HYDROGEN FUELING FACILITY

1697 Bishop Road
Chehalis, WA 98532

PREPARED FOR

Twin Transit

PREPARED BY

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE C210
TUMWATER, WA 98501
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Contents

PROJECT ENGINEER'S CERTIFICATION

The technical material and data contained in these documents were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer to practice as such, is affixed below.

Digitally signed by
Brandon L Johnson
Date: 2022.10.10
16:25:47-07'00'

Brandon Johnson, PE
Principal

Date

SECTION 1: PROJECT OVERVIEW

This Stormwater Site Plan was prepared for the proposed Hydrogen Fueling Facility located at 1697 Bishop Road, Chehalis, WA 98532. This report was prepared to comply with the minimum technical standards and requirements that are set forth in the 2019 Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW).

The proposed commercial development will be constructed on a portion of Lewis County Tax Parcel No. 017758002000. Specifically, the proposed site improvements include the following:

- Site preparation, grading, and erosion control activities
- Construction of hydrogen fueling facilities
- Construction of an impervious surface parking lot & access roadways
- Construction of on-site stormwater facilities
- Extension of utilities (sewer, water, power, cable, etc.)

The proposed project improvements will result in more than 5,000 ft^2 of new impervious surface area. According to the SWMMWW, Minimum Requirements 1-9 need to be addressed. The following table summarizes how each requirement will be met.

MINIMUM REQUIREMENT	COMPLIANCE WITH MINIMUM REQUIREMENT
#1 - Stormwater Site Plan	The contents of this report and the enclosed plans are intended to satisfy this requirement.
#2 - Construction SWPPP	A Construction SWPPP will be prepared at the time of final permitting.
#3 - Source Control of Pollution	If required, a Source Control Pollution Prevention Plan will be recorded against the property prior to certificate of occupancy.
#4 - Drainage Path Preservation	Preservation of the site's previously established natural drainage paths will be maintained to the maximum extent practicable.
#5 - Stormwater Management	List 2 from the SWMMWW will be implemented to meet the project's Low Impact Development (LID) requirements.
#6 - Runoff Treatment	More than 5,000 ft^2 of new/replaced impervious surface area is proposed. A downstream, an
#7 - Flow Control	More than 10,000 ft^2 of new/replaced impervious surface is proposed. Stormwater will be released off-site at the predeveloped flow rates.
#8 - Wetlands Protection	The proposed project improvements will not disturb existing mapped wetlands.
#9 - Operation & Maintenance	An Agreement to Maintain Stormwater Facilities will be recorded against the property, if required.

Table 1: Compliance with Minimum Technical Requirements

SECTION 2: SITE CONDITIONS

Existing Site Conditions

The subject parcel is approximately 23.28 acres of undeveloped property. The proposed improvements associated with this application will be positioned on approximately 1.94 acres of the parent parcel in the southern corner of the site, adjacent to Bishop Road. The developed portion of the site, generally, slopes east to west towards Bishop Road. According to FEMA mapping, the site is positioned in Zone X, an area of minimal flooding.

Soils Information

A geotechnical report will be completed for the project prior to final construction. For preliminary design, the SCS Web Soil Survey shows the soils to be Scamman Silty Clay Loam, a type C/D with little infiltration capacity. A detention facility that releases stormwater off-site at the predeveloped flow rates is proposed in-lieu of an infiltration facility.

SECTION 3: OFF-SITE ANALYSIS AND REPORT

On-site generated stormwater runoff from the proposed commercial development will be routed to an on-site detention facility, which will be released off-site to the north at the predeveloped flow rates. Historic off-site drainage courses will not be altered. Consequently, downstream impacts are not anticipated.

SECTION 4: PERMANENT STORMWATER CONTROL PLAN

Summary Section

The following tables identifies the different land-type designations and their respective areas for the on-site and off-site threshold discharge areas:

ON-SITE LAND TYPE DESIGNATIONS	AREA (ACRES)	% OF TOTAL AREA
Threshold Discharge Area	1.94	100.0%
Proposed Impervious Surface Area	1.27	65.5%
Proposed Landscaping & Storm Pond Area	0.67	34.5%

Low Impact Development Analysis

List #2 from *Table I-3.2* of the SWMMWW will be used for this project in lieu of meeting the LID Performance Standard.

SURFACE	BMP LID	FEASIBLE	INFEASIBILITY CRITERIA
Landscaped Areas	BMP T5.13	Yes	Post Construction Soil Quality & Depth - N/A

SURFACE	BMP LID	FEASIBLE	INFEASIBILITY CRITERIA
Roof Area	BMP T5.30	No	A minimum on-site forested or native vegetation flow path length of 100 feet cannot be achieved.
	BMP T5.10A	No	Per soils information, infiltration is infeasible.
	BMP T7.30	No	Per soils information, infeasible.
	BMP 5.10B	No	A vegetated flowpath of at least 25 feet between dispersion BMP and property line is not feasible.
	BMP T5.10C	No	The connecting pipe discharged to a stormwater facility designed to meet Minimum Requirement 7.

SURFACE	BMP LID	FEASIBLE	INFEASIBILITY CRITERIA
Other Hardscapes	BMP T5.30	No	A minimum on-site forested or native vegetation flow path length of 100 feet cannot be achieved.
	BMP T5.15	No	New permeable pavement would be exposed to long-term excessive sediment deposition after construction.
	BMP T7.30	No	Per soils information, infiltration is infeasible.
	BMP T5.12	No	A vegetated flowpath of at least 25 feet between dispersion BMP and property line is not feasible.
	BMP T5.11	No	A vegetated flowpath of at least 25 feet between dispersion BMP and property line is not feasible.

Water Quality System

According to Volume I, Section 2.5.6, of the SWMMWW, Basic Treatment is required for the proposed project improvements. The project will utilize a treatment BMP downstream of the proposed detention facility. Clear Creek's 2021 Western Washington Hydrologic Modeling (WWHM) software was used to determine a 2yr flow rate of 0.0581 CFS (26.07 gpm). An MWS-Modular Wetland will be utilized to provide treatment per the WSDOE sizing requirements below:

- **Wetland Cell Surface Area:** WSDOE requires 1 SF of wetland cell surface area per gpm of treatment flow. The MWS-L-G-6.33-V contains 50sf of surface area, which is greater than the required 26 sf.

- **Pretreatment Filter:** WSDOE requires 2.1 gpm/sf of cartridge area. Each cartridge contains 25 SF of surface area, therefore 1 pretreatment cartridge is required.

Flow Control System

According to Volume I, Section 2.5.7, of the SWMMWW, stormwater discharges shall match developed discharge durations to predeveloped durations for the range of predeveloped discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow (i.e., the stream duration standard). WWHM was used to size the proposed detention facility. An infiltration rate was **not** applied for the design of the detention pond. The Detention WWHM report is enclosed as an appendix. Stormwater will be released off-site at the historic location. Refer to the civil engineering plans for additional design information.

SECTION 5: PERMITS

The following permits and approvals will need to be secured from Lewis County prior to beginning construction activities.

- State Environmental Policy Act (SEPA) Determination
- Site Plan Review
- Civil Construction Permit
- Building Permit
- WSDOE Notice of Intent

SECTION 6: CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

A Construction Stormwater Pollution Prevention Plan will be prepared as part of the final construction documents.

APPENDIX 1
VICINITY MAP

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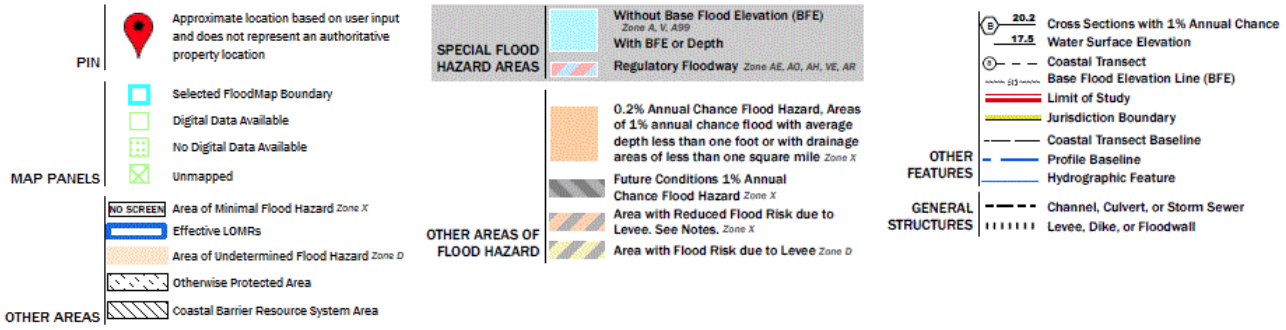
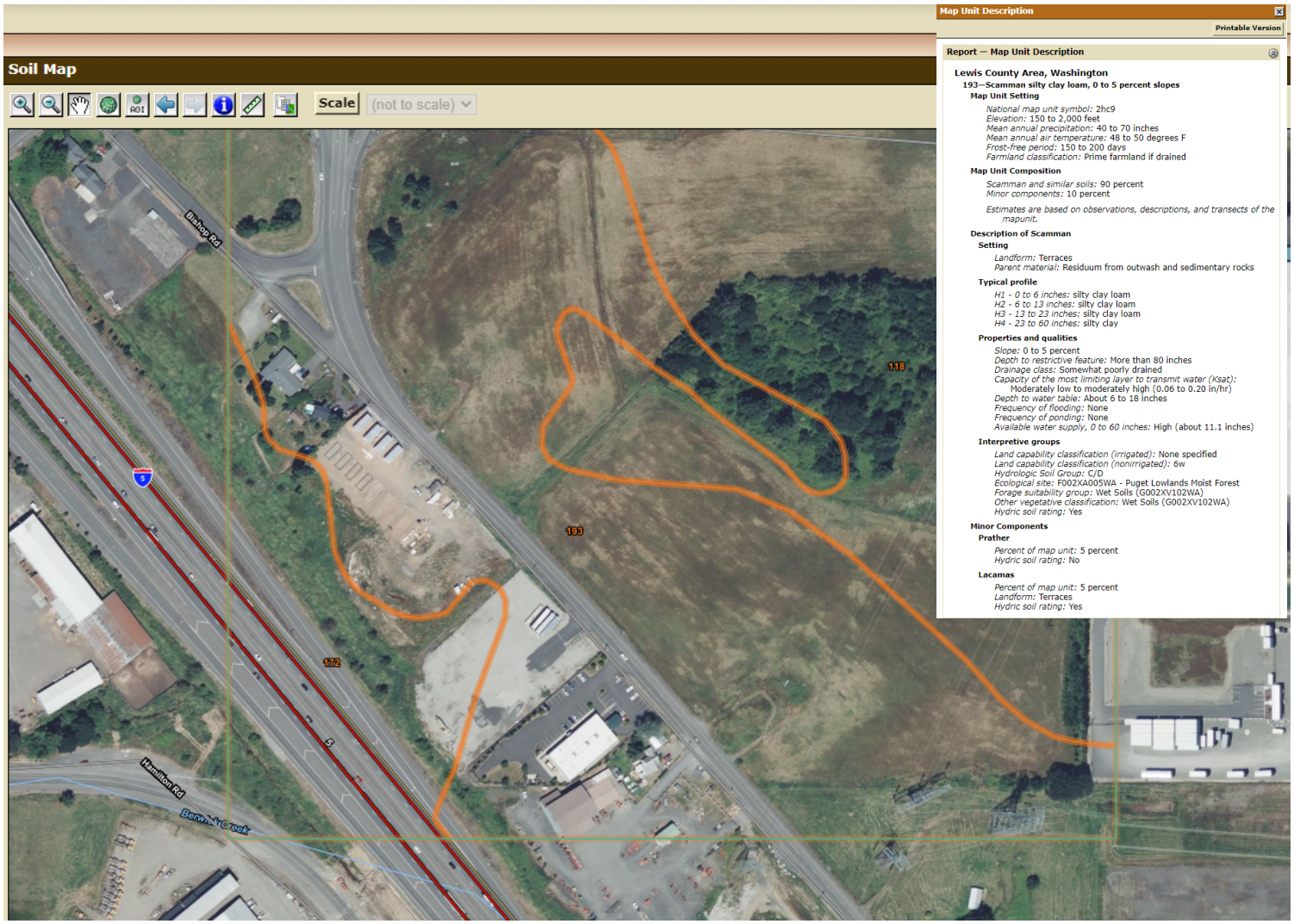
APPENDIX 2
FEMA MAP



APPENDIX 3
SCS SOILS MAP



APPENDIX 4
WWHM REPORT

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WWHM2012

PROJECT REPORT

General Model Information

Project Name:	114.004 Twin Transit
Site Name:	
Site Address:	
City:	
Report Date:	9/29/2022
Gage:	Olympia
Data Start:	1955/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	0.800
Version Date:	2019/09/13
Version:	4.2.17

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Flat	1.94
Pervious Total	1.94
Impervious Land Use	acre
Impervious Total	0
Basin Total	1.94

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
C, Lawn, Flat	0.67
Pervious Total	0.67

Impervious Land Use	acre
PARKING FLAT	1.27
Impervious Total	1.27
Basin Total	1.94

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1	Trapezoidal Pond 1	

Routing Elements
Predeveloped Routing

Mitigated Routing

Trapezoidal Pond 1

Bottom Length: 76.00 ft.
Bottom Width: 76.00 ft.
Depth: 5 ft.
Volume at riser head: 0.7283 acre-feet.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 18 in.
Notch Type: Rectangular
Notch Width: 0.029 ft.
Notch Height: 1.225 ft.
Orifice 1 Diameter: 0.829 in. Elevation:0 ft.
Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

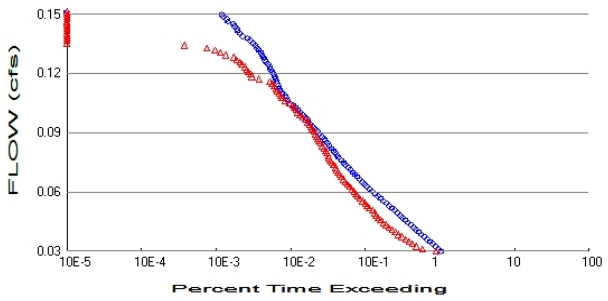
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.132	0.000	0.000	0.000
0.0556	0.133	0.007	0.004	0.000
0.1111	0.134	0.014	0.006	0.000
0.1667	0.136	0.022	0.007	0.000
0.2222	0.137	0.030	0.008	0.000
0.2778	0.138	0.037	0.009	0.000
0.3333	0.139	0.045	0.010	0.000
0.3889	0.140	0.053	0.011	0.000
0.4444	0.142	0.061	0.012	0.000
0.5000	0.143	0.069	0.013	0.000
0.5556	0.144	0.076	0.013	0.000
0.6111	0.145	0.085	0.014	0.000
0.6667	0.146	0.093	0.015	0.000
0.7222	0.148	0.101	0.015	0.000
0.7778	0.149	0.109	0.016	0.000
0.8333	0.150	0.117	0.017	0.000
0.8889	0.151	0.126	0.017	0.000
0.9444	0.153	0.134	0.018	0.000
1.0000	0.154	0.143	0.018	0.000
1.0556	0.155	0.152	0.019	0.000
1.1111	0.156	0.160	0.019	0.000
1.1667	0.158	0.169	0.020	0.000
1.2222	0.159	0.178	0.020	0.000
1.2778	0.160	0.187	0.021	0.000
1.3333	0.162	0.196	0.021	0.000
1.3889	0.163	0.205	0.022	0.000
1.4444	0.164	0.214	0.022	0.000
1.5000	0.165	0.223	0.022	0.000
1.5556	0.167	0.232	0.023	0.000
1.6111	0.168	0.242	0.023	0.000
1.6667	0.169	0.251	0.024	0.000
1.7222	0.171	0.260	0.024	0.000

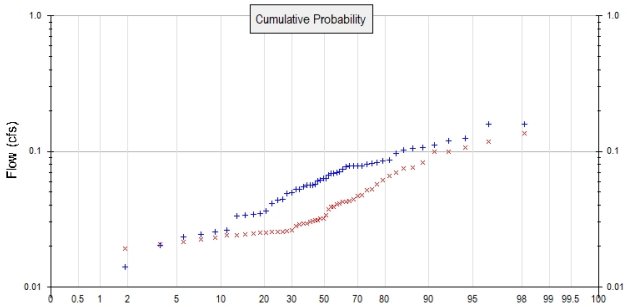
1.7778	0.172	0.270	0.024	0.000
1.8333	0.173	0.280	0.025	0.000
1.8889	0.175	0.289	0.025	0.000
1.9444	0.176	0.299	0.026	0.000
2.0000	0.177	0.309	0.026	0.000
2.0556	0.179	0.319	0.026	0.000
2.1111	0.180	0.329	0.027	0.000
2.1667	0.181	0.339	0.027	0.000
2.2222	0.183	0.349	0.027	0.000
2.2778	0.184	0.359	0.028	0.000
2.3333	0.186	0.369	0.028	0.000
2.3889	0.187	0.380	0.028	0.000
2.4444	0.188	0.390	0.029	0.000
2.5000	0.190	0.401	0.029	0.000
2.5556	0.191	0.411	0.029	0.000
2.6111	0.192	0.422	0.030	0.000
2.6667	0.194	0.433	0.030	0.000
2.7222	0.195	0.444	0.030	0.000
2.7778	0.197	0.455	0.031	0.000
2.8333	0.198	0.466	0.032	0.000
2.8889	0.200	0.477	0.035	0.000
2.9444	0.201	0.488	0.038	0.000
3.0000	0.202	0.499	0.042	0.000
3.0556	0.204	0.510	0.045	0.000
3.1111	0.205	0.522	0.050	0.000
3.1667	0.207	0.533	0.054	0.000
3.2222	0.208	0.545	0.059	0.000
3.2778	0.210	0.556	0.064	0.000
3.3333	0.211	0.568	0.069	0.000
3.3889	0.213	0.580	0.074	0.000
3.4444	0.214	0.592	0.079	0.000
3.5000	0.216	0.604	0.085	0.000
3.5556	0.217	0.616	0.090	0.000
3.6111	0.219	0.628	0.096	0.000
3.6667	0.220	0.640	0.101	0.000
3.7222	0.222	0.652	0.107	0.000
3.7778	0.223	0.665	0.112	0.000
3.8333	0.225	0.677	0.119	0.000
3.8889	0.226	0.690	0.126	0.000
3.9444	0.228	0.702	0.133	0.000
4.0000	0.229	0.715	0.140	0.000
4.0556	0.231	0.728	0.348	0.000
4.1111	0.232	0.741	0.728	0.000
4.1667	0.234	0.754	1.215	0.000
4.2222	0.235	0.767	1.778	0.000
4.2778	0.237	0.780	2.390	0.000
4.3333	0.238	0.793	3.024	0.000
4.3889	0.240	0.806	3.652	0.000
4.4444	0.242	0.820	4.246	0.000
4.5000	0.243	0.833	4.781	0.000
4.5556	0.245	0.847	5.240	0.000
4.6111	0.246	0.861	5.611	0.000
4.6667	0.248	0.874	5.897	0.000
4.7222	0.249	0.888	6.118	0.000
4.7778	0.251	0.902	6.393	0.000
4.8333	0.253	0.916	6.613	0.000
4.8889	0.254	0.930	6.825	0.000
4.9444	0.256	0.944	7.031	0.000

5.0000	0.257	0.959	7.231	0.000
5.0556	0.259	0.973	7.425	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 1.94
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 0.67
Total Impervious Area: 1.27

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.060693
5 year	0.092837
10 year	0.112539
25 year	0.135272
50 year	0.150656
100 year	0.164799

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.036959
5 year	0.058137
10 year	0.075524
25 year	0.101784
50 year	0.12477
100 year	0.150958

TREATMENT FLOW

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1956	0.074	0.042
1957	0.102	0.031
1958	0.034	0.023
1959	0.044	0.030
1960	0.081	0.100
1961	0.061	0.039
1962	0.020	0.024
1963	0.086	0.069
1964	0.063	0.032
1965	0.052	0.028

1966	0.034	0.026
1967	0.068	0.031
1968	0.050	0.026
1969	0.026	0.025
1970	0.056	0.043
1971	0.071	0.047
1972	0.105	0.100
1973	0.057	0.065
1974	0.041	0.034
1975	0.096	0.025
1976	0.078	0.047
1977	0.014	0.019
1978	0.060	0.057
1979	0.078	0.024
1980	0.056	0.042
1981	0.080	0.032
1982	0.053	0.041
1983	0.085	0.029
1984	0.068	0.025
1985	0.023	0.025
1986	0.107	0.039
1987	0.120	0.076
1988	0.035	0.029
1989	0.044	0.023
1990	0.126	0.052
1991	0.158	0.107
1992	0.036	0.029
1993	0.025	0.022
1994	0.024	0.021
1995	0.069	0.031
1996	0.111	0.045
1997	0.063	0.062
1998	0.055	0.026
1999	0.077	0.075
2000	0.078	0.037
2001	0.012	0.019
2002	0.078	0.083
2003	0.033	0.025
2004	0.049	0.052
2005	0.057	0.025
2006	0.083	0.041
2007	0.067	0.119
2008	0.160	0.136

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.1598	0.1356
2	0.1578	0.1186
3	0.1255	0.1067
4	0.1203	0.1000
5	0.1112	0.0998
6	0.1068	0.0825
7	0.1051	0.0760
8	0.1015	0.0750
9	0.0963	0.0694
10	0.0861	0.0655
11	0.0854	0.0616

12	0.0831	0.0571
13	0.0812	0.0522
14	0.0798	0.0520
15	0.0783	0.0475
16	0.0781	0.0466
17	0.0777	0.0445
18	0.0775	0.0432
19	0.0767	0.0424
20	0.0741	0.0423
21	0.0710	0.0414
22	0.0695	0.0406
23	0.0685	0.0391
24	0.0682	0.0391
25	0.0665	0.0372
26	0.0633	0.0339
27	0.0630	0.0320
28	0.0612	0.0317
29	0.0605	0.0310
30	0.0571	0.0309
31	0.0566	0.0308
32	0.0564	0.0303
33	0.0563	0.0295
34	0.0549	0.0292
35	0.0527	0.0291
36	0.0524	0.0280
37	0.0497	0.0262
38	0.0492	0.0259
39	0.0443	0.0256
40	0.0437	0.0255
41	0.0414	0.0253
42	0.0363	0.0252
43	0.0346	0.0251
44	0.0342	0.0247
45	0.0337	0.0246
46	0.0334	0.0241
47	0.0263	0.0240
48	0.0253	0.0231
49	0.0243	0.0226
50	0.0233	0.0216
51	0.0203	0.0206
52	0.0141	0.0193
53	0.0120	0.0189

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0303	19217	16449	85	Pass
0.0316	17693	10768	60	Pass
0.0328	16174	9004	55	Pass
0.0340	14860	7951	53	Pass
0.0352	13639	7109	52	Pass
0.0364	12507	6466	51	Pass
0.0376	11467	5772	50	Pass
0.0389	10461	5133	49	Pass
0.0401	9593	4680	48	Pass
0.0413	8859	4256	48	Pass
0.0425	8168	3856	47	Pass
0.0437	7532	3537	46	Pass
0.0449	6941	3232	46	Pass
0.0461	6397	2974	46	Pass
0.0474	5910	2764	46	Pass
0.0486	5447	2607	47	Pass
0.0498	4999	2472	49	Pass
0.0510	4555	2314	50	Pass
0.0522	4193	2093	49	Pass
0.0534	3866	1968	50	Pass
0.0547	3570	1862	52	Pass
0.0559	3263	1712	52	Pass
0.0571	2972	1568	52	Pass
0.0583	2730	1464	53	Pass
0.0595	2505	1386	55	Pass
0.0607	2308	1311	56	Pass
0.0619	2117	1228	58	Pass
0.0632	1953	1148	58	Pass
0.0644	1801	1069	59	Pass
0.0656	1672	1000	59	Pass
0.0668	1558	937	60	Pass
0.0680	1449	883	60	Pass
0.0692	1345	842	62	Pass
0.0704	1258	805	63	Pass
0.0717	1169	775	66	Pass
0.0729	1096	738	67	Pass
0.0741	1012	701	69	Pass
0.0753	949	660	69	Pass
0.0765	886	633	71	Pass
0.0777	824	611	74	Pass
0.0790	785	593	75	Pass
0.0802	738	571	77	Pass
0.0814	695	549	78	Pass
0.0826	653	519	79	Pass
0.0838	610	495	81	Pass
0.0850	577	468	81	Pass
0.0862	544	445	81	Pass
0.0875	518	428	82	Pass
0.0887	491	411	83	Pass
0.0899	453	396	87	Pass
0.0911	422	378	89	Pass
0.0923	395	363	91	Pass
0.0935	367	346	94	Pass

0.0948	345	329	95	Pass
0.0960	324	312	96	Pass
0.0972	309	290	93	Pass
0.0984	289	269	93	Pass
0.0996	269	246	91	Pass
0.1008	252	227	90	Pass
0.1020	231	218	94	Pass
0.1033	216	207	95	Pass
0.1045	201	197	98	Pass
0.1057	180	177	98	Pass
0.1069	170	154	90	Pass
0.1081	160	143	89	Pass
0.1093	154	136	88	Pass
0.1106	142	130	91	Pass
0.1118	136	122	89	Pass
0.1130	132	117	88	Pass
0.1142	127	111	87	Pass
0.1154	122	105	86	Pass
0.1166	120	97	80	Pass
0.1178	116	70	60	Pass
0.1191	113	56	49	Pass
0.1203	110	54	49	Pass
0.1215	104	50	48	Pass
0.1227	100	48	48	Pass
0.1239	97	45	46	Pass
0.1251	93	41	44	Pass
0.1264	87	39	44	Pass
0.1276	84	35	41	Pass
0.1288	81	32	39	Pass
0.1300	77	25	32	Pass
0.1312	74	21	28	Pass
0.1324	69	18	26	Pass
0.1336	66	14	21	Pass
0.1349	62	7	11	Pass
0.1361	58	0	0	Pass
0.1373	53	0	0	Pass
0.1385	49	0	0	Pass
0.1397	42	0	0	Pass
0.1409	39	0	0	Pass
0.1421	36	0	0	Pass
0.1434	35	0	0	Pass
0.1446	33	0	0	Pass
0.1458	32	0	0	Pass
0.1470	27	0	0	Pass
0.1482	26	0	0	Pass
0.1494	23	0	0	Pass
0.1507	22	0	0	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #1

On-line facility volume:	0 acre-feet
On-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.
Off-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Trapezoidal Pond 1 POC	☐	215.15			☐	0.00			
Total Volume Infiltrated		215.15	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

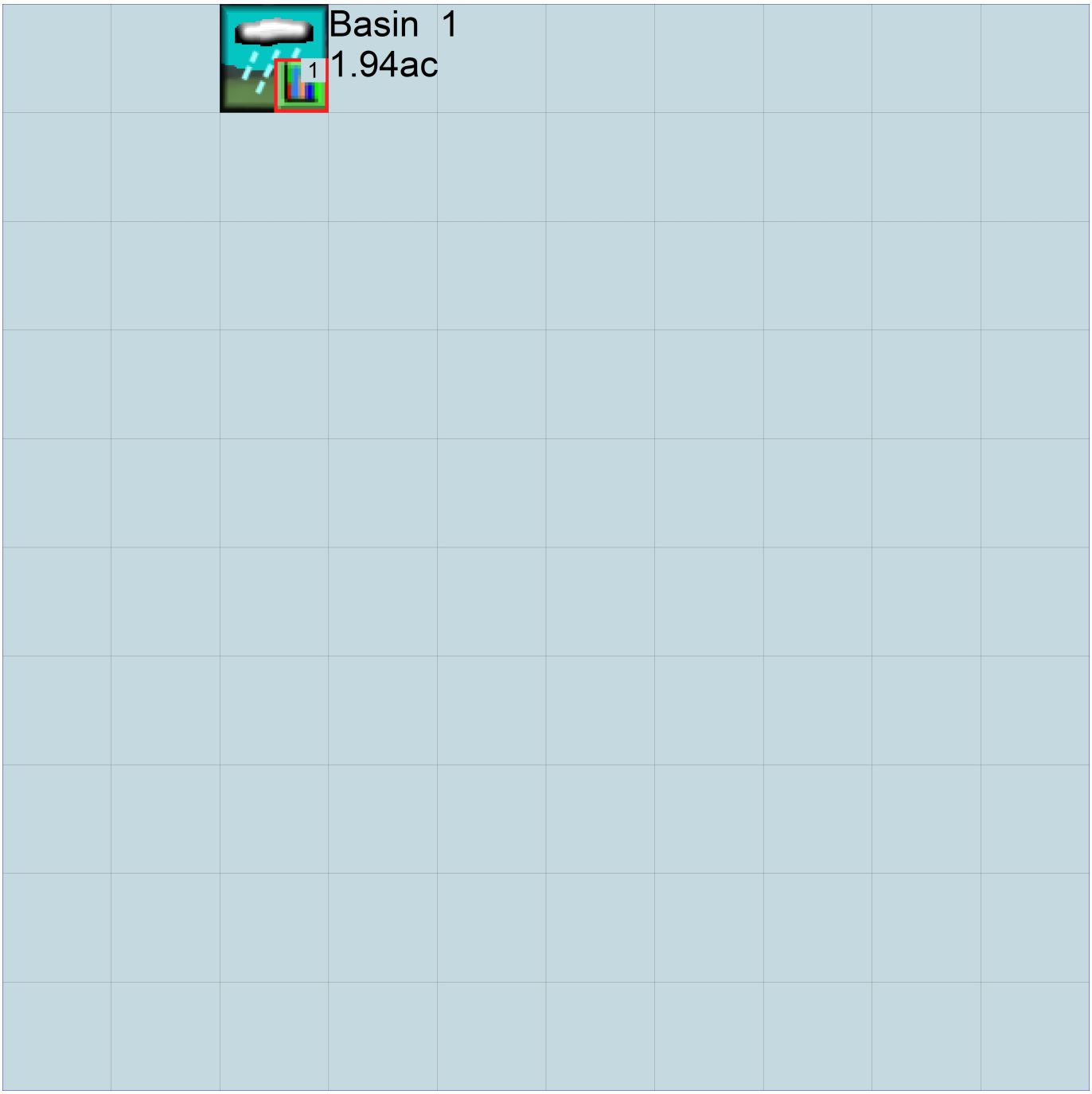
No PERLND changes have been made.

IMPLND Changes

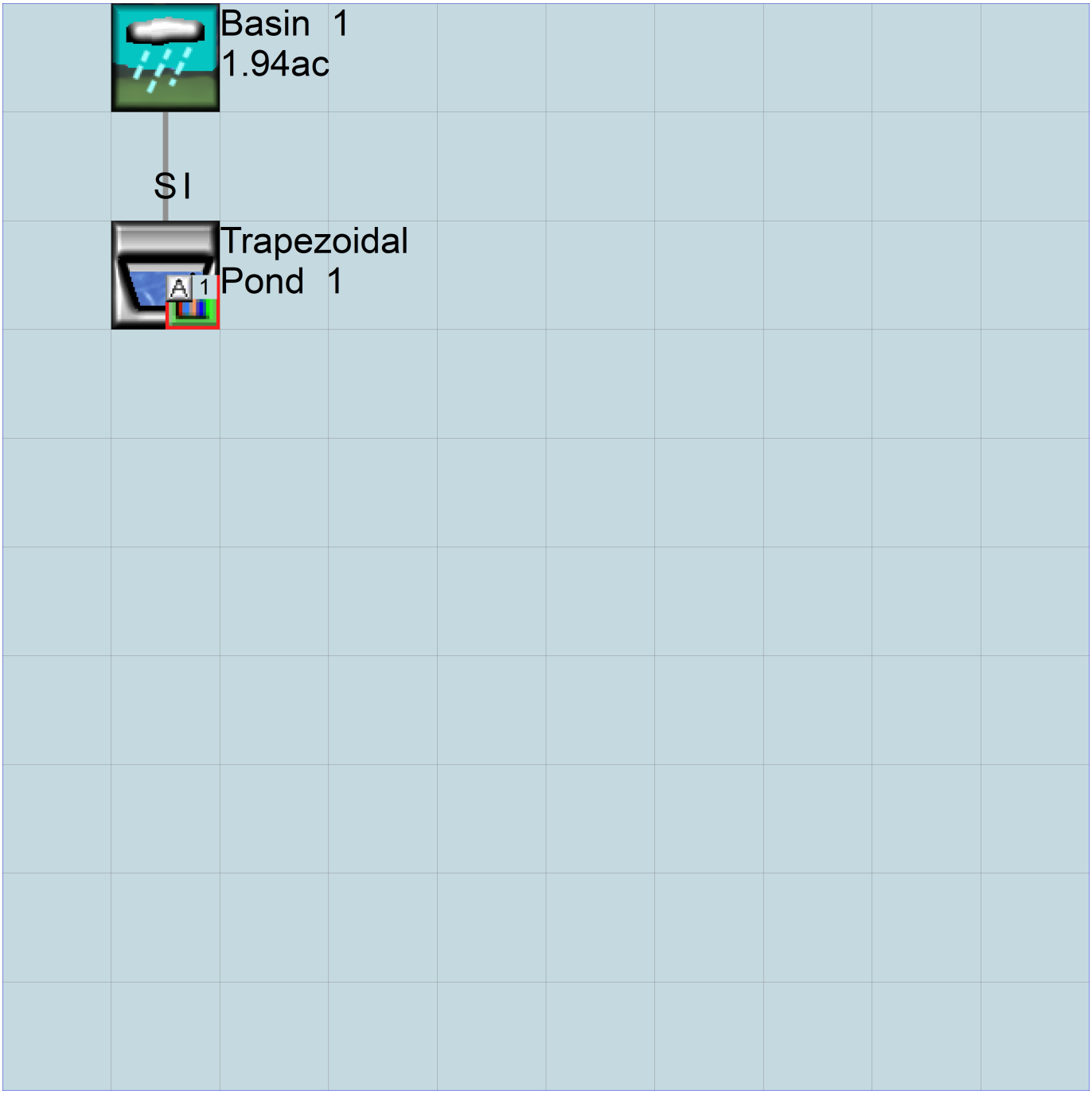
No IMPLND changes have been made.

Appendix

Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1955 10 01        END    2008 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   114.004 Twin Transit.wdm
MESSU       25   Pre114.004 Twin Transit.MES
            27   Pre114.004 Twin Transit.L61
            28   Pre114.004 Twin Transit.L62
            30   POC114.004 Twin Transit1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      10
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                   MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                         User  t-series Engl Metr ***
                                      in  out           ***
   10     C, Forest, Flat         1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   10         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   10         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   10         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   10              0       4.5      0.08       400      0.05       0.5     0.996
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   10             0         0         2         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   10           0.2       0.5      0.35         6       0.5       0.7
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   10             0         0         0         0       2.5         1         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1
```

```
END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  10                        1.94     COPY   501     12
PERLND  10                        1.94     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                 ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG            ***
                                          in  out                            ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                      ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                         ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit       for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    0.8            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    0.8            IMPLND   1 999 EXTNL  PREC
```

```
WDM      1 EVAP     ENGL    0.76           PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.76           IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1955 10 01        END    2008 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM        26   114.004 Twin Transit.wdm
MESSU      25   Mit114.004 Twin Transit.MES
           27   Mit114.004 Twin Transit.L61
           28   Mit114.004 Twin Transit.L62
           30   POC114.004 Twin Transit1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      16
      IMPLND      11
      RCHRES       1
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Trapezoidal Pond  1         MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                      in  out           ***
   16     C, Lawn, Flat           1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   16         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
```

```
   16         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   16         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   16             0       4.5      0.03       400      0.05       0.5     0.996
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   16             0         0         2         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   16           0.1      0.25      0.25         6       0.5      0.25
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS       GWVS
   16             0         0         0         0       2.5         1          0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
   11      PARKING/FLAT           1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
   11         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
   11         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
   11         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
   11            400      0.01       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
```

```
    # -  # ***PETMAX    PETMIN
   11              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
   11              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  16                        0.67     RCHRES   1      2
PERLND  16                        0.67     RCHRES   1      3
IMPLND  11                        1.27     RCHRES   1      5

******Routing******
PERLND  16                        0.67     COPY     1     12
IMPLND  11                        1.27     COPY     1     15
PERLND  16                        0.67     COPY     1     13
RCHRES   1                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                               ***
    1     Trapezoidal Pond-012    1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->      ***
```

```
    1             1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                         ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   91    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.132599  0.000000  0.000000
  0.055556  0.133764  0.007399  0.004396
  0.111111  0.134935  0.014863  0.006217
  0.166667  0.136111  0.022392  0.007614
  0.222222  0.137292  0.029986  0.008791
  0.277778  0.138478  0.037647  0.009829
  0.333333  0.139669  0.045373  0.010767
  0.388889  0.140866  0.053166  0.011630
  0.444444  0.142067  0.061025  0.012433
  0.500000  0.143274  0.068951  0.013187
  0.555556  0.144485  0.076944  0.013901
  0.611111  0.145702  0.085005  0.014579
  0.666667  0.146924  0.093134  0.015227
  0.722222  0.148151  0.101330  0.015849
  0.777778  0.149383  0.109595  0.016447
  0.833333  0.150620  0.117928  0.017025
  0.888889  0.151862  0.126331  0.017583
  0.944444  0.153109  0.134802  0.018124
  1.000000  0.154362  0.143343  0.018650
  1.055556  0.155619  0.151954  0.019161
  1.111111  0.156882  0.160634  0.019658
  1.166667  0.158150  0.169385  0.020144
  1.222222  0.159423  0.178206  0.020618
  1.277778  0.160700  0.187099  0.021081
  1.333333  0.161983  0.196062  0.021535
  1.388889  0.163272  0.205097  0.021979
  1.444444  0.164565  0.214204  0.022414
  1.500000  0.165863  0.223382  0.022841
  1.555556  0.167167  0.232633  0.023260
  1.611111  0.168475  0.241956  0.023672
  1.666667  0.169789  0.251353  0.024076
  1.722222  0.171108  0.260822  0.024474
  1.777778  0.172431  0.270365  0.024866
  1.833333  0.173760  0.279981  0.025252
  1.888889  0.175094  0.289672  0.025631
  1.944444  0.176434  0.299436  0.026006
  2.000000  0.177778  0.309275  0.026374
  2.055556  0.179127  0.319189  0.026738
  2.111111  0.180482  0.329179  0.027097
  2.166667  0.181841  0.339243  0.027451
  2.222222  0.183206  0.349383  0.027801
  2.277778  0.184576  0.359599  0.028146
  2.333333  0.185950  0.369892  0.028488
  2.388889  0.187330  0.380261  0.028825
  2.444444  0.188715  0.390706  0.029158
  2.500000  0.190106  0.401229  0.029487
  2.555556  0.191501  0.411829  0.029813
  2.611111  0.192901  0.422507  0.030136
  2.666667  0.194307  0.433263  0.030455
  2.722222  0.195717  0.444097  0.030770
  2.777778  0.197133  0.455010  0.031098
  2.833333  0.198554  0.466001  0.032724
```

```
  2.888889  0.199980  0.477071  0.035279
  2.944444  0.201411  0.488221  0.038418
  3.000000  0.202847  0.499450  0.042002
  3.055556  0.204288  0.510760  0.045944
  3.111111  0.205734  0.522149  0.050183
  3.166667  0.207185  0.533619  0.054672
  3.222222  0.208642  0.545170  0.059372
  3.277778  0.210104  0.556802  0.064252
  3.333333  0.211570  0.568515  0.069283
  3.388889  0.213042  0.580310  0.074443
  3.444444  0.214519  0.592186  0.079708
  3.500000  0.216001  0.604145  0.085060
  3.555556  0.217488  0.616187  0.090481
  3.611111  0.218980  0.628311  0.095955
  3.666667  0.220478  0.640518  0.101466
  3.722222  0.221980  0.652808  0.107000
  3.777778  0.223487  0.665182  0.112602
  3.833333  0.225000  0.677640  0.119298
  3.888889  0.226518  0.690183  0.126164
  3.944444  0.228041  0.702809  0.133194
  4.000000  0.229568  0.715521  0.140385
  4.055556  0.231101  0.728317  0.348914
  4.111111  0.232640  0.741199  0.728704
  4.166667  0.234183  0.754166  1.215423
  4.222222  0.235731  0.767219  1.778352
  4.277778  0.237284  0.780358  2.390495
  4.333333  0.238843  0.793584  3.024427
  4.388889  0.240407  0.806897  3.652076
  4.444444  0.241975  0.820296  4.246035
  4.500000  0.243549  0.833783  4.781739
  4.555556  0.245128  0.847357  5.240244
  4.611111  0.246712  0.861019  5.611474
  4.666667  0.248301  0.874770  5.897868
  4.722222  0.249895  0.888609  6.118372
  4.777778  0.251495  0.902536  6.393703
  4.833333  0.253099  0.916553  6.613299
  4.888889  0.254709  0.930658  6.825696
  4.944444  0.256323  0.944854  7.031558
  5.000000  0.257943  0.959139  7.231455
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    0.8            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    0.8            IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    0.76           PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.76           IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
```

```
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

Predeveloped HSPF Message File

Mitigated HSPF Message File

Disclaimer

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Local (360)943-0304

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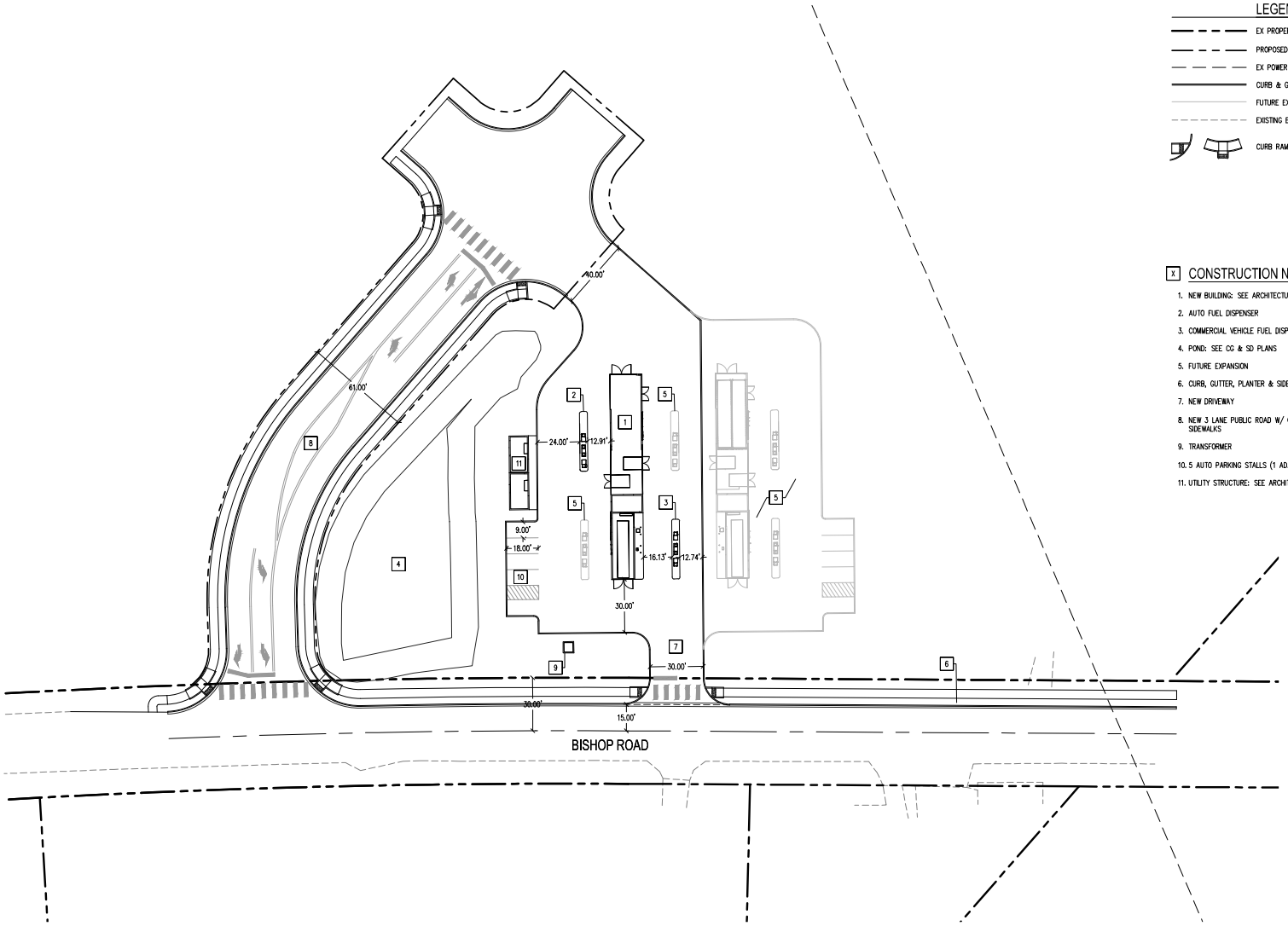
APPENDIX 5
PRELIMINARY PLANS

JSA CIVIL
Engineering | Planning | Management
111 Tumwater Blvd SE, Suite C210 | Tumwater, WA 98501



LEGEND

- EX PROPERTY LINE
- PROPOSED R/W DEDICATION
- EX POWER EASEMENT
- CURB & GUTTER
- FUTURE EXPANSION
- EXISTING EDGE OF PAVEMENT
- CURB RAMPS

CONSTRUCTION NOTES

1. NEW BUILDING: SEE ARCHITECTURAL PLANS
2. AUTO FUEL DISPENSER
3. COMMERCIAL VEHICLE FUEL DISPENSER
4. POND: SEE CG & SD PLANS
5. FUTURE EXPANSION
6. CURB, GUTTER, PLANTER & SIDEWALK FRONTAGE IMPROVEMENTS
7. NEW DRIVEWAY
8. NEW 3 LANE PUBLIC ROAD W/ CURB, GUTTER, PLANTER AND SIDEWALKS
9. TRANSFORMER
10. 5 AUTO PARKING STALLS (1 ADA VAN ACCESSIBLE)
11. UTILITY STRUCTURE: SEE ARCHITECTURAL PLANS

JSA CIVIL
Engineering | Planning | Management

VICINITY MAP (NTS)

SITE DATA

ADDRESS	1697 BISHOP ROAD
TPN	1775800200
PARCEL SIZE	23.28 ACRES
JURISDICTION	CITY OF CHEHALIS – UGA
ZONING	C-G & I-L

REV.	DATE	COMMENT	BY
0	09/29/22	ISSUED FOR REVIEW	BLJ

DRAWN BY:	L. SATER
CHECKED BY:	B. JOHNSON

SEAL:

PRELIMINARY

SCALE:

0 30 60
SCALE IN FEET

Twin Transit "GOING YOUR WAY"

HYDROGEN
FUELING FACILITY

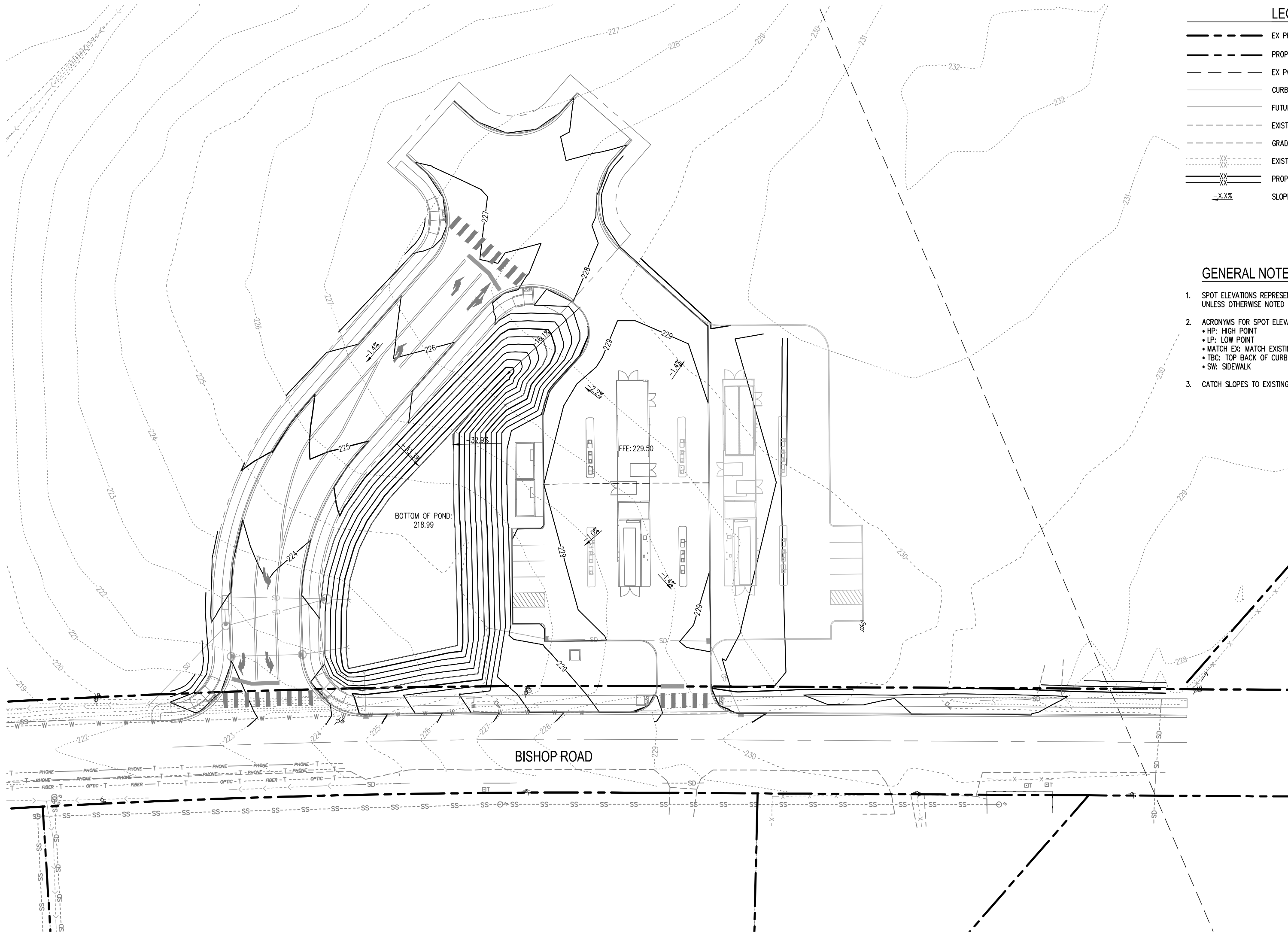
SHEET TITLE:

SP-01

SHEET NO.

SITE PLAN

Sep 29, 2022 1:49:52pm - User bjohnson
N:\2 - PROJECTS\114 TWIN TRANSIT\114.003 HYDROGEN FUELING FACILITY\ACAD\114.03 CG-01.DWG



LEGEND

- EX PROPERTY LINE
- PROPOSED R/W DEDICATION
- EX POWER EASEMENT
- CURB & GUTTER
- FUTURE EXPANSION
- EXISTING EDGE OF PAVEMENT
- GRADE BREAK
- EXISTING CONTOURS
- PROPOSED CONTOURS
- X.X% SLOPE LABEL

GENERAL NOTES

1. SPOT ELEVATIONS REPRESENT FINISHED GRADE AT FLOW LINE UNLESS OTHERWISE NOTED
2. ACRONYMS FOR SPOT ELEVATIONS:
   - HP: HIGH POINT
   - LP: LOW POINT
   - MATCH EX: MATCH EXISTING GRADE
   - TBC: TOP BACK OF CURB
   - SW: SIDEWALK
3. CATCH SLOPES TO EXISTING GRADE SHALL NOT EXCEED 3:1

JSA CIVIL
Engineering | Planning | Management

VICINITY MAP (NTS)

SITE DATA

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JURISDICTION	CITY OF CHEHALIS - UGA
ZONING	C-G & I-L

REV.	DATE	COMMENT	BY
0	09/29/22	ISSUED FOR REVIEW	BLJ

DRAWN BY:	L. SATER
CHECKED BY:	B. JOHNSON

SEAL:

PRELIMINARY

SCALE:

0 30 60
SCALE IN FEET

Twin Transit "GOING YOUR WAY"

HYDROGEN
FUELING FACILITY

SHEET TITLE:
CG-01

SHEET NO.
GRADING PLAN

Sep 29, 2022 1:50:19pm - User bjohnson
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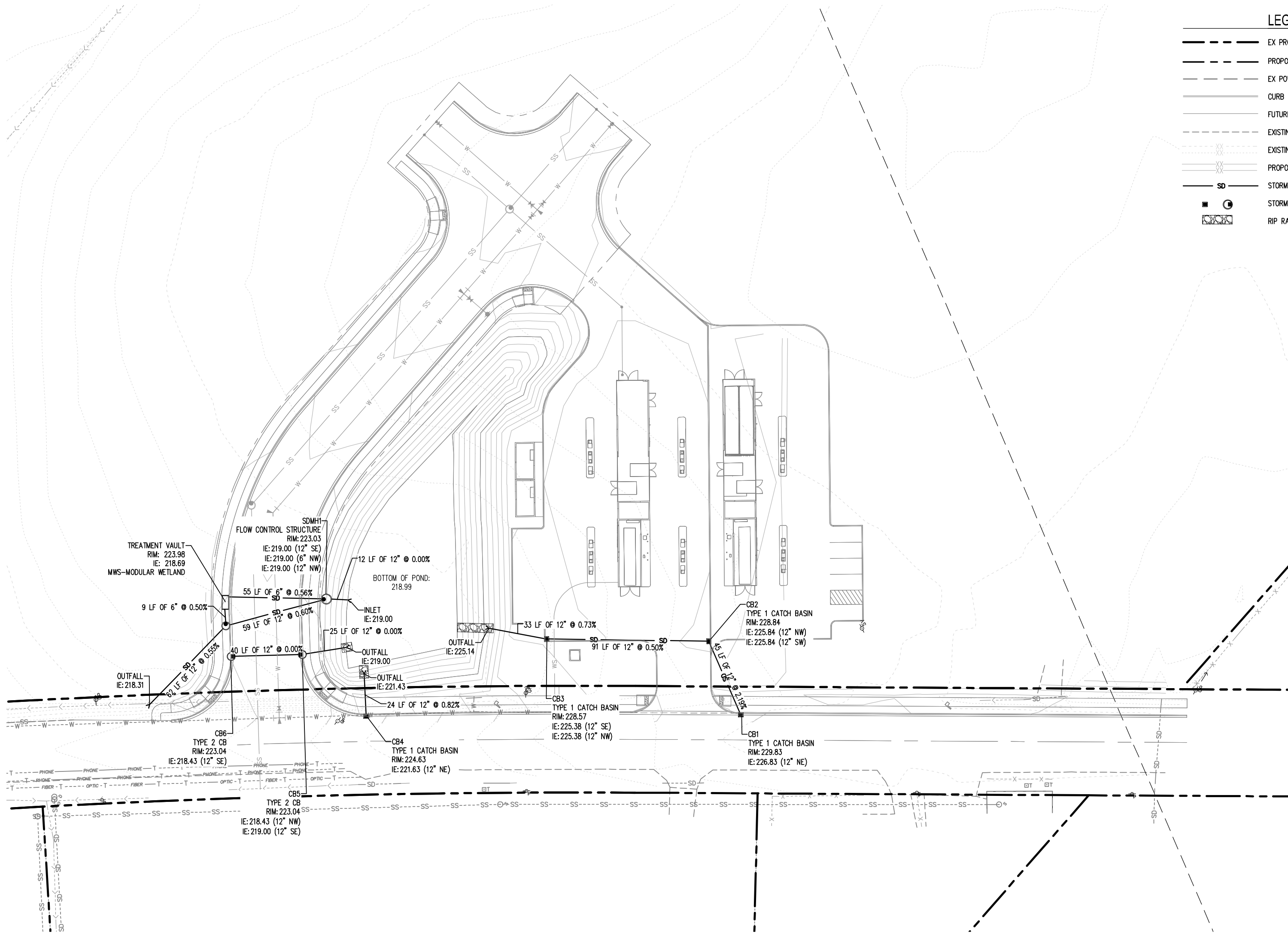


TREATMENT VAULT
RIM: 223.98
IE: 218.69
MWS-MODULAR WETLAND
SDMH1
FLOW CONTROL STRUCTURE
RIM: 223.03
IE: 219.00 (12" SE)
IE: 219.00 (6" NW)
IE: 219.00 (12" NW)
12 LF OF 12" @ 0.00%
BOTTOM OF POND:
218.99
55 LF OF 6" @ 0.56%
9 LF OF 6" @ 0.50%
59 LF OF 12" @ 0.60%
INLET
IE: 219.00
25 LF OF 12" @ 0.00%
40 LF OF 12" @ 0.00%
62 LF OF 12" @ 0.55%
OUTFALL
IE: 218.31
OUTFALL
IE: 219.00
OUTFALL
IE: 221.43
OUTFALL
IE: 225.14
33 LF OF 12" @ 0.73%
91 LF OF 12" @ 0.50%
24 LF OF 12" @ 0.82%
45 LF OF 12" @ 2.19%
CB2
TYPE 1 CATCH BASIN
RIM: 228.84
IE: 225.84 (12" NW)
IE: 225.84 (12" SW)
CB3
TYPE 1 CATCH BASIN
RIM: 228.57
IE: 225.38 (12" SE)
IE: 225.38 (12" NW)
CB6
TYPE 2 CB
RIM: 223.04
IE: 218.43 (12" SE)
CB4
TYPE 1 CATCH BASIN
RIM: 224.63
IE: 221.63 (12" NE)
CB1
TYPE 1 CATCH BASIN
RIM: 229.83
IE: 226.83 (12" NE)
CB5
TYPE 2 CB
RIM: 223.04
IE: 218.43 (12" NW)
IE: 219.00 (12" SE)

LEGEND

EX PROPERTY LINE
PROPOSED R/W DEDICATION
EX POWER EASEMENT
CURB & GUTTER
FUTURE EXPANSION
EXISTING EDGE OF PAVEMENT
EXISTING CONTOURS
PROPOSED CONTOURS
STORM PIPE
STORM STRUCTURE
RIP RAP PAD

JSA CIVIL
Engineering | Planning | Management

VICINITY MAP (NTS)

SITE DATA

ADDRESS	1697 BISHOP ROAD
TPN	1775800200
PARCEL SIZE	23.28 ACRES
JURISDICTION	CITY OF CHEHALIS - UGA
ZONING	C-G & I-L

REV.	DATE	COMMENT	BY
0	09/29/22	ISSUED FOR REVIEW	BLJ

DRAWN BY:	L. SATER
CHECKED BY:	B. JOHNSON

SEAL:

PRELIMINARY

SCALE:

0 30 60
SCALE IN FEET

Twin Transit "GOING YOUR WAY"

HYDROGEN
FUELING FACILITY

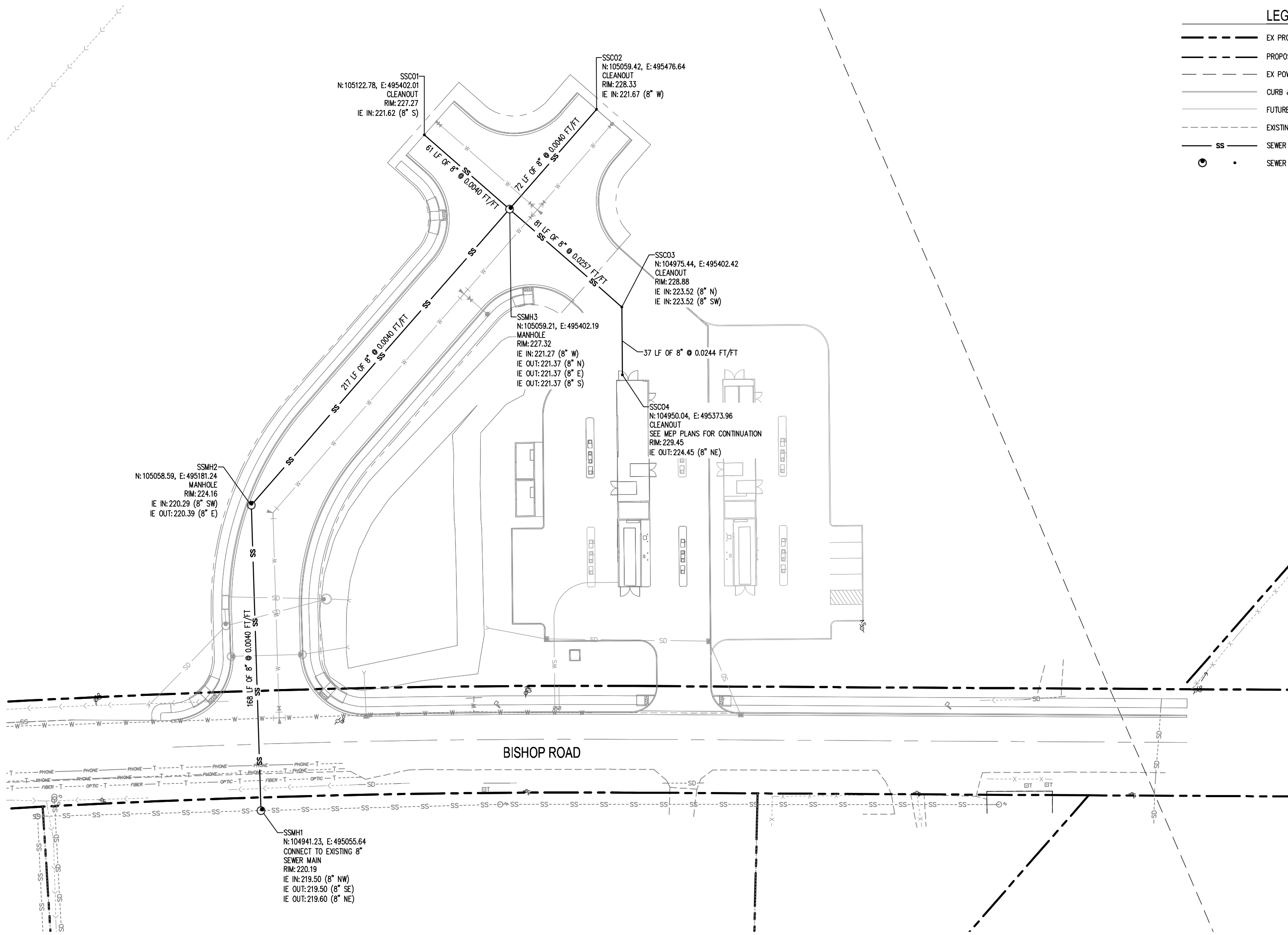
SHEET TITLE:

SD-01

SHEET NO.

STORM PLAN

Sep 29, 2022 1:50:39pm - User bjohnson
N:\2 - PROJECTS\114 TWIN TRANSIT\114.003 HYDROGEN FUELING FACILITY\ACAD\114.03 SS-01.DWG



SSCO1
N:105122.78, E:495402.01
CLEANOUT
RIM:227.27
IE IN:221.62 (8" S)
SSCO2
N:105059.42, E:495476.64
CLEANOUT
RIM:228.33
IE IN:221.67 (8" W)
61 LF OF 8" @ 0.0040 FT/FT
72 LF OF 8" @ 0.0040 FT/FT
81 LF OF 8" @ 0.0257 FT/FT
SSCO3
N:104975.44, E:495402.42
CLEANOUT
RIM:228.88
IE IN:223.52 (8" N)
IE IN:223.52 (8" SW)
SSMH3
N:105059.21, E:495402.19
MANHOLE
RIM:227.32
IE IN:221.27 (8" W)
IE OUT:221.37 (8" N)
IE OUT:221.37 (8" E)
IE OUT:221.37 (8" S)
37 LF OF 8" @ 0.0244 FT/FT
SSCO4
N:104950.04, E:495373.96
CLEANOUT
SEE MEP PLANS FOR CONTINUATION
RIM:229.45
IE OUT:224.45 (8" NE)
217 LF OF 8" @ 0.0040 FT/FT
SSMH2
N:105058.59, E:495181.24
MANHOLE
RIM:224.16
IE IN:220.29 (8" SW)
IE OUT:220.39 (8" E)
168 LF OF 8" @ 0.0040 FT/FT
BISHOP ROAD
SSMH1
N:104941.23, E:495055.64
CONNECT TO EXISTING 8"
SEWER MAIN
RIM:220.19
IE IN:219.50 (8" NW)
IE OUT:219.50 (8" SE)
IE OUT:219.60 (8" NE)

LEGEND

- EX PROPERTY LINE
- PROPOSED R/W DEDICATION
- EX POWER EASEMENT
- CURB & GUTTER
- FUTURE EXPANSION
- EXISTING EDGE OF PAVEMENT
- SS SEWER PIPE
- SEWER STRUCTURE

JSA CIVIL
Engineering | Planning | Management

VICINITY MAP (NTS)

SITE DATA

ADDRESS	1697 BISHOP ROAD
TPN	1775800200
PARCEL SIZE	23.28 ACRES
JURISDICTION	CITY OF CHEHALIS - UGA
ZONING	C-G & I-L

REV.	DATE	COMMENT	BY
0	09/29/22	ISSUED FOR REVIEW	BLJ

DRAWN BY:	L. SATER
CHECKED BY:	B. JOHNSON

SEAL:

PRELIMINARY

SCALE:

0 30 60
SCALE IN FEET

Twin Transit "GOING YOUR WAY"

HYDROGEN
FUELING FACILITY

SHEET TITLE:
SS-01

SHEET NO.
SEWER PLAN

Sep 29, 2022 1:51:07pm - User bjohnson
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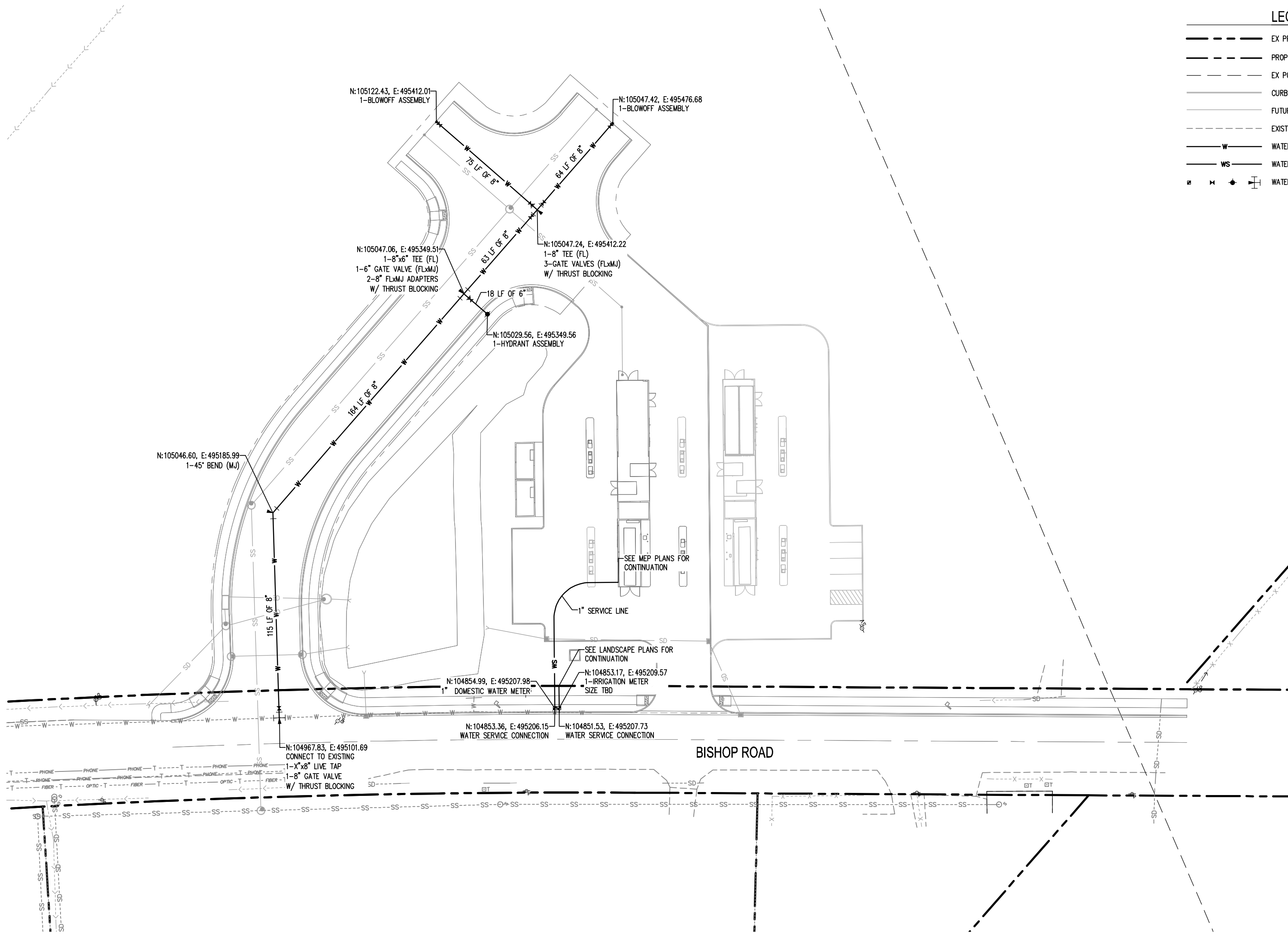
N:105122.43, E:495412.01
1-BLOWOFF ASSEMBLY
N:105047.42, E:495476.68
1-BLOWOFF ASSEMBLY
75 LF OF 8"
64 LF OF 8"
63 LF OF 8"
N:105047.06, E:495349.51
1-8"x6" TEE (FL)
1-6" GATE VALVE (FLxMJ)
2-8" FLxMJ ADAPTERS
W/ THRUST BLOCKING
N:105047.24, E:495412.22
1-8" TEE (FL)
3-GATE VALVES (FLxMJ)
W/ THRUST BLOCKING
18 LF OF 6"
N:105029.56, E:495349.56
1-HYDRANT ASSEMBLY
164 LF OF 8"
N:105046.60, E:495185.99
1-45° BEND (MJ)
115 LF OF 8"
SEE MEP PLANS FOR CONTINUATION
1" SERVICE LINE
SEE LANDSCAPE PLANS FOR CONTINUATION
N:104854.99, E:495207.98
1" DOMESTIC WATER METER
N:104853.17, E:495209.57
1-IRRIGATION METER
SIZE TBD
N:104853.36, E:495206.15
WATER SERVICE CONNECTION
N:104851.53, E:495207.73
WATER SERVICE CONNECTION
N:104967.83, E:495101.69
CONNECT TO EXISTING
1-X"x8" LIVE TAP
1-8" GATE VALVE
W/ THRUST BLOCKING
BISHOP ROAD

LEGEND

- EX PROPERTY LINE
- PROPOSED R/W DEDICATION
- EX POWER EASEMENT
- CURB & GUTTER
- FUTURE EXPANSION
- EXISTING EDGE OF PAVEMENT
- WATER MAIN
- WATER SERVICE LINE
- WATER STRUCTURES

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VICINITY MAP (NTS)

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0	09/29/22	ISSUED FOR REVIEW	BLJ

DRAWN BY:	L. SATER
CHECKED BY:	B. JOHNSON

SEAL:

PRELIMINARY

SCALE:

0 30 60
SCALE IN FEET

Twin Transit "GOING YOUR WAY"

HYDROGEN
FUELING FACILITY

SHEET TITLE:
WT-01

SHEET NO.
WATER PLAN