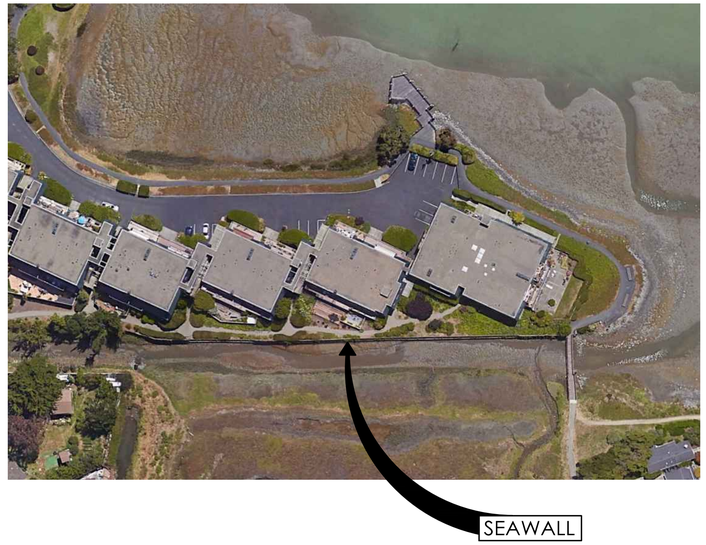
GREENWOOD BAY CONDOMINIUMS
SEAWALL REPAIR

Tiburon, California

Vicinity Map



Site Plan

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APN: 055-051-24

No.	Date	Description	By
0	02/03/23	Issued for Permit	JJP

GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

COVER SHEET

Drawing Title

Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	NONE

REGISTERED PROFESSIONAL ENGINEER
JUSTIN J. PFUNDER
S 6628
STRUCTURAL
STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

G00

PROJECT SCOPE

The design of the repair system provided in these drawings is intended to structurally rehabilitate the earth retaining system along the channel west of the Greenwood Bay Condominium Complex. The system comprises a replacement wall constructed with FRP sheet piling, FRP wale, tipping plate anchors, and the reuse of existing tie–rods. The wall is to be constructed behind the existing deteriorated timber seawall (landward). The design of the wall is not intended to provide any enhancements, additional locations of supports on site, or additional load carrying capacity. The top of grade elevation at the mudline and the upland area shall remain the same as that of the existing condition that is in place prior to construction. No increase in fill at the upland area or increase in weight of material within the backfill is permitted. No over excavation of material at the channel mudline is permitted. The design of items such as architectural, civil, landscaping, mechanical, electrical, and plumbing are not in this scope.

Refer to the following documents for additional information:

1. Geotechnical Report prepared by RGH Consultants titled, "Geotechnical Study Report, Greenwood Bay Condominium Complex Timber Seawall, Greenwood Bay Drive, Tiburon, California", Dated 2 May 2022.
2. 1980's Seawall Drawings titled, "Stream Channel Wall Repair & Cathodic Protection, One Greenwood Bay Drive, Tiburon, CA", Dated 23 January 1989.
3. 1970's Seawall Drawings titled, "Greenwood Bay Condominiums", Sheets LS 5 and LS 6, Revised 11 December 1973.

GENERAL

1. General notes and typical details apply to all structural features, unless otherwise indicated.
2. If certain features are not fully shown or called out on the drawings, their construction shall be of the same character as for similar conditions.
3. Specifications, codes and standards noted in the contract documents shall be of the latest edition, unless otherwise noted.
4. Dimensions shall not be scaled off of the drawings.
5. All work shall conform to minimum standards of the 2022 California Building Code, of any codes listed in the drawings and of any regulating agencies which have authority over any portion of the work, including the California Health and Safety Code.
6. Prior to submitting shop drawings and product data, the Contractor shall verify that the submittals meet the requirements of the drawings. The Contractor shall specifically note any exceptions to these requirements with the submittal.
7. The Contractor shall maintain a continuous fire watch, with extinguishing equipment immediately available during welding, cutting or burning near combustible materials.
8. Openings, pockets, etc. shall not be placed in structural members unless specifically detailed on the structural drawings. Notify the Structural Engineer when work requires openings, pockets, etc. in structural members not shown on the structural drawings.
9. The Contractor shall be responsible for coordinating the work of all trades and shall check all dimensions and holes and openings required in structural members. All discrepancies shall be called to the attention of the Engineer and shall be resolved before proceeding with the work.
10. All work to be performed by the Contractor shall be performed in a continuous scheduled manner regardless of tidal conditions.

EXISTING CONSTRUCTION

1. Work shown is new unless noted as existing: (E).
2. Existing construction shown on these drawings was obtained from site investigations and a review of historical drawings. The contractor shall verify all existing job conditions, review all drawings and verify dimensions prior to construction. The Contractor shall notify the Engineer of all discrepancies and exceptions before proceeding with the work.
3. The removal, cutting, drilling, etc. of existing work shall be performed with care in order not to jeopardize the structural integrity of the structures. If structural members or mechanical, electrical or architectural features not indicated for removal interfere with the new work, notify the Engineer immediately and obtain approval before removal of members.
4. The Contractor shall exercise all necessary care and precautions to prevent any damage to existing utilities, substructures, structures, and facilities by or as a result of Contractor operations. Any damage resulting from Contractor operations shall be repaired as directed by the Owner at no additional cost to the Owner.
5. The Contractor shall be responsible for the design and installation of temporary shoring, bracing, work platform, etc., as necessary for the protection of life and property during the construction of the work shown on the contract drawings and as required by OSHA and other applicable safety regulations.
6. The Contractor shall perform the work with minimal inconvenience to the Owner and without interruption of day–to–day work operations. The Contractor shall ensure safe travel of persons around areas of construction and shall coordinate all operations with the Owner or the Owner's agent.

NDPES / WATER POLLUTION PREVENTION NOTES

1. All fuel, waste, oils, and solvents shall be stored away from the construction site. Any spills shall be contained and properly disposed.
2. All vehicles and equipment shall be properly maintained to reduce the potential for spills of petroleum–based products. Containment booms and sorbent materials shall be available during the activity and shall be deployed immediately in the event of a spill to limit its spread.
3. If any materials or wastes are released to the Bay, Project Supervisors shall immediately halt all work and utilize all available resources to assure containment and removal.
4. Best Management Practices (BMPs) shall be consistently employed to help prevent pollutants from entering the Bay waters. Employees, Subcontractors, and Vendors must be informed, educated and trained to understand the applicable practices and procedures for the various construction activities being done.
5. The construction site shall be maintained by the contractor in such a condition that any storms do not carry wastes or pollutants off the site. Upon completion of the project, all equipment shall be safely demobilized from the area.
6. All required jurisdictional agency permits (i.e. SFBCDC, USACOE, SFBRWQCB) shall be obtained by the Owner's Representative prior to start of any work.
7. At the end of each day of construction activity all construction debris and waste materials shall be collected and properly disposed of by the Contractor in the appropriate trash or recycle bins.

STRUCTURAL STEEL & MISC. METALS

1. Fabrication and erection of structural steel shall be in accordance with the "Code of Standard Practice for Steel Buildings and Bridges" AISC 303–16, as modified by the project specifications.
2. Materials (Carbon Steel, unless otherwise noted):

A.	Plates:	ASTM A572 grade 50 u.o.n.
B.	High–strength bolts (HSB):	ASTM F3125, Grade A325, Type 1 or ASTM A325
C.	Machine bolts (MB):	ASTM A307
D.	Anchor rods:	ASTM F1554 grade 55 with supplementary requirement S1.

3. Materials (Stainless Steel, where denoted "SS"):

A.	Plates (316L):	ASTM A240 (F_y=25 ksi)
B.	Structural pipes (316L):	ASTM A312 (F_y=25 ksi)
C.	Hex bolts (316):	ASTM F593
D.	Anchor rods (316):	ASTM F593

4. Joint type for bolted connections shall be snug–tightened (ST), unless otherwise noted as pretensioned (PT) or slip–critical (SC).
5. For ST joints, design is based on bolt threads included in the shear plane (Thread Condition N).
6. Bolt holes in steel shall be $\frac{1}{16}$ inch larger diameter than nominal size of bolt used, unless otherwise noted.
7. For bolted connections, provide 1½ inch edge and end distance, unless otherwise noted.
8. All welds shall be prequalified or qualified by test in conformance with the "Structural Welding Code – Steel" (AWS D1.1–15) of the American Welding Society. Submit Welding Procedure Specifications for approval prior to performing work. Submit Procedure Qualification Reports with Welding Procedure Specifications for welds qualified by test.
9. Minimum tensile strength of weld metal shall be 70 ksi typical, unless otherwise noted. Welding electrodes shall be as recommended by their manufacturer for the position and other conditions of actual use.
10. Weld symbols shown on the drawings do not necessarily differentiate between shop weld and field welds. When field welds are necessary due to construction procedure or sequence, welds shall be provided and be inspected per the general notes. All welds shown as field welds shall be done in field as indicated.
11. All structural steel, miscellaneous metal and connectors exposed to weather shall be hot–dip galvanized in accordance with ASTM A123 after fabrication. Apply zinc–rich paint complying with SSPC–Paint 20 to repair damaged or cut surfaces, field welds, and field–drilled holes in galvanized steel. Application shall comply with ASTM A780, including Annex A2. Apply PPG Amerlock 2 marine protective coating to all galvanized treated structural steel exposed to weather.
12. All holes in steel members to facilitate galvanizing, including all vent holes and drain holes, shall be shown on shop drawings. Holes shall not be cut prior to approval of shop drawings.
13. No penetrations in structural steel members are allowed except as indicated on the structural drawings.
14. Furnish shop and erection drawings of all structural steel for the Engineer's review before fabrication.

EARTHWORK

1. Refer to the Geotechnical Report prepared by RGH Consultants for additional requirements and information.
2. The contractor shall maintain the stability of the slope near the excavated area during construction.
3. The Contractor shall be solely responsible for all excavation procedures, including lagging, shoring, and protection of adjacent property, structures, streets, and utilities in accordance with the local building department.
4. Backfill at walls shall not be placed until a minimum of 7 days after the completion of the walls and shall not be placed until after completed testing of anchors, inspection, and stabilization of post–construction settlements. The final top of grade elevation at the mudline and the upland area shall remain the same as the existing condition.
5. Import fill shall contain 20% fines or greater and be compacted to 90% proctor.
6. Lightweight permeable fill shall be Class 1B aggregate with dry unit weight of 60 pcf max from Clearlake Lava, Inc. or approved alternative.
7. Geotextile drainage fabric shall be Mirafi 140N or approved alternative.
8. Weep holes shall be stainless steel Jet Filter one–way weep holes with check valve. Installation and maintenance shall be per mfr. recommendations.

SHEET PILE, WALE, AND ANCHORS

1. Sheet piles, wales, and caps shall be polyester resin fiber–reinforced polymer (FRP) conforming to ASTM D7290. Member types and sizes shall be as indicated in these plans.
2. Tipping plate anchors shall be as indicated in these plans. All anchors shall be performance and proof tested per the requirements in these drawings and the manufacturer specifications.
3. At a minimum, the FRP cap and wale shall be painted with Sherwin Polane S+ UV Inhibitive Coating or approved alternative to limit direct UV exposure.
4. All proposed product and material substitutions shall be submitted to the E.O.R. for approval prior to construction.
5. Contractor shall install sheet piles, wales, anchors, and all accessories per manufacturer's recommendations. Notify the E.O.R. where conflicting information occurs between the requirements in these drawings and the manufacturer's recommendations
6. (E) tie–rods shall be located and exposed to determine their condition and suitability for use in the seawall repair system. Locations and observations shall be coordinated with the E.O.R. prior to commencement of construction.
7. The existing seawall components embedded below the channel mudline shall be cut off at or below the mudline.
8. Contact the Engineer immediately if sheet pile cannot be driven to the design grade or if the sheet piling, wale, or anchors are damaged during installation.
9. Sheet pilings shall be monitored for settlement following installation. Wales and caps shall be installed after settlement rate has stabilized to prevent warping or misalignment of the seawall components.
10. The final top of grade elevation at the mudline and the upland area shall remain the same as the existing condition.

EXAMPLE SEQUENCE OF WORK

The following example sequence of work is provided as to outline the minimum requirements for the unloading and loading of earth pressures on the (E) timber seawall and the repair wall. The contractor is responsible for the means and methods for executing the installation of the repair seawall, wale, anchors, and accessories. The contractor shall submit their proposed work plan per the requirements outlined in the Submittals section of these drawings.

1. Excavate (E) backfill and expose (E) tie–rods for structural observation.
2. Cut, clean, and prepare surfaces of exposed (E) tie–rods.
3. Drive tipping plate anchors and install coupler. Perform load testing on tipping plate anchors.
4. Install FRP repair sheet piling. Wait a minimum of 72 hours after sheet piling installation or until the piling settlement has stabilized to install FRP wale and cap.
5. Install geotextile fabric and backfill with compacted permeable lightweight backfill.
6. Demolish (E) timber seawall elements.

DESIGN CRITERIA:

2022 California Building Code

1. Live load Surcharge (construction) = 300 psf
2. Live Load Surcharge (service) = 100 psf
3. Earthquake Design Data:

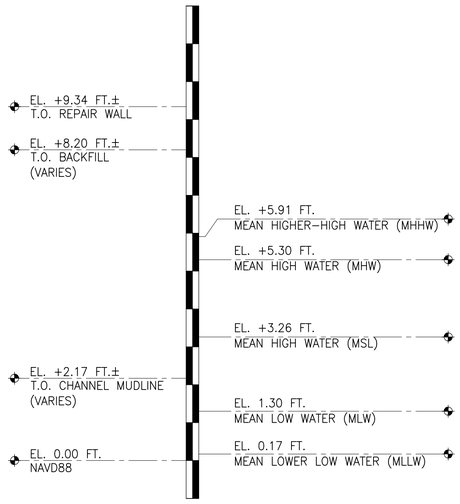
S_S	1.50g
S_1	0.60g
S_{MS}	1.46g
S_{M1}	2.44g
S_{DS}	0.97g
S_{D1}	1.62g

Design data prepared by RGH Consultants and provided to SGH in the Geotechnical Study Report dated 02 May 2022.

DATUM AND ELEVATIONS

1. Vertical Datum
   A. Elevations of site features are based on Sheet 1 of 1 of the Greenwood Bay Condos survey in the drawing set titled, "Greenwood Bay Homeowners Association, Stream Channel Wall Repair & Cathodic Protection", dated 23 January, 1989 performed by Worldwide Surveys, Inc. The elevations reference County of Marin brass disk benchmark stamped "TB–1 1977" located in the Cove Shopping Center; 50 ft. Northerly of Tiberon Blvd. and 300 ft. Easterly of Blackfield Dr.
   B. Benchmark TB–1 1977 elevation = 5.13 ft (NGVD29) per the following source: https://www.marinmap.org/Html5Viewer/index.html?viewer=Benchmark_child.BenchMark_H5. A conversion of NGVD29 = NAVD88 – 2.67 ft. is used to convert the site survey information provided in the reference drawings noted in item A.
   C. All elevations shown in these drawings are NAVD88 per Tidal Epoch 1983–2001 measured at National Oceanic and Atmospheric Administration (NOAA) Tide Station 9414819, Sausalito, California.

STRUCTURAL ELEVATIONS AND DATUMS



BCDC CALCULATIONS

Table 1 - Summary of Bay Areas and Fill Volumes For Project Within 100 ft of MHW

	Shadow Area				Fill Area			Bay Fill Volume		
	Gross Added	Gross Removed	Net Added	Net Added	Gross Added	Gross Removed	Net Added	Gross Added	Gross Removed	Net Added
Component	(ft^2)	(ft^2)	(ft^2)	% of (E)				(cy)	(cy)	(cy)
Seawall	0.0	379.5	-379.5	-100%	0.0	1155.6	-1155.6	0.0	79.3	-79.3
Piles	0.0	0.0	0.0	0%	0.0	61.8	-61.8	0.0	4.5	-4.5
Totals	0.0	379.5	-379.5	-100%	0.0	1217.4	-1217.4	0.0	83.8	-83.8

Notes:
1) Fill volumes measured from MHW
2) Piles assumed to be cut at mudline
3) Assuming MHW is 5.3 ft in NAVD88
4) Assuming Average Mudline 3.3 ft in NAVD88
5) Volume Quantities include 10% Contingency
6) Shadow Area and Fill Area Quantities include 10% Contingency

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GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

GENERAL NOTES

Drawing Title

Project No. 207561.10	Checked JJP	Date 02/03/23
Drawn RTB	Approved GSJ	Scale NONE

REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PYLMAN S 6624 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

G01

SUBMITTALS

The following submittals are required. Where submittals include shop drawings, each sheet of shop drawings submitted shall incorporate a pre-applied stamp to be used by the engineer to indicate the status of review and approval. The Engineer will furnish the required text and graphics of the stamp to the Contractor upon request. Submittals shall include those indicated on the following list. This list is provided for convenience only and may not incorporate all requirements indicated in the plans.

STRUCTURAL STEEL

1. Shop Drawings and Erection Drawings:
   - A. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   - B. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths and sizes. Distinguish between shop and field welds. Identify welds by WPS number.
   - C. Include details of cuts, connections, splices, camber, holes, stiffeners, doubler plates, and other pertinent data, such as surface preparation. Include setting drawings, templates, and directions for installation of embedded items to be installed by others.
   - D. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.
2. Manufacturer's Mill Certificates: Certify that products meet or exceed specified requirements.
3. Mill Test Reports: Indicate structural strength, destructive test analysis and non-destructive test analysis.
   - A. Structural steel including chemical and physical properties and Charpy V-notch test results, where specifically required.
   - B. Bolts, nuts, and washers including mechanical properties and chemical analysis.
   - C. Direct-tension indicators.
   - D. Tension-control, high-strength bolt-nut-washer assemblies.
   - E. Weld filler metals, including Charpy V-notch test results, where specifically required.
4. Weld filler metal manufacturer's data sheets, indicating filler metal classification, characteristics, recommended ranges of heat inputs, permissible positions, strength and CVN toughness, if applicable.
5. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.
6. Welding Procedure Specifications (WPS) per AWS D1.1 for each type of welded joint.
7. Welding Procedure Qualification Record (PQR) for each weld procedure that is not prequalified by AWS D1.1.

EARTHWORK

1. Laboratory analysis for each soil material proposed for fill and backfill from on-site and borrow sources.
2. Optimum moisture-maximum density curve for each soil material used as fill, subgrade, subbase, or base course.

FRP SHEET PILE AND WALE

1. Installation procedures.
2. Shop drawings:
   - A. Sheet pile section properties.
   - B. Section properties and the locations and extents of each wale, splice, and all other accessories.
   - C. Show locations and details for cuts, connections, holes, and surface preparation.
3. Pile driving: Submit records of the completed sheet piling driving operations, including a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions, top and bottom elevations of installed piling, and records of damage that occurs to any element of the sheet pile repair system.
4. Pile driving equipment: Submit complete descriptions of sheet piling driving equipment, including hammers, power packs, driving helmets, cap blocks, pile cushions, leads, extractors, jetting equipment, and pre-boring equipment at least 30 days prior to commencement of work.
5. Material Test Reports: Certified materials test reports showing that sheet piling and appurtenant materials meet the specified requirements, for each shipment prior to installing materials.

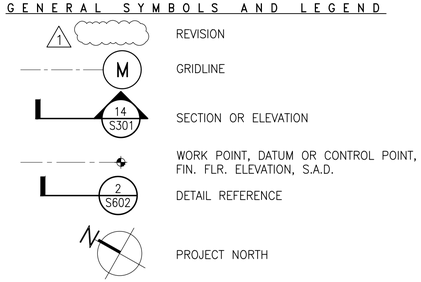
TIPPING PLATE ANCHORS

1. Shop drawings showing anchor sizes, lengths, locations, and installation angle.
2. Installation work plan including complete descriptions of equipment used to proof load and install anchors at least 30 days prior to commencement of work.
3. Results of proof and performance load testing.

ABBREVIATIONS

&	And
@	At
A.B.	Anchor Bolt
ACI	American Concrete Institute
ADD'L	Additional
AESS	Architectural Exposed Structural Steel
AISC	American Institute of Steel Construction
ALT.	Alternate
APPROX.	Approximate
ARCH.	Architect
ASD	Allowable Strength Design
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Assoc.
AWS	American Welding Society
BLK'G	Blocking
BM.	Beam
B.N.	Boundary Nail
BOCA	Building Officials and Code Administrators International, Inc.
BOT.	Bottom
BRG.	Bearing
B.S.	Both Sides
BTWN.	Between
C	Camber
CBC	California Building Code
C.C.	Center to Center
CCR	California Code of Regulations
C.J.	Control Joint
C.I.P.	Cast-in-place
C.L., ℄	Center Line
CLG.	Ceiling
CLR.	Clear
CMU	Concrete Masonry Unit
COL.	Column
CONC.	Concrete
CONN.	Connection
CONT.	Continuous
CJP	Complete Joint Penetration
CSK.	Countersink
CTBR.	Counterbore
CTR.	Center
DBA	Deformed Bar Anchor
DBL.	Double
DC	Demand Critical (Weld)
DET., DTL.	Detail
DF	Douglas Fir
DIA., ⌀	Diameter
DIAG.	Diagonal
DL	Dead Load
DN.	Down
DO.	Ditto
DSA	Division of the State Architect
DWG(S).	Drawing(s)
(E)	Existing
EA.	Each
E.A.	Each Face
E.J.	Expansion Joint
ELEV.,EL.	Elevation
EMB.,EMBED.	Embedment
E.N.	Edge Nail
EQ.	Equal
EQUIP.	Equipment
E.S.	Each Side
E.W.	Each Way
FDN.	Foundation
F.F.	Finish Floor
F.G.	Finish Grade
FIN.	Finish
FLR.	Floor
F.O.C.	Face of Concrete
F.O.M.	Face of Masonry
F.O.S.	Face of Stud
FRMG.	Framing
FRP	Fiber Reinforced Polymer
F.S.	Far Side
FT.	Foot, Feet
FTG.	Footing
GA.	Gauge
GALV.	Galvanized
G.L.	Grid Line
GLB	Glued Laminated Beam
GR.	Grade
HDG	Hot-dip Galvanized
HGR.	Hanger
HK.	Hook
HORIZ.	Horizontal
HSB	High Strength Bolt
HSS	Hollow Structural Section
HT.	Height
IBC	International Building Code
ICC	International Code Council
IN.	Inch, Inches
INT.	Interior
INV.	Inverted
JST.	Joist
K	Kips
KSI	Kips per Square Inch
LABC	Los Angeles Building Code
LBS.	Pounds
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LONG.	Longitudinal
LTWT.	Lightweight
LVL	Laminated Veneer Lumber
MAX.	Maximum
M.B.	Machine Bolt
MECH.	Mechanical
MFR.	Manufacturer
M.I.	Malleable Iron
MIL.	0.001 Inch
MIN.	Minimum
MISC.	Miscellaneous
(N)	New
NO., #	Number
N.S.	Near Side
N.T.S.	Not to Scale
NWT.	Normal Weight
O.C.	On Center
O.D.	Outside Diameter
O.H.	Opposite Hand
OPNG.	Opening
OPP.	Opposite
OSHPD	Office of Statewide Health Planning and Development
PAF	Powder-Actuated Fasteners
PART.	Partial
PCF	Pounds per Cubic Foot
PL, ℔	Plate
PLY.	Plywood
PP	Partial Penetration
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
P.T.	Pressure Treated
PW	Puddle Weld
PWJ	Plywood Web Joists
RAD.	Radius
R.D.	Roof Drain
REINF.	Reinforcing
REQ.	Required
RF.	Roof
RND.	Round
R.O.	Rough Opening
R.R.	Remove & Replace
S.A.D.	See Architectural Drawings
SCHED.	Schedule
SFBC	San Francisco Building Code
SFRS	Seismic Force Resisting System
SHT.	Sheet
SHTG.	Sheathing
SIM.	Similar
SLRS	Seismic Load Resisting System
S.M.D.	See Mechanical Drawings
S.O.G.	Slab on Grade
S.P.	Southern Pine
S.S.	Stainless Steel
STAGG'D.,STG.	Staggered
STD.	Standard
STIFF.	Stiffener
STL.	Steel
STRUCT.	Structural
SYMM.,SYM.	Symmetrical
T&B	Top and Bottom
T&G	Tongue & Groove
T.N.	Toe Nail
T.O.C.	Top of Concrete
T.O.S.	Top of Steel
T.O.W.	Top of Wall
TS	Tube Steel (Hollow Structural Section)
TYP.	Typical
U.O.N.	Unless Otherwise Noted
URM	Unreinforced Masonry
VERT.	Vertical
V.I.F., ±	Verify in Field
W/	With
W/O	Without
WCLIB	West Coast Lumber Inspection Bureau
W.P.	Work Point
WHS	Welded Headed Stud
WTS	Welded Threaded Stud
WWPA	Western Wood Products Association
WWR	Welded Wire Reinforcing

GENERAL SYMBOLS AND LEGEND



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GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

GENERAL NOTES

Drawing Title

Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn: RTB	Approved: GSJ	Scale: NONE

REGISTERED PROFESSIONAL ENGINEER — JUSTIN J. PYLE — S 6624 — STRUCTURAL — STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

G02

STATEMENT OF STRUCTURAL OBSERVATION

Structural Observation is required by Chapter 17 of the California Building Code. Types of work listed below shall be observed during periodic site visits by the Structural Engineer. Contractor is responsible for notifying Structural Engineer 48 hours before work is ready for observation. Structural Observation does not constitute Special Inspection.

1. Excavation of existing backfill, and placement of new backfill, and removal of existing seawall elements.
2. Observation of the conditions of existing tie–rods to be used in seawall repair system.
3. Structural Steel: Steel elements and welded/bolted connections shall be observed.
4. FRP sheet pile and wale: Sheet piles and wale installation shall be observed.
5. Tipping plate anchors: Placement and load testing of anchors shall be observed.

STATEMENT OF SPECIAL INSPECTIONS

Tests and inspections indicated on the drawings are required for this project. The tests and inspections indicated here are the responsibilities of the Owner's Special Inspector, as required by Chapter 17 of the Building Code.

The Special Inspector shall observe the work assigned for conformance with the approved design drawings.

1. Special inspections and associated testing shall be performed by an approved qualified testing and inspecting agency meeting the requirements of ASTM E329 (materials), ASTM D3740 (soils), ASTM C1077 (concrete), and ASTM E543 (non–destructive testing). The testing and inspecting agency shall furnish to the Engineer a copy of their scope of accreditation. Special inspectors shall be certified by the building official. Welding inspectors shall be qualified per Section 6.1.4 of AWS D1.1.
2. The Special Inspector shall furnish inspection reports to the building official, the Engineer and other designated persons. All discrepancies shall be brought to the immediate attention of the Contractor for correction, then, if uncorrected, to the proper design authority and to the Building Official.
3.. The Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and applicable standards of quality and workmanship of the Building Code.
4. The Contractor shall hold a pre–construction meeting involving the Structural Engineer and the Special Inspector in order to discuss the specific requirements of this project.
5. Terminology:
   a. Continuous: Special inspection by the special inspector who is present when and where the work to be inspected is being performed.
   b. Periodic: Special inspection by the special inspector who is intermittently present where the work to be inspected has been performed or is being performed.
   c. Observe: Observe these items on a random basis. Operations need not be delayed pending these inspections.
   d. Perform: Perform these tasks for each element.
6. Indicated testing meets minimum requirements for structural testing to be provided by the approved qualified testing and inspecting agency. Additional tests for construction considerations are not indicated. The need for such additional tests shall be determined by the Contractor and provided at the Contractor's expense.

Reference Standard Editions:

California Building Code	2022
ACI 318	2019*
ACI 440.2R	2008*
ACI 440.3R	2012
ACI 506.2	2013*
ANSI/AISC 341	2016*
ANSI/AISC 360	2016*
ANSI/SDI QA/QC	2017*
ASTM C31	2018*
ASTM C39	2018
ASTM C42	2018a
ASTM C94	2017*
ASTM C143	2015a
ASTM C780	2018a
ASTM C1019	2016*
ASTM C1064	2017
ASTM C1077	2017
ASTM C1314	2018
ASTM D1557	2012–e1*
ASTM D3740	2012a
ASTM D7522	2015
ASTM E164	2019
ASTM E329	2018
ASTM E488	2018
ASTM E543	2015
ASTM E709	2015
AWS D1.1	2015*
AWS D1.4	2018*
RCSC Specification	2014*
SJI 100	2020*
SJI 200	2015*
TMS 602	2016*

* Reference standard cited by CBC 2022, Chapter 35

SOIL AND FOUNDATIONS

Item No.	System, Material or Element	Building Code Reference	Material Standard Reference	Frequency		Remarks
				Continuous	Periodic	
1	Verify excavations are extended to proper depth and have reached proper material.	Table 1705.6			X	
2	Perform classification and testing of compacted fill materials.				X	
3	Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.		ASTM D1557	X		
4	Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.				X	

FRP SHEET PILE AND ANCHORS

Item No.	System, Material or Element	Building Code Reference	Material Standard Reference	Frequency		Remarks
				Continuous	Periodic	
1	Verify element materials, sizes and lengths comply with the requirements.	Table 1705.7		X		See material–specific requirements for structural inspections performed by the Special Inspector
2	Determine capacities of anchors and conduct additional load tests, as required.			X		
3	Inspect driving operations and maintain complete and accurate records for each element.			X		
4	Verify placement locations and plumbness, record tip and butt elevations and document any damage to foundation element.			X		

STRUCTURAL STEEL – BOLTING

Item No.	System, Material or Element	Building Code Reference	Material Standard Reference	Frequency		Remarks
				Perform	Observe	
4	Inspection Tasks Prior to Bolting	1705.2	AISC 360 Section N5.6 and Table N5.6–1			
a	Verify that the manufacturer's certifications are available for fastener materials			X		
b	Verify that fasteners marked in accordance with ASTM requirements				X	
c	Verify that the correct fasteners are selected for the joint detail (grade, type, diameter, bolt length if threads are to be excluded from shear plane)				X	
d	Verify that the correct bolting procedure is selected for joint detail				X	
e	Verify that connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable equirements				X	
f	Confirm that pre–installation verification testing by installation personnel are observed and documented for fastener assemblies and that verified methods are used				X	Documentation for seismic resistance is required per AISC 348 Section J7 and Table J7.2
g	Verify that protected storage is provided for bolts, nuts, washers and other fastener components				X	
5	Inspection Tasks During Bolting	1705.2	AISC 360 Section N5.6 and Table N5.6–2, RCSC Specification Section 9			
a	Verify that fastener assemblies are placed in all holes and washers and nuts are positioned as required				X	
b	Verify that the joint is brought to the snug–tight condition prior to the pretensioning operation				X	
c	Verify that fastener component not turned by the wrench prevented from rotating				X	
d	Verify that fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges				X	
6	Inspection Tasks After Bolting	1705.2	AISC 360 Section N5.6 and Table N5.6–3			
a	Document acceptance or rejection of bolted connections			X		Documentation for seismic resistance is required per AISC 348 Section J7 and Table J7.3
7	Inspection of Fabricated or Erected Frame					
a	Confirm compliance with the details shown on the drawings. Verify member sizes, member locations and proper application of joint details at each connection				X	

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APN: 055-051-24

No.	Date	Description	By
0	02/03/23	Issued for Permit	JJP

GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

STATEMENT OF STRUCTURAL OBSERVATION AND SPECIAL INSPECTIONS

Drawing Title

Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	NONE

REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PURDY S 6625 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

G03

STRUCTURAL STEEL – WELDING

Item No.	System, Material or Element	Building Code Reference	Material Standard Reference	Frequency		Remarks
				Perform	Observe	
1	Inspection Tasks Prior to Welding	1705.2	AISC 360 Section N5.4 and Table N5.4–1			
a	Verify presence of welder qualification records and continuity records				X	
b	Verify that applicable WPS is available			X		
c	Verify manufacturer certifications for welding consumables available			X		
d	Verify material identification (type/grade)				X	
e	Confirm welder identification system is followed				X	The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
f	Verify fit–up of groove welds (including joint geometry) • Joint preparations • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)				X	
h	Verify proper configuration and finish of access holes				X	
j	Verify fit–up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)				X	
k	Check welding equipment				X	Fabricator or erector shall observe
2	Inspection Tasks During Welding	1705.2	AISC 360 Section N5.4 and Table N5.4–2			
a	Confirm control and handling of welding consumables • Packaging • Exposure control				X	
b	Confirm no welding occurs over cracked tack welds				X	
c	Verify environmental conditions • Wind speed within limits • Precipitation and temperature				X	
d	Verify that applicable WPS is followed • Settings on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min./max.) • Proper position (F, V, H, OH) • Intermix of filler metals avoided unless approved				X	
e	Verify proper welding techniques are followed • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements			Welds larger than 5/16"	Welds 5/16" And Smaller	
3	Inspection Tasks After Welding	1705.2	AISC 360 Section N5.4 and Table N5.4–3			
a	Verify welds are cleaned				X	
b	Verify size, length and location of welds			X		
c	Verify that welds meet visual acceptance criteria • Crack prohibition • Weld/base–metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity			X		Documentation for seismic resistance is required per AISC 348 Section J6 and Table J6.3
d	Verify proper treatment of arc strikes			X		
g	Placement of reinforcing or contouring fillet welds (if required)			X		Documentation for seismic resistance is required per AISC 348 Section J6 and Table J6.3
h	Backing removed and weld tabs removed (if required)			X		Documentation for seismic resistance is required per AISC 348 Section J6 and Table J6.3
j	Repair activities			X		Documentation for seismic resistance is required per AISC 348 Section J6 and Table J6.3
k	Document acceptance or rejection of welded joint or member			X		
m	No prohibited welds have been added without the approval of the Engineer of Record					

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GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

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Drawing Title

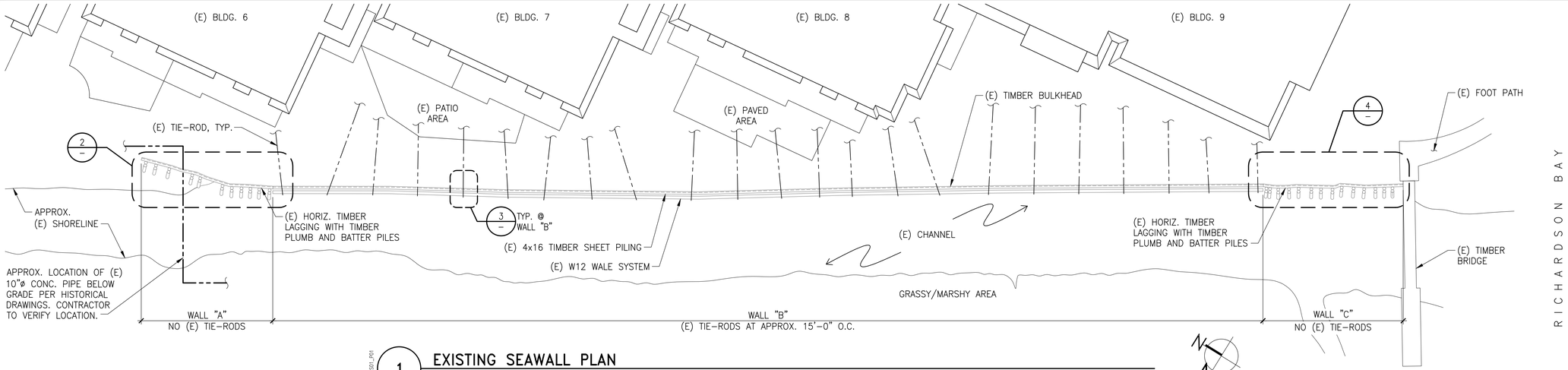
Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	NONE

REGISTERED PROFESSIONAL ENGINEER
JUSTIN J. PYLE
S 6624
STRUCTURAL
STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

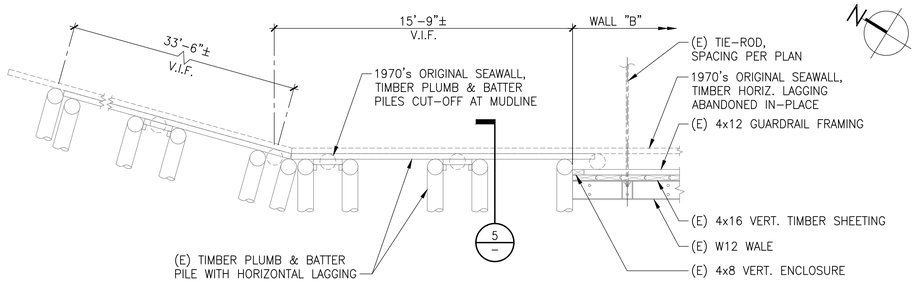
G04

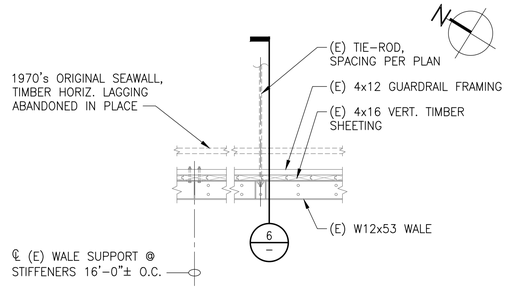


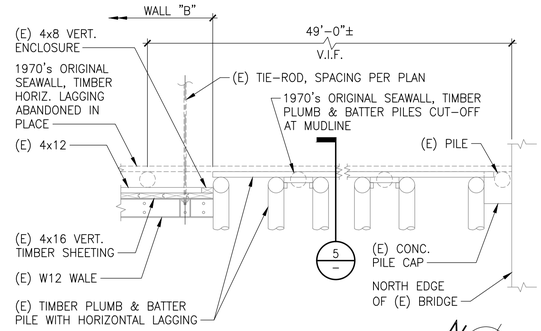
G:\SGH_S01_P01

1 EXISTING SEAWALL PLAN

SCALE: 1"=20'–0"



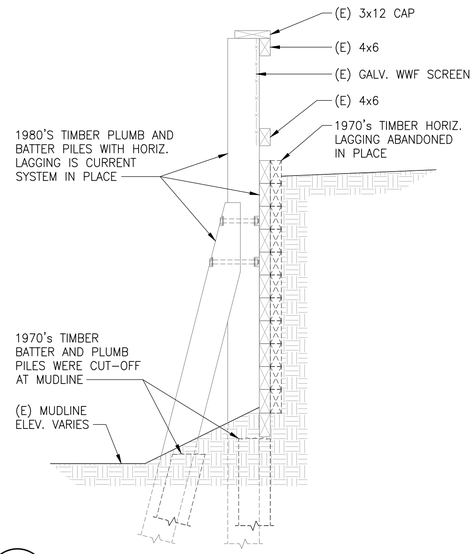




G:\SGH_S01_P02

2 EXISTING PLAN – WALL "A"

SCALE: 1/4"=1'–0"



G:\SGH_S01_P03

3 EXISTING PLAN – WALL "B"

SCALE: 1/4"=1'–0"

G:\SGH_S01_P04

4 EXISTING PLAN – WALL "C"

SCALE: 1/4"=1'–0"

NOTES:

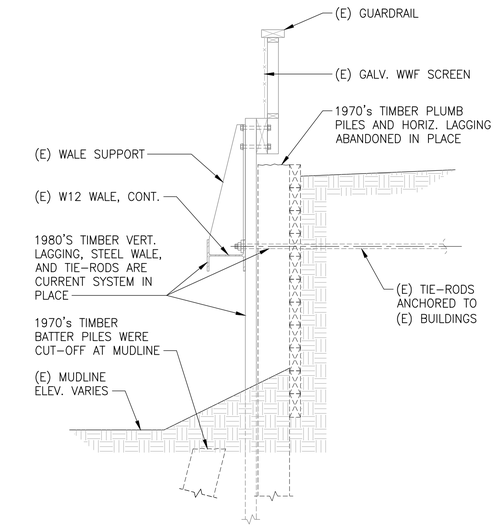
1. ALL INFORMATION PROVIDED ON THIS SHEET IS FOR REFERENCE ONLY. THE LOCATIONS, MEMBER SIZES, AND CONSTRUCTION OF THE EXISTING SEAWALL COMPONENTS SHOWN ON THIS SHEET ARE BASED ON SITE OBSERVATIONS AND HISTORICAL DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION OF THE SEAWALL REPAIR.
2. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

THIS SHEET IS FOR INFORMATION ONLY

G:\SGH_S01_P05

5 TYPICAL SECTION THROUGH BULKHEAD WALL "A" & "C"

SCALE: 1/2"=1'–0"



G:\SGH_S01_P06

6 TYPICAL SECTION THROUGH BULKHEAD WALL "B"

SCALE: 1/2"=1'–0"

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APN: 055-051-24

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GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

EXISTING SEAWALL PLANS AND SECTIONS

Drawing Title

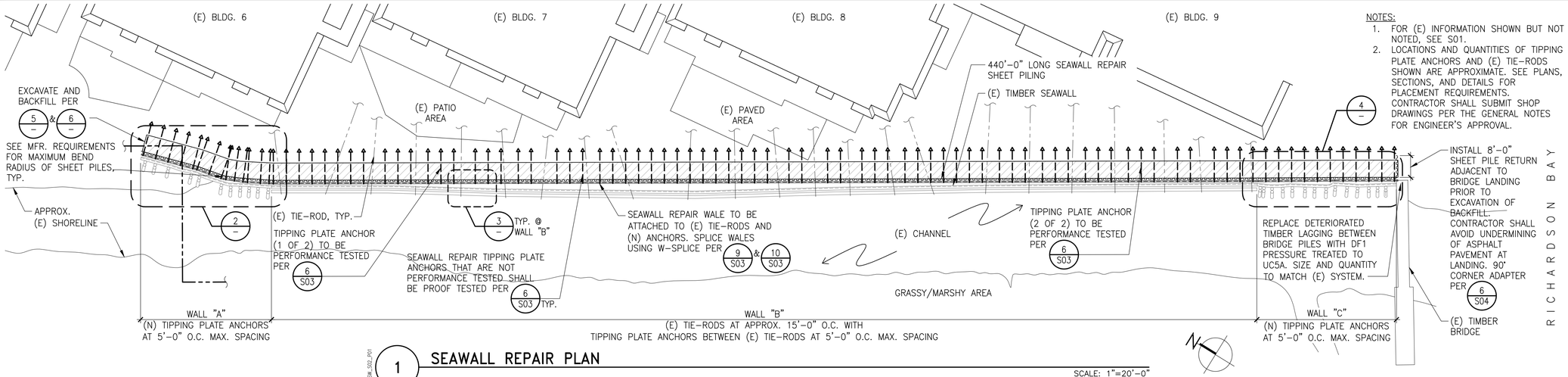
Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	AS NOTED

REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PUCKETT S 6625 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

S01

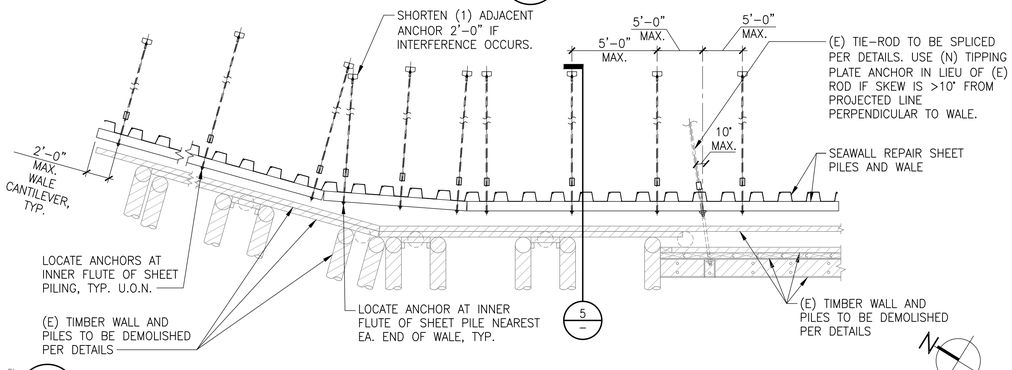


NOTES:
1. FOR (E) INFORMATION SHOWN BUT NOT NOTED, SEE S01.
2. LOCATIONS AND QUANTITIES OF TIPPING PLATE ANCHORS AND (E) TIE-RODS SHOWN ARE APPROXIMATE. SEE PLANS, SECTIONS, AND DETAILS FOR PLACEMENT REQUIREMENTS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE GENERAL NOTES FOR ENGINEER'S APPROVAL.

GBSW_S02_P01

1 SEAWALL REPAIR PLAN

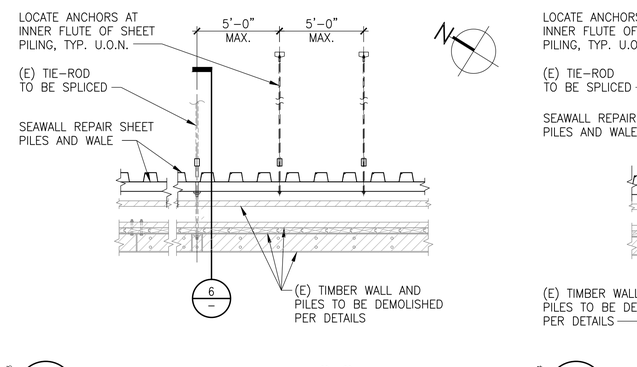
SCALE: 1"=20'-0"



GBSW_S02_P02

2 REPAIR PLAN – WALL "A"

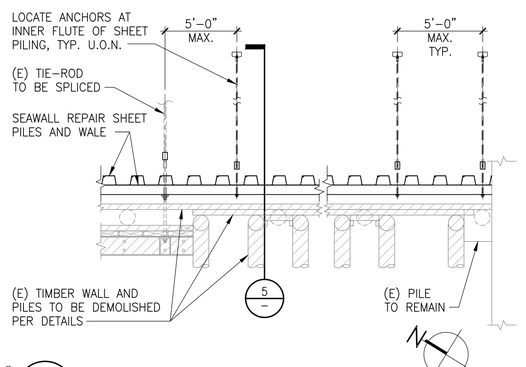
SCALE: 1/4"=1'-0"



GBSW_S02_P03

3 REPAIR PLAN – WALL "B"

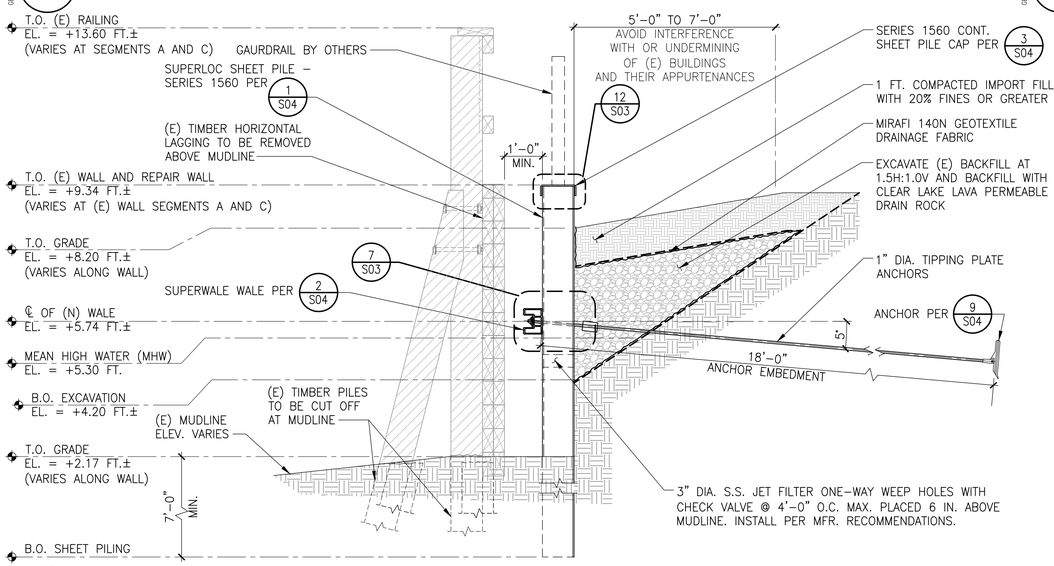
SCALE: 1/4"=1'-0"



GBSW_S02_P04

4 REPAIR PLAN – WALL "C"

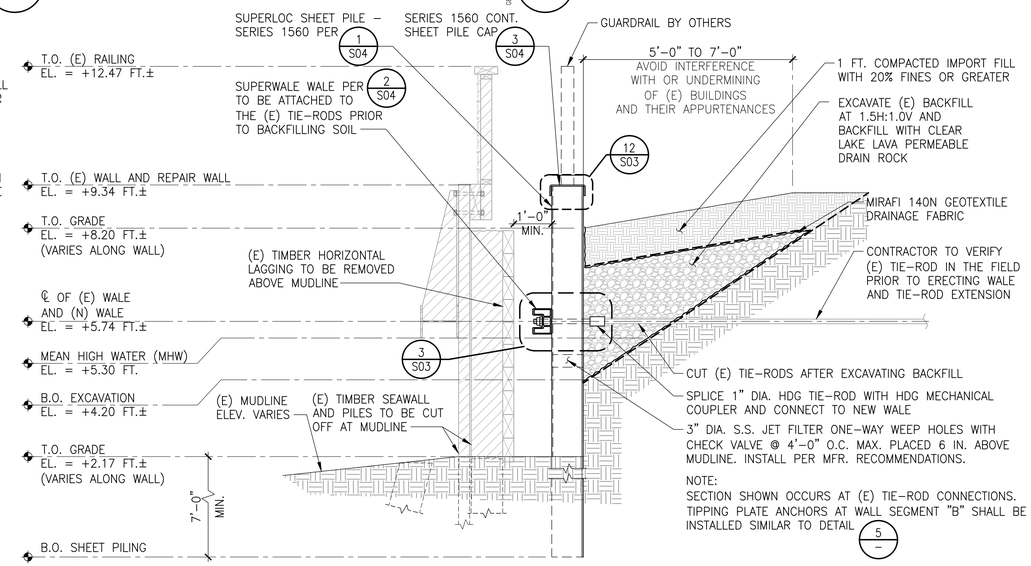
SCALE: 1/4"=1'-0"



GBSW_S02_P05

5 TYPICAL REPAIR SECTION THROUGH BULKHEAD WALL "A" & "C"

SCALE: 1/2"=1'-0"



NOTE:
SECTION SHOWN OCCURS AT (E) TIE-ROD CONNECTIONS. TIPPING PLATE ANCHORS AT WALL SEGMENT "B" SHALL BE INSTALLED SIMILAR TO DETAIL 5/–

GBSW_S02_P06

6 TYPICAL REPAIR SECTION THROUGH BULKHEAD WALL "B"

SCALE: 1/2"=1'-0"

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GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

REPAIR SEAWALL PLANS AND SECTIONS

Drawing Title

Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	AS NOTED

REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PYLE S 6624 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

S02

NOTES:

1. THE DESIGN OF THE REPAIR SYSTEM PROVIDED IN THESE DRAWINGS IS INTENDED TO STRUCTURALLY REHABILITATE THE EARTH RETAINING SYSTEM ALONG THE CHANNEL WEST OF THE GREENWOOD BAY CONDOMINIUM COMPLEX. THE TOP OF GRADE ELEVATION AT THE MUDLINE AND THE UPLAND AREA SHALL REMAIN THE SAME AS THE EXISTING CONDITION PRIOR TO CONSTRUCTION. NO INCREASE IN FILL IN AT THE UPLAND AREA OR INCREASE IN WEIGHT OF MATERIAL WITHIN THE BACKFILL IS PERMITTED. NO OVER EXCAVATION OF MATERIAL AT THE CHANNEL MUDLINE IS PERMITTED.
2. REFER TO THE GENERAL NOTES, SUBMITTAL REQUIREMENTS, AND SPECIAL INSPECTION REQUIREMENTS ON SHEETS G01–G03 FOR ADDITIONAL PROJECT REQUIREMENTS.
3. CONTRACTOR SHALL IDENTIFY ANY OBSTRUCTIONS LOCATED BELOW GRADE, INCLUDING UTILITIES, PRIOR TO THE INSTALLATION OF SEAWALL REPAIR.
4. (E) TIE–RODS SHALL BE LOCATED AND EXPOSED TO DETERMINE THEIR CONDITION AND SUITABILITY FOR USE IN THE SEAWALL REPAIR SYSTEM. LOCATIONS AND OBSERVATIONS SHALL BE COORDINATED WITH THE E.O.R. PRIOR TO COMMENCEMENT OF WORK.
5. TIPPING PLATE ANCHORS SHALL BE MANTA RAY MR–SR OR AN ALTERNATIVE APPROVED BY THE E.O.R.
6. TIPPING PLATE ANCHORS SHALL BE PERFORMANCE AND PROOF TESTED PER THE REQUIREMENTS IN THESE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE E.O.R. OF ANY ANCHORS THAT DO MEET THE TESTING REQUIREMENTS.
7. ALL PROPOSED PRODUCT AND MATERIAL SUBSTITUTIONS SHALL BE SUBMITTED TO THE E.O.R. FOR APPROVAL PRIOR TO CONSTRUCTION.
8. ALL STEEL COMPONENTS SHALL BE STAINLESS STEEL OR HOT–DIPPED GALVANIZED. DISSIMILAR METALS SUCH AS STAINLESS STEEL AND GALVANIZED STEEL SHALL NOT BE IN CONTACT. APPLY MARINE PROTECTIVE COATING TO STEEL COMPONENTS. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
9. FRP CAP AND WALE SHALL BE PAINTED WITH UV PROTECTIVE COATING.
10. THE EXISTING SEAWALL COMPONENTS EMBEDDED BELOW THE CHANNEL MUDLINE SHALL BE CUT OFF AT OR BELOW THE MUDLINE.
11. CONSTRUCTION ACTIVITY INCLUDING THE EXCAVATION AND FILL OF THE UPLAND AREA, INSTALLATION OF SEAWALL REPAIR COMPONENTS, AND TESTING OF ANCHORS SHALL BE PERFORMED IN A MANNER TO MINIMIZE DISRUPTION TO RESIDENTS OF THE HOMEOWNER'S ASSOCIATION. CONTRACTOR SHALL SUBMIT A WORK PLAN TO THE OWNER AND E.O.R. PER THE SUBMITTAL REQUIREMENTS FOR ALL CONSTRUCTION ACTIVITY PRIOR TO THE COMMENCEMENT OF WORK.
12. CONTRACTOR SHALL INSTALL SHEET PILES, WALES, AND ACCESSORIES PER MANUFACTURER'S RECOMMENDATIONS, INCLUDING EQUIPMENT USED, SETUP OF MATERIALS TO BE INSTALLED, AND EXECUTION. CONTACT THE E.O.R. WHERE CONFLICTING INFORMATION OCCURS BETWEEN THE REQUIREMENTS IN THESE DRAWINGS AND THE MANUFACTURER'S RECOMMENDATIONS
13. NOTIFY THE E.O.R. IF PILE DRIVING REFUSAL OR EXCESSIVE INITIAL SETTLEMENT OCCUR THAT RESULTS IN DIFFICULTY IN REACHING OR MAINTAINING THE DESIGN SHEET PILE TIP ELEVATION.
14. WALES SHALL HAVE A MINIMUM OF (2) TIE–RODS OR ANCHORS PER SEGMENT TO MAINTAIN STABILITY.
15. BACKFILL SHALL BE COMPACTED TO 90% PROCTOR. TOP OF BACKFILL ELEVATIONS SHALL NOT EXCEED THE DESIGN FINISHED GRADE ELEVATION.
16. LIGHTWEIGHT FILL SHALL BE CLASS 1B PERMEABLE AGGREGATE WITH DRY UNIT WEIGHT OF 60 PCF MAX.
17. THE CONTRACTOR SHALL MAINTAIN THE STABILITY OF THE SLOPE NEAR THE EXCAVATED AREA DURING CONSTRUCTION.
18. LIVE LOAD SURCHARGE DURING CONSTRUCTION SHALL NOT EXCEED 300 PSF.

GRSW_S03_005

5 CONSTRUCTION NOTES

FULL SIZE

PERFORMANCE TESTING OF TIPPING PLATE ANCHORS:

A TOTAL OF (2) TIPPING PLATE ANCHORS SHALL BE PERFORMANCE TESTED BY INCREMENTALLY LOADING AND UNLOADING THE ANCHOR IN ACCORDANCE WITH THE PERFORMANCE TEST SCHEDULE (SEE TABLE 1). SEE PLANS FOR LOCATIONS OF THESE ANCHORS.

A TOTAL OF (5) LOADING/UNLOADING CYCLES SHALL BE APPLIED TO EACH PERFORMANCE TEST ANCHOR. DURING EACH CYCLE, THE APPLIED LOAD SHALL BE INCREASED FROM ONE INCREMENT TO THE NEXT IMMEDIATELY AFTER RECORDING THE ANCHOR MOVEMENT, THEN RELEASED AT THE DESIGNATED LOAD INCREMENT. THE LOAD SHALL BE HELD LONG ENOUGH TO OBTAIN AND RECORD THE MOVEMENT READING AT ALL LOAD INCREMENTS OTHER THAN THE MAXIMUM TEST LOAD. DURING THE 5TH CYCLE, THE MAXIMUM TEST LOAD (1.25 X DL) SHALL BE HELD FOR A MINIMUM OF 10 MINUTES, WITH ANCHOR MOVEMENTS RECORDED AT 0.5, 1, 2, 3, 4, 5, 6, AND 10 MINUTE MARKS.

ACCEPTANCE CRITERIA:
WHEN THE MAXIMUM TEST LOAD IS HELD IN THE FIFTH CYCLE, THE NET DISPLACEMENT SHALL NOT EXCEED 0.05 INCHES DURING THE FIRST LOG CYCLE OF TIME (I.E., 0.5 MIN TO 10 MIN). IF THE ANCHOR MOVEMENT BETWEEN THE 1 MINUTE AND 10 MINUTE READINGS EXCEEDS 0.05 INCHES, THEN THE 1.25 DL TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 20 MINUTES. DISPLACEMENTS SHALL BE RECORDED AT 15, 20, 25, AND 30 MINUTES. NET DISPLACEMENT IS THE DIFFERENCE BETWEEN THE MOVEMENT RECORDED AT THE INITIAL TIME INCREMENT AND THE FINAL TIME INCREMENT OF THE LOG CYCLE OF TIME. THE INITIAL TIME INCREMENT IS 1 MINUTE AND THE FINAL TIME INCREMENT IS 10 MINUTES FOR THE FIRST LOG CYCLE OF TIME FOR PERFORMANCE TESTS. THE NET DISPLACEMENT SHALL NOT EXCEED 0.10 INCHES DURING THE FINAL LOG CYCLE OF TIME (EXAMPLES, 3 MIN TO 30 MIN, 6 MIN TO 60 MIN, ETC). IF THE ACCEPTANCE CRITERIA IS NOT SATISFIED, THEN THE ANCHOR TEST SHALL BE CONTINUED FOR AN ADDITIONAL 30 MINUTES. DISPLACEMENTS SHALL BE RECORDED AT 45 AND 60 MINUTES.

Table 1. Performance Test Schedule

Cyclical Load Increments (%DL/100)						
Cycle 1	AL	0.25DL				
Cycle 2	AL	0.25DL	0.25DL			
Cycle 3	AL	0.25DL	0.5DL	0.75DL		
Cycle 4	AL	0.25DL	0.5DL	0.75DL	1.00DL	
Cycle 5	AL	0.25DL	0.5DL	0.75DL	1.00DL	1.25DL

AL = Alignment Load (0.10DL)
DL = Design (Working) Load

PROOF TESTING OF TIPPING PLATE ANCHORS:

ALL ANCHORS WHICH ARE NOT PERFORMANCE TESTED SHALL BE PROOF TESTED. THE PROOF TEST SHALL BE PERFORMED BY INCREMENTALLY LOADING THE TIPPING PLATE ANCHOR IN A SINGLE LOAD CYCLE IN ACCORDANCE WITH THE PROOF TEST SCHEDULE (SEE TABLE 2). THE LOAD SHALL BE RAISED FROM ONE INCREMENT TO ANOTHER AFTER THE OBSERVATION PERIOD. AT LOAD INCREMENTS OTHER THAN THE MAXIMUM TEST LOAD, THE LOAD SHALL BE HELD FOR AN OBSERVATION PERIOD NOT TO EXCEED TWO MINUTES. THE TWO MINUTE OBSERVATION PERIOD SHALL BEGIN WHEN THE PUMP BEGINS TO LOAD THE ANCHOR TO THE NEXT LOAD INCREMENT. MOVEMENT READINGS SHALL BE TAKEN AT THE END OF THE TWO MINUTE OBSERVATION PERIOD. THE DEALER/INSTALLING CONTRACTOR OR ENGINEER SHALL PLOT THE TIPPING PLATE ANCHOR DISPLACEMENT VS. LOAD FOR EACH LOAD INCREMENT IN THE PROOF TEST. THE MAXIMUM TEST LOAD SHALL BE MAINTAINED FOR FIVE MINUTES. THIS FIVE MINUTE OBSERVATION PERIOD SHALL COMMENCE AS SOON AS 1.25 X DL IS APPLIED TO THE ANCHOR. DISPLACEMENT READINGS SHALL BE RECORDED AT 0.5, 1, 2, 3, 4, AND 5 MINUTES.

ACCEPTANCE CRITERIA:
THE NET DISPLACEMENT SHALL NOT EXCEED 0.05 INCHES DURING THE FIRST LOG CYCLE OF TIME (I.E., 0.5 MIN TO 5 MIN). IF THE ANCHOR MOVEMENT BETWEEN THE 0.5 MINUTE AND FIVE MINUTE READINGS EXCEEDS 0.05 INCHES, THEN THE 1.25 DL TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 5 MINUTES. DISPLACEMENTS SHALL BE RECORDED AT 6 AND 10 MINUTES. THE NET DISPLACEMENT SHALL NOT EXCEED 0.10 INCHES DURING THE FINAL LOG CYCLE OF TIME (EXAMPLES, 1 MIN TO 10 MIN, 3 MIN TO 30 MIN, ETC). IF THE ACCEPTANCE CRITERIA IS NOT SATISFIED, THEN THE ANCHOR TEST SHALL BE CONTINUED FOR AN ADDITIONAL 20 MINUTES. DISPLACEMENTS SHALL BE RECORDED AT 15, 20, 25, AND 30 MINUTES.

Table 2. Proof Test Schedule

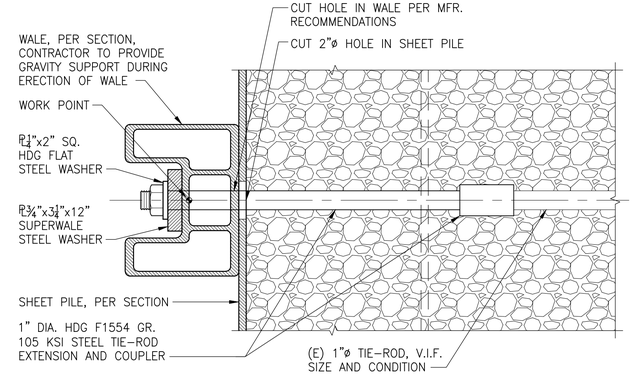
Load Test (%DL/100)	AL	0.25DL	0.5DL	0.75DL	1.00DL	1.25DL
Observation Period (Min.)	AL	2	2	2	2	5

AL = Alignment Load (0.10DL)
DL = Design (Working) Load

GRSW_S03_006

6 TIPPING PLATE ANCHOR TESTING NOTES

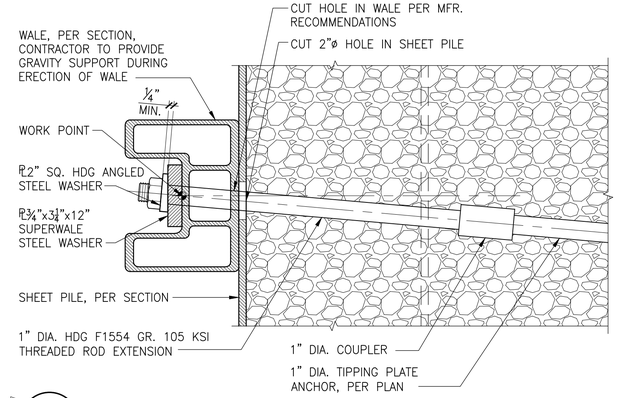
FULL SIZE



GRSW_S03_003

3 TIE–ROD TO WALE CONNECTION (E) TIE–RODS

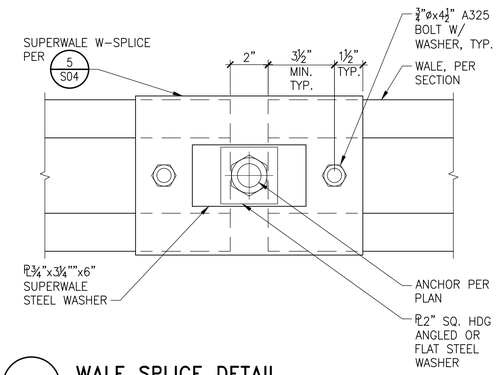
SCALE: 3"=1'–0"



GRSW_S03_007

7 TIE–ROD TO WALE CONNECTION TIPPING PLATE ANCHOR

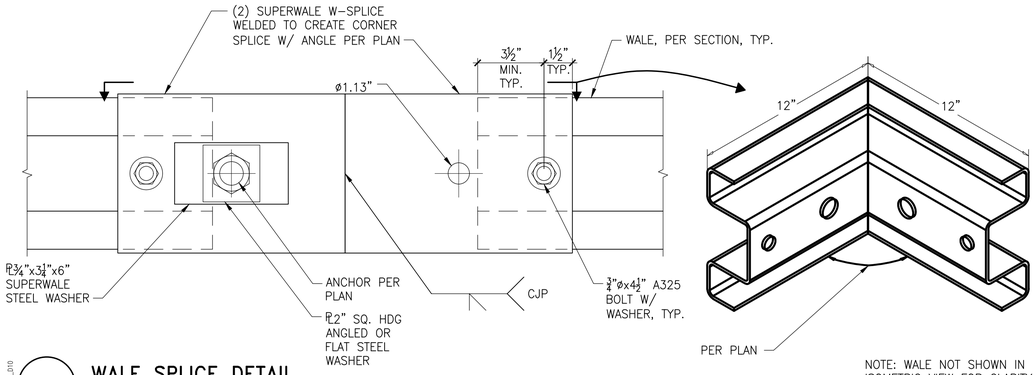
SCALE: 3"=1'–0"



GRSW_S03_009

9 WALE SPLICE DETAIL TYPICAL

SCALE: 3"=1'–0"

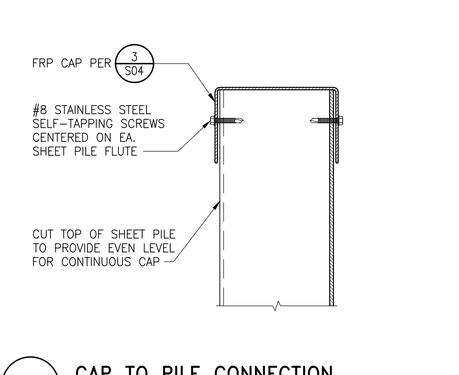


GRSW_S03_010

10 WALE SPLICE DETAIL @ CORNER

SCALE: 3"=1'–0"

NOTE: WALE NOT SHOWN IN ISOMETRIC VIEW FOR CLARITY



GRSW_S03_012

12 CAP TO PILE CONNECTION

SCALE: 3"=1'–0"

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1 GREENWOOD BAY DR.
TIBURON, CA 94920

APN: 055-051-24

No.	Date	Description	By
0	02/03/23	Issued for Permit	JJP

GREENWOOD BAY CONDOMINIUMS SEAWALL REPAIR
TIBURON, CALIFORNIA

Project

REPAIR DETAILS

Drawing Title

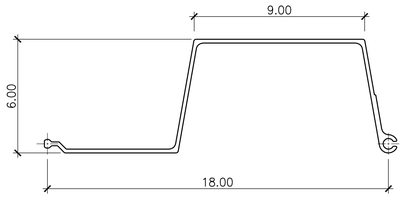
Project No.	Checked	Date
207561.10	JJP	02/03/23
Drawn	Approved	Scale
RTB	GSJ	AS NOTED

REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PUTNAM S 6628 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

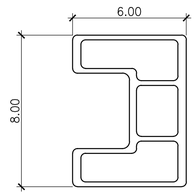
Drawing No.

S03



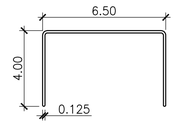
SECTION PROPERTIES
- MODULUS OF ELASTICITY = 3.62 MSI
- SECTION MODULUS = 8.02 IN^3/FT.
- MOMENT OF INERTIA = 24.13 IN^4/FT.
- SHEAR CAPACITY = 21,041 LB/FT.
- MOMENT CAPACITY = 9,052 LB-FT./FT.

GSEW_S04_D01
1 SHEET PILE PROFILE
SUPERLOC SERIES 1560
SCALE: 3"=1'-0"



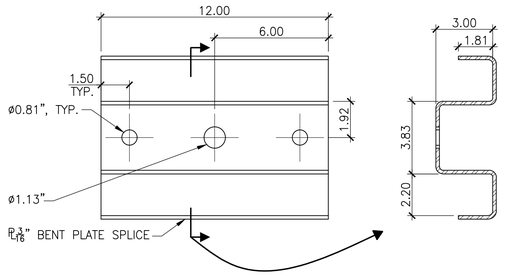
SECTION PROPERTIES
- MODULUS OF ELASTICITY = 3.16 MSI
- MINOR SECTION MODULUS = 14.40 IN^3
- MINOR MOMENT OF INERTIA = 49.22 IN^4
- SHEAR CAPACITY = 31,600 LB
- MOMENT CAPACITY = 41,600 LB-FT.

GSEW_S03_D12
2 WALE PROFILE
SUPERWALE
SCALE: 3"=1'-0"

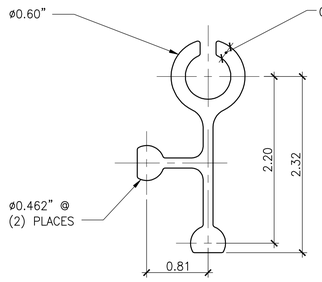


SECTION PROPERTIES
- MODULUS OF ELASTICITY = 3.62 MSI
- MINOR SECTION MODULUS = 3.84 IN^3
- MINOR MOMENT OF INERTIA = 12.46 IN^4

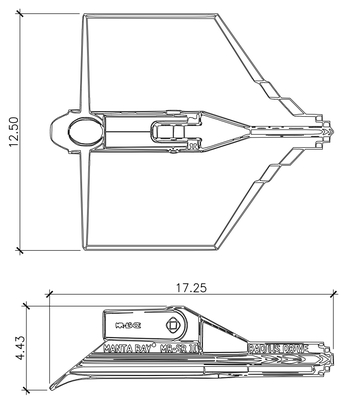
GSEW_S04_D03
3 CAP PROFILE
SERIES 1560
SCALE: 3"=1'-0"



GSEW_S04_D05
5 W-SPLICE
SCALE: 3"=1'-0"



GSEW_S04_D06
6 SHEET PILE CORNER ADAPTER
SERIES 1560
FULL SIZE



DESIGN WORKING LOAD = 7,000 LB

GSEW_S03_D10
9 TIPPING PLATE ANCHOR
MANTA RAY MR-SR
SCALE: 3"=1'-0"

1. INFORMATION SHOWN FOR REFERENCE. SEE CREATIVE COMPOSITES GROUP PRODUCT CATALOG FOR ADDITIONAL INFORMATION.

GSEW_S04_D12
12 NOTES
FULL

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REGISTERED PROFESSIONAL ENGINEER JUSTIN J. PUTNAM S 6625 STRUCTURAL STATE OF CALIFORNIA

Seal SIGNED: 02/03/23

Drawing No.

S04