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Received
Planning Division
10/04/2023

Exhibit 3.7

(Preliminary) Stormwater Drainage Report

CATT INTENSIVE SERVICES BUILDING (ISB)

17911 NW Evergreen Place
Beaverton, Oregon 97006

For

Washington County Support Services



RENEWS: 12/31/23

Regular maintenance and inspection are required on all components of the stormwater system. This plan provides instruction on how to maintain and inspect the system.

Prepared by: Evan Eykelbosch, PE and Ben Ullmann, PE
Froelich Engineers
17700 SW Upper Boones Ferry Rd, Suite 115
Portland, OR 97224
Froelich Project Number: 22-C023
Date: August 31, 2023

Designer's Certification and Statement

"I hereby certify that this Stormwater Management Report for the CATT Intensive Services Building (ISB) project has been prepared by me or under my supervision and meets the minimum standards of the City of Beaverton and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities design by me."

Evan Eykelbosch, PE

(Preliminary) Stormwater Drainage Report

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I. Project Overview and Description

This stormwater report has been prepared in accordance with the City of Beaverton requirements and the Clean Water Services Design and Construction Standards (CWS) to support the permit applications for the proposed project improvements.

The CATT Intensive Services Building (ISB) is a proposed remodel of and addition to the existing building located at 17911 NW Evergreen Place (see Appendix A: Vicinity Map). Other site improvements include reconstruction of the ADA parking stalls, ramps, entryways, and sidewalks to be ADA compliant.

Existing Conditions

The existing site consists of one tax lot with an existing building, sidewalks, and parking lots along the south side of the building. The topography is slightly sloping and drains to the south towards the private street. Roof runoff is collected in roof drains that ultimately convey the water to the public stormwater system. Parking lot runoff is collected in catch basins at the low points and is also conveyed to the public stormwater system. The public stormwater system drains into the Tanasbourne Town Center Regional Water Quality Facility and Mitigation Area in the adjacent tax lot east of the project site per as-builts AB006715 dated 1995. The existing soil is mostly Helvetia silt loam with the southeast corner being Dayton silt loam based on a Soil Resource Report from the NRCS (See Appendix D: Soil Resource Report).

An existing condition Basin Map is provided in Appendix B.

Proposed Conditions

The proposed development is to complete tenant improvements to the existing building and construct a two-story addition to the south of the building. This would reconfigure the western parking lot, remove the middle parking lot and keep a majority of the eastern parking lot fully intact. The existing ADA parking stalls would be reconstructed to meet current ADA regulations. Additionally, proposed frontage improvements will include a new vehicular drop off on the northwest side of the building, a new driveway for the west parking lot, closure of the west and middle driveways, reconstruct the east parking lot driveway, and reconstruction of all sidewalks to be 10' wide curb tight sidewalks and street trees with grates. The project will also need to reconstruct the ADA curb ramp located in the southwest corner of the site with a single sidewalk ramp and construct a midblock curb ramp to cross NW Evergreen Place.

A proposed condition Basin Map is provided in Appendix B.

'Table 1: Catchment Basins' provides the basin characteristics for the various catchment areas under the existing and proposed conditions.

The facility is to be maintained by the owner or owner's representative. The preparer has designed a system that can be easily maintained by maintenance staff. A copy of the O&M Plan shall be provided to all property owners and tenants.

II. Methodology

The City of Beaverton adopted the 2019 Clean Water Services Design and Construction Standards (CWS) for stormwater management. The CWS Standards require all development and redevelopment that creates and/or modifies 1,000 square feet or more of impervious area to comply with stormwater management requirements of hydromodification and treatment.

(Preliminary) Stormwater Drainage Report

Hydromodification:

The proposed development has between 12,000 sf and 80,000 sf of new or modified impervious surface (see Appendix B: Basin Map and Areas), is within the developed area, and has a reach-specific risk level rating of moderate, based on the Hydromodification Map Web Tool on Clean Water Services website, designating the site as a Category 2 project, per CWS Table 4-2. This result requires peak flow matching detention or an infiltration facility. The entire site is currently managed by the Tanasbourne Town Center Regional Water Quality Facility and Mitigation Area located adjacent to the site. This system was approved as part of a large development from 1995 (AB006715). Per the Pre-Application notes a Fee-In-Lieu can be paid for the hydromodification of the site.

Water Quality Treatment:

Per the Pre-Application notes a Fee-In-Lieu can be paid for the water quality requirement of the site.

Conveyance:

The conveyance capacity was calculated for the 25-year storm event (3.90 in/24-hr) per Table 4-4 of the CWS standards. A 6" minimum pipe with a 2% or greater slope is sufficient for the peak flow of the site. For the plaza areas, a 4" minimum pipe with a 2% or greater slope is sufficient (see Appendix E: Conveyance Calculations).

- Required Hydromodification Area = 30,191 sf
- Required Treatment Area = 63,462 sf

III. Analysis

This project was analyzed using the Santa Barbara Urban Hydrograph (SBUH) Method with a NRCS Type 1A rainfall distribution for a 24-hour storm. The system was designed using HydroCAD software. Conveyance calculations are based on the Manning Formula for uniform pipe flow. (See Appendix E: Conveyance Calculations).

Table 1: Catchment Basins

Existing

Basin	Area				Total	
	Pervious		Impervious - Disturbed		sf	ac
	sf	ac	sf	ac		
Existing	13,628	0.31	25,458	0.58	39,086	0.90
Total	13,628	0.31	25,458	0.58	39,086	0.90

Proposed

Basin	Area						Total	
	Pervious		Impervious - New		Impervious - Modified		sf	ac
	sf	ac	sf	ac	sf	ac		
Site	8,895	0.20	8,262	0.24	21,929	0.19	39,086	0.90
Total	8,895	0.20	8,262	0.24	21,929	0.19	39,086	0.90

IV. Engineering Conclusion

Based on the requirements of the City of Beaverton and Clean Water Services, all facilities and conveyance components have the capacity to handle the runoff from the required storm events and should be approved as designed.

V. Appendices

Appendix A: Vicinity Map



Appendix B: Basin Map and Areas



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Basin Areas

CATT Intensive Services Building
Project #22-C023

Stormwater Management Requirements

Existing

Basin	Area				Total	
	Pervious		Impervious - Disturbed		sf	ac
	sf	ac	sf	ac		
Existing	13,628	0.31	25,458	0.58	39,086	0.90
Total	13,628	0.31	25,458	0.58	39,086	0.90

Proposed

Basin	Area						Total		Flow Q (25-YR)
	Pervious		Impervious - New		Impervious - Modified		sf	ac	cfs
	sf	ac	sf	ac	sf	ac			
Site	8,895	0.20	8,262	0.24	21,929	0.19	39,086	0.90	0.737
Total	8,895	0.20	8,262	0.24	21,929	0.19	39,086	0.90	

Required Hydromodification = New Impervious + Modified Impervious = 8,262 + 21,929 = 30,191 sf

Required Treatment = New Impervious + 3 * (Modified Impervious - New Pervious) = 8,262 + 3 * (21,929 - 3,529) = 63,462 sf



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ARCHITECT PROJECT NUMBER:
22-010

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

HOLSTARC.COM

COUNTY PROJECT NUMBER:
2040

COUNTY PROJECT MANAGER:
STUART SPAFFORD

BUILDING NUMBER:
0371A

BUILDING NAME:
**EVERGREEN (EVGR) -
INTENSIVE SERVICES**

DEPARTMENT NAME:
**HEALTH AND HUMAN
SERVICES**

PROJECT NAME:
**CATT - INTENSIVE
SERVICES BUILDING
(ISB)**

PROJECT ADDRESS:
17511 NW EVERGREEN PLACE
BEAVERTON, OR 97006

REVISION / ISSUE SCHEDULE

NO.	DESCRIPTION	DATE
A	SCHEMATIC DESIGN	11/18/22
B	50% DESIGN DEVELOPMENT	02/24/23
C	10% DESIGN DEVELOPMENT	04/24/23
D	DESIGN REVIEW	05/22/23
E	DESIGN REVIEW R1	09/04/23

SHEET NUMBER:

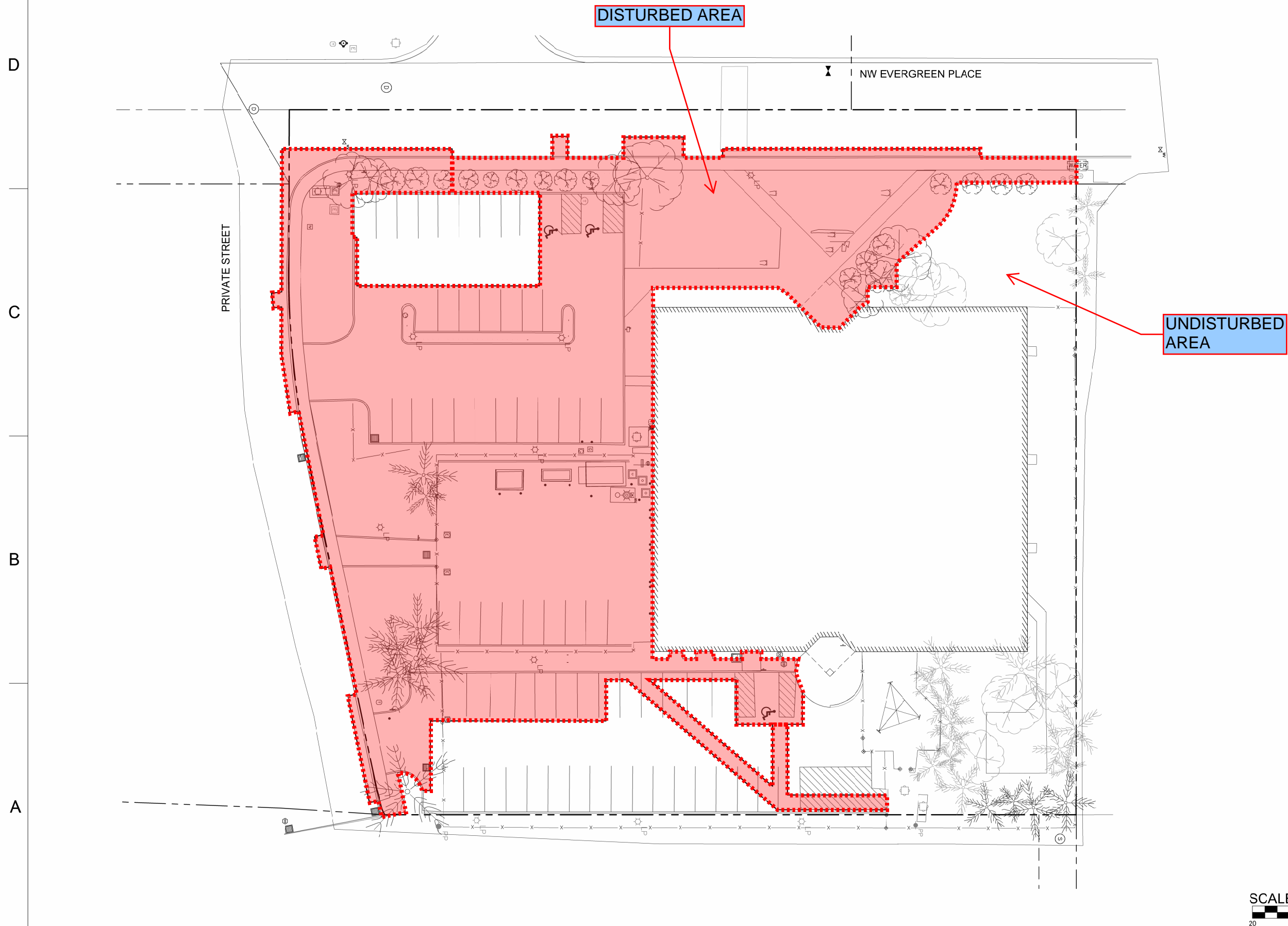
EX-1

SHEET NAME:
EXISTING BASIN MAP

DRAWN BY: BLU SHEET ISSUE DATE: 04/19/23

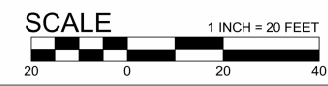
CHECKED BY: EME

STATUS:
DESIGN REVIEW



UNDISTURBED AREA

DISTURBED AREA





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REVISION / ISSUE SCHEDULE

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A	SCHEMATIC DESIGN	11/18/22
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C	100% DESIGN DEVELOPMENT	04/21/23
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SHEET NUMBER:

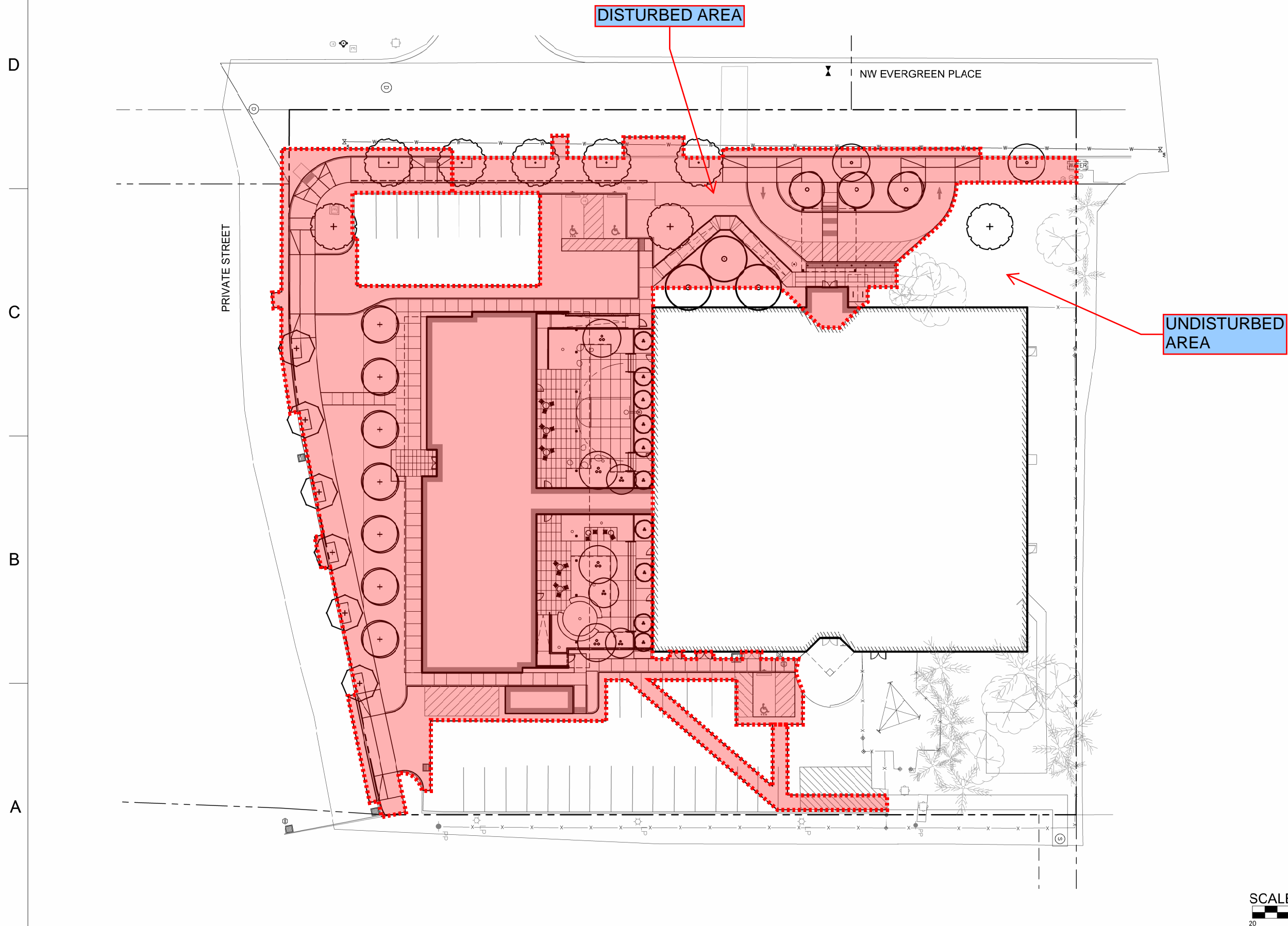
EX-2

SHEET NAME:
**PROPOSED BASIN
MAP**

DRAWN BY: BLU SHEET ISSUE DATE:
04/19/23

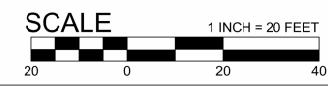
CHECKED BY:
EME

STATUS:
DESIGN REVIEW



**UNDISTURBED
AREA**

**DISTURBED
AREA**



1 2 3 4

D
C
B
A

Appendix C: Assumptions



Assumptions

CATT Intensive Services Building
Project #22-C023

Santa Barbara Unit Hydrograph (SBUH) Assumptions:

WQ Storm Event=	0.36 in x Drainage Area (3 hour event)
2-year Storm Event=	2.50 in/24-hours per CWS Design Standards 12/19
5-year Storm Event=	3.10 in/24-hours per CWS Design Standards 12/19
10-year Storm Event=	3.45 in/24-hours per CWS Design Standards 12/19
25-year Storm Event =	3.90 in/24-hours per CWS Design Standards 12/19

Time of Concentration **5.0** minutes

Roughness Coefficient **0.013**

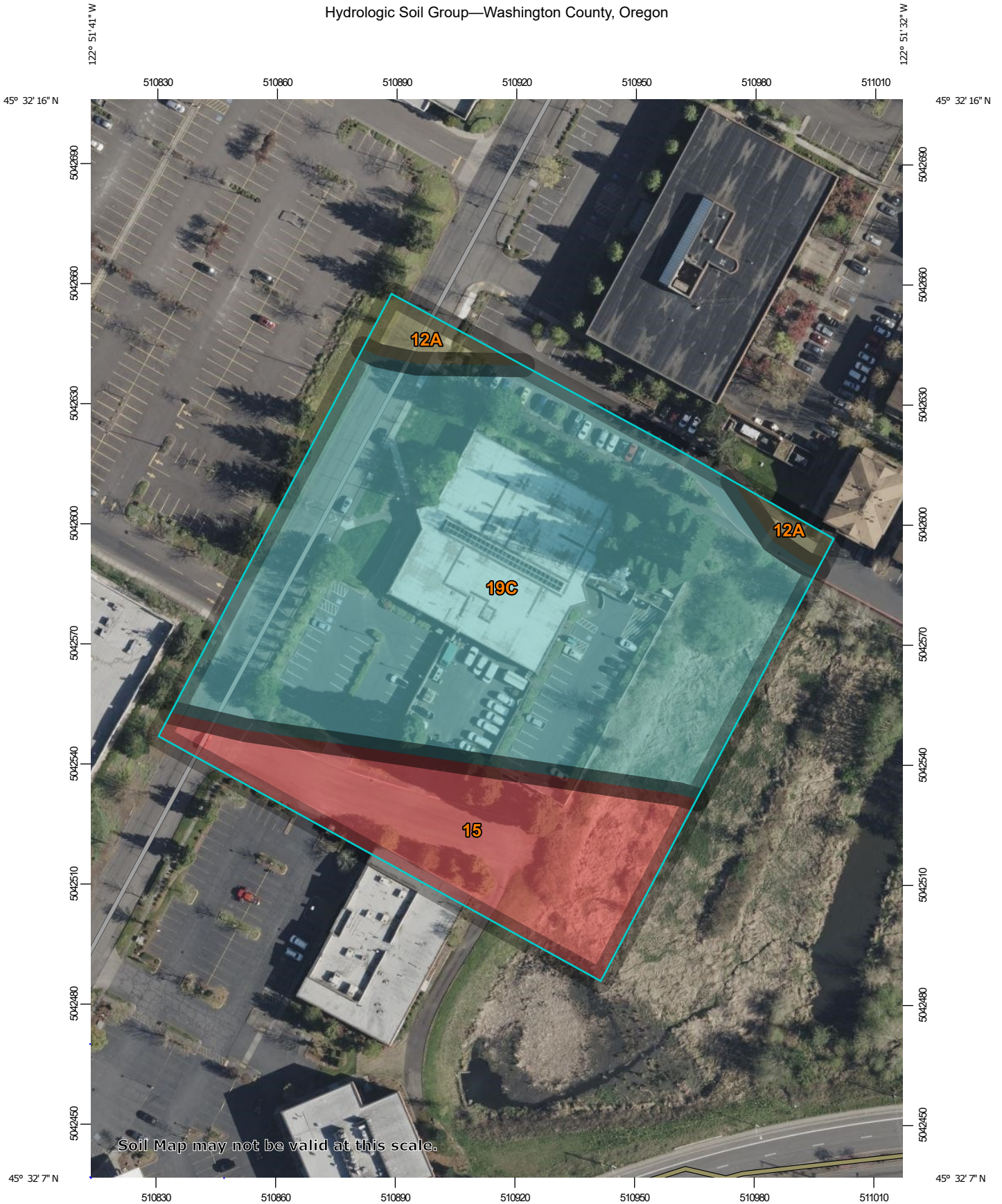
Curve Number Assumptions:

Impervious Area =	98	Per NRCS
Pervious Area =	74	Per NRCS
Existing Pervious Area=	75	per CWS Design Standards 12/19

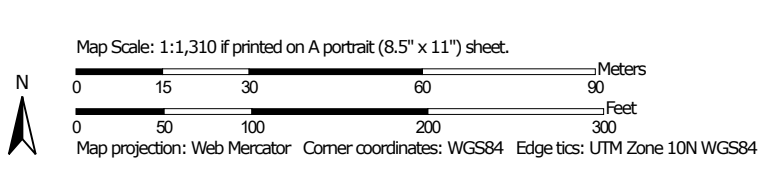
NRCS Soil Group C

Appendix D: Soil Resource Report

Hydrologic Soil Group—Washington County, Oregon



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points



-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available


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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Washington County, Oregon
 Survey Area Data: Version 22, Sep 14, 2022

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

Date(s) aerial images were photographed: Apr 16, 2021—Apr 18, 2021

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
12A	Cornelius variant silt loam, 0 to 3 percent slopes	C/D	0.1	3.3%
15	Dayton silt loam	D	0.9	22.8%
19C	Helvetia silt loam, 7 to 12 percent slopes	C	2.9	73.9%
Totals for Area of Interest			3.9	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Appendix E: Conveyance Calculations



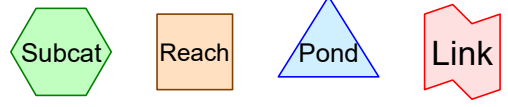
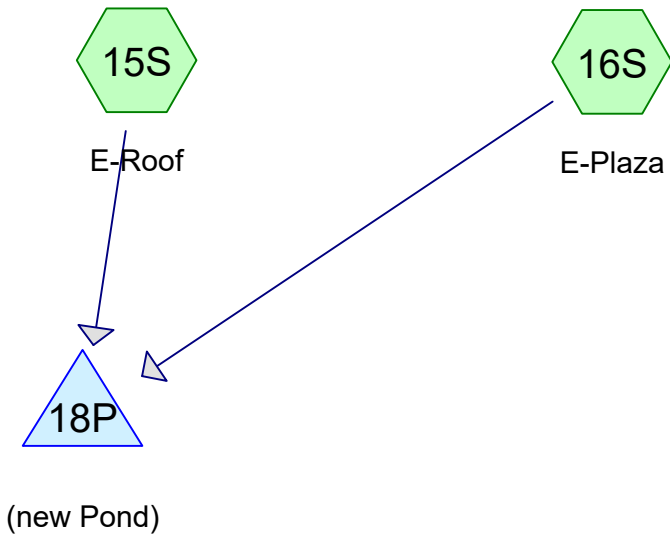
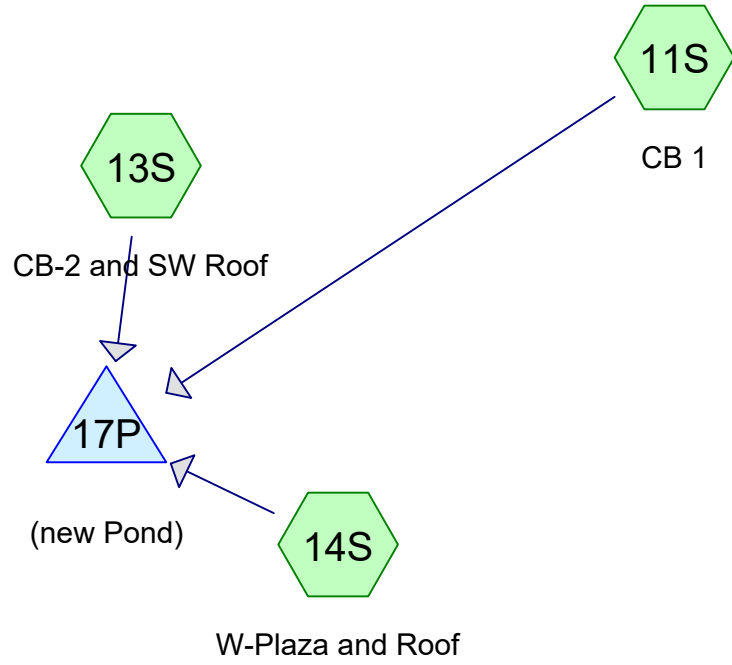
Conveyance Calculations

CATT - Intensive Services Building
Project #22-C023

CONVEYANCE CALCULATIONS

DESIGN SECTION		DESIGN CALCULATIONS		Detail						
PIPE	CONTRIBUTING BASIN/PIPE	RUNOFF Q CFS	TOTAL Q CFS	SLOPE %	DIA IN.	CAPACITY Qf CFS	VEL. Vf FT/S	RUNOFF RATIO Q/Qf	VEL. AT Q/QF	CAPACITY Q VS. Qf
1	CB-1	0.06	0.06	2	6	0.79	4.04	0.07	2.42	OK
2	W-Plaza, W-Roof	0.11	0.11	2	4	0.27	3.08	0.39	2.88	OK
3	Pipe 1,2, SW-Roof, CB-2	0.42	0.58	2	6	0.79	4.04	0.73	4.41	OK
4	E-Roof	0.11	0.11	2	4	0.27	3.08	0.41	2.91	OK
5	E-Plaza	0.02	0.02	2	4	0.27	3.08	0.08	1.85	OK
	Overall W-Site		0.58	2	6	0.79	4.04	0.73	4.41	OK
	Overall E-Site		0.13	2	4	0.27	3.08	0.49	3.07	OK

Catch Basins all use a 6" lead with 2.00% slope which has a design capacity of 0.79 cfs



Routing Diagram for WashCo CATT ISB - HydroCAD
 Prepared by Froelich Engineers, Printed 8/31/2023
 HydroCAD® 10.20-3c s/n 10688 © 2023 HydroCAD Software Solutions LLC

WashCo CATT ISB - HydroCAD

Prepared by Froelich Engineers

HydroCAD® 10.20-3c s/n 10688 © 2023 HydroCAD Software Solutions LLC

Printed 8/31/2023

Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25-Year	Type IA 24-hr		Default	24.00	1	3.90	2

WashCo CATT ISB - HydroCAD

Prepared by Froelich Engineers

HydroCAD® 10.20-3c s/n 10688 © 2023 HydroCAD Software Solutions LLC

Type IA 24-hr 25-Year Rainfall=3.90"

Printed 8/31/2023

Page 3

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment11S: CB 1	Runoff Area=3,000 sf 76.23% Impervious Runoff Depth=3.02" Tc=5.0 min CN=92 Runoff=0.055 cfs 755 cf
Subcatchment13S: CB-2 and SW Roof	Runoff Area=22,148 sf 79.84% Impervious Runoff Depth=3.12" Tc=5.0 min CN=93 Runoff=0.418 cfs 5,763 cf
Subcatchment14S: W-Plaza and Roof	Runoff Area=5,222 sf 85.68% Impervious Runoff Depth=3.33" Tc=5.0 min CN=95 Runoff=0.105 cfs 1,450 cf
Subcatchment15S: E-Roof	Runoff Area=5,143 sf 100.00% Impervious Runoff Depth=3.67" Tc=5.0 min CN=98 Runoff=0.110 cfs 1,571 cf
Subcatchment16S: E-Plaza	Runoff Area=1,576 sf 42.51% Impervious Runoff Depth=2.28" Tc=5.0 min CN=84 Runoff=0.021 cfs 300 cf
Pond 17P: (new Pond)	Inflow=0.577 cfs 7,969 cf Primary=0.577 cfs 7,969 cf
Pond 18P: (new Pond)	Inflow=0.130 cfs 1,871 cf Primary=0.130 cfs 1,871 cf

Total Runoff Area = 37,089 sf Runoff Volume = 9,840 cf Average Runoff Depth = 3.18"
18.42% Pervious = 6,833 sf 81.58% Impervious = 30,256 sf

Summary for Subcatchment 11S: CB 1

Runoff = 0.055 cfs @ 7.89 hrs, Volume= 755 cf, Depth= 3.02"
 Routed to Pond 17P : (new Pond)

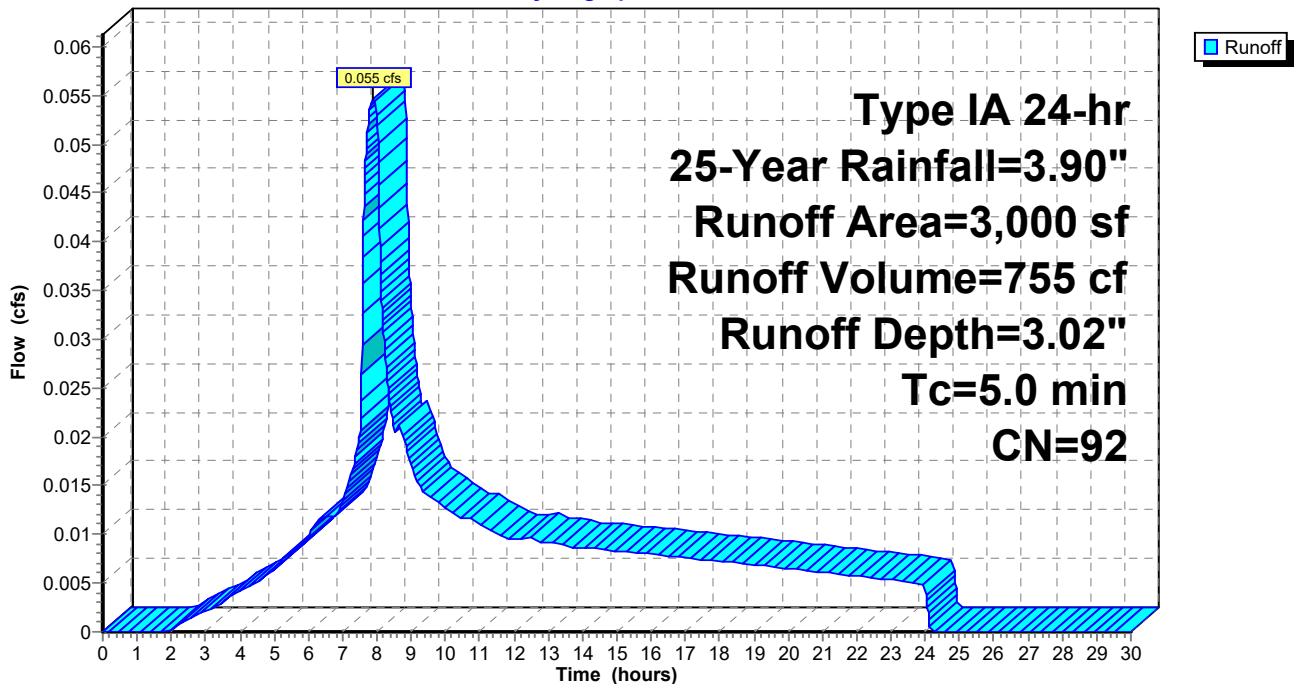
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	2,287	98	Impervious West
*	172	74	
*	372	74	
*	169	74	
<hr/>			
	3,000	92	Weighted Average
	713		23.77% Pervious Area
	2,287		76.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 11S: CB 1

Hydrograph



Summary for Subcatchment 13S: CB-2 and SW Roof

Runoff = 0.418 cfs @ 7.88 hrs, Volume= 5,763 cf, Depth= 3.12"
 Routed to Pond 17P : (new Pond)

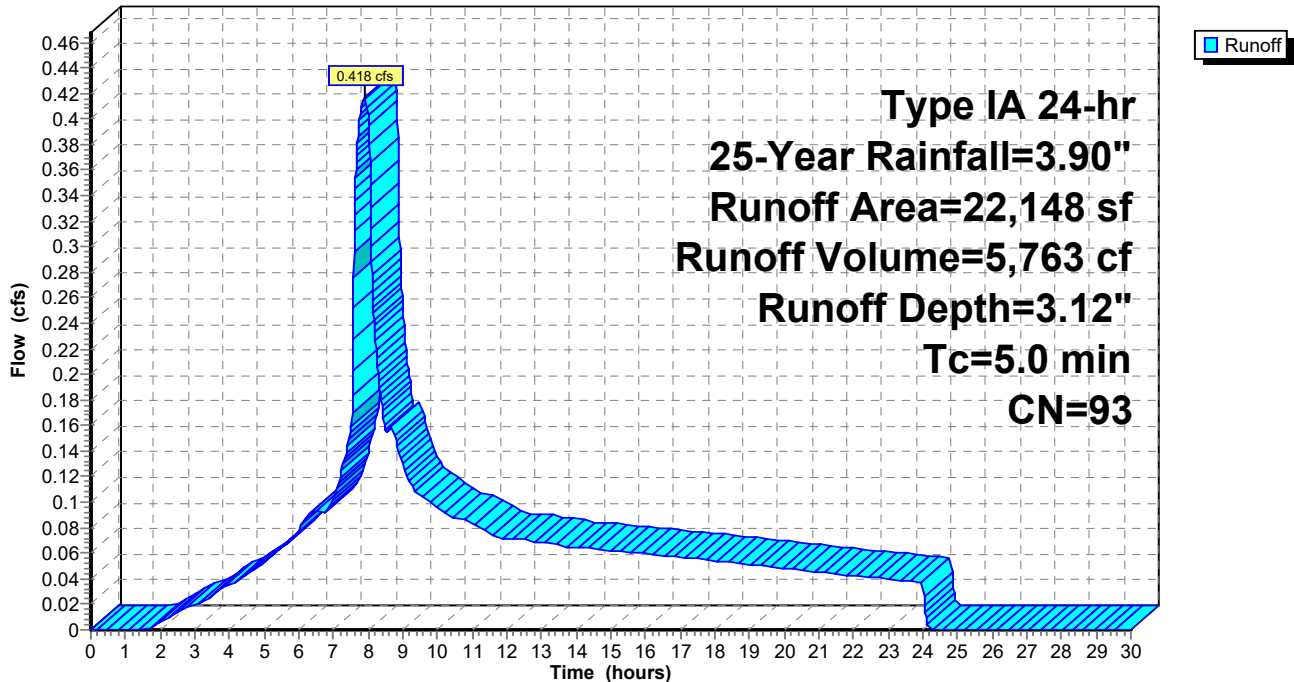
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	17,682	98	Impervious West
*	1,183	74	
*	312	74	
*	2,971	74	
<hr/>			
	22,148	93	Weighted Average
	4,466		20.16% Pervious Area
	17,682		79.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 13S: CB-2 and SW Roof

Hydrograph



Summary for Subcatchment 14S: W-Plaza and Roof

Runoff = 0.105 cfs @ 7.87 hrs, Volume= 1,450 cf, Depth= 3.33"
 Routed to Pond 17P : (new Pond)

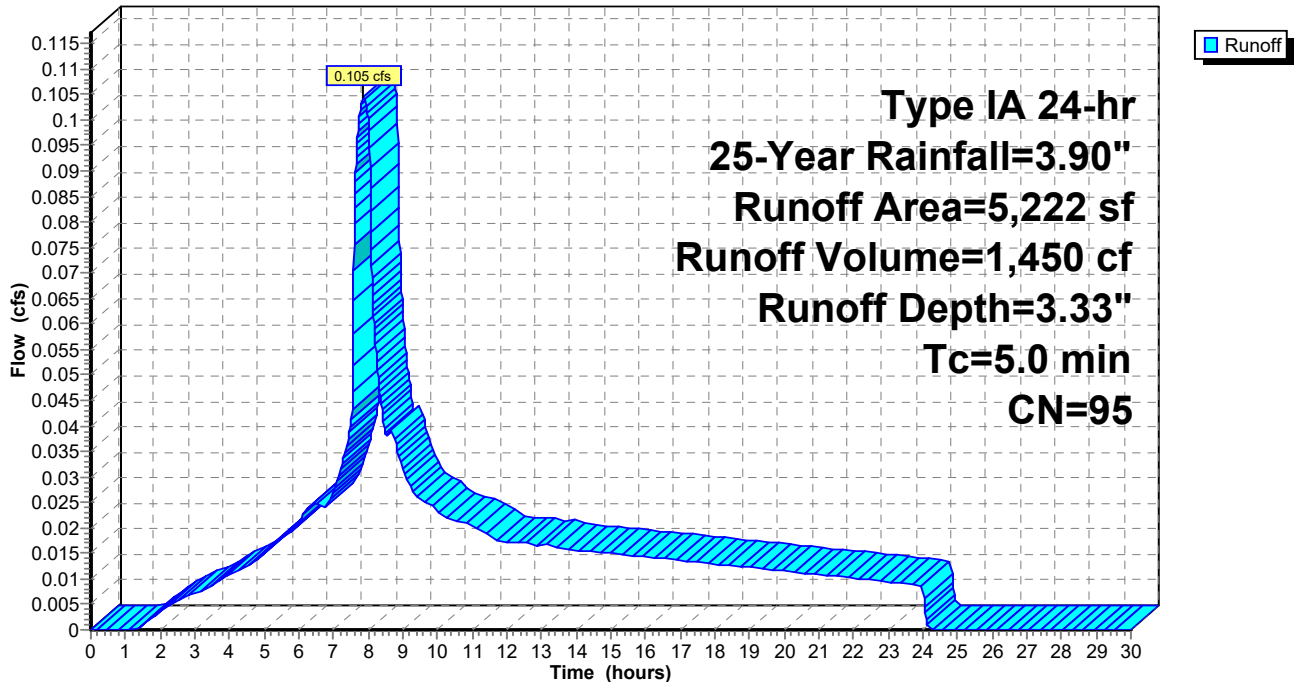
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	4,474	98	Impervious West
*	212	74	
*	246	74	
*	290	74	
<hr/>			
	5,222	95	Weighted Average
	748		14.32% Pervious Area
	4,474		85.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14S: W-Plaza and Roof

Hydrograph



Summary for Subcatchment 15S: E-Roof

Runoff = 0.110 cfs @ 7.86 hrs, Volume= 1,571 cf, Depth= 3.67"
 Routed to Pond 18P : (new Pond)

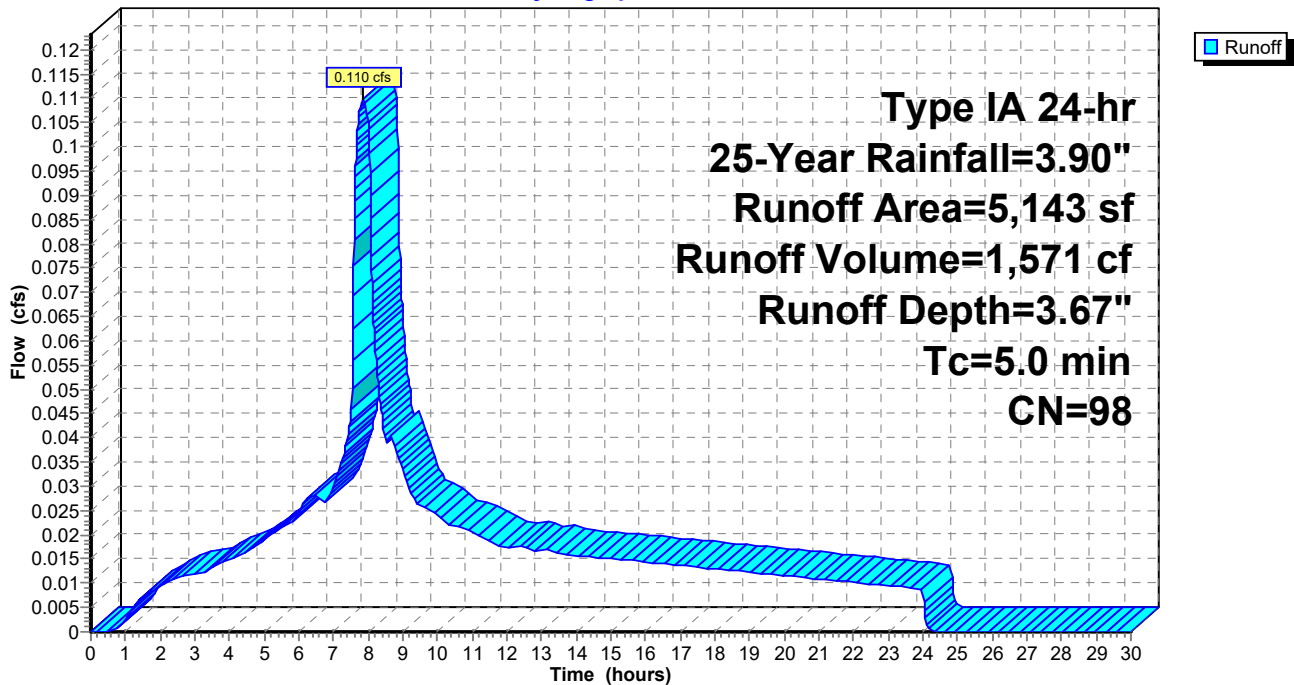
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

Area (sf)	CN	Description
* 5,143	98	Impervious West
5,143		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 15S: E-Roof

Hydrograph



Summary for Subcatchment 16S: E-Plaza

Runoff = 0.021 cfs @ 7.94 hrs, Volume= 300 cf, Depth= 2.28"
 Routed to Pond 18P : (new Pond)

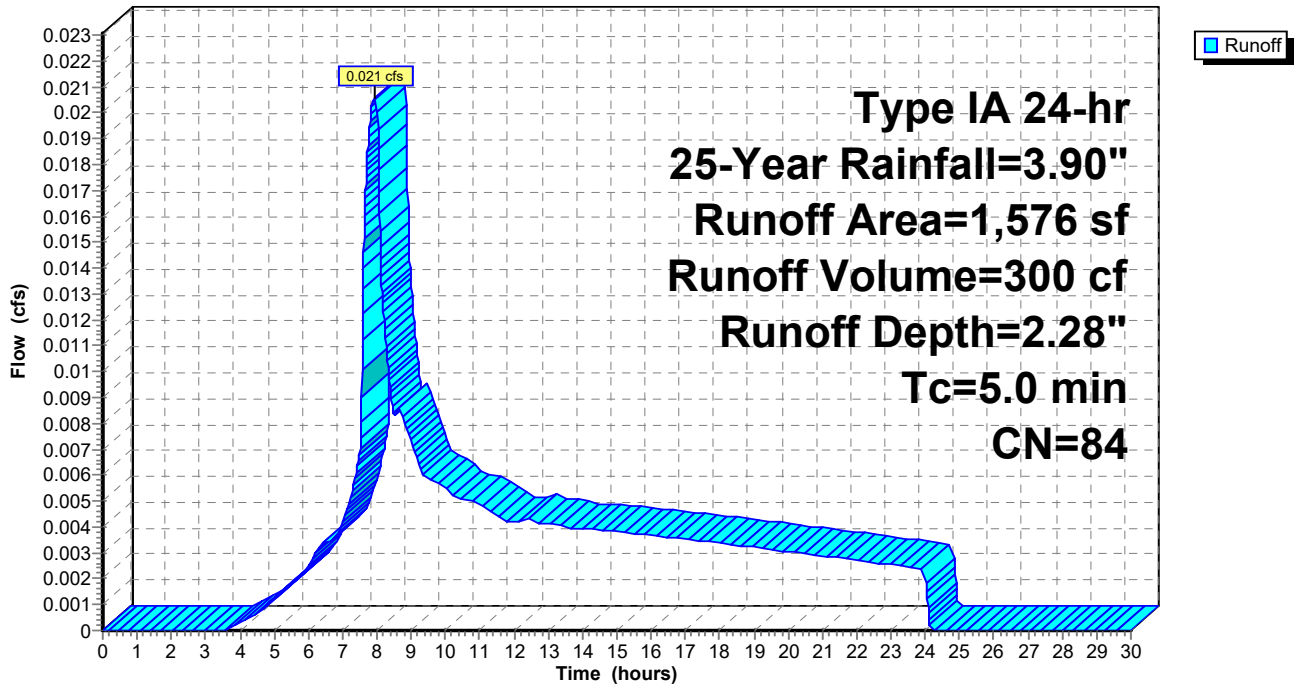
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	670	98	Impervious West
*	400	74	
*	209	74	
*	81	74	
*	216	74	
<hr/>			
	1,576	84	Weighted Average
	906		57.49% Pervious Area
	670		42.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 16S: E-Plaza

Hydrograph



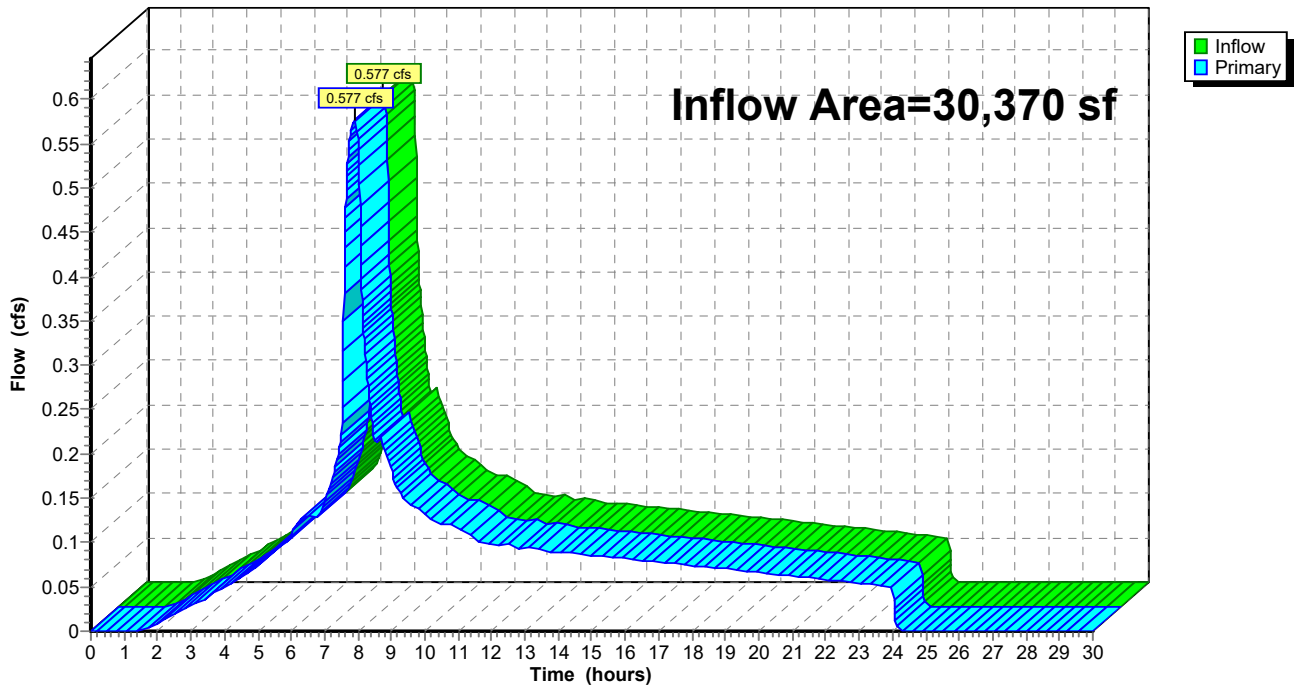
Summary for Pond 17P: (new Pond)

Inflow Area = 30,370 sf, 80.48% Impervious, Inflow Depth = 3.15" for 25-Year event
Inflow = 0.577 cfs @ 7.88 hrs, Volume= 7,969 cf
Primary = 0.577 cfs @ 7.88 hrs, Volume= 7,969 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Pond 17P: (new Pond)

Hydrograph



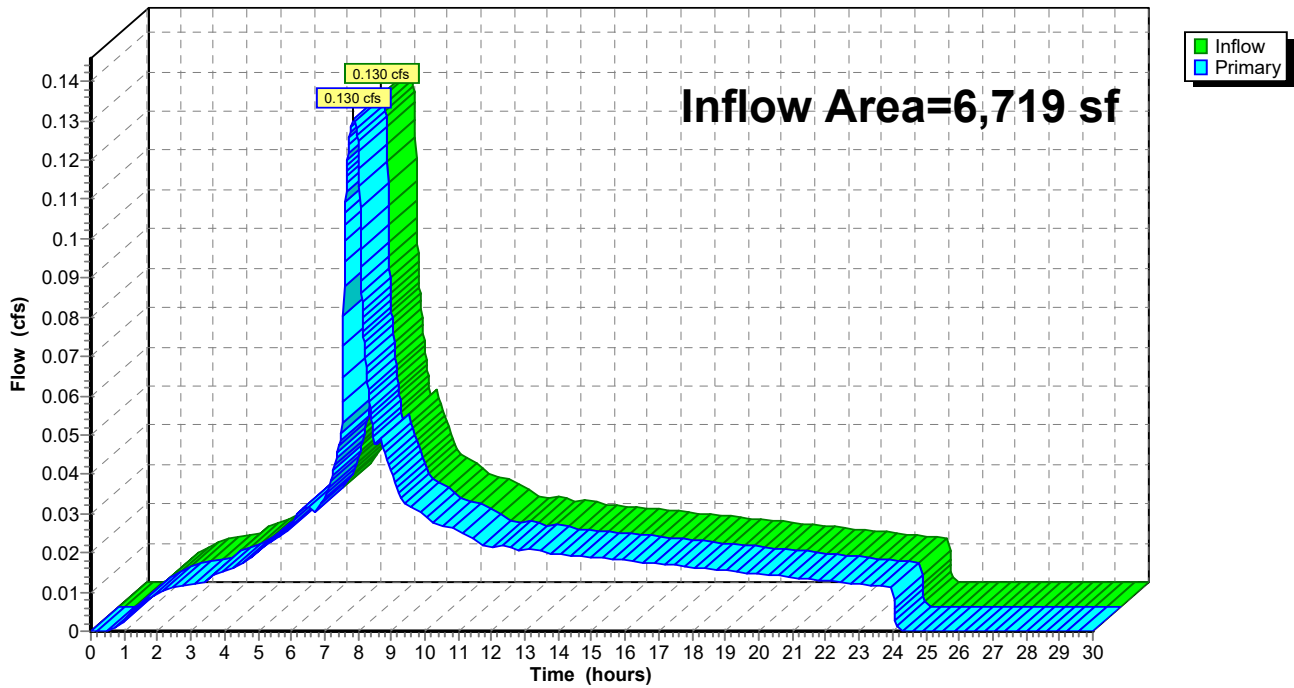
Summary for Pond 18P: (new Pond)

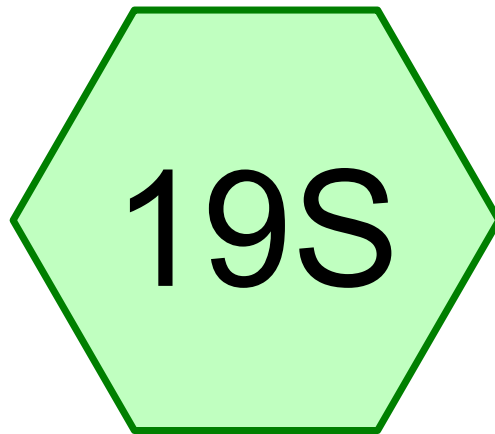
Inflow Area = 6,719 sf, 86.52% Impervious, Inflow Depth = 3.34" for 25-Year event
Inflow = 0.130 cfs @ 7.87 hrs, Volume= 1,871 cf
Primary = 0.130 cfs @ 7.87 hrs, Volume= 1,871 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

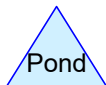
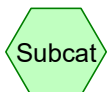
Pond 18P: (new Pond)

Hydrograph





Site Flow



WashCo CATT ISB - HydroCAD

Prepared by Froelich Engineers

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	25-Year	Type IA 24-hr		Default	24.00	1	3.90	2

WashCo CATT ISB - HydroCAD

Type IA 24-hr 25-Year Rainfall=3.90"

Prepared by Froelich Engineers

Printed 8/31/2023

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Page 3

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 19S: Site Flow

Runoff Area=39,086 sf 77.24% Impervious Runoff Depth=3.12"
Tc=5.0 min CN=93 Runoff=0.737 cfs 10,171 cf

Total Runoff Area = 39,086 sf Runoff Volume = 10,171 cf Average Runoff Depth = 3.12"
22.76% Pervious = 8,895 sf 77.24% Impervious = 30,191 sf

Summary for Subcatchment 19S: Site Flow

Runoff = 0.737 cfs @ 7.88 hrs, Volume= 10,171 cf, Depth= 3.12"

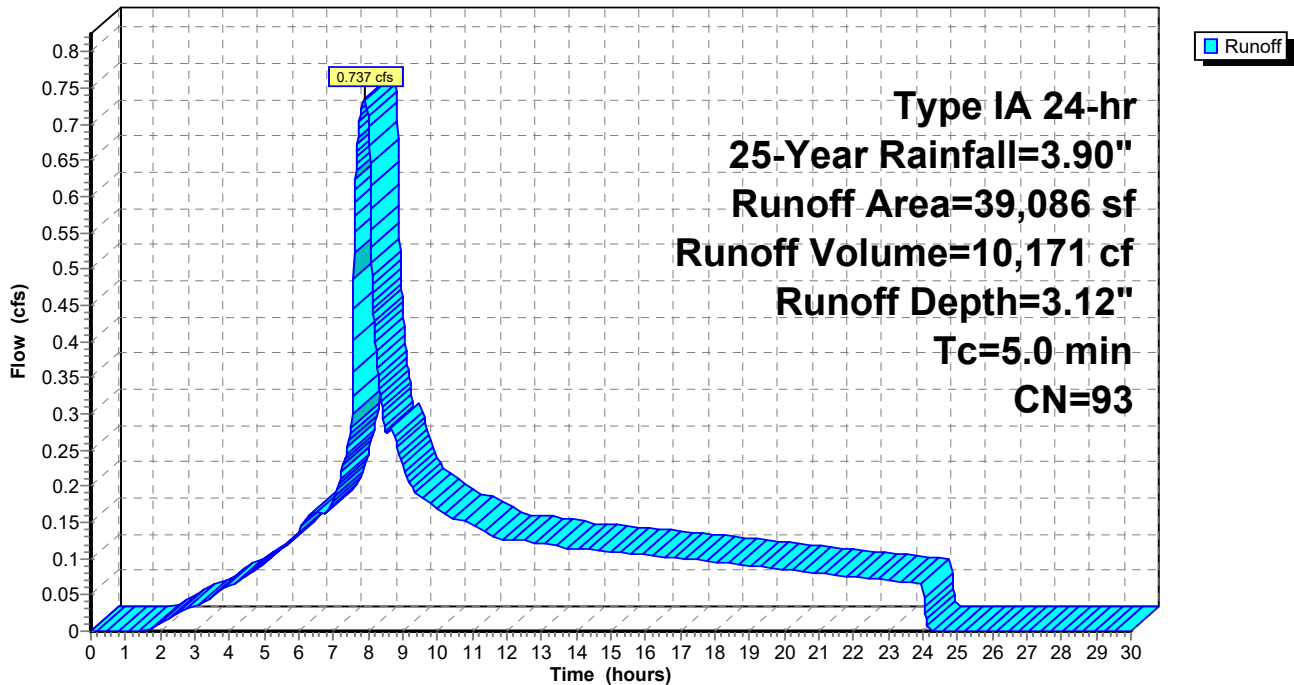
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 25-Year Rainfall=3.90"

Area (sf)	CN	Description
8,895	74	>75% Grass cover, Good, HSG C
8,262	98	Paved parking, HSG C
21,929	98	Paved parking, HSG C
39,086	93	Weighted Average
8,895		22.76% Pervious Area
30,191		77.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 19S: Site Flow

Hydrograph



Appendix F: Utility Plan / Details



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17700 SW UPPER BOONES FERRY RD
PORTLAND, OREGON 97223
(503) 624-7005
froelich-engineers.com

ARCHITECT PROJECT NUMBER:
22-010

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

HOLSTARC.COM

COUNTY PROJECT NUMBER:
2040

COUNTY PROJECT MANAGER:
STUART SPAFFORD

BUILDING NUMBER:
0371A

BUILDING NAME:
**EVERGREEN (EVGR) -
INTENSIVE SERVICES**

DEPARTMENT NAME:
**HEALTH AND HUMAN
SERVICES**

PROJECT NAME:
**CATT - INTENSIVE
SERVICES BUILDING
(ISB)**

PROJECT ADDRESS:
**17911 NW EVERGREEN PLACE
BEAVERTON, OR 97006**

REVISION / ISSUE SCHEDULE

NO.	DESCRIPTION	DATE
A	SCHEMATIC DESIGN	11/18/22
B	90% DESIGN DEVELOPMENT	02/24/23
C	100% DESIGN DEVELOPMENT	04/21/23
D	DESIGN REVIEW	05/25/23
E	DESIGN REVIEW R1	09/01/23

SHEET NUMBER:

C-400

SHEET NAME:
UTILITY PLAN

DRAWN BY: **BLU** SHEET ISSUE DATE:
04/19/23

CHECKED BY:
EME

STATUS:
DESIGN REVIEW

SHEET NOTES

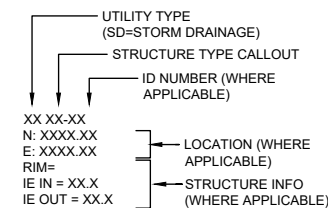
- PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL A1/C-500
- STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE.
- INSTALL THRUST BLOCK ON FIRE AND WATER LINES.
- CONTRACTOR TO VERIFY TIE-IN ELEVATION AND COMMUNICATE ANY DISCREPANCIES TO THE ENGINEER OF RECORD.
- CONNECTIONS TO ANY STRUCTURE MUST USE AN APPROVED WATERTIGHT SEAL. THIS INCLUDES MANHOLES, CATCH BASINS, VAULTS, AREA DRAINS, DITCH INLETS, OR OTHERS. REFERENCE DETAIL A3/C-501. ANY VARIATION MUST BE PRE-APPROVED BY THE CITY OF BEAVERTON ENGINEER. GLUE AND SAND IS NOT ACCEPTABLE.

KEY NOTES

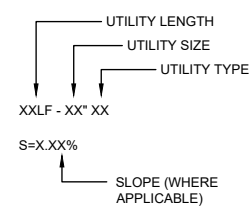
- COORDINATE WATER SERVICE POINT OF CONNECTION FOR PROPOSED 3" WATER METER. COORDINATE WITH CITY OF BEAVERTON.
- REPLACE EXISTING 6" SANITARY SEWER LATERAL WITH PROPOSED 6" SEWER LATERAL USING TRENCHLESS TECHNOLOGY. CONNECT TO EXISTING BUILDING STUB AND EXISTING SANITARY SEWER MANHOLE.
- FIELD VERIFY LOCATION, SIZE, AND IE OF EXISTING STORM MAIN. CONNECT PROPOSED LATERAL TO MAIN WITH PVC GASKETED SADDLE PER CITY STD DETAIL C2/C-501.
- COORDINATE FIRE PROTECTION SERVICE POINT OF CONNECTION. COORDINATE WITH CITY OF BEAVERTON.
- COORDINATE FIRE HYDRANT POINT OF CONNECTION. COORDINATE WITH CITY OF BEAVERTON.

UTILITY LABEL LEGEND

STRUCTURE LABEL



PIPE LABEL

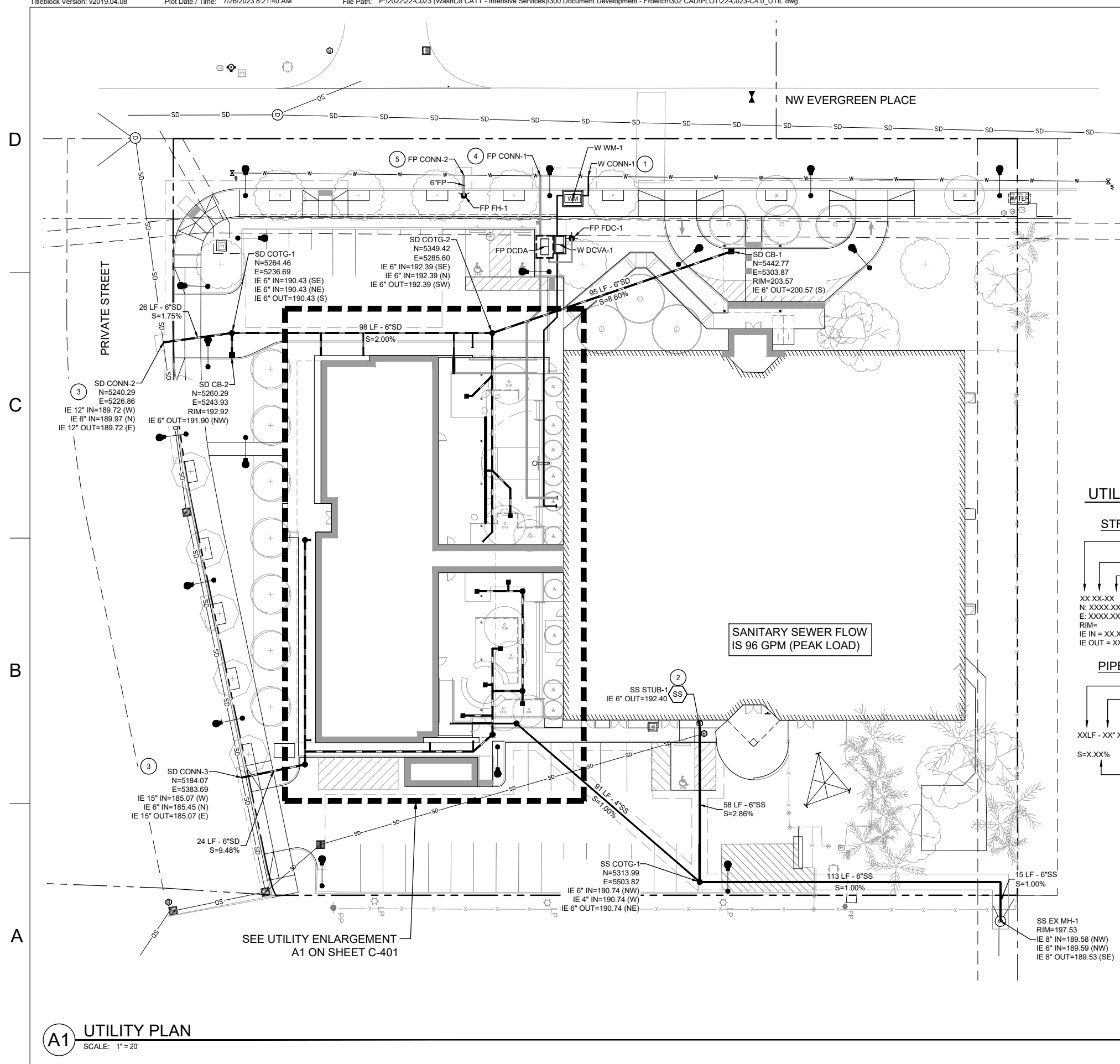


STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
AD	AREA DRAIN	D2 (C504)
BEND	BEND, USE FITTING IF APPL.	
BWV	BACKWATER VALVE	A1 (C504)
CB	TRAPPED CATCH BASIN	B2 (C504)
CONN	CONNECTION	
COTG	CLEANOUT TO GRADE	C1 (C504)
DCDA	DOUBLE CHECK DETECTOR	A3 (C502) C2 (C502)
DCVA	DOUBLE CHECK VALVE	A1 (C501) C3 (C502)
FD	FOUNDATION DRAINAGE POINT	
FDC	FIRE DEPARTMENT CONNECTION	A2 (C504)
FH	FIRE HYDRANT	A2 (C501)
GV	GATE VALVE	
MH	MANHOLE	
TEE	TEE CONNECTION	
TD	TRENCH DRAIN	B1 (C504)
WM	WATER METER	C1 (C501)
WYE	WYE CONNECTION	

SHEET LEGEND

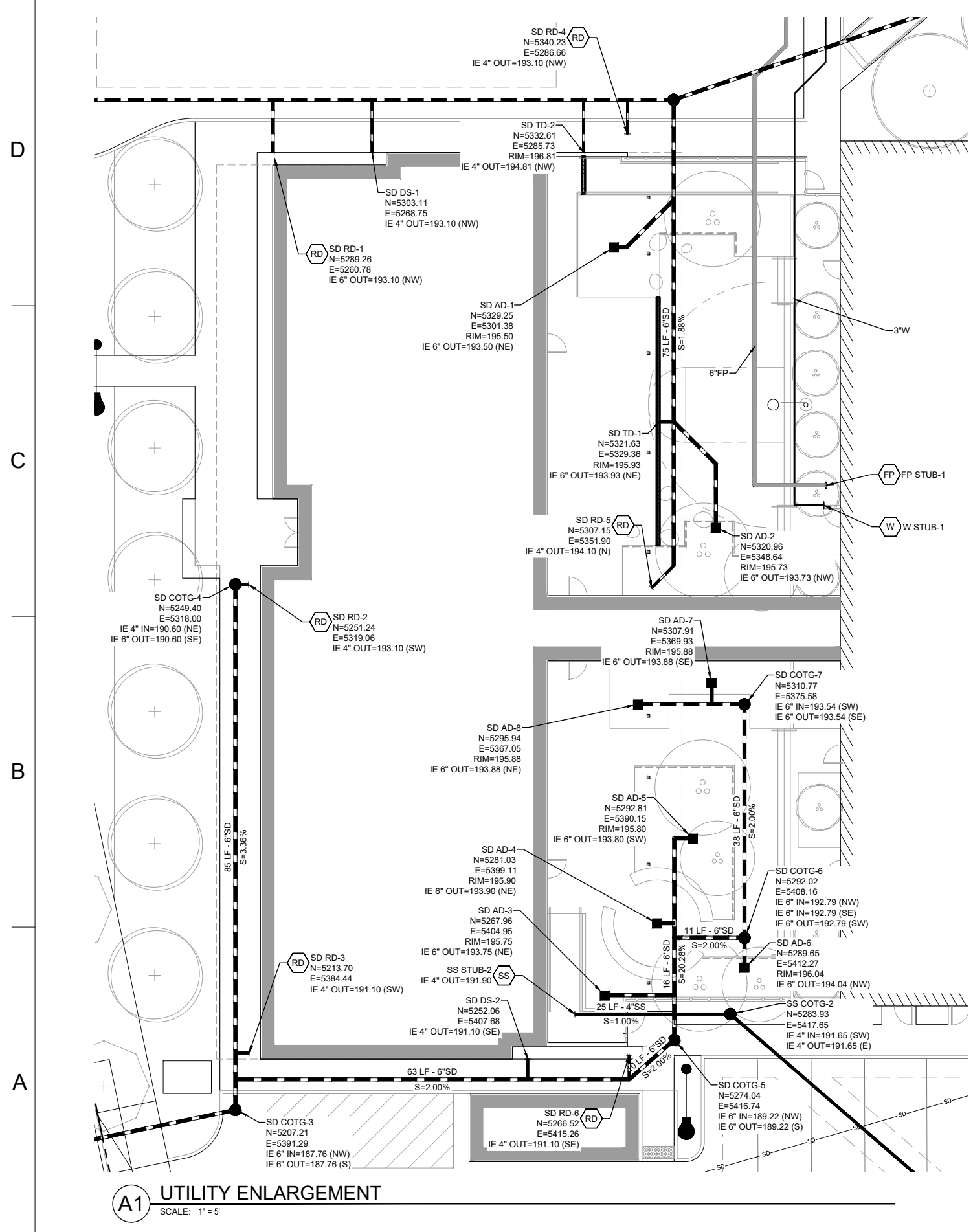
- RD CONNECT TO STORM DRAIN/ROOF DRAIN. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.
- FP CONNECT TO FIRE PROTECTION SYSTEM. SIZE AS NOTED. SEE PLUMBING PLANS FOR CONTINUATION.
- S CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.
- DCV DOUBLE CHECK VAULT A1 (C501) C3 (C502)
- DCD DOUBLE CHECK DETECTOR VAULT A3 (C502) C2 (C502)
- W CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.



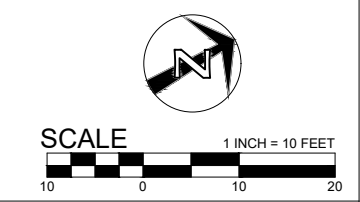
A1 UTILITY PLAN
SCALE: 1" = 20'

SEE UTILITY ENLARGEMENT
A1 ON SHEET C-401

SANITARY SEWER FLOW
IS 96 GPM (PEAK LOAD)



A1 UTILITY ENLARGEMENT
SCALE: 1" = 5'



Washington County
Support Services
Facilities and Parks Services Division
Capital Improvement Projects

169 N 1st Ave
Hillsboro, OR 97124
503-846-8751
MFacilitiesExternal@cc.washington.or.us
www.co.washington.or.us



ARCHITECT PROJECT NUMBER:
22-010

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

HOLSTARC.COM

COUNTY PROJECT NUMBER:
2040

COUNTY PROJECT MANAGER:
STUART SPAFFORD

BUILDING NUMBER:
0371A

BUILDING NAME:
EVERGREEN (EVGR) - INTENSIVE SERVICES

DEPARTMENT NAME:
HEALTH AND HUMAN SERVICES

PROJECT NAME:
CATT - INTENSIVE SERVICES BUILDING (ISB)

PROJECT ADDRESS:
17911 NW EVERGREEN PLACE
BEAVERTON, OR 97006

REVISION / ISSUE SCHEDULE

NO.	DESCRIPTION	DATE
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C	100% DESIGN DEVELOPMENT	04/21/23
D	DESIGN REVIEW	06/29/23
E	DESIGN REVIEW R1	09/01/23

SHEET NUMBER:
C-401

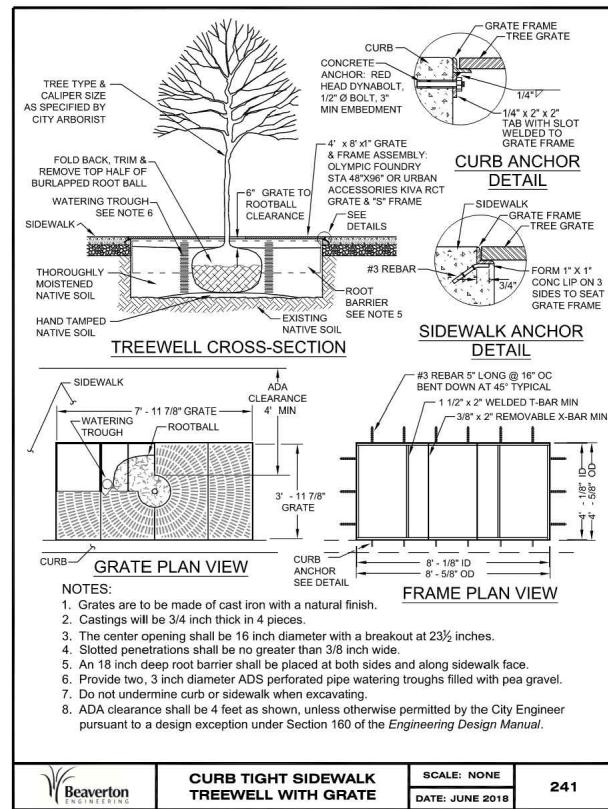
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UTILITY ENLARGEMENT

DRAWN BY:
BLU

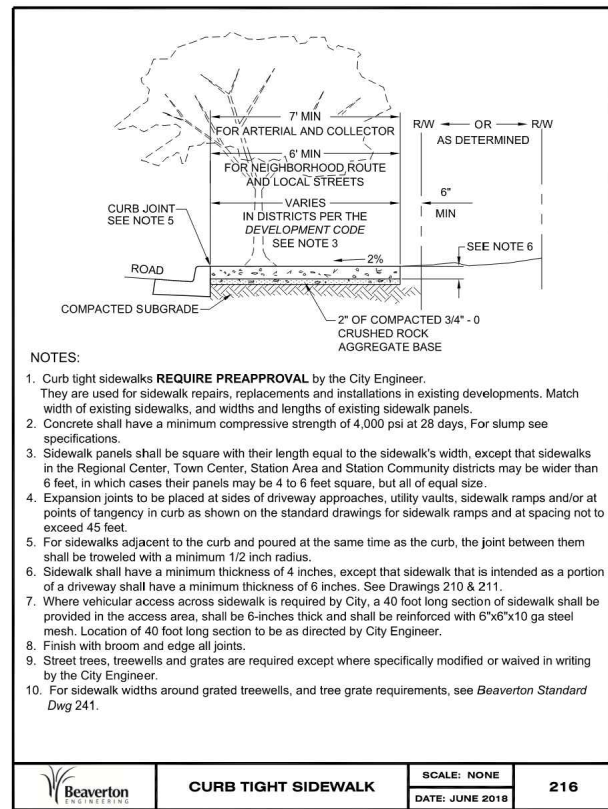
CHECKED BY:
EME

STATUS:
DESIGN REVIEW

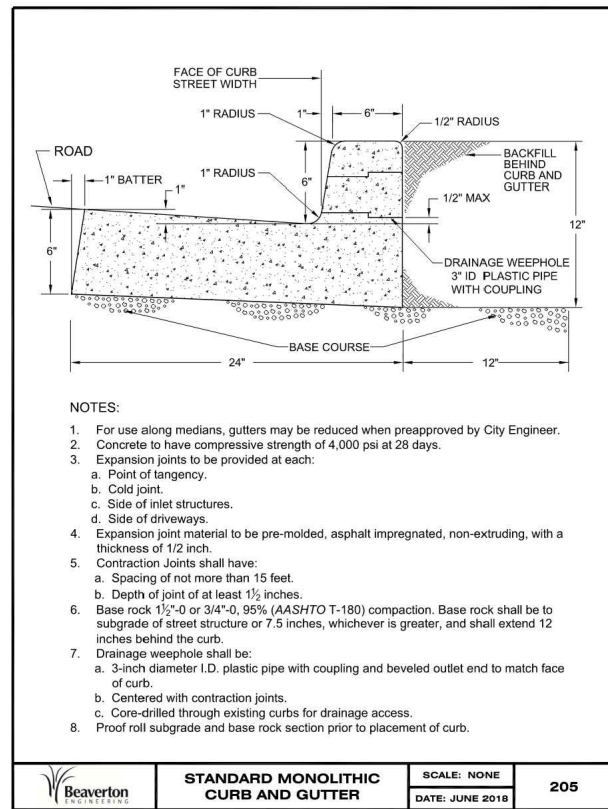
SHEET ISSUE DATE:
04/19/23



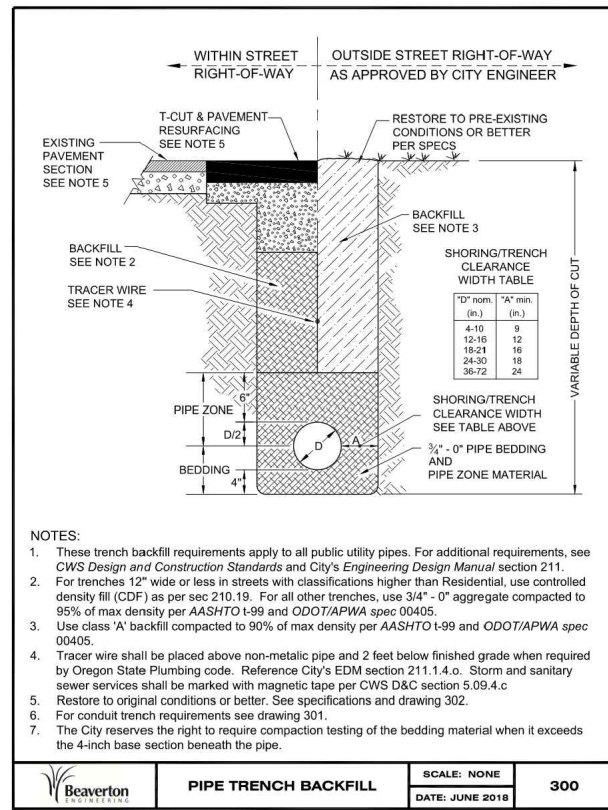
C1 CURB TIGHT S/W TREEWELL W/ GRATE
SCALE: NTS
DATE: JUNE 2018
241



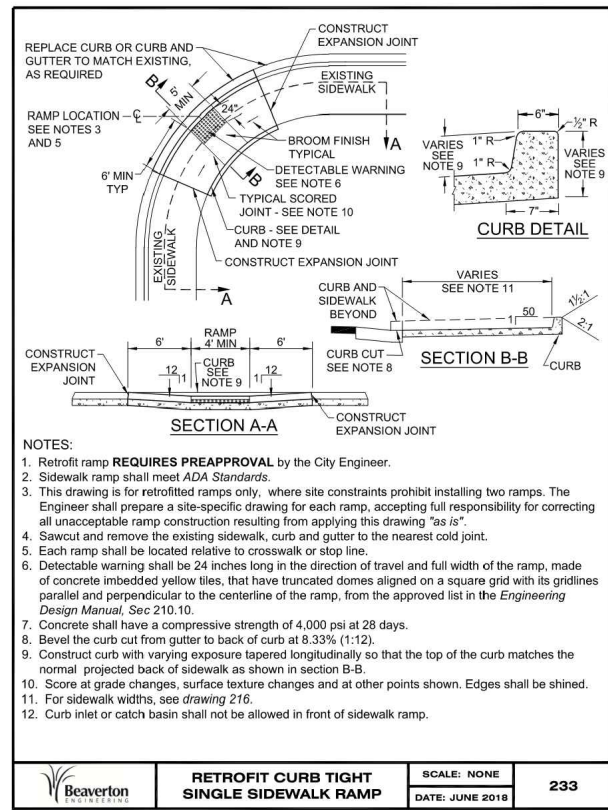
C2 CURB TIGHT SIDEWALK
SCALE: NONE
DATE: JUNE 2018
216



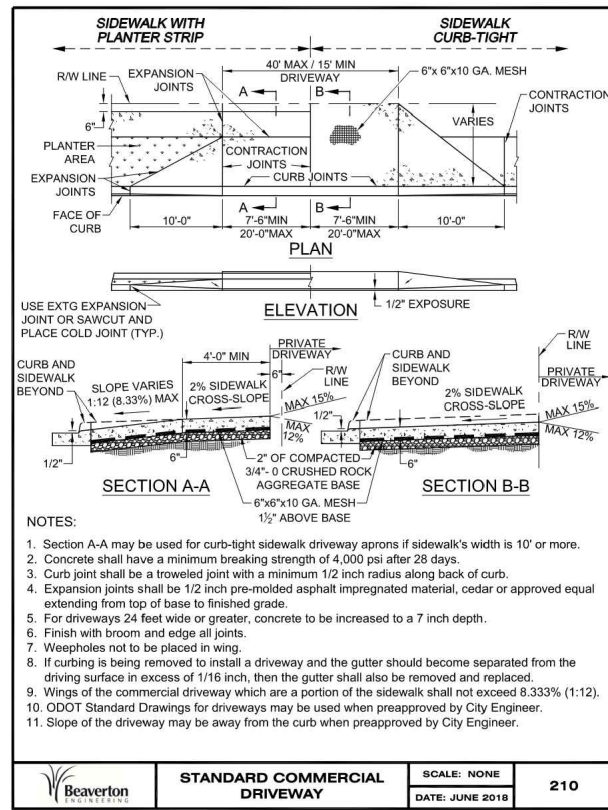
C3 STANDARD MONOLITHIC CURB AND GUTTER
SCALE: NONE
DATE: JUNE 2018
205



A1 PIPE TRENCH BACKFILL
SCALE: NONE
DATE: JUNE 2018
300



A2 RETROFIT CURB TIGHT SINGLE S/W RAMP
SCALE: NONE
DATE: JUNE 2018
233



A3 STANDARD COMMERCIAL DRIVEWAY
SCALE: NONE
DATE: JUNE 2018
210

A1 PIPE TRENCH BACKFILL
SCALE: NTS

A2 RETROFIT CURB TIGHT SINGLE S/W RAMP
SCALE: NTS

A3 STANDARD COMMERCIAL DRIVEWAY
SCALE: NTS



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ARCHITECT PROJECT NUMBER:
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97232

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COUNTY PROJECT NUMBER:
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COUNTY PROJECT MANAGER:
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BUILDING NUMBER:
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BUILDING NAME:
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DEPARTMENT NAME:
HEALTH AND HUMAN SERVICES

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17911 NW EVERGREEN PLACE
BEAVERTON, OR 97006

REVISION / ISSUE SCHEDULE

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C	100% DESIGN DEVELOPMENT	06/21/23
D	DESIGN REVIEW	06/29/23
E	DESIGN REVIEW R1	09/12/23

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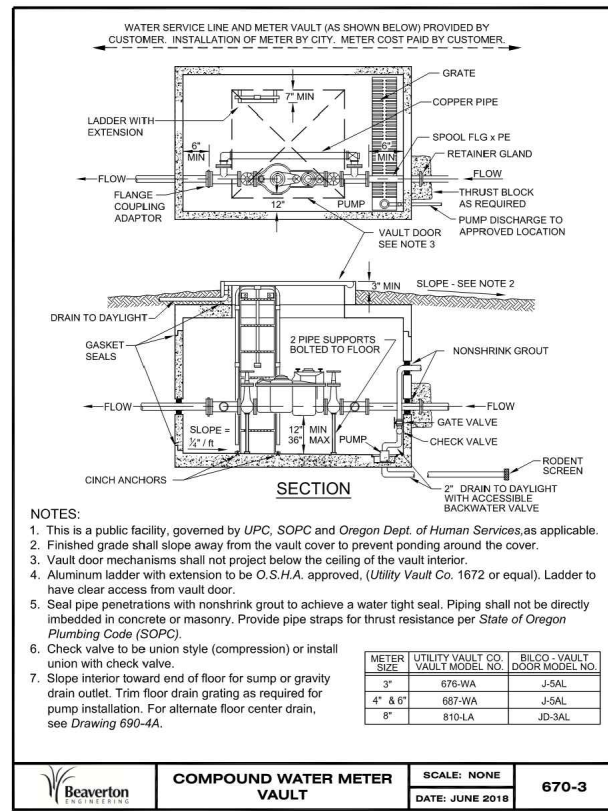
C-500

SHEET NAME:
DETAILS

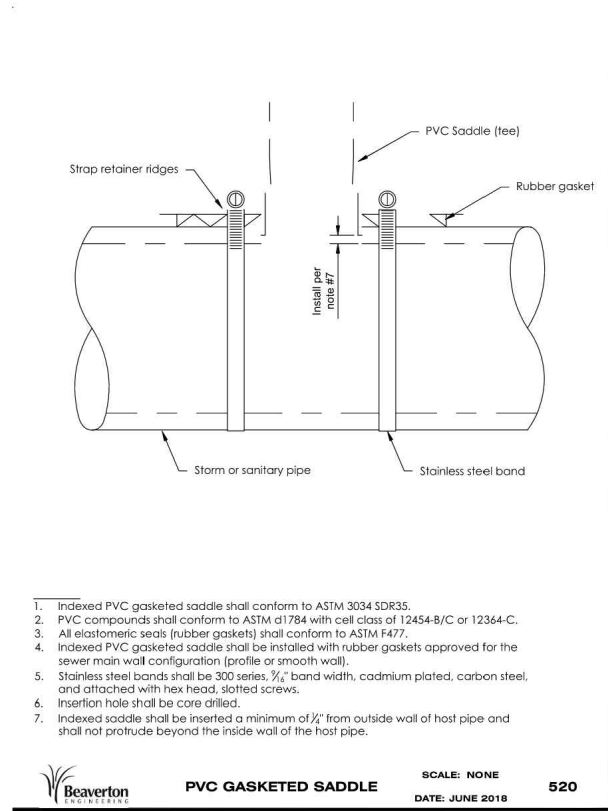
DRAWN BY: BLU SHEET ISSUE DATE: 04/19/23

CHECKED BY: EME

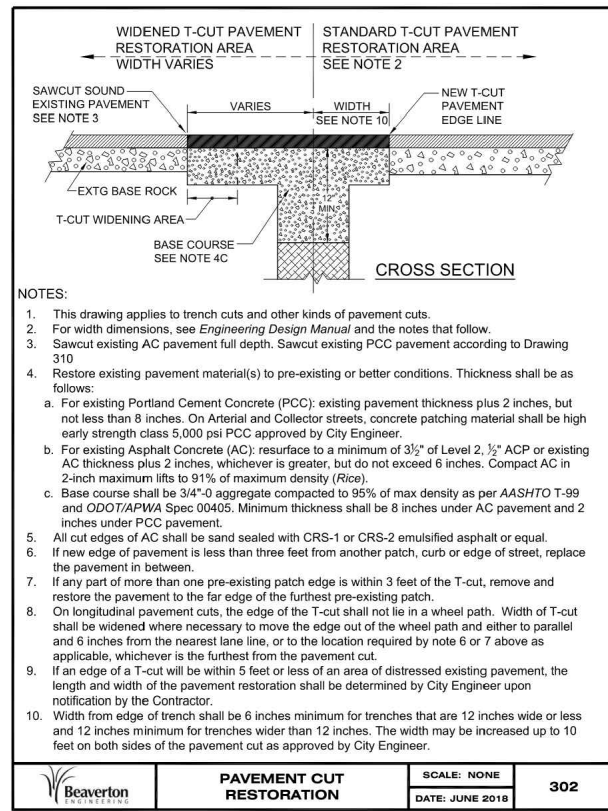
STATUS:
DESIGN REVIEW



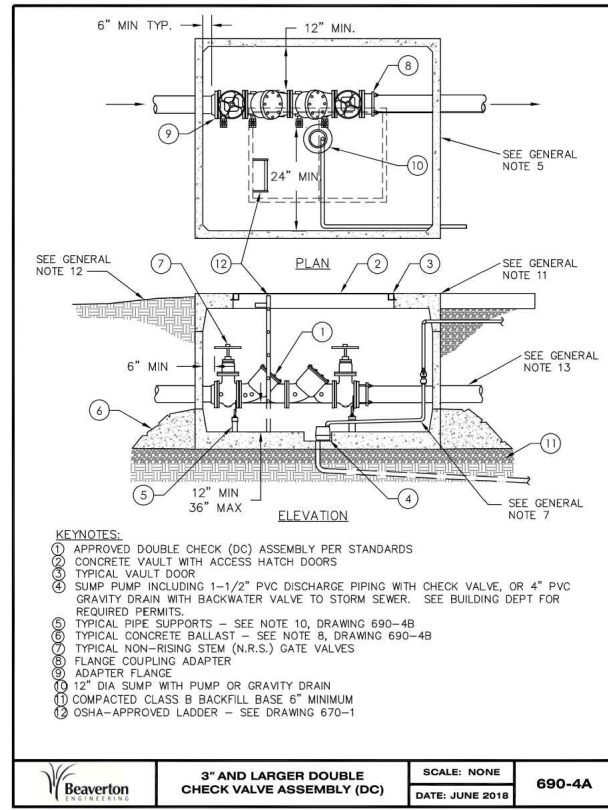
C1 3\"/>



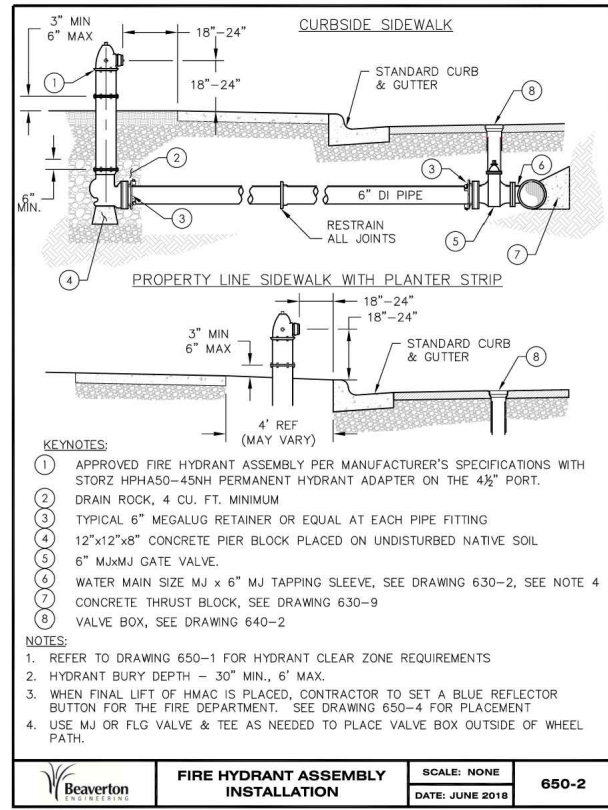
C2 PVC GASKETED SADDLE
SCALE: NTS



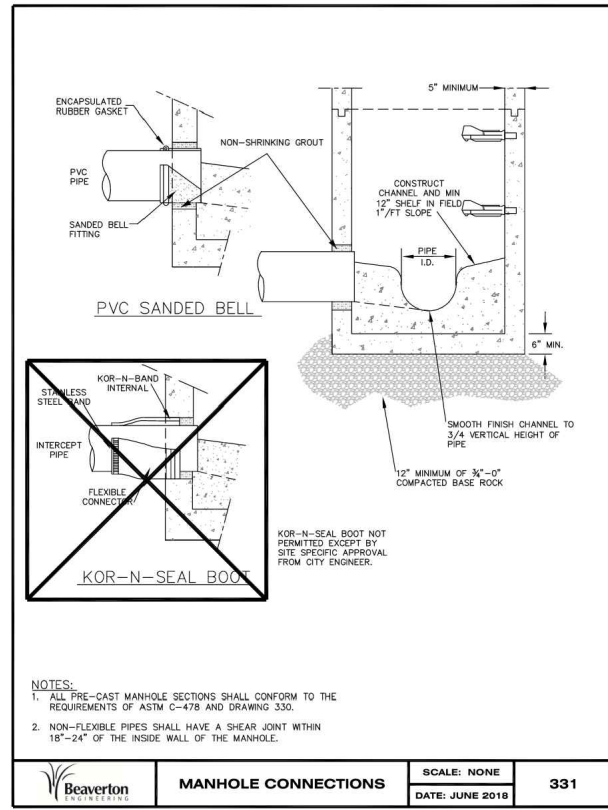
C3 PAVEMENT CUT RESTORATION
SCALE: NTS



A1 3\"/>



A2 FIRE HYDRANT ASSEMBLY INSTALLATION
SCALE: NTS



A3 MANHOLE CONNECTIONS
SCALE: NTS



ARCHITECT PROJECT NUMBER:
22-010

HOLST

123 NE 3RD AVE.
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PORTLAND, OR
97232

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COUNTY PROJECT NUMBER:
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(ISB)**

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C	100% DESIGN DEVELOPMENT	06/21/23
D	DESIGN REVIEW	06/29/23
E	DESIGN REVIEW R1	09/01/23

SHEET NUMBER:

C-501

SHEET NAME:
DETAILS

DRAWN BY: BLU SHEET ISSUE DATE: 04/19/23

CHECKED BY: EME

STATUS:
DESIGN REVIEW

D

C

B

A

VAULT INFORMATION		
DCVA SIZE	OLDCASTLE VAULT NO.	DOOR MODEL NO.
4"	676-WA	676-T-2-332P
6"	687-WA	687-T-2-332P
8"	5106-WA	5106-3-T-2-332P
10"	5106-WA	5106-3-T-2-332P

OR APPROVED EQUAL

GENERAL NOTES:

- CONSULT WITH FIRE DEPARTMENT FOR SIZING OF DCDA.
- THIS IS TO BE A PRIVATE FACILITY, GOVERNED BY QPSC, NFPA, OREGON HEALTH AUTHORITY, AND HILLSBORO FIRE MARSHAL, AS APPLICABLE.
- ALL MJ JOINTS SHALL HAVE MECHANICAL JOINT RESTRAINTS.
- CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON-SHRINK GROUT OR "LINK-SEAL."
- COAT ALL EXTERIOR VAULT SURFACES WITH CO-MA-SEAL, OR APPROVED EQUAL.
- PROVIDE POWER SOURCE AS REQUIRED FOR SUMP PUMP. SECURE POWER CORD TO DISCHARGE PIPING WITH NYLON CABLE TIES. SEE DRAWING 670-2 FOR SUMP PUMP INSTALLATION DETAILS.
- PLUMB PUMP DISCHARGE TO APPROVED LOCATION PER PLUMBING INSPECTOR.
- IN AREAS PRONE TO HIGH GROUNDWATER POUR CONCRETE BALLAST (3 CUBIC YARDS MINIMUM); ENGINEER IS RESPONSIBLE TO ENSURE ADEQUATE BALLAST IS PROVIDED TO PREVENT FLOATING OF VAULT.
- VAULT DOOR MECHANISMS SHALL NOT PROTRUDE BELOW THE CEILING OF THE VAULT INTERIOR.
- ASSEMBLY IS TO BE SUPPORTED BY A SUBSTANTIAL RUST-RESISTANT PRODUCT SUCH AS "STANDON" OR APPROVED EQUAL TO PREVENT UNDUE STRESS OR STRAIN ON THE ASSEMBLY AND PIPING.
- VAULT TOP SHALL BE SET LEVEL WITH ADJACENT HARD SURFACE (CONCRETE OR AC PAVEMENT).
- FOR INSTALLATION IN LANDSCAPE AREA, PLACE VAULT TOP 3"-5" ABOVE GROUND SURFACE AND SLOPE GROUND AWAY AT 1/4" PER FOOT TYPICAL. **DO NOT BURY HATCH DRAIN.**
- EXTEND DUCTILE IRON PIPE 5' MINIMUM OUT OF VAULT TO PROTECT FROM BREAKING DUE TO VAULT SETTLEMENT.
- SEE DRAWING 690-5A FOR PLAN AND ELEVATION VIEWS. TYPICAL LAYOUT SHOWN, MAY BE INSTALLED IN OPPOSITE CONFIGURATION TO CONFORM TO SITE CONDITION REQUIREMENTS.
- DETECTOR METER SHALL BE MART & COMPATIBLE WITH SENSUS MX4.
- WHEN LOCATED IN PEDESTRIAN WALKWAY A NON-SLIP LID AND GROUTED PICK HOLES ARE REQUIRED.

	3" AND LARGER DOUBLE CHECK DETECTOR ASSEMBLY (DETAIL NOTES)	SCALE: NONE DATE: JUNE 2018	690-5C
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FILENAME: 690-5C.dwg

C2 6" DCDA DETAIL NOTES
SCALE: NTS

VAULT INFORMATION		
DCVA SIZE	OLDCASTLE VAULT NO.	DOOR MODEL NO.
3"	577-LA	57-T-2-332P
4"	577-LA	57-T-2-332P
6"	676-WA	676-T-2-332P
8"	687-WA	687-T-2-332P
10"	5106-WA	5106-3-T-2-332P

OR APPROVED EQUAL

GENERAL NOTES:

- PLACE DC ASSEMBLY WITHIN PROPERTY LINE AS CLOSE TO METER AS POSSIBLE WITH NO CONNECTIONS OR TEES BETWEEN METER AND DC.
- THIS IS TO BE A PRIVATE FACILITY, GOVERNED BY QPSC AND OREGON HEALTH AUTHORITY, AS APPLICABLE.
- ALL MJ JOINTS SHALL HAVE MECHANICAL JOINT RESTRAINTS.
- CONTRACTOR TO SEAL ALL OPENINGS IN VAULT WITH NON-SHRINK GROUT OR "LINK-SEAL."
- COAT ALL EXTERIOR VAULT SURFACES WITH CO-MA-SEAL OR APPROVED EQUAL.
- PROVIDE POWER SOURCE AS REQUIRED FOR SUMP PUMP. SECURE POWER CORD TO DISCHARGE PIPING WITH NYLON CABLE TIES. SEE DRAWING 670-2 FOR SUMP PUMP INSTALLATION DETAILS.
- PUMP DISCHARGE TO APPROVED LOCATION PER PLUMBING INSPECTOR.
- IN AREAS PRONE TO HIGH GROUNDWATER POUR CONCRETE BALLAST (3 CUBIC YARDS MINIMUM); ENGINEER IS RESPONSIBLE TO ENSURE ADEQUATE BALLAST IS PROVIDED TO PREVENT FLOATING OF VAULT.
- VAULT DOOR MECHANISMS SHALL NOT PROTRUDE BELOW THE CEILING OF THE VAULT INTERIOR.
- ASSEMBLY IS TO BE SUPPORTED BY A SUBSTANTIAL RUST-RESISTANT PRODUCT SUCH AS "STANDON" OR APPROVED EQUAL TO PREVENT UNDUE STRESS OR STRAIN ON THE ASSEMBLY AND PIPING.
- VAULT TOP SHALL BE SET LEVEL WITH ADJACENT HARD SURFACE (CONCRETE OR AC PAVEMENT).
- FOR INSTALLATION IN LANDSCAPE AREA, PLACE VAULT TOP 3"-5" ABOVE GROUND SURFACE AND SLOPE GROUND AWAY AT 1/4" PER FOOT TYPICAL. **DO NOT BURY HATCH DRAIN.**
- EXTEND DUCTILE IRON PIPE 5' MINIMUM OUT OF VAULT TO PROTECT FROM BREAKING DUE TO VAULT SETTLEMENT.
- SEE DRAWING 690-4A FOR PLAN AND ELEVATION VIEWS.
- CONSULT WITH BUILDING DEPARTMENT FOR PROPER SIZING OF DC.
- WHEN LOCATED IN PEDESTRIAN WALKWAY A NON-SLIP LID AND GROUTED PICK HOLES ARE REQUIRED.

	3" AND LARGER DOUBLE CHECK VALVE ASSEMBLY (DETAIL NOTES)	SCALE: NONE DATE: JUNE 2018	690-4B
--	---	--------------------------------	---------------

FILENAME: 690-4B.dwg

C3 3" DCVA DETAIL NOTES
SCALE: NTS

NOTES:
Approved for use under the following conditions:
1. Locations per approved plan.
2. Neighborhood routes & local streets only.
3. Street has posted speed 25 mph or less.
4. Tangent sections or curves with 300' radius or larger.
5. Street has no more than 2 travel lanes.

Other conditions require a design exception. See Sect 160 of the Engineering Design Manual.

	MID-BLOCK PEDESTRIAN CROSSING	SCALE: NONE DATE: JUNE 2018	705
--	--------------------------------------	--------------------------------	------------

FILENAME: 690-5A.dwg

A2 MID-BLOCK PEDESTRIAN CROSSING
SCALE: NTS

KEYNOTES:

- APPROVED DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) PER STANDARDS
- CONCRETE VAULT WITH ACCESS HATCH DOORS
- TYPICAL VAULT DOOR
- SUMP PUMP INCLUDING 1 1/2" PVC DISCHARGE PIPING WITH CHECK VALVE, OR 4" PVC GRAVITY DRAIN WITH BACKWATER VALVE TO STORM SEWER
- TYPICAL PIPE SUPPORTS, SEE NOTE 10, DRAWING 690-5C
- TYPICAL CONCRETE BALLAST - SEE NOTE 8, DRAWING 690-5C
- TYPICAL OS&Y GATE VALVES FOR DCDA, 3" MINIMUM CLEARANCE IN OPEN POSITION
- FLANGE COUPLING ADAPTER
- ADAPTER FLANGE
- 12" DIA SUMP WITH PUMP OR GRAVITY DRAIN
- COMPACTED CLASS B BACKFILL BASE 6" MINIMUM
- OSHA-APPROVED LADDER - SEE DRAWING 670-1
- CHECK VALVE WITH BALL DRIP VALVE PER NFPA 13 AND NFPA 24 STANDARDS
- F.D.C. PER OREGON FIRE CODE, OREGON STRUCTURAL SPECIALTY CODE, NFPA 13, 13R, 14 & 24 STANDARDS. LOCATION AS APPROVED BY THE FIRE CODE OFFICIAL.
- DETECTOR METER - SEE NOTE 15, DRAWING 690-5C
- F.D.C. SHALL BE PROVIDED WITH LOCKING FDC PLUGS.

	3" AND LARGER DOUBLE CHECK DETECTOR ASSEMBLY	SCALE: NONE DATE: JUNE 2018	690-5A
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FILENAME: 690-5A.dwg

A3 6" DBL CHECK DETECTOR ASM (DCDA)
SCALE: NTS

Washington County
Support Services
Facilities and Parks Services Division
Capital Improvement Projects

169 N 1st Ave
Hillsboro, OR 97124
503-846-6751
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ARCHITECT PROJECT NUMBER:
22-010

HOLST

123 NE 3RD AVE.
SUITE 310
PORTLAND, OR
97232

HOLSTAR.CM

COUNTY PROJECT NUMBER:
2040

COUNTY PROJECT MANAGER:
STUART SPAFFORD

BUILDING NUMBER:
0371A

BUILDING NAME:
EVERGREEN (EVGR) - INTENSIVE SERVICES

DEPARTMENT NAME:
HEALTH AND HUMAN SERVICES

PROJECT NAME:
CATT - INTENSIVE SERVICES BUILDING (ISB)

PROJECT ADDRESS:
**17911 NW EVERGREEN PLACE
BEAVERTON, OR 97006**

REVISION / ISSUE SCHEDULE

NO.	DESCRIPTION	DATE
A	SCHEMATIC DESIGN	11/18/22
B	50% DESIGN DEVELOPMENT	02/24/23
C	100% DESIGN DEVELOPMENT	06/21/23
D	DESIGN REVIEW	06/29/23
E	DESIGN REVIEW R1	09/01/23

SHEET NUMBER:

C-502

SHEET NAME:

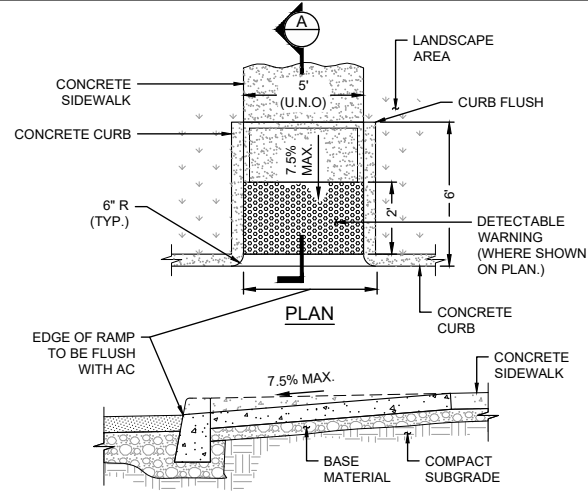
DETAILS

DRAWN BY: BLU SHEET ISSUE DATE: 04/19/23

CHECKED BY: EME

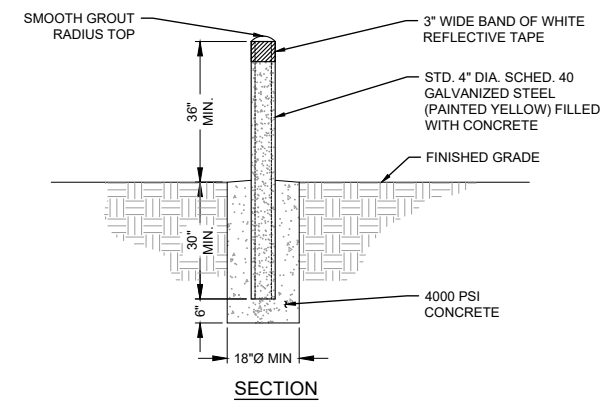
STATUS:

DESIGN REVIEW

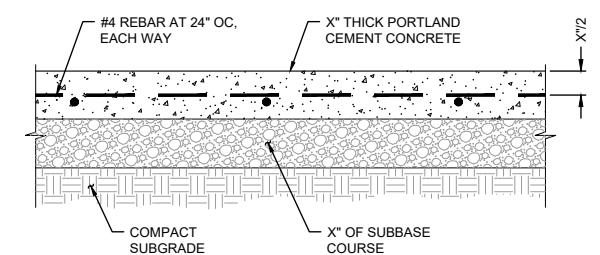


NOTES:
1. CONCRETE SHALL BE 3,000 PSI.

A1 HEAVY CONCRETE PAVEMENT SECTION
SCALE: NTS



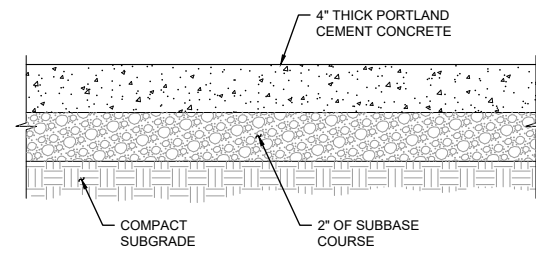
B1 PIPE BOLLARD (4" DIA)
SCALE: NTS



NOTES:
1. JOINTS:
- CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
- CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

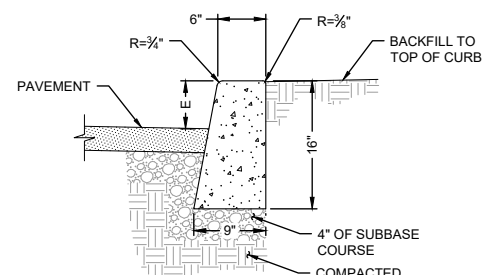
B2 PRECAST CONCRETE WHEEL STOP
SCALE: NTS

A1 HEAVY CONCRETE PAVEMENT SECTION
SCALE: NTS



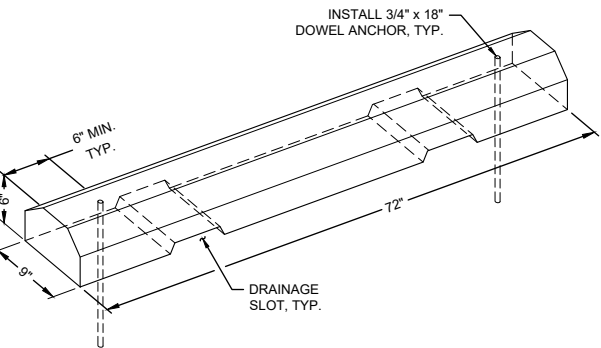
NOTES:
1. - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
- CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

D2 CONCRETE PAVEMENT SECTION
SCALE: NTS



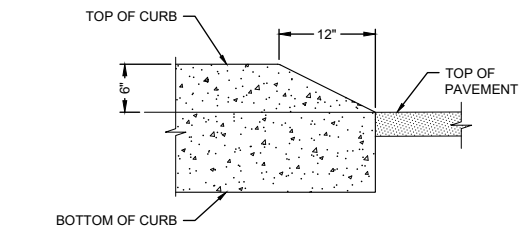
NOTES:
1. CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
3. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
4. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

C2 STANDARD CONCRETE CURB
SCALE: NTS

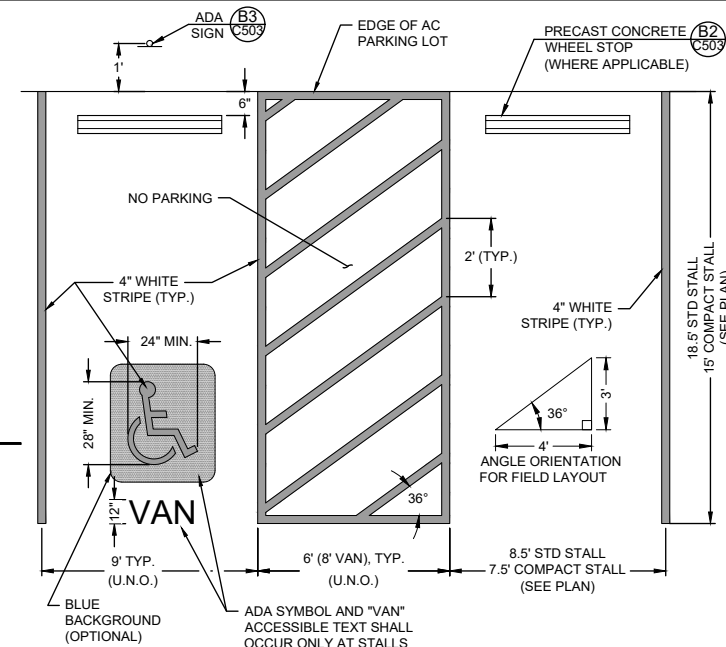


NOTES:
1. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM TO MANUFACTURER'S PRODUCTS APPROVED BY ENGINEER.

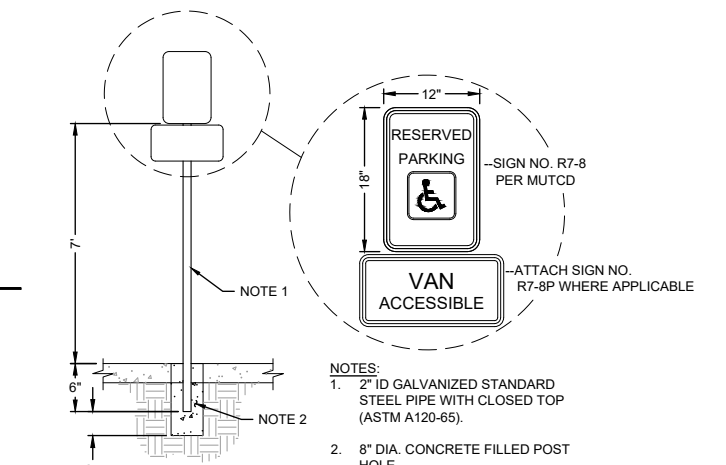
B3 ADA PARKING SIGN - TYPE 1
SCALE: NTS



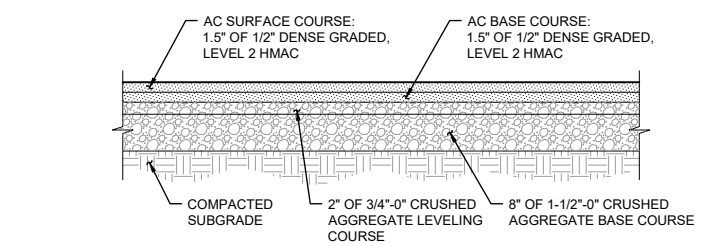
A2 CONCRETE CURB ENDING
SCALE: NTS



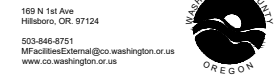
C3 TYPICAL PARKING LAYOUT
SCALE: NTS



B3 ADA PARKING SIGN - TYPE 1
SCALE: NTS



A3 ASPHALT PAVEMENT SECTION (ONSITE)
SCALE: NTS



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SHEET NUMBER:

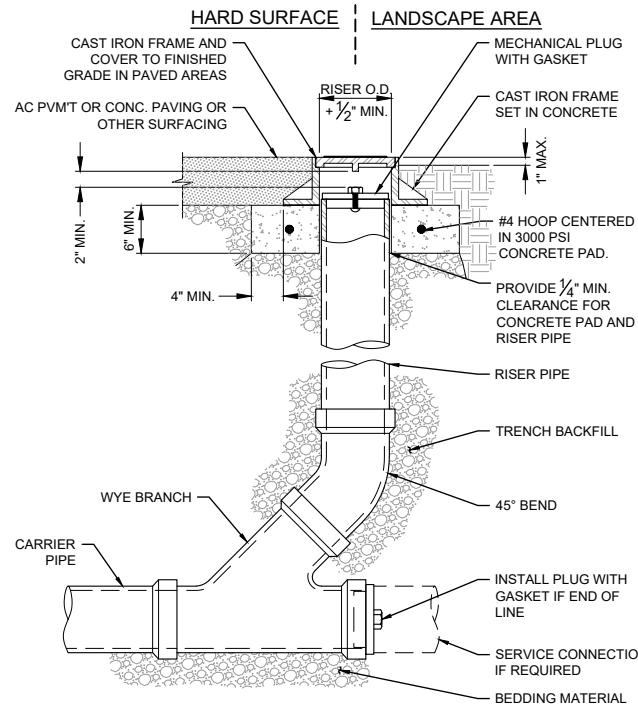
C-503

SHEET NAME:
DETAILS

DRAWN BY: BLU SHEET ISSUE DATE: 04/19/23

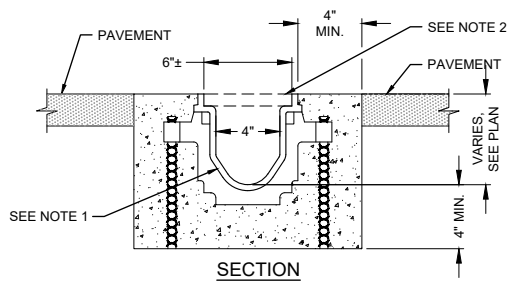
CHECKED BY: EME

STATUS:
DESIGN REVIEW



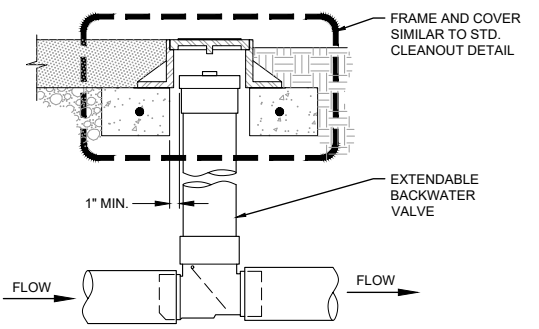
- NOTES:**
1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
 2. FOR CARRIER PIPE SIZE 6" Ø AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
 3. FOR CARRIER PIPE SIZE 8" Ø AND LARGER, RISER PIPE SHALL BE 6" Ø.
 4. RISER PIPE MATERIAL TO MATCH CARRIER PIPE MATERIAL.

C1 STANDARD CLEANOUT (COTG)
SCALE: NTS



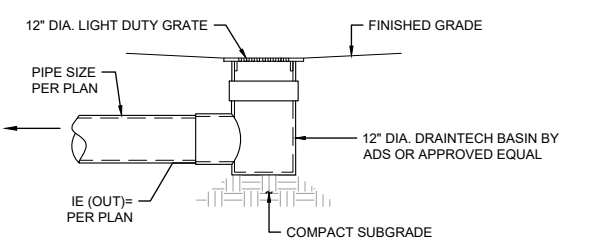
- NOTES:**
1. TRENCH DRAIN SHALL BE NDS DURA SLOPE TRENCH DRAIN. MINIMUM DEPTH = 6"
 2. TRENCH DRAINS GRATE SHALL BE IRON AGE RAIN 6" HEEL PROOF RAIN TRENCH GRATE.
 3. TRENCH SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

B1 TRENCH DRAIN - 6 INCH WIDE
SCALE: NTS



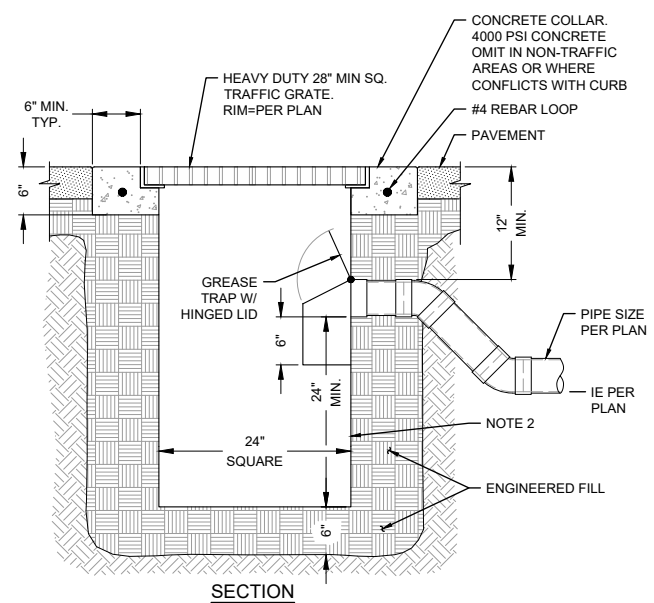
- NOTES:**
1. EXTENDABLE BACKWATER VALVE TO BE MANUFACTURED BY CLEAN CHECK OR APPROVED EQUAL AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

A1 EXTENDABLE BACKWATER VALVE
SCALE: NTS



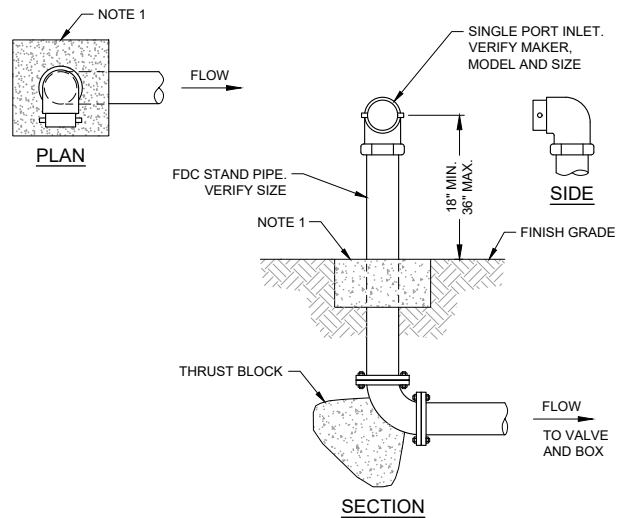
- NOTES:**
1. DRAIN AND GRATE BY ADS OR APPROVED EQUAL.

D2 AREA DRAIN - TYPE 1
SCALE: NTS



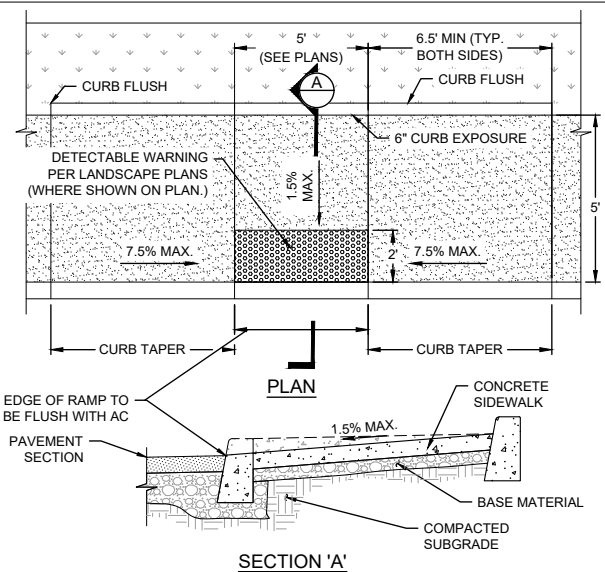
- NOTES:**
1. CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.
 2. 1/4" STEEL PLATE, BITUMINOUS COATED, AS MANUFACTURED BY GIBSON STEEL BASINS OR APPROVED EQUAL.

B2 TRAPPED CATCH BASIN
SCALE: NTS



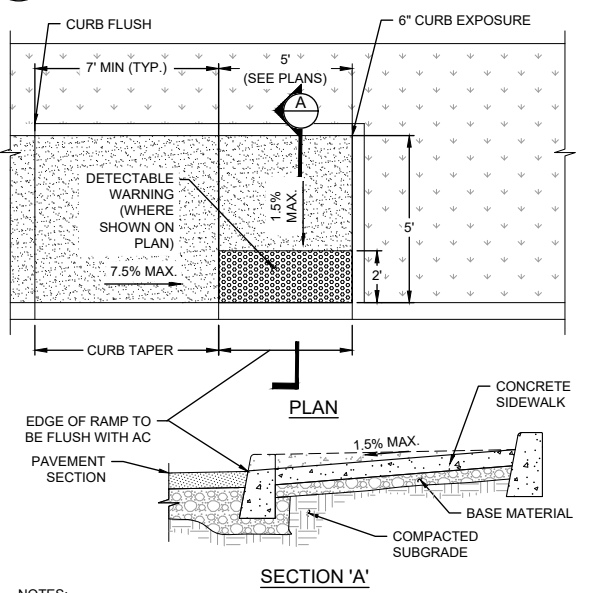
- NOTES:**
1. MIN. 3000 PSI CONCRETE ANCHOR PAD TO BE 12"x12"x6" THICK, UNLESS NOTED OTHERWISE. ELIMINATE IF INSTALLED IN CONCRETE PAVED AREA.
 2. USE FLANGE OR THREADED FITTINGS.
 3. CONTRACTOR SHALL PROVIDE SINGLE CHECK VALVE AND BALL DRIP VALVE IN ACCESSIBLE LOCATION INSIDE DCDA VAULT. COORDINATE WITH PLUMBING.

A2 FIRE DEPARTMENT CONNECTION (FDC) SINGLE PORT
SCALE: NTS



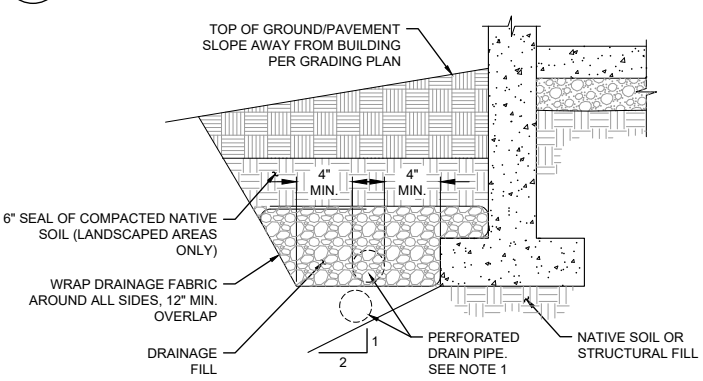
- NOTES:**
1. CONCRETE SHALL BE 3,000 PSI.

C3 CURB RAMP - TYPE 1
SCALE: NTS



- NOTES:**
1. CONCRETE SHALL BE 3,000 PSI.

B3 CURB RAMP - TYPE 3
SCALE: NTS



- NOTES:**
1. LAY PERFORATED DRAIN PIPE ON MIN. 0.5% GRADIENT. WIDENING EXCAVATION AS REQUIRED. MAINTAIN PIPE ABOVE 2:1 SLOPE AS SHOWN.
 2. CONNECT TO FOUNDATION DRAIN STUBOUT SHOWN ON PLANS.

A3 PERIMETER FOUNDATION DRAIN
SCALE: NTS



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C	100% DESIGN DEVELOPMENT	06/21/23
D	DESIGN REVIEW	06/29/23
E	DESIGN REVIEW R1	09/01/23

SHEET NUMBER:
C-504
SHEET NAME:
DETAILS

DRAWN BY:
BLU
CHECKED BY:
EME

SHEET ISSUE DATE:
04/19/23
STATUS:
DESIGN REVIEW

D

C

B

A

Appendix G: Operation and Maintenance

**PROVIDED IN
FINAL REPORT**