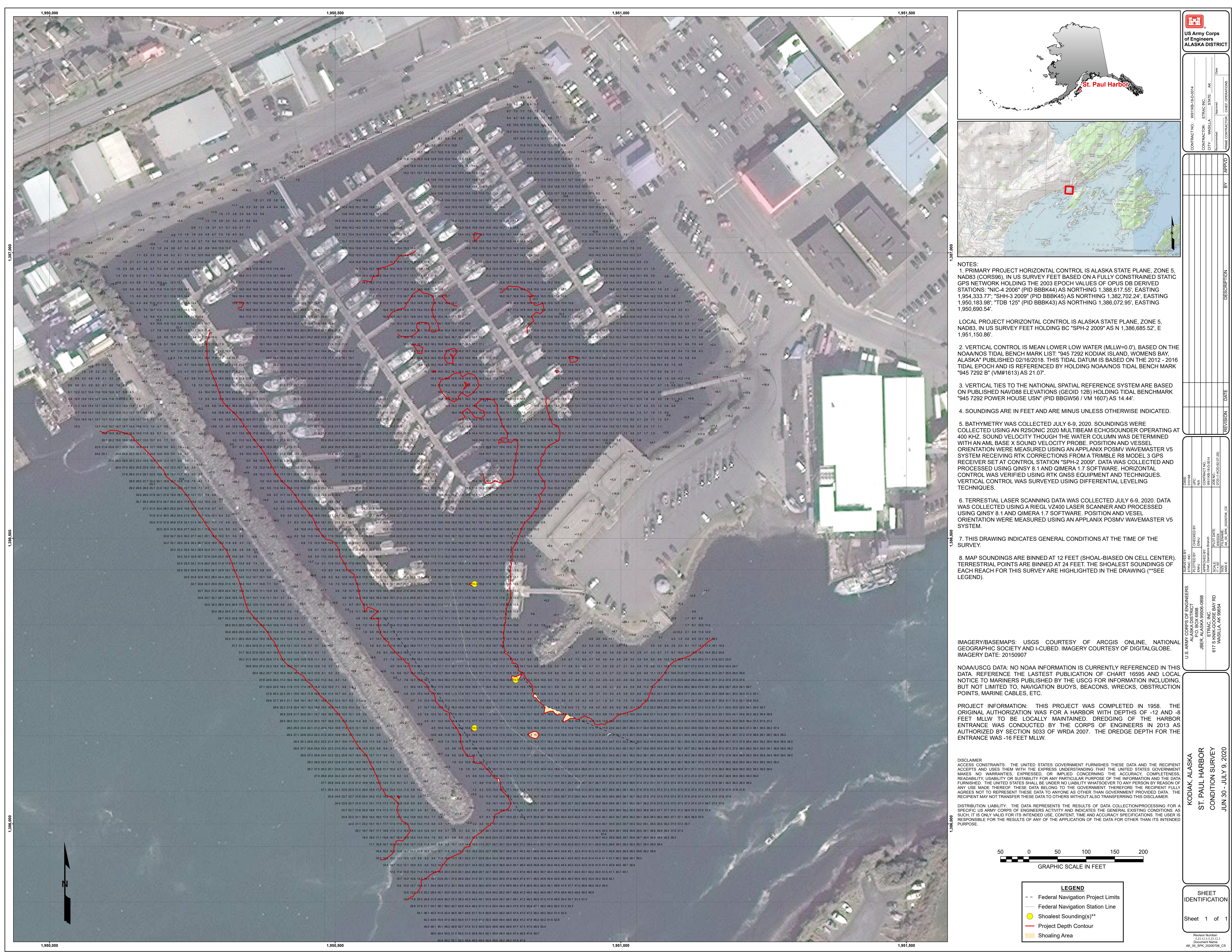




**St. Paul Harbor**

**NOTES:**

1. PRIMARY PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 5, NAD83 (CORSS96), IN US SURVEY FEET BASED ON A FULLY CONSTRAINED STATIC GPS NETWORK HOLDING THE 2003 EPOCH VALUES OF OPUS DB DERIVED STATIONS: "NIC-4 2006" (PID BBBK44) AS NORTHING 1,388,617.55', EASTING 1,954,333.77', "SHH-3 2009" (PID BBBK45) AS NORTHING 1,382,702.24', EASTING 1,950,183.98', "TDS 125" (PID BBBK43) AS NORTHING 1,386,072.95', EASTING 1,950,690.54'.

2. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), BASED ON THE NOAA/NOS TIDAL BENCH MARK LIST "945 7292 KODIAK ISLAND, WOMENS BAY, ALASKA" PUBLISHED 02/16/2018. THIS TIDAL DATUM IS BASED ON THE 2012 - 2016 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOAA/NOS TIDAL BENCH MARK "945 7292 B" (VMM1613) AS 21.07'.

3. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 ELEVATIONS (GEOID 12B) HOLDING TIDAL BENCHMARK "945 7292 POWER HOUSE USN" (PID BGGW56 / VM 1607) AS 14.44'.

4. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.

5. BATHYMETRY WAS COLLECTED JULY 6-9, 2020. SOUNDINGS WERE COLLECTED USING AN RZSONIC 2020 MULTIBEAM ECHOSOUNDER OPERATING AT 400 KHZ. SOUND VELOCITY THOUGH THE WATER COLUMN WAS DETERMINED WITH AN AML BASE X SOUND VELOCITY PROBE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM RECEIVING RTK CORRECTIONS FROM A TRIMBLE R8 MODEL 3 GPS RECEIVER SET AT CONTROL STATION "SPH-2 2009". DATA WAS COLLECTED AND PROCESSED USING QINSY 8.1 AND QIMERA 1.7 SOFTWARE. HORIZONTAL CONTROL WAS VERIFIED USING RTK GNSS EQUIPMENT AND TECHNIQUES. VERTICAL CONTROL WAS SURVEYED USING DIFFERENTIAL LEVELING TECHNIQUES.

6. TERRESTRIAL LASER SCANNING DATA WAS COLLECTED JULY 6-9, 2020. DATA WAS COLLECTED USING A RIEGL VZ400 LASER SCANNER AND PROCESSED USING QINSY 8.1 AND QIMERA 1.7 SOFTWARE. POSITION AND VESSEL ORIENTATION WERE MEASURED USING AN APPLANIX POSMV WAVEMASTER V5 SYSTEM.

7. THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.

8. MAP SOUNDINGS ARE BINNED AT 12 FEET (SHOAL-BIASED ON CELL CENTER). TERRESTRIAL POINTS ARE BINNED AT 24 FEET. THE SHOALEST SOUNDINGS OF EACH REACH FOR THIS SURVEY ARE HIGHLIGHTED IN THE DRAWING (\*\*SEE LEGEND).

IMAGERY/BASEMAPS: USGS COURTESY OF ARCGIS ONLINE, NATIONAL GEOGRAPHIC SOCIETY AND I-CUBED. IMAGERY COURTESY OF DIGITALGLOBE. IMAGERY DATE: 20150907

NOAA/USCG DATA: NO NOAA INFORMATION IS CURRENTLY REFERENCED IN THIS DATA. REFERENCE THE LATEST PUBLICATION OF CHART 16595 AND LOCAL NOTICE TO MARINERS PUBLISHED BY THE USCG FOR INFORMATION INCLUDING, BUT NOT LIMITED TO, NAVIGATION BUOYS, BEACONS, WRECKS, OBSTRUCTION POINTS, MARINE CABLES, ETC.

PROJECT INFORMATION: THIS PROJECT WAS COMPLETED IN 1958. THE ORIGINAL AUTHORIZATION WAS FOR A HARBOR WITH DEPTHS OF -12 AND -8 FEET MLLW TO BE LOCALLY MAINTAINED. DREDGING OF THE HARBOR ENTRANCE WAS CONDUCTED BY THE CORPS OF ENGINEERS IN 2013 AS AUTHORIZED BY SECTION 5033 OF WRDA 2007. THE DREDGE DEPTH FOR THE ENTRANCE WAS -16 FEET MLLW.

DISCLAIMER

ACCESS CONSTRAINTS: THE UNITED STATES GOVERNMENT FURNISHES THESE DATA AND THE RECIPIENT ACCEPTS AND USES THEM WITH THE EXPRESS UNDERSTANDING THAT THE UNITED STATES GOVERNMENT MAKES NO WARRANTIES, EXPRESSED, OR IMPLIED CONCERNING THE ACCURACY, COMPLETENESS, READABILITY, USABILITY OR SUITABILITY FOR ANY PARTICULAR PURPOSE OF THE INFORMATION AND THE DATA FURNISHED. THE UNITED STATES SHALL BE UNDER NO LIABILITY WHATSOEVER TO ANY PERSON BY REASON OF ANY USE MADE THEREOF. THESE DATA BELONG TO THE GOVERNMENT. THEREFORE THE RECIPIENT FULLY AGREES NOT TO REPRESENT THESE DATA TO ANYONE AS OTHER THAN GOVERNMENT PROVIDED DATA. THE RECIPIENT MAY NOT TRANSFER THESE DATA TO OTHERS WITHOUT ALSO TRANSFERRING THIS DISCLAIMER.

DISTRIBUTION LIABILITY: THE DATA REPRESENTS THE RESULTS OF DATA COLLECTION/PROCESSING FOR A SPECIFIC US ARMY CORPS OF ENGINEERS ACTIVITY AND INDICATES THE GENERAL EXISTING CONDITIONS, AS SUCH, IT IS ONLY VALID FOR ITS INTENDED USE, CONTENT, TIME AND ACCURACY SPECIFICATIONS. THE USER IS RESPONSIBLE FOR THE RESULTS OF ANY OF THE APPLICATION OF THE DATA FOR OTHER THAN ITS INTENDED PURPOSE.

**LEGEND**

- Federal Navigation Project Limits
- - - Federal Navigation Station Line
- Shoalest Sounding(s)\*\*
- Project Depth Contour
- Shoaling Area

**SHEET IDENTIFICATION**

Sheet 1 of 1

Revision Number: 1.0  
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CONTRACT NO.: W91HE118-0004  
CONTRACTOR: ETAC INC.  
CITY: WASILLA  
STATE: AK  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
TIME CONTRACTOR: \_\_\_\_\_  
BY: \_\_\_\_\_  
APPROD: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_

REVISION: \_\_\_\_\_

DATE: \_\_\_\_\_