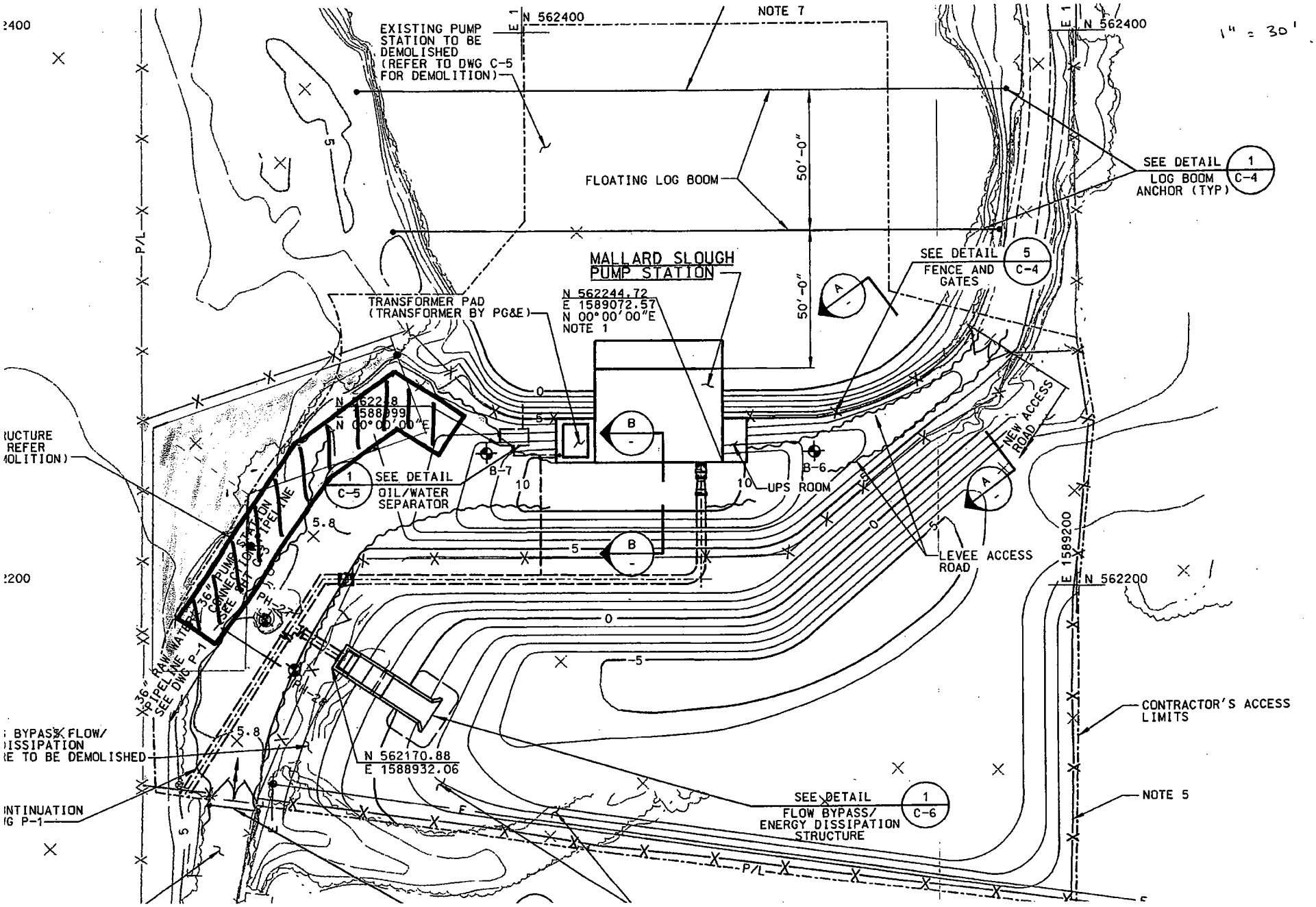
1" = 30'
N 562400
E 1
NOTE 7
EXISTING PUMP STATION TO BE DEMOLISHED (REFER TO DWG C-5 FOR DEMOLITION)
FLOATING LOG BOOM
50'-0"
50'-0"
SEE DETAIL 1 / C-4
LOG BOOM ANCHOR (TYP)
SEE DETAIL 5 / C-4
FENCE AND GATES
MALLARD SLOUGH PUMP STATION
N 562244.72
E 1589072.57
N 00°00'00"E
NOTE 1
TRANSFORMER PAD (TRANSFORMER BY PG&E)
N 562228
E 1588999
N 00°00'00"E
SEE DETAIL 1 / C-5
OIL/WATER SEPARATOR
B-7
B-6
UPS ROOM
NEW ACCESS ROAD
LEVEE ACCESS ROAD
E 1589200
N 562200
CONTRACTOR'S ACCESS LIMITS
NOTE 5
N 562170.88
E 1588932.06
SEE DETAIL 1 / C-6
FLOW BYPASS/ ENERGY DISSIPATION STRUCTURE
P/L
36" RAW WATER PIPELINE SEE DWG P-1
36" PUMP STATION CONNECTION SEE DWG P-1
BYPASS FLOW/ DISSIPATION STRUCTURE TO BE DEMOLISHED
CONTINUATION DWG P-1
2400
2200

Not For Navigational Use

SOUNDINGS IN FEET

18656

Formerly C&GS 5034, 1st Ed., Jan. 1903 G-1945-E40 KA70 18th

Nautical Chart Catalog No. 2, Panel N

UNITED STATES - WEST COAST

CALIFORNIA

SUISUN BAY

Mercator Projection
Scale 1:40,000 at Lat. 38°07'

North American Datum of 1983
(World Geodetic System of 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

TIDAL INFORMATION

Place		Height referred to datum of soundings (MLLW)			
Name	LATITUDE LONGITUDE	Mean Higher High Water	Mean High Water	Mean Low Water	Extreme Low Water
		feet	feet	feet	feet
Crockett	(38°03'N/122°13'W)	5.5	5.0	0.0	-2.0
Carquinez	(38°04'N/122°14'W)	4.9	4.4	0.0	-2.0
Port Chicago	(38°03'N/122°02'W)	4.2	4.1	0.0	-2.0
Suisun Slough Entrance	(38°08'N/122°04'W)	4.7	4.2	0.7	-2.0
Benicia	(38° 4'N/122°10'W)	5.1	4.7	0.7	-2.0
Northbound Slough Bridge	(38° 1'N/121°59'W)	4.9	4.4	0.7	-2.0
Antioch	(38°01'N/121°46'W)	3.9	3.4	0.6	-2.0

(1992)

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)
AIDS to Navigation (lights are white unless otherwise indicated)

AERO (aeronautical)
Al alternating
B black
Bn beacon
C can
DIA diaphone
F fixed
Fl flashing
G green
Gp group
h hour
Iso isophase
LT HO lighthouse
M nautical mile
m minutes
MICRO TR microwave tower
Mkr marker
Mo morse code
N red
Oc occulting
Or orange
Q quick
R red
Ra Ref radar reflector
R Bn racebeacon
R Tlr radio tower
Rot rotating
s seconds
W white
W M statute miles
VQ very quick
W white
WHIS whistle
Y yellow

Bottom characteristics:
Bldr boulders
Sk broken
Cy clay
Co coral
Gr gravel
Grs grass
Gy gritty
h hard
M mud
Oys oysters
Rk rock
S sand
sh soft
Sh shells
sy sticky

Miscellaneous:
AUTH authorized
Obstr obstruction
PD position doubtful
Subm submerged
SD existence doubtful
Ph position approximate
Rep reported
Wreck, rock, obstruction, or shoal swept clear to the depth indicated
Rocks that cover and uncover, with heights in feet above datum of soundings.

COLREGS International Regulations for Preventing Collisions at Sea, 1972.

HEIGHTS
Heights in feet above Mean High Water.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

NOAA VHF-FM WEATHER BROADCASTS
The National Weather Service stations listed below provide continuous marine weather broadcasts. The range of reception is variable, but for most stations is usually 20 to 40 miles from the antenna site.

Mt. Pleasant, CA	KHB-49	162.40 MHz
Sacramento, CA	KEC-57	162.55 MHz

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 7 for important supplemental information.

WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS3), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been bianded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

SOURCE			
A	1990-1999	NOS Surveys	full bottom coverage
B1	1990-1999	NOS Surveys	partial bottom coverage
B2	1910-1969	NOS Surveys	partial bottom coverage
B3	Pre - 1900	NOS Surveys	partial bottom coverage

CAUTION
SUBMARINE PIPELINES AND CABLES
Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:
Pipeline Area
Cable Area
Additional unchartedsubmarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners are cautioned to use caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.
Covered wells may be marked by lighted or unlighted buoys.

BUSIN BAY
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO JUL 2001

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTBNDR QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTBNDR QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT MILES)	DEPTH VALUE (FEET)
SUISUN PT. REACH	42.6	44.7	47.8	4-01	350	0.8	36
BULLS HEAD CHANNEL	31.8	30.3	31.6	4,7-01	300-350	1.3	36
EAST BULLS HEAD CHANNEL	32.8	32.6	32.5	4-01	350	1.1	36
PE. EDITH CROSSING RANGE	35.6	34.8	28.4	4-01	350	1.1	36
ROE ISLAND CHANNEL	35.5	34.9	35.7	4-01	350	0.9	36
ROE ISLAND CUTOFF	30.0	32.2	32.3	4-01	350	1.1	36
PORT CHICAGO REACH	36.8	37.1	36.3	4-01	350	0.52	36
MIDDLE GROUND CHANNEL							
WEST REACH	34.7	36.4	34.9	4-01	350	1.29	36
EAST REACH	34.2	36.5	35.3	4-01	350	1.08	36
NEW YORK SLOUGH							
WEST REACH	31.8	35.3	36.4	1-01	400	1.3	36
EAST REACH	29.6	34.8	32.2	1-01	400	1.7	36

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

NOTE D
CAUTION
Mariners are warned that numerous uncharted piles, snags, pumps, and pipes, some submerged, may exist along the edges of the waterway.

SACRAMENTO RIVER
DEEP WATER SHIP CHANNEL
165.205 (see note A)
Controlling depth for a width of 200 feet was 28.8 feet from the channel entrance (38°03'50"N, 122°13'18"W) to LL "40", thence 30.3 feet to LL "32", thence 28.4 feet to LL 169", thence 28.1 feet to LL "39", thence 30.1 feet to LL"95" and 32.4 feet in the turning basin at West Sacramento.
May 1999 - Apr 2001

NOTE B
The area within one hundred yards of the southern end of Mare Island and within 50 yards of any part of the berthing piers at the Navy Yard including pier 36 at the south end of Mare Island is a Prohibited Area 334.1100 (See Note A).

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.29" northwest and 3.67" westward to agree with this chart.

BENICIA-MARTINEZ HIGHWAY BRIDGE
Privately maintained lights marking this bridge are shown as follows:
An occulting red light, with 3 fixed white lights in a vertical line above on each side of the span over the middle of Suisun Pt. Reach. The occulting red lights change to occulting green when the lift span on the adjacent railroad bridge is fully open.
A fixed green light on each side of the span over the middle of the channel between Piers 6 and 7 (approx 38°02'36"N, 122°07'31"W).
Fixed red lights mark Piers 4 through 12 and fixed green lights mark center of the spans.

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District in Alameda, California or at the Office of the District Engineer, Corps of Engineers in San Francisco, California.
Refer to charted regulation section numbers.

NOTE E
The U.S. Coast Guard operates a mandatory Vessel Traffic Services (VTS) system in the San Francisco Bay and surrounding areas. Vessel operating procedures and designated radiotelephone frequencies are published in 33 CFR (Navigation), U.S. Coast Pilot, and/or the VTS User's Manual. The entire area of the chart falls within the Vessel Traffic Services (VTS) system.

NOTE C
UNION PACIFIC BRIDGE
The clearance of the lift span is 70 feet above mean higher high water when down and 135 feet when raised. Horizontal clearance 291 feet.
Fixed red lights are shown to mark the piers supporting the spans that adjoin the lift span. A fixed green light is shown to mark the middle of each of those spans. Flashing red lights are shown from the top of the middle of those spans and from the top of the northern lift tower.

LOGARITHMIC SPEED SCALE
To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

CAUTION
Only marine radiobeacons have been calibrated for surface use. Limitations on the use of certain other radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Imagery and Mapping Agency Publication 117.
Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
(A)Accurate location (a)Approximate location

CAUTION
This chart has been corrected from the Notice to Mariners published weekly by the National Imagery and Mapping Agency and the Local Notice to Mariners issued periodically by each U.S. Coast Guard district to the date shown in the lower left hand corner.

2nd Ed, Mar. 31/01

18656

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U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDINGS IN FEET

Suisun Bay
SOUNDINGS IN FEET - SCALE 1:40,000

18656

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