CITY OF CLE ELUM

STORMWATER SYSTEM CAPITOL IMPROVEMENT PLAN

Prepared by HLA Engineering and Land Surveying, Inc.
HLA Project No. 23104

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HLA

PROJECT NO. 23104E

May 2026

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INTRODUCTION AND EXECUTIVE SUMMARY

INTRODUCTION

The City of Cle Elum (City), located in western Kittitas County and shown in Figure 1-1 Washington State Vicinity Map, owns and operates its stormwater system that serves the core of the City. Much of the system was installed more than 40 years ago and is comprised of catch basins and conveyance piping to infiltration ponds located southeast of the City, adjacent to the Yakima River.

This Stormwater Plan (Plan) includes the approximate location and description of existing catch basins, conveyance piping, and infiltration systems serving areas within the City. The sections of this Plan describe the basis for development of planning areas, growth projections, forecasted municipal stormwater flows, and design criteria for recommended stormwater system improvements. Maps showing the existing stormwater system inventory are included in Appendix A.

The City recognizes the need to improve and maintain its stormwater system to properly collect, convey, and infiltrate stormwater from the impervious surfaces throughout the City, and to plan for expansion of the system. HLA Engineering and Land Surveying, Inc. (HLA), was authorized by the City to prepare this Plan, which represents the culmination of planning and data collection efforts.

The Plan includes the following information:

- Purpose and need for the Plan.
- The existing and proposed service boundaries.
- Layout map, including existing and proposed catch basins, existing and proposed stormwater conveyance piping, topography and elevations, streams, lakes, and other bodies of water, and location of major water system components.
- Identified problem areas, needed upgrades and improvements, and future expansion/extension considerations.
- Financial evaluation/rate study, including the cost of proposed debt service and operation and maintenance costs.
- The Stormwater Operations and Maintenance Plan.

PURPOSE AND OBJECTIVE OF PLAN

This Plan evaluates the existing system condition and needs and addresses potential improvements and expansion within the current use area. As such, the Plan has been developed to serve as a guide for the necessary improvements, expansion, and maintenance of the City's stormwater collection, conveyance, and treatment facilities. It also has been developed to ensure the orderly growth of the system while maintaining reliable service. Additionally, this document is intended to guide utility actions in a manner consistent with other activities taking place in the community.

The following major components are included in this Plan:

- Definition of the planning area, determination of the areas in and around the City most likely to grow.
- Development of estimates for the current quantity of stormwater and projected quantity to be generated within the planning area.
- Evaluation of capacity and condition of the existing stormwater system.

The sections of this Plan describe the basis for stormwater flow rates and design criteria for recommended improvements. Major stormwater system components are shown in Appendix A.

SUMMARY OF SYSTEM ANALYSIS

A hydraulic analysis of the existing City stormwater collection and conveyance system was performed to evaluate the capacity of the system and to identify specific hydraulic loading problem areas. The computer-assisted analysis (using SewerGEMS) uses pipe sizes and slopes, swales, catch basins, and manholes, to model system conveyance and deficiencies, showing areas of present and future concern. The results of the analysis show:

- Existing System: Through video inspection and observation, it was found that portions of the existing system are dilapidated and in poor condition. To be categorized as "poor condition," a pipe must have had one or more qualities such as collapsed, antiquated, or showing signs of loss of structural integrity. Comparatively, areas in the First Street corridor from Billings Avenue to Peoh Avenue, and north of Sixth Street within the City Heights development, were recently updated or installed, and showed no sign of poor condition pipes.
- Future Buildout System: The future buildout system considers City and system growth within the next ten years. These system projections include completion of the buildout of City Heights developments. With this increase in impervious areas from new public roads, the system will fail if no upgrades or improvements to the current system are implemented.
- Year 2043 System: Two hydraulic analyses were performed to examine the existing and proposed future stormwater system at peak flows generated by the complete development within both the City and Urban Growth Area (UGA). With these developments, the future increase of impervious areas led to increased runoff flows entering the system. These flows from future collection basins were modeled and routed through the existing collection and conveyance system to examine system loading capacity and to determine system size increases sufficient to alleviate surcharge or over-capacity conditions in the system.

SUMMARY OF RECOMMENDED IMPROVEMENTS

Improvements to the existing collection and conveyance system, and expansion to accommodate future growth with their associated costs are identified within CHAPTER 6 of this Plan. The summary of the recommended improvements and costs is listed in Appendix C.

This Plan does not address treatment capabilities of the regional detention or water quality facilities. That is, this information is not a part of the study conducted for this report. It is recommended, however, that further evaluation of these locations in the future will be necessary to determine any additional stormwater treatment requirements.

Repair and Replacement Needs:

Multiple areas of improvement have been proposed to address identified sections within the existing collection system and remedy problems such as inadequate pipe slopes, collapsed or broken pipe, separated joints, root and debris intrusions, and illicit connections to the storm system. The City recently conducted an inventory and video inspection study of the collection system to identify additional areas in need of repair. These areas are described in more detail in CHAPTER 4.

Much of the City's stormwater system is at, or more than, 50 years old, and has, or is reaching, the end of its service life. Therefore, it is expected that additional areas will be identified as needing replacement or repairs when inspection, operations, and maintenance continue in the future.

SCHEDULE OF IMPROVEMENTS AND ESTIMATED COSTS

It is recommended that the City proceed with construction of improvements to the existing system referenced in Table 6-1, and shown in Figure 6-1 and 6-2. Estimated costs (in 2025 dollars) for construction of the improvements recommended are also presented in Table 6-1.

ESTIMATED COSTS AND PROPOSED STORMWATER SYSTEM FINANCIAL PROGRAM

Developing a plan for project financing involves examining current system expenditures and revenues, integrating the schedule and costs of the recommended improvements into the City's financial structure, recommending funding sources, and developing a method to pay for the identified improvements. Recommended stormwater system improvements are necessary to improve system performance for the existing system, and in preparation for any increased future buildout system loading. A schedule and estimate of costs for recommended improvements are provided in Section 6.2 of this Plan. Timing of the improvements has been developed to allow the City to meet the most pressing needs while maintaining positive fund balances.

Revenue increases are necessary to fund recommended system improvements identified in the Plan. The City plans to continue inspection of the system, and additional projects will likely be identified to replace dilapidated and broken pipes; replace and/or repair deficient manholes, catch basins, and drywells; update and protect existing swales and conveyances; and introduce new systems to better move stormwater out of the roadway. To fund these collection systems and improvement/maintenance program projects identified in Table 6-1, it is recommended that the City adequately increase and equitably establish user rates between its customer classes. A rate study has been conducted, as discussed in CHAPTER 7, and a copy of the study can be found in Appendix D.

The rate study determined the stormwater utility rate be initiated and established as $10.00 per month, per Equivalent Residential Unit (ERU). Due to unknowns related to operating expenses and growth, the City should also continue to monitor system finances and make necessary annual adjustments in rates to fund expenses adequately.

CHAPTER 1

Introduction and Description of Stormwater System

CHAPTER 1 – INTRODUCTION AND DESCRIPTION OF STORMWATER SYSTEM

1.1 BACKGROUND INFORMATION

1.1.1 Stormwater System Ownership

The City owns and operates its stormwater system. Decisions regarding daily stormwater system operations are made by the Public Works Director. Financial decisions regarding major system improvements and the establishment of stormwater rates are made by the Cle Elum City Council.

The following parties are involved in the operation, maintenance, and planning for the Cle Elum stormwater infrastructure:

OWNER AND OPERATOR:

Owner:	City of Cle Elum
Mayor:	Matthew Lundh
Public Works Director:	Mathew Bailey

STORMWATER SYSTEM CONSULTING ENGINEER:

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
Phone: (509) 966-7000
Project Engineer: Dean P. Smith, PE

1.1.2 Background

Founded in the 1870s, the City was incorporated in 1902 and is currently the second largest community in Kittitas County. The population peaked around 1915 as a center for coal mining, railroad, and logging activities. Today, recreation and tourism are the area's primary industries. The City has become a residential area for commuters working in the greater Seattle area and is central to north Kittitas County's shopping and services.

The City currently operates a stormwater system, however as of the publish date of this Plan, it does not have a stormwater utility established to fund operations and maintenance or capital projects necessary to effectively manage the system. This Plan provides the City with a document identifying stormwater requirements and issues related to both the structural components of the stormwater system and establishing the new utility. During the development of this Plan, the City performed a systemwide inventory of stormwater system components to determine existing system conditions and where funds should be focused to create a capital improvement program for the new proposed stormwater utility. This Plan serves as a complement to the General Sewer Plan (GSP) and the Water System Plan (WSP).

1.2 NEIGHBORING/ADJACENT STORMWATER SYSTEMS

The nearby communities of South Cle Elum, Roslyn, the unincorporated area of Ronald, and the Suncadia development are all located in the vicinity of Cle Elum. Despite providing wastewater treatment service to these communities, stormwater management is not shared between these entities, and the scope of this Plan includes assessment of stormwater generated only within Cle Elum parcels and roadways.

1.3 POPULATION

Population projections are not expected to impact the City's stormwater system since the growth areas will include independent stormwater system's that are not tied into the existing system. As a result, this Plan evaluates the existing system condition needs and only assesses potential improvements and expansion within the current use area.

1.4 RELATED PLANNING DOCUMENTS

1.4.1 Wastewater Plans

In 2003, a *Comprehensive Sewer and Wastewater Facility Plan* was developed for the City and its UGA. This document included:

- Description of the existing City limits, future UGA sewer service area, and Suncadia master planned resort.
- Estimate of future sewer service population based upon the current population.
- Forecast of future wastewater loadings based on sewer service population predictions.
- Description and location of existing sewer system, WWTP, and potable water supply components.
- Design standards for recommended sewer system improvements and a financial plan.

1.4.2 Wastewater Facility Plan

In 2003, the City received approval from the Department of Ecology (Ecology) for the *Facility Plan for the Regional WWTP*. This document included:

- Description of existing and future sewer service area, population projections, and regulatory requirements.
- Description of existing wastewater treatment facilities and wastewater flows and loadings.
- Presentation and evaluation of the selected Sequencing Batch Reactor (SBR) process to provide biological treatment to accommodate the City's projected 30-year growth and to meet pending regulatory requirements.

1.4.3 Urban Growth Area Comprehensive Plan

The City's current *Comprehensive Plan* was adopted on June 25, 2019, with an updated Land Use Element adopted on December 10, 2019. The next *Comprehensive Plan* update is scheduled to be completed in 2026. The *Comprehensive Plan* describes current conditions, develops forecasts for a 20-year planning period, evaluates observed or predicted deficiencies, strategies for addressing current and future challenges, and budgets for necessary improvements.

Comprehensive plans identify many of the physical, environmental, and economic elements within Cle Elum and the surrounding area (including the UGA). They also forecast anticipated changes within those geographical areas. Understanding and predicting future changes within the City and its future service areas provides critical background for forecasting future demands on the system. As a result, the City's *Comprehensive Plan* was an important tool in the development of this Plan.

1.4.4 Water System Plan (WSP)

The City's WSP was most recently updated in 2024. This document provides an in-depth look at their water system, its deficiencies, potential growth, and requirements to serve their own and the surrounding community's needs. Completion of the City's original Comprehensive Water Plan took place in 1997.

Figure 1 - Washington State Vicinity Map

CHAPTER 2

Study Area Description

CHAPTER 2 – STUDY AREA DESCRIPTION

2.1 INTRODUCTION

The City is located on the eastern slopes of the Cascade Mountains in Kittitas County, approximately 30 miles east of Snoqualmie Pass. The majority of Cle Elum lies between the elevations of 1,890 and 2,070 feet, although the annexed Bullfrog Urban Grown Area extends the City to an elevation of 2,170 feet.

The service area for this Plan is bounded by the City limits and the UGA boundary and has a total area of approximately 2,800 acres. The remainder of this section focuses on the physical attributes of the service area that affect stormwater planning and design, as follows:

- **Section 2.2 Topography.** Provides a brief summary of major topographic features that help define the study area's drainage patterns.
- **Section 2.3 Climate and Rainfall Patterns.** Summarizes climate conditions and provides summary statistics of long-term monthly mean precipitation, temperature, and snowfall.
- **Section 2.4 Land Use Distribution and Urban Growth Areas.** Defines major land use types and distributions inside and outside of the UGA.
- **Section 2.5 Sensitive Areas**. Discusses wetlands, floodplains, and critical habitat areas that must be considered for stormwater planning purposes.
- **Section 2.6 Illicit/Illegal and Unpermitted Connections.** Describes what conditions are required for a pipe connection to fall under Illicit or Illegal.
- **Section 2.7 Drainage area Delineation**. Describes the delineation and drainage patterns of the two drainage areas that contribute flows to the City's stormwater management facilities.

2.2 TOPOGRAPHY

The City resides within the mountainous regions and foothills of the Cascade Mountain Range's eastern slopes. The river basin where the City mainly resides falls between the Cle Elum Ridge to the north, and the South Cle Elum Ridge, Peoh Point, and Taneum Point to the south. The Yakima River and Interstate 90 (I-90) pass by just south of the City. The slope of the mountains and ridges causes the City to generally slope down towards the southeast.

Across the City, slopes are predominantly flat with three percent or less in slope. However, on the north side of the City at the base of Cle Elum Ridge, slopes begin to increase and range from three to 15 percent. Elevations range from 1,890 feet to over 3,000 feet in the surrounding ridges and points.

2.3 CLIMATE AND RAINFALL PATTERNS

The City averages 28.6 inches of precipitation per year. The distribution varies significantly throughout the year, with a distinct dry season during the summer months. The month with the most precipitation is December, with an average of 5.2 inches of precipitation.

The temperatures vary significantly from season to season as well, with an average high temperature during the summer months of 72 degrees Fahrenheit. In contrast, the winter months have an average daily high temperature of 43 degrees Fahrenheit.

2.4 LAND USE DISTRIBUTION AND URBAN GROWTH AREAS

All future residential growth for the City is assumed to occur within the two major private developments (Suncadia Resort and City Heights). Residential land within Suncadia Resort is assumed to be completely built out and unavailable for future construction. Most of the residential land within City Heights is within one of the two major proposed developments that have independent stormwater systems. Therefore, the growth of the area is not expected to impact the existing system within the City.

2.5 SENSITIVE AREAS

Chapter 18.01 of the Cle Elum Municipal Code (CEMC) covers sensitive areas and contains standards, guidelines, criteria, and requirements intended to identify, analyze, and mitigate probable impacts to the City's sensitive areas and geologic hazard areas and to enhance and restore them when possible. The categories of sensitive areas are: (1) wetlands; (2) frequently flooded areas; (3) fish and wildlife habitat conservation areas; (4) critical aquifer recharge areas; and (5) geologically hazardous areas. For a more detailed review of the local environment and sensitive areas, refer to the City's 2019 *Comprehensive Plan.*

2.5.1 Wetlands

Wetlands are defined in CEMC 18.01.020 as "an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and other similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate the conversion of wetlands."

Surrounding wetlands, there are typically buffers, meaning "an area contiguous to and protecting a critical area that is required for the continued maintenance, functioning, and/or structural stability" of the wetland, and are intended to provide separation between a protected wetland and surrounding uses. There are five categories of wetlands. Categories I, II, III, and IV are defined by the Washington State Department of Ecology's Wetland Rating System for Eastern Washington, October 2014 (Publication No. 14-06-030). The fifth category includes "locally significant wetlands," which are wetlands deemed important to the City because they function as part of a water quality or flood mitigation program, are planned to be or can be integrated into an identified open space plan or system or serve other substantial public purposes.

The category of wetland determines the size of the buffer area around the wetland for low- and high-impact land use. “Low impact land use” means land uses that are typically associated with relatively low levels of human activity, disturbance, or development, and that are conducted in a manner as to minimize impacts to the buffer, such as passive recreation, agriculture, or conservation activities. “High impact land use” means land uses that are generally associated with relatively high levels of human activity or disturbance, development of structures, or substantial wetland habitat impacts. This would include permanent structures, commercial and industrial land uses, and impactful recreation activities.

The alteration or destruction of wetlands can reduce or eliminate the biological and hydrologic benefits they offer. Direct impact can result from site preparation activities, including clearing, grading, and filling, which can increase the volume of sediment-laden storm runoff entering wetlands.

This reduces the wetland’s natural capacity to remove nutrients, process chemical and organic wastes, and temporarily store floodwater. Proper management of stormwater runoff in areas that contribute to wetlands is critical to maintaining proper wetland function.

The City has identified that the only wetlands receiving stormwater flows are the Hansen Ponds (located southeast of the City) and Crystal Creek, both of which are part of the system discharge that eventually leads into the Yakima River.

2.5.2 Floodplains and Floodways

The Federal Emergency Management Agency (FEMA) produces flood insurance rate maps (FIRMs) that indicate the probability of a flood event occurring. The National Flood Hazard Layer (NFHL) is a digital database that contains flood hazard mapping data from FEMA’s National Flood Insurance Program (NFIP). This map data is derived from FIRM databases and Letters of Map Revision (LOMRs).

Data from the NFIP indicate that a significant portion of the City is currently located within a floodplain, and the limits of this floodplain were updated by LOMR 21-10-1313P, effective 12/8/2023. See Figure 2-1. Table 2-1 provides definitions of the flood zones shown in Figure 2-1.

2.6 ILLICIT/ILLEGAL AND UNPERMITTED CONNECTIONS

As consistent with construction standards in the early 1900’s and earlier, most of the downtown historical buildings in Cle-Elum have roof drains and catch basins connected into the City’s stormwater system. These connections are defined as an “Illicit connection” due to the water coming from private property. However, they are permitted due to this being the standard for stormwater when the buildings and or parking lots were constructed.

The definition for an “illicit discharge” however is defined as any discharge to a municipal separate stormwater system that is not entirely composed of stormwater. Sources of illicit discharges include but are not limited to sanitary wastewater, effluent from septic tanks, improper oil disposal, laundry wastewater, car wash wastewater, radiator flushing disposal, spill from roadway accidents, and improper disposal of auto and household toxins. Exceptions include National Pollutant Discharge Elimination System (NPDES) permitted industrial sources and discharges from fire-fighting activities. These are illegal connections and non-permitted. Upon discovery of this connection the City will require the connection to be disconnected and re-installed in accordance with the City’s construction standards.

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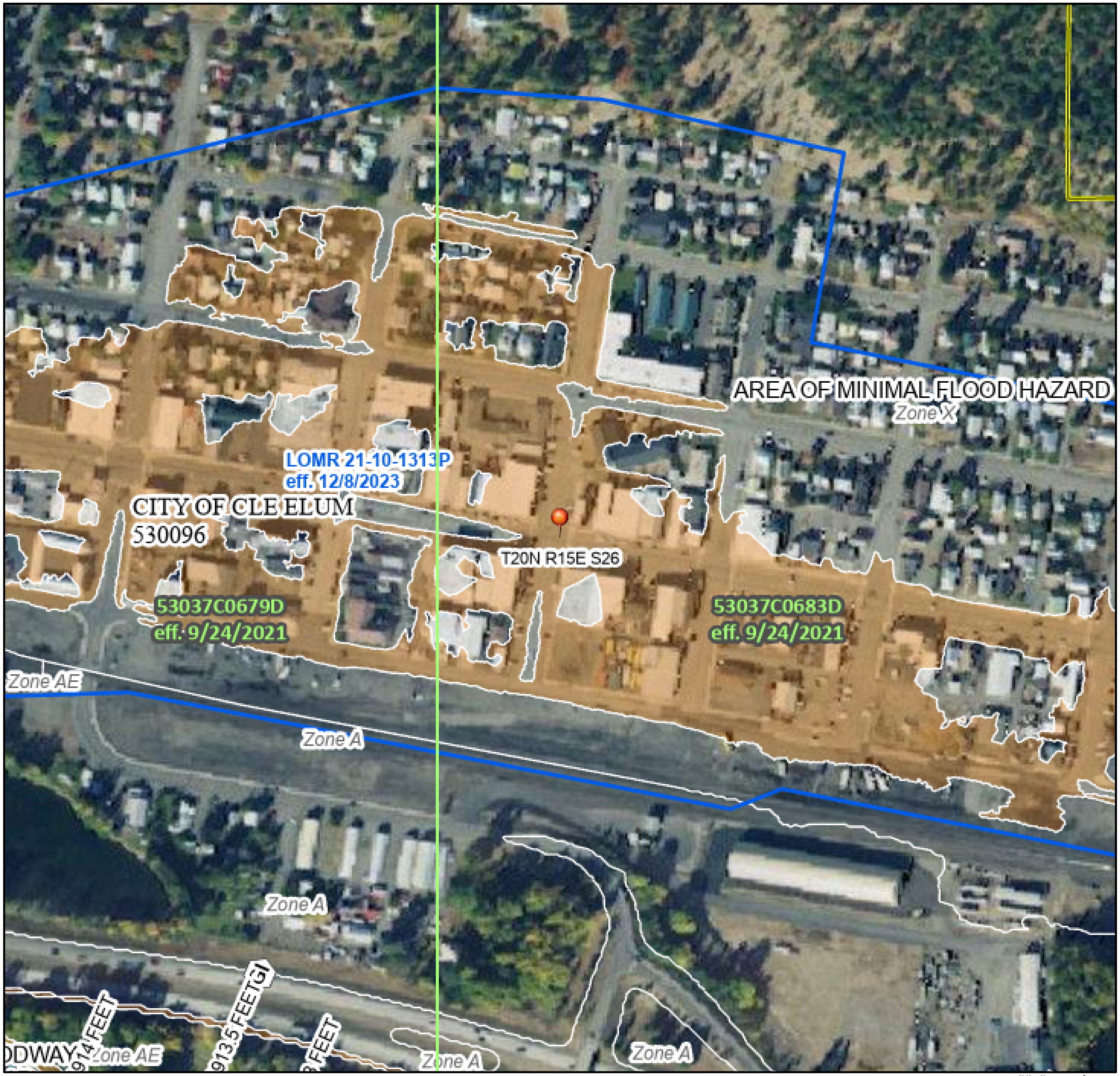

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TABLE 2-1 FIRM FLOOD ZONE TYPES	
Zone Type	**Description**
Zone X	Areas inundated by 500-year flooding; inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile.
Zone AE	Areas subjected to inundation by the 1% annual chance flood event. Base Flood Elevations (BEFs) are known.
Zone A	Areas subject to inundation by the 1% annual chance flood event. No Base Flood Elevations (BFEs) or flood depths have been determined.
Source: FEMA, 2023	

Development within the floodplain is further described in CEMC Chapter 15.24. State law prohibits permanent structures from being constructed on a floodway or having zero rise (i.e., no displacement of floodwater). These lands are key natural resource areas for enhancing water quality, providing important fish and wildlife habitat, and serving as water retention and flood storage areas, and are therefore allowed only the most limited and regulated future development.

2.6.1 Fish and Wildlife Habitat Conservation Areas

Much of the remaining native habitat in the City is generally limited to streams, wetlands, forest lands, and steep slopes. The only river frontage areas within the City are located along the two river corridors. Most of the riverfront property is planned by the City to remain undeveloped, with limited managed dry camping and park properties. The Cle Elum and Yakima River floodplain areas provide habitat linkages with other riparian habitats beyond the City.

2.6.2 Critical Aquifer Recharge Areas

Critical aquifer recharge areas are those areas that are important for returning water to underground aquifers for use as potable water. Due to the permeability of different soils within the City, some areas require greater protection, as they are at risk of permeating water rapidly and/or with minimal treatment, thereby polluting groundwater. There have been no specific aquifers identified in the City; however, to protect the City's drinking water, the City has categorized all areas that the Washington State Department of Health designates as Type A and B wellhead protection areas as a high risk of contamination. Due to high soil permeability, the remaining areas in the City are categorized as a moderate risk for contamination.

2.6.3 Geologically Hazardous Areas

Geologically hazardous areas are defined in CEMC 18.01.020 as "an area that is not suited to commercial, residential, or industrial development because of its susceptibility to erosion, sliding, earthquakes, or other geological events hazardous to public health or safety."

The northern portion of the City and most of its UGA north of the City limits can be categorized as geologically hazardous. The soil within the City and UGA also could experience liquefaction, which could result in a landslide if an earthquake were to occur. However, no previous landslides have been identified within the City limits or UGA. Also, due to the City's coal mining past, hazardous gases and chemicals could be transmitted into the air and water near any decommissioned mines in the vicinity. There is also a risk of mine infrastructure collapse during a potential earthquake or other geologic hazard event.

For these reasons, the hazardous areas within the City are not desirable for development.

2.7 DRAINAGE AREA DELINEATION

The City's stormwater system is divided into two drainage basins, which collectively cover an area of approximately 500 acres. One basin discharges to Crystal Creek and the other to Town Ditch, which drains to the Hanson Ponds adjacent to the Yakima River. The drainage areas and flows upstream were accounted for in the modeling of peak flow rates for sizing Capital Improvement Projects, as discussed in more detail in CHAPTER 5. Table 2-2 summarizes the individual drainage areas and their predominant land use and soil types based on City zoning and USDA National Resource Conservation Service mapping. Appendix A provides a drainage area map showing subbasin areas.

TABLE 2-2 DRAINAGE AREA SUMMARY

Drainage Area	Size (acres)	Predominant Land Use	Predominant Hydrologic Soil Group and Soil Series [1]
Crystal Creek	150	Residential	Soil Group B Series: Roslyn ashy sandy loam
Town Ditch	350	Residential and Commercial	Soil Group C Series: Patnish-Mippon-Myzel complex
Total	500		

1. Soil information based on National Resource Conservation Service (NRCS) for Kittitas County.

More information describing the basins is described in CHAPTER 4.

CHAPTER 3

Design Standards

CHAPTER 3 – DESIGN STANDARDS

3.1 INTRODUCTION

This section provides an overview of the design standards and practices the City has incorporated regarding the construction and maintenance of stormwater infrastructure. This section is organized as follows:

- **Section 3.2 – Existing Stormwater Standards**. Reviews the City standards that regulate and guide the development and management of stormwater runoff.
- **Section 3.3 – Submittal, Permitting, Construction, and Inspection Procedures**. Provides an overview of the steps required for design and installation of stormwater infrastructure, including review and inspection during and after construction.

3.2 EXISTING STORMWATER STANDARDS

This section reviews important codes, ordinances, standards, and rules that affect stormwater management.

3.2.1 City Stormwater Codes and Ordinances

The 2024 City of Cle Elum Construction Standards for the Private Construction of Public Facilities (City Standards) were adopted by the City as stated in the Cle Elum Municipal Code section 15.08.010. These standards contain guidance for stormwater management and design in Chapter 6 of the City Standards and apply to all design and construction within the City. Supplementing Ecology's Stormwater Management Manual for Eastern Washington (SWMMEW), City Standards state that design should be based on a minimum 25-year design storm. The City Standards also state that all stormwater runoff on all new lots and developments shall remain on site and no runoff from private property will be permitted to enter the public storm system.

3.2.2 Underground Injection Control (UIC)

As required by the US Environmental Protection Agency (EPA), the State has developed an Underground Injection Control (UIC) Rule and program that is administered by the Department of Ecology. The purpose of the program is to protect groundwater quality by regulating the use of UIC wells, which dispose of water underground.

A UIC well is defined as a "structure built to discharge fluids from the ground surface into the subsurface; a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or a dug hole whose depth is greater than the largest surface dimension; or an improved sinkhole, which is a natural crevice that has been modified; or a subsurface fluid distribution system that includes an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluid below the surface of the ground. Examples of UIC wells or surface infiltration systems include drywells, drain fields, infiltration trenches with perforated pipe, storm chamber systems with the intent to infiltrate, French drains, bioretention systems intended to infiltrate with perforated pipe installed below the treatment soil, and other similar devices that discharge to the ground." (Ecology, 2024). Surface infiltration facilities and infiltration trenches lacking a perforated pipe or similar mechanism are not considered a UIC well.

The two main requirements of the UIC Program are to (1) register UIC wells with Ecology, and (2) to ensure that groundwater quality is protected from pollutants that may be introduced through a manmade fluid distribution system. Registration can be completed through an online form available on the Ecology website. A well assessment is required for all UIC wells built and in use before February 2, 2006, and used to manage stormwater. Wells constructed after this date must be built to the current UIC Program rule, Chapter 173-218-WAC UIC Program, and the current stormwater management manual for the location of the well.

UIC wells typically require a form of pre-treatment before infiltrating stormwater runoff. The level of treatment is based on the pollutant loading of stormwater influent (which depends on the land use of the contributing basin) and the treatment capacity of the vadose zone of soil around the UIC well. If the contributing basin is prone to spills, such as high vehicle traffic areas, a spill control device (e.g., turn down elbow, tee section, etc.) is required upstream of the UIC well. Depending on treatment requirements, pretreatment may be accomplished through BMPs like swales, bio-infiltration, oil/water separators, catch basin inserts, and media filters. See the guidelines provided in the SWMMEW (Ecology, 2024). Furthermore, coordination with Ecology's UIC program will provide the most up-to-date information and guidance.

3.2.3 NPDES Construction Stormwater General Permit

The Construction Stormwater General Permit (CSWGP), administered by Ecology, applies to construction sites disturbing one acre or more and discharging stormwater to a water of the State (either directly or through a stormwater system) or for any size of construction project that has been determined by Ecology to pose a significant risk of degrading water quality. Section 3.3 provides further discussion on the City's implementation of the CSWGP.

3.2.4 Endangered Species Act

The Endangered Species Act (ESA) is a federal law with the purpose of protecting critically threatened fauna and flora. The law includes requirements that prevent endangered species from being killed or harmed. Criteria relating to ESA must be met to be eligible for coverage under the CSWGP or the 2008 Multi Sector General Permit (EPA 2015).

3.2.5 Water Quality Assessments and 303(d) List

The 303(d) list comprises State waters that have been polluted and have been impaired for beneficial uses such as drinking, recreation, aquatic habitat, and industrial use. Special requirements and restrictions, such as total maximum daily loads (TMDLs), take effect if discharging to a 303(d) water body. The reaches of the Yakima rivers in the vicinity of the City are not on the 303(d) list, and therefore, the City currently does not have any TMDL or other 303(d) restrictions. Upriver from Cle Elum, between the small, unincorporated community of Nelson and Bullfrog Road, is a section that is listed for temperature.

3.2.6 Existing City Design Standards

All stormwater conveyance, on-site management, flow control, and treatment facilities must be designed in accordance with the latest edition of the City Standards, and consider water quality and quantity control measures as stated in the latest edition of the SWMMEW.

A summary of key stormwater design requirements in the current City Standards includes:

- All stormwater systems shall be designed following the core elements defined in the SWMMEW.
- All storm drainage facilities, public or private, shall be designed by a Civil Engineer currently licensed in the State of Washington.
- Hydrological analysis and design of conveyance systems must be designed as described in the SWMMEW using 25-year storms of both short and long duration using the Region 1 hydrographs.
- Volume-based treatment BMPs are to be sized the same, whether upstream or downstream of detention volume. The volume of runoff predicted for the proposed development condition is to be calculated using the 24-hour SCS Type 1A storm with a 6-month return frequency and must be capable of passing the 25-year short-duration storm either through or around the BMP, without damaging the BMP or dislodging pollutants from within it.
- Flow-rate-based treatment BMPs are sized differently depending on whether they are located upstream or downstream of detention volume. If located upstream or without detention, the runoff flow rate is to be calculated using the 3-hour short-duration storm with a 6-month return frequency. If the BMP is located downstream of a detention facility, it is to be sized for a full 2-year release from the detention facility.
- Precipitation event information is as follows:
    - 6-month, 3-hour storm event: 0.44 inches
    - 6-month, 24-hour storm event: 1.22 inches
    - 2-year, 24-hour storm event: 1.74 inches
    - 10-year, 24-hour storm event: 2.90 inches
    - 25-year, 3-hour storm event: 1.11 inches
    - 25-year, 3-hour storm event: 3.48 inches
    - 50-year, 24-hour storm event: 4.06 inches
    - 100-Year, 24-hour storm event: 4.64 inches
- The Santa Barbara Urban Hydrograph (SBUH) method may be used for all analyses regardless of the size of the drainage area. Input parameters shall be as described by Ecology or WSDOT for the design storms described above. Other computer models may also be used with prior approval by the City.
- Stormwater inlet spacing shall not exceed 300 feet.
- A manhole or Type 2 catch basin shall be installed at the intersection of two or more collector sewers.
- All public stormwater pipes or culverts must be a minimum of 12 inches in diameter. Pipes shall have a minimum slope of 0.5% and be designed with a minimum velocity of 2 ft/s.

3.3 SUBMITTAL, PERMITTING, CONSTRUCTION, AND INSPECTION PROCEDURES

Construction sites must adhere to City and State submittal, permitting, construction, and inspection procedures. Stormwater calculations and designs submitted to the City to obtain a building permit must be stamped by a Civil Engineer currently licensed in the State of Washington.

Some construction sites may be required to obtain a Construction Stormwater General Permit (CSWGP) through Ecology. The current CSWGP became effective in 2021 and expires at the end of 2025. A new CSWPG will be issued at the start of 2026, which all current CSWPG holders must reapply for.

A CSWGP requires the contractor to do the following:

1. Apply for coverage by submitting a Notice of Intent (NOI) to Ecology.
2. Develop and use a Stormwater Pollution Prevention Plan (SWPPP).
3. Monitor stormwater discharges and inspect BMPs installed as part of the SWPPP by a certified erosion and sediment control lead (CESCL).
4. Submit a monthly discharge monitoring report (DMR) to Ecology.
5. Submit a Notice of Termination (NOT) to Ecology when soils are stabilized on site, and all temporary BMPs have been decommissioned.

The City also requires preparation of Erosion and Sedimentation Control (ESC) plans, Stormwater Site Plan, and SWPPP as outlined in Ecology's SWMMEW and City Standards.

Post-Construction structural BMPs are inspected by the City at least once every five (5) years or as necessary.

CHAPTER 4

Existing Stormwater System

CHAPTER 4 – EXISTING STORMWATER SYSTEM

This section is organized as follows:

- **Section 4.1 – Stormwater Utility**. Describes the City organization responsible for maintaining, operating, and preserving public stormwater infrastructure.
- **Section 4.2 – General Drainage Patterns**. Summarizes general drainage patterns that underlie the routing of stormwater runoff throughout the service area.
- **Section 4.3 – Existing Stormwater Management Facilities**. Provides an overview of existing collection and conveyance facilities, pumps, drywells, regional detention/water quality facilities, and regional outfalls.
- **Section 4.4 – Documented Drainage Problems**. Summarizes existing drainage problems based on known flooding issues and staff reports of frequent maintenance needs.
- **Section 4.5 – Low Impact Development**. Provides an overview of existing Low Impact Development (LID) infrastructure and discusses recommendations to develop LID standards and standard details, and the use of LID more routinely in public infrastructure projects.

4.1 STORMWATER UTILITY

The City Public Works Department primarily oversees the maintenance, operation, and preservation of the stormwater system within city limits. City crews also oversee the operation and maintenance of public streets and all street sweeping services where much of the system is located. All City crews and equipment are based out of the City shop.

Currently, the Public Works Department does not have a dedicated division or staff responsible for stormwater system maintenance. Additionally, no ordinance or fee has been established to support stormwater system operations and maintenance or to fund dedicated staffing. At the time of publishing this Plan, the City is actively implementing an ordinance and fee to generate revenue for dedicated operations personnel for the stormwater system.

4.2 GENERAL DRAINAGE PATTERNS

Within the service area, much of the stormwater runoff infiltrates into the ground via drywells and land surface infiltration. However, during peak rainfall events when infiltration capacity has been exceeded, excess rainfall contributes to stormwater runoff collected and conveyed via the City’s drainage facilities to the Yakima River. Appendix A provides a drainage area map showing subbasin areas and their outfall locations.

4.3 EXISTING STORMWATER MANAGEMENT FACILITIES

This section provides an overview of the existing City stormwater management facilities, including collection and conveyance, UICs, regional detention and water quality facilities, and regional outfalls to surface receiving water bodies.

4.3.1 Collection and Conveyance

Table 4-1 and Table 4-2 summarize the existing stormwater collection system structures and conveyance facilities, respectively. Pipe material is comprised mainly of Polyvinyl chloride (PVC), concrete, corrugated metal, ductile iron, clay, and corrugated high-density polyethylene pipe (CPEP). Through video inspection, it was found that pipes of each material type are damaged or in poor condition (see Appendix G). Notably, concrete and clay are the two materials where existing pipe was noted as collapsing. Much of the main stormwater conveyance lines found in Second Street are constructed of clay or concrete, with portions of the clay line already noted in City GIS maps as collapsed. This is a large vein of the stormwater system that directs runoff flow from the north half of the City to the Town Ditch conveyance. A recent construction project was completed to replace the collapsed section of clay pipe found in Second Street from Stafford Avenue to Wright Avenue. Future projects are also planned in the Second Street corridor to reconnect catch basins from the 12-inch clay line to the 30-inch cement line to reduce loading on the clay line. Some concrete and clay pipe will remain within the Second Street main conveyance line after this project.

TABLE 4-1 EXISTING STORMWATER COLLECTION STRUCTURES

Owner	Type 1 Catch Basins	Manholes and Type 2 (Manhole) Catch Basins	Manholes with Oil Water Separator	Drywells
City	318	90	3	31
Private	13	1	0	0
Total	331	91	3	31

Table 4-2 tabulates the linear feet in the existing stormwater system, classified by pipe material and pipe diameter. Approximately 44,333 linear feet, or 8.4 miles of pipe, make up the stormwater conveyance network.

TABLE 4-2 EXISTING CONVEYANCE PIPES AND CULVERTS				
Pipe Material	**Size (inches)**	**Linear Feet (LF) Public**	**Linear Feet (LF) Private**	**Total Linear Feet Per Pipe Material**
PVC	24	505	8	6,883
	18	69	---	
	12	2,308	---	
	10	61	---	
	8	1,408	---	
	6	2,173	25	
	4	241	---	
	2	118	---	
CPEP	24	2,698	69	11,415
	18	1,369	---	
	16	391	---	
	12	6,468	310	
	8	299	---	
	6	190	---	
Corrugated Steel	36	408	---	4,886
	24	211	---	
	18	75	---	
	16	29	---	
	12	533	---	
	10	1,029	---	
	8	2,135	---	
	6	462	---	
	4	4	---	
Ductile Iron	24	63	---	1,550
	18	126	---	
	12	896	---	
	10	285	---	
	8	81	---	
	6	99	---	
Concrete	48	1,208	---	12,592
	36	934	---	
	30	3,185	---	
	24	4,169	---	
	21	272	---	
	16	85	---	
	12	425	---	
	10	36	---	
	8	1,802	---	
	6	476	---	
Concrete Box Culvert	48 x 48	425	---	425
Clay	12	6,447	---	6,582
	8	135	---	
			Total Linear Feet in System	44,333
Drainage Ditch	Varies	15,380	---	15,380
			Total Linear Feet in System with Drainage Ditches	59,713

As discussed in CHAPTER 3, the City Standards currently require conveyance facilities to be designed to convey 25-year storm events. City engineering standards prohibit the use of closed conveyances less than 12 inches in diameter. The City does not have records available to determine the age of all conveyance facilities; therefore, most stormwater infrastructure is assumed to have been constructed prior to the adoption of these standards.

4.3.2 Pumps

The City does not own or operate any stormwater pump stations currently. With the City generally sloping downhill to the southeast, the system has used gravity flows to convey stormwater to designated outfalls.

4.3.3 Underground Injection Control Facilities (UICs)

While the City uses several drywells and infiltration galleries to percolate stormwater into the ground, there are no current registered UICs in place that distribute surface stormwater below the groundwater level.

4.3.4 Regional Detention/Water Quality Facilities

The City's stormwater system includes the lower Hansen Ponds and two (2) dedicated swales. Detailed information on the sizes and configurations of these facilities is generally unavailable through City records. Treatment capabilities of the Hansen Ponds and the swales within the stormwater system are not a part of this study. Further evaluation of these locations will be necessary to determine if additional treatment within the stormwater system is required.

4.3.5 Regional Outfalls

Stormwater that does not infiltrate within the immediate surface or infiltrates through drywells is directed to regional outfalls. Stormwater throughout the City is routed to two regional outfalls prior to discharge to the Yakima River. These regional outfalls are listed below.

TABLE 4-3 REGIONAL OUTFALLS

Regional Outfall	Outfall Route and Depository Location
"Town Ditch"	Collects flow from First, Second, Third, and Fourth Streets east of Stafford Street. Town Ditch flows into the Hansen Ponds and is then discharged to the Yakima River.
"Crystal Creek"	Collects flow from Fifth and Sixth Streets, Flows south on the west side of Stafford Street, then deposits into the Yakima River.

4.4 DOCUMENTED DRAINAGE ISSUES

This section presents a brief summary of documented drainage issues based on information from City Public Works Department staff regarding known flooding areas and areas requiring frequent maintenance.

4.4.1 Areas Requiring Frequent Maintenance

There is currently no City record for known areas requiring frequent maintenance. Through records review and coordination with Public Works Department personnel, no significant areas of flooding or frequent maintenance issues have been identified.

4.4.2 Known Damaged Pipes or Structures

An inventory and video inspection study was conducted to supplement missing data and collect updated information on pipe conditions, materials, alignment, inverts, and system connections. (See Appendix G) This study utilized a vactor truck to jet-clean each pipe and remove debris. Following cleaning, a CCTV inspection truck was deployed to assess the pipe condition, alignment, and undocumented connections. The study was completed over a four-week period, identifying areas of damage and severe corrosion. These corroded and damaged areas lead to soil, rock, and other pollutants to infiltrate the system, contributing to additional drainage deficiencies.

4.5 LOW IMPACT DEVELOPMENT

While there are no clear LID areas laid out within the City, there are several goals and policies newly established that promote the implementation of LIDs. Cle Elum Policy CE-8.1 aims to reduce stormwater impacts from transportation and development through watershed planning, redevelopment projects, and low-impact development practices. Policy CE-7.1 also promotes the restoration of floodplains and connectivity to improve the resilience of streams and rivers and reduce flood risk.

The City will follow guidance for implementing LIDs outlined in the SWMMEW Appendix 3-D. In preserving or redeveloping natural hydrologic patterns and environments, the City maintains their surrounding ecosystems and environments, as well as increases the capacity for stormwater infiltration through the lowering of impervious areas.

CHAPTER 5

Stormwater Convenyance Model Analysis

CHAPTER 5 – STORMWATER CONVEYANCE MODEL ANALYSIS

5.1 INTRODUCTION

The City's hydrologic and hydraulic models were used to assess the stormwater system capacity for current and future condition flows, identify possible system deficiencies, and evaluate projects for inclusion in the Capital Improvement Plan (CIP). The remainder of this chapter is organized as follows:

- **Section 5.2 – Model Development**. Summarizes the model development for use in the Plan.
- **Section 5.3 – Model Analysis**. Documentation of the model analysis performed for the current and future build out land use conditions for multiple design storm events.
- **Section 5.4 – Results**. Summarizes the modeling results and system deficiencies.
- **Section 5.5 – Recommendations**. Recommends additional model updates and validation that should be completed prior to detailed design of CIP projects or future planning efforts.

5.2 MODEL DEVELOPMENT

After completing video inspection and general field inventory of the City's stormwater system, HLA developed a model reflecting the existing City stormwater infrastructure and parcels within city limits. Record drawings were utilized to supplement any additional information that could not be gathered from the inventory inspection or the City GIS. The main objective of the model was to identify or confirm system sizing deficiencies and assess CIP project needs (CHAPTER 6).

Model development considered the requirements of both Ecology's SWMMEW and the City Standards that were adopted as construction standards for the City.

Further detail regarding the components of model creation is found below.

5.2.1 Modeling Software

Software readily available and applicable for the development of the model was SewerGEMS Connect Edition, which also has the capability of integrating with ArcGIS and AutoCAD programs. This software runs both hydrologic and hydraulic equations, so calculations for rainfall runoff and conveyance through the storm system could be analyzed simultaneously in a single model run. The software offers several methodologies for calculating hydrological and hydraulic outcomes, many of which are listed in the SWMMEW and affirmed by City Standards.

5.2.2 Methodology

In further review of the SWMMEW, other modeling methods supported with local data could be approved by agencies or local jurisdictions for use (SMWWEW 4.2.1, 2024). As the software used can be operated in a fully dynamic mode, a dynamic method solver was used to give clearer details of the system loadings over time. The method solver selected, and approved by the City in October 2025, was the Environmental Protection Agency (EPA) Stormwater Management Model (SWMM) Explicit solver. The EPA SWMM solver version five (5) can be used for both short and long-term events, and for hydrologic processes and hydraulic modeling.

The hydraulic capabilities of this solver include routing runoff and external inflows through a drainage network, using a variety of closed and open conduit or channel shapes, simulating various flow conditions such as backwater, surcharging, reverse flow, or surface ponding, and running the simulation dynamically so each time-step can be viewed and analyzed individually. With the varied use of open channels or ditches and pipes within the City, and the desire to see how the existing City storm infrastructure operates, these capabilities proved sufficient.

5.2.2.1 Rainfall Runoff

The EPA SWMM runoff method was used to calculate rainfall runoff for each sub-basin. Sub-basins are fractions of the overall drainage area within the City, divided into one sub-basin per active inlet, so runoff calculations are more reflective of each sub-basin's individual imperviousness or slope. This EPA SWMM method accounts for several hydrological processes contributing to runoff across urban, agricultural, and rangeland settings, such as rainfall interception from depression storage, or infiltration of rainfall into unsaturated soils. A hydrograph is created by the solver for these sub-basins, and the runoff is routed into the next downstream inlet in a drainage system.

Upstream flows north of the City were accounted for to the best of the model abilities. One option for delineating sub-basins utilized digital elevation map (DEM) data. This data would allow the model to automatically delineate and slope sub-basin areas based on recorded geographical elevations. This would mean accurately accounting for upstream runoff and the areas that slope towards the City basins. As there was no ability to integrate DEM data in this model iteration, sub-basins were methodically increased in size following in-person observation of the slopes. By manual input, these increased sub-basin sizes accounted for additional upstream and uphill runoff. Section 5.5 addresses the recommendation to improve the model to include this data in the future and more accurately model runoff flows based on geographic data instead of observations.

One way the SWMM solver accounts for the rate of infiltration in these areas is by use of the Soil Conservation Service (SCS) Runoff Curve Number (CN). SCS CN's are empirical values that encapsulate a sub-basin's hydrologic response based on soil properties – ranging from well-draining soils to poorly draining soils – land use condition types such as grass, range, or imperviousness, and other hydrologic conditions. Tables 9-1, 9-2, and 9-5 in Part 630 of the National Engineering Handbook (NEH) (Natural Resources Conservation Service, 2009), and City land use denoted in the City GIS (Cle Elum, 2021) were both referenced when assessing CN values. The United States Department of Agriculture (USDA) Natural Resources Conservation Service Web Soil Survey was utilized for soil group identification.

5.2.3 Conveyance System Attribute Information

The model was created based on available City GIS data and existing record drawing information. While this information provided locations, much of the system lacked records of pipe material type and conditions, invert elevations of the pipes, structure surface elevations and invert elevations, and other miscellaneous information necessary to create the most complete model.

To gain missing information, a field inventory and video inspection were utilized to verify or update all pipe sizing, invert elevations, material, directions, and conditions, as well as verify or update structure conditions and locations. This inventory also analyzed the entire system's configuration and connections. All missing information was collected through this effort and noted in the City GIS. Similarly, existing information was verified and corrected in the City GIS if necessary. Some new pipes and structures (catch basins, manholes, or drywells) were also discovered during this inventory and included in the City GIS. All existing and new information was entered as nodes (structures) and links (pipes, culverts, or channels) into the model.

5.3 MODEL ANALYSIS

This section discusses a model run performed to compare existing conditions to a 10-Year Future, and a 2043 system buildout per requirements from Ecology. This section also discusses modeling the 2043 load conditions under different design scenarios (see 5.3.3) to alleviate any surcharging causing overflow of catch basins or manholes under these loads. Design scenarios allow pipes and structures of the model to be altered in size, slope, or configuration, to gain insight into what changes would relieve any pressurized pipe or over-full structure conditions.

5.3.1 Existing, Future, and 2043 Buildouts

Existing sites were modeled with no contributions or minor contributions to the stormwater runoff amount. This was dependent on two conditions; if a clear system connection was noted coming from the site or not, or if the majority of observed catch basin loading was flowing from an existing site or not. During the inventory and video inspection effort, seasonal rainstorms occurred, allowing for in-person observations of existing site runoff. Generally, residential sites had little to no runoff contributions whereas industrial or business sites with impervious lots had some runoff but significantly less than the public street. Because of this, existing sites were not modeled to contribute to the system unless they met the previously mentioned conditions. All public roads were still modeled with contributing runoff, where sub-basin limits reached adjacent property lines.

While it can be difficult to interpolate or accurately measure precipitation amounts a specified number of years into the future, estimating urban growth of a city can be done more effectively. As a city increases in size, so do public roads and thus stormwater conveyance systems. Cle Elum City Standards state that any new lots or developments must retain and dispose of precipitation on site (Cle Elum, 2024). Only new public streets or further development of City-owned roads have the potential of increasing loading to the current city system. All existing site and road contributions remained the same under each of these modeled buildout conditions.

With this consideration and for conservative analysis, hypothetical future loading (in the next ten years) is assumed to increase by ten percent, and by fifteen percent by 2043. Percentage amounts were determined based on existing infrastructure, and the projected future land use and urban growth area boundaries found in the City GIS.

5.3.2 Design Storms

Based on City Standards, the 25-year storm warranting the largest storm sewer facility size shall be the controlling storm (Cle Elum, 2024). Scenarios were modeled using the 25-year, 3-hour storm, and the 25-year, 24-hour storm. Both storms have been adjusted from the SWMMEW in the City construction standards to a total precipitation amount of 1.11 inches, and 3.48 inches respectively, to consider the climate and rainfall records.

Tabulated hyetograph data for short- and long-duration storms was taken from the SWMMEW and adjusted accordingly for Cle Elum's construction standard requirements. The adjusted tabulated data was then entered into the modeling software's storm database to be used in rainfall and runoff calculations.

5.3.3 Scenarios

This section describes the modeling scenarios used to evaluate the stormwater system. The existing system and two future conditions (10-year future and 2043 estimated buildouts) were each examined using the long- and short-duration storm conditions. Different pipe configurations were examined under a "design" scenario, to reduce surcharging and overflow conditions underestimated 2043 buildout conditions experiencing a 25-year short-duration storm. A design scenario alters the physical properties of a pipe or structure from existing properties. These scenarios are detailed in Table 5-1.

TABLE 5-1 MODEL SCENARIOS AND ASSOCIATED CONDITIONS		
Model Scenarios	**Storm Event**	**Existing, Future, or 2043 Buildout Loading**
25-Year, 24-Hour Long duration Storm	25-Year, 24-Hour	Existing
10-Year Future Buildout – Long duration Storm	25-Year, 24-Hour	10-Year Future
2043 Buildout – Long duration Storm	25-Year, 24-Hour	2043
Design - 2043 Buildout – Long duration Storm	25-Year, 24-Hour	2043
25-Year, 3-Hour Short duration Storm	25-Year, 3-Hour	Existing
10-Year Future Buildout – Short duration Storm	25-Year, 3-Hour	10-Year Future
2043 Buildout – Short duration Storm	25-Year, 3-Hour	2043
Design - 2043 Buildout – Short duration Storm	25-Year, 3-Hour	2043

5.3.3.1 Analysis 1 - Existing, 10-Year Future, and 2043 Buildout Comparison

A comparison of model scenarios representing existing, future, and 2043 flow estimates was made to analyze varied loadings of the City stormwater infrastructure. This comparison denoted key differences in loading and resulting surcharge or overflow conditions between scenarios. This information helped prioritize projects later listed in CHAPTER 6.

As previously mentioned, both regional long- and short-duration storm data (adjusted for City design storm requirements) were entered into the model's rain data library for use. As City Standards state, the storm warranting the largest facility size controls design aspects. A prior model run of both short- (3-hour) and long-duration (24-hour) design storms on existing infrastructure was performed to determine the controlling design storm. It was found that the short-duration storm, while significantly less in volume and duration, surcharged more pipes and overflowed more structures in the existing, future, and 2043 buildouts, warranting larger facility increases. This is largely due to the intensity (0.37 inches/hour) of the short-duration storm being greater than that of the long-duration storm (0.145 inches/hour). Because of this, the short-duration storm was selected as the controlling storm for design.

The existing, 10-year future, and 2043 buildouts were then computed as a batch under short-duration storm loading. The rainfall runoff inflow computed runoff values of 2.45 million gallons (MG), 2.71 MG, and 2.85 MG respectively. With this loading variance, approximately 224 links (pipes, culverts, or channels) returned as surcharged at some point in the simulation.

Another key difference in flow data between scenarios is the outflow from the Second Street 30-inch concrete main line to the Town Ditch conveyance. The main storm line located on Second Street collects runoff from Second Street itself, as well as all adjacent side streets from Billings Avenue to Columbia Avenue. Additionally, currently planned construction projects aim to improve the eastern half of the Second Street corridor, increasing the number of catch basins along the road distributing into the 30-inch concrete line. This planned development makes the line a good representation of increased flows between scenarios. For existing, future, and 2043 scenarios, the model estimates maximum outflow from the 30-inch line to Town Ditch during peak storm as 9.0 cubic feet per second (cfs). 11.83 cfs, and 12.07 cfs respectively. These flows were observed in the last pipe on the east end of the main line, just before depositing into the Town Ditch conveyance, providing a cumulative flow rate at peak storm runoff for comparison.

5.3.3.2 Analysis 2 - 2043 Design

Another model computation was performed to compare projected 2043 flows through the existing system, and through a proposed design infrastructure that alleviates the structure overflow conditions. The purpose of comparing these analyses and design scenarios is to identify and develop CIP projects that will improve the capability and capacity of the existing stormwater system in preparation for future 2043 loads.

With the use of the EPA SWMM solver in the software, the model cannot automatically design or upsize system links unless the model components are duplicated and edited to work with a separate, static loading, in-software solver. This is addressed later in the recommendations (Section 5.5). For this analysis, however, the model's surcharged or overflowing areas and potential design solutions were manually reviewed and entered. Profiles were created within the model software to view energy and hydraulic grade lines for each area of concern.

After adjusting the design and model computation that resolved many of the surcharge pipe or overflow conditions in structures, a comparison table was generated to tabulate and highlight differences within the model from existing infrastructure to the design scenario. These tables can be found in Appendix B. The completed design scenario guided the development of projects detailed further in CHAPTER 6.

5.4 RESULTS

Analysis of the model to determine areas of concern and CIP projects considered overflow and flooding of structures rather than surcharging of pipe as stated in City Standards. This is because most of the City's stormwater system was installed before the Standards were in effect and therefore did not have the same requirements. To be conservative, design also considered any structures with less than one (1) foot of freeboard at any point in the simulation as an area of concern.

Structures are considered flooded when the modeled water surface elevation is above the rim elevation. Similarly, open channels are considered flooded when the modeled water surface elevation is above the set ground elevation for reporting flooding. With model computation, under 2043 short duration storm conditions, 164 structures were overflowing or had less than one (1) foot of freeboard at some point during the simulated storm.

Some structures that were exempt from the one-foot freeboard constraint exist in catch basins with limiting physical dimensions of one to one and a half feet wide, long, and deep. As the adjacent pipe would have to be extremely large to keep water levels in these small catch basins under the freeboard consideration constraint, these catch basins and adjacent pipes were only altered if water levels exceeded the rim of the catch basin.

Through model design and analysis, 50 pipes and 15 structures required altering to alleviate flooding or overflow conditions of structures. These changes do not include areas where there are known plans for improvement, or all pipes identified as broken or damaged. However, the changes from design as well as any broken and damaged pipe, or known future projects, have been grouped and included into CIP project identification, which was conducted in coordination with City staff (see CHAPTER 6).

An example of a future project that was not included in the design analysis but included in the CIP is the area of Railroad Street from Pennsylvania Avenue to Peoh Avenue. This area contains a significant amount of damaged or dilapidated pipes, however, the entirety of the pipeline in this area is planned to be replaced with several underground stormwater infiltration pipe systems. Because the entirety of this area is going to be altered from the original configuration to another, redesigning the existing pipe size or elevations was unnecessary.

5.5 RECOMMENDATIONS

The following recommendations are provided to enhance model development and detailed CIP project planning or design use beyond the scope of this Plan:

- Implement United States Geological Survey (USGS) Digital Elevation Model (DEM) data for the area scope, which would allow for the software to more accurately delineate sub-basin areas and runoff routes based on existing topography.

- Prior to taking definitive action to address predicted flooding or predicted surcharged pipe conditions, refine the affected portions of the model and implement a downstream analysis to develop detailed information for sizing facilities and better understand how solving an upstream problem may affect the downstream portions of the system.

- As new projects or land use actions arise, update the model with all known future public street developments that may affect the loading of the public stormwater system, to ensure accurate future loading and locations of additional inflow in the future.

- If the City desires the model to automatically design or upsize system components based on given constraints, a copy of the model should be created and all components converted from the dynamic EPA SWMM solver to a static solver within the software, as the model will not automatically design links or nodes using a dynamic solver.

CHAPTER 6

Capital Improvement Plan

CHAPTER 6 – CAPITAL IMPROVEMENT PLAN

6.1 INTRODUCTION

This section describes the development of recommended CIP projects to address existing and future stormwater infrastructure needs throughout the service area. As identified in CHAPTER 5, the City has undertaken a systemwide review of existing stormwater infrastructure and identified projects to repair damaged infrastructure, which represents the majority of the projects within the CIP. Systemwide hydraulic modeling efforts have also identified portions of the stormwater system that are undersized for meeting 25-year storms. These undersized components will be replaced with properly-sized infrastructure when these pipes are included in future capital projects.

The projects identified herein are shown in Figure 6-1 and 6-2. Cost estimates for each project are included in Appendix C.

6.2 PROJECTS TO REPLACE DAMAGED INFRASTRUCTURE

The City has identified 28 locations where pipe sections require replacement due to corrosion, physical damage to the pipe, and/or pipe collapse. In some locations, new catch basins or sidewalk replacement will be required to adequately connect the new pipe to the stormwater system. Table 6-1 summarizes the costs for each project (in 2025 dollars). Figure 6-1 and Figure 6-2 both visually denote the project areas within the City system.

TABLE 6-1 PIPE REPLACEMENT CAPITAL IMPROVEMENT SUMMARY				
Project Name	**Pipe Length (ft)**	**Structure Replacement**	**Sidewalk/Curb Replacement**	**Conceptual Project Cost**
Schedule A: GIS Structure ID (148E, 149SW, 290E)	595	No	No	$273,000
Schedule B: GIS Structure ID (518E, 435E, 434E, 436S)	155	No	No	$159,000
Schedule C: GIS Structure ID (304NE, 517S, 432N, 633E, 625E New)	540	No	Yes	$293,000
Schedule D: GIS Structure ID (499S, 499W, 275N, 644N, 287S)	470	Yes	Yes	$232,000
Schedule E: GIS Structure ID (167S, 431W, 308W)	850	Yes	No	$324,000
Schedule F: GIS Structure ID (371W, CB-523, 371N, CB-658, 169W)	230	Yes	Yes	$169,000
Schedule G: GIS Structure ID (176W, 286S, 668N, 652E, 654E, 175S, 500N, 173S)	1,600	No	No	$840,000
Schedule H: GIS Structure ID (178E, 182W, 519W, 659S, 519S, 661W, CB-661, 662W, 655N, 281W, 281E, 282W)	2,500	No	No	$930,000
Schedule I: GIS Structure ID (669N, 670N, CB-676, CB-671, 676E, 671N, 206S, 673S, 206E)	1,220	Yes	No	$393,000
Schedule J: GIS Structure ID (353N, 205S, 285 SW)	590	No	No	$247,000
Schedule K: Railroad Infiltration	2,060	Yes	Yes	$1,640,000
Total	**10,810**	**---**	**---**	**$5,500,000**

Figure 6-1

CITY OF CLE ELUM
Proposed Capital Improvements Exhibit

LEGEND

- OUTSIDE CITY LIMITS

STORM LINES

- PIPE TO TOWN DITCH
- OPEN DITCH TO TOWN DITCH
- PIPE TO CRYSTAL CREEK
- OPEN DITCH TO CRYSTAL CREEK
- PRIVATE
- INFILTRATION
- BROKEN PIPE
- ABC See Table 6-1

0 350 700 Feet

N

Figure 6-2

CITY OF CLE ELUM
Proposed Capital Improvements Exhibit

LEGEND

OUTSIDE CITY LIMITS

STORM LINES

PIPE TO TOWN DITCH

OPEN DITCH TO TOWN DITCH

PIPE TO CRYSTAL CREEK

OPEN DITCH TO CRYSTAL CREEK

PRIVATE

INFILTRATION

BROKEN PIPE

PIPE SEGMENT INDICATOR

ABC See Table 6-1

0 350 700 Feet

N

6.3 CAPITAL IMPROVEMENT PLAN

As shown in Table 6-1, infrastructure requiring replacement has been organized into 11 schedules (A through K), based on proximity of damaged pipes to one another, and proximity to shared intersections. Undersized pipes found through the model software (see CHAPTER 5) were also accounted for and added to the nearest schedule.

Through coordination with City staff, the schedules were prioritized. The organization effort considered the quantity and severity of damaged pipes or structures, the volume of runoff and conveyance through the area, and hindrance to the public if the area were to overflow. Based on these criteria, the City prioritized the proposed schedules as found in Table 6-2.

Table 6-2 lists capital improvement projects (CIP) identified by the City during the development of this planning effort. The projects have been prioritized for completion; however, the City anticipates that the actual order in which they will be completed could change as funding becomes available and ongoing maintenance activities dictate a change in the City's priorities. When feasible, the City will complete stormwater projects concurrently with road and utility projects to minimize costs associated with surface restoration and mobilization. Projects may also be combined to reduce the total number of construction contracts that the City will need to manage and efficiently address its project needs.

TABLE 6-2 CAPITAL IMPROVEMENT PLAN PRIORITIZATION LIST

CIP Project Number	Project Name	Conceptual Project Cost
1	Schedule G	**$840,000**
2	Schedule E	**$324,000**
3	Schedule D	**$232,000**
4	Schedule H	**$930,000**
5	Schedule J	**$247,000**
6	Schedule F	**$169,000**
7	Schedule K	**$1,640,000**
8	Schedule C	**$293,000**
9	Schedule B	**$159,000**
10	Schedule A	**$273,000**
11	Schedule I	**$393,000**

CHAPTER 7

Financial Plan

CHAPTER 7 – FINANCIAL PLAN

The City does not currently operate its stormwater system as a dedicated utility, and historical financial records are insufficient to fully quantify the cost of operating and maintaining the system within a utility framework. Establishing a formal Stormwater Utility is therefore necessary to ensure compliance with applicable regulatory requirements, provide transparency in the use of public funds, and implement a stable, equitable funding structure.

To support this effort, the City has completed a stormwater rate study as part of this Stormwater Management Plan, and that analysis is included in Appendix D. The rate analysis is grounded in cost-of-service principles consistent with Washington municipal utility best practices and applicable legal standards. Rates are designed to recover only the reasonable and necessary costs of providing stormwater services, including operations, maintenance, capital improvement, system rehabilitation and replacement, and associated administrative functions. No revenues generated by the utility are intended for unrelated governmental purposes.

The financial plan developed through the rate analysis evaluates the City's ability to meet identified capital improvement needs, fully fund operations and maintenance (O&M), satisfy any debt service obligations, and establish reserve levels necessary to ensure system reliability, regulatory compliance, and long-term financial stability. Reserve targets are established consistently with prudent utility practice to manage revenue variability, respond to emergency conditions, and minimize rate volatility over time.

The proposed rates and financial plan are based on documented system needs, regulatory drivers, and reasonable engineering and financial assumptions. They are structured to ensure a direct nexus between the rates charged and the services provided, and to equitably allocate costs among ratepayers in proportion to their demand on the public stormwater system. This approach is intended to maintain compliance with Washington legal standards distinguishing utility rates from taxes, including requirements for fairness, proportionality, and use of revenues solely for utility purposes.

In the near term, the financial plan assumes a consistent and programmatic implementation of capital projects. This approach reflects best practices for newly established utilities, providing expenditure predictability and allowing the City to develop an operating history while building adequate reserve capacity. As the utility matures, the City may pursue larger capital projects through competitive grant funding, low-interest loan programs, or debt financing, where such approaches are demonstrated to be cost-effective and in the best interest of ratepayers.

The need for external financing will be evaluated based on project scale, timing, and the availability of accumulated reserves. While the projects identified in Chapter 6 are generally smaller in scale, bundling projects to improve delivery efficiency and reduce administrative costs may increase overall project costs to a level where financing becomes appropriate. Any decision to utilize debt will be based on lifecycle cost analysis, intergenerational equity, and minimization of total cost to ratepayers.

The City will manage the Stormwater Utility in accordance with established Washington municipal utility practices, including maintaining transparent financial reporting, segregating utility funds, periodically updating rate studies, and ensuring that all expenditures are necessary, reasonable, and directly related to the provision of stormwater services. This approach ensures responsible stewardship of public resources and long-term sustainability of the stormwater system.

Recommended Stormwater Utility Rate Structure:

The City's stormwater utility rate is established to equitably recover the costs of operating, maintaining, and improving the public stormwater system, consistent with accepted municipal utility practices in Washington State. The rate structure is designed to equitably apportion costs based on each parcel's relative contribution to the stormwater system.

The stormwater utility base rate recommended in the rate analysis is summarized as follows:

- $10.00 per month per Equivalent Residential Unit (ERU)

Single-Family Residential

Single-family residential properties, including condominiums, are assigned ERUs based on total parcel size as a reasonable proxy for runoff contribution. This approach reflects industry-standard practice where parcel-level impervious data is not uniformly available.

- 10,000 square foot lots or smaller = 1.0 ERU
- 10,001 square foot lots to 20,000 square foot lots = 1.5 ERU
- 20,001 square foot lots or larger = 2.0 ERU

Non-Single-Family

Multifamily residential, commercial, industrial, public assembly, and governmental parcels are charged based on measured impervious areas, which directly correlates to stormwater runoff and system demand.

- An ERU is defined as 2,5000 ft^2 of calculated impervious area within a parcel.
- ERU calculation is to be rounded to the nearest tenth, and no utility account will be charged less than 1.0 ERU.

ERUs are calculated as follows:

- Impervious Area of 20,000 square feet or smaller equals Impervious Area / 2,500 SF = ERU's
- Impervious Area of 20,001 square feet to 50,000 SF equals Impervious Area*0.9 / 2,500 SF = ERU's
- Impervious Area of 50,001 square feet or larger equals Impervious Area*0.8 / 2,500 SF = ERU's

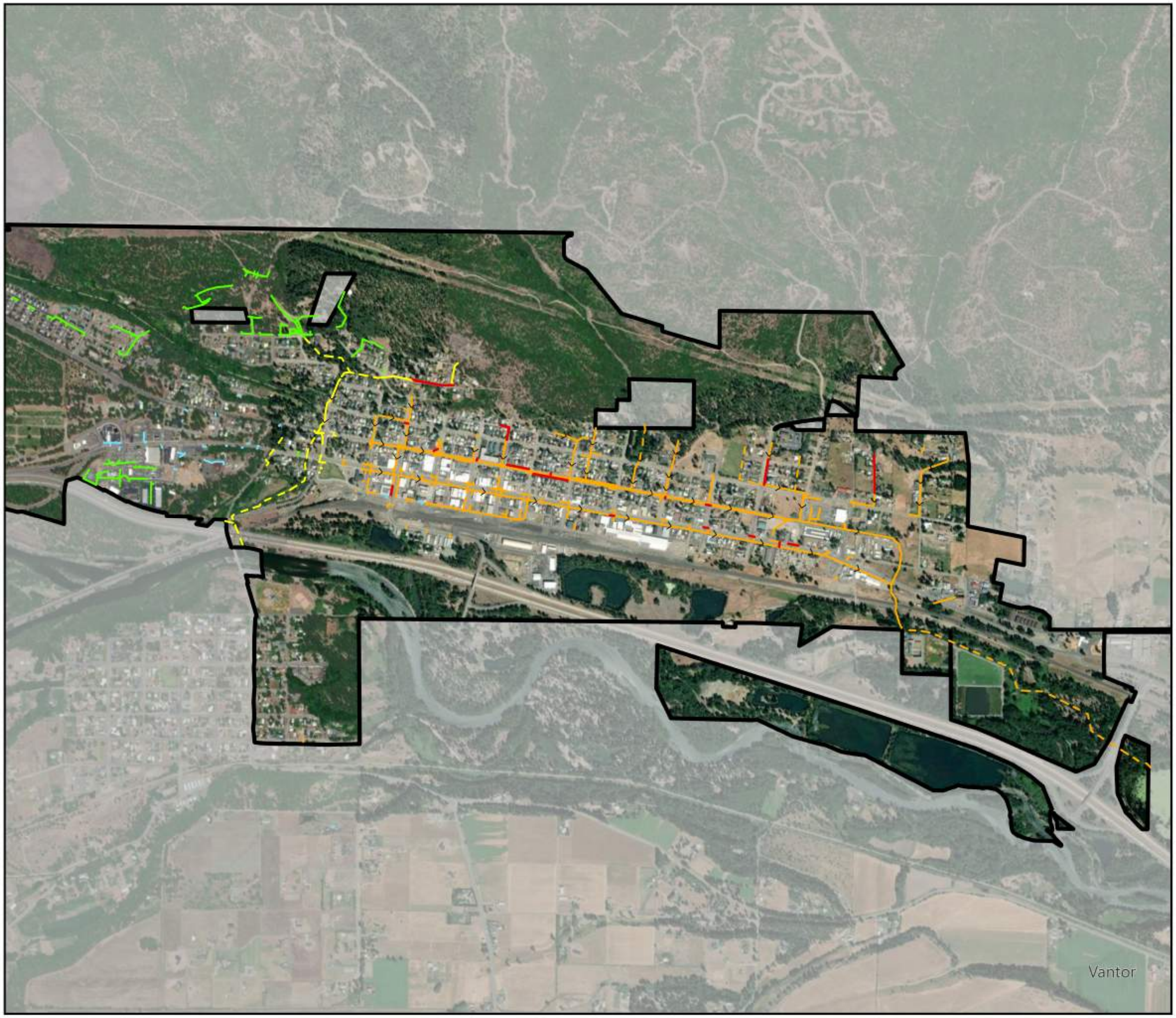
Appendix

CHAPTER 8 – APPENDIX

Appendix A

Stormwater Exhibits

CITY OF CLE ELUM
Stormwater Flow Exhibit



LEGEND

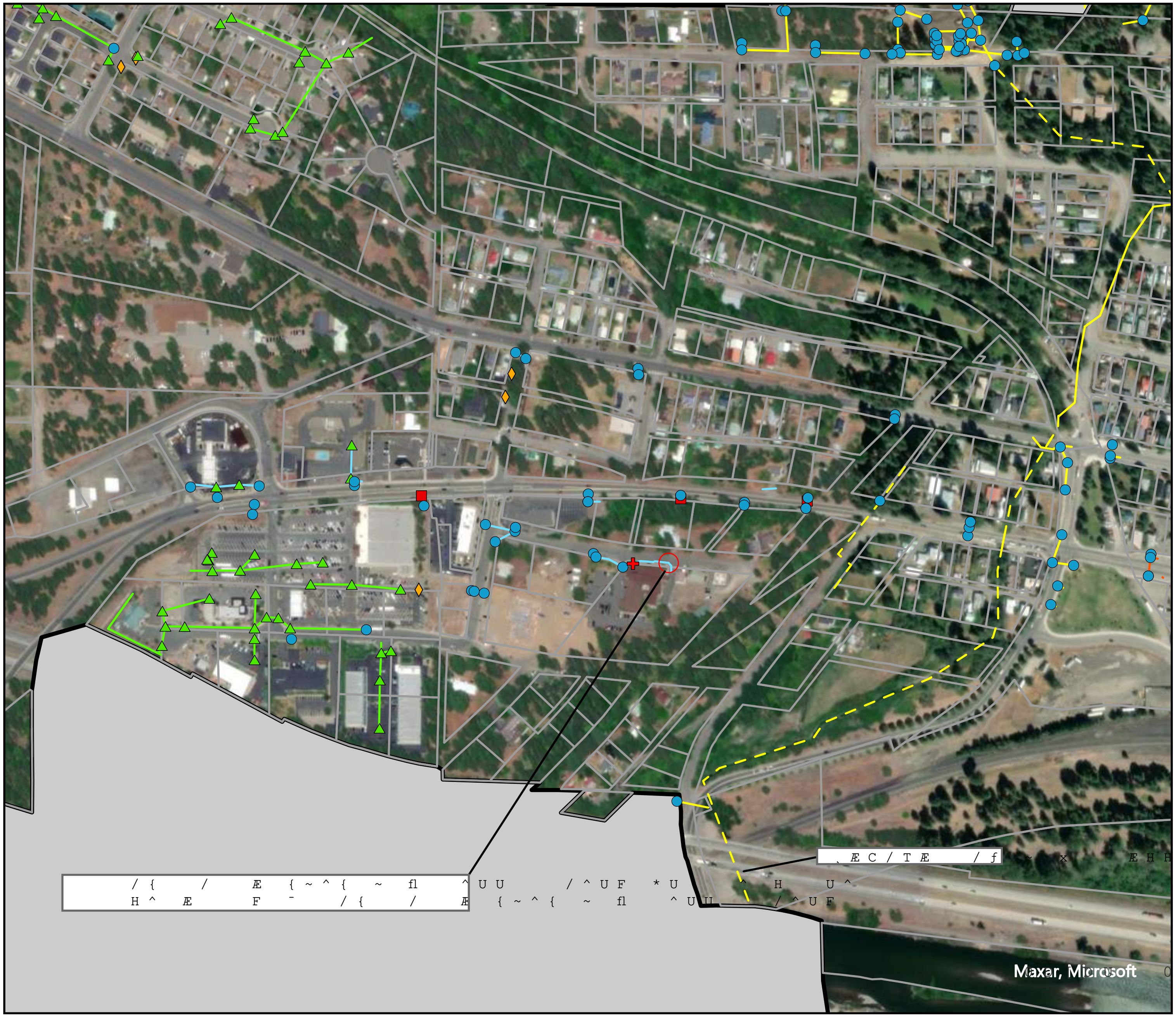
- OUTSIDE CITY LIMITS

STORM LINES

- PIPE TO TOWN DITCH
- OPEN DITCH TO TOWN DITCH
- PIPE TO CRYSTAL CREEK
- OPEN DITCH TO CRYSTAL CREEK
- PRIVATE
- INFILTRATION
- DAMAGED PIPE

0 1000 2000 Feet

N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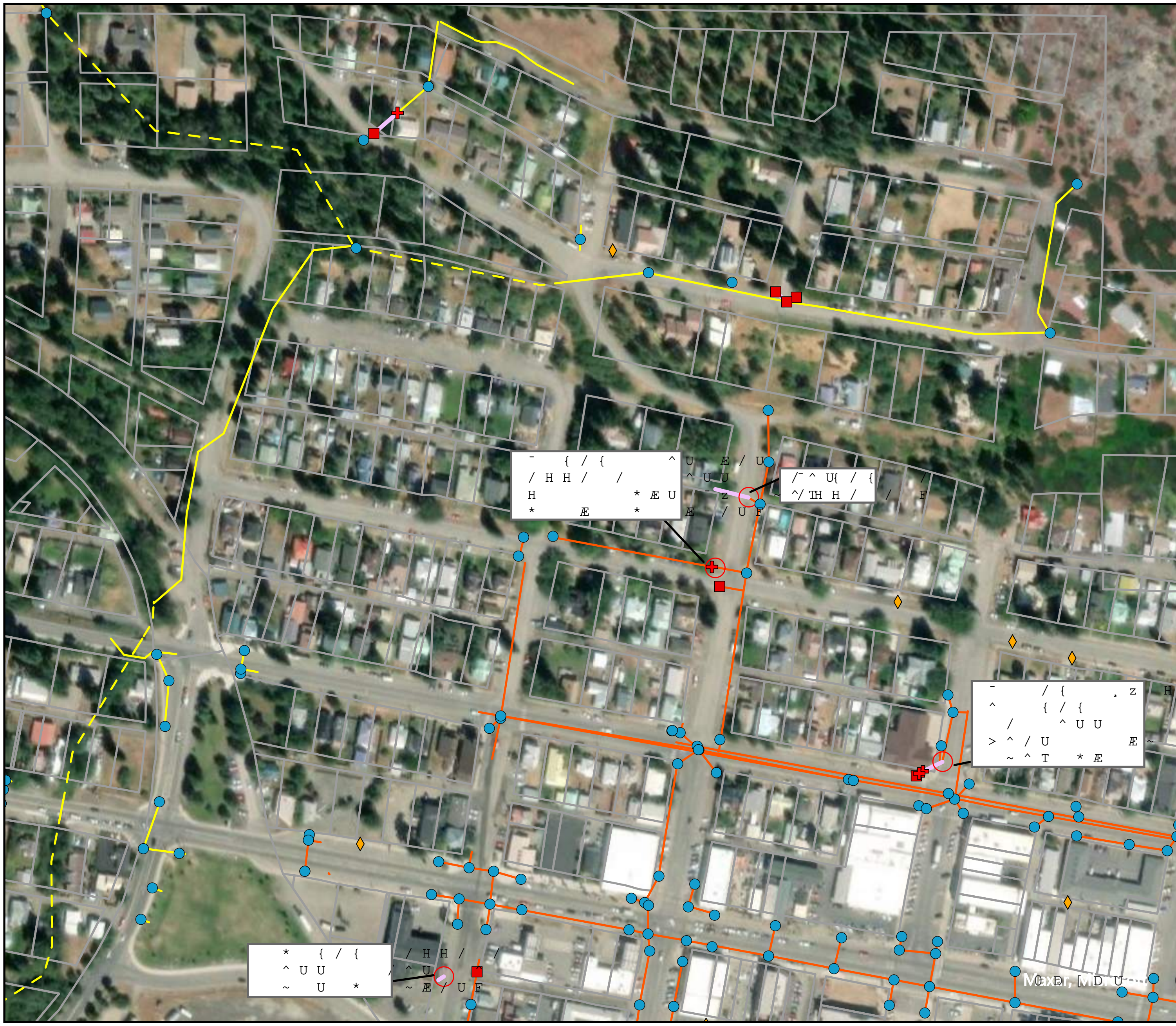

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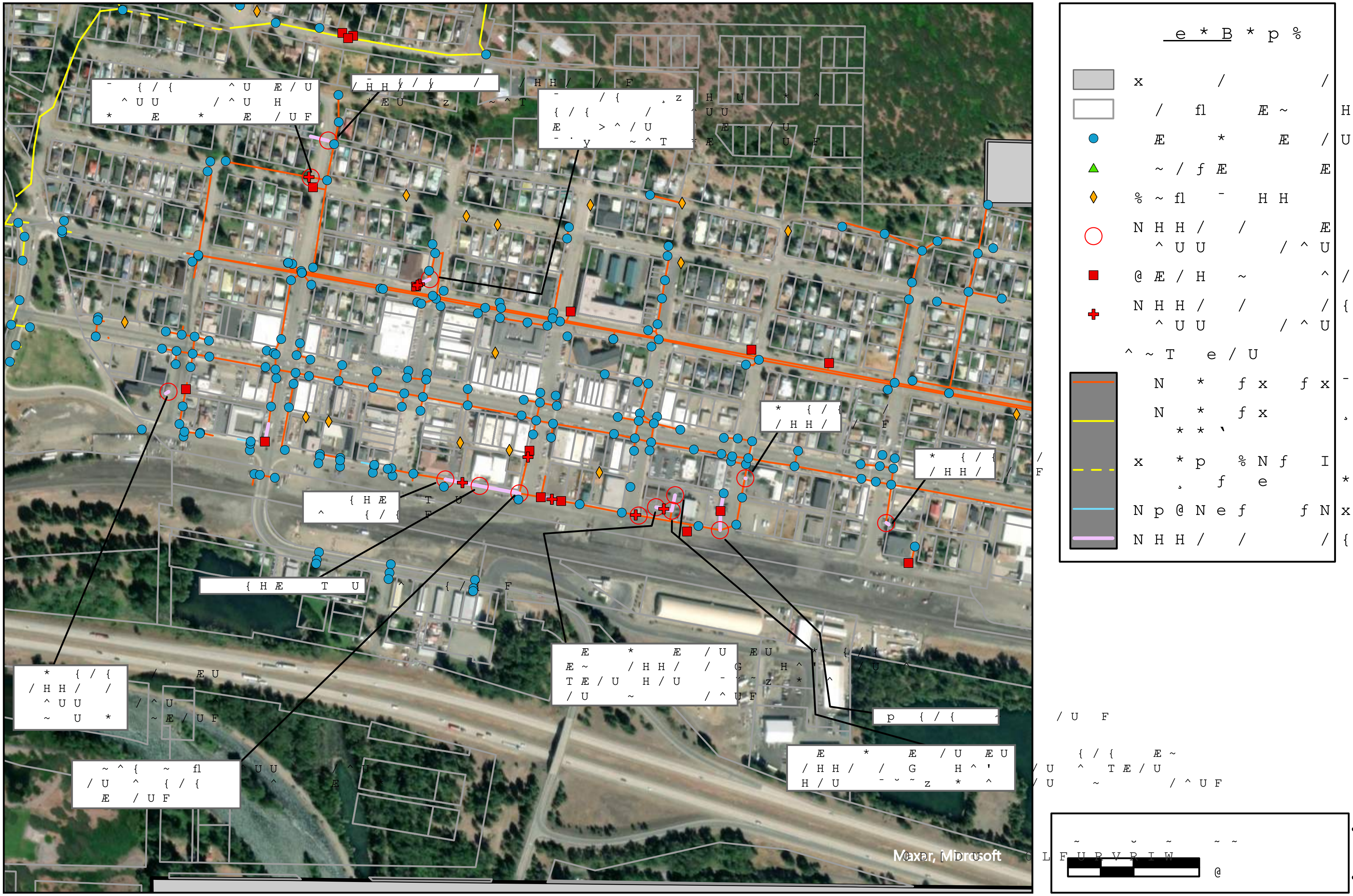

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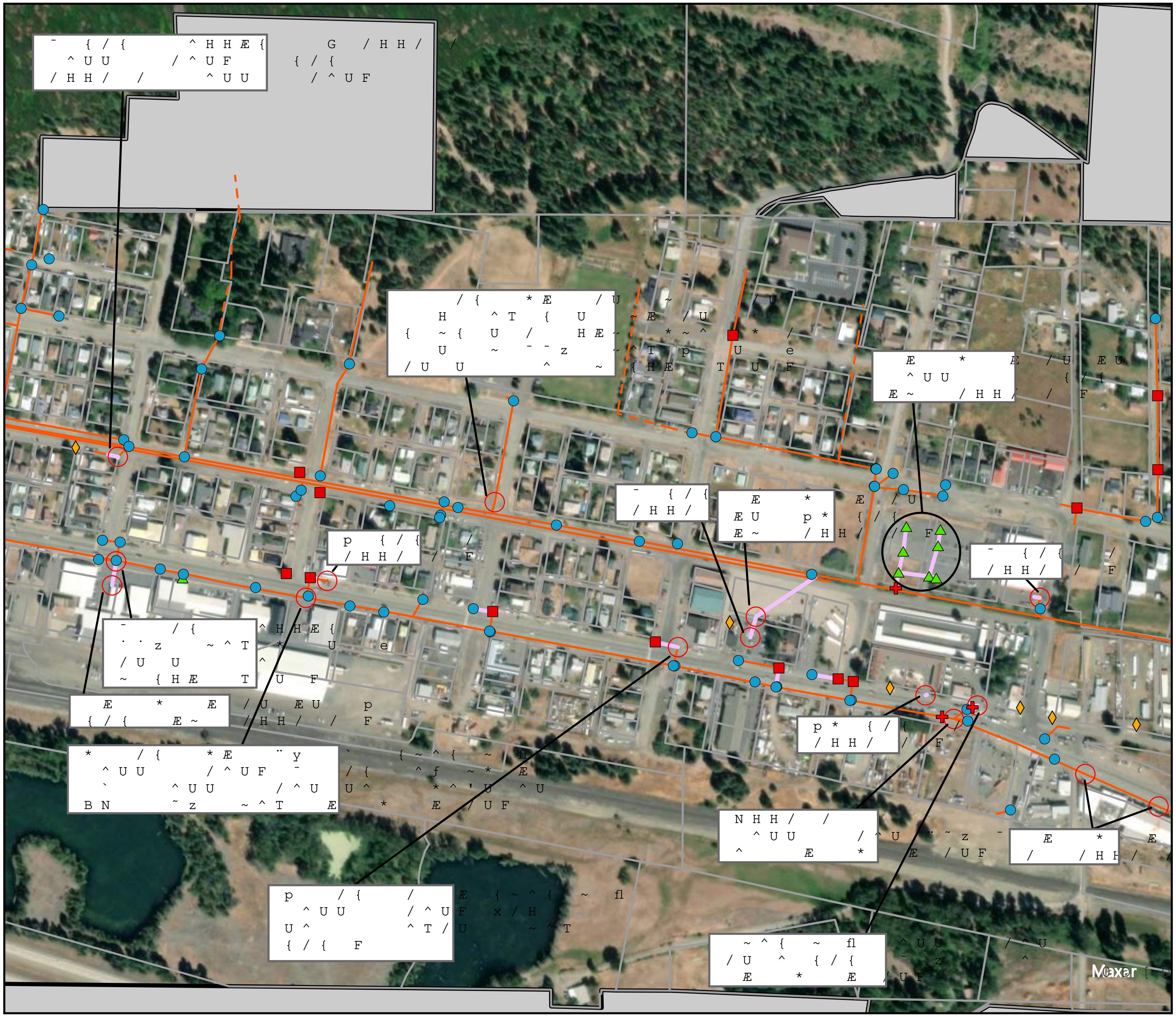
CITY of CLE ELUM WASHINGTON EST. 1902



Appendix B

Stormwater Modeling Output

SECTION 1

Model Sub-basin Inventory

Description:

This table denotes all sub-basins (labeled as catchments within the model software) used in modeling existing, 10-year future, and 2043 build out conditions. As described in section 5.2.2.1 of the report, the whole Cle Elum drainage basin was subdivided into fractional sub-basins so there is one modeled "sub-basin" per active system inlet. The table below lists each sub-basin, their calculated surface area, the maximum flow during the 3-hour storm period, and total volume runoff generated from each.

Stormwater Modeling Catchment Table

All Existing Catchments (10-year and 2043 buildout additions noted)

Storm Data: 25-year, Short Duration (3-Hour) Storm
Adjusted Total Precipitation for Cle Elum: 1.1 Inches

Catchment Label	Outflow Element	Runoff Method	Loss Method	SCS CN Number	Flow (Total Out) (cfs)	Notes	Scaled Area (acres)	Flow (Maximum) (cfs)	Volume (Total Runoff) (gal)
CM-1	CB-361	EPA-SWMM Runoff	SCS CN	98	0.00		0.560	0.00	0.0
CM-2	CB-90	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.00	0.0
CM-3	CB-89	EPA-SWMM Runoff	SCS CN	98	0.00		0.030	0.00	0.0
CM-4	CB-91	EPA-SWMM Runoff	SCS CN	98	0.00		0.066	0.16	1,998.9
CM-5	CB-96	EPA-SWMM Runoff	SCS CN	98	0.00		0.079	0.19	2,378.5
CM-6	CB-98	EPA-SWMM Runoff	SCS CN	98	0.00		0.063	0.15	1,893.9
CM-7	CB-87	EPA-SWMM Runoff	SCS CN	98	0.00		0.075	0.18	2,255.2
CM-8	CB-88	EPA-SWMM Runoff	SCS CN	98	0.00		0.108	0.00	0.0
CM-9	CB-86	EPA-SWMM Runoff	SCS CN	98	0.00		0.064	0.15	1,921.1
CM-10	CB-416	EPA-SWMM Runoff	SCS CN	98	0.00		0.067	0.16	2,010.2
CM-11	O-4	EPA-SWMM Runoff	SCS CN	98	0.00		0.168	0.40	5,026.6
CM-12	CB-6	EPA-SWMM Runoff	SCS CN	98	0.00		0.062	0.15	1,852.7
CM-13	CB-7	EPA-SWMM Runoff	SCS CN	98	0.00		0.071	0.17	2,121.7
CM-14	CB-4	EPA-SWMM Runoff	SCS CN	98	0.00		0.253	0.61	7,615.6
CM-15	CB-5	EPA-SWMM Runoff	SCS CN	98	0.00		0.059	0.14	1,787.3
CM-16	CB-94	EPA-SWMM Runoff	SCS CN	98	0.00		0.118	0.28	3,552.9
CM-17	CB-95	EPA-SWMM Runoff	SCS CN	91	0.00		0.142	0.34	4,265.7
CM-18	CB-16	EPA-SWMM Runoff	SCS CN	98	0.00		0.080	0.19	2,425.6
CM-19	CB-100	EPA-SWMM Runoff	SCS CN	98	0.00		0.087	0.21	2,611.3
CM-20	CB-355	EPA-SWMM Runoff	SCS CN	98	0.00		0.157	0.38	4,736.7
CM-21	CB-17	EPA-SWMM Runoff	SCS CN	98	0.00		0.110	0.26	3,296.6
CM-22	CB-101	EPA-SWMM Runoff	SCS CN	98	0.00		0.105	0.25	3,158.2
CM-23	CB-99	EPA-SWMM Runoff	SCS CN	98	0.00		0.148	0.36	4,468.8
CM-24	CB-104	EPA-SWMM Runoff	SCS CN	98	0.00		0.067	0.16	2,025.1
CM-25	CB-105	EPA-SWMM Runoff	SCS CN	98	0.00		0.061	0.15	1,828.1
CM-26	CB-106	EPA-SWMM Runoff	SCS CN	98	0.00		0.031	0.08	943.5
CM-27	CB-107	EPA-SWMM Runoff	SCS CN	98	0.00		0.028	0.07	856.2
CM-28	CB-108	EPA-SWMM Runoff	SCS CN	98	0.00		0.047	0.11	1,427.8

CM-29	CB-109	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.12	1,514.5
CM-31	O-33	EPA-SWMM Runoff	SCS CN	89	0.00		0.090	0.21	2,638.6
CM-32	CB-356	EPA-SWMM Runoff	SCS CN	96	0.00		0.262	0.63	7,902.5
CM-33	CB-357	EPA-SWMM Runoff	SCS CN	98	0.00		0.159	0.38	4,794.7
CM-34	CB-359	EPA-SWMM Runoff	SCS CN	95	0.00		0.199	0.48	5,993.9
CM-35	CB-358	EPA-SWMM Runoff	SCS CN	93	0.00		0.106	0.25	3,165.1
CM-36	CB-360	EPA-SWMM Runoff	SCS CN	95	0.00		0.164	0.39	4,944.1
CM-37	CB-414	EPA-SWMM Runoff	SCS CN	98	0.00		0.138	0.33	4,145.0
CM-38	CB-110	EPA-SWMM Runoff	SCS CN	98	0.00		0.022	0.05	666.3
CM-39	CB-N413	EPA-SWMM Runoff	SCS CN	98	0.00		0.023	0.06	691.9
CM-40	CB-112	EPA-SWMM Runoff	SCS CN	98	0.00		0.032	0.08	970.4
CM-41	CB-111	EPA-SWMM Runoff	SCS CN	98	0.00		0.196	0.47	5,920.2
CM-42	CB-114	EPA-SWMM Runoff	SCS CN	98	0.00		0.040	0.10	1,195.1
CM-43	CB-113	EPA-SWMM Runoff	SCS CN	98	0.00		0.059	0.14	1,783.0
CM-44	CB-119	EPA-SWMM Runoff	SCS CN	98	0.00		0.081	0.19	2,441.7
CM-45	CB-116	EPA-SWMM Runoff	SCS CN	98	0.00		0.088	0.21	2,639.4
CM-46	CB-118	EPA-SWMM Runoff	SCS CN	98	0.00		0.167	0.40	5,035.9
CM-48	CB-120	EPA-SWMM Runoff	SCS CN	98	0.00		0.186	0.45	5,595.7
CM-49	CB-121	EPA-SWMM Runoff	SCS CN	98	0.00		0.056	0.13	1,684.5
CM-50	CB-122	EPA-SWMM Runoff	SCS CN	98	0.00		0.057	0.14	1,728.9
CM-51	CB-123	EPA-SWMM Runoff	SCS CN	98	0.00		0.183	0.44	5,512.4
CM-52	CB-367	EPA-SWMM Runoff	SCS CN	98	0.00		0.195	0.47	5,882.9
CM-53	CB-366	EPA-SWMM Runoff	SCS CN	98	0.00		0.102	0.25	3,083.9
CM-54	CB-365	EPA-SWMM Runoff	SCS CN	98	0.00		0.098	0.23	2,945.2
CM-55	CB-124	EPA-SWMM Runoff	SCS CN	98	0.00		0.171	0.41	5,159.8
CM-56	CB-129	EPA-SWMM Runoff	SCS CN	98	0.00		0.065	0.16	1,968.0
CM-57	CB-128	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.12	1,518.7
CM-58	CB-130	EPA-SWMM Runoff	SCS CN	98	0.00		0.060	0.14	1,802.1
CM-59	CB-132	EPA-SWMM Runoff	SCS CN	98	0.00		0.063	0.15	1,911.5
CM-60	CB-133	EPA-SWMM Runoff	SCS CN	98	0.00		0.133	0.32	4,011.5
CM-61	CB-131	EPA-SWMM Runoff	SCS CN	98	0.00		0.108	0.26	3,269.7
CM-62	CB-369	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.12	1,495.9
CM-63	CB-134	EPA-SWMM Runoff	SCS CN	98	0.00		0.076	0.18	2,292.4
CM-64	CB-364	EPA-SWMM Runoff	SCS CN	98	0.00		0.107	0.26	3,231.3
CM-65	O-41	EPA-SWMM Runoff	SCS CN	89	0.00		0.090	0.22	2,701.2
CM-66	O-34	EPA-SWMM Runoff	SCS CN	89	0.00		0.121	0.29	3,633.1
CM-67	O-35	EPA-SWMM Runoff	SCS CN	89	0.00		0.068	0.16	2,036.0
CM-68	CB-117	EPA-SWMM Runoff	SCS CN	98	0.00		0.122	0.29	3,664.6
CM-69	CB-418	EPA-SWMM Runoff	SCS CN	98	0.00		0.140	0.34	4,220.4

CM-70	CB-419	EPA-SWMM Runoff	SCS CN	98	0.00		0.162	0.39	4,877.9
CM-71	O-43	EPA-SWMM Runoff	SCS CN	98	0.00		0.118	0.28	3,556.6
CM-72	CB-187	EPA-SWMM Runoff	SCS CN	98	0.00		0.157	0.38	4,743.1
CM-73	CB-2	EPA-SWMM Runoff	SCS CN	98	0.00		0.184	0.44	5,535.5
CM-74	CB-8	EPA-SWMM Runoff	SCS CN	98	0.00		0.082	0.20	2,473.5
CM-75	CB-3	EPA-SWMM Runoff	SCS CN	98	0.00		0.199	0.48	6,010.5
CM-76	CB-9	EPA-SWMM Runoff	SCS CN	98	0.00		0.240	0.58	7,226.6
CM-77	CB-12	EPA-SWMM Runoff	SCS CN	98	0.00		0.264	0.63	7,962.4
CM-78	CB-10	EPA-SWMM Runoff	SCS CN	98	0.00		0.110	0.26	3,273.2
CM-79	CB-11	EPA-SWMM Runoff	SCS CN	98	0.00		0.083	0.20	2,476.2
CM-80	CB-13	EPA-SWMM Runoff	SCS CN	98	0.00		0.144	0.35	4,335.2
CM-81	CB-413	EPA-SWMM Runoff	SCS CN	98	0.00		0.262	0.63	7,841.9
CM-82	CB-19	EPA-SWMM Runoff	SCS CN	98	0.00		0.180	0.43	5,372.4
CM-83	CB-21	EPA-SWMM Runoff	SCS CN	98	0.00		0.183	0.44	5,431.9
CM-84	CB-20	EPA-SWMM Runoff	SCS CN	98	0.00		0.143	0.34	4,245.2
CM-85	CB-25	EPA-SWMM Runoff	SCS CN	98	0.00		0.123	0.30	3,707.5
CM-86	CB-26	EPA-SWMM Runoff	SCS CN	98	0.00		0.171	0.41	5,154.7
CM-87	CB-24	EPA-SWMM Runoff	SCS CN	98	0.00		0.233	0.56	6,955.5
CM-88	CB-23	EPA-SWMM Runoff	SCS CN	98	0.00		0.156	0.37	4,671.2
CM-89	CB-27	EPA-SWMM Runoff	SCS CN	98	0.00		0.069	0.16	2,058.7
CM-90	CB-22	EPA-SWMM Runoff	SCS CN	98	0.00		0.183	0.44	5,521.2
CM-91	CB-30	EPA-SWMM Runoff	SCS CN	98	0.00		0.165	0.39	4,934.8
CM-92	CB-28	EPA-SWMM Runoff	SCS CN	98	0.00		0.043	0.10	1,294.8
CM-93	CB-31	EPA-SWMM Runoff	SCS CN	98	0.00		0.229	0.55	6,847.2
CM-94	CB-32	EPA-SWMM Runoff	SCS CN	98	0.00		0.157	0.38	4,705.3
CM-95	CB-36	EPA-SWMM Runoff	SCS CN	98	0.00		0.248	0.59	7,411.1
CM-96	CB-35	EPA-SWMM Runoff	SCS CN	98	0.00		0.167	0.40	4,997.1
CM-97	CB-37	EPA-SWMM Runoff	SCS CN	98	0.00		0.140	0.33	4,176.0
CM-98	CB-33	EPA-SWMM Runoff	SCS CN	98	0.00		0.108	0.26	3,244.2
CM-99	CB-38	EPA-SWMM Runoff	SCS CN	98	0.00		0.056	0.13	1,676.7
CM-100	CB-40	EPA-SWMM Runoff	SCS CN	98	0.00		0.071	0.17	2,133.1
CM-101	CB-39	EPA-SWMM Runoff	SCS CN	98	0.00		0.168	0.40	5,065.8
CM-102	CB-41	EPA-SWMM Runoff	SCS CN	98	0.00		0.069	0.17	2,072.1
CM-103	CB-34	EPA-SWMM Runoff	SCS CN	98	0.00		0.158	0.38	4,772.4
CM-104	CB-42	EPA-SWMM Runoff	SCS CN	98	0.00		0.116	0.28	3,492.4
CM-105	CB-43	EPA-SWMM Runoff	SCS CN	98	0.00		0.270	0.65	8,129.2
CM-106	CB-44	EPA-SWMM Runoff	SCS CN	98	0.00		0.203	0.49	6,104.2
CM-107	CB-45	EPA-SWMM Runoff	SCS CN	98	0.00		0.158	0.38	4,758.0
CM-108	CB-352	EPA-SWMM Runoff	SCS CN	98	0.00		0.056	0.13	1,685.7

CM-109	CB-353	EPA-SWMM Runoff	SCS CN	98	0.00		0.139	0.33	4,200.7
CM-110	CB-50	EPA-SWMM Runoff	SCS CN	98	0.00		0.056	0.13	1,688.6
CM-111	CB-46	EPA-SWMM Runoff	SCS CN	98	0.00		0.132	0.31	3,934.1
CM-112	CB-48	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.12	1,511.1
CM-113	CB-47	EPA-SWMM Runoff	SCS CN	96	0.00		0.109	0.26	3,293.3
CM-114	CB-49	EPA-SWMM Runoff	SCS CN	96	0.00		0.084	0.20	2,526.9
CM-115	CB-188	EPA-SWMM Runoff	SCS CN	98	0.00		0.192	0.46	5,779.2
CM-116	CB-51	EPA-SWMM Runoff	SCS CN	98	0.00		0.097	0.23	2,937.7
CM-117	CB-189	EPA-SWMM Runoff	SCS CN	98	0.00		0.161	0.39	4,848.6
CM-118	CB-190	EPA-SWMM Runoff	SCS CN	98	0.00		0.153	0.37	4,620.2
CM-119	CB-135	EPA-SWMM Runoff	SCS CN	98	0.00		0.083	0.20	2,451.9
CM-120	CB-136	EPA-SWMM Runoff	SCS CN	98	0.00		0.061	0.14	1,788.3
CM-121	CB-137	EPA-SWMM Runoff	SCS CN	96	0.00		0.199	0.48	5,998.0
CM-122	CB-138	EPA-SWMM Runoff	SCS CN	96	0.00		0.133	0.32	4,022.8
CM-123	CB-191	EPA-SWMM Runoff	SCS CN	98	0.00		0.227	0.55	6,836.8
CM-124	CB-192	EPA-SWMM Runoff	SCS CN	98	0.00		0.177	0.43	5,332.9
CM-125	CB-140	EPA-SWMM Runoff	SCS CN	98	0.00		0.331	0.80	9,973.0
CM-126	CB-139	EPA-SWMM Runoff	SCS CN	98	0.00		0.244	0.59	7,347.9
CM-127	CB-393	EPA-SWMM Runoff	SCS CN	98	0.00		0.189	0.46	5,707.9
CM-128	CB-144	EPA-SWMM Runoff	SCS CN	98	0.00		0.238	0.57	7,127.3
CM-129	CB-142	EPA-SWMM Runoff	SCS CN	98	0.00		0.155	0.37	4,632.6
CM-130	CB-143	EPA-SWMM Runoff	SCS CN	98	0.00		0.171	0.41	5,121.8
CM-131	CB-147	EPA-SWMM Runoff	SCS CN	98	0.00		0.593	1.42	17,724.8
CM-132	CB-145	EPA-SWMM Runoff	SCS CN	98	0.00		0.742	1.77	22,032.3
CM-133	CB-146	EPA-SWMM Runoff	SCS CN	96	0.00		0.252	0.61	7,596.7
CM-134	CB-N148	EPA-SWMM Runoff	SCS CN	98	0.00		0.068	0.16	2,049.5
CM-135	CB-149	EPA-SWMM Runoff	SCS CN	93	0.00		0.119	0.29	3,600.8
CM-136	CB-394	EPA-SWMM Runoff	SCS CN	98	0.00		1.664	4.00	50,164.9
CM-137	CB-151	EPA-SWMM Runoff	SCS CN	89	0.00		0.045	0.11	1,360.7
CM-138	CB-N7	EPA-SWMM Runoff	SCS CN	93	0.00		0.146	0.34	4,304.5
CM-139	CB-152	EPA-SWMM Runoff	SCS CN	93	0.00		0.245	0.58	7,247.4
CM-140	CB-389	EPA-SWMM Runoff	SCS CN	96	0.00		0.216	0.52	6,519.1
CM-141	CB-N541	EPA-SWMM Runoff	SCS CN	98	0.00		0.764	1.84	23,043.3
CM-142	CB-155	EPA-SWMM Runoff	SCS CN	95	0.00		0.186	0.45	5,617.3
CM-143	CB-157	EPA-SWMM Runoff	SCS CN	95	0.00		0.171	0.41	5,147.1
CM-144	CB-395	EPA-SWMM Runoff	SCS CN	93	0.00		0.083	0.20	2,501.0
CM-145	CB-N8	EPA-SWMM Runoff	SCS CN	93	0.00		0.153	0.36	4,514.8
CM-146	CB-159	EPA-SWMM Runoff	SCS CN	93	0.00		0.363	0.86	10,729.7
CM-147	CB-162	EPA-SWMM Runoff	SCS CN	93	0.00		0.442	1.06	13,331.0

CM-148	CB-160	EPA-SWMM Runoff	SCS CN	93	0.00		0.333	0.80	10,052.4
CM-149	CB-161	EPA-SWMM Runoff	SCS CN	93	0.00		0.189	0.46	5,707.8
CM-150	CB-52	EPA-SWMM Runoff	SCS CN	98	0.00		0.243	0.58	7,315.9
CM-151	CB-53	EPA-SWMM Runoff	SCS CN	98	0.00		0.117	0.28	3,492.3
CM-152	CB-330	EPA-SWMM Runoff	SCS CN	96	0.00		0.361	0.87	10,873.1
CM-153	CB-331	EPA-SWMM Runoff	SCS CN	95	0.00		0.444	1.07	13,371.8
CM-154	CB-332	EPA-SWMM Runoff	SCS CN	98	0.00		0.311	0.75	9,376.7
CM-155	CB-198	EPA-SWMM Runoff	SCS CN	95	0.00		0.246	0.58	7,288.0
CM-156	CB-197	EPA-SWMM Runoff	SCS CN	98	0.00		0.178	0.43	5,379.7
CM-157	CB-201	EPA-SWMM Runoff	SCS CN	95	0.00		0.231	0.55	6,851.1
CM-158	CB-333	EPA-SWMM Runoff	SCS CN	98	0.00		0.037	0.09	1,126.4
CM-159	CB-333	EPA-SWMM Runoff	SCS CN	98	0.00		0.185	0.44	5,576.0
CM-160	CB-334	EPA-SWMM Runoff	SCS CN	98	0.00		0.170	0.41	5,094.6
CM-161	CB-202	EPA-SWMM Runoff	SCS CN	98	0.00		0.140	0.34	4,233.5
CM-162	CB-210	EPA-SWMM Runoff	SCS CN	98	0.00		0.062	0.15	1,866.1
CM-164	CB-373	EPA-SWMM Runoff	SCS CN	98	0.00		0.083	0.20	2,492.2
CM-165	CB-372	EPA-SWMM Runoff	SCS CN	98	0.00		0.119	0.29	3,592.9
CM-166	CB-335	EPA-SWMM Runoff	SCS CN	98	0.00		0.049	0.12	1,466.1
CM-167	CB-336	EPA-SWMM Runoff	SCS CN	98	0.00		0.144	0.34	4,301.1
CM-168	CB-337	EPA-SWMM Runoff	SCS CN	98	0.00		0.132	0.32	3,963.9
CM-169	CB-338	EPA-SWMM Runoff	SCS CN	98	0.00		0.041	0.10	1,239.8
CM-170	CB-339	EPA-SWMM Runoff	SCS CN	98	0.00		0.100	0.24	3,020.5
CM-171	CB-340	EPA-SWMM Runoff	SCS CN	98	0.00		0.039	0.09	1,006.6
CM-172	CB-340	EPA-SWMM Runoff	SCS CN	98	0.00		0.097	0.23	2,936.4
CM-173	CB-341	EPA-SWMM Runoff	SCS CN	98	0.00		0.156	0.37	4,691.4
CM-174	CB-342	EPA-SWMM Runoff	SCS CN	98	0.00		0.040	0.10	1,198.7
CM-175	CB-343	EPA-SWMM Runoff	SCS CN	98	0.00		0.175	0.42	5,280.5
CM-176	CB-344	EPA-SWMM Runoff	SCS CN	98	0.00		0.169	0.41	5,107.6
CM-177	CB-211	EPA-SWMM Runoff	SCS CN	93	0.00		0.112	0.27	3,386.4
CM-178	CB-432	EPA-SWMM Runoff	SCS CN	93	0.00		0.340	0.82	10,237.8
CM-179	CB-374	EPA-SWMM Runoff	SCS CN	93	0.00		0.174	0.42	5,231.9
CM-180	CB-349	EPA-SWMM Runoff	SCS CN	98	0.00		0.100	0.24	3,017.0
CM-181	CB-350	EPA-SWMM Runoff	SCS CN	98	0.00		0.111	0.27	3,337.1
CM-182	CB-351	EPA-SWMM Runoff	SCS CN	98	0.00		0.135	0.33	4,080.2
CM-183	CB-226	EPA-SWMM Runoff	SCS CN	93	0.00		0.229	0.55	6,894.5
CM-184	O-15	EPA-SWMM Runoff	SCS CN	98	0.00		0.101	0.24	3,026.8
CM-185	CB-209	EPA-SWMM Runoff	SCS CN	98	0.00		0.390	0.93	11,673.1
CM-186	O-14	EPA-SWMM Runoff	SCS CN	98	0.00		0.213	0.51	6,375.4
CM-187	CB-126	EPA-SWMM Runoff	SCS CN	98	0.00		0.050	0.12	1,501.6

CM-188	CB-351	EPA-SWMM Runoff	SCS CN	98	0.00		0.024	0.06	723.6
CM-190	CB-231	EPA-SWMM Runoff	SCS CN	93	0.00		0.429	1.03	12,930.4
CM-191	CB-227	EPA-SWMM Runoff	SCS CN	98	0.00		0.105	0.25	3,157.8
CM-192	CB-386	EPA-SWMM Runoff	SCS CN	98	0.00		0.060	0.14	1,815.1
CM-193	CB-378	EPA-SWMM Runoff	SCS CN	98	0.00		0.086	0.21	2,600.7
CM-194	O-42	EPA-SWMM Runoff	SCS CN	98	0.00		0.150	0.36	4,513.2
CM-196	CB-232	EPA-SWMM Runoff	SCS CN	93	0.00		0.390	0.94	11,763.7
CM-197	CS-14	EPA-SWMM Runoff	SCS CN	93	0.00		0.441	1.04	13,024.8
CM-199	CS-15	EPA-SWMM Runoff	SCS CN	94	0.00		0.242	0.57	7,159.3
CM-202	CB-239	EPA-SWMM Runoff	SCS CN	93	0.00		0.958	2.30	28,889.6
CM-204	CB-410	EPA-SWMM Runoff	SCS CN	94	0.00		0.176	0.42	5,294.1
CM-205	CB-242	EPA-SWMM Runoff	SCS CN	93	0.00		0.238	0.57	7,179.5
CM-206	CB-244	EPA-SWMM Runoff	SCS CN	93	0.00		0.154	0.37	4,642.9
CM-207	CB-243	EPA-SWMM Runoff	SCS CN	89	0.00		0.055	0.13	1,649.8
CM-210	CB-322	EPA-SWMM Runoff	SCS CN	95	0.00		0.446	1.06	13,224.7
CM-211	CB-323	EPA-SWMM Runoff	SCS CN	95	0.00		0.458	1.10	13,721.6
CM-212	CB-324	EPA-SWMM Runoff	SCS CN	95	0.00		0.196	0.46	5,799.3
CM-213	CB-325	EPA-SWMM Runoff	SCS CN	98	0.00		0.408	0.98	12,193.3
CM-214	CB-326	EPA-SWMM Runoff	SCS CN	98	0.00		0.484	1.16	14,478.8
CM-215	CB-328	EPA-SWMM Runoff	SCS CN	98	0.00		0.241	0.58	7,209.5
CM-216	CB-327	EPA-SWMM Runoff	SCS CN	98	0.00		0.454	1.09	13,576.5
CM-217	CB-283	EPA-SWMM Runoff	SCS CN	94	0.00		0.899	2.09	26,106.3
CM-218	CB-68	EPA-SWMM Runoff	SCS CN	96	0.00		0.343	0.83	10,352.5
CM-219	CB-67	EPA-SWMM Runoff	SCS CN	93	0.00		0.577	1.36	17,035.9
CM-220	CB-371	EPA-SWMM Runoff	SCS CN	93	0.00		0.274	0.66	8,253.1
CM-221	CB-69	EPA-SWMM Runoff	SCS CN	93	0.00		0.150	0.35	4,425.6
CM-222	CB-66	EPA-SWMM Runoff	SCS CN	93	0.00		0.112	0.27	3,368.3
CM-223	MH-13	EPA-SWMM Runoff	SCS CN	89	0.00		0.149	0.32	4,014.0
CM-225	CB-64	EPA-SWMM Runoff	SCS CN	91	0.00		0.198	0.47	5,822.5
CM-226	CS-5	EPA-SWMM Runoff	SCS CN	84	0.00		0.151	0.25	3,117.8
CM-227	O-39	EPA-SWMM Runoff	SCS CN	93	0.00		0.641	1.51	18,939.9
CM-228	O-38	EPA-SWMM Runoff	SCS CN	93	0.00		0.361	0.87	10,879.4
CM-229	O-37	EPA-SWMM Runoff	SCS CN	93	0.00		0.408	0.98	12,288.0
CM-230	CS-26	EPA-SWMM Runoff	SCS CN	93	0.00		0.310	0.75	9,348.0
CM-231	CS-27	EPA-SWMM Runoff	SCS CN	95	0.00		0.274	0.66	8,245.6
CM-232	CS-47	EPA-SWMM Runoff	SCS CN	96	0.00		0.083	0.20	2,489.4
CM-233	CB-73	EPA-SWMM Runoff	SCS CN	93	0.00		0.308	0.73	9,095.3
CM-234	O-36	EPA-SWMM Runoff	SCS CN	96	0.00		0.162	0.39	4,871.6
CM-235	CS-7	EPA-SWMM Runoff	SCS CN	93	0.00		0.357	0.86	10,750.2

CM-236	CB-375	EPA-SWMM Runoff	SCS CN	89	0.00		0.235	0.54	6,708.9
CM-237	O-40	EPA-SWMM Runoff	SCS CN	89	0.00		0.200	0.46	5,705.8
CM-238	CS-25	EPA-SWMM Runoff	SCS CN	89	0.00		0.067	0.15	1,854.9
CM-239	CS-24	EPA-SWMM Runoff	SCS CN	89	0.00		0.076	0.17	2,180.8
CM-240	CS-22	EPA-SWMM Runoff	SCS CN	84	0.00		0.178	0.27	3,332.3
CM-241	CB-412	EPA-SWMM Runoff	SCS CN	93	0.00		0.181	0.44	5,468.7
CM-242	CS-20	EPA-SWMM Runoff	SCS CN	93	0.00		0.301	0.72	9,058.7
CM-243	CS-21	EPA-SWMM Runoff	SCS CN	93	0.00		0.310	0.74	9,343.8
CM-244	CS-28	EPA-SWMM Runoff	SCS CN	89	0.00		0.123	0.29	3,599.7
CM-245	CS-29	EPA-SWMM Runoff	SCS CN	98	0.00		0.039	0.09	1,157.9
CM-246	CB-76	EPA-SWMM Runoff	SCS CN	80	0.00		0.121	0.15	1,886.7
CM-247	CB-77	EPA-SWMM Runoff	SCS CN	89	0.00		0.255	0.60	7,477.5
CM-248	CB-78	EPA-SWMM Runoff	SCS CN	93	0.00		0.211	0.50	6,223.1
CM-249	O-28	EPA-SWMM Runoff	SCS CN	89	0.00		0.085	0.18	2,290.4
CM-250	CB-79	EPA-SWMM Runoff	SCS CN	93	0.00		0.088	0.21	2,660.4
CM-251	CS-30	EPA-SWMM Runoff	SCS CN	47	0.00		0.679	0.29	3,697.5
CM-252	CS-19	EPA-SWMM Runoff	SCS CN	93	0.00		0.274	0.64	7,932.5
CM-253	CS-31	EPA-SWMM Runoff	SCS CN	95	0.00		0.559	1.34	16,849.8
CM-254	CS-46	EPA-SWMM Runoff	SCS CN	47	0.00		0.418	0.09	1,130.0
CM-255	CS-18	EPA-SWMM Runoff	SCS CN	93	0.00		0.438	1.05	13,202.8
CM-256	CS-50	EPA-SWMM Runoff	SCS CN	89	0.00		0.089	0.16	1,966.0
CM-257	CB-163	EPA-SWMM Runoff	SCS CN	98	0.00		0.461	1.11	13,904.4
CM-258	CS-32	EPA-SWMM Runoff	SCS CN	93	0.00		0.704	1.57	19,509.1
CM-259	CS-17	EPA-SWMM Runoff	SCS CN	93	0.00		0.377	0.91	11,371.1
CM-260	CB-164	EPA-SWMM Runoff	SCS CN	89	0.00		0.301	0.71	8,833.6
CM-261	CS-44	EPA-SWMM Runoff	SCS CN	94	0.00		0.523	1.26	15,762.4
CM-262	CS-34	EPA-SWMM Runoff	SCS CN	93	0.00		0.327	0.73	9,050.2
CM-263	CS-16	EPA-SWMM Runoff	SCS CN	98	0.00		0.710	1.70	21,223.1
CM-264	CS-42	EPA-SWMM Runoff	SCS CN	98	0.00		0.077	0.18	2,317.6
CM-265	CS-43	EPA-SWMM Runoff	SCS CN	74	0.00		0.225	0.17	2,140.0
CM-266	CS-45	EPA-SWMM Runoff	SCS CN	74	0.00		0.435	0.26	3,147.2
CM-267	CB-176	EPA-SWMM Runoff	SCS CN	93	0.00		0.356	0.79	9,854.7
CM-268	CB-411	EPA-SWMM Runoff	SCS CN	89	0.00		0.220	0.53	6,636.0
CM-269	CB-177	EPA-SWMM Runoff	SCS CN	93	0.00		0.227	0.55	6,844.5
CM-270	CB-178	EPA-SWMM Runoff	SCS CN	94	0.00		0.287	0.69	8,651.1
CM-271	CS-39	EPA-SWMM Runoff	SCS CN	93	0.00		0.409	0.95	11,835.1
CM-273	CS-33	EPA-SWMM Runoff	SCS CN	89	0.00		0.469	1.10	13,764.7
CM-274	CS-49	EPA-SWMM Runoff	SCS CN	93	0.00		0.204	0.48	6,013.4
CM-275	CB-391	EPA-SWMM Runoff	SCS CN	98	0.00		0.168	0.40	5,060.7

CM-276	CB-392	EPA-SWMM Runoff	SCS CN	89	0.00		0.043	0.10	1,291.4
CM-277	CB-390	EPA-SWMM Runoff	SCS CN	93	0.00		0.706	1.70	21,288.3
CM-278	CB-166	EPA-SWMM Runoff	SCS CN	93	0.00		0.743	1.78	22,381.2
CM-279	CB-167	EPA-SWMM Runoff	SCS CN	98	0.00		0.202	0.48	6,072.2
CM-280	CB-170	EPA-SWMM Runoff	SCS CN	98	0.00		0.283	0.68	8,533.3
CM-281	CB-169	EPA-SWMM Runoff	SCS CN	98	0.00		0.244	0.59	7,350.0
CM-282	CB-171	EPA-SWMM Runoff	SCS CN	98	0.00		0.083	0.20	2,491.1
CM-283	CB-396	EPA-SWMM Runoff	SCS CN	98	0.00		0.174	0.42	5,247.7
CM-284	CB-172	EPA-SWMM Runoff	SCS CN	98	0.00		0.102	0.24	3,059.5
CM-285	CB-173	EPA-SWMM Runoff	SCS CN	96	0.00		0.296	0.71	8,907.4
CM-286	CB-397	EPA-SWMM Runoff	SCS CN	98	0.00		0.301	0.72	9,032.5
CM-287	CB-174	EPA-SWMM Runoff	SCS CN	93	0.00		0.236	0.57	7,119.7
CM-288	CB-179	EPA-SWMM Runoff	SCS CN	98	0.00		0.222	0.53	6,705.7
CM-289	CB-182	EPA-SWMM Runoff	SCS CN	93	0.00		0.491	1.18	14,801.0
CM-290	CB-402	EPA-SWMM Runoff	SCS CN	98	0.00		0.355	0.85	10,698.7
CM-291	CB-249	EPA-SWMM Runoff	SCS CN	89	0.00		0.171	0.41	5,153.3
CM-292	CS-52	EPA-SWMM Runoff	SCS CN	96	0.00		0.273	0.63	7,780.0
CM-293	CS-51	EPA-SWMM Runoff	SCS CN	79	0.00		0.536	1.29	16,164.9
CM-294	CB-454	EPA-SWMM Runoff	SCS CN	98	0.00		1.751	4.21	52,786.1
CM-295	CB-453	EPA-SWMM Runoff	SCS CN	98	0.00		1.587	3.81	47,823.2
CM-296	CB-181	EPA-SWMM Runoff	SCS CN	98	0.00		0.121	0.29	3,651.9
CM-297	CB-180	EPA-SWMM Runoff	SCS CN	98	0.00		0.081	0.20	2,453.7
CM-298	CB-185	EPA-SWMM Runoff	SCS CN	93	0.00		0.313	0.75	9,440.9
CM-299	CB-183	EPA-SWMM Runoff	SCS CN	98	0.00		0.380	0.91	11,446.7
CM-300	CB-400	EPA-SWMM Runoff	SCS CN	95	0.00		0.099	0.24	2,972.3
CM-301	CB-401	EPA-SWMM Runoff	SCS CN	98	0.00		0.269	0.65	8,107.1
CM-302	CS-53	EPA-SWMM Runoff	SCS CN	98	0.00		0.346	0.83	10,424.4
CM-303	O-65	EPA-SWMM Runoff	SCS CN	95	0.00		0.259	0.62	7,797.0
CM-304	CB-184	EPA-SWMM Runoff	SCS CN	98	0.00		0.201	0.48	6,051.4
CM-305	O-66	EPA-SWMM Runoff	SCS CN	96	0.00		0.219	0.53	6,598.5
CM-306	CS-40	EPA-SWMM Runoff	SCS CN	95	0.00		0.209	0.50	6,303.3
CM-307	CB-408	EPA-SWMM Runoff	SCS CN	55	0.00		0.554	0.39	4,933.3
CM-308	CB-407	EPA-SWMM Runoff	SCS CN	89	0.00		0.292	0.63	7,874.6
CM-309	CB-406	EPA-SWMM Runoff	SCS CN	89	0.00		0.248	0.54	6,674.3
CM-310	CB-405	EPA-SWMM Runoff	SCS CN	89	0.00		0.147	0.32	3,968.9
CM-311	CB-509	EPA-SWMM Runoff	SCS CN	93	0.00		0.229	0.55	6,904.5
CM-312	CS-41	EPA-SWMM Runoff	SCS CN	96	0.00		0.317	0.76	9,508.1
CM-313	CB-403	EPA-SWMM Runoff	SCS CN	74	0.00		0.370	0.42	5,225.3
CM-314	CB-404	EPA-SWMM Runoff	SCS CN	79	0.00		0.109	0.17	2,118.5

CM-315	CS-37	EPA-SWMM Runoff	SCS CN	89	0.00		0.163	0.38	4,774.5
CM-316	CS-10	EPA-SWMM Runoff	SCS CN	89	0.00		0.278	0.65	8,152.7
CM-317	CS-11	EPA-SWMM Runoff	SCS CN	89	0.00		0.117	0.27	3,439.4
CM-318	CS-12	EPA-SWMM Runoff	SCS CN	96	0.00		0.161	0.38	4,816.1
CM-319	CS-35	EPA-SWMM Runoff	SCS CN	96	0.00		0.143	0.34	4,289.7
CM-320	CS-36	EPA-SWMM Runoff	SCS CN	96	0.00		0.218	0.52	6,528.7
CM-321	CS-9	EPA-SWMM Runoff	SCS CN	79	0.00		0.592	0.63	7,769.4
CM-322	CB-62	EPA-SWMM Runoff	SCS CN	91	0.00		0.290	0.69	8,645.5
CM-323	CB-388	EPA-SWMM Runoff	SCS CN	95	0.00		0.603	1.45	18,164.6
CM-324	CB-148	EPA-SWMM Runoff	SCS CN	95	0.00		0.315	0.75	9,424.7
CM-325	CB-N6	EPA-SWMM Runoff	SCS CN	95	0.00		0.078	0.19	2,348.0
CM-326	CB-58	EPA-SWMM Runoff	SCS CN	95	0.00		0.271	0.65	8,121.8
CM-327	CS-8	EPA-SWMM Runoff	SCS CN	89	0.00		0.276	0.43	5,251.7
CM-328	CB-56	EPA-SWMM Runoff	SCS CN	89	0.00		0.229	0.54	6,726.3
CM-329	CB-387	EPA-SWMM Runoff	SCS CN	79	0.00		0.166	0.18	2,177.6
CM-330	CB-329	EPA-SWMM Runoff	SCS CN	98	0.00		0.376	0.90	11,341.5
CM-331	CB-420	EPA-SWMM Runoff	SCS CN	98	0.00		0.693	1.67	20,897.9
CM-332	CB-421	EPA-SWMM Runoff	SCS CN	98	0.00		0.435	1.05	13,109.8
CM-333	CB-423	EPA-SWMM Runoff	SCS CN	98	0.00		0.153	0.37	4,604.6
CM-334	CB-422	EPA-SWMM Runoff	SCS CN	98	0.00		0.099	0.24	2,983.2
CM-335	CB-424	EPA-SWMM Runoff	SCS CN	98	0.00		0.562	1.35	16,888.9
CM-336	CB-425	EPA-SWMM Runoff	SCS CN	98	0.00		0.627	1.51	18,901.3
CM-337	CB-426	EPA-SWMM Runoff	SCS CN	98	0.00		0.447	1.05	12,959.0
CM-338	CB-427	EPA-SWMM Runoff	SCS CN	98	0.00		0.349	0.84	10,451.6
CM-339	CB-428	EPA-SWMM Runoff	SCS CN	98	0.00		0.214	0.51	6,425.0
CM-340	CB-429	EPA-SWMM Runoff	SCS CN	98	0.00		0.262	0.63	7,893.9
CM-341	CB-434	EPA-SWMM Runoff	SCS CN	98	0.00		0.097	0.23	2,920.6
CM-342	CB-433	EPA-SWMM Runoff	SCS CN	98	0.00		0.178	0.43	5,341.6
CM-343	CB-430	EPA-SWMM Runoff	SCS CN	98	0.00		0.362	0.87	10,887.1
CM-344	CB-N432	EPA-SWMM Runoff	SCS CN	98	0.00		0.213	0.51	6,412.1
CM-345	CB-436	EPA-SWMM Runoff	SCS CN	98	0.00		0.133	0.32	4,023.3
CM-346	CB-435	EPA-SWMM Runoff	SCS CN	98	0.00		0.120	0.29	3,598.5
CM-347	CB-431	EPA-SWMM Runoff	SCS CN	98	0.00		0.189	0.46	5,708.3
CM-348	CB-441	EPA-SWMM Runoff	SCS CN	89	0.00		0.285	0.65	8,125.0
CM-349	CB-440	EPA-SWMM Runoff	SCS CN	98	0.00		0.245	0.59	7,382.1
CM-350	CB-442	EPA-SWMM Runoff	SCS CN	98	0.00		0.125	0.30	3,771.9
CM-351	CB-443	EPA-SWMM Runoff	SCS CN	98	0.00		0.080	0.19	2,415.4
CM-352	CB-445	EPA-SWMM Runoff	SCS CN	98	0.00		0.456	1.10	13,751.9
CM-353	CB-446	EPA-SWMM Runoff	SCS CN	98	0.00		0.180	0.43	5,427.4

CM-354	CB-437	EPA-SWMM Runoff	SCS CN	98	0.00		0.800	1.92	24,120.8
CM-355	CB-439	EPA-SWMM Runoff	SCS CN	98	0.00		0.234	0.56	7,040.4
CM-356	CB-438	EPA-SWMM Runoff	SCS CN	98	0.00		0.170	0.41	5,113.5
CM-357	CB-447	EPA-SWMM Runoff	SCS CN	98	0.00		0.350	0.84	10,529.7
CM-358	O-61	EPA-SWMM Runoff	SCS CN	89	0.00		0.084	0.20	2,535.8
CM-359	O-62	EPA-SWMM Runoff	SCS CN	89	0.00		0.083	0.20	2,511.3
CM-361	CB-450	EPA-SWMM Runoff	SCS CN	89	0.00		0.075	0.16	2,019.6
CM-362	CB-451	EPA-SWMM Runoff	SCS CN	98	0.00		0.458	1.10	13,797.9
CM-363	CB-452	EPA-SWMM Runoff	SCS CN	98	0.00		0.764	1.83	23,015.5
CM-374	CB-62	EPA-SWMM Runoff	SCS CN	94	0.00		0.142	0.33	4,114.3
CM-375	CB-458	EPA-SWMM Runoff	SCS CN	96	0.00		0.201	0.48	5,978.2
CM-376	CB-457	EPA-SWMM Runoff	SCS CN	96	0.00		0.131	0.31	3,830.8
CM-377	CB-459	EPA-SWMM Runoff	SCS CN	96	0.00		0.317	0.75	9,295.8
CM-378	CB-460	EPA-SWMM Runoff	SCS CN	96	0.00		0.340	0.80	9,972.0
CM-379	CB-462	EPA-SWMM Runoff	SCS CN	94	0.00		0.209	0.49	6,074.1
CM-380	CB-461	EPA-SWMM Runoff	SCS CN	94	0.00		0.164	0.38	4,773.0
CM-381	CB-463	EPA-SWMM Runoff	SCS CN	96	0.00		0.421	0.99	12,340.2
CM-382	CB-464	EPA-SWMM Runoff	SCS CN	94	0.00		0.410	0.95	11,901.9
CM-383	CB-465	EPA-SWMM Runoff	SCS CN	96	0.00		0.205	0.48	6,024.7
CM-384	CB-466	EPA-SWMM Runoff	SCS CN	96	0.00		0.235	0.55	6,895.8
CM-385	CB-467	EPA-SWMM Runoff	SCS CN	98	0.00		0.124	0.30	3,721.3
CM-386	CB-468	EPA-SWMM Runoff	SCS CN	98	0.00		0.123	0.29	3,665.1
CM-387	CB-469	EPA-SWMM Runoff	SCS CN	98	0.00		0.152	0.36	4,543.8
CM-388	CB-470	EPA-SWMM Runoff	SCS CN	98	0.00		0.107	0.26	3,213.8
CM-389	CB-471	EPA-SWMM Runoff	SCS CN	98	0.00		0.177	0.42	5,315.7
CM-390	CB-472	EPA-SWMM Runoff	SCS CN	98	0.00		0.207	0.50	6,213.6
CM-391	CB-473	EPA-SWMM Runoff	SCS CN	98	0.00		0.118	0.28	3,535.1
CM-392	CB-474	EPA-SWMM Runoff	SCS CN	98	0.00		0.164	0.39	4,942.6
CM-393	CB-475	EPA-SWMM Runoff	SCS CN	98	0.00		0.194	0.46	5,765.8
CM-394	CB-476	EPA-SWMM Runoff	SCS CN	98	0.00		0.202	0.49	6,101.1
CM-395	CB-478	EPA-SWMM Runoff	SCS CN	98	0.00		0.259	0.62	7,817.7
CM-396	CB-497	EPA-SWMM Runoff	SCS CN	93	0.00		0.336	0.81	10,138.9
CM-397	CB-479	EPA-SWMM Runoff	SCS CN	94	0.00		0.203	0.47	5,907.8
CM-398	CB-480	EPA-SWMM Runoff	SCS CN	98	0.00		0.149	0.36	4,457.2
CM-399	CB-617	EPA-SWMM Runoff	SCS CN	94	0.00		0.128	0.30	3,780.5
CM-400	CB-532	EPA-SWMM Runoff	SCS CN	94	0.00		0.099	0.24	2,941.7
CM-401	MH-126	EPA-SWMM Runoff	SCS CN	96	0.00		0.126	0.30	3,759.3
CM-402	CS-63	EPA-SWMM Runoff	SCS CN	86	0.00		0.097	0.22	2,746.5
CM-403	CS-64	EPA-SWMM Runoff	SCS CN	47	0.00		0.401	0.17	2,183.9

CM-404	CS-65	EPA-SWMM Runoff	SCS CN	68	0.00		0.475	0.50	6,207.1
CM-405	T-36	EPA-SWMM Runoff	SCS CN	68	0.00		0.373	0.32	3,966.5
CM-406	CB-485	EPA-SWMM Runoff	SCS CN	86	0.00	FUTURE BUILDOUT	0.363	0.77	9,629.9
CM-407	CB-484	EPA-SWMM Runoff	SCS CN	86	0.00	FUTURE BUILDOUT	0.572	1.22	15,179.2
CM-408	CB-486	EPA-SWMM Runoff	SCS CN	91	0.00		0.147	0.34	4,229.0
CM-409	CB-482	EPA-SWMM Runoff	SCS CN	89	0.00		0.403	0.94	11,824.0
CM-410	CB-483	EPA-SWMM Runoff	SCS CN	89	0.00		0.620	1.45	18,205.1
CM-411	CB-487	EPA-SWMM Runoff	SCS CN	95	0.00		0.405	0.97	12,220.1
CM-412	CB-488	EPA-SWMM Runoff	SCS CN	93	0.00		0.350	0.84	10,545.1
CM-413	CB-489	EPA-SWMM Runoff	SCS CN	95	0.00	FUTURE BUILDOUT	0.148	0.35	4,385.0
CM-414	CB-490	EPA-SWMM Runoff	SCS CN	93	0.00		0.245	0.59	7,399.8
CM-415	CB-491	EPA-SWMM Runoff	SCS CN	95	0.00	2043 BUILDOUT	0.350	0.83	10,377.5
CM-416	CB-492	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.339	0.80	10,004.6
CM-417	CB-493	EPA-SWMM Runoff	SCS CN	93	0.00	FUTURE BUILDOUT	0.265	0.64	7,981.8
CM-418	CB-494	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.173	0.42	5,220.0
CM-419	CB-495	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.218	0.52	6,574.3
CM-420	CB-496	EPA-SWMM Runoff	SCS CN	93	0.00	FUTURE BUILDOUT	0.296	0.71	8,925.3
CM-421	CB-477	EPA-SWMM Runoff	SCS CN	95	0.00	FUTURE BUILDOUT	0.213	0.51	6,424.5
CM-422	CB-498	EPA-SWMM Runoff	SCS CN	89	0.00	FUTURE BUILDOUT	0.338	0.81	10,176.4
CM-423	CB-499	EPA-SWMM Runoff	SCS CN	95	0.00	FUTURE BUILDOUT	0.131	0.32	3,960.9
CM-424	CB-500	EPA-SWMM Runoff	SCS CN	93	0.00	FUTURE BUILDOUT	0.288	0.69	8,694.2
CM-425	CB-501	EPA-SWMM Runoff	SCS CN	93	0.00	FUTURE BUILDOUT	0.282	0.68	8,497.6
CM-426	CB-502	EPA-SWMM Runoff	SCS CN	93	0.00	FUTURE BUILDOUT	0.244	0.59	7,355.7
CM-427	CB-503	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.472	1.13	14,219.5
CM-428	CB-504	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.578	1.39	17,434.0
CM-429	CB-505	EPA-SWMM Runoff	SCS CN	91	0.00	FUTURE BUILDOUT	0.357	0.84	10,506.4
CM-430	CB-506	EPA-SWMM Runoff	SCS CN	93	0.00	2043 BUILDOUT	0.130	0.31	3,919.1
CM-434	CB-512	EPA-SWMM Runoff	SCS CN	96	0.00		0.113	0.27	3,399.5
CM-435	CB-510	EPA-SWMM Runoff	SCS CN	93	0.00		0.283	0.68	8,520.6
CM-436	CB-511	EPA-SWMM Runoff	SCS CN	93	0.00		0.047	0.11	1,424.1
CM-437	CB-513	EPA-SWMM Runoff	SCS CN	93	0.00		0.033	0.08	986.8
CM-438	ROOF DRAIN 1	EPA-SWMM Runoff	SCS CN	98	0.00	ROOF	0.030	0.07	899.4
CM-439	UNKNOWN CONNECTION	EPA-SWMM Runoff	SCS CN	98	0.00	Assumed Roof	0.031	0.07	920.0
CM-440	CB-514	EPA-SWMM Runoff	SCS CN	93	0.00		0.034	0.08	1,018.4
CM-441	CB-517	EPA-SWMM Runoff	SCS CN	93	0.00		0.209	0.50	6,306.7
CM-442	CB-520	EPA-SWMM Runoff	SCS CN	93	0.00		0.176	0.42	5,298.0
CM-443	CB-519	EPA-SWMM Runoff	SCS CN	93	0.00		0.043	0.10	1,310.1
CM-444	CB-518	EPA-SWMM Runoff	SCS CN	93	0.00		0.131	0.31	3,942.1
CM-445	CB-521	EPA-SWMM Runoff	SCS CN	93	0.00		0.042	0.10	1,275.2

CM-446	CB-522	EPA-SWMM Runoff	SCS CN	93	0.00		0.231	0.56	6,966.0
CM-447	CB-523	EPA-SWMM Runoff	SCS CN	93	0.00		0.120	0.29	3,610.8
CM-448	CB-524	EPA-SWMM Runoff	SCS CN	93	0.00		0.083	0.19	2,412.6
CM-449	CB-525	EPA-SWMM Runoff	SCS CN	93	0.00		0.109	0.25	3,162.1
CM-450	CB-526	EPA-SWMM Runoff	SCS CN	93	0.00		0.082	0.19	2,384.2
CM-451	CB-N531	EPA-SWMM Runoff	SCS CN	93	0.00		0.632	1.52	19,052.9
CM-452	CB-530	EPA-SWMM Runoff	SCS CN	93	0.00		0.170	0.41	5,110.7
CM-453	CB-N532	EPA-SWMM Runoff	SCS CN	93	0.00		0.223	0.54	6,728.8
CM-454	CB-N533	EPA-SWMM Runoff	SCS CN	93	0.00		0.083	0.20	2,490.7
CM-455	CB-N534	EPA-SWMM Runoff	SCS CN	93	0.00		0.080	0.19	2,411.5
CM-456	CB-535	EPA-SWMM Runoff	SCS CN	93	0.00		0.212	0.51	6,395.2
CM-457	CB-N536	EPA-SWMM Runoff	SCS CN	93	0.00		0.129	0.31	3,895.0
CM-458	CB-537	EPA-SWMM Runoff	SCS CN	93	0.00		0.419	1.01	12,615.0
CM-459	CB-538	EPA-SWMM Runoff	SCS CN	93	0.00		0.218	0.52	6,582.5
CM-460	CB-N528	EPA-SWMM Runoff	SCS CN	93	0.00		0.670	1.61	20,180.6
CM-461	CB-N527	EPA-SWMM Runoff	SCS CN	93	0.00		0.048	0.12	1,452.9
CM-462	CB-N529	EPA-SWMM Runoff	SCS CN	93	0.00		0.058	0.14	1,739.6
CM-463	CB-545	EPA-SWMM Runoff	SCS CN	93	0.00		0.063	0.15	1,911.4

SECTION 2

Overflow and Freeboard Analysis

Description:

The following tables list all known catch basins and manholes modeled during a 25-year, three-hour storm. Each structure was analyzed during the storm's peak (1.25 hours) for the total available free board. As described in section 5.4, structures with less than one foot of freeboard were considered areas of concern along with overflowing structures. The model was run for existing, 10-year future, and 2043 future build out scenarios to determine the number of structures that are overflowing or have less than one foot of freeboard.

This first table set highlights all structures that are overflowing or have less than one foot of freeboard during the storm peak for existing infrastructure.

Stormwater Modeling Analysis - Structures Less Than 1 ft Freeboard

Existing System Layout

Storm Data: 25-Year, Short Duration (3-Hour) Storm
Adjusted Total Precipitation for Cle Elum: 1.1 Inches
Peak Time Analyzed: 1.25 Hours

Catch Basin Table - Existing Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Captured) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum) (ft)	Hydraulic Grade (Maximum)	Freeboard (ft)	Less than 1 ft Freeboard
CB-2	1,911.95	1,911.95	1908.95	3.00	0.44	False		0.92	1909.86	2.09	FALSE
CB-3	1,911.45	1,911.45	1907.45	4.00	0.48	False		2.13	1909.57	1.88	FALSE
CB-4	1,912.35	1,912.35	1908.35	4.00	0.61	False		1.97	1910.32	2.03	FALSE
CB-5	1,912.00	1,912.00	1908	4.00	0.14	False		0.99	1908.99	3.01	FALSE
CB-6	1,911.80	1,911.80	1907.8	4.00	0.15	False		2.23	1910.02	1.78	FALSE
CB-7	1,911.75	1,911.75	1907.75	4.00	0.17	False		2.21	1909.96	1.79	FALSE
CB-8	1,911.95	1,911.95	1905	6.95	0.20	False		0.95	1905.94	6.01	FALSE
CB-9	1,910.84	1,910.84	1903.84	7.00	0.58	False		1.91	1904.71	6.13	FALSE
CB-10	1,910.70	1,910.70	1903.5	7.20	0.26	False		2.26	1904.66	6.04	FALSE
CB-11	1,910.95	1,910.95	1907.95	3.00	0.20	False		1.23	1909.17	1.78	FALSE
CB-12	1,910.38	1,910.38	1907.38	3.00	0.63	True		3	1909.24	1.14	FALSE
CB-13	1,910.37	1,910.37	1906.37	4.00	0.35	True		4	1909.17	1.2	FALSE
CB-14	1,910.09	1,910.09	0	1,910.09	0.00	False	Couldn't field locate - perhaps abated	0	0	1910.09	FALSE
CB-15	1,910.25	1,910.25	0	1,910.25	0.00	False	Couldn't field locate - perhaps abated	0	0	1910.25	FALSE
CB-16	1,910.54	1,910.54	1906.5	4.04	0.19	False	NW Pipe Sealed?	1.73	1908.23	2.31	FALSE
CB-17	1,910.30	1,910.30	1906.3	4.00	0.26	False		1.75	1908.03	2.27	FALSE
CB-413	1,909.87	1,909.87	1901.3	8.57	0.63	False		4.41	1904.68	5.19	FALSE
CB-19	1,909.90	1,909.90	1905.9	4.00	0.43	False		2.81	1907.75	2.15	FALSE
CB-20	1,909.75	1,909.75	1905.75	4.00	0.34	False		1.99	1907.73	2.02	FALSE
CB-21	1,909.63	1,909.63	1901.19	8.44	0.44	False		4.48	1904.66	4.97	FALSE
CB-22	1,909.00	1,909.00	1906	3.00	0.44	False		1.3	1907.28	1.72	FALSE
CB-23	1,909.90	1,909.90	1905.9	4.00	0.37	False		1.38	1907.27	2.63	FALSE
CB-24	1,909.70	1,909.70	1901.04	8.66	0.56	False		4.58	1904.62	5.08	FALSE
CB-25	1,909.30	1,909.30	1905.3	4.00	0.30	False		1.81	1907.11	2.19	FALSE
CB-26	1,908.95	1,908.95	1904.95	4.00	0.41	False		1.9	1906.85	2.1	FALSE
CB-27	1,909.35	1,909.35	1900.68	8.67	0.16	False		4.89	1904.6	4.75	FALSE
CB-28	1,909.85	1,909.85	1905	4.85	0.10	False		2.24	1907.23	2.62	FALSE
CB-30	1,909.15	1,909.15	1906.15	3.00	0.39	False		0	1907.23	1.92	FALSE
CB-31	1,908.67	1,908.67	1900.23	8.44	0.55	False		1.1	1904.48	4.19	FALSE
CB-32	1,908.70	1,908.70	1904.7	4.00	0.38	False		5.2	1906.48	2.22	FALSE
CB-33	1,907.80	1,907.80	1903	4.80	0.26	False		1.78	1905.21	2.59	FALSE
CB-34	1,907.55	1,907.55	1903.55	4.00	0.38	False		2.24	1905.41	2.14	FALSE
CB-35	1,907.75	1,907.75	1903.75	4.00	0.40	False		1.87	1905.62	2.13	FALSE

CB-36	1,907.67	1,907.67	1900.99	6.68	0.59	False		1.88	1904.31	3.36	FALSE
CB-37	1,907.60	1,907.60	1900.99	6.61	0.33	False		4.23	1904.22	3.38	FALSE
CB-38	1,907.70	1,907.70	1903.7	4.00	0.13	False		4.14	1905.4	2.3	FALSE
CB-39	1,907.40	1,907.40	1903.4	4.00	0.40	False		1.7	1905.28	2.12	FALSE
CB-40	1,907.70	1,907.70	1901.33	6.37	0.17	False		1.88	1904.07	3.63	FALSE
CB-41	1,907.75	1,907.75	1903.5	4.25	0.17	False		3.65	1905.24	2.51	FALSE
CB-42	1,907.50	1,907.50	1903.5	4.00	0.28	False		1.76	1905.31	2.19	FALSE
CB-43	1,906.37	1,906.37	1901.46	4.91	0.65	False		1.82	1903.94	2.43	FALSE
CB-44	1,906.85	1,906.85	1903.85	3.00	0.49	False		3.45	1904.67	2.18	FALSE
CB-45	1,906.30	1,906.30	1901.36	4.94	0.38	False		0.83	1903.71	2.59	FALSE
CB-46	1,906.15	1,906.15	1902.15	4.00	0.31	False		3.41	1903.69	2.46	FALSE
CB-47	1,906.35	1,906.35	1903.35	3.00	0.26	False		2.51	1904.99	1.36	FALSE
CB-48	1,906.15	1,906.15	1902.15	4.00	0.12	False		1.64	1903.76	2.39	FALSE
CB-49	1,906.75	1,906.75	1903.75	3.00	0.20	False		2.46	1904.41	2.34	FALSE
CB-50	1,906.45	1,906.45	1901.2	5.25	0.13	False		0.9	1903.6	2.85	FALSE
CB-51	1,906.35	1,906.35	1903.35	3.00	0.23	False		3.58	1904.06	2.29	FALSE
CB-52	1,930.06	1,930.06	1925.56	4.50	0.58	False		1.3	1926.37	3.69	FALSE
CB-53	1,929.65	1,929.65	1925.15	4.50	0.28	False		4.5	1926.28	3.37	FALSE
CB-55	2,012.47	2,012.47	2007.47	5.00	0.00	False		1.13	2007.47	5	FALSE
CB-56	2,013.56	2,013.56	2010.56	3.00	0.54	False		0	2012.56	1	FALSE
CB-57	2,014.10	2,014.10	2013.1	1.00	0.00	False		2	2013.1	1	FALSE
CB-58	1,998.30	1,998.30	1997.8	0.50	0.65	False	Structure is 1.5 ft deep or less.	0	1997.8	0.5	TRUE
CB-N6	2,007.32	2,007.32	2006.32	1.00	0.19	False		0	2006.32	1	FALSE
CB-148	2,009.26	2,009.26	2006.26	3.00	0.75	False		0	2006.45	2.81	FALSE
CB-62	2,010.87	2,010.87	2007.37	3.50	0.69	False		0.19	2010.23	0.64	TRUE
CB-64	1,922.22	1,922.22	1919.22	3.00	0.47	False		2.86	1920.48	1.74	FALSE
CB-66	1,919.86	1,919.86	1916.36	3.50	0.27	False		1.26	1918.46	1.4	FALSE
CB-67	1,918.40	1,918.40	1916.9	1.50	1.36	False	Structure is 1.5 ft deep or less.	2.74	1917.73	0.67	TRUE
CB-68	1,917.74	1,917.74	1916.24	1.50	0.83	False	Structure is 1.5 ft deep or less.	0.9	1917.34	0.4	TRUE
CB-69	1,916.98	1,916.98	1915.14	1.84	0.35	False		1.11	1916.25	0.73	TRUE
CB-73	1,909.20	1,909.20	1905.2	4.00	0.73	True		1.84	1909.2	0	TRUE
CB-76	1,931.78	1,931.78	1930.11	1.67	0.15	False		4	1930.21	1.57	FALSE
CB-77	1,912.88	1,912.88	1909.38	3.50	0.6	False		0.1	1909.56	3.32	FALSE
CB-78	1,907.93	1,907.93	1905.1	2.83	0.5	False		0.18	1905.52	2.41	FALSE
CB-79	1,908.71	1,908.71	1907.7	1.01	0.21	False	Structure is 1.5 ft deep or less.	0.43	1907.86	0.85	TRUE
CB-N1	1,908.97	1,908.97	0	1,908.97	0.00	False		0.16	0	1908.97	FALSE
CB-N2	1,908.86	1,908.86	0	1,908.86	0.00	False		0	0	1908.86	FALSE
CB-N3	1,908.99	1,908.99	0	1,908.99	0.00	False		0	0	1908.99	FALSE
CB-86	1,911.84	1,911.84	1908.84	3.00	0.15	False		0	1910.02	1.82	FALSE
CB-87	1,911.95	1,911.95	1910.45	1.50	0.18	False	Structure is 1.5 ft deep or less.	1.18	1911.19	0.76	TRUE
CB-88	1,912.97	1,912.97	1908.97	4.00	0.00	False		0.74	1908.97	4	FALSE
CB-89	1,912.32	1,912.32	1908.9	3.42	0.00	False		0	1909.02	3.3	FALSE
CB-90	1,912.52	1,912.52	1909.35	3.17	0.00	False		0.2	1909.35	3.17	FALSE
CB-91	1,912.60	1,912.60	1908.6	4.00	0.16	False		0	1909.11	3.49	FALSE
CB-94	1,913.09	1,913.09	1909.74	3.35	0.28	False		0.51	1909.84	3.25	FALSE
CB-95	1,912.99	1,912.99	1909.92	3.07	0.34	False		0.1	1910.2	2.79	FALSE
CB-96	1,912.19	1,912.19	1909.19	3.00	0.19	False		0.28	1909.31	2.88	FALSE
CB-98	1,911.93	1,911.93	1908.76	3.17	0.15	False		0.12	1908.92	3.01	FALSE

CB-99	1,910.96	1,910.96	1906.96	4.00	0.36	False		0.16	1908.19	2.77	FALSE
CB-100	1,910.56	1,910.56	1905.56	5.00	0.21	False		1.23	1907.51	3.05	FALSE
CB-101	1,910.50	1,910.50	1905.5	5.00	0.25	False		1.95	1908.03	2.47	FALSE
CB-104	1,910.57	1,910.57	1906.57	4.00	0.16	False		2.53	1907.66	2.91	FALSE
CB-105	1,910.70	1,910.70	1906.7	4.00	0.15	False		1.09	1907.98	2.72	FALSE
CB-106	1,910.07	1,910.07	1906.07	4.00	0.08	False		1.28	1907.2	2.87	FALSE
CB-107	1,910.12	1,910.12	1906.12	4.00	0.07	False		1.25	1907.34	2.78	FALSE
CB-108	1,909.07	1,909.07	1905.07	4.00	0.11	False		1.22	1906.07	3	FALSE
CB-109	1,908.91	1,908.91	1904.91	4.00	0.12	False		1	1906.21	2.7	FALSE
CB-110	1,908.90	1,908.90	1904.9	4.00	0.05	True	Planned for replacement prior to Plan analysis.	1.3	1908.64	0.26	TRUE
CB-111	1,908.77	1,908.77	1904.77	4.00	0.47	True	Planned for replacement prior to Plan analysis.	4	1908.64	0.13	TRUE
CB-112	1,908.96	1,908.96	1904.96	4.00	0.08	False	Planned for replacement prior to Plan analysis.	4	1908.64	0.32	TRUE
CB-113	1,908.55	1,908.55	1904.55	4.00	0.14	True	Planned for replacement prior to Plan analysis.	3.92	1908.48	0.07	TRUE
CB-114	1,908.81	1,908.81	1904.81	4.00	0.10	False	Planned for replacement prior to Plan analysis.	4	1908.48	0.33	TRUE
CB-116	1,908.09	1,908.09	1904.09	4.00	0.21	True	Planned for replacement prior to Plan analysis.	3.85	1908.09	0	TRUE
CB-117	1,907.70	1,907.70	1905.7	2.00	0.29	True	Planned for replacement prior to Plan analysis.	4	1907.7	0	TRUE
CB-118	1,908.09	1,908.09	1904.09	4.00	0.40	False	Planned for replacement prior to Plan analysis.	2	1907.89	0.2	TRUE
CB-119	1,908.09	1,908.09	1904.09	4.00	0.19	False	Planned for replacement prior to Plan analysis.	3.87	1907.9	0.19	TRUE
CB-120	1,907.80	1,907.80	1903.8	4.00	0.45	True	Planned for replacement prior to Plan analysis.	3.89	1907.77	0.03	TRUE
CB-121	1,907.50	1,907.50	1903.5	4.00	0.13	True	Planned for replacement prior to Plan analysis.	4	1907.5	0	TRUE
CB-122	1,907.13	1,907.13	1903.13	4.00	0.14	True	Planned for replacement prior to Plan analysis.	4	1907.13	0	TRUE
CB-123	1,906.78	1,906.78	1903.78	3.00	0.44	False	Planned for replacement prior to Plan analysis.	4	1906.75	0.03	TRUE
CB-124	1,906.18	1,906.18	1903.18	3.00	0.41	False	Planned for replacement prior to Plan analysis.	3	1905.78	0.4	TRUE
CB-126	1,908.70	1,908.70	1904.7	4.00	0.12	False		2.62	1904.7	4	FALSE
CB-128	1,906.29	1,906.29	1902.29	4.00	0.12	False		0	1905.23	1.06	FALSE
CB-129	1,905.60	1,905.60	1901.6	4.00	0.16	False	Planned for replacement prior to Plan analysis.	2.96	1905.13	0.47	TRUE
CB-130	1,905.69	1,905.69	1902.69	3.00	0.14	False	Planned for replacement prior to Plan analysis.	3.56	1904.86	0.83	TRUE
CB-131	1,906.26	1,906.26	1901	5.26	0.26	False		2.2	1904.52	1.74	FALSE
CB-132	1,905.44	1,905.44	1903.44	2.00	0.15	False	Planned for replacement prior to Plan analysis.	3.53	1905.2	0.24	TRUE
CB-133	1,905.38	1,905.38	1903.84	1.54	0.32	True	Planned for replacement prior to Plan analysis.	1.79	1905.38	0	TRUE
CB-134	1,906.91	1,906.91	1905.41	1.50	0.18	False		1.54	1905.48	1.43	FALSE
CB-135	1,906.40	1,906.40	1901.06	5.34	0.20	False		0.07	1901.84	4.56	FALSE
CB-136	1,906.60	1,906.60	1900.34	6.26	0.14	True		5.23	1901.46	5.14	FALSE
CB-137	1,906.37	1,906.37	1902.37	4.00	0.48	False		6.26	1904.03	2.34	FALSE
CB-138	1,906.39	1,906.39	1902.39	4.00	0.32	False		1.66	1903.63	2.76	FALSE
CB-139	1,905.18	1,905.18	1902.18	3.00	0.59	False		1.31	1902.41	2.77	FALSE
CB-140	1,905.09	1,905.09	1898.59	6.50	0.80	True		0.81	1900.52	4.57	FALSE
CB-142	1,904.37	1,904.37	1901.37	3.00	0.37	True		6.5	1901.81	2.56	FALSE

CB-143	1,903.77	1,903.77	1900.35	3.42	0.41	True		3	1900.68	3.09	FALSE
CB-144	1,904.02	1,904.02	1898.44	5.58	0.57	True		3.42	1900.57	3.45	FALSE
CB-145	1,901.24	1,901.24	1898.24	3.00	1.77	True		5.58	1901.24	0	TRUE
CB-146	1,900.70	1,900.70	1897.7	3.00	0.61	True		3	1900.7	0	TRUE
CB-147	1,901.18	1,901.18	1899.68	1.50	1.42	True	Structure is 1.5 ft deep or less.	3	1901.18	0	TRUE
CB-N148	1,900.69	1,900.69	1898	2.69	0.16	True		1.5	1899.8	0.89	TRUE
CB-149	1,900.72	1,900.72	1899.22	1.50	0.29	False	Structure is 1.5 ft deep or less.	2.69	1899.98	0.74	TRUE
CB-N7	1,900.06	1,900.06	1897	3.06	0.34	False		0.76	1898.17	1.89	FALSE
CB-151	1,901.36	1,901.36	1899.36	2.00	0.11	False		2.29	1899.86	1.5	FALSE
CB-152	1,900.60	1,900.60	1896.6	4.00	0.58	False		0.5	1898.56	2.04	FALSE
CB-155	1,900.17	1,900.17	1897.17	3.00	0.45	False		1.96	1898.77	1.4	FALSE
CB-157	1,898.84	1,898.84	1896.94	1.90	0.41	True		1.6	1898.84	0	TRUE
CB-N8	1,898.68	1,898.68	1897.48	1.20	0.36	False	Structure is 1.5 ft deep or less.	1.9	1898.11	0.57	TRUE
CB-159	1,897.24	1,897.24	1896	1.24	0.86	True	Structure is 1.5 ft deep or less.	0.63	1897.24	0	TRUE
CB-160	1,896.84	1,896.84	1892.84	4.00	0.80	False		1.24	1895.92	0.92	TRUE
CB-161	1,896.77	1,896.77	1894	2.77	0.46	False		3.08	1894.93	1.84	FALSE
CB-162	1,896.77	1,896.77	1893.27	3.50	1.06	False		0.94	1893.87	2.9	FALSE
CB-163	1,901.27	1,901.27	1898.94	2.33	1.11	False		0.6	1899.36	1.91	FALSE
CB-164	1,901.73	1,901.73	1897.73	4.00	0.71	False		0.42	1900.49	1.24	FALSE
CB-165	1,895.50	1,895.50	1893.5	2.00	1.48	False		3.33	1893.98	1.52	FALSE
CB-166	1,893.92	1,893.92	1892	1.92	1.78	True		0.48	1893.92	0	TRUE
CB-167	1,893.68	1,893.68	1890.68	3.00	0.48	True		1.92	1893.38	0.3	TRUE
CB-169	1,892.74	1,892.74	1890	2.74	0.59	True		3	1892.74	0	TRUE
CB-170	1,892.45	1,892.45	1889.45	3.00	0.68	False		2.74	1891.19	1.26	FALSE
CB-171	1,892.07	1,892.07	1888.07	4.00	0.20	False		2.25	1891.29	0.78	TRUE
CB-172	1,892.04	1,892.04	1890.04	2.00	0.24	True		3.66	1891.99	0.05	TRUE
CB-173	1,891.85	1,891.85	1887.85	4.00	0.71	True		1.97	1891.85	0	TRUE
CB-174	1,891.78	1,891.78	1888.78	3.00	0.57	False	Broken Lid	4	1891.09	0.69	TRUE
CB-177	1,895.96	1,895.96	1892.46	3.50	0.55	False		2.32	1894.75	1.21	FALSE
CB-178	1,896.30	1,896.30	1893.3	3.00	0.69	False		2.29	1894.7	1.6	FALSE
CB-179	1,891.92	1,891.92	1889.92	2.00	0.53	False		1.41	1889.92	2	FALSE
CB-180	1,891.37	1,891.37	1888.37	3.00	0.20	False		0	1890.09	1.28	FALSE
CB-182	1,891.52	1,891.52	1888.52	3.00	1.18	True		1.72	1891.52	0	TRUE
CB-183	1,891.78	1,891.78	0	1,891.78	0.91	False		3	0	1891.78	FALSE
CB-184	1,891.54	1,891.54	1885.54	6.00	0.48	False		0	1889.09	2.45	FALSE
CB-185	1,890.66	1,890.66	1886.16	4.50	0.75	False		3.55	1889.28	1.38	FALSE
CB-N9	1,891.68	1,891.68	1888.68	3.00	0.00	False		3.15	1888.68	3	FALSE
CB-187	1,912.25	1,912.25	1908.25	4.00	0.38	False		0	1910.47	1.78	FALSE
CB-188	1,906.25	1,906.25	1900.7	5.55	0.46	False		2.22	1903.07	3.18	FALSE
CB-189	1,906.15	1,906.15	1900.98	5.17	0.39	True		5.01	1902.65	3.5	FALSE
CB-190	1,906.15	1,906.15	1902.15	4.00	0.37	False		5.17	1904.08	2.07	FALSE
CB-191	1,905.75	1,905.75	1898.75	7.00	0.55	True		1.93	1900.69	5.06	FALSE
CB-192	1,905.75	1,905.75	1902.25	3.50	0.43	False		7	1903.38	2.37	FALSE
CB-197	1,911.73	1,911.73	1909.31	2.42	0.43	True		(N/A)	1911.71	0.02	TRUE
CB-198	1,911.82	1,911.82	1909.82	2.00	0.58	True		2.42	1911.82	0	TRUE
CB-199	1,911.84	1,911.84	1908.67	3.17	0.00	False		2	1908.67	3.17	FALSE
CB-201	1,910.36	1,910.36	1907.94	2.42	0.55	True		0	1910.36	0	TRUE
CB-202	1,909.96	1,909.96	1906.29	3.67	0.34	True		2.42	1909.3	0.66	TRUE

CB-209	1,909.34	1,909.34	1908.34	1.00	0.93	False		(N/A)	1908.34	1	FALSE
CB-210	1,909.95	1,909.95	1905.95	4.00	0.15	True		0	1909.3	0.65	TRUE
CB-211	1,909.07	1,909.07	1906.15	2.92	0.27	True		4	1908.85	0.22	TRUE
CB-212	1,908.54	1,908.54	1903.54	5.00	(N/A)	False	Plans to demo by 10-year Future Buildout	2.92	(N/A)	#VALUE!	#VALUE!
CB-213	1,908.55	1,908.55	1905.25	3.30	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-214	1,908.46	1,908.46	0	1,908.46	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-215	1,908.38	1,908.38	0	1,908.38	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-226	1,908.97	1,908.97	1907.47	1.50	0.55	True	Structure is 1.5 ft deep or less.	(N/A)	1908.97	0	TRUE
CB-227	1,909.50	1,909.50	1907	2.50	0.25	True		1.5	1909.11	0.39	TRUE
CB-230	1,907.53	1,907.53	1906	1.53	0.77	True		2.5	1907.53	0	TRUE
CB-231	1,907.72	1,907.72	1905	2.72	1.03	True	Wooden Lid	1.53	1907.72	0	TRUE
CB-232	1,906.83	1,906.83	1905.5	1.33	0.94	False		2.72	1905.71	1.12	FALSE
CB-233	1,905.74	1,905.74	1902.7	3.04	1.06	False		0.21	1902.96	2.78	FALSE
CB-235	1,901.84	1,901.84	1899.87	1.97	0.53	True		0.26	1901.84	0	TRUE
CB-236	1,902.30	1,902.30	1900.3	2.00	1.98	True		1.97	1902.3	0	TRUE
CB-237	0.00	0.00	0	0.00	0.00	False	Couldn't field locate - perhaps abated	2	0	0	TRUE
CB-239	1,899.16	1,899.16	1896.56	2.60	2.30	True		0	1899.16	0	TRUE
CB-241	1,900.03	1,900.03	1898.03	2.00	1.63	False		2.6	1899.11	0.92	TRUE
CB-242	1,899.11	1,899.11	1895.11	4.00	0.57	False		1.16	1898.02	1.09	FALSE
CB-243	1,898.41	1,898.41	1895.41	3.00	0.13	False		2.93	1897.5	0.91	TRUE
CB-244	1,898.51	1,898.51	1895.51	3.00	0.37	False		2.09	1896.16	2.35	FALSE
CB-245	1,898.82	1,898.82	1897.22	1.60	0.96	False		0.65	1897.97	0.85	TRUE
CB-246	1,899.69	1,899.69	1897	2.69	0.67	False		0.75	1897.52	2.17	FALSE
CB-249	1,891.58	1,891.58	1888.58	3.00	0.41	False		0.52	1889.69	1.89	FALSE
CB-283	1,934.95	1,934.95	1930.95	4.00	2.09	False		1.12	1933.04	1.91	FALSE
CB-586	2,056.05	2,056.05	2052.59	3.46	0.00	False		2.1	2052.59	3.46	FALSE
CB-587	2,056.50	2,056.50	2051.84	4.66	0.00	False		0	2051.84	4.66	FALSE
CB-588	2,057.55	2,057.55	2051.16	6.39	0.00	False		0	2051.16	6.39	FALSE
CB-589	2,057.29	2,057.29	2050.22	7.07	0.00	False		0	2050.22	7.07	FALSE
CB-590	2,050.84	2,050.84	2045.85	4.99	0.00	False		0	2045.85	4.99	FALSE
CB-567	2,069.15	2,069.15	2063.46	5.69	0.00	False		0	2063.46	5.69	FALSE
CB-570	2,066.02	2,066.02	2063.02	3.00	0.00	False		0	2063.02	3	FALSE
CB-620	2,066.72	2,066.72	2063.72	3.00	0.00	False		0	2063.72	3	FALSE
CB-574	2,068.99	2,068.99	2058.01	10.98	0.00	False		0	2058.01	10.98	FALSE
CB-577	2,072.99	2,072.99	2070	2.99	0.00	False		0	2070	2.99	FALSE
CB-576	2,079.23	2,079.23	2074.3	4.93	0.00	False		0	2074.3	4.93	FALSE
CB-578	2,062.76	2,062.76	2057.76	5.00	0.00	False		0	2057.76	5	FALSE
CB-592	2,050.25	2,050.25	2045.25	5.00	0.00	False		0	2045.25	5	FALSE
CB-595	2,036.87	2,036.87	2033.37	3.50	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2033.37	3.5	FALSE
CB-591	2,049.60	2,049.60	2045.75	3.85	0.00	False		0	2045.75	3.85	FALSE
CB-593	2,049.71	2,049.71	2045.84	3.87	0.00	False		0	2045.84	3.87	FALSE
CB-596	2,034.65	2,034.65	2029.65	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2029.65	5	FALSE
CB-604	2,031.40	2,031.40	2026.4	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2026.4	5	FALSE
CB-610	2,012.73	2,012.73	2009.91	2.82	0.00	False		0	2009.91	2.82	FALSE
CB-609	2,012.25	2,012.25	2010.14	2.11	0.00	False		0	2010.14	2.11	FALSE

CB-555	2,014.48	2,014.48	2011.29	3.19	0.00	False		0	2011.29	3.19	FALSE
CB-557	2,018.45	2,018.45	2014.41	4.04	0.00	False		0	2014.41	4.04	FALSE
CB-554	2,014.52	2,014.52	2011.38	3.14	0.00	False		0	2011.38	3.14	FALSE
CB-566	2,019.25	2,019.25	2015.58	3.67	0.00	False		0	2015.58	3.67	FALSE
CB-619	2,017.97	2,017.97	2014.97	3.00	0.00	False		0	2014.97	3	FALSE
CB-558	2,019.28	2,019.28	2016.28	3.00	0.00	False		0	2016.28	3	FALSE
CB-559	2,020.69	2,020.69	2017.69	3.00	0.00	False		0	2017.69	3	FALSE
CB-561	2,009.91	2,009.91	2007.33	2.58	0.00	False		0	2007.33	2.58	FALSE
CB-560	2,009.00	2,009.00	2007.5	1.50	0.00	False		0	2007.5	1.5	FALSE
CB-608	2,008.24	2,008.24	2005.05	3.19	0.00	False		0	2005.05	3.19	FALSE
CB-607	2,008.24	2,008.24	2005.05	3.19	0.00	False		0	2005.05	3.19	FALSE
CB-540	2,006.40	2,006.40	2003.22	3.18	0.00	False		0	2003.22	3.18	FALSE
CB-541	2,006.61	2,006.61	1995.75	10.86	0.00	False	PRIVATELY MAINTAINED - GIS description	0	1995.75	10.86	FALSE
CB-565	2,010.88	2,010.88	2007.87	3.01	0.00	False		0	2007.87	3.01	FALSE
CB-564	2,021.46	2,021.46	2013.46	8.00	0.00	False		0	2013.46	8	FALSE
CB-563	2,024.21	2,024.21	2016.83	7.38	0.00	False		0	2016.83	7.38	FALSE
CB-562	2,022.15	2,022.15	2017.51	4.64	0.00	False		0	2017.51	4.64	FALSE
CB-616	2,004.05	2,004.05	1999.05	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	1999.05	5	FALSE
CB-536	2,006.40	2,006.40	2004.83	1.57	0.00	False		0	2004.83	1.57	FALSE
CB-579	2,056.16	2,056.16	2053.16	3.00	0.00	False		0	2053.16	3	FALSE
CB-580	2,052.36	2,052.36	2049.23	3.13	0.00	False		0	2049.23	3.13	FALSE
CB-581	2,047.90	2,047.90	2044.9	3.00	0.00	False		0	2044.9	3	FALSE
CB-618	2,030.03	2,030.03	2026.89	3.14	0.00	False		0	2026.89	3.14	FALSE
CB-531	2,021.36	2,021.36	2018.36	3.00	0.00	False		0	2018.36	3	FALSE
CB-533	2,013.89	2,013.89	2008.87	5.02	0.00	False		0	2008.87	5.02	FALSE
CB-534	2,010.12	2,010.12	2005.14	4.98	0.00	False		0	2005.14	4.98	FALSE
CB-527	2,035.68	2,035.68	2032	3.68	0.00	False		0	2032	3.68	FALSE
CB-528	2,031.68	2,031.68	2027.68	4.00	0.00	False		0	2027.68	4	FALSE
CB-529	2,028.68	2,028.68	2024.37	4.31	0.00	False		0	2024.37	4.31	FALSE
CB-532	2,021.11	2,021.11	2016.11	5.00	0.24	False		0	2016.26	4.85	FALSE
CB-617	2,014.22	2,014.22	2010.48	3.74	0.30	False		0.15	2010.61	3.61	FALSE
CB-551	2,002.23	2,002.23	1998.23	4.00	0.00	False		0.13	1998.23	4	FALSE
CB-611	2,001.15	2,001.15	1998.65	2.50	0.00	False		0	1998.65	2.5	FALSE
CB-432	1,909.26	1,909.26	1908.06	1.20	0.82	True	Structure is 1.5 ft deep or less.	0	1909	0.26	TRUE
CB-176	1,896.29	1,896.29	1893.29	3.00	0.79	False		1.2	1895.67	0.62	TRUE
CB-181	1,892.20	1,892.20	1889.2	3.00	0.29	False		2.38	1889.95	2.25	FALSE
CB-127	1,908.75	1,908.75	0	1,908.75	0.00	False	Couldn't field locate - perhaps abated	0.75	0	1908.75	FALSE
CB-322	1,996.85	1,996.85	1993.85	3.00	1.06	False		0	1994.27	2.58	FALSE
CB-323	1,960.17	1,960.17	1957.17	3.00	1.10	False		0.42	1957.35	2.82	FALSE
CB-324	1,939.15	1,939.15	1935.72	3.43	0.46	False		0.18	1936.3	2.85	FALSE
CB-325	1,939.15	1,939.15	1935.59	3.56	0.98	False		0.58	1935.94	3.21	FALSE
CB-326	1,934.97	1,934.97	1931.97	3.00	1.16	False		0.35	1932.24	2.73	FALSE
CB-327	1,934.49	1,934.49	1931.49	3.00	1.09	False		0.27	1931.89	2.6	FALSE
CB-328	1,934.49	1,934.49	1931.36	3.13	0.58	False		0.4	1931.81	2.68	FALSE
CB-329	1,929.60	1,929.60	1924.6	5.00	0.90	True		0.46	1929.6	0	TRUE
CB-330	1,924.43	1,924.43	1920.93	3.50	0.87	False		5	1921.09	3.34	FALSE
CB-331	1,918.90	1,918.90	1915.9	3.00	1.07	False		0.16	1916.07	2.83	FALSE

CB-332	1,912.35	1,912.35	1909.35	3.00	0.75	True		0.17	1910.88	1.47	FALSE
CB-333	1,910.17	1,910.17	1907.17	3.00	0.53	True		3	1909.95	0.22	TRUE
CB-334	1,909.61	1,909.61	1906.61	3.00	0.41	True		3	1909.31	0.3	TRUE
CB-335	1,909.34	1,909.34	1906.26	3.08	0.12	False		3	1909.09	0.25	TRUE
CB-336	1,908.87	1,908.87	1906.87	2.00	0.34	True		3.08	1908.87	0	TRUE
CB-337	1,909.04	1,909.04	1906.45	2.59	0.32	True		2	1909.04	0	TRUE
CB-338	1,909.15	1,909.15	1906.15	3.00	0.10	True		2.59	1909.05	0.1	TRUE
CB-339	1,908.82	1,908.82	1905.82	3.00	0.24	True		3	1908.82	0	TRUE
CB-340	1,908.65	1,908.65	1905.65	3.00	0.32	True		3	1908.65	0	TRUE
CB-341	1,908.78	1,908.78	1905.78	3.00	0.37	False		3	1908.69	0.09	TRUE
CB-342	1,908.90	1,908.90	1905.4	3.50	0.10	True		3	1908.65	0.25	TRUE
CB-343	1,908.66	1,908.66	1905.66	3.00	0.42	True		3.32	1908.66	0	TRUE
CB-344	1,908.82	1,908.82	1905.82	3.00	0.41	True		3	1908.68	0.14	TRUE
CB-349	1,908.88	1,908.88	1905.88	3.00	0.24	True		3	1908.66	0.22	TRUE
CB-350	1,908.95	1,908.95	1905.95	3.00	0.27	True		3	1908.66	0.29	TRUE
CB-351	1,909.35	1,909.35	1906.35	3.00	0.38	True		2.84	1908.63	0.72	TRUE
CB-352	1,906.22	1,906.22	1901.28	4.94	0.13	False		2.61	1903.71	2.51	FALSE
CB-353	1,906.41	1,906.41	1901.49	4.92	0.33	False		3.63	1903.63	2.78	FALSE
CB-355	1,910.90	1,910.90	1906.4	4.50	0.38	False		3.52	1907.37	3.53	FALSE
CB-356	1,911.67	1,911.67	1908.67	3.00	0.63	False		0.98	1908.91	2.76	FALSE
CB-357	1,910.08	1,910.08	1907.08	3.00	0.38	False		0.24	1907.31	2.77	FALSE
CB-358	1,910.08	1,910.08	1906.9	3.18	0.25	False		0.23	1907.21	2.87	FALSE
CB-359	1,908.23	1,908.23	1905.23	3.00	0.48	False		0.31	1905.48	2.75	FALSE
CB-360	1,908.23	1,908.23	1905.05	3.18	0.39	False		0.25	1905.43	2.8	FALSE
CB-361	1,912.60	1,912.60	1910.1	2.50	0.00	False		0.38	1910.1	2.5	FALSE
CB-364	1,906.80	1,906.80	1904.3	2.50	0.26	False		0	1904.3	2.5	FALSE
CB-365	1,905.42	1,905.42	1902	3.42	0.23	False	Private but contributes flow to system	0	1905.42	0	TRUE
CB-366	1,904.70	1,904.70	1900.7	4.00	0.25	True	Private but contributes flow to system	3.42	1904.7	0	TRUE
CB-367	1,906.10	1,906.10	1902.1	4.00	0.47	False	Private but contributes flow to system	4	1905.68	0.42	TRUE
CB-369	1,905.66	1,905.66	1904.5	1.16	0.12	False	Structure is 1.5 ft deep or less.	3.66	1904.89	0.77	TRUE
CB-371	1,927.51	1,927.51	1926.01	1.50	0.66	False	Structure is 1.5 ft deep or less.	0.39	1927	0.51	TRUE
CB-372	1,909.23	1,909.23	1905.23	4.00	0.29	True		0.99	1909.2	0.03	TRUE
CB-373	1,909.82	1,909.82	1908.82	1.00	0.20	False	Structure is 1.5 ft deep or less.	4	1908.93	0.89	TRUE
CB-374	1,909.26	1,909.26	1908.1	1.16	0.42	True	Structure is 1.5 ft deep or less.	0.11	1909.26	0	TRUE
CB-375	1,910.34	1,910.34	1906.34	4.00	0.54	False		1.16	1908.78	1.56	FALSE
CB-378	1,909.76	1,909.76	1906.76	3.00	0.21	True		2.44	1909.17	0.59	TRUE
CB-386	1,909.82	1,909.82	1906.62	3.20	0.14	True		3	1909.17	0.65	TRUE
CB-387	2,002.79	2,002.79	2001.29	1.50	0.18	True	Structure is 1.5 ft deep or less.	3.2	2002.79	0	TRUE
CB-388	2,009.10	2,009.10	2006.1	3.00	1.45	False		1.5	2007.07	2.03	FALSE
CB-389	1,900.14	1,900.14	1896.14	4.00	0.52	False		0.97	1896.56	3.58	FALSE
CB-390	1,893.54	1,893.54	1890.48	3.06	1.70	True		0.94	1892.33	1.21	FALSE
CB-391	1,904.85	1,904.85	1900.85	4.00	0.40	False		3.06	1904.35	0.5	TRUE
CB-392	1,904.30	1,904.30	1902.3	2.00	0.10	True		3.56	1904.3	0	TRUE
CB-393	1,904.84	1,904.84	1902.84	2.00	0.46	False		2	1904.55	0.29	TRUE
CB-394	1,901.85	1,901.85	1896.85	5.00	4.00	True	Connects to other Private Catchbasins	1.71	1901.85	0	TRUE
CB-395	1,899.65	1,899.65	1898.25	1.40	0.20	False	Structure is 1.5 ft deep or less.	5	1898.88	0.77	TRUE
CB-396	1,892.08	1,892.08	1890	2.08	0.42	True		0.63	1891.76	0.32	TRUE
CB-397	1,891.68	1,891.68	1889.17	2.51	0.72	False		2.08	1890.41	1.27	FALSE

CB-400	1,890.88	1,890.88	1886.38	4.50	0.24	False		2.51	1889.15	1.73	FALSE
CB-401	1,890.93	1,890.93	1887.93	3.00	0.65	False		2.77	1889.22	1.71	FALSE
CB-402	1,892.11	1,892.11	1888.11	4.00	0.85	False		1.29	1890.54	1.57	FALSE
CB-403	1,974.07	1,974.07	1972.57	1.50	0.42	False		2.43	1972.76	1.31	FALSE
CB-404	1,972.39	1,972.39	1970.89	1.50	0.17	True	Structure is 1.5 ft deep or less.	0.19	1972.39	0	TRUE
CB-405	1,896.44	1,896.44	1892.44	4.00	0.32	True		1.5	1896.44	0	TRUE
CB-406	1,899.47	1,899.47	1896.47	3.00	0.54	False		4	1898.3	1.17	FALSE
CB-407	1,902.82	1,902.82	1899.82	3.00	0.63	False		1.87	1901.06	1.76	FALSE
CB-408	1,906.93	1,906.93	1903.93	3.00	0.39	False		1.25	1905.65	1.28	FALSE
CB-409	1,897.00	1,897.00	1894	3.00	0.00	False	Paved Over Catch Basin	1.72	1896.43	0.57	TRUE
CB-410	1,900.34	1,900.34	1884.34	16.00	0.42	False		2.52	1898.92	1.42	FALSE
CB-411	1,896.29	1,896.29	1893.29	3.00	0.53	False		14.58	1894.14	2.15	FALSE
CB-412	1,906.75	1,906.75	1905.75	1.00	0.44	False	Structure is 1.5 ft deep or less.	0.85	1906.17	0.58	TRUE
CB-N413	1,908.78	1,908.78	1904.78	4.00	0.06	True		0.42	1908.64	0.14	TRUE
CB-414	1,908.70	1,908.70	1908.2	0.50	0.33	True	Row of shallow CB Drains, Structure is 1.5 ft deep or less.	4	1908.7	0	TRUE
CB-416	1,911.42	1,911.42	1907.42	4.00	0.16	False		0.5	1908.4	3.02	FALSE
CB-417	1,987.00	1,987.00	1986	1.00	0.00	False		0.98	1986	1	FALSE
CB-418	1,915.74	1,915.74	1911.74	4.00	0.34	False		0	1913.43	2.31	FALSE
CB-419	1,915.49	1,915.49	1911.49	4.00	0.39	False		1.69	1912.78	2.71	FALSE
CB-420	1,926.18	1,926.18	1923.18	3.00	1.67	False		1.29	1924.55	1.63	FALSE
CB-421	1,925.36	1,925.36	1921.86	3.50	1.05	False		1.37	1923.04	2.32	FALSE
CB-422	1,924.02	1,924.02	1922.52	1.50	0.24	False		1.18	1922.61	1.41	FALSE
CB-423	1,924.18	1,924.18	1922.68	1.50	0.37	False		0.09	1922.8	1.38	FALSE
CB-424	1,930.48	1,930.48	1926.48	4.00	1.35	False		0.12	1927.8	2.68	FALSE
CB-425	1,930.37	1,930.37	1926.37	4.00	1.51	False		1.32	1928.01	2.36	FALSE
CB-426	1,959.83	1,959.83	1955.83	4.00	1.05	False		1.64	1956.88	2.95	FALSE
CB-427	1,958.92	1,958.92	1954.92	4.00	0.84	False		1.05	1957.08	1.84	FALSE
CB-428	1,978.90	1,978.90	1974.9	4.00	0.51	False		2.16	1977.03	1.87	FALSE
CB-429	1,989.45	1,989.45	1985.45	4.00	0.63	False		2.13	1987.33	2.12	FALSE
CB-430	1,999.43	1,999.43	1996.43	3.00	0.87	False		1.88	1997.32	2.11	FALSE
CB-431	1,996.75	1,996.75	1993.75	3.00	0.46	False		0.89	1994.69	2.06	FALSE
CB-N432	1,996.23	1,996.23	1992.23	4.00	0.51	False		0.94	1993.34	2.89	FALSE
CB-433	2,007.92	2,007.92	2004.92	3.00	0.43	True		1.11	2007.92	0	TRUE
CB-434	2,009.31	2,009.31	2005.81	3.50	0.23	True		3	2007.96	1.35	FALSE
CB-435	2,012.09	2,012.09	2008.59	3.50	0.29	False		3.5	2009.27	2.82	FALSE
CB-436	2,012.38	2,012.38	2009.38	3.00	0.32	False		0.68	2009.81	2.57	FALSE
CB-437	2,009.20	2,009.20	2006.2	3.00	1.92	False		0.43	2006.43	2.77	FALSE
CB-438	2,016.16	2,016.16	2012.16	4.00	0.41	False		0.64	2012.7	3.46	FALSE
CB-439	2,016.57	2,016.57	2013.57	3.00	0.56	False		0.54	2014.2	2.37	FALSE
CB-440	2,018.42	2,018.42	2014.42	4.00	0.59	False		0.63	2015.84	2.58	FALSE
CB-441	2,017.30	2,017.30	2014.8	2.50	0.65	False		1.42	2017.01	0.29	TRUE
CB-442	2,019.66	2,019.66	2015.66	4.00	0.30	False		2.39	2017.03	2.63	FALSE
CB-443	2,020.02	2,020.02	2014.02	6.00	0.19	False		1.37	2015.69	4.33	FALSE
CB-444	2,017.00	2,017.00	2012.3	4.70	0.00	True		1.68	2017	0	TRUE
CB-445	2,020.00	2,020.00	2014.5	5.50	1.10	False		4.7	2015.69	4.31	FALSE
CB-446	2,019.50	2,019.50	2014.9	4.60	0.43	False		1.2	2015.66	3.84	FALSE
CB-447	2,012.01	2,012.01	2009.01	3.00	0.84	False		0.77	2009.47	2.54	FALSE

CB-450	2,008.18	2,008.18	2003.18	5.00	0.16	False		0.46	2004.19	3.99	FALSE
CB-451	2,007.19	2,007.19	2003.69	3.50	1.10	False		1.01	2005.61	1.58	FALSE
CB-452	1,964.70	1,964.70	1961.7	3.00	1.83	False		1.92	1962.68	2.02	FALSE
CB-453	1,894.17	1,894.17	1890	4.17	3.81	True		0.98	1891.66	2.51	FALSE
CB-454	1,894.49	1,894.49	1890.07	4.42	4.21	True		4.17	1894.49	0	TRUE
CB-457	2,053.00	2,053.00	2049	4.00	(N/A)	False	10-Year Future Buildout	4.42	(N/A)	#VALUE!	#VALUE!
CB-458	2,032.00	2,032.00	2028	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-459	2,048.00	2,048.00	2044	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-460	2,050.00	2,050.00	2046	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-461	2,025.00	2,025.00	2021	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-462	2,025.00	2,025.00	2021	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-463	2,023.50	2,023.50	2019.5	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-464	2,023.50	2,023.50	2019.5	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-465	2,017.50	2,017.50	2013.5	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-466	2,017.00	2,017.00	2013	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-467	2,003.00	2,003.00	1999	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-468	1,899.00	1,899.00	1895	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-469	1,891.00	1,891.00	1887	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-470	1,980.00	1,980.00	1976	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-471	1,974.00	1,974.00	1970	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-472	1,947.00	1,947.00	1943	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-473	1,950.00	1,950.00	1947	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-474	1,940.00	1,940.00	1937	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-475	1,940.50	1,940.50	1937.5	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-476	1,919.00	1,919.00	1916	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-477	1,910.00	1,910.00	1907	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-478	1,911.00	1,911.00	1908	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-479	2,065.00	2,065.00	2061	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-480	2,023.00	2,023.00	2019	4.00	0.36	False		(N/A)	2019.14	3.86	FALSE
CB-482	1,943.00	1,943.00	1939	4.00	(N/A)	False	10-Year Future Buildout	0.14	(N/A)	#VALUE!	#VALUE!
CB-483	1,938.00	1,938.00	1934	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-484	2,040.00	2,040.00	2036	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-485	2,040.00	2,040.00	2036	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-486	2,043.00	2,043.00	2040	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-487	1,928.00	1,928.00	1924	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-488	1,927.00	1,927.00	1923	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-489	1,919.76	1,919.76	1915.41	4.35	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-490	1,930.00	1,930.00	1926	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-491	1,909.00	1,909.00	1905	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-492	1,909.25	1,909.25	1905.25	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-493	1,908.50	1,908.50	1905.5	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-494	1,909.00	1,909.00	1906	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-495	1,909.25	1,909.25	1906.25	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-496	1,910.00	1,910.00	1906	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-497	19,010.50	19,010.50	1907.5	17,103.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-498	1,915.00	1,915.00	1912	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-499	1,902.50	1,902.50	1899.5	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-500	1,896.00	1,896.00	1893	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!

CB-501	1,897.50	1,897.50	1894.5	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-502	1,894.00	1,894.00	1890	4.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-503	1,899.00	1,899.00	1896	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-504	1,897.00	1,897.00	1894	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-505	2,039.00	2,039.00	2036	3.00	(N/A)	False	10-Year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-506	1,901.00	1,901.00	1898	3.00	(N/A)	False	Couldnt locate (GIS says MH)	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-508	1,908.97	1,908.97	1906.5	2.47	0.00	True	Uderground Box - No physical way to overflow to surface	(N/A)	1908.97	0	TRUE
CB-509	1,897.00	1,897.00	1893.5	3.50	0.55	False	BASIN - CULVERT OPENING	2.47	1895.54	1.46	FALSE
CB-510	1,908.18	1,908.18	1903.68	4.50	(N/A)	False	2043 Buildout	2.04	(N/A)	#VALUE!	#VALUE!
CB-511	1,908.07	1,908.07	1903.4	4.67	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-512	1,908.31	1,908.31	1903.81	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-513	1,907.93	1,907.93	1903.43	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-514	1,907.61	1,907.61	1903.11	4.50	(N/A)	False		(N/A)	(N/A)	#VALUE!	#VALUE!
ROOF DRAIN 1	1,907.51	1,907.51	1905.01	2.50	0.07	True	ROOF DRAIN	(N/A)	1905.2	2.31	FALSE
UNKNOWN CONNECTION	1,907.40	1,907.40	1906.9	0.50	0.07	False	UNKNOWN DRAIN - Less than 1.5 ft depth	2.5	1906.95	0.45	TRUE
CB-517	1,906.77	1,906.77	1902.27	4.50	(N/A)	False	2043 Buildout	0.05	(N/A)	#VALUE!	#VALUE!
CB-518	1,905.59	1,905.59	1902.69	2.90	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-519	1,906.45	1,906.45	1901.33	5.12	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-520	1,906.17	1,906.17	1900.97	5.20	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-521	1,905.32	1,905.32	1900.82	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-522	1,903.23	1,903.23	1898.73	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-523	1,903.03	1,903.03	1898.53	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-524	1,903.03	1,903.03	1899.53	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-525	1,902.88	1,902.88	1897.2	5.68	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-526	1,902.30	1,902.30	1897.8	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N527	1,902.99	1,902.99	1898.47	4.52	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N528	1,902.70	1,902.70	1897.69	5.01	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N529	1,902.64	1,902.64	1898.47	4.17	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-530	1,900.46	1,900.46	1895.96	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N531	1,900.42	1,900.42	1895.92	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N532	1,899.54	1,899.54	1896.04	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N533	1,899.41	1,899.41	1895.91	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N534	1,899.46	1,899.46	1897.46	2.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-535	1,899.40	1,899.40	1895.3	4.10	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N536	1,898.93	1,898.93	1894.43	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-537	1,896.62	1,896.62	1892.12	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-538	1,896.48	1,896.48	1891.98	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-539	1,894.71	1,894.71	1889.71	5.00	0.00	False		(N/A)	1889.71	5	FALSE
CB-N540	1,894.54	1,894.54	1889.87	4.67	0.00	False		0	1889.87	4.67	FALSE
CB-N541	1,899.82	1,899.82	1897.82	2.00	1.84	True		0	1899.82	0	TRUE
CB-542	1,908.52	1,908.52	1906.02	2.50	(N/A)	False	2043 Buildout	2	(N/A)	#VALUE!	#VALUE!
CB-543	1,911.07	1,911.07	1908.82	2.25	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
Unknown Alley Connection	1,910.00	1,910.00	1906.50	3.50	0.00	True		(N/A)	1909.66	0.34	TRUE
CB-545	1,908.83	1,908.83	1906.00	2.83	0.00	True		3.5	1908.83	0	TRUE

Manhole Table - Existing Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Total In) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum)	Hydraulic Grade	Freeboard (ft)	Less than 1 ft Freeboard
MH-3	1910.55	1910.55	1903.5	7.05	2.65	FALSE		2.27	1905.77	4.78	FALSE
MH-4	1911.26	1911.26	1904.26	7	0.31	FALSE		3.19	1907.45	3.81	FALSE
MH-5	1910.66	1910.66	1903.66	7	0	FALSE		3.69	1907.35	3.31	FALSE
MH-6	1909.18	1909.18	1902	7.18	0.23	FALSE		3.48	1905.48	3.7	FALSE
MH-7	1913.54	1913.54	1907.59	5.95	0.62	FALSE		0.36	1907.95	5.59	FALSE
MH-8	1912.47	1912.47	1908.47	4	0.34	FALSE		0.35	1908.82	3.65	FALSE
MH-9	1913.13	1913.13	1908.85	4.28	0.14	FALSE		0.24	1909.09	4.04	FALSE
MH-13	1920.89	1920.89	1915.39	5.5	0.32	FALSE		3.18	1918.57	2.32	FALSE
MH-14	1933.49	1933.49	N/A	0	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1933.49	FALSE
MH-15	1929.97	1929.97	1923.97	6	0.85	FALSE		0.42	1924.39	5.58	FALSE
MH-17	1911.16	1911.16	1905.6	5.56	0.19	FALSE		4.99	1910.59	0.57	TRUE
MH-18	1910.78	1910.78	0	1910.78	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1910.78	FALSE
MH-20	1918.57	1918.57	0	1918.57	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-22	1910.85	1910.85	1901.3	9.55	2.77	TRUE		9.55	1910.85	0	TRUE
MH-23	1910.39	1910.39	0	1910.39	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-24	1909.74	1909.74	1900.31	9.43	1.6	FALSE		8.58	1908.89	0.85	TRUE
MH-25	1910.21	1910.21	1899.69	10.52	0.02	FALSE		9.09	1908.78	1.43	FALSE
MH-26	1910.4	1910.4	1898.97	11.43	2.03	FALSE		9.7	1908.67	1.73	FALSE
MH-28	1909.04	1909.04	1898.27	10.77	2.35	FALSE		9.47	1907.74	1.3	FALSE
MH-30	1904.37	1904.37	1899.24	5.13	4.88	FALSE		0.77	1900.01	4.36	FALSE
MH-31	1903.65	1903.65	1897.73	5.92	2.64	TRUE		5.92	1903.65	0	TRUE
MH-32	1902.44	1902.44	1897.11	5.33	5.28	FALSE		0.74	1897.85	4.59	FALSE
MH-33	1900.11	1900.11	1893.41	6.7	7.05	FALSE		0.93	1894.34	5.77	FALSE
MH-35	1899.43	1899.43	1892.43	7	8.35	FALSE		0.98	1893.41	6.02	FALSE
MH-36	1897.78	1897.78	1889.78	8	7.91	FALSE		1.85	1891.63	6.15	FALSE
MH-47	1904.46	1904.46	1898.21	6.25	8.67	TRUE		6.25	1904.46	0	TRUE
MH-50	1997.4	1997.4	1992	5.4	1.05	FALSE		1.54	1993.54	3.86	FALSE
MH-51	1936	1936	1930.5	5.5	2.48	FALSE		1.02	1931.52	4.48	FALSE
MH-52	1934.98	1934.98	1930.5	4.48	2.8	FALSE		1.06	1931.56	3.42	FALSE
MH-53	1932.28	1932.28	1928.78	3.5	2.09	FALSE		1.02	1929.8	2.48	FALSE
MH-54	1924.75	1924.75	1916.36	8.39	0.86	FALSE		0.23	1916.59	8.16	FALSE
MH-55	1918.57	1918.57	1909.82	8.75	1.9	FALSE		3.82	1913.64	4.93	FALSE
MH-56	1912.12	1912.12	1905.15	6.97	3.53	TRUE		6.97	1912.12	0	TRUE
MH-58	1910.39	1910.39	1900.8	9.59	1.77	FALSE		9.42	1910.22	0.17	TRUE
MH-71	1912.21	1912.21	1906.19	6.02	0.63	FALSE		0.38	1906.57	5.64	FALSE
MH-72	1910.25	1910.25	1904.8	5.45	0.63	FALSE		0.38	1905.18	5.07	FALSE
MH-73	1908.4	1908.4	1902.95	5.45	0.86	FALSE		0.43	1903.38	5.02	FALSE
MH-74	1912.6	1912.6	1907	5.6	0	FALSE		0	1907	5.6	FALSE
MH-75	1911.5	1911.5	1907	4.5	0	FALSE		0	1907	4.5	FALSE
MH-78	1909.99	1909.99	1902.99	7	0.77	TRUE		7	1909.99	0	TRUE
MH-82	1908.56	1908.56	1904.56	4	0.52	TRUE	No outlet found so could not be properly modeled. No notable flooding observed.	4	1908.56	0	TRUE
MH-83	2003.86	2003.86	1996.86	7	0	FALSE		6.16	2003.02	0.84	TRUE

MH-84	2000.88	2000.88	1996.08	4.8	3.24	FALSE		0.42	1996.5	4.38	FALSE
MH-85	1900.14	1900.14	1894.14	6	18.4	FALSE		2.79	1896.93	3.21	FALSE
MH-86	1896	1896	1891.34	4.66	10.07	FALSE	PAVED OVER - Surface elevation is estimated.	2.17	1893.51	2.49	FALSE
MH-87	1893.78	1893.78	1888.77	5.01	11.25	TRUE		5.01	1893.78	0	TRUE
MH-90	1900.69	1900.69	1896.25	4.44	14.41	TRUE	PAVED OVER - Surface elevation is estimated.	4.44	1900.69	0	TRUE
MH-91	1892	1891.75	1888.04	3.71	13.12	FALSE	PAVED OVER - Surface elevation is estimated.	3.63	1891.67	0.08	TRUE
MH-92	1891.68	1891.68	1887.43	4.25	15.02	TRUE		4.25	1891.68	0	TRUE
MH-93	1891.83	1891.83	1887.23	4.6	16.59	FALSE		1.35	1888.58	3.25	FALSE
MH-94	1895.21	1895.21	1884.21	11	3.81	FALSE		4	1888.21	7	FALSE
MH-95	1910.51	1910.51	1903.76	6.75	0.91	FALSE		0.08	1903.84	6.67	FALSE
MH-96	2008.89	2008.89	2001.72	7.17	3.42	FALSE		0.69	2002.41	6.48	FALSE
MH-97	1915.91	1915.91	1908.91	7	0.72	FALSE		1.96	1910.87	5.04	FALSE
MH-99	1924.53	1924.53	0	1924.53	2.68	FALSE		359.9	359.9	1564.63	FALSE
MH-100	1930.22	1930.22	1924.22	6	2.83	FALSE		2.42	1926.64	3.58	FALSE
MH-101	1960.12	1960.12	1952	8.12	1.87	FALSE		1.58	1953.58	6.54	FALSE
MH-102	1978.94	1978.94	1971.44	7.5	0.51	FALSE		1.63	1973.07	5.87	FALSE
MH-103	1989.7	1989.7	1982.2	7.5	0.63	FALSE		1.69	1983.89	5.81	FALSE
MH-104	1996.07	1996.07	1990.07	6	1.8	FALSE		0.08	1990.15	5.92	FALSE
MH-105	2008.71	2008.71	2002.71	6	0.23	FALSE		5.39	2008.1	0.61	TRUE
MH-106	2010.75	2010.75	2003.75	7	0.23	FALSE		4.76	2008.51	2.24	FALSE
MH-108	2012.75	2012.75	2006.75	6	0.6	FALSE		1.4	2008.15	4.6	FALSE
MH-109	2006.63	2006.63	2000.63	6	1.92	TRUE		6	2006.63	0	TRUE
MH-110	2012.44	2012.44	2006.44	6	0.84	FALSE		1.97	2008.41	4.03	FALSE
MH-111	1965.47	1965.47	1959.47	6	1.83	FALSE		1.7	1961.17	4.3	FALSE
MH-126	2009.6	2009.6	1993.52	16.08	1.18	FALSE		0.33	1993.85	15.75	FALSE
MH-127	2040	2040	2034	6	(N/A)	(N/A)	FUTURE BUILDOUT	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-128	2100	2100	2094	6	(N/A)	(N/A)	FUTURE BUILDOUT	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-129	1909.1	1909.1	1903	6.1	(N/A)	(N/A)	2043 BUILDOUT	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-130	2066.26	2066.26	2060.75	5.51	0	FALSE		0	2060.75	5.51	FALSE
MH-134	1908.81	1908.81	1902.16	6.65	0	FALSE	PAVED OVER - Surface elevation is estimated.	5.85	1908.01	0.8	TRUE
MH-137	1906.9	1906.9	1899.8	7.1	3.14	FALSE		0.66	1900.46	6.44	FALSE
MH-138	1894.82	1894.82	1886.32	8.5	2.43	FALSE		5.52	1891.84	2.98	FALSE
MH-140	1909.7	1909.7	1905.7		0.89	FALSE	Pour-in-Place uncovered, coundnt access. IEs unknown. Grout Plug approx 100 LF west of MH	3.52	1909.22	0.48	TRUE
MH-141	1910.21	1910.21	1904.84		0.89	TRUE		5.37	1910.21	0	TRUE

Description:

This table set highlights all structures that are overflowing or have less than one foot of freeboard during the storm peak for a 10-year future build out scenario.

Stormwater Modeling Analysis - Structures Less Than 1 ft Freeboard

10-Year Future System Layout

Storm Data: 25-Year, Short Duration (3-Hour) Storm
Adjusted Total Precipitation for Cle Elum: 1.1 Inches
Peak Time Analyzed: 1.25 Hours

Catch Basin Table - 10-Year Future Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Captured) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum) (ft)	Hydraulic Grade (Maximum)	Freeboard (ft)	Less than 1 ft Freeboard
CB-2	1911.95	1911.95	1908.95	3.00	0.44	False		0.92	1909.87	2.08	FALSE
CB-3	1911.45	1911.45	1907.45	4.00	0.48	False		2.13	1909.58	1.87	FALSE
CB-4	1912.35	1912.35	1908.35	4.00	0.61	False		1.97	1910.32	2.03	FALSE
CB-5	1912	1912	1908	4.00	0.14	False		0.99	1908.99	3.01	FALSE
CB-6	1911.8	1911.8	1907.8	4.00	0.15	False		2.23	1910.03	1.77	FALSE
CB-7	1911.75	1911.75	1907.75	4.00	0.17	False		2.21	1909.96	1.79	FALSE
CB-8	1911.95	1911.95	1905	6.95	0.20	False		0.95	1905.95	6	FALSE
CB-9	1910.84	1910.84	1903.84	7.00	0.58	False		1.92	1905.76	5.08	FALSE
CB-10	1910.7	1910.7	1903.5	7.20	0.26	False		2.26	1905.76	4.94	FALSE
CB-11	1910.95	1910.95	1907.95	3.00	0.20	False		1.23	1909.18	1.77	FALSE
CB-12	1910.38	1910.38	1907.38	3.00	0.63	True		3	1910.38	0	TRUE
CB-13	1910.37	1910.37	1906.37	4.00	0.35	True		4	1910.37	0	TRUE
CB-14	1910.09	1910.09	0	1,910.09	0.00	False	Couldn't field locate - perhaps abated	0	0	1910.09	FALSE
CB-15	1910.25	1910.25	0	1,910.25	0.00	False	Couldn't field locate - perhaps abated	0	0	1910.25	FALSE
CB-16	1910.54	1910.54	1906.5	4.04	0.19	False	NW Pipe Sealed.	1.73	1908.23	2.31	FALSE
CB-17	1910.3	1910.3	1906.3	4.00	0.26	False		1.79	1908.09	2.21	FALSE
CB-413	1909.87	1909.87	1901.3	8.57	0.63	False		4.41	1905.71	4.16	FALSE
CB-19	1909.9	1909.9	1905.9	4.00	0.43	False		2.78	1908.68	1.22	FALSE
CB-20	1909.75	1909.75	1905.75	4.00	0.34	False		1.99	1907.74	2.01	FALSE
CB-21	1909.63	1909.63	1901.19	8.44	0.44	False		4.48	1905.67	3.96	FALSE
CB-22	1909	1909	1906	3.00	0.44	False		1.3	1907.3	1.7	FALSE
CB-23	1909.9	1909.9	1905.9	4.00	0.37	False		1.38	1907.28	2.62	FALSE
CB-24	1909.7	1909.7	1901.04	8.66	0.56	False		4.58	1905.62	4.08	FALSE
CB-25	1909.3	1909.3	1905.3	4.00	0.30	False		1.81	1907.11	2.19	FALSE
CB-26	1908.95	1908.95	1904.95	4.00	0.41	False		1.9	1906.85	2.1	FALSE
CB-27	1909.35	1909.35	1900.68	8.67	0.16	False		4.89	1905.57	3.78	FALSE
CB-28	1909.85	1909.85	1905	4.85	0.10	False		2.24	1907.24	2.61	FALSE
CB-30	1909.15	1909.15	1906.15	3.00	0.39	False		1.1	1907.25	1.9	FALSE
CB-31	1908.67	1908.67	1900.23	8.44	0.55	False		5.2	1905.43	3.24	FALSE
CB-32	1908.7	1908.7	1904.7	4.00	0.38	False		1.78	1906.48	2.22	FALSE
CB-33	1907.8	1907.8	1903	4.80	0.26	False		2.24	1905.24	2.56	FALSE
CB-34	1907.55	1907.55	1903.55	4.00	0.38	False		1.87	1905.42	2.13	FALSE
CB-35	1907.75	1907.75	1903.75	4.00	0.40	False		1.88	1905.63	2.12	FALSE

CB-36	1907.67	1907.67	1900.99	6.68	0.59	False		4.26	1905.25	2.42	FALSE
CB-37	1907.6	1907.6	1900.99	6.61	0.33	False		4.14	1905.13	2.47	FALSE
CB-38	1907.7	1907.7	1903.7	4.00	0.13	False		1.7	1905.4	2.3	FALSE
CB-39	1907.4	1907.4	1903.4	4.00	0.40	False		1.88	1905.28	2.12	FALSE
CB-40	1907.7	1907.7	1901.33	6.37	0.17	False		3.65	1904.98	2.72	FALSE
CB-41	1907.75	1907.75	1903.5	4.25	0.17	False		1.76	1905.26	2.49	FALSE
CB-42	1907.5	1907.5	1903.5	4.00	0.28	False		1.82	1905.32	2.18	FALSE
CB-43	1906.37	1906.37	1901.46	4.91	0.65	False		3.44	1904.9	1.47	FALSE
CB-44	1906.85	1906.85	1903.85	3.00	0.49	False		0.83	1904.68	2.17	FALSE
CB-45	1906.3	1906.3	1901.36	4.94	0.38	False		3.43	1904.79	1.51	FALSE
CB-46	1906.15	1906.15	1902.15	4.00	0.31	False		2.51	1904.66	1.49	FALSE
CB-47	1906.35	1906.35	1903.35	3.00	0.26	False		1.64	1904.99	1.36	FALSE
CB-48	1906.15	1906.15	1902.15	4.00	0.12	False		2.46	1904.61	1.54	FALSE
CB-49	1906.75	1906.75	1903.75	3.00	0.20	False		0.9	1904.65	2.1	FALSE
CB-50	1906.45	1906.45	1901.2	5.25	0.13	False		3.59	1904.79	1.66	FALSE
CB-51	1906.35	1906.35	1903.35	3.00	0.23	False		1.3	1904.65	1.7	FALSE
CB-52	1930.06	1930.06	1925.56	4.50	0.58	False		4.5	1930.06	0	TRUE
CB-53	1929.65	1929.65	1925.15	4.50	0.28	False		1.13	1926.28	3.37	FALSE
CB-55	2012.47	2012.47	2007.47	5.00	0.00	False		0	2007.47	5	FALSE
CB-56	2013.56	2013.56	2010.56	3.00	0.54	False		2	2012.56	1	FALSE
CB-57	2014.1	2014.1	2013.1	1.00	0.00	False		0	2013.1	1	FALSE
CB-58	1998.3	1998.3	1997.8	0.50	0.65	False	Less than 1 ft deep structure.	0	1997.8	0.5	TRUE
CB-N6	2007.32	2007.32	2006.32	1.00	0.19	False	Less than 1 ft deep structure.	0	2006.32	1	FALSE
CB-148	2009.26	2009.26	2006.26	3.00	0.75	False		0.19	2006.45	2.81	FALSE
CB-62	2010.87	2010.87	2007.37	3.50	0.69	False		2.98	2010.35	0.52	TRUE
CB-64	1922.22	1922.22	1919.22	3.00	0.47	False		1.26	1920.48	1.74	FALSE
CB-66	1919.86	1919.86	1916.36	3.50	0.27	False		2.74	1919.1	0.76	TRUE
CB-67	1918.4	1918.4	1916.9	1.50	1.36	False	Structure is 1.5 ft deep or less.	0.9	1917.8	0.6	TRUE
CB-68	1917.74	1917.74	1916.24	1.50	0.83	False	Structure is 1.5 ft deep or less.	1.1	1917.34	0.4	TRUE
CB-69	1916.98	1916.98	1915.14	1.84	0.35	False		1.84	1916.98	0	TRUE
CB-73	1909.2	1909.2	1905.2	4.00	0.73	True		4	1909.2	0	TRUE
CB-76	1931.78	1931.78	1930.11	1.67	0.15	False		0.1	1930.21	1.57	FALSE
CB-77	1912.88	1912.88	1909.38	3.50	0.60	False		0.26	1909.64	3.24	FALSE
CB-78	1907.93	1907.93	1905.1	2.83	0.50	False		0.52	1905.62	2.31	FALSE
CB-79	1908.71	1908.71	1907.7	1.01	0.21	False	Structure is 1.5 ft deep or less.	0.16	1907.86	0.85	TRUE
CB-N1	1908.97	1908.97	0	1,908.97	0.00	False		0	0	1908.97	FALSE
CB-N2	1908.86	1908.86	0	1,908.86	0.00	False		0	0	1908.86	FALSE
CB-N3	1908.99	1908.99	0	1,908.99	0.00	False		0	0	1908.99	FALSE
CB-86	1911.84	1911.84	1908.84	3.00	0.15	False		1.18	1910.02	1.82	FALSE
CB-87	1911.95	1911.95	1910.45	1.50	0.18	False	Structure is 1.5 ft deep or less.	0.74	1911.19	0.76	TRUE
CB-88	1912.97	1912.97	1908.97	4.00	0.00	False		0	1908.97	4	FALSE
CB-89	1912.32	1912.32	1908.9	3.42	0.00	False		0.2	1909.1	3.22	FALSE
CB-90	1912.52	1912.52	1909.35	3.17	0.00	False		0	1909.35	3.17	FALSE
CB-91	1912.6	1912.6	1908.6	4.00	0.16	False		0.51	1909.11	3.49	FALSE
CB-94	1913.09	1913.09	1909.74	3.35	0.28	False		0.1	1909.84	3.25	FALSE
CB-95	1912.99	1912.99	1909.92	3.07	0.34	False		0.28	1910.2	2.79	FALSE
CB-96	1912.19	1912.19	1909.19	3.00	0.19	False		0.12	1909.31	2.88	FALSE
CB-98	1911.93	1911.93	1908.76	3.17	0.15	False		0.16	1908.92	3.01	FALSE

CB-99	1910.96	1910.96	1906.96	4.00	0.36	False		1.23	1908.19	2.77	FALSE
CB-100	1910.56	1910.56	1905.56	5.00	0.21	False		1.95	1907.51	3.05	FALSE
CB-101	1910.5	1910.5	1905.5	5.00	0.25	False		2.53	1908.03	2.47	FALSE
CB-104	1910.57	1910.57	1906.57	4.00	0.16	False		1.09	1907.66	2.91	FALSE
CB-105	1910.7	1910.7	1906.7	4.00	0.15	False		1.28	1907.98	2.72	FALSE
CB-106	1910.07	1910.07	1906.07	4.00	0.08	False		1.25	1907.32	2.75	FALSE
CB-107	1910.12	1910.12	1906.12	4.00	0.07	False		1.22	1907.34	2.78	FALSE
CB-108	1909.07	1909.07	1905.07	4.00	0.11	False		1	1906.07	3	FALSE
CB-109	1908.91	1908.91	1904.91	4.00	0.12	False		1.3	1906.21	2.7	FALSE
CB-110	1908.9	1908.9	1904.9	4.00	0.05	True	Planned for replacement prior to Plan analysis.	4	1908.9	0	TRUE
CB-111	1908.77	1908.77	1904.77	4.00	0.47	True	Planned for replacement prior to Plan analysis.	4	1908.77	0	TRUE
CB-112	1908.96	1908.96	1904.96	4.00	0.08	False	Planned for replacement prior to Plan analysis.	3.92	1908.88	0.08	TRUE
CB-113	1908.55	1908.55	1904.55	4.00	0.14	True	Planned for replacement prior to Plan analysis.	4	1908.55	0	TRUE
CB-114	1908.81	1908.81	1904.81	4.00	0.10	False	Planned for replacement prior to Plan analysis.	3.78	1908.59	0.22	TRUE
CB-116	1908.09	1908.09	1904.09	4.00	0.21	True	Planned for replacement prior to Plan analysis.	4	1908.09	0	TRUE
CB-117	1907.7	1907.7	1905.7	2.00	0.29	True	Planned for replacement prior to Plan analysis.	2	1907.7	0	TRUE
CB-118	1908.09	1908.09	1904.09	4.00	0.40	False	Planned for replacement prior to Plan analysis.	3.9	1907.99	0.1	TRUE
CB-119	1908.09	1908.09	1904.09	4.00	0.19	False	Planned for replacement prior to Plan analysis.	3.93	1908.02	0.07	TRUE
CB-120	1907.8	1907.8	1903.8	4.00	0.45	True	Planned for replacement prior to Plan analysis.	4	1907.8	0	TRUE
CB-121	1907.5	1907.5	1903.5	4.00	0.13	True	Planned for replacement prior to Plan analysis.	4	1907.5	0	TRUE
CB-122	1907.13	1907.13	1903.13	4.00	0.14	True	Planned for replacement prior to Plan analysis.	4	1907.13	0	TRUE
CB-123	1906.78	1906.78	1903.78	3.00	0.44	False	Planned for replacement prior to Plan analysis.	3	1906.78	0	TRUE
CB-124	1906.18	1906.18	1903.18	3.00	0.41	False	Planned for replacement prior to Plan analysis.	2.62	1905.8	0.38	TRUE
CB-126	1908.7	1908.7	1904.7	4.00	0.12	False		0	1904.7	4	FALSE
CB-128	1906.29	1906.29	1902.29	4.00	0.12	False		2.96	1905.25	1.04	FALSE
CB-129	1905.6	1905.6	1901.6	4.00	0.16	False	Planned for replacement prior to Plan analysis.	3.55	1905.15	0.45	TRUE
CB-130	1905.69	1905.69	1902.69	3.00	0.14	False	Planned for replacement prior to Plan analysis.	2.2	1904.89	0.8	TRUE
CB-131	1906.26	1906.26	1901	5.26	0.26	False		3.54	1904.54	1.72	FALSE
CB-132	1905.44	1905.44	1903.44	2.00	0.15	False	Planned for replacement prior to Plan analysis.	1.79	1905.23	0.21	TRUE
CB-133	1905.38	1905.38	1903.84	1.54	0.32	True	Planned for replacement prior to Plan analysis.	1.54	1905.38	0	TRUE
CB-134	1906.91	1906.91	1905.41	1.50	0.18	False		0.07	1905.48	1.43	FALSE
CB-135	1906.4	1906.4	1901.06	5.34	0.20	False		5.24	1906.3	0.1	TRUE
CB-136	1906.6	1906.6	1900.34	6.26	0.14	True		6.26	1906.6	0	TRUE
CB-137	1906.37	1906.37	1902.37	4.00	0.48	False		1.66	1904.03	2.34	FALSE
CB-138	1906.39	1906.39	1902.39	4.00	0.32	False		1.31	1903.7	2.69	FALSE
CB-139	1905.18	1905.18	1902.18	3.00	0.59	False		0.81	1902.99	2.19	FALSE
CB-140	1905.09	1905.09	1898.59	6.50	0.80	True		6.5	1905.09	0	TRUE
CB-142	1904.37	1904.37	1901.37	3.00	0.37	True		3	1904.37	0	TRUE

CB-143	1903.77	1903.77	1900.35	3.42	0.41	True		3.42	1903.77	0	TRUE
CB-144	1904.02	1904.02	1898.44	5.58	0.57	True		5.58	1904.02	0	TRUE
CB-145	1901.24	1901.24	1898.24	3.00	1.77	True		3	1901.24	0	TRUE
CB-146	1900.7	1900.7	1897.7	3.00	0.61	True		3	1900.7	0	TRUE
CB-147	1901.18	1901.18	1899.68	1.50	1.42	True	Structure is 1.5 ft deep or less.	1.5	1901.18	0	TRUE
CB-N148	1900.69	1900.69	1898	2.69	0.16	True		2.69	1900.69	0	TRUE
CB-149	1900.72	1900.72	1899.22	1.50	0.29	False	Structure is 1.5 ft deep or less.	0.76	1899.98	0.74	TRUE
CB-N7	1900.06	1900.06	1897	3.06	0.34	False		2.29	1899.29	0.77	TRUE
CB-151	1901.36	1901.36	1899.36	2.00	0.11	False		0.5	1899.86	1.5	FALSE
CB-152	1900.6	1900.6	1896.6	4.00	0.58	False		1.96	1898.56	2.04	FALSE
CB-155	1900.17	1900.17	1897.17	3.00	0.45	False		1.6	1898.77	1.4	FALSE
CB-157	1898.84	1898.84	1896.94	1.90	0.41	True		1.9	1898.84	0	TRUE
CB-N8	1898.68	1898.68	1897.48	1.20	0.36	False	Structure is 1.5 ft deep or less.	0.63	1898.11	0.57	TRUE
CB-159	1897.24	1897.24	1896	1.24	0.86	True	Structure is 1.5 ft deep or less.	1.24	1897.24	0	TRUE
CB-160	1896.84	1896.84	1892.84	4.00	0.80	False		3.08	1895.92	0.92	TRUE
CB-161	1896.77	1896.77	1894	2.77	0.46	False		0.94	1894.94	1.83	FALSE
CB-162	1896.77	1896.77	1893.27	3.50	1.06	False		0.6	1893.87	2.9	FALSE
CB-163	1901.27	1901.27	1898.94	2.33	1.11	False		0.42	1899.36	1.91	FALSE
CB-164	1901.73	1901.73	1897.73	4.00	0.71	False		3.33	1901.06	0.67	TRUE
CB-165	1895.5	1895.5	1893.5	2.00	1.48	False		0.48	1893.98	1.52	FALSE
CB-166	1893.92	1893.92	1892	1.92	1.78	True		1.92	1893.92	0	TRUE
CB-167	1893.68	1893.68	1890.68	3.00	0.48	True		3	1893.68	0	TRUE
CB-169	1892.74	1892.74	1890	2.74	0.59	True		2.74	1892.74	0	TRUE
CB-170	1892.45	1892.45	1889.45	3.00	0.68	False		2.26	1891.71	0.74	TRUE
CB-171	1892.07	1892.07	1888.07	4.00	0.20	False		3.96	1892.03	0.04	TRUE
CB-172	1892.04	1892.04	1890.04	2.00	0.24	True		1.97	1892.01	0.03	TRUE
CB-173	1891.85	1891.85	1887.85	4.00	0.71	True		4	1891.85	0	TRUE
CB-174	1891.78	1891.78	1888.78	3.00	0.57	False	Broken Lid	2.33	1891.11	0.67	TRUE
CB-177	1895.96	1895.96	1892.46	3.50	0.55	False		2.29	1894.75	1.21	FALSE
CB-178	1896.3	1896.3	1893.3	3.00	0.69	False		1.41	1894.71	1.59	FALSE
CB-179	1891.92	1891.92	1889.92	2.00	0.53	False		0	1889.92	2	FALSE
CB-180	1891.37	1891.37	1888.37	3.00	0.20	False		1.72	1890.09	1.28	FALSE
CB-182	1891.52	1891.52	1888.52	3.00	1.18	True		3	1891.52	0	TRUE
CB-183	1891.78	1891.78	0	1,891.78	0.91	False		0	0	1891.78	FALSE
CB-184	1891.54	1891.54	1885.54	6.00	0.48	False		3.55	1889.09	2.45	FALSE
CB-185	1890.66	1890.66	1886.16	4.50	0.75	False		3.15	1889.31	1.35	FALSE
CB-N9	1891.68	1891.68	1888.68	3.00	0.00	False		0	1888.68	3	FALSE
CB-187	1912.25	1912.25	1908.25	4.00	0.38	False		2.22	1910.47	1.78	FALSE
CB-188	1906.25	1906.25	1900.7	5.55	0.46	False		4.96	1905.66	0.59	TRUE
CB-189	1906.15	1906.15	1900.98	5.17	0.39	True		5.17	1906.15	0	TRUE
CB-190	1906.15	1906.15	1902.15	4.00	0.37	False		1.93	1904.08	2.07	FALSE
CB-191	1905.75	1905.75	1898.75	7.00	0.55	True		7	1905.75	0	TRUE
CB-192	1905.75	1905.75	1902.25	3.50	0.43	False		1.17	1903.42	2.33	FALSE
CB-197	1911.73	1911.73	1909.31	2.42	0.43	True		2.42	1911.73	0	TRUE
CB-198	1911.82	1911.82	1909.82	2.00	0.58	True		2	1911.82	0	TRUE
CB-199	1911.84	1911.84	1908.67	3.17	0.00	False		0	1908.67	3.17	FALSE
CB-201	1910.36	1910.36	1907.94	2.42	0.55	True		2.42	1910.36	0	TRUE
CB-202	1909.96	1909.96	1906.29	3.67	0.34	True		3.67	1909.96	0	TRUE

CB-209	1909.34	1909.34	1908.34	1.00	0.93	False		0	1908.34	1	FALSE
CB-210	1909.95	1909.95	1905.95	4.00	0.15	True		4	1909.95	0	TRUE
CB-211	1909.07	1909.07	1906.15	2.92	0.27	True		2.92	1909.07	0	TRUE
CB-212	1908.54	1908.54	1903.54	5.00	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-213	1908.55	1908.55	1905.25	3.30	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-214	1908.46	1908.46	0	1,908.46	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-215	1908.38	1908.38	0	1,908.38	(N/A)	False	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-226	1908.97	1908.97	1907.47	1.50	0.55	True	Structure is 1.5 ft deep or less.	1.5	1908.97	0	TRUE
CB-227	1909.5	1909.5	1907	2.50	0.25	True		2.5	1909.5	0	TRUE
CB-230	1907.53	1907.53	1906	1.53	0.77	True		1.53	1907.53	0	TRUE
CB-231	1907.72	1907.72	1905	2.72	1.03	True	Wooden Lid	2.72	1907.72	0	TRUE
CB-232	1906.83	1906.83	1905.5	1.33	0.94	False		0.21	1905.71	1.12	FALSE
CB-233	1905.74	1905.74	1902.7	3.04	1.06	False		0.26	1902.96	2.78	FALSE
CB-235	1901.84	1901.84	1899.87	1.97	0.53	True		1.97	1901.84	0	TRUE
CB-236	1902.3	1902.3	1900.3	2.00	1.98	True		2	1902.3	0	TRUE
CB-237	0	0	0	0.00	0.00	False	Couldn't field locate - perhaps abated	0	0	0	TRUE
CB-239	1899.16	1899.16	1896.56	2.60	2.30	True		2.6	1899.16	0	TRUE
CB-241	1900.03	1900.03	1898.03	2.00	1.63	False		1.16	1899.19	0.84	TRUE
CB-242	1899.11	1899.11	1895.11	4.00	0.57	False		2.93	1898.04	1.07	FALSE
CB-243	1898.41	1898.41	1895.41	3.00	0.13	False		2.09	1897.5	0.91	TRUE
CB-244	1898.51	1898.51	1895.51	3.00	0.37	False		0.65	1896.16	2.35	FALSE
CB-245	1898.82	1898.82	1897.22	1.60	0.96	False		0.75	1897.97	0.85	TRUE
CB-246	1899.69	1899.69	1897	2.69	0.67	False		0.52	1897.52	2.17	FALSE
CB-249	1891.58	1891.58	1888.58	3.00	0.41	False		1.12	1889.7	1.88	FALSE
CB-283	1934.95	1934.95	1930.95	4.00	2.09	False		2.1	1933.05	1.9	FALSE
CB-586	2056.05	2056.05	2052.59	3.46	0.00	False		0	2052.59	3.46	FALSE
CB-587	2056.5	2056.5	2051.84	4.66	0.00	False		0	2051.84	4.66	FALSE
CB-588	2057.55	2057.55	2051.16	6.39	0.00	False		0	2051.16	6.39	FALSE
CB-589	2057.29	2057.29	2050.22	7.07	0.00	False		0	2050.22	7.07	FALSE
CB-590	2050.84	2050.84	2045.85	4.99	0.00	False		0	2045.85	4.99	FALSE
CB-567	2069.15	2069.15	2063.46	5.69	0.00	False		0	2063.46	5.69	FALSE
CB-570	2066.02	2066.02	2063.02	3.00	0.00	False		0	2063.02	3	FALSE
CB-620	2066.72	2066.72	2063.72	3.00	0.00	False		0	2063.72	3	FALSE
CB-574	2068.99	2068.99	2058.01	10.98	0.00	False		0	2058.01	10.98	FALSE
CB-577	2072.99	2072.99	2070	2.99	0.00	False		0	2070	2.99	FALSE
CB-576	2079.23	2079.23	2074.3	4.93	0.00	False		0	2074.3	4.93	FALSE
CB-578	2062.76	2062.76	2057.76	5.00	0.00	False		0	2057.76	5	FALSE
CB-592	2050.25	2050.25	2045.25	5.00	0.00	False		0	2045.25	5	FALSE
CB-595	2036.87	2036.87	2033.37	3.50	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2033.37	3.5	FALSE
CB-591	2049.6	2049.6	2045.75	3.85	0.00	False		0	2045.75	3.85	FALSE
CB-593	2049.71	2049.71	2045.84	3.87	0.00	False		0	2045.84	3.87	FALSE
CB-596	2034.65	2034.65	2029.65	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2029.65	5	FALSE
CB-604	2031.4	2031.4	2026.4	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	2026.4	5	FALSE
CB-610	2012.73	2012.73	2009.91	2.82	0.00	False		0	2009.91	2.82	FALSE
CB-609	2012.25	2012.25	2010.14	2.11	0.00	False		0	2010.14	2.11	FALSE

CB-555	2014.48	2014.48	2011.29	3.19	0.00	False		0	2011.29	3.19	FALSE
CB-557	2018.45	2018.45	2014.41	4.04	0.00	False		0	2014.41	4.04	FALSE
CB-554	2014.52	2014.52	2011.38	3.14	0.00	False		0	2011.38	3.14	FALSE
CB-566	2019.25	2019.25	2015.58	3.67	0.00	False		0	2015.58	3.67	FALSE
CB-619	2017.97	2017.97	2014.97	3.00	0.00	False		0	2014.97	3	FALSE
CB-558	2019.28	2019.28	2016.28	3.00	0.00	False		0	2016.28	3	FALSE
CB-559	2020.69	2020.69	2017.69	3.00	0.00	False		0	2017.69	3	FALSE
CB-561	2009.91	2009.91	2007.33	2.58	0.00	False		0	2007.33	2.58	FALSE
CB-560	2009	2009	2007.5	1.50	0.00	False		0	2007.5	1.5	FALSE
CB-608	2008.24	2008.24	2005.05	3.19	0.00	False		0	2005.05	3.19	FALSE
CB-607	2008.24	2008.24	2005.05	3.19	0.00	False		0	2005.05	3.19	FALSE
CB-540	2006.4	2006.4	2003.22	3.18	0.00	False		0	2003.22	3.18	FALSE
CB-541	2006.61	2006.61	1995.75	10.86	0.00	False	PRIVATELY MAINTAINED - GIS description	0	1995.75	10.86	FALSE
CB-565	2010.88	2010.88	2007.87	3.01	0.00	False		0	2007.87	3.01	FALSE
CB-564	2021.46	2021.46	2013.46	8.00	0.00	False		0	2013.46	8	FALSE
CB-563	2024.21	2024.21	2016.83	7.38	0.00	False		0	2016.83	7.38	FALSE
CB-562	2022.15	2022.15	2017.51	4.64	0.00	False		0	2017.51	4.64	FALSE
CB-616	2004.05	2004.05	1999.05	5.00	0.00	False	PRIVATELY MAINTAINED - GIS description	0	1999.05	5	FALSE
CB-536	2006.4	2006.4	2004.83	1.57	0.00	False		0	2004.83	1.57	FALSE
CB-579	2056.16	2056.16	2053.16	3.00	0.00	False		0	2053.16	3	FALSE
CB-580	2052.36	2052.36	2049.23	3.13	0.00	False		0	2049.23	3.13	FALSE
CB-581	2047.9	2047.9	2044.9	3.00	0.00	False		0	2044.9	3	FALSE
CB-618	2030.03	2030.03	2026.89	3.14	0.00	False		0	2026.89	3.14	FALSE
CB-531	2021.36	2021.36	2018.36	3.00	0.00	False		0	2018.36	3	FALSE
CB-533	2013.89	2013.89	2008.87	5.02	0.00	False		0	2008.87	5.02	FALSE
CB-534	2010.12	2010.12	2005.14	4.98	0.00	False		0	2005.14	4.98	FALSE
CB-527	2035.68	2035.68	2032	3.68	0.00	False		0	2032	3.68	FALSE
CB-528	2031.68	2031.68	2027.68	4.00	0.00	False		0	2027.68	4	FALSE
CB-529	2028.68	2028.68	2024.37	4.31	0.00	False		0	2024.37	4.31	FALSE
CB-532	2021.11	2021.11	2016.11	5.00	0.24	False		0.15	2016.26	4.85	FALSE
CB-617	2014.22	2014.22	2010.48	3.74	0.30	False		0.13	2010.61	3.61	FALSE
CB-551	2002.23	2002.23	1998.23	4.00	0.00	False		0	1998.23	4	FALSE
CB-611	2001.15	2001.15	1998.65	2.50	0.00	False		0	1998.65	2.5	FALSE
CB-432	1909.26	1909.26	1908.06	1.20	0.82	True	Structure is 1.5 ft deep or less.	1.2	1909.26	0	TRUE
CB-176	1896.29	1896.29	1893.29	3.00	0.79	False		2.38	1895.67	0.62	TRUE
CB-181	1892.2	1892.2	1889.2	3.00	0.29	False		0.75	1889.95	2.25	FALSE
CB-127	1908.75	1908.75	0	1,908.75	0.00	False	Couldn't field locate - perhaps abated	0	0	1908.75	FALSE
CB-322	1996.85	1996.85	1993.85	3.00	1.06	False		0.42	1994.27	2.58	FALSE
CB-323	1960.17	1960.17	1957.17	3.00	1.10	False		0.18	1957.35	2.82	FALSE
CB-324	1939.15	1939.15	1935.72	3.43	0.46	False		0.58	1936.3	2.85	FALSE
CB-325	1939.15	1939.15	1935.59	3.56	0.98	False		0.35	1935.94	3.21	FALSE
CB-326	1934.97	1934.97	1931.97	3.00	1.16	False		0.27	1932.24	2.73	FALSE
CB-327	1934.49	1934.49	1931.49	3.00	1.09	False		0.4	1931.89	2.6	FALSE
CB-328	1934.49	1934.49	1931.36	3.13	0.58	False		0.46	1931.82	2.67	FALSE
CB-329	1929.6	1929.6	1924.6	5.00	0.90	True		5	1929.6	0	TRUE
CB-330	1924.43	1924.43	1920.93	3.50	0.87	False		0.16	1921.09	3.34	FALSE
CB-331	1918.9	1918.9	1915.9	3.00	1.07	False		0.17	1916.07	2.83	FALSE

CB-332	1912.35	1912.35	1909.35	3.00	0.75	True		3	1912.35	0	TRUE
CB-333	1910.17	1910.17	1907.17	3.00	0.53	True		3	1910.17	0	TRUE
CB-334	1909.61	1909.61	1906.61	3.00	0.41	True		3	1909.61	0	TRUE
CB-335	1909.34	1909.34	1906.26	3.08	0.12	False		2.91	1909.17	0.17	TRUE
CB-336	1908.87	1908.87	1906.87	2.00	0.34	True		2	1908.87	0	TRUE
CB-337	1909.04	1909.04	1906.45	2.59	0.32	True		2.59	1909.04	0	TRUE
CB-338	1909.15	1909.15	1906.15	3.00	0.10	True		3	1909.15	0	TRUE
CB-339	1908.82	1908.82	1905.82	3.00	0.24	True		3	1908.82	0	TRUE
CB-340	1908.65	1908.65	1905.65	3.00	0.32	True		3	1908.65	0	TRUE
CB-341	1908.78	1908.78	1905.78	3.00	0.37	False		3	1908.78	0	TRUE
CB-342	1908.9	1908.9	1905.4	3.50	0.10	True		3.35	1908.75	0.15	TRUE
CB-343	1908.66	1908.66	1905.66	3.00	0.42	True		3	1908.66	0	TRUE
CB-344	1908.82	1908.82	1905.82	3.00	0.41	True		3	1908.82	0	TRUE
CB-349	1908.88	1908.88	1905.88	3.00	0.24	True		3	1908.88	0	TRUE
CB-350	1908.95	1908.95	1905.95	3.00	0.27	True		2.84	1908.79	0.16	TRUE
CB-351	1909.35	1909.35	1906.35	3.00	0.38	True		2.59	1908.94	0.41	TRUE
CB-352	1906.22	1906.22	1901.28	4.94	0.13	False		3.75	1905.03	1.19	FALSE
CB-353	1906.41	1906.41	1901.49	4.92	0.33	False		3.55	1905.04	1.37	FALSE
CB-355	1910.9	1910.9	1906.4	4.50	0.38	False		0.98	1907.38	3.52	FALSE
CB-356	1911.67	1911.67	1908.67	3.00	0.63	False		0.24	1908.91	2.76	FALSE
CB-357	1910.08	1910.08	1907.08	3.00	0.38	False		0.23	1907.31	2.77	FALSE
CB-358	1910.08	1910.08	1906.9	3.18	0.25	False		0.31	1907.21	2.87	FALSE
CB-359	1908.23	1908.23	1905.23	3.00	0.48	False		0.25	1905.48	2.75	FALSE
CB-360	1908.23	1908.23	1905.05	3.18	0.39	False		0.38	1905.43	2.8	FALSE
CB-361	1912.6	1912.6	1910.1	2.50	0.00	False		0	1910.1	2.5	FALSE
CB-364	1906.8	1906.8	1904.3	2.50	0.26	False		0	1904.3	2.5	FALSE
CB-365	1905.42	1905.42	1902	3.42	0.23	False	Private but contributes flow to system	3.42	1905.42	0	TRUE
CB-366	1904.7	1904.7	1900.7	4.00	0.25	True	Private but contributes flow to system	4	1904.7	0	TRUE
CB-367	1906.1	1906.1	1902.1	4.00	0.47	False	Private but contributes flow to system	3.66	1905.76	0.34	TRUE
CB-369	1905.66	1905.66	1904.5	1.16	0.12	False	Structure is 1.5 ft deep or less.	0.39	1904.89	0.77	TRUE
CB-371	1927.51	1927.51	1926.01	1.50	0.66	False	Structure is 1.5 ft deep or less.	0.99	1927	0.51	TRUE
CB-372	1909.23	1909.23	1905.23	4.00	0.29	True		4	1909.23	0	TRUE
CB-373	1909.82	1909.82	1908.82	1.00	0.20	False	Structure is 1.5 ft deep or less.	0.11	1908.93	0.89	TRUE
CB-374	1909.26	1909.26	1908.1	1.16	0.42	True	Structure is 1.5 ft deep or less.	1.16	1909.26	0	TRUE
CB-375	1910.34	1910.34	1906.34	4.00	0.54	False		2.44	1908.78	1.56	FALSE
CB-378	1909.76	1909.76	1906.76	3.00	0.21	True		3	1909.76	0	TRUE
CB-386	1909.82	1909.82	1906.62	3.20	0.14	True		3.2	1909.82	0	TRUE
CB-387	2002.79	2002.79	2001.29	1.50	0.18	True	Structure is 1.5 ft deep or less.	1.5	2002.79	0	TRUE
CB-388	2009.1	2009.1	2006.1	3.00	1.45	False		0.97	2007.07	2.03	FALSE
CB-389	1900.14	1900.14	1896.14	4.00	0.52	False		0.92	1897.06	3.08	FALSE
CB-390	1893.54	1893.54	1890.48	3.06	1.70	True		3.06	1893.54	0	TRUE
CB-391	1904.85	1904.85	1900.85	4.00	0.40	False		3.57	1904.42	0.43	TRUE
CB-392	1904.3	1904.3	1902.3	2.00	0.10	True		2	1904.3	0	TRUE
CB-393	1904.84	1904.84	1902.84	2.00	0.46	False		1.71	1904.55	0.29	TRUE
CB-394	1901.85	1901.85	1896.85	5.00	4.00	True	Connects to other Private Catchbasins	5	1901.85	0	TRUE
CB-395	1899.65	1899.65	1898.25	1.40	0.20	False	Structure is 1.5 ft deep or less.	0.63	1898.88	0.77	TRUE
CB-396	1892.08	1892.08	1890	2.08	0.42	True		2.08	1892.08	0	TRUE
CB-397	1891.68	1891.68	1889.17	2.51	0.72	False		2.24	1891.41	0.27	TRUE

CB-400	1890.88	1890.88	1886.38	4.50	0.24	False		2.77	1889.15	1.73	FALSE
CB-401	1890.93	1890.93	1887.93	3.00	0.65	False		1.29	1889.22	1.71	FALSE
CB-402	1892.11	1892.11	1888.11	4.00	0.85	False		2.43	1890.54	1.57	FALSE
CB-403	1974.07	1974.07	1972.57	1.50	0.42	False		0.19	1972.76	1.31	FALSE
CB-404	1972.39	1972.39	1970.89	1.50	0.17	True	Structure is 1.5 ft deep or less.	1.5	1972.39	0	TRUE
CB-405	1896.44	1896.44	1892.44	4.00	0.32	True		4	1896.44	0	TRUE
CB-406	1899.47	1899.47	1896.47	3.00	0.54	False		1.87	1898.34	1.13	FALSE
CB-407	1902.82	1902.82	1899.82	3.00	0.63	False		1.25	1901.07	1.75	FALSE
CB-408	1906.93	1906.93	1903.93	3.00	0.39	False		1.72	1905.65	1.28	FALSE
CB-409	1897	1897	1894	3.00	0.00	False	Paved Over Catch Basin	2.68	1896.68	0.32	TRUE
CB-410	1900.34	1900.34	1884.34	16.00	0.42	False		14.58	1898.92	1.42	FALSE
CB-411	1896.29	1896.29	1893.29	3.00	0.53	False		0.85	1894.14	2.15	FALSE
CB-412	1906.75	1906.75	1905.75	1.00	0.44	False	Structure is 1.5 ft deep or less.	0.42	1906.17	0.58	TRUE
CB-N413	1908.78	1908.78	1904.78	4.00	0.06	True		4	1908.78	0	TRUE
CB-414	1908.7	1908.7	1908.2	0.50	0.33	True	Row of shallow CB Drains, Structure is 1.5 ft deep or less.	0.5	1908.7	0	TRUE
CB-416	1911.42	1911.42	1907.42	4.00	0.16	False		0.98	1908.4	3.02	FALSE
CB-417	1987	1987	1986	1.00	0.00	False		0	1986	1	FALSE
CB-418	1915.74	1915.74	1911.74	4.00	0.34	False		1.69	1913.43	2.31	FALSE
CB-419	1915.49	1915.49	1911.49	4.00	0.39	False		1.29	1912.78	2.71	FALSE
CB-420	1926.18	1926.18	1923.18	3.00	1.67	False		1.37	1924.55	1.63	FALSE
CB-421	1925.36	1925.36	1921.86	3.50	1.05	False		1.18	1923.04	2.32	FALSE
CB-422	1924.02	1924.02	1922.52	1.50	0.24	False		0.09	1922.61	1.41	FALSE
CB-423	1924.18	1924.18	1922.68	1.50	0.37	False		0.12	1922.8	1.38	FALSE
CB-424	1930.48	1930.48	1926.48	4.00	1.35	False		1.32	1927.8	2.68	FALSE
CB-425	1930.37	1930.37	1926.37	4.00	1.51	False		1.64	1928.01	2.36	FALSE
CB-426	1959.83	1959.83	1955.83	4.00	1.05	False		1.05	1956.88	2.95	FALSE
CB-427	1958.92	1958.92	1954.92	4.00	0.84	False		2.16	1957.08	1.84	FALSE
CB-428	1978.9	1978.9	1974.9	4.00	0.51	False		2.13	1977.03	1.87	FALSE
CB-429	1989.45	1989.45	1985.45	4.00	0.63	False		1.88	1987.33	2.12	FALSE
CB-430	1999.43	1999.43	1996.43	3.00	0.87	False		0.89	1997.32	2.11	FALSE
CB-431	1996.75	1996.75	1993.75	3.00	0.46	False		0.94	1994.69	2.06	FALSE
CB-N432	1996.23	1996.23	1992.23	4.00	0.51	False		1.11	1993.34	2.89	FALSE
CB-433	2007.92	2007.92	2004.92	3.00	0.43	True		3	2007.92	0	TRUE
CB-434	2009.31	2009.31	2005.81	3.50	0.23	True		3.5	2009.31	0	TRUE
CB-435	2012.09	2012.09	2008.59	3.50	0.29	False		0.68	2009.27	2.82	FALSE
CB-436	2012.38	2012.38	2009.38	3.00	0.32	False		0.43	2009.81	2.57	FALSE
CB-437	2009.2	2009.2	2006.2	3.00	1.92	False		0.64	2006.84	2.36	FALSE
CB-438	2016.16	2016.16	2012.16	4.00	0.41	False		0.54	2012.7	3.46	FALSE
CB-439	2016.57	2016.57	2013.57	3.00	0.56	False		0.63	2014.2	2.37	FALSE
CB-440	2018.42	2018.42	2014.42	4.00	0.59	False		1.42	2015.84	2.58	FALSE
CB-441	2017.3	2017.3	2014.8	2.50	0.65	False		2.39	2017.19	0.11	TRUE
CB-442	2019.66	2019.66	2015.66	4.00	0.30	False		1.37	2017.03	2.63	FALSE
CB-443	2020.02	2020.02	2014.02	6.00	0.19	False		1.68	2015.7	4.32	FALSE
CB-444	2017	2017	2012.3	4.70	0.00	True		4.7	2017	0	TRUE
CB-445	2020	2020	2014.5	5.50	1.10	False		1.2	2015.7	4.3	FALSE
CB-446	2019.5	2019.5	2014.9	4.60	0.43	False		0.77	2015.67	3.83	FALSE
CB-447	2012.01	2012.01	2009.01	3.00	0.84	False		0.46	2009.47	2.54	FALSE

CB-450	2008.18	2008.18	2003.18	5.00	0.16	False		1.01	2004.19	3.99	FALSE
CB-451	2007.19	2007.19	2003.69	3.50	1.10	False		1.92	2005.61	1.58	FALSE
CB-452	1964.7	1964.7	1961.7	3.00	1.83	False		0.98	1962.68	2.02	FALSE
CB-453	1894.17	1894.17	1890	4.17	3.81	True		4.17	1894.17	0	TRUE
CB-454	1894.49	1894.49	1890.07	4.42	4.21	True		4.42	1894.49	0	TRUE
CB-457	2053	2053	2049	4.00	(N/A)	False	10-Year Future Buildout	1.08	2050.08	2.92	FALSE
CB-458	2032	2032	2028	4.00	(N/A)	False	10-Year Future Buildout	1.11	2029.11	2.89	FALSE
CB-459	2048	2048	2044	4.00	(N/A)	False	10-Year Future Buildout	1.19	2045.19	2.81	FALSE
CB-460	2050	2050	2046	4.00	(N/A)	False	10-Year Future Buildout	2.24	2048.24	1.76	FALSE
CB-461	2025	2025	2021	4.00	(N/A)	False	10-Year Future Buildout	2.16	2023.16	1.84	FALSE
CB-462	2025	2025	2021	4.00	(N/A)	False	10-Year Future Buildout	2.18	2023.18	1.82	FALSE
CB-463	2023.5	2023.5	2019.5	4.00	(N/A)	False	10-Year Future Buildout	1.23	2020.73	2.77	FALSE
CB-464	2023.5	2023.5	2019.5	4.00	(N/A)	False	10-Year Future Buildout	2.21	2021.71	1.79	FALSE
CB-465	2017.5	2017.5	2013.5	4.00	(N/A)	False	10-Year Future Buildout	2.15	2015.65	1.85	FALSE
CB-466	2017	2017	2013	4.00	(N/A)	False	10-Year Future Buildout	2.19	2015.19	1.81	FALSE
CB-467	2003	2003	1999	4.00	(N/A)	False	10-Year Future Buildout	2.06	2001.06	1.94	FALSE
CB-468	1899	1899	1895	4.00	(N/A)	False	10-Year Future Buildout	4	1899	0	TRUE
CB-469	1891	1891	1887	4.00	(N/A)	False	10-Year Future Buildout	4	1891	0	TRUE
CB-470	1980	1980	1976	4.00	(N/A)	False	10-Year Future Buildout	2.09	1978.09	1.91	FALSE
CB-471	1974	1974	1970	4.00	(N/A)	False	10-Year Future Buildout	2.06	1972.06	1.94	FALSE
CB-472	1947	1947	1943	4.00	(N/A)	False	10-Year Future Buildout	2.13	1945.13	1.87	FALSE
CB-473	1950	1950	1947	3.00	(N/A)	False	10-Year Future Buildout	0.05	1947.05	2.95	FALSE
CB-474	1940	1940	1937	3.00	(N/A)	False	10-Year Future Buildout	0.16	1937.16	2.84	FALSE
CB-475	1940.5	1940.5	1937.5	3.00	(N/A)	False	10-Year Future Buildout	0.18	1937.68	2.82	FALSE
CB-476	1919	1919	1916	3.00	(N/A)	False	10-Year Future Buildout	2.16	1918.16	0.84	TRUE
CB-477	1910	1910	1907	3.00	(N/A)	False	10-Year Future Buildout	0.2	1907.2	2.8	FALSE
CB-478	1911	1911	1908	3.00	(N/A)	False	10-Year Future Buildout	0.18	1908.18	2.82	FALSE
CB-479	2065	2065	2061	4.00	(N/A)	False	10-Year Future Buildout	0.15	2061.15	3.85	FALSE
CB-480	2023	2023	2019	4.00	0.36	False		0.14	2019.14	3.86	FALSE
CB-482	1943	1943	1939	4.00	(N/A)	False	10-Year Future Buildout	0	1939	4	FALSE
CB-483	1938	1938	1934	4.00	(N/A)	False	10-Year Future Buildout	0	1934	4	FALSE
CB-484	2040	2040	2036	4.00	(N/A)	False	10-Year Future Buildout	1.34	2037.34	2.66	FALSE
CB-485	2040	2040	2036	4.00	(N/A)	False	10-Year Future Buildout	1.21	2037.21	2.79	FALSE
CB-486	2043	2043	2040	3.00	(N/A)	False	10-Year Future Buildout	1.65	2041.65	1.35	FALSE
CB-487	1928	1928	1924	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-488	1927	1927	1923	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-489	1919.76	1919.76	1915.41	4.35	(N/A)	False	10-Year Future Buildout	0.14	1915.55	4.21	FALSE
CB-490	1930	1930	1926	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-491	1909	1909	1905	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-492	1909.25	1909.25	1905.25	4.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-493	1908.5	1908.5	1905.5	3.00	(N/A)	False	10-Year Future Buildout	1.22	1906.72	1.78	FALSE
CB-494	1909	1909	1906	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-495	1909.25	1909.25	1906.25	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-496	1910	1910	1906	4.00	(N/A)	False	10-Year Future Buildout	1.71	1907.71	2.29	FALSE
CB-497	19010.5	1910.5	1907.5	3.00	(N/A)	False	10-Year Future Buildout	0.72	1908.22	2.28	FALSE
CB-498	1915	1915	1912	3.00	(N/A)	False	10-Year Future Buildout	0.24	1912.24	2.76	FALSE
CB-499	1902.5	1902.5	1899.5	3.00	(N/A)	False	10-Year Future Buildout	1.02	1900.52	1.98	FALSE
CB-500	1896	1896	1893	3.00	(N/A)	False	10-Year Future Buildout	1.76	1894.76	1.24	FALSE

CB-501	1897.5	1897.5	1894.5	3.00	(N/A)	False	10-Year Future Buildout	0.68	1895.18	2.32	FALSE
CB-502	1894	1894	1890	4.00	(N/A)	False	10-Year Future Buildout	1.18	1891.18	2.82	FALSE
CB-503	1899	1899	1896	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-504	1897	1897	1894	3.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-505	2039	2039	2036	3.00	(N/A)	False	10-Year Future Buildout	1.17	2037.17	1.83	FALSE
CB-506	1901	1901	1898	3.00	(N/A)	False	Couldnt locate (GIS says MH)	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-508	1908.97	1908.97	1906.5	2.47	0.00	True	Uderground Box - No physical way to overflow to surface	2.47	1908.97	0	TRUE
CB-509	1897	1897	1893.5	3.50	0.55	False	BASIN - CULVERT OPENING	2.04	1895.54	1.46	FALSE
CB-510	1908.18	1908.18	1903.68	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-511	1908.07	1908.07	1903.4	4.67	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-512	1908.31	1908.31	1903.81	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-513	1907.93	1907.93	1903.43	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-514	1907.61	1907.61	1903.11	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
ROOF DRAIN 1	1907.51	1907.51	1905.01	2.50	0.07	True	ROOF DRAIN	2.5	1907.51	0	TRUE
UNKNOWN CONNECTION	1907.4	1907.4	1906.9	0.50	0.07	False	UNKNOWN DRAIN - Less than 1.5 ft depth	0.05	1906.95	0.45	TRUE
CB-517	1906.77	1906.77	1902.27	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-518	1905.59	1905.59	1902.69	2.90	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-519	1906.45	1906.45	1901.33	5.12	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-520	1906.17	1906.17	1900.97	5.20	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-521	1905.32	1905.32	1900.82	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-522	1903.23	1903.23	1898.73	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-523	1903.03	1903.03	1898.53	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-524	1903.03	1903.03	1899.53	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-525	1902.88	1902.88	1897.2	5.68	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-526	1902.3	1902.3	1897.8	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N527	1902.99	1902.99	1898.47	4.52	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N528	1902.7	1902.7	1897.69	5.01	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N529	1902.64	1902.64	1898.47	4.17	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-530	1900.46	1900.46	1895.96	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N531	1900.42	1900.42	1895.92	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N532	1899.54	1899.54	1896.04	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N533	1899.41	1899.41	1895.91	3.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N534	1899.46	1899.46	1897.46	2.00	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-535	1899.4	1899.4	1895.3	4.10	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-N536	1898.93	1898.93	1894.43	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-537	1896.62	1896.62	1892.12	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-538	1896.48	1896.48	1891.98	4.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-539	1894.71	1894.71	1889.71	5.00	0.00	False		0	1889.71	5	FALSE
CB-N540	1894.54	1894.54	1889.87	4.67	0.00	False		0	1889.87	4.67	FALSE
CB-N541	1899.82	1899.82	1897.82	2.00	1.84	True		2	1899.82	0	TRUE
CB-542	1908.52	1908.52	1906.02	2.50	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-543	1911.07	1911.07	1908.82	2.25	(N/A)	False	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
Unknown Alley Connection	1910	1910	1906.5	3.50	0.00	True		3.5	1910	0	TRUE
CB-545	1908.83	1908.83	1906	2.83	0.00	True		2.83	1908.83	0	TRUE

Manhole Table - 10-Year Future Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Total In) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum)	Hydraulic Grade	Freeboard (ft)	Less than 1 ft Freeboard
MH-3	1910.55	1910.55	1903.5	7.05	2.65	FALSE		2.29	1905.79	4.76	FALSE
MH-4	1911.26	1911.26	1904.26	7	0.31	FALSE		3.19	1907.45	3.81	FALSE
MH-5	1910.66	1910.66	1903.66	7	0	FALSE		3.69	1907.35	3.31	FALSE
MH-6	1909.18	1909.18	1902	7.18	0.23	FALSE		3.48	1905.48	3.7	FALSE
MH-7	1913.54	1913.54	1907.59	5.95	0.62	FALSE		0.36	1907.95	5.59	FALSE
MH-8	1912.47	1912.47	1908.47	4	0.34	FALSE		0.35	1908.82	3.65	FALSE
MH-9	1913.13	1913.13	1908.85	4.28	0.14	FALSE		0.24	1909.09	4.04	FALSE
MH-13	1920.89	1920.89	1915.39	5.5	0.32	FALSE		3.18	1918.57	2.32	FALSE
MH-14	1933.49	1933.49	0	0	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1933.49	FALSE
MH-15	1929.97	1929.97	1923.97	6	0.85	FALSE		0.42	1924.39	5.58	FALSE
MH-17	1911.16	1911.16	1905.6	5.56	0.19	FALSE		4.85	1910.45	0.71	TRUE
MH-18	1910.78	1910.78	0	1910.78	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1910.78	FALSE
MH-20	1918.57	1918.57	0	1918.57	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-22	1910.85	1910.85	1901.3	9.55	2.77	TRUE		9.55	1910.85	0	TRUE
MH-23	1910.39	1910.39	0	1910.39	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-24	1909.74	1909.74	1900.31	9.43	1.6	FALSE		8.55	1908.86	0.88	TRUE
MH-25	1910.21	1910.21	1899.69	10.52	0.02	FALSE		9.1	1908.79	1.42	FALSE
MH-26	1910.4	1910.4	1898.97	11.43	2.03	FALSE		9.7	1908.67	1.73	FALSE
MH-28	1909.04	1909.04	1898.27	10.77	2.36	FALSE		9.58	1907.85	1.19	FALSE
MH-30	1904.37	1904.37	1899.24	5.13	6.29	FALSE		0.88	1900.12	4.25	FALSE
MH-31	1903.65	1903.65	1897.73	5.92	2.64	TRUE		5.92	1903.65	0	TRUE
MH-32	1902.44	1902.44	1897.11	5.33	6.63	FALSE		0.83	1897.94	4.5	FALSE
MH-33	1900.11	1900.11	1893.41	6.7	8.28	FALSE		1.01	1894.42	5.69	FALSE
MH-35	1899.43	1899.43	1892.43	7	10.2	FALSE		1.06	1893.49	5.94	FALSE
MH-36	1897.78	1897.78	1889.78	8	10.35	FALSE		1.93	1891.71	6.07	FALSE
MH-47	1904.46	1904.46	1898.21	6.25	8.65	TRUE		6.25	1904.46	0	TRUE
MH-50	1997.4	1997.4	1992	5.4	1.05	FALSE		1.54	1993.54	3.86	FALSE
MH-51	1936	1936	1930.5	5.5	2.48	FALSE		1.02	1931.52	4.48	FALSE
MH-52	1934.98	1934.98	1930.5	4.48	2.8	FALSE		1.06	1931.56	3.42	FALSE
MH-53	1932.28	1932.28	1928.78	3.5	2.09	FALSE		1.02	1929.8	2.48	FALSE
MH-54	1924.75	1924.75	1916.36	8.39	0.86	FALSE		0.23	1916.59	8.16	FALSE
MH-55	1918.57	1918.57	1909.82	8.75	2.25	FALSE		1.91	1911.73	6.84	FALSE
MH-56	1912.12	1912.12	1905.15	6.97	3.68	TRUE		6.97	1912.12	0	TRUE
MH-58	1910.39	1910.39	1900.8	9.59	1.77	FALSE		8.67	1909.47	0.92	TRUE
MH-71	1912.21	1912.21	1906.19	6.02	0.63	FALSE		0.38	1906.57	5.64	FALSE
MH-72	1910.25	1910.25	1904.8	5.45	0.63	FALSE		0.38	1905.18	5.07	FALSE
MH-73	1908.4	1908.4	1902.95	5.45	0.86	FALSE		0.43	1903.38	5.02	FALSE
MH-74	1912.6	1912.6	1907	5.6	0	FALSE		0	1907	5.6	FALSE
MH-75	1911.5	1911.5	1907	4.5	0	FALSE		0	1907	4.5	FALSE
MH-78	1909.99	1909.99	1902.99	7	0.77	TRUE		7	1909.99	0	TRUE
MH-82	1908.56	1908.56	1904.56	4	0.52	TRUE	No outlet found so could not be properly modeled. No notable flooding observed.	4	1908.56	0	TRUE
MH-83	2003.86	2003.86	1996.86	7	0.01	FALSE		6.05	2002.91	0.95	TRUE

MH-84	2000.88	2000.88	1996.08	4.8	4.89	FALSE		0.56	1996.64	4.24	FALSE
MH-85	1900.14	1900.14	1894.14	6	18.55	FALSE		2.78	1896.92	3.22	FALSE
MH-86	1896	1896	1891.34	4.66	10.32	FALSE	PAVED OVER - Surface elevation is estimated.	2.17	1893.51	2.49	FALSE
MH-87	1893.78	1893.78	1888.77	5.01	11.21	TRUE		5.01	1893.78	0	TRUE
MH-90	1900.69	1900.69	1896.25	4.44	14.54	TRUE	PAVED OVER - Surface elevation is estimated.	4.44	1900.69	0	TRUE
MH-91	1892	1891.75	1888.04	3.71	13.07	FALSE	PAVED OVER - Surface elevation is estimated.	3.88	1891.92	-0.17	TRUE
MH-92	1891.68	1891.68	1887.43	4.25	14.98	TRUE		3.97	1891.4	0.28	TRUE
MH-93	1891.83	1891.83	1887.23	4.6	16.55	FALSE		1.35	1888.58	3.25	FALSE
MH-94	1895.21	1895.21	1884.21	11	3.81	FALSE		4	1888.21	7	FALSE
MH-95	1910.51	1910.51	1903.76	6.75	0.91	FALSE		0.08	1903.84	6.67	FALSE
MH-96	2008.89	2008.89	2001.72	7.17	7.27	FALSE		3.91	2005.63	3.26	FALSE
MH-97	1915.91	1915.91	1908.91	7	0.72	FALSE		1.96	1910.87	5.04	FALSE
MH-99	1924.53	1924.53	0	1924.53	2.68	FALSE		359.9	359.9	1564.63	FALSE
MH-100	1930.22	1930.22	1924.22	6	2.83	FALSE		2.42	1926.64	3.58	FALSE
MH-101	1960.12	1960.12	1952	8.12	1.87	FALSE		1.58	1953.58	6.54	FALSE
MH-102	1978.94	1978.94	1971.44	7.5	0.51	FALSE		1.63	1973.07	5.87	FALSE
MH-103	1989.7	1989.7	1982.2	7.5	0.63	FALSE		1.69	1983.89	5.81	FALSE
MH-104	1996.07	1996.07	1990.07	6	1.8	FALSE		0.08	1990.15	5.92	FALSE
MH-105	2008.71	2008.71	2002.71	6	0.23	FALSE		5.35	2008.06	0.65	TRUE
MH-106	2010.75	2010.75	2003.75	7	0.23	FALSE		4.6	2008.35	2.4	FALSE
MH-108	2012.75	2012.75	2006.75	6	0.6	FALSE		1.4	2008.15	4.6	FALSE
MH-109	2006.63	2006.63	2000.63	6	1.92	TRUE		6	2006.63	0	TRUE
MH-110	2012.44	2012.44	2006.44	6	0.84	FALSE		1.97	2008.41	4.03	FALSE
MH-111	1965.47	1965.47	1959.47	6	1.83	FALSE		1.7	1961.17	4.3	FALSE
MH-113	1910	1910	1903	7	8.08	(N/A)	FUTURE BUILDOUT	0.68	1903.68	6.32	FALSE
MH-114	1940	1940	1933	7	5	(N/A)	FUTURE BUILDOUT	0.33	1933.33	6.67	FALSE
MH-115	1947	1947	1940	7	3.91	(N/A)	FUTURE BUILDOUT	0.4	1940.4	6.6	FALSE
MH-116	1980	1980	1973	7	3.01	(N/A)	FUTURE BUILDOUT	0.27	1973.27	6.73	FALSE
MH-117	1990	1990	1983	7	6.07	(N/A)	FUTURE BUILDOUT	4	1987	3	FALSE
MH-119	2052	2052	2046	6	0	(N/A)	FUTURE BUILDOUT	0	2046	6	FALSE
MH-121	2049	2049	2043	6	2.24	(N/A)	FUTURE BUILDOUT	0.24	2043.24	5.76	FALSE
MH-122	2025	2025	2019	6	3.1	(N/A)	FUTURE BUILDOUT	0.66	2019.66	5.34	FALSE
MH-123	2023	2023	2016	7	4.93	(N/A)	FUTURE BUILDOUT	0.6	2016.6	6.4	FALSE
MH-124	2017	2017	2010	7	5.86	(N/A)	FUTURE BUILDOUT	0.46	2010.46	6.54	FALSE
MH-126	2009.6	2009.6	1993.52	16.08	1.18	FALSE		0.33	1993.85	15.75	FALSE
MH-127	2040	2040	2034	6	2.29	(N/A)	FUTURE BUILDOUT	0.27	2034.27	5.73	FALSE
MH-128	2100	2100	2094	6	0	(N/A)	FUTURE BUILDOUT	0	2094	6	FALSE
MH-129	1909.1	1909.1	1903	6.1	(N/A)	(N/A)	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-130	2066.26	2066.26	2060.75	5.51	0	FALSE		0	2060.75	5.51	FALSE
MH-134	1908.81	1908.81	1902.16	6.65	0	FALSE	PAVED OVER - Surface elevation is estimated.	5.85	1908.01	0.8	TRUE
MH-137	1906.9	1906.9	1899.8	7.1	3.14	FALSE		0.66	1900.46	6.44	FALSE
MH-138	1894.82	1894.82	1886.32	8.5	2.43	FALSE		5.52	1891.84	2.98	FALSE
MH-140	1909.7	1909.7	1905.7		0.89	FALSE	Pour-in-Place uncovered, coundnt access. IEs unknown. Grout Plug approx 100 LF west of MH	3.23	1908.93	0.77	TRUE
MH-141	1910.21	1910.21	1904.84		0.89	TRUE		5.37	1910.21	0	TRUE

Description:

This table set highlights all structures that are overflowing or have less than one foot of freeboard during the storm peak for a 2043 build out scenario.

Stormwater Modeling Analysis - Structures Less Than 1 ft Freeboard

2043 System Layout

Storm Data: 25-Year, Short Duration (3-Hour) Storm
Adjusted Total Precipitation for Cle Elum: 1.1 Inches
Peak Time Analyzed: 1.25 Hours

Catch Basin Table - 2043 Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Captured) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum) (ft)	Hydraulic Grade (Maximum)	Freeboard (ft)	Less than 1 ft Freeboard
CB-2	1911.95	1911.95	1908.95	3.00	0.44	FALSE		0.92	1909.87	2.08	FALSE
CB-3	1911.45	1911.45	1907.45	4.00	0.48	FALSE		2.13	1909.58	1.87	FALSE
CB-4	1912.35	1912.35	1908.35	4.00	0.61	FALSE		1.97	1910.32	2.03	FALSE
CB-5	1912	1912	1908	4.00	0.14	FALSE		0.99	1908.99	3.01	FALSE
CB-6	1911.8	1911.8	1907.8	4.00	0.15	FALSE		2.23	1910.03	1.77	FALSE
CB-7	1911.75	1911.75	1907.75	4.00	0.17	FALSE		2.21	1909.96	1.79	FALSE
CB-8	1911.95	1911.95	1905	6.95	0.2	FALSE		1.12	1906.12	5.83	FALSE
CB-9	1910.84	1910.84	1903.84	7.00	0.58	FALSE		2.3	1906.14	4.7	FALSE
CB-10	1910.7	1910.7	1903.5	7.20	0.26	FALSE		2.6	1906.1	4.6	FALSE
CB-11	1910.95	1910.95	1907.95	3.00	0.2	FALSE		1.23	1909.18	1.77	FALSE
CB-12	1910.38	1910.38	1907.38	3.00	0.63	FALSE		1.13	1908.51	1.87	FALSE
CB-13	1910.37	1910.37	1906.37	4.00	0.35	FALSE		3.14	1909.51	0.86	TRUE
CB-14	1910.09	1910.09	0	1,910.09	0	FALSE	Couldn't field locate - perhaps abated	0	0	1910.09	FALSE
CB-15	1910.25	1910.25	0	1,910.25	0	FALSE	Couldn't field locate - perhaps abated	0	0	1910.25	FALSE
CB-16	1910.54	1910.54	1906.5	4.04	0.19	FALSE	NW Pipe Sealed.	1.73	1908.23	2.31	FALSE
CB-17	1910.3	1910.3	1906.3	4.00	0.26	FALSE		0.17	1906.47	3.83	FALSE
CB-413	1909.87	1909.87	1901.3	8.57	0.63	FALSE		4.74	1906.04	3.83	FALSE
CB-19	1909.9	1909.9	1905.9	4.00	0.43	FALSE		2.82	1908.72	1.18	FALSE
CB-20	1909.75	1909.75	1905.75	4.00	0.34	FALSE		1.99	1907.74	2.01	FALSE
CB-21	1909.63	1909.63	1901.19	8.44	0.44	FALSE		4.8	1905.99	3.64	FALSE
CB-22	1909	1909	1906	3.00	0.44	FALSE		1.3	1907.3	1.7	FALSE
CB-23	1909.9	1909.9	1905.9	4.00	0.37	FALSE		1.38	1907.28	2.62	FALSE
CB-24	1909.7	1909.7	1901.04	8.66	0.56	FALSE		4.88	1905.92	3.78	FALSE
CB-25	1909.3	1909.3	1905.3	4.00	0.3	FALSE		1.81	1907.11	2.19	FALSE
CB-26	1908.95	1908.95	1904.95	4.00	0.41	FALSE		1.9	1906.85	2.1	FALSE
CB-27	1909.35	1909.35	1900.68	8.67	0.16	FALSE		5.19	1905.87	3.48	FALSE
CB-28	1909.85	1909.85	1905	4.85	0.1	FALSE		2.24	1907.24	2.61	FALSE
CB-30	1909.15	1909.15	1906.15	3.00	0.39	FALSE		1.1	1907.25	1.9	FALSE
CB-31	1908.67	1908.67	1900.23	8.44	0.55	FALSE		5.48	1905.71	2.96	FALSE
CB-32	1908.7	1908.7	1904.7	4.00	0.38	FALSE		1.78	1906.48	2.22	FALSE
CB-33	1907.8	1907.8	1903	4.80	0.26	FALSE		2.46	1905.46	2.34	FALSE
CB-34	1907.55	1907.55	1903.55	4.00	0.38	FALSE		1.93	1905.48	2.07	FALSE
CB-35	1907.75	1907.75	1903.75	4.00	0.4	FALSE		1.88	1905.63	2.12	FALSE

CB-36	1907.67	1907.67	1900.99	6.68	0.59	FALSE		4.51	1905.5	2.17	FALSE
CB-37	1907.6	1907.6	1900.99	6.61	0.33	FALSE		4.39	1905.38	2.22	FALSE
CB-38	1907.7	1907.7	1903.7	4.00	0.13	FALSE		1.7	1905.4	2.3	FALSE
CB-39	1907.4	1907.4	1903.4	4.00	0.4	FALSE		1.88	1905.28	2.12	FALSE
CB-40	1907.7	1907.7	1901.33	6.37	0.17	FALSE		3.89	1905.22	2.48	FALSE
CB-41	1907.75	1907.75	1903.5	4.25	0.17	FALSE		1.98	1905.48	2.27	FALSE
CB-42	1907.5	1907.5	1903.5	4.00	0.28	FALSE		1.99	1905.49	2.01	FALSE
CB-43	1906.37	1906.37	1901.46	4.91	0.65	FALSE		3.66	1905.12	1.25	FALSE
CB-44	1906.85	1906.85	1903.85	3.00	0.49	FALSE		1.02	1904.87	1.98	FALSE
CB-45	1906.3	1906.3	1901.36	4.94	0.38	FALSE		3.76	1905.12	1.18	FALSE
CB-46	1906.15	1906.15	1902.15	4.00	0.31	FALSE		2.71	1904.86	1.29	FALSE
CB-47	1906.35	1906.35	1903.35	3.00	0.26	FALSE		1.64	1904.99	1.36	FALSE
CB-48	1906.15	1906.15	1902.15	4.00	0.12	FALSE		2.64	1904.79	1.36	FALSE
CB-49	1906.75	1906.75	1903.75	3.00	0.2	FALSE		1.1	1904.85	1.9	FALSE
CB-50	1906.45	1906.45	1901.2	5.25	0.13	FALSE		4.13	1905.33	1.12	FALSE
CB-51	1906.35	1906.35	1903.35	3.00	0.23	FALSE		1.51	1904.86	1.49	FALSE
CB-52	1930.06	1930.06	1925.56	4.50	0.58	FALSE		4.5	1930.06	0	TRUE
CB-53	1929.65	1929.65	1925.15	4.50	0.28	FALSE		1.13	1926.28	3.37	FALSE
CB-55	2012.47	2012.47	2007.47	5.00	0	FALSE		0	2007.47	5	FALSE
CB-56	2013.56	2013.56	2010.56	3.00	0.54	FALSE		2	2012.56	1	FALSE
CB-57	2014.1	2014.1	2013.1	1.00	0	FALSE		0	2013.1	1	FALSE
CB-58	1998.3	1998.3	1997.8	0.50	0.65	FALSE	Less than 1 ft deep structure.	0	1997.8	0.5	TRUE
CB-N6	2007.32	2007.32	2006.32	1.00	0.19	FALSE	Less than 1 ft deep structure.	0	2006.32	1	FALSE
CB-148	2009.26	2009.26	2006.26	3.00	0.75	FALSE		0.19	2006.45	2.81	FALSE
CB-62	2010.87	2010.87	2007.37	3.50	1.02	FALSE		2.98	2010.35	0.52	TRUE
CB-64	1922.22	1922.22	1919.22	3.00	0.47	FALSE		1.26	1920.48	1.74	FALSE
CB-66	1919.86	1919.86	1916.36	3.50	0.27	FALSE		2.74	1919.1	0.76	TRUE
CB-67	1918.4	1918.4	1916.9	1.50	1.36	FALSE	Structure is 1.5 ft deep or less.	0.9	1917.8	0.6	TRUE
CB-68	1917.74	1917.74	1916.24	1.50	0.83	FALSE	Structure is 1.5 ft deep or less.	1.11	1917.35	0.39	TRUE
CB-69	1916.98	1916.98	1915.14	1.84	0.35	TRUE		1.84	1916.98	0	TRUE
CB-73	1909.2	1909.2	1905.2	4.00	0.73	TRUE		4	1909.2	0	TRUE
CB-76	1931.78	1931.78	1930.11	1.67	0.15	FALSE		0.1	1930.21	1.57	FALSE
CB-77	1912.88	1912.88	1909.38	3.50	0.6	FALSE		0.26	1909.64	3.24	FALSE
CB-78	1907.93	1907.93	1905.1	2.83	0.5	FALSE		0.52	1905.62	2.31	FALSE
CB-79	1908.71	1908.71	1907.7	1.01	0.21	FALSE	Structure is 1.5 ft deep or less.	0.16	1907.86	0.85	TRUE
CB-N1	1908.97	1908.97	0	1,908.97	0	FALSE		0	0	1908.97	FALSE
CB-N2	1908.86	1908.86	0	1,908.86	0	FALSE		0	0	1908.86	FALSE
CB-N3	1908.99	1908.99	0	1,908.99	0	FALSE		0	0	1908.99	FALSE
CB-86	1911.84	1911.84	1908.84	3.00	0.15	FALSE		1.18	1910.02	1.82	FALSE
CB-87	1911.95	1911.95	1910.45	1.50	0.18	FALSE	Structure is 1.5 ft deep or less.	0.74	1911.19	0.76	TRUE
CB-88	1912.97	1912.97	1908.97	4.00	0	FALSE		0	1908.97	4	FALSE
CB-89	1912.32	1912.32	1908.9	3.42	0	FALSE		0.2	1909.1	3.22	FALSE
CB-90	1912.52	1912.52	1909.35	3.17	0	FALSE		0	1909.35	3.17	FALSE
CB-91	1912.6	1912.6	1908.6	4.00	0.16	FALSE		0.51	1909.11	3.49	FALSE
CB-94	1913.09	1913.09	1909.74	3.35	0.28	FALSE		0.1	1909.84	3.25	FALSE
CB-95	1912.99	1912.99	1909.92	3.07	0.34	FALSE		0.28	1910.2	2.79	FALSE
CB-96	1912.19	1912.19	1909.19	3.00	0.19	FALSE		0.12	1909.31	2.88	FALSE
CB-98	1911.93	1911.93	1908.76	3.17	0.15	FALSE		0.16	1908.92	3.01	FALSE

CB-99	1910.96	1910.96	1906.96	4.00	0.36	FALSE		1.25	1908.21	2.75	FALSE
CB-100	1910.56	1910.56	1905.56	5.00	0.21	FALSE		1.95	1907.51	3.05	FALSE
CB-101	1910.5	1910.5	1905.5	5.00	0.25	FALSE		1.95	1907.45	3.05	FALSE
CB-104	1910.57	1910.57	1906.57	4.00	0.16	FALSE		1.09	1907.66	2.91	FALSE
CB-105	1910.7	1910.7	1906.7	4.00	0.15	FALSE		1.28	1907.98	2.72	FALSE
CB-106	1910.07	1910.07	1906.07	4.00	0.08	FALSE		1.25	1907.32	2.75	FALSE
CB-107	1910.12	1910.12	1906.12	4.00	0.07	FALSE		1.22	1907.34	2.78	FALSE
CB-108	1909.07	1909.07	1905.07	4.00	0.11	FALSE		1	1906.07	3	FALSE
CB-109	1908.91	1908.91	1904.91	4.00	0.12	FALSE		1.3	1906.21	2.7	FALSE
CB-110	1908.9	1908.9	1904.9	4.00	0.05	FALSE	Planned for replacement prior to Plan analysis.	4	1908.9	0	TRUE
CB-111	1908.77	1908.77	1904.77	4.00	0.47	TRUE	Planned for replacement prior to Plan analysis.	4	1908.77	0	TRUE
CB-112	1908.96	1908.96	1904.96	4.00	0.08	FALSE	Planned for replacement prior to Plan analysis.	3.92	1908.88	0.08	TRUE
CB-113	1908.55	1908.55	1904.55	4.00	0.14	TRUE	Planned for replacement prior to Plan analysis.	4	1908.55	0	TRUE
CB-114	1908.81	1908.81	1904.81	4.00	0.1	FALSE	Planned for replacement prior to Plan analysis.	3.79	1908.6	0.21	TRUE
CB-116	1908.09	1908.09	1904.09	4.00	0.21	TRUE	Planned for replacement prior to Plan analysis.	4	1908.09	0	TRUE
CB-117	1907.7	1907.7	1905.7	2.00	0.29	TRUE	Planned for replacement prior to Plan analysis.	2	1907.7	0	TRUE
CB-118	1908.09	1908.09	1904.09	4.00	0.4	FALSE	Planned for replacement prior to Plan analysis.	3.89	1907.98	0.11	TRUE
CB-119	1908.09	1908.09	1904.09	4.00	0.19	FALSE	Planned for replacement prior to Plan analysis.	3.91	1908	0.09	TRUE
CB-120	1907.8	1907.8	1903.8	4.00	0.45	TRUE	Planned for replacement prior to Plan analysis.	4	1907.8	0	TRUE
CB-121	1907.5	1907.5	1903.5	4.00	0.13	TRUE	Planned for replacement prior to Plan analysis.	4	1907.5	0	TRUE
CB-122	1907.13	1907.13	1903.13	4.00	0.14	TRUE	Planned for replacement prior to Plan analysis.	4	1907.13	0	TRUE
CB-123	1906.78	1906.78	1903.78	3.00	0.44	TRUE	Planned for replacement prior to Plan analysis.	3	1906.78	0	TRUE
CB-124	1906.18	1906.18	1903.18	3.00	0.41	FALSE	Planned for replacement prior to Plan analysis.	2.62	1905.8	0.38	TRUE
CB-126	1908.7	1908.7	1904.7	4.00	0.12	FALSE		0	1904.7	4	FALSE
CB-128	1906.29	1906.29	1902.29	4.00	0.12	FALSE		2.96	1905.25	1.04	FALSE
CB-129	1905.6	1905.6	1901.6	4.00	0.16	FALSE	Planned for replacement prior to Plan analysis.	3.56	1905.16	0.44	TRUE
CB-130	1905.69	1905.69	1902.69	3.00	0.14	FALSE	Planned for replacement prior to Plan analysis.	2.2	1904.89	0.8	TRUE
CB-131	1906.26	1906.26	1901	5.26	0.26	FALSE		3.53	1904.53	1.73	FALSE
CB-132	1905.44	1905.44	1903.44	2.00	0.15	FALSE	Planned for replacement prior to Plan analysis.	1.79	1905.23	0.21	TRUE
CB-133	1905.38	1905.38	1903.84	1.54	0.32	TRUE	Planned for replacement prior to Plan analysis.	1.54	1905.38	0	TRUE
CB-134	1906.91	1906.91	1905.41	1.50	0.18	FALSE		0.07	1905.48	1.43	FALSE
CB-135	1906.4	1906.4	1901.06	5.34	0.2	FALSE		5.09	1906.15	0.25	TRUE
CB-136	1906.6	1906.6	1900.34	6.26	0.14	TRUE		6.26	1906.6	0	TRUE
CB-137	1906.37	1906.37	1902.37	4.00	0.48	FALSE		1.66	1904.03	2.34	FALSE
CB-138	1906.39	1906.39	1902.39	4.00	0.32	FALSE		1.34	1903.73	2.66	FALSE
CB-139	1905.18	1905.18	1902.18	3.00	0.59	FALSE		0.92	1903.1	2.08	FALSE
CB-140	1905.09	1905.09	1898.59	6.50	0.8	TRUE		6.5	1905.09	0	TRUE
CB-142	1904.37	1904.37	1901.37	3.00	0.37	TRUE		3	1904.37	0	TRUE

CB-143	1903.77	1903.77	1900.35	3.42	0.41	TRUE		3.42	1903.77	0	TRUE
CB-144	1904.02	1904.02	1898.44	5.58	0.57	TRUE		5.58	1904.02	0	TRUE
CB-145	1901.24	1901.24	1898.24	3.00	1.77	TRUE		3	1901.24	0	TRUE
CB-146	1900.7	1900.7	1897.7	3.00	0.61	TRUE		3	1900.7	0	TRUE
CB-147	1901.18	1901.18	1899.68	1.50	1.42	TRUE	Structure is 1.5 ft deep or less.	1.5	1901.18	0	TRUE
CB-N148	1900.69	1900.69	1898	2.69	0.16	TRUE		2.69	1900.69	0	TRUE
CB-149	1900.72	1900.72	1899.22	1.50	0.29	FALSE	Structure is 1.5 ft deep or less.	0.76	1899.98	0.74	TRUE
CB-N7	1900.06	1900.06	1897	3.06	0.34	FALSE		2.31	1899.31	0.75	TRUE
CB-151	1901.36	1901.36	1899.36	2.00	0.11	FALSE		0.5	1899.86	1.5	FALSE
CB-152	1900.6	1900.6	1896.6	4.00	0.58	FALSE		1.96	1898.56	2.04	FALSE
CB-155	1900.17	1900.17	1897.17	3.00	0.45	FALSE		1.6	1898.77	1.4	FALSE
CB-157	1898.84	1898.84	1896.94	1.90	0.41	TRUE		1.9	1898.84	0	TRUE
CB-N8	1898.68	1898.68	1897.48	1.20	0.36	FALSE	Structure is 1.5 ft deep or less.	0.63	1898.11	0.57	TRUE
CB-159	1897.24	1897.24	1896	1.24	0.86	TRUE	Structure is 1.5 ft deep or less.	1.24	1897.24	0	TRUE
CB-160	1896.84	1896.84	1892.84	4.00	0.8	FALSE		3.08	1895.92	0.92	TRUE
CB-161	1896.77	1896.77	1894	2.77	0.46	FALSE		0.94	1894.94	1.83	FALSE
CB-162	1896.77	1896.77	1893.27	3.50	1.06	FALSE		0.6	1893.87	2.9	FALSE
CB-163	1901.27	1901.27	1898.94	2.33	1.11	FALSE		1.59	1900.53	0.74	TRUE
CB-164	1901.73	1901.73	1897.73	4.00	0.71	FALSE		3.33	1901.06	0.67	TRUE
CB-165	1895.5	1895.5	1893.5	2.00	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-166	1893.92	1893.92	1892	1.92	1.78	TRUE		1.92	1893.92	0	TRUE
CB-167	1893.68	1893.68	1890.68	3.00	0.48	TRUE		3	1893.68	0	TRUE
CB-169	1892.74	1892.74	1890	2.74	0.59	TRUE		2.74	1892.74	0	TRUE
CB-170	1892.45	1892.45	1889.45	3.00	0.68	FALSE		2.27	1891.72	0.73	TRUE
CB-171	1892.07	1892.07	1888.07	4.00	0.2	TRUE		4	1892.07	0	TRUE
CB-172	1892.04	1892.04	1890.04	2.00	0.24	TRUE		2	1892.04	0	TRUE
CB-173	1891.85	1891.85	1887.85	4.00	0.71	TRUE		4	1891.85	0	TRUE
CB-174	1891.78	1891.78	1888.78	3.00	0.57	FALSE	Broken Lid	2.33	1891.11	0.67	TRUE
CB-177	1895.96	1895.96	1892.46	3.50	0.55	FALSE		2.29	1894.75	1.21	FALSE
CB-178	1896.3	1896.3	1893.3	3.00	0.69	FALSE		1.41	1894.71	1.59	FALSE
CB-179	1891.92	1891.92	1889.92	2.00	0.53	FALSE		0	1889.92	2	FALSE
CB-180	1891.37	1891.37	1888.37	3.00	0.2	FALSE		1.72	1890.09	1.28	FALSE
CB-182	1891.52	1891.52	1888.52	3.00	1.18	TRUE		3	1891.52	0	TRUE
CB-183	1891.78	1891.78	0	1,891.78	0.91	FALSE		0	0	1891.78	FALSE
CB-184	1891.54	1891.54	1885.54	6.00	0.48	FALSE		3.55	1889.09	2.45	FALSE
CB-185	1890.66	1890.66	1886.16	4.50	0.75	FALSE		3.15	1889.31	1.35	FALSE
CB-N9	1891.68	1891.68	1888.68	3.00	0	FALSE		0	1888.68	3	FALSE
CB-187	1912.25	1912.25	1908.25	4.00	0.38	FALSE		2.22	1910.47	1.78	FALSE
CB-188	1906.25	1906.25	1900.7	5.55	0.46	TRUE		5.55	1906.25	0	TRUE
CB-189	1906.15	1906.15	1900.98	5.17	0.39	TRUE		5.17	1906.15	0	TRUE
CB-190	1906.15	1906.15	1902.15	4.00	0.37	FALSE		1.93	1904.08	2.07	FALSE
CB-191	1905.75	1905.75	1898.75	7.00	0.55	TRUE		7	1905.75	0	TRUE
CB-192	1905.75	1905.75	1902.25	3.50	0.43	FALSE		1.23	1903.48	2.27	FALSE
CB-197	1911.73	1911.73	1909.31	2.42	0.43	TRUE		2.42	1911.73	0	TRUE
CB-198	1911.82	1911.82	1909.82	2.00	0.58	TRUE		2	1911.82	0	TRUE
CB-199	1911.84	1911.84	1908.67	3.17	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-201	1910.36	1910.36	1907.94	2.42	0.55	TRUE		2.42	1910.36	0	TRUE
CB-202	1909.96	1909.96	1906.29	3.67	0.34	TRUE		3.67	1909.96	0	TRUE

CB-209	1909.34	1909.34	1908.34	1.00	0.93	FALSE		0	1908.34	1	FALSE
CB-210	1909.95	1909.95	1905.95	4.00	0.15	TRUE		4	1909.95	0	TRUE
CB-211	1909.07	1909.07	1906.15	2.92	0.27	TRUE		2.92	1909.07	0	TRUE
CB-212	1908.54	1908.54	1903.54	5.00	(N/A)	(N/A)	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-213	1908.55	1908.55	1905.25	3.30	(N/A)	(N/A)	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-214	1908.46	1908.46	0	1,908.46	(N/A)	(N/A)	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-215	1908.38	1908.38	0	1,908.38	(N/A)	(N/A)	Plans to demo by 10-year Future Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-226	1908.97	1908.97	1907.47	1.50	0.55	TRUE	Structure is 1.5 ft deep or less.	1.5	1908.97	0	TRUE
CB-227	1909.5	1909.5	1907	2.50	0.25	TRUE		2.5	1909.5	0	TRUE
CB-230	1907.53	1907.53	1906	1.53	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-231	1907.72	1907.72	1905	2.72	1.03	TRUE	Wooden Lid	2.72	1907.72	0	TRUE
CB-232	1906.83	1906.83	1905.5	1.33	0.94	FALSE		0.21	1905.71	1.12	FALSE
CB-233	1905.74	1905.74	1902.7	3.04	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-235	1901.84	1901.84	1899.87	1.97	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-236	1902.3	1902.3	1900.3	2.00	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-237	0	0	0	0.00	0	FALSE	Couldn't field locate - perhaps abated	0	0	0	TRUE
CB-239	1899.16	1899.16	1896.56	2.60	2.3	TRUE		2.6	1899.16	0	TRUE
CB-241	1900.03	1900.03	1898.03	2.00	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-242	1899.11	1899.11	1895.11	4.00	0.57	FALSE		2.96	1898.07	1.04	FALSE
CB-243	1898.41	1898.41	1895.41	3.00	0.13	FALSE		2.09	1897.5	0.91	TRUE
CB-244	1898.51	1898.51	1895.51	3.00	0.37	FALSE		0.65	1896.16	2.35	FALSE
CB-245	1898.82	1898.82	1897.22	1.60	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-246	1899.69	1899.69	1897	2.69	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
CB-249	1891.58	1891.58	1888.58	3.00	0.41	FALSE		1.12	1889.7	1.88	FALSE
CB-283	1934.95	1934.95	1930.95	4.00	2.09	FALSE		2.1	1933.05	1.9	FALSE
CB-586	2056.05	2056.05	2052.59	3.46	0	FALSE		0	2052.59	3.46	FALSE
CB-587	2056.5	2056.5	2051.84	4.66	0	FALSE		0	2051.84	4.66	FALSE
CB-588	2057.55	2057.55	2051.16	6.39	0	FALSE		0	2051.16	6.39	FALSE
CB-589	2057.29	2057.29	2050.22	7.07	0	FALSE		0	2050.22	7.07	FALSE
CB-590	2050.84	2050.84	2045.85	4.99	0	FALSE		0	2045.85	4.99	FALSE
CB-567	2069.15	2069.15	2063.46	5.69	0	FALSE		0	2063.46	5.69	FALSE
CB-570	2066.02	2066.02	2063.02	3.00	0	FALSE		0	2063.02	3	FALSE
CB-620	2066.72	2066.72	2063.72	3.00	0	FALSE		0	2063.72	3	FALSE
CB-574	2068.99	2068.99	2058.01	10.98	0	FALSE		0	2058.01	10.98	FALSE
CB-577	2072.99	2072.99	2070	2.99	0	FALSE		0	2070	2.99	FALSE
CB-576	2079.23	2079.23	2074.3	4.93	0	FALSE		0	2074.3	4.93	FALSE
CB-578	2062.76	2062.76	2057.76	5.00	0	FALSE		0	2057.76	5	FALSE
CB-592	2050.25	2050.25	2045.25	5.00	0	FALSE		0	2045.25	5	FALSE
CB-595	2036.87	2036.87	2033.37	3.50	0	FALSE	PRIVATELY MAINTAINED - GIS description	0	2033.37	3.5	FALSE
CB-591	2049.6	2049.6	2045.75	3.85	0	FALSE		0	2045.75	3.85	FALSE
CB-593	2049.71	2049.71	2045.84	3.87	0	FALSE		0	2045.84	3.87	FALSE
CB-596	2034.65	2034.65	2029.65	5.00	0	FALSE	PRIVATELY MAINTAINED - GIS description	0	2029.65	5	FALSE
CB-604	2031.4	2031.4	2026.4	5.00	0	FALSE	PRIVATELY MAINTAINED - GIS description	0	2026.4	5	FALSE
CB-610	2012.73	2012.73	2009.91	2.82	0	FALSE		0	2009.91	2.82	FALSE
CB-609	2012.25	2012.25	2010.14	2.11	0	FALSE		0	2010.14	2.11	FALSE

CB-555	2014.48	2014.48	2011.29	3.19	0	FALSE		0	2011.29	3.19	FALSE
CB-557	2018.45	2018.45	2014.41	4.04	0	FALSE		0	2014.41	4.04	FALSE
CB-554	2014.52	2014.52	2011.38	3.14	0	FALSE		0	2011.38	3.14	FALSE
CB-566	2019.25	2019.25	2015.58	3.67	0	FALSE		0	2015.58	3.67	FALSE
CB-619	2017.97	2017.97	2014.97	3.00	0	FALSE		0	2014.97	3	FALSE
CB-558	2019.28	2019.28	2016.28	3.00	0	FALSE		0	2016.28	3	FALSE
CB-559	2020.69	2020.69	2017.69	3.00	0	FALSE		0	2017.69	3	FALSE
CB-561	2009.91	2009.91	2007.33	2.58	0	FALSE		0	2007.33	2.58	FALSE
CB-560	2009	2009	2007.5	1.50	0	FALSE		0	2007.5	1.5	FALSE
CB-608	2008.24	2008.24	2005.05	3.19	0	FALSE		0	2005.05	3.19	FALSE
CB-607	2008.24	2008.24	2005.05	3.19	0	FALSE		0	2005.05	3.19	FALSE
CB-540	2006.4	2006.4	2003.22	3.18	0	FALSE		0	2003.22	3.18	FALSE
CB-541	2006.61	2006.61	1995.75	10.86	0	FALSE	PRIVATELY MAINTAINED - GIS description	0	1995.75	10.86	FALSE
CB-565	2010.88	2010.88	2007.87	3.01	0	FALSE		0	2007.87	3.01	FALSE
CB-564	2021.46	2021.46	2013.46	8.00	0	FALSE		0	2013.46	8	FALSE
CB-563	2024.21	2024.21	2016.83	7.38	0	FALSE		0	2016.83	7.38	FALSE
CB-562	2022.15	2022.15	2017.51	4.64	0	FALSE		0	2017.51	4.64	FALSE
CB-616	2004.05	2004.05	1999.05	5.00	0	FALSE	PRIVATELY MAINTAINED - GIS description	0	1999.05	5	FALSE
CB-536	2006.4	2006.4	2004.83	1.57	0	FALSE		0	2004.83	1.57	FALSE
CB-579	2056.16	2056.16	2053.16	3.00	0	FALSE		0	2053.16	3	FALSE
CB-580	2052.36	2052.36	2049.23	3.13	0	FALSE		0	2049.23	3.13	FALSE
CB-581	2047.9	2047.9	2044.9	3.00	0	FALSE		0	2044.9	3	FALSE
CB-618	2030.03	2030.03	2026.89	3.14	0	FALSE		0	2026.89	3.14	FALSE
CB-531	2021.36	2021.36	2018.36	3.00	0	FALSE		0	2018.36	3	FALSE
CB-533	2013.89	2013.89	2008.87	5.02	0	FALSE		0	2008.87	5.02	FALSE
CB-534	2010.12	2010.12	2005.14	4.98	0	FALSE		0	2005.14	4.98	FALSE
CB-527	2035.68	2035.68	2032	3.68	0	FALSE		0	2032	3.68	FALSE
CB-528	2031.68	2031.68	2027.68	4.00	0	FALSE		0	2027.68	4	FALSE
CB-529	2028.68	2028.68	2024.37	4.31	0	FALSE		0	2024.37	4.31	FALSE
CB-532	2021.11	2021.11	2016.11	5.00	0.24	FALSE		0.15	2016.26	4.85	FALSE
CB-617	2014.22	2014.22	2010.48	3.74	0.3	FALSE		0.13	2010.61	3.61	FALSE
CB-551	2002.23	2002.23	1998.23	4.00	0	FALSE		0	1998.23	4	FALSE
CB-611	2001.15	2001.15	1998.65	2.50	0	FALSE		0	1998.65	2.5	FALSE
CB-432	1909.26	1909.26	1908.06	1.20	0.82	FALSE	Structure is 1.5 ft deep or less.	1	1909.06	0.2	TRUE
CB-176	1896.29	1896.29	1893.29	3.00	0.79	FALSE		2.38	1895.67	0.62	TRUE
CB-181	1892.2	1892.2	1889.2	3.00	0.29	FALSE		0.75	1889.95	2.25	FALSE
CB-127	1908.75	1908.75	0	1,908.75	0	FALSE	Couldn't field locate - perhaps abated	0	0	1908.75	FALSE
CB-322	1996.85	1996.85	1993.85	3.00	1.06	FALSE		0.42	1994.27	2.58	FALSE
CB-323	1960.17	1960.17	1957.17	3.00	1.1	FALSE		0.18	1957.35	2.82	FALSE
CB-324	1939.15	1939.15	1935.72	3.43	0.46	FALSE		0.58	1936.3	2.85	FALSE
CB-325	1939.15	1939.15	1935.59	3.56	0.98	FALSE		0.35	1935.94	3.21	FALSE
CB-326	1934.97	1934.97	1931.97	3.00	1.16	FALSE		0.27	1932.24	2.73	FALSE
CB-327	1934.49	1934.49	1931.49	3.00	1.09	FALSE		0.4	1931.89	2.6	FALSE
CB-328	1934.49	1934.49	1931.36	3.13	0.58	FALSE		0.46	1931.82	2.67	FALSE
CB-329	1929.6	1929.6	1924.6	5.00	0.9	TRUE		5	1929.6	0	TRUE
CB-330	1924.43	1924.43	1920.93	3.50	0.87	FALSE		0.16	1921.09	3.34	FALSE
CB-331	1918.9	1918.9	1915.9	3.00	1.07	FALSE		0.17	1916.07	2.83	FALSE

CB-332	1912.35	1912.35	1909.35	3.00	0.75	TRUE		3	1912.35	0	TRUE
CB-333	1910.17	1910.17	1907.17	3.00	0.53	TRUE		3	1910.17	0	TRUE
CB-334	1909.61	1909.61	1906.61	3.00	0.41	TRUE		3	1909.61	0	TRUE
CB-335	1909.34	1909.34	1906.26	3.08	0.12	TRUE		3.08	1909.34	0	TRUE
CB-336	1908.87	1908.87	1906.87	2.00	0.34	TRUE		2	1908.87	0	TRUE
CB-337	1909.04	1909.04	1906.45	2.59	0.32	TRUE		2.59	1909.04	0	TRUE
CB-338	1909.15	1909.15	1906.15	3.00	0.1	TRUE		3	1909.15	0	TRUE
CB-339	1908.82	1908.82	1905.82	3.00	0.24	TRUE		3	1908.82	0	TRUE
CB-340	1908.65	1908.65	1905.65	3.00	0.32	TRUE		3	1908.65	0	TRUE
CB-341	1908.78	1908.78	1905.78	3.00	0.37	TRUE		3	1908.78	0	TRUE
CB-342	1908.9	1908.9	1905.4	3.50	0.1	FALSE		3.34	1908.74	0.16	TRUE
CB-343	1908.66	1908.66	1905.66	3.00	0.42	TRUE		3	1908.66	0	TRUE
CB-344	1908.82	1908.82	1905.82	3.00	0.41	TRUE		3	1908.82	0	TRUE
CB-349	1908.88	1908.88	1905.88	3.00	0.24	TRUE		3	1908.88	0	TRUE
CB-350	1908.95	1908.95	1905.95	3.00	0.27	TRUE		3	1908.95	0	TRUE
CB-351	1909.35	1909.35	1906.35	3.00	0.38	FALSE		2.41	1908.76	0.59	TRUE
CB-352	1906.22	1906.22	1901.28	4.94	0.13	FALSE		4.08	1905.36	0.86	TRUE
CB-353	1906.41	1906.41	1901.49	4.92	0.33	FALSE		3.75	1905.24	1.17	FALSE
CB-355	1910.9	1910.9	1906.4	4.50	0.38	FALSE		0.98	1907.38	3.52	FALSE
CB-356	1911.67	1911.67	1908.67	3.00	0.63	FALSE		0.24	1908.91	2.76	FALSE
CB-357	1910.08	1910.08	1907.08	3.00	0.38	FALSE		0.23	1907.31	2.77	FALSE
CB-358	1910.08	1910.08	1906.9	3.18	0.25	FALSE		0.31	1907.21	2.87	FALSE
CB-359	1908.23	1908.23	1905.23	3.00	0.48	FALSE		0.25	1905.48	2.75	FALSE
CB-360	1908.23	1908.23	1905.05	3.18	0.39	FALSE		0.38	1905.43	2.8	FALSE
CB-361	1912.6	1912.6	1910.1	2.50	0	FALSE		0	1910.1	2.5	FALSE
CB-364	1906.8	1906.8	1904.3	2.50	0.26	FALSE		0	1904.3	2.5	FALSE
CB-365	1905.42	1905.42	1902	3.42	0.23	TRUE	Private but contributes flow to system	3.42	1905.42	0	TRUE
CB-366	1904.7	1904.7	1900.7	4.00	0.25	TRUE	Private but contributes flow to system	4	1904.7	0	TRUE
CB-367	1906.1	1906.1	1902.1	4.00	0.47	FALSE	Private but contributes flow to system	3.64	1905.74	0.36	TRUE
CB-369	1905.66	1905.66	1904.5	1.16	0.12	FALSE	Structure is 1.5 ft deep or less.	0.39	1904.89	0.77	TRUE
CB-371	1927.51	1927.51	1926.01	1.50	0.66	FALSE	Structure is 1.5 ft deep or less.	0.99	1927	0.51	TRUE
CB-372	1909.23	1909.23	1905.23	4.00	0.29	TRUE		4	1909.23	0	TRUE
CB-373	1909.82	1909.82	1908.82	1.00	0.2	FALSE	Structure is 1.5 ft deep or less.	0.11	1908.93	0.89	TRUE
CB-374	1909.26	1909.26	1908.1	1.16	0.42	TRUE	Structure is 1.5 ft deep or less.	1.16	1909.26	0	TRUE
CB-375	1910.34	1910.34	1906.34	4.00	0.54	FALSE		2.44	1908.78	1.56	FALSE
CB-378	1909.76	1909.76	1906.76	3.00	0.21	TRUE		3	1909.76	0	TRUE
CB-386	1909.82	1909.82	1906.62	3.20	0.14	TRUE		3.2	1909.82	0	TRUE
CB-387	2002.79	2002.79	2001.29	1.50	0.18	TRUE	Structure is 1.5 ft deep or less.	1.5	2002.79	0	TRUE
CB-388	2009.1	2009.1	2006.1	3.00	1.45	FALSE		0.97	2007.07	2.03	FALSE
CB-389	1900.14	1900.14	1896.14	4.00	0.52	FALSE		0.92	1897.06	3.08	FALSE
CB-390	1893.54	1893.54	1890.48	3.06	1.7	TRUE		3.06	1893.54	0	TRUE
CB-391	1904.85	1904.85	1900.85	4.00	0.4	FALSE		3.66	1904.51	0.34	TRUE
CB-392	1904.3	1904.3	1902.3	2.00	0.1	TRUE		2	1904.3	0	TRUE
CB-393	1904.84	1904.84	1902.84	2.00	0.46	FALSE		1.71	1904.55	0.29	TRUE
CB-394	1901.85	1901.85	1896.85	5.00	4	TRUE	Connects to other Private Catchbasins	5	1901.85	0	TRUE
CB-395	1899.65	1899.65	1898.25	1.40	0.2	FALSE	Structure is 1.5 ft deep or less.	0.63	1898.88	0.77	TRUE
CB-396	1892.08	1892.08	1890	2.08	0.42	TRUE		2.08	1892.08	0	TRUE
CB-397	1891.68	1891.68	1889.17	2.51	0.72	TRUE		2.51	1891.68	0	TRUE

CB-400	1890.88	1890.88	1886.38	4.50	0.24	FALSE		2.77	1889.15	1.73	FALSE
CB-401	1890.93	1890.93	1887.93	3.00	0.65	FALSE		1.29	1889.22	1.71	FALSE
CB-402	1892.11	1892.11	1888.11	4.00	0.85	FALSE		2.43	1890.54	1.57	FALSE
CB-403	1974.07	1974.07	1972.57	1.50	0.42	FALSE		0.19	1972.76	1.31	FALSE
CB-404	1972.39	1972.39	1970.89	1.50	0.17	TRUE	Structure is 1.5 ft deep or less.	1.5	1972.39	0	TRUE
CB-405	1896.44	1896.44	1892.44	4.00	0.32	TRUE		4	1896.44	0	TRUE
CB-406	1899.47	1899.47	1896.47	3.00	0.54	FALSE		1.87	1898.34	1.13	FALSE
CB-407	1902.82	1902.82	1899.82	3.00	0.63	FALSE		1.25	1901.07	1.75	FALSE
CB-408	1906.93	1906.93	1903.93	3.00	0.39	FALSE		1.72	1905.65	1.28	FALSE
CB-409	1897	1897	1894	3.00	0	FALSE	Paved Over Catch Basin	2.68	1896.68	0.32	TRUE
CB-410	1900.34	1900.34	1884.34	16.00	0.42	FALSE		14.58	1898.92	1.42	FALSE
CB-411	1896.29	1896.29	1893.29	3.00	0.53	FALSE		0.85	1894.14	2.15	FALSE
CB-412	1906.75	1906.75	1905.75	1.00	0.44	FALSE	Structure is 1.5 ft deep or less.	0.42	1906.17	0.58	TRUE
CB-N413	1908.78	1908.78	1904.78	4.00	0.06	TRUE		4	1908.78	0	TRUE
CB-414	1908.7	1908.7	1908.2	0.50	0.33	TRUE	Row of shallow CB Drains, Structure is 1.5 ft deep or less.	0.5	1908.7	0	TRUE
CB-416	1911.42	1911.42	1907.42	4.00	0.16	FALSE		0.98	1908.4	3.02	FALSE
CB-417	1987	1987	1986	1.00	0	FALSE		0	1986	1	FALSE
CB-418	1915.74	1915.74	1911.74	4.00	0.34	FALSE		1.69	1913.43	2.31	FALSE
CB-419	1915.49	1915.49	1911.49	4.00	0.39	FALSE		1.29	1912.78	2.71	FALSE
CB-420	1926.18	1926.18	1923.18	3.00	1.67	FALSE		1.37	1924.55	1.63	FALSE
CB-421	1925.36	1925.36	1921.86	3.50	1.05	FALSE		1.18	1923.04	2.32	FALSE
CB-422	1924.02	1924.02	1922.52	1.50	0.24	FALSE		0.09	1922.61	1.41	FALSE
CB-423	1924.18	1924.18	1922.68	1.50	0.37	FALSE		0.12	1922.8	1.38	FALSE
CB-424	1930.48	1930.48	1926.48	4.00	1.35	FALSE		1.32	1927.8	2.68	FALSE
CB-425	1930.37	1930.37	1926.37	4.00	1.51	FALSE		1.64	1928.01	2.36	FALSE
CB-426	1959.83	1959.83	1955.83	4.00	1.05	FALSE		1.05	1956.88	2.95	FALSE
CB-427	1958.92	1958.92	1954.92	4.00	0.84	FALSE		2.16	1957.08	1.84	FALSE
CB-428	1978.9	1978.9	1974.9	4.00	0.51	FALSE		2.13	1977.03	1.87	FALSE
CB-429	1989.45	1989.45	1985.45	4.00	0.63	FALSE		1.88	1987.33	2.12	FALSE
CB-430	1999.43	1999.43	1996.43	3.00	0.87	FALSE		0.89	1997.32	2.11	FALSE
CB-431	1996.75	1996.75	1993.75	3.00	0.46	FALSE		0.94	1994.69	2.06	FALSE
CB-N432	1996.23	1996.23	1992.23	4.00	0.51	FALSE		1.11	1993.34	2.89	FALSE
CB-433	2007.92	2007.92	2004.92	3.00	0.43	TRUE		3	2007.92	0	TRUE
CB-434	2009.31	2009.31	2005.81	3.50	0.23	TRUE		3.5	2009.31	0	TRUE
CB-435	2012.09	2012.09	2008.59	3.50	0.29	FALSE		0.68	2009.27	2.82	FALSE
CB-436	2012.38	2012.38	2009.38	3.00	0.32	FALSE		0.43	2009.81	2.57	FALSE
CB-437	2009.2	2009.2	2006.2	3.00	1.92	FALSE		0.64	2006.84	2.36	FALSE
CB-438	2016.16	2016.16	2012.16	4.00	0.41	FALSE		0.54	2012.7	3.46	FALSE
CB-439	2016.57	2016.57	2013.57	3.00	0.56	FALSE		0.63	2014.2	2.37	FALSE
CB-440	2018.42	2018.42	2014.42	4.00	0.59	FALSE		1.42	2015.84	2.58	FALSE
CB-441	2017.3	2017.3	2014.8	2.50	0.65	FALSE		2.39	2017.19	0.11	TRUE
CB-442	2019.66	2019.66	2015.66	4.00	0.3	FALSE		1.37	2017.03	2.63	FALSE
CB-443	2020.02	2020.02	2014.02	6.00	0.19	FALSE		1.68	2015.7	4.32	FALSE
CB-444	2017	2017	2012.3	4.70	0	TRUE		4.7	2017	0	TRUE
CB-445	2020	2020	2014.5	5.50	1.1	FALSE		1.2	2015.7	4.3	FALSE
CB-446	2019.5	2019.5	2014.9	4.60	0.43	FALSE		0.77	2015.67	3.83	FALSE
CB-447	2012.01	2012.01	2009.01	3.00	0.84	FALSE		0.46	2009.47	2.54	FALSE

CB-450	2008.18	2008.18	2003.18	5.00	0.16	FALSE		1.01	2004.19	3.99	FALSE
CB-451	2007.19	2007.19	2003.69	3.50	1.1	FALSE		1.92	2005.61	1.58	FALSE
CB-452	1964.7	1964.7	1961.7	3.00	1.83	FALSE		0.98	1962.68	2.02	FALSE
CB-453	1894.17	1894.17	1890	4.17	3.81	TRUE		4.17	1894.17	0	TRUE
CB-454	1894.49	1894.49	1890.07	4.42	4.21	TRUE		4.42	1894.49	0	TRUE
CB-457	2053	2053	2049	4.00	0.31	FALSE	10-Year Future Buildout	1.08	2050.08	2.92	FALSE
CB-458	2032	2032	2028	4.00	0.48	FALSE	10-Year Future Buildout	1.11	2029.11	2.89	FALSE
CB-459	2048	2048	2044	4.00	0.75	FALSE	10-Year Future Buildout	1.19	2045.19	2.81	FALSE
CB-460	2050	2050	2046	4.00	0.8	FALSE	10-Year Future Buildout	2.24	2048.24	1.76	FALSE
CB-461	2025	2025	2021	4.00	0.38	FALSE	10-Year Future Buildout	2.16	2023.16	1.84	FALSE
CB-462	2025	2025	2021	4.00	0.49	FALSE	10-Year Future Buildout	2.18	2023.18	1.82	FALSE
CB-463	2023.5	2023.5	2019.5	4.00	0.99	FALSE	10-Year Future Buildout	1.23	2020.73	2.77	FALSE
CB-464	2023.5	2023.5	2019.5	4.00	0.95	FALSE	10-Year Future Buildout	2.21	2021.71	1.79	FALSE
CB-465	2017.5	2017.5	2013.5	4.00	0.48	FALSE	10-Year Future Buildout	2.15	2015.65	1.85	FALSE
CB-466	2017	2017	2013	4.00	0.55	FALSE	10-Year Future Buildout	2.19	2015.19	1.81	FALSE
CB-467	2003	2003	1999	4.00	0.3	FALSE	10-Year Future Buildout	2.06	2001.06	1.94	FALSE
CB-468	1899	1899	1895	4.00	0.29	TRUE	10-Year Future Buildout	4	1899	0	TRUE
CB-469	1891	1891	1887	4.00	0.36	TRUE	10-Year Future Buildout	4	1891	0	TRUE
CB-470	1980	1980	1976	4.00	0.26	FALSE	10-Year Future Buildout	2.09	1978.09	1.91	FALSE
CB-471	1974	1974	1970	4.00	0.42	FALSE	10-Year Future Buildout	2.06	1972.06	1.94	FALSE
CB-472	1947	1947	1943	4.00	0.5	FALSE	10-Year Future Buildout	2.13	1945.13	1.87	FALSE
CB-473	1950	1950	1947	3.00	0.28	FALSE	10-Year Future Buildout	0.05	1947.05	2.95	FALSE
CB-474	1940	1940	1937	3.00	0.39	FALSE	10-Year Future Buildout	0.16	1937.16	2.84	FALSE
CB-475	1940.5	1940.5	1937.5	3.00	0.46	FALSE	10-Year Future Buildout	0.18	1937.68	2.82	FALSE
CB-476	1919	1919	1916	3.00	0.49	FALSE	10-Year Future Buildout	2.16	1918.16	0.84	TRUE
CB-477	1910	1910	1907	3.00	0.51	FALSE	10-Year Future Buildout	0.2	1907.2	2.8	FALSE
CB-478	1911	1911	1908	3.00	0.62	FALSE	10-Year Future Buildout	0.18	1908.18	2.82	FALSE
CB-479	2065	2065	2061	4.00	0.47	FALSE	10-Year Future Buildout	0.15	2061.15	3.85	FALSE
CB-480	2023	2023	2019	4.00	0.36	FALSE		0.14	2019.14	3.86	FALSE
CB-482	1943	1943	1939	4.00	0.94	FALSE	10-Year Future Buildout	0.27	1939.27	3.73	FALSE
CB-483	1938	1938	1934	4.00	1.45	FALSE	10-Year Future Buildout	0.36	1934.36	3.64	FALSE
CB-484	2040	2040	2036	4.00	1.22	FALSE	10-Year Future Buildout	1.34	2037.34	2.66	FALSE
CB-485	2040	2040	2036	4.00	0.77	FALSE	10-Year Future Buildout	1.21	2037.21	2.79	FALSE
CB-486	2043	2043	2040	3.00	0.34	FALSE	10-Year Future Buildout	1.65	2041.65	1.35	FALSE
CB-487	1928	1928	1924	4.00	0.97	TRUE	2043 Buildout	4	1928	0	TRUE
CB-488	1927	1927	1923	4.00	0.84	TRUE	2043 Buildout	4	1927	0	TRUE
CB-489	1919.76	1919.76	1915.41	4.35	0.35	FALSE	10-Year Future Buildout	0.14	1915.55	4.21	FALSE
CB-490	1930	1930	1926	4.00	0.59	FALSE	2043 Buildout	1.24	1927.24	2.76	FALSE
CB-491	1909	1909	1905	4.00	0.83	TRUE	2043 Buildout	4	1909	0	TRUE
CB-492	1909.25	1909.25	1905.25	4.00	0.8	TRUE	2043 Buildout	4	1909.25	0	TRUE
CB-493	1908.5	1908.5	1905.5	3.00	0.64	FALSE	10-Year Future Buildout	1.22	1906.72	1.78	FALSE
CB-494	1909	1909	1906	3.00	0.42	TRUE	2043 Buildout	3	1909	0	TRUE
CB-495	1909.25	1909.25	1906.25	3.00	0.52	TRUE	2043 Buildout	3	1909.25	0	TRUE
CB-496	1910	1910	1906	4.00	0.71	FALSE	10-Year Future Buildout	1.71	1907.71	2.29	FALSE
CB-497	19010.5	19010.5	1907.5	17,103.00	0.81	FALSE	10-Year Future Buildout	0.72	1908.22	17102.28	FALSE
CB-498	1915	1915	1912	3.00	0.81	FALSE	10-Year Future Buildout	0.24	1912.24	2.76	FALSE
CB-499	1902.5	1902.5	1899.5	3.00	0.32	FALSE	10-Year Future Buildout	1.02	1900.52	1.98	FALSE
CB-500	1896	1896	1893	3.00	0.69	FALSE	10-Year Future Buildout	1.76	1894.76	1.24	FALSE

CB-501	1897.5	1897.5	1894.5	3.00	0.68	FALSE	10-Year Future Buildout	0.68	1895.18	2.32	FALSE
CB-502	1894	1894	1890	4.00	0.59	FALSE	10-Year Future Buildout	1.18	1891.18	2.82	FALSE
CB-503	1899	1899	1896	3.00	1.13	TRUE	2043 Buildout	3	1899	0	TRUE
CB-504	1897	1897	1894	3.00	1.39	TRUE	2043 Buildout	3	1897	0	TRUE
CB-505	2039	2039	2036	3.00	0.84	FALSE	10-Year Future Buildout	1.17	2037.17	1.83	FALSE
CB-506	1901	1901	1898	3.00	0.31	FALSE	Couldnt locate (GIS says MH)	0.13	1898.13	2.87	FALSE
CB-508	1908.97	1908.97	1906.5	2.47	0	TRUE	Uderground Box - No physical way to overflow to surface	2.47	1908.97	0	TRUE
CB-509	1897	1897	1893.5	3.50	0.55	FALSE	BASIN - CULVERT OPENING	2.04	1895.54	1.46	FALSE
CB-510	1908.18	1908.18	1903.68	4.50	0.68	TRUE	2043 Buildout	4.5	1908.18	0	TRUE
CB-511	1908.07	1908.07	1903.4	4.67	0.11	TRUE	2043 Buildout	4.67	1908.07	0	TRUE
CB-512	1908.31	1908.31	1903.81	4.50	0.27	FALSE	2043 Buildout	4.36	1908.17	0.14	TRUE
CB-513	1907.93	1907.93	1903.43	4.50	0.08	TRUE	2043 Buildout	4.5	1907.93	0	TRUE
CB-514	1907.61	1907.61	1903.11	4.50	0.08	TRUE	2043 Buildout	4.5	1907.61	0	TRUE
ROOF DRAIN 1	1907.51	1907.51	1905.01	2.50	0.07	TRUE	ROOF DRAIN	2.5	1907.51	0	TRUE
UNKNOWN CONNECTION	1907.4	1907.4	1906.9	0.50	0.07	FALSE	UNKNOWN DRAIN - Less than 1.5 ft depth	0.05	1906.95	0.45	TRUE
CB-517	1906.77	1906.77	1902.27	4.50	0.5	TRUE	2043 Buildout	4.5	1906.77	0	TRUE
CB-518	1905.59	1905.59	1902.69	2.90	0.31	TRUE	2043 Buildout	2.9	1905.59	0	TRUE
CB-519	1906.45	1906.45	1901.33	5.12	0.1	FALSE	2043 Buildout	4.59	1905.92	0.53	TRUE
CB-520	1906.17	1906.17	1900.97	5.20	0.42	FALSE	2043 Buildout	4.87	1905.84	0.33	TRUE
CB-521	1905.32	1905.32	1900.82	4.50	0.1	TRUE	2043 Buildout	4.5	1905.32	0	TRUE
CB-522	1903.23	1903.23	1898.73	4.50	0.56	TRUE	2043 Buildout	4.5	1903.23	0	TRUE
CB-523	1903.03	1903.03	1898.53	4.50	0.29	TRUE	2043 Buildout	4.5	1903.03	0	TRUE
CB-524	1903.03	1903.03	1899.53	3.50	0.19	TRUE	2043 Buildout	3.5	1903.03	0	TRUE
CB-525	1902.88	1902.88	1897.2	5.68	0.25	FALSE	2043 Buildout	5.36	1902.56	0.32	TRUE
CB-526	1902.3	1902.3	1897.8	4.50	0.19	TRUE	2043 Buildout	4.5	1902.3	0	TRUE
CB-N527	1902.99	1902.99	1898.47	4.52	0.12	FALSE	2043 Buildout	1.11	1899.58	3.41	FALSE
CB-N528	1902.7	1902.7	1897.69	5.01	1.61	FALSE	2043 Buildout	1.68	1899.37	3.33	FALSE
CB-N529	1902.64	1902.64	1898.47	4.17	0.14	FALSE	2043 Buildout	1.63	1900.1	2.54	FALSE
CB-530	1900.46	1900.46	1895.96	4.50	0.41	FALSE	2043 Buildout	1.68	1897.64	2.82	FALSE
CB-N531	1900.42	1900.42	1895.92	4.50	1.52	FALSE	2043 Buildout	1.96	1897.88	2.54	FALSE
CB-N532	1899.54	1899.54	1896.04	3.50	0.54	FALSE	2043 Buildout	1.63	1897.67	1.87	FALSE
CB-N533	1899.41	1899.41	1895.91	3.50	0.2	FALSE	2043 Buildout	1.58	1897.49	1.92	FALSE
CB-N534	1899.46	1899.46	1897.46	2.00	0.19	FALSE	2043 Buildout	0.07	1897.53	1.93	FALSE
CB-535	1899.4	1899.4	1895.3	4.10	0.51	FALSE	2043 Buildout	1.63	1896.93	2.47	FALSE
CB-N536	1898.93	1898.93	1894.43	4.50	0.31	FALSE	2043 Buildout	1.61	1896.04	2.89	FALSE
CB-537	1896.62	1896.62	1892.12	4.50	1.01	FALSE	2043 Buildout	1.7	1893.82	2.8	FALSE
CB-538	1896.48	1896.48	1891.98	4.50	0.52	FALSE	2043 Buildout	1.62	1893.6	2.88	FALSE
CB-539	1894.71	1894.71	1889.71	5.00	0	FALSE		0	1889.71	5	FALSE
CB-N540	1894.54	1894.54	1889.87	4.67	0	FALSE		0	1889.87	4.67	FALSE
CB-N541	1899.82	1899.82	1897.82	2.00	1.84	TRUE		2	1899.82	0	TRUE
CB-542	1908.52	1908.52	1906.02	2.50	0	TRUE	2043 Buildout	2.5	1908.52	0	TRUE
CB-543	1911.07	1911.07	1908.82	2.25	(N/A)	(N/A)	2043 Buildout	(N/A)	(N/A)	#VALUE!	#VALUE!
Unknown Alley Connection	1910	1910	1906.5	3.50	0	TRUE		3.5	1910	0	TRUE
CB-545	1908.83	1908.83	1906	2.83	0.15	TRUE		2.83	1908.83	0	TRUE

Manhole Table - 2043 Layout

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Structure Depth (ft)	Flow (Total In) (cfs)	Is Ever Overflowing?	Notes	Depth (Maximum)	Hydraulic Grade	Freeboard (ft)	Less than 1 ft Freeboard
MH-3	1910.55	1910.55	1903.5	7.05	2.66	FALSE		2.62	1906.12	4.43	FALSE
MH-4	1911.26	1911.26	1904.26	7	0.31	FALSE		3.19	1907.45	3.81	FALSE
MH-5	1910.66	1910.66	1903.66	7	0	FALSE		3.69	1907.35	3.31	FALSE
MH-6	1909.18	1909.18	1902	7.18	0.23	FALSE		3.48	1905.48	3.7	FALSE
MH-7	1913.54	1913.54	1907.59	5.95	0.62	FALSE		0.36	1907.95	5.59	FALSE
MH-8	1912.47	1912.47	1908.47	4	0.34	FALSE		0.35	1908.82	3.65	FALSE
MH-9	1913.13	1913.13	1908.85	4.28	0.14	FALSE		0.24	1909.09	4.04	FALSE
MH-13	1920.89	1920.89	1915.39	5.5	0.32	FALSE		3.18	1918.57	2.32	FALSE
MH-14	1933.49	1933.49	0	0	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1933.49	FALSE
MH-15	1929.97	1929.97	1923.97	6	0.85	FALSE		237.16	237.16	1692.81	FALSE
MH-17	1911.16	1911.16	1905.6	5.56	0.97	FALSE		0.49	1906.09	5.07	FALSE
MH-18	1910.78	1910.78	0	1910.78	0	FALSE	Couldn't field locate - perhaps abated? Paved Over?	0	0	1910.78	FALSE
MH-20	1918.57	1918.57	0	1918.57	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-22	1910.85	1910.85	1901.3	9.55	2.77	FALSE		8.67	1909.97	0.88	TRUE
MH-23	1910.39	1910.39	0	1910.39	(N/A)	(N/A)	Planed for replacement or removal.	(N/A)	(N/A)	#VALUE!	#VALUE!
MH-24	1909.74	1909.74	1900.31	9.43	1.58	FALSE		8.56	1908.87	0.87	TRUE
MH-25	1910.21	1910.21	1899.69	10.52	0.24	FALSE		9.13	1908.82	1.39	FALSE
MH-26	1910.4	1910.4	1898.97	11.43	1.71	FALSE		9.75	1908.72	1.68	FALSE
MH-28	1909.04	1909.04	1898.27	10.77	2.77	FALSE		9.88	1908.15	0.89	TRUE
MH-30	1904.37	1904.37	1899.24	5.13	5.25	FALSE		0.79	1900.03	4.34	FALSE
MH-31	1903.65	1903.65	1897.73	5.92	2.5	FALSE		4.39	1902.12	1.53	FALSE
MH-32	1902.44	1902.44	1897.11	5.33	7.43	FALSE		0.87	1897.98	4.46	FALSE
MH-33	1900.11	1900.11	1893.41	6.7	9.47	FALSE		1.07	1894.48	5.63	FALSE
MH-35	1899.43	1899.43	1892.43	7	10.36	FALSE		1.07	1893.5	5.93	FALSE
MH-36	1897.78	1897.78	1889.78	8	10.53	FALSE		1.94	1891.72	6.06	FALSE
MH-47	1904.46	1904.46	1898.21	6.25	10.73	TRUE		6.25	1904.46	0	TRUE
MH-50	1997.4	1997.4	1992	5.4	1.05	FALSE		1.54	1993.54	3.86	FALSE
MH-51	1936	1936	1930.5	5.5	2.48	FALSE		1.02	1931.52	4.48	FALSE
MH-52	1934.98	1934.98	1930.5	4.48	2.8	FALSE		1.06	1931.56	3.42	FALSE
MH-53	1932.28	1932.28	1928.78	3.5	2.09	FALSE		1.03	1929.81	2.47	FALSE
MH-54	1924.75	1924.75	1916.36	8.39	0.86	FALSE		0.23	1916.59	8.16	FALSE
MH-55	1918.57	1918.57	1909.82	8.75	2.25	FALSE		1.91	1911.73	6.84	FALSE
MH-56	1912.12	1912.12	1905.15	6.97	3.68	TRUE		6.97	1912.12	0	TRUE
MH-58	1910.39	1910.39	1900.8	9.59	1.78	TRUE		9.59	1910.39	0	TRUE
MH-71	1912.21	1912.21	1906.19	6.02	0.63	FALSE		0.38	1906.57	5.64	FALSE
MH-72	1910.25	1910.25	1904.8	5.45	0.63	FALSE		0.38	1905.18	5.07	FALSE
MH-73	1908.4	1908.4	1902.95	5.45	0.86	FALSE		0.43	1903.38	5.02	FALSE
MH-74	1912.6	1912.6	1907	5.6	0	FALSE		0	1907	5.6	FALSE
MH-75	1911.5	1911.5	1907	4.5	0	FALSE		0	1907	4.5	FALSE
MH-78	1909.99	1909.99	1902.99	7	0.77	TRUE		7	1909.99	0	TRUE
MH-82	1908.56	1908.56	1904.56	4	0.52	TRUE	No outlet found so could not be properly modeled. No notable flooding observed.	4	1908.56	0	TRUE
MH-83	2003.86	2003.86	1996.86	7	0.35	FALSE		0.08	1996.94	6.92	FALSE

MH-84	2000.88	2000.88	1996.08	4.8	4.89	FALSE		0.56	1996.64	4.24	FALSE
MH-85	1900.14	1900.14	1894.14	6	18.69	FALSE		2.79	1896.93	3.21	FALSE
MH-86	1896	1896	1891.34	4.66	10.42	FALSE	PAVED OVER - Surface elevation is estimated.	2.17	1893.51	2.49	FALSE
MH-87	1893.78	1893.78	1888.77	5.01	11.22	TRUE		5.01	1893.78	0	TRUE
MH-90	1900.69	1900.69	1896.25	4.44	15.42	TRUE	PAVED OVER - Surface elevation is estimated.	4.44	1900.69	0	TRUE
MH-91	1892	1891.75	1888.04	3.71	13.1	FALSE	PAVED OVER - Surface elevation is estimated.	3.7	1891.74	0.01	TRUE
MH-92	1891.68	1891.68	1887.43	4.25	15	FALSE		4	1891.43	0.25	TRUE
MH-93	1891.83	1891.83	1887.23	4.6	16.58	FALSE		1.36	1888.59	3.24	FALSE
MH-94	1895.21	1895.21	1884.21	11	3.81	FALSE		4	1888.21	7	FALSE
MH-95	1910.51	1910.51	1903.76	6.75	0.91	FALSE		0.08	1903.84	6.67	FALSE
MH-96	2008.89	2008.89	2001.72	7.17	7.28	FALSE		3.91	2005.63	3.26	FALSE
MH-97	1915.91	1915.91	1908.91	7	0.72	FALSE		1.96	1910.87	5.04	FALSE
MH-99	1924.53	1924.53	0	1924.53	2.68	FALSE		359.89	359.89	1564.64	FALSE
MH-100	1930.22	1930.22	1924.22	6	2.83	FALSE		2.42	1926.64	3.58	FALSE
MH-101	1960.12	1960.12	1952	8.12	1.87	FALSE		1.58	1953.58	6.54	FALSE
MH-102	1978.94	1978.94	1971.44	7.5	0.51	FALSE		1.63	1973.07	5.87	FALSE
MH-103	1989.7	1989.7	1982.2	7.5	0.63	FALSE		1.69	1983.89	5.81	FALSE
MH-104	1996.07	1996.07	1990.07	6	1.8	FALSE		0.08	1990.15	5.92	FALSE
MH-105	2008.71	2008.71	2002.71	6	0.23	FALSE		5.39	2008.1	0.61	TRUE
MH-106	2010.75	2010.75	2003.75	7	0.23	FALSE		4.51	2008.26	2.49	FALSE
MH-108	2012.75	2012.75	2006.75	6	0.6	FALSE		1.4	2008.15	4.6	FALSE
MH-109	2006.63	2006.63	2000.63	6	1.92	TRUE		6	2006.63	0	TRUE
MH-110	2012.44	2012.44	2006.44	6	0.84	FALSE		1.97	2008.41	4.03	FALSE
MH-111	1965.47	1965.47	1959.47	6	1.83	FALSE		1.7	1961.17	4.3	FALSE
MH-113	1910	1910	1903	7	8.08	FALSE	FUTURE BUILDOUT	0.68	1903.68	6.32	FALSE
MH-114	1940	1940	1933	7	5	FALSE	FUTURE BUILDOUT	0.33	1933.33	6.67	FALSE
MH-115	1947	1947	1940	7	3.91	FALSE	FUTURE BUILDOUT	0.4	1940.4	6.6	FALSE
MH-116	1980	1980	1973	7	3.01	FALSE	FUTURE BUILDOUT	0.27	1973.27	6.73	FALSE
MH-117	1990	1990	1983	7	6.07	FALSE	FUTURE BUILDOUT	4	1987	3	FALSE
MH-119	2052	2052	2046	6	0	FALSE	FUTURE BUILDOUT	0	2046	6	FALSE
MH-121	2049	2049	2043	6	2.24	FALSE	FUTURE BUILDOUT	0.24	2043.24	5.76	FALSE
MH-122	2025	2025	2019	6	3.1	FALSE	FUTURE BUILDOUT	0.66	2019.66	5.34	FALSE
MH-123	2023	2023	2016	7	4.93	FALSE	FUTURE BUILDOUT	0.6	2016.6	6.4	FALSE
MH-124	2017	2017	2010	7	5.86	FALSE	FUTURE BUILDOUT	0.46	2010.46	6.54	FALSE
MH-126	2009.6	2009.6	1993.52	16.08	1.18	FALSE		0.33	1993.85	15.75	FALSE
MH-127	2040	2040	2034	6	2.29	FALSE	FUTURE BUILDOUT	0.27	2034.27	5.73	FALSE
MH-129	1909.1	1909.1	1903	6.1	0.94	TRUE	2043 Buildout	6.1	1909.1	0	TRUE
MH-130	2066.26	2066.26	2060.75	5.51	0	FALSE		0	2060.75	5.51	FALSE
MH-134	1908.81	1908.81	1902.16	6.65	0	FALSE	PAVED OVER - Surface elevation is estimated.	5.85	1908.01	0.8	TRUE
MH-137	1906.9	1906.9	1899.8	7.1	2.08	FALSE		0.54	1900.34	6.56	FALSE
MH-138	1894.82	1894.82	1886.32	8.5	2.43	FALSE		5.52	1891.84	2.98	FALSE
MH-140	1909.7	1909.7	1905.7		0.9	FALSE	Pour-in-Place uncovered, coundnt access. IEs unknown. Grout Plug approx 100 LF west of MH	3.5	1909.2	0.5	TRUE
MH-141	1910.21	1910.21	1904.84		0.9	TRUE		5.37	1910.21	0	TRUE

SECTION 3

Physical Property Comparison for

Design Analysis

Description:

The following table details physical parameters of the storm system infrastructure in the existing and design scenario, both under 2043 loading conditions. The design scenario and it's physical characteristics were created by analyzing the existing infrastructure under 2043 loading conditions, and altering properties of pipes and structures to alleviate overflowing conditions. Therefore, this table acts as a record of changes made to the physical properties of system components. See report section 5.3.3.2 - Analysis 2 - 2043 Design for more information.

Stormwater Modeling Comparison Output

Existing Infrastructure and Design Scenario (2043 Loading)

Storm Data: 25-Year, Short-Duration (3-Hour) Storm
Adjusted Total Precipitation for Cle Elum: 1.1 Inches

Conduit Table

Compared Alternative: Physical

Label	Material Existing	Material Design Scenario	Invert (Start) Existing (ft)	Invert (Start) Design Scenario (ft)	Invert (Stop) Existing (ft)	Invert (Stop) Design Scenario (ft)	Pipe Diameter Existing (in)	Pipe Diameter Design Scenario (in)
CO-93	Concrete	Concrete	**1,899.99**	**1,899.25**	**1,898.78**	**1,898.60**	**8.0**	**12.0**
CO-108	PVC	PVC	**1,910.49**	**1,909.82**	**1,910.23**	**1,909.70**	**6.0**	**12.0**
CO-109	PVC	PVC	**1,910.31**	**1,909.75**	**1,909.35**	**1,909.45**	**6.0**	**12.0**
CO-112	**Concrete**	**PVC**	**1,909.36**	**1,908.36**	1,915.56	1,915.56	**6.0**	**12.0**
CO-134	PVC	PVC	**2,009.87**	**2,008.87**	2,001.72	2,001.72	12.0	12.0
CO-140	Steel	Steel	**1,895.59**	**1,894.59**	1,894.44	1,894.04	**8.0**	**12.0**
CO-141	Steel	Steel	**1,892.17**	**1,891.67**	**1,891.85**	**1,891.35**	**8.0**	**12.0**
CO-200	Steel	Steel	**1,890.35**	**1,889.85**	**1,890.28**	**1,889.78**	**8.0**	**12.0**
CO-94(1)	Concrete	Concrete	**1,898.19**	**1,898.34**	**1,898.25**	**1,898.32**	**8.0**	**12.0**
CO-94(2)	Concrete	Concrete	**1,898.25**	**1,898.50**	**1,898.70**	**1,898.65**	**8.0**	**12.0**
CO-295	Concrete	Concrete	1,894.14	1,894.14	1,891.34	1,891.34	**24.0**	**30.0**
CO-296	Concrete	Concrete	1,891.34	1,891.34	1,888.77	1,888.77	**24.0**	**30.0**
CO-327	Concrete	Concrete	**1,900.43**	**1,898.93**	1,898.35	1,898.35	**6.0**	**12.0**
CO-328	PVC	PVC	**1,891.14**	**1,890.64**	**1,890.68**	**1,890.00**	**6.0**	**12.0**
CO-335	Steel	Steel	**1,900.73**	**1,899.75**	1,895.75	1,895.75	**8.0**	**12.0**
CO-342	PVC	PVC	**1,895.29**	**1,894.40**	1,893.83	1,893.83	**6.0**	**12.0**
CO-350	PVC	PVC	**1,908.64**	**1,907.64**	**1,907.62**	**1,907.42**	**6.0**	**12.0**
CO-352	Concrete	Concrete	**1,894.96**	**1,894.50**	**1,894.82**	**1,894.32**	16.0	16.0
CO-368	Ductile Iron	Ductile Iron	1,907.62	1,907.62	**1,907.76**	**1,907.51**	10.0	10.0
CO-393	Concrete	Concrete	**1,909.36**	**1,908.36**	1,904.78	1,904.78	12.0	12.0
CO-435	Steel	Steel	**1,905.43**	**1,904.93**	1,900.62	1,900.62	**8.0**	**12.0**
CO-436	Steel	Steel	**1,900.62**	**1,900.00**	**1,897.77**	**1,896.47**	**8.0**	**12.0**
CO-437	Steel	Steel	**1,897.77**	**1,896.47**	1,895.19	1,895.19	**8.0**	**12.0**
CO-438	Steel	Steel	**1,895.19**	**1,895.25**	1,895.14	1,895.14	12.0	12.0
CO-439(2)	Steel	Steel	**1,895.00**	**1,894.90**	**1,894.86**	**1,894.60**	**6.0**	**12.0**
CO-444	Concrete	Concrete	1,888.77	1,888.77	**1,888.04**	**1,887.54**	**24.0**	**30.0**
CO-445	Concrete	Concrete	**1,888.04**	**1,887.54**	**1,887.43**	**1,886.93**	**24.0**	**30.0**
CO-447	Concrete	Concrete	**1,891.68**	**1,891.48**	**1,890.98**	**1,890.78**	**8.0**	**12.0**
CO-448	Concrete	Concrete	**1,890.68**	**1,890.00**	1,889.80	1,889.80	**8.0**	**12.0**
CO-452	PVC	PVC	**1,890.37**	**1,889.87**	**1,890.43**	**1,889.75**	**6.0**	**12.0**
CO-453	Concrete	Concrete	**1,890.28**	**1,889.78**	1,889.08	1,889.08	**8.0**	**12.0**
CO-455	Concrete	Concrete	**1,887.43**	**1,886.93**	**1,887.23**	**1,885.33**	**24.0**	**30.0**
CO-456	Concrete	Concrete	**1,887.23**	**1,885.33**	1,878.16	1,878.16	**24.0**	**30.0**
CO-458	Concrete	Concrete	**1,889.52**	**1,889.02**	**1,888.43**	**1,887.93**	**6.0**	**12.0**
CO-463	**Steel**	**CMP**	1,932.61	1,932.61	1,929.00	1,929.00	24.0	24.0
CO-547	Steel	Steel	**1,907.00**	**1,907.20**	**1,906.50**	**1,907.00**	**8.0**	**12.0**
CO-552	PVC	PVC	1,904.90	1,904.90	1,898.41	1,898.41	12.0	12.0
CO-575	Concrete	Concrete	**1,905.90**	**1,904.90**	1,904.84	1,904.84	**12.0**	**18.0**
CO-581	PVC	PVC	**1,897.20**	**1,898.80**	1,897.97	1,897.97	12.0	12.0
CO-582	PVC	PVC	**1,900.97**	**1,902.47**	1,899.95	1,899.95	12.0	12.0
CO-583	PVC	PVC	1,902.44	1,902.44	1,902.16	1,902.16	12.0	12.0
CO-584	PVC	PVC	**1,903.40**	**1,904.90**	**1,902.16**	**1,903.16**	12.0	12.0
CO-585	PVC	PVC	1,898.97	1,898.97	1,902.55	1,902.55	12.0	12.0
CO-586	PVC	PVC	1,906.50	1,906.50	1,904.30	1,904.30	12.0	12.0
CO-587	PVC	PVC	**1,900.31**	**1,905.25**	**1,905.70**	**1,905.00**	**12.0**	**18.0**

Lateral Table

Compared Alternative: Physical

Label	Material Existing	Material Design Scenario	Invert (Start) Existing (ft)	Invert (Start) Design Scenario (ft)	Invert (Stop) Existing (ft)	Invert (Stop) Design Scenario (ft)	Diameter Existing (in)	Diameter Design Scenario (in)
L-30	PVC	PVC	**1,896.40**	**1,893.24**	N/A	N/A	**4.0**	**12.0**
L-86	Steel	Steel	**1,897.81**	**1,897.94**	N/A	N/A	6.0	6.0
L-88	PVC	PVC	**1,898.22**	**1,896.82**	N/A	N/A	**6.0**	**12.0**
L-89	Concrete	Concrete	**1,884.34**	**1,898.79**	N/A	N/A	10.0	10.0
L-90	Concrete	Concrete	1,896.56	1,896.56	N/A	N/A	12.0	12.0
L-91	PVC	PVC	**1,899.53**	**1,900.03**	N/A	N/A	12.0	12.0
L-92	PVC	PVC	**1,898.53**	**1,900.03**	N/A	N/A	12.0	12.0
L-93	PVC	PVC	**1,898.73**	**1,900.23**	N/A	N/A	12.0	12.0
L-94	PVC	PVC	**1,900.82**	**1,902.32**	N/A	N/A	12.0	12.0
L-95	PVC	PVC	**1,902.27**	**1,903.77**	N/A	N/A	12.0	12.0
L-96	PVC	PVC	1,906.90	1,906.90	N/A	N/A	12.0	12.0
L-97	PVC	PVC	**1,903.11**	**1,904.61**	N/A	N/A	12.0	12.0
L-98	PVC	PVC	**1,903.43**	**1,904.93**	N/A	N/A	12.0	12.0
L-99	PVC	PVC	1,903.68	1,903.68	N/A	N/A	12.0	12.0

Culvert Opening Table

Compared Alternative: Physical

Label	Elevation (Ground) Existing (ft)	Elevation (Ground) Design Scenario (ft)	Elevation (Invert) Existing (ft)	Elevation (Invert) Design Scenario (ft)	Height Existing (ft)	Height Design Scenario (ft)	Bottom Width Existing (ft)	Bottom Width Design Scenario (ft)
CS-7	1,909.64	1,909.64	**1,908.64**	**1,907.04**	**0.50**	**1.00**	**0.50**	**1.00**
CS-41	**1,896.32**	**1,896.80**	**1,894.49**	**1,894.32**	2.00	2.00	1.3	1.3

Manhole Table

Compared Alternative: Physical

Label	Elevation (Ground) Existing (ft)	Elevation (Ground) Design Scenario (ft)	Elevation (Invert) Existing (ft)	Elevation (Invert) Design Scenario (ft)
MH-91	1,892.00	1,892.00	**1,888.04**	**1,887.54**
MH-92	1,891.68	1,891.68	**1,887.43**	**1,886.93**
MH-93	1,891.83	1,891.83	**1,887.23**	**1,885.33**
MH-140	1,909.70	1,909.70	**1,905.70**	**1,904.90**

Catch Basin Table

Compared Alternative: Physical

Label	Elevation (Ground) Existing (ft)	Elevation (Ground) Design Scenario (ft)	Elevation (Invert) Existing (ft)	Elevation (Invert) Design Scenario (ft)	Length Existing (ft)	Length Design Scenario (ft)	Width Existing (ft)	Width Design Scenario (ft)
CB-147	1,901.18	1,901.18	**1,899.68**	**1,898.18**	**1.00**	**2.00**	**1.00**	**1.50**
CB-159	1,897.24	1,897.24	**1,896.00**	**1,893.24**	2.00	2.00	1.50	1.50
CB-166	1,893.92	1,893.92	**1,892.00**	**1,891.00**	2.50	2.50	2.00	2.00
CB-172	1,892.04	1,892.04	**1,890.04**	**1,889.04**	3.00	3.00	3.00	3.00
CB-201	1,910.36	1,910.36	**1,907.94**	**1,907.36**	2.00	2.00	1.50	1.50
CB-227	1,909.50	1,909.50	**1,907.00**	**1,906.50**	2.00	2.00	1.50	1.50
CB-242	1,899.11	1,899.11	**1,895.11**	**1,897.94**	3.00	3.00	3.00	3.00
CB-405	**1,896.44**	**1,897.00**	**1,892.44**	**1,893.50**	2.00	2.00	1.50	1.50
CB-509	1,897.00	1,897.00	**1,893.50**	**1,893.00**	4.00	4.00	4.00	4.00
CB-N541	1,899.82	1,899.82	**1,897.82**	**1,896.82**	1.50	2.00	1.50	1.50

Appendix C

Cost Estimates

Schedule A - Descriptions

Object ID	Intersection	Problem Description
148SE	Fifth & Oakes	SE pipe large gap between transition from PVC to Clay 22' from NW end 8" PVC/Clay
149SW	Fifth & Oakes	SW pipe large gap between transition from PVC to Clay. PVC lightly crushed. 7' from NE end 8" PVC/Clay
290E	Fifth & Oakes	E pipe rusted full circumference. 12" Corrugated Steel

Schedule A - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (148SE, 149SW, 290E)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$15,000.00	1	$15,000.00
3	Project Temporary Traffic Control	LS	$30,000.00	1	$30,000.00
4	Crushed Surfacing Base Course	TON	$50.00	120	$6,000.00
5	Crushed Surfacing Top Course	TON	$60.00	50	$3,000.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$200.00	65	$13,000.00
7	Storm Sewer Pipe 8 In. Diam.	LF	$120.00	65	$7,800.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	530	$58,300.00
9	Shoring or Extra Excavation	LF	$4.00	570	$2,280.00
10	Select Backfill, as Directed	CY	$60.00	370	$22,200.00
			Schedule A Subtotal		$162,580.00

Assumptions:
1. PVC Pipe

Schedule B - Descriptions

Object ID	Intersection	Problem Description
518E	Third & Oakes	E Pipe rusting. 8" Corrugated Steel
435E	Second & Oakes	Pipe IE drop by 6"
434E	Second & Oakes	Pipe IE drop by 6"
436S	Second & Oakes	Pipe Dia. 12" Concrete, Pipe I.E. drop by 12"

Schedule B - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (518E, 435E, 434E, 436S)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$10,000.00	1	$10,000.00
3	Project Temporary Traffic Control	LS	$50,000.00	1	$50,000.00
4	Crushed Surfacing Base Course	TON	$120.00	20	$2,400.00
5	Crushed Surfacing Top Course	TON	$130.00	10	$1,300.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$250.00	25	$6,250.00
7	Select Backfill, as Directed	CY	$120.00	10	$1,200.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$120.00	100	$12,000.00
9	Storm Sewer Pipe 8 In. Diam.	LF	$130.00	55	$7,150.00
			Schedule B Subtotal		$95,300.00

Assumptions:
1. 105LF Ductile Iron Pipe
2. 50LF PVC

Schedule C - Descriptions

Object ID	Intersection	Problem Description
304NE	Second & Pennsylvania	NE Pipe broken 43' from East end - in need of replacement 8" PVC (59 LF)
517S	Second & Harris	S pipe rusting, gaps in joins 6" DI (36 LF)
432N	Second & Harris	with several punctures visible from surface. May warrant new or dropping structure (3' depth). Replace pipe w/ 12" PVC or Steel
633E	Second & Harris	Pipe Dia. 12" pvc, Changed to 18" Pipe I.E. raise by 5' start, lower by .7' end
625E NEW	Second & Harris	Pipe Dia. 12" pvc, Changed to 18" Pipe I.E. raise by 5' start, lower by .7' end

Schedule C - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (304NE, 517S, 432N, 633E, 625E NEW)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$15,000.00	1	$15,000.00
3	Project Temporary Traffic Control	LS	$55,000.00	1	$55,000.00
4	Crushed Surfacing Base Course	TON	$100.00	60	$6,000.00
5	Crushed Surfacing Top Course	TON	$110.00	20	$2,200.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$250.00	40	$10,000.00
7	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	440	$48,400.00
8	Storm Sewer Pipe 6 In. Diam.	LF	$100.00	40	$4,000.00
9	Storm Sewer Pipe 8 In. Diam.	LF	$120.00	60	$7,200.00
10	Shoring or Extra Excavation	LF	$4.00	300	$1,200.00
11	Select Backfill, as Directed	CY	$60.00	90	$5,400.00
12	Landscape Restoration	FA	$5,000.00	1	$5,000.00
13	Cement Conc. Traffic Curb and Gutter	LF	$300.00	10	$3,000.00
14	Cement Conc. Sidewalk 4-Inch Thick	SY	$70.00	90	$6,300.00
15	Permanent Signing	LS	$1,000.00	1	$1,000.00
			Schedule C Subtotal		$174,700.00

Assumptions:

1. 60LF 8in Ductile Iron, 40LF 6in Ductile Iron, 145lf 12in Ductile Iron
2. 290LF 12in PVC

Schedule D - Descriptions

Object ID	Intersection	Problem Description
499S	Fourth & Wright	S Pipe dented and broken 11.5' from north end 8' Corrugated Steel
499W	Fourth & Wright	W Pipe dented 63' from East end 8" Corrugated Steel
275N	Third & Wright	Pipe Dia. Changed to 12" PVC, Pipe I.E. drop by 2"
644N	Third & Wright	Pipe Dia. 10" Concrete, Pipe I.E. drop by 3"
287S	Second & Wright	Pipe Dia. 8" pvc, Changed to 12" Pipe I.E. raise by .2' start, .5' end

Schedule D - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (499S, 499W, 275N, 644N, 287S)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$15,000.00	1	$15,000.00
3	Project Temporary Traffic Control	LS	$30,000.00	1	$30,000.00
4	Crushed Surfacing Base Course	TON	$120.00	25	$3,000.00
5	Crushed Surfacing Top Course	TON	$130.00	10	$1,300.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$300.00	15	$4,500.00
7	Storm Sewer Pipe 8 In. Diam.	LF	$110.00	300	$33,000.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$120.00	170	$20,400.00
9	Catch Basin Type 1	EA	$4,000.00	1	$4,000.00
10	Cement Conc. Sidewalk 4-Inch Thick	SY	$90.00	50	$4,500.00
11	Cement Conc. Traffic Curb and Gutter	LF	$50.00	110	$5,500.00
12	Cement Conc. Curb Ramp	EA	$5,000.00	1	$5,000.00
13	Landscape Restoration	FA	$7,000.00	1	$7,000.00
			Schedule D Subtotal		$138,200.00

Assumptions:
1. 295LF 8in Ductile Iron, 140LF 12in Ductile Iron
2. 40LF 12in PVC

Schedule E - Descriptions

Object ID	Intersection	Problem Description
167S	Second & Bullitt	S Pipe cracked, starting cave in 8" PVC (1 LF) 12" Concrete (17 LF)
431W	Second & Bullitt	W Pipe starting to cave in, dirt and gravel blockage 12" Concrete (8 LF)
308W	Second & Peoh	W Pipe collapsed from above - in need of replacement 12" Concrete

Schedule E - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (167S, 431W, 308W)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$18,000.00	1	$18,000.00
3	Project Temporary Traffic Control	LS	$30,000.00	1	$30,000.00
4	Crushed Surfacing Base Course	TON	$80.00	160	$12,800.00
5	Crushed Surfacing Top Course	TON	$100.00	65	$6,500.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$220.00	90	$19,800.00
7	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	850	$93,500.00
8	Catch Basin Type 1	EA	$4,000.00	2	$8,000.00
			Schedule E Subtotal		$193,600.00

Assumptions:
1. 850LF 12in Ductile Iron

Schedule F - Descriptions

Object ID	Intersection	Problem Description
371W & CB-523	First & Montgomery	W Pipe collapsed 33' from E end - in need of replacement 6" Concrete (59.3 LF) Replace w/ 12" PVC per City Code W IE increase by 0.5' Structure replacement (orig. 1.5 by 1.5 by 2')
371N & CB-658	First & Montgomery	North Pipe surcharged/under pressure, Replace pipe w/ 12" PVC Paved over Manhole - Needs to be saw cut around, uncovered, and raised to grade.
170E	First & Montgomery	Pipe IE drop by 9"
169W	Second & Montgomery	W Pipe Collapsed less than 1ft from E end - in need of replacement 6" Concrete (81.2 LF)

Schedule F - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (371W & CB-523, 371N & CB-658, 170E, 169W)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$10,000.00	1	$10,000.00
3	Project Temporary Traffic Control	LS	$30,000.00	1	$30,000.00
4	Crushed Surfacing Top Course	TON	$120.00	15	$1,800.00
5	Crushed Surfacing Base Course	TON	$110.00	30	$3,300.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$400.00	10	$4,000.00
7	Adjust Catch Basin	EA	$1,200.00	1	$1,200.00
8	ADA Grate	EA	$1,000.00	1	$1,000.00
9	Catch Basin Type 1	EA	$4,000.00	1	$4,000.00
10	Storm Sewer Pipe 12 In. Diam.	LF	$120.00	230	$27,600.00
11	Cement Conc. Traffic Curb and Gutter	LF	$300.00	10	$3,000.00
12	Cement Conc. Sidewalk 4-Inch Thick	SY	$450.00	10	$4,500.00
13	Cement Conc. Curb Ramp	EA	$5,000.00	1	$5,000.00
			Schedule F Subtotal		$100,400.00

Assumptions:

1. 230LF 12in Ductile Iron

Schedule G - Descriptions

Object ID	Intersection	Problem Description
176W	First & Yakima	W pipe rusting through in various places - in need of replacement 8" Corrugated Steel (67.2 LF) increase to 12"
654E	First & Yakima	Pipe Dia. Changed to 30" PVC
175S	First & Yakima	Pipe Dia. 4" pvc, Changed to 12" Pipe I.E. drop by 3'
286S	Second & Yakima	S Pipe has intersecting telecom penetrating perpendicular through its center 11' from N end - in need of replacement 12" PVC (40 LF)
500N	Second & Yakima	Pipe I.E. raise by .25'
668N	Second & Teannaway	N Pipe broken and clogged at transition from PVC to Concrete 8' of S end. 8" PVC (7 LF), 8" Concrete (17 LF)
652E	First & Teannaway	Pipe Dia. Changed to 30" PVC
173S	First & Teannaway	S Pipe broken off but not sealed I.E. drop by 2.5', 6" to 12" 6" PVC

Schedule G - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (176W, 286S, 668N, 652E, 654E, 175S, 500N, 173S)					
1	Minor Change	FA	$10,000.00	1	$10,000.00
2	Mobilization	LS	$45,000.00	1	$45,000.00
3	Project Temporary Traffic Control	LS	$100,000.00	1	$100,000.00
4	Crushed Surfacing Base Course	TON	$60.00	340	$20,400.00
5	Crushed Surfacing Top Course	TON	$70.00	130	$9,100.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$160.00	170	$27,200.00
7	Storm Sewer Pipe 12 In. Diam.	LF	$120.00	270	$32,400.00
8	Storm Sewer Pipe 10 In. Diam.	LF	$110.00	30	$3,300.00
9	Storm Sewer Pipe 30 In. Diam.	LF	$180.00	1300	$234,000.00
10	Shoring or Extra Excavation	LF	$4.00	1450	$5,800.00
11	Select Backfill, as Directed	CY	$45.00	300	$13,500.00
			Schedule G Subtotal		$500,700.00

Assumptions:

1. 30LF 10in Ductile Iron, 110LF 12in Ductile Iron
2. 160LF 12in PVC, 1300LF 30in PVC

Schedule H - Descriptions

Object ID	Intersection	Problem Description
178	First & Columbia	E Pipe heavy rusting entire visible length of pipe - in need of replacement 8" Corrugated Steel (78 LF) Increase to 12" dia
661W & CB-661	First & Columbia	Pipe Dia. 24" pvc, Changed to 30" Pipe I.E. drop by .5' Paved over Manhole - Needs to be saw cut around, uncovered, and raised
655N	First & Columbia	Pipe Dia. 8" pvc, Changed to 12" DI Pipe I.E. drop by .2'
182	First & Floral	W Pipe joints separated. 6" PVC (89 LF) Replace w/ 12" PVC per City Code Increase IE W by 0.27', IE E by 0.5'
519	First & Floral	W Pipe rusting through - in need of replacement 8" Corrugated Steel (51.5 LF) Replace w/ 12" PVC per City Code Increase IE W by 0.15', IE E by 0.3'
659 S & W	First & Floral	S Pipe collapsed - in need of replacement 8" Cement (64.5 LF) Replace w/ 12" PVC W Pipe replaced with 12" Pipe
519	First & Floral	S pipe not undersized, but lump in with rest of line to avoid surcharging from lines upstream. Replace pipe w/ 12" PVC per City Code Increase IE N by 0.3'
662W	First & Floral	Pipe Dia. 24" pvc, Changed to 30" Pipe I.E. drop by .5'
281W	First & Short	Pipe Dia. 24" pvc, Changed to 30" Pipe I.E. drop by 2'
281E	First & Short	Pipe Dia. 24" pvc, Changed to 30" Pipe I.E. drop by 2'
282W	First & Short	Pipe Dia. 24" pvc, Changed to 30" Pipe I.E. drop by 2'

Schedule H - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (178E, 182W, 519W, 659 S & W, 519S, 661W & CB-661, 662W, 655N, 281W, 281E, 282W)					
1	Minor Change	FA	$10,000.00	1	$10,000.00
2	Mobilization	LS	$50,000.00	1	$50,000.00
3	Project Temporary Traffic Control	LS	$60,000.00	1	$60,000.00
4	Crushed Surfacing Base Course	TON	$50.00	400	$20,000.00
5	Crushed Surfacing Top Course	TON	$60.00	170	$10,200.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$140.00	300	$42,000.00
7	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	500	$55,000.00
8	Storm Sewer Pipe 30 In. Diam.	LF	$140.00	2000	$280,000.00
9	Shoring or Extra Excavation	LF	$4.00	2050	$8,200.00
10	Select Backfill, as Directed	CY	$45.00	380	$17,100.00
11	Adjust Catch Basin	EA	$1,000.00	1	$1,000.00
12	ADA Grate	EA	$1,000.00	1	$1,000.00
			Schedule H Subtotal		$554,500.00

Assumptions:

1. 455LF 12in Ductile Iron
2. 2000LF 30in PVC, 45LF 12in PVC

Schedule I - Descriptions

Object ID	Intersection	Problem Description
669	Third & Garden	N Pipe rusted through in multiple locations from 88' to 95' from S end - in need of replacement 8" Corrugated Steel
670	Third & Garden	N Pipe dented, punctured, and collapsed 101' of S end - in need of replacement 8" Corrugated steel
CB-676, CB-671, 671N, 676E	Third & Garden	Paved over Catchbasin - Saw cut around structure, uncover and raise to grade. Pipe Dia. 8" Steel, Change to 12" Pipe I.E. drop by 1.3'
673S	Third & Garden	Pipe Dia. 8" Steel, Changed to 12" Pipe I.E. drop by 6"
206E	Third & Garden	Pipe Dia. 8" Steel, Changed to 12" Pipe I.E. drop by .2'
206S	Third & Short	Pipe Dia. 16" Concrete, Pipe I.E. drop by 6"

Schedule I - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (669N, 670N, CB-676 CB-671 671N, 206S, 673S, 206E)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$20,000.00	1	$20,000.00
3	Project Temporary Traffic Control	LS	$30,000.00	1	$30,000.00
4	Crushed Surfacing Base Course	TON	$60.00	170	$10,200.00
5	Crushed Surfacing Top Course	TON	$70.00	70	$4,900.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$160.00	110	$17,600.00
7	Storm Sewer Pipe 8 In. Diam.	LF	$110.00	270	$29,700.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	950	$104,500.00
9	Landscape Restoration	FA	$7,000.00	1	$7,000.00
10	Catch Basin Type 1	EA	$4,000.00	1	$4,000.00
11	Adjust Catch Basin	EA	$1,000.00	1	$1,000.00
			Schedule I Subtotal		$233,900.00

Assumptions:

1. 270LF 8in Ductile Iron, 670LF 12in Ductile Iron
2. 280LF 12in PVC

Schedule J - Descriptions

Object ID	Intersection	Problem Description
353	Railroad & Oakes	Line north collapsed, in need of replacement PVC, 18" south end (69.1 LF) CPEP, 8" North end (66.5 LF)
205	Fourth & Columbia	S Pipe multiple gravel blockages 8" Courrgated steel increase to 12"
285	Third & Floral	Pipe Dia. 8" PVC, Changed to 12".

Schedule J - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
GIS Structure ID (353N, 205S, 285SW)					
1	Minor Change	FA	$5,000.00	1	$5,000.00
2	Mobilization	LS	$15,000.00	1	$15,000.00
3	Project Temporary Traffic Control	LS	$35,000.00	1	$35,000.00
4	Crushed Surfacing Base Course	TON	$110.00	65	$7,150.00
5	Crushed Surfacing Top Course	TON	$120.00	25	$3,000.00
6	HMA Cl. 1/2-Inch PG 64H-28	TON	$220.00	35	$7,700.00
7	Storm Sewer Pipe 18 In. Diam.	LF	$120.00	140	$16,800.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$110.00	450	$49,500.00
9	Shoring or Extra Excavation	LF	$4.00	140	$560.00
10	Select Backfill, as Directed	CY	$100.00	30	$3,000.00
11	Landscape Restoration	FA	$5,000.00	1	$5,000.00
			Schedule J Subtotal		$147,710.00

Assumptions:

1. 100LF 12in PVC, 140LF 18in PVC
2. 350LF 12in Ductile Iron

Schedule K - Cost Breakdown

Item No.	Description	Unit	Unit Cost	Overall Quantity	Overall Cost
Railroad Infiltration					
1	Minor Change	FA	$15,000.00	1	$15,000.00
2	Mobilization	LS	$80,000.00	1	$80,000.00
3	Project Temporary Traffic Control	LS	$120,000.00	1	$120,000.00
4	Removal of Structures and Obstructions	LS	$36,000.00	1	$36,000.00
5	Crushed Surfacing Base Course	TON	$50.00	500	$25,000.00
6	Crushed Surfacing Top Course	TON	$60.00	180	$10,800.00
7	HMA Cl. 1/2-Inch PG 64H-28	TON	$180.00	270	$48,600.00
8	Storm Sewer Pipe 12 In. Diam.	LF	$80.00	750	$60,000.00
9	Underdrain Pipe Infiltration Trench System 24 In. Diam.	LF	$250.00	1310	$327,500.00
10	Catch Basin Type 1	EA	$3,000.00	31	$93,000.00
11	Catch Basin Type 2	EA	$4,500.00	16	$72,000.00
12	Shoring or Extra Excavation	LF	$4.00	1310	$5,240.00
13	Select Backfill, as Directed	CY	$50.00	70	$3,500.00
14	Erosion Control and Water Pollution Prevention	LS	$1,000.00	1	$1,000.00
15	Landscape Restoration	FA	$5,000.00	1	$5,000.00
16	Cement Conc. Traffic Curb and Gutter	LF	$70.00	620	$43,400.00
17	Cement Conc. Sidewalk 4-Inch Thick	SY	$80.00	270	$21,600.00
18	Pavement Markings	LS	$10,000.00	1	$10,000.00
			Schedule K Subtotal		$977,640.00

Assumptions:
1. All infiltration pipe
2. Remove existing structures and piping

Total Cost Summary

		Subtotal		$3,279,230.00
		Sales Tax	8.0%	$262,338.40
Assumptions:		Contingency	15%	$531,200.00
1.	4' wide trench, 6' wide resurfacing area	**Total Estimated Construction Cost**		**$4,072,768.40**
2.	Resurfacing section (0.33' HMA, 0.25' CSTC, 0.66' CSBC)			
3.	Manholes every 300 feet	Design Engineering	14%	$570,190.00
4.	Conflicts with other utilities not anticipated	nvironmental and Cultural Resources		$7,500.00
5.		Funding Agency Review Fees		$5,000.00
6.		Funding Administration	5%	$203,640.00
7.		Construction Engineering	16%	$651,640.00
8.				
9.		**Total Estimated Project Cost**		**$5,510,738.40**

Appendix D

Stormwater Rate Analysis

CITY OF CLE ELUM
STORMWATER RATE ANALYSIS

Introduction

The City of Cle Elum owns, currently operates and maintains a stormwater drainage system consisting of catch basins, swales, conveyance pipelines, and associated infrastructure through its Public Works Department. While these activities are ongoing, the City has not established a dedicated stormwater utility to fund the full lifecycle costs of system operation, maintenance, regulatory compliance, and capital improvement.

Stormwater management is a fundamental municipal responsibility directly tied to the protection of public health, safety, property, and environmental quality. Failure to adequately maintain, operate and improve the system exposes the City to material risks including localized flooding, infrastructure failure, degradation of receiving waters, and violations of state and federal regulatory requirements. Consistent with Washington municipal utility best practices, the City will establish a stable, equitable funding mechanism designed to reasonably apportion costs based on each parcel's relative contribution to the stormwater system.

The purpose of this rate analysis is to develop a financial plan for a Stormwater Utility identifying the City's ability to meet capital improvement needs, fully fund operations and maintenance (O&M), satisfy any debt service obligations, and establish reserve levels necessary to ensure system reliability, regulatory compliance, long-term financial stability, analyze the issues, discuss industry best practices, and present alternative solutions (if applicable) that would improve alignment with the City's goals and objectives. The City's goal is to implement a rate structure that is equitable, easy for property owners to understand, and able to be billed by current City employees without creating a significant administrative burden.

Projected Revenues and Expenses

Operation and maintenance

The City does not currently segregate stormwater-specific expenditures. Accordingly, projected costs have been developed based on system inventory, standard maintenance frequencies, and industry-accepted unit costs.

For rate-setting purposes, the City assumes and affirms that all stormwater system components will be inspected and maintained on an annual basis. This level of service reflects a prudent asset management standard consistent with regulatory expectations and risk mitigation obligations.

Table 1 identifies the average cost to clean various categories of infrastructure and the resulting annual maintenance budget that must be supported by the proposed stormwater utility.

TABLE 1 STORMWATER FUND PROPOSED EXPENSES			
Category	**Number in System**	**Cost to Clean, Each**	**Annual Maintenance Cost**
Catch Basin	457	$50	$22,900
Manhole/French Drain	120	$80	$9,600
Storm Drain Line (per 100 ft)	700	$135	$94,500
Ditch/Swale	42	$1,000	$42,000
Grand Total			**$169,000**

Capital Improvement Program

The City has identified approximately $5,500,000 in capital improvements necessary to address known system deficiencies, including undersized conveyance, aging infrastructure, and areas with documented drainage issues.

The City finds that deferral of these improvements will increase long-term costs and risk exposure. Accordingly, a systematic funding approach is required.

Amortizing these costs over a 20-year planning horizon results in an annual capital funding requirement of $275,000, which is incorporated into the proposed utility rate.

Table 2 summarizes Capital Improvement Project cost estimates. Detailed information regarding the projects is included in Chapter 6 of the *City of Cle Elum Stormwater Plan*.

TABLE 2 CAPITAL IMPROVEMENTS SUMMARY	
Project Schedule	**Project Cost**
Schedule A	$273,000
Schedule B	$159,000
Schedule C	$293,000
Schedule D	$232,000
Schedule E	$324,000
Schedule F	$169,000
Schedule G	$840,000
Schedule H	$930,000
Schedule I	$393,000
Schedule J	$247,000
Schedule K	$1,640,000
Total	**$5,500,000**
Note: Project costs include sales tax, engineering, and environmental review.	

Staffing

Effective utility operation requires dedicated personnel to perform inspection, maintenance, regulatory compliance, and program administration functions.

The City will assign one full-time equivalent (FTE) to the stormwater utility at an estimated annual cost of $100,000. The City finds this staffing level to be necessary and reasonable to meet operational and regulatory obligations and consistent with similarly situated jurisdictions.

Financial Stability and Reserve Policy

Best practices for municipal utilities in Washington State recommend maintaining a minimum reserve balance equivalent to six months of operating expenditures to ensure financial resilience, emergency response capability, and rate stability.

The City has developed a six-year financial plan that incrementally builds reserves while maintaining rate stability. The proposed revenue target of $450,000 annually beginning in July 2026 is intentionally calibrated to:

- Fully fund annual O&M, staffing, and capital obligations when combined with competitive grant funding, low-interest loan programs; and
- Gradually build reserves to approximately six months of operating expenditures within six years.

While this reserve relies on successfully obtaining competitive grant funding and/or low-interest loan programs to achieve the six-month best practice target, it represents a measured starting point that balances financial prudence with ratepayer impacts. The City retains the ability to adjust rates in the future based on actual operating experience, inflation, growth, and success of obtaining competitive grant funding and/or low-interest loan programs. The six-year plan to achieve this goal is summarized in Table 3.

TABLE 3 STORMWATER FUND FINANCIAL PROJECTION						
Category	**2026 (6 months)**	**2027**	**2028**	**2029**	**2030**	**2031**
System Operation & Maintenance	$84,500	$169,000	$177,500	186,400	$195,700	$205,500
Dedicated Personnel Costs	$50,000	$100,000	$105,000	$110,300	$115,800	$121,600
Capital Projects	$50,000	$275,000	$275,000	$275,000	$275,000	$275,000
Utility Rates	$225,000	$ 450,000	$456,300	$462,700	$469,200	$ 475,800
Grant/Loan	$0	$160,000	$160,000	$160,000	$160,000	$160,000
Difference (+/-)	**$40,500**	**$66,000**	**$58,800**	**$51,000**	**$42,700**	**$33,700**
Starting Fund Balance(1)	$0	$ 40,500	$106,500	$165,300	$216,300	$259,000
Ending Fund Balance(1)	$ 40,500	$106,500	$165,300	$216,300	$259,000	$292,700
Percentage of Annual Expenditures	22%	20%	30%	38%	44%	49%
(1) Starting Fund Balances are equal to previous year's Ending Fund Balance.						

Revenue Sufficiency and Rate Adjustment

The proposed rate structure is designed to produce stable and sufficient revenue; however, it must be actively managed. The City will review stormwater utility revenues and expenditures on an annual basis.

Key considerations include:

- Variations in growth relative to the assumed 1.4% annual rate;
- Inflationary impacts exceeding projections;
- Changes in regulatory requirements; and
- Actual system maintenance and capital costs.

If revenues are insufficient, the City will implement rate adjustments to ensure continued cost recovery and system reliability. Conversely, higher-than-anticipated growth may allow for rate stabilization or delayed increases.

Rate Structure Alternatives

Rate Setting Overview

The City shall impose ongoing user charges to recover the costs of providing stormwater services to properties within its jurisdiction. Such charges shall be established and administered as a utility rate structure designed to equitably, proportionally, and reliably recover the full cost of planning, constructing, operating, maintaining, repairing, replacing, and regulating the stormwater system.

In accordance with Washington law, the City shall set rates that are fair, reasonable, and based on the cost of service. The City finds that establishing rates based on cost-of-service principles is essential to ensuring legal defensibility, financial sustainability, and equitable treatment of ratepayers.

There is no single rate structure appropriate for all utilities. The City shall evaluate its unique physical, financial, and regulatory conditions in developing and periodically updating its rate structure. Because the majority of stormwater utility revenues are derived from user charges, the rate structure represents a critical policy and financial tool.

The City further finds that the adopted rate structure advances legitimate governmental objectives, including protection of public health, safety, and welfare; compliance with state and federal stormwater regulations; preservation of infrastructure; and environmental stewardship. The rate structure may also reflect community policy objectives, provided that any such considerations are implemented in a manner that remains consistent with cost-of-service principles and does not result in rates that are disproportionate to the services received.

Legal Considerations

An evaluation of alternative stormwater rate structures must be grounded in controlling Washington statutory authority, constitutional requirements, and well-established utility ratemaking principles. The following legal standards govern the defensibility of the proposed rate structure:

- A stormwater utility charge is lawful where it is imposed as a utility fee—rather than a tax—and where the revenues are dedicated to the operation, maintenance, and capital improvement of the stormwater system, consistent with RCW authority governing municipal utilities.
- Washington courts have consistently held that utility rates need not establish a precise, property-specific equivalency between the fee paid and the service received; rather, a reasonable relationship between the rate methodology and the cost of providing service is sufficient.
- In Teter v. Clark County, the court affirmed that stormwater charges are valid where they are based on a rational and equitable methodology, and that an indirect but demonstrable relationship between the ratepayer and the benefits received satisfies legal requirements.
- Rates must be structured to avoid arbitrary or discriminatory treatment of similarly situated properties and must be supported by a defensible cost-of-service framework that allocates costs in proportion to system demand drivers.

Impervious surface area is the most widely accepted and legally supportable proxy for stormwater system demand. It directly correlates with runoff volume and pollutant loading, which in turn drive system capacity requirements, regulatory compliance obligations, and long-term capital investment needs. The functional nexus between impervious surface area and stormwater impacts—including increased runoff, flooding risk, water quality degradation, and habitat impairment—is well-established in both engineering practice and case law.

Accordingly, a rate structure based on impervious surface area (or its standardized derivative, such as an Equivalent Residential Unit) satisfies the legal requirement for a rational nexus between the fee imposed and the service provided, and is consistent with prevailing industry best practices for equitable and defensible stormwater utility ratemaking.

Rate Structure Alternatives

In evaluating stormwater rate structure alternatives, the City considered both cost-of-service equity and administrative feasibility as primary decision criteria. While a highly refined rate structure may more precisely allocate costs in proportion to runoff contribution, such approaches can require disproportionate investment in data collection, system development, and ongoing administration. Accordingly, the City recognizes that a rate structure must balance theoretical precision with practical implementation to ensure that the cost of administration does not outweigh the incremental equity achieved.

To that end, the City developed and evaluated a range of rate structure alternatives representing six primary methodologies for allocating stormwater utility costs. Each methodology was further analyzed with respect to its treatment of different property classes, including the applicability of discounts or exemptions, as well as the resulting monthly charge to a typical single-family residential customer.

The most common approach in the industry is to charge customers based on impervious surface area, resulting in a rate expressed as a dollar amount per equivalent residential unit (ERU). An ERU typically represents the average impervious area for a single -family residential parcel within the service area. Impervious area is area that prevents or impedes the permeation of water into the ground.

Single-family:

Tracking parcel-specific measurements of impervious area for single-family customers can add administrative effort and complexity to the rate structure due to the number of customers that generally constitute this class. The more common practice is to impose a uniform rate on single- family residences by assigning each a single ERU. Though a uniform approach may overcharge smaller residences and undercharge larger residences, this approach is widely considered to be an acceptable compromise between equity and practicality.

Single-family Tiers:

An increasing trend is to consider and/or implement an assumed impervious surface based tiered total parcel size approach for single-family parcels. For example, a tiered single-family rate structure could group single-family parcels into “Small,” “Average,” and “Large.” In Washington, several stormwater utilities have implemented some type of single-family residential rate tiers.

In general, despite potential added administrative costs, utilizing a tiered and / or “variable” single- family stormwater rate structure results in more equitable treatment of single-family customers by more closely aligning charges with assumed impervious area by total parcel size. City of Cle Elum chose this approach and it is summarized as follows:

Single-Family Residential

Single-family residential properties, including condominiums, are assigned ERUs based on total parcel size.

- 10,000 square foot lots or smaller = 1.0 ERU
- 10,001 square foot lots to 20,000 square foot lots = 1.5 ERU
- 20,001 square foot lots or larger = 2.0 ERU

Non-Single Family Residential:

Given the diversity that exists among non-single family residential properties, which include multifamily residential, commercial, industrial, public assembly, and governmental parcels. It is common to charge these customers based on actual measured impervious surface area, expressed as a certain number of equivalent residential units.

Impervious surface area is an ideal fee basis as it creates a standard of charging that quantifies how the amount of impervious surface area impacts the environment through flooding, changes in water quality, and habitat degradation. Additionally, impervious area proportionately charges customers their share of system costs and provides an equitable, defensible means of cost recovery.

An increasing trend is to consider and/or implement impervious surface based tiered approach for Non-single family residential. For example, a tiered Non-single family residential rate structure could group Non-single family residential parcels into “Small,” “Medium,” and “Large.” In Washington, several stormwater utilities have implemented some type of Non-single family residential rate tiers.

In general, despite potential added administrative costs, utilizing a tiered and / or “variable” Non-single family residential stormwater rate structure results in more equitable treatment of Non-single family residential customers by more closely aligning charges with impervious area impacts the environment through flooding, changes in water quality, and habitat degradation. City of Cle Elum chose this approach and it is summarized as follows:

Multifamily residential, commercial, industrial, public assembly, and governmental parcels are charged based on measured impervious area, which directly correlates stormwater runoff and system demand.

- An ERU is defined as 2,500 ft^2 of calculated impervious area within a parcel.
- ERU calculation is to be rounded to the nearest tenth, and no utility account will be charged less than 1.0 ERU.

ERUs are calculated as follows:

- Impervious Area of 20,000 square feet or smaller equals Impervious Area / 2,500 SF = ERU's
- Impervious Area of 20,001 square feet to 50,000 SF equals Impervious Area*0.9 / 2,500 SF = ERU's
- Impervious Area of 50,001 square feet or larger equals Impervious Area*0.8 / 2,500 SF = ERU's

Table 4 provides a comparative evaluation of rate structure alternatives, assessing each approach in terms of proportional equity, administrative simplicity, and revenue sufficiency. Based on this analysis, the City determines that Alternative 6B represents the most legally and operationally defensible option.

Alternative 6B achieves a reasonable proportional relationship between rates charged and the relative contribution of stormwater runoff, consistent with established cost-of-service principles and applicable Washington case law. At the same time, it avoids unnecessary administrative complexity, allowing for efficient implementation and ongoing management by City staff without imposing undue burden or cost.

Accordingly, Alternative 6B provides a balanced and sustainable framework that supports long-term utility funding, enhances transparency to ratepayers, and strengthens the City's position in demonstrating that rates are fair, equitable, and appropriately aligned with the benefits and burdens of stormwater service.

TABLE 4 STORMWATER RATE ALTERNATIVES			
Approach Number	**Description**	**Single-Family Residential Monthly Rate**	**% of Revenue from Single-Family Residential**
1A	All parcels equal	$22.69	57%
1B	All parcels equal, no payment for Undeveloped Land or Forest	$30.00	76%
1C	All Parcels Equal, 50% payment for Undeveloped Land	$25.00	63%
2A	Payment based on parcel area	$3.88	10%
2B	Payment based on parcel area, no payment for Undeveloped Land	$22.00	55%
2C	Payment based on parcel area, 50% payment for Undeveloped Land	$5.67	14%
3A	Payment based on Area-Based ERUs (6,500 Square feet per ERU)	$1.81	9%
3B	Payment based on Area-Based ERUs (6,500 Square feet per ERU), no payment for Undeveloped Land	$10.53	52%
3C	Payment based on Area-Based ERUs (6,500 Square feet per ERU), 50% payment for Undeveloped Land	$2.69	13%
4A	Payment based on impervious area for parcel	$10.56	27%
4B	Payment based on impervious area for parcel, 10% payment for Undeveloped Land	$8.16	21%
5A	Payment based on Impervious Area-Based ERUs	$2.33	19%
5B	Payment based on Impervious Area-Based ERUs, but no payment for Undeveloped or Forest	$5.27	42%
5C	Payment based on Impervious Area-Based ERUs, but 50% payment for Undeveloped or Forest	$2.65	21%
6A	Payment based on Parcel Area-Based ERUs for Single Family, Impervious Area-Based ERUs for Non Single Family (2,500 Square feet per ERU), 10% payment for Undeveloped Land	$8.75	26%
6B	Payment based on Parcel Area-Based ERUs for Single Family, Impervious Area-Based ERUs for Non Single Family (2,500 Square feet per ERU), no payment for Undeveloped Land / Parks	$10.00	30%

Ratepayer Equity and Legal Defensibility

The City finds that selected rate structure is consistent with established Washington case law and utility rate-setting principles, including:

- Proportionality between fee and service received;
- Avoidance of arbitrary or discriminatory charges; and
- Clear nexus between stormwater generation and system costs.

The City further finds that the rate structure is fair, reasonable, and not arbitrary, and is therefore legally defensible under Washington law.

Conclusion

The establishment of a stormwater utility is necessary to ensure the long-term functionality, safety, and regulatory compliance of the City's drainage system. The proposed rate structure provides a fair, rational, and sustainable funding mechanism that aligns with industry standards and Washington municipal best practices.

The recommended rate of $10.00 per month per single-family equivalent unit represents a balanced approach that:

- Fully funds current and future system needs;
- Maintains affordability for ratepayers; and
- Positions the City to responsibly manage its stormwater infrastructure.
- Consistent with industry standards and Washington municipal utility practices.

This rate positions the City to responsibly fund, operate, and maintain its stormwater system while meeting its obligations to the public and regulatory agencies.

Appendix E

O & M Manual

Kittitas County

City of Cle-Elum Stormwater

Operation & Maintenance Manual

December 2025

HLA Project No. 23104

Operation and Maintenance Manual

City of Cle Elum

December 2025

Project Information

Prepared for: City of Cle Elum
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Reviewing Agency

Jurisdiction: Department Of Ecology

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Attachments

STORMWATER OPERATION & MAINTENANCE PLAN

SECTION 1 - Inspection & Maintenance of Stormwater Management Facilities

The City of Cle Elum's (City) primary method for stormwater management will be a conveyance system to two discharges into the Yakima River.

Stormwater management facilities must be properly maintained to ensure that they operate correctly and provide the water quality treatment for which they were designed. Routine maintenance performed on a regularly scheduled basis, can help avoid more costly rehabilitative maintenance that results when facilities are not adequately maintained.

Training and education can be useful tools in maintaining the stormwater facilities in the development. It is strongly encouraged that the City conducts periodic preventative maintenance discussions with the personnel to avoid costly maintenance in the future.

Inspecting Stormwater Management Facilities

The quality of stormwater entering the waters of the State relies heavily on the proper operations and maintenance of permanent Best Management Practices (BMPs). Stormwater management facilities must be periodically inspected to ensure that they function as designed. All stormwater management facilities are required to be inspected by a city representative/employee at a minimum of twice per year. Inspections should follow the inspection guidelines found in Attachment A. The assessment from the inspection will determine the appropriate maintenance that is required for the facility. A complete and thorough system inspection using the Inspection and Maintenance forms shall be completed on the following schedule:

1. Inspection should occur at least twice a year preferably in the spring season when evidence of any erosion would be greatest and in the fall season when excess debris could clog the downstream waterways causing flooding during the wet season.
2. After any major storm events that produce more than 1" of rainfall in 24 hours.

Inspection Forms and Maintenance Report

Once the applicable stormwater system components have been identified, utilize the Inspection and Maintenance forms and Inspection Cover Sheet, found in Attachment A,. Inspect each system design feature to determine if any of the conditions are present as provided on the forms. Add comments, problems found, and/or action taken. If the current condition of the drainage system feature matches the description on the Inspection and Maintenance form, place a checkmark in the appropriate column or use the grading system offered below. The system design features that have been checked will need maintenance if you determine a problem exists.

<u>Inspection Scoring</u>

One method to itemize the condition of each facility is through the use of a score card. The following is one example of a method that could be instituted by the City while performing inspecton(s) on its stormwater system.

0 = No deficiencies identified.

1 = Monitor – Although maintenance may not be required at this time, a potential problem exists that will most likely need to be addressed in the future. This can include items

like minor erosion, concrete cracks/spalling, or minor sediment accumulation. This item should be revisited at the next inspection.

2 = Routine Maintenance Required – Some inspection items can be addressed through the routine maintenance program using the checklists in Attachment A. This can include items like vegetation management or debris/trash removal.

3 = Immediate Repair Necessary – This item needs immediate attention because failure is imminent or has already occurred. This could include items such as structural failure of a feature, significant erosion, or significant sediment accumulation. This score should be given to an item that can significantly affect the function of the facility.

N/A This is checked by an item that may not exist in a facility. Not all the items on the checklists are applicable to the individual facilities.

To use the Maintenance Report form, first complete any maintenance activities that were required for the stormwater system. Second, after you have maintained the stormwater system, fill out a Maintenance Report. Describe the maintenance activities, including descriptions of the type of work, completion dates, contractors used, time needed, and costs. Documenting the maintenance performed on a stormwater system will be useful in planning future maintenance activities.

It is the responsibility of the City to archive all reports upon completion and maintain access to them for reference whenever needed.

SECTION 2 - Responsible Organization

At the time of development of this Operations and Maintenance Manual, it is understood that maintenance of the stormwater facilities located within the City right of way would be the sole responsibility of the City.

Operation and maintenance for on-site private drainage facilities are the responsibility of the property owner, and/or their heirs or successors. The maintenance schedule shall be kept on record by the property owner.

Property owners are responsible for ensuring all stormwater facilities installed (existing or new) on their property are properly maintained and function as designed. In some cases, this maintenance responsibility may be assigned to others through special arrangements and as governed by the legal property owner. The maintenance responsibility for a stormwater facility may be designated on the site development plan, within the development's CCR's, and/or within a maintenance agreement for the property.

Maintenance required by the property owner is outlined in the maintenance checklists located in Attachment A and applies to all private facilities. All facilities within the public right of way are the responsibility of the City.

SECTION 3 - Safety

Keep safety considerations at the forefront of inspection procedures at all times. Likely hazards should be anticipated and avoided. Never enter a confined space (outlet structure, manhole, etc.) without proper training or equipment.

To report a spill or to determine if a spill is a substance of a reportable quantity, call the Washington State Department of Ecology Regional Office to speak with an oil spill operations or hazardous waste specialist:

Central Regional Office (509) 575-2490

Safety Information

1. Inspections

The inspector must have the proper safety equipment (e.g. heavy duty gloves, boots, and first aid kits) and training before conducting any inspections. If the stormwater system inspection reveals a safety concern, assess the risk and modify the site activities appropriately to reduce or eliminate the safety risk. The following is a list of safety precautions an inspector should be aware of when conducting stormwater system inspections.

Never enter a confined space without proper Occupational Safety and Health Administration (OSHA) training. Do not enter any confined space until the atmosphere has been checked and proper safety equipment is worn and/or erected.

Avoid entering pipes or conduits without another individual present. If the structural strength of a pipe or conduit is questionable, do not enter the pipe or conduit at all.

Check the ventilation in the stormwater system before using any type of combustible materials. Some stormwater systems may be sealed and have poor ventilation, posing a safety risk to the inspector if the vapor comes in contact with an open flame.

Wear gloves if any mechanical parts or structural components are going to be handled. Wearing gloves not only reduces the risk of getting cuts and abrasions, but also reduces the exposure of pollutants to the skin.

Lift manhole covers, catch basin grates, or other structural covers (trash racks, access covers, etc.) carefully and with appropriate lifting aids. These items can be very heavy and slippery if wet. Also, learn the correct way to lift heavy items to avoid back injury.

Check the water depth of the system before stepping in the water. The water may be deeper than it appears, or there may be steep slopes below the water line.

Check for poison ivy, poison oak, or other poisonous plants when inspecting ponds or other large stormwater systems. Inform the individual who will perform maintenance on the system if these plants are present.

2. Maintenance

All maintenance work needs to be done in accordance with OSHA regulations. Maintenance personnel must have the proper safety equipment (e.g. heavy duty gloves, steel toed boots, and first aid kits) and training before performing any maintenance on a stormwater system. The following is a list of safety precautions maintenance personnel should be aware of when they perform maintenance on stormwater systems:

Equipment shall be operated safely and in accordance with manufacturer's specifications. Equipment operators must be aware of site personnel at all times to avoid causing injury to others.

Utility companies shall be contacted before excavating a site. Underground utility wires may be present. Excavated areas that cannot be filled by the end of the day must be covered or clearly marked to alert site employees and/or the public of the potential risk.

Areas where removed sediment or wastes will be disposed should be identified prior to cleaning the storm water system. Use shovels, trowels, or a high-suction vacuum to remove wastes.

Sediment or waste shall not be cleaned out with bare hands. The sediment or waste may be hazardous. Place the sediment or waste in an area where it cannot be washed into a storm drain or water body.

Gloves must be worn if any mechanical parts or structural components are going to be handled. Wearing gloves not only reduces the risk of getting cuts and abrasions, but also reduces the exposure of pollutants to the skin.

Caution should be taken when mowing any areas, that by design, have steep slopes.

SECTION 3 - Best Management Practices (BMPs)

BMPs for City properties

The following BMPs will keep pollutants out of the stormwater runoff for the City. These BMPs are also known as source controls and were selected from the Stormwater Management Manuel for Eastern Washington (SWMMEW). Ensuring these source controls are followed is the responsibility of the City. These BMPs include the following:

- Lawn chemicals such as fertilizers and pesticides will be used in accordance with manufacturer's recommendations, and will be used only when less toxic ways to control insects or weeds are not effective.
- Dirt, grass, and other materials will be kept out of the street so they do not wash into a storm drain when it rains. Materials stored outdoors will be covered.
- Leaves and other yard debris will be kept out of the street to avoid clogging storm drains.

See Attachment B for additional "Source Control Best Management Practices".

SECTION 4 - Vegetation Management Plan

All disturbed pervious area within the site will be landscaped in accordance with City code requirements, and to prevent soil erosion. Vegetation management includes maintaining landscaping for roadway rights-of-way, on-site landscaping, controlling noxious weeds, pests, and unwanted vegetation growth. Disturbed soil, removed vegetation, and chemicals can all negatively impact receiving waters.

Landscaping and Irrigation BMPs

- Maintain vegetative cover on landscape areas and embankments to prevent soil erosion. When vegetation is removed, apply mulch or other cover measures to prevent soil erosion.
- Dispose of lawn clippings, leaves, branches, and other vegetative material; landscape material should not be disposed of in streams or storm drains.
- Avoid loosening the soil during weed control.
- Inspect the irrigation system regularly to minimize excess watering and prevent the runoff of fertilizer.
- Repair leaks to the irrigation system as soon as they are observed or reported.
- Minimize the use of chemical fertilizers and calibrate the distributor to avoid excessive application.
- Store fertilizers in enclosed areas or in covered impervious containment. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

Pesticide and Herbicide BMPs

- Use mechanical methods of vegetation removal rather than herbicides.
- Use pesticides only if there is an actual pest problem (not as a regularly scheduled preventative maintenance measure).
- Use the least toxic pesticide for the job; avoid the use of copper-based pesticides if alternatives are available; select products with low water solubility and low persistence.
- Do not use pesticides or herbicides if rain is expected.
- Do not mix or prepare pesticides near storm drain inlets.
- Follow product labels for proper application of any pesticide.
- Use the minimum amount of chemical needed for the job.
- Avoid pesticide applications within 100 feet of a water body and avoid application on or near most stormwater collection and conveyance facilities, excluding dry roadside ditches.
- Use products specifically labeled for dry ditches when treating roadside ditches.

SECTION 5 - Winter Activities

Winter activities around municipal site includes anti-icing, deicing, sanding, and snow removal on sidewalks and small parking lots. These activities protect public safety during inclement winter weather.

Deicing and Sanding

- Whenever possible, limit the use of chemical deicers. When chemical application is needed, select produces with the least adverse environmental impact while still providing for public safety.
- Apply sand and deicer at the lowest rate necessary to provide for public safety; avoid excessive application.
- Sweep parking lots in early spring to collect accumulated sand after the winter season.

Snow Removal

- Whenever possible, avoid piling snow over inlets of the stormwater collection and conveyance system to allow melting snow to drain.
- Snow removed from sidewalks and parking lots shall be deposited on adjacent landscaped areas, or within a seldom used parking stall for storage during melting.
- Avoid depositing snow within 25 feet of surface waters, 75 feet of private water supplies, 200 feet from any community water supply, or 400 feet from any municipal well.

Attachment A
Maintenance Program and Checklists

Inspection Forms and Maintenance Report

Inspection Cover Sheet

Date: ___________________

Facility Name: _____________________________________

Facility Address: ___________________________________

Facility Owner: ____________________________________

Inspector Name: ____________________________________

Inspector Phone Number: ___________________________

Inspection Period: _____________________ Number of Sheets Attached: __________

Important Safety Information

Never enter a confined space or trench unless you have proper Occupational Health and Safety (OSHA) training. Do not enter any confined space unless the atmosphere has been checked and proper safety equipment is worn or erected. Check the ventilation in the stormwater system before using ignitable materials. Some stormwater systems have poor ventilation and can pose a safety risk to the inspector if the vapor comes in contact with an open flame. Always cover or clearly mark excavated areas as potential safety risks if the areas cannot be filled by the end of a work day.

Inspection comments:

Maintenance Report Form

Date: ________________

Facility Name: ____

Facility Address: ____

Facility Owner: ____

Name of Person Overseeing Maintenance: _______________________

Type of System: ____

Date of Last Inspection: ______________________________________

Describe maintenance activities, including type of work, completion dates, contractors, time needed to complete task, and cost.

O&M - Minimizing Directly Connected Impervious Areas (DCIAs)

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
Landscaped or Natural Area		Sediment accumulation exceeds 2" in depth	Sediment buildup on vegetation	Remove sediment carefully to avoid damaging the existing vegetation. Dispose of sediment properly.
		Grass becomes excessively tall or weeds invade the area	Tall grass or weeds	Mow vegetation regularly. Grass should be mowed to a height between 4-9" for best stormwater treatment. Remove weeds.
		Trash and debris are present	Trash and debris accumulation	Remove waste and dispose of properly.
		Offensive color, odor, or sludge is present	Unknown or uncharacteristic substance	Remove substance and eliminate its source. If unsure whether the substance is hazardous, take a sample or contact a qualified hazardous waste consultant for assistance.
		Erosion or scouring is evident	Excessive flows or flow channelization	Re-grade and re-seed area to eliminate high velocity or channelized flows. Overseed areas where bare spots are present.

O&M – Bio-Infiltration/ Infiltration / Basins

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Standing water is present 72 hours after storm event	Sediment buildup on bottom or sides of infiltration system	Excavate infiltration system and remove excess sediment. Dispose of sediment properly. An engineer or geotechnical consultant should examine drain rock and filter fabric to determine if replacement is needed. Re-install infiltration system 12" into free draining material.
		Offensive odor, color, or sludge is present	Unknown or uncharacteristic substance	Remove substance and eliminate its source. If unsure whether the substance is hazardous, either take a sample or contact a qualified hazardous waste consultant for assistance.
		Propane, oil, or gasoline odor or puddle is present	Accumulation of petroleum products	Contact a qualified hazardous waste consultant for information on proper treatment and disposal of petroleum products.
		Excessive debris, sediment, and oil buildup is present	Pretreatment system not working properly	Clean out accumulated debris in pretreatment system and dispose of properly.
Inlet/outlet Pipes		Standing water is present 72 hours after storm event	Clogged pipes	Clean out sediment and debris from pipes. See O&M- Pipes, for more information.
Rock Filters		Sediment and debris	By visual inspection little or no water flows through filter during heavy rain storms	Replace gravel rock filter.
Storm Pure Filter		Replace Per Manuf. Spec. if excessive debris, sediment, and oil buildup is present	Filter is clogged	Replace filter cartridge.

O&M - Ponds (Detention, Extended Detention, Evaporation)

Stormwater system feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Dumped yard wastes or nondegradable materials (glass, plastic, Styrofoam, etc.) are present in pond	Accumulation of trash and debris	Remove trash and debris and dispose of properly.
		Undesirable vegetation is invading the pond	nuisance, poisonous, or noxious weeds	Seek advice from the Kittitas County Noxious week control before spraying pesticides. Certain pesticides should not be used near waterbodies.
		propane, oil, or gasoline odor or surface film is present	accumulation of petroleum products	Contact a qualified hazardous waste consultant for more information.
		bare spots or sparse vegetation is evident in the pond	compaction	Aerate and amend soils, re-seed, and mulch bare areas. Re-contour and re-seed pond to original design specifications.
			insect infestation	Seek advice from Washington State University Integrated Prest Management (IPM) regarding appropriate methods for controlling insects.
		grass is taller than 10"	overgrown vegetation	Mow grass regularly. Grass should be mowed to a height of 4-9" for best storm water control. Avoid over-applying fertilizers. Excessive fertilizer application may compound water quality problems.
		offensive color, odor, or sludge is present	unknown or uncharacteristic substance	Remove substance and eliminate its source. If you don't know if the substance is hazardous, either take a sample or contact a qualified hazardous waste consultant for more information.
		excessive mosquito population is present	mosquitos	Install predacious bird and bat nesting boxes to control insects. Mosquito fish (Gambusia) can be used and are available locally.
		water flows through holes in dam or berm; holes are present around pond	rodents	Destroy rodents and repair dam or berm. Contact the Idaho Department of Fish and Game for information on controlling rodents.
		large trees interfere with maintenance activities	overgrown trees	Remove trees that interfere with access or maintenance activities. Preserve trees that are not a problem.
				Clean out sediment to original shape and depth of the pond. Re-seed pond, if necessary, to control erosion.
Storage area		accumulated sediment exceeds 10% of the designed pond depth	excessive sediment	If the pond is designated as "waters of the U.S." or as a wetland by the U.S. Army Corps of Engineers (Corps), you must obtain a 404 (dredge and fill) permit. You must also obtain a Stream Channel Alteration permit from the Washington Department of Ecology. Contact the Corps and Ecology for more information.
Pond dike/berm		dike or berm has settled 4" lower than design elevation	dike/berm settlement	Repair dike/berm to original design specifications. Re-seed or sod.
Overflow spillway		bare soil is visible at top of spillway or outside slope	inadequate rock layer	Add enough rock to cover up bare soil.
Trash rack		debris covers at least 25% of the bar screen or bar screen is missing	trash rack is plugged or missing	Replace screen, if necessary. Remove trash and debris. Dispose of waste properly.

O&M - Biofiltration Swales

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Dumped yard wastes or nondegradable materials (glass, plastic, Styrofoam, etc.) are present in pond	Accumulation of trash and debris	Remove trash and debris and dispose of properly.
		Offensive color, odor, or sludge is present	Unknown or uncharacteristic substance	Remove substance and eliminate its source. If unsure whether the substance is hazardous, either take a sample or contact a qualified hazardous waste consultant for assistance.
		Propane, oil, or gasoline odor or surface film is present	Accumulation of petroleum products	Contact a qualified hazardous waste consultant for more information.
		Grass is taller than 10"	Overgrown vegetation	Mow grass regularly. Grass should be mowed to a height of 4-9" for best storm water control. Avoid over-applying fertilizers. Excessive fertilizer application may compound water quality problems.
		Accumulated sediment exceeds 2" in depth	Sediment buildup on grass	Remove sediment so that no deposits remain on the buffer strip. Dispose of sediment properly.
		Poisonous or noxious vegetation that is a potential hazard to the public is present	Poisonous or noxious weed infestations	Remove poisonous or noxious vegetation either by digging up or hand-pulling the weeds. Seek advice from the Kittitas County Noxious Week control regarding appropriate methods for controlling weeds. Re-seed to original design specifications.
		Presence of standing water in swale or flow velocity is slow and water becomes stagnant	Inadequate swale grade	Conduct a survey to check grades. Swale grades need to be between 2-4%. If the grades are less than 2%, re-grade, and re-seed the swale.
Side Slopes/bottom of Swale		Slope has areas where erosion is at least 2" deep and there is potential for further erosion	Soil erosion	Eliminate causes of erosion, if possible. If not possible, use erosion and sedimentation control Best Management Practices (BMPs) listed in the Stormwater Management Manual for Eastern Washington.
		Swale shows signs of active erosion; bottom of swale is scoured	High flow velocity flow channelization	Re-grade and re-seed swale to original design specifications. Install a rectangular weir to spread out the flow, if necessary. Overseed bare spots.
Inlet/outlet Pipe		Storm water is not flowing into or out of the swale; water is puddling near the pipe	Clogged pipe	Clean sediment and debris from inlet or outlet pipe.

O&M - Irrigated Grass Buffer Strips

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Dumped yard wastes or nondegradable materials (glass, plastic, Styrofoam, etc.) are present in pond	Accumulation of trash and debris	Remove trash and debris and dispose of properly.
		Offensive color, odor, or sludge is present	Unknown or uncharacteristic substance	Remove substance and eliminate its source. If unsure whether the substance is hazardous, take a sample or contact a qualified hazardous waste consultant for assistance.
		Propane, oil, or gasoline odor or surface film is present	Accumulation of petroleum products	Contact a qualified hazardous waste consultant for more information.
		Grass is taller than 10"	Overgrown vegetation	Mow grass regularly. Grass should be mowed to a height of 4-9" for best storm water control. Avoid over-applying fertilizers. Excessive fertilizer application may compound water quality problems.
		Accumulated sediment exceeds 2" in depth	Sediment buildup on grass	Remove sediment so that no deposits remain on the buffer strip. Dispose of sediment properly.
		Poisonous or noxious vegetation that is a potential hazard to the public is present	Poisonous or noxious weed infestations	Remove poisonous or noxious vegetation either by digging up or hand-pulling the weeds. Seek advice from the Kittitas County noxious weed control appropriate methods for controlling weeds. Re-seed to original design specifications.
		Buffer strip shows signs of active erosion	High flow velocity flow channelization	Re-grade and re-seed buffer strip to original design specifications. Overseed bare spots. Provide other erosion protection as needed.

O&M - Sand Filters

Stormwater system feature	✓	Are any of these conditions present?	Problem	Recommendation
General		dumped yard wastes or nondegradable materials (glass, plastic, styrofoam, etc.) are present on sand filter bed	accumulation of trash and debris	Remove trash and debris and dispose of properly.
		offensive color, odor, or sludge is present	unknown or uncharacteristic substance	Remove substance and eliminate its source. If you don't know if the substance is hazardous, either take a sample or contact a qualified hazardous waste consultant for more information.
		propane, oil, or gasoline odor or surface film is present	accumulation of petroleum products	Contact a qualified hazardous waste consultant for more information.
		sediment accumulation exceeds 1/2" in depth	sediment buildup on grass layer (if applicable)	Remove sediment so that no deposits remain on the grass layer of the sand filter. Dispose of sediment properly
		concentrated water flow occurs over the sand filter	clogged or damaged weir	Clean or repair weir to that water flow is uniform across the sand filter.
		grass is taller than 6"; weeds begin to invade the filter	overgrown vegetation or nuisance weeds	Mow grass regularly. Seek advice from the Kittitas County noxious weed control regarding methods for controlling weeds.
		standing water around sand filter is present	clogged or damaged pipes	Repair or replace parts as needed.
		bare soil beneath the rock is visible	rock pad is missing or out of place	Replace or rebuild the rock pad to design specifications.
		slope has areas where erosion is at least 2" deep and there is potential for further erosion	soil erosion	Eliminate causes of erosion, if possible. If it isn't possible, use erosion and sedimentation control best management practices (BMPs) listed in the Kittitas Storm Water BMP Guidebook.
Sand filter media		water drawdown through sand filter takes longer than 24 hours; waterflow bypasses sand filter; or, concentrated water flow occurs over the sand filter	clogged sand filter media	Replace the top 6"-12" of sand media. Use a flat shovel to remove the sand. May require replacement of entire sand filter section. OR Replace sand filter media so that the flow and percolation of water through and across the sand filter is uniform.
Below ground vault (if applicable)		sediment accumulation exceeds 1/2" in depth on sand media section	excessive sediment	Vactor or shovel out sediment deposits on sand filter. Dispose of sediment properly.
		sediment accumulation exceeds 6" in depth in vault	excessive sediment	Vactor or shovel out sediment deposits in the first chamber of the vault and dispose of properly.
		yard wastes or non-degradable materials (glass, plastic, styrofoam, etc.) are present in the vault.	accumulation of trash and debris	Remove trash and debris from vault and inlet/outlet piping. Dispose of wastes properly.
Inlet/outlet pipe		drain pipes become clogged with sediment or debris	excessive sediment	Vactor or shovel out sediment or debris. You can also use a high pressure hose to clean out sediment or debris. See OM-10, Pipes, for more information.
Underdrain pipe		pipe is damaged, broken, cracked, or corroded	defective pipe	See OM-10, Pipes, for more information.

		sediment accumulation impedes water flow	excessive sediment	Remove sediment from pipe and dispose of properly. Repair or replace pipe to design specifications.
Trash rack		debris covers at least 25% of the bar screen or bar screen is missing	trash rack is plugged or missing	Replace screen, if necessary. Remove trash and debris and dispose of waste properly.
Cover crop		cover crop appears very dry or dead	cover crop lack water	Irrigate cover crop regularly during dry seasons or periods of drought.

O&M - Oil/Water Separator

Stormwater system feature	✓	Are any of these conditions present?	Problem	Recommendation
Conventional gravity separator		discharge water is discolored, turbid, or has an oil sheen	excessive sediment or oil accumulation	Check if separator has excess sediment or oil accumulation. If so, remove oil or sediment and dispose of properly.
			damaged baffle	Check baffle integrity. If damaged, repair or replace to design specifications.
			incorrectly designed	Contact the design engineer to check if the system is appropriately sized for the drainage basin. if it isn't, then upgrade system with an additional or larger separator.
sediment accumulation exceeds 1' in bottom of vault			excessive sediment	Vactor or shovel out sediment. Dispose of sediment properly.
standing water is present 24 hours after storm event			sediment buildup blocks flow through separator	Vactor or shovel out sediment. Dispose of sediment properly.
yard wastes or non degradable materials (glass, plastic, styrofoam, etc.) are present in the vault or inlet/outlet pipes			accumulation of trash and debris	Remove trash and debris from vault and inlet/outlet pipes. Dispose of wastes properly.
		oil accumulation exceeds 1" at water surface	excessive oil accumulation	Vactor or manually remove oil from water surface. Dispose of waste properly.
		pipes broken or damage; cracks in pipe are wider than 1/4" at the joint	damaged inlet/outlet pipes	Replace pipe or repair to original design specifications.
		cover cannot be opened; cover is corroded or damaged	defective access cover	Repair or replace cover to original design specifications.
		cracks in vault are wider than 1/2"; soil enters the vault through the cracks	structural damage to vault	Replace or rebuild the vault to design specifications.
		baffles are cracked, warped, or corroded	defective baffles	Repair or replace baffles to original design specifications
Coalescing plate separator		discharge water is discolored, turbid, or has an oil sheen	excessive sediment or oil accumulation	Check if separator has excess sediment or oil accumulation. If so, remove oil or sediment and dispose of properly.
			damaged coalescing plate	Check coalescing plate integrity. If damaged, repair or replace to design specifications.
		sediment accumulation exceeds 1' in depth in vault	excessive sediment	Vactor or shovel out sediment deposits on vault bottom. Dispose of sediment properly.
		yard wastes or non-degradable materials (glass, plastic, styrofoam, etc.) are present in the vault.	accumulation of trash and debris	Remove trash and debris from vault and inlet/outlet piping. Dispose of wastes properly.
		oil accumulation exceeds 1" at water surface	excessive oil accumulation	Vactor or manually remove oil from water surface. Dispose of waste properly.

	pipes are broken or damaged; pipe has cracks wider than 1/4" at the joint	damaged inlet/outlet pipe	Replace or repair pipe to original specifications.
	standing water is present 24 hours after storm event	sediment buildup blocks flow through separator	Vactor or shovel out sediment. Dispose of sediment properly.
	baffles are cracked, warped, or corroded	defective baffles	Repair or replace baffles to original design specifications
	cracks in vault are wider than 1/2"; soil enters the vault through the cracks	structural damage to vault	Replace or rebuild the vault to design specifications.

O&M - Constructed Wetlands

Stormwater system feature	✓	Are any of these conditions present?	Problem	Recommendation
General		dumped yard wastes or nondegradable materials (glass, plastic, styrofoam, etc.) are present in pond	accumulation of trash and debris	Remove trash and debris and dispose of properly.
		offensive color, odor, or sludge is present propane, oil, or gasoline odor or surface film is present	unknown or uncharacteristic substance accumulation of petroleum products	Remove substance and eliminate its source. If you don't know if the substance is hazardous, either take a sample or contact a qualified hazardous waste consultant for more information. Contact a qualified hazardous waste consultant for more information.
		wetland vegetation grows into areas designated for other uses	overgrown wetland vegetation	Remove any vegetation which has grown outside the design boundaries as indiciated in the landscape plan. Remove trees and bushes that interfere with maintenance activities
		accumulated sediment exceeds the designated pond bottom elevation by 6-12"	excess sediment accumulation	Clean out sediment to original shape, depth, and elevation of the wetland. Dispose of sediment properly. If the wetland is constructed in jurisdictional "waters of the U.S." you must obtain a 404 (dredge and fill) permit from the U.S. Army Corps of Engineers (Corps). You must also obtain a Stream Channel Alteration permit from the Washington Department of Ecology Contact the Corps and WSDE for more information.
		excessive mosquito popultation	mosquitos	Install predacious bird and bat nesting boxes to control insects. Mosquito fish (Gambusia) can be used are available locally.
		excessive debris, sediment, or oil buildup	pretreatment system not installed	Install a pretreatment system upgradient from the wetland. The pretreatment system should be approved by City of Cle Elum Public Works.
Side slopes/bottom of wetland		slope has areas where erosion is at least 2" deep and there is potential for further erosion	soil erosion	Eliminate causes of erosion, if possible. If it isn't possible, use erosion and sedimentation control best management practices (BMPs) listed in the Kittitas County Stormwater book.
Trash rack		debris covers at least 25% of the bar screen or bar screen is missing	trash rack is plugged or missing	Replace screen, if needed. Remove trash and debris. Dispose of waste properly.
Pond dike/berm		dike or berm has settled 4" lower than design elevation	dike/berm settlement	Repair dike/berm to original design specifications.
Inlet/outlet pipe		storm water is not flowing into or out of the wetland; puddles are present near the pipe	clogged pipe	Clean sediment and debris from inlet or outlet pipe. See OM-10 , Pipes, for more information.
Overflow spillway		bare soil is visible at top of spillway or outside slope	inadequate rock layer	Add enough rock to cover up bare soil.

O&M - Catch Basins

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Yard wastes or non-degradable materials (glass, plastic, Styrofoam, etc.) are blocking the front of the catch basin or grate by 10%	Accumulation of trash and debris	Remove trash and debris from front of catch basin opening or grate. Dispose of waste properly.
		Frame has separated more than 3/4" from the top slab	Frame separation	Reset frame even with top of slab.
		Propane, oil, gasoline odor, offensive color or odor, or sludge is present	Accumulation of petroleum products or unknown or uncharacteristic substances	Contact a qualified hazardous waste consultant for more information.
		Top slab has cracks wider than 1/4" or holes larger than 2"	Defective top slab	Replace or repair slab to design specifications.
		Corner of frame extends more than 3/4" top slab past curb face into the street	Structural damage to frame or top of slab	Reset frame even with curb. Replace slab, if necessary.
		Catch basin has cracks wider than 1/2" and longer than 3"; soil is entering the catch basin through the cracks	Defective catch basin	Replace or repair catch basin to original design specifications. You may need to contact the design engineer to evaluate the structural integrity of the catch basin.
		Catch basin has settled more than1' or has moved more than 2" out of alignment	Basin settlement/alignment	Replace or repair catch basin to original design specifications. You may need to contact the design engineer to evaluate the structural integrity of the catch basin.
		Grate bars are broken or grate is missing	Grate is damaged or missing	Replace or repair grate to design specifications.
Inlet/outlet pipes		Trash or sediment in the inlet/outlet pipe is blocking more than 1/3" of the diameter of the pipe	Trash or sediment accumulation	Remove trash and sediment from pipes. Dispose of wastes properly.
		Piping has cracks wider than 1/2" and longer than 1' at the joint; soil is entering the catch basin through the cracks	Cracked pipes	Replace or repair pipe to original design specifications.
		Vegetation is growing in inlet/outlet pipe joints	Overgrown vegetation	Remove vegetation from pipe joints.

O&M - Pipes

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
General		Accumulated sediment or trash exceeds 20% of the diameter of the pipe	Excess accumulation of sediment or trash	Clean out sediment and trash from pipe. Use a high pressure hose, vacuum suction, or other appropriate cleaning method. Contact the design engineer for information on appropriate cleaning methods for this type of drainage system.
		Vegetation is impeding water flow	Overgrown vegetation	Clean out sediment and trash from pipe. Use a high pressure hose, vacuum suction, or other appropriate cleaning method. Contact the design engineer for information on appropriate cleaning methods for this type of drainage system.
		Pipe is rusted; protected coating is damaged	Corroded pipe	Replace or repair pipe to original design specifications.
		Dent in pipe has reduced the pipe diameter by 20%; water flow is impeded; pipe is broken	Defective pipe	Replace or repair pipe to original design specifications.
		Water is leaking from pipe	Cracked pipe	Replace or repair pipe to original design specifications.

O&M - Ditches and Gates

Stormwater System Feature	✓	Are any of these conditions present?	Problem	Recommendation
Ditches		Dumped yard wastes or nondegradable materials (glass, plastic, Styrofoam, etc.) are present in the ditch	Accumulation of trash and debris	Remove trash and debris from ditch. Dispose of waste properly.
		Accumulated sediment exceeds 20% of the designed ditch depth	Excess sediment accumulation	Clean out sediment to original shape and depth of the ditch. Dispose of sediment properly.
		Vegetation reduces water movement through ditch	Overgrown vegetation	Remove any weedy shrubs or saplings that impede water flow. Preserve grass to control erosion.
		Slope has areas where erosion is at least 2" deep and there is a potential for further erosion	Soil erosion	Check around inlets and outlets for erosion. Eliminate causes of erosion, if possible. If it isn't possible, use erosion and sedimentation control best management practices (BMPs) as listed in the Kittitas Storm Water BMP Guidebook.
		Bare soil is visible beneath the rock lining	Inadequate rock layer	Add enough rock to meet design specifications.
Gates		Gate or gate parts are missing	Missing gate or gate parts	Replace gate or missing parts
		Gate cannot be opened or closed	Missing or defective gate hinges	Replace and lube hinges.
		Gate moved out of vertical alignment by more than 6" or more than 1' out of design alignment	Misaligned gate	Reset gate to original design specifications.

Attachment B
Source Control Best Management Practices

The following text is from the Stormwater Management Manual for Eastern Washington and was prepared by the Washington State Department of Ecology.

Note: Contact the local Air Quality Authority for appropriate and required BMPs for dust control to implement at your project site.

Description of Pollutant Sources: Dust can cause air and water pollution problems, particularly in arid areas where reduced rainfall exposes soil particles to transport by air.

Pollutant Control Approach: Minimize dust generation and apply environmentally friendly and government approved dust suppressant chemicals, if necessary.

Applicable Operational BMPs:

- Sprinkle or wet down soil or dust with water as long as it does not result in a wastewater discharge.
- Apply stormwater containment to prevent the conveyance of stormwater TSS into storm drains or receiving waters.
- The use of motor oil for dust control is prohibited. Care should be taken when using lignin derivatives and other high BOD chemicals in excavations or areas easily accessible to surface water or groundwater.
- Consult with the Washington State Department of Ecology Regional Office in your area for discharge permit requirements, if the dust suppression process results in a wastewater discharge to the ground, groundwater storm drain, or surface water.

Recommended Additional Operational BMPs for Roadways and Other Trafficked Areas:

- Consider limiting use of off-road recreational vehicles on dust generating land.
- Consider paving unpaved permanent roads and other trafficked areas.
- Consider paving or stabilizing shoulders of paved roads with gravel, vegetation, or local government approved chemicals.
- Encourage use of alternate paved routes, if available.
- Vacuum or wet sweep fine dirt and skid control materials from paved roads soon after winter weather ends or when needed.
- Consider using traction sand that is pre-washed to reduce dust emissions.

Additional Recommended Operational BMPs for Dust Generating Areas:

- Prepare a dust control plan. Helpful references include: “Control of Open Fugitive Dust Sources” (EPA-450/3-88-088), and “Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures” (EPA-450/2-92-004).
- Limit exposure of soil (dust source) as much as feasible.

- Stabilize dust-generating soil by growing and maintaining vegetation mulching, topsoiling, and/or applying stone, sand, or gravel.

- Apply windbreaks in the soil, such as trees, board fences, tarp curtains, bales of hay, etc.

- Cover dust-generating piles with wind-impervious fabric or equivalent material.

BMPs for Illicit Connections to Storm Drains

Description of Pollutant Sources: Illicit connections are unpermitted sanitary or process wastewater discharges to a storm drain or to surface water rather than to a sanitary sewer, industrial process wastewater or other appropriate treatment. They can also include swimming pool water, filter backwash, cleaning solutions/wash waters, cooling water, etc. Experience has shown that illicit connections are common, particularly in older buildings.

Pollutant Control Approach: Identify and eliminate unpermitted discharges.

Applicable Operational BMPs:

- Eliminate unpermitted wastewater discharges to storm drains, groundwater, or surface water.

- Convey unpermitted discharges to a sanitary sewer if allowed by the local jurisdiction, or to other approved treatment.

BMPs for Landscaping and Lawn/Vegetation Management

Description of Pollutant Sources: Landscaping can include grading, soil transfer, vegetation removal, pesticide and fertilizer applications, and watering. Stormwater contaminants include toxic organic compounds, heavy metals, oils, total suspended solids, coliform bacteria, fertilizers, and pesticides.

Lawn and vegetation management can include control of objectionable weeds, insects, mold, bacteria and other pests with chemical pesticides and is conducted commercially at commercial, industrial, and residential sites. Examples include weed control on golf course lawns, access roads, utility corridors, and during landscaping; sap stain and insect control on fungicide application to patio decks, and residential lawn/plant care. Toxic pesticides such as pentachlorophenol, carbamates, and organometallics can be released to the environment by leaching and dripping from treated parts, container leaks, product misuse, and outside storage of pesticide contaminated materials and equipment. Poor management of the vegetation and poor application of pesticides or fertilizers can cause appreciable stormwater contamination.

Pollutant Control Approach: Control fertilizer and pesticide applications, soil erosion, and site debris to prevent contamination of stormwater. Develop and implement an Integrated Pest Management Plan (IPM) and use pesticides only as a last resort. If pesticides/herbicides are used, they must be carefully applied in accordance with label instructions on U.S. Environmental Protection Agency (EPA) registered materials. Maintain appropriate vegetation, with proper fertilizer application where practicable, to control erosion and the discharge of stormwater pollutants. Where practicable, grow plant species appropriate for the site, or adjust the soil properties of the subject site to grow desired plant species.

Applicable Operational BMPs for Landscaping:

- Install engineered soil/landscape systems to improve the infiltration and regulation of stormwater in landscaped areas.

- Do not dispose of collected vegetation into waterways or storm drainage systems.

Recommended Additional Operational BMPs for Landscaping:

- Conduct mulch-mowing whenever practicable.

- Dispose of grass clippings, leaves, sticks, or other collected vegetation, by composting, if feasible.

- Use mulch or other erosion control measures when soils are exposed for more than one week.

- If oil or other chemicals are handled, store and maintain appropriate oil and chemical spill cleanup materials in readily accessible locations. Ensure [the responsible parties] are familiar with proper spill cleanup procedures.

- Till fertilizers into the soil rather than dumping or broadcasting onto the surface. Determine the proper fertilizer application for the types of soil and vegetation encountered.

- Till a topsoil mix or composed organic materials into the soil to create a well-mixed transition layer that encourages deeper root systems and drought-resistant plants.

- Use manual and/or mechanical methods of vegetation removal rather than applying herbicides, where practical.

- Develop and implement and IPM and use pesticides only as a last resort.

- Implement a pesticide-use plan and include at a minimum: a list of selected pesticides and their specific uses; brands, formulations, application methods and quantities to be used; equipment use and maintenance procedures; safety, storage, and disposal methods; and monitoring, record keeping and public notice procedures. All procedures shall conform to the requirements of Chapter 17.21 RCW and Chapter 16-228 WAC.

- Choose the least toxic pesticide available that is capable of reducing the infestation to acceptable levels. The pesticide should readily degrade in the environment and/or have properties that strongly bind to the soil. Any pest control used should be conducted at the life stage when the pest is most vulnerable. For example, if it is necessary to use a Bacillus thuringiens application to control tent caterpillars, it must be applied before the caterpillars cocoon or it will be ineffective. Any method used should be site-specific and not used wholesale over a wide area.

- Apply the pesticide according to label directions. Under no conditions shall pesticides be applied in quantities that exceed manufacturer's instructions.

- Mix the pesticides and clean the application equipment in an area where accidental spills will not enter surface or ground waters, and will not contaminate the soil.

- Store pesticides in enclosed areas or in covered impervious containment. Ensure that pesticide contaminated stormwater or spills/leaks of pesticides are not discharged to storm drains. Do not hose down the paved areas to a storm drain or conveyance ditch. Store and maintain appropriate spill cleanup materials in a location known to all near the storage area.

- Clean up any spilled pesticides and ensure that the pesticide contaminated waste materials are kept in designated covered and contained areas.

- The pesticide application equipment must be capable of immediate shutoff in the event of an emergency.

- Do not spray non-permitted pesticides within 100 feet of open waters including wetlands, ponds, and streams, soughs and any drainage ditch or channel that leads to open water except when approved by Washington State Department of Ecology or the local jurisdiction. All sensitive areas including wells, creeks, and wetlands must be flagged prior to spraying.

- As required by the local government or by Washington State Department of Ecology, complete public posting of the area to be sprayed prior to the application.

- Spray applications should only be conducted during weather conditions as specified in the label direction and applicable local and state regulations. Do not apply during rain or immediately before expected rain.

Recommended Additional Operational BMPs for the use of pesticides:

- Consider alternatives to the use of pesticides such as covering or harvesting weeds, substitute vegetative growth, and manual weed control/moss removal.

- Consider the use of soil amendments, such as compost, that are known to control some common diseases in plants, such as Pythium root rot, ashy stemp blight, and parasitic nematodes. The following are three possible mechanisms for disease control by compost addition (USEPA Publication 530-F-0-044):

    1. Successful competition for nutrients by antibiotic production;

    2. Successful predation against pathogens by beneficial microorganism; and

    3. Activation of disease-resistant genes in plants by composts.

Installing an amended soil/landscape system can preserve both the plant system and the soil system more effectively. This type of approach provides a soil/landscape system with adequate depth, permeability, and organic matter to sustain itself and to continue working as an effective stormwater infiltration system and a sustainable nutrient cycle.

- Once a pesticide is applied, its effectiveness should be evaluated for possible improvement. Records should be kept showing the applicability and inapplicability of the pesticides considered.

- An annual evaluation procedure should be developed including a review of the effectiveness of pesticide applications, impact on buffers and sensitive areas (including potable wells), public concerns, and recent toxicological information on pesticides used/proposed for use. If individual or public potable wells are located in the proximity of commercial pesticide applications, contact the regional Washington State Department of Ecology hydrogeologist to determine if additional pesticide application control measures are necessary.

- Rinseate from equipment cleaning and/or triple-rinsing of pesticide containers should be used as product or recycled into product.

- The application equipment used should be capable of immediate shutoff in the event of an emergency.

For more information, contact the WSU Extension Home-Assist Program, (253) 445-4556, or Bio-Integral Resource Center (BIRC), P.O. Box 7414, Berkeley, CA, 94707, or the Washington Department of Ecology to obtain "Hazardous Waste Pesticides" (Publication #89-41); and/or EPA to obtain a publication entitled "Suspended, Canceled and Restricted Pesticides" which lists all restricted pesticides and the specific uses allowed. Valuable information from these sources may also be available on the internet.

Applicable Operational BMPs for Vegetation Management:

- Use at least an 8-inch topsoil layer with at least eight percent organic matter to provide a sufficient vegetation-growing medium. Amending existing landscapes and turf systems by increasing the percent organic matter and depth of topsoil can substantially improve the permeability of the soil, the disease and drought resistance of the vegetation, and reduce fertilizer demand. This reduces the demand for fertilizers, herbicides, and pesticides. Organic matter is the least water-soluble form of nutrients that can be added to the soil. Composted organic matter generally releases only between two and ten percent of its total nitrogen each year, and this release corresponds closely to the plant growth cycles. If natural plant debris and mulch are returned to the soil, this system can continue recycling nutrients indefinitely.

- Select the appropriate turf grass mixture for your climate and soil type. Certain tall fescues and rye grasses resist insect attack, because the symbiotic endophytic fungi found naturally in their tissues repel or kill common leaf and stem-eating lawn insects. They do not, however, repel root-feeding lawn pests such as Crane Fly larvae, and are toxic to ruminants such as cattle and sheep. The fungus causes no known adverse effects to the host plant or to humans. Endophytic grasses are commercially available and can be used in areas such as parks or golf courses where grazing does not occur. The local Cooperative Extension office can offer advice on which types of grass are best suited to the area and soil type.

- Use the appropriate seeding and planting BMPs in Chapter 7, or equivalent BMPs, to obtain information on grass mixtures, temporary and permanent seeding procedures, maintenance of recently planted area, and fertilizer application rates.

- Selection of desired plant species can be made by adjusting the soil properties of the subject site. For example, a constructed wetland can be designed to resist the invasion of reed canary grass by layering specific strata of organic matters (e.g., compost forest product residuals), and creating a mildly acidic pH and carbon-rich soil medium. Consult a soil restoration specialist for site-specific conditions.

- Aerate lawns regularly in areas of heavy use where the soil tends to become compacted. Aeration should be conducted while the grasses in the lawn are growing most vigorously. Remove layers of thatch greater than ¾-inch deep.

- Mowing is a stress-creating activity for turf grass. When grass is mowed too short its productivity is decreased and there is less growth of roots and rhizomes. The turf becomes less tolerant of environmental stresses, more disease prone, and more reliant on outside means, such as pesticides, fertilizers, and irrigation to remain healthy. Set the mowing height at the highest acceptable level and mow at times and intervals designed to minimize stress on the turf. Generally, mowing only 1/3 of the grass blade height will prevent stressing the turf.

Irrigation:

- The depth from which a plant normally extracts water depends on the rooting depth of the plant. Appropriately irrigated lawn grasses normally root in the top six to twelve inches of soil; lawns irrigated on a daily basis often root only in the top one inch of soil. Improper irrigation can encourage pest problems, leach nutrients, and make a lawn completely dependent on artificial watering. The amount of water applied depends on the normal rooting depth of the turf grass species used, the available water holding capacity of the soil, and the efficiency of the irrigation system. Consult with the local water utility, Conservation District, or Cooperative Extension office to help determine optimum irrigation practices.

Fertilizer Management:

- Turf grass is most responsive to nitrogen fertilization, followed by potassium and phosphorus. Fertilization needs vary by site depending on plant, soil and climatic conditions. Evaluation of soil nutrient levels through regular testing ensures the best possible efficiency and economy of fertilization. For details on soils testing, contact the local Conservation District or Cooperative Extension Service.

- Fertilizers should be applied in amounts appropriate for the target vegetation and at the time of year that minimizes losses to surface and groundwaters. Do not fertilize during a drought or when the soil is dry. Alternatively, do not apply fertilizers within three days prior to predicted rainfall. The longer the period between fertilizer application and either rainfall or irrigation, the less fertilizer runoff occurs.

- Use slow release fertilizers such as methylene urea, IDBU, or resin coated fertilizers, when appropriate, generally in the spring. Use of slow release fertilizers is especially important in areas with sandy or gravelly soils.

- Time the fertilizer application to periods of maximum plant uptake. Generally, fall and spring applications are recommended.

- Properly trained persons should apply all fertilizers. At commercial and industrial facilities, fertilizers should not be applied to grass swales, filter strips, or buffer areas that drain to sensitive water bodies unless approved by the local jurisdiction.

Integrated Pest Management:

An IPM program might consist of the following steps:

Step 1: Correctly identify problem pests and understand their life cycle.
Step 2: Establish tolerance thresholds for pests.
Step 3: Monitor to detect and prevent pest problems.
Step 4: Modify the maintenance program to promote healthy plants and discourage pests.
Step 5: Use cultural, physical, mechanical, or biological controls first when pests exceed the tolerance thresholds.
Step 6: Evaluate and record the effectiveness of the control, and modify maintenance practices to support lawn or landscape recovery and prevent recurrence.

BMPs for Maintenance of Public and Private Utility Corridors and Facilities

Description of Pollutant Sources: Passageways at sewer pipelines, water pipelines, electrical power transmission corridors and rights-of-way can be sources of pollutants, such as herbicides used for vegetation management, and eroded soil particles from unpaved access roads. The following are potential pollutants: oil and grease, TSS, BOD, organics, PCB, pesticides, and heavy metals.

Pollutant Control Approach: Control of fertilizer and pesticide applications, soil erosion, and site debris that can contaminate stormwater.

Applicable Operational BMPs:

- Implement BMPs for landscaping and lawn/vegetation management.

- Within utility corridors, consider preparing maintenance procedures and an implementation schedule that provides for a vegetative, gravel, or equivalent cover that minimizes bare or thinly vegetated ground surfaces within the corridor, to prevent the erosion of soil.

- Provide maintenance practices to prevent stormwater from accumulating and drainage across and/or onto roadways. Stormwater should be conveyed through roadside ditches and culverts. The road should be crowned, outsloped, water barred or otherwise left in a condition not conducive to erosion. Appropriately maintaining grassy roadside ditches discharging to surface waters is an effective way of removing some pollutants associated with sediments carried by stormwater.

- Maintain ditches and culverts at an appropriate frequency to ensure that plugging and flooding across the roadbed, with resulting overflow erosion, does not occur.

BMPs for Maintenance of Roadside Ditches

Description of Pollutant Sources: Common road debris, including eroded soil, oils, vegetative particles, and heavy metals, can be a source of stormwater pollutants.

Pollutant Control Approach: Roadside ditches should be maintained to preserve the condition and capacity for which they were originally constructed, and to minimize bare or thinly vegetated ground surfaces. Maintenance practices should provide for erosion and sediment control. (Refer to BMP Landscaping and Lawn/Vegetation Management).

Applicable Operational BMPs:

- Inspect roadside ditches regularly, as needed, to identify sediment accumulations and localized erosion.

- Clean ditches on a regular basis, as needed. Ditches should be kept free of [trash] and debris.

- In situations where appropriate, vegetation in ditches often prevents erosion and cleanses runoff waters. Remove vegetation only when flow is blocked or excess sediments have accumulated. Conduct ditch maintenance (seeding, fertilizer application, harvesting) in late spring and/or early fall, when possible. This allows vegetative cover to be re-established by the next wet season, thereby minimizing erosion of the ditch as well as making the ditch effective as a biofilter.

- In the area between the edge of the pavement and the bottom of the ditch, commonly known as the “bare earth zone,” use grass vegetation, wherever possible. Vegetation should be established from the edge of the pavement, if possible, or at least from the top of the slope of the ditch.

- Diversion ditches on top of cut slopes that are constructed to prevent slope erosion by intercepting surface drainage must be maintained to retain their diversion shape and capability.

- Ditch cleanings are not to be left on the roadway surfaces. Sweep dirt and debris remaining on the pavement at the completion of ditch cleaning operations.

- Roadside ditch cleanings, not contaminated by spills or other releases and not associated with a stormwater treatment system, such as a bioswale, may be screened to remove litter and separated into soil and vegetative matter (leaves, grass, needles, braches, etc.). The soil fraction may be handled as “clean soils” and the vegetative matter can be composted or disposed of in a municipal waste landfill.

- Roadside ditch cleanings contaminated by spills or other releases known, or suspected, to contain dangerous waste must be handled following the Dangerous Waste Regulations (Chapter 173-303 WAC), unless testing determines it is not dangerous waste.

- Examine culverts on a regular basis for scour or sedimentation at the inlet and outlet and repair, as necessary. Give priority to those culverts conveying perennial and/or salmon-bearing streams and culverts near streams in areas of high sediment load, such as those near subdivisions during construction.

BMPs for Maintenance of Stormwater Drainage and Treatment Systems

Description of Pollutant Sources: Facilities include roadside catch basins on arterials and within residential areas, conveyance systems, detention facilities, such as ponds and vaults, oil and water separators, biofilters, settling basins, infiltration systems, and all other types of stormwater treatment systems presented in Chapter 5. Roadside catch basins can remove 5 to 15 percent of the pollutants present in stormwater. When catch basins are approximately 60 percent full of sediment, they cease removing sediments. Oil and grease, hydrocarbons, debris, heavy metals, sediments, and contaminated water are found in catch basins, oil and water separators, settling basins, etc.

Pollutant Control Approach: Provide maintenance and cleaning of debris, sediments, and oil from stormwater collection, conveyance, and treatment systems to obtain proper operation.

Applicable Operational BMPs: Maintain stormwater treatment facilities according to the operation and maintenance (O&M) procedures presented in this manual in addition to the following BMPs:

- Inspect and clean treatment BMPs, conveyance systems, as needed, and determine whether improvements in O&M are needed.

- Promptly repair any deterioration threatening the structural integrity of the facilities. This includes replacement of check dams and rock in drainage ways.

- Ensure that storm sewer capacities are not exceeded and that heavy sediment discharges to the sewer system are prevented.

- Regularly remove debris and sludge from BMPs used for peak rate control, treatment, etc., and discharge to a sanitary sewer, if approved by the local jurisdiction, or truck to a local or state government approved disposal site.

- Post warning signs; “Dump No Waste – Drains to Groundwater,” “Streams,” “Lakes,” or emboss on or adjacent to all storm drain inlets where practical.

Additional Applicable BMPs: Select additional applicable BMPs from this chapter depending on the pollutant sources and activities conducted at the facility. Those BMPs include:

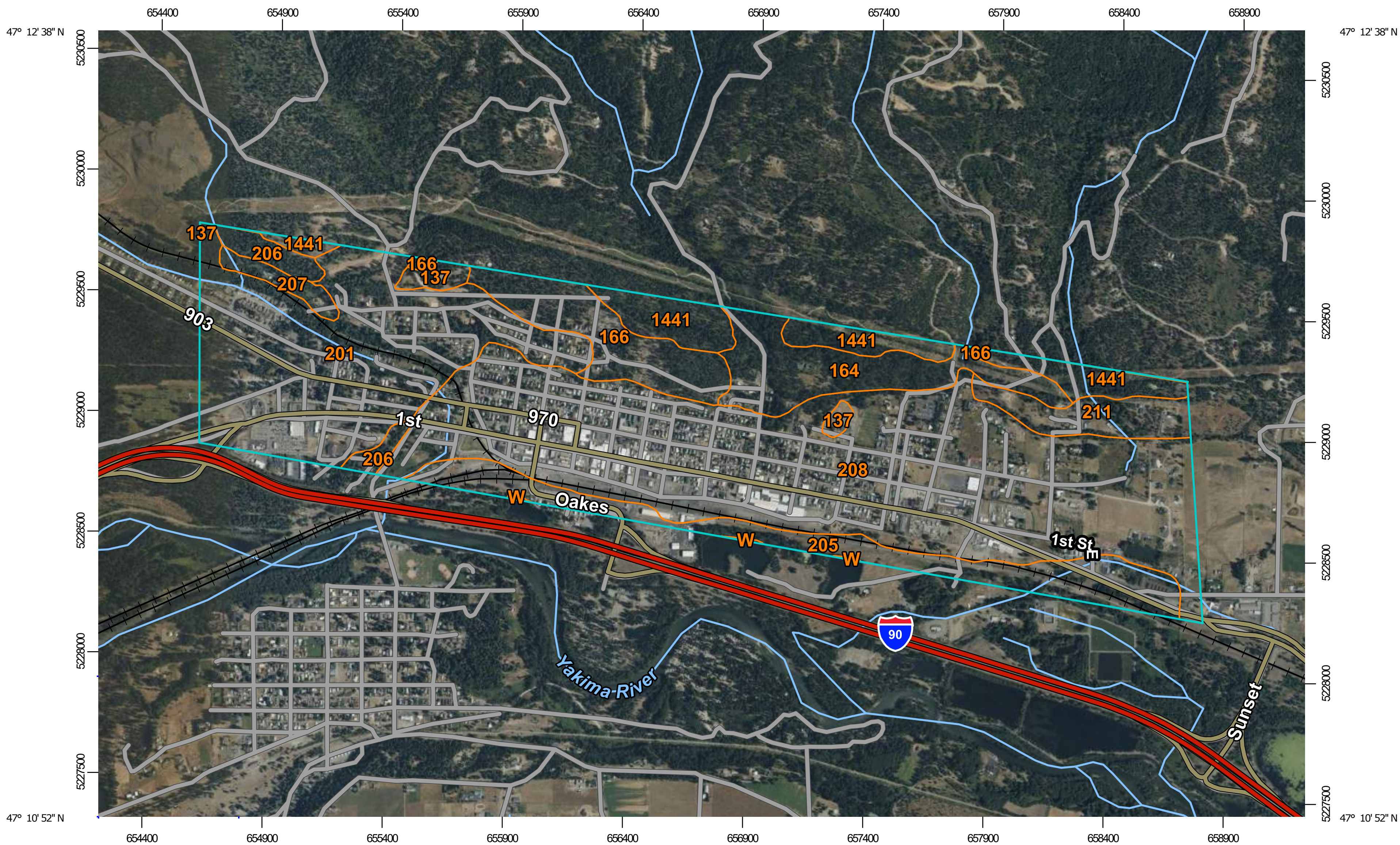
- BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers.

- BMPs for Illicit Connections to Storm Drains.

Appendix F

USDA Soil Map

Soil Map—Kittitas County Area, Washington
(Cle Elum)



Map Scale: 1:22,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0, 300, 600, 1200, 1800

Feet: 0, 1000, 2000, 4000, 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kittitas County Area, Washington
Survey Area Data: Version 18, Aug 28, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2022—Sep 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
137	Dumps, mine	9.8	1.0%
164	Nard ashy loam, 25 to 45 percent slopes	64.9	6.6%
166	Ampad ashy sandy loam, warm, 5 to 30 percent slopes	56.5	5.8%
201	Roslyn ashy sandy loam, 0 to 5 percent slopes	212.5	21.7%
205	Xerofluvents, 0 to 5 percent slopes	81.4	8.3%
206	Dystroxerepts, 45 to 65 percent south slopes	16.5	1.7%
207	Quicksell loam, 0 to 5 percent slopes	10.2	1.0%
208	Patnish-Mippon-Myzel complex, 0 to 3 percent slopes	431.9	44.2%
211	Teanaway ashy loam, 0 to 3 percent slopes	31.1	3.2%
1441	Teanaway ashy loam, 10 to 25 percent slopes	61.9	6.3%
W	Water	0.9	0.1%
Totals for Area of Interest		**977.9**	**100.0%**

Appendix G

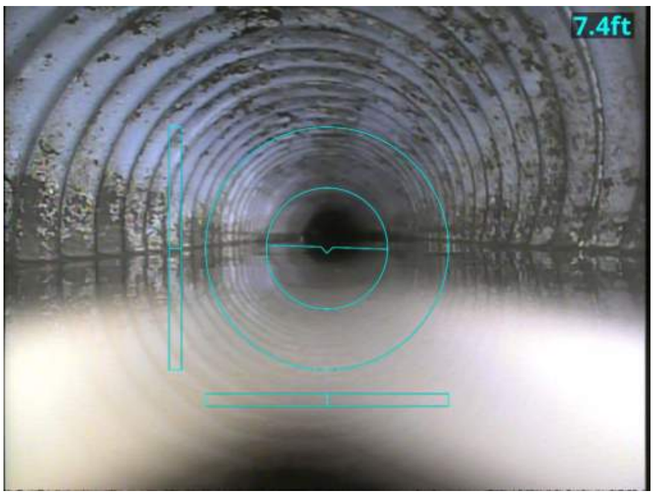
Video Inspection Report

Inspection Report

TTC Construction
12871 Summitview Rd, Yakima
98908,
5094573969

Client	HLA Civil Engineering and Land Surveying
Surveyed By	
Job Number	HLA Project No. 23104
Date	08/18/2025
Time	07:56
Location	Cle Elum, Washington
Remarks	

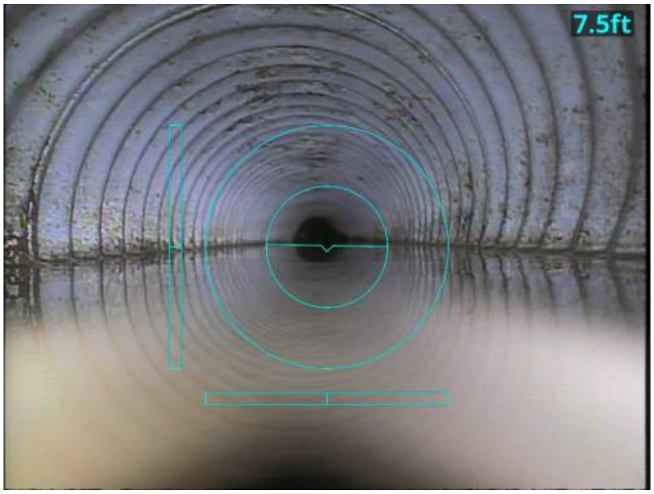
Observations



0:00:51
./BASIN-335-EAST/BASIN-335-EAST_2025_08_18-07_58_34_505.jpg
7.4 (ft)
BELLY

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	08:54
Location	
Remarks	

Observations



0:00:45

./BASIN-335-EAST-PT.2/BASIN-335-EAST-PT.2_2025_08_18-08_56_13_737.jpg

7.5 (ft)

HOLDING WATER

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	09:08
Location	
Remarks	

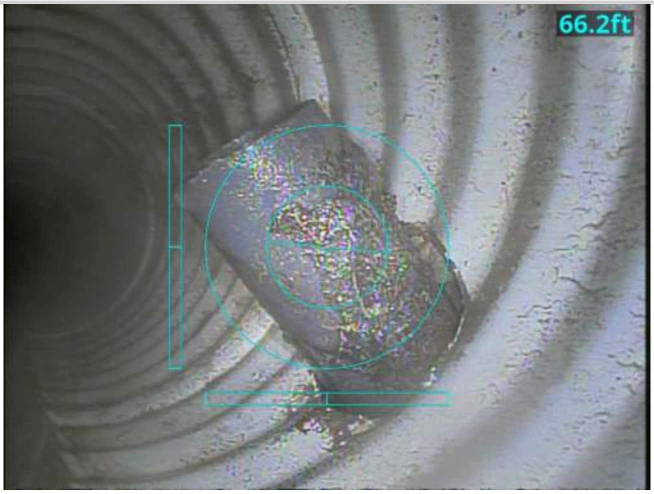
Observations

0:00:03

./BASIN-336-WEST/BASIN-336-WEST_2025_08_18-09_09_30_253.jpg

0.0 (ft)

PIPE CHANGE

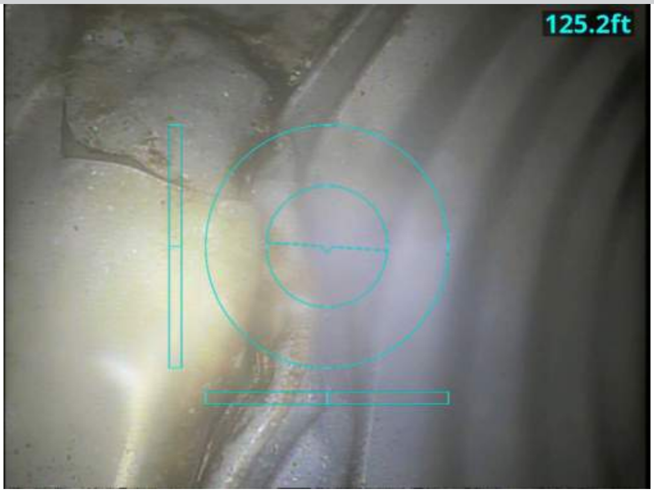


0:09:00

./BASIN-336-WEST/BASIN-336-WEST_2025_08_18-09_18_36_455.jpg

66.2 (ft)

LATERAL RIGHT 2 O'CLOCK



0:15:12

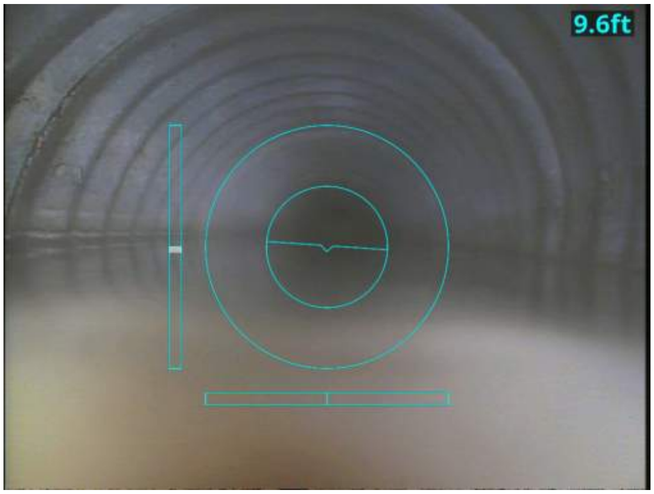
./BASIN-336-WEST/BASIN-336-WEST_2025_08_18-09_24_55_906.jpg

125.2 (ft)

DENTED PIPE

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	09:28
Location	
Remarks	

Observations

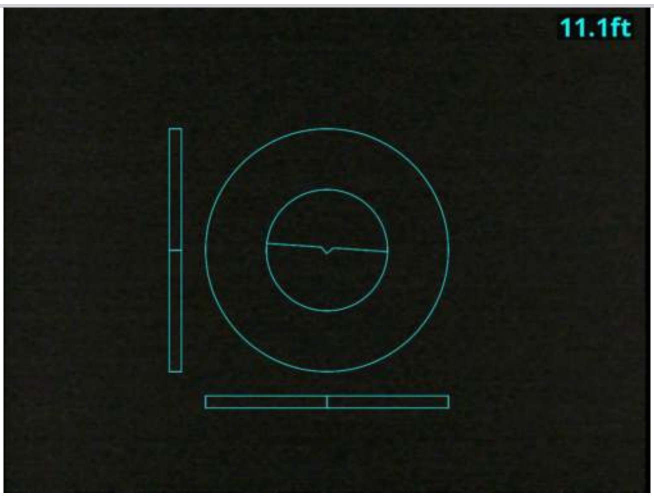


0:01:10

./BASIN-336-WEST-CONT./BASIN-336-WEST-CONT._2025_08_18-09_31_05_598.jpg

9.6 (ft)

HOLDING WATER



0:01:10

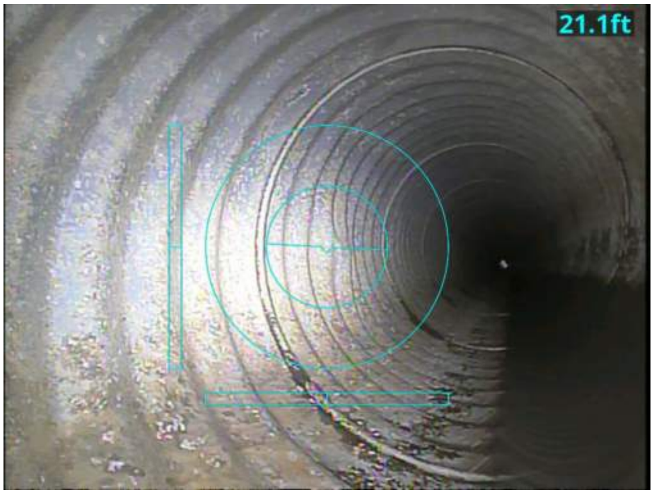
./BASIN-336-WEST-CONT./BASIN-336-WEST-CONT._2025_08_18-09_31_31_359.jpg

11.1 (ft)

CAMERA UNDERWATER

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	09:46
Location	
Remarks	

Observations

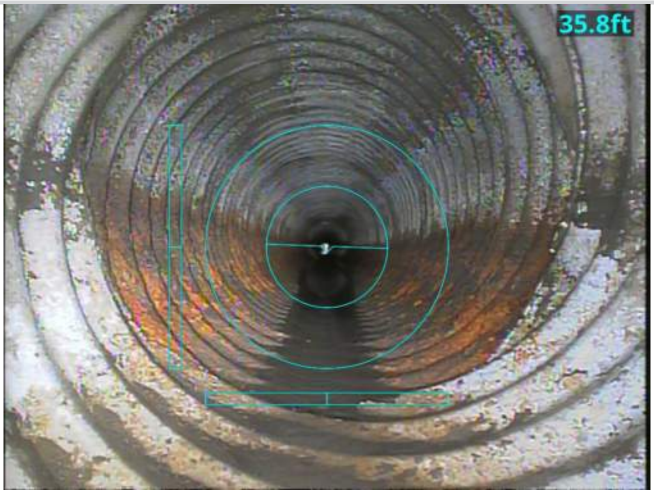


0:02:49

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_49_19_456.jpg

21.1 (ft)

DENTED PIPE

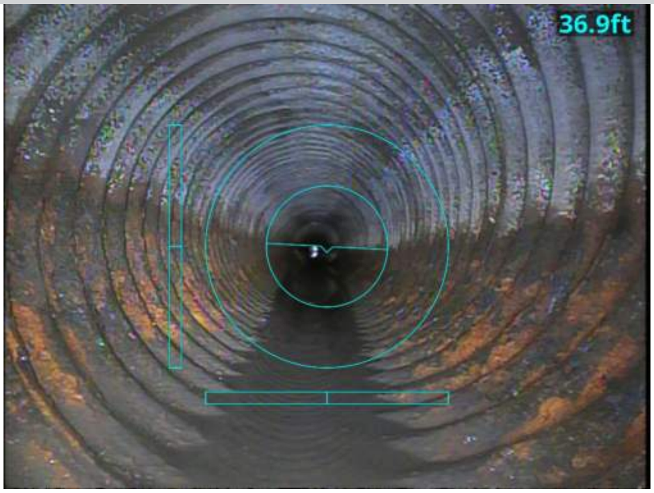


0:04:06

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_50_45_844.jpg

35.8 (ft)

PIPE CHANGE

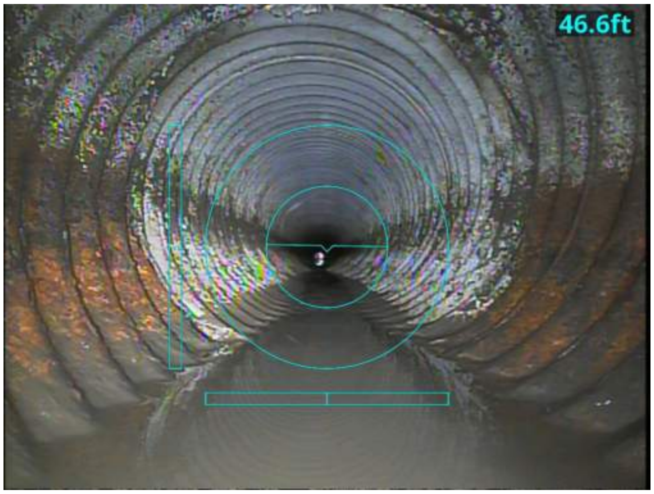


0:04:14

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_50_59_854.jpg

36.9 (ft)

RUSTED PIPE



0:04:51

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_51_43_936.jpg

46.6 (ft)

PIPE CHANGE

0:05:08

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_52_05_907.jpg

50.3 (ft)

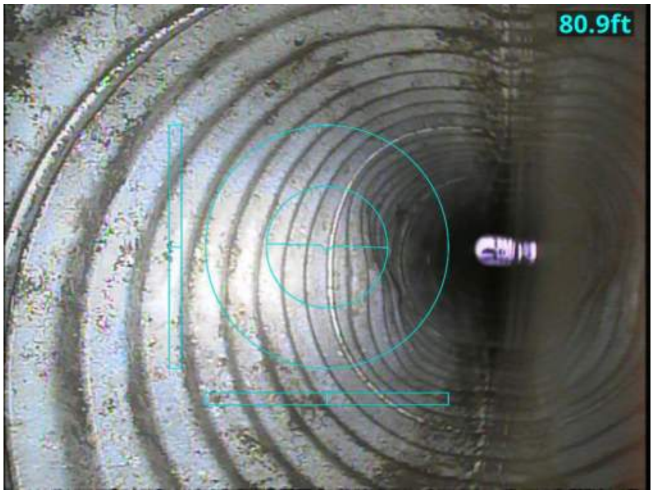
DENTED PIPE

0:06:51

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_53_52_027.jpg

65.3 (ft)

LATERAL LEFT 10 O'CLOCK

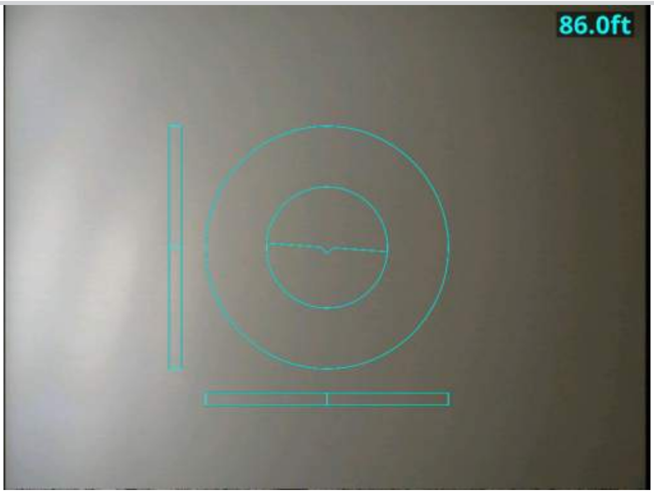


0:08:27

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_55_37_472.jpg

80.9 (ft)

DENTED PIPE



0:09:11

./BASIN-336-EAST/BASIN-336-EAST_2025_08_18-09_56_27_836.jpg

86.0 (ft)

CAMERA UNDERWATER

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	10:46
Location	
Remarks	

Observations

0:00:04

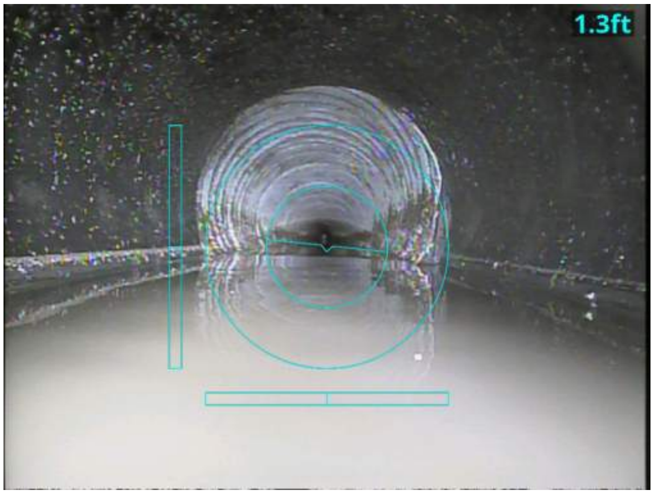
./BASIN-220-WEST/BASIN-220-WEST_2025_08_18-10_47_06_894.jpg

0.0 (ft)

SILT

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	10:54
Location	
Remarks	

Observations

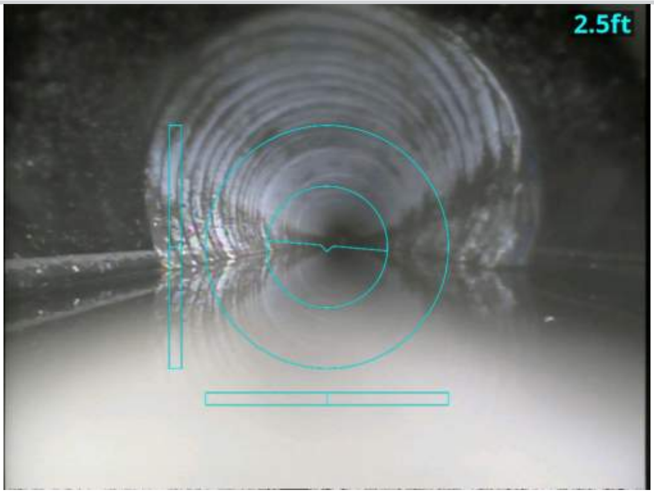


0:00:44

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-10_56_21_745.jpg

1.3 (ft)

HOLDING WATER

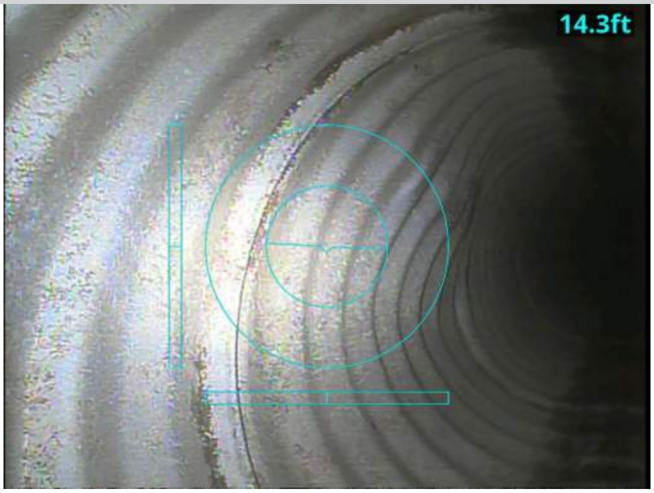


0:01:21

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-10_57_02_303.jpg

2.5 (ft)

PIPE CHANGE



0:02:29

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-10_58_15_485.jpg

14.3 (ft)

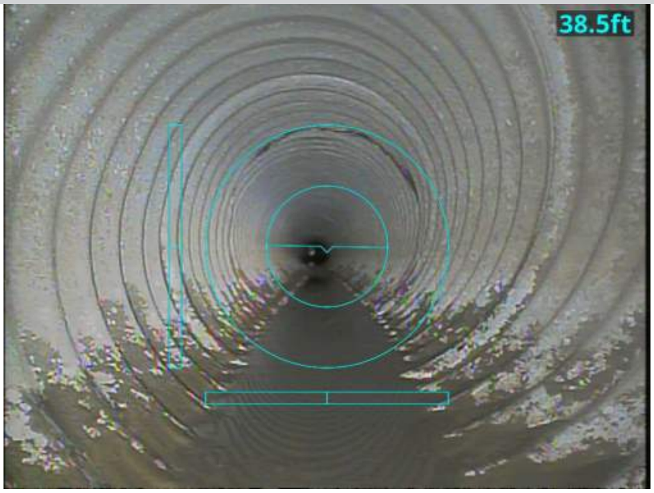
DENTED PIPE

0:03:58

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-10_59_48_951.jpg

33.6 (ft)

LATERAL RIGHT 2 O'CLOCK

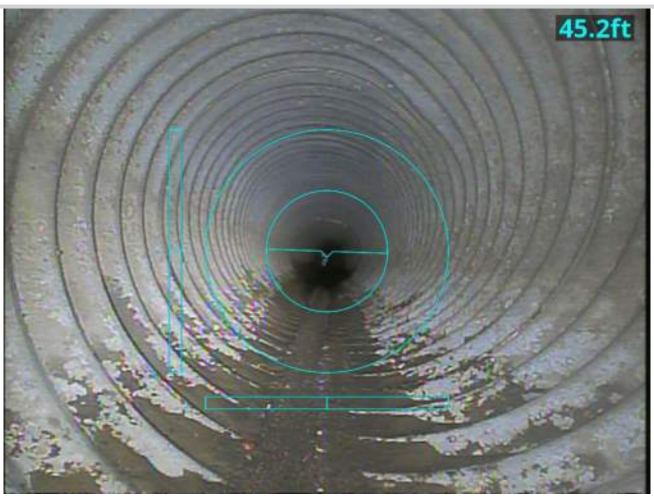


0:04:24

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-11_00_23_906.jpg

38.5 (ft)

DEFORMED PIPE

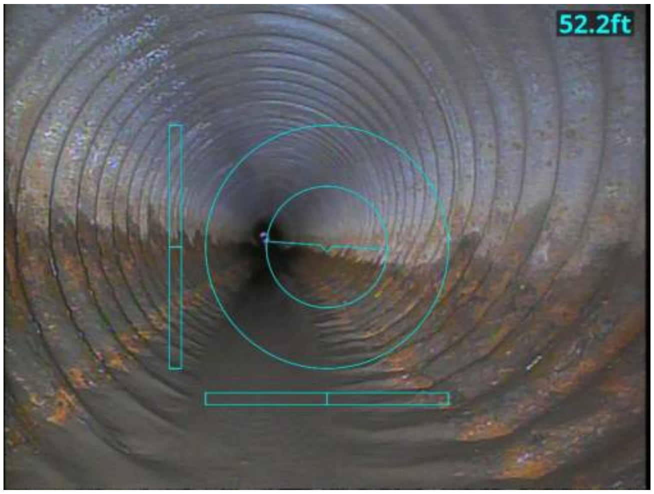


0:04:52

./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-11_00_59_909.jpg

45.2 (ft)

DENTED PIPE



0:05:35

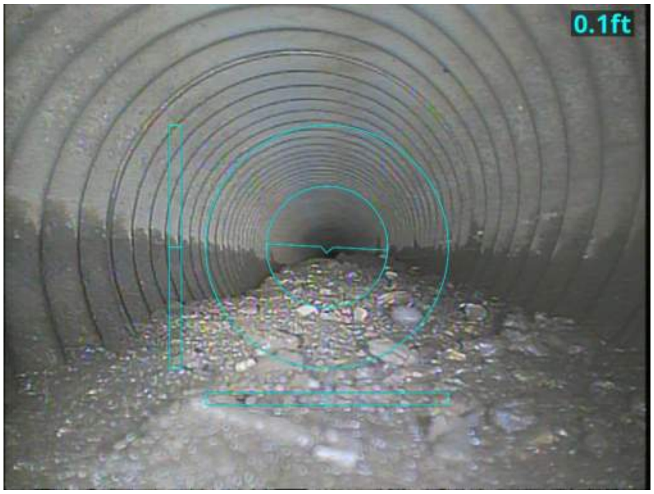
./BASIN-220-WEST-PT.2/BASIN-220-WEST-PT.2_2025_08_18-11_01_47_926.jpg

52.2 (ft)

RUSTED PIPE

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	11:13
Location	
Remarks	

Observations



0:00:09

./BASIN-220-SOUTH/BASIN-220-SOUTH_2025_08_18-11_14_02_138.jpg

0.1 (ft)

SILT, ROCKS

0:00:28

./BASIN-220-SOUTH/BASIN-220-SOUTH_2025_08_18-11_14_29_465.jpg

0.6 (ft)

BLOCKED

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	11:39
Location	
Remarks	

Observations

0:06:41

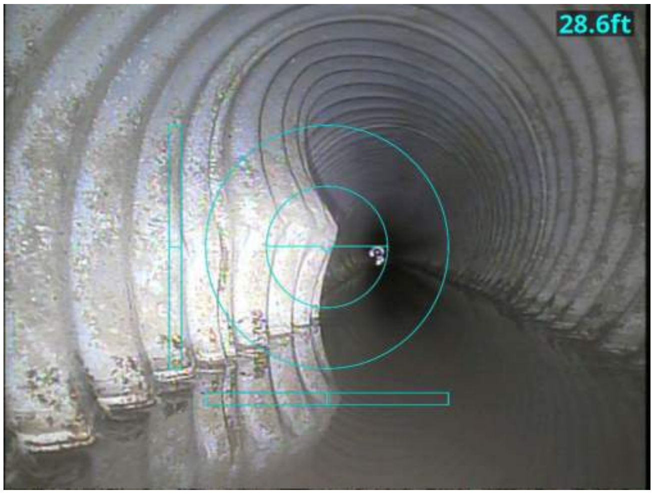
./BASIN-220-SOUTH-PT.2/BASIN-220-SOUTH-PT.2_2025_08_18-11_45_58_216.jpg

70.5 (ft)

ROCKS

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	12:01
Location	
Remarks	

Observations



0:03:00

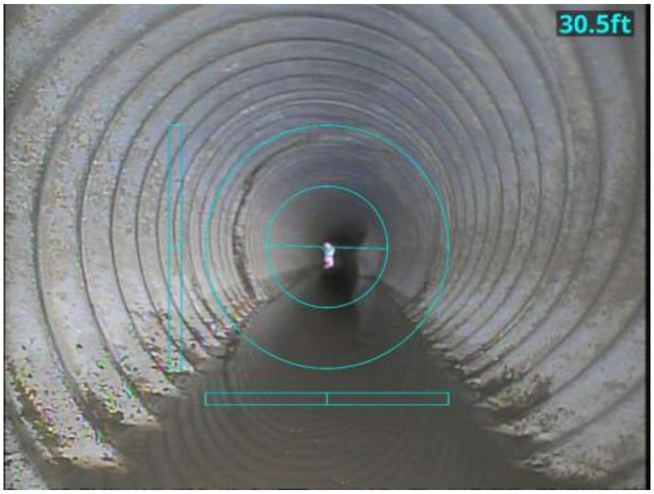
./BASIN-339-EAST/BASIN-339-EAST_2025_08_18-12_04_29_015.jpg

28.6 (ft)

DENTED PIPE

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	12:21
Location	
Remarks	

Observations

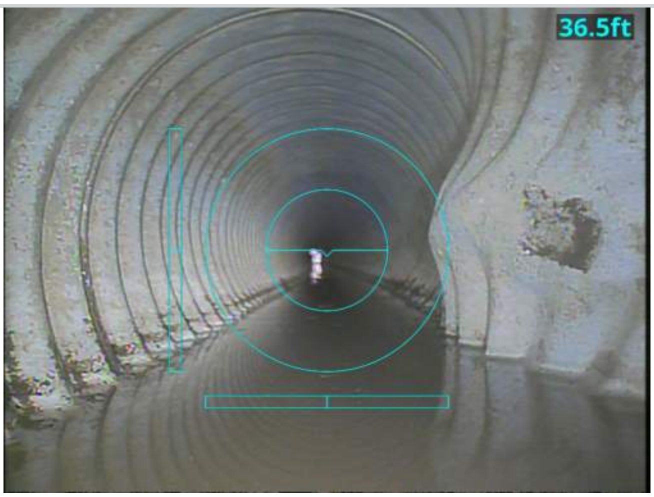


0:04:34

./BASIN-340-WEST/BASIN-340-WEST_2025_08_18-12_27_58_907.jpg

30.5 (ft)

BELLY



0:05:38

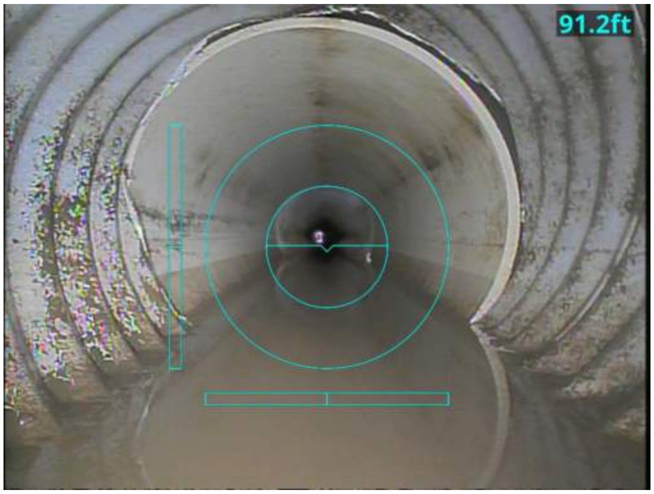
./BASIN-340-WEST/BASIN-340-WEST_2025_08_18-12_29_09_434.jpg

36.5 (ft)

DENTED PIPE

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	12:51
Location	
Remarks	

Observations

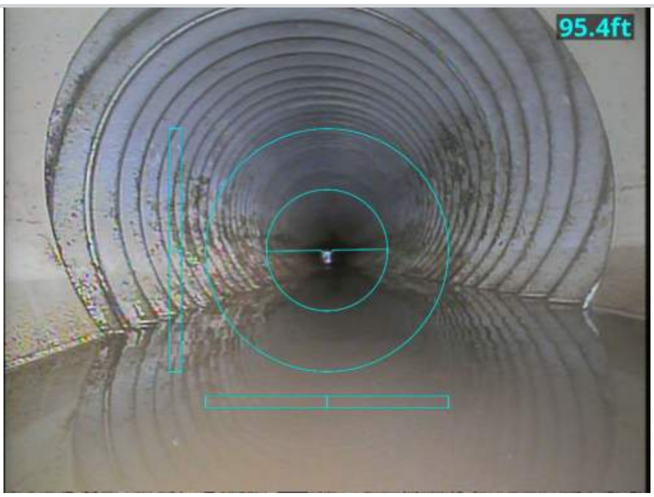


0:07:37

./BASIN-341-EAST/BASIN-341-EAST_2025_08_18-12_59_50_544.jpg

91.2 (ft)

PIPE CHANGE



0:08:09

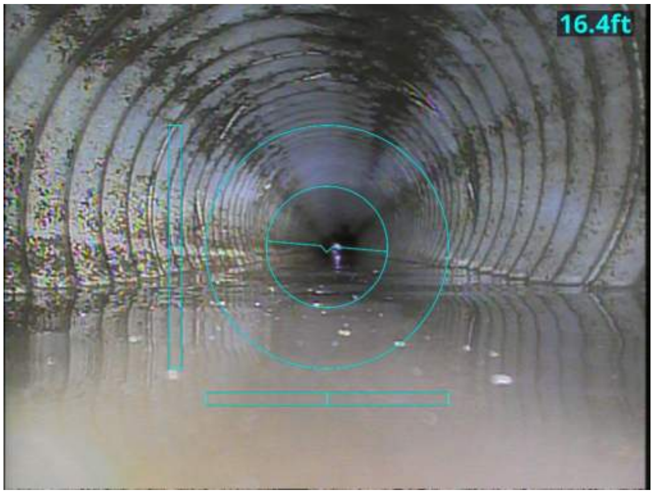
./BASIN-341-EAST/BASIN-341-EAST_2025_08_18-13_00_29_119.jpg

95.4 (ft)

PIPE CHANGE

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	13:51
Location	
Remarks	

Observations



0:01:25

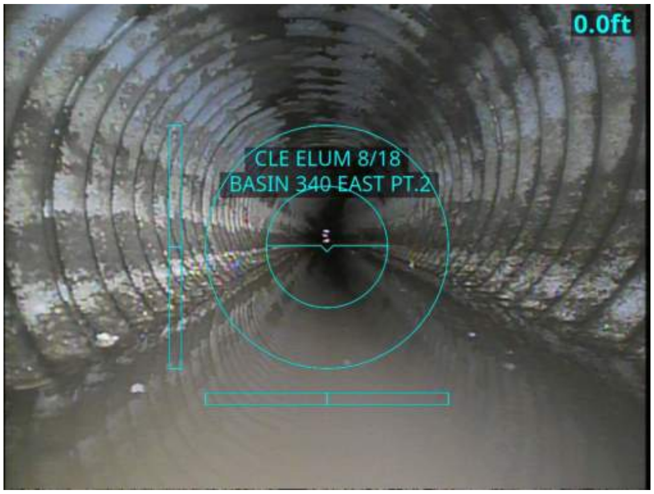
./BASIN-340-EAST/BASIN-340-EAST_2025_08_18-13_53_09_451.jpg

16.4 (ft)

HOLDING WATER

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	14:00
Location	
Remarks	

Observations



0:00:03

./BASIN-340-EAST-PT.2/BASIN-340-EAST-PT.2_2025_08_18-14_00_21_481.jpg

0.0 (ft)

HOLDING WATERR

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	14:37
Location	
Remarks	

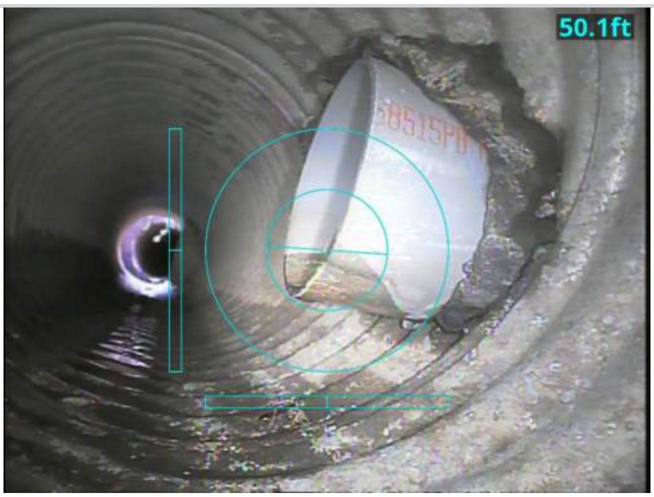
Observations

0:00:00

./BASIN-342-WEST/BASIN-342-WEST_2025_08_18-14_47_22_466.jpg

1.5 (ft)

BREAK



0:05:52

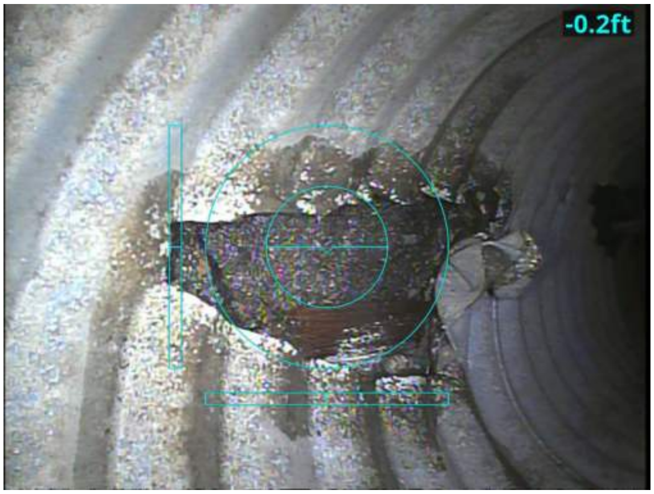
./BASIN-342-WEST/BASIN-342-WEST_2025_08_18-14_43_21_642.jpg

50.1 (ft)

LATERAL RIGHT 2 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	08/18/2025
Time	14:48
Location	
Remarks	

Observations

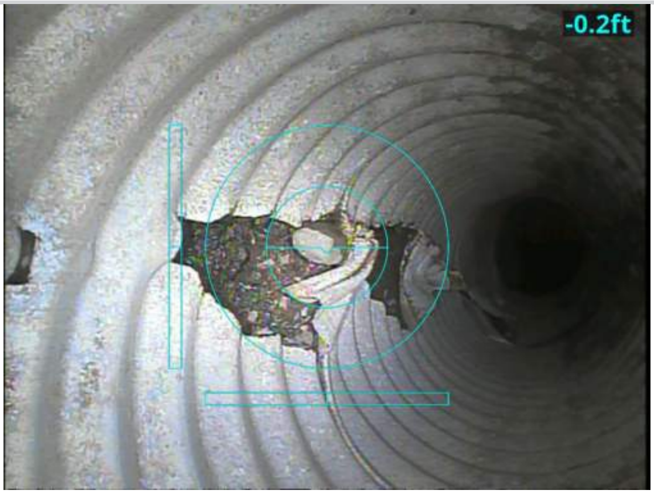


0:00:16

./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_49_20_255.jpg

-0.2 (ft)

BREAK

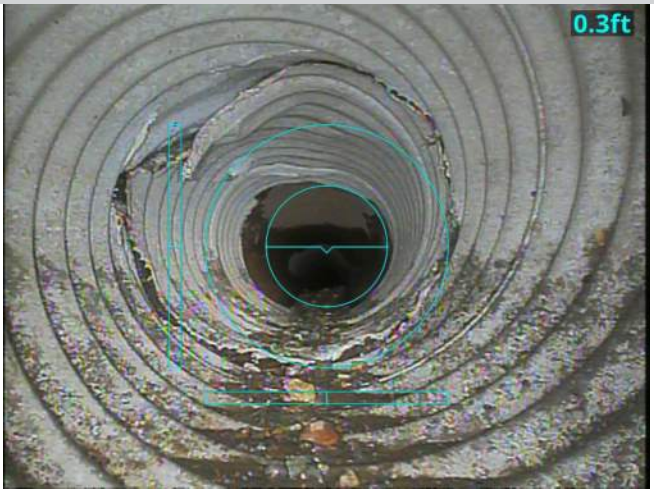


0:00:35

./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_49_42_600.jpg

-0.2 (ft)

BROKEN

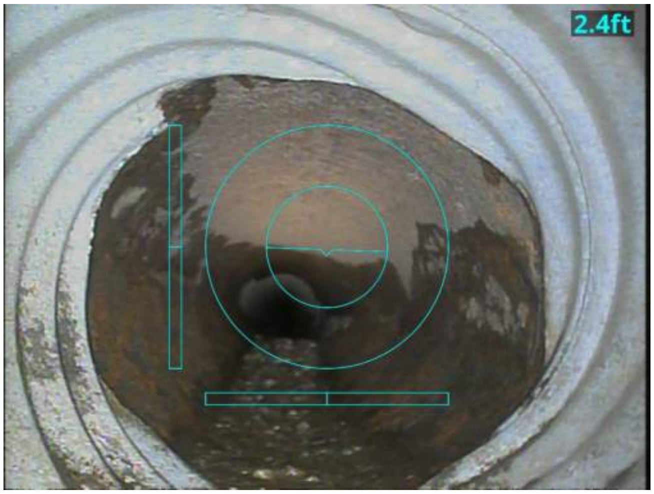


0:00:43

./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_51_25_428.jpg

0.3 (ft)

BREAK

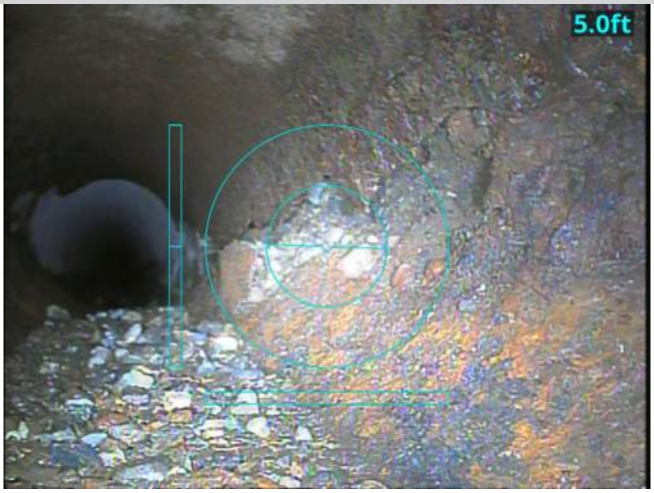


0:00:43

./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_52_52_308.jpg

2.4 (ft)

MATERIAL CHANGE



0:01:46

./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_54_37_956.jpg

5.0 (ft)

RUSTED, BROKE

0:02:32

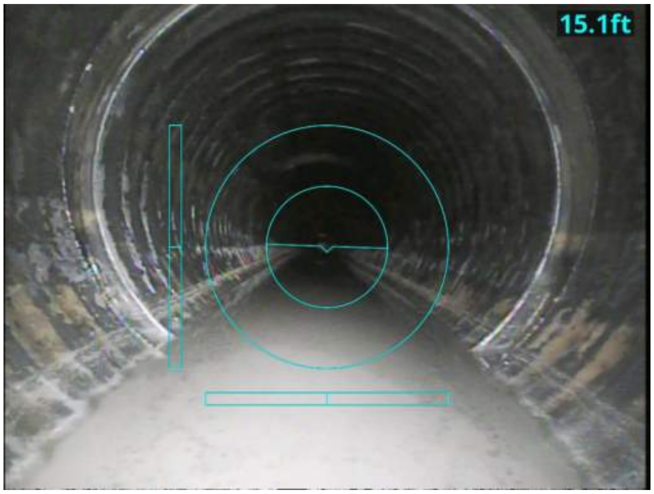
./BASIN-342-EAST/BASIN-342-EAST_2025_08_18-14_55_30_175.jpg

7.9 (ft)

MATERIAL CHANGE

Client	
Surveyed By	
Job Number	
Date	08/19/2025
Time	07:57
Location	
Remarks	

Observations



0:01:28

./BASIN-348-NORTH/BASIN-348-NORTH_2025_08_19-07_59_21_697.jpg

15.1 (ft)

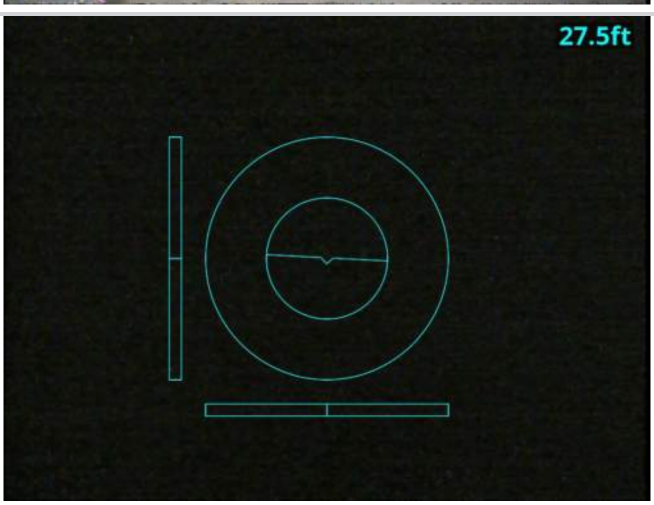
BELLY

0:01:38

./BASIN-348-NORTH/BASIN-348-NORTH_2025_08_19-07_59_35_453.jpg

16.1 (ft)

GAP IN JOINT



0:02:59

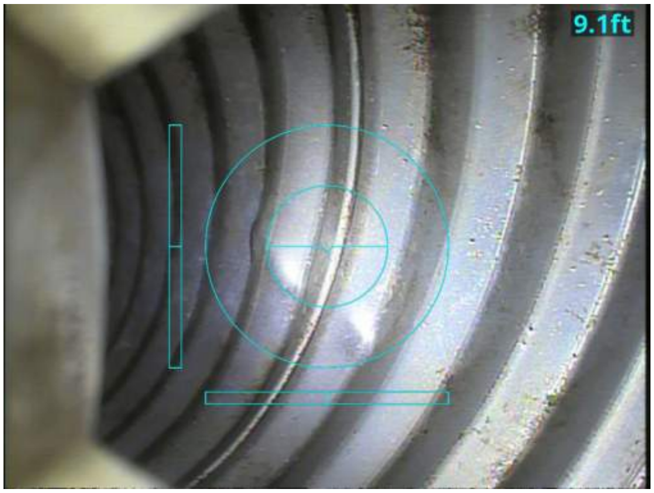
./BASIN-348-NORTH/BASIN-348-NORTH_2025_08_19-08_01_01_529.jpg

27.5 (ft)

CAMERA UNDERWATERR

Client	
Surveyed By	
Job Number	
Date	08/19/2025
Time	09:40
Location	
Remarks	

Observations

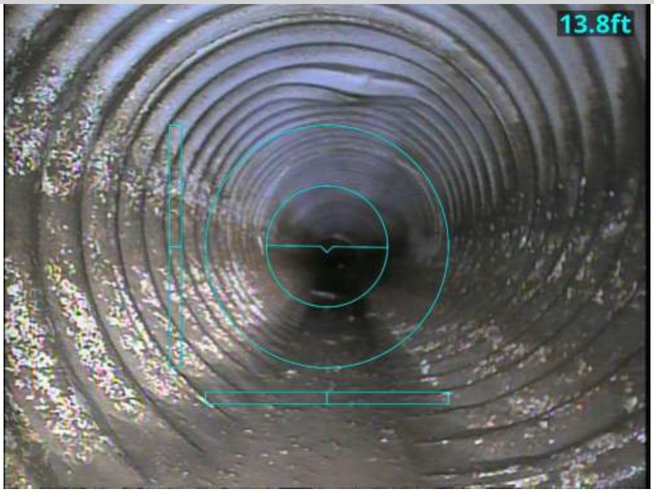


0:01:16

./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_42_15_525.jpg

9.1 (ft)

DENTED PIPE

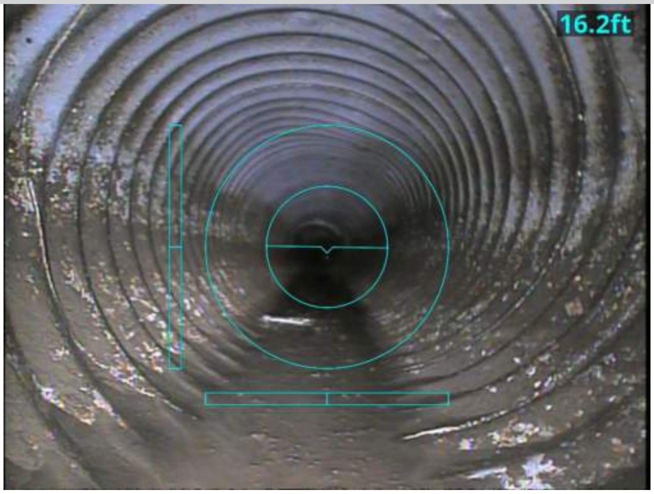


0:01:49

./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_42_53_412.jpg

13.8 (ft)

DENTED PIPE

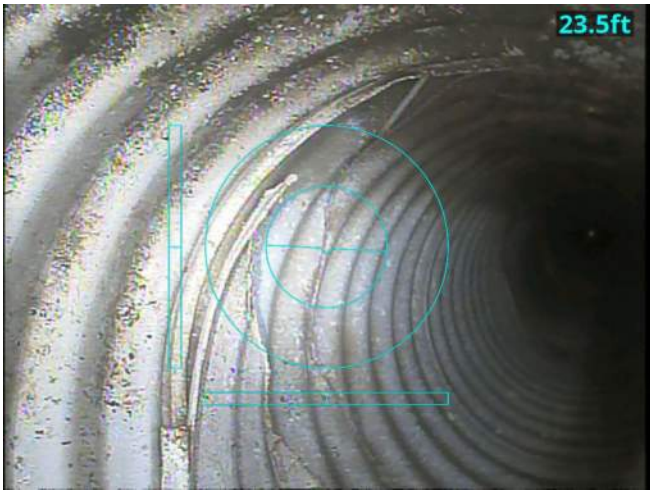


0:02:26

./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_43_35_920.jpg

16.2 (ft)

DENTED PIPE

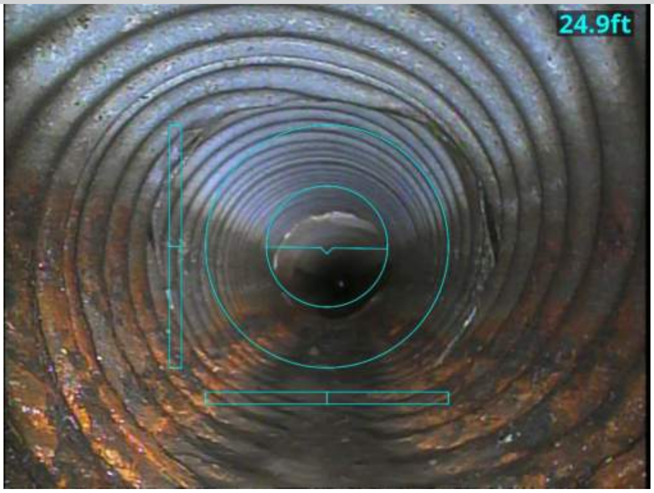


0:03:29

./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_44_43_178.jpg

23.5 (ft)

BREAK

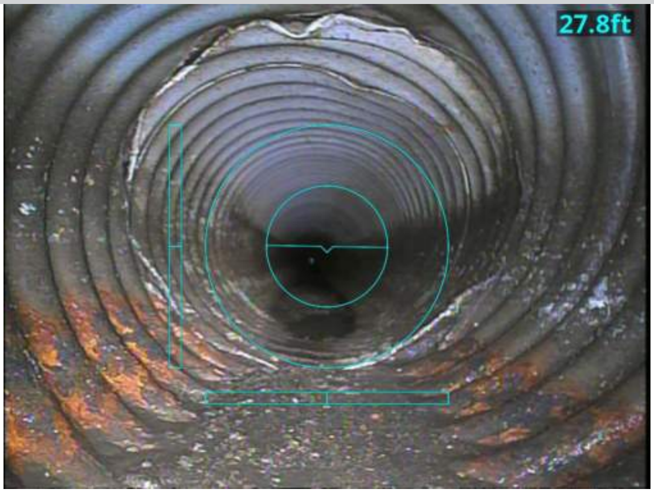


0:04:17

./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_45_35_362.jpg

24.9 (ft)

RUST, DENTED PIPE



0:04:56

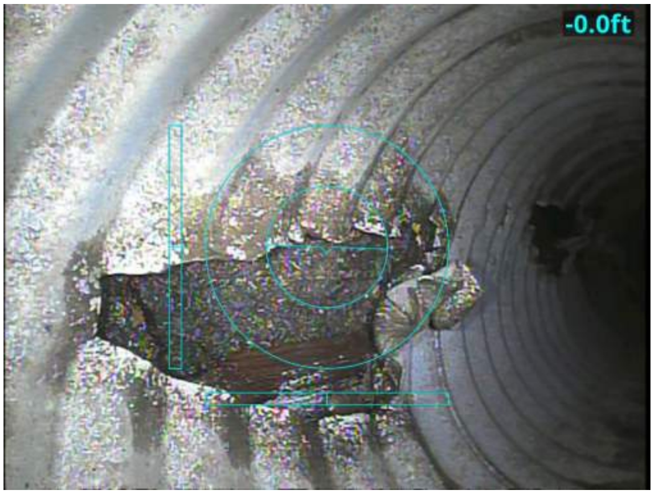
./BASIN-636-SOUTH/BASIN-636-SOUTH_2025_08_19-09_46_21_023.jpg

27.8 (ft)

BAD JOINT

Client	
Surveyed By	
Job Number	
Date	08/19/2025
Time	11:14
Location	
Remarks	

Observations

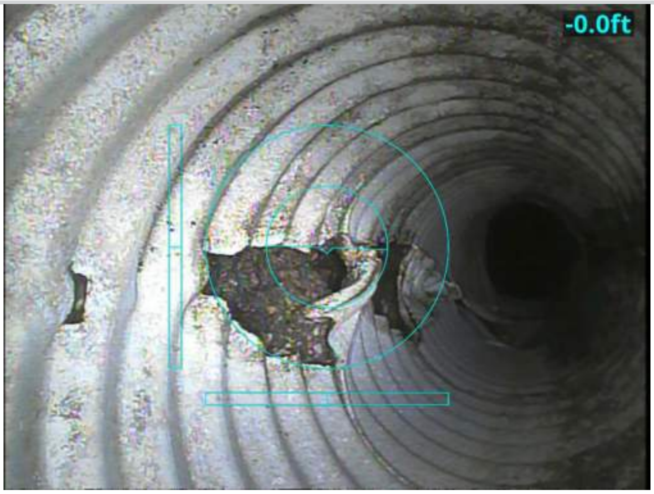


0:00:18

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_15_43_254.jpg

0.0 (ft)

BREAK

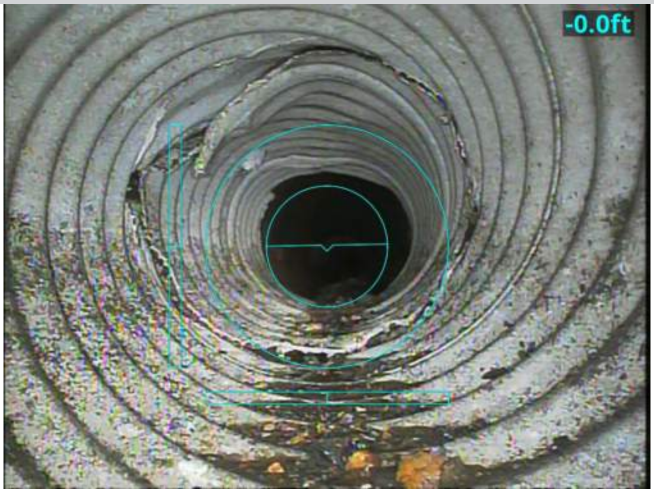


0:00:45

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_16_18_022.jpg

0.0 (ft)

BROKEN

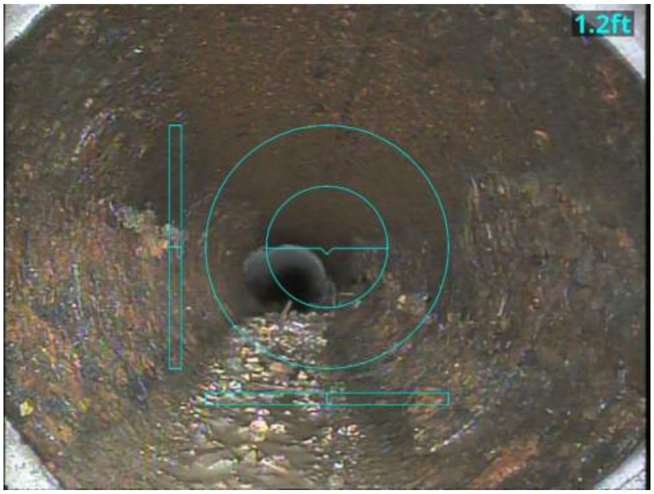


0:01:27

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_18_58_776.jpg

0.0 (ft)

BROKEN



0:02:08

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_19_42_966.jpg

1.2 (ft)

MATERIAL CHANGE, RUSTY

0:02:20

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_20_27_274.jpg

2.0 (ft)

BROKEN

0:03:10

./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_21_26_487.jpg

6.5 (ft)

MATERIAL CHANGE

0:14:49

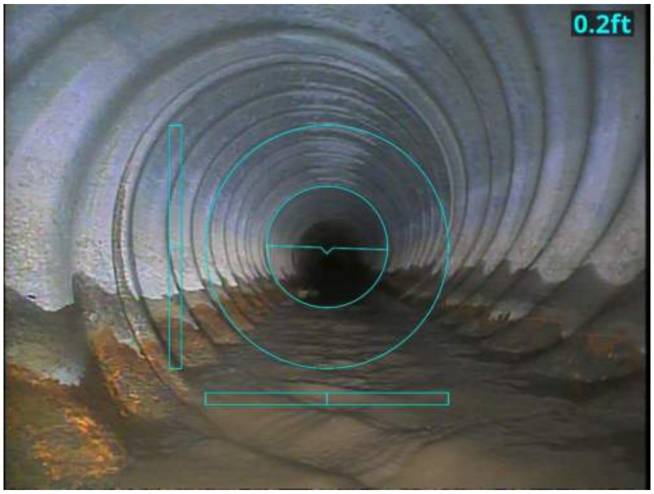
./BASIN-342-EAST-PT.2/BASIN-342-EAST-PT.2_2025_08_19-11_33_11_427.jpg

118.8 (ft)

LATERAL LEFT 10 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	08/19/2025
Time	12:03
Location	
Remarks	

Observations



0:00:08

./BASIN-343-WEST/BASIN-343-WEST_2025_08_19-12_10_41_563.jpg

0.2 (ft)

RUST

0:02:40

./BASIN-343-WEST/BASIN-343-WEST_2025_08_19-12_13_17_057.jpg

10.2 (ft)

STUCK

Client	
Surveyed By	
Job Number	
Date	08/19/2025
Time	14:19
Location	
Remarks	

Observations

0:01:22

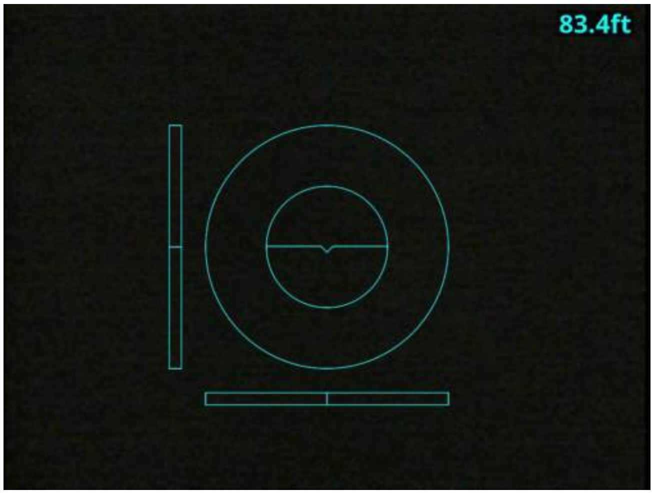
./BASIN-344-NORTH/BASIN-344-NORTH_2025_08_19-14_21_04_854.jpg

7.8 (ft)

STUCK

Client	
Surveyed By	
Job Number	
Date	08/20/2025
Time	09:22
Location	
Remarks	

Observations



0:06:42

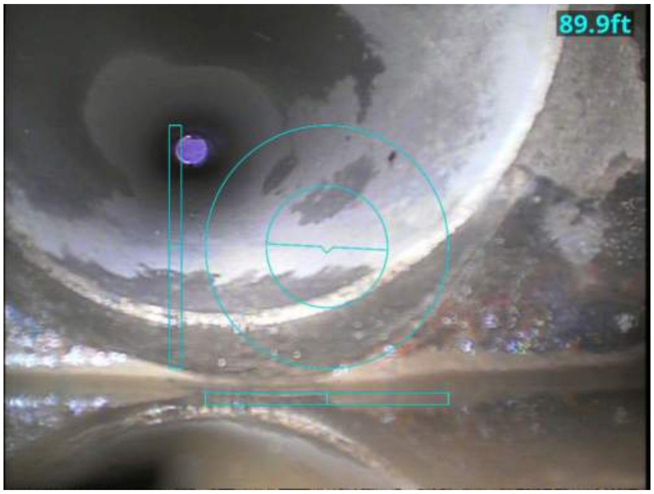
./BASIN-347-NORTH/BASIN-347-NORTH_2025_08_20-09_29_07_576.jpg

83.4 (ft)

CAMERA UNDERWATER

Client	
Surveyed By	
Job Number	
Date	08/20/2025
Time	09:49
Location	
Remarks	

Observations



0:08:03

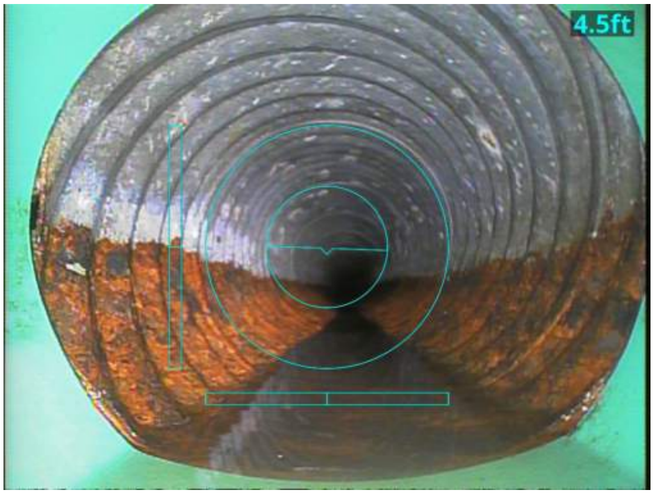
./BASIN-347-NORTH-PT.2/BASIN-347-NORTH-PT.2_2025_08_20-09_57_27_335.jpg

89.9 (ft)

LATERAL RIGHT 2 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	08/20/2025
Time	11:58
Location	
Remarks	

Observations

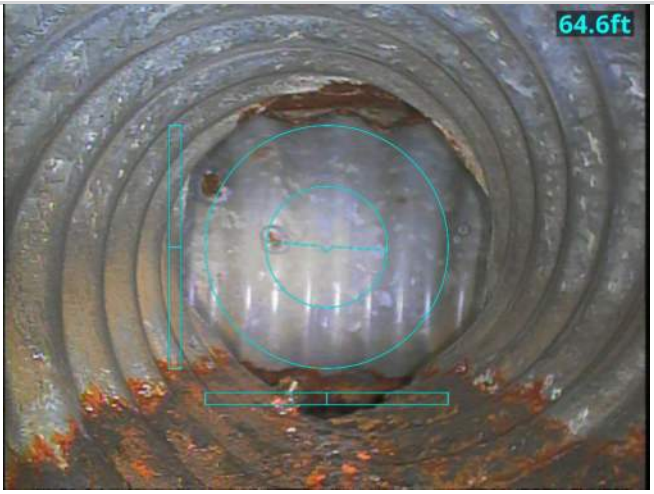


0:00:23

./BASIN-518-NORTHEAST/BASIN-518-NORTHEAST_2025_08_20-11_59_03_720.jpg

4.5 (ft)

MATERIAL CHANGE



0:04:13

./BASIN-518-NORTHEAST/BASIN-518-NORTHEAST_2025_08_20-12_03_00_153.jpg

64.6 (ft)

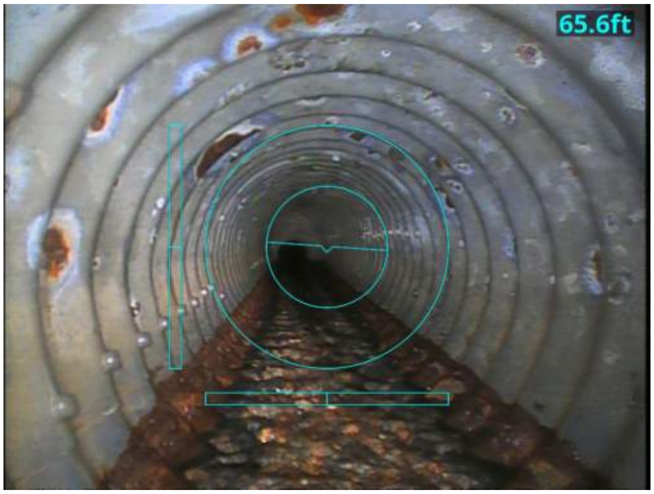
T IN PIPE

0:04:55

./BASIN-518-NORTHEAST/BASIN-518-NORTHEAST_2025_08_20-12_03_47_538.jpg

65.6 (ft)

LEFT



0:05:25

./BASIN-518-NORTHEAST/BASIN-518-NORTHEAST_2025_08_20-12_04_27_931.jpg

65.6 (ft)

RIGHT

Client	
Surveyed By	
Job Number	
Date	08/20/2025
Time	12:38
Location	
Remarks	

Observations

0:00:20

./BASIN-152-WEST/BASIN-152-WEST_2025_08_20-12_39_16_074.jpg

0.0 (ft)

PIPE NOT HOMED

0:00:36

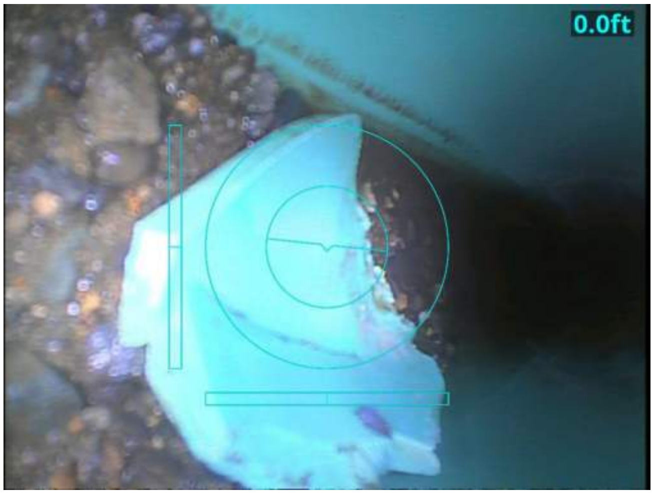
./BASIN-152-WEST/BASIN-152-WEST_2025_08_20-12_39_38_049.jpg

0.3 (ft)

LATERAL RIGHT

Client	
Surveyed By	
Job Number	
Date	08/20/2025
Time	14:50
Location	
Remarks	

Observations



0:00:05

./BASIN-304-NORTHEAST/BASIN-304-NORTHEAST_2025_08_20-14_51_24_066.jpg

0.0 (ft)

BROKEN PIPE

0:01:58

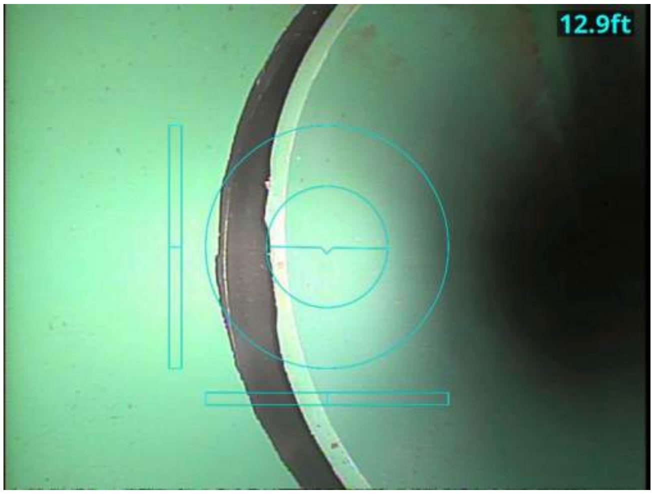
./BASIN-304-NORTHEAST/BASIN-304-NORTHEAST_2025_08_20-14_53_23_815.jpg

1.5 (ft)

BREAK

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	07:10
Location	
Remarks	

Observations

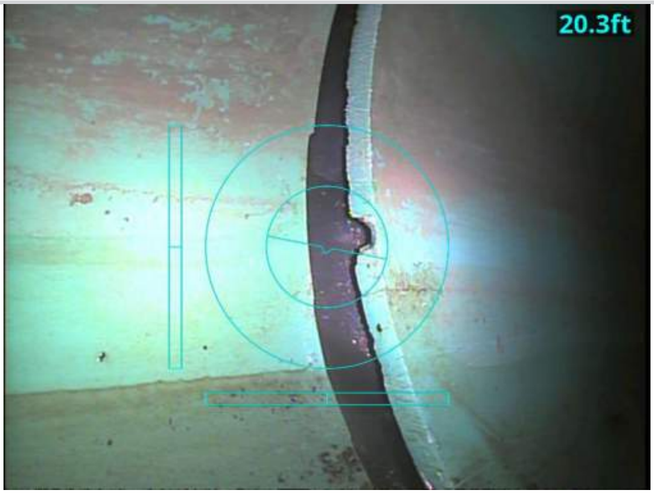


0:01:13

./BASIN-299-WEST/BASIN-299-WEST_2025_08_21-07_13_48_136.jpg

12.9 (ft)

GAP IN JOINT, GASKET SHOWN

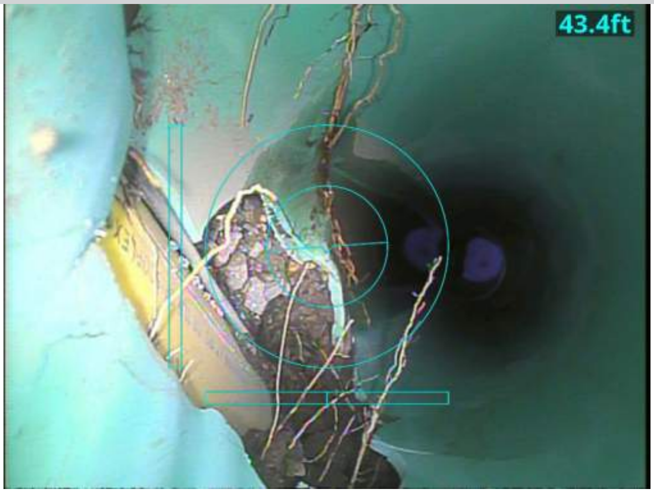


0:02:08

./BASIN-299-WEST/BASIN-299-WEST_2025_08_21-07_14_52_538.jpg

20.3 (ft)

GAP IN JOINT, GASKET SHOWN



0:04:10

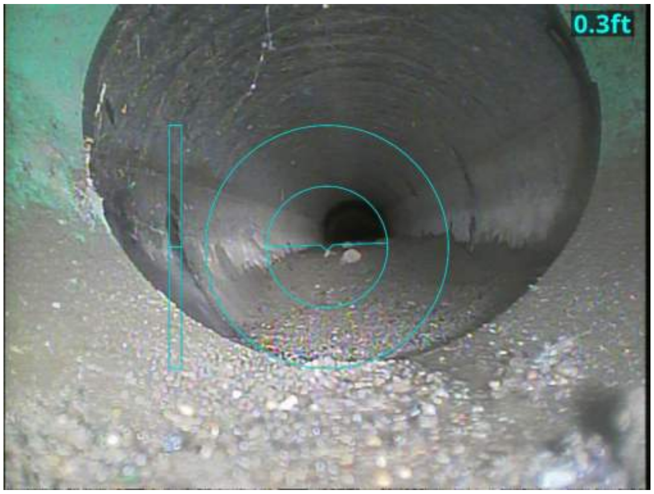
./BASIN-299-WEST/BASIN-299-WEST_2025_08_21-07_17_01_900.jpg

43.4 (ft)

BREAK; ROOTS, 4in. LINE

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	08:15
Location	
Remarks	

Observations



0:00:18

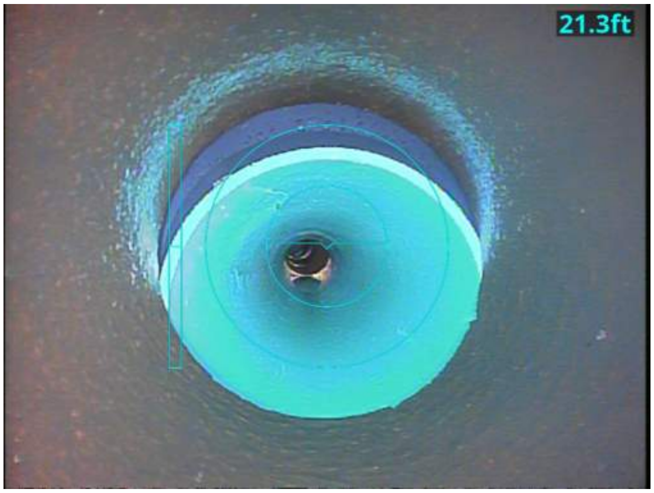
./BASIN-300-SOUTH/BASIN-300-SOUTH_2025_08_21-08_16_09_952.jpg

0.3 (ft)

MATERIAL + SIZE CHANGE

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	09:23
Location	
Remarks	

Observations

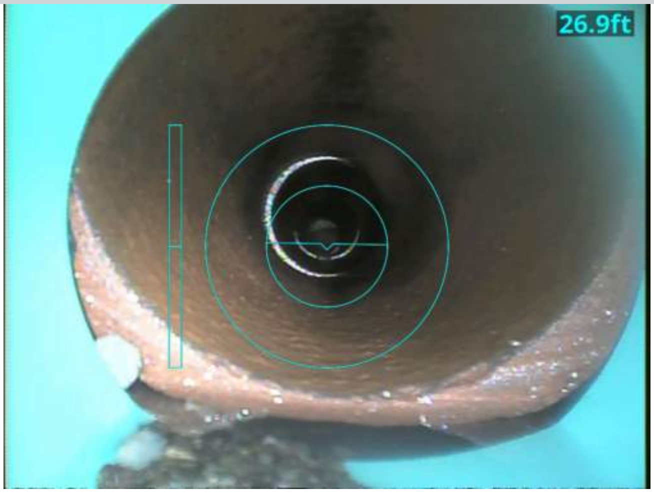


0:01:23

./BASIN-517-SOUTH-PT.2/BASIN-517-SOUTH-PT.2_2025_08_21-09_30_08_681.jpg

21.3 (ft)

GAP IN JOINT, MATERIAL CHANGE

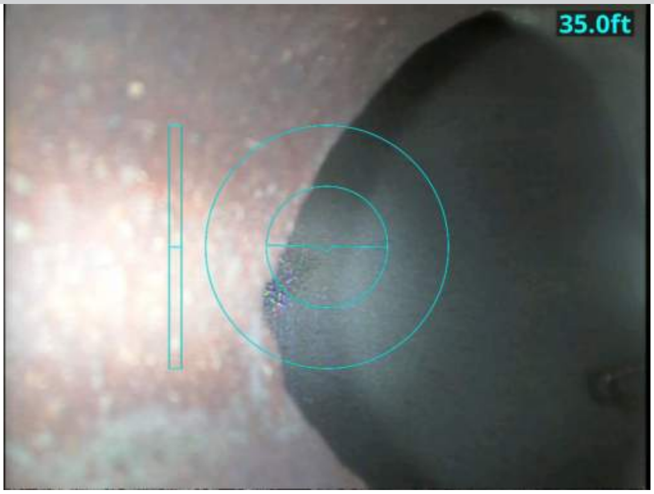


0:02:24

./BASIN-517-SOUTH-PT.2/BASIN-517-SOUTH-PT.2_2025_08_21-09_31_19_418.jpg

26.9 (ft)

MATERIAL CHANGE, GAP



0:03:41

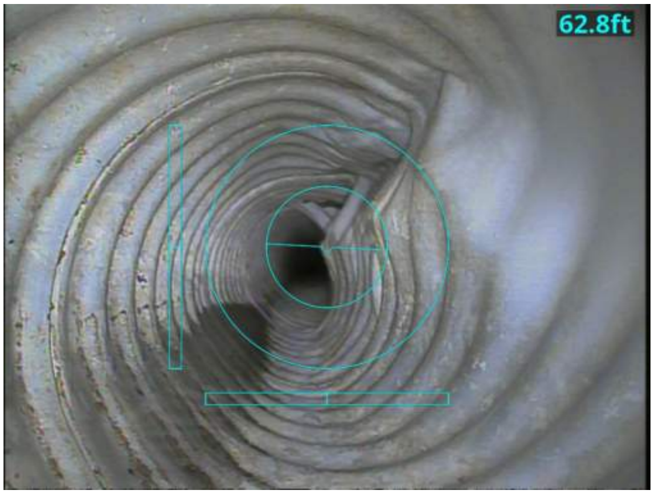
./BASIN-517-SOUTH-PT.2/BASIN-517-SOUTH-PT.2_2025_08_21-09_32_43_439.jpg

35.0 (ft)

TIE IN

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	10:53
Location	
Remarks	

Observations



0:04:44

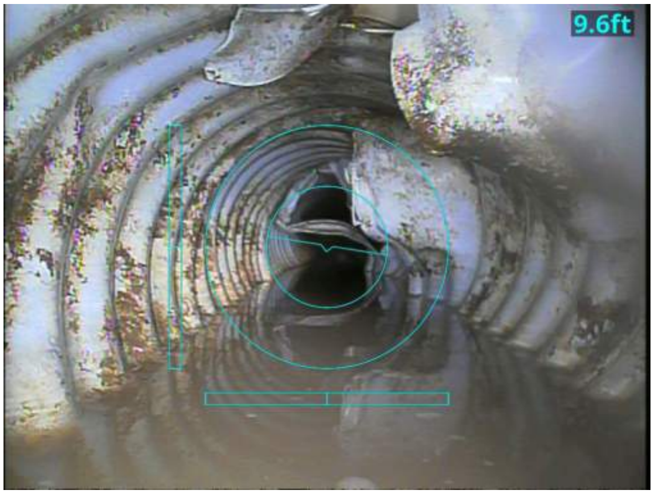
./BASIN-499-WEST/BASIN-499-WEST_2025_08_21-10_58_07_722.jpg

62.8 (ft)

DENT IN PIPE

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	11:09
Location	
Remarks	

Observations



0:01:00

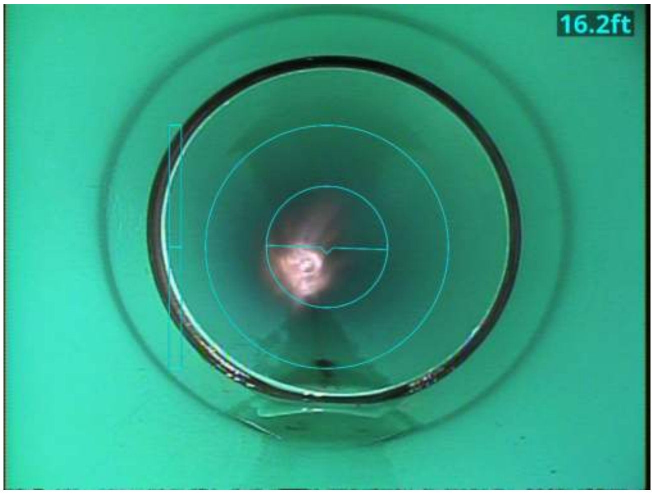
./BASIN-499-SOUTH/BASIN-499-SOUTH_2025_08_21-11_10_31_943.jpg

9.6 (ft)

DENTED, BROKEN PIPE

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	11:31
Location	
Remarks	

Observations



0:01:20

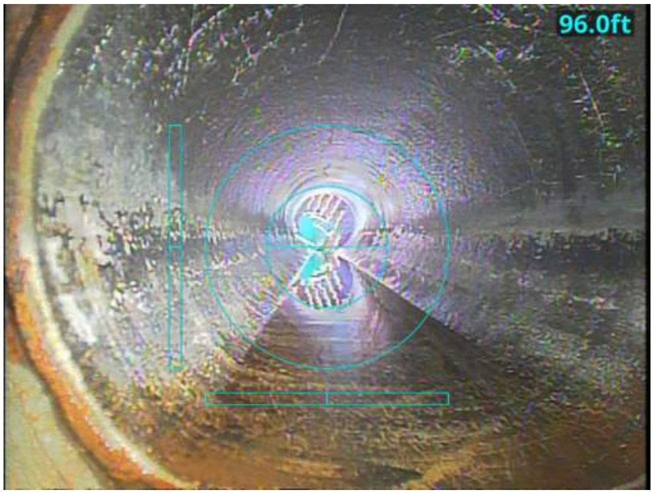
./BASIN-275-NORTH/BASIN-275-NORTH_2025_08_21-11_32_40_815.jpg

16.2 (ft)

PIPE NOT HOMED, GASKET SHOWN

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	12:43
Location	
Remarks	

Observations



0:05:10

./BASIN-644-NORTH/BASIN-644-NORTH_2025_08_21-12_49_05_425.jpg

96.0 (ft)

PIPE TURNS

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	14:46
Location	
Remarks	

Observations

0:01:39

./BASIN-431-EAST-PT.2/BASIN-431-EAST-PT.2_2025_08_21-14_47_57_145.jpg

19.9 (ft)

TIE IN

Client	
Surveyed By	
Job Number	
Date	08/21/2025
Time	14:52
Location	
Remarks	

Observations

0:00:57

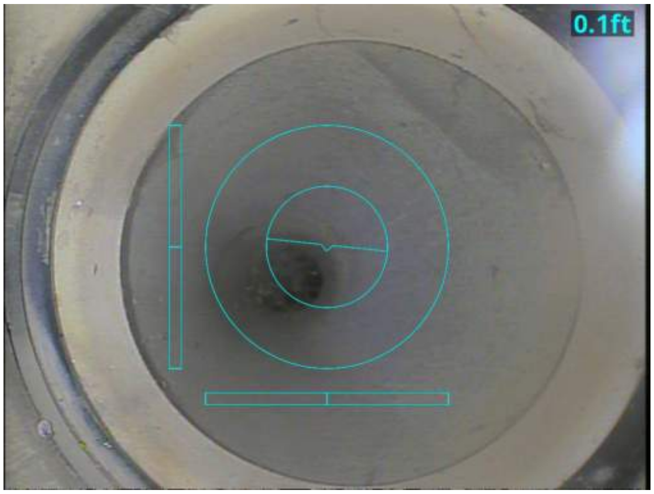
./BASIN-431-WEST/BASIN-431-WEST_2025_08_21-14_53_29_071.jpg

4.5 (ft)

BLOCKED OFF

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	07:32
Location	
Remarks	

Observations



0:00:26

./BASIN-167-SOUTH/BASIN-167-SOUTH_2025_08_22-07_32_58_027.jpg

0.1 (ft)

MATERIAL + SIZE CHANGE

0:02:31

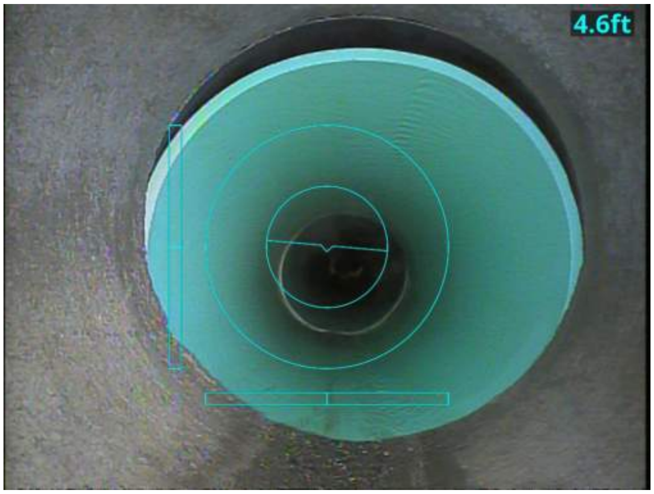
./BASIN-167-SOUTH/BASIN-167-SOUTH_2025_08_22-07_35_14_255.jpg

13.4 (ft)

BLOCKED OFF

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	08:00
Location	
Remarks	

Observations

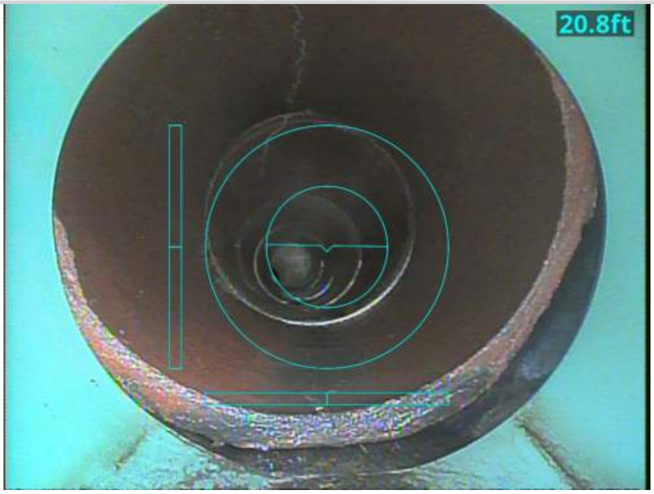


0:00:16

./BASIN-308-NORTH/BASIN-308-NORTH_2025_08_22-08_00_38_545.jpg

4.6 (ft)

MATERIAL CHANGE

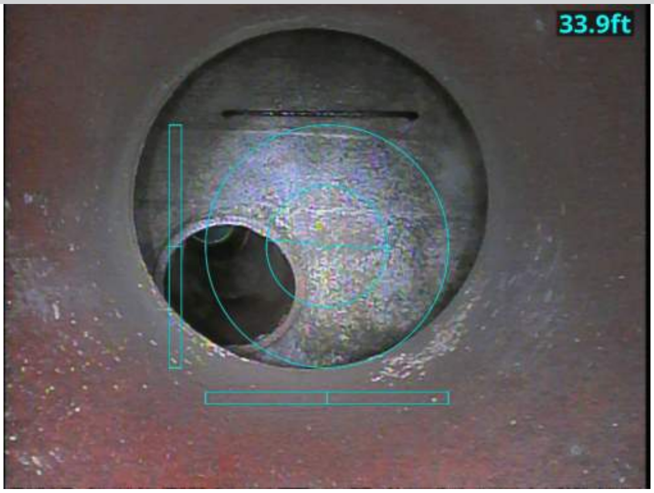


0:00:55

./BASIN-308-NORTH/BASIN-308-NORTH_2025_08_22-08_01_23_520.jpg

20.8 (ft)

MATERIAL CHANGE



0:02:38

./BASIN-308-NORTH/BASIN-308-NORTH_2025_08_22-08_03_11_791.jpg

33.9 (ft)

MANHOLE

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	08:15
Location	
Remarks	

Observations

0:00:30

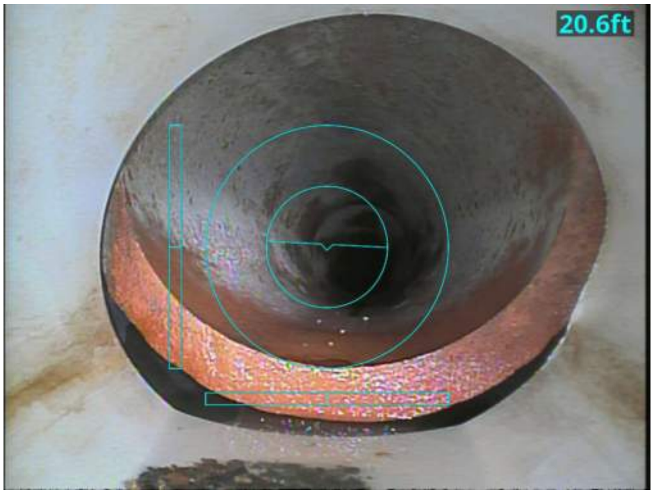
./BASIN-308-WEST/BASIN-308-WEST_2025_08_22-08_16_08_872.jpg

11.2 (ft)

CAVED IN

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	09:13
Location	
Remarks	

Observations



0:01:18

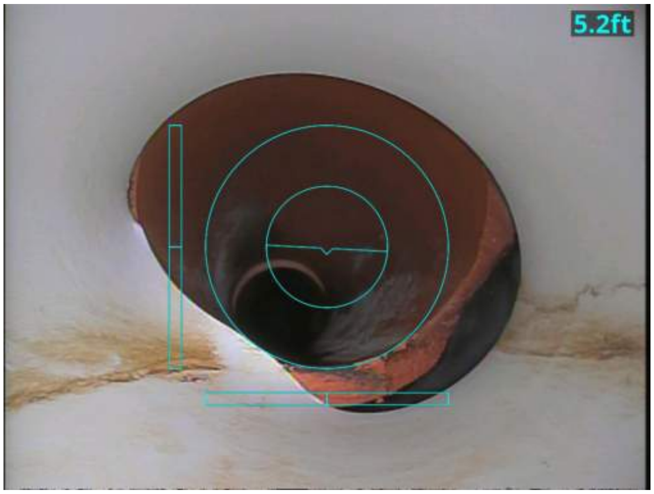
./BASIN-148-SOUTHEAST/BASIN-148-SOUTHEAST_2025_08_22-09_14_42_584.jpg

20.6 (ft)

MATERIAL CHANGE, GAP

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	09:25
Location	
Remarks	

Observations



0:00:26

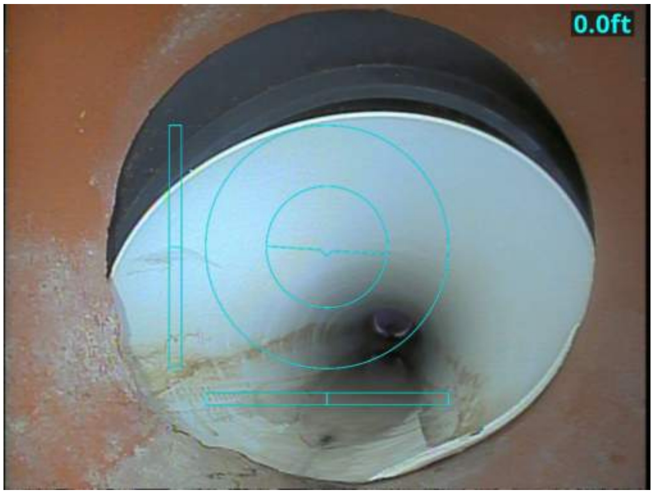
./BASIN-149-SOUTHWEST/BASIN-149-SOUTHWEST_2025_08_22-09_25_47_003.jpg

5.2 (ft)

MATERIAL CHANGE, DEFORMED PIPE

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	09:34
Location	
Remarks	

Observations



0:00:18

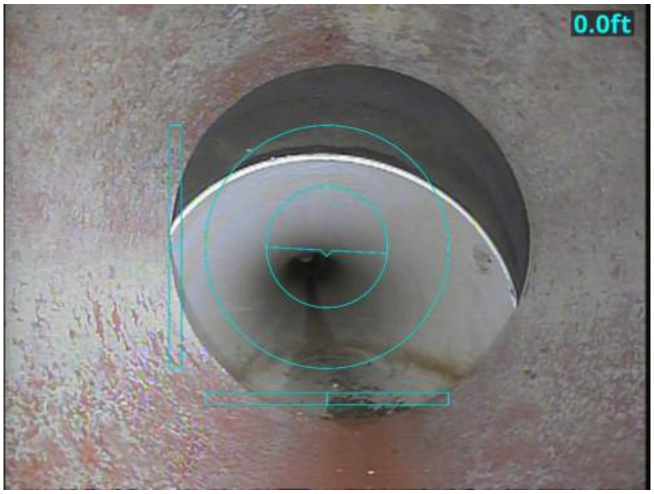
./BASIN--MH--290-NORTHEAST/BASIN--MH--290-NORTHEAST_2025_08_22-09_35_13_789.jpg

0.0 (ft)

MATERIAL CHANGE

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	09:39
Location	
Remarks	

Observations



0:00:19

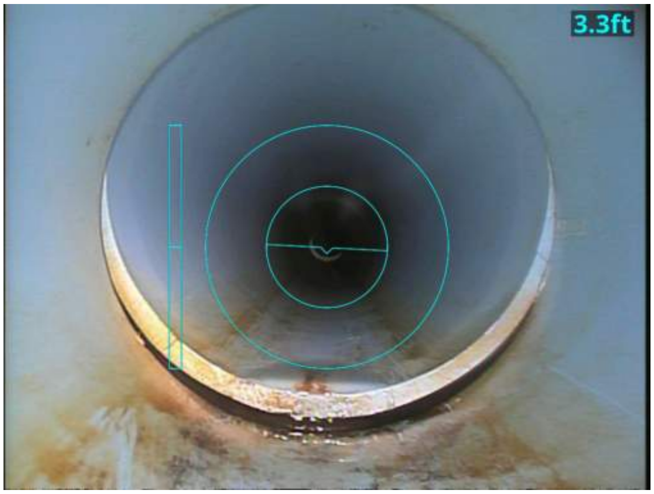
./BASIN--MH--290-NORTHEAST./BASIN--MH--290-NORTHEAST._2025_08_22-09_40_02_979.jpg

0.0 (ft)

MATERIAL CHANGE

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	10:47
Location	
Remarks	

Observations



0:00:25

./BASIN-452-NORTH/BASIN-452-NORTH_2025_08_22-10_47_58_272.jpg

3.3 (ft)

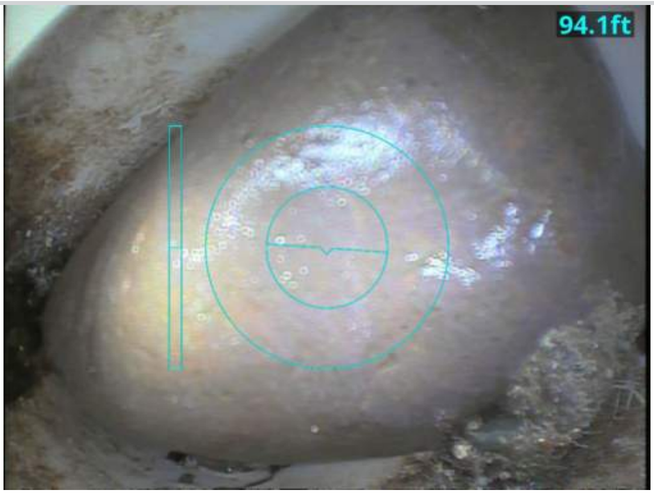
LIP, GASKET SHOWN

0:04:54

./BASIN-452-NORTH/BASIN-452-NORTH_2025_08_22-10_52_33_766.jpg

62.8 (ft)

LATERAL OVERHEAD



0:07:11

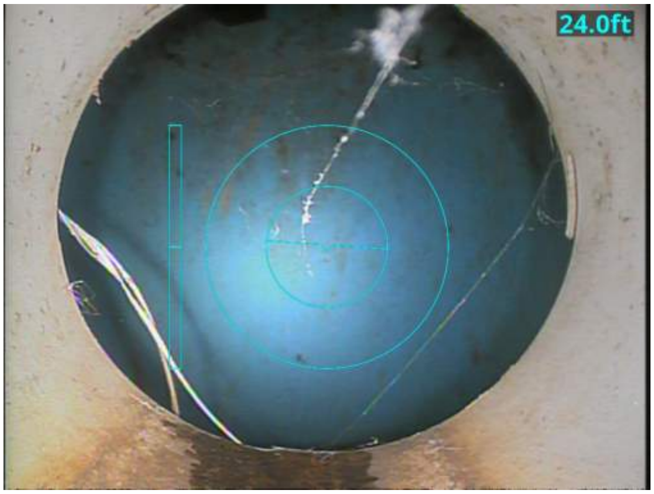
./BASIN-452-NORTH/BASIN-452-NORTH_2025_08_22-10_54_56_669.jpg

94.1 (ft)

ROCK

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	11:00
Location	
Remarks	

Observations



0:02:45

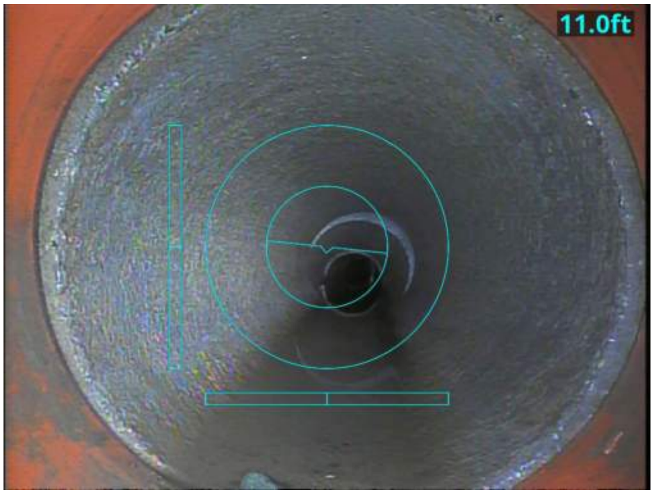
./BASIN-452-SOUTH/BASIN-452-SOUTH_2025_08_22-11_03_48_837.jpg

24.0 (ft)

TIE IN

Client	
Surveyed By	
Job Number	
Date	08/22/2025
Time	11:50
Location	
Remarks	

Observations

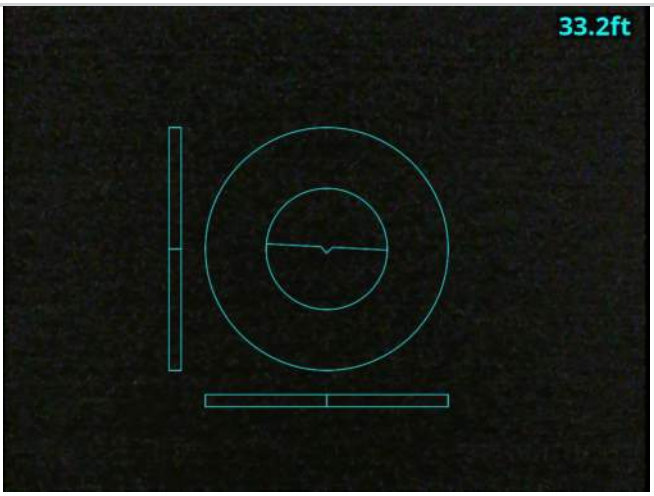


0:00:49

./BASIN-147-WEST/BASIN-147-WEST_2025_08_22-11_51_49_071.jpg

11.0 (ft)

MATERIAL CHANGE



0:02:17

./BASIN-147-WEST/BASIN-147-WEST_2025_08_22-11_53_22_133.jpg

33.2 (ft)

CAMERA UNDERWATER

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	10:23
Location	
Remarks	

Observations

0:01:18

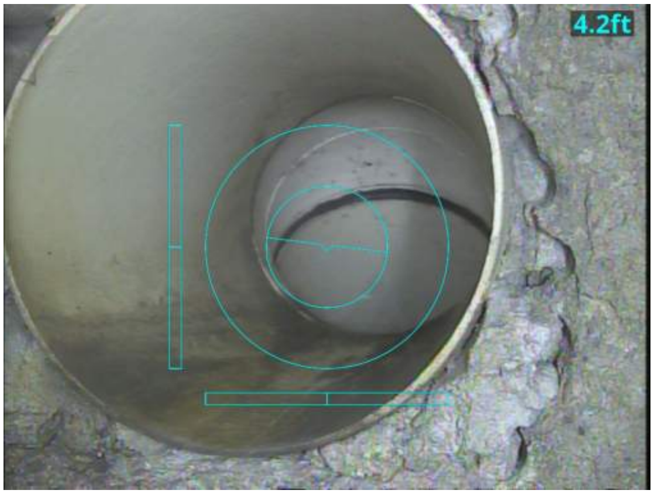
./BASIN-172-SOUTH/BASIN-172-SOUTH_2025_08_25-10_25_15_560.jpg

1.3 (ft)

LIT END

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	12:22
Location	
Remarks	

Observations



0:00:24

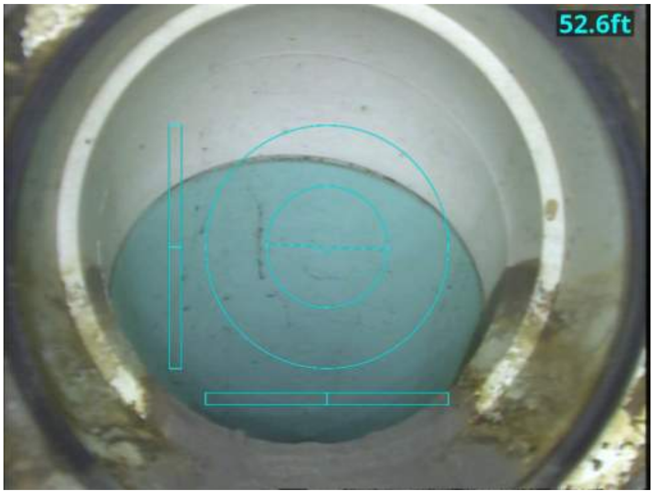
./BASIN--MH--652-EAST/BASIN--MH--652-EAST_2025_08_25-12_22_45_393.jpg

4.2 (ft)

LATERAL RIGHT 1 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	12:33
Location	
Remarks	

Observations

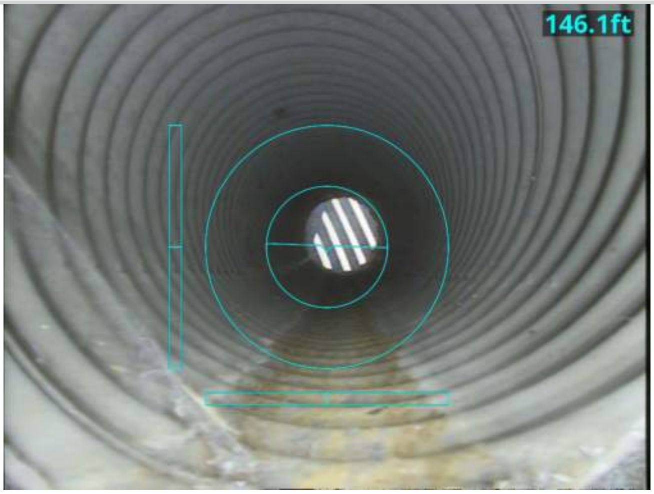


0:01:50

./BASIN--MH--652-WEST/BASIN--MH--652-WEST_2025_08_25-12_35_54_818.jpg

52.6 (ft)

LATERAL LEFT 1 O'CLOCK



0:04:32

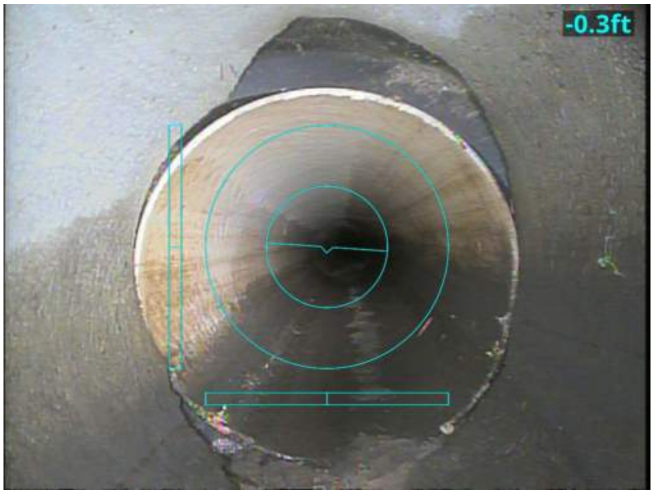
./BASIN--MH--652-WEST/BASIN--MH--652-WEST_2025_08_25-12_38_50_926.jpg

146.1 (ft)

LATERAL RIGHT 2 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	14:08
Location	
Remarks	

Observations

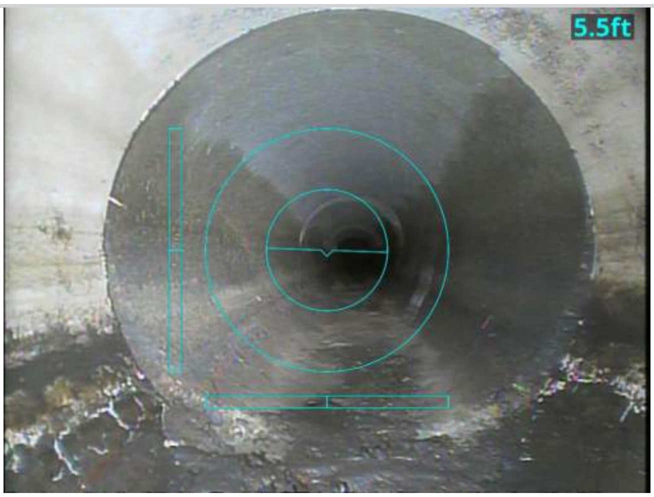


0:00:07

./BASIN--MH--655-NORTH/BASIN--MH--655-NORTH_2025_08_25-14_08_59_858.jpg

-0.3 (ft)

MATERIAL CHANGE, GASKET SHOWN

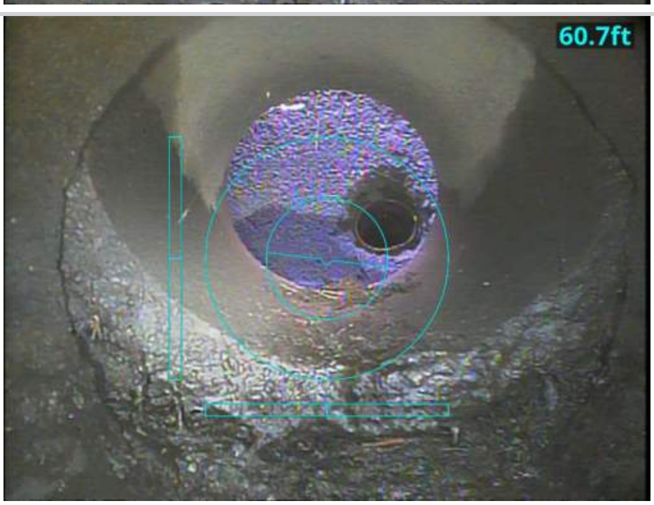


0:01:02

./BASIN--MH--655-NORTH/BASIN--MH--655-NORTH_2025_08_25-14_10_05_797.jpg

5.5 (ft)

MATERIAL CHANGE



0:03:08

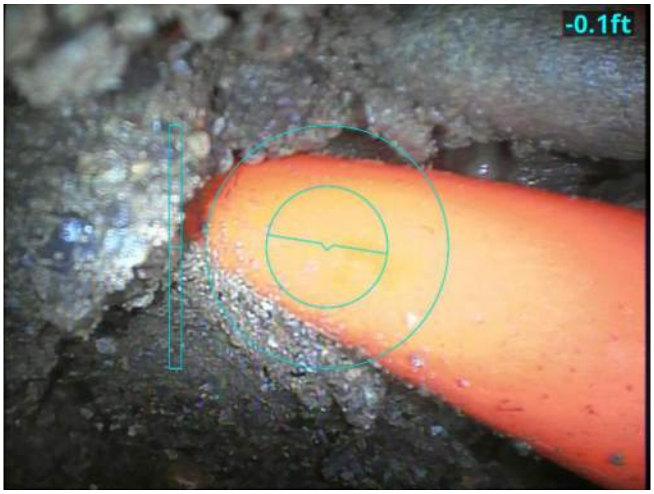
./BASIN--MH--655-NORTH/BASIN--MH--655-NORTH_2025_08_25-14_12_16_906.jpg

60.7 (ft)

LARGE GAP IN JOINT

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	14:41
Location	
Remarks	

Observations



0:00:44

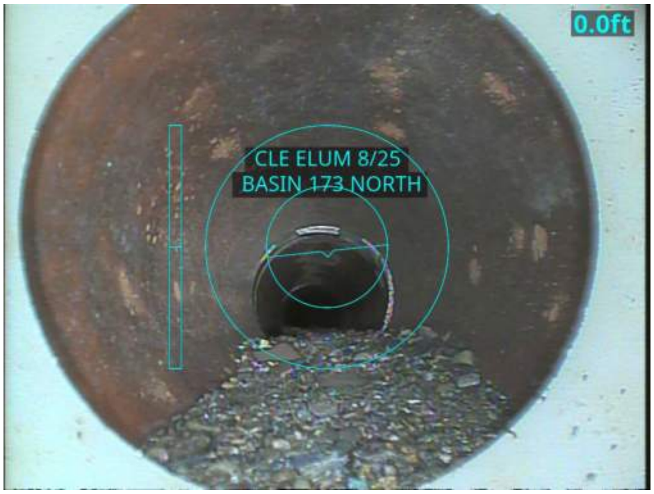
./BASIN-173-SOUTH/BASIN-173-SOUTH_2025_08_25-14_42_50_423.jpg

-0.1 (ft)

ELECTRICAL LINE

Client	
Surveyed By	
Job Number	
Date	08/25/2025
Time	14:47
Location	
Remarks	

Observations



0:00:02

./BASIN-173-NORTH/BASIN-173-NORTH_2025_08_25-14_47_31_377.jpg

0.0 (ft)

MATERIAL CHANGE

CUES

Inspection Report

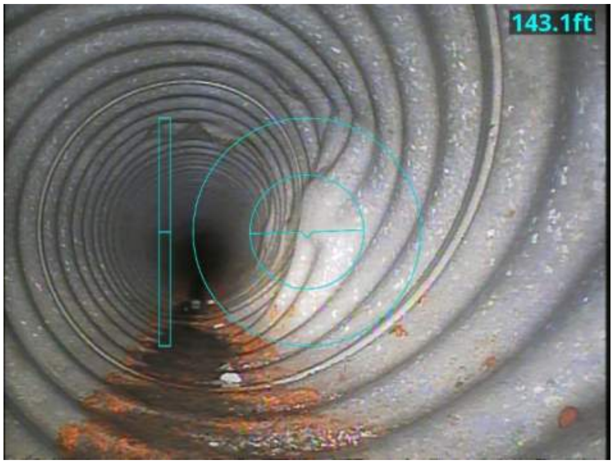
TTC Construction
12871 Summitview Rd, Yakima
98908,
5094573969

Client	HLA Civil Engineering and Land Surveying
Surveyed By	
Job Number	HLA Project No. 23104
Date	09/09/2025
Time	18:28
Location	Cle Elum, Washington
Remarks	

Observations

./3RD---COLUMBIA-NORTH-PT.2_2025_09_04-11_24_58_741.jpg
57.0 (ft)
RUSTED PIPE

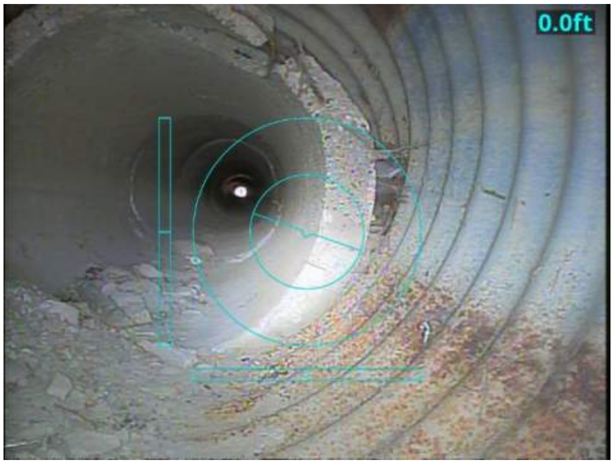
./3RD---COLUMBIA-NORTH-PT.2_2025_09_04-11_26_23_387.jpg
86.3 (ft)
DENTED PIPE



./3RD---COLUMBIA-NORTH-PT.2_2025_09_04-11_29_05_093.jpg
143.1 (ft)
DENTED PIPE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



./674-NORTH_2025_09_02-08_49_33_266.jpg
0.0 (ft)
MATERIAL CHANGE

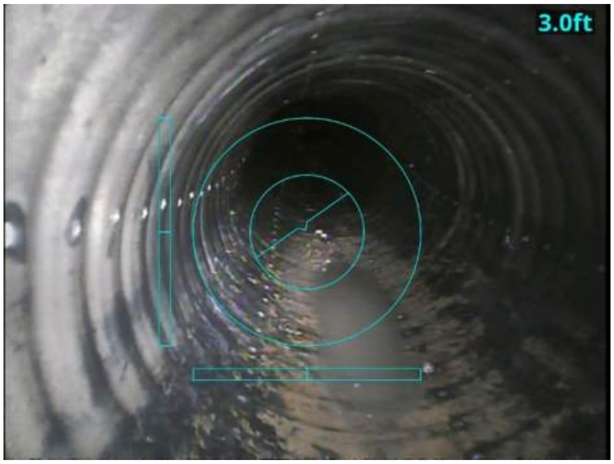
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

./BASIN-5-NORTH_2025_09_03-11_02_44_033.jpg
0.0 (ft)
PIPE BLOCKED

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

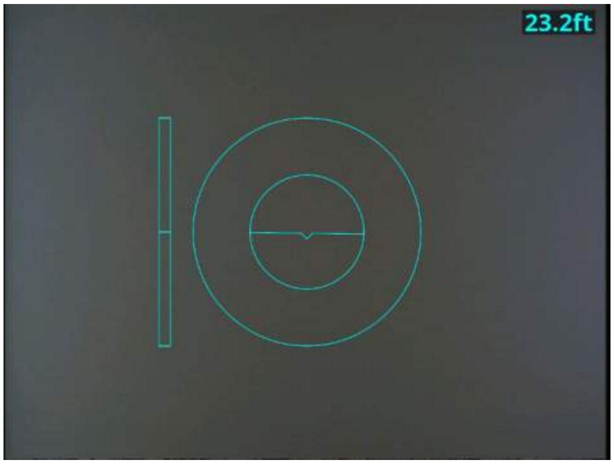
Observations



./BASIN-66-WEST_2025_07_03-10_15_30_404.jpg
3.0 (ft)
PERFORATED PIPE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

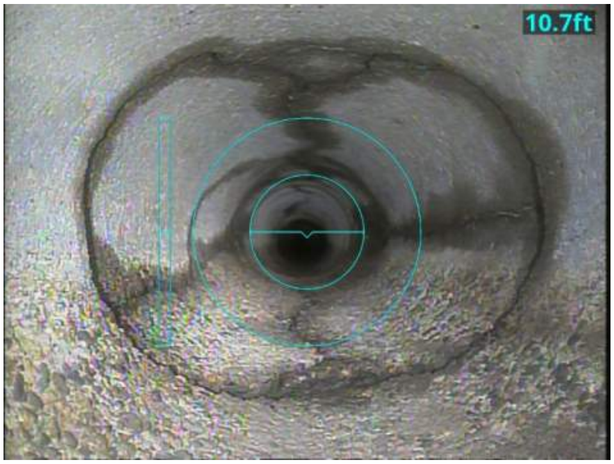
Observations



./BASIN-171-SOUTH-PT.2_2025_08_26-12_03_42_431.jpg
23.2 (ft)
PIPE UNDERWATER

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



./BASIN-171-WEST_2025_08_26-11_03_38_008.jpg
10.7 (ft)
PIPE CRACKED

./BASIN-171-WEST_2025_08_26-11_05_48_581.jpg
33.4 (ft)
MATERIAL AND SIZE CHANGE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

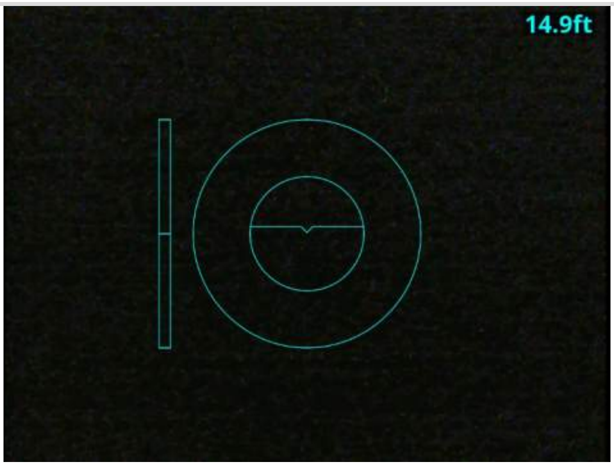
Observations

./BASIN-172-SOUTH_2025_08_25-10_25_15_560.jpg
1.3 (ft)
ROCKS IN PIPE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

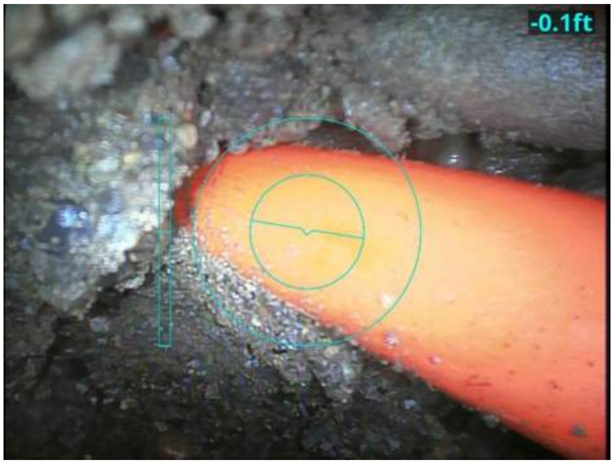
./BASIN-173-NORTH_2025_08_25-14_47_31_377.jpg
0.0 (ft)
MATERIAL CHANGE



./BASIN-173-NORTH-PT.2_2025_08_26-11_28_29_641.jpg
14.9 (ft)
PIPE UNDERWATER

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

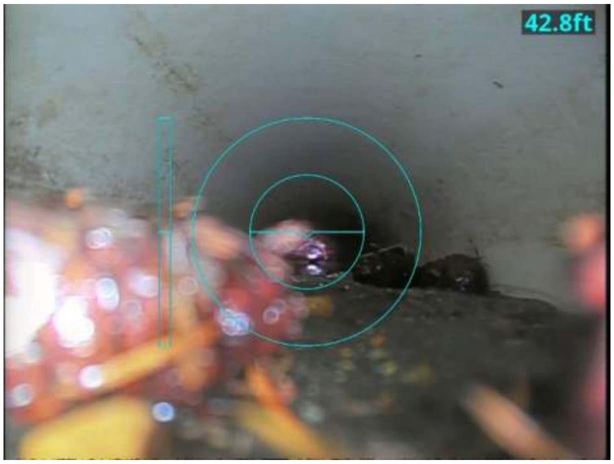
Observations



./BASIN-173-SOUTH_2025_08_25-14_42_50_423.jpg
-0.1 (ft)
ELECTRICAL LINE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

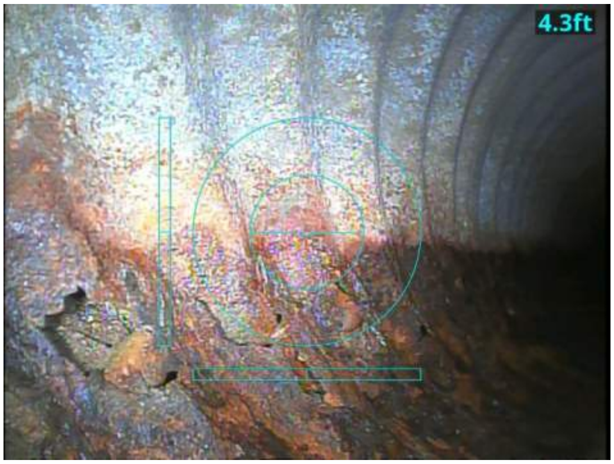
Observations



./BASIN-174-EAST_2025_08_26-11_41_17_484.jpg
42.8 (ft)
PIPE BLOCKED

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

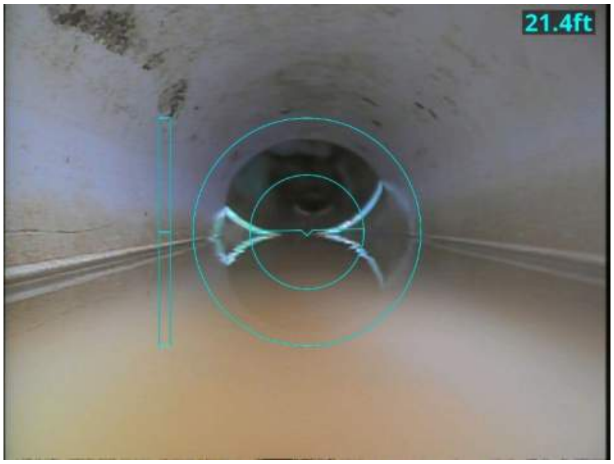
Observations



./BASIN-176-WEST_2025_08_26-12_36_59_795.jpg
4.3 (ft)
RUSTED THROUGH, BROKEN

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



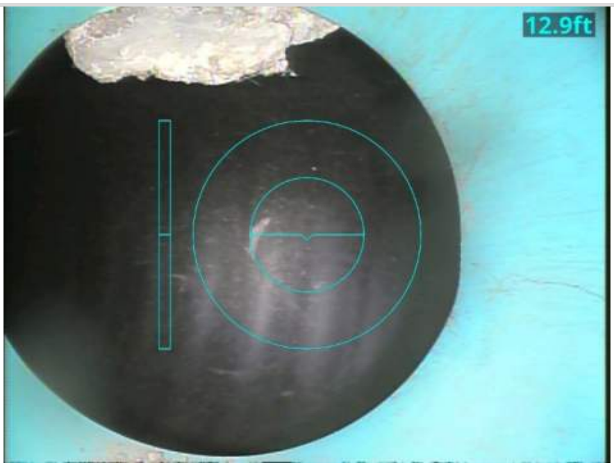
./BASIN-182-WEST_2025_08_27-10_42_40_637.jpg
21.4 (ft)
LARGE GAP IN JOINT, HOLDING WATER

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

./BASIN-190-SOUTH_2025_09_02-14_59_26_036.jpg
2.8 (ft)
GAP IN JOINT

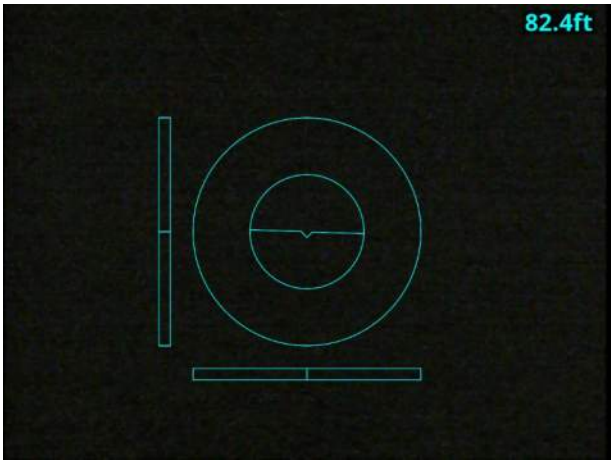
./BASIN-190-SOUTH_2025_09_02-15_00_04_068.jpg
10.9 (ft)
MATERIAL CHANGE, GAP IN JOINT



./BASIN-190-SOUTH_2025_09_02-15_00_52_022.jpg
12.9 (ft)
TIE IN

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



./BASIN-252-NORTHEAST_2025_08_28-09_32_56_290.jpg
82.4 (ft)
PIPE UNDERWATER

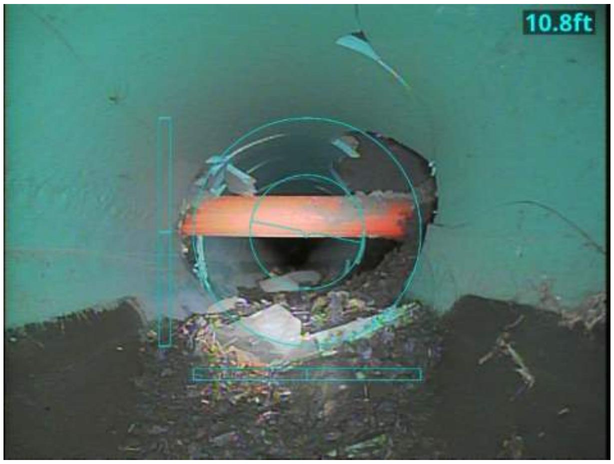
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

./BASIN-262-NORTHEAST_2025_08_27-12_13_38_830.jpg
17.1 (ft)
PIPE RUSTED, BLOCKED

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

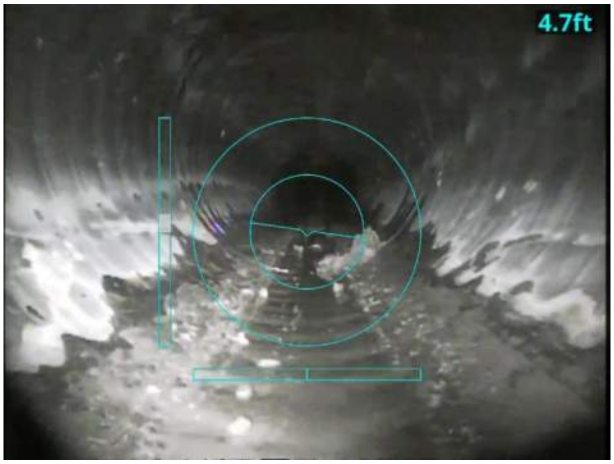
Observations



./BASIN-286-SOUTH_2025_08_29-08_58_55_517.jpg
10.8 (ft)
PIPE BROKEN, ELECTRICAL LINE RUN THROUGH

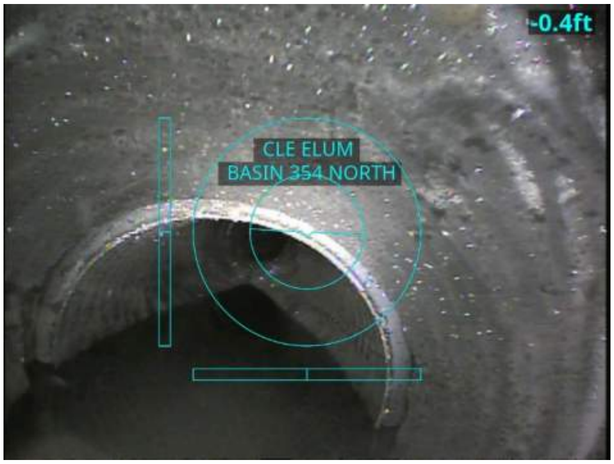
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

	./BASIN-353-NORTH_1.jpg 4.7 (ft) PERFORATED PIPE
	./BASIN-353-NORTH_2.jpg 41.5 (ft) PERFORATED PIPE, SIZE CHANGE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

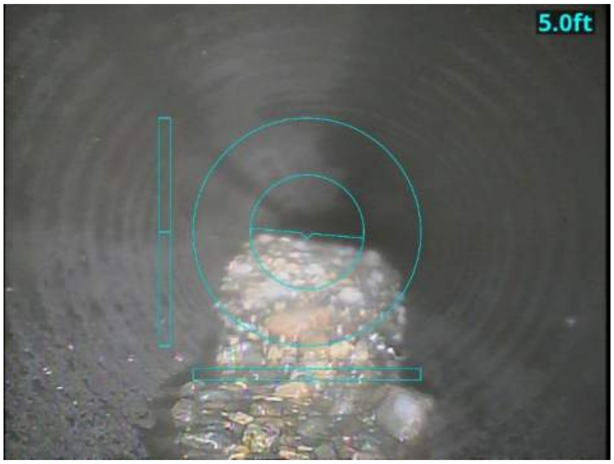
Observations



./BASIN-354-NORTH_2025_07_02-11_09_32_374.jpg
-0.4 (ft)
PIPE START

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

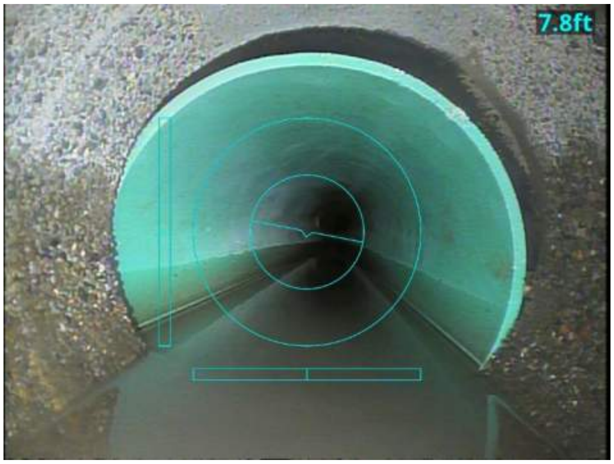
Observations



./BASIN-354-SOUTH_2025_07_02-12_37_07_764.jpg
5.0 (ft)
PIPE BLOCKED

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

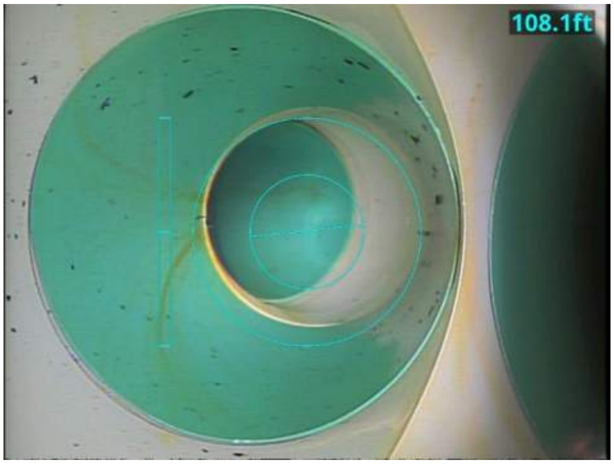
Observations



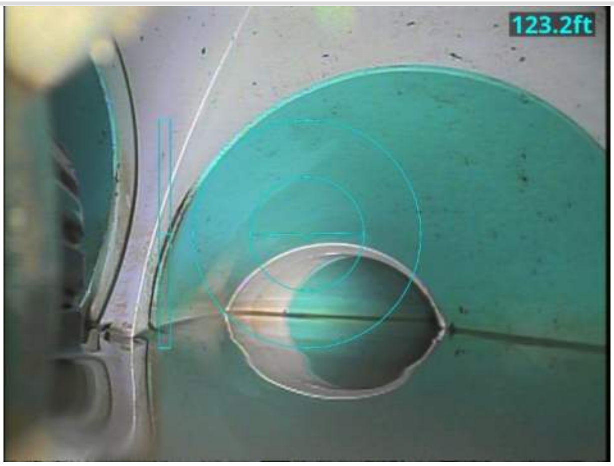
./BASIN-381-NORTH_2025_08_28-14_42_16_308.jpg
7.8 (ft)
MATERIAL CHANGE, GAP IN JOINT

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

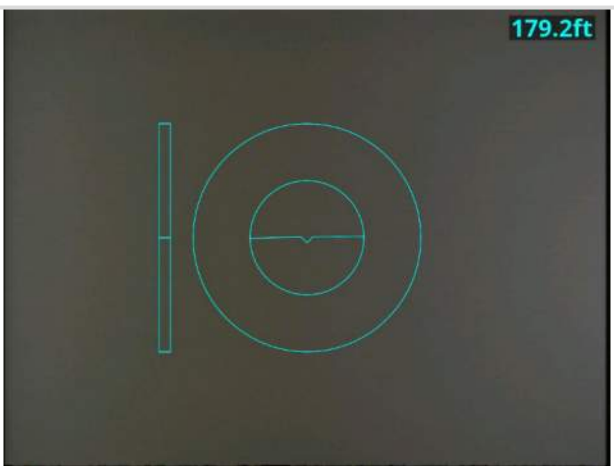
Observations



./BASIN-424-WEST_2025_09_03-09_41_39_699.jpg
108.1 (ft)
TIE IN 12 O'CLOCK



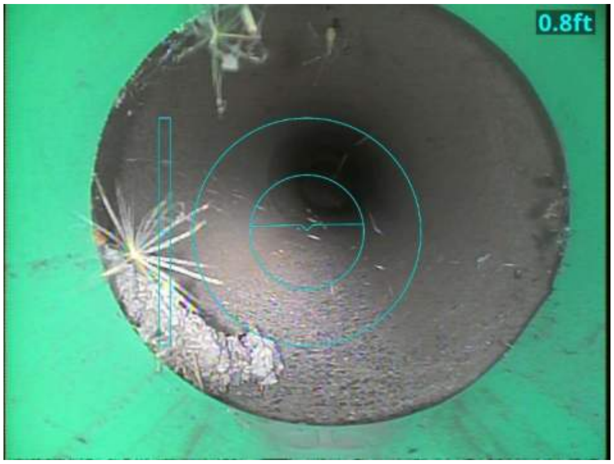
./BASIN-424-WEST_2025_09_03-09_43_34_800.jpg
123.2 (ft)
TIE IN WYE 9 O'CLOCK



./BASIN-424-WEST_2025_09_03-09_46_13_274.jpg
179.2 (ft)
PIPE UNDERWATER

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

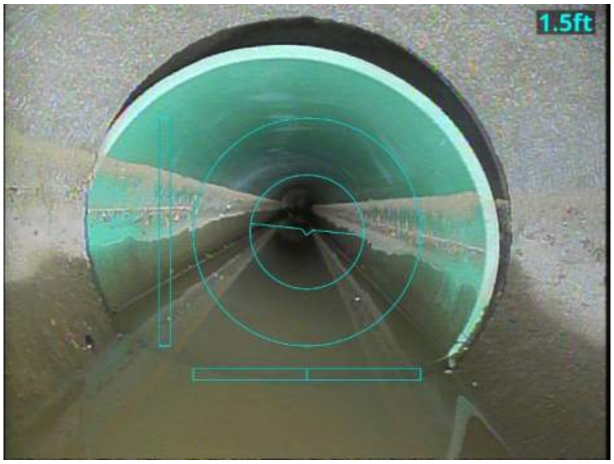
Observations



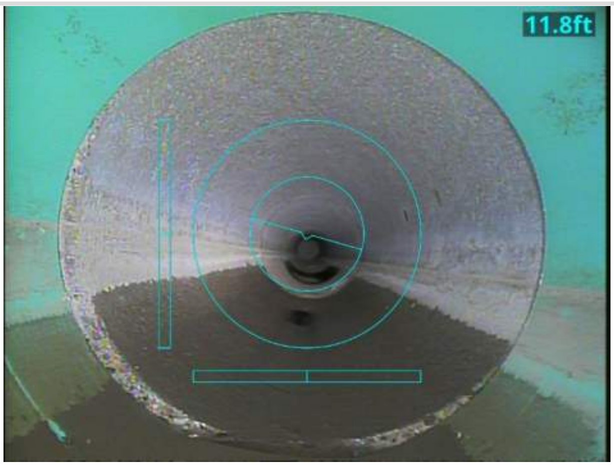
./BASIN-426-SOUTH_2025_08_29-08_32_06_636.jpg
0.8 (ft)
MATERIAL CHANGE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



./BASIN-428-NORTH_2025_08_29-08_11_17_528.jpg
1.5 (ft)
MATERIAL CHANGE, GAP IN JOINT



./BASIN-428-NORTH_2025_08_29-08_13_14_479.jpg
11.8 (ft)
MATERIAL CHANGE

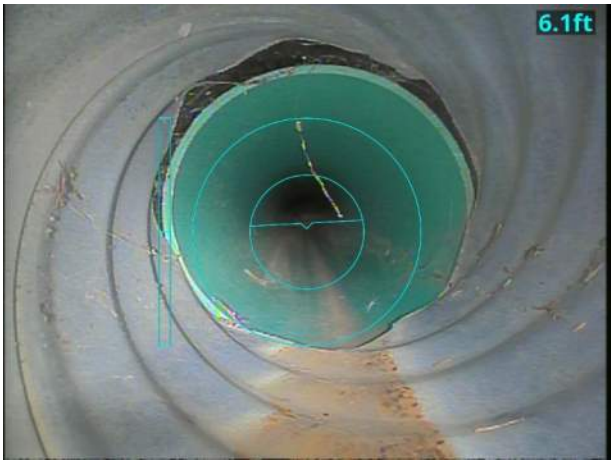
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

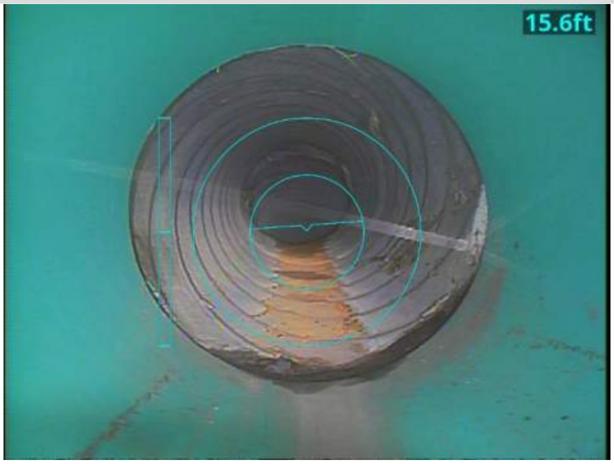
./BASIN-498-SOUTH_2025_07_01-10_08_56_664.jpg
17.3 (ft)
PIPE BLOCKED

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



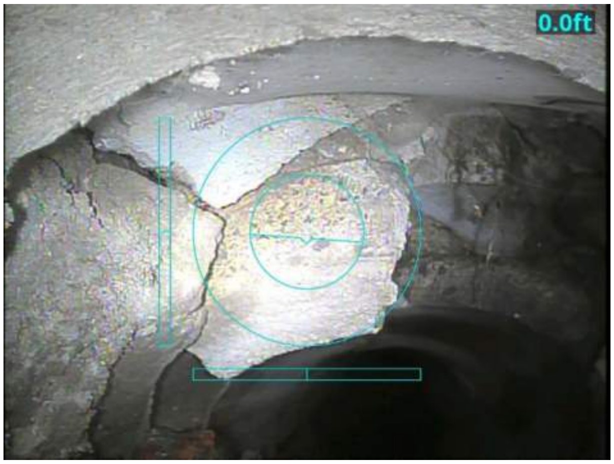
./BASIN-500-NORTH_2025_08_29-07_46_46_767.jpg
6.1 (ft)
MATERIAL CHANGE



./BASIN-500-NORTH_2025_08_29-07_47_22_822.jpg
15.6 (ft)
MATERIAL CHANGE

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



./BASIN-659-SOUTH_2025_08_27-10_06_24_372.jpg
0.0 (ft)
PIPE BROKEN, ROCKS AND DIRT FALLING IN

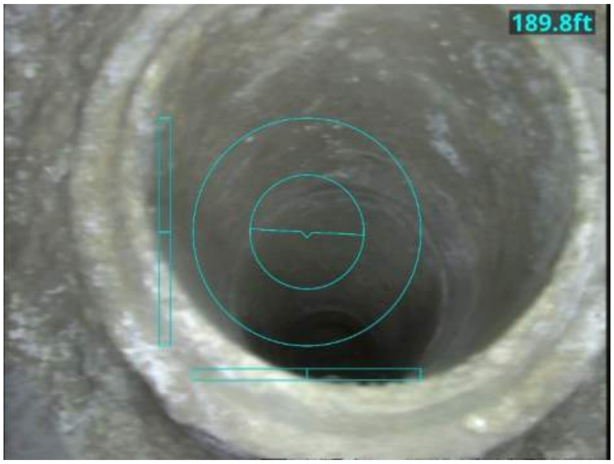
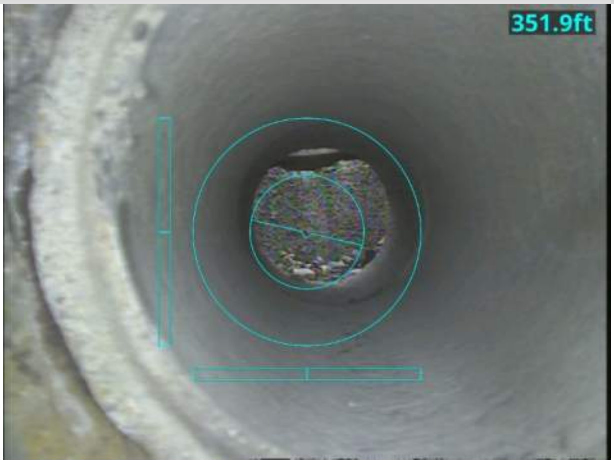
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

./BASIN-668-NORTH_2025_08_29-07_13_31_934.jpg
7.3 (ft)
PIPE NOT HOMED, GASKET SHOWN

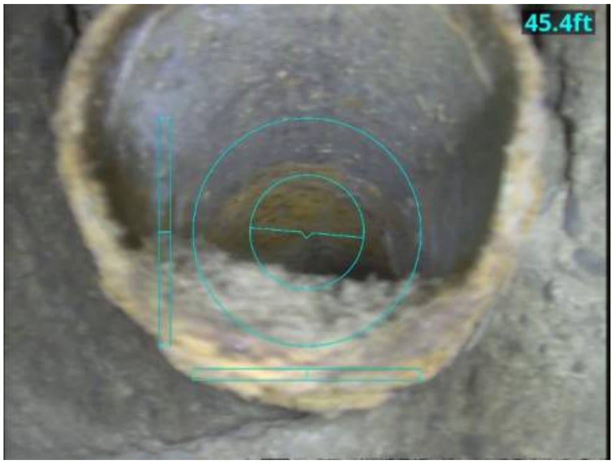
Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

	./BASIN--MH--281-EAST_2025_08_27-14_51_51_867.jpg 189.8 (ft) LATERAL LEFT 11 O'CLOCK
	./BASIN--MH--281-EAST_2025_08_27-14_55_02_001.jpg 351.9 (ft) LATERAL LEFT 10 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

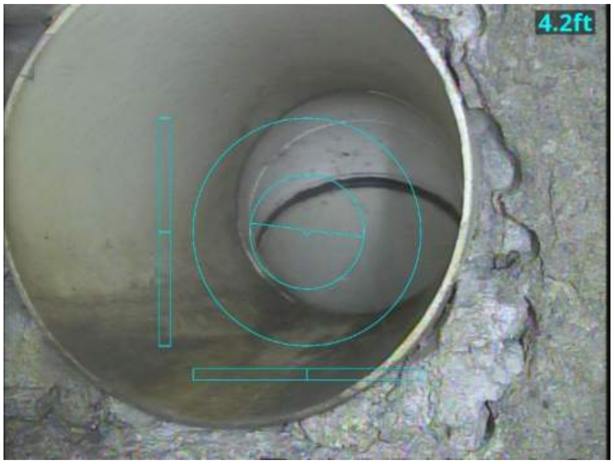
Observations



./BASIN--MH--281-WEST_2025_08_27-14_06_14_378.jpg
45.4 (ft)
LATERAL LEFT 11 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

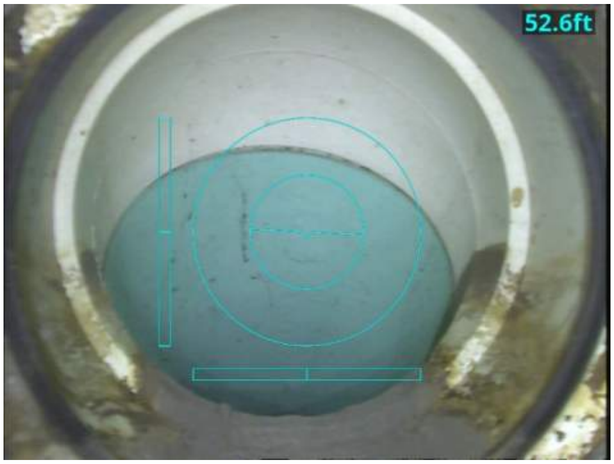
Observations



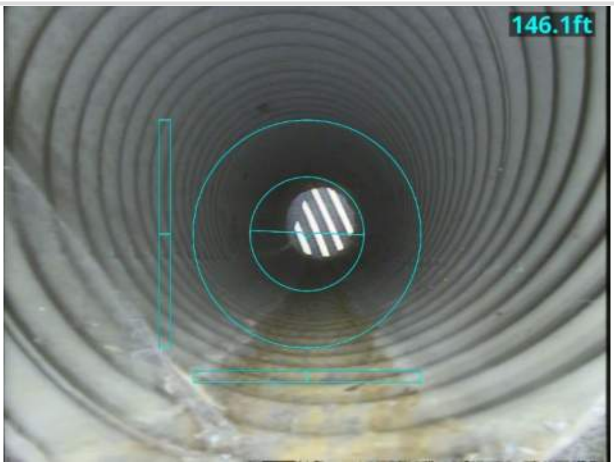
./BASIN--MH--652-EAST_2025_08_25-12_22_45_393.jpg
4.2 (ft)
LATERAL RIGHT 1 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations



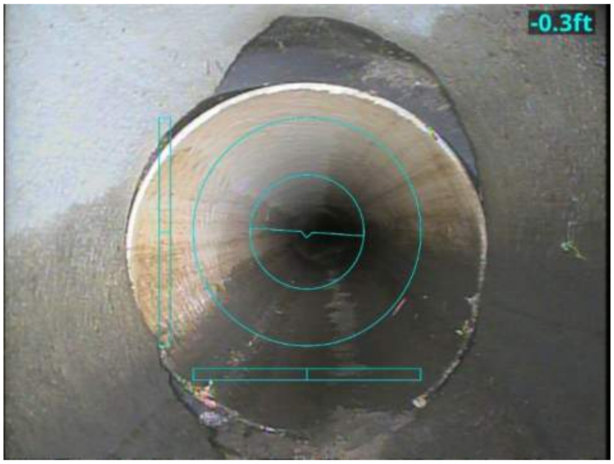
./BASIN--MH--652-WEST_2025_08_25-12_35_54_818.jpg
52.6 (ft)
LATERAL LEFT 11 O'CLOCK



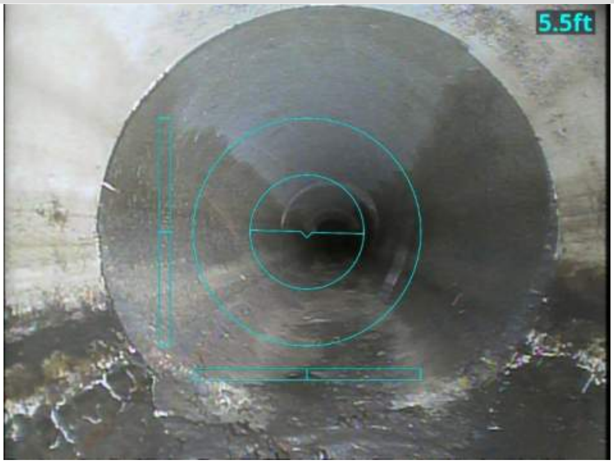
./BASIN--MH--652-WEST_2025_08_25-12_38_50_926.jpg
146.1 (ft)
LATERAL RIGHT 2 O'CLOCK

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

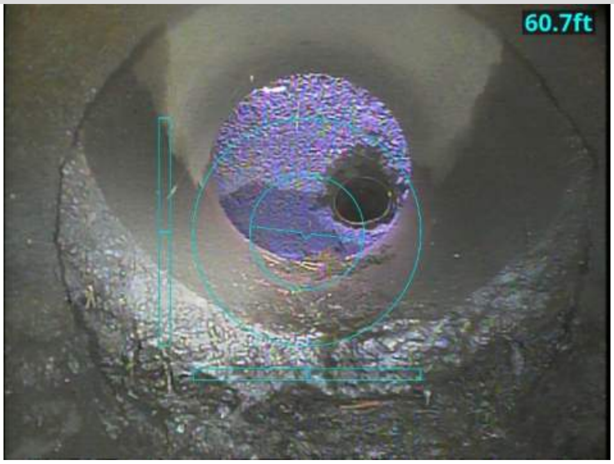
Observations



./BASIN--MH--655-NORTH_2025_08_25-14_08_59_858.jpg
-0.3 (ft)
BROKEN PIPE, GAP IN JOINT



./BASIN--MH--655-NORTH_2025_08_25-14_10_05_797.jpg
5.5 (ft)
MATERIAL CHANGE



./BASIN--MH--655-NORTH_2025_08_25-14_12_16_906.jpg
60.7 (ft)
PIPE EXIT, GAP IN JOINT

Client	
Surveyed By	
Job Number	
Date	09/09/2025
Time	18:28
Location	
Remarks	

Observations

./MH319-WEST_2025_08_29-12_05_40_730.jpg
58.2 (ft)
LATERAL RIGHT 1 O'CLOCK

./MH319-WEST_2025_08_29-12_06_05_708.jpg
59.0 (ft)
LATERAL LEFT 10 O'CLOCK