

# Harborview Heights

(Short Plat Subdivision)

**5130 61<sup>st</sup> Street NE**

**Marysville, WA**

## *Stormwater Report*

Prepared for

**Grant & Aubrey Nixon**

5130 61<sup>st</sup> Street NE

Marysville, WA 98270

Prepared by

**Nixon E&D, LLC**

230 N 550 East

Lindon, UT 84042

(801) 706-8516

**December 2023**

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## **SECTION I: PROJECT OVERVIEW**

The proposed Harborview Heights project is comprised of parcel # 00388800201500. The project will develop 2 single-family lots along with associated utilities on a 0.35-acre site. The project area address is 5130 61<sup>st</sup> Street NE (Sunnyside Blvd.). The site is located within the SW ¼ of the SW ¼ of Section 27, Township 30N, Range 5E. See Appendix 1: Plat and Construction Plan Set for location and vicinity map.

### **EXISTING SITE**

The existing site is a single-family residence on a flat lot. Existing ground cover is lawn and building. Site slopes are flat across the site. The project proposes to subdivide the site into two single-family lots. The property is bounded on the north by 61<sup>st</sup> Street NE, on the east by 52<sup>nd</sup> Ave NE, and on the south and west by residential lots.

Site soils are classified as underlain by Marysville sand with slopes ranging from 0 to 1 percent. A Geotechnical Engineering Study was performed for the proposed project site by CMT Technical Services.

The project does not contain any Threshold Discharge Area(s) as any runoff from the site does not discharge to a single natural discharge location or multiple natural discharge locations. Runoff from the site, both existing and proposed, discharges directly to an existing MS4 facility.

### **UPSTREAM AREA**

Based on site observation of flows and the topographic survey there is no upstream run-on. Runoff from the north (61<sup>st</sup> Street pavement south of roadway crown) is contained by an existing swale in the road right-of-way. Any overflow from the swale outlets to the west by existing curb and gutter near the NW corner of the parcel. Currently there is no runoff from the east (52<sup>nd</sup> Ave pavement) as runoff from this roadway flows east due to a reverse crown on the pavement and into the existing MS4 on the east side of the road. Runoff from developed parcels to the west and south flow south and west due to existing topography and site grading.

### **DOWNSTREAM ANALYSIS**

The project site discharges at one location in the south east corner of the site. Any flows leaving the site sheet flow across 52<sup>nd</sup> Ave at this location into the existing MS4 on the east side of the road. Flow is then conveyed to the south within a series of catch basins and pipes that discharge into Ebey Slough, part of the Snohomish River Estuary (a flow control exempt receiving water, see the SWMMWW: Appendix I-A: Flow Control Exempt Receiving Waters; Table I-A.1: Flow Control Exempt Receiving Waters).

## PROPOSED DEVELOPMENT

The project proposes to develop 2 residential lots from 1 existing residential lot, along with associated utilities, on a 0.35-acre site. Site development will construct 0.064-acre of impervious cover onsite and will disturb 0.091-acre onsite.

No frontage improvements are planned for 61<sup>st</sup> Street. The City is planning to extend the Sunnyside Ave. trail in the future and will construct curb, gutter and sidewalk improvements at that time. The project owner will be paying a fee in lieu of constructing improvements.

52<sup>nd</sup> Ave. NE will be widened to be compliant with standard plan 3-202-002 of the EDDS. Two (2) feet of existing asphalt pavement will be removed and replaced with 7.5 feet of asphalt. The existing reverse crown will be modified by sloping the new and replaced pavement to the west.

## PROPOSED DRAINAGE SYSTEM

Existing runoff from 61<sup>st</sup> Street NE is not impacted by the proposed project. The runoff flows into an existing swale in the road right-of-way. Any overflow from the swale outlets to the west to existing curb and gutter.

The new and replaced pavement on 52<sup>nd</sup> Ave will create new runoff conditions. As the project proposes less than 5,000 SF of new plus replaced hard surface, the project does not require water quality treatment. However, in an effort to implement Low Impact Development principles, a bioswale is proposed in lieu of curb and gutter for stormwater collection and handling. As shown in the Bioswale Calculation spreadsheet (Appendix 2) an eight (8) foot wide bioswale is able to retain the 6-month water quality storm (any overflow from Bioswale B is captured and retained by Bioswale C). Any overflow from the bioswale will sheet flow across 52<sup>nd</sup> Ave into the existing MS4 on the east side of the road.

## EROSION/SEDIMENTATION CONTROL

Erosion control measures that will be utilized during construction will include a combination of silt fence and storm drain inlet protection. See Section 2.0 for discussion of how SWPPP Elements are addressed.

## MINIMUM REQUIREMENTS

Per 2019 DOE SWMMWW “Flow Chart for Determining Requirements for New Development”, Minimum Requirements 1-5 apply to the proposed development.

**Minimum Requirement #1: Preparation of Stormwater Site Plans:** This Report along with the Construction Plans (Appendix 1) satisfies this minimum requirement. Since the project site does not discharge to any natural drainage system, no Threshold Discharge Areas (TDAs) are delineated. In addition, due to the size of the project and the proposed facilities, a DOE

Construction Stormwater Permit and Underground Injection Control (UIC) registration are not required.

**Minimum Requirement #2: Construction Stormwater Pollution Prevention:** See Section 2 of this Report for SWPPP BMP elements proposed, and for discussion of erosion control BMP's and their use specific to the site.

**Minimum Requirement #3: Source Control of Pollution:** Permanent source control BMPs are not required for the subject site since the proposed activities for the project do not fall within the types of facilities listed within Volume IV of the Drainage Manual (Residential developments are not required to implement source control BMP's).

**Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls:** There are no existing natural drainage systems or outfalls on, or associated with, the project site.

**Minimum Requirement #5: Onsite Stormwater Management:** Given the size of the project (<5,000 SF) and that runoff receiving waters (Ebey Slough, part of the Snohomish River Estuary) are flow control exempt, there are no applicable requirements associated with MR #5. However, in an effort to implement Low Impact Development principles, a bioswale is proposed to handle roadway runoff in lieu of curb and gutter.

The proposed bioswales (to be constructed to BMP T7.30: Bioretention requirements), combined with infiltration per the rates anticipated based on the geotechnical study, will provide both quality and quantity treatment for all right-of-way runoff. As shown in the Bioswale Calculation spreadsheet (Appendix 2) an eight (8) foot wide bioswale is able to completely retain the 6-month water quality storm (any overflow from Bioswale B is captured and retained by Bioswale C). In addition, all flows up to and including those from a 100-year 24-hour storm are expected to be retained and infiltrated in the bioswales (a factor-of-safety of 4.0 was used on the observed infiltration rates to determine design infiltration rates). Any flows leaving the bioswales will sheet flow across 52<sup>nd</sup> Ave into the existing MS4 on the east side of the road. Flows from this MS4 discharge into Ebey Slough, part of the Snohomish River Estuary (a flow control exempt receiving water).

## **SECTION 2: STORMWATER POLLUTION PREVENTION PLAN**

A Stormwater Pollution Prevention Plan (SWPPP) will be provided as part of the final submittal. The SWPPP report will be modeled under the guidelines of the 2019 Stormwater Management Manual for Western Washington.

### **TEMPORARY EROSION AND SEDIMENT CONTROL**

Grading operations will begin with the excavation of the bioswales. This will result in the capturing and detention of any runoff from all disturb areas during construction.

Erosion control measures that will be utilized during construction will include a combination of silt fence and storm drain inlet protection. Silt fence will be installed in the southeast corner of the project site to intercept any flows leaving the site. The catch basins on the east side of 52<sup>nd</sup> Ave adjacent to the project will receive inlet protection.

**Appendix 1: Plat and Construction Plan Set**

**SURVEY NOTES**

FIELD MEASUREMENTS USED TO PREPARE THIS SURVEY WERE MADE IN MAY 2022.  
 BASIS OF BEARING: MONUMENTED CENTERLINE 52nd AVENUE  
 BEARING: N02°16'46"W (PER PLAT OF EBEBY LANDING-AUDITORS FILE NO. 200002255002)  
 BASIS OF ELEVATION: CITY OF MARYSVILLE SEWER RIM SS MH #2  
 SANITARY SEWER PLAN EBEBY LANDING BY BELMARK INDUSTRIES DATED 01.07.00  
 ELEVATION: 28.66 (NGVD 29 DATUM)

ALL EASEMENTS SHOWN ON THIS SURVEY ARE PROVIDED, PER RECORD. THERE IS NO GUARANTEE TO UNRECORDED EASEMENTS OR THOSE EASEMENTS NOT SHOWN PER RECORD.  
 ALL LINES OF OCCUPATION HAVE BEEN NOTED ON THIS SURVEY. NO ATTEMPT HAS BEEN MADE TO RESOLVE THESE LINES OF OCCUPATION, IF ANY.

UTILITIES ARE SHOWN PER VISUAL OBSERVANCE.  
 (VERIFY ALL UTILITIES BEFORE DESIGN AND CONSTRUCTION)

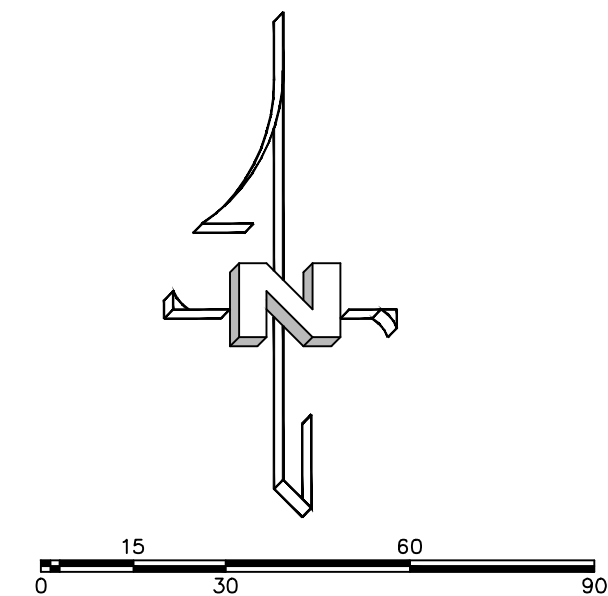
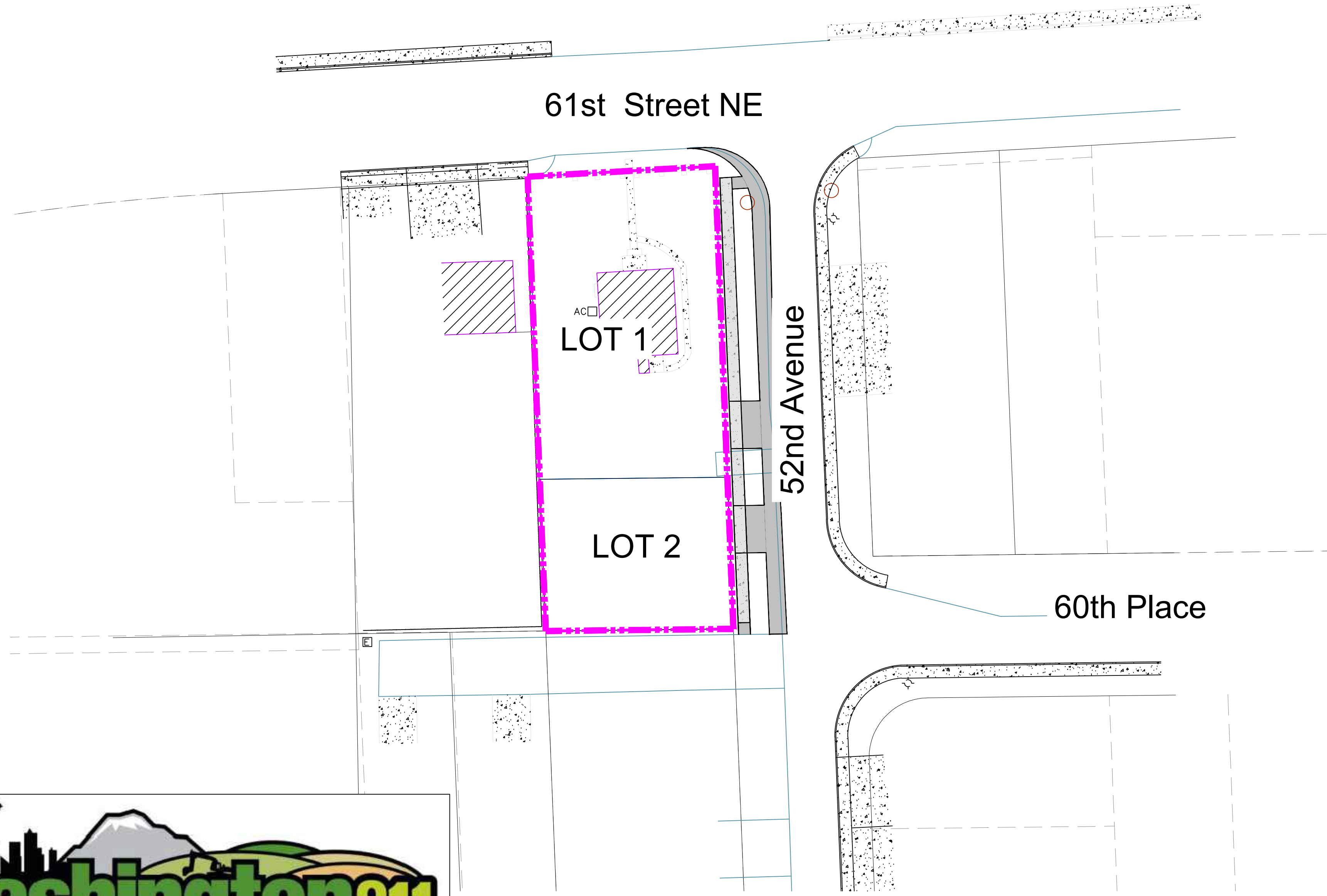
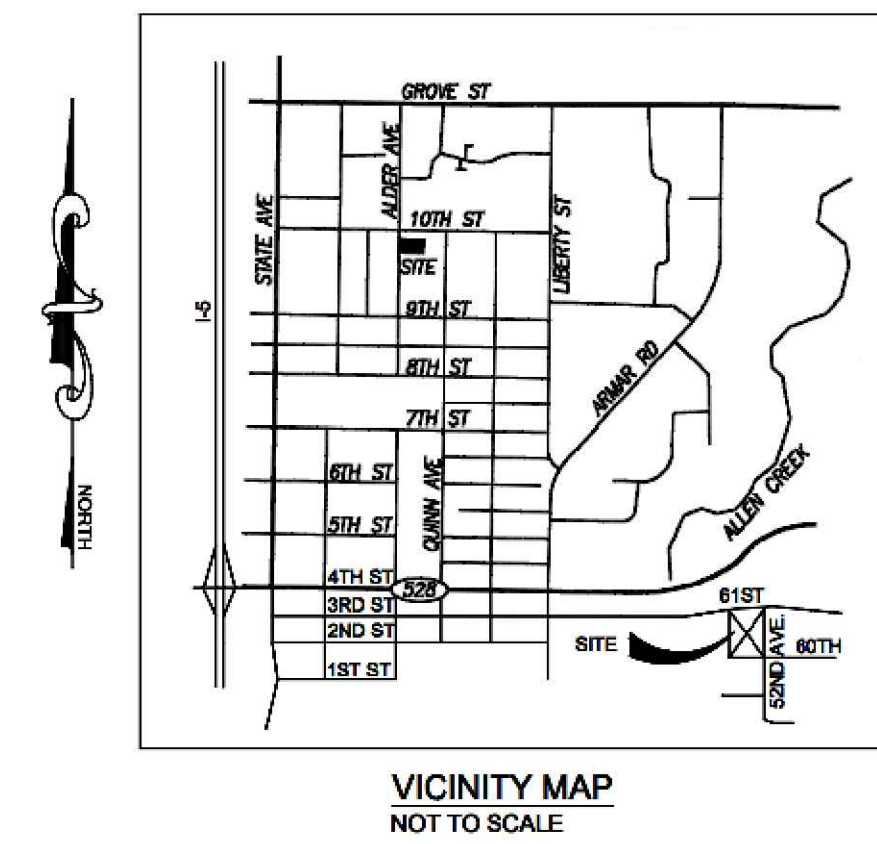
**LEGAL DESCRIPTION (AUDITOR FILE NO. 8811230026)**

LOTS 15 AND 16, BLOCK 2 AND ALL THAT PORTION OF LOTS 1 AND 2, BLOCK 2 LYING SOUTH OF PACIFIC HIGHWAY, TOGETHER WITH THAT PORTION OF VACATED ALLEY LYING BETWEEN LOTS 1 AND 2 AND 15 AND 16, BLOCK 2, BAY VIEW ADDITION TO MARYSVILLE, ACCORDING TO PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS, PAGE 52 RECORDE OF SNOHOMISH COUNTY, WASHINGTON.

TOGETHER WITH THE NORTH HALF OF VACATED JUDSON STREET ON THE SOUTH THAT WOULD ATTACH BY OPERATION OF LAW.

# HARBORVIEW HEIGHTS

PORTION OF BAY VIEW ADDITION TO MARYSVILLE  
 SOUTHWEST QUARTER OF SECTION 27, T30N, R5E, W.M.  
 CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON



(22"x34")  
 SCALE 1" = 30'  
 (11"x17")  
 SCALE 1" = 60'

**Owner:**  
 Grant Nixon  
 432-615-9604  
 grantlynixon@gmail.com

**Project Engineer:**  
 Evan Nixon  
 Nixon E&D, LLC  
 801-706-8516  
 nixon.evan@gmail.com

**Surveyor:**  
 Urban Visser, PLS  
 928-885-9113  
 urbanvisser@gmail.com

**Geotechnical Engineer:**  
 Andrew Harris, PE  
 CMT Technical Services  
 801-492-4132

**NOTES TO CONTRACTOR:**

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**CITY OF MARYSVILLE CONSTRUCTION DRAWING REVIEW ACKNOWLEDGEMENT**

THIS PLAN SHEET HAS BEEN REVIEWED AND EVALUATED FOR GENERAL COMPLIANCE WITH THE APPLICABLE CITY OF MARYSVILLE CODES AND ORDINANCES.

THIS DAY OF: \_\_\_\_\_

BY: \_\_\_\_\_  
 MAX PHAN, P.E. - CITY ENGINEER

THESE APPROVED CONSTRUCTION PLANS EXPIRE AFTER A PERIOD OF 60 MONTHS FROM THE DATE SHOWN ABOVE OR UPON EXPIRATION OF PRELIMINARY PLAT OR SITE PLAN APPROVAL PER MMC CODE 15.09.080



**-INDEX OF PLAN SHEETS-**

SHEET	DESCRIPTION
CS-01-02	COVER SHEET & NOTES
EX-01	EXISTING SITE PLAN
PLAT	FINAL PLAT
SP-01	SITE/UTILITY PLAN
GR-01	GRADING PLAN
EC-01	EROSION CONTROL PLAN
DT-01-DT-02	TYPICAL DETAILS

**Nixon E&D, LLC**

230 NORTH 550 EAST  
 LINDON, UTAH 84042  
 801.706.8516  
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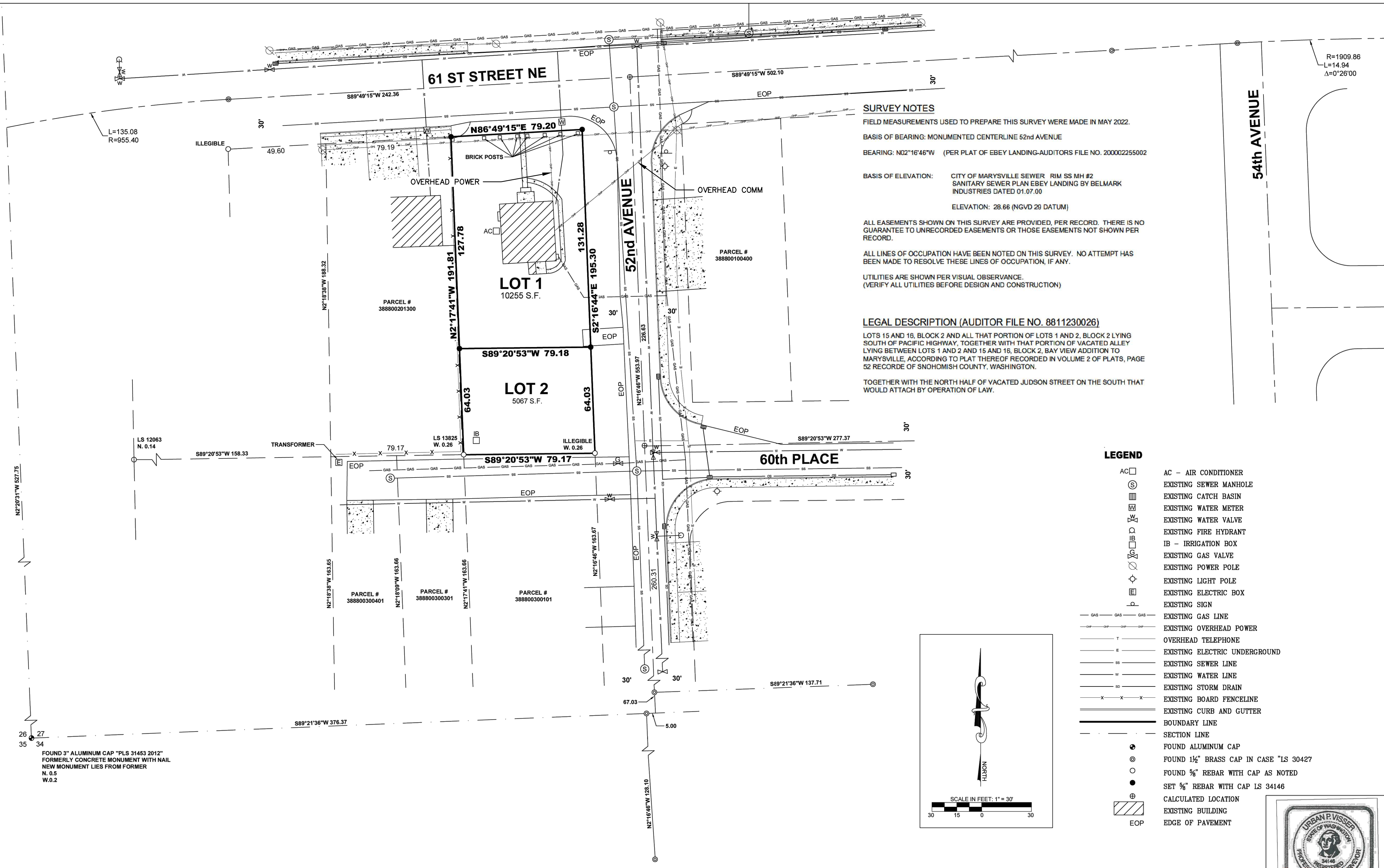
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 DRAWN: SH  
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 REVISION:

COVER SHEET & NOTES

SHEET:  
**CS-01**

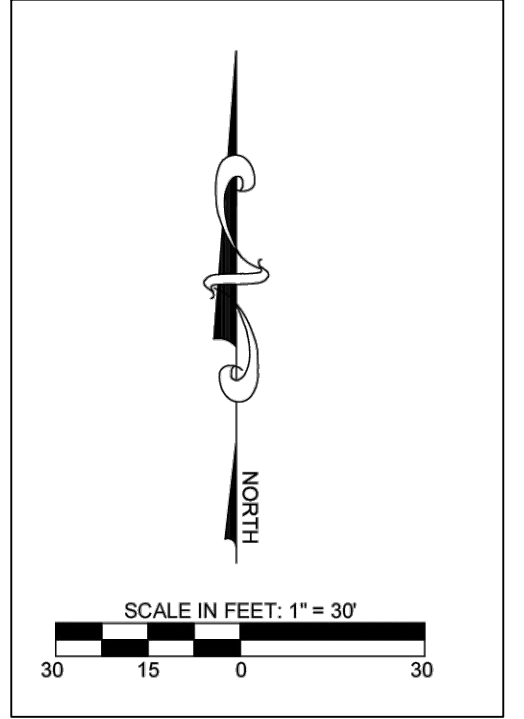




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- LEGEND**
- AC □ AC - AIR CONDITIONER
  - ⊙ EXISTING SEWER MANHOLE
  - ⊞ EXISTING CATCH BASIN
  - ⊞ EXISTING WATER METER
  - ⊞ EXISTING WATER VALVE
  - ⊞ EXISTING FIRE HYDRANT
  - IB □ IB - IRRIGATION BOX
  - ⊞ EXISTING GAS VALVE
  - ⊞ EXISTING POWER POLE
  - ⊞ EXISTING LIGHT POLE
  - ⊞ EXISTING ELECTRIC BOX
  - ⊞ EXISTING SIGN
  - GAS — EXISTING GAS LINE
  - T — EXISTING OVERHEAD POWER
  - T — OVERHEAD TELEPHONE
  - E — EXISTING ELECTRIC UNDERGROUND
  - S — EXISTING SEWER LINE
  - W — EXISTING WATER LINE
  - SD — EXISTING STORM DRAIN
  - X — EXISTING BOARD FENCELINE
  - — EXISTING CURB AND GUTTER
  - — BOUNDARY LINE
  - — SECTION LINE
  - ⊙ FOUND ALUMINUM CAP
  - ⊙ FOUND 1½" BRASS CAP IN CASE "IS 30427"
  - ⊙ FOUND ¾" REBAR WITH CAP AS NOTED
  - ⊙ SET ¾" REBAR WITH CAP IS 34146
  - ⊙ CALCULATED LOCATION
  - ▨ EXISTING BUILDING
  - — EOP



FOUND 3" ALUMINUM CAP "PLS 31453 2012" FORMERLY CONCRETE MONUMENT WITH NAIL NEW MONUMENT LIES FROM FORMER N. 0.5 W. 0.2

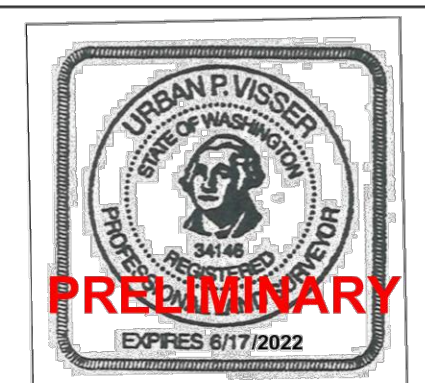
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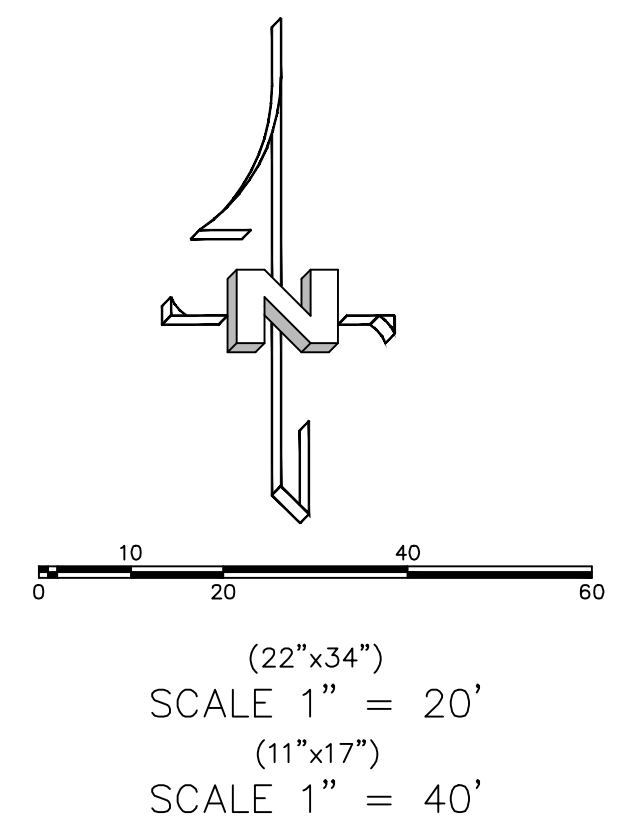
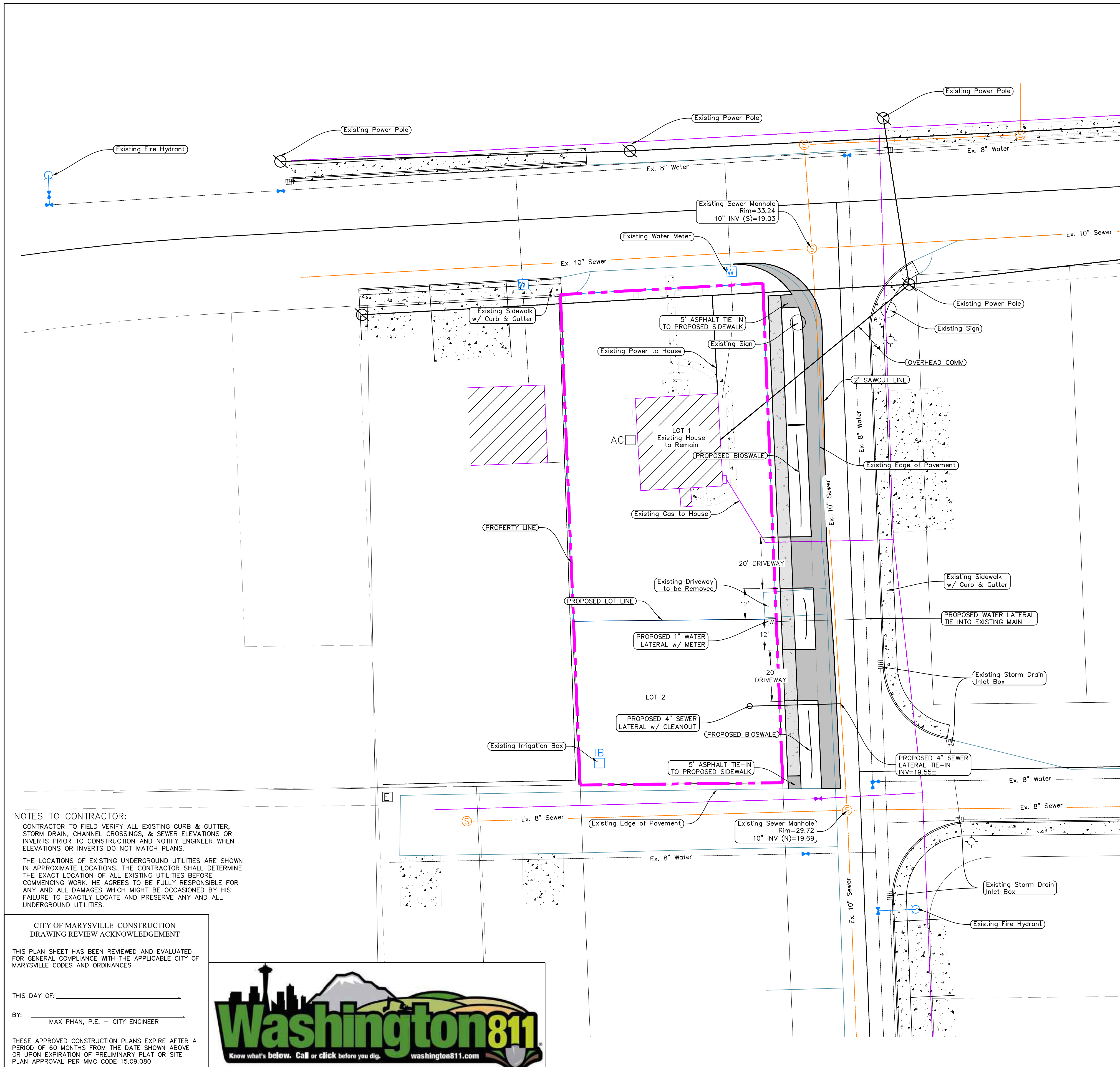


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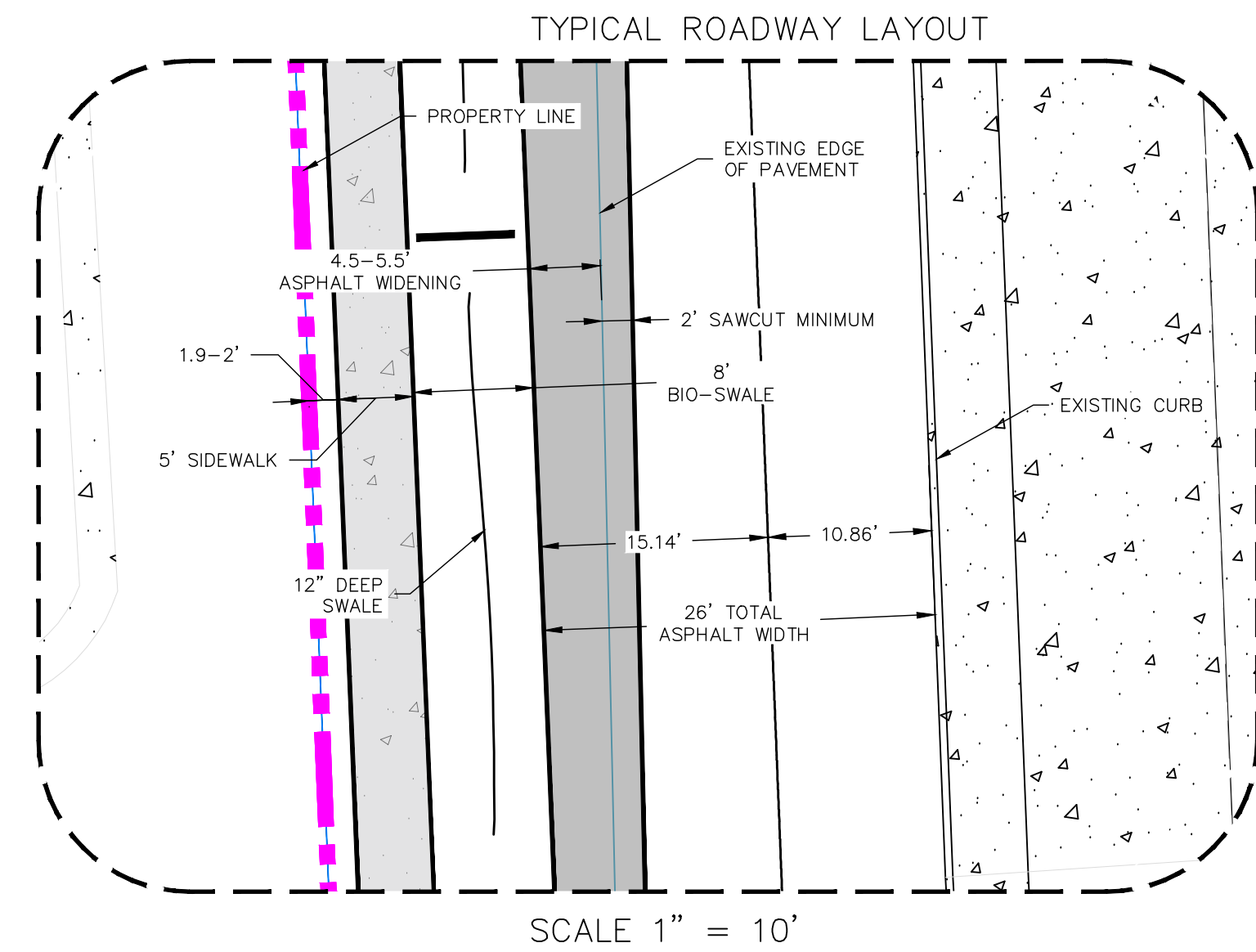
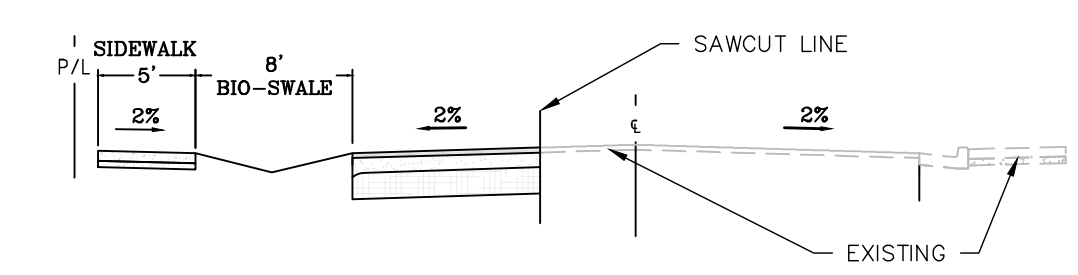
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EXISTING CONDITIONS  
 SHEET: EX-01



**LEGEND**

	EXISTING POWER POLE
	PROPOSED STREET LIGHT
	PROPOSED FIRE HYDRANT
	PROPOSED STOP/STREET SIGN
	PROPOSED WATER METER
	PROPERTY BOUNDARY CENTERLINE
	RIGHT-OF-WAY LINE
	LOT LINE
	EDGE OF PAVEMENT
	EXISTING OVER HEAD POWER
	EXISTING FENCE LINE
	EXISTING STORM DRAIN W/MH
	PROPOSED SEWER W/MH
	PROPOSED CULINARY WATERLINE
	PROPOSED SECONDARY WATERLINE
	PROPOSED CULINARY LATERAL
	PROPOSED SANITARY SEWER LATERAL
	PROPOSED SECONDARY LATERAL
	PROPOSED ASPHALT
	PROPOSED SIDEWALK
	EXISTING SEWER MANHOLE



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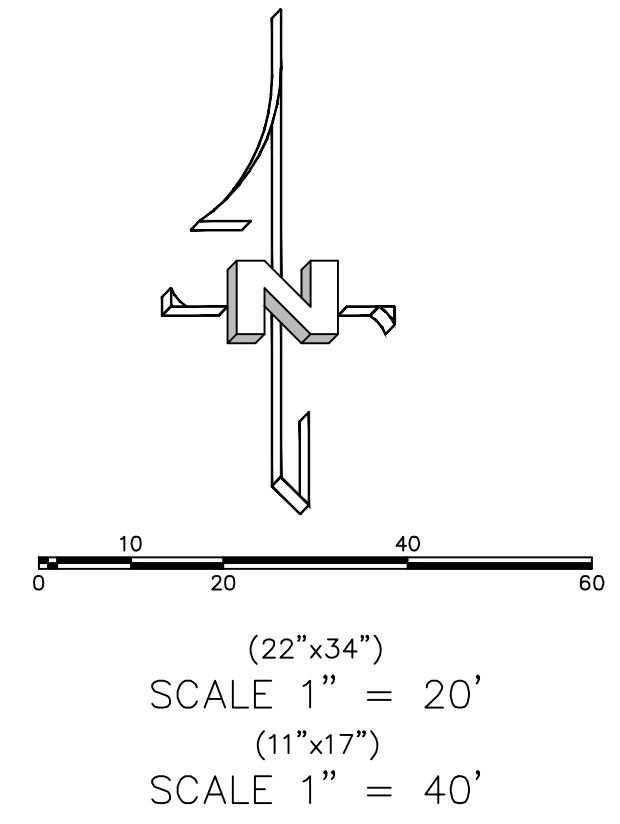
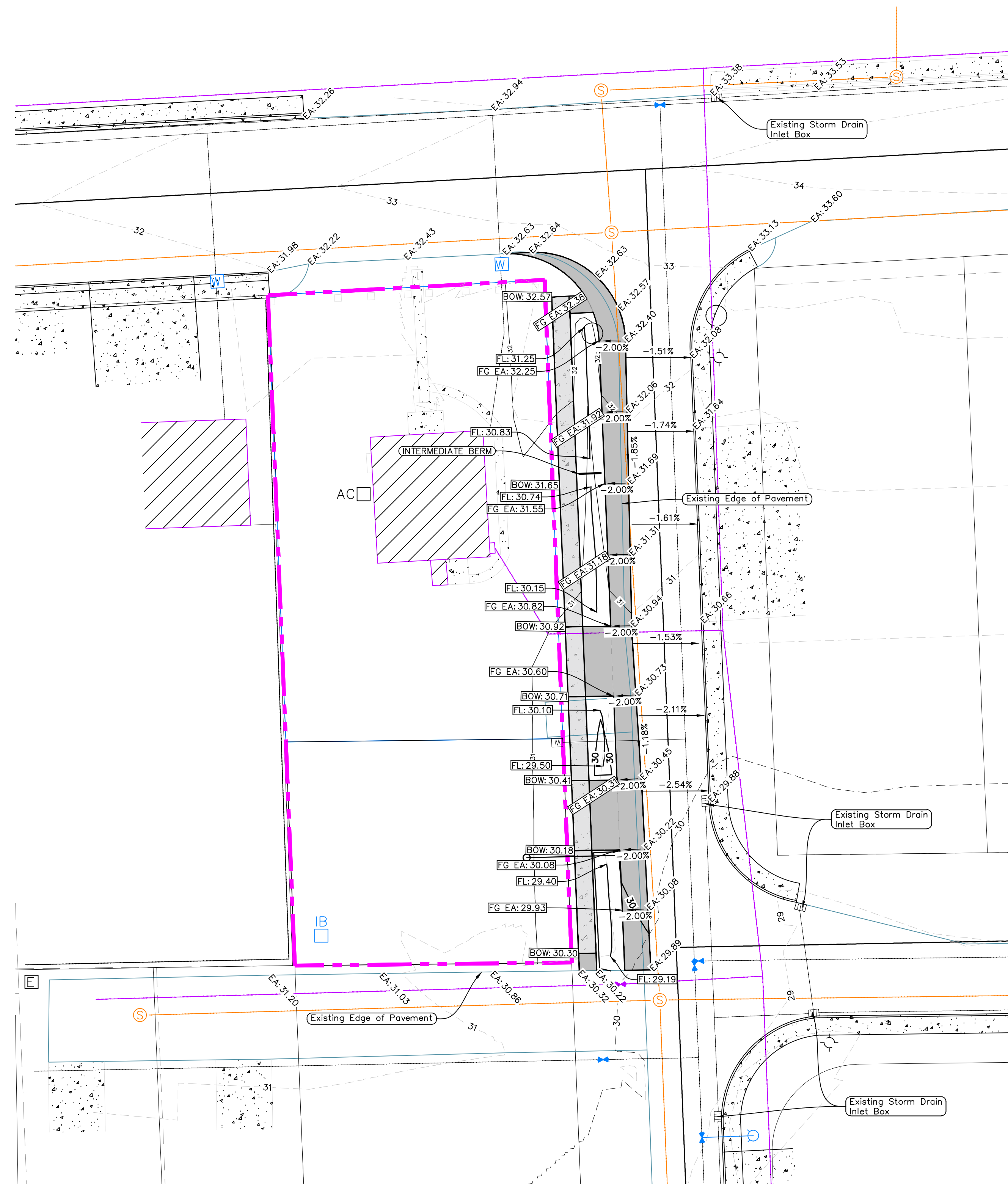
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**LEGEND**

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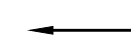
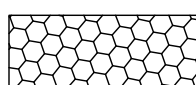



GRADING PLAN

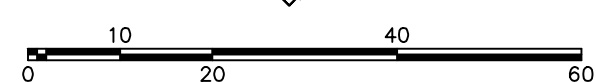
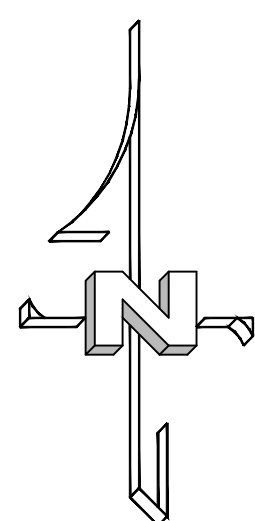
SHEET:  
GR-01

**NOTE:**

GRADING ACTIVITIES ARE TO COMMENCE WITH THE PRELIMINARY GRADING OF THE BIOSWALE IN ORDER TO CAPTURE ALL POTENTIAL CONSTRUCTION RUNOFF.

**LEGEND:**

-  PROPOSED SILT FENCE
-  FLOW ARROW
-  PROPOSED VEHICLE TRACKING CONTROL
-  PROPOSED CURB INLET PROTECTION
-  CONCRETE WASTE MGMT.
-  PORTABLE TOILETS

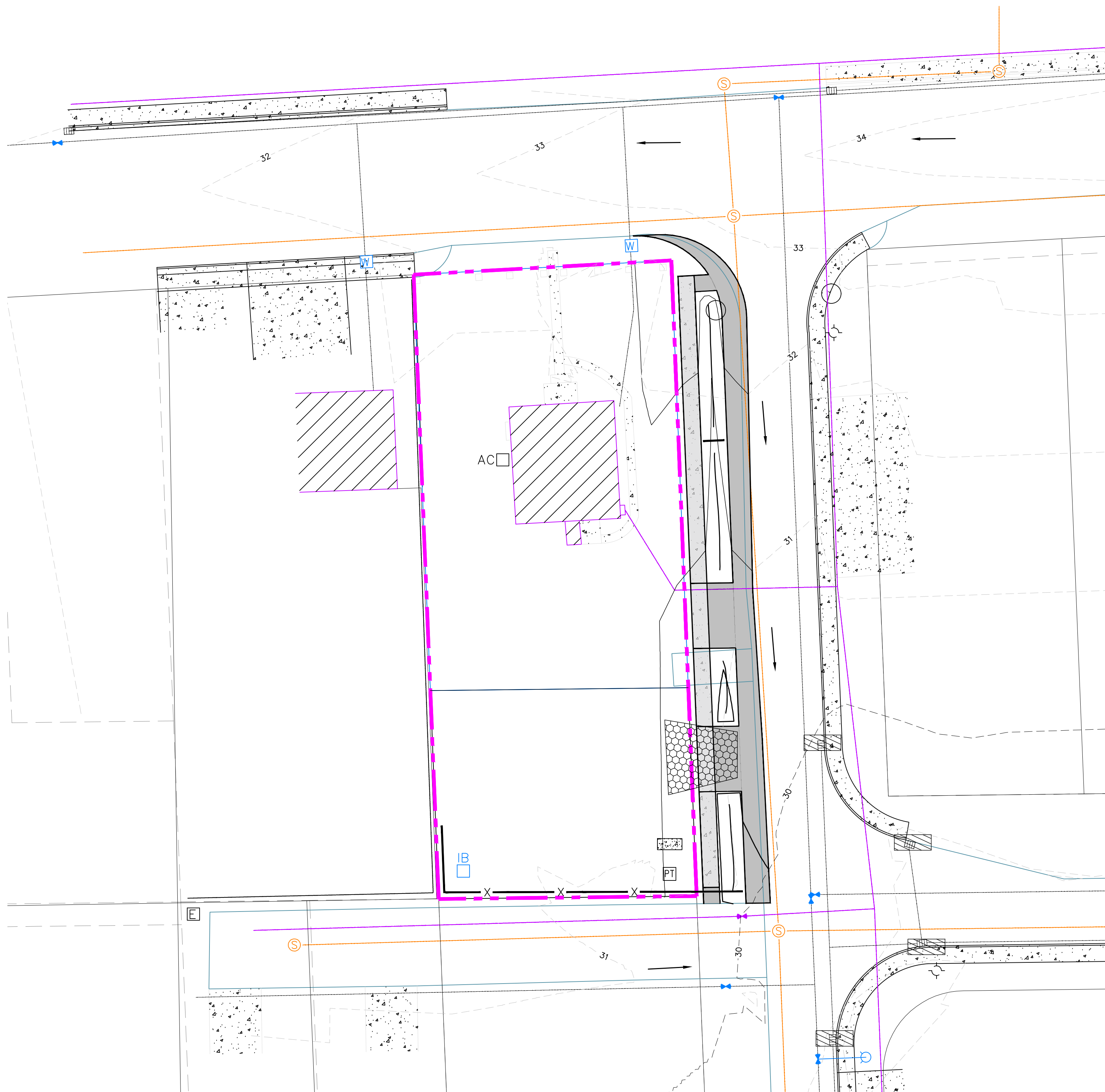


(22"x34")  
SCALE 1" = 20'  
(11"x17")  
SCALE 1" = 40'

**NOTES TO CONTRACTOR:**

CONTRACTOR TO FIELD VERIFY ALL EXISTING CURB & GUTTER, STORM DRAIN, CHANNEL CROSSINGS, & SEWER ELEVATIONS OR INVERTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER WHEN ELEVATIONS OR INVERTS DO NOT MATCH PLANS.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



**CITY OF MARYSVILLE CONSTRUCTION DRAWING REVIEW ACKNOWLEDGEMENT**

THIS PLAN SHEET HAS BEEN REVIEWED AND EVALUATED FOR GENERAL COMPLIANCE WITH THE APPLICABLE CITY OF MARYSVILLE CODES AND ORDINANCES.

THIS DAY OF: \_\_\_\_\_

BY: MAX PHAN, P.E. - CITY ENGINEER

THESE APPROVED CONSTRUCTION PLANS EXPIRE AFTER A PERIOD OF 60 MONTHS FROM THE DATE SHOWN ABOVE OR UPON EXPIRATION OF PRELIMINARY PLAT OR SITE PLAN APPROVAL PER MMC CODE 15.09.080



**Nixon E&D, LLC**

230 NORTH 550 EAST  
LINDON, UTAH 84042  
801.706.8516  
nixon.evan@gmail.com

STAMP

**HARBORVIEW HEIGHTS**

PORTION OF BAY VIEW ADDITION TO MARYSVILLE  
SOUTHWEST QUARTER OF SECTION 27, T30N, R5E, W.M.  
CITY OF MARYSVILLE, SNOHOMISH COUNTY, WASHINGTON

DATE : 19-Oct-23

JOB NO: 2023 046

DRAWN: SH

CHECKED: EN

REVISION:

EROSION CONTROL PLAN

SHEET:

EC-01

**Appendix 2: Bioswale Calculations Spreadsheet**

# BioSwale Calculations

## Existing Impervious Runoff Area

	Width (ft)	Length (ft)	Area (sf)
Roadway (61st)	0	0	0
Roadway (52nd)	0	195	0
Driveway	12	8	96

## Proposed Impervious Runoff Area

		Width (ft)	Length (ft)	Area (sf)
A	Roadway	7.5	100	750
	Sidewalk	5	97	485
				1235
B	Roadway	7.5	44	330
	Sidewalk	5	44	220
	Driveway	8	20	160
				710
C	Roadway	7.5	54	405
	Sidewalk	5	54	270
	Driveway	8	20	160
				835
				2780

0.064 acres

## Proposed Pervious Area (direct precipitation)

				Bioswale Avg. Depth (ft)	Bioswale Volume (cf)*
A	Bioswale (north of driveways)	8	89	0.5	<b>324</b>
*Effective length reduce by 8' to account for sloped ends and middle berm.					
B	Bioswale (between driveways)	8	24	0.5	<b>80</b>
*Effective length reduce by 4' to account for sloped ends.					
C	Bioswale (south of driveways)	8	34	0.5	<b>120</b>
*Effective length reduce by 4' to account for sloped ends.					
B + C	Bioswales	8	58	0.5	<b>200</b>
					1176

0.027 acres

## Preprecipitation

	Area: Pervious + Impervious (sf)	6 mo - 24 hr (inches)	6 mo - 24 hr Volume (cf)	Bioswale Volumes (cf)	100 yr - 24 hr (inches)	100 yr - 24 hr Volume (cf)
<b>A</b>	1947	1.17	190	<b>324</b>	3.41	553
<b>B</b>	902	1.17	88	<b>80</b>	3.41	256
<b>C</b>	1107	1.17	108	<b>120</b>	3.41	315
<b>B + C</b>	2009	1.17	196	<b>200</b>	3.41	571

Note: 1.17" is based on a combination of Appendix 3 - Rainfall Table and NOAA Atlas 2.

## Infiltration

	Observed Rate		Design Rate	Infiltrated Vol. per Hour @depth = 0.25'	Hours of Infiltration for Excess Runoff (100 yr storm)
	(ft/hr)	FS	(ft/hr)	(cf/hr)	
A	1.42	4.0	0.35	63	3.6
B	1.42	4.0	0.35	17	10.4
C	1.42	4.0	0.35	24	8.1
B+C	1.42	4.0	0.35	41	9.0

## Appendix 3: Rainfall Table

### SWMMWW - Appendix III-C: Rainfall Amounts and Statistics

**Table III-C.1: 24-Hour Rainfall Amounts and Comparisons for Selected USGS Stations**

<b>Station Name</b>	<b>6 Month Storm Inches</b>	<b>6 Month % Rainfall Volume</b>	<b>2 Year Storm Inches</b>	<b>6 Month/2 year %</b>	<b>90% Rainfall Inches</b>	<b>95% Rainfall Inches</b>	<b>Mean Annual Precip. Inches</b>
Everett	1.10	93.14%	1.46	75.3%	1.00	1.22	36.80