

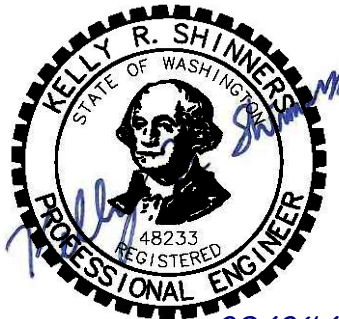
PACIFIC HIGHWAY DUPLEX

In The City of La Center, Washington

PRELIM TECHNICAL INFORMATION REPORT

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03/04/2025

This Preliminary Technical Information Report was prepared in accordance with the City of La Center Municipal Code (LCMC) Chapter 18.320 and the 1992 Stormwater Management Manual for the Puget Sound Basin.

ENG #: _____

DATE: 3/4/2025

JOB #: 2400

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SECTION A - PROJECT OVERVIEW

The Pacific Highway Duplex project proposes a 2-lot short plat on parcel 62642015 in the City of La Center, Washington. There are approximately 1.60 acres total on the site. Currently, the proposed lot 1 has a duplex already built on it that will remain. An additional duplex unit will be built on lot 2. The property contains 1 tax parcel which is located within the northwest Quarter of Section 03, Township 4 North, Range 1 East, Willamette Meridian. The site is currently zoned residential/professional (RP). In addition, the property borders residential/professional (RP) zoned properties to the north, east and west. There are Downtown commercials (D, DC, C-1) to the south with no comprehensive plan overlay.

The site is mostly unused vacant land with a duplex in the southwest portion of the site and a private drive providing access to the existing duplex. It has a moderately sloping topography between 0-25%. It also has a creek running from the northwest portion to the southeast portion of the site. GIS also shows riparian habitat on-site; however, it is not shown in the southwest portion of the site, where we will be developing.

There is also a conservation covenant recorded on the lot. In 2017 the covenant was adjusted and recorded as shown on the existing conditions plan. The project proposes to split the previously recorded Conservation Covenant, currently located on the southern portion of the site into two covenants making room to build while preserving the site's critical areas. The project will incorporate stormwater facilities, an extension of the existing driveway which will become a shared driveway stemming from NW Pacific Highway.

This project proposes to construct a new duplex with associated driveway. The total new impervious area is 3,197 sf. Since this is less than 5,000sf and disturbance is less than an acre, this project will follow Section I-2.3 Small Parcel Minimum Requirements of the 1992 Stormwater Management Manual for the Puget Sound Basin. The existing duplex on Lot 1 built a detention pond with an outlet control structure to mitigate the stormwater peak flow discharge to the creek. This project proposes to expand the existing detention pond and utilize the existing outlet control structure.

SECTION B – APPROVAL CONDITIONS SUMMARY

A final staff report with Conditions of Approval will be issued with Preliminary Land Use Approval. The Approval Conditions Summary will be provided with the Final TIR.

SECTION C - DOWNSTREAM ANALYSIS

The water that currently leaves the site proceeds easterly to a DNR Type Ns (non-fish bearing and seasonal) stream which is flowing from north to south. The stream is a tributary to the East Fork Lewis River which is located approximately 0.3 miles to the south of the project site. The stream also has defined channel along its entire length within the property site and flows through an intact forested riparian zone.

SECTION D - QUANTITY CONTROL ANALYSIS AND DESIGN

This project is exempt from quantity control requirements per the small parcel requirements. However, expansion of the existing detention pond is proposed to help mitigate peak flow surges in the creek. The existing detention pond was constructed

with the existing duplex remaining on lot 1. The existing pond has a bottom area of 4'x60' with 2:1 side slopes and an outlet control structure. The proposed pond will be expanded by an additional 30' to the north onto Lot 2 with no changes to the existing outlet control structure.

See Appendix B for the design criteria used in completing the analysis. Hydrographs were calculated for the developed condition in the 100-year storm event. The Isopluvial map precipitation depth used is included in Appendix B. The hydrologic analysis for this site follows methods and guidelines outlined in Chapter III of the Puget Sound Manual and Chapter 14.10 of the La Center Stormwater Control Ordinance. The SBUH Hydrograph method was used to compute storm flows and volumes used in designing the storm system. The Hydrocad software package was used to complete the calculations.

The site was analyzed in two basins. Basins A is the predeveloped basin tributary to the existing pond. Basin B is proposed basin for Lot 2. See the Santa Barbara Urban Hydrograph Summary Worksheet for detailed information about the basins.

See Appendix C for Design Calculations used in completing the analysis. The proposed storm system will be designed to collect and detain the stormwater runoff prior to release to the existing creek below pre-developed rates. The following table summarizes flows, volumes and elevations for the proposed expanded pond.

Table 1. Detention Pond Peak Flow Rates, Actual Release, Elevations

100-yr 24 HOUR STORM	PEAK INFLOW (CFS)	POND DISCHARGE (CFS)	STORAGE VOLUME REQUIRED (CF)	PEAK WATER SURFACE ELEVATION (0'=BOTTOM)	TOTAL DISCHARGE TO EX CREEK (CFS)
Predeveloped	0.30	0.16	523	1.27	0.19
Developed	0.41	0.18	915	1.42	0.18

SECTION E - CONVEYANCE SYSTEM ANALYSIS AND DESIGN

The Basins will flow overland to the detention pond and discharge from the pond will be below predeveloped rates, therefore no conveyance analysis is required.

SECTION F - WATER QUALITY DESIGN

The total proposed improvements are less than 5,000 sf of impervious area, of which only 1,193sf is driveway area. This project is exempt from water quality design per the small parcel requirements.

SECTION G - SOILS EVALUATION

The soil types on site are Hillsboro Silt Loam, 8 to 15 percent slopes (HoC), Hillsboro Silt Loam, 30 to 65 percent slopes (HoG), and Odne Silt Loam, 0 to 5 percent slopes (OdB). Hillsboro type soils belong to hydrologic group "B", and Odne soils belong to hydrologic group "D." See the geotechnical report in Appendix D for additional information.

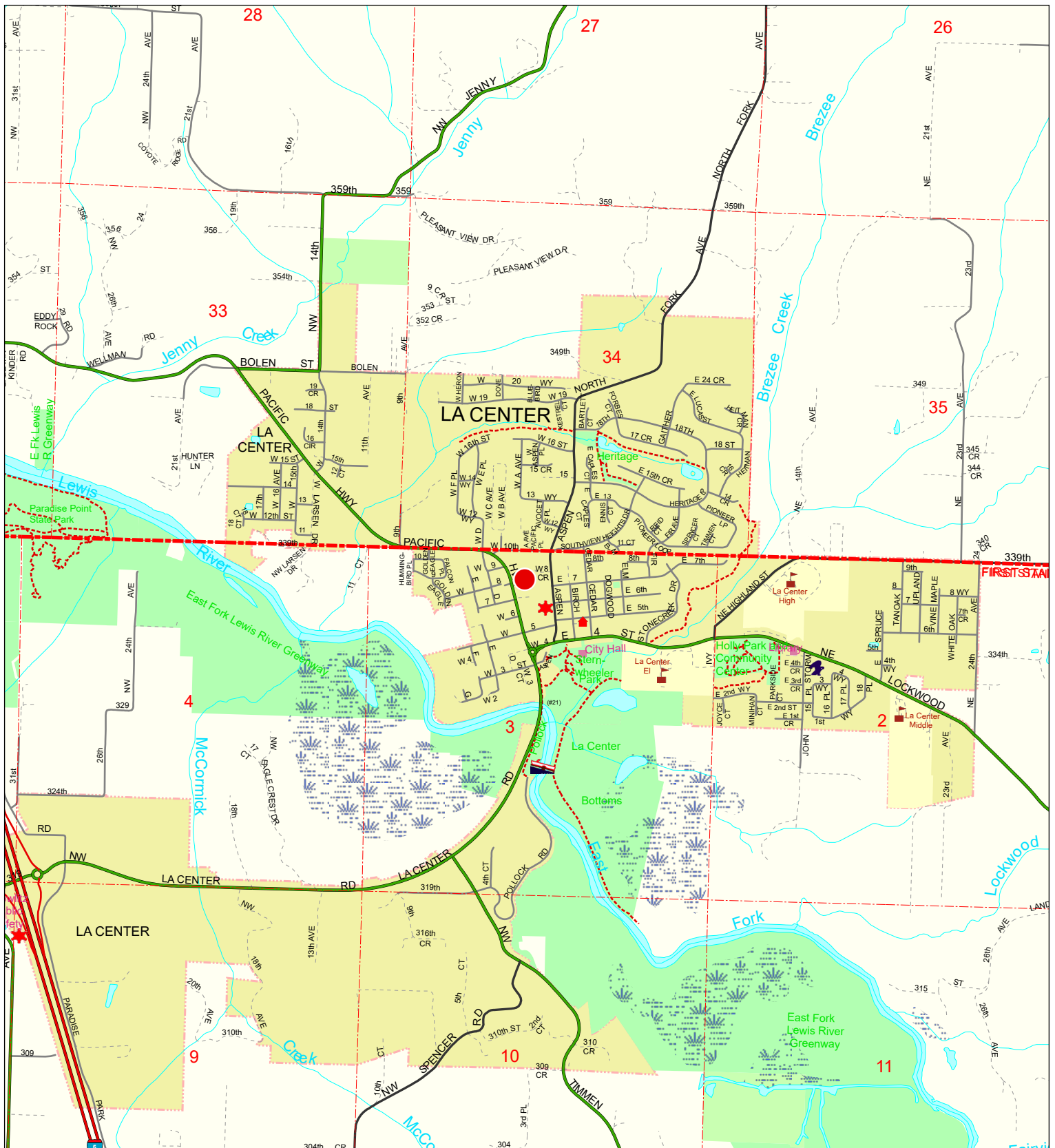
SECTION H - SPECIAL REPORTS AND STUDIES

- Geotechnical/Soils Report
- Critical Areas Report

SECTION I - MAINTENANCE AND OPERATIONS

The stormwater facilities will be privately owned and maintained by the property owner or a home-owners association.

Appendix A - Basin Maps





Geographic Information System

0 1,000 2,000 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

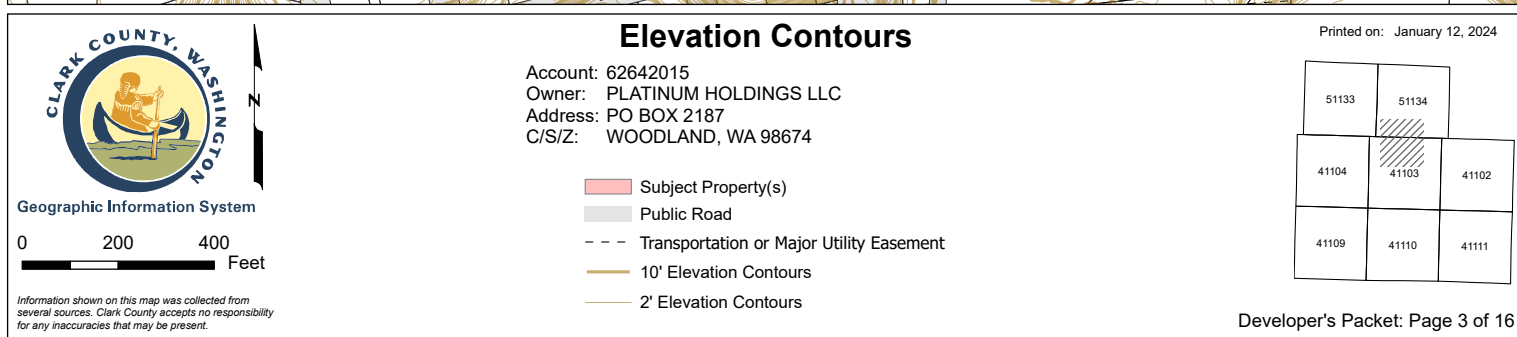
General Location

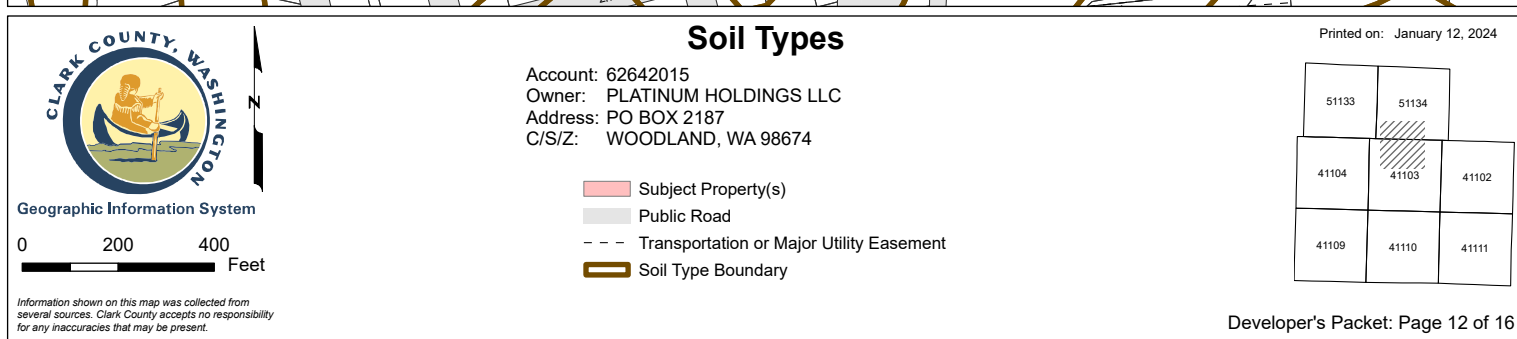
Account: 62642015
Owner: PLATINUM HOLDINGS LLC
Address: PO BOX 2187
C/S/Z: WOODLAND, WA 98674

● Location of Subject Property(s)

Printed on: January 12, 2024







BASIN A(PRE/POST)

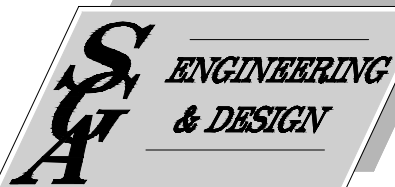
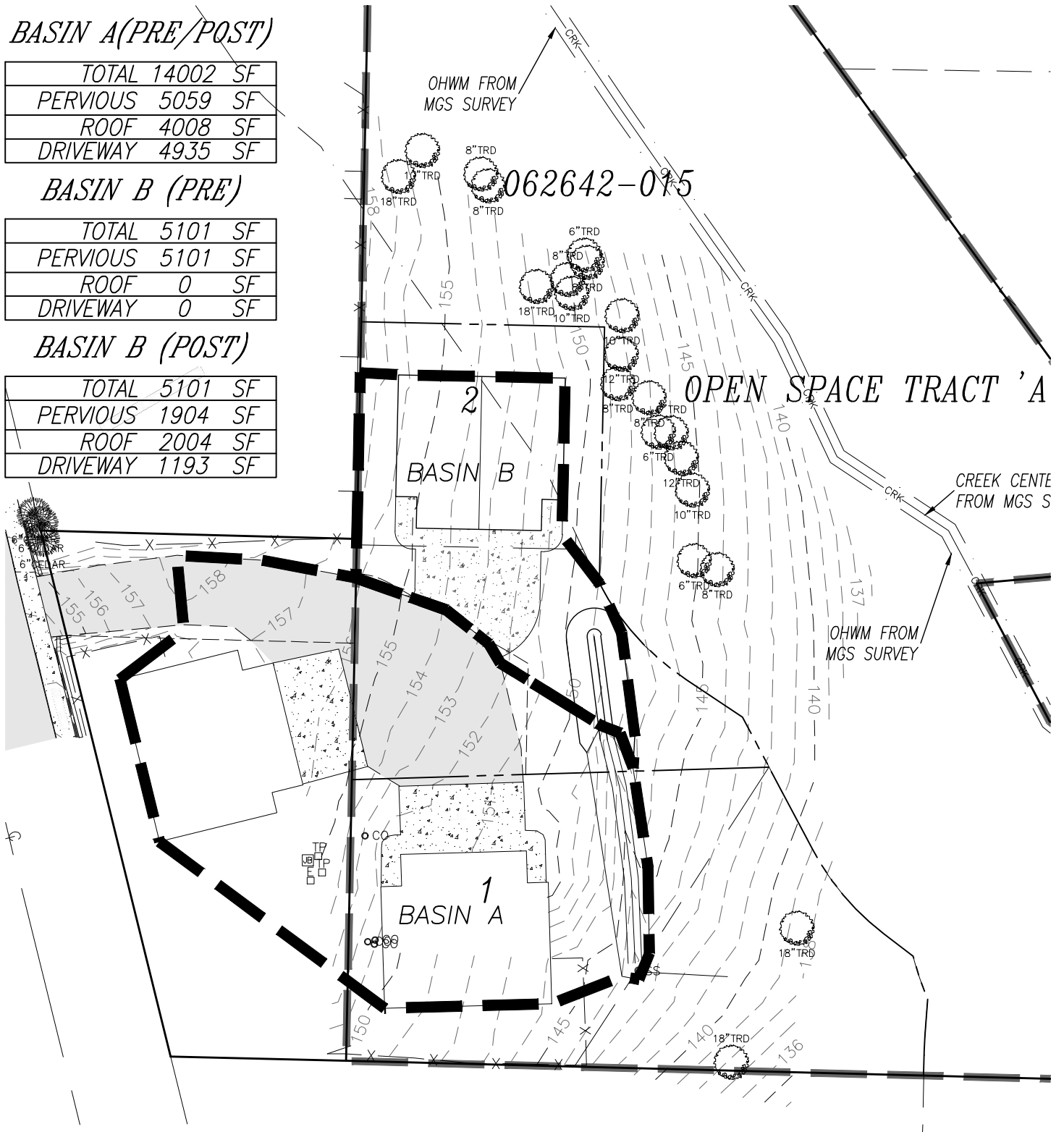
TOTAL	14002	SF
PERVIOUS	5059	SF
ROOF	4008	SF
DRIVEWAY	4935	SF

BASIN B (PRE)

TOTAL	5101	SF
PERVIOUS	5101	SF
ROOF	0	SF
DRIVEWAY	0	SF

BASIN B (POST)

TOTAL	5101	SF
PERVIOUS	1904	SF
ROOF	2004	SF
DRIVEWAY	1193	SF



**BASIN MAP
FOR
PACIFIC HIGHWAY DUPLEX
SHORT PLAT
LA CENTER, WASHINGTON**

JOB #: 2400
SCALE: 1"=40'

Appendix B – Design Criteria

Map Symbol	Soil Name	HSG
HoB	HILLSBORO	B
Soils Group (SG) 3 (continued)		
HoC	HILLSBORO	B
HoD	HILLSBORO	B
HoE	HILLSBORO	B
HoG	HILLSBORO	B
HsB	HILLSBORO	B
McB	McBEE	C
MeA	McBEE	C
MIA	McBEE	C
OeD	OLEQUA	B
OeE	OLEQUA	B
OeF	OLEQUA	B
OIB	OLYMPIC	B
OID	OLYMPIC	B
OIE	OLYMPIC	B
OIF	OLYMPIC	B
OmE	OLYMPIC	B
OmF	OLYMPIC	B
OpC	OLYMPIC VARIANT	C
OpE	OLYMPIC VARIANT	C
OpG	OLYMPIC VARIANT	C
OrC	OLYMPIC VARIANT	C
PoB	POWELL	C
PoD	POWELL	C
PoE	POWELL	C
SmA	SAUVIE	B
SmB	SAUVIE	B
SnA	SAUVIE	D
SpB	SAUVIE	B

Soils Group (SG) 4

CvA	COVE	D
CwA	COVE	D
GeB	GEE	C

Table III-1.3 SCS Western Washington Runoff Curve Numbers
(Published by SCS in 1982) Runoff curve numbers for selected agricultural,
suburban and urban
land use for Type 1A rainfall distribution, 24-hour storm duration.

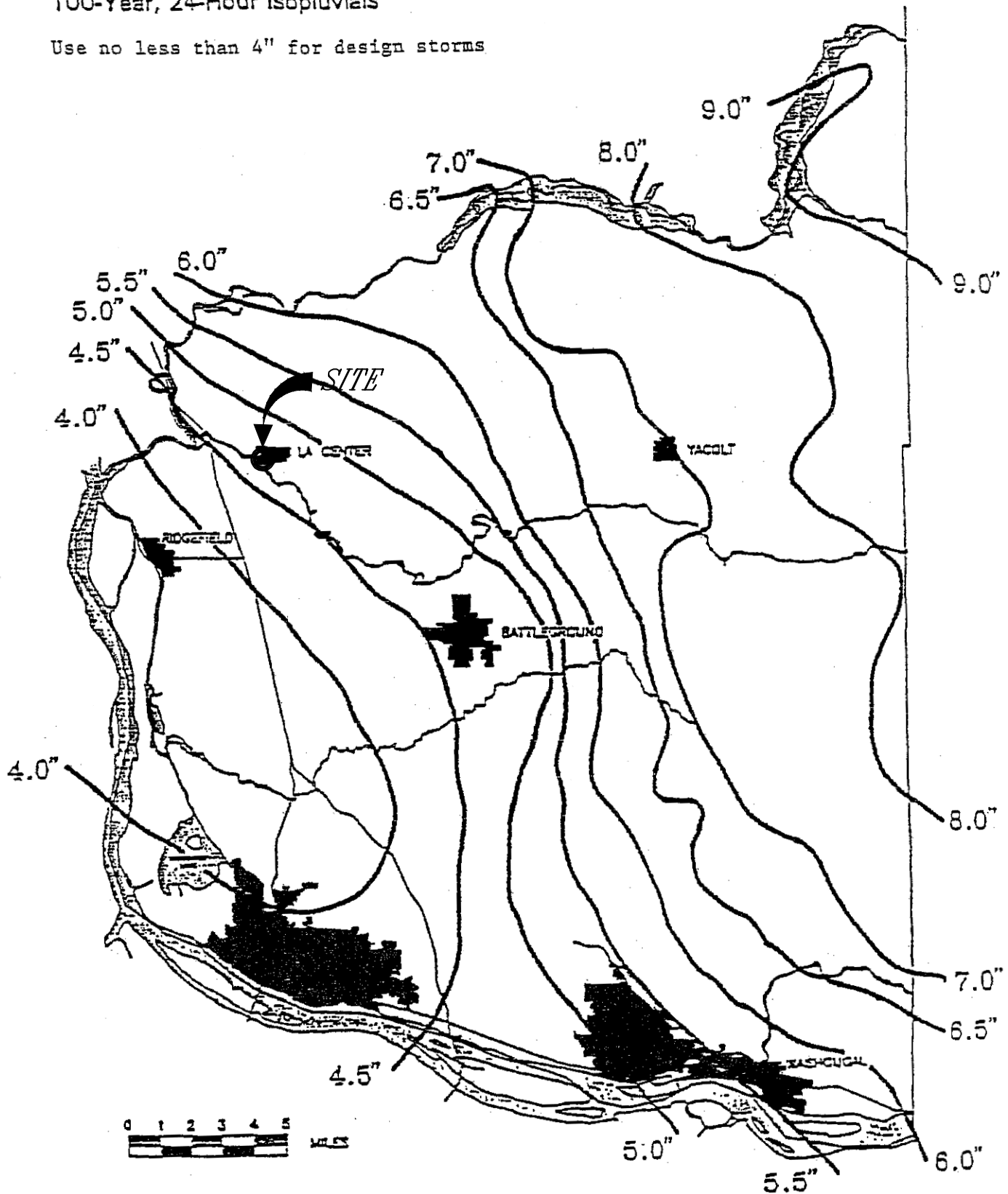
LAND USE DESCRIPTION		CURVE NUMBERS BY HYDROLOGIC SOIL GROUP			
		A	B	C	D
Cultivated land(1):	winter condition	86	91	94	95
Mountain open areas:	low growing brush & grasslands	74	82	89	92
Meadow or pasture:		65	78	85	89
Wood or forest land:	undisturbed	42	64	76	81
Wood or forest land:	young second growth or brush	55	72	81	86
Orchard:	with cover crop	81	88	92	94
Open spaces, lawns, parks, golf courses, cemeteries, landscaping.					
Good condition:	grass cover on $\geq 75\%$ of the area	68	80	86	90
Fair condition:	grass cover on 50-75% of the area	77	85	90	92
Gravel roads & parking lots:		76	85	89	91
Dirt roads & parking lots:		72	82	87	89
Impervious surfaces, pavement, roofs etc.		98	98	98	98
Open water bodies: lakes, wetlands, ponds etc.		100	100	100	100
Single family residential(2):					
Dwelling Unit/Gross Acre	%Impervious(3)				
1.0 DU/GA	15				
1.5 DU/GA	20				
2.0 DU/GA	25				
2.5 DU/GA	30				
3.0 DU/GA	34				
3.5 DU/GA	38				
4.0 DU/GA	42				
4.5 DU/GA	46				
5.0 DU/GA	48				
5.5 DU/GA	50				
6.0 DU/GA	52				
6.5 DU/GA	54				
7.0 DU/GA	56				
PUD's, condos, apartments, commercial businesses & industrial areas	%impervious must be computed				
		Separate curve number shall be selected for pervious & impervious portions of the site or basin			

- (1) For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Sec. 4, Hydrology, Chapter 9, August 1972.
- (2) Assumes roof and driveway runoff is directed into street/storm system.
- (3) The remaining pervious areas (lawn) are considered to be in good condition for these curve numbers.

Exhibit C
Isopluvial Maps for Design Storms in Clark County

100-Year, 24-Hour Isopluvials

Use no less than 4" for design storms



APPENDIX C - Design Calculations

Basin Summary Sheet

Hydrograph Printouts

BASIN SUMMARY SHEET

Pacific Highway Duplex

JOB #: 2004

Basin Number	PERVIOUS		IMPERVIOUS		OVERLAND FLOW				SHALLOW / CHANNEL FLOW				Time of Conc. (min.)	PEAK FLOW			
	Area A (sf)	RCN	Area A (sf)	RCN	Length L (ft.)	Slope S (ft./ft)	"n"	Travel Time (min.)	Length L (ft.)	Slope S (ft./ft)	"k"	Vel. V (fps)	Travel Time (min.)	Water Quality (cfs)	2-Yr (cfs)	10-Yr (cfs)	100-Yr (cfs)
PREDEVELOPED BASINS:																	
PRE A	5059	80	8943	98										*6.00			0.30
PRE B	5101	72												*6.00			0.05
DEVELOPED BASINS:																	
A	5059	80	8943	98										*6.00			0.30
B	1904	80	3197	98										*6.00			0.11

Designed By: KRS
 Checked By: KRS

100 Yr. Precip.: 4.70 in.

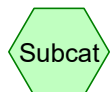
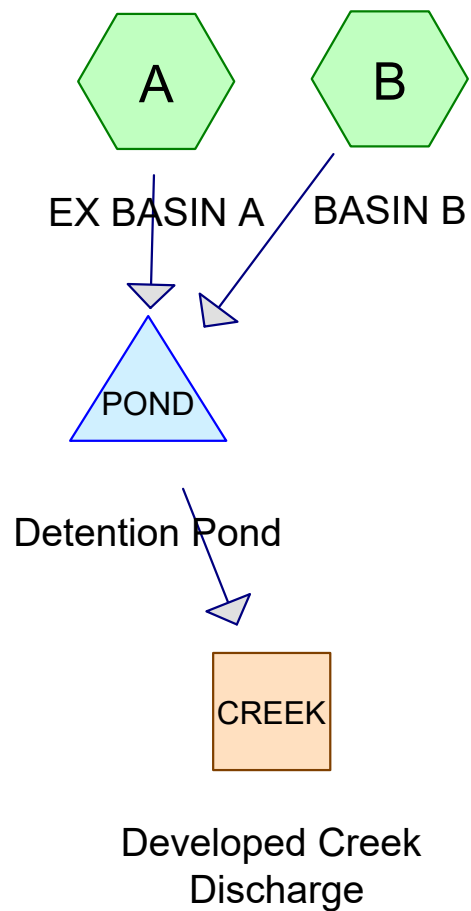
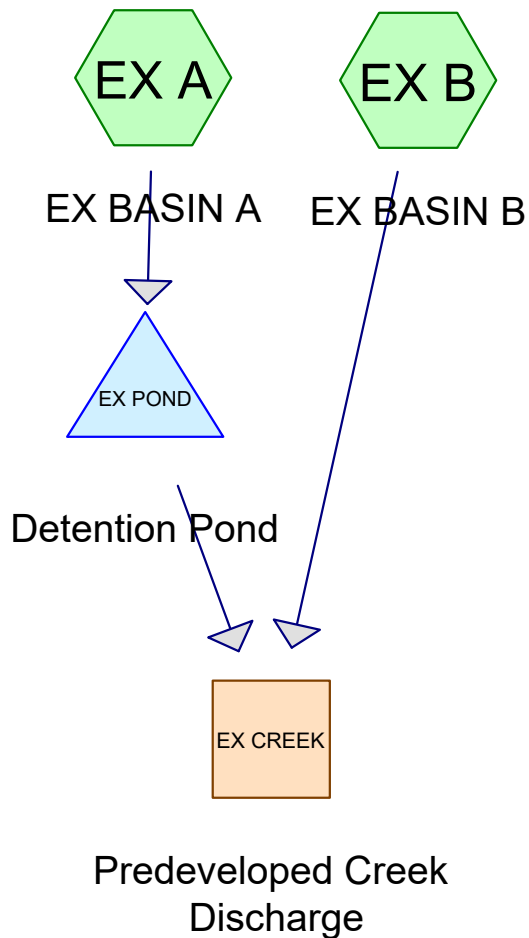
Hydrologic Soils Group: HoC, HoG

NOTES:

*A minimum Tc of 6 minutes is used to calculate Peak Flows using the Hydrocad Program.

n Values: Grass= 0.24 Pavement=0.011

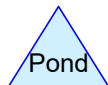
K Values: Grass = 11 Pavement = 27



Subcat



Reach



Pond



Link

Routing Diagram for Pacific Highway Duplex

Prepared by SGA Engineering, PLLC, Printed 3/4/2025
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Pacific Highway Duplex

Prepared by SGA Engineering, PLLC

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Type IA 24-hr 100-YR Rainfall=4.70"

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Summary for Subcatchment A: EX BASIN A

Runoff = 0.30 cfs @ 7.93 hrs, Volume= 0.102 af, Depth> 3.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=4.70"

	Area (sf)	CN	Description
*	4,008	98	Ex Roof
*	4,935	98	Ex Driveway
*	5,059	80	Pervious
	14,002	91	Weighted Average
	5,059	80	36.13% Pervious Area
	8,943	98	63.87% Impervious Area

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

Summary for Subcatchment B: BASIN B

Runoff = 0.11 cfs @ 7.94 hrs, Volume= 0.037 af, Depth> 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=4.70"

	Area (sf)	CN	Description
*	2,004	98	Roof
*	1,193	98	Driveway
*	1,904	80	Yard
	5,101	91	Weighted Average
	1,904	80	37.33% Pervious Area
	3,197	98	62.67% Impervious Area

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

Summary for Subcatchment EX A: EX BASIN A

Runoff = 0.30 cfs @ 7.93 hrs, Volume= 0.102 af, Depth> 3.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=4.70"

Pacific Highway Duplex

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Type IA 24-hr 100-YR Rainfall=4.70"

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	Area (sf)	CN	Description
*	4,008	98	Ex Roof
*	4,935	98	Ex Driveway
*	5,059	80	Pervious
	14,002	91	Weighted Average
	5,059	80	36.13% Pervious Area
	8,943	98	63.87% Impervious Area

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

Summary for Subcatchment EX B: EX BASIN B

Runoff = 0.05 cfs @ 7.99 hrs, Volume= 0.019 af, Depth> 1.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=4.70"

	Area (sf)	CN	Description
*	5,101	72	Ex Pervious
	5,101	72	100.00% Pervious Area

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

Summary for Reach CREEK: Developed Creek DischargeInflow Area = 0.439 ac, 63.55% Impervious, Inflow Depth > 3.73" for 100-YR event
Inflow = 0.18 cfs @ 8.43 hrs, Volume= 0.136 af
Outflow = 0.18 cfs @ 8.43 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach EX CREEK: Predeveloped Creek DischargeInflow Area = 0.439 ac, 46.81% Impervious, Inflow Depth > 3.28" for 100-YR event
Inflow = 0.19 cfs @ 8.14 hrs, Volume= 0.120 af
Outflow = 0.19 cfs @ 8.14 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond EX POND: Detention PondInflow Area = 0.321 ac, 63.87% Impervious, Inflow Depth > 3.79" for 100-YR event
Inflow = 0.30 cfs @ 7.93 hrs, Volume= 0.102 af
Outflow = 0.16 cfs @ 8.31 hrs, Volume= 0.101 af, Atten= 46%, Lag= 22.4 min
Primary = 0.16 cfs @ 8.31 hrs, Volume= 0.101 af

Pacific Highway Duplex

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Type IA 24-hr 100-YR Rainfall=4.70"

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Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.27' @ 8.31 hrs Surf.Area= 0.014 ac Storage= 0.012 af

Plug-Flow detention time= 38.3 min calculated for 0.100 af (99% of inflow)
Center-of-Mass det. time= 31.4 min (719.5 - 688.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.046 af	4.00'W x 60.00'L x 3.00'H Prismaoid Z=2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	1.00'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 8.31 hrs HW=1.27' (Free Discharge)

└─1=Orifice/Grate (Orifice Controls 0.11 cfs @ 5.25 fps)

└─2=Orifice/Grate (Orifice Controls 0.05 cfs @ 2.08 fps)

Summary for Pond POND: Detention Pond

Inflow Area = 0.439 ac, 63.55% Impervious, Inflow Depth > 3.79" for 100-YR event
Inflow = 0.41 cfs @ 7.93 hrs, Volume= 0.138 af
Outflow = 0.18 cfs @ 8.43 hrs, Volume= 0.136 af, Atten= 55%, Lag= 29.5 min
Primary = 0.18 cfs @ 8.43 hrs, Volume= 0.136 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.42' @ 8.43 hrs Surf.Area= 0.021 ac Storage= 0.021 af

Plug-Flow detention time= 65.7 min calculated for 0.136 af (98% of inflow)
Center-of-Mass det. time= 54.1 min (742.5 - 688.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	0.067 af	4.00'W x 90.00'L x 3.00'H Prismaoid Z=2.0

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	1.00'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 8.43 hrs HW=1.42' (Free Discharge)

└─1=Orifice/Grate (Orifice Controls 0.12 cfs @ 5.57 fps)

└─2=Orifice/Grate (Orifice Controls 0.06 cfs @ 2.80 fps)

Appendix D - Soils Report

[See Preliminary Documents](#)

Appendix E – Critical Areas Report

[See Preliminary Documents](#)