

- ### NOTES
- PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 3, NAD83 (CORS), IN US SURVEY FEET BASED ON A STATIC GPS NETWORK HOLDING NOS EPOCH 2010.00 CORRS. 1 PHASE CENTER VALUES FOR 'EYAC_AKDA_AK2005' (CORS DESIGNATION EYAC, NGS PID DL6465), 'CP_HINCHINBROOK_6' (CORS DESIGNATION CH6, NGS PID DJ3663), 'NAKEDISL_AK2007' (CORS DESIGNATION AC48, NGS PID DO1809).
 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 3, NAD83, IN US SURVEY FEET HOLDING USACE SBC 'CH-1 1997' AS N 2,390,429.33, E 1,682,761.94
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW-0.0') BASED ON THE NOAA'S TIDAL BENCH MARK LIST: '945 4050 CORDOVA, ORCA INLET, PRINCE WILLIAM SOUND, ALASKA' PUBLISHED 05/16/2003. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA'S TIDAL BENCH MARK 'NO 13 1970' (PID BBBD28MM1237) AS 21.53.
 - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 (GEOID 12A) ELEVATIONS HOLDING NOAA'S TIDAL BENCH MARK 'NO 13 1970' (PID BBBD28MM1237) AS 19.47.
 - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
 - BATHYMETRIC DATA WAS COLLECTED MAY 19-20, 2014. SOUNDINGS WERE COLLECTED USING AN 'R2SONIC 2024' MULTIBEAM ECHO SOUNDER OPERATING AT 200 KHZ. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH A MINOS BASE X SOUND VELOCITY PROBE. POSITIONING AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION OCCUPYING 'CH 1 1997'. A POST-PROCESSED KINEMATIC SOLUTION WAS COMPUTED USING APPLANIX POSPCAP MMS V 6.2 SOFTWARE. DATA WAS COLLECTED AND FIELD PROCESSED USING QINSY V 8.1 SOFTWARE.
 - TOPOGRAPHIC DATA WAS COLLECTED USING TRIMBLE R8 GNSS RECEIVERS AND WAS POST-PROCESSED USING TRIMBLE BUSINESS CENTER SOFTWARE.
 - HORIZONTAL CONTROL WAS UPDATED BY A STATIC GNSS NETWORK USING TRIMBLE R8 AND R7 GNSS RECEIVERS AND WAS PROCESSED USING TRIMBLE BUSINESS CENTER SOFTWARE. VERTICAL CONTROL WAS UPDATED BY DIFFERENTIAL LEVELING USING A LEICA DNA03 DIGITAL LEVEL AND PROCESSED USING LEICA GEO OFFICE SOFTWARE.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - MAP SOUNDINGS ARE BINNED AT 2 FEET AND ARE SHOAL-BASED. CONTOURS ARE BASED ON 12 FEET BINNED SHOAL-BASED SOUNDINGS. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE MEAN VALUE.

SURVEY CONTROL DATA

STATION	NORTHING	EASTING	MLLW	DESCRIPTION
BK-1 1977	2,392,081.06	1,682,294.17	19.89	USACE SBC
CB-5 1977	2,392,180.26	1,682,367.74	18.56	USACE SBC
CB-6 1977	2,391,801.14	1,683,389.76	39.83	USACE SBC
CH-1 1997	2,390,429.33	1,682,761.94	21.07	USACE SBC
CH-2 1997	2,390,622.12	1,683,190.78	21.79	USACE SBC
CH-6 2003	2,392,372.16	1,683,146.31	22.56	USACE SBC
CH-7 2006	2,391,817.36	1,682,081.05	21.32	USACE SBC
CH-8 2006	2,391,514.04	1,681,868.01	21.93	USACE SBC
COR 19 1982	2,390,148.67	1,682,142.48	22.18	USACE SBC
COR 20 1982	2,391,176.64	1,681,632.67	21.86	USACE SBC

NAVIGATION AIDS

USCG NO.	NORTHING	EASTING	DESCRIPTION
25608	2,392,107	1,682,142	HARBOR LIGHT 1 FL. G
25610	2,391,837	1,682,095	HARBOR LIGHT 2 FL. R

PROJECT LIMITS

CORNER#	NORTHING	EASTING	CORNER#	NORTHING	EASTING
1	2,392,117.77	1,682,073.24	10	2,391,943.21	1,681,976.14
2	2,391,868.49	1,682,369.08	10B	2,391,906.06	1,682,130.50
3	2,391,974.87	1,682,606.33	11	2,391,890.27	1,682,149.23
4	2,391,756.67	1,683,165.11	12	2,391,181.09	1,681,764.63
5	2,391,109.58	1,683,064.29	13	2,390,305.77	1,682,198.61
6	2,390,794.87	1,683,180.93	22	2,391,745.51	1,682,159.89
7	2,390,748.96	1,683,164.19	23	2,391,755.42	1,682,166.83
7B	2,390,659.20	1,682,968.63	24	2,391,339.69	1,681,875.70
8	2,390,607.03	1,682,854.98	25	2,390,376.70	1,682,353.14
9	2,391,789.67	1,682,268.64	26	2,390,558.19	1,682,748.55

VOLUME COMPUTATIONS

PROJECT DEPTH	VOLUME
PROJECT DEPTH -10 FEET	
AVAILABLE TO PROJECT DEPTH (-10.0)	863 Cu. Yd.
PROJECT DEPTH -12 FEET	
AVAILABLE TO PROJECT DEPTH (-12.0)	4,112 Cu. Yd.
PROJECT DEPTH -14 FEET	
AVAILABLE TO PROJECT DEPTH (-14.0)	57,832 Cu. Yd.
PROJECT DEPTH -16 FEET	
AVAILABLE TO PROJECT DEPTH (-16.0)	7,174 Cu. Yd.

THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM THROUGH CERTIFIED HYDROGRAPHER

David R. Neff C.H. (275)

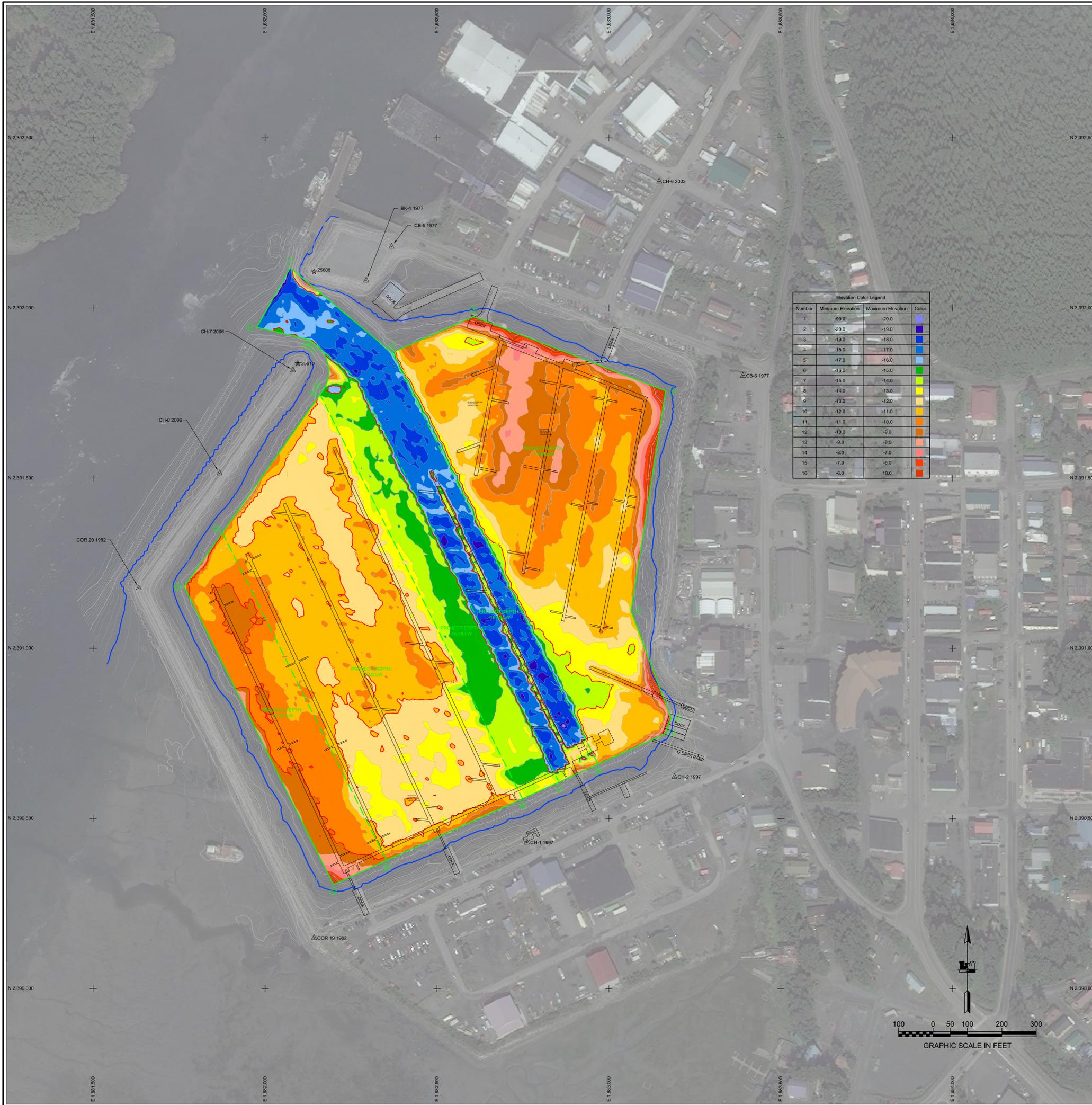
US Army Corps of Engineers - ALASKA DISTRICT

CONTRACT NO. W11FH12K003
 CONTRACTOR: ETM INC.
 CITY: SAN RAFAEL STATE: CALIFORNIA
 APPROVED: MICHAEL E. LAELLER, DISTRICT ENGINEER
 DATE: 08/14/2014

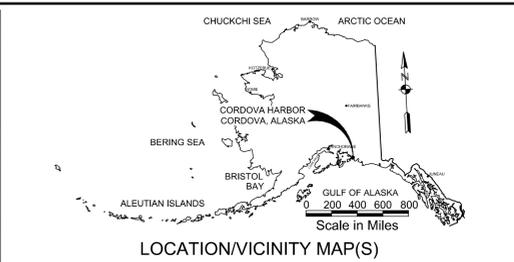
DATE: 08/14/2014
 CHECKED BY: JEFFREY A. BROWN, DISTRICT ENGINEER
 DRAWN BY: TRAVIS R. SLACK, CIVIL ENGINEER
 SCALE: 1" = 100' (VERTICAL)
 FILE NAME: 3-COR-92-07-35
 SHEET: 1 OF 2

**CORDOVA, ALASKA
 CORDOVA HARBOR
 PROJECT CONDITION SURVEY
 MAY 17-23, 2014**

SHEET IDENTIFICATION
 3-COR-92-07-35
 Sheet 1 of 2



Elevation Color Legend			
Number	Minimum Elevation	Maximum Elevation	Color
1	-90.0	-20.0	Blue
2	-20.0	-19.0	Blue
3	-19.0	-18.0	Blue
4	-18.0	-17.0	Blue
5	-17.0	-16.0	Blue
6	-16.0	-15.0	Green
7	-15.0	-14.0	Green
8	-14.0	-13.0	Yellow
9	-13.0	-12.0	Yellow
10	-12.0	-11.0	Yellow
11	-11.0	-10.0	Orange
12	-10.0	-9.0	Orange
13	-9.0	-8.0	Orange
14	-8.0	-7.0	Red
15	-7.0	-6.0	Red
16	-6.0	10.0	Red



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David R. Neff C.H. (275)

US Army Corps of Engineers ALASKA DISTRICT

CONTRACT NO. W11FH12D003
 CONTRACTOR: ETM&C INC.
 CITY: SAN RAFAEL STATE: CALIFORNIA
 RECOMMENDED: MICHAEL E. MUELLER (CIVIL ENGINEER)
 APPROVED: THOMAS A. BLOOM (SICP)

DATE: 05/16/2014
 CHECKED BY: TAD BISHOP
 DRAWN BY: TAD BISHOP
 SCALE: 1"=100'
 SIZE: 11x17 (1/4"=1")

**CORDOVA, ALASKA
 CORDOVA HARBOR
 PROJECT CONDITION SURVEY
 MAY 17-23, 2014**

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 Sheet 2 of 2