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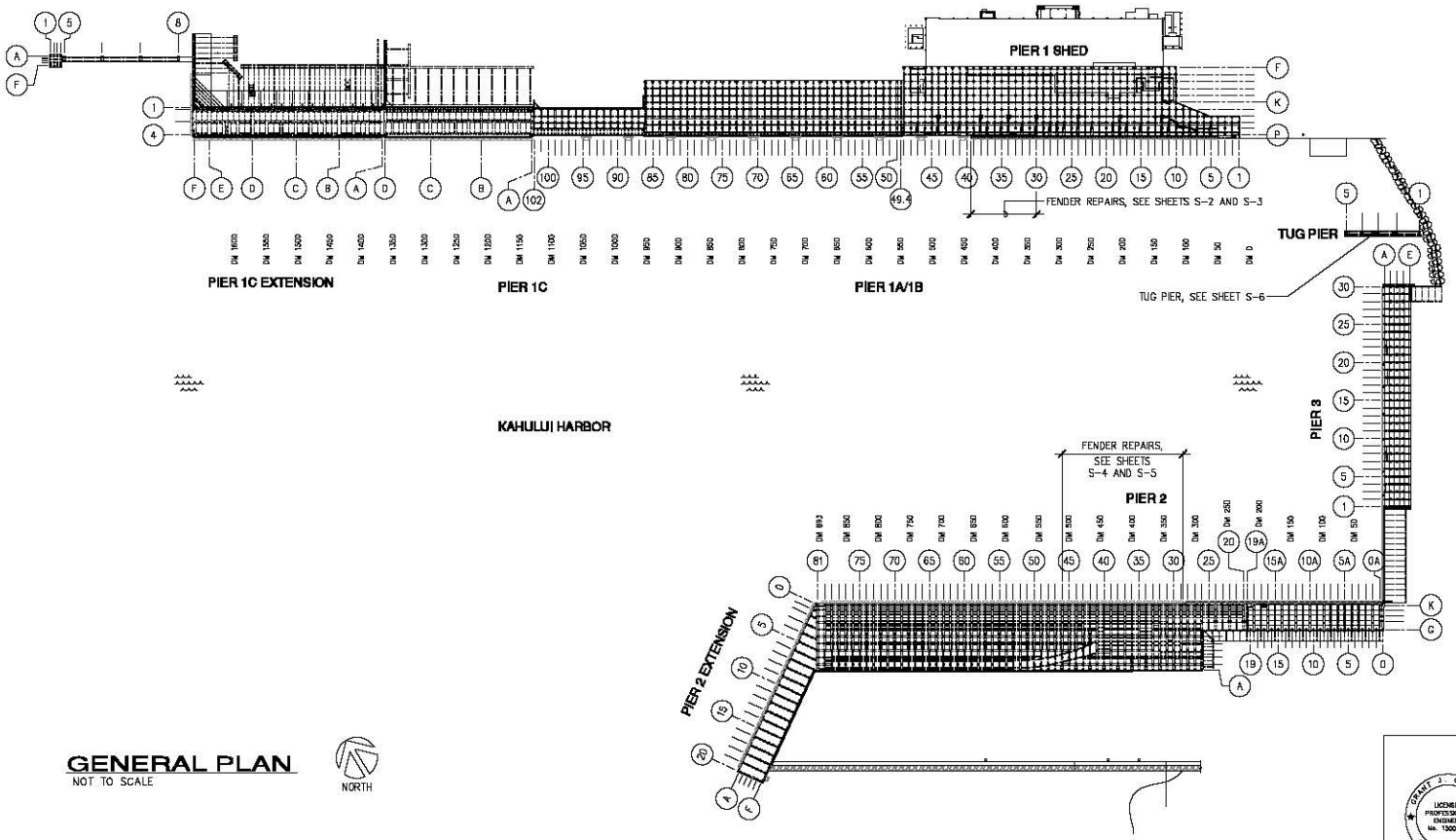


GENERAL PLAN

NOT TO SCALE

NORTH

1	5/23/23	ADDENDUM NO. 1	MKE	
REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
INDEX TO DRAWINGS AND GENERAL PLAN

GRANT J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
EXP. 4-30-24
MIKE ASSOCIATES LLC

DESIGNED BY: GO
DRAWN BY: DL
CHECKED BY: GM
DATE: 04/2023
SCALE: AS SHOWN

JOB NUMBER
S30215

SHEET
T-2
2 OF 13 SHTS.

STRUCTURAL NOTES:

GENERAL:

1. WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE HAWAII STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2005, FOR THE STATE OF HAWAII, UNLESS OTHERWISE INDICATED. HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
2. THE CONTRACTOR SHALL COMPARE PLANS, SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE HARBORS DIVISION CONSTRUCTION ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
3. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE HARBORS DIVISION CONSTRUCTION ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
4. CONTRACTOR SHALL RESOLVE ANY DISCREPANCIES AND QUESTIONS PRIOR TO THE START OF WORK. NO EXTRA PAYMENT SHALL BE ALLOWED ON ACCOUNT OF WORK MADE NECESSARY BY CONTRACTORS FAILURE TO VISIT THE SITE AND/OR FAILURE TO RESOLVE DISCREPANCIES AND QUESTIONS.
5. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND STRUCTURES IN AND ADJACENT TO THE PROJECT SITE. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE HARBORS DIVISION CONSTRUCTION ENGINEER AND PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
7. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER CONTRACTORS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL ALSO COORDINATE WITH THE HARBORS DIVISION MAUI DISTRICT MANAGER AND CONSTRUCTION ENGINEER FOR AN APPROVED STAGING AND STORAGE AREA AND FOR RESTRICTIONS OF HARBORS OPERATIONS OVER REPAIR AREAS.
8. THE CONTRACTOR SHALL REMOVE ALL DEBRIS RESULTING FROM HIS/HER WORK AS REQUIRED FOR PUBLIC HEALTH AND SAFETY AND TO THE SATISFACTION OF THE HARBORS DIVISION CONSTRUCTION ENGINEER. SHOULD THE STATE PERFORM ANY OF THE ABOVE WORK DUE TO NON-PERFORMANCE BY THE CONTRACTOR, THE CONTRACTOR AGREES TO REIMBURSE THE STATE FOR ALL COSTS INCURRED.
9. HARBOR OPERATIONS TAKE PRECEDENCE OVER CONSTRUCTION ACTIVITY. THE CONTRACTOR MUST WORK AROUND HARBOR OPERATIONS SO THAT THE PIERS WILL REMAIN OPERATIONAL. WEEKEND WORK MAY BE REQUIRED AND SHALL BE COORDINATED WITH THE HARBORS DIVISION CONSTRUCTION ENGINEER AND TENANTS IN ADVANCE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
11. ALL WORK SPECIFIED IN THE CONTRACT BUT NOT LISTED SEPARATELY SHALL BE CONSIDERED INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.
12. NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. SHOULD THERE BE CONFLICTS BETWEEN THE REQUIREMENTS OF THE PLANS OR SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY.
13. THE CONTRACTOR SHALL COMPLY WITH THE CLEAN WATER ACT AND THE STATE HARBORS DIVISION STORMWATER MANAGEMENT PROGRAM. NO POLLUTANTS ARE ALLOWED TO BE DISCHARGED DIRECTLY OR INDIRECTLY THROUGH THE HARBORS SMALL MS4 OR OTHER POTENTIAL PATHWAY INTO HARBOR WATERS.
14. THE CONTRACTOR WILL BE RESPONSIBLE FOR REGULATORY FINES OR PENALTIES THAT MAY BE IMPOSED BY ENVIRONMENTAL REGULATORY AGENCIES (EPA AND/OR STATE DOH) IN THE EVENT OF VIOLATIONS.
15. THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC BEST MANAGEMENT PRACTICES (BMP) PLAN TO HARBORS DIVISION ENGINEER BRANCH PRIOR TO THE START OF ANY CONSTRUCTION WORK. THE SITE SPECIFIC BMP PLAN SHALL COMPLY WITH ENVIRONMENTAL PROTECTION AND TEMPORARY WATER POLLUTION, DUST, AND EROSION CONTROL ARTICLES IN THE SPECIFICATIONS AND PROPOSAL.
16. IN CASE OF SPILL, LEAK, OR OTHER RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL, THE CONTRACTOR SHALL NOTIFY APPROPRIATE FACILITY PERSONNEL, EMERGENCY RESPONSE AGENCIES, AND REGULATORY AGENCIES FOLLOWING NOTIFICATION PROCEDURES, AND SHALL NOTIFY THE HARBORS DIVISION CONSTRUCTION ENGINEER IMMEDIATELY (I.E. WITHIN 24 HOURS). SUCH CONTACT INFORMATION MUST BE IN LOCATIONS THAT ARE READILY ACCESSIBLE AND AVAILABLE.
17. TIDAL DATA MAY NOT REPRESENT CONDITIONS THAT OCCUR DURING CONSTRUCTION AND ACTUAL WATER LEVELS WILL VARY FROM LEVELS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN ESTIMATES OF WATER LEVELS WHICH MAY OCCUR DURING CONSTRUCTION. VARIATION FROM TIDAL LEVELS INDICATED OR CONTRACTOR'S ESTIMATION OF TIDAL LEVELS WILL NOT BE CONSIDERED AS A CLAIM FOR ADDITIONAL COMPENSATION OR DELAY OF WORK.

CONCRETE:

1. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318R-14 AND ACI 546R-14.
2. FORMED CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF f'c=5,000 PSI WITH SILICA FUME AND CORTEC MCI 2005 NS MIGRATING CORROSION INHIBITING ADMIXTURE, OR APPROVED EQUAL.
3. MAXIMUM AGGREGATE SIZE SHALL BE ⅜ INCHES AND SHALL BE COORDINATED WITH CONCRETE PREPARATION PROCEDURES FOR SPALL REPAIRS.
4. CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.
5. MAXIMUM WATER TO CEMENTITIOUS MATERIALS RATIO SHALL BE 0.40.
6. PATCHING COMPOUND FOR FORM AND POUR SPALL REPAIRS SHALL BE SIKACRETE 211 SCC PLUS BY SIKA, OR APPROVED EQUAL.
7. PATCHING COMPOUND FOR REPAIRING VERTICAL AND SOFFIT SPALLS IN LIFTS SHALL BE SIKAQUICK VOH WITH LATEX R BY SIKA, OR APPROVED EQUAL.
8. REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.

REINFORCING STEEL:

1. REINFORCING STEEL FOR WELD SPLICING SHALL BE ASTM A706 GRADE 60. WELDING ELECTRODES SHALL BE LOW HYDROGEN E70.
2. REINFORCING STEEL NOT TO BE WELD SPLICED SHALL BE ASTM A615, GRADE 60 OR ASTM A706 GRADE 60.
3. CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE 3 INCHES MINIMUM, UNLESS OTHERWISE NOTED.
4. BAR BENDS AND HOOKS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI 318.
5. REINFORCING STEEL SHALL BE SPLICED AS INDICATED ON PLANS. PROVIDE WELD SPLICE PER TYPICAL DETAILS, UNLESS OTHERWISE NOTED.
6. ANTI-CORROSION COATING WITH A MINIMUM 7 DAY OPEN TIME FOR REINFORCING STEEL SHALL BE ARMATEC 110 EPOCEM BY SIKA OR APPROVED EQUAL.
7. EPOXY FOR GROUTING OF DOWELS SHALL BE SET-3G BY SIMPSON STRONG-TIE, OR APPROVED EQUAL.
8. TIE WIRE SHALL BE PLASTIC-COATED, STAINLESS STEEL, OR MADE OF DIELECTRIC OR OTHER ACCEPTABLE MATERIAL. ALL LOOSE REINFORCING STEEL SHALL BE SECURED WITH TIES AT ALL INTERSECTIONS WITH ADJACENT REINFORCING STEEL.

FENDER SYSTEM:

1. THE EXISTING TIMBER IS ASSUMED TO BE TREATED WITH CREOSOTE. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS AND FOLLOW ALL GOVERNING LAWS WHEN HANDLING, REMOVING, AND DISPOSING OF THE EXISTING TIMBER.
2. TIRE FENDER HARDWARE INCLUDING SHACKLES, ANCHOR PINS, CHAINS, GROMMETS AND MISCELLANEOUS ITEMS EXCEPT COTTER PINS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A-123.
3. COTTER PINS SHALL BE STAINLESS STEEL..
4. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, FIFTEENTH EDITION. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED UNLESS OTHERWISE NOTED.
5. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
6. STEEL PIPES SHALL CONFORM TO ASTM A53, GRADE B.
7. TIRES SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE FREE OF RIPS, TEARS OR OTHER SIGNIFICANT DAMAGE TO THE SATISFACTION OF THE CONSTRUCTION ENGINEER.
8. LUMBERS FOR FENDER SYSTEM REPAIRS SHALL BE BAR AND FIBER REINFORCED MOLDED LUMBER AND HIGH-DENSITY PLASTIC SHEET MANUFACTURED BY TANGENT TECHNOLOGIES, LLC OR APPROVED EQUAL AS INDICATED ON THE PLANS.
9. ALL BOLTS, NUTS, NAILS AND MISCELLANEOUS CONNECTION HARDWARE FOR LUMBER SHALL BE TYPE 316 STAINLESS STEEL.

PREPARATION OF SUBSTRATE AND REINFORCING STEEL FOR SPALL REPAIRS:

1. SURFACE PREPARATION FOR SPALL REPAIRS SHALL FOLLOW THE INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI) GUIDELINE NO. 310.1R-2008.
2. BOTH SPALLS AND DELAMINATIONS ARE REFERRED TO ON THE DRAWINGS AS "SPALLS", AS THE REPAIR PROCEDURES ARE THE SAME FOR BOTH CONDITIONS.
3. THE CONTRACTOR SHALL SOUND ALL CONCRETE SURFACES TO IDENTIFY SPALLS AND DELAMINATIONS.
4. ANY ELEMENT BEING REPAIRED SHALL NOT BE SUBJECTED TO LIVE LOADS DURING THE PERIOD STARTING FROM THE REMOVAL OF EXISTING CONCRETE UNTIL THE REPAIR CONCRETE HAS OBTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.
5. PREPARATION OF SUBSTRATE AND REINFORCING STEEL FOR SPALL REPAIRS SHALL BE PERFORMED IN THE ORDER LISTED BELOW.
6. THE SPALLED AND DELAMINATED CONCRETE SHALL BE COMPLETELY REMOVED TO SOUND SUBSTRATE AND BEYOND THE EXTENT OF THE CORRODED REINFORCING. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO AVOID DAMAGING THE UNDERLYING SOUND CONCRETE.
7. THE SPALLED AND DELAMINATED EDGES SHALL BE SQUARED BY SAW-CUTTING AND CHIPPING THE CONCRETE AT THE PERIMETER BEYOND THE REMOVAL AREA AS NECESSARY TO ATTAIN A MINIMUM DEPTH OF ¾ INCH AND TO PREVENT FEATHER EDGE CONDITIONS. EXERCISE GREAT CARE TO AVOID CUTTING OR DAMAGING ANY EXISTING EMBEDDED STEEL REINFORCING. ANGLES BETWEEN ADJACENT SAW-CUTS AROUND THE PERIMETER SHALL NOT BE LESS THAN 90 DEGREES AND THE SHAPE OF EACH PATCH SHALL NOT BE IRREGULAR.
8. FOR ANY EXPOSED REINFORCEMENT WITHIN THE REPAIR AREA, ADDITIONAL CONCRETE SHALL BE REMOVED FOR A MINIMUM ¾ INCH CLEAR SPACE MEASURED RADIALLY AROUND THE BARS.
9. EXISTING CONCRETE SURFACES WITHIN THE REPAIR AREAS SHALL BE ROUGHENED TO ENSURE PROPER ADHESION WITH REPAIR CONCRETE.
10. ALL EXPOSED CONCRETE SURFACES AND REINFORCING BARS IN THE REPAIR AREA SHALL BE NEEDLE GUNNED TO REMOVE ALL SCALE, LOOSE RUST, DEBRIS AND DETERIORATED CONCRETE.
11. ANY REINFORCEMENT WHICH HAS LOST MORE THAN 20 PERCENT OF ITS CROSS-SECTIONAL AREA SHALL BE REPLACED AND CALLED TO THE ATTENTION OF THE HARBORS DIVISION CONSTRUCTION ENGINEER.
12. ALL WELDING SHALL CONFORM TO AWS D1.4.
13. ALL EXISTING BARS WITH CARBON EQUIVALENT (C.E.) ABOVE 0.55 PERCENT SHALL BE PREHEATED ACCORDING TO THE REQUIREMENTS SET FORTH IN AWS D.1. IF THE C.E. IS UNKNOWN, MAXIMUM PREHEAT REQUIREMENTS, FOR AN ASSUMED C.E. GREATER THAN 0.75 PERCENT SHALL BE USED.
14. THE PATCH AREA SHALL BE CLEANED OF ALL DUST AND DEBRIS JUST PRIOR TO PATCHING WITH HIGH PRESSURE, OIL-FREE COMPRESSED AIR WITH APPROPRIATE PPE'S AND CONTAINMENT.

APPLICATION OF SPALL REPAIR MATERIALS:

1. ALL EXPOSED STEEL IN THE REPAIR AREA SHALL BE LIBERALLY COATED WITH ANTI-CORROSION COATING PER MANUFACTURER'S RECOMMENDATIONS.
2. PRIOR TO PLACEMENT OF REPAIR CONCRETE, ALL CONCRETE REPAIR SURFACES SHALL BE WASHED WITH CLEAN POTABLE WATER AND THE EXPOSED CONCRETE SURFACE SHALL BE SATURATED WITH NO WATER ACCUMULATION ON THE SURFACE.
3. ALL VERTICAL AND OVERHEAD REPAIRS GREATER THAN 10 SQUARE FEET SHALL BE FORMED.
4. THE CONTRACTOR SHALL NOT SECURE FORMS BY RAMSETTING. ALL HOLES AND SPALLS CAUSED BY TEMPORARY ATTACHMENTS SHALL BE PATCHED. ALL INSERTS SHALL BE REMOVED OR SHALL BE STAINLESS STEEL WITH MINIMUM ¾ INCH COVER AFTER FORM REMOVAL.
5. PATCHING COMPOUND MAY BE USED INSTEAD OF FORMED CONCRETE FOR VERTICAL AND OVERHEAD REPAIRS LESS THAN OR EQUAL TO 10 SQUARE FEET IN AREA. A SLURRY COAT OF THE COMPOUND SHALL BE USED TO PRIME THE SUBSTRATE AND THE MATERIAL SHALL BE APPLIED IN LIFTS PER MANUFACTURER'S RECOMMENDATIONS.
6. SNAP TIES AND OTHER NON-REMOVABLE INSERTS SHALL BE PLASTIC OR STAINLESS STEEL.
7. WITH THE EXCEPTION OF THE TOP SURFACE OF THE PIER AND OUTBOARD FACE OF EXTERIOR BEAMS, ALL FORMED CONCRETE REPAIRS SHALL BE BUILT UP TO OR BEYOND THE ORIGINAL SURFACE AND SHALL MAINTAIN A 3 INCH MINIMUM CLEAR COVER FOR REINFORCING.
8. CONCRETE REPAIRS AT THE TOP SURFACE OF THE PIER AND OUTBOARD FACE OF EXTERIOR BEAMS SHALL BE BUILT UP TO THE ORIGINAL CONCRETE SURFACE.
9. CONCRETE REPAIRS SHALL MATCH AND MAINTAIN EXISTING CHAMFER EDGES AND EXPANSION JOINTS. CONTRACTOR SHALL INSTALL JOINT FILLER TO MAINTAIN JOINTS.
10. REPAIR CONCRETE SHALL BE VIBRATED, RODDED OR TAMPED DURING PLACEMENT TO CONSOLIDATE THE POUR AND FILL ALL CORNERS OF THE PATCH OR FORM AND BENEATH THE REINFORCING.
11. THERE SHALL BE NO COLD JOINTS IN THE FIELD OF THE REPAIR.
12. THE REPAIRED SURFACE FINISH SHALL MATCH THE ORIGINAL SURFACE FINISH.
13. VOID SPACES BEYOND THE EDGE OF THE FORM SHALL BE DRY PACKED IN LIFTS WITH PATCHING COMPOUND.
14. FORMWORK FOR CONCRETE REPAIRS ON THE PIER SUBSTRUCTURE SHALL NOT BE REMOVED FOR A MINIMUM OF 24 HOURS AND UNTIL CONCRETE HAS OBTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.
15. CONCRETE REPAIRS ON THE UNDERSIDE OF THE PIER SHALL BE CURED EITHER BY LEAVING FORMS IN PLACE A MINIMUM OF 7 DAYS OR COVERING THE SURFACE WITH A CURING COMPOUND APPROVED BY THE HARBORS DIVISION CONSTRUCTION ENGINEER.

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	5/23/23	ADDENDUM NO. 1	MKE	

GRANT J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
EXP. 4-30-24
MKE ASSOCIATES LLC

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

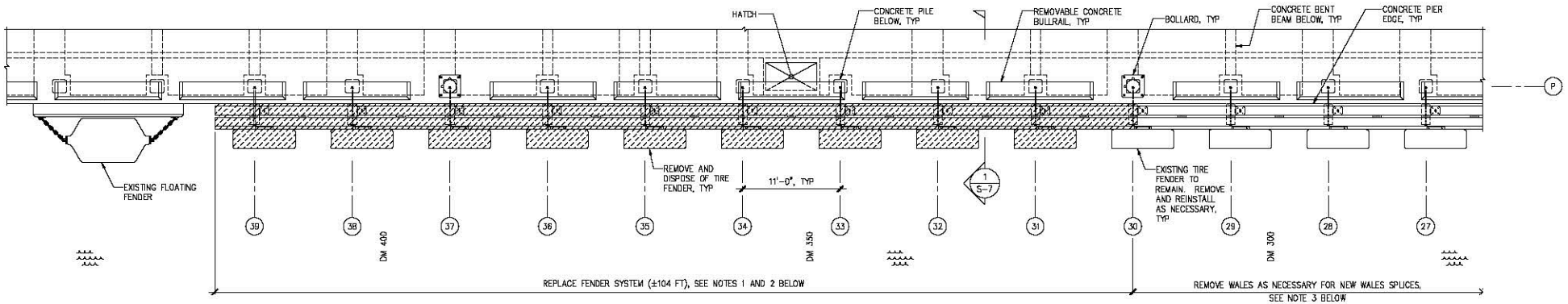
JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
STRUCTURAL NOTES

DESIGNED BY: GO
DRAWN BY: DL
CHECKED BY: GM
DATE: 04/2023
SCALE: AS SHOWN

JOB NUMBER
S30215

SHEET
S-1
3 OF 13 SHTS.

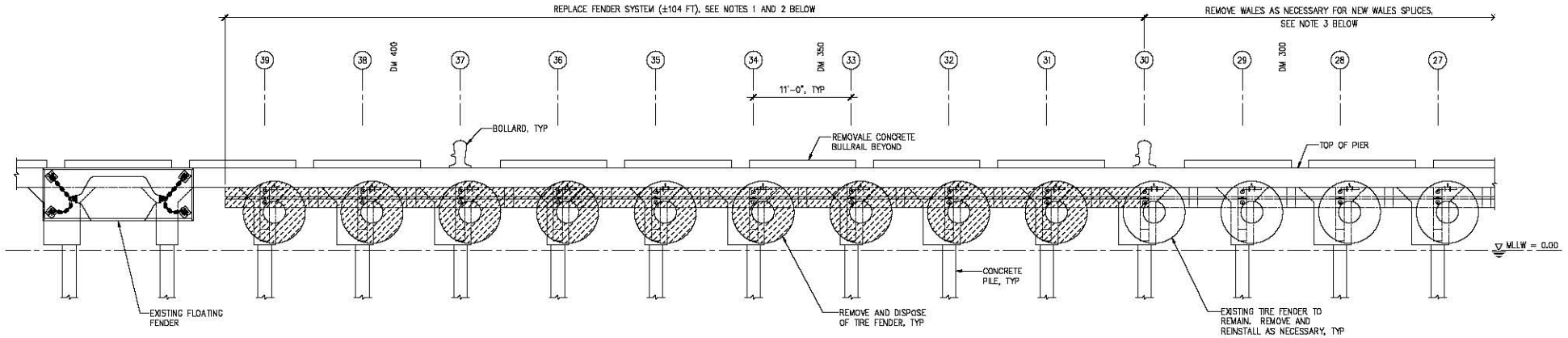


KAHULUI HARBOR

EXISTING PARTIAL PIER 1 PLAN

SCALE: 3/16" = 1'-0"

NORTH



EXISTING PARTIAL PIER 1 ELEVATION

SCALE: 3/16" = 1'-0"

NOTES:

1. REMOVE AND DISPOSE OF ALL TIMBER MEMBERS INCLUDING WALES, CHAFING STRIPS, RUBBING BLOCKS AND BLOCKING.
2. REMOVE AND DISPOSE OF ALL FENDER HARDWARE INCLUDING CHAINS, SHACKLES, EYE BOLTS UNLESS NOTED OTHERWISE.
3. WALE SPLICES ARE STAGGERED ALONG THE LENGTH OF THE PIER. DEMOLISH WALES SHOWN ON SHEET S-3 BEYOND BENT 30 TO APPROXIMATE NEW SPLICE LOCATIONS.
4. CONTRACTOR SHALL FIELD VERIFY WALE LENGTHS AND EXISTING DAMAGE PRIOR TO ORDERING MATERIALS.
5. FENDER CHAINS AND SHACKLES NOT SHOWN FOR CLARITY.

GRANT J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

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EXP. 4-30-24
MIKE ASSOCIATES LLC

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
EXISTING PARTIAL PIER 1 PLAN AND ELEVATION

DESIGNED BY: GO
DRAWN BY: DL
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DATE: 04/2023
SCALE: AS SHOWN

JOB NUMBER
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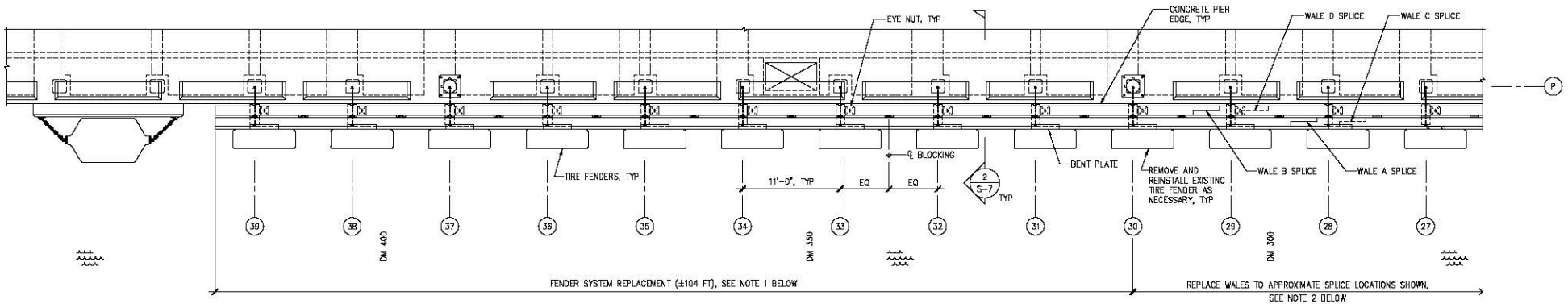
SHEET
S-2
4 OF 13 SHTS.

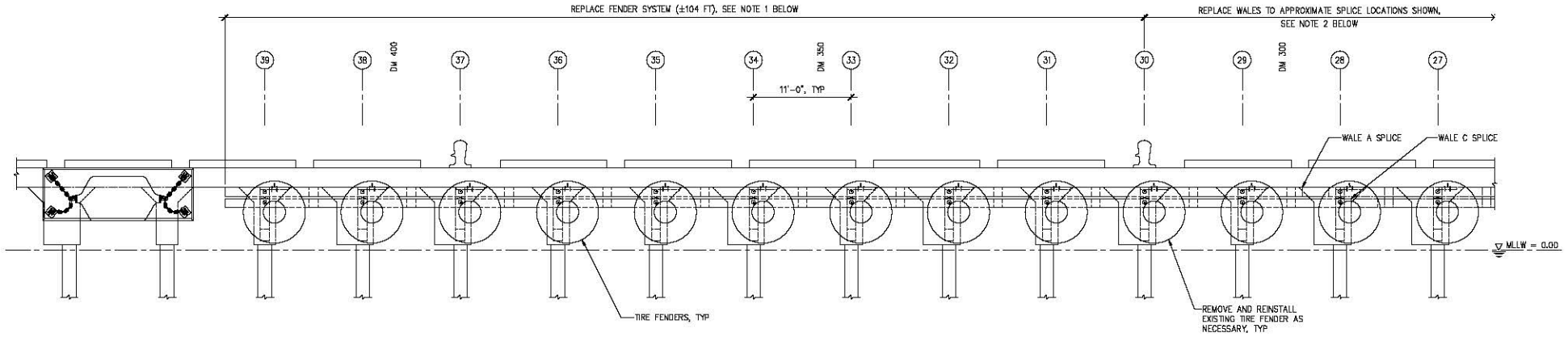


KAHULUI HARBOR

PARTIAL PIER 1 REPAIR PLAN

SCALE: 3/16" = 1'-0"

NORTH



PARTIAL PIER 1 REPAIR ELEVATION

SCALE: 3/16" = 1'-0"

NOTES:

1. FENDER REPLACEMENT SHALL INCLUDE REPLACING ALL TIMBER MEMBERS AND HARDWARE. TIMBER MEMBERS INCLUDING WALES, CHAFING STRIPS, RUBBING BLOCKS AND BLOCKING. HARDWARE SHALL INCLUDE CHAINS, SHACKLES, EYE BOLTS UNLESS NOTED OTHERWISE.
2. WALES SHALL BE REPLACED TO APPROXIMATE SPLICE LOCATIONS SHOWN. CONTRACTOR TO FIELD VERIFY SPLICE LOCATIONS. MINIMUM EXISTING AND NEW WALE LENGTHS SHALL BE 16'-0" AND SPAN AT LEAST 1 BAY. CONTRACTOR SHALL STAGGER SPLICES SUCH THAT NO MORE THAN ONE TOP AND ONE BOTTOM WALE SPLICE ARE LOCATED IN THE SAME BAY.
3. FENDER CHAINS, GROMMETS AND SHACKLES NOT SHOWN FOR CLARITY.

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	5/23/23	ADDENDUM NO. 1	MKE	

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
PARTIAL PIER 1 REPAIR PLAN AND ELEVATION

DESIGNED BY: GO
DRAWN BY: DL
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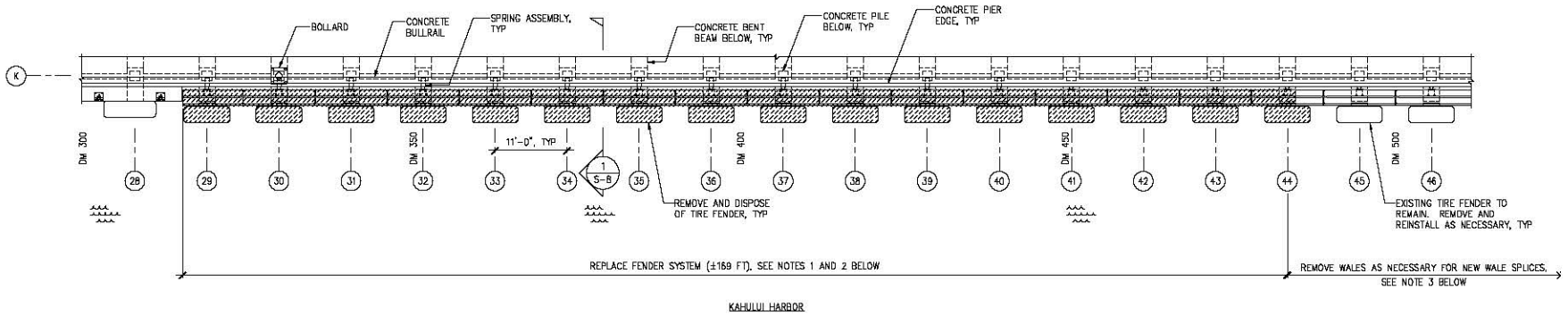
SCALE: AS SHOWN

JOB NUMBER
S30215

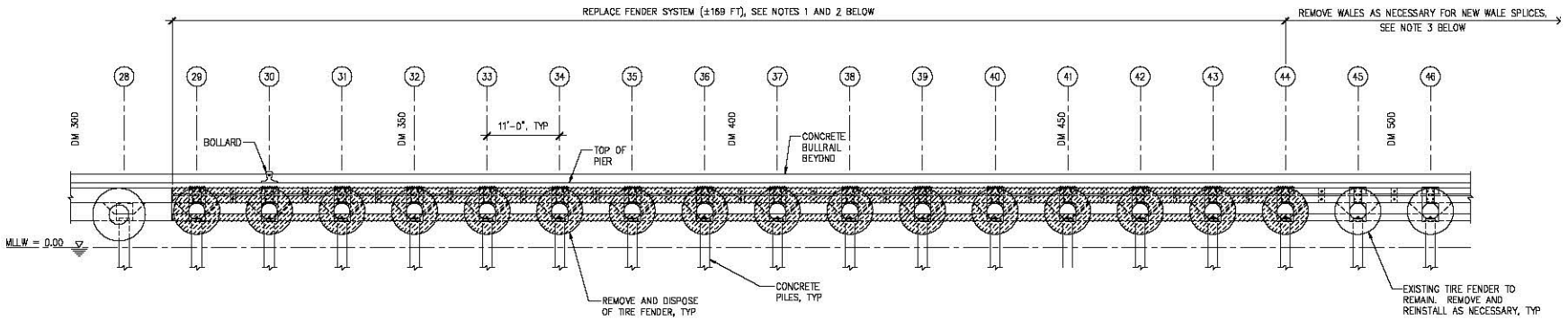
SHEET
S-3
5 OF 13 SHTS.



EXISTING PARTIAL PIER 2 PLAN

SCALE: 1/8" = 1'-0"

NORTH



EXISTING PARTIAL PIER 2 ELEVATION

SCALE: 1/8" = 1'-0"

NOTES:

1. REMOVE AND DISPOSE OF ALL TIMBER MEMBERS INCLUDING WALES, CHAFING STRIPS, RUBBING BLOCKS AND BLOCKING.
2. REMOVE AND DISPOSE OF ALL FENDER HARDWARE INCLUDING CHAINS, SHACKLES, EYE BOLTS UNLESS NOTED OTHERWISE.
3. WALE SPLICES ARE STAGGERED ALONG THE LENGTH OF THE PIER. DEMOLISH WALES SHOWN ON SHEET S-5 BEYOND BENT 44 TO APPROXIMATE NEW SPLICE LOCATIONS.
4. CONTRACTOR SHALL FIELD VERIFY WALE LENGTHS AND EXISTING DAMAGE PRIOR TO ORDERING MATERIALS.
5. FENDER CHAINS AND SHACKLES NOT SHOWN FOR CLARITY.

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1	5/23/23	ADDENDUM NO. 1	MKE	

LICENSED PROFESSIONAL ENGINEER No. 13001-S HAWAII U.S.A.

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EXP. 4-30-24
MIKE ASSOCIATES LLC

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

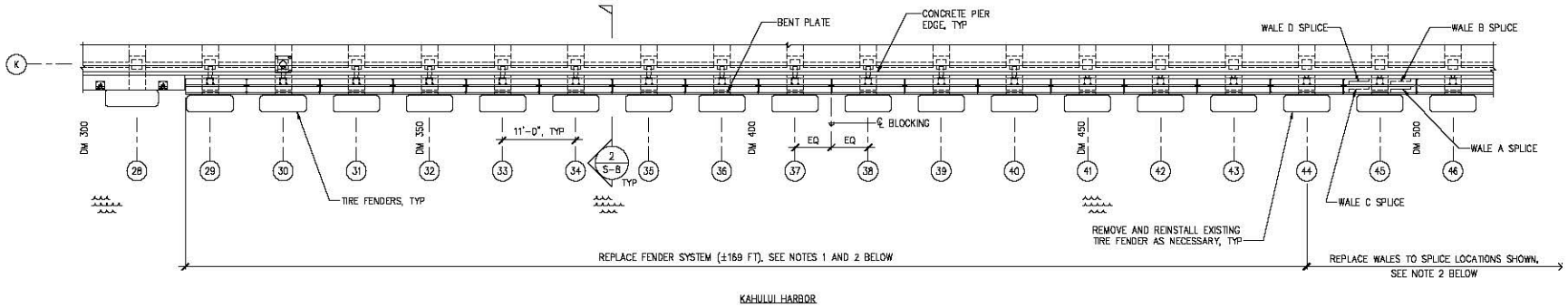
SHEET TITLE
EXISTING PARTIAL PIER 2 PLAN AND ELEVATION

DESIGNED BY:	GO
DRAWN BY:	DL
CHECKED BY:	GM
DATE:	04/2023
SCALE:	AS SHOWN

JOB NUMBER S30215

SHEET S-4

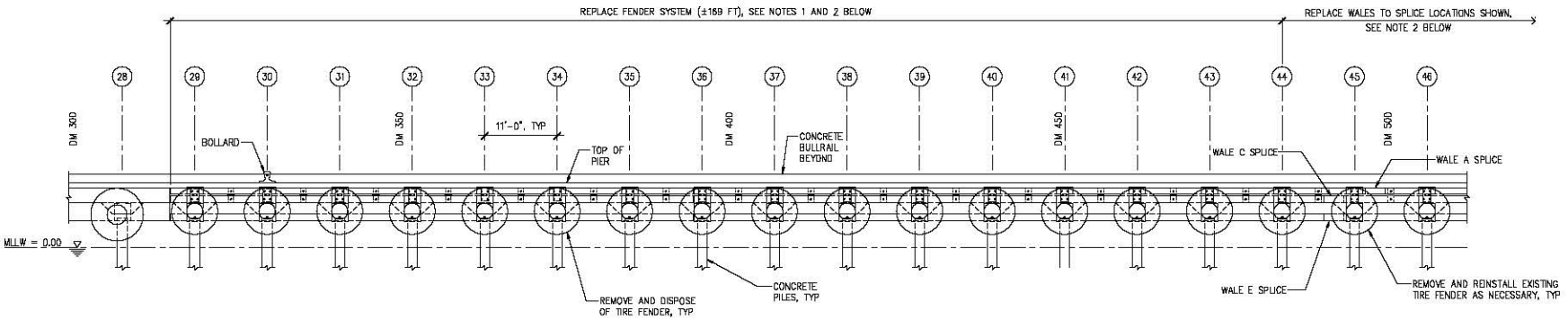
6 OF 13 SHTS.



PARTIAL PIER 2 REPAIR PLAN

SCALE: 3/16" = 1'-0"

NORTH



PARTIAL PIER 2 REPAIR ELEVATION

SCALE: 3/16" = 1'-0"

NOTES:

1. FENDER REPLACEMENT SHALL INCLUDE REPLACING ALL TIMBER MEMBERS AND HARDWARE. TIMBER MEMBERS INCLUDING WALES, CHAFING STRIPS, RUBBING BLOCKS AND BLOCKING. HARDWARE SHALL INCLUDE CHAINS, SHACKLES, EYE BOLTS UNLESS NOTED OTHERWISE.
2. WALES SHALL BE REPLACED TO APPROXIMATE SPLICE LOCATIONS SHOWN. CONTRACTOR TO FIELD VERIFY SPLICE LOCATIONS. MINIMUM EXISTING AND NEW WALE LENGTHS SHALL BE 16'-0" AND SPAN AT LEAST 1 BAY. CONTRACTOR SHALL STAGGER SPLICES SUCH THAT NO MORE THAN ONE TOP AND ONE BOTTOM WALE SPLICE ARE LOCATED IN THE SAME BAY.
3. FENDER CHAINS, GROMMETS AND SHACKLES NOT SHOWN FOR CLARITY.

GRANT J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
EXP. 4-30-24
MIKE ASSOCIATES LLC

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	5/23/23	ADDENDUM NO. 1	MIKE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

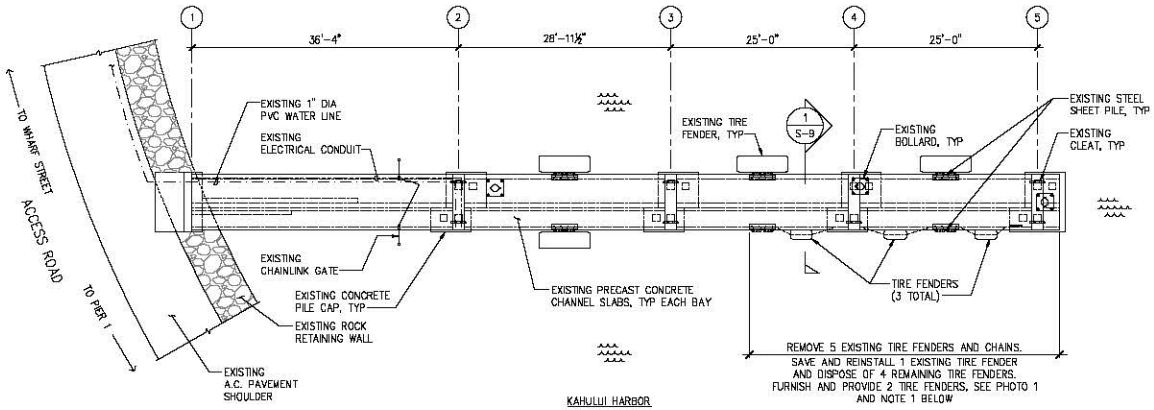
JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
PARTIAL PIER 2 REPAIR PLAN AND ELEVATION

DESIGNED BY: GO
DRAWN BY: DL
CHECKED BY: GM
DATE: 04/2023
SCALE: AS SHOWN

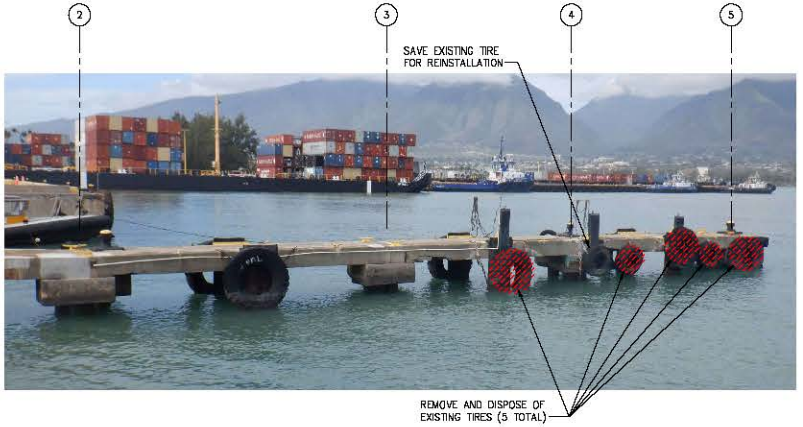
JOB NUMBER
S30215

SHEET
S-5
7 OF 13 SHTS.

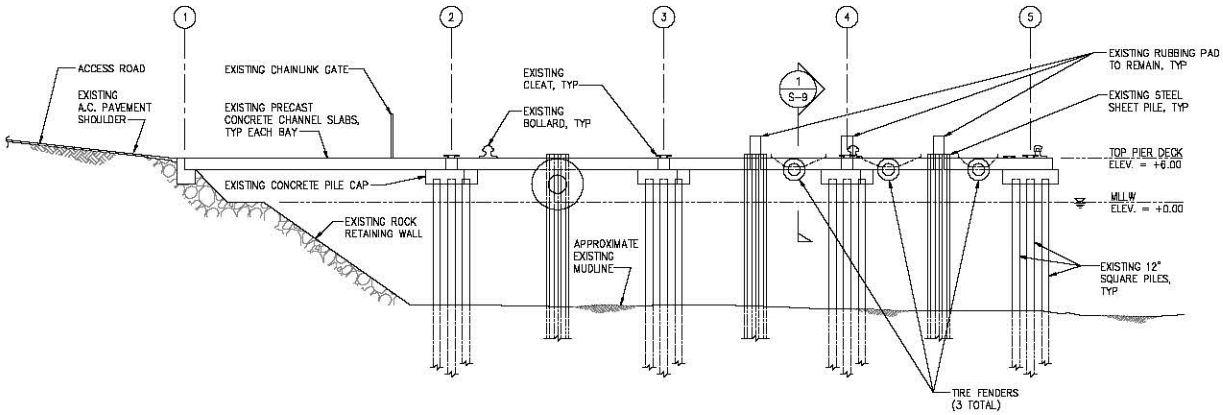


PLAN
SCALE: 1/8" = 1'-0"

NORTH



1 PHOTO



ELEVATION
SCALE: 1/8" = 1'-0"

NOTE:

1. FURNISH CHAINS AND SHACKLES TO HANG TIRE FENDERS FROM EXISTING EYE BOLTS ON TOP OF PIER DECK.

REVISION	DATE	DESCRIPTION	BY	APPROVED
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LICENSED PROFESSIONAL ENGINEER No. 13001-S HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

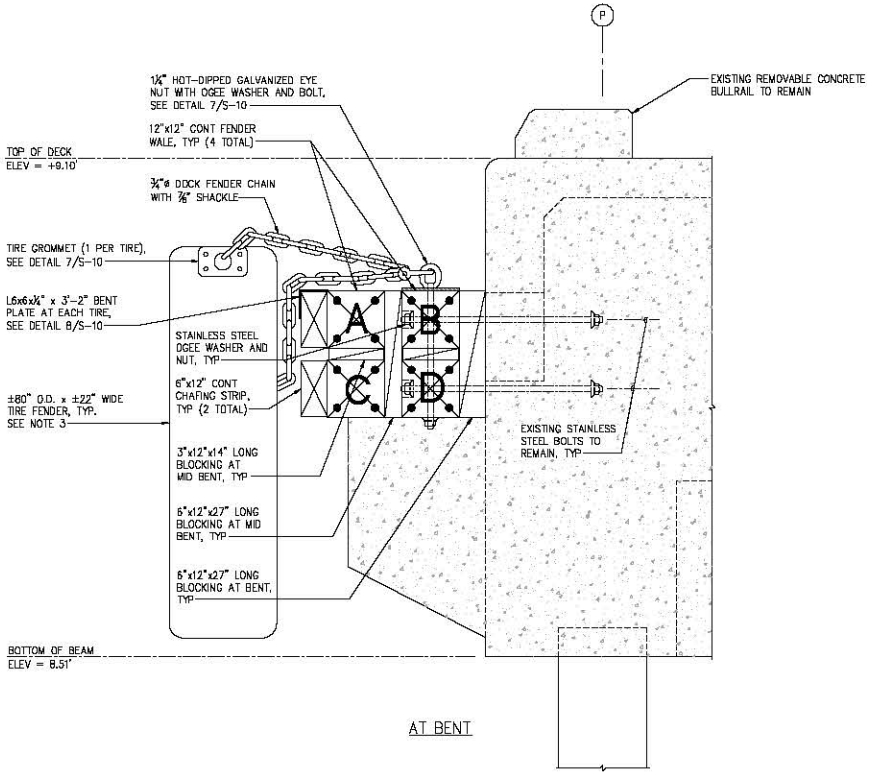
JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
TUG PIER PLAN AND ELEVATION

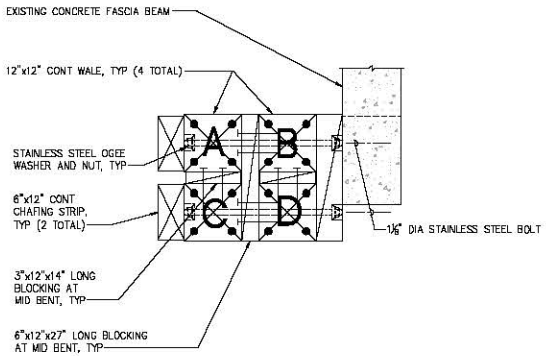
DESIGNED BY: GO
DRAWN BY: DL
CHECKED BY: GM
DATE: 04/2023
SCALE: AS SHOWN

JOB NUMBER
S30215

SHEET
S-6
8 OF 13 SHTS.



AT BENT

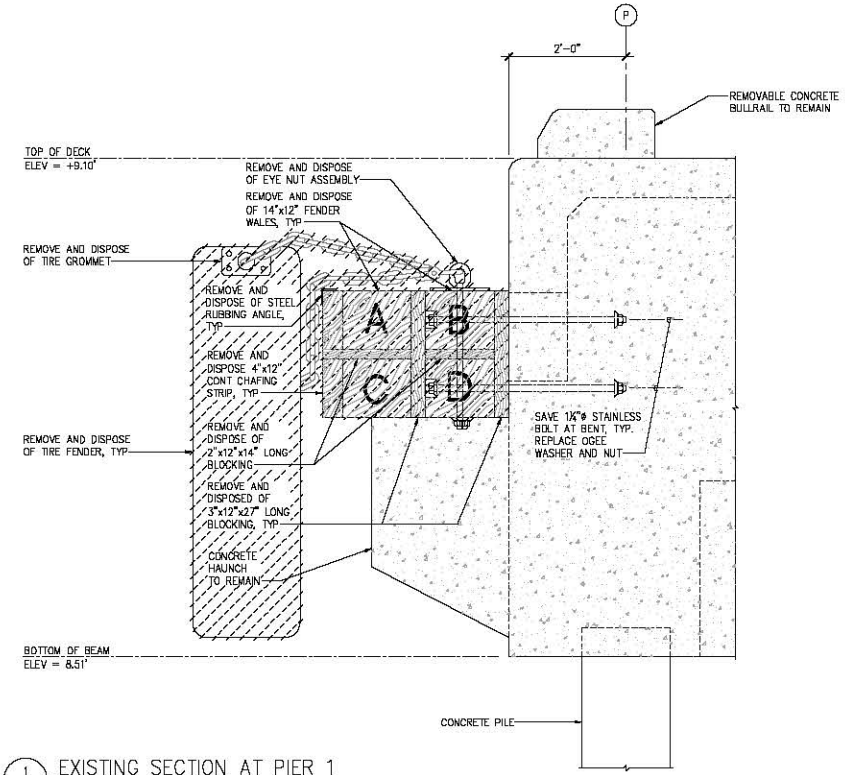


AT MID BENT

NOTES:

1. 12x12 WALES SHALL BE BAR REINFORCED MOLDED LUMBER. ALL OTHER MEMBERS SHALL BE FIBER REINFORCED MOLDED LUMBER.
2. NAILING FOR BLOCKING SHALL BE ½" DIA x 8" LONG STAINLESS STEEL SCREWS WITH COUNTERSUNK HEADS AT 12" SPACING.
3. EXISTING TIRE FENDERS SHALL MAX EXISTING TIRE FENDERS.

2 / S-7 REPAIR SECTION AT PIER 1
SCALE: 1" = 1'-0"



1 / S-7 EXISTING SECTION AT PIER 1
SCALE: 1" = 1'-0"

1	5/23/23	ADDENDUM NO. 1	MIKE	
REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
PIER 1 SECTIONS

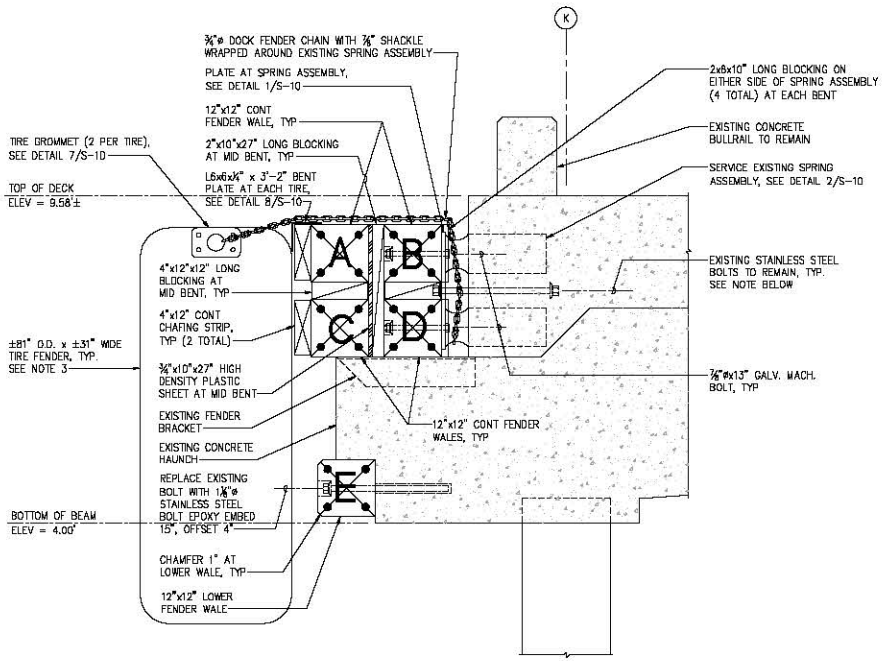
DRANEY J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
EXP. 4-30-24
MIKE ASSOCIATES LLC

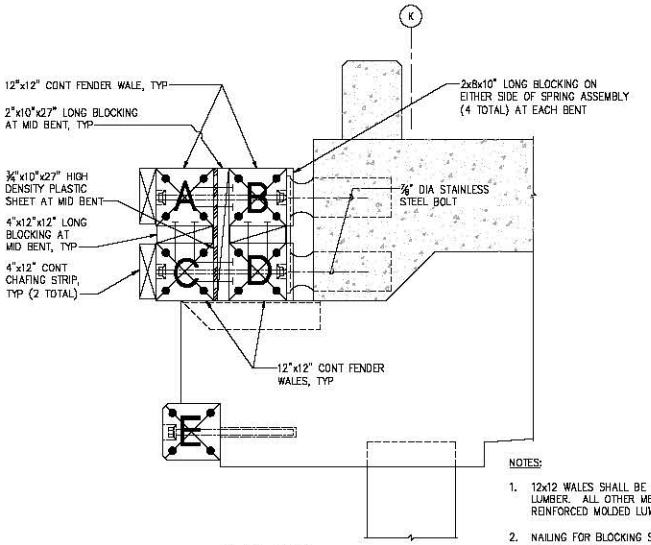
DESIGNED BY:	GO
DRAWN BY:	DL
CHECKED BY:	GM
DATE:	04/2023
SCALE:	AS SHOWN

JOB NUMBER S30215

SHEET S-7
9 OF 13 SHTS.



AT BENT

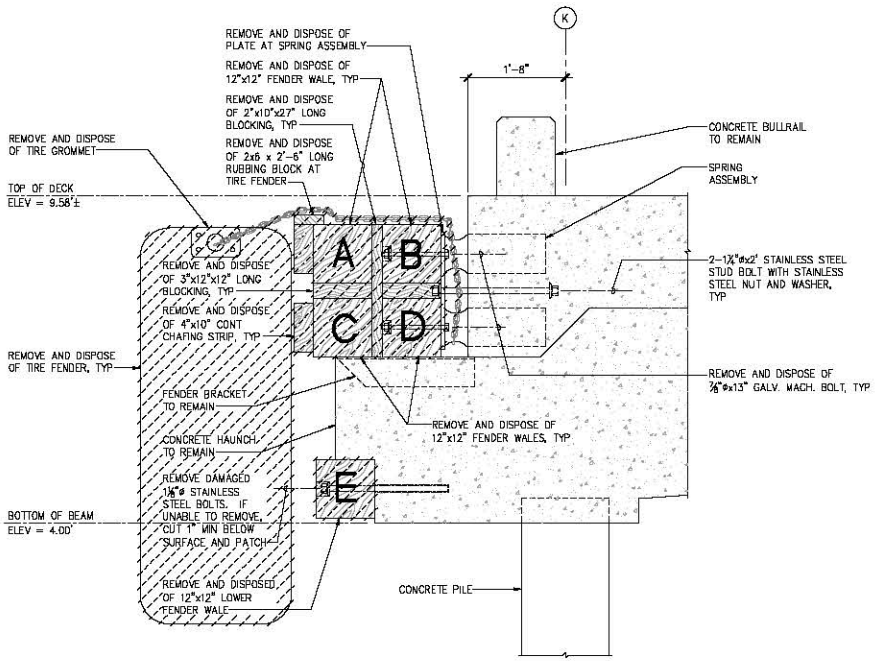


AT MID BENT

2 S-8 REPAIR SECTION AT PIER 2
SCALE: 1" = 1'-0"

NOTES:

1. 12x12 WALES SHALL BE BAR REINFORCED MOLDED LUMBER. ALL OTHER MEMBERS SHALL BE FIBER REINFORCED MOLDED LUMBER.
2. NAILING FOR BLOCKING SHALL BE ½" DIA x 8" LONG STAINLESS STEEL SCREWS WITH COUNTERSUNK HEADS AT 12" SPACING.
3. EXISTING TIRE FENDERS SHALL MAX EXISTING TIRE FENDERS.



NOTE:

REMOVE WALES, CHAFING STRIPS, RUBBING BLOCKS, BLOCKING, PLATES AND MISCELLANEOUS ITEMS AS SHOWN.

1 S-8 EXISTING SECTION AT PIER 2
SCALE: 1" = 1'-0"

REVISION	DATE	DESCRIPTION	BY	APPROVED
1	5/23/23	ADDENDUM NO. 1	MKE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
PIER 2 SECTIONS

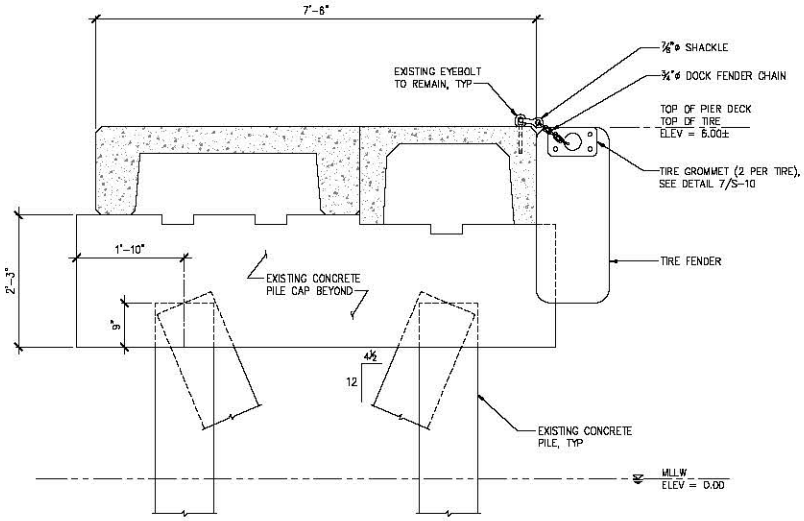
DRAKE J. OKUMURA
LICENSED PROFESSIONAL ENGINEER
No. 13001-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
EXP. 4-30-24
MIKE ASSOCIATES LLC

DESIGNED BY: GO
DRAWN BY: DL
CHECKED BY: GM
DATE: 04/2023
SCALE: AS SHOWN

JOB NUMBER
S30215

SHEET
S-8
10 OF 13 SHTS.



1 / S-9 EXISTING SECTION AT TUG PIER
SCALE: 1" = 1'-0"

1	5/23/23	ADDENDUM NO. 1	MIKE	
REVISION	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
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SHEET TITLE
TUG PIER SECTION

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MIKE ASSOCIATES LLC

DESIGNED BY: GO
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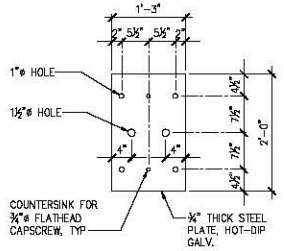
JOB NUMBER
S30215

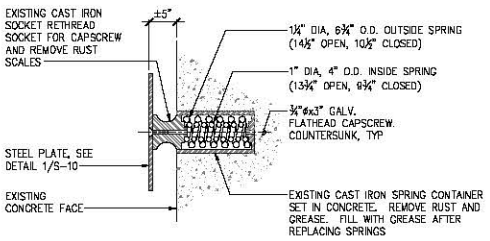
SHEET
S-9
11 OF 13 SHTS



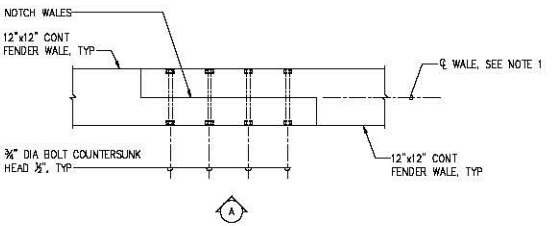
1 S-10 STEEL PLATE DETAIL
SCALE: 1" = 1'-0"

NOTES:

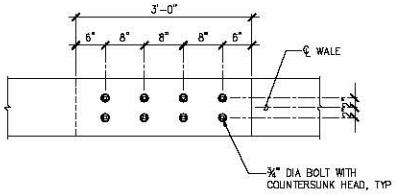
1. FIELD VERIFY LOCATION AND SPACING BOLT PRIOR TO PLATE FABRICATION.
2. REPLACE ALL BOLTS CONNECTED TO WALES.



2 S-10 SPRING ASSEMBLY DETAIL
SCALE: 1" = 1'-0"



PLAN

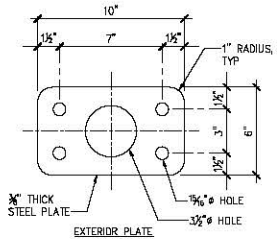


A ELEVATION

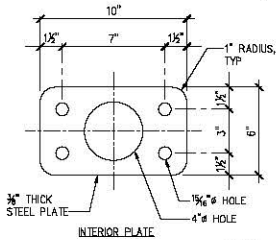
NOTE:

1. FOR SPLICE AT EXISTING WALE, LOCATE NOTCH AT CENTERLINE OF EXISTING WALE.

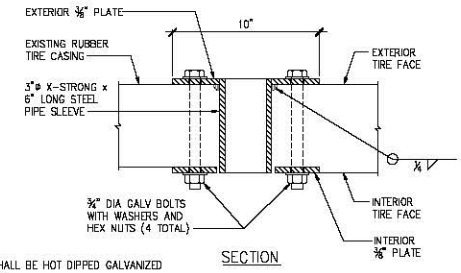
3 S-10 WALE SPLICE DETAIL
SCALE: 1" = 1'-0"



ELEVATION



ELEVATION

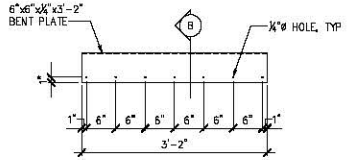


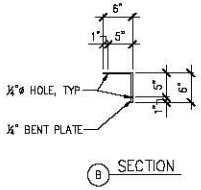
SECTION

NOTES:

1. TIRE GROMMETS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. ROTATE TIRE AND INSTALL TIRE GROMMETS INTO UNDAMAGED AREA OF RUBBER TIRE CASING.

4 S-10 TIRE GROMMET DETAIL
SCALE: 3" = 1'-0"



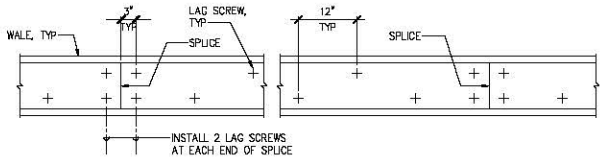


B SECTION

NOTE:

SECURE WITH 3/16"ø x 4" STAINLESS STEEL SCREWS.

5 S-10 BENT PLATE DETAIL
SCALE: 1" = 1'-0"

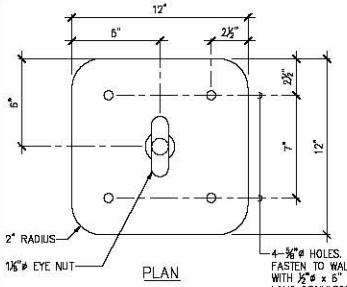


ELEVATION

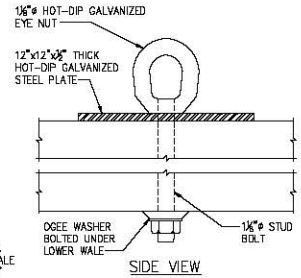
NOTES:

1. LAG SCREWS SHALL BE 3/4" DIA x 10" LONG AT 24" STAGGERED WITH COUNTERSUNK HEAD AT SPACING AS SHOWN.
2. DO NOT DAMAGE BAR REINFORCING IN WALES BEYOND.

6 S-10 CHAFING STRIP DETAIL
SCALE: 1" = 1'-0"



PLAN



SIDE VIEW

7 S-10 EYE NUT DETAIL
SCALE: 3" = 1'-0"

REVISION	DATE	DESCRIPTION	BY	APPROVED
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

JOB TITLE
FENDER REPAIRS AT PIER 1, 2 AND TUG PIER
KAHULUI HARBOR, MAUI, HAWAII

SHEET TITLE
FENDER DETAILS

LICENSED PROFESSIONAL ENGINEER No. 13001-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
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MIKE ASSOCIATES LLC

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SHEET
S-10
12 OF 13 SHTS.