

MURPHY BURR CURRY, INC. STRUCTURAL ENGINEERS mbcse.com

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PROJECT TEAM

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San Francisco CA 94110 415.282.4428



PROJECT NAME

MAR 3.1 2008

DOLPHIN CLUB PILE REPAIR SAN FRANCISCO, CA

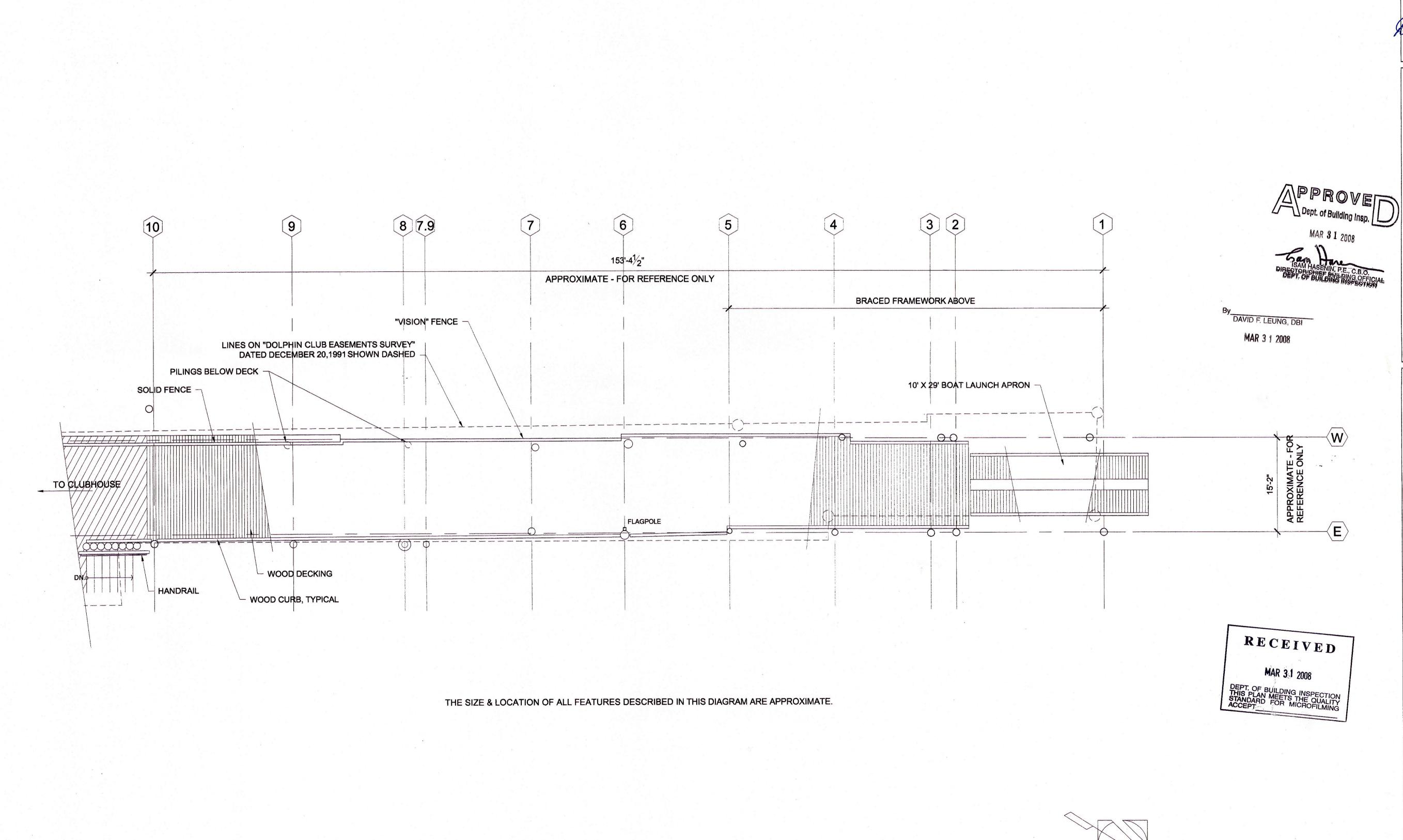
502 Jefferson St. 94109

SHEET TITLE

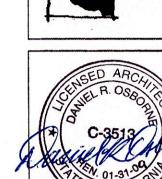
**DATE** 03-19-08

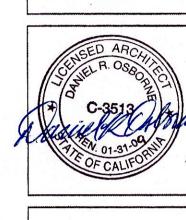
LOCATION SITE PLAN & INDEX

SCALE: AS NOTED OWNER'S NO. JOB NO. 207-261 SHEET NUMBER DRAWN BY: CHECKED BY: A0.1









REVISIONS:

DATE: 3 SEPT. 2007

SHEET NO. SCALE: 1/8" = 1'-0"

### **ABBREVIATIONS**

Pound or Number Diameter A.B. Anchor Bolt ADJ. Adiacent ARCH Architect Bolt Both Sides Clear Center Control Join CONC. Concrete CONT. Continuous COL. CTR. Center DET. Detail Diameter Dimension Down DRP Dropped Each East Each Face Each Way Expansion Joint Elevation Embedded Length Equal Foundation Flush Frame FIN. Finish FLR. Floor Face of Concrete F.0.S. Face of Stud FT. Feet FTG. Footing GALV. Glulam GLB Glulam Beam GYP. Gypsum HORIZ. Horizontal Inside Diameter Machine Bolt MECH. Mechanical Minimum Miscellaneous Not in Contract NO. or # Number NOM. Nominal N.T.S Not to Scale On Center O.D. Outside Diameter 0.H. Opposite Hand OPNG. Opening OPP. Opposite Pressure Treated PARAL. Parallel PLYWD. Plywood REF. Reference REINF. Reinforcing REQ. Required REV. Revision R.O. Rough Opening South SCH. Schedule See Civil Drawings S.C.D. See Architectural Drawings See Mechanical Drawings S.F. Square Feet SIM. Similar Simpson SPEC. **Specifications** SQ. Square STD. Standard STL. SYM. Symmetrical T.&B. Top and Bottom. T.&G Tongue and Groove T.O.C Top of Concrete
T.O.S. Top of Steel T.O.W. Top of Wall Tube Steel U.B.C. Uniform Building Code U.N.O Unless Otherwise Noted VAR. Varies VERT. Vertical Verify in Field West With Wide Flange Without Waterproofing Weight

### STRUCTURAL NOTES

## GENERAL

- A. THESE NOTES APPLY TO ALL DRAWINGS AND GOVERN UNLESS OTHERWISE NOTED OR
- B. THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF MURPHY BURR CURRY INC. AND SHALL NOT BE USED ON ANY OTHER WORK EXCEPT BY
- WRITTEN AGREEMENT WITH MURPHY BURR CURRY INC. C. VERIFY ALL EXISTING CONDITIONS AND PROPOSED DIMENSIONS AT JOB SITE. COMPARE
- WORK WITH PROPOSED NEW RAMP LIFT. D. UNLESS OTHERWISE SHOWN OR NOTED, ALL DETAILS SHALL BE CONSIDERED TYPICAL
- E. SHOP DRAWINGS MAY BE SUBMITTED FOR REVIEW BY THE ENGINEER BEFORE FABRICATION, FOR THE FOLLOWING ITEMS:
- GLUED LAMINATED BEAMS
- FOX PILE REPAIR SYSTEM

AT SIMILAR CONDITIONS.

- F. SAFETY MEASURES: AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF THE PERSONS AND PROPERTY, AND FOR ALL NECESSARY INDEPENDENT ENGINEERING REVIEWS OF THESE CONDITIONS. THE ARCHITECT'S OR ENGINEER'S JOB SITE REVIEW IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
- G. THESE DRAWINGS ARE TO SHOW STRUCTURAL INFORMATION ONLY. FOR ALL NON-STRUCTURAL INFORMATION AND DETAILS INCLUDING BUT NOT LIMITED TO FINISHES, ACCESSIBILITY, ETC. REFER TO ARCHITECT'S DRAWINGS.
- 2. FRAMING LUMBER (UNLESS OTHERWISE NOTED)
- A. ALL FRAMING LUMBER SHALL BE GRADED PER WCLIB GRADING RULES NO. 16.
- B. ALL FRAMING LUMBER SHALL BE PRESSURE TREATED DOUGLAS FIR, #1.
- 3. GLULAM BEAMS
- A. ALL BEAMS SHALL BE FABRICATED IN ACCORDANCE WITH AITC, 'STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED TIMBERS' (AITC 203-70), AND U.S. COMMERCIAL STANDARD CS 253-63 FOR STRUCTURAL GLUED LAMINATED TIMBER. AITC CERTIFICATES SHALL BE FURNISHED TO THE ARCHITECT FOR ALL MEMBERS. ALL BEAMS SHALL BE "LOAD WRAPPED" BEFORE TRANSPORTATION.
- B. USE 2 INCH NOMINAL LUMBER GRADE COMBINATION A (24). SLOPE IN GRAIN IN TOP AND BOTTOM 10% OF LAMINATION SHALL NOT EXCEED 1:14. END JOINTS SHALL BE EITHER SCARFED 1:12 OR APPROVED FINGER JOINTS.
- C. MOISTURE CONTENT OF LUMBER SHALL NOT BE LESS THAN 7 % OR GREATER THAN 12%.
- D. ALL GLUING SHALL BE DONE IN THE SHOP BY QUALIFIED PERSONNEL AND CONFORM WITH ALL REQUIREMENTS SET OUT IN CS 253-63 (SEE A ABOVE).
- E. USE EXTERIOR GLUE UNLESS OTHERWISE SPECIFIED.
- F. USE APPEARANCE GRADE.
- 4. PRESSURE TREATMENT
- A. ALL LUMBER SHALL BE PRESSURE TREATED WITH A PRESERVATIVE CONFORMING TO USE CATEGORY UC5B PER AWPA TECHNICAL NOTE #U1-07.
- B. ALL GLUED LAMINATED BEAMS SHALL BE PRESSURE TREATED WITH A PRESERVATIVE CONFORMING TO USE CATEGORY UC5B PER APA EWS TECHNICAL NOTE #S580C DATED AUGUST 2006.
- ROUGH CARPENTRY
- A. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS STEEL GRADE 316.
- TIMBER PILE REPAIR
- A. TIMBER PILE REPAIR SHALL BE FOX INDUSTRY'S STANDARD PILE REPAIR SYSTEM.,
- 7. FX-70 PILE PROTECTION SYSTEM FOR CONCRETE, STEEL AND WOOD PILES UTILIZING MULTI-PURPOSE MARINE EPOXY GROUT

THE WORK UNDER THIS SECTION SHALL INCLUDE FURNISHIG AND INSTALLING A PERMANENT OUTER JACKET, MADE FROM DURABLE, INERT CORROSION-FREE MATERIALS AND FILLING THE ANNULAR SPACE BETWEEN THE PILE AND THE PERMANENT JACKET WITH A HYDRO-ESTER MULTI-PURPOSE MARINE EPOXY GROUT AND CONSTRUCTING A BEVEL AT THE TOP OF THE JACKET WITH A TROWEL GRADE HYDRO-ESTER GROUT. ALL MATERIALS SHALL BE COMPATIBLE AND SHALL BE MANUFACTURED BY A SINGLE SOURCE.

CONTRACTOR QUALIFICATIONS THIS WORK MUST BE PERFORMED BY A FIRM EXPERT IN PILE RESTORATION AND WITH AN ESTABLISHED RECORD OF AT LEAST 5 YEARS EXPERIENCE IN THIS TYPE OF

AN EXPERIENCED FULL TIME SUPERVISOR WHO HAS BEEN IN RESPONSIBLE CHARGE OF PILE RESTORATION INSTALLATIONS FOR A MINIMUM OF 2 YEARS SHALL BE ASSIGNED TO THIS PROJECT. THE SUPERVISOR SHALL BE PRESENT AT THE PROJECT SITE AT ALL TIMES DURING THE INSTALLATION OF THE FX-70 SYSTEM.

## **MATERIALS**

THE JACKETS SHALL BE FX-70 INERT CORROSION-FREE JACKETS, WITH AN INTERLOCKING JOINT. THE JACKETS SHALL BE FABRICATED FROM FIBERGLASS AND POLYMER RESINS AND SHALL BE A MINIMUM THICKNESS OF 1/8 INCH UNLESS OTHERWISE SHOWN ON THE PLANS AND/OR DETAILS. THE INSIDE FACE OF THE JACKET SHALL BE TEXTURED SIMILAR TO A SANDBLASTED SURFACE AND HAVE NO BOND-INHIBITING AGENTS IN CONTACT WITH THE HYDRO-ESTER EPOXY GROUTS. THE JACKETS SHALL BE PROVIDED WITH NON-CORROSIVE STANDOFFS, WHICH WILL MAINTAIN THE JACKETS IN THE REQUIRED POSITIONS. THE JACKET SHALL BE CAPABLE OF BEING OPENED, PLACED AROUND A PILE AND THEN RETURNED TO ITS ORIGINAL SHAPE WITHOUT DAMAGING THE JACKET. THE JACKETS MAY BE EQUIPPED WITH A COMPRESSIBLE SEALING STRIP AT THE BOTTOM, WHICH WILL EFFECTIVELY SEAL THE BOTTOM OF THE ANNULAR SPACE BETWEEN THE PILE AND THE JACKET.

- ...1 % MAX. A. WATER ABSORPTION (ASTM D-570)... B. ULTIMATE TENSILE STRENGTH (ASTM D-638)
- LONGITUDINAL, TRANSVERSE AND DIAGONAL.
- C. FLEXURAL STRENGTH (ASTM D-796)... ...25,000 PSI
- D. FLEXURAL MODULUS OF ELASTICITY (ASTM D-790)....... ...700,000 PSI MIN. BARCOL HARDNESS (ASTM D-2583)... ...45 MIN.
- F. COLOR... ...FEDERAL COLOR STANDARD
  - NO. 595A-TABLE VIII-26622-GRAY OR TRANSLUCENT

HYDRO-ESTER MULTI PURPOSE MARINE EPOXY GROUT THE EPOXY GROUT SHALL BE COMPOSED OF FX-70-6 MULTI-PURPOSE MARINE EPOXY BINDER AND C COMPONENT EXTENDER AS FOLLOWS:

THE BINDER SHALL BE A TWO (2) COMPONENT (2:1 RATIO) HYDRO-ESTER EPOXY MATERIAL MEETING THE FOLLOWING REQUIREMENTS:

- A. IT SHALL BE MOISTURE INSENSITIVE FOR APPLICATION BOTH ABOVE AND
- BELOW WATER. B. IT SHALL ADHERE TO WET CONCRETE, STEEL AND FX-70 JACKETS.

THE EXTENDER SHALL BE COMPATIBLE WITH THE HYDRO-ESTER EPOXY BINDER AND, WHEN MIXED WITH THE EPOXY BINDER, SHALL PRODUCE A SMOOTH FLOWING POURABLE/PUMPABLE GROUT.

THE BINDER SHALL BE MECHANICALLY MIXED IN STRICT ACCORDANCE WITH THE

- MANUFACTURER'S INSTRUCTION. A. ONE PART BINDER SHALL BE COMBINED WITH ONE 50 LB BAG OF "C" COMPONENT.
- B. WHEN MIXED IN THE RATIO OF ONE GALLON BINDER BY VOLUME, TO ONE-50 LB BAF EXTENDER, "C" COMPONENT, THE MINIMUM COMPRESSIVE STRENGTH OF TWO INCH CUBES SHALL BE 8,000 PSI AT SEVEN DAYS WHEN TESTED ACCORDING TO ASTM C-579 METHOD B.
- C. THE YIELD OF ONE GALLON OF BINDER, WHEN MIXED WITH ONE-50 LB BAG "C" COMPONENT EXTENDER SHALL BE A MINIMUM OF 800 CUBIC INCHES.

### HYDRO-ESTER TROWEL GRADE EPOXY GROUT:

THE TROWEL GRADE EPOXY GROUT SHALL BE COMPOSED OF FX-763 TROWEL GRADE EPOXY BINDER AND FX-701 FILLER AS FOLLOWS:

THE BINDER SHALL BE A TWO COMPONENT 2:1 RATIO FX-763 TROWEL GRADE HYDRO ESTER EPOXY MATERIAL MEETING THE FOLLOWING REQUIREMENTS:

- A. IT SHALL BE MOISTURE INSENSITIVE FOR APPLICATION BOTH ABOVE AND
- B. IT SHALL ADHERE TO WET CONCRETE, STEEL, THE FX-70 JACKETS.

THE FILLER SHALL BE FX-701 KILN-DRIED SILICA SAND.

- THE BINDER SHALL BE MECHANICALLY MIXED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- A. ONE PART OF BINDER SHALL BE COMBINED WITH A MAXIMUM OF ONE PART OF
- B. WHEN MIXED ON A RATIO OF ONE PART BINDER TO ONE PART FILLER, TWO-INCH CUBES OF THIS MATERIAL AT SEVEN DAYS (CURING AT 66 TO 74° F) SHALL BE 8,000 PSI WHEN TESTED ACCORDING TO ASTM C-579 METHOD B.

### **CERTIFICATION AND MATERIAL TESTS**

THE CONTRACTOR SHALL FURNISH A CERTIFICATE TO THE ENGINEER, ATTESTING THAT THE MATERIALS MEET ALL THE REQUIREMENTS CONTAINED HEREIN AND THAT THE SYSTEM SUBMITTED HAS BEEN SUCCESFULLY USED BY CITY, STATE OR FEDERAL AGENCIES FOR A MINIMUM OF FIVE YEARS.

THE CONTRACTOR SHALL PROCURE THE MANUFACTURER'S SERVICES TO PROVIDE ONSITE TECHNICAL ASSISTANCE DURING THE INITIAL JACKETING INSTALLATION UNTIL BOTH THE ENGINEER AND THE OWNER ARE SATISFIED WITH THE PROCEDURE.

SHOP DRAWINGS, SHOWING LOCATIONS OF STANDOFF SPACERS, METHOD OF FASTENING JACKET FORM TO PILING, SEALING THE JACKET AFTER INSTALLATION, AND BRACING DURING PLACEMENT OF MATERIALS IN THE ANNULAR SPACE BETWEEN THE JACKET AND THE PILE, SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL PRIOR TO ANY FIELD INSTALLATIONS.

ALL PILE SURFACES TO BE COVERED WITH PILE JACKETS OR PROTECTIVE COATING SHALL BE THOROUGHLY CLEANED OF OIL, GREASE, DIRT, BROKEN AND UNSOUND CONCRETE, AND ANY OTHER DELETERIOUS MATERIAL, WHICH WOULD PREVENT PROPER BONDING. ALL EXPOSED REINFORCING STEEL SHALL BE CLEANED TO REMOVE ALL RUST AND SCALE PRIOR TO INSTALLATION OF THE PILE JACKET. CLEANING MAY BE ACCOMPLISHED BY SANDBLASTING, WET BLASTING, WIRE BRUSHING, WATER LASER, OR OTHER APPROVED METHODS, WHICH WILL YIELD AN EQUIVALENT RESULT. NO PLACEMENT OF THE JACKETS WILL BE ALLOWED UNTIL THE PILE CLEANING HAS BEEN APPROVED.

TO INSTALL JACKETS, PLACE FX-763 TROWEL GRADE EPOXY, NO FILLER, INTO FEMALE PORTION OF JOINT, SPREAD JACKET OPEN AND PLACE AROUND PILE; ALLOW JACKET TO RETURN TO ORIGINAL SHAPE ENGAGING INTERLOCKING JOINT. POSITION JACKET AT PROPER ELEVATION.

## ONCE THE JACKET IS POSITIONED TO THE PROPER ELEVATION,

- A. INSTALL SELF-DRILLING, SELF-TAPPING STAINLESS STEEL SCREWS, TO SECURE
- INTERLOCKING JOINT, AT 6 INCH ON CENTER. B. INSTALL EXTERNAL BRACING.
- C. INSTALL TEMPORARY BOTTOM SEAL (MAY BE INSTALLED PRIOR TO PLACING
- D. INSTALL FX-70-6 HYDRO-ESTER MULTI-PURPOSE MARINE EPOXY GROUT INTO THE BOTTOM 6" OF THE ANNULAR VOID BY POURING OR PUMPING.

# ALLOW TO CURE OVERNIGHT BEFORE CONTINUING WITH THE GROUTING OPERATION.

AFTER THE GROUTING IS COMPLETED; ALLOW TO CURE A MINIMUM OF 6 HOURS, THEN CONSTRUCT THE BEVEL USING FX-763 TROWEL GRADE MORTAR, AS SHOWN ON THE

EXTERNAL BRACING MATERIALS SHALL BE REMOVED AFTER COMPLETION OF THE WORK AND THE EXTERIOR SURFACES OF THE JACKETS SHALL BE CLEANED OF ANY FILLER MATERIAL OR OTHER EXTRANEOUS MATERIAL DEPOSITED ON THE PILE JACKETS.

THE ITEMS TO BE MEASURED UNDER THIS CONTRACT SHALL BE THE TOTAL LINEAR FEET, IN PLACE FOR THE SIZES OF THE PILE JACKETS SPECIFIED AND FOR THE TOTAL AMOUNT OF SQUARE FEET OF PILE PROTECTED WITH TWO COATS OF THE EPOXY COATING BETWEEN THE TOP OF THE JACKET AND THE UNDERSIDE OF THE BENT.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT OF THE PILE JACKET, AND PER SQUARE FOOT OF EPOXY PROTECTIVE COATING. PAYMENTS MADE WILL CONSTITUTE FULL COMPENSATION FOR ALL TOOLS, MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THE PROJECT.

MURPHY BURR CURRY, INC. STRUCTURAL ENGINEERS mbcse.com San Francisco

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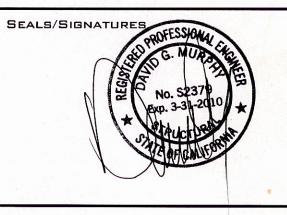
PROJECT TEAM

DAVID F. LEUNG, DBI MAR 3 1 2008

RECEIVED

MAR 3.1 2008

DEPT. OF BUILDING INSPECTION THIS PLAN MEETS THE QUALITY STANDARD FOR MICROFILMING



APPROVALS



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PROJECT NAME

DOLPHIN CLUB PILE REPAIR SAN FRANCISCO, CA

SHEET TITLE

DATE 03-19-08

STRUCTURAL NOTES

SCALE: AS NOTED	OWNER'S NO.	<b>Јов No.</b> 207—261
DRAWN BY: YK	SHEET NUMBER	
CHECKED BY: DGM	S.	11

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