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# PRELIMINARY STORMWATER MANAGEMENT REPORT

**FOR** 

#### DEARBORN MULTIFAMILY

at 797 Dearborn Ave N, Keizer, OR 97303

July 24th, 2025



#### PREPARED BY:

7 OAKS ENGINEERING, INC.

Kimberly Johnson, P.E. 345 Westfield St. #107 Silverton, Or. 97381 503.308.8554

kim@7oaksengineering.com



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#### I. PURPOSE OF REPORT

This report describes the proposed private onsite improvements compliance with the City of Keizer's Design Standards (February 2023) – Chapter 400.

#### II. PROJECT DESCRIPTION

The site is 797 Dearborn Ave N in Keizer. To the east and west, there is private property that is adjacent to Dearborn Ave N. To the south of the site is Dearborn Ave N. To the north of the site there is private property adjacent to James St NE.

#### A. EXISTING CONDITION

On the existing site, currently there are two buildings, and one shed on the property. The site currently has some trees along the west portion of the property. One tree is located north of the building on the south side of the property. To the southwest of the property there is an existing 12" pvc storm drain main in Dearborn ave.

The site has a gentle slope from the southeast to the middle of the north side of the property. The property also has a gentle slope from the northwest to the same low point on the property.

#### GEOTECHNICAL FINDINGS:

Infiltration testing was completed by GeoPacific on July 9<sup>th</sup>, Project No. 25-6832, and the following results were concluded;

Exploration ID	Depth (ft)	Soil Type	Infiltration Rate (in/hr)
HA-1	5.0	SILT (ML)	0.0
HA-1	8.0	Silty SAND (SM)	1.4

No Groundwater was encountered onsite, Groundwater was estimated to be 13 to 20 feet.

#### B. PROPOSED CONDITION

The proposed development includes an existing single-family residence and garage, a new ADU, and a new single-family residence. A proposed access easement will be located on the property to provide access to the new single-family residence.

The proposed site will need to alter the natural drainage pattern slightly to direct runoff and sheet flow towards the proposed stormwater planter. The stormwater planter has been sized to fully infiltrate the entire 100-year storm event, and a small 5' drywell will be



placed under the stormwater planter to ensure infiltration can occur in the layer at 8.0 below grade.

An secondary overflow drain has been provided at the stormwater planter, in the event a rain event exceeds 100-year storm event. The secondary overflow will be piped directly to the existing storm drain in Dearborn Avenue. No offsite run-on is anticipated and will have no negative impacts downstream.

Additionally, the proposed roof runoff from the single-family residence and proposed ADU will be piped directly to the proposed drywells, utilizing the simplified stormwater method. In the event a rain event exceeds 100-year storm event a proposed secondary overflow will be provided and connect to the existing storm drain main in Dearborn Avenue.



#### III. METHODOLOGY

The City of Keizer's Design Standards (February 2023) – Chapter 400 were implemented for the design of the onsite stormwater system, as follows:

Projects greater than 5,000 square feet of new or replaced impervious surface are required to meet the full requirements for treatment, flow control, and retention of stormwater as provided below. This proposed project exceeds this new or replaced 5,000 square feet of impervious area.

#### **Stormwater Treatment**

The entire WQE will be required to retain and treat and shall conform to NPDES, TMDL and WPCF requirements and reduce the discharge of the listed pollutants to the Waters of the State. All treatment facilities will be designed to utilize the GSI to the MEF.

#### **Stormwater Retention**

The hierarchy to be followed in determining project specific appliable facility retention requirements based on the Design Infiltration Rates for the site or the Point of Connection as follows:

#### 1. Design Infiltration Rate greater than 2 inches per hour:

The project facility shall retain and treat the entire WQE. The project facility shall retain all stormwater runoff up to and including the 100-year design storm event with no release allowed.

#### 2. Project is in an Unserved Stormwater Area (regardless of design infiltration rate):

The project facility shall retain and treat the entire WQE. The project facility shall retain all stormwater runoff from design storm events up to and including the 100-year design storm event with no release allowed.

#### 3. Design Infiltration Rate between 0.75 inches and 2 inches per hour:

The facility shall retain and treat the entire WQE. In addition, the facility shall retain stormwater runoff for the 5-year, 10-year, 25-year design storm events with an allowable release rate up to the predeveloped 5-year design storm event. Runoff for the 50-year and 100-year design storm events shall be retained with an allowable release rate up to the predeveloped 25-year design storm event.

#### 4. Design Infiltration Rate less than 0.75 inches per hour:

The facility shall retain and treat the entire WQE to the MEF. The facility shall also retain stormwater runoff for the 5-year, 10-year, 25-year, 50-year, and 100-year design storm events, not allowing any increase in runoff for all storm events listed.

#### 5. "Critical Basin" Point of Connection (regardless of design infiltration rate):

The facility shall retain and treat the entire WQE to the MEF. The facility shall also retain stormwater runoff for the 2-year, 5-year, 10-year, 25- year, 50-year, and 100-year design storm events, not allowing any increase in runoff all storm events listed.

The site is located within a "critical basin" designated area, therefore Item 5 compliance will be required.



#### Flow Control Requirements:

To meet the requirement to retain all stormwater runoff to the MEF, certain sites may need to include flow control to be implemented as part of the design. In other situations, it simply benefits the overall system to provide flow control prior treatment or retention systems.



## IV. CALCULATIONS

The development will be designed in accordance with the Design Standards in Division 004, Appendix D. The Santa Barbara Urban Hydrograph (SBUH) method will be the selected methodology used in the computer program HydroCAD Version 10.20. The following parameters were inputted.

Storm Type: Type 1A Rainfall Distribution

Soil Group: Group C

#### Curve Number:

CURVE NUMBERS				
Pre-Development				
Range, Grassland, Fair	79			

CURVE NUMBERS				
Post-Development	CN			
Grass Cover, Fair	74			
Pervious Paving*	88			

<sup>\*</sup> Pervious Paving was assumed, CN of 88 per ASCE.

#### Rainfall Depth:

Return Interval	Peak 24-Hour Rainfall
Water Quality Storm Event	1.38 inches
2-YR Storm Event	2.20 inches
5-YR Storm Event	2.70 inches
10-YR Storm Event	3.20 inches
25-YR Storm Event	3.60 inches
50-YR Storm Event	4.10 inches
100-YR Storm Event	4.40 inches



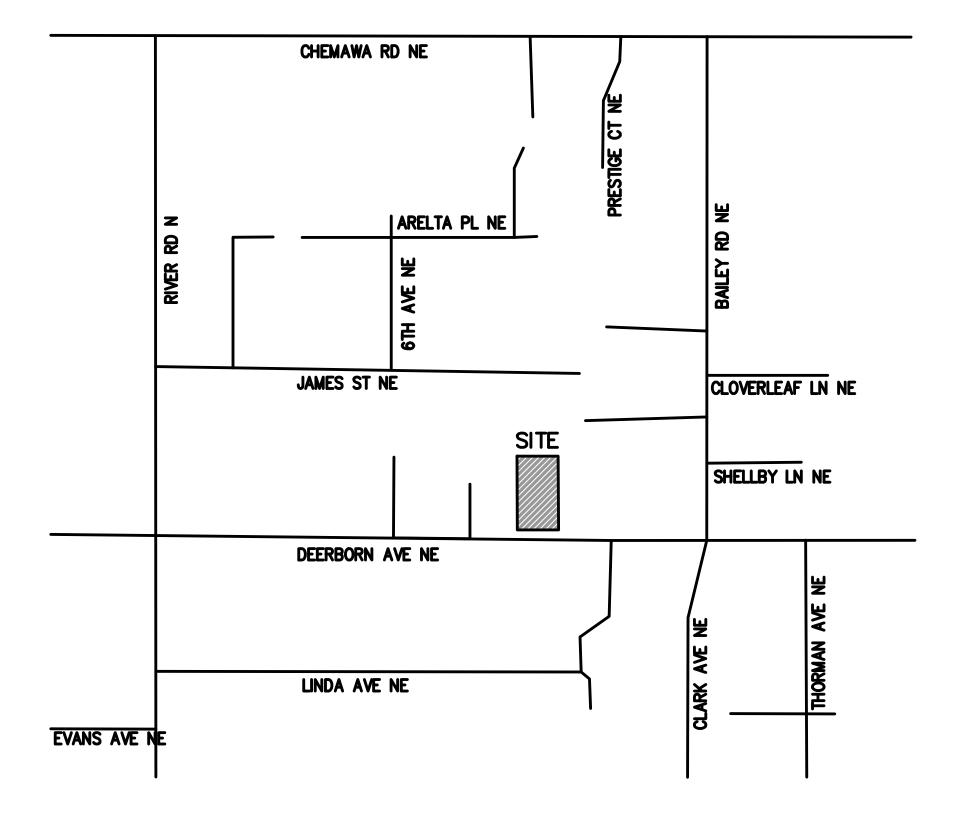
# V. <u>SUMMARY</u>

In conclusion, the

PRE VS. POST CONSTRUCTION FLOW RATES							
FACILITY ID PEAK FLOW RATE (CFS) PEAK FLOW RATE (CFS)							
Project Site	100-Year Pre	100-Year Post					
Α	A 0.1 0						

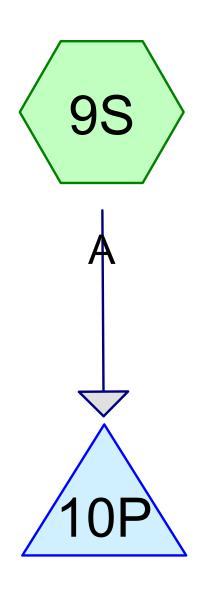
CATCHMENT AND FACILITY TABLE									
CATCHMENT/ FACILITY ID  TOTAL AREA (SF)/(AC.)  IMPERVIOUS AREA (SF)  PERVIOUS (PRIVATE/ PUBLIC)  FACILITY TYPE					TOP OF FACILITY SURFACE AREA (SQ.FT)	BOTTOM INFILTRATION SURFACE AREA (SQ.FT)			
А	4650	4650	0.00	Private	FILTRATION PLANTER W/ DRYWELL	730	730		

# APPENDIX A - MAPS





# APPENDIX B - CALCULATIONS



Rain Garden - A









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#### Rainfall Events Listing (selected events)

Event#	Event	Storm Type	Curve	Mode	Duration	B/B	Depth	AMC
	Name				(hours)		(inches)	
1	100-Yr	Type IA 24-hr		Default	24.00	1	4.40	2

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#### **Area Listing (all nodes)**

Area	CN	Description
(acres)		(subcatchment-numbers)
0.096	98	(9S)
0.096	98	TOTAL AREA

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#### Soil Listing (all nodes)

Area	Soil	Subcatchment
(acres)	Group	Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.096	Other	9S
0.096		TOTAL AREA

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#### **Ground Covers (all nodes)**

HSG-A	HSG-B	HSG-C	HSG-D	Other (acres)	Total	Ground	Subcatchment
(acres)	(acres)	(acres)	(acres)		(acres)	Cover	Numbers
0.000 <b>0.000</b>	0.000 <b>0.000</b>	0.000 <b>0.000</b>	0.000 <b>0.000</b>	0.096 <b>0.096</b>	0.096 <b>0.096</b>	TOTAL AREA	9S

#### 00386 - POST-Development

Type IA 24-hr 100-Yr Rainfall=4.40" Printed 7/24/2025

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Time span=0.10-72.00 hrs, dt=0.05 hrs, 1439 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment9S: A Runoff Area=4,200 sf 100.00% Impervious Runoff Depth=4.16"

Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.033 af

Pond 10P: Rain Garden - A Peak Elev=104.78' Storage=1,457 cf Inflow=0.10 cfs 0.033 af

Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.096 ac Runoff Volume = 0.033 af Average Runoff Depth = 4.16" 0.00% Pervious = 0.000 ac 100.00% Impervious = 0.096 ac

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Runoff

#### **Summary for Subcatchment 9S: A**

[49] Hint: Tc<2dt may require smaller dt

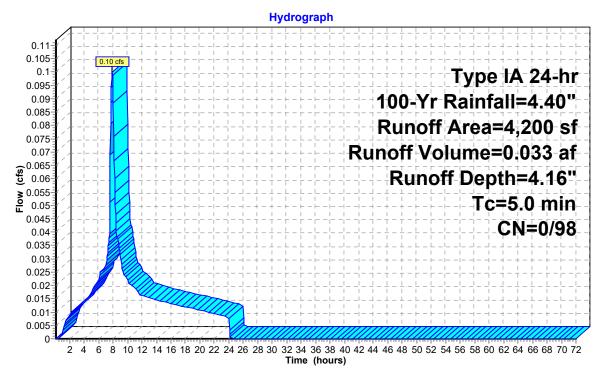
7.90 hrs, Volume= 0.033 af, Depth= 4.16" Runoff 0.10 cfs @

Routed to Pond 10P: Rain Garden - A

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-72.00 hrs, dt= 0.05 hrs Type IA 24-hr 100-Yr Rainfall=4.40"

	Α	rea (sf)	CN [	Description		
*		4,200	98			
		4,200	98 1	100.00% Im	npervious A	Area
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	5.0					Direct Entry,

#### Subcatchment 9S: A



#### 00386 - POST-Development

#1

Discarded

1=Exfiltration (Controls 0.00 cfs)

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#### Summary for Pond 10P: Rain Garden - A

Inflow Area = 0.096 ac,100.00% Impervious, Inflow Depth = 4.16" for 100-Yr event

Inflow = 0.10 cfs @ 7.90 hrs, Volume= 0.033 af

Outflow = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Discarded = 0.00 cfs @ 0.10 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.10-72.00 hrs, dt= 0.05 hrs Peak Elev= 104.78' @ 26.20 hrs Surf.Area= 758 sf Storage= 1,457 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert Ava	il.Storage	Storage	Descrip	tion				
#1	100.00'	1,548 cf	Custom	Stage I	Data (Pri	ismatic)	Listed below	(Recalc)	
#2	95.00'	70 cf					Listed below		
		1,618 cf	Total Av	ailable S	Storage				
Elevation	Surf.Area	Voids	Inc.S	Store	Cum	.Store			
(feet)	(sq-ft)	(%)	(cubic-	feet)	(cubi	c-feet)			
100.00	730	0.0	,	0	,	0			
101.50	730	30.0		329		329			
101.83	730	0.0		0		329			
103.33	730	0.0		0		329			
104.83	730	100.0	1	,095		1,424			
105.00	730	100.0		124		1,548			
Elevation	Surf.Area	Ind	c.Store	Cur	n.Store				
(feet)	(sq-ft)		c-feet)	_	c-feet)				
	, , ,	(Cubi		(Cubi	<del></del>				
95.00	0		0		0				
100.00	28		70		70				
Device Routing Invert Outlet Devices									

Excluded Surface area = 11 sf

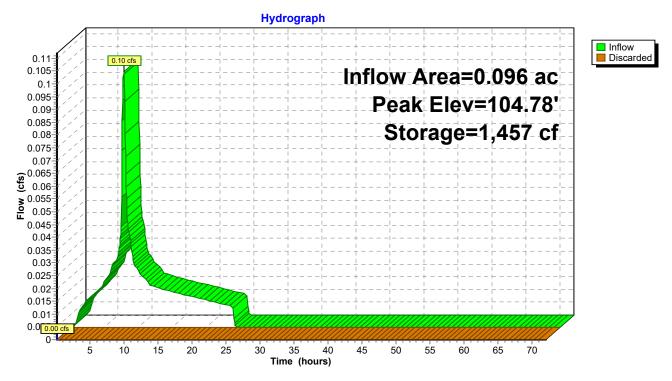
0.600 in/hr Exfiltration over Surface area from 97.00' - 87.00'

Discarded OutFlow Max=0.00 cfs @ 0.10 hrs HW=95.00' (Free Discharge)

97.00'

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#### Pond 10P: Rain Garden - A



# APPENDIX C - PLANS

# GENERAL NOTES:

- CODE), AND THE OREGON FIRE CODE (FIRE CODE), LATEST EDITIONS.
- ALL PERMIT AND LICENSES NECESSARY FOR THE EXECUTION AND COMPLETION OF THE WORK SHALL BE SECURED BY THE
- NOTIFICATION OF ALL OWNERS OF UNDERGROUND UTILITIES AT LEAST 48 BUSINESS HOURS, BUT NOT MORE THAN 10
- GUARANTEED TO BE ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS OF ALL UNDERGROUND UTILITY CONNECTION POINTS PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF 7 OAKS ENGINEERING, INC. POTHOLE ALL CROSSINGS AS NECESSARY BEFORE CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT
- 7 OAKS ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ANY DISCREPANCIES ENCOUNTERED BETWEEN THE CURRENT FIELD CONDITIONS AND THE INFORMATION SHOWN ON THE SURVEY MAP (PERFORMED BY FORTY FIVE NORTH SURVEYING, LLC). THE CONTRACTOR IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.

# GRADING AND PAVING NOTES:

- ALL SURFACES SHALL HAVE A MINIMUM 1.0% SLOPE UNLESS OTHERWISE NOTED ON THE PLANS. ALL SURFACES SHALL MEET FXISTING GRADES SMOOTHLY AND EVENLY AND MAINTAIN CONSTANT SLOPES UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL NOTIFY 7 OAKS ENGINEERING, INC. IF THE GRADING PLAN DOES NOT PROVIDE POSITIVE DRAINAGE OR IF SLOPE CALLOUTS DO NOT MATCH SPOT GRADES.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING SITE AND DRAINAGE PATTERNS AND THE PROTECTION OF EXISTING ENGINEERED DRAINAGE FACILITIES.
- THE CONTRACTOR SHALL REPLACE AND RESTORE AREAS NOT SCHEDULED FOR CONSTRUCTION TO THEIR ORIGINAL CONDITION AND TO THE APPROVAL OF THE OWNERS REPRESENTATIVE.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS ADJACENT TO EXISTING TREES IN ORDER TO MINIMIZE DISTURBANCES TO THE ROOTS. THE CONTRACTOR SHALL INSTALL TREE PROTECTION FENCING PER CITY OF KEIZER
- TREE CODE. NO PARKING VEHICLES UNDER TREES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS, AND OTHER SITE ELEMENTS WITHIN THE LIMITS OF DEMOLITION., UNLESS OTHERWISE NOTED ON PLANS. DISPOSE OF DEMOLISHED ITEMS
- ACTUAL LINES AND GRADES OF EXCAVATION SHALL BE STAKED BY A QUALIFIED SURVEYOR. BASED ON THE INFORMATION
- SHOWN ON THE PLANS, THE CONTRACTOR SHALL RETAIN A SURVEYOR LICENSED IN OREGON.
- ADJUST ALL INCIDENTAL STRUCTURES, MANHOLE LIDS, VALVE BOXES, ETC. TO FINISH GRADE.
- PAVING WILL NOT BE ALLOWED DURING WET OR COLD WEATHER.
- 10. ALL CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY SHALL HAVE AN APPROVED TRAFFIC CONTROL PLAN. 11. ALL CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY SHALL BE PERMITTED UNDER SEPARATE PERMIT.
- 12. PRIOR TO THE PLACEMENT OF AGGREGATE BASE MATERIALS RELATED TO SITE PAVING, A GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO OBSERVE AND EVALUATE THE SUBGRADE SOIL CONDITIONS, AS OUTLINED IN THE GEOTECHNICAL REPORT.

# UTILITY NOTES:

- MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM CITY ENGINEER PRIOR TO INSTALLATION.
- ALL TRENCH BACKFILL SHALL BE SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.
- CONNECTIONS TO EXISTING UTILITIES SHALL CONFORM WITH THE CITY'S ENGINEERING DESIGN MANUAL AND STANDARD PLANS. ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO FINISHED GRADE.
- ALL WATER LINES SHALL BE THOROUGHLY FLUSHED, CHLORINATED AND TESTED IN ACCORDANCE WITH OREGON STATE HEALTH DEPARTMENT PRIOR TO ANY METER HOOK-UP SERVICE.
- BEGIN LAYING STORM AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE
- CONTRACTOR SHALL MAINTAIN A MINIMUM 5' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN ALL EXISTING AND
- FOR CROSSINGS OF WATER LINES AND SANITARY SEWER LINES, THE OREGON STATE HEALTH DEPARTMENT CRITERIA SHALL
- EXISTING STORM OR SANITARY LATERALS TO BE UTILIZED FOR NEW SYSTEM MUST BE VIDEO INSPECTED WITH CITY INSPECTOR PRESENT PRIOR TO CONNECTION.
- 10. ALL NEW DRYWELLS MUST BE ACCESSIBLE PER OREGON DEPARTMENT OF ENVIRONMENTAL SERVICES QUALITY REQUIREMENTS. . THE CONTRACTOR SHALL VACUUM OUT ALL TRAPPED INLETS, MANHOLES, AND DRYWELLS AT THE END OF CONSTRUCTION.
- 12. CONTRACTOR SHALL EXERCISE CARE IN ALL OPERATIONS TO PROTECT EXISTING UNDERGROUND UTILITIES, ANY DAMAGE
- RESULTING FROM THIS WORK MUST BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

# SURVEY NOTES

- BASIS OF BEARINGS AND COORDINATE SYSTEM IS BASED ON OREGON COORDINATE REFERENCE SYSTEM "SALEM" ZONE, NAD83(2011), EPOCH 2010.00. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES.
- ELEVATIONS WERE ESTABLISHED BY GPS RTK OBSERVATIONS TO CITY OF SALEM BENCHMARK "KSUN". MARK IS AN ALUMINUM DISK IN A CONCRETE UTILITY PAD ON THE NORTH SIDE OF SUNSET AVENUE N, APPROXIMATELY 120 FEET WEST OF RIVER ROAD N. ELEVATION = 134.38' (CITY OF SALEM DATUM, NGVD29)
- THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED VISIBLE EVIDENCE OF ABOVE GROUND APPURTENANCES ALONG WITH SURFACE UTILITY MARKINGS BY OTHERS. ALL UNDERGROUND UTILITIES SHOWN WERE MARKED ON THE SURFACE BY AN "OREGON ONE-CALL NOTIFICATION CENTER" REQUEST. SURVEYOR MAKES NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF SAID MARKINGS, HOWEVER, THEY ARE LOCATED AS ACCURATELY AS THEY ARE MARKED ON THE GROUND. ALL UTILITY LOCATIONS SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.
- MANHOLE RIMS AS SHOWN ARE CENTER OF LID AT SURFACE WITH A NOTE INDICATING WHETHER THE UNDERGROUND CONE IS FCCENTRIC OR CONCENTRIC, IF ECCENTRIC, IT IS ALSO NOTED WHICH EDGE OF THE RIM THE ECCENTRIC CONE IS FLUSH WITH.
- ACCORDING TO THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 41047C0332G, PUBLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITH AN EFFECTIVE DATE OF JANUARY 19, 2000, THE SUBJECT PROPERTY LIES WITHIN THE FOLLOWING ZONE AND IS NOT IN A SPECIAL FLOOD HAZARD AREA:

"ZONE X" — AREAS DETERMINED TO BE OUTSIDE THE 500—YEAR FLOODPLAIN

PER ORS 209.150, ANY SURVEY MONUMENT REMOVED, DISTURBED OR DESTROYED SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR WITHIN 90 DAYS AT THE EXPENSE OF THE PERSON OR PUBLIC AGENCY RESPONSIBLE FOR SAID REMOVAL, DISTURBANCE OR DESTRUCTION

LINES OR STRUCTURES.

WORK ON THIS PROJECT.

**ENGINEER'S NOTICE TO CONTRACTOR:** 

OF OUR KNOWLEDGE, THERE ARE NOT EXISTING UTILITIES EXCEPT THOSE SHOWN ON

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN

IN THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS, AND TO THE BEST

THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO

PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON

THESE PLANS, AND IS RESPONSIBLE FOR THE PROTECTION OF ANY DAMAGE TO THESE

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED

CONSTRUCTION PRACTICES. CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME

SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF

THAT THIS REQUIREMENTS SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED

CONSTRUCTION FOR THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY;

TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO

DEFEND. INDEMNIFY. AND HOLD HARMLESS THE CITY, ITS EMPLOYEES, AND AGENTS FROM

ANY AND ALL LIABILITY. REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPORT DISCREPANCIES IN PLANS AND/OR FIELD CONDITIONS IMMEDIATELY TO THE DESIGN ENGINEER FOR RESOLUTION PRIOR TO

CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR DISCREPANCIES NOT SO REPORTED AND

FIELD SURVEYED MAY, 2025.

## NOTICE TO EXCAVATORS:

ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER.

(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-232-1987).

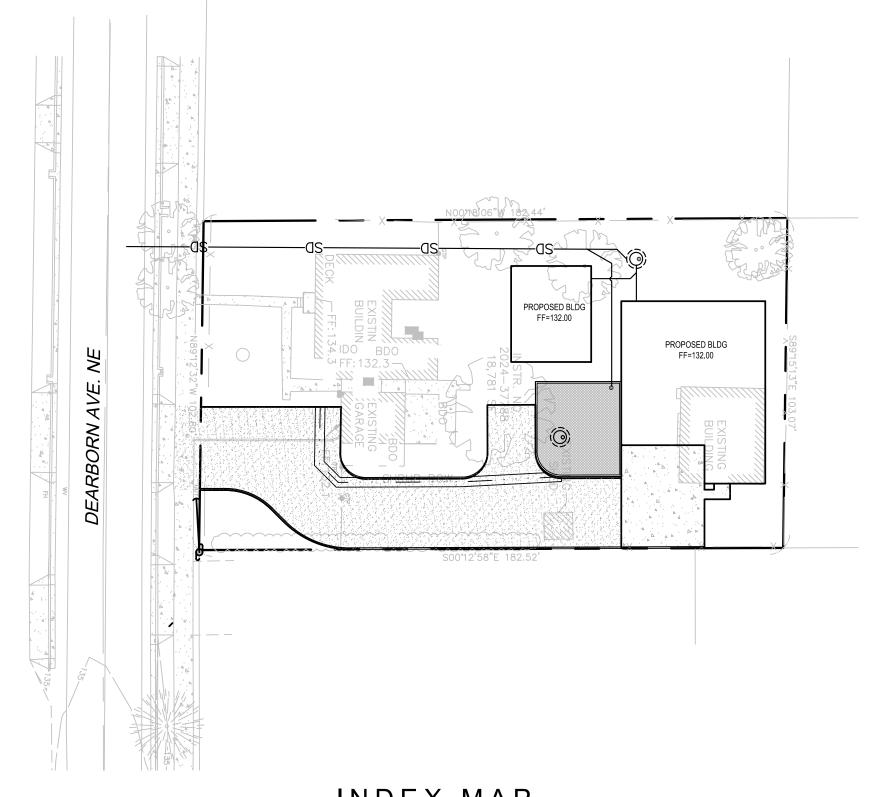
POTENTIAL UNDERGROUND FACILITY OWNFRS

# Dig | Safely.

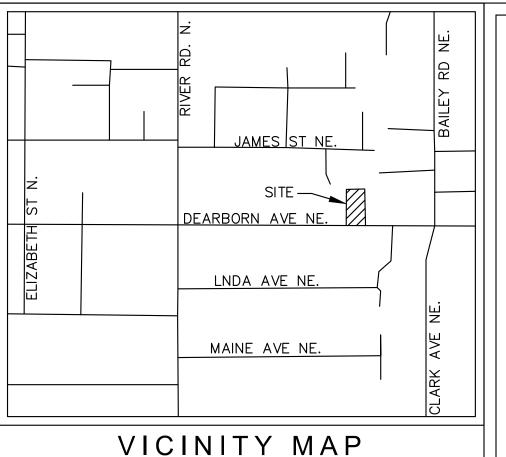
Call the Oregon One-Call Center DIAL 811 or 1-800-332-2344

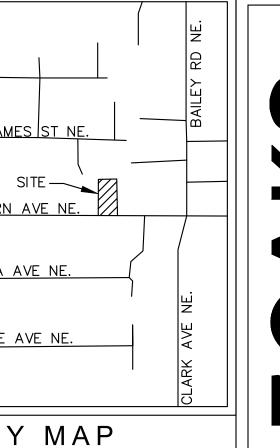
# ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF THE CITY OF KEIZER. THE OREGON STRUCTURAL SPECIALITY CODE (BUILDING CODE), OREGON PLUMBING SPECIALITY (PLUMBING SPECIAL DEARBORN - KEIZER

AT 797 DEARBORN AVENUE NE. KEIZER, OR









RENEWS BY: 06/30/2027

# DATE ISSUE DESCRIPTION

# PROJECT DIRECTORY:

STORM DRAIN:

NATURAL GAS:

NORTHWEST NATURAL GAS COMPANY

3123 BROADWAY ST NE

SALEM, OR. 97303

503.585.6611

CITY OF KEIZER

930 CHEMAWA RD

KEZIER, OR. 97303

# ARCHITECT:

SHEET INDEX:

C-3 - PRELIMINARY STORMWATER PLAN

C-2 - PRELIMINARY GRADING PLAN

LIFT ARCHITECTURE 1130 LIBERTY ST SE SUITE 230 SALEM, OR 97302 503.420.8520

C-1 - TITLE SHEET

# SURVEY:

FORTY FIVE NORTH SURVEYING, LLC 7320 3RD STREET SE #145 TURNER, OR. 97392 503.558.3330

### CIVIL ENGINEER: 7 OAKS ENGINEERING, INC.

STEVEN JOHNSON, P.E. 345 WESTFIELD ST. #107 SILVERTON, OR. 97381 503.308.8520 STEVEN@70AKSENGINEERING.COM

# UTILITY PURVEYORS

# WATER: CITY OF KEIZER

CITY OF KEIZER-PUBLIC WORKS 930 CHEMAWA RD. 930 CHEMAWA RD. KEZIER, OR. 97303 KEIZER, OR. 97303 FIRE:

# SEWER

CITY OF SALEM 555 LIBERTY STREET SE SALEM, OREGON. 503.588.6311

# **ELECTRIC:**

PORTLAND GENERAL ELECTRIC KEN SPENCER KENNETH.SPENCER@PGN.COM 503.970.7200

# ROADWAYS:

CITY OF KEIZER-PUBLIC WORKS 930 CHEMAWA RD. KEIZER, OR. 97303

# ABBREVIATIONS:

FINISHED FLOOR MINIMUM MIN. TOP OF CURB FINISHED SURFACE CURB FACE FLOW LINE FINISHED GRADE GRADE BREAK FDC CENTERLINE APN RIDGE LINE SQ.FT RIGHT OF WAY INV. INVERT WATER VALVE BACKFLOW PROPOSED CFS NOT A PART SCH. SCHEDULE PVC ELECTRIC VEHICLE SDR CLEAN AIR VEHICLE PSI STANDARD STD. NFPA ACRES CUP CONDITIONAL USE PERMIT DIAMETER EXISTING

SANITARY SEWER STORM DRAIN WATER METER FIRE DEPARTMENT CONNECTION ACCESSOR'S PARCEL MAP SQUARE FEET CUBIC FEET PER SECOND POLYVINYL CHLORIDE SPECIAL DRAWING RIGHT

POUNDS PER SQUARE INCH NATIONAL FIRE PREVENTION ASSOCIATION CATCH BASIN VITRIFIED CLAY PIPE

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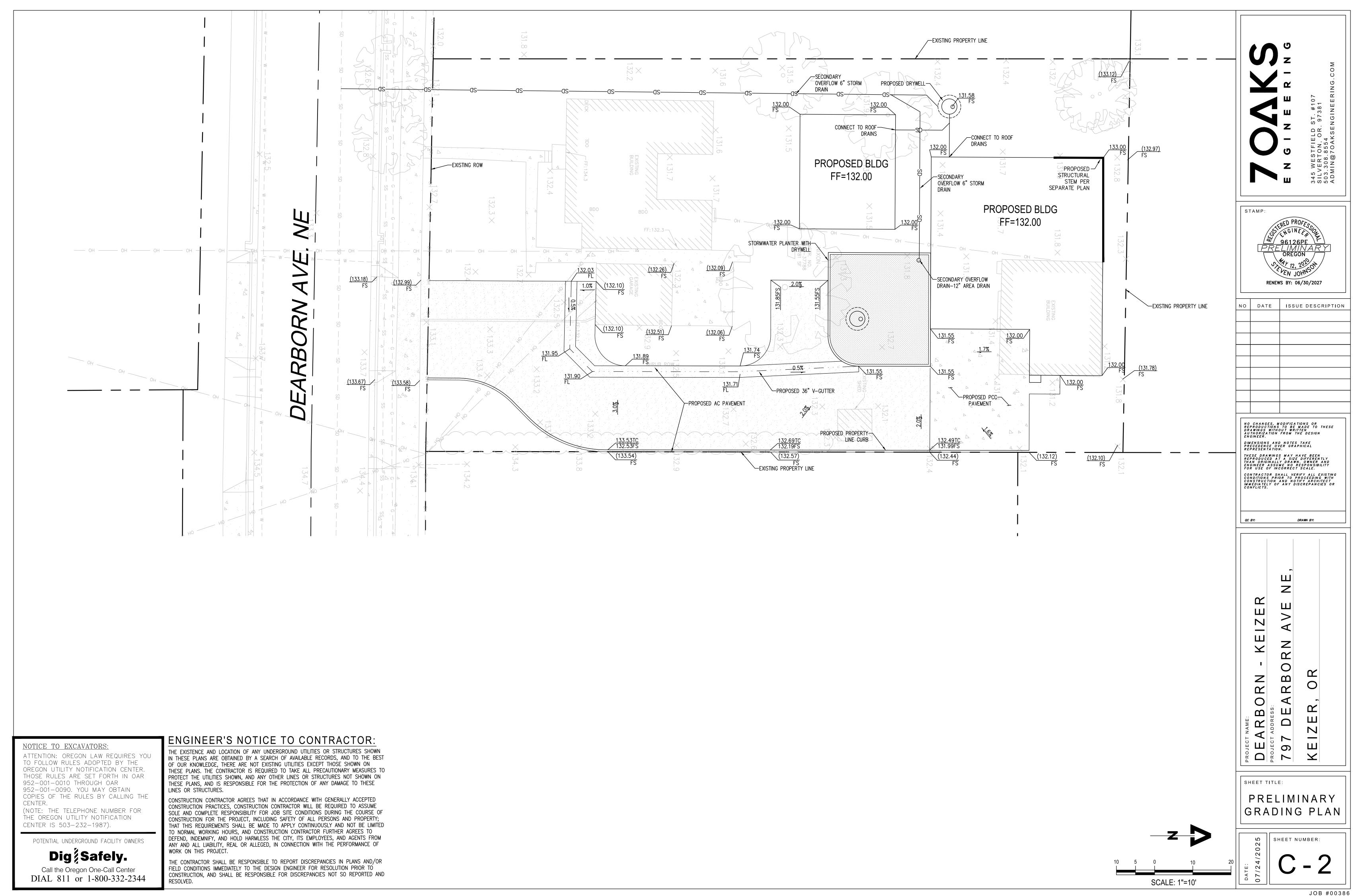
ENGINEER ASSUME NO RESPONSIBILITY FOR USE OF INCORRECT SCALE. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO PROCEEDING WITH CONSTRUCTION AND NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS.

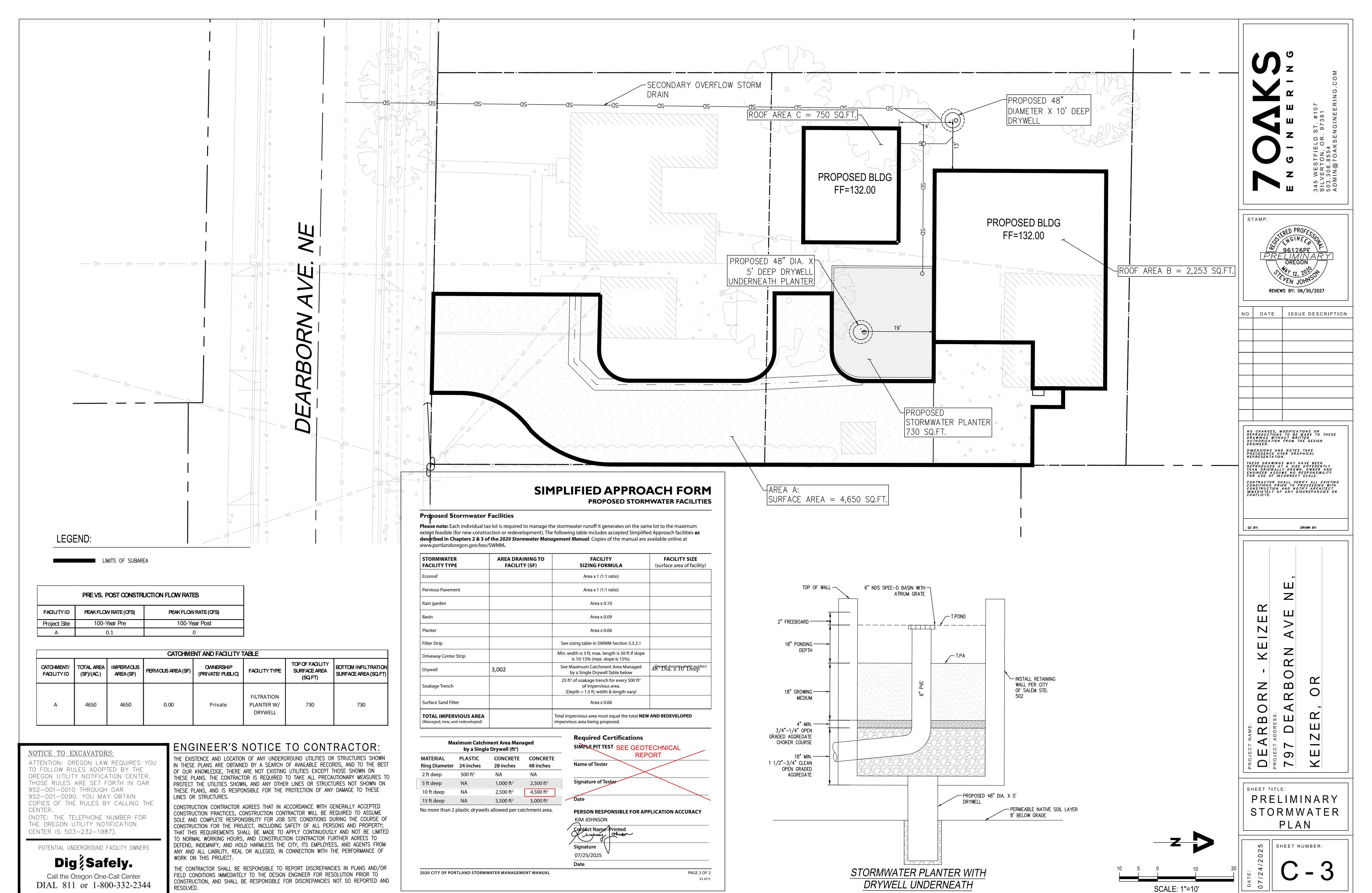
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# APPENDIX D - GEOTECHNICAL REPORT



Real-World Geotechnical Solutions
Investigation • Design • Construction Support

July 9, 2025 Project No. 25-6832

LIFT Architecture
Matt Johnson
1130 Liberty Street SE, Suite 230
Keizer, OR 97302

Phone: (503) 420-8520

Email: matt@liftarchitecture.com

SUBJECT: INFILTRATION TEST RESULTS

**797 DEARBORN AVENUE NE** 

**KEIZER, OREGON** 

This letter presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our study was to conduct infiltration testing at the site and provide information to aid in the design of stormwater systems. On July 3, 2025, GeoPacific Engineering, Inc. (GeoPacific) logged one hand auger boring at the site. The approximate location of the hand auger boring is indicated on Figure 1. Design of the stormwater management systems is to be completed by others.

#### **SOIL CONDITIONS**

In our hand auger boring, we encountered approximately 10 inches of Organic SILT (OL-ML) topsoil with fine roots throughout. Below the topsoil, we encountered stiff brown SILT (ML). The SILT (ML) graded to brown Silty SAND (SM) at approximately 7 feet bgs. The Silty SAND (SM) was medium dense and graded to very dense with depth. This soil type extended beyond the maximum depth of our hand auger boring (13 feet).

No groundwater or groundwater seepage was encountered at the time and location explored. Local well logs indicate that groundwater has been recorded at depths ranging from 5 to 20 feet bgs in the vicinity of the subject site.

#### **INFILTRATION TESTING**

Soil infiltration testing was performed in hand auger boring HA-1 using the encased falling head testing method at 5 feet bgs and 8 feet bgs. The soils were presoaked prior to infiltration testing. During testing, we measured the water level to the nearest 0.01 foot (1/8 inch) from a fixed point

#### Geotechnical Infiltration Test Results GeoPacific Project No. 25-6832, 797 Dearborn Avenue NE, Keizer, Oregon

and the change in water level was recorded at regular intervals until three successive measurements showing a consistent infiltration rate were achieved. The infiltration results are presented in the table below. The infiltration rates have been reported without applying a factor of safety. Care should be taken when estimating infiltration capacity at the site.

Exploration ID	Depth (ft)	Soil Type	Infiltration Rate (in/hr)
HA-1	5.0	SILT (ML)	0.0
HA-1	8.0	Silty SAND (SM)	1.4

Groundwater is anticipated at depths of approximately 13 to 20 feet. Typically, at least 5 feet of separation distance should be maintained between the bottom of stormwater management facilities and groundwater levels, when infiltration is planned.

Stormwater management systems should be constructed as specified by the designer and/or in accordance with the applicable stormwater design codes. The infiltration rates presented in this report do not incorporate a factor of safety. All systems should include an adequate factor of safety. Stormwater exceeding soil infiltration and/or soil storage capacities will need to be directed in a controlled manner to a suitable surface discharge location, away from structures.



#### Geotechnical Infiltration Test Results GeoPacific Project No. 25-6832, 797 Dearborn Avenue NE, Keizer, Oregon

#### **UNCERTAINTIES AND LIMITATIONS**

This scope of this study includes measuring infiltration rates only. Rates of infiltration that were affected by impermeable soils or groundwater seepage were not reported. This study did not include risk assessment for geologic hazards or flooding on the site. Environmental implications of stormwater disposal or ODEQ approval at this site are also beyond the scope of this report.

Infiltration test methods and procedures attempt to simulate the as-built conditions of the planned subsurface disposal system. However, due to natural variations in soil properties, actual infiltration rates may vary from the measured and/or recommended design rates. All systems should be constructed such that potential overflow is discharged in a controlled manner away from structures, and all systems should include an adequate factor of safety. Infiltration rates presented in this report should not be applied to inappropriate or complex hydrological models such as a closed basin without extensive further studies. This report presents infiltration test results only and should not be construed as an approval of a system design.

Please call if you have any questions or need further information.

Sincerely,

GeoPacific Engineering, Inc.

Alexandria B. Campbell, P.E. Staff Engineer

EXPIRES: 12/31/2025

Reviewed By: James D. Imbrie, G.E., P.E.

Juns D. Alic

Principal Engineer

Attachments: Figure 1 – Site Aerial and Exploration Locations

Hand Auger Log

**GEOPHCIFIC**14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445

#### SITE AERIAL AND **EXPLORATION LOCATION**



Legend

Hand Auger Boring Designation and Approximate Location

Date: 07/09/25 Drawn by: ABC

Approximate Scale: 1" = 40'

Project: 797 Dearborn Avenue Infiltration Keizer, Oregon

Project No. 25-6832

FIGURE 1

# **GEOPACIFIC**

14835 SW 72nd Avenue

**HAND AUGER LOG** Portland, Oregon 97224 Tel: (503) 598-8445 Project: 797 Dearborn Avenue Infiltration Project No. 25-6832 Boring No. **HA-1** Keizer, Oregon Water Bearing Zone Moisture Content (%) Sample Type Depth (ft) **Material Description** Moderately Organic SILT (OL), brown, fine roots to 10 in., dry (Topsoil) SILT (ML), brown, micaceous, stiff, damp (Native Soil) Grades to moist Infiltration test conducted at 5 feet bgs. Infiltration rate measured as 0.0 in/hr Silty SAND (SM), brown, fine-grained, medium dense, moist (Native Soil) Infiltration test conducted at 8 feet bgs. Infiltration rate measured as 1.4 in/hr Boring log continues on next page **LEGEND** Equipment: Ratchet-Handled Auger Date Excavated: 07/03/25 Logged By: ABC 5 Gal. Auger Diameter: 2.75 Inches 100 to Bucket 1,000 g

Bag Sample

Bucket

Seepage



Water Bearing

Auger Head Type: Mud Auger

Surface Elevation: 135 Feet Surface Conditions: Grass

# **GEOPACIFIC**

14835 SW 72nd Avenue Portland, Oregon 97224 Tel: (503) 598-8445

## **HAND AUGER LOG**

Project: 797 Dearborn Avenue Infiltration

Keizer, Oregon

Project No. 25-6832

Boring No. **HA-1 cont**.

				9		
Depth (ft)	Sample Type	Moisture Content (%)	Water Bearing Zone		Material Description	
				E	Boring log continued from previous	page
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1 1	00 to ,000 g		Gal. ıcket	0/10 [/]	Auger Diameter: 2.75 Inches	Logged By: ABC
- 1	1	1			THE PROPERTY OF THE PROPERTY O	

100 to 1,000 g

Bag Sample

Bucket Sample



Water Bearing

Auger Diameter: 2.75 Inches Auger Head Type: Mud Auger

Surface Elevation: 135 Feet Surface Conditions: Grass

# APPENDIX E OPERATION AND MAINTEANCE MANUAL

0 & M Report will be provided in Final Report