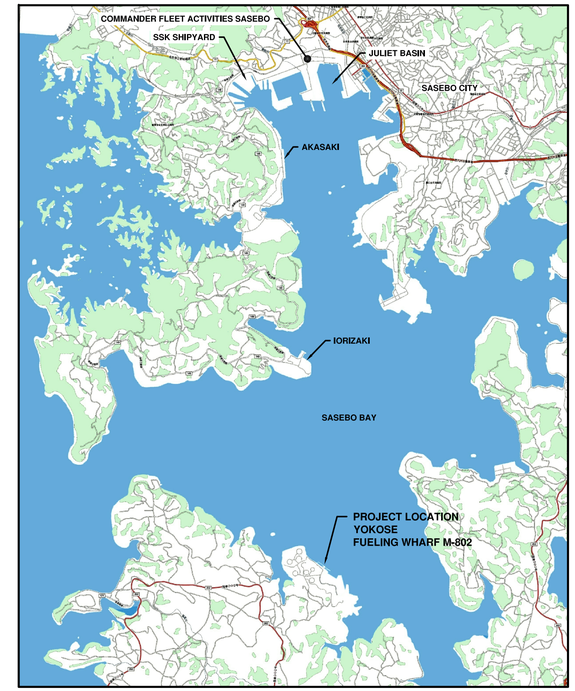
DEPARTMENT OF THE NAVY,
NAVAL FACILITIES ENGINEERING AND
EXPEDITIONARY WARFARE CENTER

REPAIRS TO FUELING WHARF M-802

YOKOSE TERMINAL, SASEBO, JAPAN

JAPAN MAP

AREA MAP



SASEBO MAP

SYM	DESCRIPTION	DATE	APPR

NAVFAC

COMMONWEALTH OF MASSACHUSETTS
CHARLES MARSHALL ROBERTS
No. 50339
REGISTERED PROFESSIONAL ENGINEER
4/25/13
SEAL

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APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE
DES CMR DRW TEQ CHK CDS
BRANCH MANAGER
CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
TITLE SHEET

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
10006587
SHEET 1 OF 12
GI-001

DRAWFORM REVISION: 10 MARCH 2009

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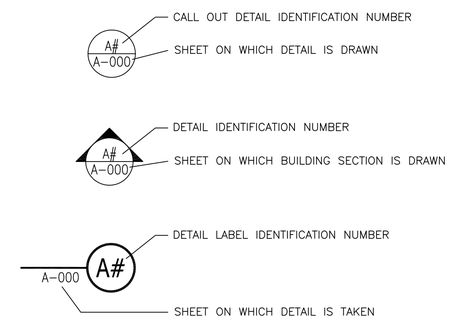
2	GI-002	10006588	DRAWING INDEX
3	GI-003	10006589	GENERAL NOTES
4	S-101	10006590	SITE PLAN
5	S-201	10006591	ELEVATION
6	S-301	10006592	SECTIONS
7	S-501	10006593	REPAIR TYPE A-C DETAILS
8	S-502	10006594	REPAIR TYPE D & E DETAILS
9	S-601	10006595	REPAIR SCHEDULE

SYMBOLS



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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
DRAWING INDEX

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
10006588
SHEET 2 OF 12
GI-002

DRAWFORM REVISION: 10 MARCH 2009

PROJECT DESCRIPTION

REPAIRS TO FUELING WHARF M–802 SHALL INCLUDE BUT ARE NOT LIMITED TO:

- REPAIRS TO THE PIER STRUCTURE INCLUDE REPAIRING SPALLS AND CRACKS IN THE CONCRETE DECK AND CAISSON.
- CLEANING AND RECOATING OF ALL MOORING HARDWARE.

GENERAL

1. THE FUEL FACILITIES ARE CONSIDERED A HIGHLY FLAMMABLE AREA WITH RESTRICTED ACCESS. USE OF FLAME PRODUCING EQUIPMENT AND HAZARDOUS MATERIALS IS RESTRICTED. THE CONTRACTOR SHALL OBTAIN A HOT WORK PERMIT FROM THE BASE FIRE CHIEF PRIOR TO CONSTRUCTION. NO HOT WORK SHALL BE ALLOWED DURING FUELING OPERATIONS.
2. CONTRACTORS ACTIVITIES SHALL NOT BLOCK FIRE LANES ON ANY OF THE FACILITIES DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCE OR BARRIER AT SURROUNDINGS OF WORK SITE TO PRECLUDE SAFETY HAZARD AS NECESSARY. CONTRACTOR SHALL PROVIDE FLASHING LIGHTS AROUND TEMPORARY FENCE OF BARRICADE DURING NIGHT.
4. THE CONTRACTOR'S WORKERS SHALL KEEP WITHIN LIMITS OF THE WORK AREA AND SHALL NOT ENTER ANY RESTRICTED AREAS UNLESS REQUIRED TO DO SO AND ARE CLEARED FOR SUCH ENTRY.
5. NO SMOKING IS ALLOWED EXCEPT IN DESIGNATED SMOKING AREAS.
6. OPENING AND CLOSING OF EXISTING GATE FOR ENTRANCE TO WHARF AND CUSTODY OF KEY FOR LOCK OF GATE SHALL BE COORDINATED WITH THE SECURITY DEPARTMENT AND RELATED DEPARTMENT VIA THE CONTRACTING OFFICER.
7. THE CONTRACTOR SHALL PROVIDE FALL PROTECTION FOR WORKERS WORKING BESIDE WHARF. ALSO WORKERS SHALL WEAR LIFE JACKETS. SCAFFOLDING SHALL BE PROVIDED AS NECESSARY. IN THIS CASE, THE SCAFFOLDING PLAN SHALL BE SUBMITTED TO THE CONTRACTING OFFICER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
8. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AT THE SITE AND SUGGESTED CONSTRUCTION SEQUENCES SHOWN ON THE DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY SAFE GUARDS TO MAINTAIN ALL PARTS OF THE EXISTING PIER STRUCTURE IN SAFE CONDITION AT ALL TIMES DURING THE PROCESS OF CONSTRUCTION AND TO PROTECT THE STRUCTURE FROM DAMAGE.
9. THE CONTRACTOR SHALL VERIFY AT THE JOB SITE ALL DIMENSIONS AND CONDITIONS PERTAINING TO THE WORK. SHOULD ACTUAL FIELD CONDITIONS VARY FROM THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER PRIOR TO PROCEEDING WITH THE WORK.
10. THE FACILITIES ARE EXPOSED TO SEVERE WEATHER CONDITIONS THAT WILL EFFECT THE WORK. CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT THE WORK AND SHALL BE RESPONSIBLE FOR ANY LOSS OF TIME AND EQUIPMENT OR DAMAGE TO THE WORK AS A RESULT OF THE WEATHER.
11. UTILITIES ARE SHOWN ON THE PLAN FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL PROCEED WITH CAUTION DURING ALL EXCAVATION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGED UTILITIES. THE CONTRACTOR SHALL COORDINATE ALL EXCAVATION PERMISSIONS WITH THE CONTRACTING OFFICER AND PUBLIC WORKS DEPARTMENT.
12. IF THE CONTRACTOR ENCOUNTERS UTILITIES THAT AFFECT THE WORK THAT ARE NOT SHOWN ON THE PLANS THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER PRIOR TO CONTINUING WITH THE WORK.
13. THE CONTRACTOR SHALL MAKE SURE ALL MEASURES LAID OUT IN THEIR APPROVED SPILL PREVENTION, CONTROL, AND RESPONSE (SPCR) PLAN ARE IN PLACE PRIOR TO THE START OF ANY CONSTRUCTION.
14. IF THE CONTRACTOR MUST DISTURB THE EXISTING SECURITY FENCE FOR REPAIRS, A TEMPORARY SECURITY FENCE SHALL BE ERECTED DURING THE REPAIR PROCESS AND SHALL REMAIN SECURE AT ALL TIMES. THE PERMANENT SECURITY FENCE SHALL BE REPLACED IN KIND AT THE CONCLUSION OF THE REPAIR PROCESS.
15. INFORMATION REGARDING EXISTING CONSTRUCTION AND CONDITIONS IS BASED ON FIELD INSPECTION AND IS INCLUDED TO ASSIST THE CONTRACTOR. THE CONTRACTING OFFICER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR COMPLETENESS.
16. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER WHEN UNANTICIPATED OR APPARENTLY DANGEROUS CONDITIONS ARE UNCOVERED DURING CONSTRUCTION OR DEMOLITION.
17. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE FOR MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE CONTRACTING OFFICER.
18. THE CONTRACTOR SHALL SHORE, BRACE, SHEETPILE OR OTHERWISE SUPPORT THE STRUCTURE AND EXCAVATIONS AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY AT ALL TIMES.

DEMOLITION

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL WASTE MATERIALS AND DEMOLISHED MATERIALS NOT BEING REUSED OFF SITE AT AN APPROVED FACILITY.
2. CONTRACTOR SHALL NOT ALLOW ANY WASTE MATERIALS TO ENTER THE WATER. CONTRACTOR SHALL TAKE MEASURES TO COLLECT ALL DEMOLISHED WASTE.
3. CONTRACTOR SHALL INSTALL A DEBRIS BOOM AROUND ALL WORK AREAS OVER THE WATER. ALL DEBRIS COLLECTED IN THE BOOM SHALL BE REMOVED DAILY.
4. CONTRACTOR SHALL NOT UTILIZE GOVERNMENT FUEL BOOM FOR DEBRIS CONTAINMENT.
5. CONTRACTOR SHALL COLLECT AND REMOVE ALL DEMOLITION DEBRIS AND WASTE MATERIALS THAT ENTER THE WATER AND LAY ON THE BOTTOM.

CONCRETE

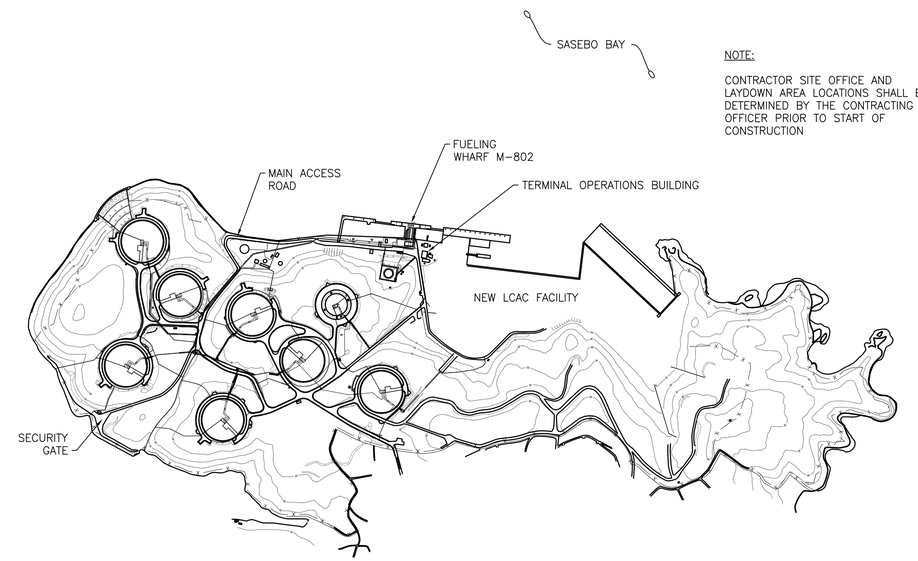
1. CONCRETE WORK SHALL CONFORM TO LATEST EDITIONS OF JAPAN SOCIETY OF CIVIL ENGINEERING (JSCE) STANDARD SPECIFICATION FOR CONCRETE.
2. CONCRETE SHALL BE PROPORTIONED, MIXED, AND PLACED UNDER THE SUPERVISION OF THE APPROVED TESTING AGENCY.
3. MASS CONCRETE FOR BOLLARD FOUNDATIONS SHALL BE DESIGNED AND PROPORTIONED TO CURE AT A LOW HEAT OF HYDRATION TO PREVENT THERMAL STRESS AND CRACKING.
4. CONCRETE SHALL HAVE A MINIMUM 42–DAY COMPRESSIVE STRENGTH OF 30 MPA.
5. ALL CONCRETE SHALL BE AIR–ENTRAINED.
6. CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS.
7. LOADS SHALL BE APPLIED TO THE BOLLARDS NO SOONER THAN 28 DAYS AFTER FINAL PLACING OF CONCRETE.
8. PROVIDE A BROOM FINISH FOR EXTERIOR FLAT SURFACES.
9. PORTLAND CEMENT TYPE II SHALL BE USED FOR ALL CONCRETE AND MAXIMUM W/C (WATER CEMENT RATIO) SHALL BE 0.40.
10. AT ALL CONSTRUCTION JOINTS EPOXY NEW CONCRETE TO HARDENED CONCRETE WITH BONDING AGENT. APPLY PER MANUFACTURER'S RECOMMENDATIONS.
11. ELASTOMERIC SEALANT SHALL BE A ONE PART POLYURETHANE SEALANT/ADHESIVE. APPLY PER MANUFACTURER'S RECOMMENDATIONS.
12. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 75MM CHAMFER (TYPE.)
13. ALL CONCRETE SHALL BE PLACED IN THE DRY.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE GRADE 60 NEW BILLET STEEL, CONFORMING TO ASTM A615. WELDED WIRE FABRIC SHALL BE ASTM A185.
2. DETAILING, FABRICATION, AND ERECTION OF REINFORCEMENT SHALL CONFORM TO LATEST EDITIONS OF JAPAN SOCIETY OF CIVIL ENGINEERING (JSCE) STANDARD SPECIFICATION FOR CONCRETE.
3. MINIMUM LAP OF REINFORCING BARS SHALL BE 40 DIAMETERS, UNLESS SHOWN OTHERWISE.
4. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 150 MM OR ONE WIRE SPACE, WHICHEVER IS LARGER.
5. MINIMUM COVER OF CONCRETE SHALL BE 75 MM.
6. INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AT LEAST 24 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT, UNLESS OTHERWISE APPROVED BY CONTRACTING OFFICER.
7. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION.
8. WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.

STEEL

1. ALL STEEL COMPONENTS AND FITTINGS EXPOSED TO WEATHER IN THEIR FINAL STATE SHALL BE HOT DIPPED GALVANIZED.
2. ANCHOR BOLTS AND BEARING PLATES SHALL BE LOCATED BY TEMPLATES OR SIMILAR METHOD. PLATES SHALL BE SET IN FULL BEDS OF NON–SHRINK GROUT, BOTTOM OF BASE PLATES SHALL BE SET APPROXIMATELY 3/4" ABOVE TOP OF BEARING. RESULTING SPACE SHALL BE FILLED WITH FLOWABLE NON–SHRINK GROUT.
3. WELDING SHALL BE INSPECTED IN THE FIELD BY QUALIFIED WELDING INSPECTORS UNDER THE SUPERVISION OF AN APPROVED TESTING AGENCY.
4. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED (.622 KG/M2) AFTER FABRICATION IN COMPLIANCE WITH ASTM–123, A156, OR A386, AS APPLICABLE. GALVANIZER SHALL FURNISH TO CONTRACTING OFFICER A NOTARIZED CERTIFICATE OF COMPLIANCE WITH THESE SPECIFICATIONS.



NOTE:

CONTRACTOR SITE OFFICE AND LAYDOWN AREA LOCATIONS SHALL BE DETERMINED BY THE CONTRACTING OFFICER PRIOR TO START OF CONSTRUCTION

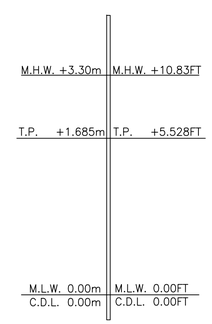
PLAN NORTH

YOKOSE SITE PLAN

NOT TO SCALE

DATUMS:

M.H.W.	– MEAN HIGH WATER
T.P.	– TOKYO PEIL
M.L.W.	– MEAN LOW WATER
C.D.L.	– CONSTRUCTION DATUM LINE



TIDAL DATUM (N.T.S.)

ABBREVIATIONS

SE	SOUTHEAST
NW	NORTHWEST
TYP	TYPICAL
HHW	HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
LLW	LOWER LOW WATER
EL.	ELEVATION
ø	DIAMETER
(UT)	INDICATES ASSET TYPE

APPR	DATE	DESCRIPTION	STM

NAVFAC

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ACTIVITY

SATISFACTORY TO DATE

DES CMR | DRW TEQ | CHK CDS

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN

REPAIRS TO FUELING WHARF M-802

GENERAL NOTES

SCALE: AS NOTED

EPROJECT NO.:

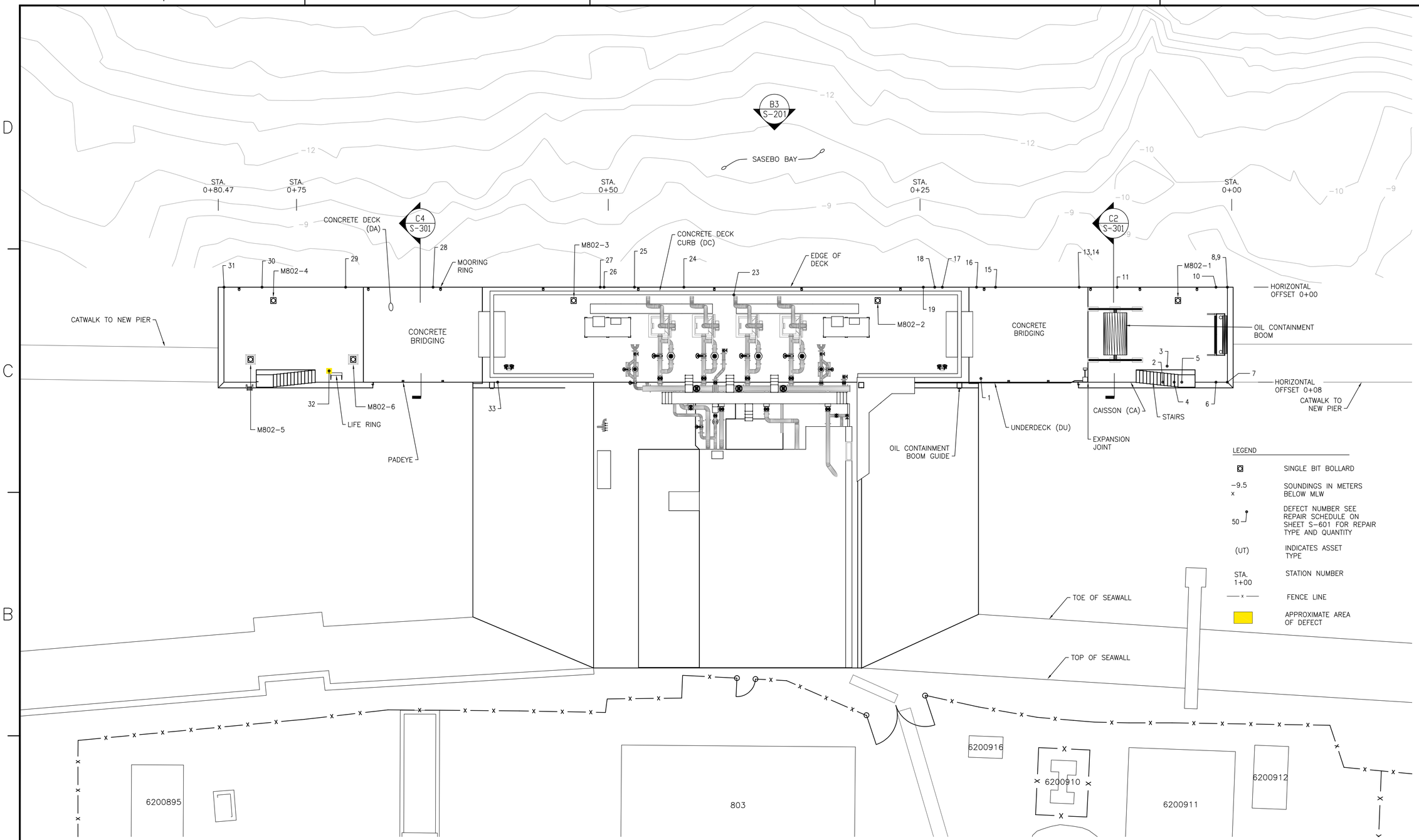
CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
10006589

SHEET 3 OF 12

GI-003

DRAWFORM REVISION: 10 MARCH 2009



LEGEND

⊠	SINGLE BIT BOLLARD
−9.5 x	SOUNDINGS IN METERS BELOW MLW
50	DEFECT NUMBER SEE REPAIR SCHEDULE ON SHEET S−601 FOR REPAIR TYPE AND QUANTITY
(UT)	INDICATES ASSET TYPE
STA. 1+00	STATION NUMBER
—x—	FENCE LINE
	APPROXIMATE AREA OF DEFECT

NOTES:

1. SEE S−601 FOR REPAIR TYPE AND QUANTITY FOR EACH DEFECT. REPAIR TYPE DETAILS ARE SHOWN ON SHEETS S−501 AND S−502.

FUELING WHARF M-802 SITE PLAN

SCALE: 1:150

PLAN NORTH

0 4 8 16 m

GRAPHIC SCALE: 1:150

SYM	DESCRIPTION	DATE	APPR

NAVFAC

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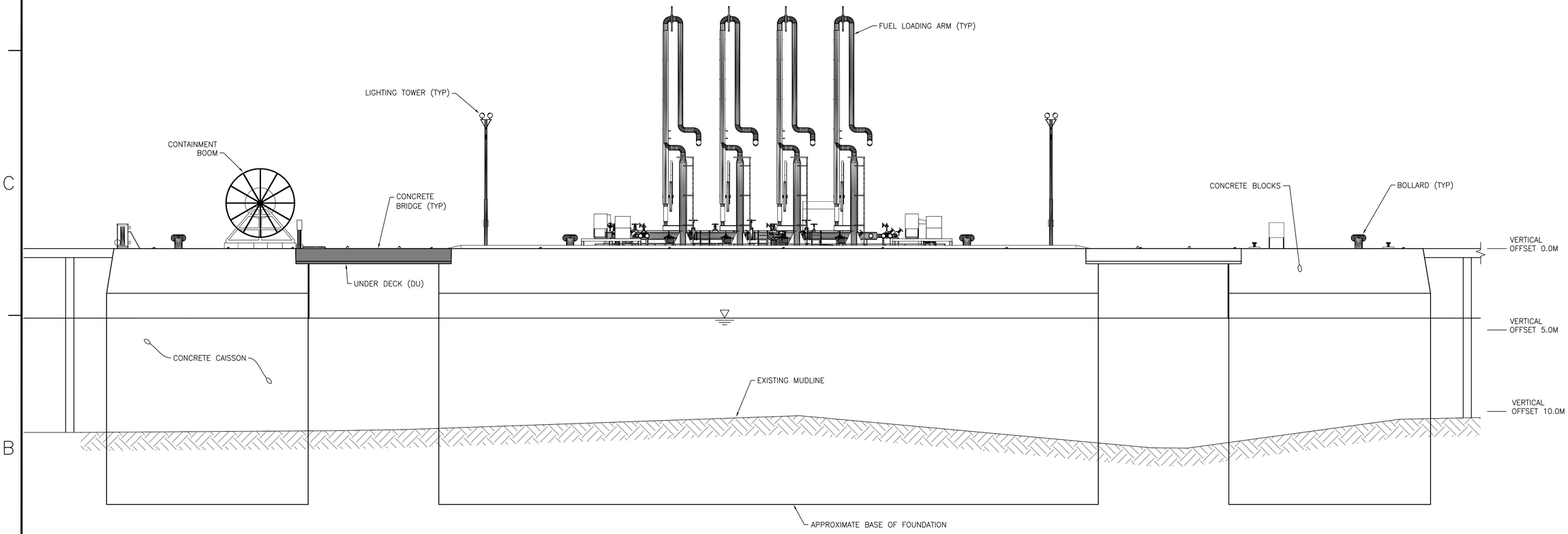
REPAIRS TO FUELING WHARF M-802

SITE PLAN

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO.
10006590
SHEET 4 OF 12

S-101

DRAWFORM REVISION: 10 MARCH 2009



FUELING WHARF M-802 ELEVATION

SCALE: 1:125

S-101 B3

0 2.0 4.0 8.0 12.0 m

GRAPHIC SCALE: 1:125

STM	DESCRIPTION	DATE	APPR

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SASEBO, JAPAN

REPAIRS TO FUELING WHARF M-802

ELEVATION

SCALE: 1:125

EPROJECT NO.:

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
10006591

SHEET 5 OF 12

S-201

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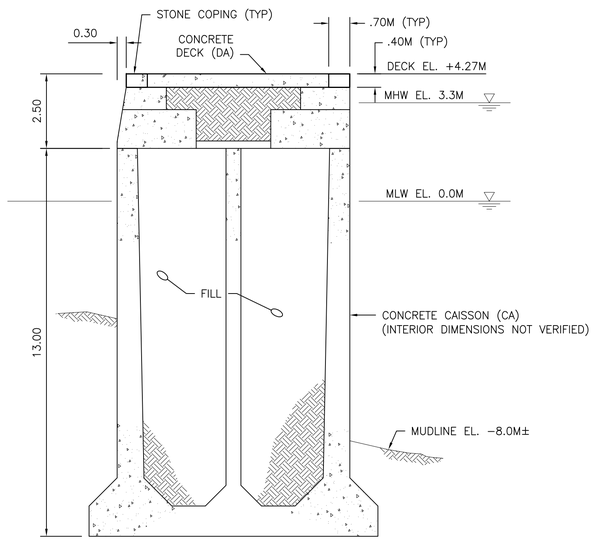
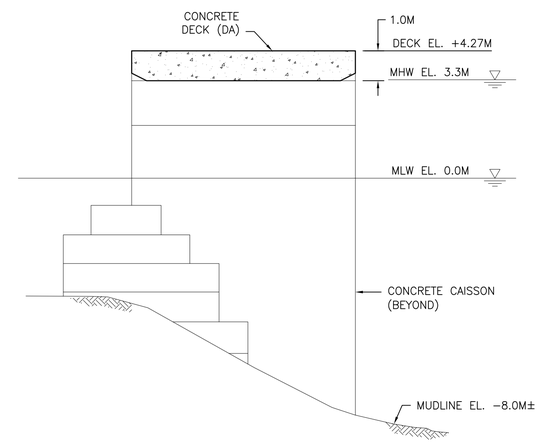


FUELING WHARF M-802 SECTION (C2)

SCALE 1:100 S-101



FUELING WHARF M-802 SECTION (C4)

SCALE 1:100 S-101

0 2.0 5.0 10.0 m

GRAPHIC SCALE: 1:100

SYM	DESCRIPTION	DATE	APPR

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DEPARTMENT OF THE NAVY
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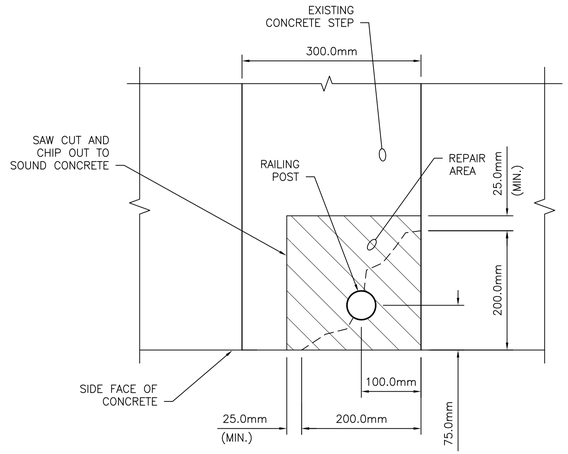
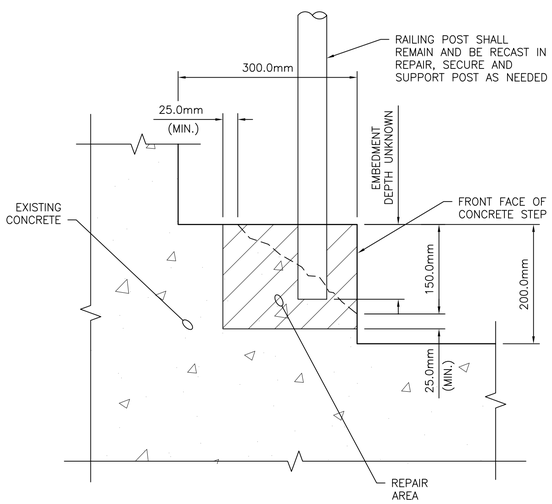
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
SECTIONS

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 10006592
SHEET 6 OF 12
S-301

DRAWFORM REVISION: 10 MARCH 2009



PLAN



SECTION

REPAIR TYPE A DETAIL

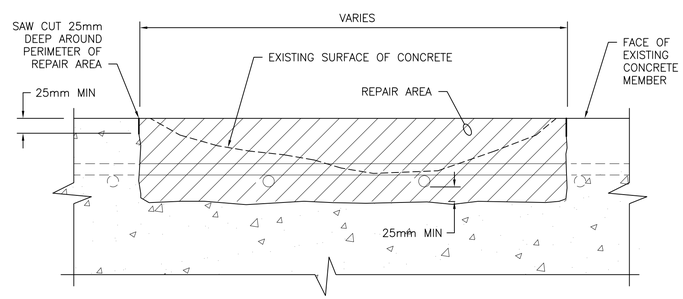
SCALE 1:5 S-101 B1

RAILING CORNER SPALL REPAIR

1. PROVIDE SCAFFOLDING AS NECESSARY TO ACCESS THE WORK AREA.
2. CHIP OUT AND REMOVE ALL LOOSE CONCRETE FROM DAMAGED AREA AND AROUND RAILING.
3. SQUARE OFF LIMITS OF REPAIR AREA A MINIMUM OF 25mm DEEP BY SAW CUTTING. CHIP BACK TO SOUND CONCRETE.
4. WHERE STEEL REINFORCING IS EXPOSED, CHIP BACK BELOW REINFORCING STEEL A MINIMUM OF 25mm. CLEAN ALL EXPOSED REINFORCING STEEL TO SA2. REFER TO SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION FOR REPLACEMENT OF CORRODED REINFORCING STEEL.
5. CLEAN AND RECOAT RAILING POST TO REMOVE ANY EXISTING CORROSION.
6. PRESENT PREPARED REPAIR AREA TO THE CONTRACTING OFFICER FOR APPROVAL.
7. SECURE FORMS IN PLACE TO RESTORE AND RECONSTRUCT THE ORIGINAL DIMENSIONS OF THE CORNER.
8. PRESENT FORMS TO THE CONTRACTING OFFICER FOR APPROVAL.
9. ONCE FORMS ARE APPROVED BY THE CONTRACTING OFFICER, FILL WITH CONCRETE RESTORATION MORTAR. FOLLOW MANUFACTURER'S RECOMMENDATION FOR PLACEMENT.
10. LEAVE FORMS IN PLACE FOR A MINIMUM OF 7 DAYS.

SCHEDULE OF MATERIALS

1. SPALLED CONCRETE AREAS SHALL BE REPAIRED WITH CONCRETE RESTORATION MORTAR AS SPECIFIED IN SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION.
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM Fy = 410 mPa.



PARTIAL DEPTH DECK SPALL REPAIR 0mm TO 150mm DEEP USING POUR AND TROWEL METHODS

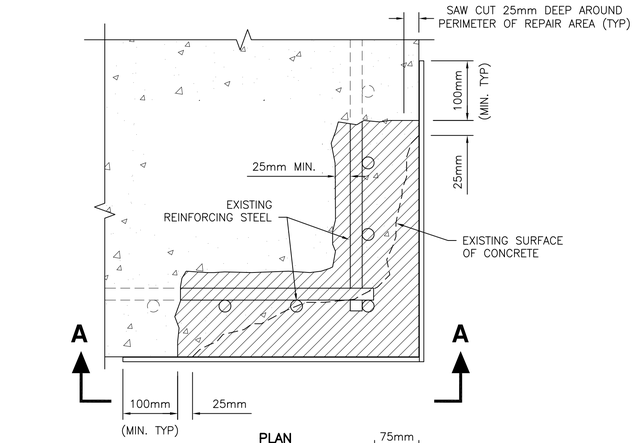
1. CHIP OUT AND REMOVE ALL LOOSE CONCRETE FROM DAMAGED AREA.
2. SQUARE OFF LIMITS OF REPAIR AREA A MINIMUM OF 25mm DEEP BY SAW CUTTING OR CHIPPING. CHIP BACK TO SOUND CONCRETE.
3. WHERE STEEL REINFORCING IS EXPOSED, CHIP BACK BELOW REINFORCING STEEL A MINIMUM OF 25mm. CLEAN EXPOSED REINFORCING STEEL TO SA2. REFER TO SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION FOR REPLACEMENT OF CORRODED REINFORCING STEEL.
4. PRESENT PREPARED REPAIR AREA TO THE CONTRACTING OFFICER FOR APPROVAL.
5. ONCE REPAIR AREA PREPARATION IS APPROVED BY THE CONTRACTING OFFICER, FILL WITH CONCRETE RESTORATION MORTAR. RESTORE AND RECONSTRUCT THE ORIGINAL DIMENSIONS OF THE STRUCTURAL ELEMENT BEING REPAIRED. FOLLOW MANUFACTURER'S RECOMMENDATION FOR PLACEMENT.
6. LEAVE FORMS IN PLACE FOR A MINIMUM OF 7 DAYS.

SCHEDULE OF MATERIALS

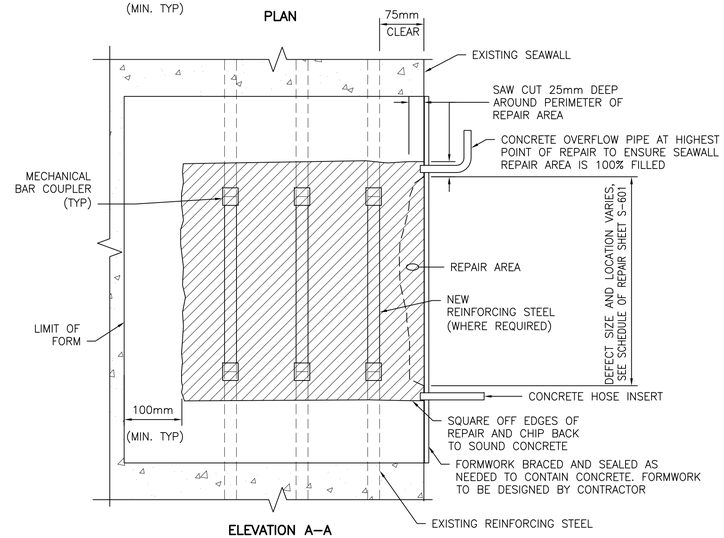
1. SPALLED CONCRETE AREAS SHALL BE REPAIRED WITH CONCRETE RESTORATION MORTAR AS SPECIFIED IN SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION.
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM Fy = 410 mPa.

REPAIR TYPE C DETAIL

SCALE 1:5 S-101 A3



PLAN



ELEVATION A–A

ABOVE WATER PARTIAL DEPTH SPALL REPAIR WITH EXPOSED REINFORCING STEEL FOR VERTICAL EDGES USING FORM AND PUMP METHODS

1. PROVIDE SCAFFOLDING AS NECESSARY TO ACCESS THE WORK AREA.
2. CHIP OUT AND REMOVE ALL LOOSE CONCRETE FROM DAMAGED AREA.
3. SQUARE OFF LIMITS OF REPAIR AREA A MINIMUM OF 25mm DEEP BY SAW CUTTING. CHIP BACK TO SOUND CONCRETE. CONTRACTOR SHALL VERIFY DEPTH TO REINFORCING PRIOR TO CUTTING.
4. WHERE STEEL REINFORCING IS EXPOSED, CHIP BACK BEHIND REINFORCING STEEL A MINIMUM OF 25mm. CLEAN ALL EXPOSED REINFORCING STEEL TO SA2. REFER TO SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION FOR REPLACEMENT OF CORRODED REINFORCING STEEL USING MECHANICAL SPLICES.
5. PRESENT PREPARED REPAIR AREA TO THE CONTRACTING OFFICER FOR APPROVAL.
6. ONCE REPAIR AREA PREPARATION IS APPROVED BY THE CONTRACTING OFFICER, FILL WITH CONCRETE RESTORATION MORTAR. RESTORE AND RECONSTRUCT THE ORIGINAL DIMENSIONS OF THE STRUCTURAL ELEMENT BEING REPAIRED. FOLLOW MANUFACTURER'S RECOMMENDATION FOR FORM AND PUMP PLACEMENT.
7. LEAVE FORMS IN PLACE FOR A MINIMUM OF 7 DAYS.

SCHEDULE OF MATERIALS

1. SPALLED CONCRETE AREAS SHALL BE REPAIRED WITH CONCRETE RESTORATION MORTAR AS SPECIFIED IN SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION.
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM Fy = 410 mPa.

REPAIR TYPE B DETAIL

SCALE 1:5 S-101 A5

0 100 200 500 mm

GRAPHIC SCALE: 1:5

NOTE:

LOCATION OF DEFECT/REPAIR IS IDENTIFIED USING THE STATIONING ALONG THE EDGE OF THE STRUCTURE WITH VERTICAL AND HORIZONTAL OFFSETS INDICATING THE RELEVANT DISTANCE FROM THAT EDGE TO THE CENTER OF THE DEFECT/REPAIR

SYM	DESCRIPTION	DATE	APPR

NAVFAC

COMMONWEALTH OF MASSACHUSETTS CHARLES MARSHALL ROBERTS No. 50339 REGISTERED PROFESSIONAL ENGINEER 4/25/13 SEAL

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FOR COMMANDER NAVFAC
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SATISFACTORY TO DATE
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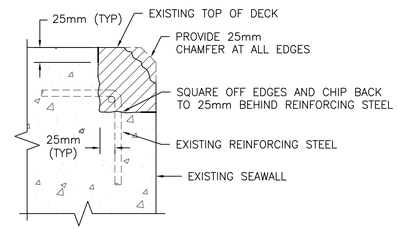
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
REPAIR TYPE A–C DETAILS

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 10006593
SHEET 7 OF 12
S-501

DRAWFORM REVISION: 10 MARCH 2009



REPAIR TYPE D DETAIL (C3)

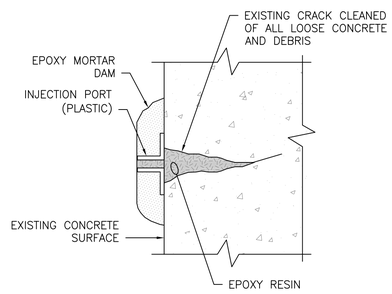
SCALE 1:5 S-101

EDGE SPALL/ABRASION REPAIR USING FORM AND POUR METHODS

1. PROVIDE SCAFFOLDING AS NECESSARY TO ACCESS WORK AREA.
2. SQUARE OFF LIMITS OF REPAIR AREA A MINIMUM OF 25mm DEEP BY SAW CUTTING. CHIP BACK TO SOUND CONCRETE.
3. WHERE STEEL REINFORCING IS EXPOSED, CHIP BACK BELOW REINFORCING STEEL A MINIMUM OF 25mm. CLEAN EXPOSED REINFORCING STEEL TO SA2. REFER TO SPECIFICATIONS SECTION 03 01 30.71 CONCRETE REHABILITATION FOR REPLACEMENT OF CORRODED REINFORCING STEEL.
4. PRESENT PREPARED REPAIR AREA TO THE CONTRACTING OFFICER FOR APPROVAL.
5. ONCE REPAIR AREA PREPARATION IS APPROVED BY THE CONTRACTING OFFICER, FORM AND FILL WITH CONCRETE RESTORATION MORTAR. RESTORE AND RECONSTRUCT THE ORIGINAL DIMENSIONS OF THE STRUCTURAL ELEMENT BEING REPAIRED. FOLLOW MANUFACTURER'S RECOMMENDATION FOR PLACEMENT.
6. LEAVE FORMS IN PLACE FOR A MINIMUM OF 7 DAYS.

SCHEDULE OF MATERIALS

1. SPALLED CONCRETE AREAS SHALL BE REPAIRED WITH CONCRETE RESTORATION MORTAR AS SPECIFIED IN SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION.
2. ALL REINFORCING STEEL SHALL HAVE A MINIMUM Fy = 410 mPa.



REPAIR TYPE E DETAIL (B3)

SCALE 1:5 S-101

EPOXY CRACK REPAIR BY PRESSURE INJECTION

1. PROVIDE SCAFFOLDING AS NECESSARY TO ACCESS THE WORK AREA.
2. CLEAN SURFACE OF ALL CONCRETE DUST, LOOSE CONCRETE, MARINE GROWTH, GREASE, OIL AND OTHER MATERIAL THAT WILL EFFECT THE BOND OF THE EPOXY MORTAR DAM.
3. SET APPROPRIATE INJECTION PORTS OVER CRACK AS RECOMMENDED BY THE EPOXY INJECTION SYSTEM MANUFACTURER WITH EPOXY MORTAR DAM.
4. PRESENT PREPARED REPAIR AREA TO THE CONTRACTING OFFICER FOR APPROVAL.
5. SEAL CRACKS AND PORTS WITH EPOXY MORTAR. TAKE CARE TO ENSURE THAT THE PORTS PROVIDE A CLEAN PATH FOR INJECTING EPOXY RESIN INTO THE CRACK.
6. USING AUTOMATED MIXING SYSTEM AND INJECTING EQUIPMENT INJECT EPOXY RESIN INTO CRACKS THROUGH PORTS. START AT ONE END OF CRACK (LOWER END) AND INJECT EPOXY RESIN INTO PORT UNTIL RESIN APPEARS AT THE NEXT PORT. PLUG PORT WHERE EPOXY RESIN IS BEING INJECTED AND MOVE NOZZLE TO PORT WHERE EPOXY RESIN HAS APPEARED. CONTINUE PUMPING REPEATING PROCEDURE UNTIL ALL THE PORTS AND CRACK HAS BEEN FILLED COMPLETELY WITH EPOXY RESIN.

SCHEDULE OF MATERIALS

1. CRACKS SHALL BE REPAIRED WITH EPOXY RESIN AS SPECIFIED IN SPECIFICATION SECTION 03 01 30.71 CONCRETE REHABILITATION.

NOTE:

LOCATION OF DEFECT/REPAIR IS IDENTIFIED USING THE STATIONING ALONG THE EDGE OF THE STRUCTURE WITH VERTICAL AND HORIZONTAL OFFSETS INDICATING THE RELEVANT DISTANCE FROM THAT EDGE TO THE CENTER OF THE DEFECT/REPAIR

0 100 200 500 mm

GRAPHIC SCALE: 1:5

SYM	DESCRIPTION	DATE	APPR

NAVFAC

COMMONWEALTH OF MASSACHUSETTS
CHARLES MARSHALL ROBERTS
No. 50339
REGISTERED PROFESSIONAL ENGINEER
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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND
FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
REPAIR TYPE D & E DETAILS

SCALE: AS NOTED
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 10006594
SHEET 8 OF 12
S-502

DRAWFORM REVISION: 10 MARCH 2009

REPAIR SCHEDULE

Defect ID No.	Asset Type	Defect Location			Fac. Sec.	Defect Type	Repair Type	Area (M^2)
		Station	Hor. Offset	Ver. Offset				
2	CA	0+5.2	7.6	1.5	M802	CCS	A	0.1
3	DA	0+5.2	6.7	1.2	M802	CCS	A	0.1
4	CA	0+4.3	7.6	1.8	M802	CCS	A	0.1
5	CA	0+3.7	7.6	1.8	M802	CCS	A	0.1

Defect ID No.	Asset Type	Defect Location			Fac. Sec.	Defect Type	Repair Type	Area (M^2)	Depth (mm)
		Station	Hor. Offset	Ver. Offset					
1	DA	0+20.1	7.6	3.1	M802	ABS	B	0.2	100
7	CA	0+00	7.6	1.5	M802	OCS	B	0.1	50
8	CA	0+00	0.0	3.7	M802	FRS	B	0.4	100
9	CA	0+00	0.0	1.5	M802	IMP	B	0.6	200
13	CA	0+11.9	0.0	3.4	M802	ABS	B	0.4	75
14	CA	0+11.9	0.0	1.5	M802	IMP	B	0.1	25
16	CA	0+20.1	0.0	4.0	M802	IMP	B	0.7	300
31	CA	0+80.5	0.0	4.0	M802	ABS	B	1.1	300

Defect ID No.	Asset Type	Defect Location			Fac. Sec.	Defect Type	Repair Type	Area (M^2)
		Station	Hor. Offset	Ver. Offset				
32	DA	0+71.6	7.0	0.0	M802	CCS	C	0.2
33	DA	0+58.5	7.6	0.0	M802	CCS	C	0.2

Defect ID No.	Asset Type	Defect Location		Fac. Sec.	Defect Type	Repair Type	Length (m)	Area (M^2)	Width (mm)	Depth (mm)	Exp Bars (#)
		Station	Hor. Offset								
6	DA	0+0.9	7.6	M802	CCS	D		0.4			
10	DA	0+0.9	0.0	M802	OCS	D	1.8	0.3	152	75	2
11	DA	0+8.8	0.0	M802	OCS	D	0.6	0.1	152	75	2
15	DA	0+18.6	0.0	M802	ABS	D		0.1		25	
18	DA	0+22.9	0.0	M802	ABS	D		0.1		25	
19	DA	0+24.4	0.0	M802	ABS	D	1.5	0.3	152	50	
23	DA	0+39.9	0.9	M802	FRS	D		0.2		25	
24	DA	0+43.6	0.0	M802	ABS	D		0.1		50	
25	DA	0+47.6	0.0	M802	ABS	D		0.2		75	
27	DA	0+50.3	0.0	M802	OCS	D		0.1		25	1
28	DA	0+63.7	0.0	M802	ABS	D		0.2		50	
29	DA	0+70.7	0.0	M802	FRS	D		0.1		50	
30	DA	0+77.4	0.0	M802	ABS	D	1.8	0.2	102	25	

Defect ID No.	Asset Type	Defect Location			Fac. Sec.	Defect Type	Repair Type	Length (m)	Width (mm)
		Station	Hor. Offset	Ver. Offset					
17	CA	0+23.5	0.0	3.4	M802	CRH	E	3.0	51
26	CA	0+49.9	0.0	1.5	M802	CRV	E	1.2	3

NOTE:
SEE SHEETS S-501 AND S-502 FOR REPAIR DETAILS.

BOLLARD CLEAN AND RECOAT SCHEDULE

BOLLARD	CLEAN AND RECOAT	ADD I.D.
M802-1	YES	N/A
M802-2	YES	N/A
M802-3	YES	N/A
M802-4	YES	N/A
M802-5	YES	N/A
M802-6	YES	N/A

NOTE:

BOLLARDS SHALL BE CLEANED AND RECOATED AS SPECIFIED IN SECTION 05 30 00 .01 MOORING HARDWARE.

ASSET TYPE KEY

CA = CONCRETE CAISSON
DU = DECK UNDER
DA = DECK ABOVE
DC = DECK CURB

DEFECT TYPE KEY

ABS = ABRAISON
CCS = CLOSED CORROSION SPALL
FRS = FRACTURE SPALL
VOD = VOID
OCS = OPEN CORROSION SPALL
CRD = DIAGONAL CRACK
CRH = HORIZONTAL CRACK
CRV = VERTICAL CRACK
CRL = LONGITUDINAL CRACK
CRT = TANGENTAL CRACK
DSG = DISINTEGRATION
WEA = WEATHERING
MIS = MISSING
UND = UNDERMINING
MDE = MORTAR DEGRADATION
BRK = BROKEN
IMP = IMPACT DAMAGE

NOTES

1. DIMENSIONS IN SCHEDULE FOR AREA AND DEPTH INDICATE THE DIMENSIONS OF THE DEFECT. THE TOTAL BELOW HAS HAD A MINIMUM OF 30% ADDED TO THE AREA OR LENGTH FOR BIDDING.
2. REFER TO SHEETS S-101 AND S-201 FOR STATIONING, VERTICAL AND HORIZONTAL OFFSETS AND DEFECT NUMBERS.

REPAIR QUANTITIES FOR BIDDING PURPOSES

REPAIR	QUANTITY
A	$0.5m^2$
B	$3.4m^2$
C	$0.5m^2$
D	$3.1m^2$
E	5.5m

SYM	DESCRIPTION	DATE	APPR

NAVFAC

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FISC, YOKOSE TERMINAL
SASEBO, JAPAN
REPAIRS TO FUELING WHARF M-802
REPAIR SCHEDULE

SCALE: NONE
EPROJECT NO.:
CONSTR. CONTR. NO.
NAVFAC DRAWING NO. 10006595
SHEET 9 OF 12
S-601

DRAWFORM REVISION: 10 MARCH 2009