Austin Engineering
Civil Engineering Services
2182 NE Eton Lane, Bremerton, Washington 98311-9529
Voice: 360-698-1661 email: austinengr@gmail.com

Date: 25 September 2024

Subject: Repair of Bulkhead at 1010 57th Street and 1022 57th Street, Port Townsend, WA

Debbi and Larry Vanselow
1010 57th Street
Port Townsend, WA 98368

Laura Mason and Keith Flyckt
1022 57th Street
Port Townsend, WA 98368

Dear Mr. and Ms. Vanselow and Ms. Mason and Mr. Flyckt

I have reviewed the proposed projects and find the proposed work to be adequate in this situation.

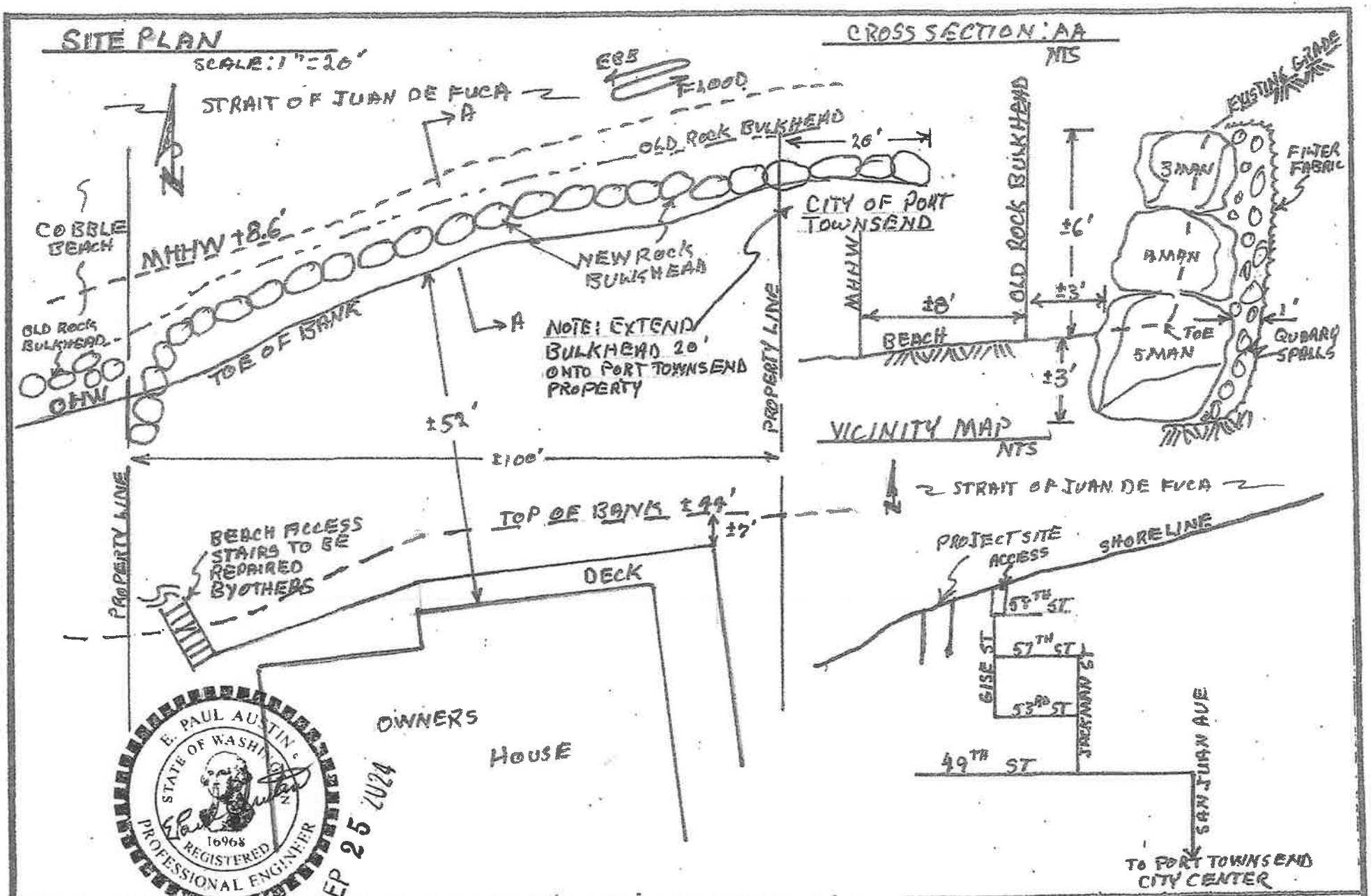
If there are any questions please contact the undersigned. Thank you for your business.

E. Paul Austin PE&LS WA
16968

cc: Vanselow – Port Townsend & Mason-Flyckt- Port Townsend

Sealevel Bulkhead Builders
P. O. Box 375
Kingston, WA 38346

SEP 25 2024



PROJECT: RECONSTRUCT ROCK BULKHEAD	**FOR:** DEBRI & LARRY VANSELOW 1010 57TH ST PORT TOWNSEND WA
BY: Sealevel Bulkhead Builders PO Box 375 Kingston Wa.	SCALE: AS NOTED DATE: 6/13/24 DRAWN BY REVISED DRAWING NUMBER 1/1

ROCK GRAVITY RETAINING WALL CALCULATIONS

PROJECT: Vanselow Bulkhead, Port Townsend

CONSULTANT: Austin Engineering ENGINEER: EPA

DATE: 23 Sept 24 Project No.: McFarland B I

PARAMETERS:

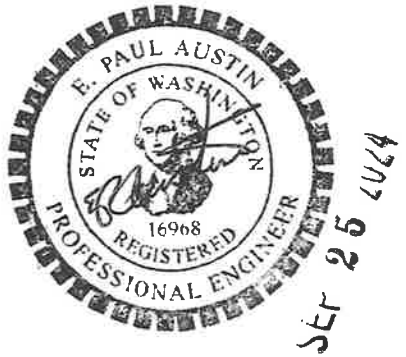
Equivalent height of wall w/surcharge if given (Feet):	2
Slope of backfill above wall (Degrees):	0
Height of wall (Feet):	9
Angle of internal friction (Degrees):	34
Angle of wall friction (Degrees):	30.6
Unit weight of soil (PCF):	130
Batter on wall (Vert./Horz.):	6 :1
Angle of inclination (Degrees):	80.53775
Unit weight of block wall (PCF):	155
Bearing capacity of soil (PSF):	2000

Ka:	0.28565
Pa:	1771.345
Ma:	5314.046

HEIGHT, WIDTH, WEIGHT, LEVER ARM & MOMENT/FT. OF BLOCKS STARTING AT THE **BOTTOM:**

H1:	4	B1:	4	W1:	2480	L1:	2.302894	M1:	5711.178
H2:	3.5	B2:	3.5	W2:	1898.75	L2:	2.67577	M2:	5080.619
H3:	2.5	B3:	2.3	W3:	891.25	L3:	2.579566	M3:	2299.038
H4:		B4:		W4:	0	L4:	1.651844	M4:	0
H5:		B5:		W5:	0	L5:	1.651844	M5:	0
H6:		B6:		W6:	0	L6:	1.651844	M6:	0
H7:		B7:		W7:	0	L7:	1.651844	M7:	0
H8:		B8:		W8:	0	L8:	1.651844	M8:	0
H9:		B9:		W9:	0	L9:	1.651844	M9:	0
H10:		B10:		W10:	0	L10:	1.651844	M10:	0
SUM:	10			SUM:	5270			SUM:	13090.83

OVERTURNING	Safety Factor:	1.5
	Ratio M/Ma:	2.4634403
	M/Ma >SF:	OK
SLIDING	Safety Factor:	1.5
	Ratio (Fv/Fh)Tang:	12.186842
	(Fv/Fh)Tang > SF:	OK
BEARING	Safety Factor:	1.5
	Ratio Cap./Wt.:	1.5180266
	Cap./Wt. >SF:	OK



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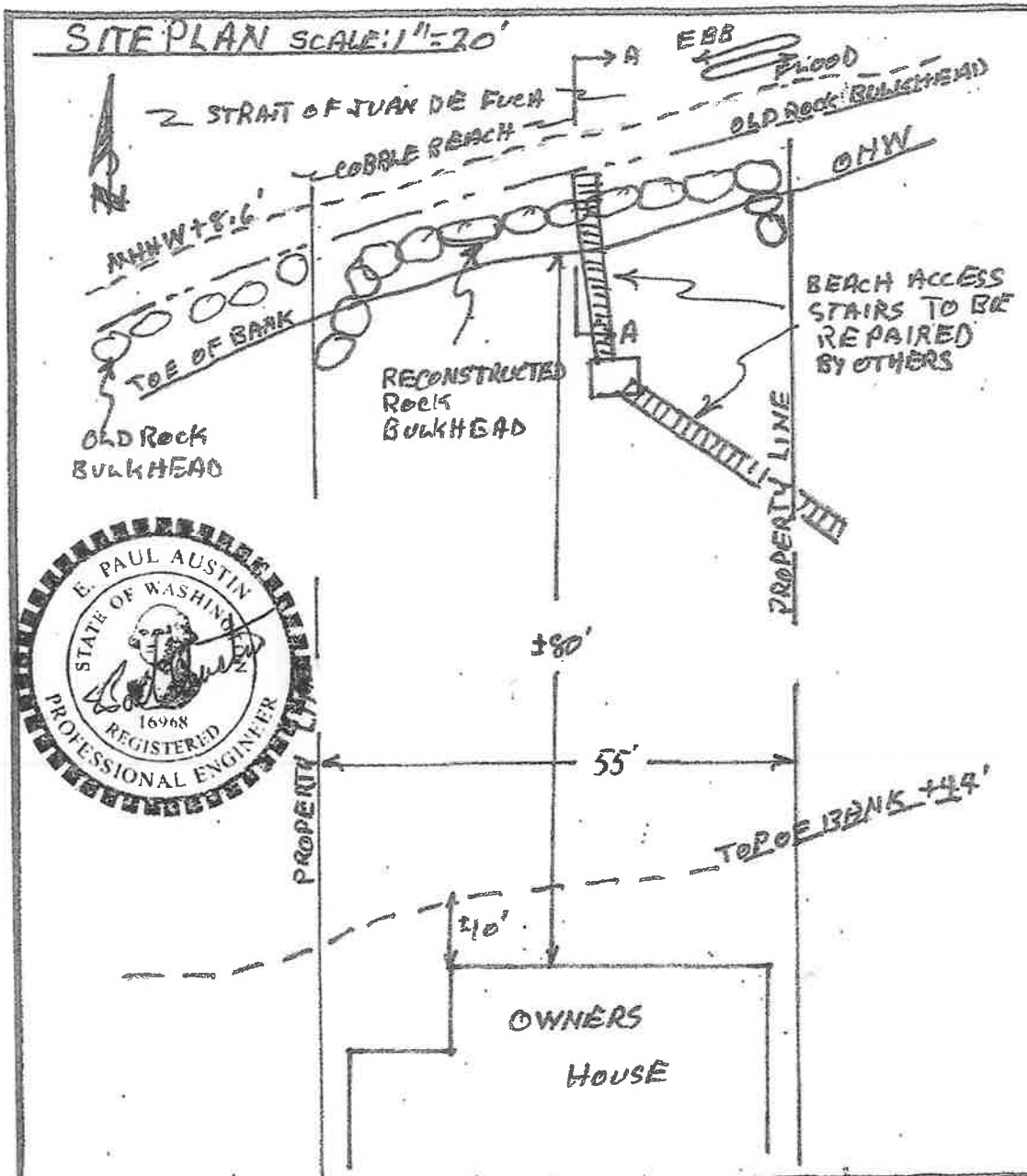
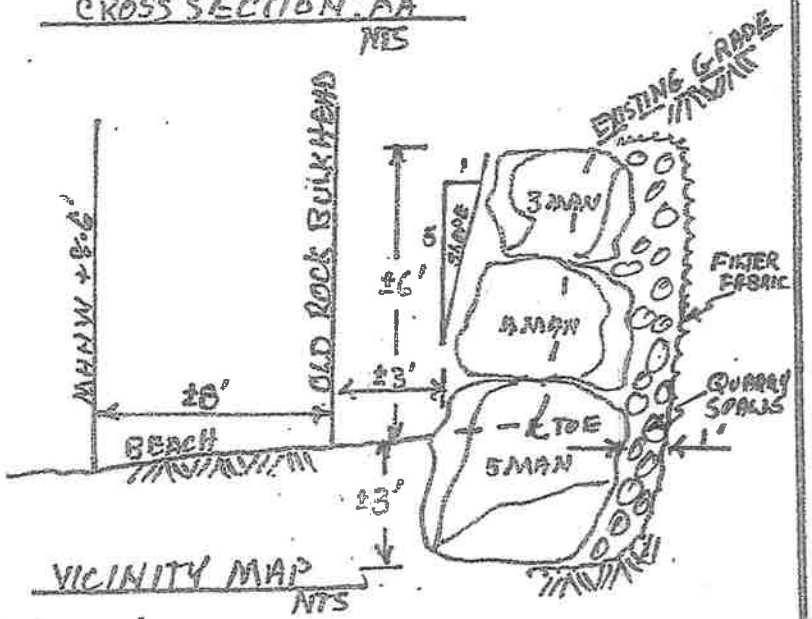
SITE PLAN SCALE: 1"=20'

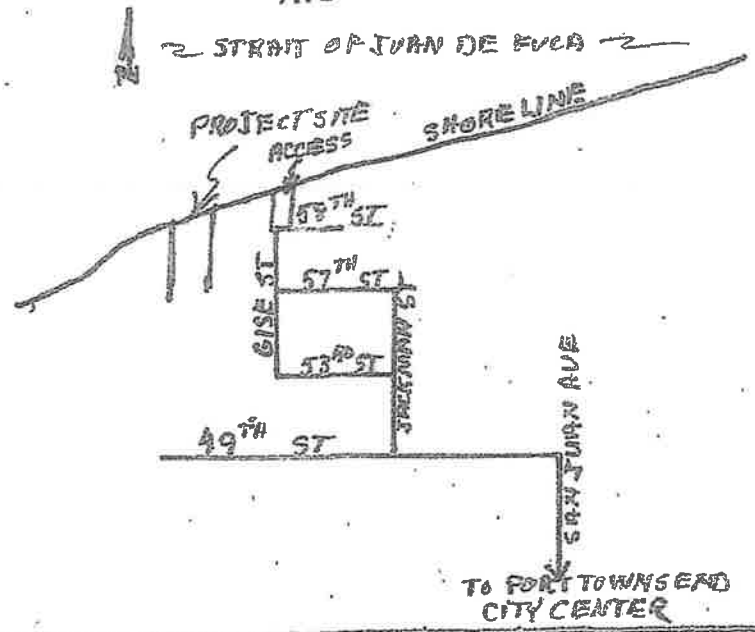


E. PAUL AUSTIN
STATE OF WASHINGTON
16968
REGISTERED
PROFESSIONAL ENGINEER

CROSS SECTION: AA



VICINITY MAP NTS



PROJECT: RECONSTRUCT ROCK BULKHEAD	FOR: LAURA MASON & KEITH FLYCKT 1022 57TH ST PORT TOWNSEND, WA
BY: Sealevel Bulkhead Builders PO Box 375 Kingston Wa.	SCALE: AS NOTED DATE: 6/14/24 DRAWN BY: WMD REVISED DRAWING NUMBER: 1/1

ROCK GRAVITY RETAINING WALL CALCULATIONS

PROJECT: L Mason Bulkhead, Port Townsend

CONSULTANT: Austin Engineering ENGINEER: EPA

DATE: 23 Sept 24

PARAMETERS:

Equivalent height of wall w/surcharge if given (Feet):	2		
Slope of backfill above wall (Degrees):	0	Ka:	0.28565
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H6:		B6:		W6:	0	L6:	1.651844	M6:	0
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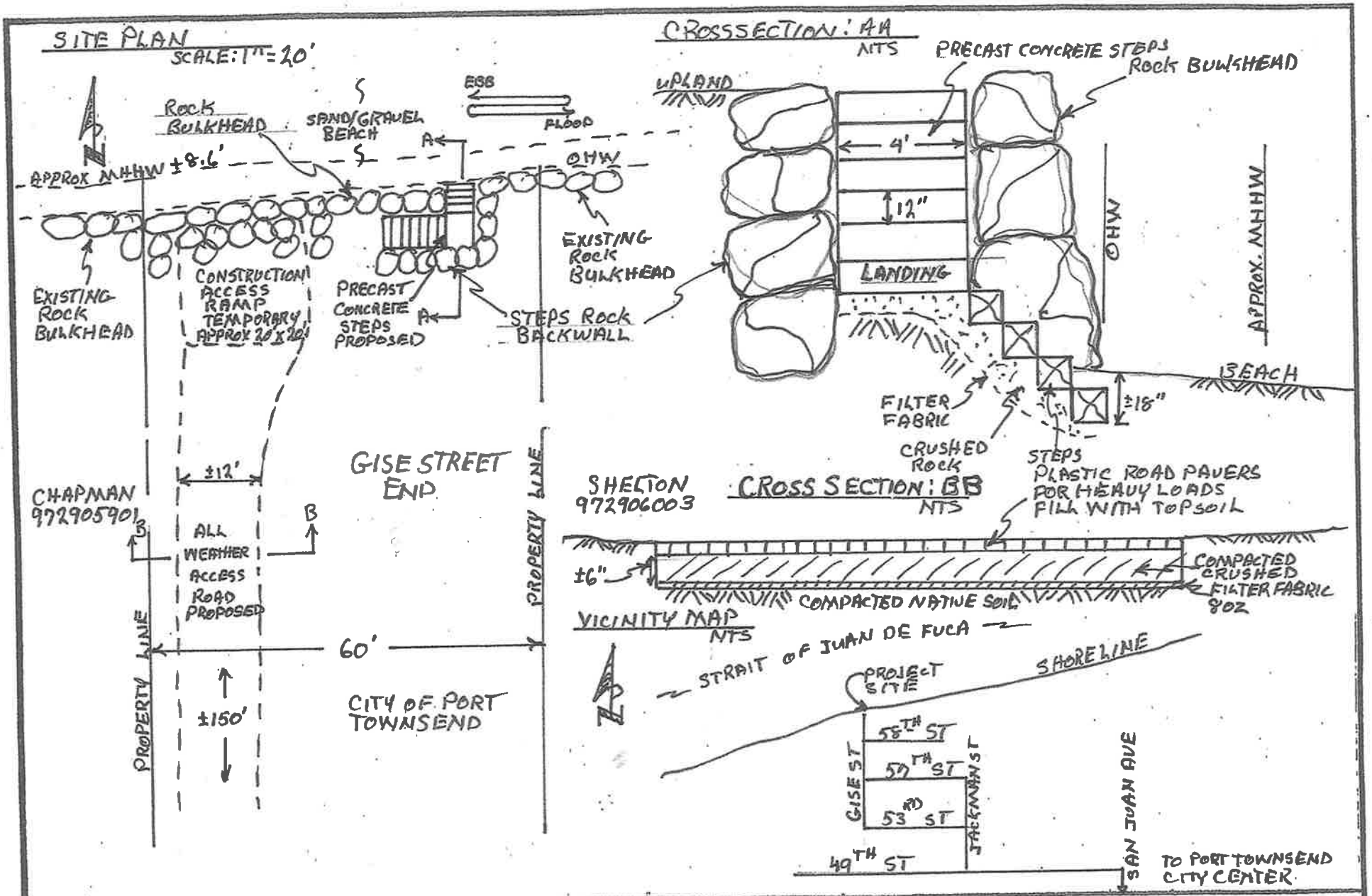

PROJECT: Vanslow & Flycht-Mason Bulkhead Repairs Gise Street Access Restoration	**FOR:** Debbi and Larry Vanslow & Keith Flycht and Laura Mason 1010 & 1022 57th St Port Townsend, WA 98368
BY: Sealevel Bulkhead Builders **PO Box 375 Kingston Wa.**	SCALE: AS NOTED DATE: 6/14/24 DRAWN BY REVISED DRAWING NUMBER 1/1

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