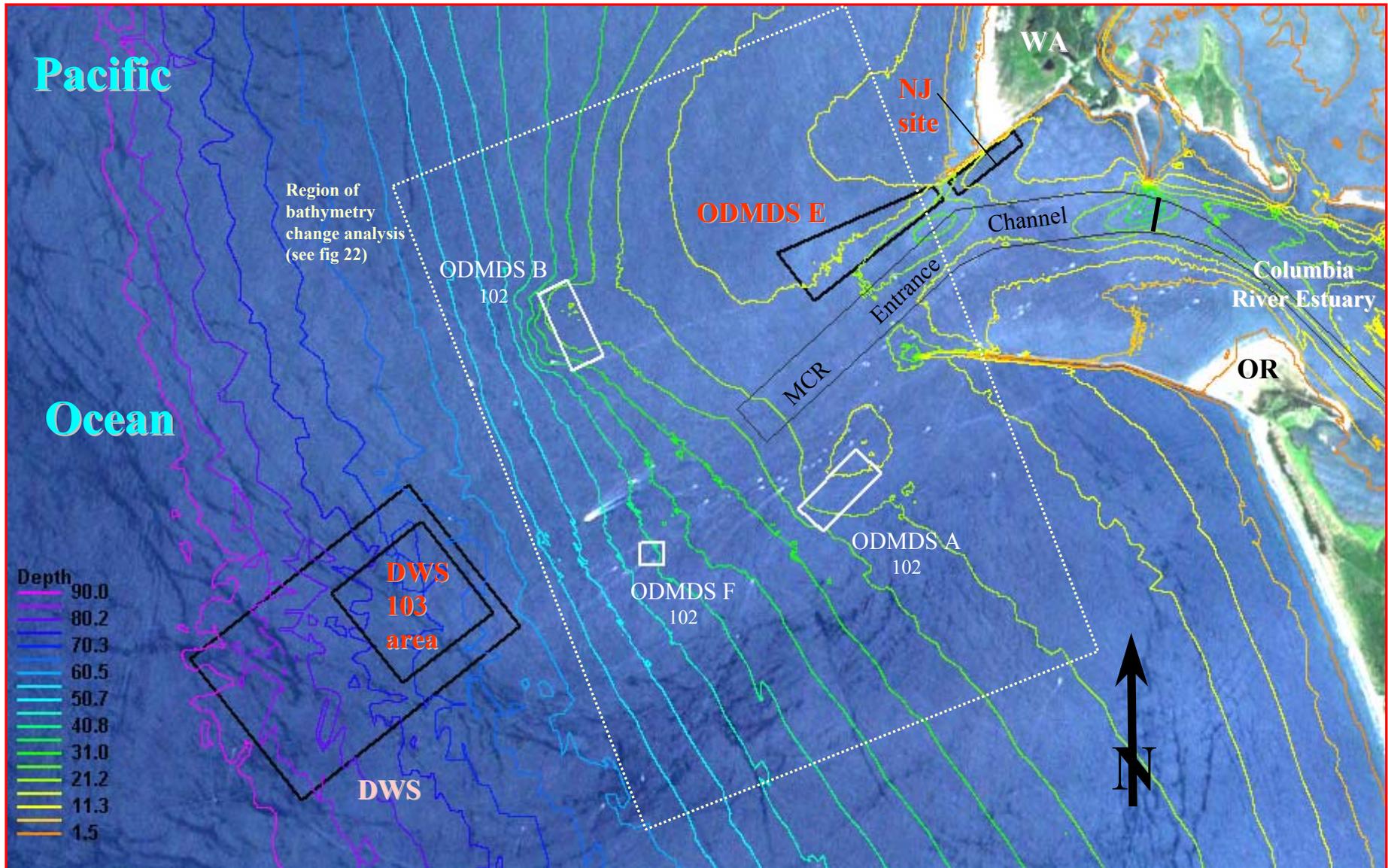


Mouth of the Columbia River - Bathymetry and Dredged Material Placement Sites



DWS= Deep Water Site ODMDS

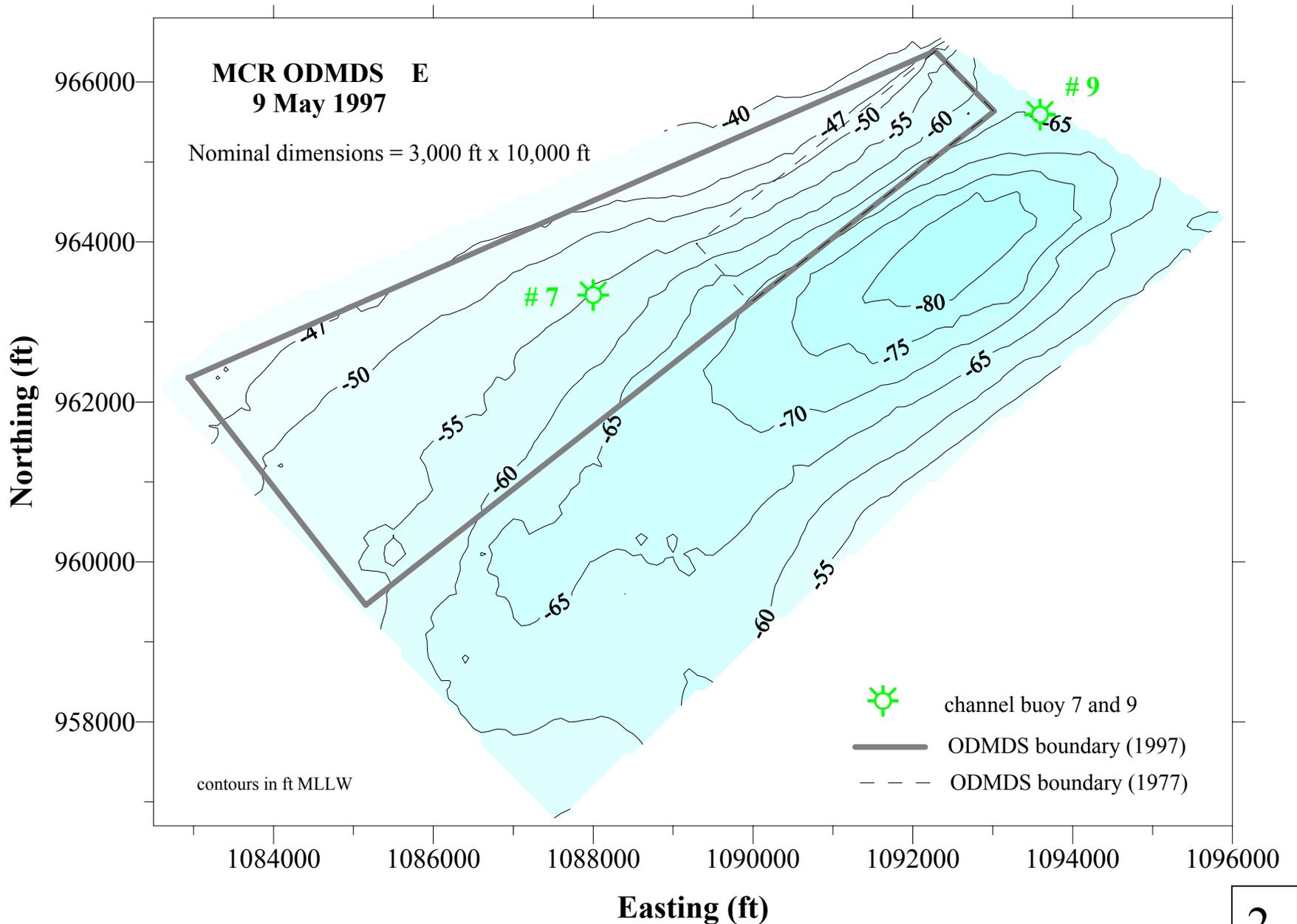
SWS= Shallow Water Site ODMDS E

ODMDS = ocean dredged material disposal site, MPRSA

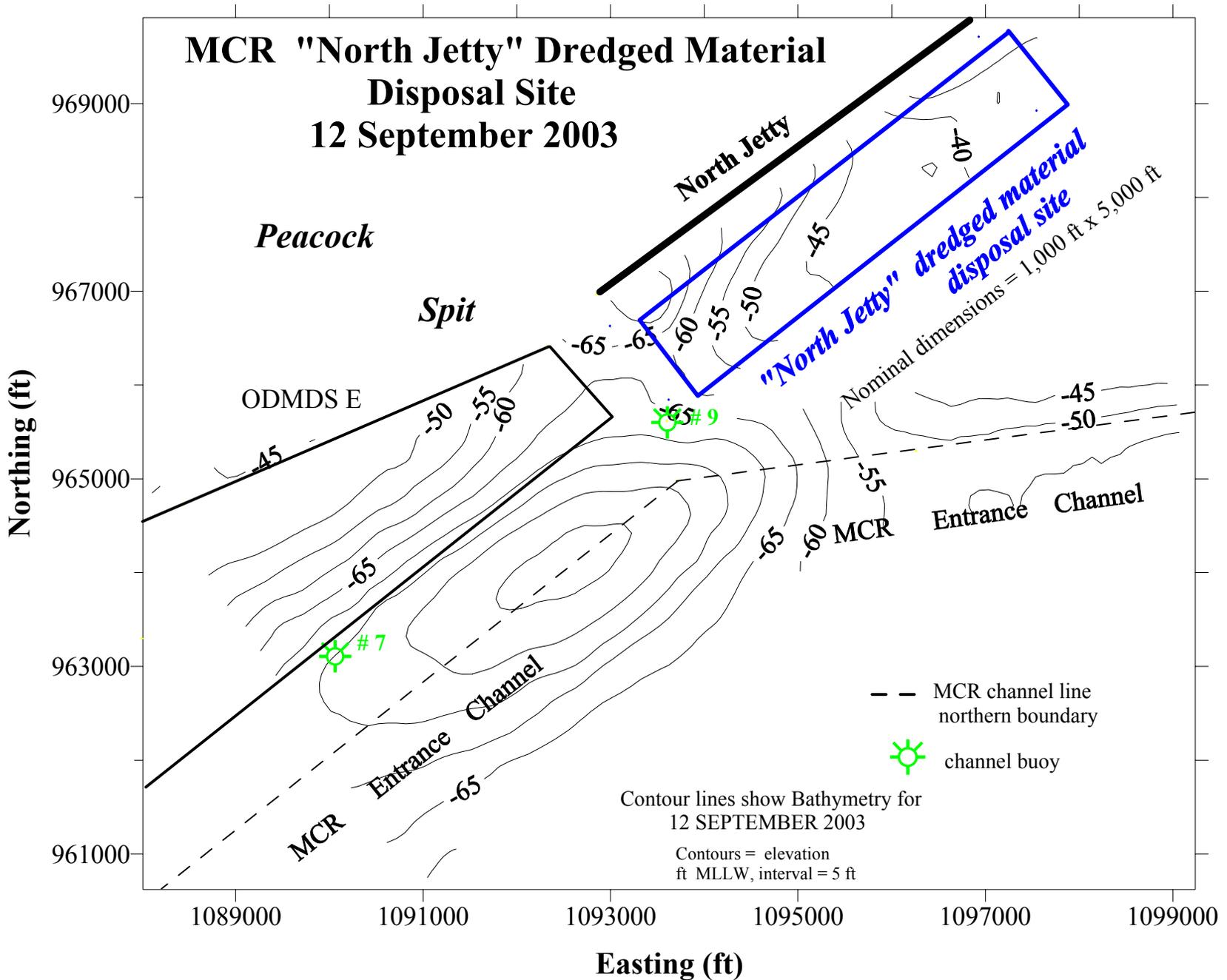
NJ Site = North Jetty disposal site, CWA

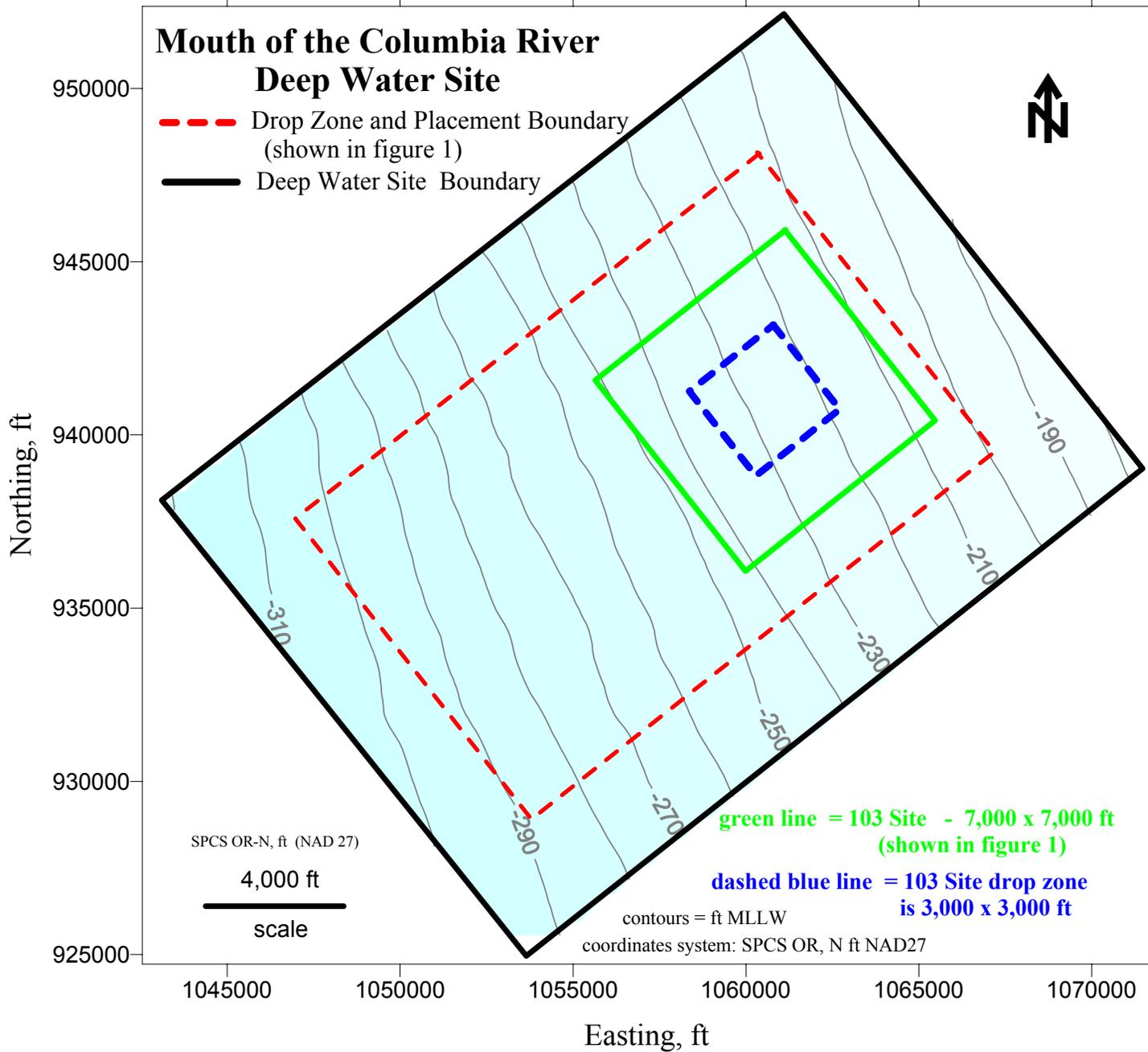
2 miles

Project Baseline Bathymetry for ODMDS E



MCR "North Jetty" Dredged Material Disposal Site 12 September 2003





MCR Channel and dredged material disposal sites available during 2004

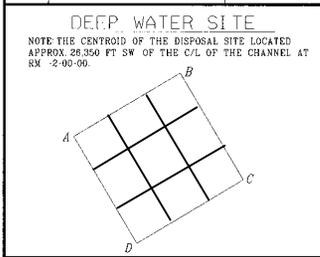
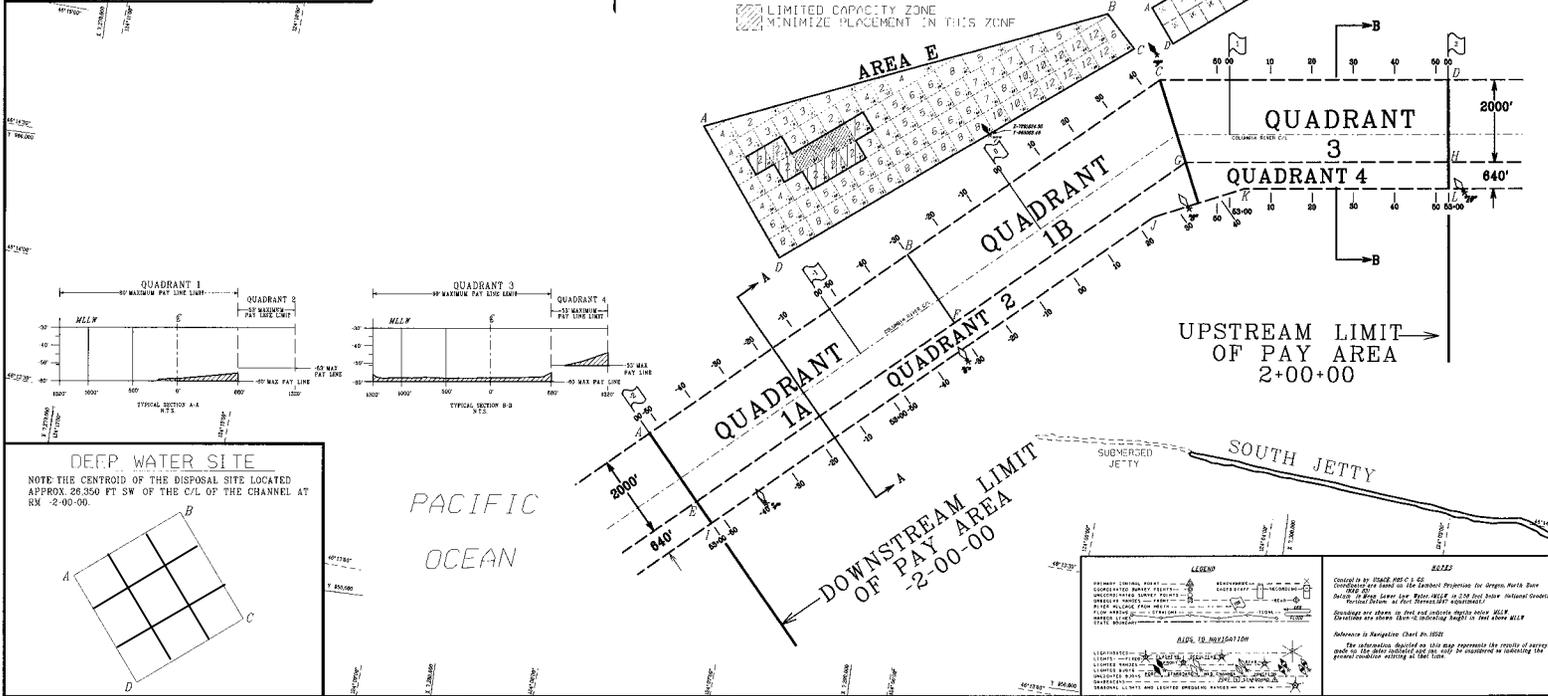
CORPS OF ENGINEERS

- NOTES:
1. THE DISPOSAL SITE EXAMPLE SHOWN FOR SITE E IS WHAT THE CONTRACTOR CAN EXPECT ON THE PRELIMINARY LAYOUT CHART. THE OUTSIDE LIMITS OF SITE E WILL NOT CHANGE, HOWEVER, THE CELLS AVAILABLE FOR DISPOSAL MAY CHANGE.
 2. CONTRACTOR WILL BE PROVIDED A COPY OF THE DISPOSAL PLAN AND COORDINATES OF THE INDIVIDUAL CELLS WITH THE BASELINE SURVEY PRIOR TO THE START OF WORK.
 3. THE CONTRACTOR SHOULD ANTICIPATE THAT SEVERAL CELLS WITHIN THE DISPOSAL SITES WILL BE MARKED AS "AVOIDANCE ZONES".
 4. THE NUMBER OF LOADS ALLOWED TO BE DUMPED IN EACH CELL WILL BE DESIGNATED ON THE DISPOSAL PLAN.
 5. THE ALLOWABLE LOADS PER CELL MAY BE MODIFIED THROUGHOUT THE CONTRACT BASED ON PERIODIC SURVEYS BY THE GOVERNMENT.
 6. THE DISPOSAL SITE SHALL BE FILLED UNIFORMLY WITH NO MORE THAN ONE LOAD DIFFERENCE BETWEEN ANY TWO CELLS. I.E., ALL CELLS MUST BE FILLED WITH ONE LOAD BEFORE PLACING A SECOND LOAD IN ANY CELL. ALL CELLS DESIGNATED FOR TWO LOADS MUST BE FILLED BEFORE PLACING A THIRD LOAD IN ANY CELL, ETC.
 7. CONTRACTOR SHALL MAINTAIN AREA E DISPOSAL OPERATIONS ACCORDING TO ANTICIPATED SEA AND WEATHER CONDITIONS TO INSURE THAT CELLS ADJACENT TO THE JETTY ARE FILLED DURING THE MOST FAVORABLE CONDITIONS FOR UNIFORM MATERIAL PLACEMENT IN THE CELLS.
 8. WHEN RECORDING THE PLACEMENT LOCATION, MATERIAL SHALL BE REFERRED TO THE CELL NUMBER, THE DISPOSITION, ORIGIN, ORIGIN IS STANDED, NUMBER OF TONS, NUMBER OF CELLS, DISPOSAL SITE, THE LOAD SHALL BE IDENTIFIED BY THE JETTY AND FILLED DURING THE MOST FAVORABLE CONDITIONS FOR UNIFORM MATERIAL PLACEMENT IN THE CELLS.
 9. OTHER REQUIREMENTS FOR DISPOSAL, INCLUDING REPORTING REQUIREMENTS ARE ADDRESSED IN SECTION BARGE AND SECTION B-451.

DREDGING QUADRANTS 2004		CHANNEL CENTER LINE 2004	
MATERIAL PLACEMENT AREAS OUTER LIMIT COORDINATES			
X COORDINATE	Y COORDINATE	STATION	X COORDINATE
A	7294488.28	0+00	7295297.12
B	7296062.98	0+00	7296133.78
C	7295522.98	0+00	7296186.82
D	7292108.21	0+00	7296238.87
E	7288090.87	0+00	7296292.05
F	7292373.73	0+00	7296345.19
G	7296487.91	0+00	7296398.31
H	7290277.31	0+00	7296451.43
I	7286195.98	0+00	7296504.58
J	7295883.74	0+00	7296557.74
K	7290938.63	0+00	7296610.88
L	7286857.82	0+00	7296664.04

AREA E 2004		NORTH JETTY SITE 2004		DEEP WATER SITE 2004	
MATERIAL PLACEMENT AREA OUTER LIMIT COORDINATES					
X COORDINATE	Y COORDINATE	X COORDINATE	Y COORDINATE	X COORDINATE	Y COORDINATE
A	7294488.28	A	7295297.12	A	7295297.12
B	7296062.98	B	7296133.78	B	7296133.78
C	7295522.98	C	7296186.82	C	7296186.82
D	7292108.21	D	7296238.87	D	7296238.87
E	7288090.87	E	7296292.05	E	7296292.05
F	7292373.73	F	7296345.19	F	7296345.19
G	7296487.91	G	7296398.31	G	7296398.31
H	7290277.31	H	7296451.43	H	7296451.43
I	7286195.98	I	7296504.58	I	7296504.58
J	7295883.74	J	7296557.74	J	7296557.74
K	7290938.63	K	7296610.88	K	7296610.88
L	7286857.82	L	7296664.04	L	7296664.04

AREA E 2004		NORTH JETTY SITE 2004		DEEP WATER SITE 2004	
MATERIAL PLACEMENT AREA OUTER LIMIT COORDINATES					
X COORDINATE	Y COORDINATE	X COORDINATE	Y COORDINATE	X COORDINATE	Y COORDINATE
A	7294488.28	A	7295297.12	A	7295297.12
B	7296062.98	B	7296133.78	B	7296133.78
C	7295522.98	C	7296186.82	C	7296186.82
D	7292108.21	D	7296238.87	D	7296238.87
E	7288090.87	E	7296292.05	E	7296292.05
F	7292373.73	F	7296345.19	F	7296345.19
G	7296487.91	G	7296398.31	G	7296398.31
H	7290277.31	H	7296451.43	H	7296451.43
I	7286195.98	I	7296504.58	I	7296504.58
J	7295883.74	J	7296557.74	J	7296557.74
K	7290938.63	K	7296610.88	K	7296610.88
L	7286857.82	L	7296664.04	L	7296664.04



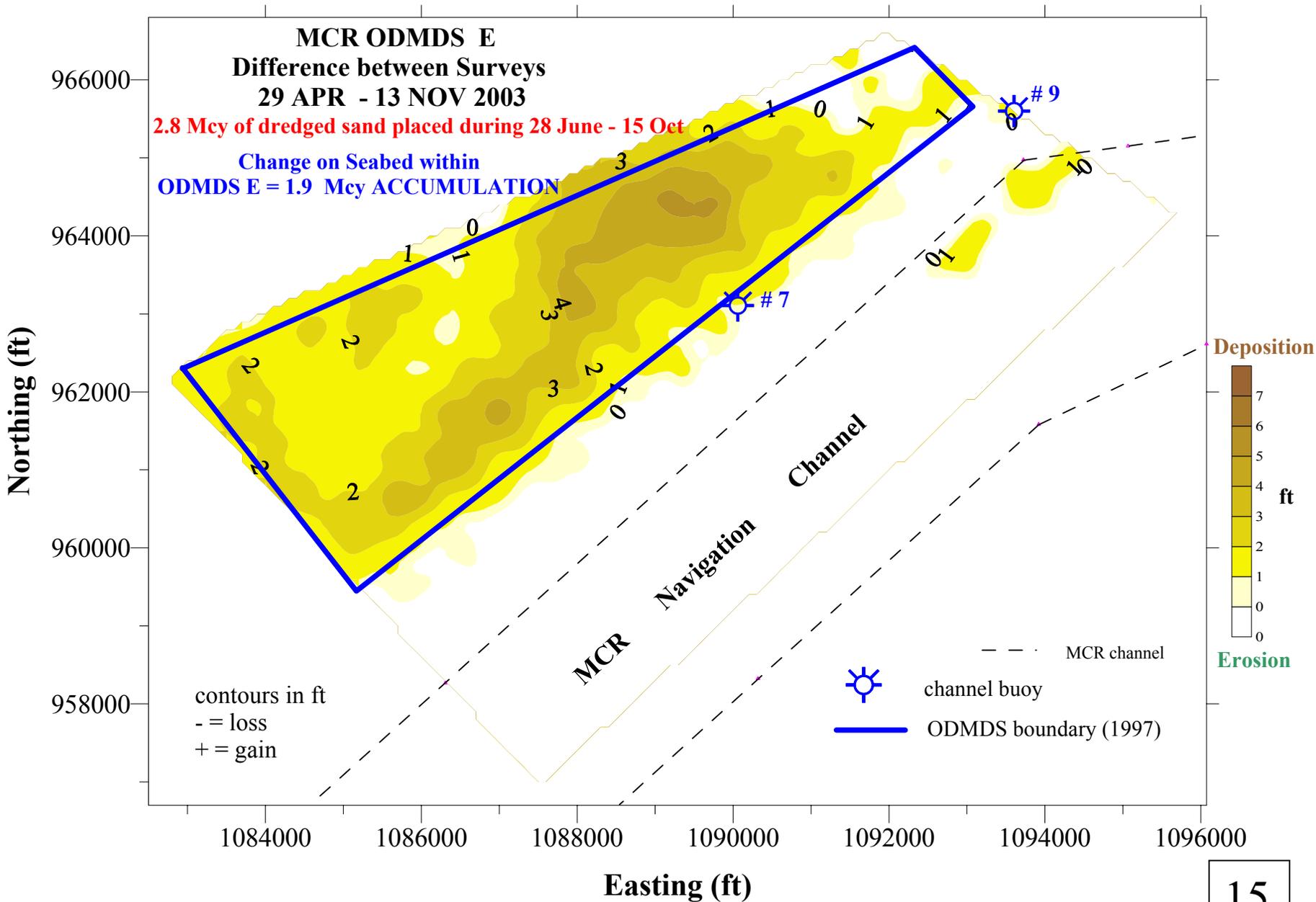
STATION	DATE	DESCRIPTION
0+00	08/01/03	CONTRACTOR SURVEY

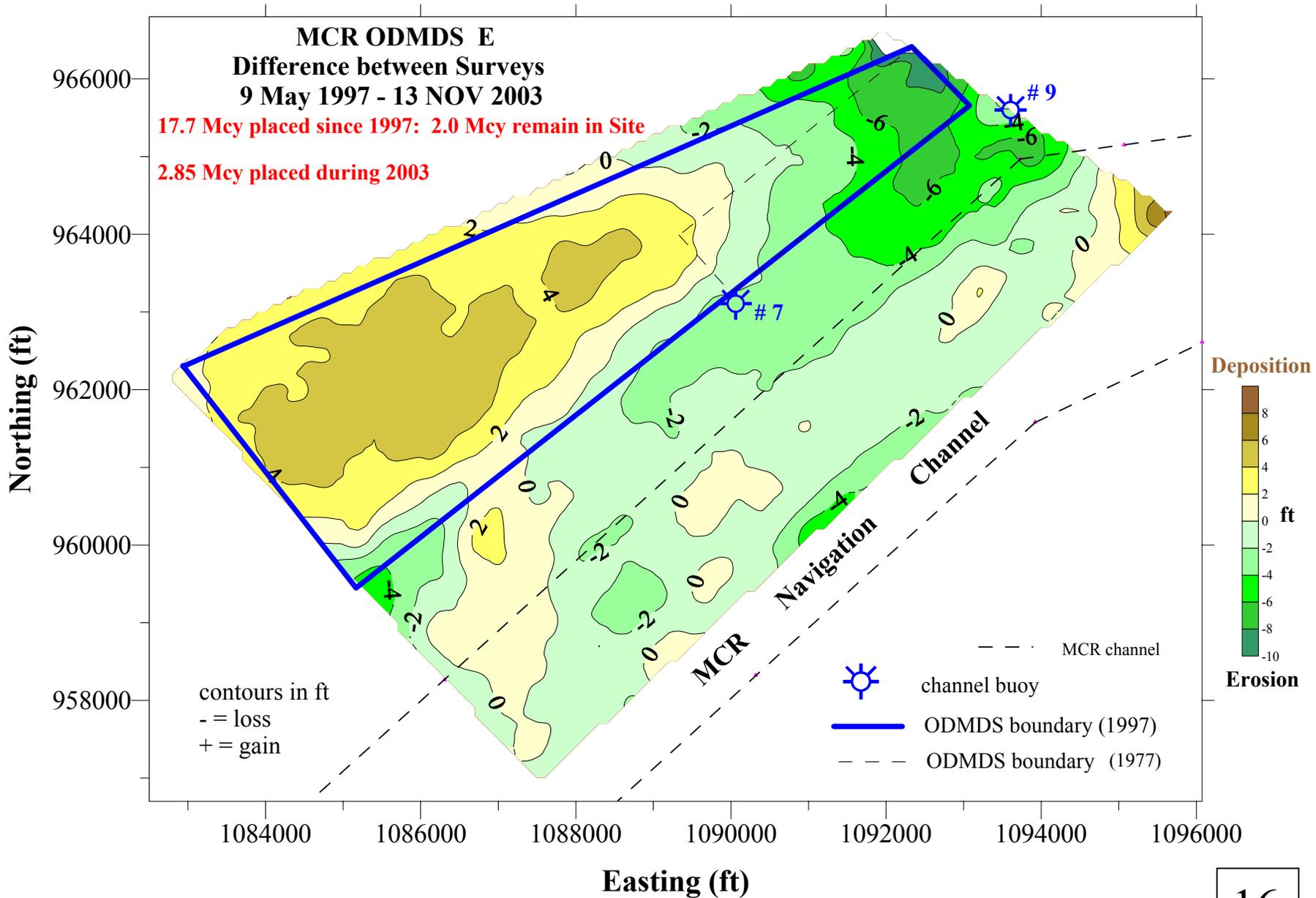


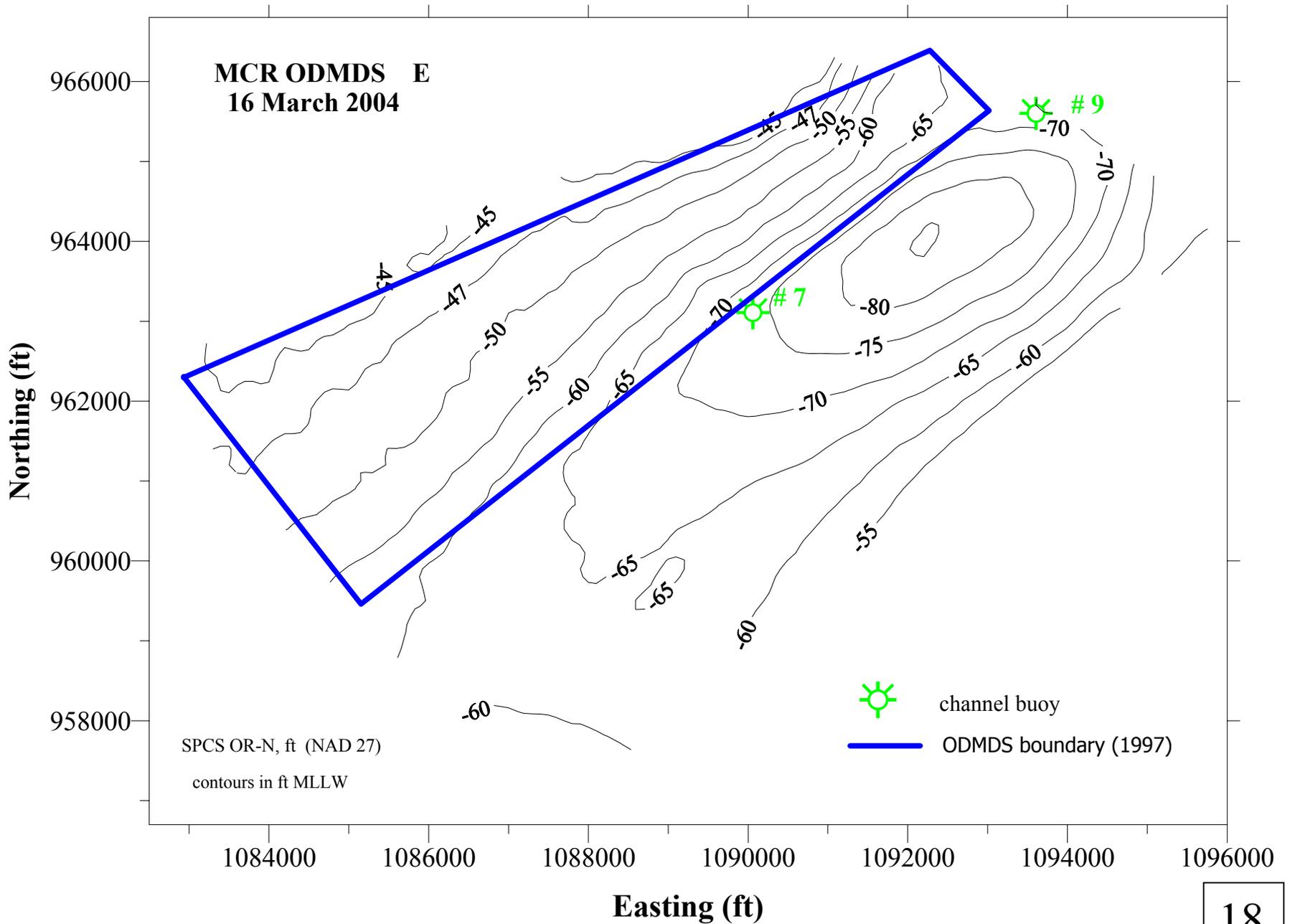
LINE NO.	DATE	DESCRIPTION
MC-1-832	1	COLUMBIA RIVER AT THE WHITE WATERSHED DREDGING 2004
CL-30-003	2	COLUMBIA RIVER TYPICAL SHEDDING AREAS - R.W. 2 TO R.W. 21 - 2004
CL-1-814	3	COLUMBIA RIVER TYPICAL SHEDDING AREAS - R.W. 22 TO R.W. 41 - 2004
CL-1-818	4	COLUMBIA RIVER TYPICAL SHEDDING AREAS - R.W. 42 TO R.W. 61 - 2004
CL-1-819	5	COLUMBIA RIVER TYPICAL SHEDDING AREAS - R.W. 62 TO R.W. 81 - 2004
CL-1-820	6	CHONG BAY ENTRANCE MAINTENANCE DREDGING - 2004

DATE	DESCRIPTION
08/01/03	CONTRACTOR SURVEY

DATE	DESCRIPTION
08/01/03	CONTRACTOR SURVEY







MCR ODMDS E
Difference between Surveys
13 NOV 2003 - 16 MAR 2004

Net Change on Seabed within
ODMDS E = 0.94 Mcy EROSION

Northing (ft)

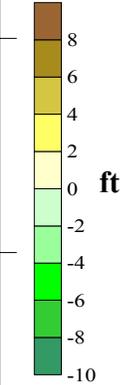
966000
964000
962000
960000
958000

contours in ft
- = loss
+ = gain

Easting (ft)

1084000 1086000 1088000 1090000 1092000 1094000 1096000

Deposition



channel buoy



ODMDS boundary (1997)



MCR channel

MCR Navigation Channel

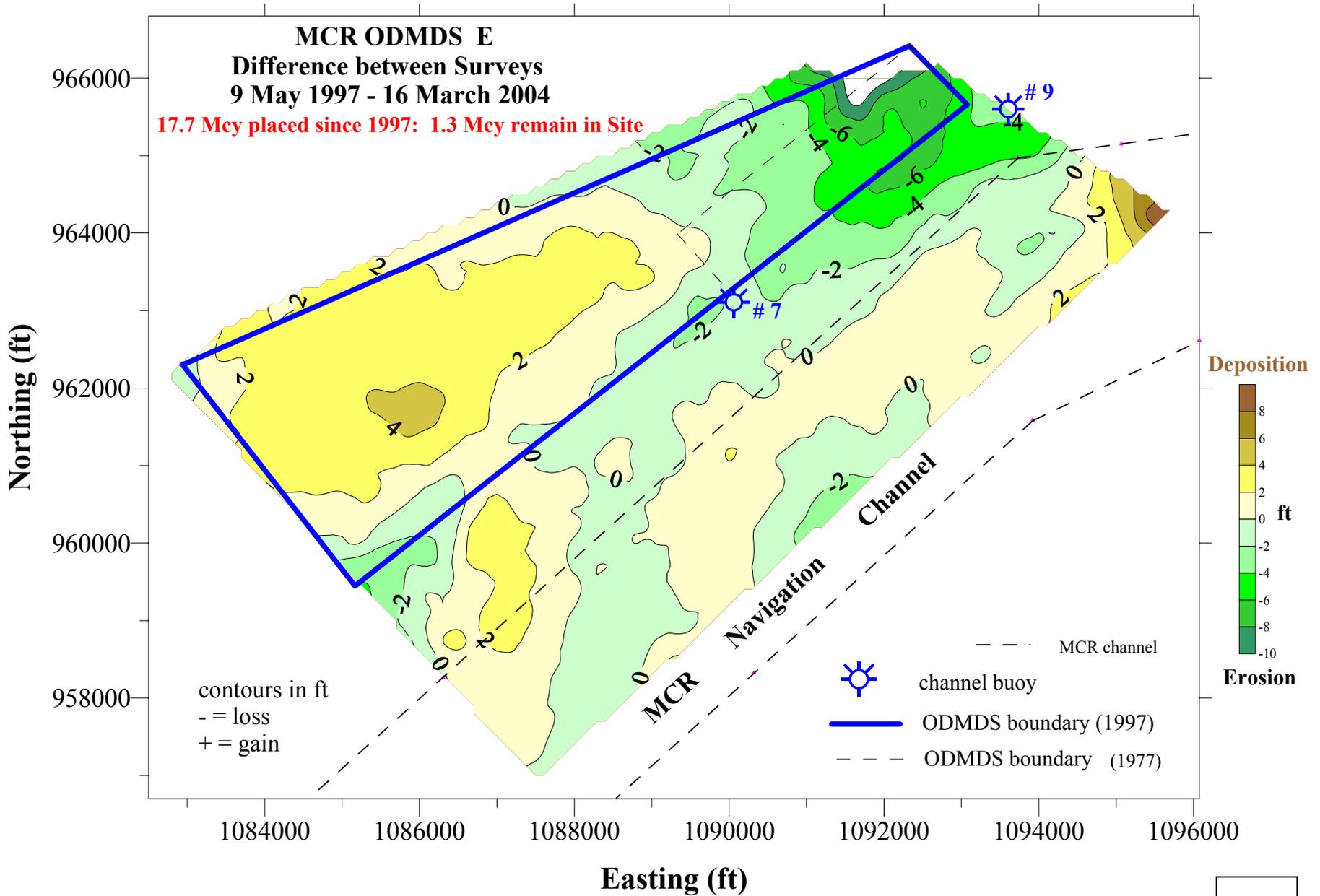
#9

#7

MCR ODMDS E

Difference between Surveys
9 May 1997 - 16 March 2004

17.7 Mcy placed since 1997: 1.3 Mcy remain in Site



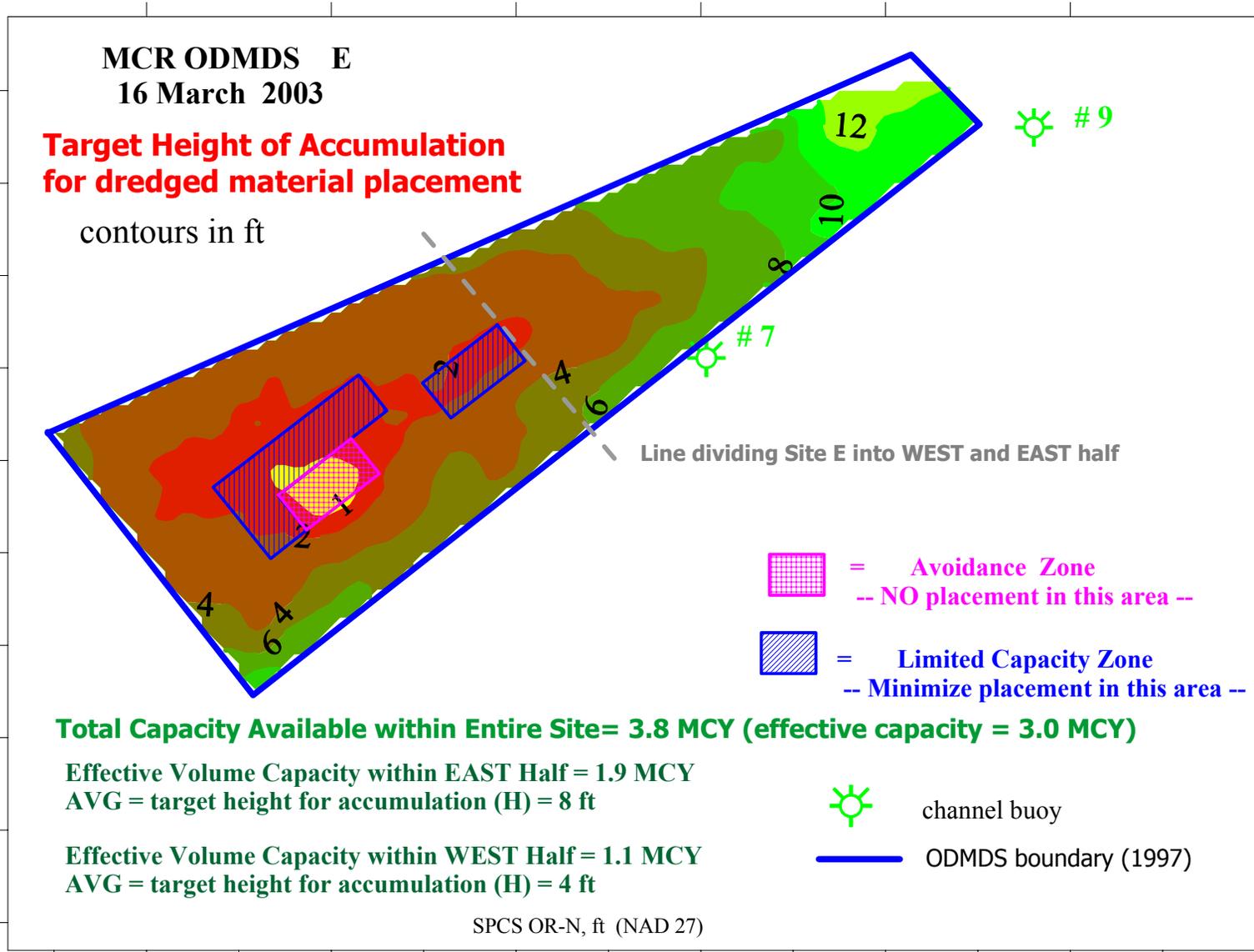
MCR ODMDS E
16 March 2003

**Target Height of Accumulation
for dredged material placement**

contours in ft

Northing (ft)

966000
964000
962000
960000
958000



Line dividing Site E into WEST and EAST half

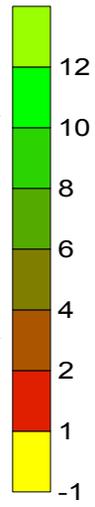
-  = Avoidance Zone
-- NO placement in this area --
-  = Limited Capacity Zone
-- Minimize placement in this area --

Total Capacity Available within Entire Site= 3.8 MCY (effective capacity = 3.0 MCY)

Effective Volume Capacity within EAST Half = 1.9 MCY
AVG = target height for accumulation (H) = 8 ft

Effective Volume Capacity within WEST Half = 1.1 MCY
AVG = target height for accumulation (H) = 4 ft

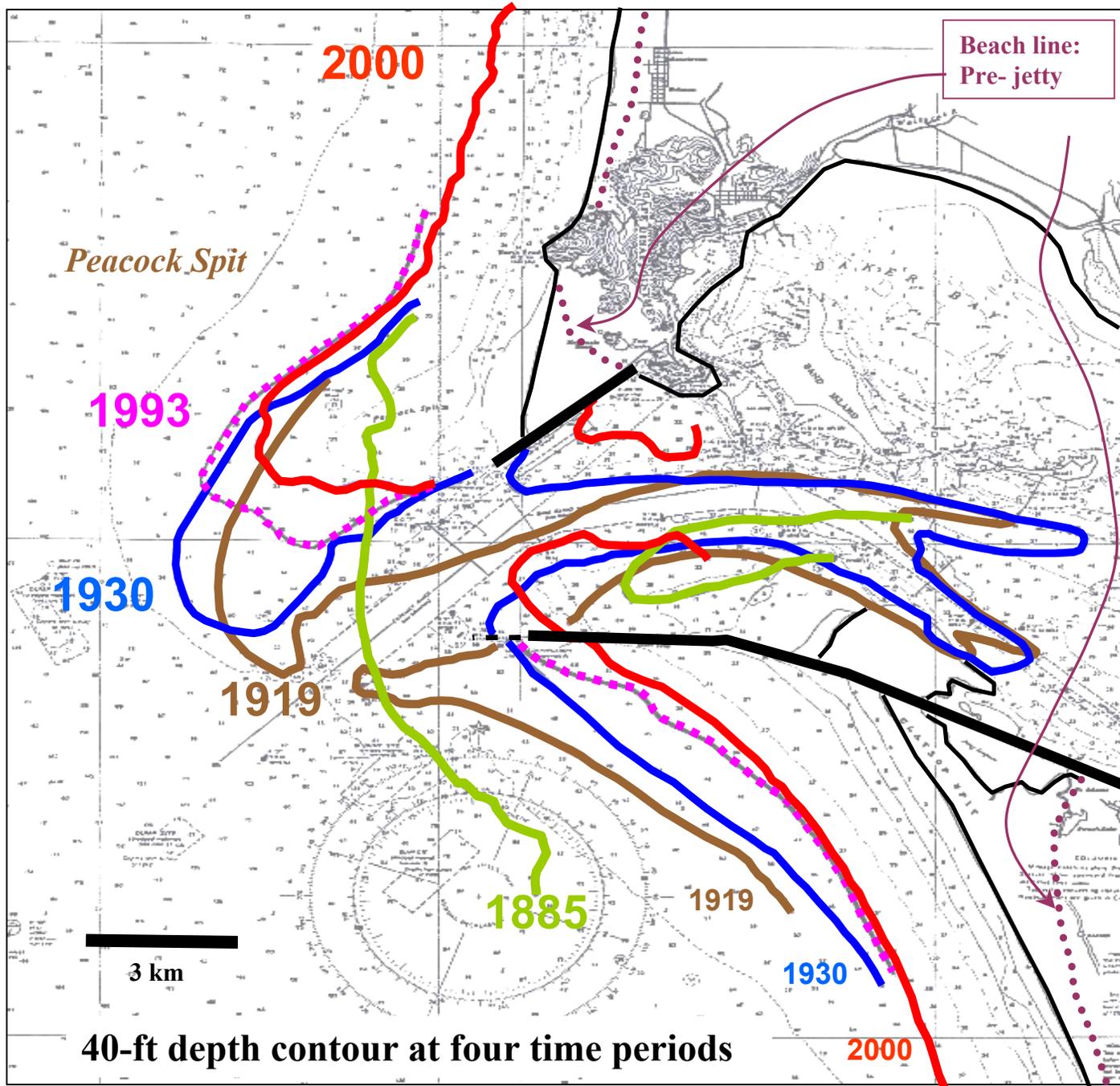
-  channel buoy
-  ODMDS boundary (1997)



Easting (ft)

1084000 1086000 1088000 1090000 1092000 1094000 1096000

SPCS OR-N, ft (NAD 27)



During **1993 to 2000**, the 40 ft contour on **Peacock Spit** receded landward at a rate 7x faster than during **1930 to 1993**.

As the offshore shoals recede, the wave climate at will change

MCR jetties were built on tidal shoals 1885-1917 that are now eroding. **Stability of jetties is compromised due to scour-based failure.**

Bathymetry Change on Peacock Spit between 1958 and Oct 2003

Contour lines show Bathymetry for Aug-Oct 2003

Recent Accumulation of Dredged Material Placed at ODMDS E

 = Channel Buoy

Latitude = 46-16-10.3

Northing (ft)

Latitude = 46-13-49.0

Contours = elevation ft MLLW, interval = 5 ft

Grid coords in NAD 27, OR N
Geo. Coords in NAD 83

1070000

1075000

1080000

1085000

1090000

1095000

Easting (ft)

Longitude = - 124-09-34.5

Longitude = - 124-05-51.7

Bathymetric Change in feet

