



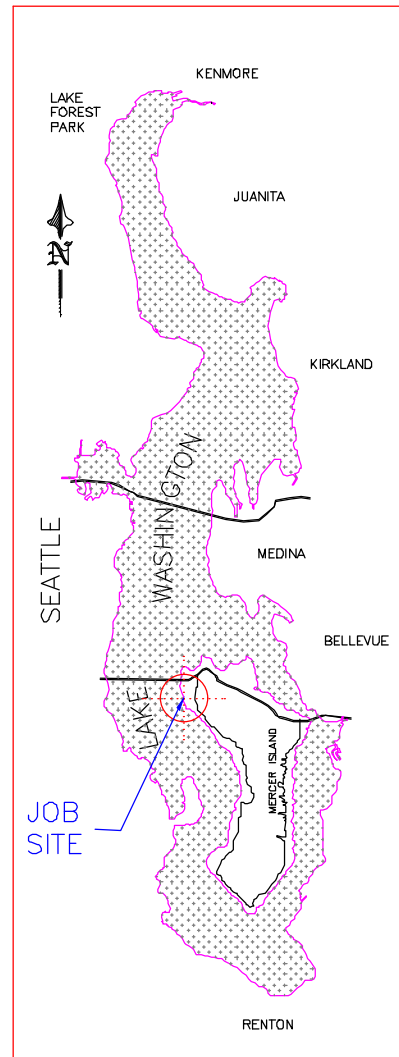
VICINITY MAP/NO SCALE

LEGAL DESCRIPTION

SECTION: NE-11-24-4 LAT: 47.583370 (47° 35' 0.132" N)
 TAXLOT #: 217450-0100 LONG: -122.252240 (122° 15' 8.064" W)

EAST SEATTLE ADD LOT 1 & SH LDS ADJ MERCER ISLAND SHORT PLAT
 NO 83-09-32 REC NO 8403019001 SD SHORT PLAT DAF - LOTS
 19-20-21 & 22 BLK 1 SD ADD & VAC ST ADJ

NOTE:
 PREVIOUS PERMITS INDICATE LEGAL NONCONFORMANCE.



AREA MAP/NO SCALE

PROJECT DESIGNED BY:

Waterfront Construction Inc.

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REVISED
08/04/2021

PER MI-SHORELINE
 PLANNER REVIEW LETTER.

ADJACENT OWNERS:

- ① GARFIELD LANDING
 CITY OF MERCER ISLAND
 MERCER ISLAND, WA 98040
- ② ALMA HOLDINGS, LLC
 3019 60TH AVE SE
 MERCER ISLAND, WA 98040

APPLICATION#:

PROPOSED: PIER REPAIR

PURPOSE: RESTORE PIER INTEGRITY

DATUM: C.O.E. MLLW=0.0'

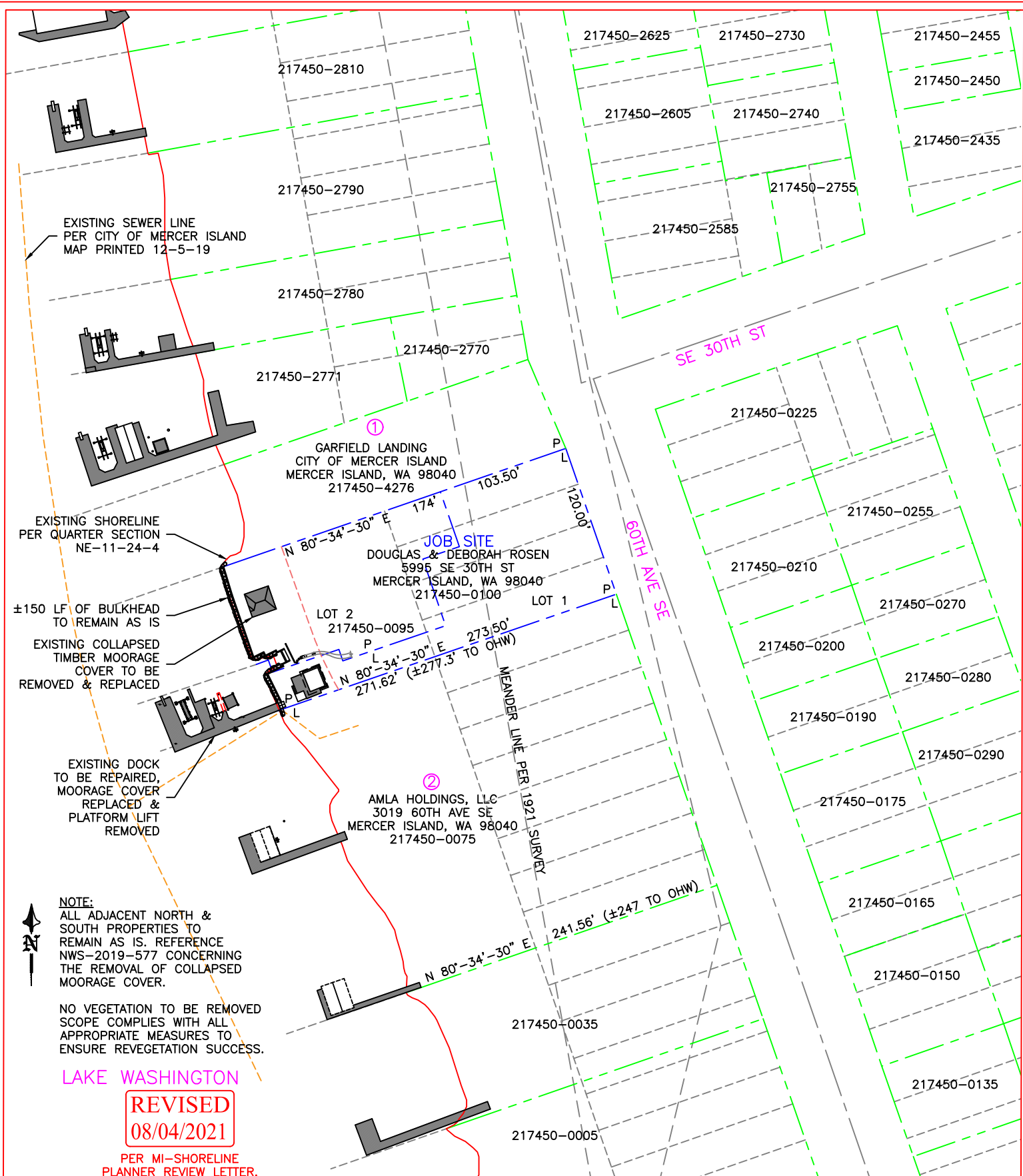
DWG#: 19-31042-A7-1

APPLICANT: DOUGLAS ROSEN

SITE ADD. 5995 SE 30TH STREET
 MERCER ISLAND, WA 98040

MAIL ADD. 5995 SE 30TH STREET
 MERCER ISLAND, WA 98040

PAGE: 1 OF: 15 DATE: 2-7-2020



NOTE:
 ALL ADJACENT NORTH & SOUTH PROPERTIES TO REMAIN AS IS. REFERENCE NWS-2019-577 CONCERNING THE REMOVAL OF COLLAPSED MOORAGE COVER.

NO VEGETATION TO BE REMOVED
 SCOPE COMPLIES WITH ALL APPROPRIATE MEASURES TO ENSURE REVEGETATION SUCCESS.

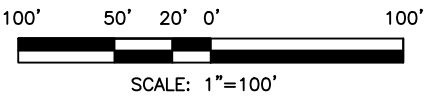
LAKE WASHINGTON

REVISED
08/04/2021

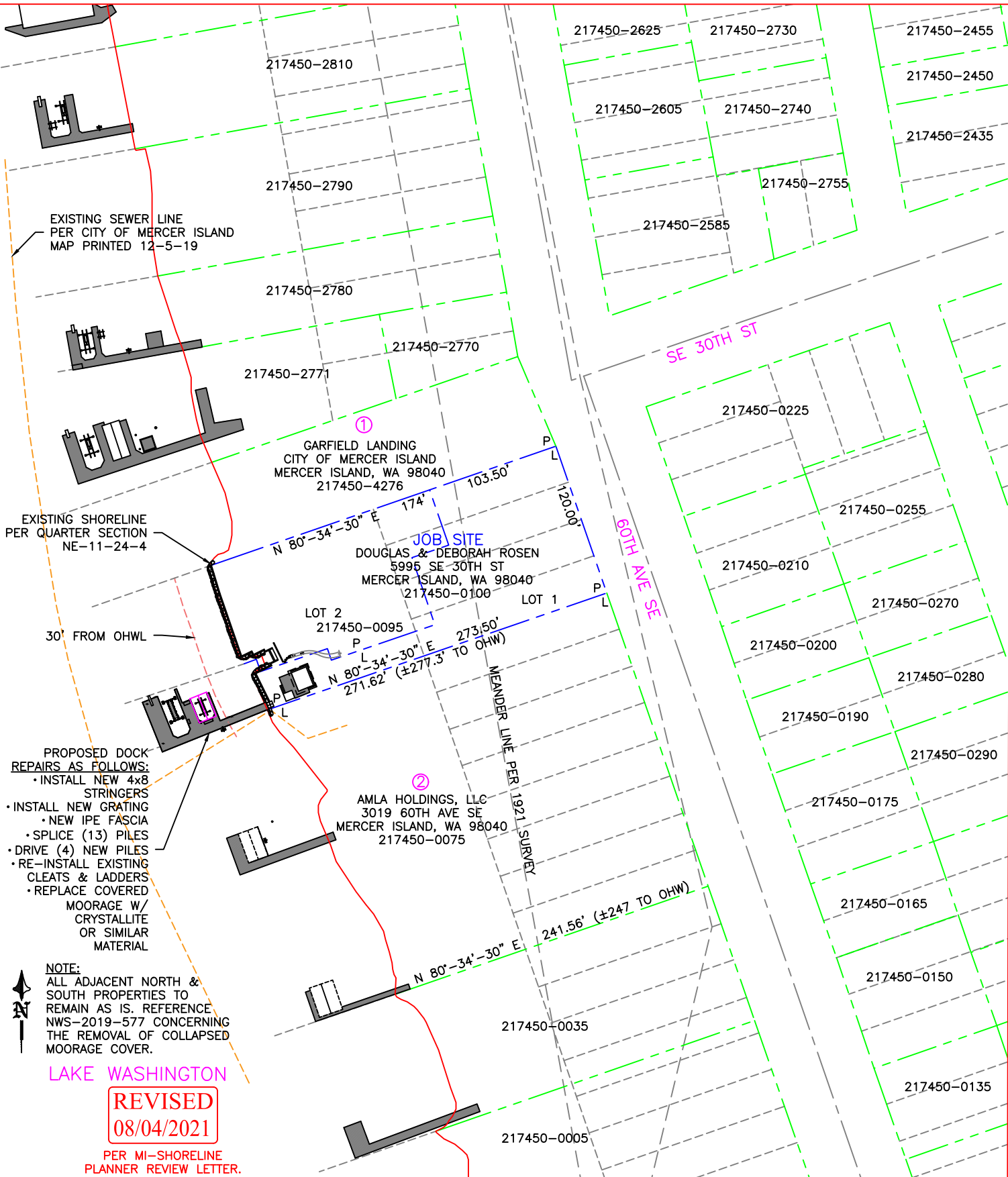
PER MI-SHORELINE PLANNER REVIEW LETTER.

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REFERENCE #:		
APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 2	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020	DWG#: 19-31042-A7-2	



EXISTING SEWER LINE
PER CITY OF MERCER ISLAND
MAP PRINTED 12-5-19

EXISTING SHORELINE
PER QUARTER SECTION
NE-11-24-4

- PROPOSED DOCK
REPAIRS AS FOLLOWS:
- INSTALL NEW 4x8 STRINGERS
 - INSTALL NEW GRATING
 - NEW IPE FASCIA
 - SPLICE (13) PILES
 - DRIVE (4) NEW PILES
 - RE-INSTALL EXISTING CLEATS & LADDERS
 - REPLACE COVERED MOORAGE W/ CRYSTALLITE OR SIMILAR MATERIAL

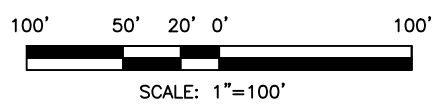
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LAKE WASHINGTON

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08/04/2021

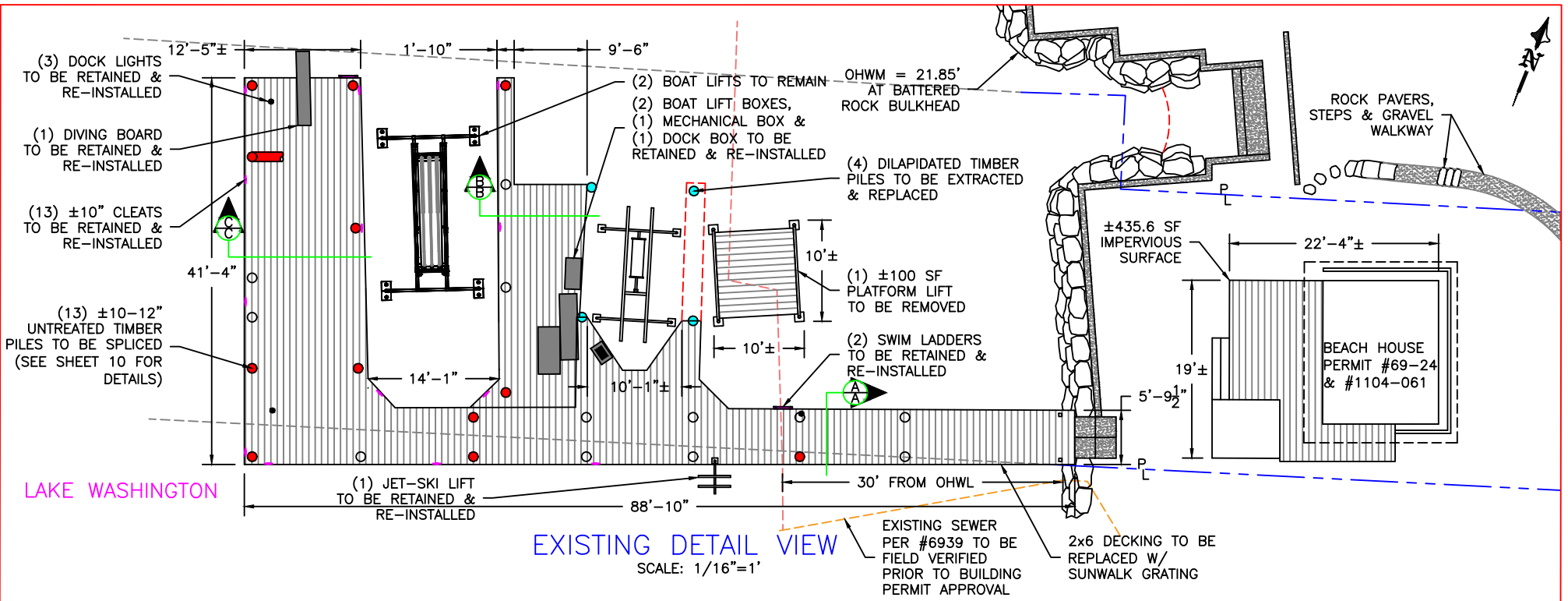
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PLANNER REVIEW LETTER.

PROPOSED SITE PLAN



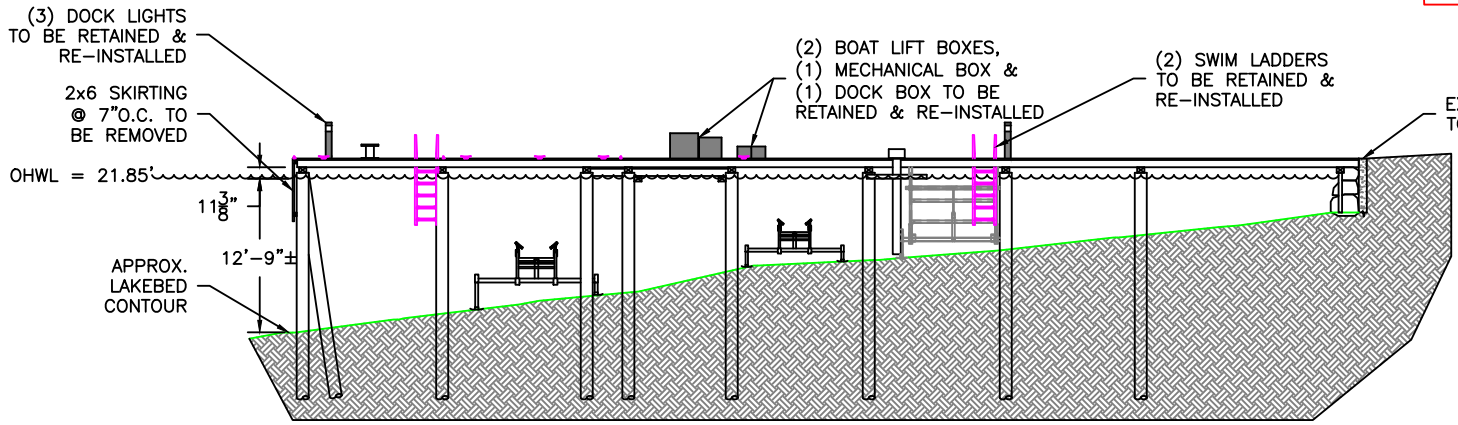
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APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 3	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020		DWG#: 19-31042-A7-3

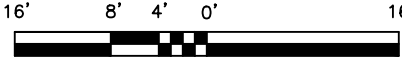


EXISTING DETAIL VIEW
SCALE: 1/16"=1'

EXISTING SQUARE FOOTAGE = 1349.7 SF



EXISTING ELEVATION VIEW



SCALE: 1/16"=1'

JOB SITE
DOUGLAS & DEBORAH ROSEN
5995 SE 30TH ST
MERCER ISLAND, WA 98040
217450-0100

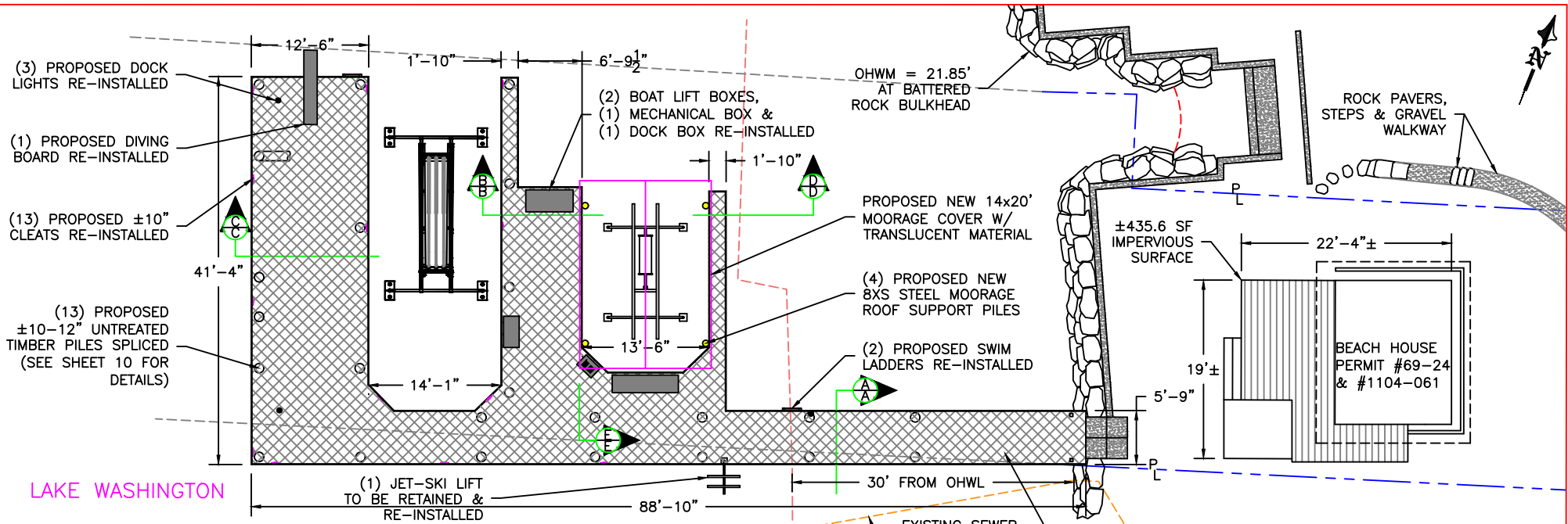
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08/04/2021

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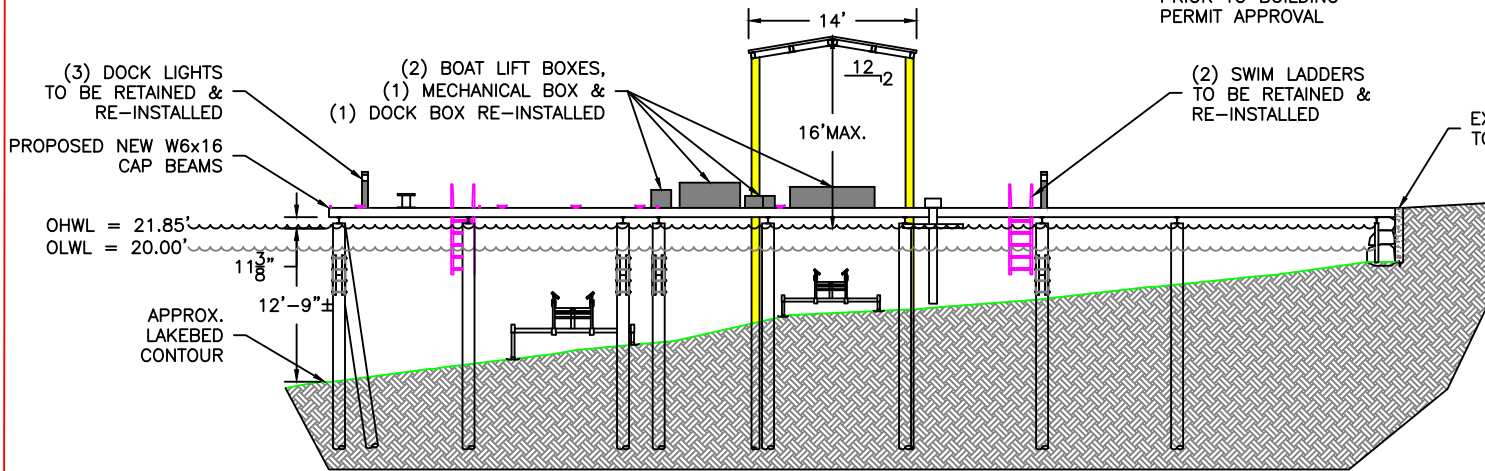
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APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 4	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020		DWG#: 19-31042-A7-4



SEE SHEET 10 FOR FRAMING DETAILS.

PROPOSED SQUARE FOOTAGE = 1295.4 SF



JOB SITE
DOUGLAS & DEBORAH ROSEN
5995 SE 30TH ST
MERCER ISLAND, WA 98040
217450-0100

REVISED
08/04/2021

PER MI-SHORELINE
PLANNER REVIEW LETTER.

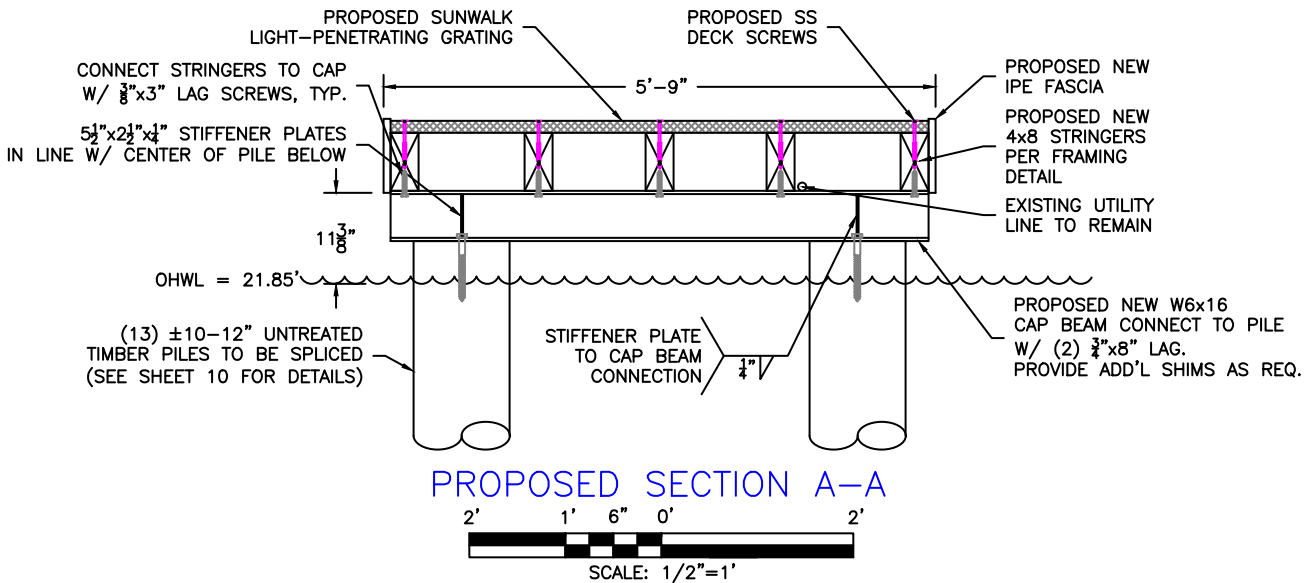
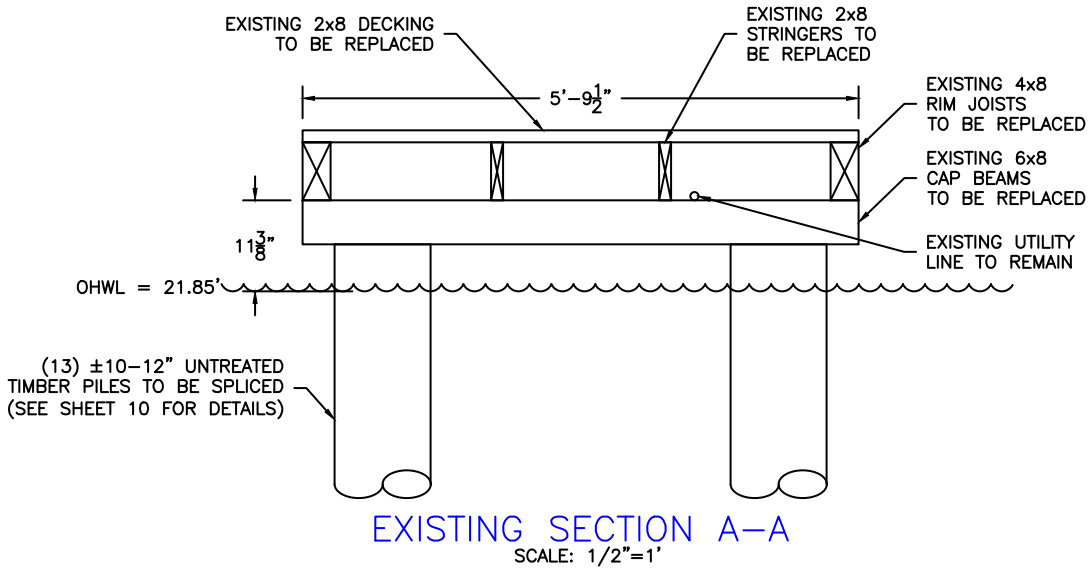
REFERENCE #:		
APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 5	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020	DWG#: 19-31042-A7-5	

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SCALE: 1/16"=1'



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08/04/2021

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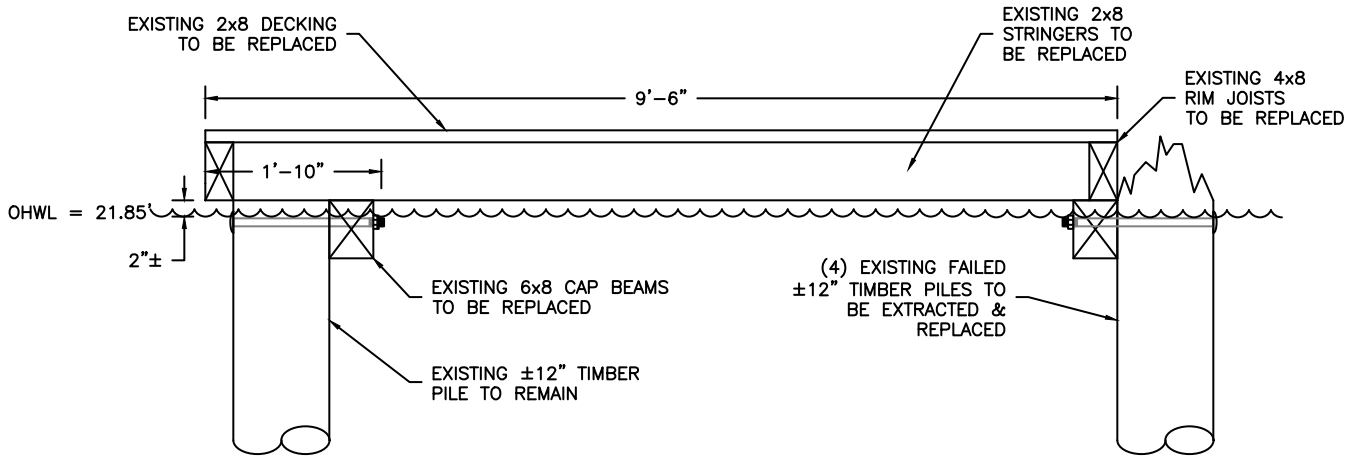
REFERENCE #:

APPLICANT: DOUGLAS ROSEN

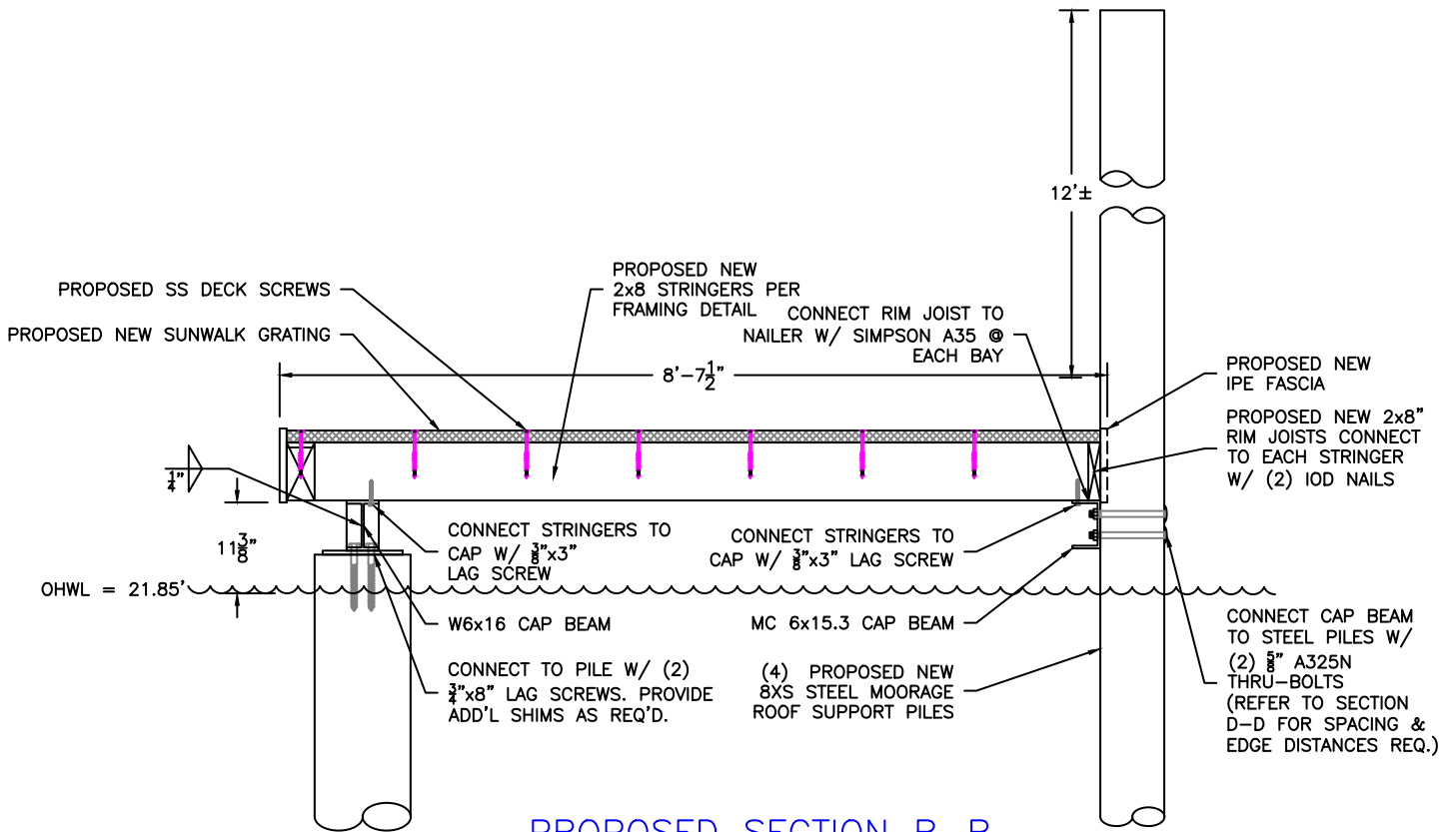
PROPOSED: PIER REPAIR

SHEET: 6 OF 15 NEAR/AT: MERCER ISLAND

DATE: 2-7-2020 DWG#: 19-31042-A7-6



EXISTING SECTION B-B
SCALE: 1/2"=1'



PROPOSED SECTION B-B
SCALE: 1/2"=1'

REVISED
08/04/2021

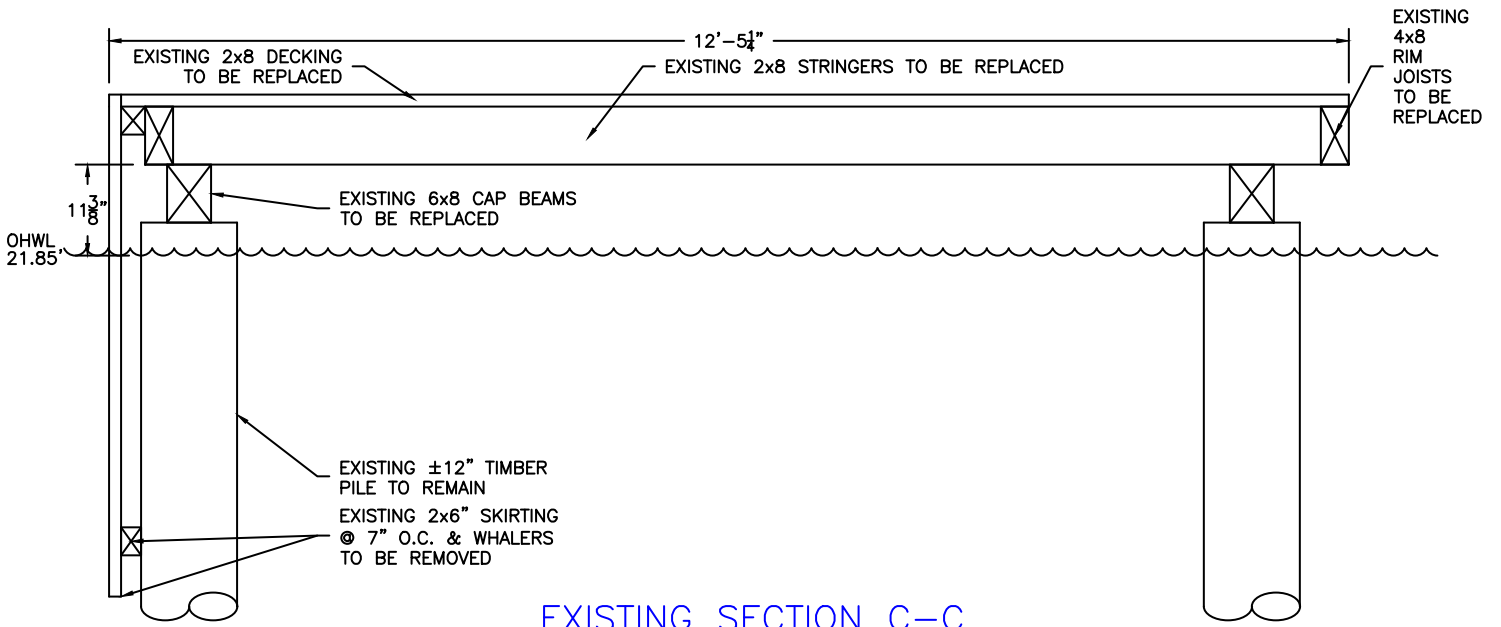
PER MI-SHORELINE
PLANNER REVIEW LETTER.

PROJECT DESIGNED BY:

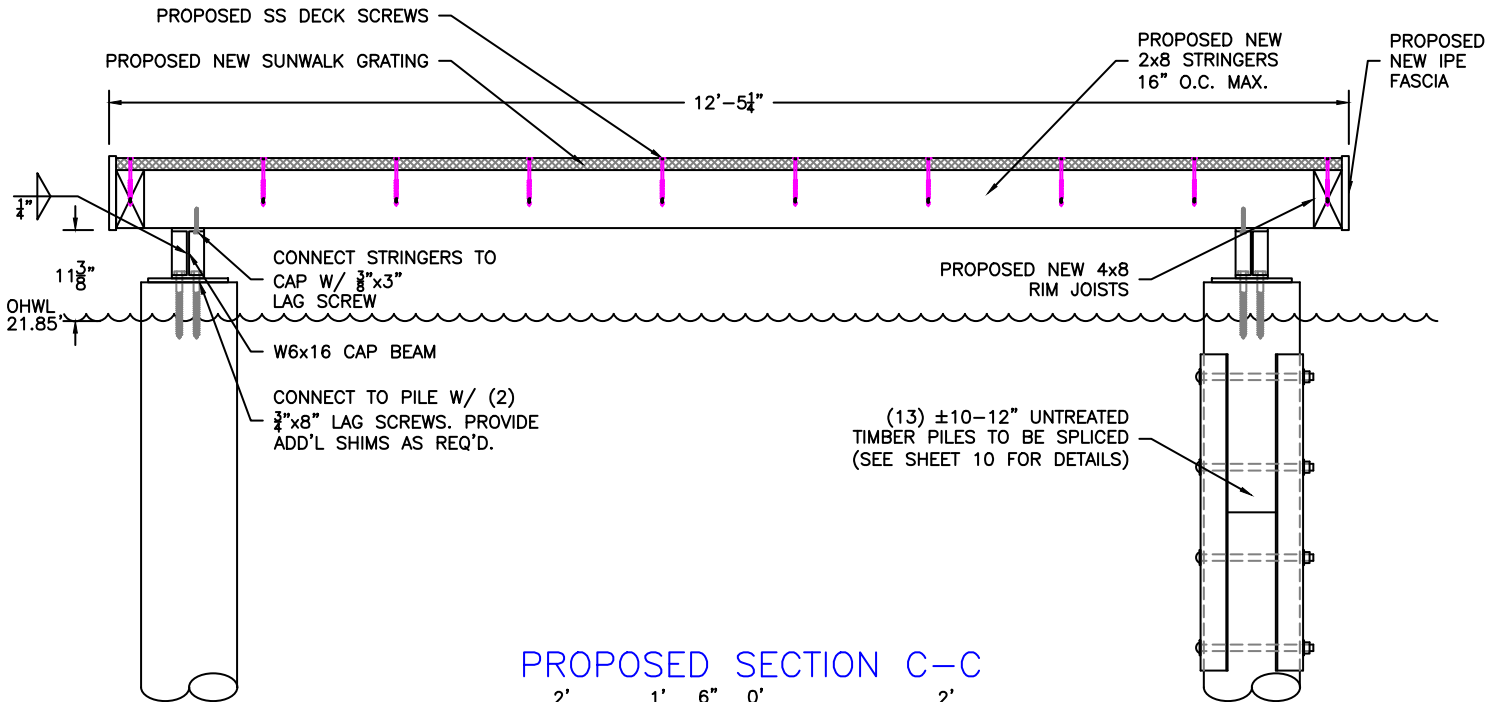
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PROPOSED: PIER REPAIR		
SHEET: 7	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020		DWG#: 19-31042-A7-7



EXISTING SECTION C-C
SCALE: 1/2"=1'



PROPOSED SECTION C-C
SCALE: 1/2"=1'

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08/04/2021

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PLANNER REVIEW LETTER.

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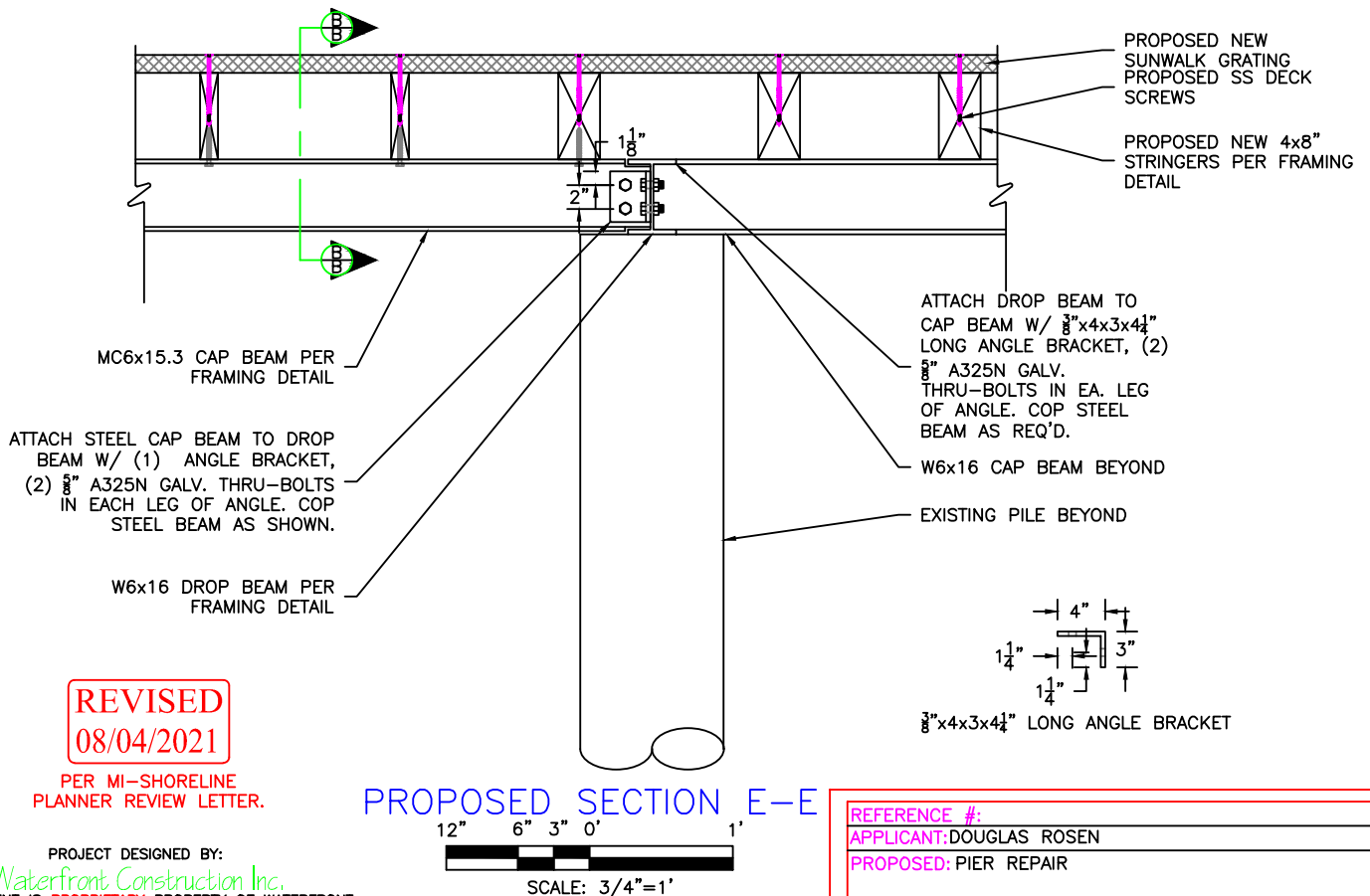
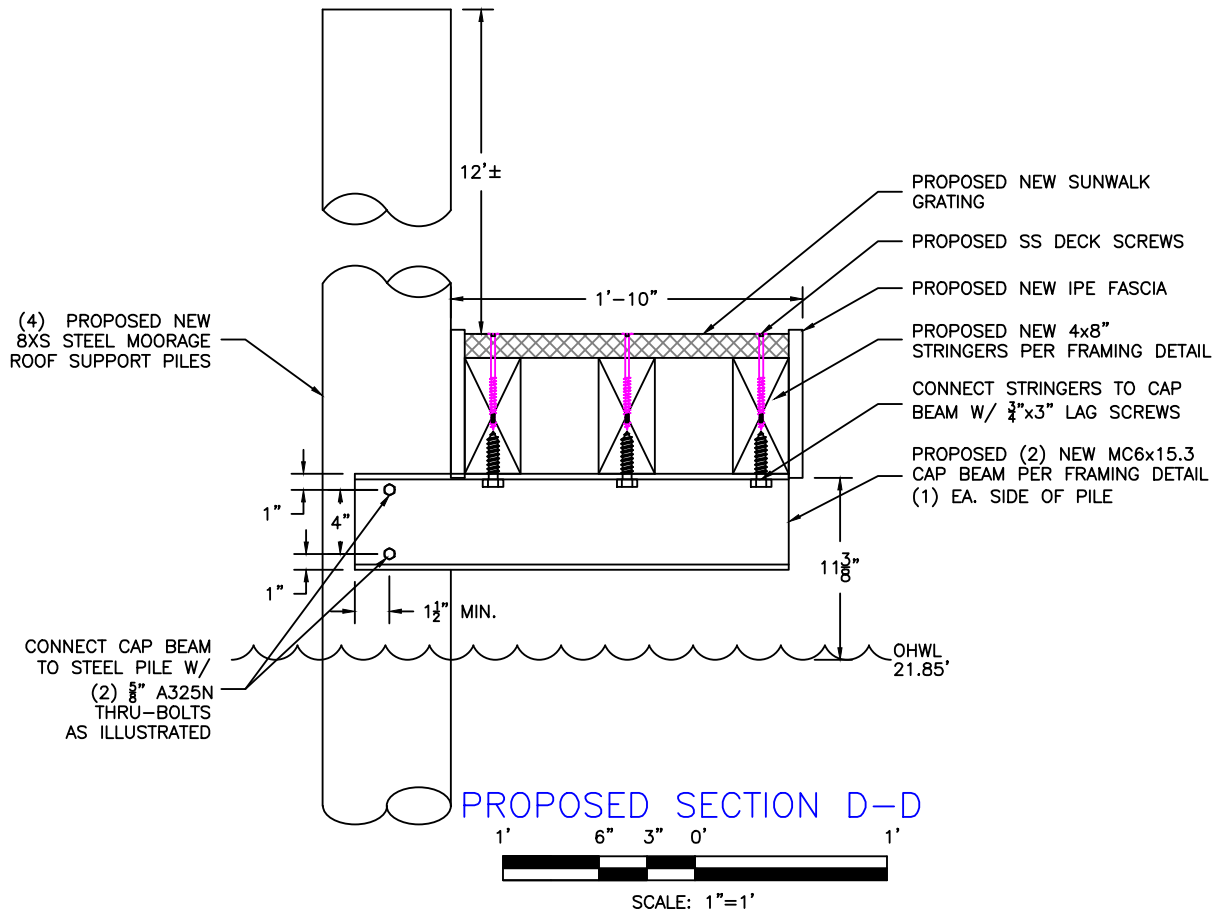
PROPOSED: PIER REPAIR

SHEET: 8 OF 15

NEAR/AT: MERCER ISLAND

DATE: 2-7-2020

DWG#: 19-31042-A7-8



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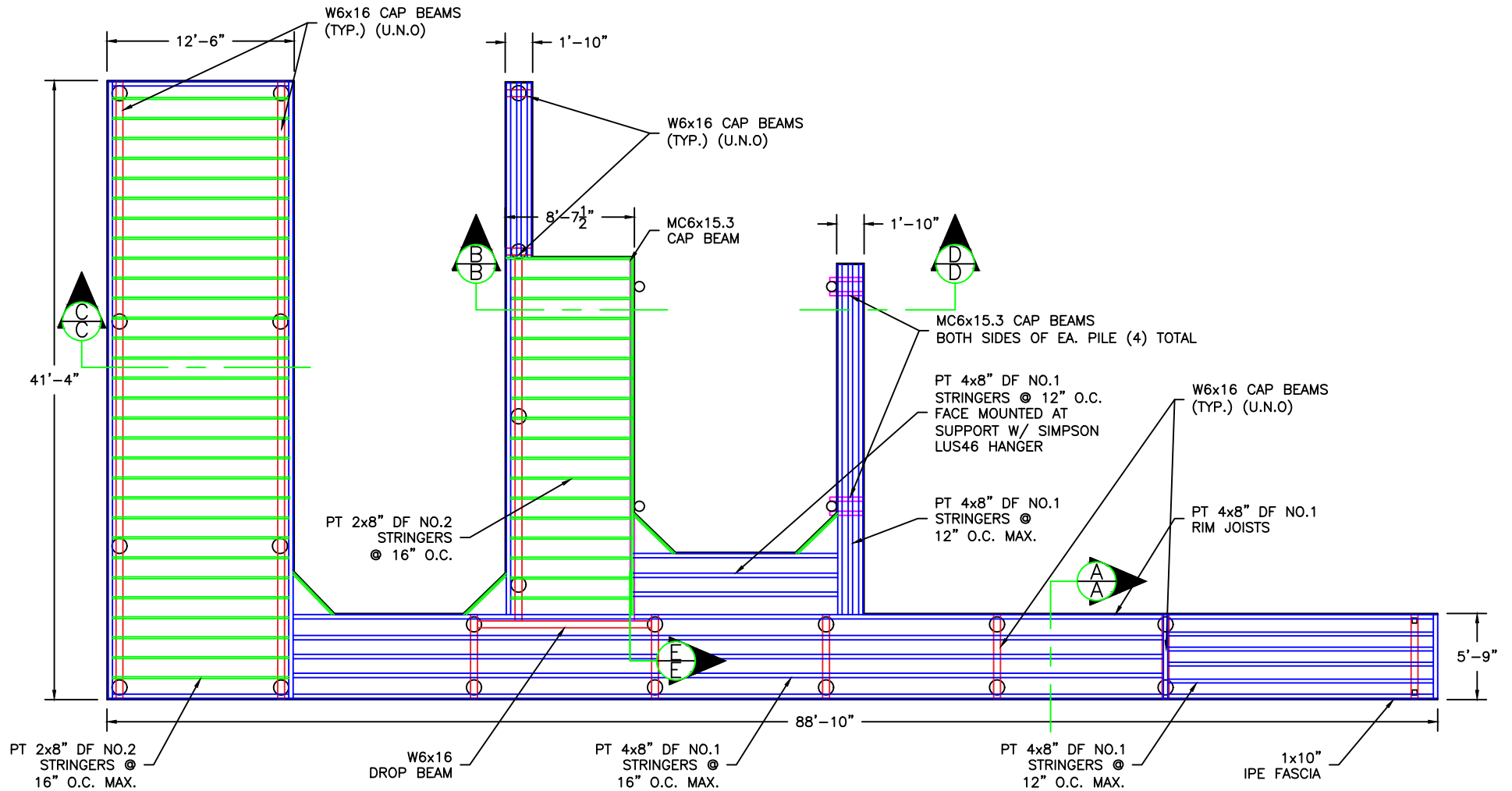
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APPLICANT: DOUGLAS ROSEN

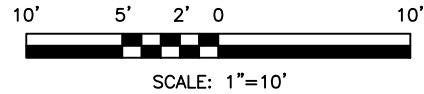
PROPOSED: PIER REPAIR

SHEET: 9 OF: 15 NEAR/AT: MERCER ISLAND

DATE: 2-7-2020 DWG#: 19-31042-A7-9



FRAMING DETAIL



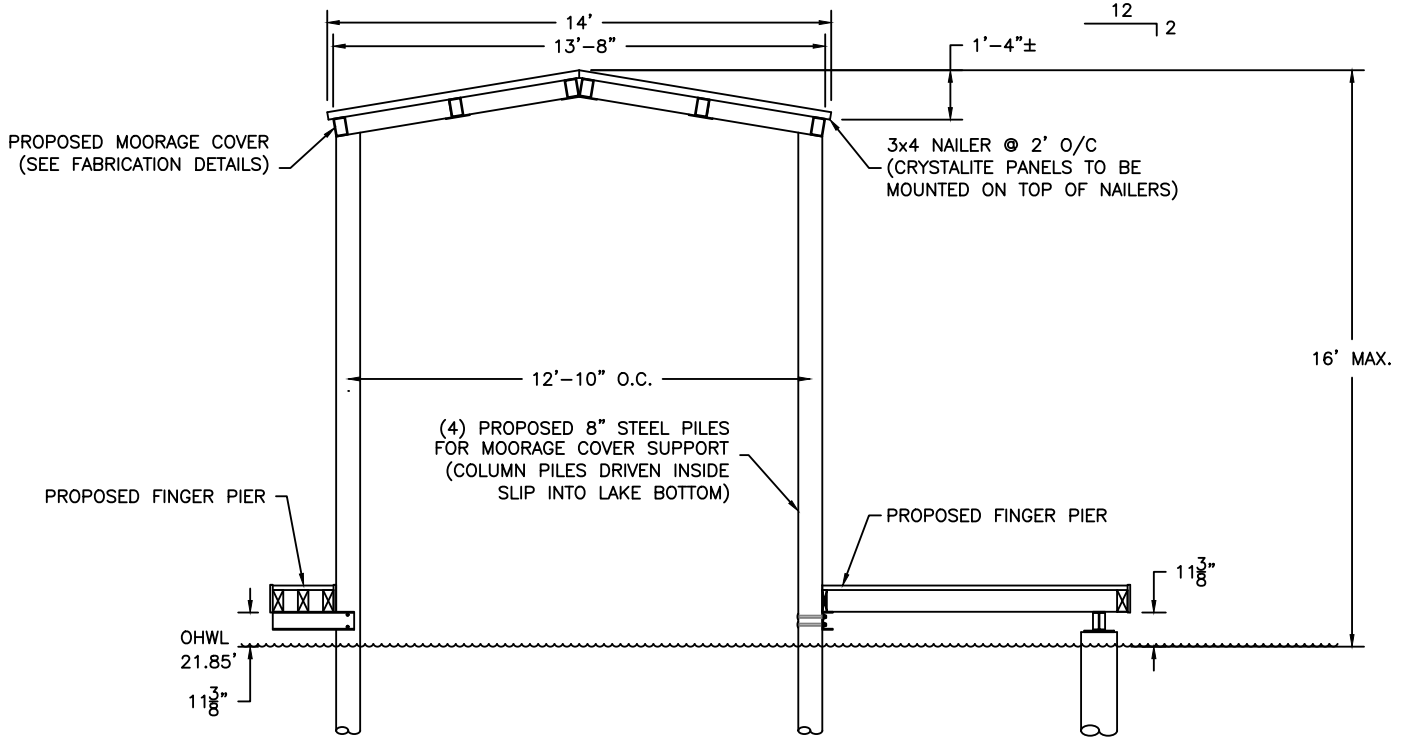
NOTE:
REFER TO STRUCTURAL NOTES
FOR MATERIAL SPECIFICATIONS.

REVISED
08/04/2021

PER MI-SHORELINE
PLANNER REVIEW LETTER.

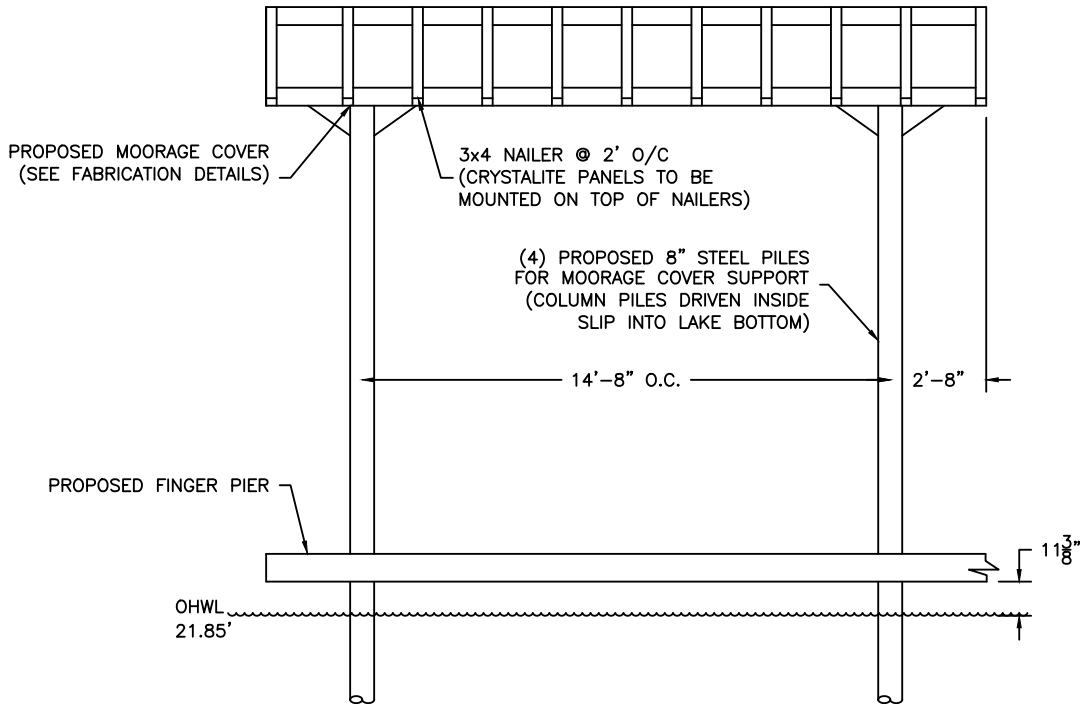
REFERENCE #:		
APPLICANT: DOUGLAS ROSEN		
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SHEET: 10	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020	DWG#: 19-31042-A7-15	

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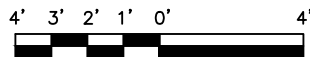


PROPOSED MOORAGE COVER SECTION

SCALE: 3/16"=1'



PROPOSED MOORAGE COVER SIDE VIEW



SCALE: 3/16"=1'

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08/04/2021

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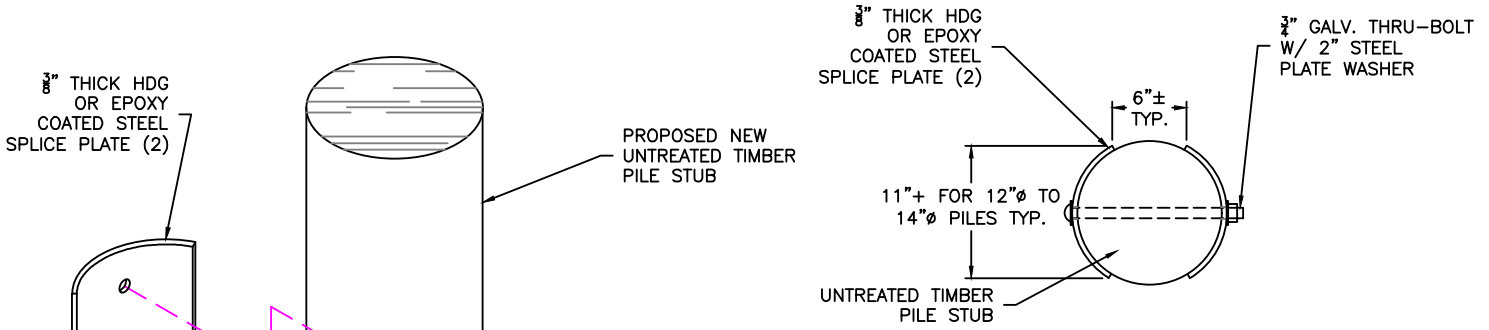
SHEET: 11

OF: 15

NEAR/AT: MERCER ISLAND

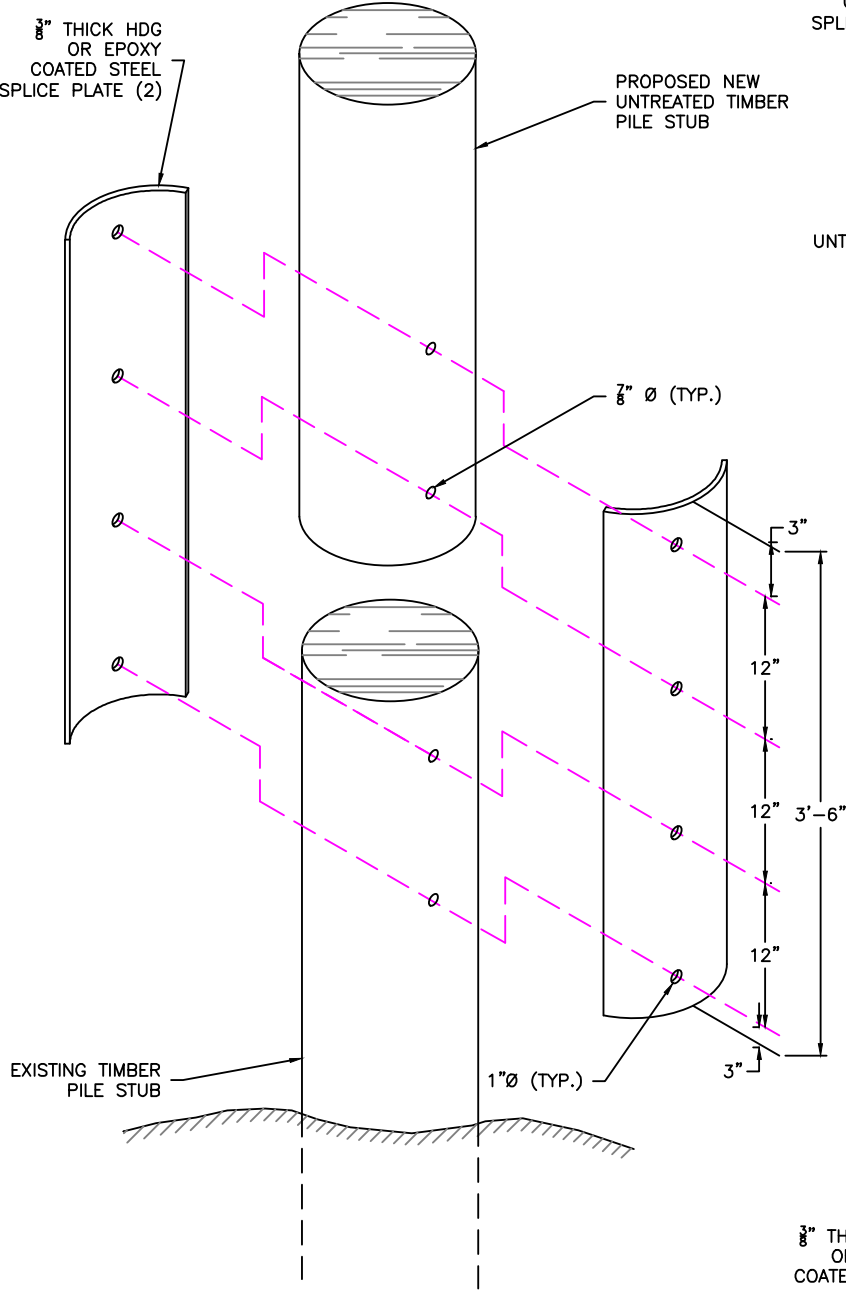
DATE: 2-7-2020

DWG#: 19-31042-A7-11



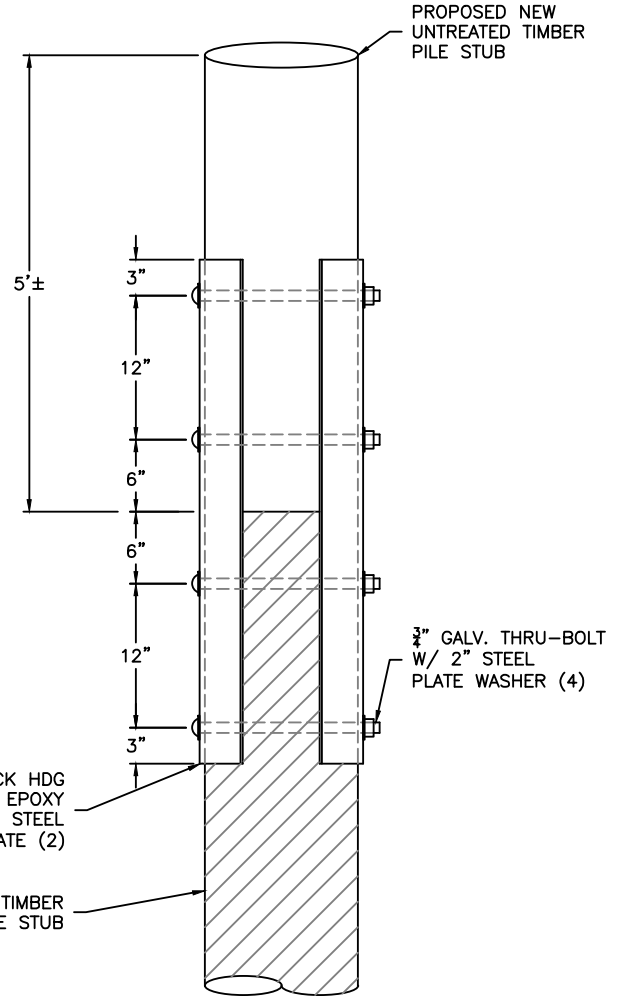
TYPICAL PILE SPLICE TOP VIEW

SCALE: 3/4"=1'

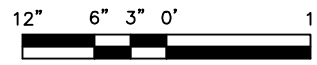


TYPICAL PILE SPLICE ASSEMBLY

SCALE: 3/4"=1'



TYPICAL PILE SPLICE SIDE VIEW



SCALE: 3/4"=1'

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PROPOSED: PIER REPAIR		
SHEET: 12	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020	DWG#: 19-31042-A7-12	

NOTE:
DOCK LIGHTS NOT TO EXCEED 450LM EACH
NOR A TOTAL OF 2700LM.

OVERWATER SOLID COVERAGE CALCULATIONS:

LIGHTS = .5889 SF
DIVING BOARD = 11.1875 SF
BOATLIFT BOXES = 8.5 SF
MECHANICAL BOX = 11.8125 SF
DOCK BOX = 13.1875 SF
TOTAL = 45.3 SF

OVERWATER LIGHT-PENETRATING COVERAGE CALCULATIONS:

GRATING = 1220.7 SF

OHWM = 21.85'
AT BATTERED
ROCK BULKHEAD

0-25' SHOREWARD OF OHWM = 3787 SF
TOTAL IMPERVIOUS SURFACE = 678 SF
OR 18%

25-50' SHOREWARD OF OHWM = 3706 SF
TOTAL IMPERVIOUS SURFACE = 188 SF
OR 5%

JOB SITE
DOUGLAS & DEBORAH ROSEN
5995 SE 30TH ST
MERCER ISLAND, WA 98040
217450-0100

EXISTING SEWER LINE
PER CITY OF MERCER ISLAND
MAP PRINTED 12-5-19

EXISTING DOCK LIGHTS,
DIVING BOARD & SWIM
LADDERS TO BE
RE-INSTALLED

PROPOSED NEW 14x20'
MOORAGE COVER W/
TRANSLUCENT MATERIAL

TOTAL OVERWATER
COVERAGE = 1291.6 SF,
TOTAL LIGHT-PENETRATING
COVERAGE = 1220.7 SF
OR 94.5%

(13) EXISTING ±10"
CLEATS RE-INSTALLED

ROCK PAVERS,
STEPS & GRAVEL
WALKWAY

50' FROM OHWM

REVISED
08/04/2021

PER MI-SHORELINE
PLANNER REVIEW LETTER.

SEWER LINE PER CITY OF
MERCER ISLAND

30' FROM OHWM

25' FROM OHWM

CABANA

**PROPOSED IMPERVIOUS SURFACE
& OVERWATER COVERAGE CALCULATIONS**

20' 15' 10' 5' 0' 20'



SCALE: 1"=20'

REFERENCE #:

APPLICANT: DOUGLAS ROSEN

PROPOSED: PIER REPAIR

SHEET: 13

OF: 15

NEAR/AT: MERCER ISLAND

DATE: 2-7-2020

DWG#: 19-31042-A7-13

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STRUCTURAL NOTES

CODE:

THE INTERNATIONAL BUILDING CODE (IBC) 2015 EDITION AND THE 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC), WITH THE STATE OF WASHINGTON AMENDMENTS.

LIVE LOADS:

RESIDENTIAL PIER (FULL DECK REPLACEMENT) 60 PSF

LATERAL LOADS (BASED ON ASCE 7):

WIND DESIGN DATA:	
WIND SPEED	110 MPH
RISK CATEGORY	I
EXPOSURE	C
TOPOGRAPHICAL FACTOR	1.0

EARTHQUAKE DESIGN DATA (USING USGS SEISMIC HAZARD MAPS):

LATITUDE	47.5837898 DEGREES (°N)
LONGITUDE	-122.2519332 DEGREES (°W)
S _s	1.407
S ₁	0.490
SITE CLASS	D
SDS	0.938
SD1	0.490
IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	D

BASIC SEISMIC-FORCE-RESISTING SYSTEM:

STEEL ORDINARY CANTILEVER COLUMN SYSTEMS	
R	1.25
C _s	0.75

STEEL PILING:

8" PILING SHALL BE X-STRONG ASTM A252, GRADE "3" F_y = 45,000 PSI.

PILES SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR ALL SCRAPES, DINGS, WELDS, ETC. IN ACCORDANCE WITH ASTM A780.

PILE INSTALLATION:

THE PILES SHALL BE DRIVEN TO REFUSAL USING A VIBRATOR OR DIESEL HAMMER. OUR DESIGN ASSUMES THAT THERE IS A LAYER OF SOFT SOIL BELOW THE MUDLINE THAT IS UP TO 20 FEET DEEP THAT IS UNDERLAIN BY DENSE SOIL THAT IS SUFFICIENT FOR BEARING. THE DEPTH OF THIS SOFT SOIL LAYER SHOULD BE MONITORED AND RECORDED TO CONFIRM THAT IT IS NOT MORE THAN 20 FEET THICK. NOTIFY ENGINEER IF THE SOFT SOIL LAYER IS MORE THAN 20 FEET THICK. THE PILES SHALL BE DRIVEN A MINIMUM OF 5 FEET INTO THE DENSE BEARING SOIL. THE DEPTH OF EMBEDMENT INTO THE DENSE BEARING SOIL SHOULD BE MONITORED AND RECORDED TO CONFIRM THAT THE MINIMUM EMBEDMENT IS ACHIEVED. IF THE MINIMUM EMBEDMENT INTO THE DENSE BEARING SOIL IS NOT REACHED, THEN OVERDRIVING OF THE PILES WILL BE NECESSARY.

STRUCTURAL & MISCELLANEOUS STEEL:

WIDE-FLANGE BEAMS ASTM A992 F_y = 50,000 PSI. CHANNELS, PLATES AND ANGLES ASTM A36 F_y = 36,000 PSI. ALL FABRICATION & ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AISC "STEEL CONSTRUCTION MANUAL."

ALL STEEL SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR ALL SCRAPES, DINGS, WELDS, ETC., IN ACCORDANCE WITH ASTM A780.

STEEL BOLTS:

ALL BOLTS AND THREADED RODS SHALL BE HIGH STRENGTH HOT-DIPPED GALVANIZED UNLESS NOTED. HIGH STRENGTH BOLTS SHALL BE A325-N HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153-CLASS C UNLESS NOTED OTHERWISE. GALVANIZED BOLTS SHOULD BE INSTALLED IN STANDARD SIZE HOLES UNLESS NOTED OTHERWISE.

SCREWS:

SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.6.1. SCREW DIAMETERS SHALL BE AS FOLLOWS:

No. 8 0.164" DIAMETER

REFERENCE DRAWINGS FOR MINIMUM SCREW LENGTHS. ALL SCREWS EXPOSED TO WEATHER OR IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153-CLASS D.

LAG SCREWS:

LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1.

REFERENCE DRAWINGS FOR MINIMUM SCREW DIAMETER AND LENGTHS. ALL LAG SCREWS EXPOSED TO WEATHER OR IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153-CLASS C.

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REVISED
08/04/2021

PER MI-SHORELINE
PLANNER REVIEW LETTER.

REFERENCE #:		
APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 14	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020		DWG#: 19-31042-A7-14

NAILS:

NAILING SHALL BE IN ACCORDANCE W/ FASTENING SCHEDULE TABLES 11-13 IN ICC-ES EVALUATION REPORT ESR-1539 PREPARED FOR THE INTERNATIONAL STAPLE, NAIL AND TOOL ASSOCIATION (ISANTA). ALL NAILS SHALL HAVE STANDARD SIZE ROUND HEADS UNLESS NOTED OTHERWISE ON THE DRAWINGS. NAIL LENGTHS AND DIAMETERS SHALL BE AS FOLLOWS:

10d 3" x 0.131" DIA.
10d COMMON 3" x 0.148" DIA.
16d COMMON 3 1/2" x .162" DIA

ALL NAILS EXPOSED TO WEATHER OR IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153-CLASS D.

LIGHT GAUGE FRAMING CONNECTORS:

NOTATIONS ON DRAWINGS RELATING TO FRAMING CLIPS, JOIST HANGERS AND OTHER CONNECTING DEVICES REFER TO CATALOG NUMBERS OF CONNECTORS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, DUBLIN, CALIFORNIA. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL LOAD CAPACITIES. CONNECTORS SHALL BE FASTENED TO THE FRAMING MEMBERS USING THE NUMBER AND TYPE OF FASTENERS CALLED FOR BY MANUFACTURER.

HANGERS AND CLIPS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE ZMAX/HDG GALVANIZED CONNECTORS. ALL HANGER FASTENERS USED WITH ZMAX/HDG GALVANIZED CONNECTORS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153-CLASS D OR SDS SCREWS WITH PROPRIETARY COATING.

STRUCTURAL LUMBER GRADES AND SHEATHING RATINGS:

ALL LUMBER SHALL BE GRADED IN ACCORDANCE WITH CURRENT WPA STANDARD GRADING RULES FOR WESTERN LUMBER. USE THE FOLLOWING SPECIES AND MINIMUM GRADE:

2x STRINGERS D.F.-L #2 Fb=900 PSI
4x STRINGERS D.F.-L #1 Fb=1,000 PSI

WOOD FOR OVER-WATER AND IN-WATER:

ALL WOOD PARTIALLY OR FULLY SUBMERGED IN WATER SHALL BE TREATED WITH AMMONIACAL COPPER ZINC ARSENATE (ACZA), EXCEPT WHEN WOOD IS IN STATE-OWNED AQUATIC LANDS (SOAL) MANAGED BY THE DEPARTMENT OF NATURAL RESOURCES (DNR) WHERE TREATMENT TO WOOD IN WATER/IN SPLASH ZONE IS PROHIBITED. ALL WOOD INSTALLED ABOVE WATER (WHERE CLEARLY OUT OF THE SPLASH ZONE) SHALL BE TREATED WITH AMMONIACAL COPPER ZINC ARSENATE (ACZA). WOOD TREATED WITH PENTACHLOROPHENOL, CREOSOTE, CHROMATE COPPER ARSENATE (CCA), OR COMPARABLY TOXIC COMPOUNDS IS PROHIBITED FOR PIERS, DOCKS, AND PILING.

WOOD SHALL BE TREATED IN ACCORDANCE WITH AWPA STANDARD U1. USE THE FOLLOWING MINIMUM AWPA USE CATEGORIES:

WOOD OVER WATER: UC4B
WOOD IN WATER: UC4C

TREAT CUT ENDS OF AND HOLES IN TREATED WOOD WITH SAFECOAT'S DYNOSEAL OR SEAL-IT-GREEN XTREME PLANT BASED STAIN.

JET SKI LIFT PIER FRAMING REQUIREMENTS

JET SKI LIFTS MANUFACTURED BY 'BOAT LIFT INTERNATIONALS' WILL BE USED. ACCORDING TO THE STRUCTURAL CALCULATIONS, THE P.T. 4X8 EDGE STRINGER IS SUFFICIENT TO SUPPORT THE UPPER MOUNTING BRACKET OF JET SKI LIFT AT THE LOCATION SHOWN ON THE 'PROPOSED DETAIL VIEW' ON SHEET 5 (DATE 2-7-2020). IF MORE THAN ONE JET SKI LIFT IS INSTALLED, IT SHOULD BE LOCATED AT LEAST ONE BENT AWAY FROM THE FIRST LIFT ON THE SOUTH SIDE SO THAT IT IS SUPPORTED BY A SEPARATE STRINGER. LATERAL SUPPORT FOR THE BASE OF THE JET SKI WILL BE DESIGNED BY THE MANUFACTURER. THE ATTACHMENTS OF THE JET SKI LIFT TO THE PIER WILL BE DESIGNED BY THE MANUFACTURER. NOTIFY ENGINEER IF A DIFFERENT MANUFACTURER IS USED OR IF MORE THAN TWO JET SKI LIFTS ARE TO BE INSTALLED.



The engineering seal on these drawings represents the following limited scope of structural engineering design:

- Design of pier framing members: cap beams and joists.
- Analysis of the proposed pile splice and timber riser connections.
- Design of the Jet Ski lift attachments.
- Design of the steel piles supporting the moorage roof.

Design is in accordance with the 2015 International Building Code and 2015 International Existing Building Code. Our scope of work does not include analysis and design of the grating, bulkhead, connection to grade, moorage cover roof and/or as associated connections.

The site information, dimensions and plan layout, has been provided to us by Waterfront Construction, Inc.

PROJECT DESIGNED BY:
Waterfront Construction Inc.
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REVISED
08/04/2021

PER MI-SHORELINE PLANNER REVIEW LETTER.

REFERENCE #:		
APPLICANT: DOUGLAS ROSEN		
PROPOSED: PIER REPAIR		
SHEET: 15	OF: 15	NEAR/AT: MERCER ISLAND
DATE: 2-7-2020	DWG#: 19-31042-A7-15	