FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PROPOSED ANCHOR PLANS LOAD LINE BARGE WITH CRANE

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 1 OF 6

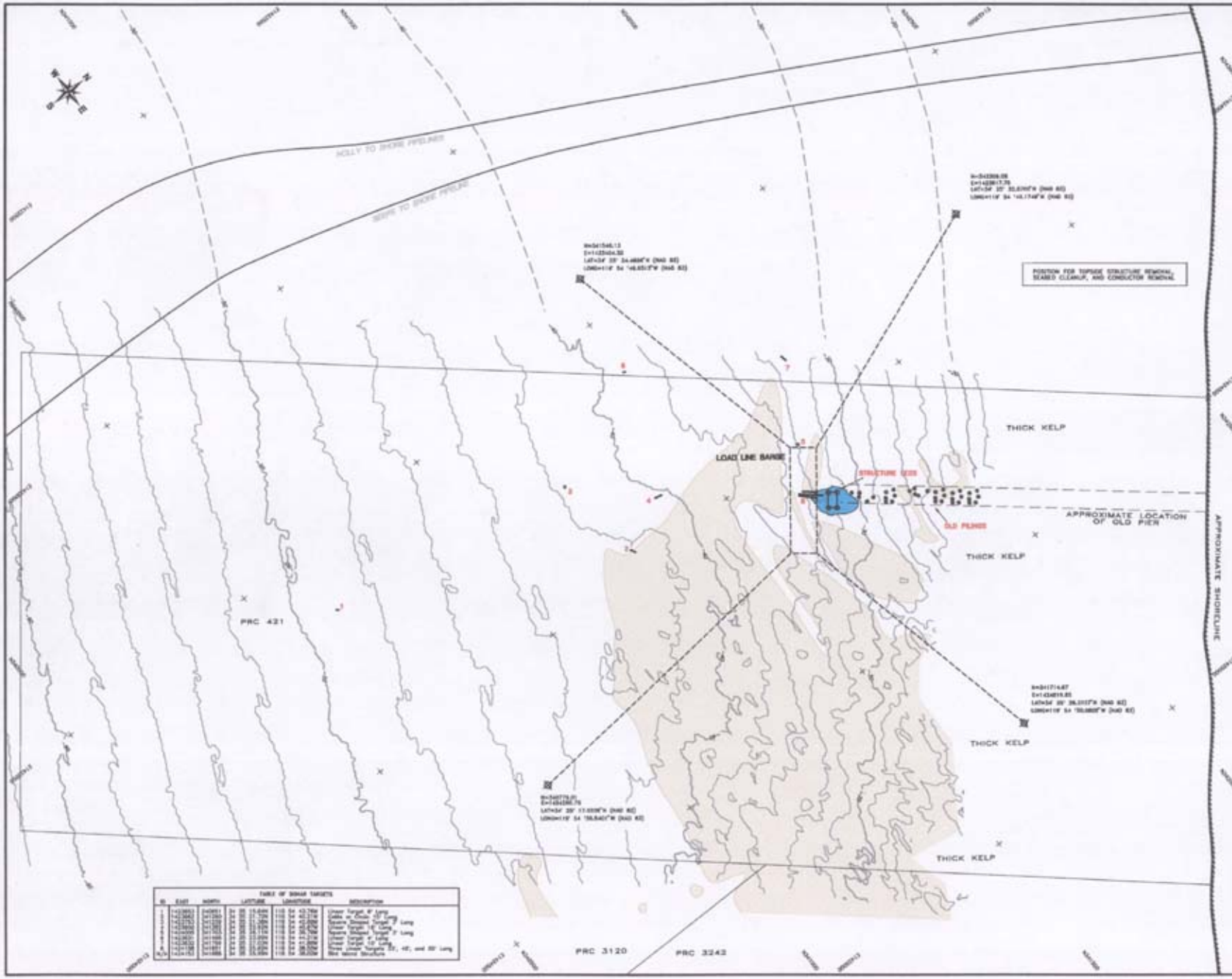


TABLE OF SONAR TARGETS

ID	EAST	NORTH	LATITUDE	LONGITUDE	DESCRIPTION
1	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 8' Long
2	[illegible]	[illegible]	[illegible]	[illegible]	Cable or Chain 20' Long
3	[illegible]	[illegible]	[illegible]	[illegible]	Square Shaped Target
4	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 12' Long
5	[illegible]	[illegible]	[illegible]	[illegible]	Square Shaped Target 7' Long
6	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 6' Long
7	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 12' Long
8	[illegible]	[illegible]	[illegible]	[illegible]	Three Linear Targets 20', 40', and 30' Long
9/A	[illegible]	[illegible]	[illegible]	[illegible]	Wire Valve Structure

Fugro West, Inc.

MARINE AND LAND SURVEYING GROUP
[illegible] Hollister St. Ste 100 Santa Barbara, CA 93103
Telephone (805) 963-1000 - Fax (805) 966-9676

LOCATION MAP

LEGEND

- PILING
- UNIDENTIFIED LINEAR SONAR TARGET
- UNIDENTIFIED SQUARE SHAPED SONAR TARGET
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE
- PROPOSED ANCHOR LOCATION

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX II DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 3.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1999
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.

REVISIONS

No.	DATE	DESCRIPTION	BY

SCALE: 1"=100'

0 100' 200' 300'

HORIZONTAL SYSTEM: N/A	DATUM: NAD 1927	SPHEROID: CLARKE 1866
PROJECTION: CALIFORNIA COORDINATE SYSTEM	ZONE: 5	UNITS: FEET
PROJECTION:	DATUM:	UNITS:

DATE: 08/15/03	MODEL: -	WORK ORDER: 03-3338.001	PLATE #: PLATE 1
DRW BY: GS	CHECK BY: BRV	MAP NO.: 3338-1	

FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PROPOSED ANCHOR PLANS LOAD LINE BARGE WITH CRANE

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 2 OF 6

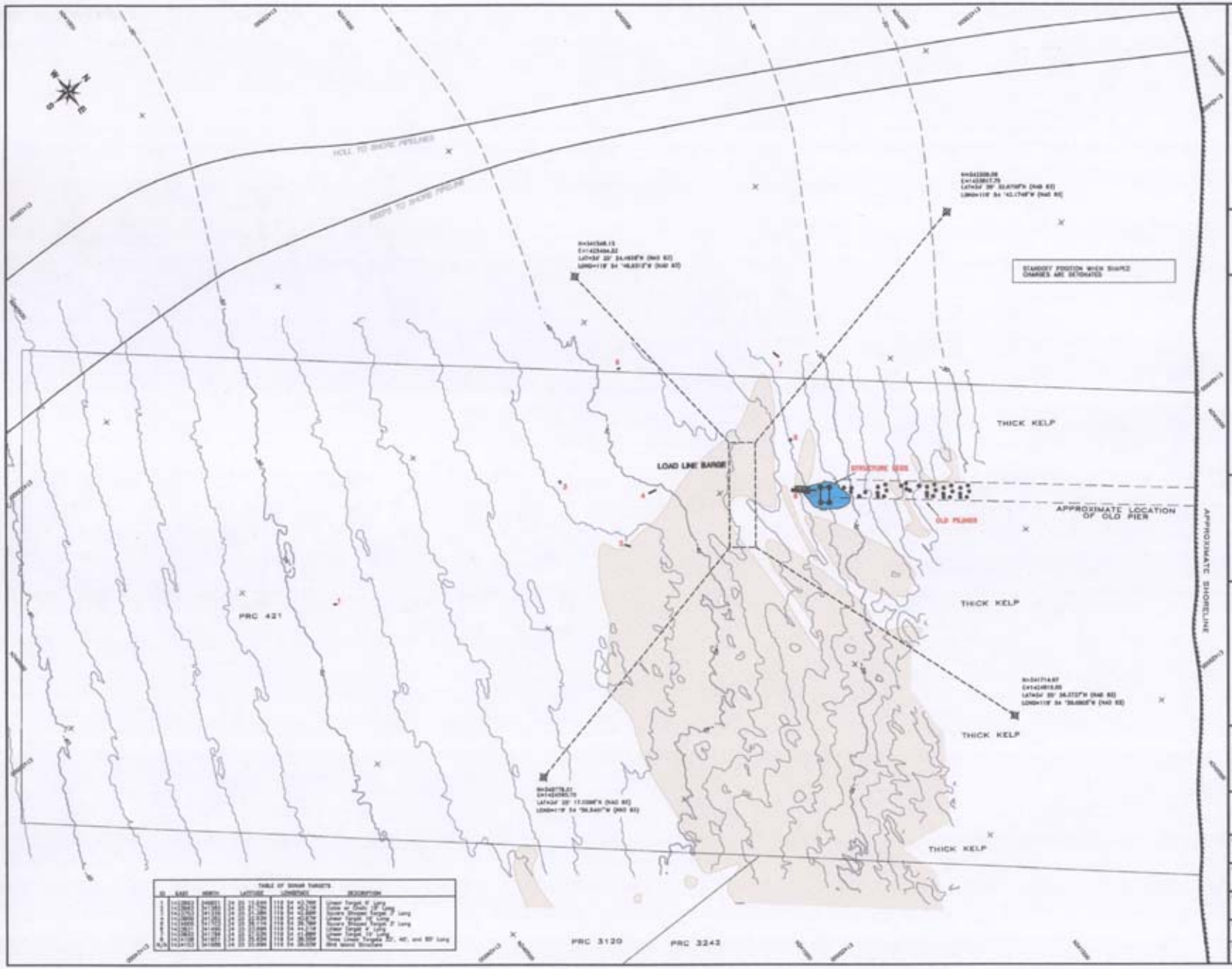


TABLE OF SONAR TARGETS

ID	EAST	NORTH	LATITUDE	LONGITUDE	DESCRIPTION
1	[illegible]	[illegible]	[illegible]	[illegible]	Linear on Chain 18" Long
2	[illegible]	[illegible]	[illegible]	[illegible]	Square Shaped Target
3	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 18" Long
4	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 18" Long
5	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 6" Long
6	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 6" Long
7	[illegible]	[illegible]	[illegible]	[illegible]	Linear Target 6" Long
8	[illegible]	[illegible]	[illegible]	[illegible]	Square Shaped Target
N/A	[illegible]	[illegible]	[illegible]	[illegible]	Rock Lines Targets 60', 48', and 80' Long
					Rock Mound Boulders

Fugro West, Inc.

MARINE AND LAND SURVEYING GROUP
[illegible]

LOCATION MAP

LEGEND

- PILING
- UNIDENTIFIED LINEAR SONAR TARGET
- UNIDENTIFIED SQUARE SHAPED SONAR TARGET
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE
- PROPOSED ANCHOR LOCATION

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX II DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 2.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1999
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.

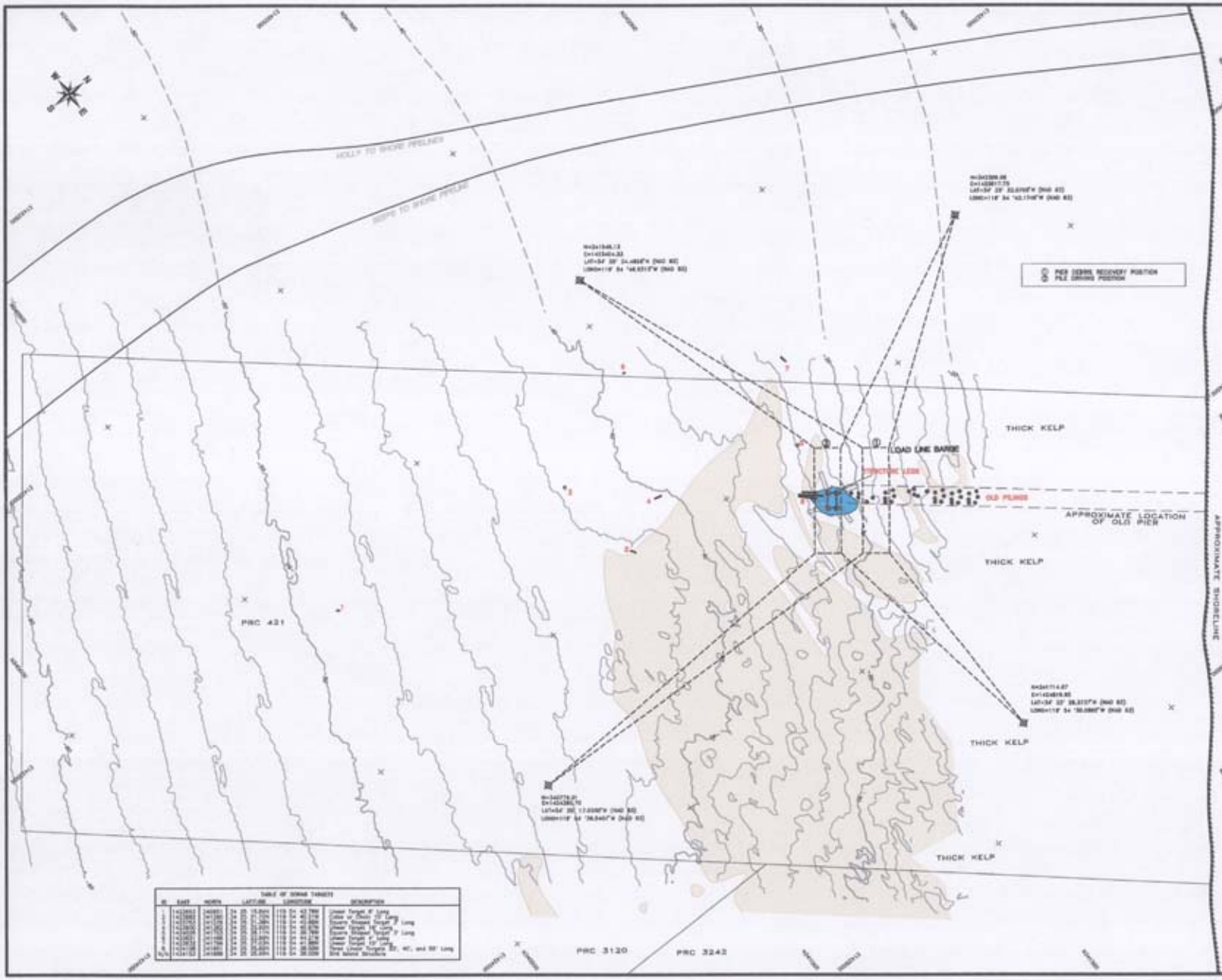
REVISIONS

No.	DATE	DESCRIPTION	BY

SCALE: 1"=100'

NAVIGATION SYSTEM: N/A	DATUM: NAD 1927	SPHEROID: CLARKE 1866
PROJECTION: CALIFORNIA COORDINATE SYSTEM	ZONE: 5	UNITS: FEET
PROJECTION:	DATUM:	UNITS:

DATE: 08/15/03	REVISED: -	WORK ORDER: 03-3338.001	PLATE #: PLATE 2
DRN BY: CS	CHECK BY: RBV	DWG No.: 3338-2	



FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PROPOSED ANCHOR PLANS LOAD LINE BARGE WITH CRANE

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 3 OF 6

Fugro West, Inc.

LOCATION MAP

LEGEND

- PILING
- UNIDENTIFIED LINEAR SONAR TARGET
- UNIDENTIFIED SQUARE SHAPED SONAR TARGET
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE
- PROPOSED ANCHOR LOCATION

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX X DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 2.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1998
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.

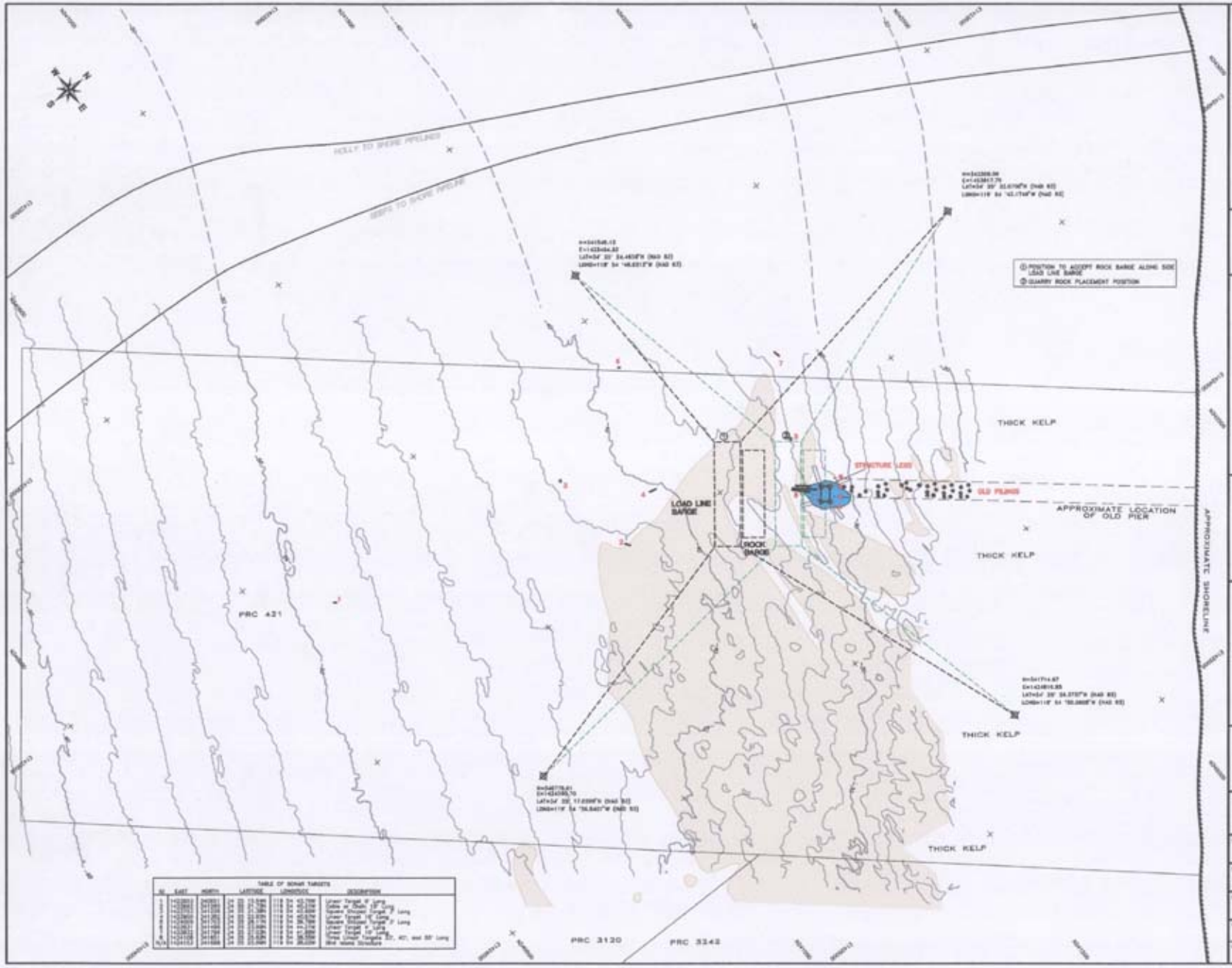
REVISIONS

No.	DATE	DESCRIPTION	BY

SCALE: 1"=100'

NAVIGATION SYSTEM: N/A	DATUM: NAD 1927	SPHEROID: CLARKE 1866
PROJECTION: CALIFORNIA COORDINATE SYSTEM	ZONE: 5	UNITS: FEET
PROJECTION:	DATUM:	UNITS:

DATE: 08/15/03	VESSEL: -	WORK ORDER: 03-3338.001	PLATE #: PLATE 3
DRW BY: GS	CHECK BY: RRV	MAP No.: 3338-3	



FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PROPOSED ANCHOR PLANS LOAD LINE BARGE WITH CRANE

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 4 OF 6

Fugro West, Inc.

MARINE AND LAND SURVEYING GROUP
4820 McGrath St. ste 100 Ventura, Ca. 93003
Telephone (805) 650-7000 - Fax (805) 650-8070

LOCATION MAP

LEGEND

- PILING
- UNIDENTIFIED LINEAR SONAR TARGET
- UNIDENTIFIED SQUARE SHAPED SONAR TARGET
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE
- PROPOSED PILE LOCATIONS
- PROPOSED ANCHOR LOCATION

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX II DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 2.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1999
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.

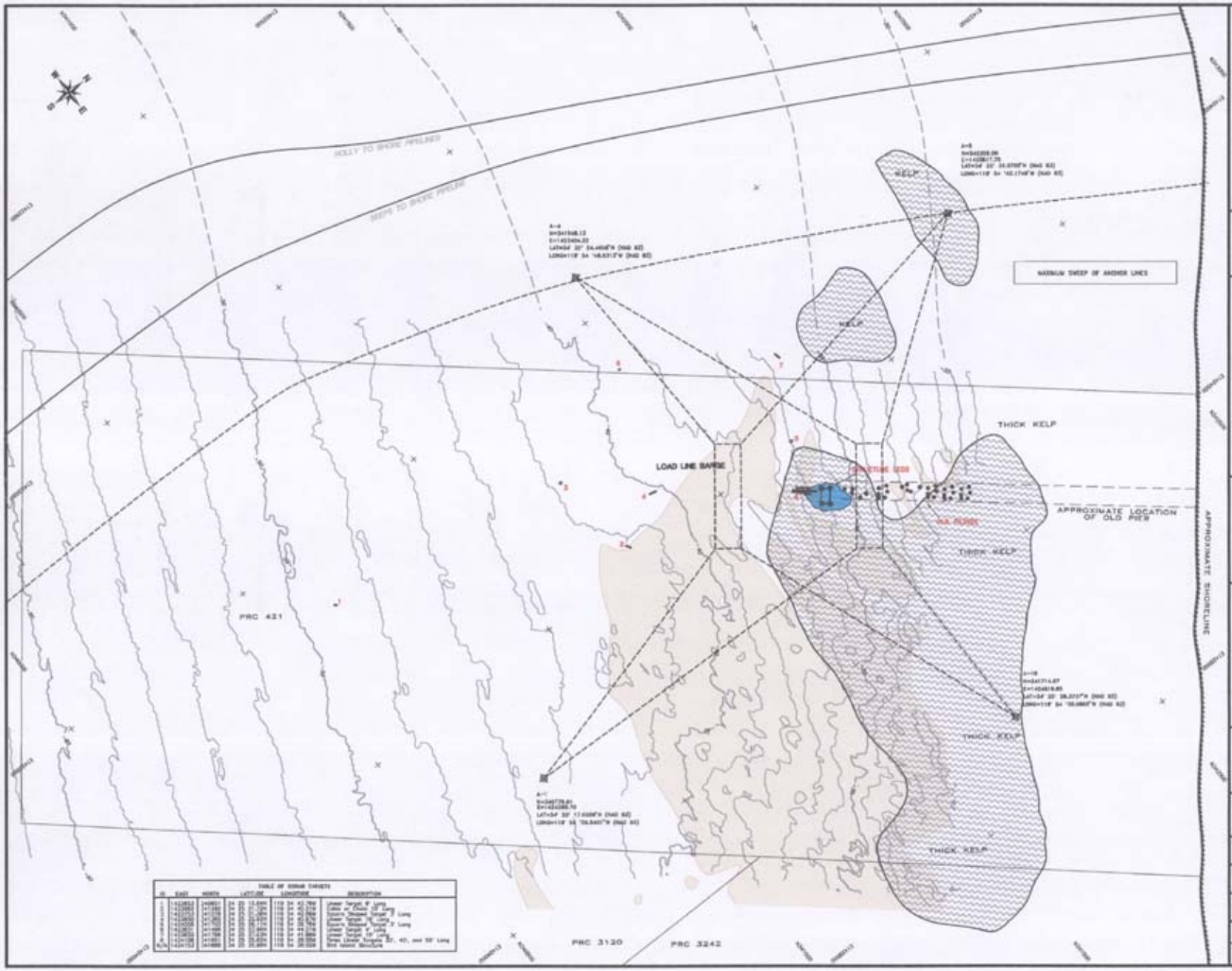
REVISIONS

No.	DATE	DESCRIPTION	BY

SCALE: 1"=100'

NAVIGATION SYSTEM: N/A	DATUM: NAD 1927	SPHEROID: CLARKE 1866
PROJECTION: CALIFORNIA COORDINATE SYSTEM	ZONE: 5	UNITS: FEET
PROJECTION:	DATUM:	UNITS:

DATE: 08/118/03	PERMIT: -	WORK ORDER: 03-3338.001	PLATE #: PLATE 4
DRN BY: CS	CHECK BY: RRV	MAP No.: 3338-4	



FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PROPOSED ANCHOR PLANS LOAD LINE BARGE WITH CRANE

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 5 OF 6

Fugro West, Inc.

MARINE AND LAND SURVEYING GROUP

LOCATION MAP

LEGEND

- PILING
- UNIDENTIFIED LINEAR SONAR TARGET
- UNIDENTIFIED SQUARE SHAPED SONAR TARGET
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE
- PROPOSED ANCHOR LOCATION

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX 8 DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 2.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1999
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.
6. EXTENT OF KELP BEDS MAPPED FROM M/V SOLERA ON MARCH 30, 2001.

REVISIONS

No.	DATE	DESCRIPTION	BY

SCALE: 1"=100'

NAVIGATION SYSTEM: N/A	DATUM: NAD 1927	SPHEROID: CLARKE 1866	
PROJECTION: CALIFORNIA COORDINATE SYSTEM	ZONE: 5	UNITS: FEET	
PROJECTION:	DATUM:	UNITS:	
DATE: 8/18/03	VESSEL: Solera	WORK ORDER: 03-3338.001	PLATE #: PLATE 5
DRW BY: CS	CHECK BY: RBV	MAP No.: 3338-5	

FAIRWEATHER PACIFIC LLC

MAP SHOWING

ARCO PIER PRC-421 PILING LOCATIONS

SANTA BARBARA COUNTY
AUGUST 2003

PLATE 6 OF 6

Fugro West, Inc.

MARINE AND LAND SURVEYING GROUP
4820 McGrath St. Ste 100 Ventura, Ca. 93003
Telephone (805) 650-7000 - Fax (805) 650-6879

LOCATION MAP

LEGEND

- PILING FOUND BY FUGRO WEST SURVEY MARCH 1999.
- PILING FOUND BY OCEANEERING 5/12/99.
- PILING FOUND BY OCEANEERING/MARTECH DIVERS.
- PILING FOUND BY MARTECH.
- ROCK OUTCROP
- DEBRIS OR SHELL PILE AT STRUCTURE

NOTES

1. HORIZONTAL POSITIONING WAS ACHIEVED USING A STARFIX II DIFFERENTIAL GPS POSITIONING SYSTEM INTEGRATED WITH HYPACK NAVIGATION PACKAGE.
2. BATHYMETRY CONTOURS ARE SHOWN IN FEET REFERENCED TO MEAN LOWER LOW WATER (MLLW). SOUNDINGS WERE REDUCED TO MLLW BASED ON NOAA TIDAL DATA FOR THE SURVEY SITE.
3. CONTOUR INTERVAL IS 2.0 FEET.
4. MULTIBEAM BATHYMETRY SURVEY WAS CONDUCTED IN MARCH 1999
5. EXISTING PIPELINE LOCATIONS FROM ARCO MAP "UNIDENTIFIED TARGETS AND MAN MADE FEATURES SANTA BARBARA CHANNEL" DATED DECEMBER 1984.
6. PILES SHOWN ON THIS MAP ARE FROM BOTH OCEANEERING AND MARTECH BOTH LOCAL DIVING CONTRACTORS. THESE PILE LOCATIONS WERE DERIVED FROM DIVER SURVEYS AND WERE NOT REFERENCED TO ANY REAL WORLD COORDINATE SYSTEM. PILE LOCATIONS PROVIDED BY OCEANEERING AND MARTECH ON THIS MAP ARE CONSIDERED APPROXIMATE AND FUGRO WEST INC. ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY.

SCALE: 1"=30'

NAVIGATION SYSTEM:	DATUM:	SPHEROID:	
N/A	NAD 1927	CLARKE 1866	
PROJECTION: CALIFORNIA COORDINATE SYSTEM		ZONE: 5	UNITS: FEET
PROJECTION:		DATUM:	UNITS:

DATE:	VESSEL:	WORK ORDER:	PLATE #:
8/18/03		03-3338.001	PLATE 6
DRW BY: CS	CHECK BY: RRV	MAP NO.: 3338-6	