
Final Utility Report

HILLSIDE AT CASTLE ROCK PHASES 3 & 4

Castle Rock, Douglas County
Colorado, 80109

Initial Submittal: August 25, 2023

2nd Resubmittal:

3rd Resubmittal:

4th Resubmittal:

5th Resubmittal:

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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 emissions on my part in preparing this report.

Signature: _____
Registered Professional Engineer
State of Colorado No. 48230
(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

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PROJECT LOCATION AND DESCRIPTION

Site Location

The Hillside at Castle Rock Phase 3 & 4 occupies approximately 21.356 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.

Description of Property and Land Use

Hillside at Castle Rock Phase 3 & 4 occupies approximately 21.356 acres and is intended to be developed as an active adult, single family attached residential community. Phases 3 & 4 will have a total of 66 units consisting of 38 duplex units; seven “4-plex” lot groups; each 4-plex group consists of two single family units and one duplex unit (the duplex models included in the 4-plex groups will be different from the 38 standalone duplex units mentioned above). Phase 3 will have 26 duplexes and Phase 4 will have 12 duplexes. All 66 units fall under Single Family and Duplexes classification with a demand of 1.00 single family equivalent (SFE’s) per unit resulting in a total of 66.0 SFE’s. Phase 5 will consist of 55 proposed Townhome lots. These lots will be classified as Multi-Family with a demand of 1.00 single family equivalent (SFE’s) per unit resulting in a total of 55.0 SFE’s. Phases 3 & 4 will have approximately 68,205 square feet of irrigated common area and open space. The site sits on a hillside with no existing irrigation canals or ditches and is located outside any major or minor drainageways or floodplains.

EXISTING WATER & WASTEWATER SYSTEM

Existing Domestic Distribution System

The site is currently partially developed with Phases 1 & 2 of the Hillside at Castle Rock development currently under construction. An existing 8-inch main runs along the constructed portions of Grayside Circle with an 8-inch stub-out at the northwest corner of the Phases 3 & 4 site.

Existing 12-inch and 16-inch transmission lines border the site to the south and west. There is a 16-inch line 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 a 12-inch line Coachline Road. There are no known shortcomings from tying into these lines.

Based on the EPANET analysis the pressures at the main line connections are (see Section III.B), Coachline Road 46.9 psi, the western connection in Wolfensberger Road is 873 psi and the eastern is 108.7 psi.

Existing Wastewater Facilities

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.

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 existing 8-inch sanitary sewer main extends north along Wolfensberger Road to an existing sanitary sewer manhole, SMH-7696 (Labeled EX. SSMH-1 in plans) located at the northeast intersection of Grayside Circle and Wolfensberger Road. This manhole serves as the ultimate outfall for the Hillside at Castle Rock site as well as the Epiphany Lutheran Church. An existing 8-inch stub extends north to the Hillside at Castle Rock property from existing sewer manhole 7696 at the northeast intersection of Wolfensberger Road and Grayside Circle.

A proposed 8-inch sewer main was installed as part of the Hillside at Castle Rock Phase 1 & 2 improvements to serve the development. This main connected to existing sewer manhole SMH-7696 and extended north along Wolfensberger Road to the southwestern intersection of Grayside Circle and Wolfensberger Road. From the intersection, the main turns north and runs along the existing Grayside Circle ROW. The 8-inch sewer main stops at the northwest boundary of Phases 2 & 3. Here an 8-inch stub was installed and extends from the existing manhole to provide service for Phases 3 & 4.

CALCULATED WATER DEMANDS

Average Day Demands

Phases 3 & 4 will consist of 66 proposed duplex units and Phase 5 (a future and separate development) will consist of 53-55 proposed Multi-Family units. AVG Day demand for each phase 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 required ADD for Phases 3, 4 & 5:

Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	AVG Day Demand (GPD)	AVG Day Demand (GPM)	AVG Annual Supply (Ac-ft/yr)
3 & 4	Duplex Lots (SF & Duplex)	400	1.00	66	26,400.0	18.33	26.40
5	Townhome Lots (Multi-Family)	260	1.00	53-55	14,300.0	9.93	14.30
Total	-	-	-		40,700.0	28.26	40.70

The total Average Annual Supply for Phases 3, 4 & 5 is 40.70. 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 P2903.6(1) 2012 IRC). If peak demand is above 20 GPM tap fees and credit against water bank will be based on a ¾" meter.

Max Day Demands

Max Day demand for each phase 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). Max day Demand was calculated by multiplying ADD by a Peaking Factor of 2.5 for residential and multi-family units. The following table shows the required MDD for Phases 3, 4 & 5:

Table 2: Max Day Demand – Phase 3 & 4						
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	Max Day Demand (GPD)	Max Day Demand (GPM)
3 & 4	Duplex Lots (SF & Duplex)	400	1.00	66	66,000.0	45.83
5	Townhome Lots (Multi-Family)	260	1.00	53-55	35,750.0	24.83
Total	-	-	-	121	101,750.0	70.66

The required storage volume (in million gallons, MG) is taken from the Max Day Demand + 2 hours Fire Flow is 180,070.66 gallons (0.181 MG), where the fire flow is 1,500 GPM for 2 hours. Refer to Appendix B for detailed calculations.

Peak Hour Demands

Peak Hour demand for each phase 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). Peak Hour Demand was calculated by multiplying ADD by a Peaking Factor of 5.5 for residential and multi-family units. The following table shows the required Peak Hour for Phases 3, 4 & 5:

Table 3: Peak Hour Demand – Phase 3 & 4						
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	Peak Hour Demand (GPD)	Peak Hour Demand (GPM)
3 & 4	Duplex Lots (SF & Duplex)	400	1.00	66	145,200.0	100.83
5	Townhome Lots (Multi-Family)	260	1.00	53-55	54.62	14.3
Total	-	-	-	121	145,254.62	115.13

Irrigation Demands

Calculated irrigation demands are based on the typical demand per acreage set forth in the ADD Land Use Table from section 4.4.1 of *Town of Castle Rock Water System Design 2018 Criteria Manual*. Per Town of Castle Rock Water System Design 2018 Criteria Manual, all calculated Average Day Demands include irrigation demand. Max Day Irrigation Demand and Peak Hour Irrigation Demand are calculated by multiplying the ADD demand by the Peak demand factors mentioned Section 4.4.1 of the Town of Castle Rock Water System Design 2018 Criteria Manual.

Areas to be irrigated for Phases 3, 4, and 5 are shown in proposed irrigation worksheets included in the irrigation plans produced by HydroSystems irrigation consulting and Water Management. The required area to be irrigated is 1.57 acres for Phases 3, 4, and 5. The proposed irrigation MDD for Phases 3, 4 and 5 is TBD GPD.

For purposes of water system demand, only the highest individual peak hour demand is considered. The following table shows the required irrigation demand for Phases 3, 4 & 5:

Table 4: Irrigation Demand – Phases 3 & 4						
Phase	Land Use	Typical ADD/Unit (GPD/Unit) (GPD/Acre)	Typical SFE's/Unit	Number of Units or Acres	Max Day Demand (GPD)	Max Day Demand (GPM)
3 & 4	Duplex Lots (Single Family & Duplexes)	400	1.00	66	66,000.0	45.83
5	Townhome Lots (Multi-Family)	260	1.00	55	35,750.0	24.83
3 & 4	Zone x Irrigation	3,750	-	1.57		
5	Zone x Irrigation	3,750	-	TBD		
Total	-	-	-			

PROPOSED WATER SYSTEM

Proposed Distribution System

The proposed Phase 3 & 4 water distribution system will consist of a single loop that begins at the northeast intersection of Wolfensberger Road and Grayside Circle. The proposed 8-inch water line will connect to the existing 12-inch main running along Wolfensberger Road. The proposed 8-inch main will extend north along Grayside Circle and connect to an existing stub constructed during Phases 1 & 2. A stretch of proposed 8-inch main will branch off the proposed 8-inch main running along Grayside Circle and extend south along the east side of the existing detention pond and connect to the existing 12-inch main running along Wolfensberger Road.

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 latest edition of the International Fire Code for one- and two-family dwelling units not exceeding 3,600 ft².

Minimum fire flow (2-hour duration) for any newly developed area is:
one- and two-family dwelling unit = 1,500 gpm.

The duplex and 4-unit lot areas will have traditional fire protection with flows provided by proposed hydrants located in the street right-of-way.

Land Dedication Requirements

A 20-foot water line easement will be created with the Final Plat 2nd Amendment for that portion of the proposed water line that is routed on the east side of the existing west detention pond south of Grayside Circle. The land within the easement is graded to meet the Town's design and maintenance access standards.

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 *Bentley WaterCAD V8I* 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:

- 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 Maximum Day Demand plus fire flow.
- Minimum dynamic pressure (20% tank storage) with residential and irrigation Peak

Hour Demand.

Hydraulic Modeling Output and Required Schematics

Please refer to Appendix C for model output tables.

Required Fire Flow Results

While modeling the MDD+FF scenario, hydrant H-E1 and junctions J-E3 and J-E21, J-E22 exhibited the worst-case results with a minimum residual pressure in the system ranging from 35 psi to 43 psi. Pipes P-E28, P-E27 and P-E26 had the highest velocities with 14.31 ft/s. These results are still in accordance with minimum standards *Town of Castle Rock Water System Design Criteria Manual*,

CALCULATED WASTEWATER FLOWS

Average Daily Wastewater Flows (ADF)

The average daily flow 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 required ADF for Phases 3, 4 & 5:

Table 5: Average Daily Flow – Phase 3 & 4						
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	AVG Daily Demand (GPD)	AVG Daily Demand (GPM)
3 & 4	Duplex Lots (SF & Duplex)	200	1.00	66	13,200	9.17
5	Townhome Lots (Multi-Family)	130	1.00	53-55	7,150	4.96
Total	-	-	-		20,350	14.13

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*. The PF was calculated to be 5.13, 5.97 and 7.15 for Phases 3 & 4. These values exceeded the maximum PF of 5.0. Therefore, a PF of 5.0 was used to determine the Peak Design Flows.

Peak Design Flows (PDF)

Peak design flow for Phase 3, 4 & 5 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 required peak design flow for Phases 3, 4 & 5:

Table 6: Peak Daily Flow – Phase 3 & 4						
Phase	Land Use	Typical ADD/Unit (GPD/Unit)	Typical SFE's/Unit	Number of Units	Peak Daily Flow (GPD)	Peak Daily Demand (GPM)
3 & 4	Duplex Lots (SF & Duplex)	200	1.00	66	67,320	46.75
5	Townhome Lots (Multi-Family)	130	1.00	53-55	36,465	25.33
Total	-	-	-		103,785	72.07

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 & 4 in Grayside Circle. This main will extend northeasterly and run along the proposed 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.

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 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.

Reservoirs representing connections to the existing sanitary sewer main were utilized as the source for the distribution system. Junctions were used at all connections points. A catch basin was used in order to add sewer demand to the system. 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:

- 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:

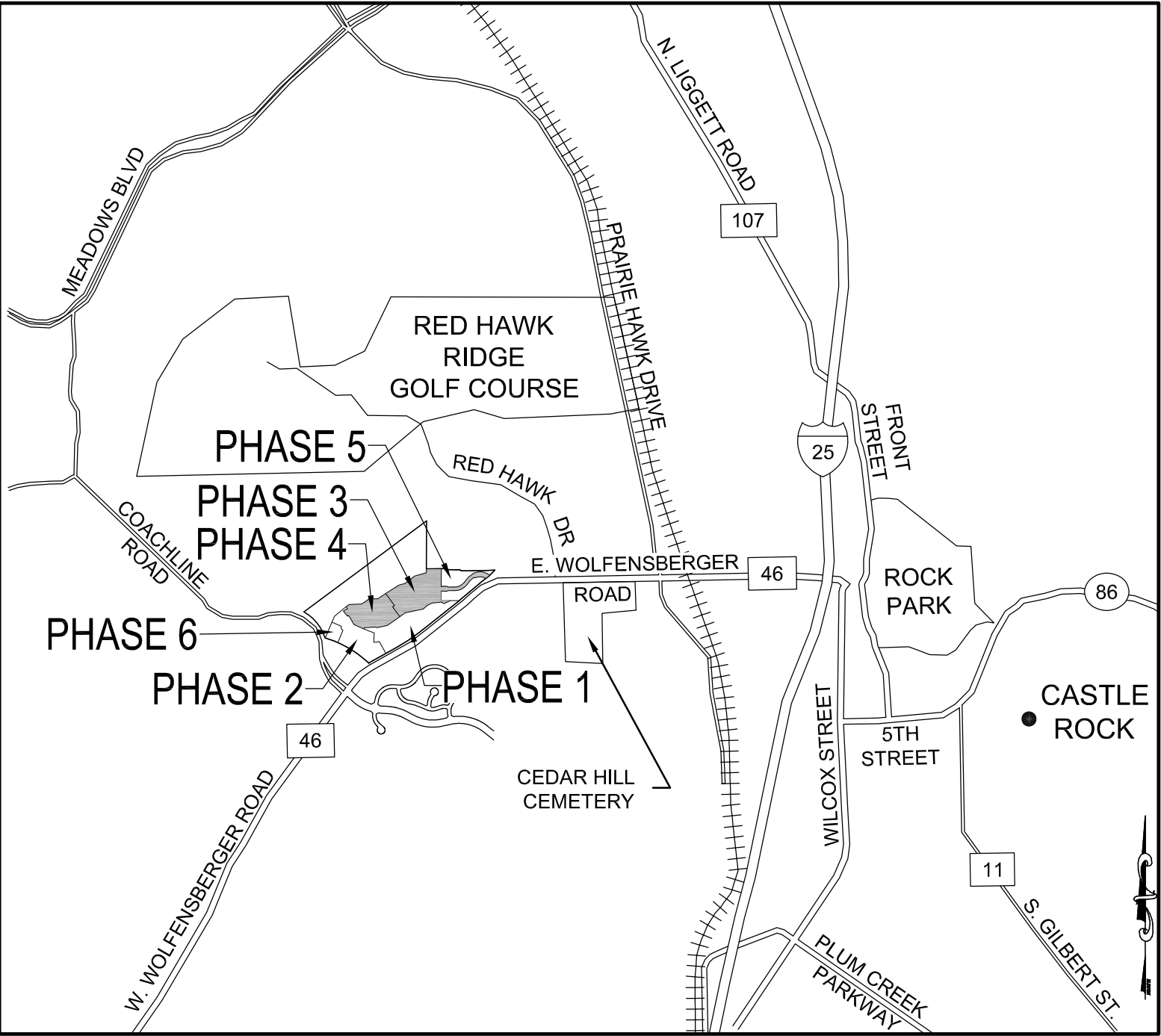
Castle Rock Water is not responsible or liable for assumptions made by the developer regarding utility information associated with the proposed development. Also see “Indemnification Statement” in Section 3.7.2 of the *Town of Castle Rock Water System Design Criteria Manual*.

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) **2010 Water Master Plan Update**, March 2011.
- 4) **2012 Wastewater Master Plan Update**, March 2011.

APPENDIX A

Vicinity Map



VICINITY MAP

SCALE: 1" = 2,000'±



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June 15, 2022

Castle Rock Fire and Rescue Department
300 Perry Street
Castle Rock, CO 80104

Re: Confirmation Memo of Required Fire Flow for Hillside/Arbors SDP Amendment No. 1

To Life Safety Division,

Please accept the following required fire flow evaluation(s) based upon the currently adopted 2012 International Fire Code for Review and confirmation for each of the following proposed buildings.

No structures or buildings were shown on the approved Hillside/Arbors SDP and no structures or buildings are shown on this SDP Amendment No. 1.

Reference Appendix C, Table C105.1

Required Number of Fire Hydrants: 12

Maximum Average Spacing: 500

Maximum Distance from Fire Hydrant to Building: 180-feet, as a fire truck would drive

(Note in sprinkled buildings, a hydrant shall be located within 100-ft of the FDC)

Design Engineers Signature:  Date: 2022/06/15

The determined Required Fire Flow, Number of Fire Hydrants and Hydrant Spacing as shown above satisfy the fire protection requirements of the Castle Rock Fire and Rescue Department.

Final fire hydrant placement will be determined and approved during the Site Development (SDP) and/or Construction Document (CD) review phase.

Castle Rock Fire Signature: _____ Date: _____

Fire Department Plan Review Number: _____

APPENDIX B

Water Demand Calculations

Domestic - Demand Calculations

Project: HILLSIDE AT CASTLE ROCK
Section: PHASE 3 & 4

Created By: GSR DATE: 8/1/2023
Checked By: DATE:

Site	Conceptual Land Use	Area (Acres)	Typical Average Day Flow (GPM/Unit)	Typical SFE's/Unit	Number of Units	Average Day Flow (GPD)	Average Day Flow (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	Duplexes Unit Lots (Multi-Family)	-	400	1	66	26,400.00	18.33	66,000.00	45.83	145,200.00	100.83	26.40
Tract C	Multi-Family (Townhomes)	-	260	0.65	41	10,660.00	7.40	26,650.00	18.51	58,630.00	40.72	10.66
Tract D	Multi-Family (Townhomes)	-	260	0.65	14	3,640.00	2.53	9,100.00	6.32	20,020.00	13.90	3.64
Phase 3 &4	Irrigation		3,750	-	-							
Phase 5	Irrigation		3,750	-	-							
Total	-	0.00	-	-	121	40,700.00	28.26	101,750.00	70.66	223,850.00	155.45	40.70

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=1,500 gpm

5 Storage Requirements:

Storage Volume=Max Day Demand + 2 Hour fire Flow= 70.66 + 180000 = 180,070.66 gallons

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

WATERCAD Demand Input

Project: HILLSIDE AT CASTLE ROCK
 Section: PHASE 3 & 4

Created By: GSR
 Checked By:

DATE: 7/28/2023
 DATE:

JUNCTION	RESIDENTIAL UNITS	MDD/UNIT (GPM/UNIT)	RESIDENTIAL MDD (GPM)	IRRIGATION MDD (GPM)	FIREFLOW (GPM)	TOTAL MDD+IRR+FF DEMAND (GPM)	PHD/UNIT (GPM/UNIT)	RESIDENTIAL PHD (GPM)	IRRIGATION PHD (GPM)	TOTAL PHD+IRR. (GPM)
J1	17	0.694	11.80	-	-	11.80	1.528	25.98	-	25.98
J2	15	0.694	10.41	-	-	10.41	1.528	22.92	-	22.92
J4	16	0.694	11.10	-	-	11.10	1.528	24.45	-	24.45
J5	16	0.694	11.10	-	-	11.10	1.528	24.45	-	24.45
J10	14	0.451	6.31	-	-	6.31	0.993	13.90	-	13.90
J12	41	0.451	18.49	-	-	18.49	0.993	40.71	-	40.71
JE3	5	0.694	3.47	-	-	3.47	1.528	7.64	-	7.64
JE4	10	0.694	6.94	-	-	6.94	1.528	15.28	-	15.28
JE6	12	0.694	8.33	-	-	8.33	1.528	18.34	-	18.34
JE7	-	-	-	2.45	-	2.45	-	-	-	-
JE10	11	0.694	7.63	-	-	7.63	1.528	16.81	-	16.81
JE11	9	0.694	6.25	-	-	6.25	1.528	13.75	-	13.75
JE12	-	-	-	7.14	-	7.14	-	-	37.00	37.00
JE13	3	0.694	2.08	-	-	2.08	1.528	4.58	-	4.58
JE21	2	0.694	1.39	-	-	1.39	1.528	3.06	-	3.06
JE22	2	0.694	1.39	-	1,500.00	1,501.39	1.528	3.06	-	3.06
H-1	-	-	-	-	1,500.00	1,500.00	-	-	-	-
H-7	-	-	-	-	1,500.00	1,500.00	-	-	-	-
Total	173		106.70	9.59	4,500.00	4,616.29		234.92	0.00	271.92

APPENDIX C

WaterCAD Model Results

APPENDIX C

No Demand at 20% Full

FlexTable: Junction Table
Active Scenario: NO DEMAND @ 20% FULL

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,390.61	0.00	6,503.60	49
J-2	6,371.09	0.00	6,503.60	57
J-3	6,366.52	0.00	6,503.60	59
J-4	6,328.34	0.00	6,503.60	76
J-5	6,323.12	0.00	6,503.60	78
J-6	6,317.90	0.00	6,503.60	80
J-7	6,314.27	0.00	6,503.60	82
J-8	6,310.34	0.00	6,503.60	84
J-9	6,309.31	0.00	6,503.60	84
J-10	6,396.47	0.00	6,503.60	46
J-11	6,293.21	0.00	6,503.60	91
J-12	6,289.70	0.00	6,503.60	93
J-13	6,281.00	0.00	6,503.60	96
J-14	6,376.30	0.00	6,503.60	55
J-15	6,269.82	0.00	6,503.60	101
J-16	6,267.00	0.00	6,503.60	102
J-17	6,267.00	0.00	6,503.60	102
J-18	6,311.48	0.00	6,503.60	83
J-19	6,307.33	0.00	6,503.60	85
J-E1	6,403.05	0.00	6,503.60	44
J-E2	6,387.38	0.00	6,503.60	50
J-E3	6,387.00	0.00	6,503.60	50
J-E4	6,386.52	0.00	6,503.60	51
J-E6	6,361.79	0.00	6,503.60	61
J-E7	6,361.19	0.00	6,503.60	62
J-E8	6,357.48	0.00	6,503.60	63
J-E9	6,354.53	0.00	6,503.60	64
J-E10	6,338.90	0.00	6,503.60	71
J-E11	6,328.58	0.00	6,503.60	76
J-E12	6,323.52	0.00	6,503.60	78
J-E13	6,322.58	0.00	6,503.60	78
J-E14	6,315.72	0.00	6,503.60	81
J-E15	6,313.28	0.00	6,503.60	82
J-E16	6,289.54	0.00	6,503.60	93
J-E17	6,289.14	0.00	6,503.60	93
J-E19	6,270.24	0.00	6,503.60	101
J-E20	6,270.00	0.00	6,503.60	101
J-E21	6,387.47	0.00	6,503.60	50
J-E22	6,390.90	0.00	6,503.60	49
J-E23	6,393.11	0.00	6,503.60	48

FlexTable: Pipe Table

Active Scenario: NO DEMAND @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-8	J-4	J-5	8.0	92	PVC	120.0	0.00	0.00	76	78	0.00
P-11	J-6	J-7	8.0	63	PVC	120.0	0.00	0.00	80	82	0.00
P-12	J-7	J-8	8.0	63	PVC	120.0	0.00	0.00	82	84	0.00
P-14	J-10	J-11	8.0	51	PVC	120.0	0.00	0.00	46	91	0.00
P-18	J-12	J-13	8.0	143	PVC	120.0	0.00	0.00	93	96	0.00
P-19	J-13	J-14	8.0	83	PVC	120.0	0.00	0.00	96	55	0.00
P-20	J-14	J-15	8.0	117	PVC	120.0	0.00	0.00	55	101	0.00
P-23	J-16	J-17	8.0	44	PVC	120.0	0.00	0.00	102	102	0.00
P-1	J-1	H-1	8.0	117	PVC	120.0	0.00	0.00	49	52	0.00
P-2	H-1	J-2	8.0	213	PVC	120.0	0.00	0.00	52	57	0.00
P-3	J-2	H-2	8.0	63	PVC	120.0	0.00	0.00	57	59	0.00
P-4	H-2	J-3	8.0	12	PVC	120.0	0.00	0.00	59	59	0.00
P-4	J-3	H-3	8.0	253	PVC	120.0	0.00	0.00	59	66	0.00
P-6	H-3	H-4	8.0	320	PVC	120.0	0.00	0.00	66	74	0.00
P-7	H-4	J-4	8.0	60	PVC	120.0	0.00	0.00	74	76	0.00
P-9	J-5	H-5	8.0	31	PVC	120.0	0.00	0.00	78	79	0.00
P-10	H-5	J-6	8.0	57	PVC	120.0	0.00	0.00	79	80	0.00
P-13	J-8	J-9	8.0	16	PVC	120.0	0.00	0.00	84	84	0.00
P-14	J-9	J-10	8.0	215	PVC	120.0	0.00	0.00	84	46	0.00
P-16	J-11	H-7	8.0	10	PVC	120.0	0.00	0.00	91	91	0.00
P-17	H-7	J-12	8.0	48	PVC	120.0	0.00	0.00	91	93	0.00
P-21	J-15	H-8	8.0	34	PVC	120.0	0.00	0.00	101	102	0.00
P-22	H-8	J-16	8.0	50	PVC	120.0	0.00	0.00	102	102	0.00
P-24	J-9	J-18	8.0	165	PVC	120.0	0.00	0.00	84	83	0.00
P-25	J-18	J-19	8.0	69	PVC	120.0	0.00	0.00	83	85	0.00
P-26	J-19	J-E16	8.0	189	PVC	120.0	0.00	0.00	85	93	0.00
P-E30	J-1	J-E23	8.0	82	PVC	120.0	0.00	0.00	49	48	0.00
P-E29	J-E23	J-E22	8.0	87	PVC	120.0	0.00	0.00	48	49	0.00
P-E28	J-E22	H-E1	8.0	49	PVC	120.0	0.00	0.00	49	50	0.00
P-E27	H-E1	J-E21	8.0	48	PVC	120.0	0.00	0.00	50	50	0.00
P-E26	J-E21	J-E3	8.0	17	PVC	120.0	0.00	0.00	50	50	0.00
P-E3	J-E3	J-E2	8.0	21	PVC	120.0	-0.01	0.00	50	50	0.00
P-E2	J-E2	J-E1	8.0	247	PVC	120.0	-0.01	0.00	50	44	0.00
P-E1	J-E1	R-1	8.0	136	PVC	120.0	-0.01	0.00	44	0	0.00
P-E4	J-E3	J-E4	8.0	15	PVC	120.0	0.01	0.00	50	51	0.00
P-E5	J-E4	H-E2	8.0	188	PVC	120.0	0.01	0.00	51	55	0.00
P-E6	H-E2	H-E3	8.0	204	PVC	120.0	0.01	0.00	55	60	0.00
P-E7	H-E3	J-E6	8.0	32	PVC	120.0	0.01	0.00	60	61	0.00
P-E8	J-E6	J-E7	8.0	10	PVC	120.0	0.01	0.00	61	62	0.00
P-E9	J-E7	J-E8	8.0	61	PVC	120.0	0.01	0.00	62	63	0.00

FlexTable: Pipe Table

Active Scenario: NO DEMAND @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-E10	J-E8	J-E9	8.0	50	PVC	120.0	0.01	0.00	63	64	0.00
P-E11	J-E9	H-E4	8.0	122	PVC	120.0	0.01	0.00	64	68	0.00
P-E12	H-E4	J-E10	8.0	139	PVC	120.0	0.01	0.00	68	71	0.00
P-E13	J-E10	H-E5	8.0	84	PVC	120.0	0.01	0.00	71	74	0.00
P-E14	H-E5	J-E11	8.0	84	PVC	120.0	0.01	0.00	74	76	0.00
P-E15	J-E11	J-E12	8.0	88	PVC	120.0	0.01	0.00	76	78	0.00
P-E16	J-E12	J-E13	8.0	14	PVC	120.0	0.01	0.00	78	78	0.00
P-E17	J-E13	H-E6	8.0	112	PVC	120.0	0.01	0.00	78	81	0.00
P-E18	H-E6	J-E14	8.0	13	PVC	120.0	0.01	0.00	81	81	0.00
P-E19	J-E14	J-E15	8.0	147	PVC	120.0	0.01	0.00	81	82	0.00
P-E23	J-E17	J-E19	12.0	546	PVC	120.0	0.00	0.00	93	101	0.00
P-E24	J-E19	J-E20	12.0	22	PVC	120.0	0.00	0.00	101	101	0.00
P-E25	J-E20	J-17	12.0	91	PVC	120.0	0.00	0.00	101	102	0.00
P-E21	J-E15	J-E16	16.0	483	PVC	120.0	-0.01	0.00	82	93	0.00
P-E22	J-E16	J-E17	16.0	7	PVC	120.0	0.00	0.00	93	93	0.00
P-E20	J-E15	R-2	16.0	24	PVC	120.0	0.02	0.00	82	0	0.00

FlexTable: Reservoir Table
Active Scenario: NO DEMAND @ 20% FULL

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	6,503.60	0.01	6,503.60
R-2	6,503.60	-0.02	6,503.60

FlexTable: Hydrant Table
Active Scenario: NO DEMAND @ 20% FULL

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	6,383.81	0.00	6,503.60	52
H-2	Closed	6,367.09	0.00	6,503.60	59
H-3	Closed	6,351.17	0.00	6,503.60	66
H-4	Closed	6,331.97	0.00	6,503.60	74
H-5	Closed	6,321.34	0.00	6,503.60	79
H-7	Open	6,292.53	0.00	6,503.60	91
H-8	Closed	6,268.40	0.00	6,503.60	102
H-E1	Closed	6,389.05	0.00	6,503.60	50
H-E2	Closed	6,375.97	0.00	6,503.60	55
H-E4	Closed	6,347.06	0.00	6,503.60	68
H-E5	Closed	6,333.51	0.00	6,503.60	74
H-E3	Closed	6,363.80	0.00	6,503.60	60
H-E6	Closed	6,316.26	0.00	6,503.60	81

APPENDIX C

No Demand at 100% Full

FlexTable: Junction Table
Active Scenario: NO DEMAND @ 100% FULL

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	0.00	0.00	6,523.30	2,822
J-2	0.00	0.00	6,523.30	2,822
J-3	0.00	0.00	6,523.30	2,822
J-4	0.00	0.00	6,523.30	2,822
J-5	0.00	0.00	6,523.30	2,822
J-6	0.00	0.00	6,523.30	2,822
J-7	0.00	0.00	6,523.30	2,822
J-8	0.00	0.00	6,523.30	2,822
J-9	0.00	0.00	6,523.30	2,822
J-10	0.00	0.00	6,523.30	2,822
J-11	0.00	0.00	6,523.30	2,822
J-12	0.00	0.00	6,523.30	2,822
J-13	0.00	0.00	6,523.30	2,822
J-14	0.00	0.00	6,523.30	2,822
J-15	0.00	0.00	6,523.30	2,822
J-16	0.00	0.00	6,523.30	2,822
J-17	0.00	0.00	6,523.30	2,822
J-18	0.00	0.00	6,523.30	2,822
J-19	0.00	0.00	6,523.30	2,822
J-E1	0.00	0.00	6,523.30	2,822
J-E2	0.00	0.00	6,523.30	2,822
J-E3	0.00	0.00	6,523.30	2,822
J-E4	0.00	0.00	6,523.30	2,822
J-E6	0.00	0.00	6,523.30	2,822
J-E7	0.00	0.00	6,523.30	2,822
J-E8	0.00	0.00	6,523.30	2,822
J-E9	0.00	0.00	6,523.30	2,822
J-E10	0.00	0.00	6,523.30	2,822
J-E11	0.00	0.00	6,523.30	2,822
J-E12	0.00	0.00	6,523.30	2,822
J-E13	0.00	0.00	6,523.30	2,822
J-E14	0.00	0.00	6,523.30	2,822
J-E15	0.00	0.00	6,523.30	2,822
J-E16	0.00	0.00	6,523.30	2,822
J-E17	0.00	0.00	6,523.30	2,822
J-E19	0.00	0.00	6,523.30	2,822
J-E20	0.00	0.00	6,523.30	2,822
J-E21	0.00	0.00	6,523.30	2,822
J-E22	0.00	0.00	6,523.30	2,822
J-E23	0.00	0.00	6,523.30	2,822

FlexTable: Pipe Table

Active Scenario: NO DEMAND @ 100% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-8	J-4	J-5	6.0	92	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-11	J-6	J-7	6.0	63	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-12	J-7	J-8	6.0	63	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-14	J-10	J-11	6.0	51	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-18	J-12	J-13	6.0	143	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-19	J-13	J-14	6.0	83	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-20	J-14	J-15	6.0	117	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-23	J-16	J-17	6.0	44	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-1	J-1	H-1	6.0	117	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-2	H-1	J-2	6.0	213	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-3	J-2	H-2	6.0	63	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-4	H-2	J-3	6.0	12	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-4	J-3	H-3	6.0	253	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-6	H-3	H-4	6.0	320	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-7	H-4	J-4	6.0	60	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-9	J-5	H-5	6.0	31	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-10	H-5	J-6	6.0	57	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-13	J-8	J-9	6.0	16	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-14	J-9	J-10	6.0	215	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-16	J-11	H-7	6.0	10	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-17	H-7	J-12	6.0	48	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-21	J-15	H-8	6.0	34	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-22	H-8	J-16	6.0	50	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-24	J-9	J-18	6.0	165	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-25	J-18	J-19	6.0	69	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-26	J-19	J-E16	6.0	189	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E30	J-1	J-E23	6.0	82	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E29	J-E23	J-E22	6.0	87	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E28	J-E22	H-E1	6.0	49	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E27	H-E1	J-E21	6.0	48	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E26	J-E21	J-E3	6.0	17	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E3	J-E3	J-E2	6.0	21	PVC	120.0	-0.01	0.00	2,822	2,822	0.00
P-E2	J-E2	J-E1	6.0	247	PVC	120.0	-0.01	0.00	2,822	2,822	0.00
P-E1	J-E1	R-1	6.0	136	PVC	120.0	-0.01	0.00	2,822	0	0.00
P-E4	J-E3	J-E4	6.0	15	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E5	J-E4	H-E2	6.0	188	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E6	H-E2	H-E3	6.0	204	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E7	H-E3	J-E6	6.0	32	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E8	J-E6	J-E7	6.0	10	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E9	J-E7	J-E8	6.0	61	PVC	120.0	0.01	0.00	2,822	2,822	0.00

FlexTable: Pipe Table

Active Scenario: NO DEMAND @ 100% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-E10	J-E8	J-E9	6.0	50	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E11	J-E9	H-E4	6.0	122	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E12	H-E4	J-E10	6.0	139	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E13	J-E10	H-E5	6.0	84	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E14	H-E5	J-E11	6.0	84	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E15	J-E11	J-E12	6.0	88	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E16	J-E12	J-E13	6.0	14	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E17	J-E13	H-E6	6.0	112	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E18	H-E6	J-E14	6.0	13	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E19	J-E14	J-E15	6.0	147	PVC	120.0	0.01	0.00	2,822	2,822	0.00
P-E21	J-E15	J-E16	6.0	483	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E22	J-E16	J-E17	6.0	7	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E23	J-E17	J-E19	6.0	546	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E24	J-E19	J-E20	6.0	22	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E25	J-E20	J-17	6.0	91	PVC	120.0	0.00	0.00	2,822	2,822	0.00
P-E20	J-E15	R-2	6.0	24	PVC	120.0	0.01	0.00	2,822	0	0.00

FlexTable: Reservoir Table
Active Scenario: NO DEMAND @ 100% FULL

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	6,523.30	0.01	6,523.30
R-2	6,523.30	-0.01	6,523.30

FlexTable: Hydrant Table
Active Scenario: NO DEMAND @ 100% FULL

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Closed	0.00	0.00	6,523.30	2,822
H-2	Closed	0.00	0.00	6,523.30	2,822
H-3	Closed	0.00	0.00	6,523.30	2,822
H-4	Closed	0.00	0.00	6,523.30	2,822
H-5	Closed	0.00	0.00	6,523.30	2,822
H-7	Closed	0.00	0.00	6,523.30	2,822
H-8	Closed	0.00	0.00	6,523.30	2,822
H-E1	Closed	0.00	0.00	6,523.30	2,822
H-E2	Closed	0.00	0.00	6,523.30	2,822
H-E4	Closed	0.00	0.00	6,523.30	2,822
H-E5	Closed	0.00	0.00	6,523.30	2,822
H-E3	Closed	0.00	0.00	6,523.30	2,822
H-E6	Closed	0.00	0.00	6,523.30	2,822

APPENDIX C

Max Day + Fire Flow

FlexTable: Pipe Table

Active Scenario: MAX DAY @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-8	J-4	J-5	8.0	92	PVC	120.0	-793.39	5.06	67	70	1.28
P-11	J-6	J-7	8.0	63	PVC	120.0	-804.51	5.14	73	75	0.89
P-12	J-7	J-8	8.0	63	PVC	120.0	-804.51	5.14	75	77	0.90
P-14	J-10	J-11	8.0	51	PVC	120.0	439.65	2.81	39	84	0.24
P-18	J-12	J-13	8.0	143	PVC	120.0	-1,078.90	6.89	86	91	3.48
P-19	J-13	J-14	8.0	83	PVC	120.0	-1,078.90	6.89	91	51	2.01
P-20	J-14	J-15	8.0	117	PVC	120.0	-1,078.90	6.89	51	98	2.86
P-23	J-16	J-17	8.0	44	PVC	120.0	-1,078.90	6.89	100	101	1.08
P-1	J-1	H-1	8.0	117	PVC	120.0	728.16	4.65	36	38	1.38
P-2	H-1	J-2	8.0	213	PVC	120.0	-771.84	4.93	38	45	2.79
P-3	J-2	H-2	8.0	63	PVC	120.0	-782.27	4.99	45	47	0.85
P-4	H-2	J-3	8.0	12	PVC	120.0	-782.27	4.99	47	47	0.16
P-4	J-3	H-3	8.0	253	PVC	120.0	-782.27	4.99	47	55	3.40
P-6	H-3	H-4	8.0	320	PVC	120.0	-782.27	4.99	55	65	4.30
P-7	H-4	J-4	8.0	60	PVC	120.0	-782.27	4.99	65	67	0.81
P-9	J-5	H-5	8.0	31	PVC	120.0	-804.51	5.14	70	71	0.44
P-10	H-5	J-6	8.0	57	PVC	120.0	-804.51	5.14	71	73	0.80
P-13	J-8	J-9	8.0	16	PVC	120.0	-804.51	5.14	77	77	0.22
P-14	J-9	J-10	8.0	215	PVC	120.0	445.99	2.85	77	39	1.02
P-16	J-11	H-7	8.0	10	PVC	120.0	439.65	2.81	84	84	0.05
P-17	H-7	J-12	8.0	48	PVC	120.0	-1,060.35	6.77	84	86	1.15
P-21	J-15	H-8	8.0	34	PVC	120.0	-1,078.90	6.89	98	99	0.82
P-22	H-8	J-16	8.0	50	PVC	120.0	-1,078.90	6.89	99	100	1.23
P-24	J-9	J-18	8.0	165	PVC	120.0	-1,250.50	7.98	77	79	5.29
P-25	J-18	J-19	8.0	69	PVC	120.0	-1,250.50	7.98	79	82	2.20
P-26	J-19	J-E16	8.0	189	PVC	120.0	-1,250.50	7.98	82	92	6.07
P-E30	J-1	J-E23	8.0	82	PVC	120.0	-739.97	4.72	36	35	0.99
P-E29	J-E23	J-E22	8.0	87	PVC	120.0	-739.97	4.72	35	36	1.05
P-E28	J-E22	H-E1	8.0	49	PVC	120.0	-2,241.36	14.31	36	39	4.63
P-E27	H-E1	J-E21	8.0	48	PVC	120.0	-2,241.36	14.31	39	42	4.56
P-E26	J-E21	J-E3	8.0	17	PVC	120.0	-2,242.75	14.31	42	43	1.57
P-E3	J-E3	J-E2	8.0	21	PVC	120.0	-1,494.62	9.54	43	43	0.94
P-E2	J-E2	J-E1	8.0	247	PVC	120.0	-1,494.62	9.54	43	41	11.02
P-E1	J-E1	R-1	8.0	136	PVC	120.0	-1,494.62	9.54	41	0	6.08
P-E4	J-E3	J-E4	8.0	15	PVC	120.0	-751.61	4.80	43	43	0.18
P-E5	J-E4	H-E2	8.0	188	PVC	120.0	-758.56	4.84	43	49	2.38
P-E6	H-E2	H-E3	8.0	204	PVC	120.0	-758.56	4.84	49	55	2.59
P-E7	H-E3	J-E6	8.0	32	PVC	120.0	-758.56	4.84	55	56	0.41
P-E8	J-E6	J-E7	8.0	10	PVC	120.0	-766.90	4.89	56	56	0.12
P-E9	J-E7	J-E8	8.0	61	PVC	120.0	-769.35	4.91	56	58	0.79

FlexTable: Pipe Table

Active Scenario: MAX DAY @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-E10	J-E8	J-E9	8.0	50	PVC	120.0	-769.35	4.91	58	60	0.65
P-E11	J-E9	H-E4	8.0	122	PVC	120.0	-769.35	4.91	60	64	1.60
P-E12	H-E4	J-E10	8.0	139	PVC	120.0	-769.35	4.91	64	68	1.81
P-E13	J-E10	H-E5	8.0	84	PVC	120.0	-776.99	4.96	68	71	1.11
P-E14	H-E5	J-E11	8.0	84	PVC	120.0	-776.99	4.96	71	73	1.12
P-E15	J-E11	J-E12	8.0	88	PVC	120.0	-783.25	5.00	73	76	1.19
P-E16	J-E12	J-E13	8.0	14	PVC	120.0	-790.38	5.04	76	77	0.19
P-E17	J-E13	H-E6	8.0	112	PVC	120.0	-792.47	5.06	77	80	1.54
P-E18	H-E6	J-E14	8.0	13	PVC	120.0	-792.47	5.06	80	80	0.18
P-E19	J-E14	J-E15	8.0	147	PVC	120.0	-792.47	5.06	80	82	2.02
P-E23	J-E17	J-E19	12.0	546	PVC	120.0	1,078.90	3.06	92	99	1.85
P-E24	J-E19	J-E20	12.0	22	PVC	120.0	1,078.90	3.06	99	99	0.08
P-E25	J-E20	J-17	12.0	91	PVC	120.0	1,078.90	3.06	99	101	0.31
P-E21	J-E15	J-E16	16.0	483	PVC	120.0	2,329.40	3.72	82	92	1.68
P-E22	J-E16	J-E17	16.0	7	PVC	120.0	1,078.90	1.72	92	92	0.01
P-E20	J-E15	R-2	16.0	24	PVC	120.0	-3,121.86	4.98	82	0	0.14

FlexTable: Reservoir Table

Active Scenario: MAX DAY @ 20% FULL

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	6,503.60	1,494.62	6,503.60
R-2	6,503.60	3,121.86	6,503.60

FlexTable: Hydrant Table

Active Scenario: MAX DAY @ 20% FULL

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	6,383.81	1,500.00	6,471.38	38
H-2	Closed	6,367.09	0.00	6,475.02	47
H-3	Closed	6,351.17	0.00	6,478.58	55
H-4	Closed	6,331.97	0.00	6,482.88	65
H-5	Closed	6,321.34	0.00	6,485.41	71
H-7	Open	6,292.53	1,500.00	6,486.91	84
H-8	Closed	6,268.40	0.00	6,497.24	99
H-E1	Closed	6,389.05	0.00	6,479.43	39
H-E2	Closed	6,375.97	0.00	6,488.13	49
H-E4	Closed	6,347.06	0.00	6,494.30	64
H-E5	Closed	6,333.51	0.00	6,497.22	71
H-E3	Closed	6,363.80	0.00	6,490.72	55
H-E6	Closed	6,316.26	0.00	6,501.25	80

FlexTable: Junction Table

Active Scenario: MAX DAY @ 20% FULL

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,390.61	11.81	6,472.76	36
J-2	6,371.09	10.43	6,474.17	45
J-3	6,366.52	0.00	6,475.18	47
J-4	6,328.34	11.12	6,483.69	67
J-5	6,323.12	11.12	6,484.97	70
J-6	6,317.90	0.00	6,486.21	73
J-7	6,314.27	0.00	6,487.10	75
J-8	6,310.34	0.00	6,487.99	77
J-9	6,309.31	0.00	6,488.21	77
J-10	6,396.47	6.34	6,487.19	39
J-11	6,293.21	0.00	6,486.95	84
J-12	6,289.70	18.55	6,488.05	86
J-13	6,281.00	0.00	6,491.54	91
J-14	6,376.30	0.00	6,493.55	51
J-15	6,269.82	0.00	6,496.41	98
J-16	6,267.00	0.00	6,498.47	100
J-17	6,267.00	0.00	6,499.54	101
J-18	6,311.48	0.00	6,493.51	79
J-19	6,307.33	0.00	6,495.71	82
J-E1	6,403.05	0.00	6,497.52	41
J-E2	6,387.38	0.00	6,486.50	43
J-E3	6,387.00	3.47	6,485.56	43
J-E4	6,386.52	6.95	6,485.75	43
J-E6	6,361.79	8.34	6,491.13	56
J-E7	6,361.19	2.45	6,491.25	56
J-E8	6,357.48	0.00	6,492.05	58
J-E9	6,354.53	0.00	6,492.70	60
J-E10	6,338.90	7.65	6,496.11	68
J-E11	6,328.58	6.26	6,498.34	73
J-E12	6,323.52	7.13	6,499.53	76
J-E13	6,322.58	2.09	6,499.71	77
J-E14	6,315.72	0.00	6,501.43	80
J-E15	6,313.28	0.00	6,503.46	82
J-E16	6,289.54	0.00	6,501.78	92
J-E17	6,289.14	0.00	6,501.78	92
J-E19	6,270.24	0.00	6,499.93	99
J-E20	6,270.00	0.00	6,499.85	99
J-E21	6,387.47	1.39	6,483.99	42
J-E22	6,390.90	1,501.39	6,474.80	36
J-E23	6,393.11	0.00	6,473.75	35

APPENDIX C

Peak Hour Demand

FlexTable: Junction Table
Active Scenario: PEAK HOUR @ 20% FULL

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,390.61	25.99	6,503.51	49
J-2	6,371.09	22.93	6,503.51	57
J-3	6,366.52	0.00	6,503.51	59
J-4	6,328.34	24.46	6,503.51	76
J-5	6,323.12	24.46	6,503.52	78
J-6	6,317.90	0.00	6,503.53	80
J-7	6,314.27	0.00	6,503.53	82
J-8	6,310.34	0.00	6,503.54	84
J-9	6,309.31	0.00	6,503.54	84
J-10	6,396.47	13.94	6,503.54	46
J-11	6,293.21	0.00	6,503.54	91
J-12	6,289.70	40.82	6,503.54	93
J-13	6,281.00	0.00	6,503.56	96
J-14	6,376.30	0.00	6,503.56	55
J-15	6,269.82	0.00	6,503.57	101
J-16	6,267.00	0.00	6,503.58	102
J-17	6,267.00	0.00	6,503.58	102
J-18	6,311.48	0.00	6,503.56	83
J-19	6,307.33	0.00	6,503.57	85
J-E1	6,403.05	0.00	6,503.58	43
J-E2	6,387.38	0.00	6,503.53	50
J-E3	6,387.00	7.65	6,503.53	50
J-E4	6,386.52	15.29	6,503.53	51
J-E6	6,361.79	18.35	6,503.53	61
J-E7	6,361.19	0.00	6,503.53	62
J-E8	6,357.48	0.00	6,503.53	63
J-E9	6,354.53	0.00	6,503.53	64
J-E10	6,338.90	16.82	6,503.53	71
J-E11	6,328.58	13.76	6,503.53	76
J-E12	6,323.52	37.00	6,503.54	78
J-E13	6,322.58	4.59	6,503.54	78
J-E14	6,315.72	0.00	6,503.57	81
J-E15	6,313.28	0.00	6,503.60	82
J-E16	6,289.54	0.00	6,503.59	93
J-E17	6,289.14	0.00	6,503.59	93
J-E19	6,270.24	0.00	6,503.59	101
J-E20	6,270.00	0.00	6,503.59	101
J-E21	6,387.47	3.06	6,503.53	50
J-E22	6,390.90	3.06	6,503.52	49
J-E23	6,393.11	0.00	6,503.52	48

FlexTable: Pipe Table

Active Scenario: PEAK HOUR @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-8	J-4	J-5	8.0	92	PVC	120.0	-34.18	0.22	76	78	0.00
P-11	J-6	J-7	8.0	63	PVC	120.0	-58.64	0.37	80	82	0.01
P-12	J-7	J-8	8.0	63	PVC	120.0	-58.64	0.37	82	84	0.01
P-14	J-10	J-11	8.0	51	PVC	120.0	-11.37	0.07	46	91	0.00
P-18	J-12	J-13	8.0	143	PVC	120.0	-52.18	0.33	93	96	0.01
P-19	J-13	J-14	8.0	83	PVC	120.0	-52.18	0.33	96	55	0.01
P-20	J-14	J-15	8.0	117	PVC	120.0	-52.18	0.33	55	101	0.01
P-23	J-16	J-17	8.0	44	PVC	120.0	-52.18	0.33	102	102	0.00
P-1	J-1	H-1	8.0	117	PVC	120.0	13.22	0.08	49	52	0.00
P-2	H-1	J-2	8.0	213	PVC	120.0	13.22	0.08	52	57	0.00
P-3	J-2	H-2	8.0	63	PVC	120.0	-9.71	0.06	57	59	0.00
P-4	H-2	J-3	8.0	12	PVC	120.0	-9.71	0.06	59	59	0.00
P-4	J-3	H-3	8.0	253	PVC	120.0	-9.71	0.06	59	66	0.00
P-6	H-3	H-4	8.0	320	PVC	120.0	-9.71	0.06	66	74	0.00
P-7	H-4	J-4	8.0	60	PVC	120.0	-9.71	0.06	74	76	0.00
P-9	J-5	H-5	8.0	31	PVC	120.0	-58.64	0.37	78	79	0.00
P-10	H-5	J-6	8.0	57	PVC	120.0	-58.64	0.37	79	80	0.01
P-13	J-8	J-9	8.0	16	PVC	120.0	-58.64	0.37	84	84	0.00
P-14	J-9	J-10	8.0	215	PVC	120.0	2.57	0.02	84	46	0.00
P-16	J-11	H-7	8.0	10	PVC	120.0	-11.37	0.07	91	91	0.00
P-17	H-7	J-12	8.0	48	PVC	120.0	-11.37	0.07	91	93	0.00
P-21	J-15	H-8	8.0	34	PVC	120.0	-52.18	0.33	101	102	0.00
P-22	H-8	J-16	8.0	50	PVC	120.0	-52.18	0.33	102	102	0.00
P-24	J-9	J-18	8.0	165	PVC	120.0	-61.21	0.39	84	83	0.02
P-25	J-18	J-19	8.0	69	PVC	120.0	-61.21	0.39	83	85	0.01
P-26	J-19	J-E16	8.0	189	PVC	120.0	-61.21	0.39	85	93	0.02
P-E30	J-1	J-E23	8.0	82	PVC	120.0	-39.22	0.25	49	48	0.00
P-E29	J-E23	J-E22	8.0	87	PVC	120.0	-39.22	0.25	48	49	0.00
P-E28	J-E22	H-E1	8.0	49	PVC	120.0	-42.27	0.27	49	50	0.00
P-E27	H-E1	J-E21	8.0	48	PVC	120.0	-42.27	0.27	50	50	0.00
P-E26	J-E21	J-E3	8.0	17	PVC	120.0	-45.33	0.29	50	50	0.00
P-E3	J-E3	J-E2	8.0	21	PVC	120.0	-75.54	0.48	50	50	0.00
P-E2	J-E2	J-E1	8.0	247	PVC	120.0	-75.54	0.48	50	43	0.04
P-E1	J-E1	R-1	8.0	136	PVC	120.0	-75.54	0.48	43	0	0.02
P-E4	J-E3	J-E4	8.0	15	PVC	120.0	22.57	0.14	50	51	0.00
P-E5	J-E4	H-E2	8.0	188	PVC	120.0	7.28	0.05	51	55	0.00
P-E6	H-E2	H-E3	8.0	204	PVC	120.0	7.28	0.05	55	60	0.00
P-E7	H-E3	J-E6	8.0	32	PVC	120.0	7.28	0.05	60	61	0.00
P-E8	J-E6	J-E7	8.0	10	PVC	120.0	-11.07	0.07	61	62	0.00
P-E9	J-E7	J-E8	8.0	61	PVC	120.0	-11.07	0.07	62	63	0.00

FlexTable: Pipe Table

Active Scenario: PEAK HOUR @ 20% FULL

Label	Start Node	Stop Node	Dia. (in)	Length (ft)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Pressure (Start) (psi)	Pressure (Stop) (psi)	Headloss (ft)
P-E10	J-E8	J-E9	8.0	50	PVC	120.0	-11.07	0.07	63	64	0.00
P-E11	J-E9	H-E4	8.0	122	PVC	120.0	-11.07	0.07	64	68	0.00
P-E12	H-E4	J-E10	8.0	139	PVC	120.0	-11.07	0.07	68	71	0.00
P-E13	J-E10	H-E5	8.0	84	PVC	120.0	-27.89	0.18	71	74	0.00
P-E14	H-E5	J-E11	8.0	84	PVC	120.0	-27.89	0.18	74	76	0.00
P-E15	J-E11	J-E12	8.0	88	PVC	120.0	-41.65	0.27	76	78	0.01
P-E16	J-E12	J-E13	8.0	14	PVC	120.0	-78.65	0.50	78	78	0.00
P-E17	J-E13	H-E6	8.0	112	PVC	120.0	-83.24	0.53	78	81	0.02
P-E18	H-E6	J-E14	8.0	13	PVC	120.0	-83.24	0.53	81	81	0.00
P-E19	J-E14	J-E15	8.0	147	PVC	120.0	-83.24	0.53	81	82	0.03
P-E23	J-E17	J-E19	12.0	546	PVC	120.0	52.18	0.15	93	101	0.01
P-E24	J-E19	J-E20	12.0	22	PVC	120.0	52.18	0.15	101	101	0.00
P-E25	J-E20	J-17	12.0	91	PVC	120.0	52.18	0.15	101	102	0.00
P-E21	J-E15	J-E16	16.0	483	PVC	120.0	113.39	0.18	82	93	0.01
P-E22	J-E16	J-E17	16.0	7	PVC	120.0	52.18	0.08	93	93	0.00
P-E20	J-E15	R-2	16.0	24	PVC	120.0	-196.63	0.31	82	0	0.00

FlexTable: Reservoir Table
Active Scenario: PEAK HOUR @ 20% FULL

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	6,503.60	75.54	6,503.60
R-2	6,503.60	196.63	6,503.60

FlexTable: Hydrant Table
Active Scenario: PEAK HOUR @ 20% FULL

Label	Hydrant Status	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Open	6,383.81	0.00	6,503.51	52
H-2	Closed	6,367.09	0.00	6,503.51	59
H-3	Closed	6,351.17	0.00	6,503.51	66
H-4	Closed	6,331.97	0.00	6,503.51	74
H-5	Closed	6,321.34	0.00	6,503.52	79
H-7	Open	6,292.53	0.00	6,503.54	91
H-8	Closed	6,268.40	0.00	6,503.58	102
H-E1	Closed	6,389.05	0.00	6,503.52	50
H-E2	Closed	6,375.97	0.00	6,503.53	55
H-E4	Closed	6,347.06	0.00	6,503.53	68
H-E5	Closed	6,333.51	0.00	6,503.53	74
H-E3	Closed	6,363.80	0.00	6,503.53	60
H-E6	Closed	6,316.26	0.00	6,503.57	81

APPENDIX D

Wastewater Demand Calculations

Wastewater- Demand Calculations

Project: HILLSIDE AT CASTLE ROCK
 Section: PHASE 3 & 4

Created By: GSR
 Checked By:

DATE: 7/28/2023
 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 Design Flow(GPD)	Peak Design Flow (GPM)	PDF (CFS)
-	Duplexes Unit Lots (Multi-Family)	200	1	66	13,200.00	9.17	0.020	5.13	5.00	67,320.00	46.75	0.10
Tract C	Multi-Family (Townhomes)	130	0.65	41	5,330.00	3.70	0.008	5.97	5.00	27,183.00	18.88	0.04
Tract D	Multi-Family (Townhomes)	130	0.65	14	1,820.00	1.26	0.003	7.15	5.00	9,282.00	6.45	0.01
Total	-	-	-	121	20,350.00	14.13	0.03	-	-	103,785.00	72.07	0.16

Notes:

- 1 All tabulated ADD rates include irrigation demands with the exception of multi-family residential per Town of Castle Rock WasteWater System 2018 Criteria Manual
- 2 peaking Factor = $3.65 \times \{ADF^{-0.168}\}$

APPENDIX E

SewerCAD Model Results

APPENDIX E

Average Daily Flow

FlexTable: Conduit Table
Active Scenario: AVG DAY

Label	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (ft)	Slope (ft/ft)	Dia. (in)	Mat.	Manning's n	Flow (cfs)	Velocity (ft/s)	Headloss (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
P-1	EX. SSMH-4.12	SSMH-1.15	6,385.99	6,383.38	80.9	0.032	8.0	PVC	0.011	0.02	2.17	2.60	6,386.05	6,383.47
P-2	SSMH-1.15	SSMH-1.14	6,383.38	6,362.96	327.5	0.062	8.0	PVC	0.011	0.02	2.75	20.36	6,383.45	6,362.99
P-3	SSMH-1.14	SSMH-1.13	6,362.76	6,358.89	77.3	0.050	8.0	PVC	0.011	0.02	2.54	3.81	6,362.82	6,358.93
P-4	SSMH-1.13	SSMH-1.12.1	6,358.69	6,351.22	135.9	0.055	8.0	PVC	0.011	0.02	2.62	7.41	6,358.76	6,351.26
P-5	SSMH-1.12.1	SSMH-1.12	6,351.02	6,340.10	182.3	0.060	8.0	PVC	0.011	0.02	2.71	10.85	6,351.08	6,340.14
P-6	SSMH-1.12	SSMH-1.11	6,339.90	6,320.84	318.3	0.060	8.0	PVC	0.011	0.02	2.71	19.00	6,339.97	6,320.88
P-7	SSMH-1.11	SSMH-1.10	6,320.65	6,315.53	85.4	0.060	8.0	PVC	0.011	0.02	2.71	5.05	6,320.71	6,315.57
P-8	SSMH-1.10	SSMH-1.9	6,315.34	6,310.22	85.4	0.060	8.0	PVC	0.011	0.02	2.71	5.05	6,315.40	6,310.26
P-9	SSMH-1.9	SSMH-1.8	6,310.02	6,306.63	61.7	0.055	8.0	PVC	0.011	0.02	2.62	3.33	6,310.08	6,306.67
P-10	SSMH-1.8	SSMH-1.7	6,306.44	6,302.79	66.3	0.055	8.0	PVC	0.011	0.02	2.62	3.58	6,306.50	6,302.83
P-11	SSMH-1.7	SSMH-1.6	6,302.60	6,289.45	234.1	0.056	8.0	PVC	0.011	0.03	3.01	13.06	6,302.67	6,289.50
P-12	SSMH-1.6	SSMH-1.5	6,289.25	6,286.13	56.8	0.055	8.0	PVC	0.011	0.03	2.99	3.04	6,289.33	6,286.18
P-13	SSMH-1.5	SSMH-1.4	6,285.94	6,282.30	60.7	0.060	8.0	PVC	0.011	0.03	3.08	3.55	6,286.01	6,282.35
P-14	SSMH-1.4	SSMH-1.3	6,282.10	6,273.67	143.3	0.059	8.0	PVC	0.011	0.03	3.06	8.35	6,282.18	6,273.72
P-15	SSMH-1.3	SSMH-1.2	6,273.47	6,268.91	76.2	0.060	8.0	PVC	0.011	0.03	3.08	4.48	6,273.55	6,268.96
P-16	SSMH-1.2	SSMH-1.1	6,268.71	6,264.22	112.2	0.040	8.0	PVC	0.011	0.03	2.68	4.44	6,268.79	6,264.27
P-17	SSMH-1.1	EX. SSMH-1	6,264.02	6,260.81	74.5	0.043	8.0	PVC	0.011	0.03	2.75	3.20	6,264.10	6,260.92
P-18	EX. SSMH-1	O-1	6,260.81	6,260.41	19.1	0.021	8.0	PVC	0.011	0.03	2.15	0.38	6,260.89	6,260.47

FlexTable: Manhole Table
Active Scenario: AVG DAY

Label	Elevation (Rim) (ft)	Invert (ft)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Dia (in)	Flow (Total Out) (cfs)	Headloss (ft)	Headloss Method	HEC-22 Benching Method
EX. SSMH-1	6,272.61	6,260.81	6,260.90	6,260.90	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.1	6,274.94	6,264.22	6,264.10	6,264.10	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.10	6,328.23	6,315.53	6,315.40	6,315.40	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.11	6,333.47	6,320.84	6,320.71	6,320.71	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.12	6,352.52	6,340.10	6,339.97	6,339.97	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.12.1	6,363.43	6,351.22	6,351.09	6,351.09	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.13	6,371.52	6,358.89	6,358.76	6,358.76	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.14	6,376.03	6,362.96	6,362.82	6,362.82	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.15	6,395.71	6,383.38	6,383.45	6,383.45	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.2	6,281.46	6,268.91	6,268.80	6,268.80	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.3	6,286.11	6,273.67	6,273.56	6,273.56	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.4	6,294.61	6,282.30	6,282.19	6,282.19	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.5	6,298.12	6,286.13	6,286.02	6,286.02	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.6	6,301.41	6,289.45	6,289.34	6,289.34	48.0	0.03	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.8	6,319.22	6,306.63	6,306.50	6,306.50	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half
SSMH-1.9	6,322.99	6,310.22	6,310.09	6,310.09	48.0	0.02	0.00	HEC-22 Energy (Third Edition)	Half

FlexTable: Catch Basin Table

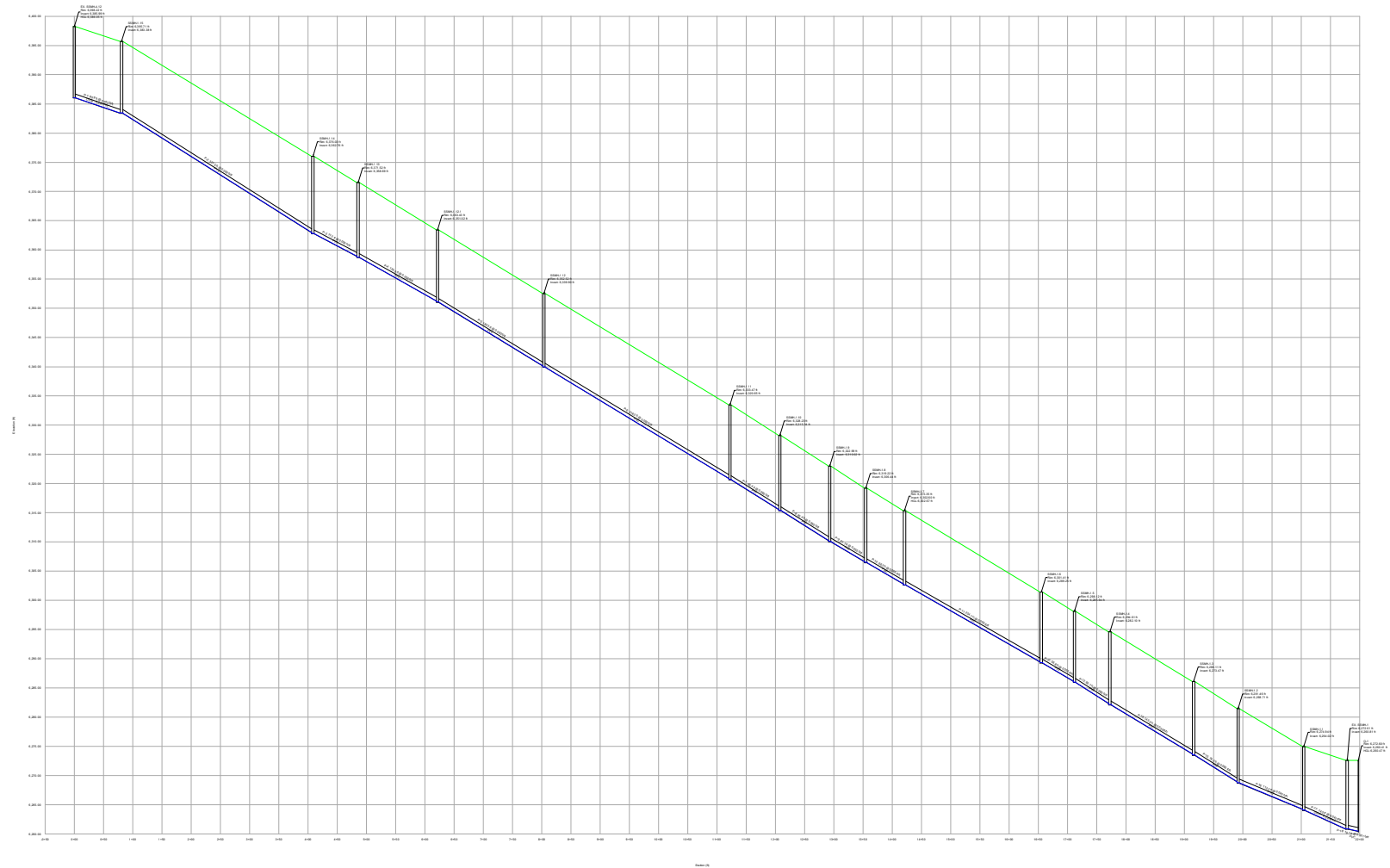
Active Scenario: AVG DAY

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Structure Type	Inlet Type	Inlet Location	Flow (cfs)	Headloss (ft)
EX. SSMH-4.12	6,398.22	6,385.99	6,386.05	6,386.05	Circular Structure	Full Capture	In Sag	0.02	0.00
SSMH-1.7	6,315.35	6,302.60	6,302.67	6,302.67	Circular Structure	Full Capture	In Sag	0.03	0.00

FlexTable: Outfall Table
Active Scenario: AVG DAY

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Hydraulic Grade (ft)	Flow (Total Out) (cfs)
O-1	6,272.60	6,260.41	6,260.47	0.03

Profile Report **Engineering Profile - SSMH4.12 TO 01 (Model.stsw)** **Active Scenario: AVG DAY**



APPENDIX E

Peak Daily Flow

FlexTable: Conduit Table

Active Scenario: PEAK

Label	Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (ft)	Slope (ft/ft)	Dia. (in)	Mat.	Manning's n	Flow (cfs)	Velocity (ft/s)	Headloss (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
P-1	EX. SSMH-4.12	SSMH-1.15	6,385.99	6,383.38	80.9	0.032	8.0	PVC	0.011	0.10	3.56	2.59	6,386.13	6,383.58
P-2	SSMH-1.15	SSMH-1.14	6,383.38	6,362.96	327.5	0.062	8.0	PVC	0.011	0.10	4.48	20.23	6,383.53	6,363.03
P-3	SSMH-1.14	SSMH-1.13	6,362.76	6,358.89	77.3	0.050	8.0	PVC	0.011	0.10	4.15	3.71	6,362.90	6,358.97
P-4	SSMH-1.13	SSMH-1.12.1	6,358.69	6,351.22	135.9	0.055	8.0	PVC	0.011	0.10	4.28	7.30	6,358.84	6,351.30
P-5	SSMH-1.12.1	SSMH-1.12	6,351.02	6,340.10	182.3	0.060	8.0	PVC	0.011	0.10	4.41	10.73	6,351.16	6,340.18
P-6	SSMH-1.12	SSMH-1.11	6,339.90	6,320.84	318.3	0.060	8.0	PVC	0.011	0.10	4.41	18.88	6,340.05	6,320.92
P-7	SSMH-1.11	SSMH-1.10	6,320.65	6,315.53	85.4	0.060	8.0	PVC	0.011	0.10	4.41	4.93	6,320.79	6,315.61
P-8	SSMH-1.10	SSMH-1.9	6,315.34	6,310.22	85.4	0.060	8.0	PVC	0.011	0.10	4.41	4.93	6,315.48	6,310.30
P-9	SSMH-1.9	SSMH-1.8	6,310.02	6,306.63	61.7	0.055	8.0	PVC	0.011	0.10	4.28	3.22	6,310.16	6,306.71
P-10	SSMH-1.8	SSMH-1.7	6,306.44	6,302.79	66.3	0.055	8.0	PVC	0.011	0.10	4.28	3.47	6,306.58	6,302.87
P-11	SSMH-1.7	SSMH-1.6	6,302.60	6,289.45	234.1	0.056	8.0	PVC	0.011	0.16	4.97	12.91	6,302.78	6,289.55
P-12	SSMH-1.6	SSMH-1.5	6,289.25	6,286.13	56.8	0.055	8.0	PVC	0.011	0.16	4.93	2.89	6,289.44	6,286.23
P-13	SSMH-1.5	SSMH-1.4	6,285.94	6,282.30	60.7	0.060	8.0	PVC	0.011	0.16	5.08	3.38	6,286.12	6,282.40
P-14	SSMH-1.4	SSMH-1.3	6,282.10	6,273.67	143.3	0.059	8.0	PVC	0.011	0.16	5.05	8.19	6,282.29	6,273.77
P-15	SSMH-1.3	SSMH-1.2	6,273.47	6,268.91	76.2	0.060	8.0	PVC	0.011	0.16	5.08	4.31	6,273.66	6,269.01
P-16	SSMH-1.2	SSMH-1.1	6,268.71	6,264.22	112.2	0.040	8.0	PVC	0.011	0.16	4.41	4.33	6,268.90	6,264.33
P-17	SSMH-1.1	EX. SSMH-1	6,264.02	6,260.81	74.5	0.043	8.0	PVC	0.011	0.16	4.52	3.18	6,264.20	6,261.06
P-18	EX. SSMH-1	O-1	6,260.81	6,260.41	19.1	0.021	8.0	PVC	0.011	0.16	3.51	0.33	6,261.00	6,260.54

FlexTable: Manhole Table

Active Scenario: PEAK

Label	Elevation (Rim) (ft)	Invert (ft)	Hydraulic Grade Line (Out) (ft)	Hydraulic Grade Line (In) (ft)	Dia (in)	Flow (Total Out) (cfs)	Headloss (ft)	Headloss Method	HEC-22 Benching Method
EX. SSMH-1	6,272.61	6,260.81	6,261.01	6,261.01	48.0	0.16	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.1	6,274.94	6,264.22	6,264.21	6,264.22	48.0	0.16	0.02	HEC-22 Energy (Third Edition)	Half
SSMH-1.10	6,328.23	6,315.53	6,315.49	6,315.49	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.11	6,333.47	6,320.84	6,320.80	6,320.80	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.12	6,352.52	6,340.10	6,340.06	6,340.06	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.12.1	6,363.43	6,351.22	6,351.17	6,351.17	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.13	6,371.52	6,358.89	6,358.85	6,358.85	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.14	6,376.03	6,362.96	6,362.91	6,362.91	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.15	6,395.71	6,383.38	6,383.54	6,383.54	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.2	6,281.46	6,268.91	6,268.91	6,268.91	48.0	0.16	0.02	HEC-22 Energy (Third Edition)	Half
SSMH-1.3	6,286.11	6,273.67	6,273.67	6,273.67	48.0	0.16	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.4	6,294.61	6,282.30	6,282.30	6,282.30	48.0	0.16	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.5	6,298.12	6,286.13	6,286.13	6,286.13	48.0	0.16	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.6	6,301.41	6,289.45	6,289.45	6,289.45	48.0	0.16	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.8	6,319.22	6,306.63	6,306.59	6,306.59	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half
SSMH-1.9	6,322.99	6,310.22	6,310.17	6,310.17	48.0	0.10	0.01	HEC-22 Energy (Third Edition)	Half

FlexTable: Catch Basin Table

Active Scenario: PEAK

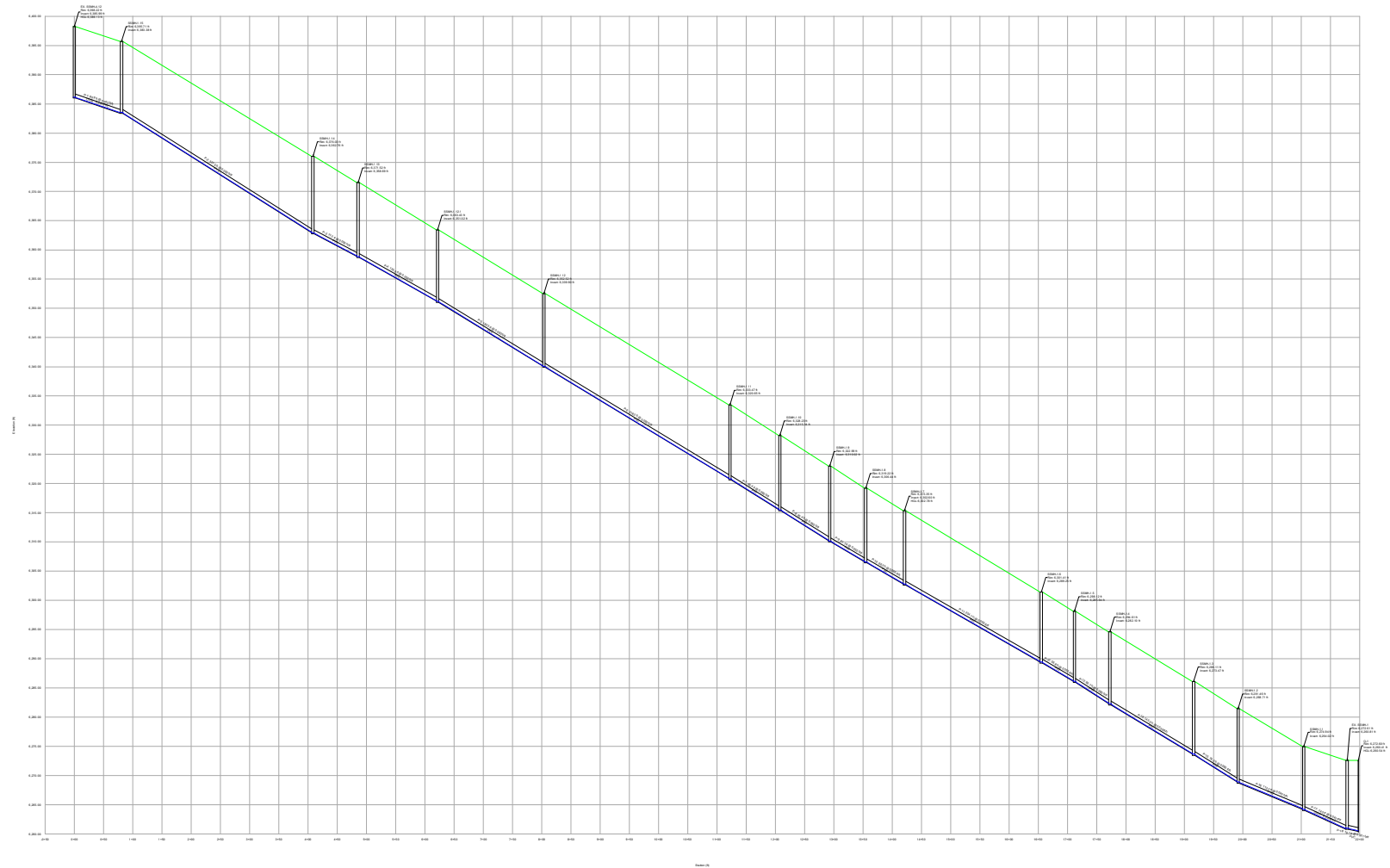
Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Structure Type	Inlet Type	Inlet Location	Flow (cfs)	Headloss (ft)
EX. SSMH-4.12	6,398.22	6,385.99	6,386.13	6,386.13	Circular Structure	Full Capture	In Sag	0.10	0.00
SSMH-1.7	6,315.35	6,302.60	6,302.78	6,302.78	Circular Structure	Full Capture	In Sag	0.16	0.00

FlexTable: Outfall Table

Active Scenario: **PEAK**

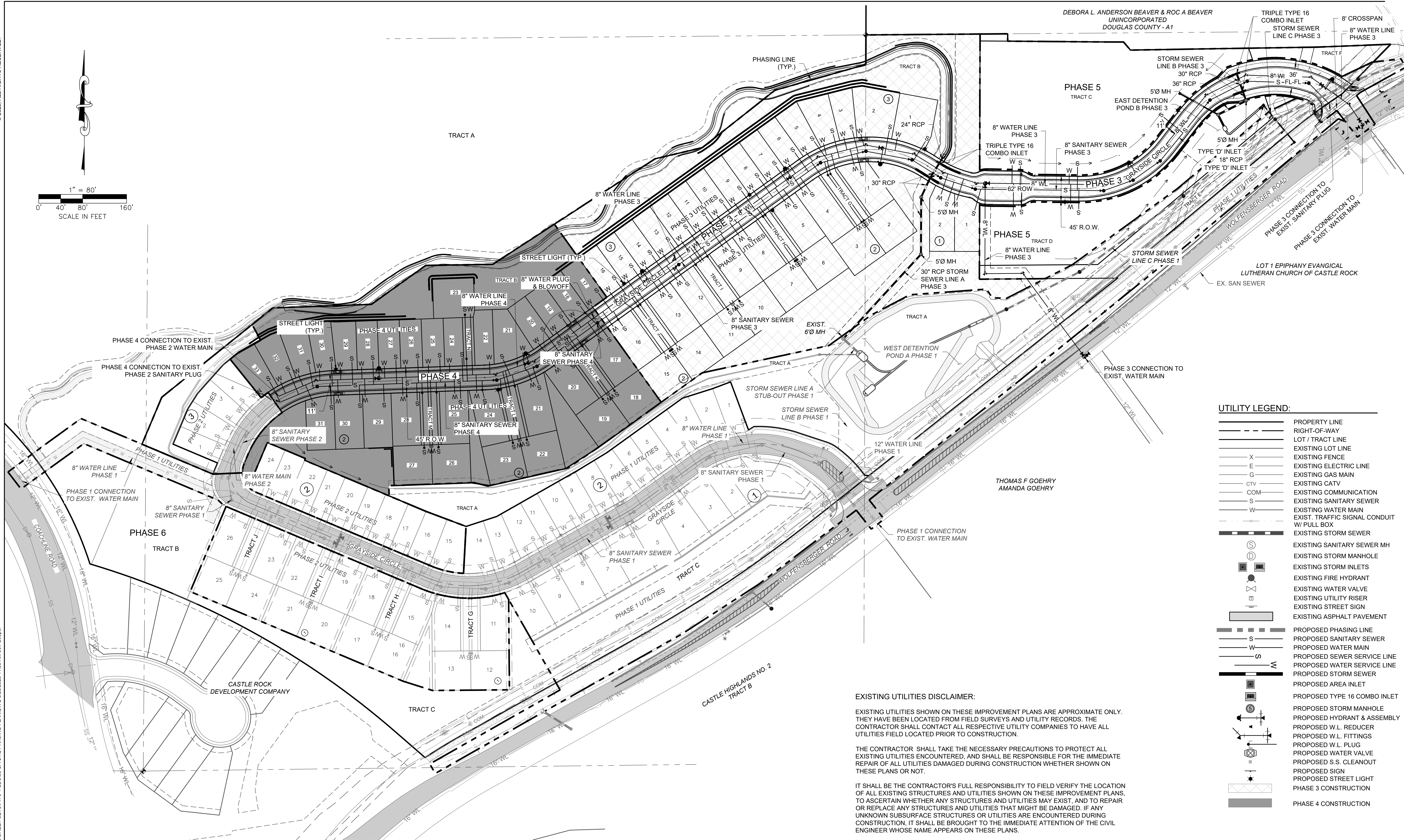
Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Hydraulic Grade (ft)	Flow (Total Out) (cfs)
O-1	6,272.60	6,260.41	6,260.54	0.16

Profile Report **Engineering Profile - SSMH4.12 TO 01 (Model.stsw)** **Active Scenario: PEAK**



APPENDIX D

Utility Plans



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.

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 |
| | PHASE 3 CONSTRUCTION |
| | PHASE 4 CONSTRUCTION |

DATE	
BY	
REVISION	
No.	

PRELIMINARY
NOT FOR
CONSTRUCTION

EES

ENTITLEMENT AND
ENGINEERING
SOLUTIONS, INC.

3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-1997 www.ees.us.com

BLVD

BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

OVERALL UTILITY PHASING
PLAN

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	8/23/2023
C1.3	SHEET 06 OF 70

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

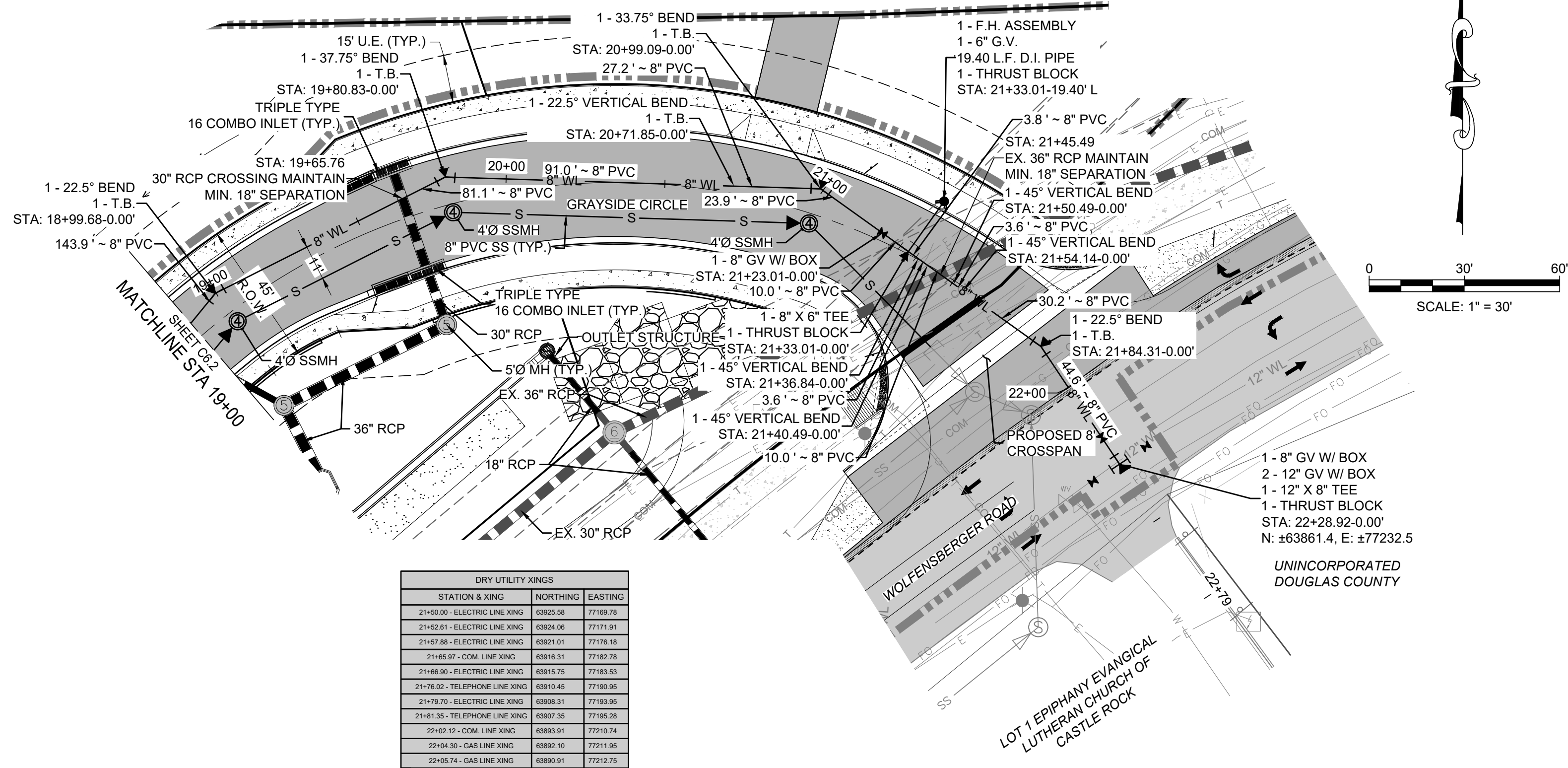
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

TOWN APPROVAL BLOCK

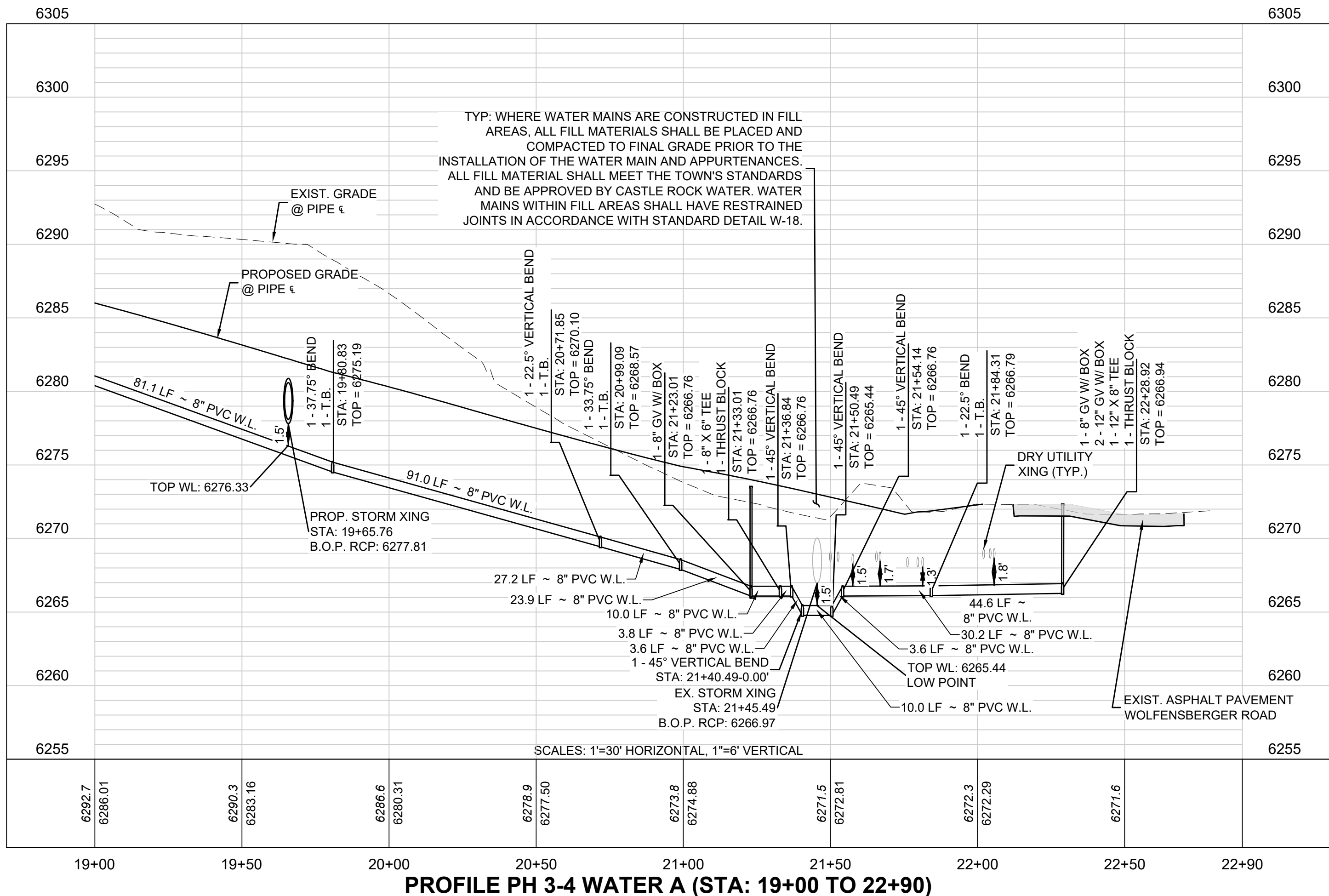
TOWN OF CASTLE ROCK APPROVAL
PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM
DATE OF DEVELOPMENT SERVICES APPROVAL

APPROVED BY:

DEVELOPMENT SERVICES DATE



DRY UTILITY XINGS		
STATION & XING	NORTHING	EASTING
21+00.00 - ELECTRIC LINE XING	6302.88	77180.78
21+02.01 - ELECTRIC LINE XING	6304.06	77171.81
21+07.88 - ELECTRIC LINE XING	6302.01	77176.18
21+08.97 - COM. LINE XING	63016.31	77162.78
21+08.90 - ELECTRIC LINE XING	63015.75	77163.83
21+78.02 - TELEPHONE LINE XING	63010.45	77180.95
21+78.76 - ELECTRIC LINE XING	63008.31	77180.98
21+81.36 - TELEPHONE LINE XING	63007.35	77186.26
22+02.12 - COM. LINE XING	63003.91	77210.74
22+04.30 - GAS LINE XING	63002.10	77211.85
22+05.74 - GAS LINE XING	63000.91	77212.75



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.

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

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.

PRELIMINARY
NOT FOR
CONSTRUCTION



ENTITLEMENT AND
ENGINEERING
SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-1987 www.ees.us.com



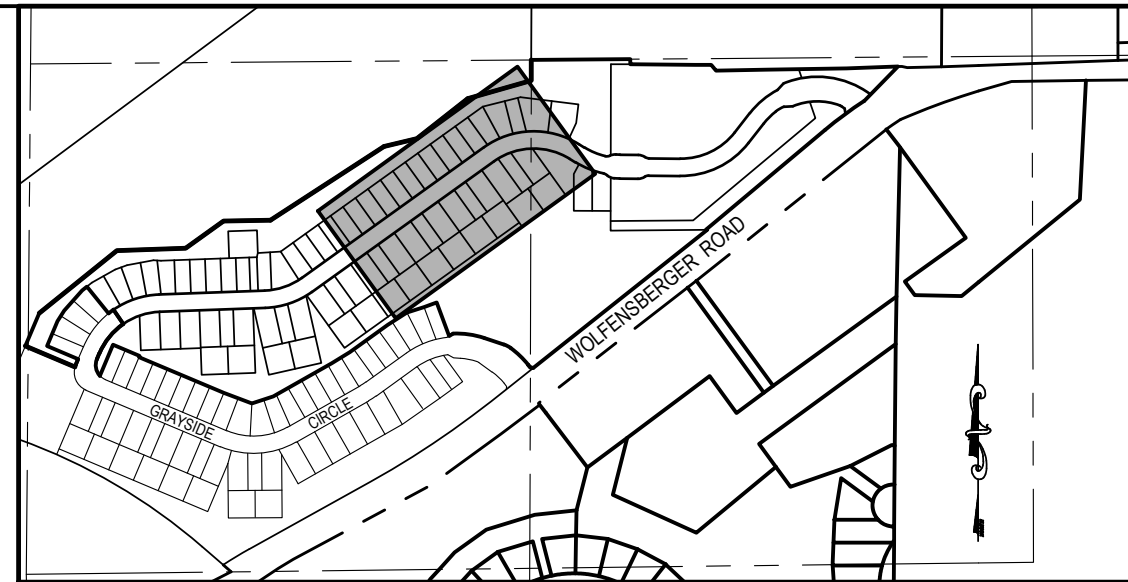
CONSTRUCTION PLANS
HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO
PHASE 3 WATER PLAN &
PROFILE 1

PROJECT NO: BLV001.02
DESIGNED BY: WLB
DRAWN BY: WLB
DATE: 8/23/2023

C6.1

SHEET 14 OF 70

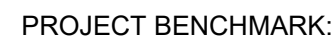


KEYMAP
SCALE: 1"=500'

UTILITY LEGEND:

WATER SERVICE LINE		
SIZE	STATION	T.O.P. ELEV.
10"	7+10.10 - LOT 15, BLOCK 3	6387.00
10"	7+13.54 R - TRACT 1	6386.82
10"	7+46.54 R - LOT 3, BLOCK 2	6384.82
10"	7+51.47 L - LOT 14, BLOCK 2	6384.54
10"	7+63.35 R - LOT 1, BLOCK 2	6382.64
10"	7+90.10 L - LOT 1, BLOCK 3	6382.22
10"	8+31.47 L - LOT 12, BLOCK 3	6348.68
10"	8+38.01 R - TRACT 1	6348.36
10"	8+43.04 R - TRACT 1	6349.00
10"	8+70.10 L - LOT 1, BLOCK 3	6347.45
10"	8+86.54 R - LOT 5, BLOCK 2	6346.41
10"	8+114.7 L - LOT 10, BLOCK 2	6345.00
10"	8+22.35 L - LOT 6, BLOCK 2	6344.25
10"	9+50.10 L - LOT 1, BLOCK 3	6342.62
10"	9+60.49 R - TRACT 8	6342.00
10"	9+91.47 L - LOT 8, BLOCK 3	6340.17
10"	9+94.47 R - TRACT 8	6340.17
10"	10+26.54 R - LOT 5, BLOCK 2	6338.00
10"	10+30.10 L - LOT 7, BLOCK 3	6337.85
10"	10+46.25 R - LOT 4, BLOCK 2	6335.75
10"	10+71.47 L - LOT 3, BLOCK 2	6335.31
10"	11+05.54 R - TRACT 6	6333.24
10"	11+10.10 L - LOT 5, BLOCK 3	6333.00
10"	11+38.08 L - LOT 4, BLOCK 3	6331.37
10"	11+43.02 R - TRACT 3	6330.85
10"	11+76.71 L - LOT 3, BLOCK 3	6329.16
10"	11+82.64 R - LOT 1, BLOCK 2	6328.80
10"	12+19.71 L - LOT 2, BLOCK 3	6328.66
10"	12+75.31 L - LOT 1, BLOCK 3	6323.47
10"	12+72.48 R - LOT 1, BLOCK 1	6318.00

- | | |
|--|--|
| | 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 |



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 _____

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

C6.3 - PHASE 3 WATER PLAN & PROFILE 3

PROJECT NO: BLV001.02

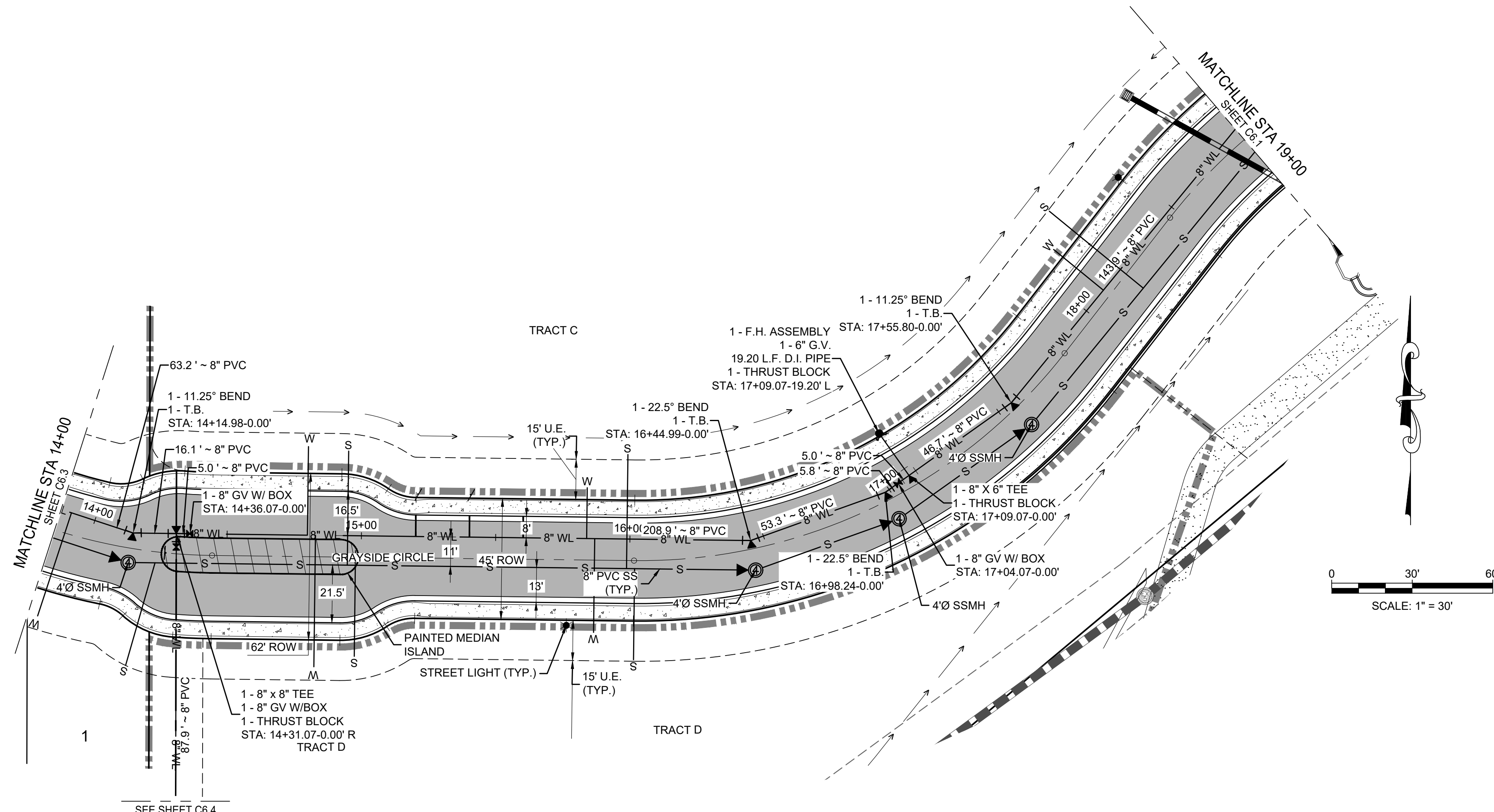
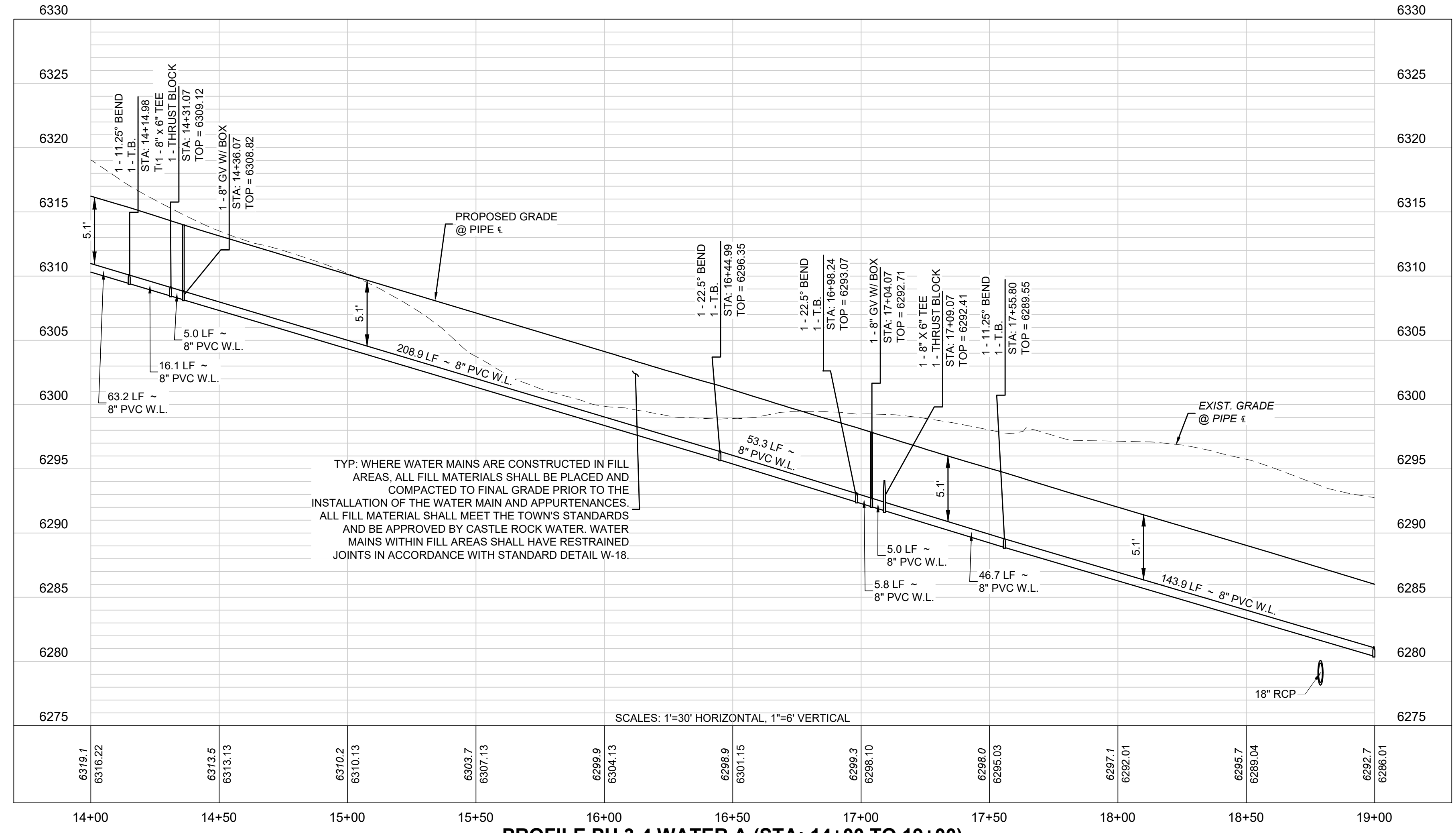
DESIGNED BY: WLF

DRAWN BY: WLF

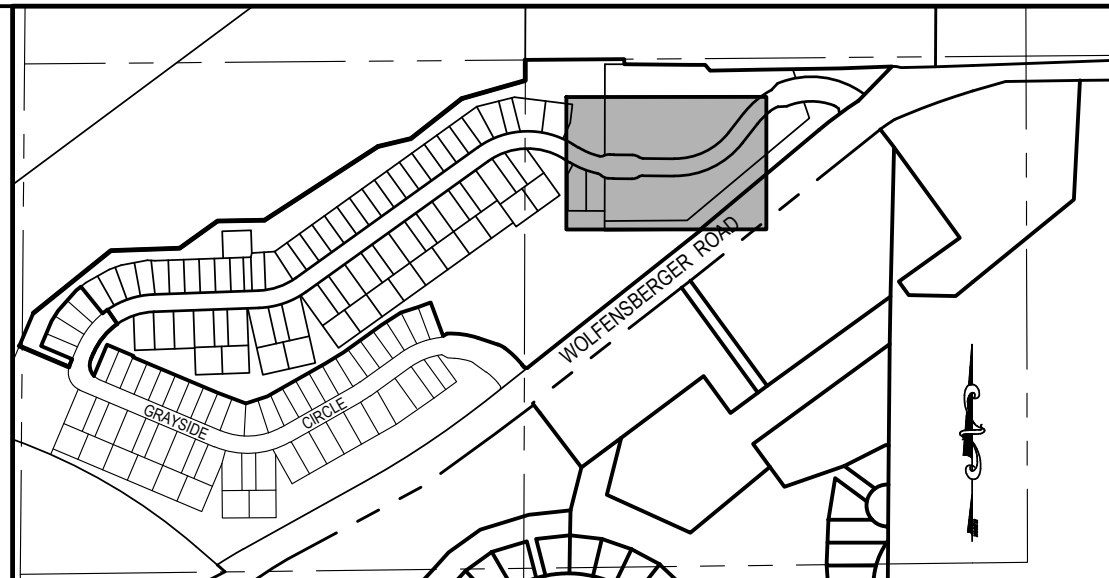
DATE: 8/23/2023

C6.3

SHEET 16 OF 70



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 |
| | 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 |

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.

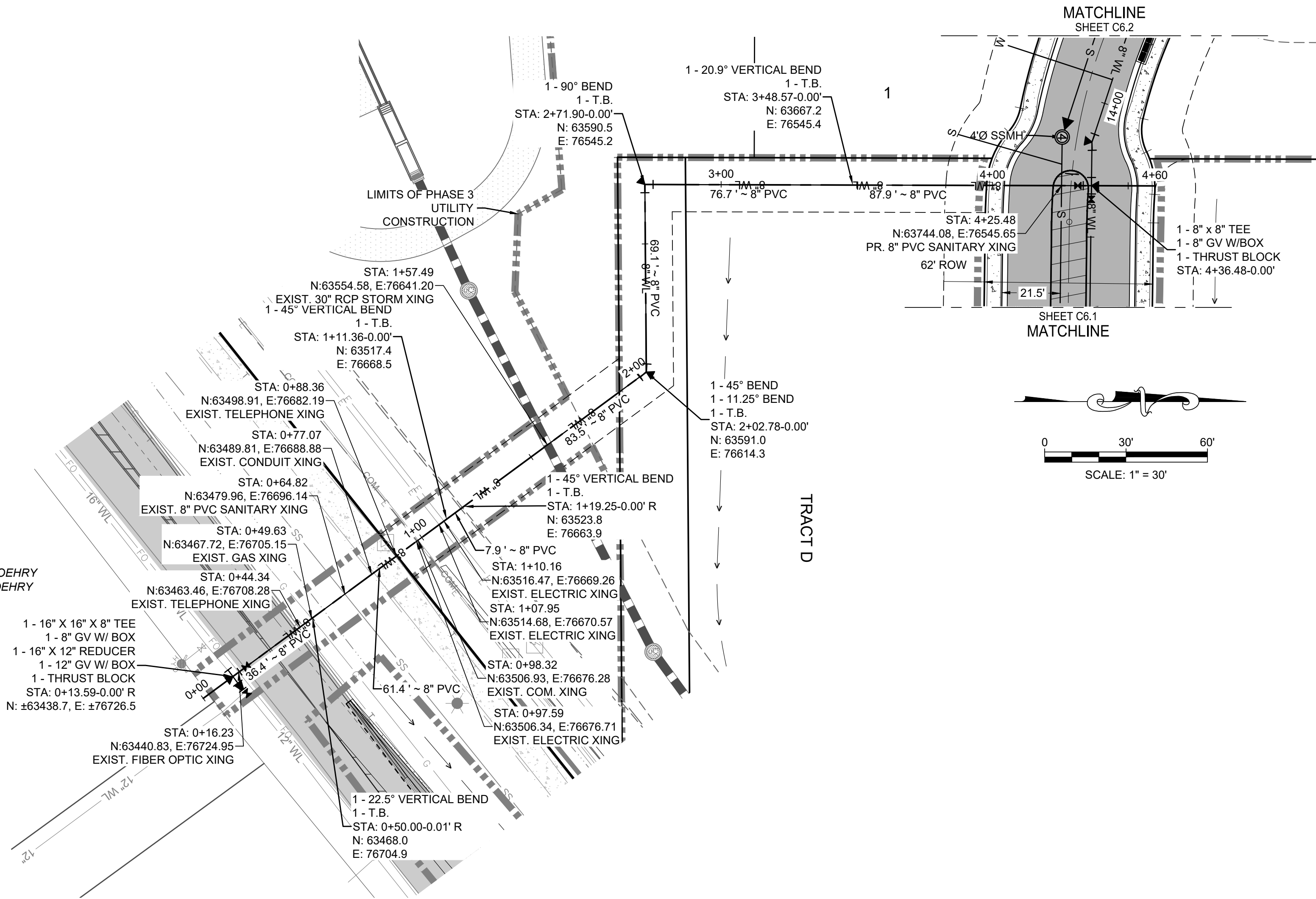
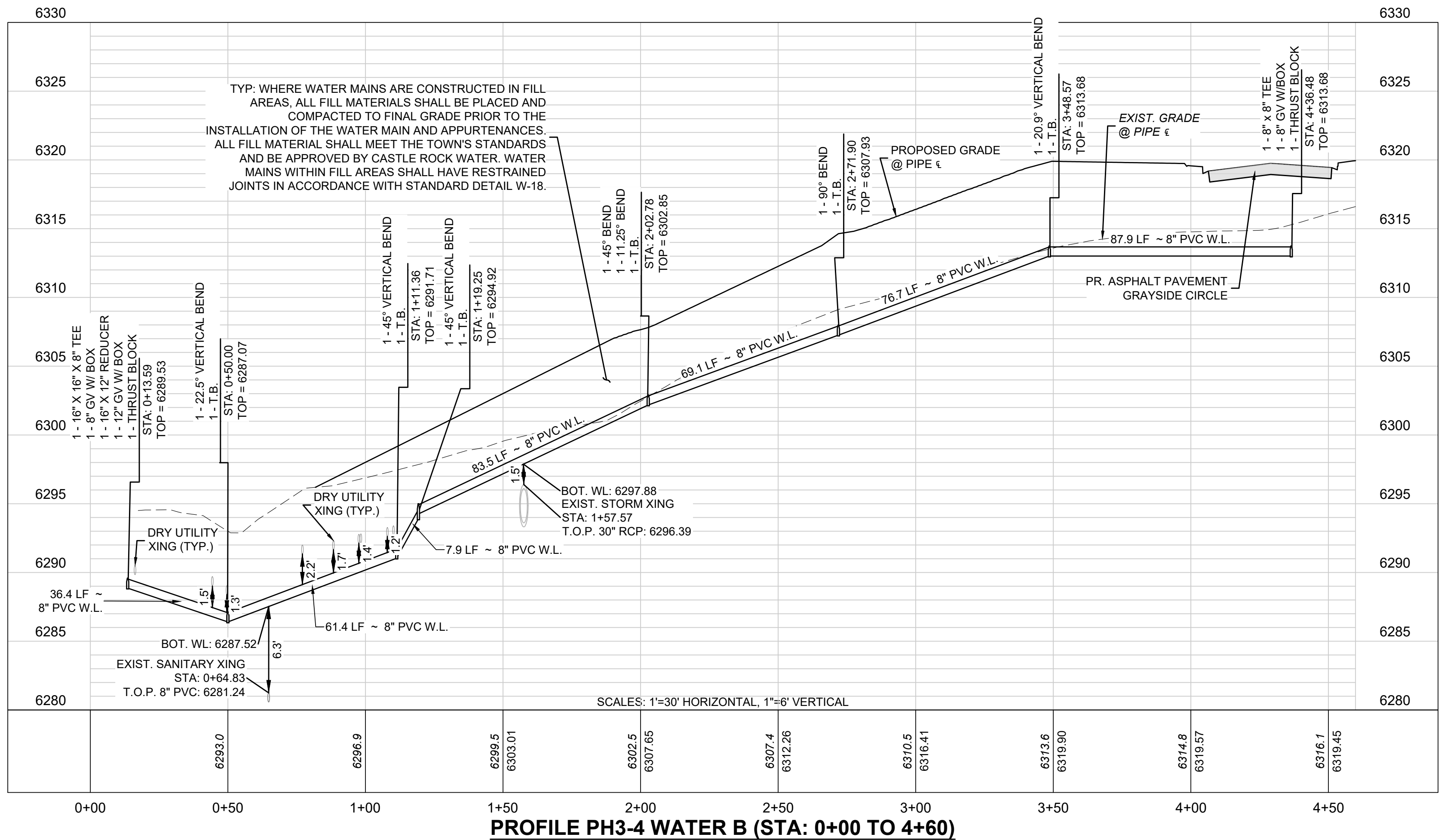
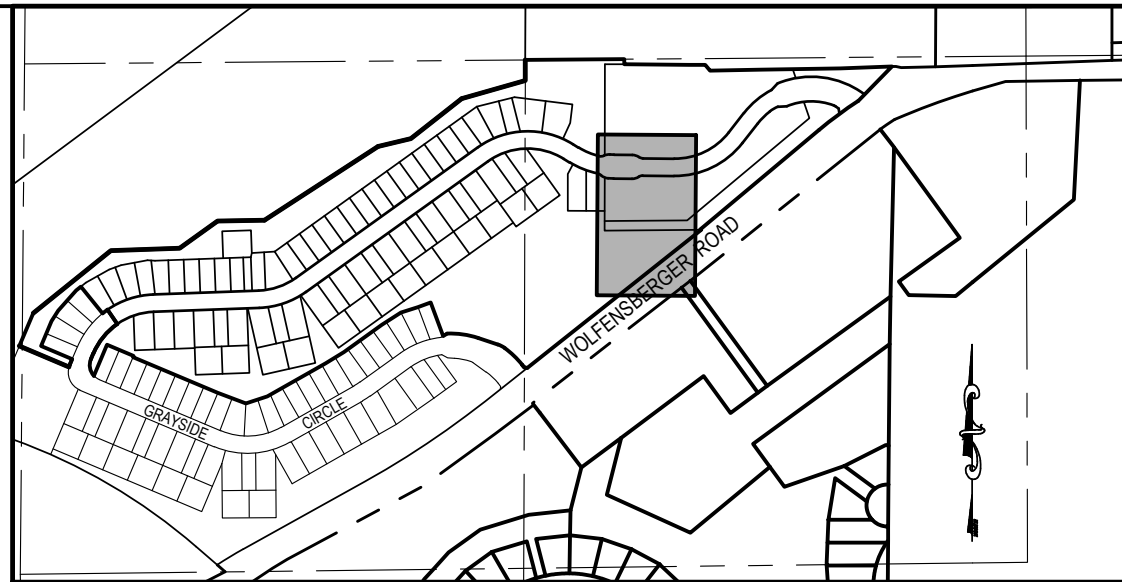
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
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Know what's below.
Call before you dig.

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

No.	REVISION	DATE	
PRELIMINARY NOT FOR CONSTRUCTION			
<div>ENTITLEMENT AND ENGINEERING SOLUTIONS, INC. 3801 E. Florida Avenue, Suite 425 Denver, CO 80210 303-572-1597 www.ees.us.com</div>			
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: 8/23/2023			
C6.2			
SHEET 15 OF 70			

THOMAS F GOEHRY
AMANDA GOEHRY



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 |
| --- | 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 |

PROJECT BENCHMARK:

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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

PHASE 3 WATER PLAN &
PROFILE 4

PROJECT NO: BLV001.02

DESIGNED BY: WLB

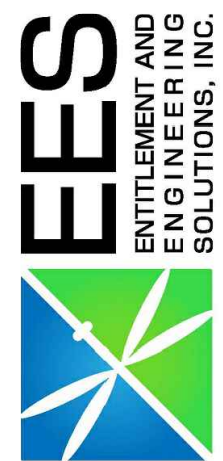
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DATE: 8/23/2023

C6.4

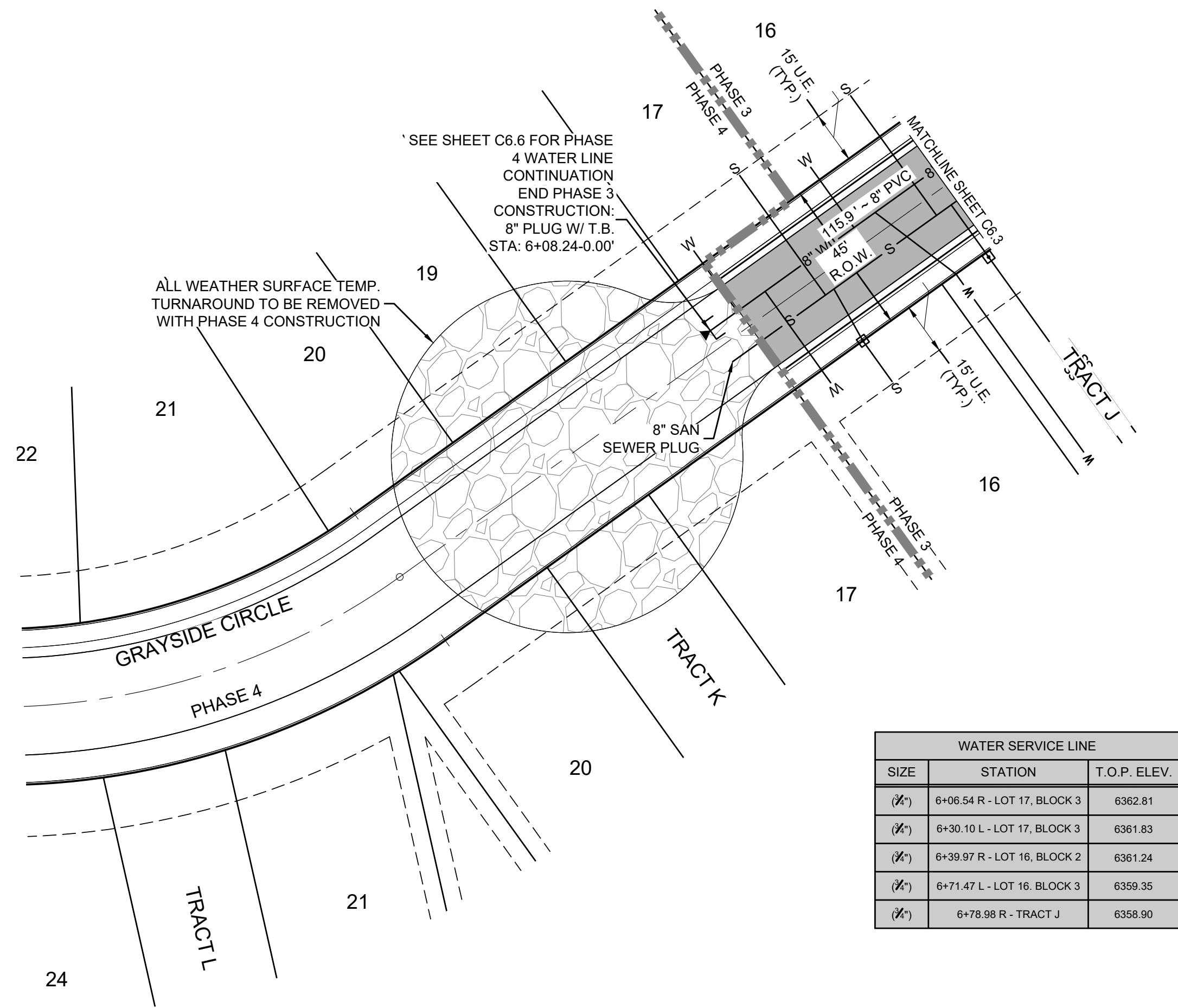
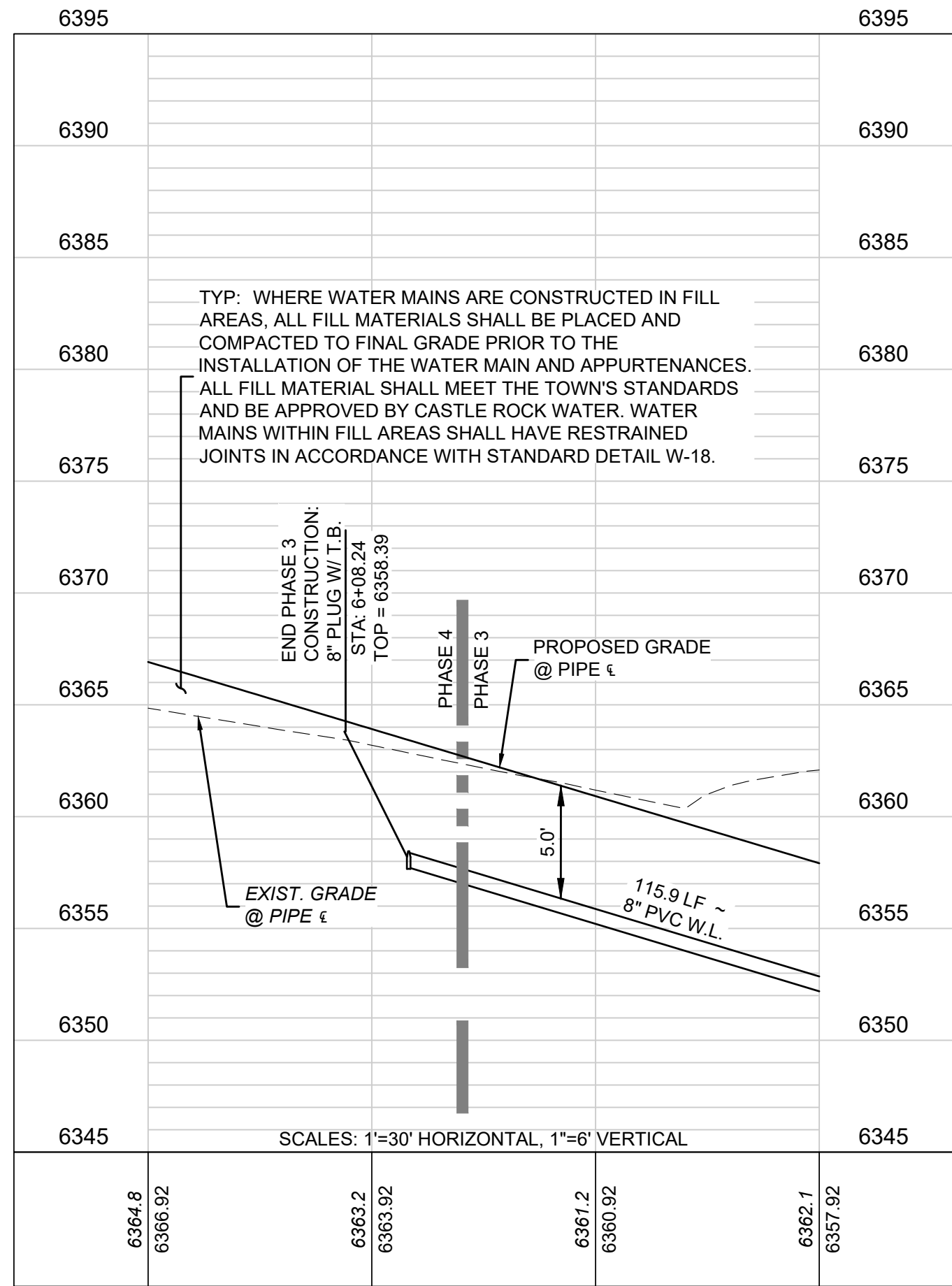
SHEET 17 OF 70

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NOT FOR
CONSTRUCTION



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Denver, CO 80210
303-572-1987 www.ees.us.com

BLVD.
BUILDERS



PROFILE PH 3-4 WATER A (STA: 5+50 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.

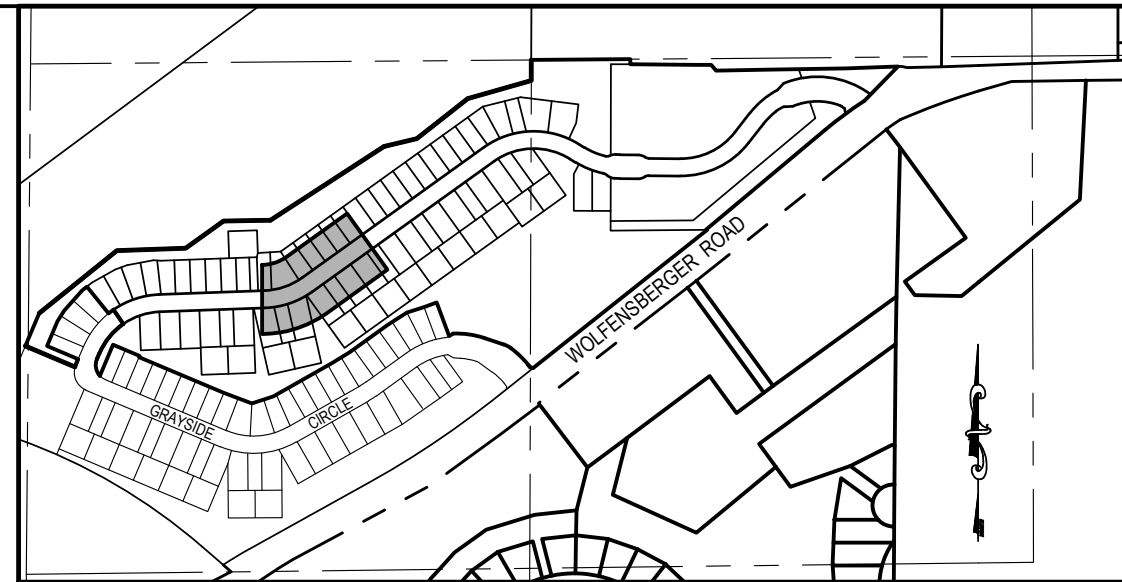


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TOWN APPROVAL BLOCK	
TOWN OF CASTLE ROCK APPROVAL	
PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL	
APPROVED BY:	DATE:
DEVELOPMENT SERVICES	DATE:

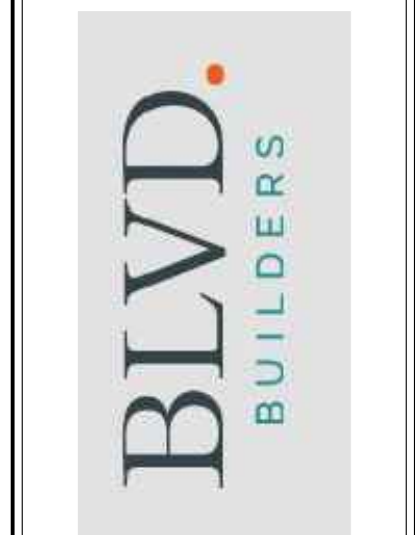


KEYMAP
SCALE: 1"=500'

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 |

PRELIMINARY
NOT FOR
CONSTRUCTION



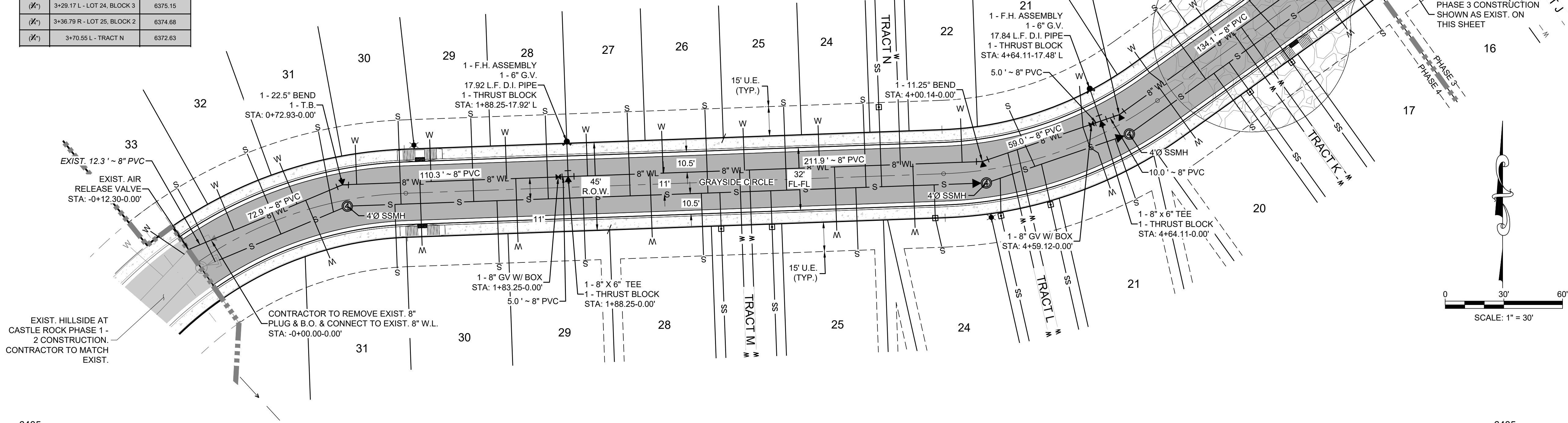
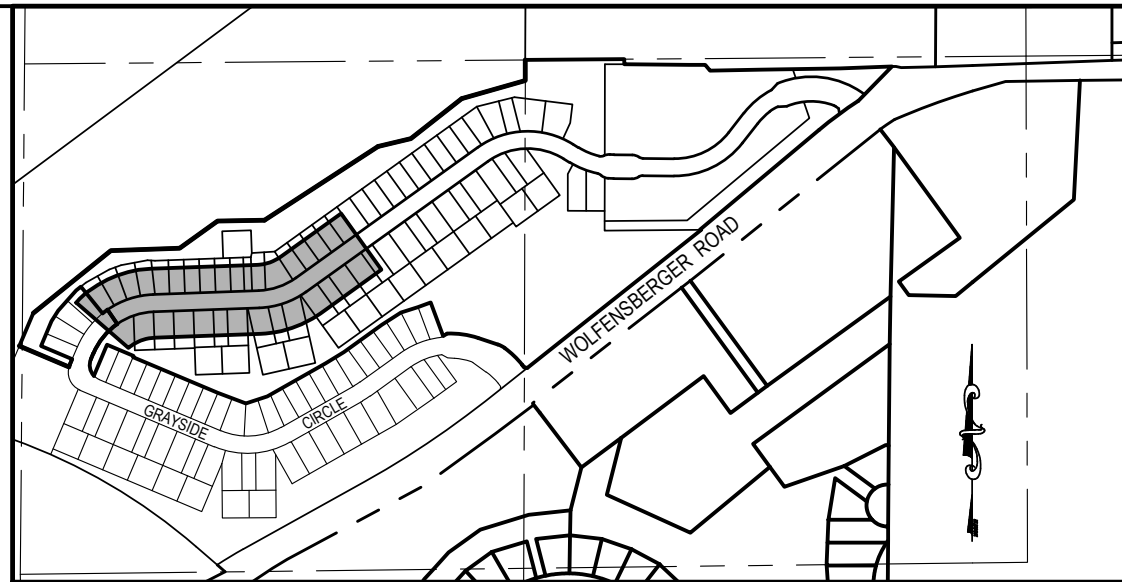
CONSTRUCTION PLANS
HILLSIDE AT CASTLE ROCK - PHASES 3-4
CASTLE ROCK, COLORADO
PHASE 3 WATER PLAN &
PROFILE 5

PROJECT NO:	BLV001.02
DESIGNED BY:	WLB
DRAWN BY:	WLB
DATE:	8/23/2023
C6.5	
SHEET 18 OF 70	

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WATER SERVICE LINE		
SIZE	STATION	T.O.P. ELEV.
8"	0+25.06 L - LOT 32, BLOCK 3	6392.47
8"	0+59.92 L - LOT 31, BLOCK 3	6390.83
8"	0+64.78 R - LOT 31, BLOCK 2	6390.83
8"	0+92.44 L - LOT 30, BLOCK 3	6389.56
8"	1+24.74 R - LOT 30, BLOCK 2	6387.58
8"	1+30.55 L - LOT 29, BLOCK 3	6387.18
8"	1+68.95 L - LOT 28, BLOCK 3	6384.93
8"	1+73.79 R - LOT 29, BLOCK 2	6384.60
8"	2+10.55 L - LOT 27, BLOCK 3	6382.41
8"	2+42.42 R - LOT 26, BLOCK 2	6380.47
8"	2+49.17 L - LOT 26, BLOCK 3	6380.06
8"	2+88.29 R - TRACT M	6377.65
8"	2+90.79 L - LOT 25, BLOCK 3	6377.51
8"	2+93.29 R - TRACT M	6377.34
8"	3+29.17 L - LOT 24, BLOCK 2	6375.15
8"	3+36.79 R - LOT 25, BLOCK 2	6374.68
8"	3+70.55 L - TRACT N	6372.63

8"	3+76.85 L - LOT 24, BLOCK 2	6372.11
8"	4+02.10 L - LOT 22, BLOCK 3	6370.71
8"	4+26.19 R - TRACT L	6369.29
8"	4+31.22 R - TRACT L	6369.04
8"	4+66.80 L - LOT 21, BLOCK 3	6367.03
8"	4+66.80 R - LOT 21, BLOCK 2	6367.03
8"	5+11.04 R - LOT 20, BLOCK 2	6365.68
8"	5+14.04 R - LOT 20, BLOCK 3	6365.60
8"	5+50.10 L - LOT 19, BLOCK 3	6364.50
8"	5+58.04 R - TRACT K	6364.27
8"	5+63.12 R - TRACT K	6364.12
8"	5+91.47 L - LOT 18, BLOCK 3	6363.26

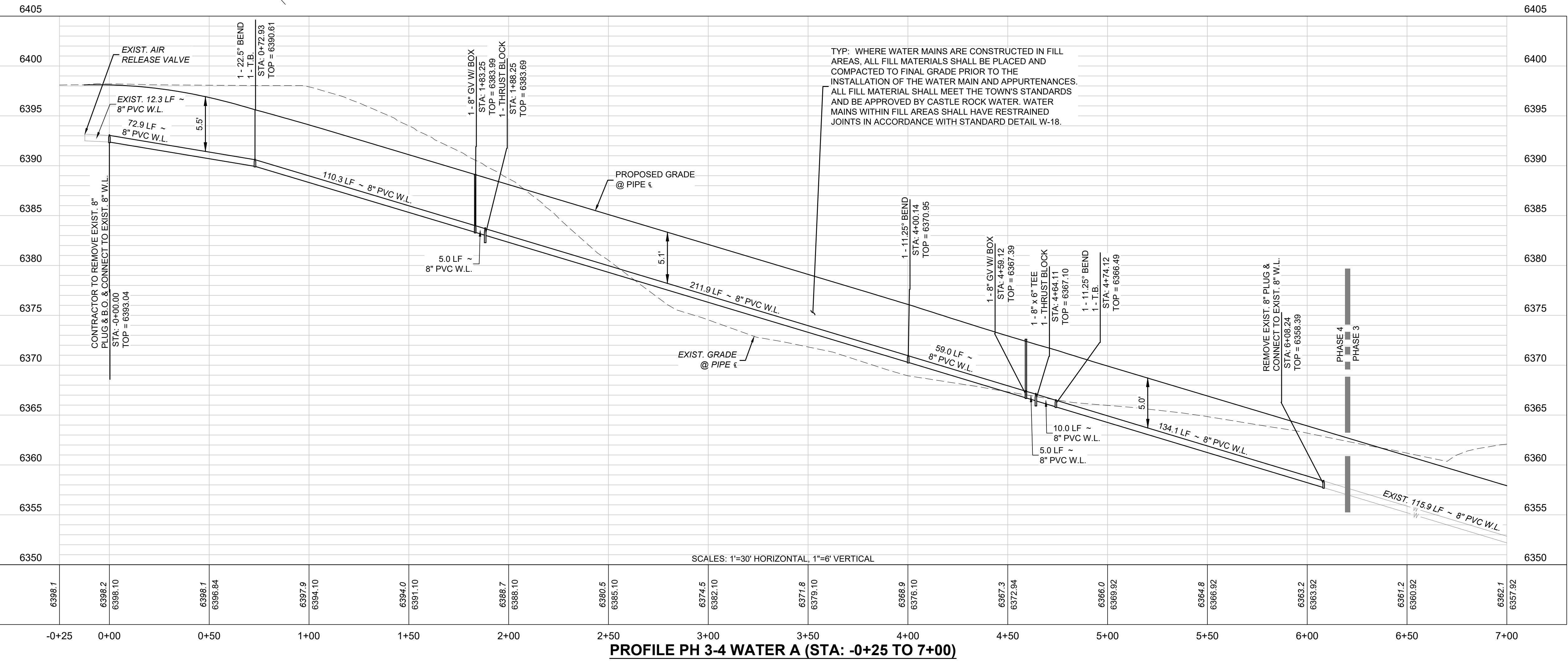


SCALE: 1"=500'

UTILITY LEGEND:

- | | |
|------------|-------------------------------|
| --- | PROPERTY LINE |
| --- | RIGHT-OF-WAY |
| --- | LOT / TRACT LINE |
| --- | EXISTING LOT LINE |
| --- | 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 |
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| --- | EXISTING STORM INLETS |
| --- | EXISTING FIRE HYDRANT |
| --- | EXISTING WATER VALVE |
| --- | EXISTING UTILITY RISER |
| --- | EXISTING STREET SIGN |
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| --- | PROPOSED W.L. REDUCER |
| --- | PROPOSED W.L. FITTINGS |
| --- | PROPOSED W.L. PLUG |
| --- | PROPOSED WATER VALVE |
| --- | PROPOSED S.S. CLEANOUT |
| --- | PROPOSED SIGN |
| --- | PROPOSED STREET LIGHT |

SCALE: 1" = 30'



P:\BLVDWAY BUILDERS\HILLSIDE AT CASTLE ROCK\8 CAD\SHSHEET SET\SPH 3-4 CD\500A PH 4 W.L. PP.DWG 8/23/2023 12:15 PM Jeff Cooper

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.

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

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.

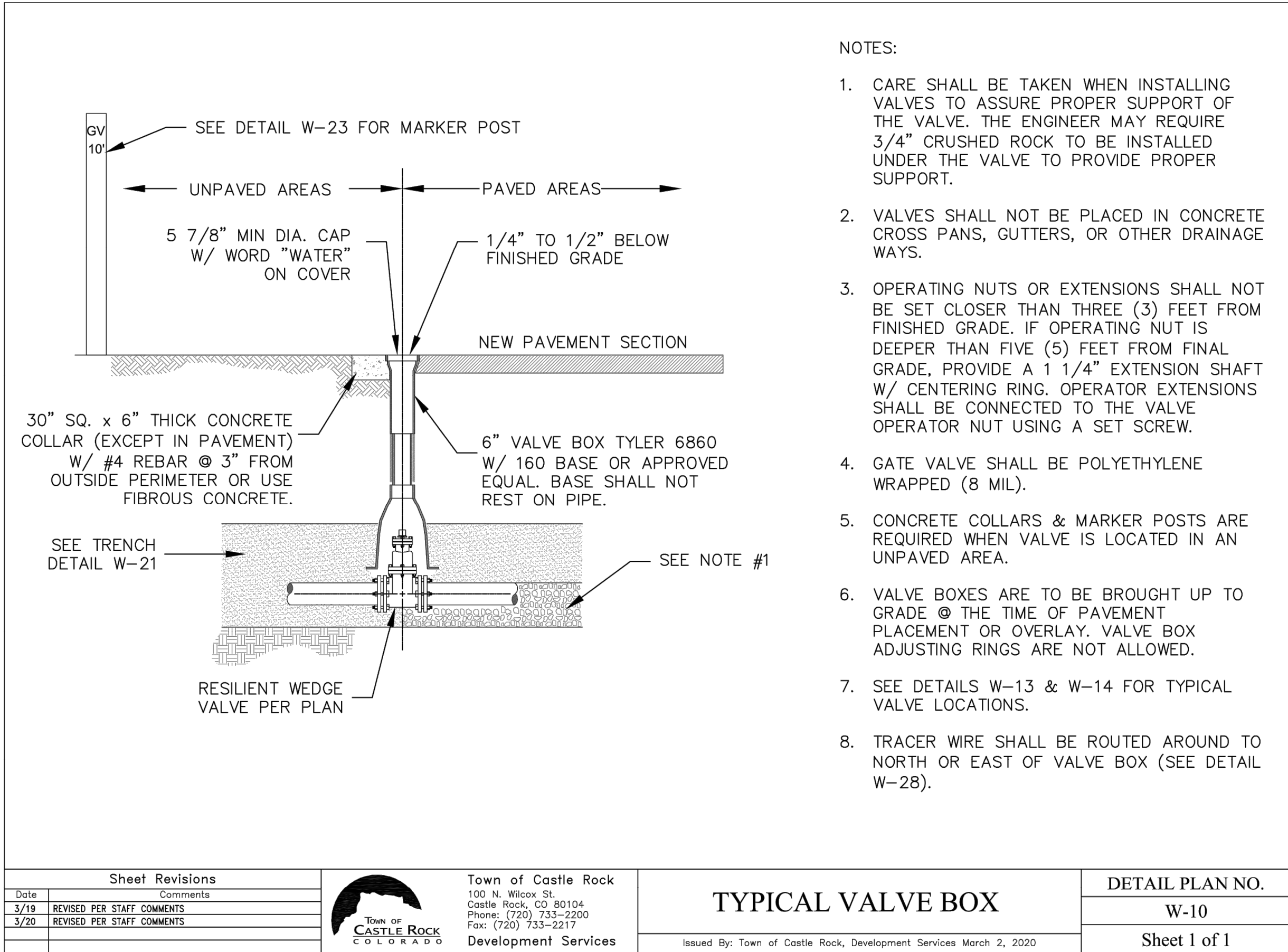
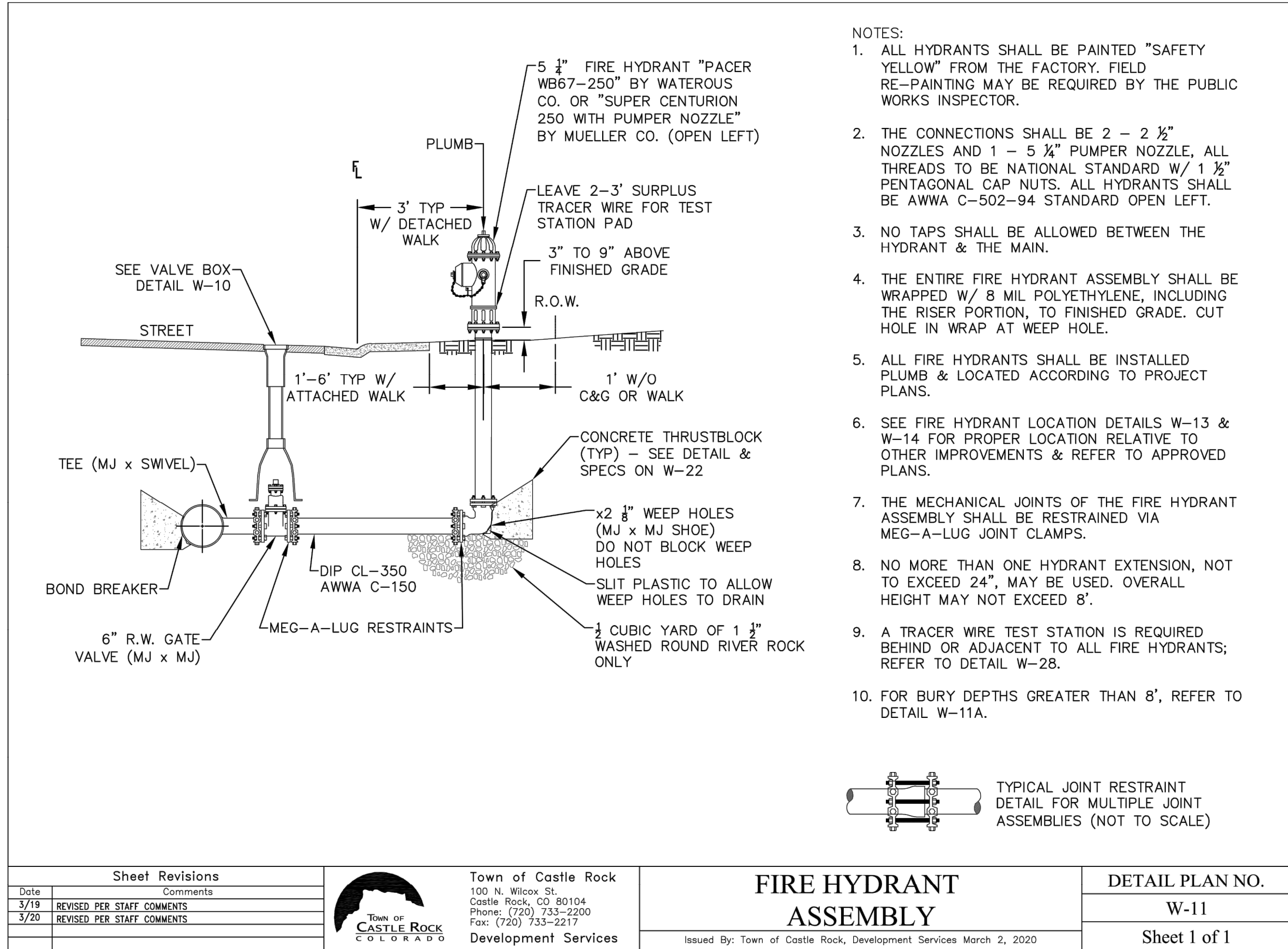
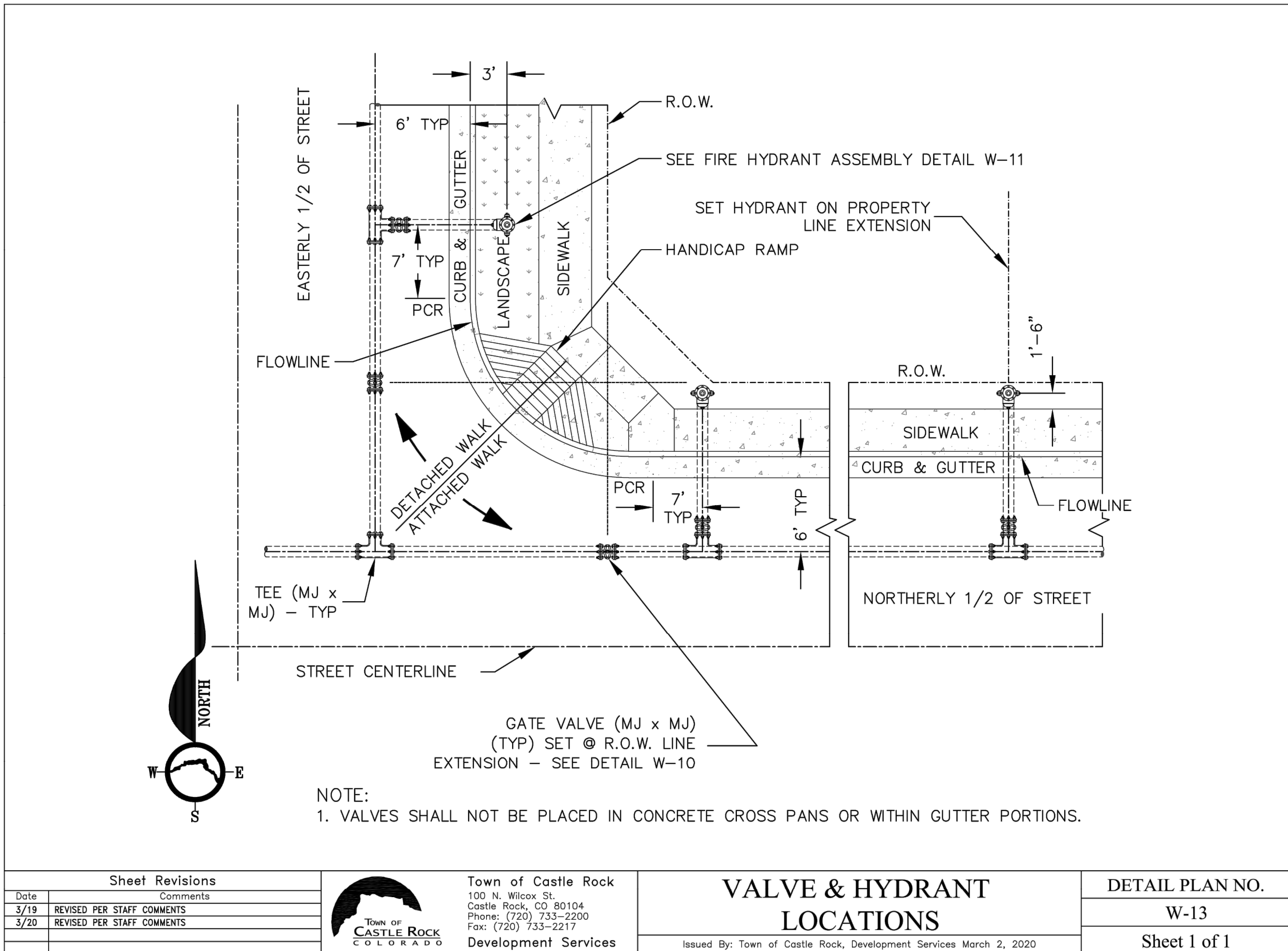
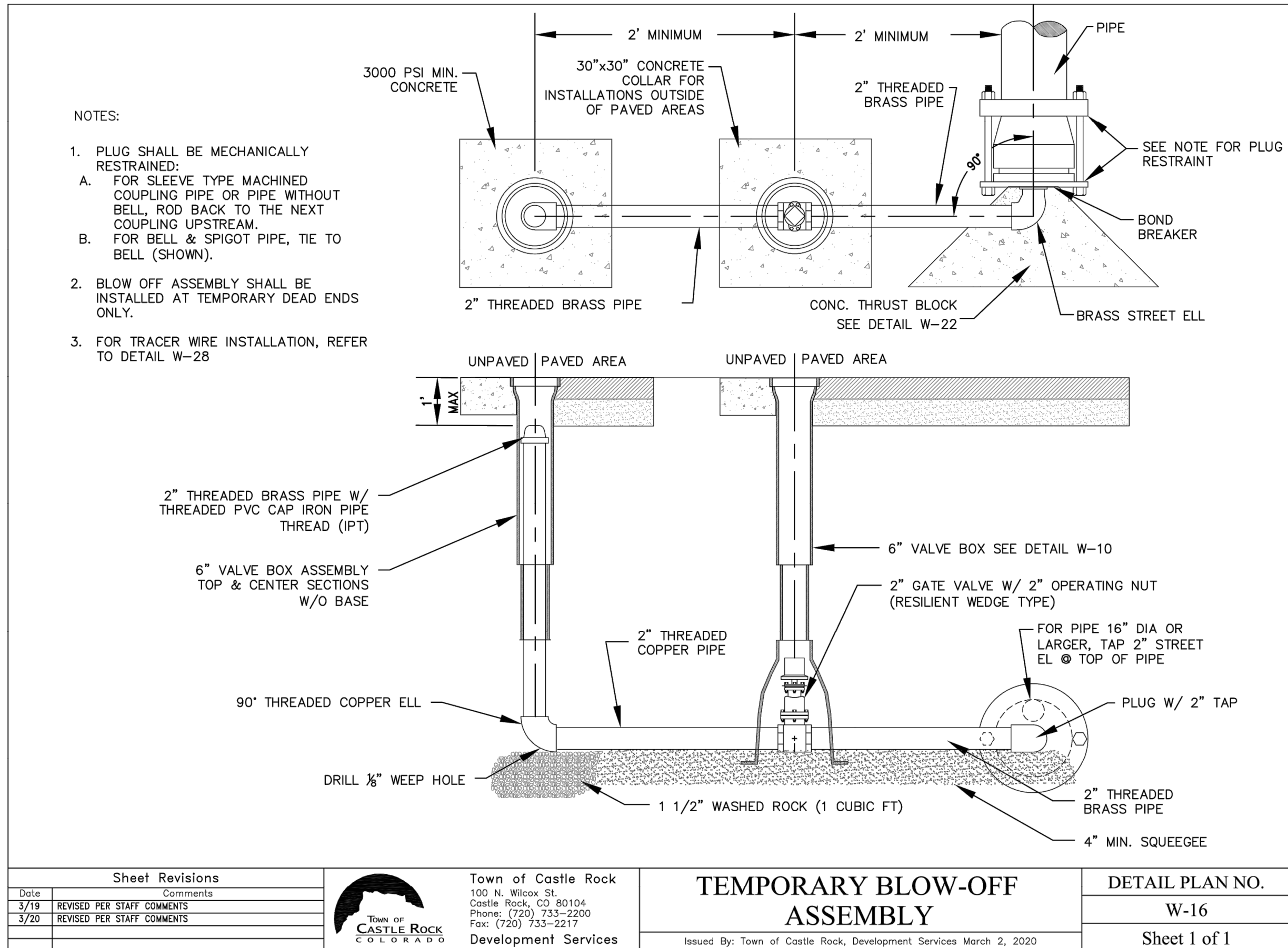
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BLVD.
BUILDERS

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: 8/23/2023
C6.6
SHEET 19 OF 70



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

DATE

BY

REVISION

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CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 2

PROJECT NO: BLV001.02

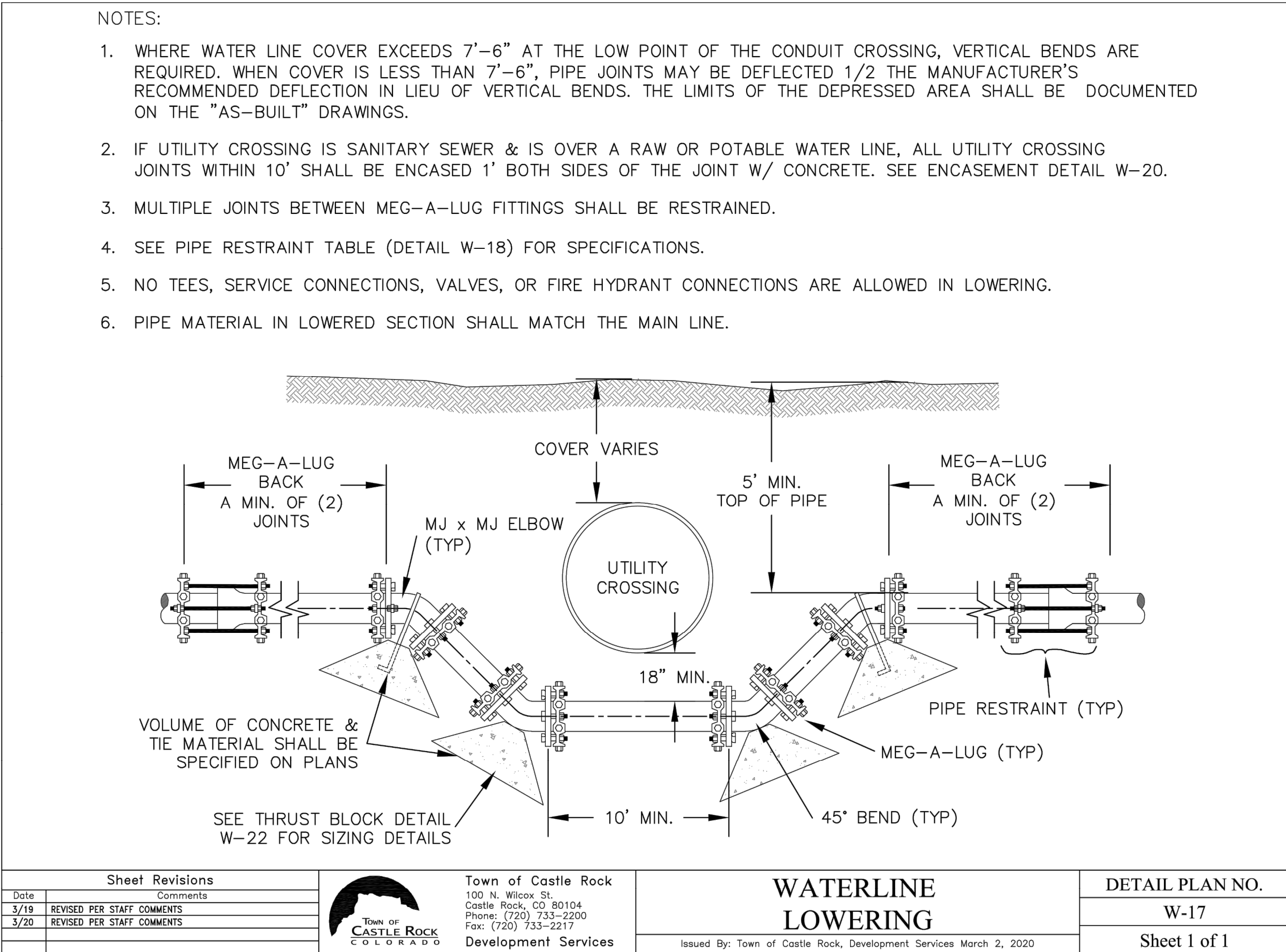
DESIGNED BY: WLB

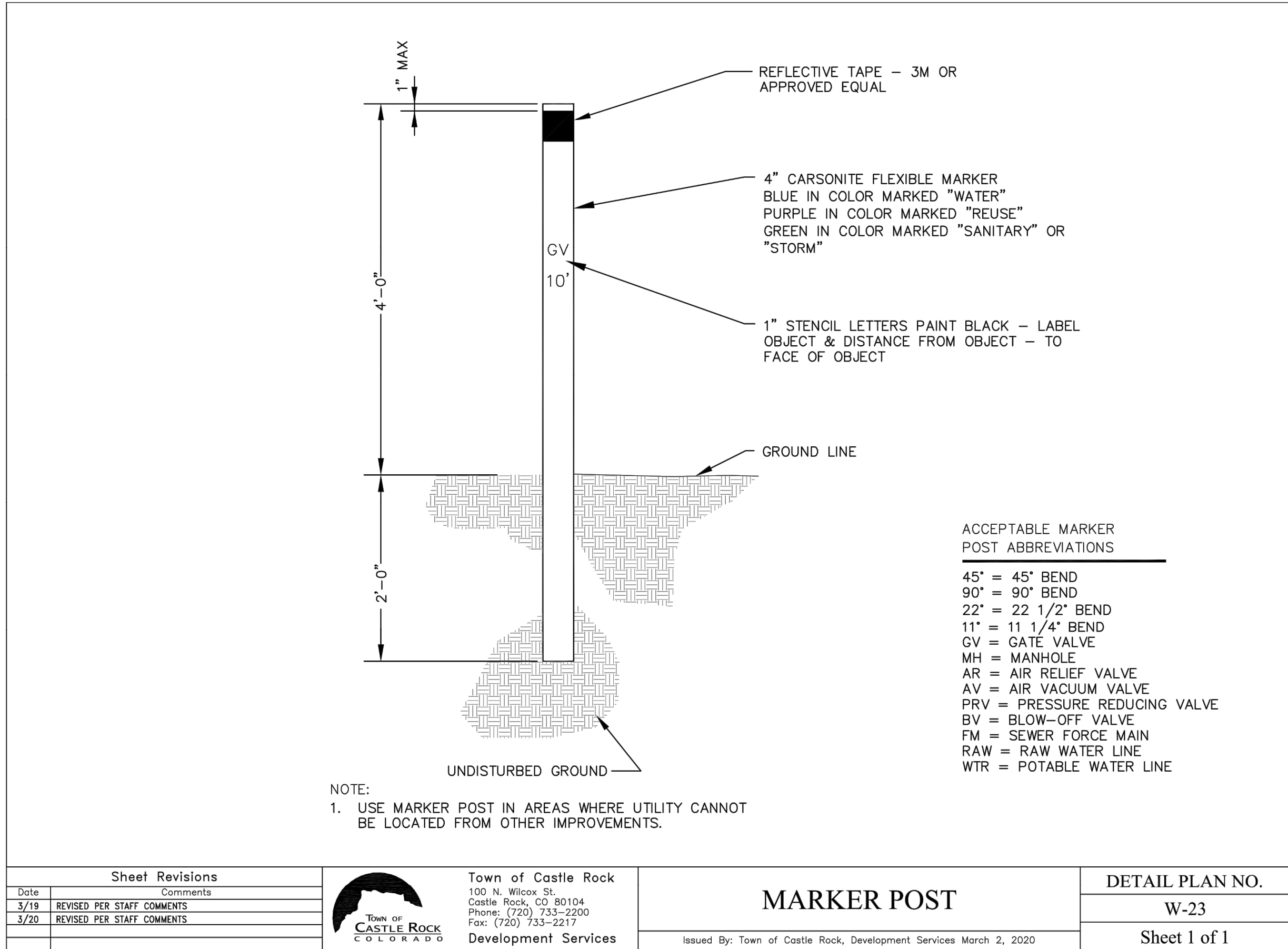
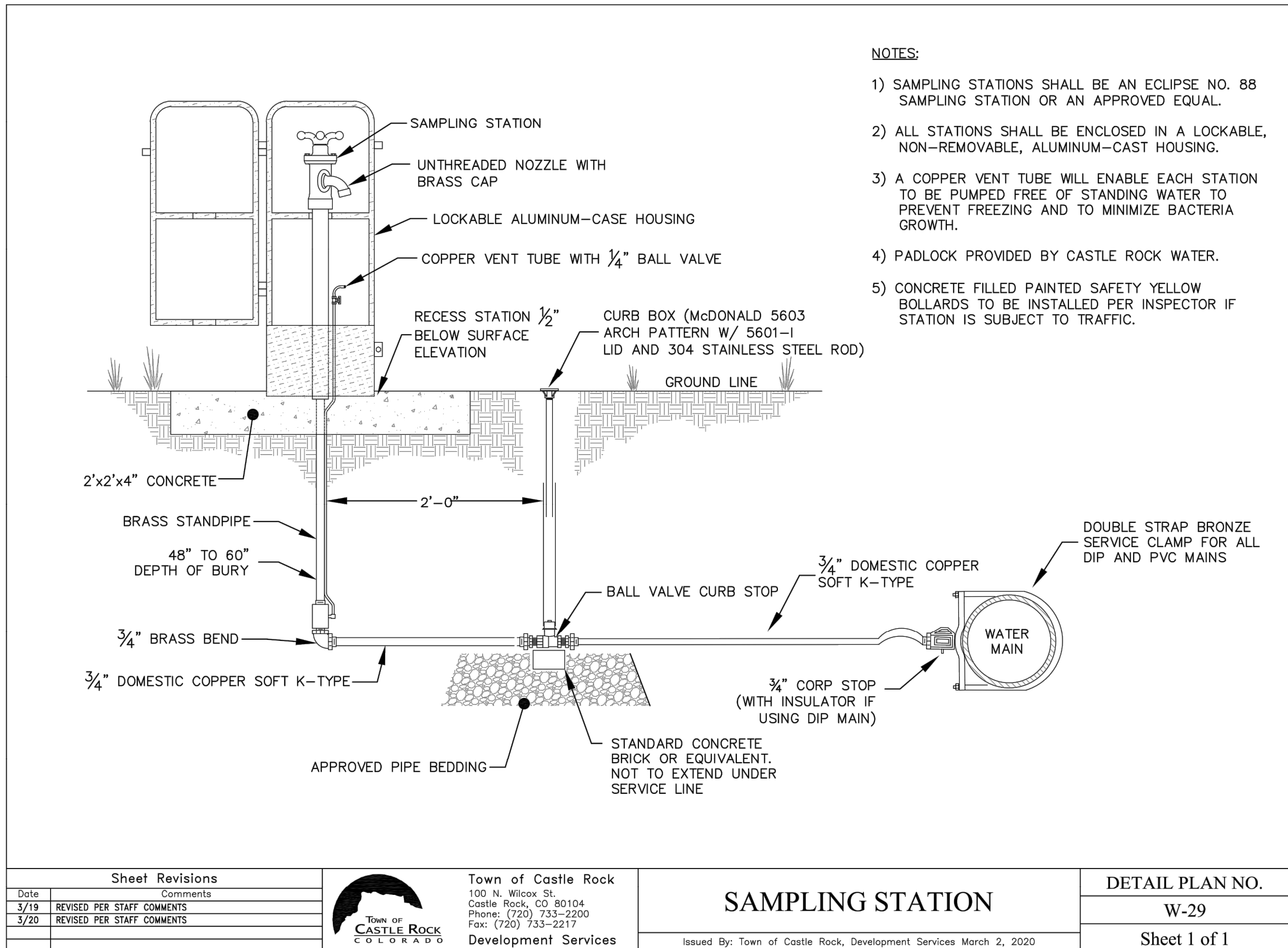
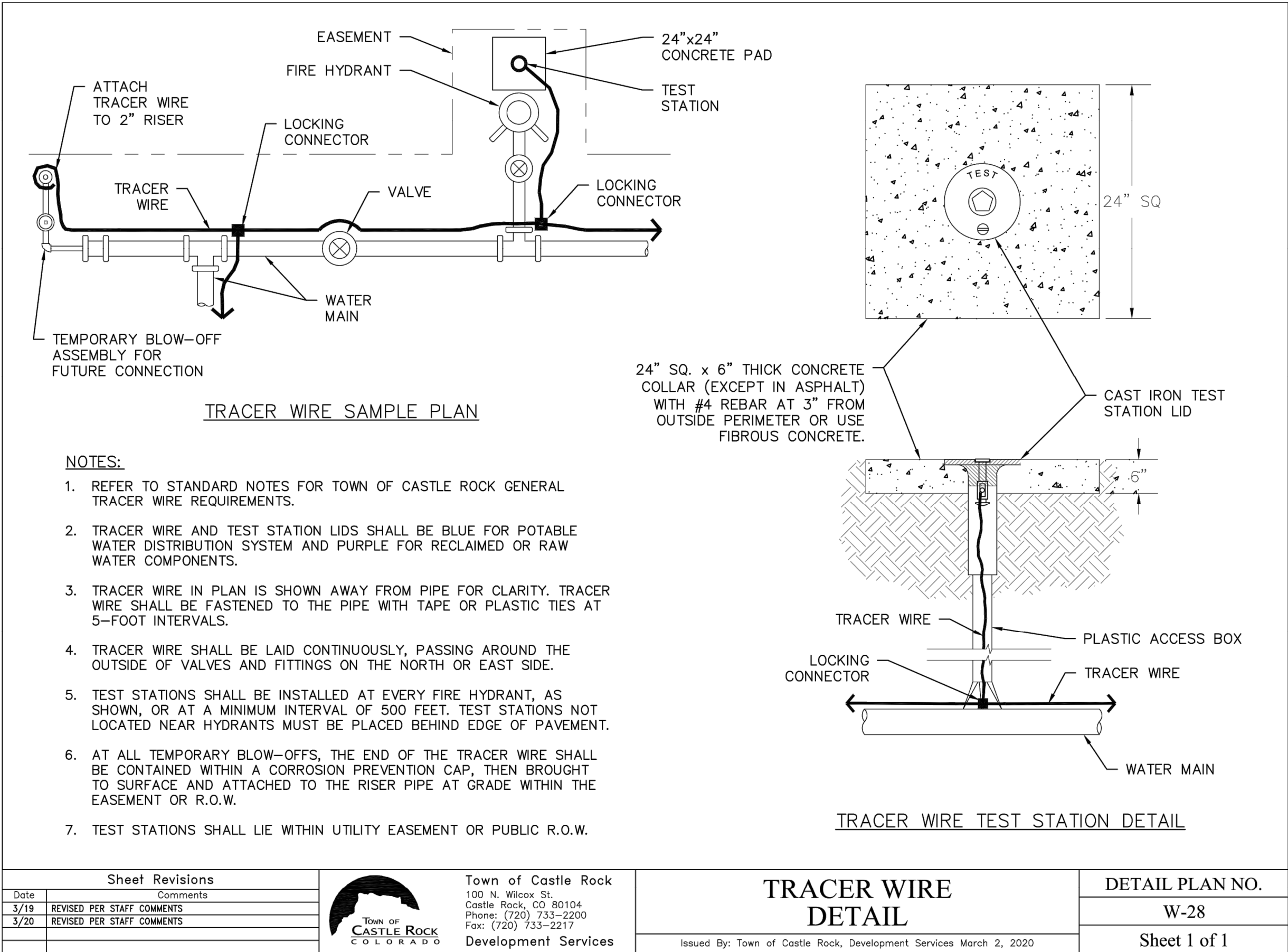
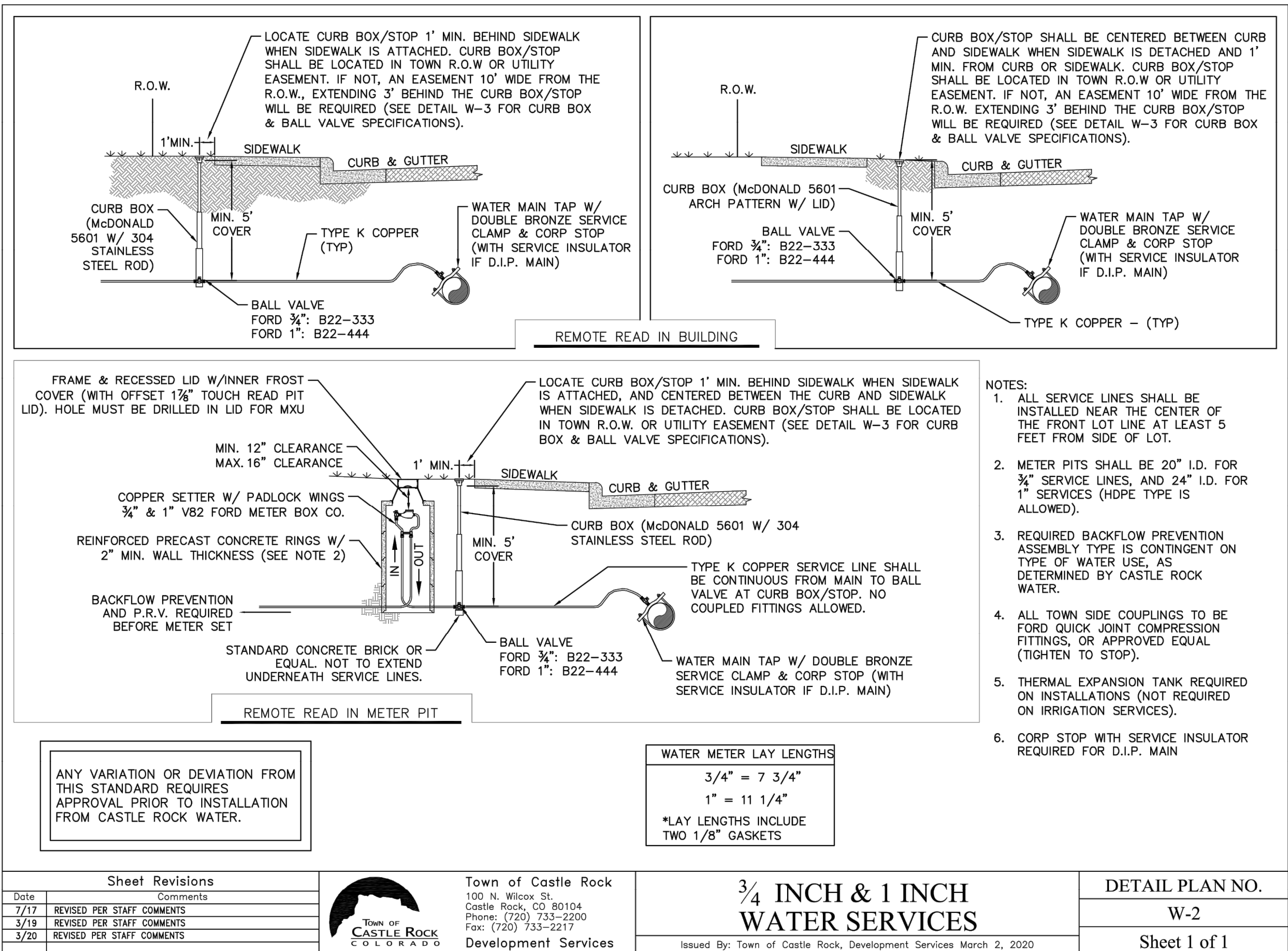
DRAWN BY: WLB

DATE: 8/23/2023

C6.8

SHEET 21 OF 70

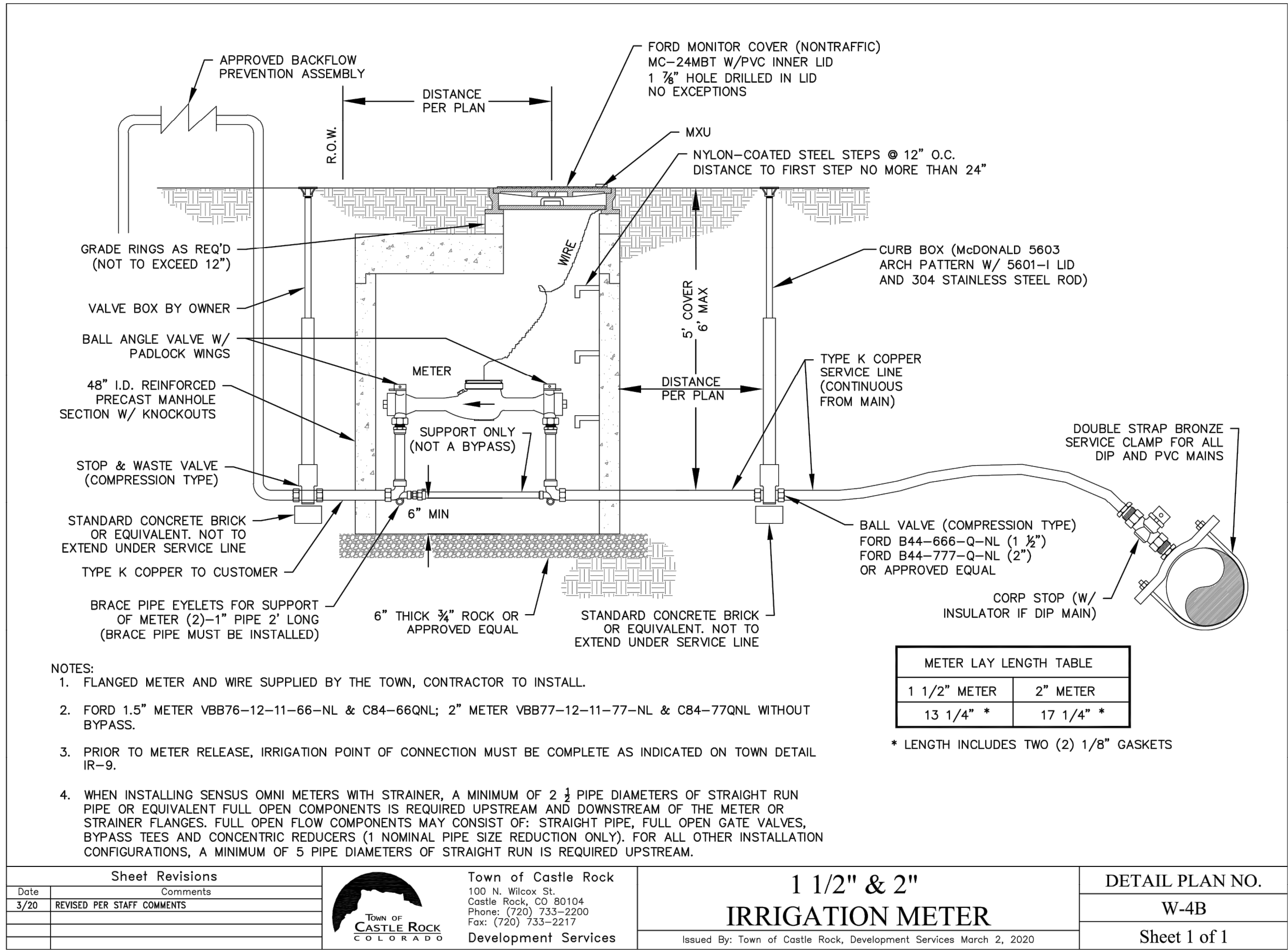
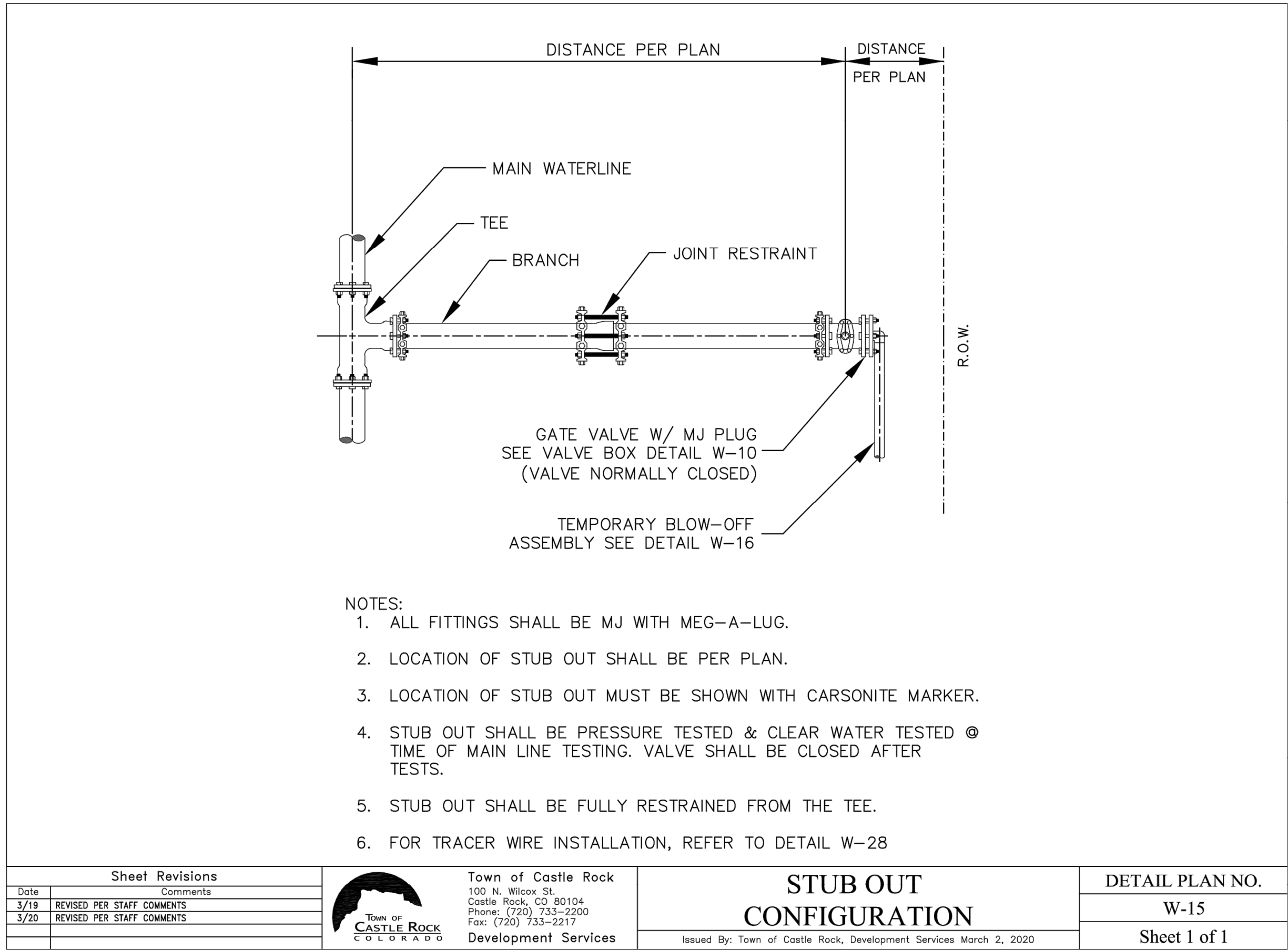
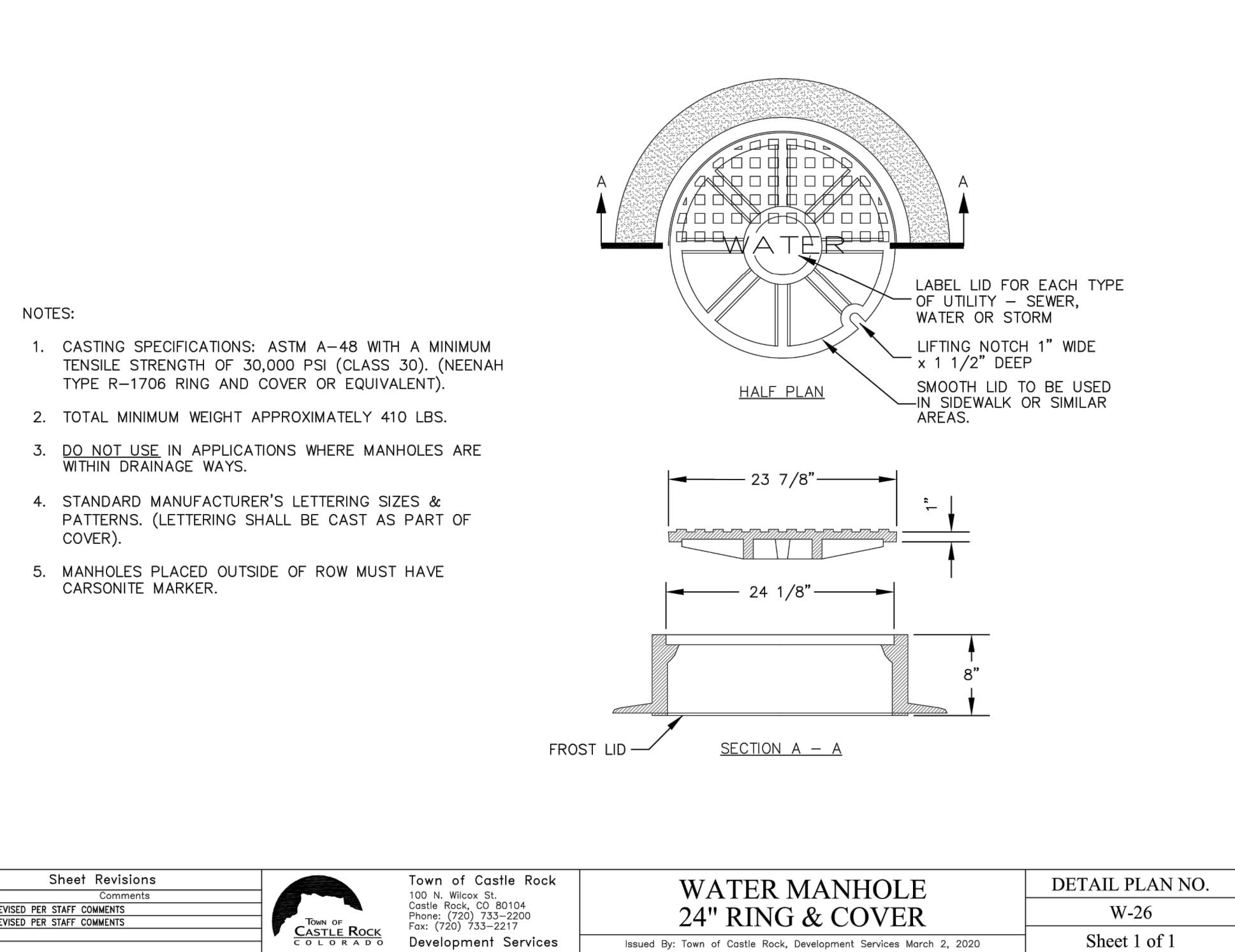
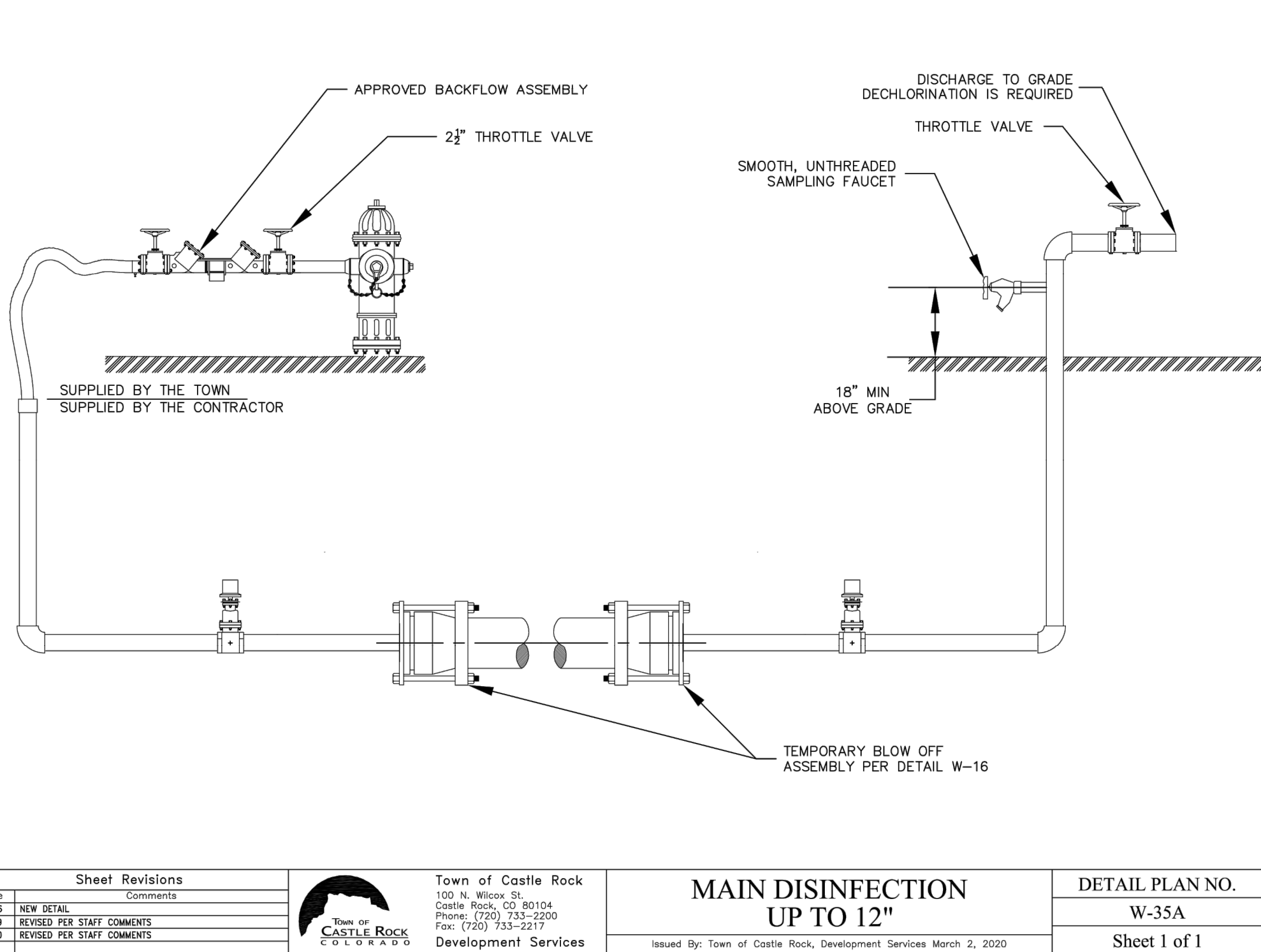
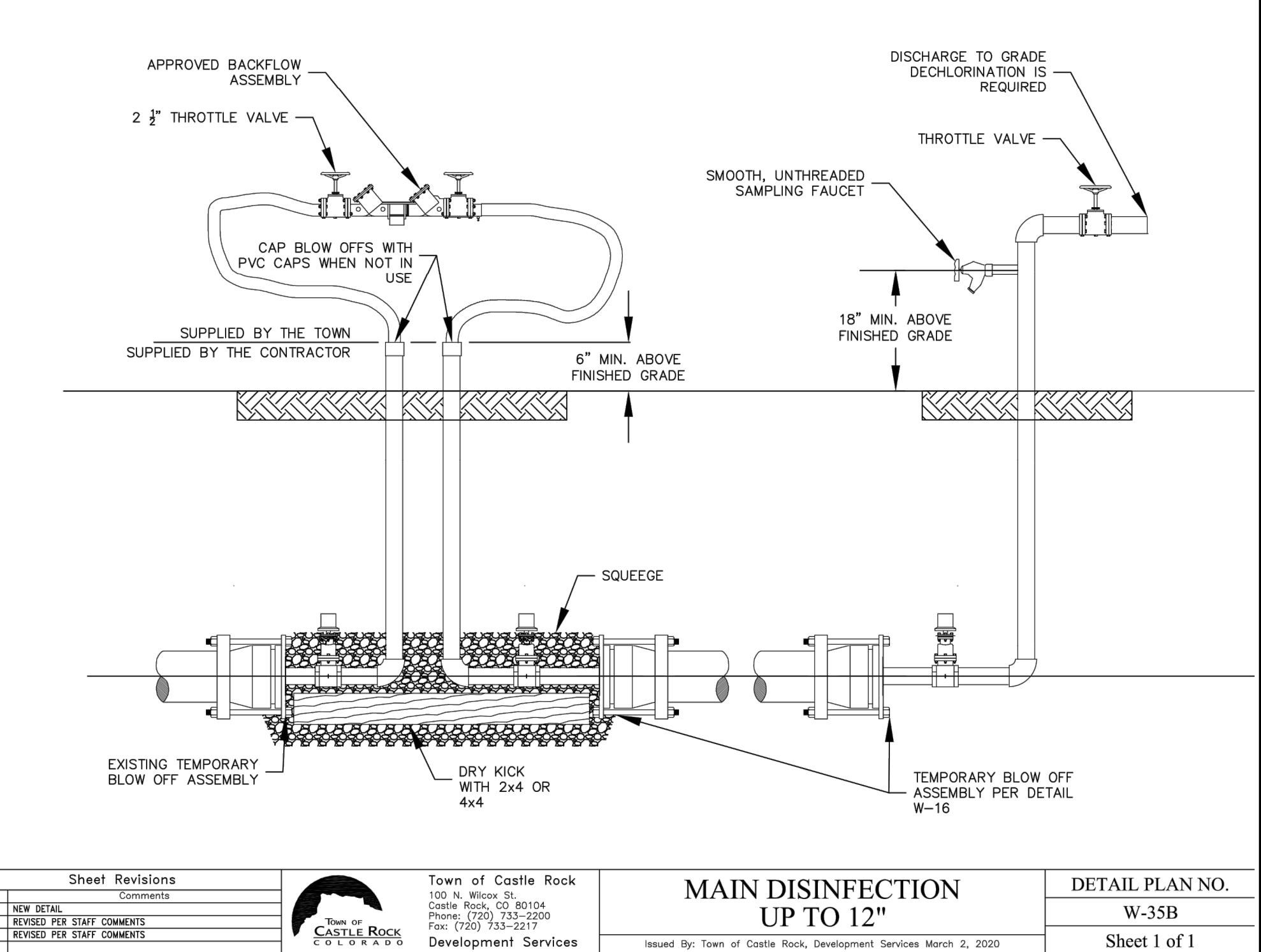




TOWN APPROVAL BLOCK	
TOWN OF CASTLE ROCK APPROVAL PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL	
APPROVED BY:	DATE:
DEVELOPMENT SERVICES	DATE

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CONSTRUCTION PLANS	CASTLE ROCK, COLORADO	HILLSIDE AT CASTLE ROCK - PHASES 3-4	WATER DETAILS 3	PROJECT NO:	BLV001.02
				DESIGNED BY:	WLB
				DRAWN BY:	WLB
				DATE:	8/23/2023
				C6.10	SHEET 23 OF 70



TOWN APPROVAL BLOCK

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

DATE

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BLVD BUILDERS

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

WATER DETAILS 4

PROJECT NO: BLV001.02

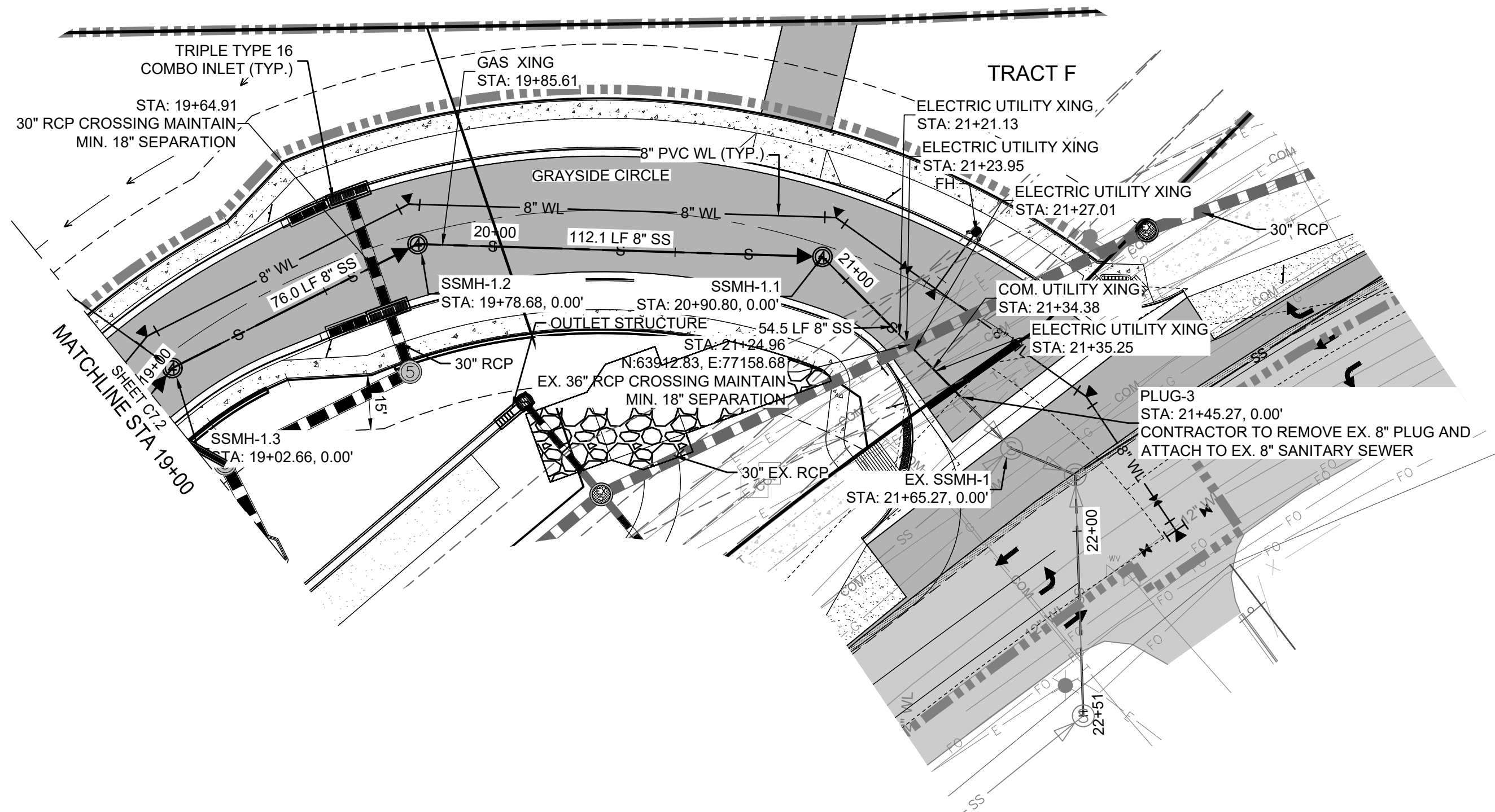
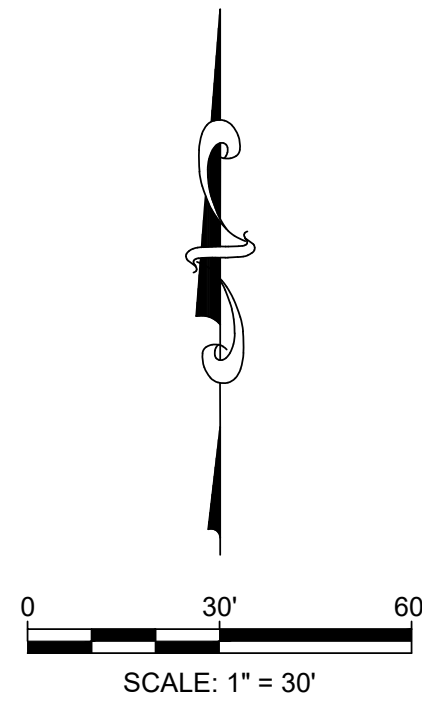
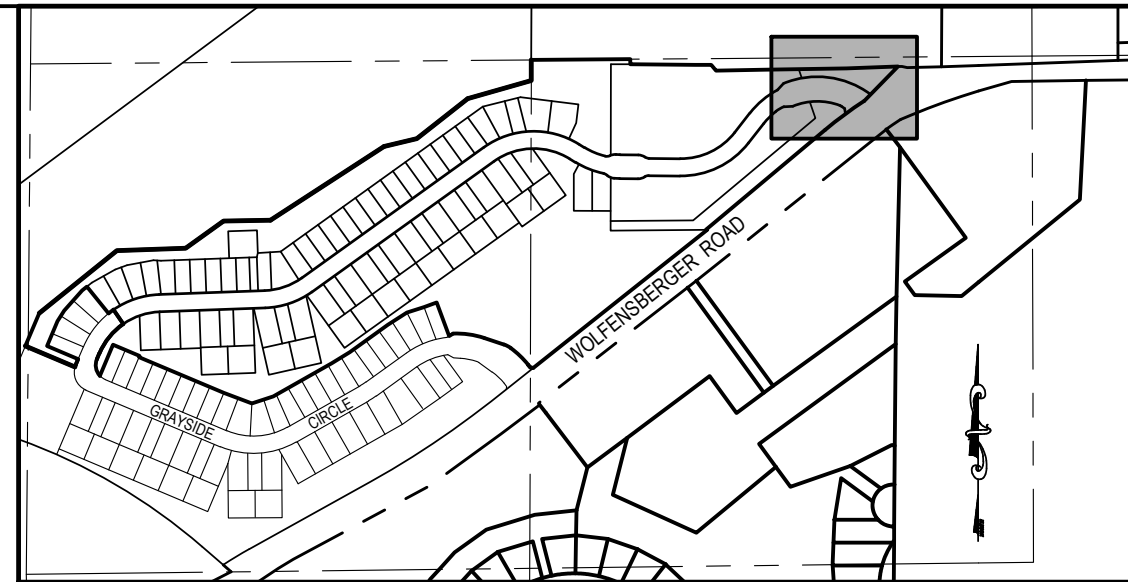
DESIGNED BY: WLB

DRAWN BY: WLB

DATE: 8/23/2023

C6.11

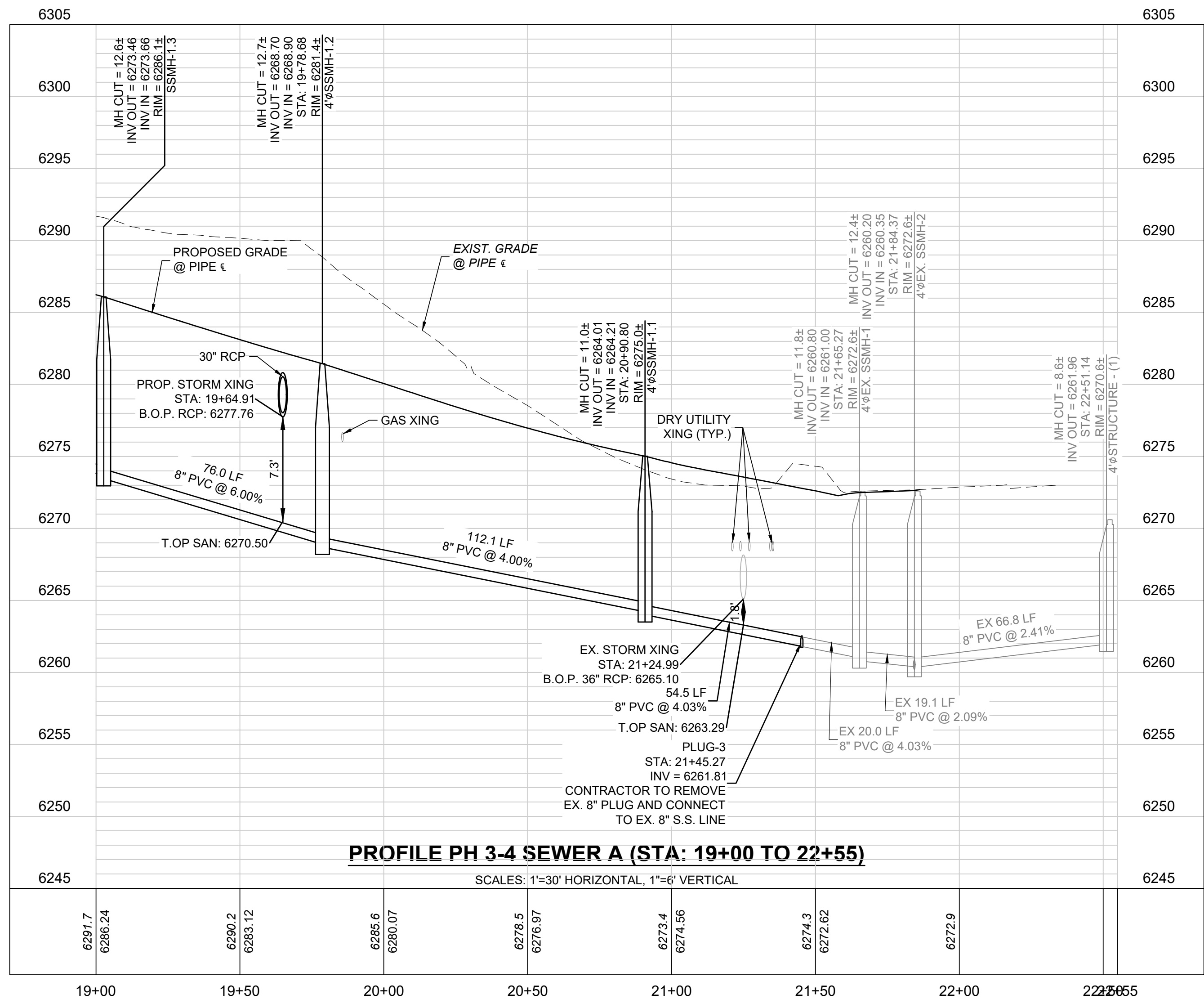
SHEET 24 OF 70



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 |



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.



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CENTER OF COLORADO

1-800-922-1987 or 811

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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

PHASE 3 SANITARY SEWER
PLAN & PROFILE 1

PROJECT NO.: BLV001.02

DESIGNED BY: WLB

DRAWN BY: WLB

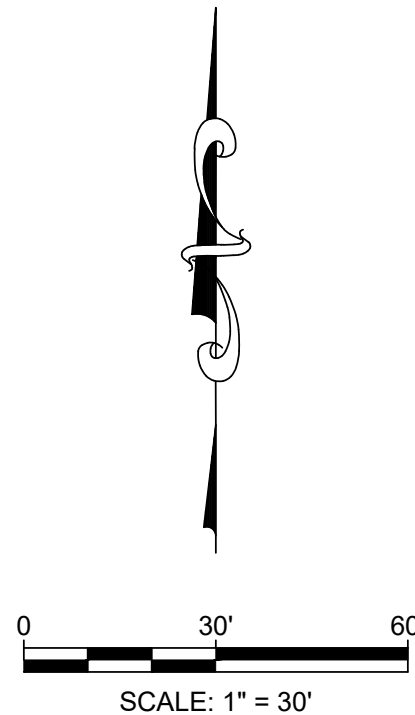
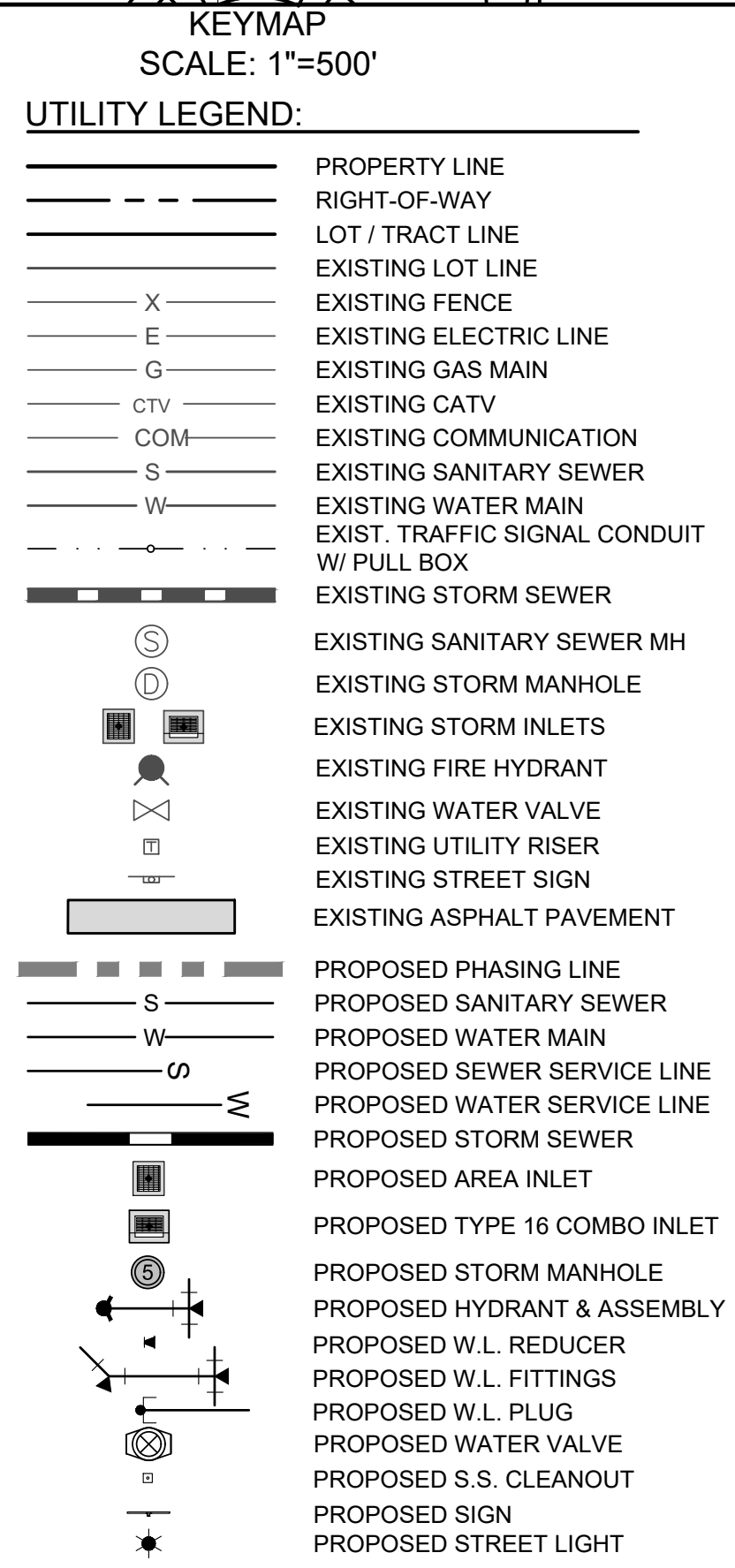
DATE: 8/24/2023

C7.1

SHEET 25 OF 70

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<div> <div>  </div> <div> <p>BLVD. BUILDERS</p> </div> </div>		<div>  <div> <p>EES ENTITLEMENT AND CONSTRUCTION SOLUTIONS, INC.</p> <p>3801 E. Florida Avenue, Suite 425 Denver, CO 80210 303-572-71997 www.ees.us.com</p> </div> </div>		<div> <div> <p>PRELIMINARY NOT FOR CONSTRUCTION</p> </div> </div>		No.	REVISION	BY	DATE
<div> <div> <p>CONSTRUCTION PLANS</p> <p>HILLSIDE AT CASTLE ROCK - PHASES 3-4</p> <p>CASTLE ROCK, COLORADO</p> <p>PHASE 3 SANITARY SEWER PLAN & PROFILE 2</p> </div> <div> <p>PROJECT NO: BLV001.02</p> <p>DESIGNED BY: WLB</p> <p>DRAWN BY: WLB</p> <p>DATE: 8/24/2023</p> </div> </div>									
<div> <p>C7.2</p> <p>SHEET 26 OF 70</p> </div>									

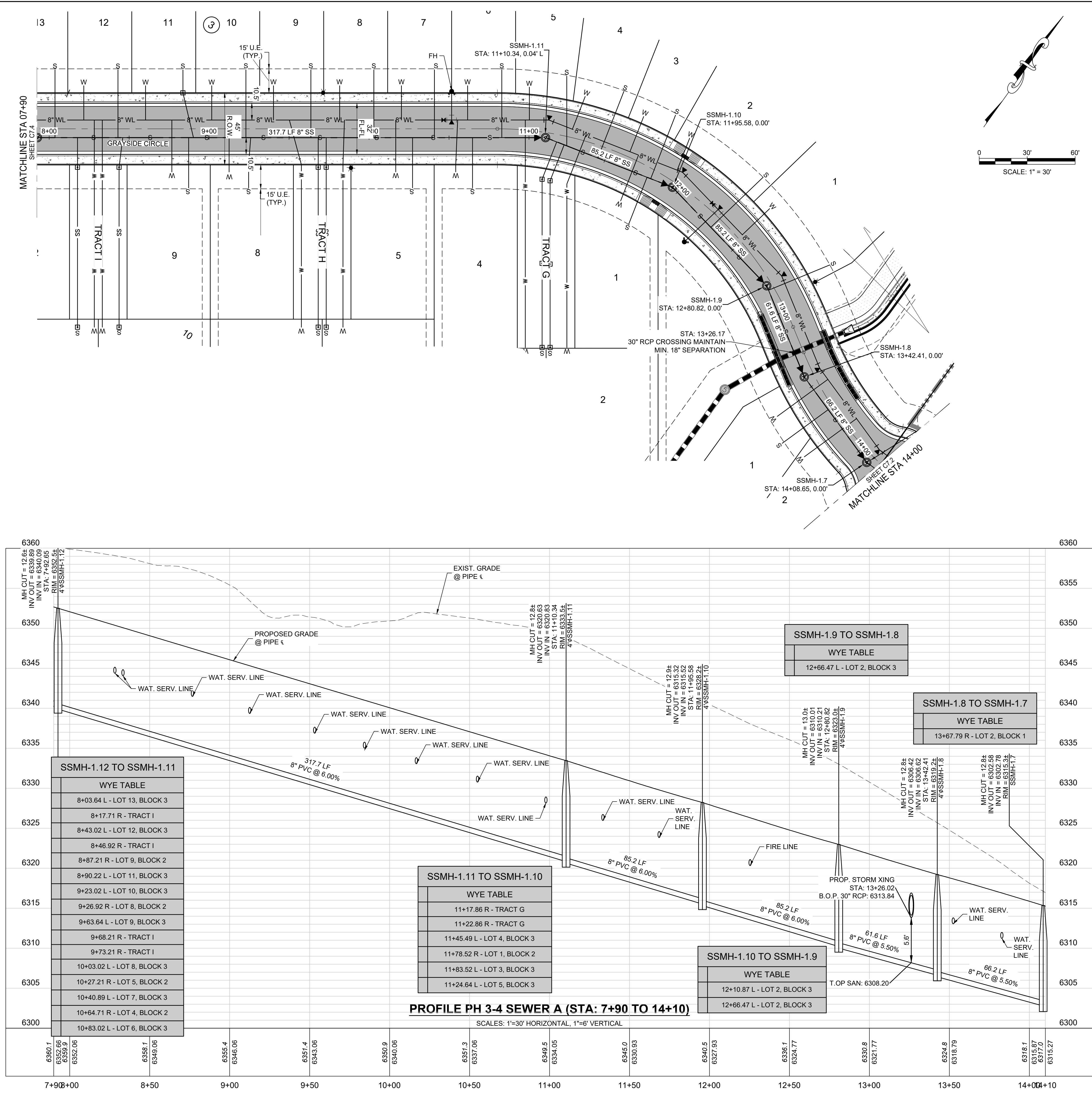
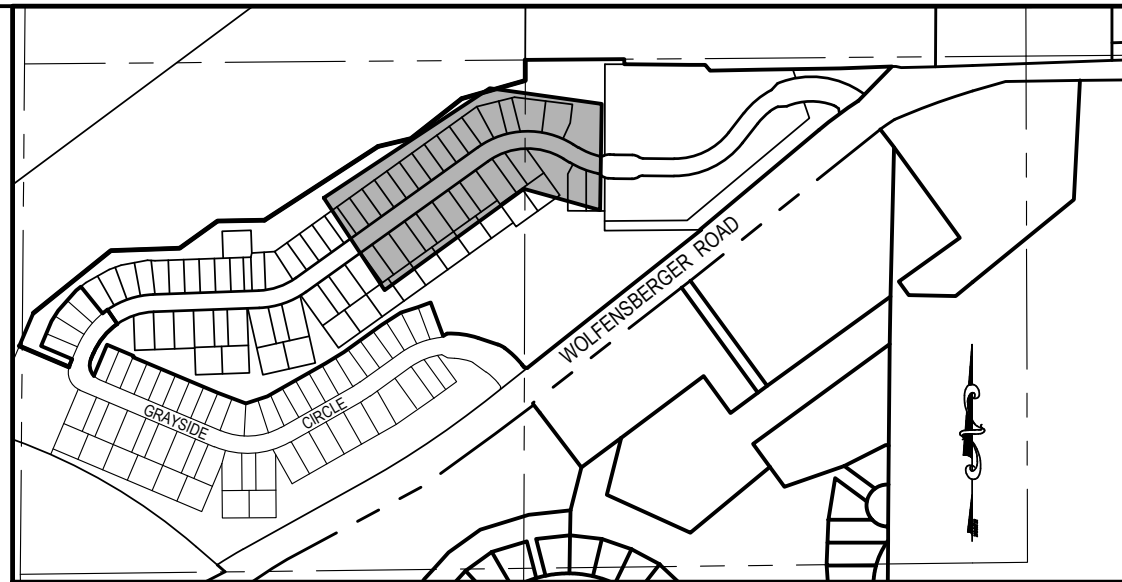
PROJECT BENCHMARK:

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811
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CENTER OF COLORADO
1-800-922-1987 or 811

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- UTILITY LEGEND:
- PROPERTY LINE
 - RIGHT-OF-WAY
 - LOT / TRACT LINE
 - EXISTING LOT LINE
 - EXISTING FENCE
 - EXISTING ELECTRIC LINE
 - EXISTING GAS MAIN
 - EXISTING CATV
 - COM
 - 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
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 - PROPOSED WATER SERVICE LINE
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 - PROPOSED W.L. FITTINGS
 - PROPOSED W.L. PLUG
 - PROPOSED WATER VALVE
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 - PROPOSED SIGN
 - PROPOSED STREET LIGHT

PROJECT BENCHMARK:
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TOWN OF CASTLE ROCK APPROVAL
PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL
DESIGNED BY: WLB
DRAWN BY: WLB
DATE: 8/24/2023
APPROVED BY: _____
DEVELOPMENT SERVICES DATE

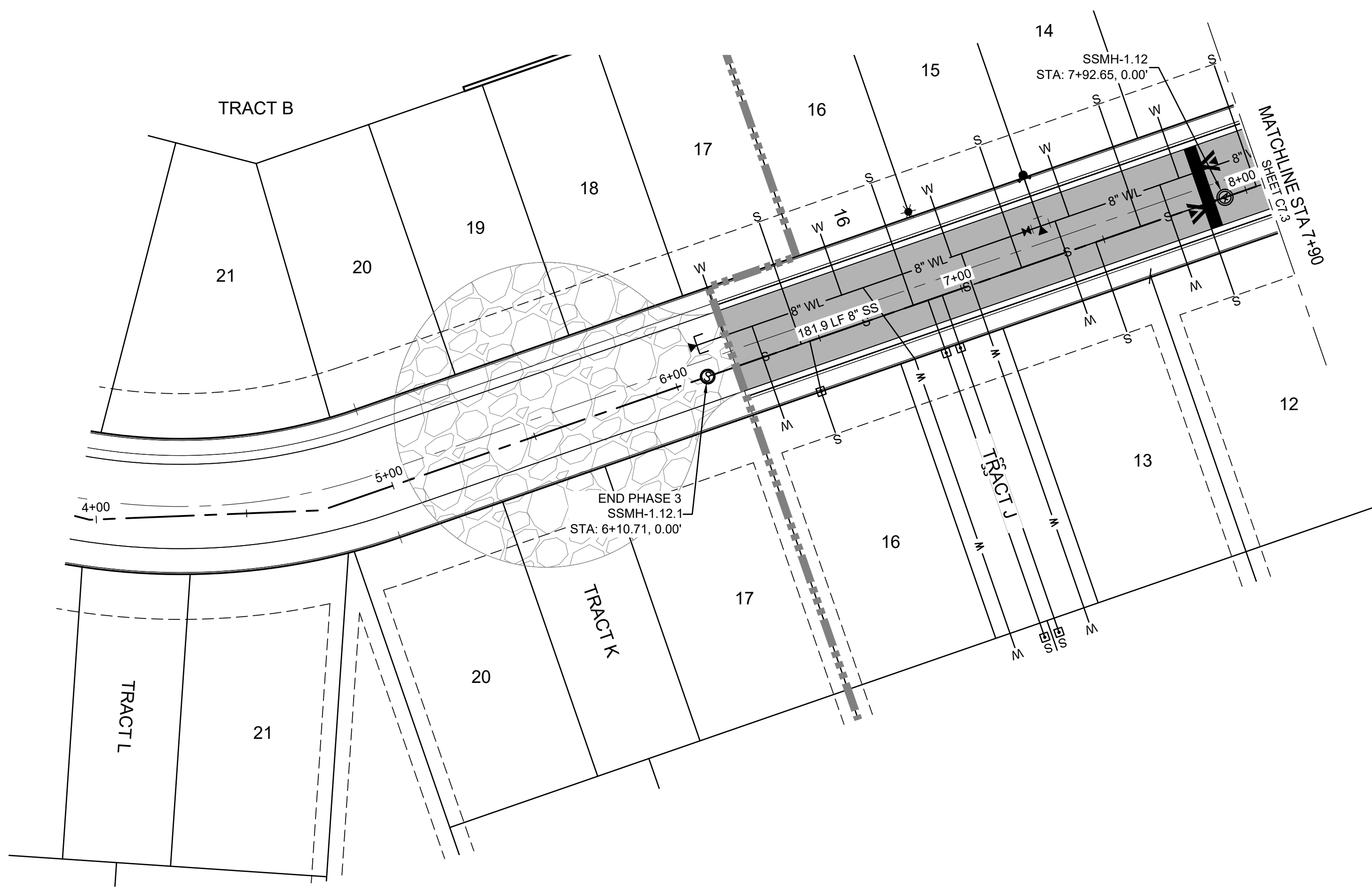
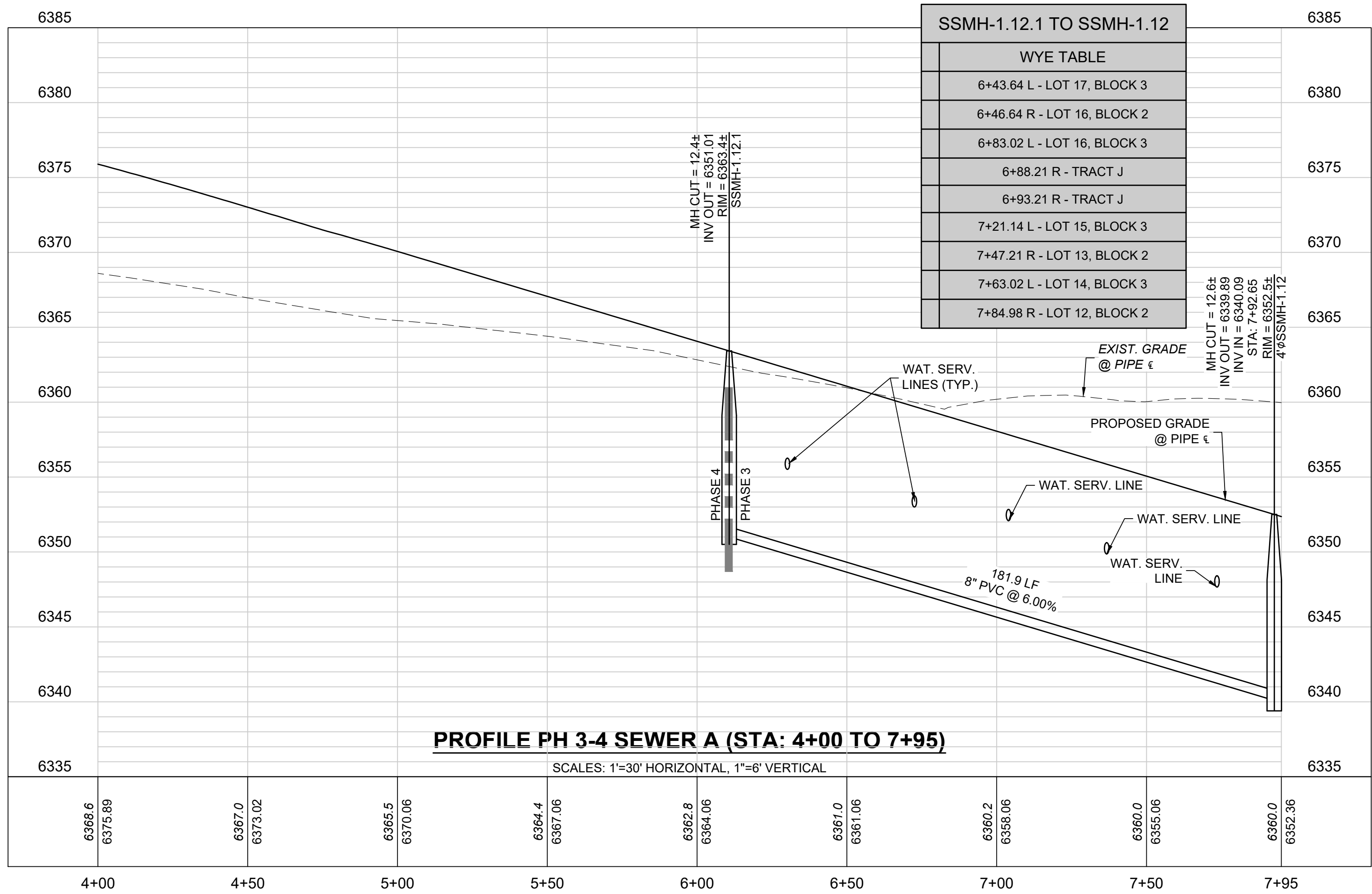
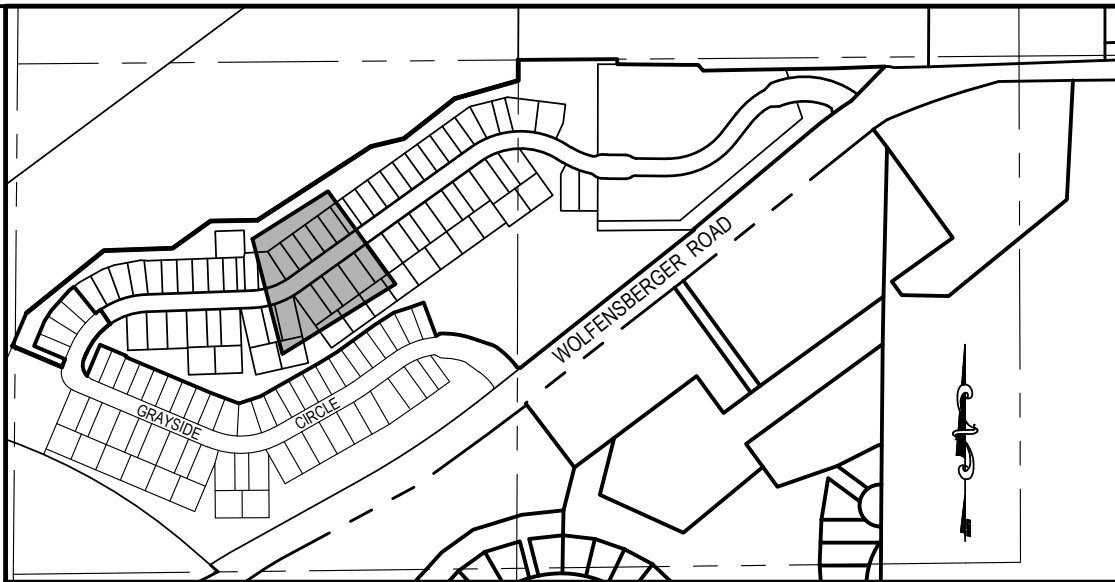
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BLVD.
BUILDERS

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: 8/24/2023
C7.3
SHEET 27 OF 70



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 |
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| | EXIST. TRAFFIC SIGNAL CONDUIT |
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| | PROPOSED WATER VALVE |
| | PROPOSED S.S. CLEANOUT |
| | PROPOSED SIGN |
| | PROPOSED STREET LIGHT |

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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: 8/24/2023

C7.4
SHEET 28 OF 70

TOWN APPROVAL BLOCK
TOWN OF CASTLE ROCK APPROVAL
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APPROVED BY:
DEVELOPMENT SERVICES DATE

PROJECT BENCHMARK:

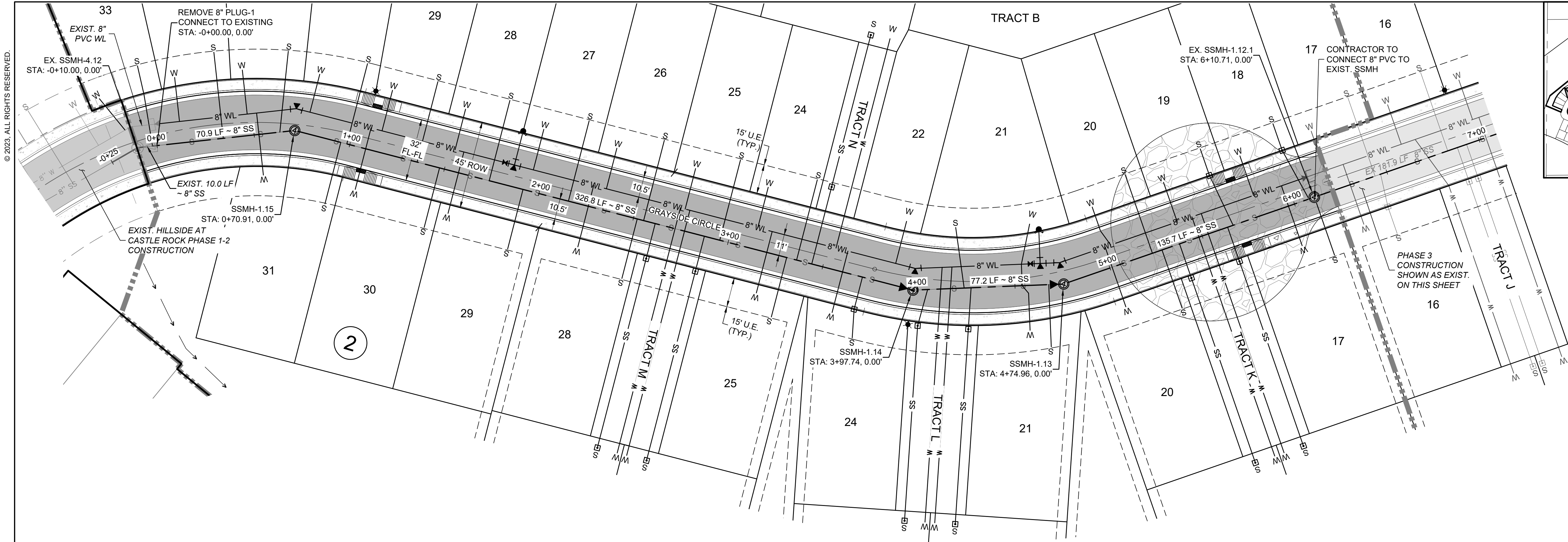
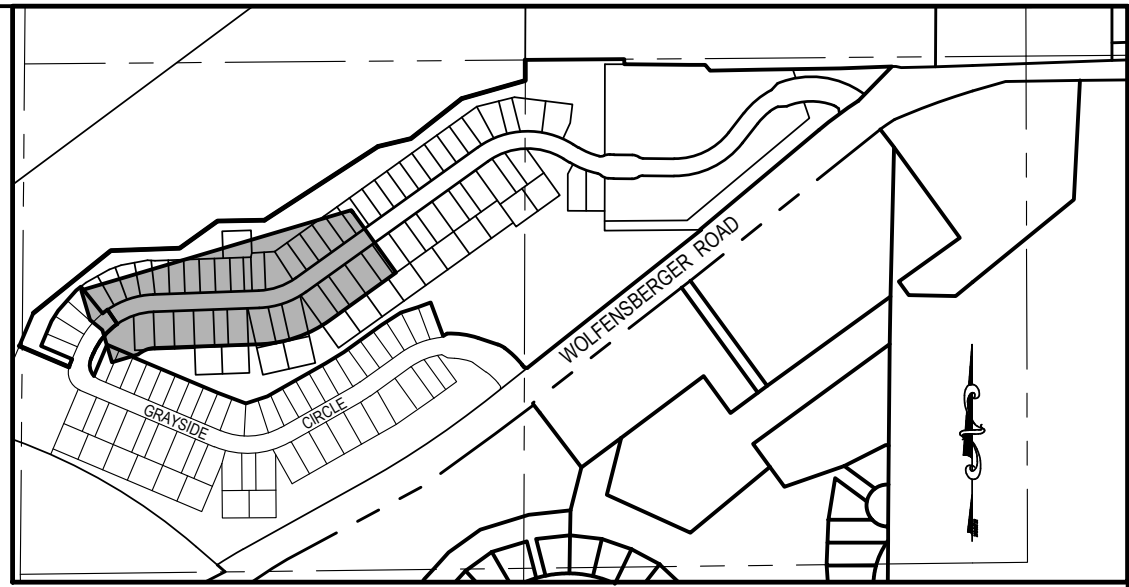
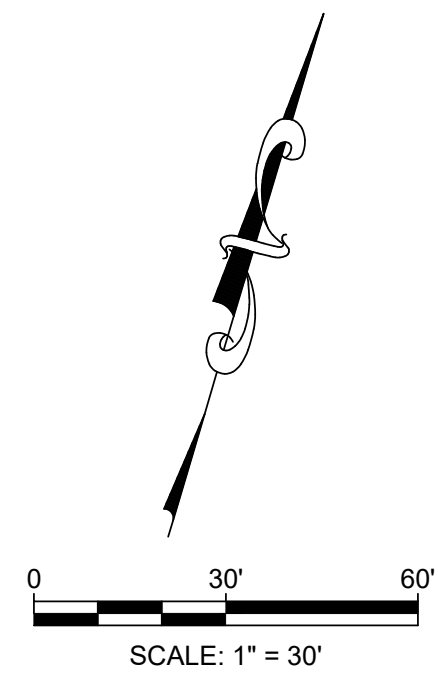
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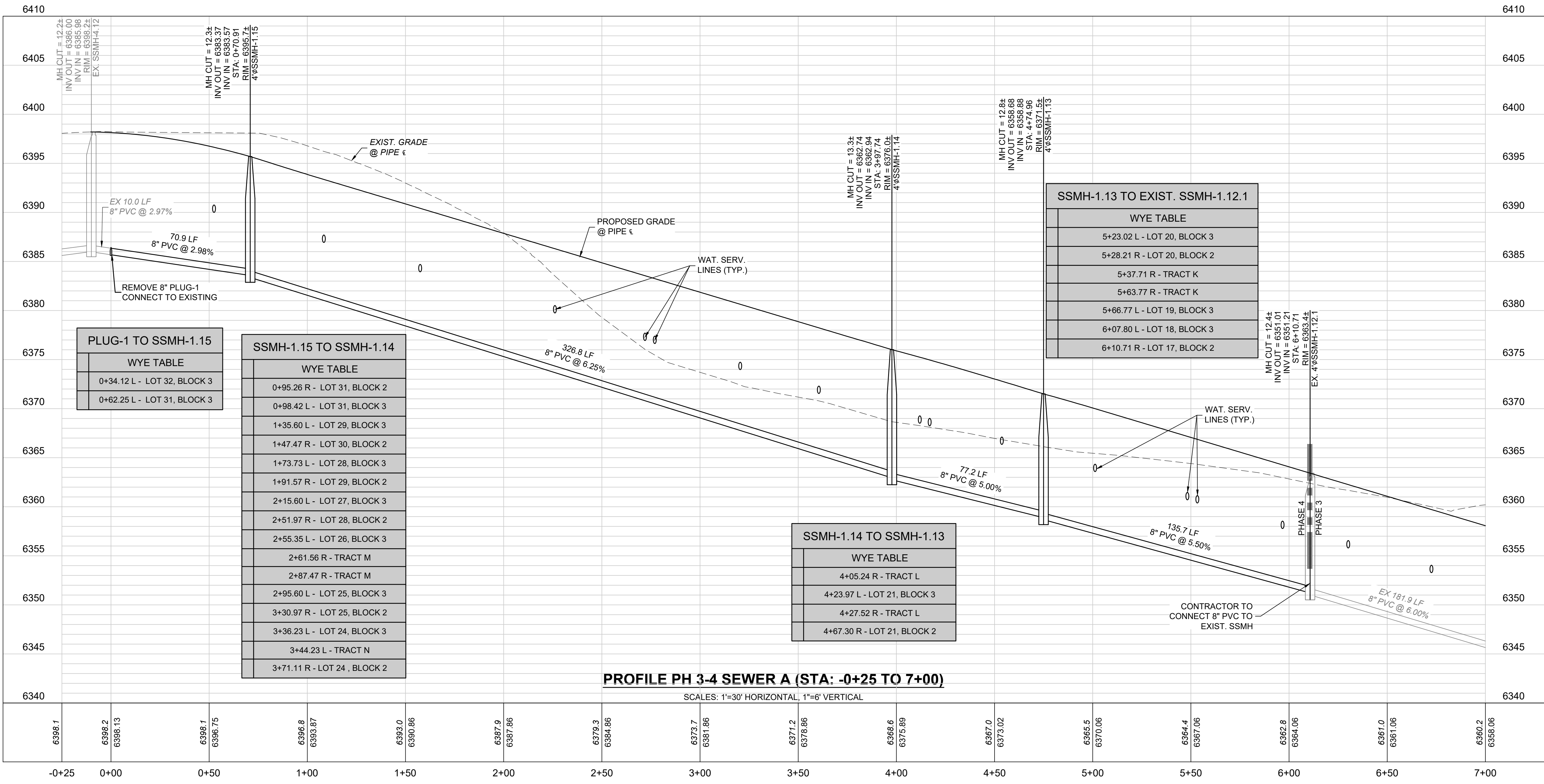
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 - EXISTING STORM INLETS
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 - EXISTING WATER VALVE
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 - PROPOSED PHASING LINE
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 - PROPOSED WATER VALVE
 - PROPOSED S.S. CLEANOUT
 - PROPOSED SIGN
 - PROPOSED STREET LIGHT



SSMH-1.13 TO EXIST. SSMH-1.12.1	
WYE TABLE	
5+23.02 L - LOT 20, BLOCK 3	
5+28.21 R - LOT 20, BLOCK 2	
5+37.71 R - TRACT K	
5+63.77 R - TRACT K	
5+66.77 L - LOT 19, BLOCK 3	
6+07.80 L - LOT 18, BLOCK 3	
6+10.71 R - LOT 17, BLOCK 2	

SSMH-1.14 TO SSMH-1.13	
WYE TABLE	
4+05.24 R - TRACT L	
4+23.97 L - LOT 21, BLOCK 3	
4+27.52 R - TRACT L	
4+67.30 R - LOT 21, BLOCK 2	

SSMH-1.15 TO SSMH-1.14	
WYE TABLE	
0+95.26 R - LOT 31, BLOCK 2	
0+98.42 L - LOT 31, BLOCK 3	
1+35.60 L - LOT 29, BLOCK 3	
1+47.47 R - LOT 30, BLOCK 2	
1+73.73 L - LOT 28, BLOCK 3	
1+91.57 R - LOT 29, BLOCK 2	
2+15.60 L - LOT 27, BLOCK 3	
2+51.97 R - LOT 28, BLOCK 2	
2+55.35 L - LOT 26, BLOCK 3	
2+61.56 R - TRACT M	
2+87.47 R - TRACT M	
2+95.60 L - LOT 25, BLOCK 3	
3+30.97 R - LOT 25, BLOCK 2	
3+36.23 L - LOT 24, BLOCK 3	
3+44.23 L - TRACT N	
3+71.11 R - LOT 24, BLOCK 2	

PLUG-1 TO SSMH-1.15	
WYE TABLE	
0+34.12 L - LOT 32, BLOCK 3	
0+62.25 L - LOT 31, BLOCK 3	

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

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.



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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 _____

PRELIMINARY
NOT FOR
CONSTRUCTION

EES
ENTITLEMENT AND
ENGINEERING
SOLUTIONS, INC.
3801 E. Florida Avenue, Suite 425
Denver, CO 80210
303-572-1597 www.ees.us.com

CONSTRUCTION PLANS

HILLSIDE AT CASTLE ROCK - PHASES 3-4

CASTLE ROCK, COLORADO

**PHASE 4 SANITARY SEWER
PLAN & PROFILE 1**

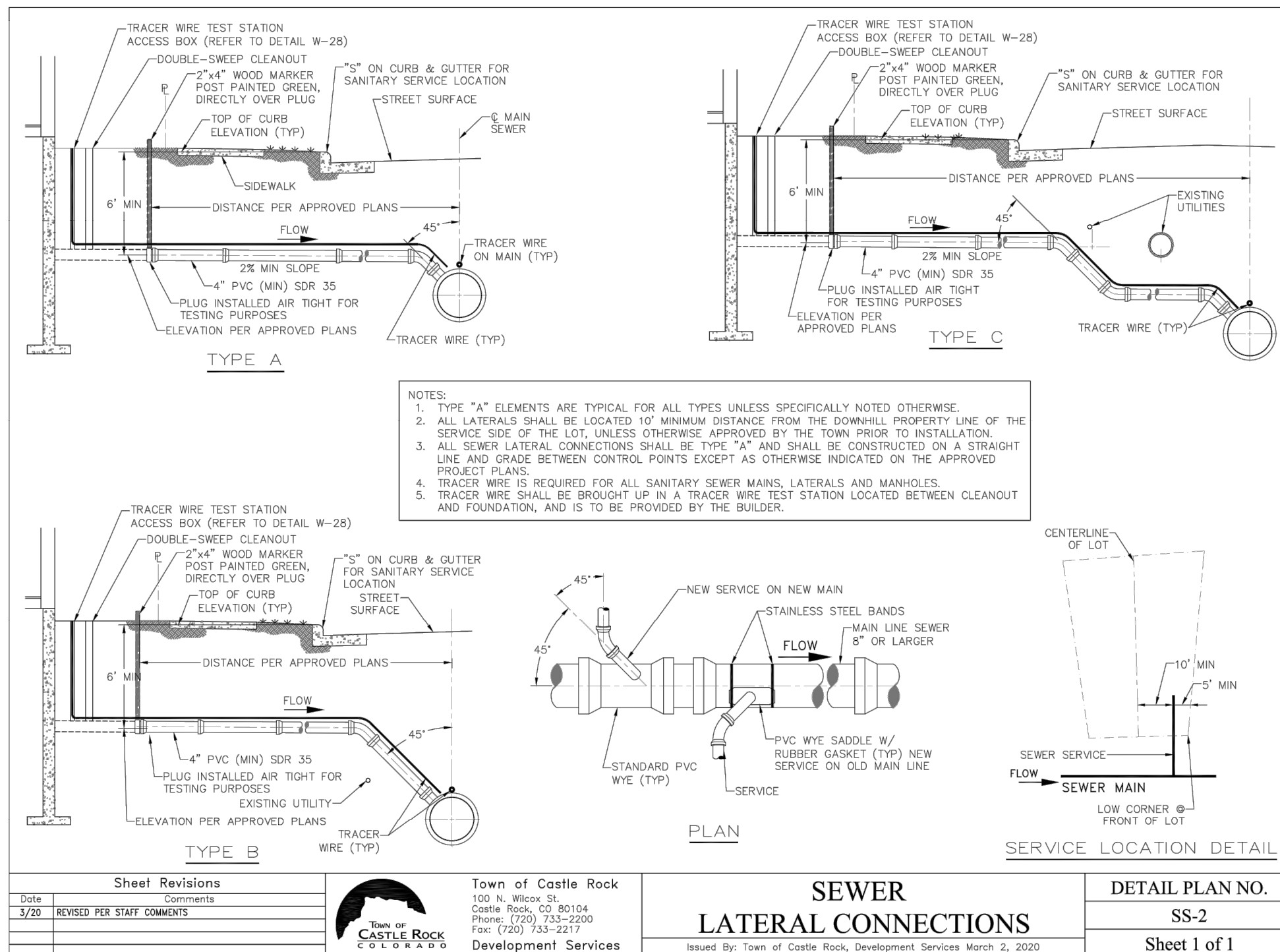
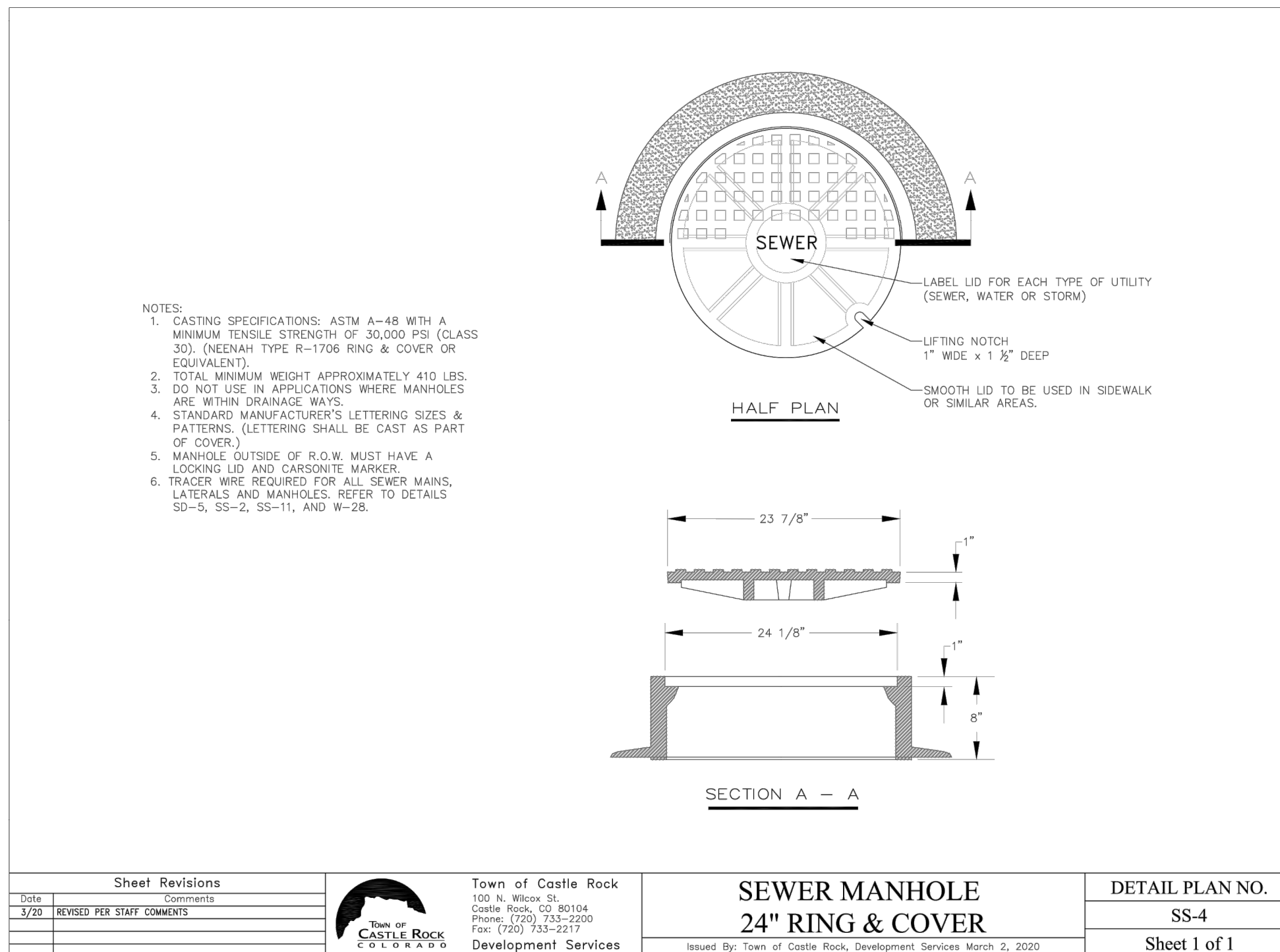
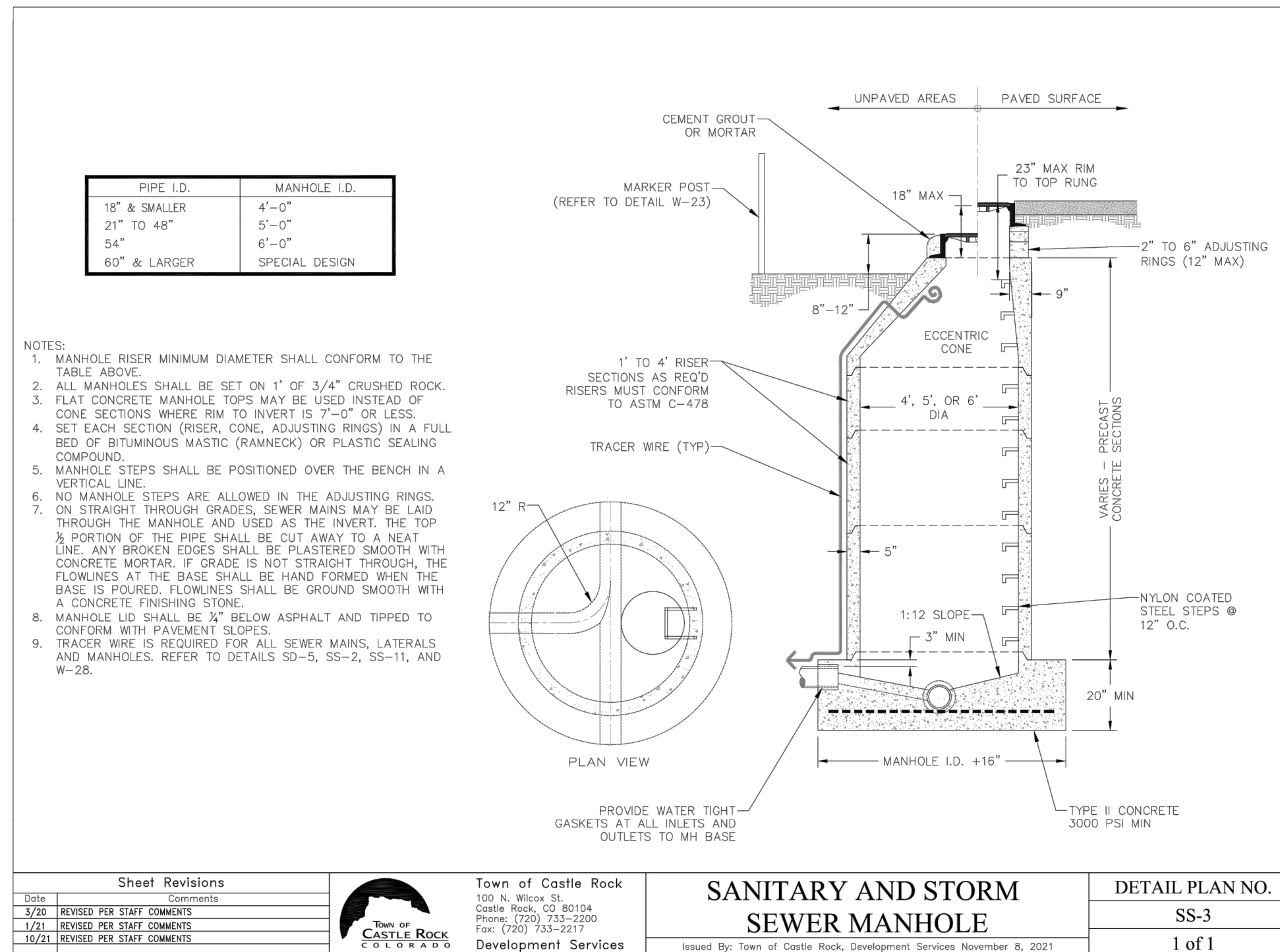
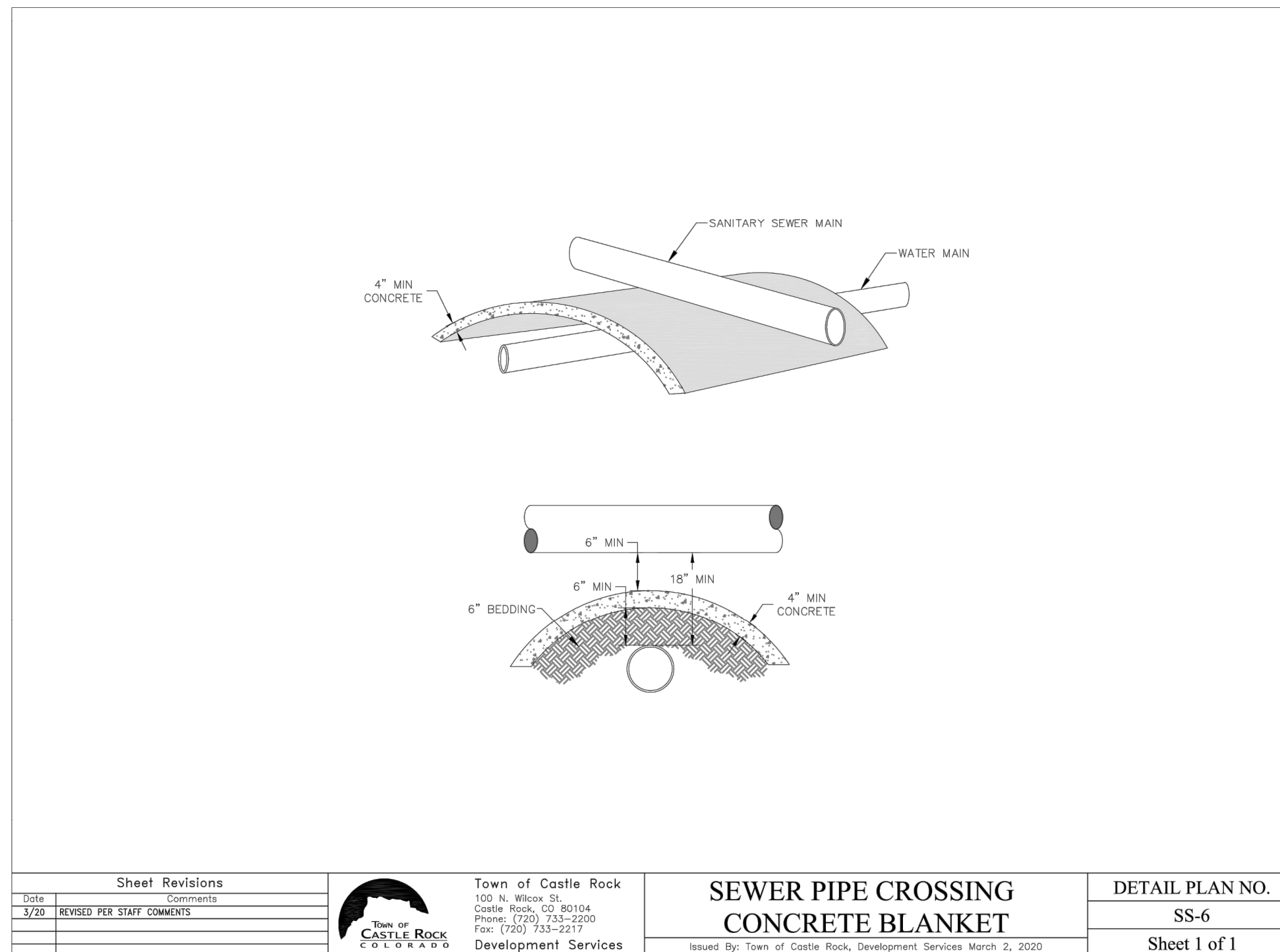
PROJECT NO: BLV001.02

DESIGNED BY: WLB

DRAWN BY: WLB

DATE: 8/23/2023

C7.5
SHEET 29 OF 70



<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> <p style="margin: 0;">CONSTRUCTION PLANS</p> <p style="margin: 0;">HILLSIDE AT CASTLE ROCK - PHASES 3-4</p> <p style="margin: 0;">CASTLE ROCK, COLORADO</p> <p style="margin: 0;">SANITARY SEWER DETAILS 1</p> </div> <div style="width: 35%; text-align: right;"> <p style="margin: 0;">PROJECT NO: BLV001.02</p> <p style="margin: 0;">DESIGNED BY: WLB</p> <p style="margin: 0;">DRAWN BY: WLB</p> <p style="margin: 0;">DATE: 8/23/2023</p> </div> </div>				<p style="margin: 0; font-size: 0.8em;">3801 E. Florida Avenue, Suite 425 Denver, CO 80210 303-572-1997 www.ees.us.com</p>	
<p style="margin: 0;">C7.6</p> <p style="margin: 0; font-size: 0.7em;">SHEET 30 OF 70</p>		<p style="margin: 0; font-weight: bold;">PRELIMINARY NOT FOR CONSTRUCTION</p>			
<p style="margin: 0;">No.</p> <p style="margin: 0;">REVISION</p>		<p style="margin: 0;">BY</p> <p style="margin: 0;">DATE</p>			

