

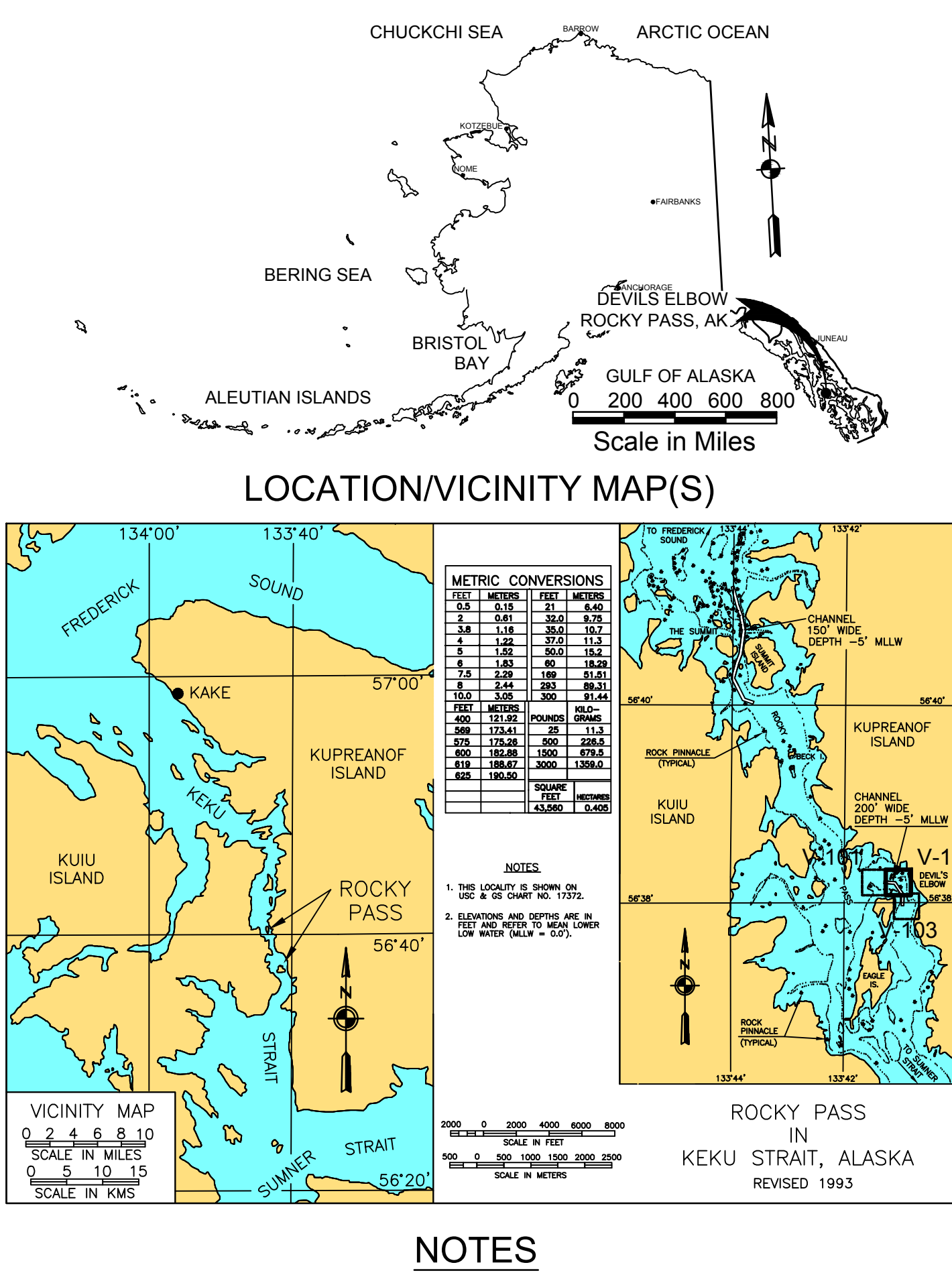


- [illegible]

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| VOLUME COMPUTATIONS   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |





- ### NOTES
- HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83, IN US SURVEY FEET, PREVIOUSLY ESTABLISHED ON SURVEY DATED MAY 8-10, 2007, BASED ON A STATIC GPS NETWORK HOLDING THE NOS EPOCH 2003.00 CORRS APP VALUES FIXED FOR "JUNEAU WAS 1" (NSG PID D14867), "BOHRA ISLAND 1" (NSG PID A15022), AND "LEVEL ISLAND 1" (NSG PID A14430). HARBOR CONTROL WAS TRANSFORMED INTO THE NOS EPOCH 2003.00 DATUM HOLDING USACE DOME BC "DE-1 2001" AS N 1754.92162, E 2681.00669 AND USACE DOME BC "DE-3 2007" AS N 1753.63378, E 2681.68189. CURRENT SURVEY WAS CONTROLLED HOLDING RECORD VALUES FOR "DE-3 2007" AS N 1753.63378, E 2681.68189 AND "SPIKE" AS N 1753.44578, E 2681.61658.
  - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0), BASED ON THE NOAA'S TIDAL BENCH MARK LIST: "945 1349 THE SUMMIT, N.W. SUMMIT ISLAND, ALASKA", PUBLISHED 09/17/2008. THIS TIDAL DATUM IS BASED ON THE 1983-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NOS TIDAL BENCHMARK "945 1349 TIDAL 1" AS 18.12' AND NOS TIDAL BENCHMARK "945 1349 TIDAL 3" AS 15.55'. ELLIPSOID ELEVATION COMPARISONS FROM LONG STATIC GPS OBSERVATIONS ON MONUMENTS TIDAL 3", "DE-1", AND "DE-3" WERE USED TO TRANSFER VERTICAL ELEVATIONS TO THE PROJECT SITE.
  - VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD88 ELEVATIONS HOLDING NOAA'S TIDAL BENCHMARK "945 1349 TIDAL 1" AS 14.80' (PID BBBG28).
  - SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
  - THE EXISTING PROJECT CONSISTS OF DEVIL'S ELBOW LOCATED IN ROCKY PASS, ALASKA.
  - THE SURVEY WAS CONDUCTED ON JULY 24, 2013. HYDROGRAPHIC SOUNDING DATA WAS COLLECTED USING AN ODOM ES3 MULTI-BEAM ECHOSOUNDER (200KHZ, 120-DEGREE SWATH-WIDTH WITH 480, 0.75 DEGREE BEAMS). POSITIONING AND VESSEL ATTITUDE WERE PROVIDED IN REAL TIME USING A TRIMBLE 461 RTK GPS RECEIVER OPERATING ON KINEMATIC CORRECTORS BROADCAST FROM A TRIMBLE R8 RTK BASE RECEIVER SET AT CONTROL STATION, "DE-3". SOUND VELOCITY PROFILE WAS PROVIDED USING AN ODOM DGI-BAR V. DATA COLLECTION AND NAVIGATION WERE PERFORMED USING HYPACK HYSWEEP (2013) SOFTWARE. MULTI-BEAM SURVEY DATA WAS POST-PROCESSED USING HYPACK HYSWEEP (2013) SOFTWARE.
  - HEAVY AREAS OF KELP SHOULD BE EXPECTED THROUGHOUT THE SURVEY AREA, PARTICULARLY AT LOWER STAGES OF THE TIDE.
  - ALL NAVIGATION AIDS APPEARED TO BE IN GOOD CONDITION AND IN THEIR SPECIFIED LOCATION.
  - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
  - MAP SOUNDINGS ARE BINNED AT 12 FEET AND ARE NEAREST CELL CENTER VALUE. VOLUME SOUNDINGS ARE BINNED AT 3 FEET AND ARE AVERAGE CELL VALUE.

| SURVEY CONTROL DATA |              |              |       |                          |
|---------------------|--------------|--------------|-------|--------------------------|
| STATION             | NORTHING     | EASTING      | MLLW  | DESCRIPTION              |
| D-1 1977            | 1,753,036.96 | 2,681,889.48 | 17.07 | USACE SBC                |
| D-2 1977            | 1,752,365.10 | 2,683,162.77 | 12.86 | USACE SBC                |
| D-3 1977            | 1,754,219.15 | 2,682,766.21 | 15.37 | USACE SBC                |
| D-4 1977 / 2001     | 1,754,277.93 | 2,681,666.98 | 16.05 | DESTROYED                |
| DE-1 2001           | 1,754,921.62 | 2,681,006.69 | 20.62 | USACE DOME BC            |
| DE-2 2001           | 1,753,067.07 | 2,681,051.56 | 15.78 | USACE DOME BC            |
| DE-3 2007           | 1,753,633.78 | 2,681,681.89 | 18.10 | 3.25 INCH DOME BC        |
| NICK 1958           | 1,753,449.30 | 2,681,631.96 | 0.00  | SEARCHED FOR & NOT FOUND |
| SPIKE               | 1,753,445.78 | 2,681,616.58 | 17.76 | IRON SPIKE               |

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| PROJECT LIMITS (CENTERLINE) |              |              |
|-----------------------------|--------------|--------------|
| CORNER#                     | NORTHING     | EASTING      |
| PL-12                       | 1,754,086.70 | 2,679,694.00 |
| PL-13                       | 1,753,921.00 | 2,681,828.30 |
| PL-14                       | 1,753,231.80 | 2,682,369.40 |
| PL-15                       | 1,752,239.30 | 2,682,308.60 |
| PL-16                       | 1,751,974.70 | 2,682,362.80 |

| VOLUME COMPUTATIONS   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |

US Army Corps of Engineers  
ALASKA DISTRICT

CONTRACT NO. W12B6-AUG-2013  
CONTRACTOR: HUGHES & ASSOCIATES  
CITY: WASILLA  
STATE: ALASKA  
APPROVED: [Signature]  
DATE: [Date]

DATE: 2013-07-27  
SURVEY NO.: 315-13-03  
DRAWN BY: KKKXX  
CHECKED BY: [Signature]  
FILE NAME: DEVILS ELBOW 2013.PCS  
SCALE: 1"=100'  
SIZE: A

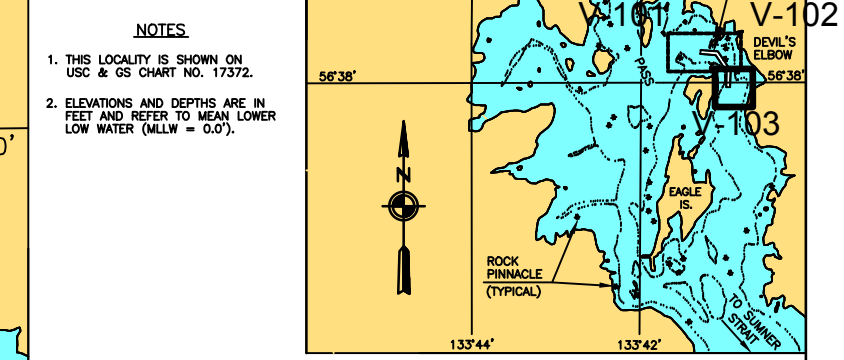
U.S. ARMY CORPS OF ENGINEERS  
ALASKA DISTRICT  
JBER, ALASKA 99506-0988  
HUGHES & ASSOCIATES  
WASILLA, ALASKA 99684

ROCKY PASS IN KEKU STRAIT, ALASKA  
DEVIL'S ELBOW  
PROJECT CENTERLINE SURVEY  
JULY 22 - 27, 2013

SHEET  
IDENTIFICATION  
V-102

Sheet 2 of 6





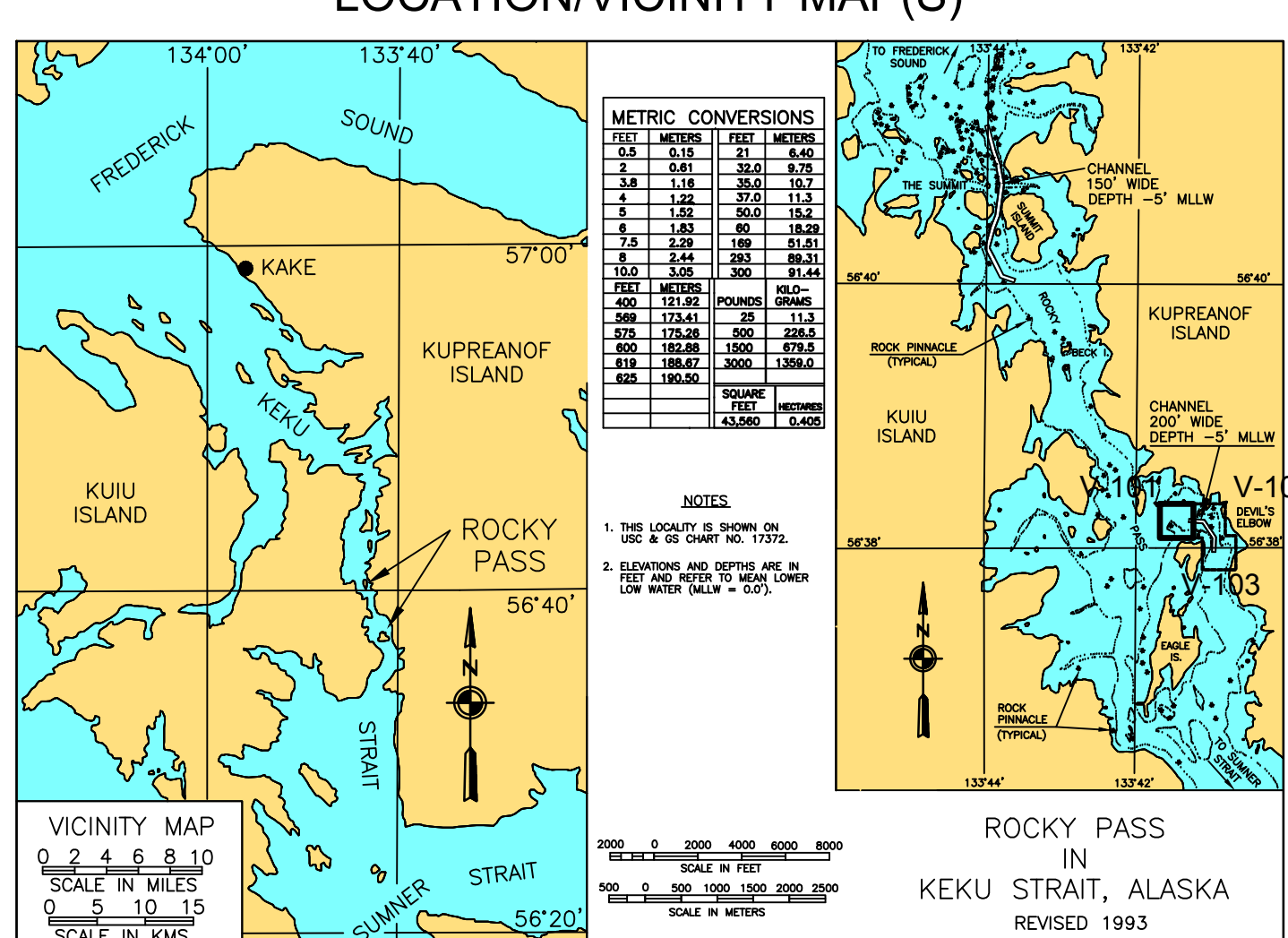
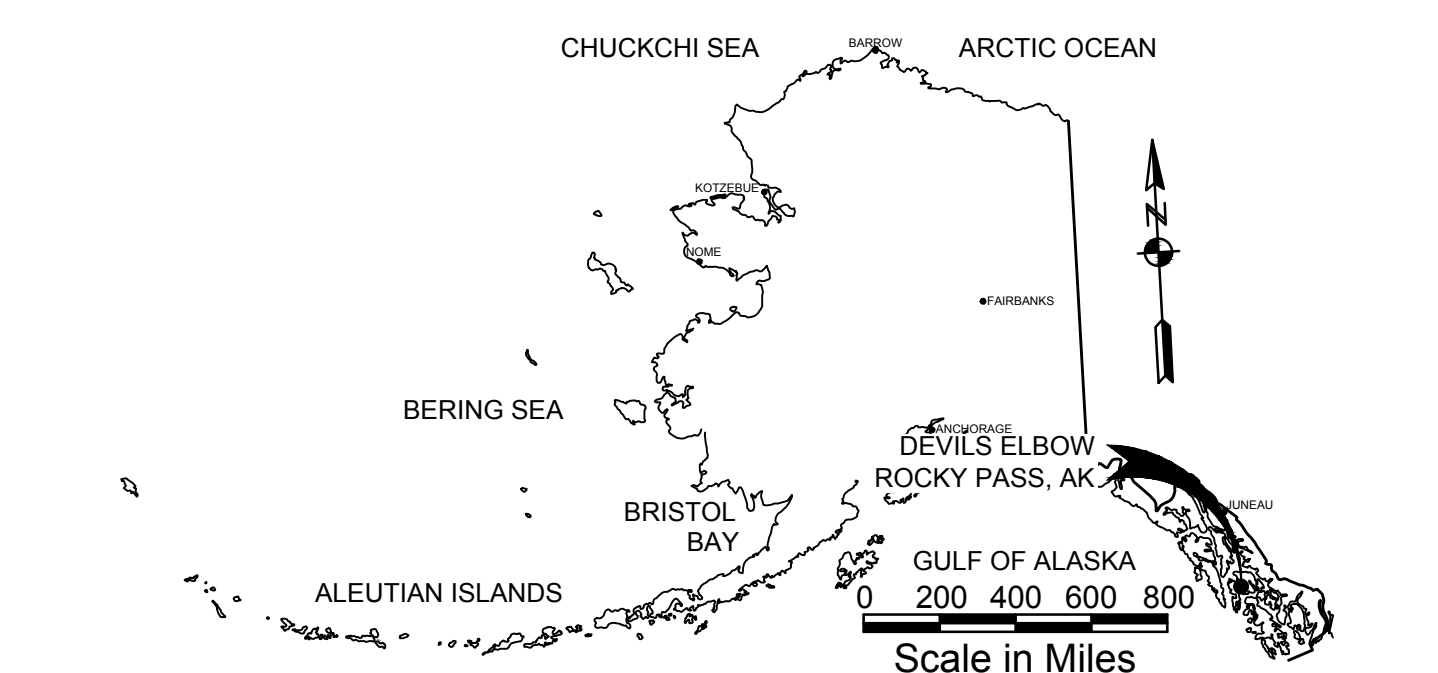
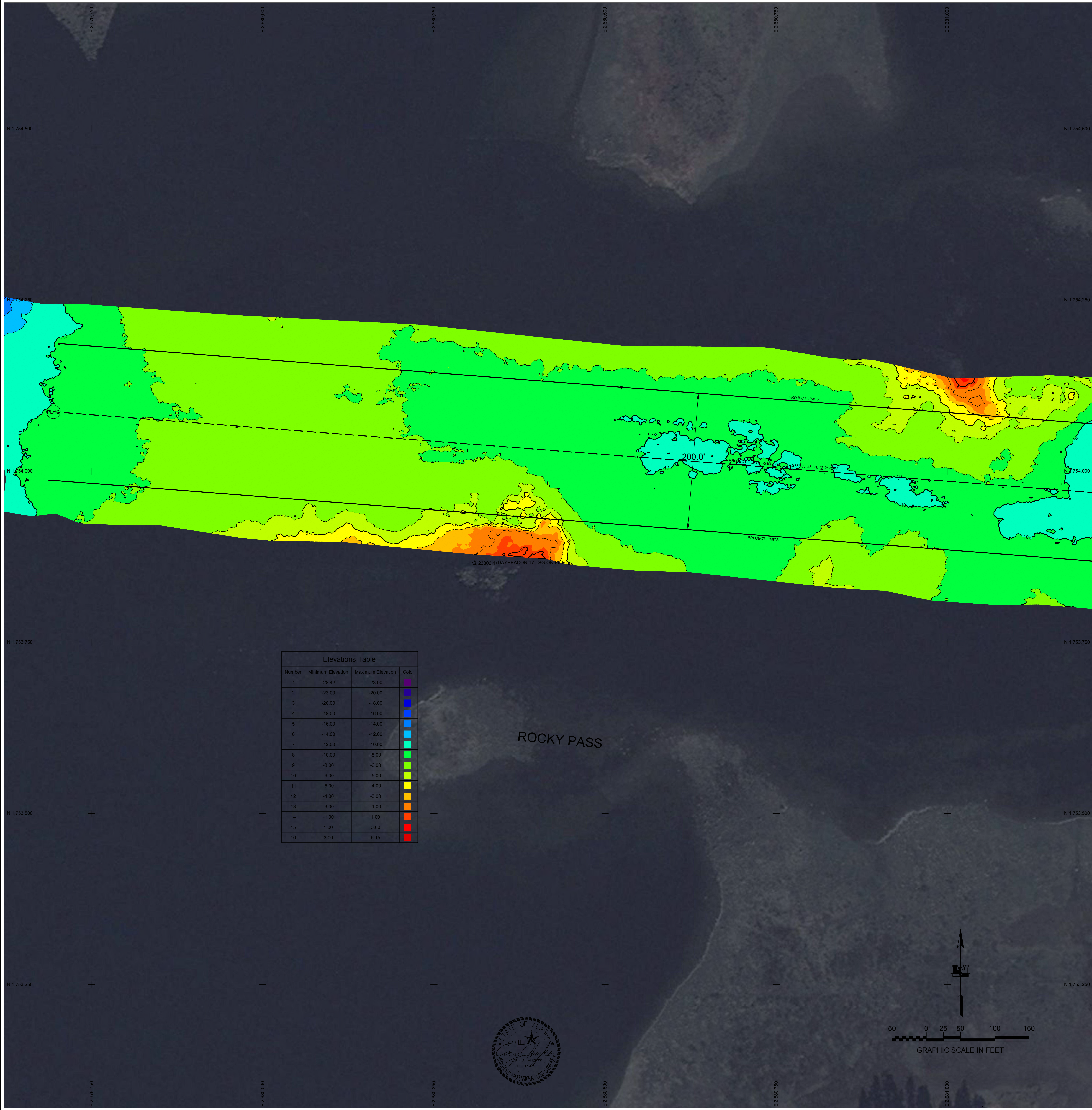
- [illegible]

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| CORNER# | NORTHING     | EASTING      |
|---------|--------------|--------------|
| PL-12   | 1,754,086.70 | 2,679,694.00 |
| PL-13   | 1,753,921.00 | 2,681,828.30 |
| PL-14   | 1,753,231.80 | 2,682,369.40 |
| PL-15   | 1,752,239.30 | 2,682,308.60 |
| PL-16   | 1,751,974.70 | 2,682,362.80 |

|   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |





| SURVEY CONTROL DATA |              |              |       |                          |
|---------------------|--------------|--------------|-------|--------------------------|
| STATION             | NORTHING     | EASTING      | MLLW  | DESCRIPTION              |
| D-1 1977            | 1,753,036.96 | 2,681,889.48 | 17.07 | USACE SBC                |
| D-2 1977            | 1,752,365.10 | 2,683,162.77 | 12.86 | USACE SBC                |
| D-3 1977            | 1,754,219.15 | 2,682,766.21 | 15.37 | USACE SBC                |
| D-4 1977 / 2001     | 1,754,277.93 | 2,681,666.98 | 16.05 | DESTROYED                |
| DE-1 2001           | 1,754,921.62 | 2,681,006.69 | 20.62 | USACE DOMED BC           |
| DE-2 2001           | 1,753,067.07 | 2,681,051.56 | 15.78 | USACE DOMED BC           |
| DE-3 2007           | 1,753,633.78 | 2,681,681.89 | 18.10 | 3.25 INCH DOMED BC       |
| NICK 1958           | 1,753,449.30 | 2,681,631.96 | 0.00  | SEARCHED FOR & NOT FOUND |
| SPIKE               | 1,753,445.78 | 2,681,616.58 | 17.76 | IRON SPIKE               |

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| PROJECT LIMITS (CENTERLINE) |              |              |
|-----------------------------|--------------|--------------|
| CORNER#                     | NORTHING     | EASTING      |
| PL-12                       | 1,754,086.70 | 2,679,694.00 |
| PL-13                       | 1,753,921.00 | 2,681,828.30 |
| PL-14                       | 1,753,231.80 | 2,682,369.40 |
| PL-15                       | 1,752,239.30 | 2,682,308.60 |
| PL-16                       | 1,751,974.70 | 2,682,362.80 |

| VOLUME COMPUTATIONS   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |

US Army Corps of Engineers  
ALASKA DISTRICT

CONTRACT NO. W19H6-AUG-2013  
CONTRACTOR: HUGHES & ASSOCIATES  
CITY: WASILLA  
STATE: ALASKA  
SHEET NUMBER: 416  
SHEET TOTAL: 416

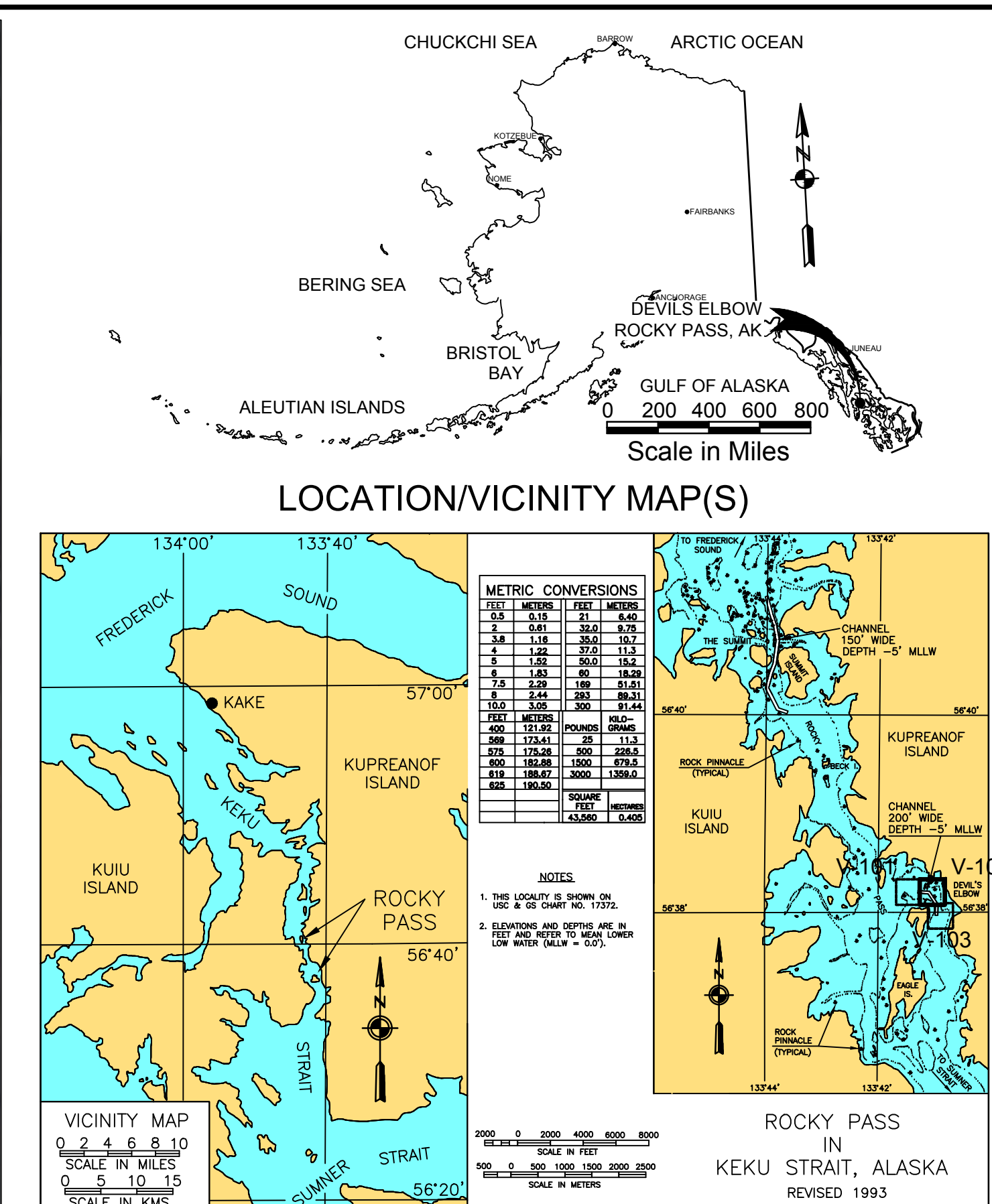
DATE: 2013-08-20  
SURVEY NO.: 318-11-10  
DRAWN BY: KKKXX  
CHECKED BY: KKKXX  
FILE NAME: DEVILS ELBOW 2013.PCS  
FILE SIZE: 10,000,000

U.S. ARMY CORPS OF ENGINEERS  
ALASKA DISTRICT  
JBER, ALASKA 99506-0998  
HUGHES & ASSOCIATES  
WASILLA, ALASKA 99684

ROCKY PASS IN KEKU STRAIT, ALASKA  
DEVIL'S ELBOW  
PROJECT CONDITION SURVEY  
JULY 22 - 27, 2013

SHEET IDENTIFICATION  
V-104  
Sheet 4 of 6





1. HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 1, NAD83. IN US SURVEY FEET, PREVIOUSLY ESTABLISHED ON SURVEY DATED MAY 8-10, 2007, BASED ON A STATIC GPS NETWORK HOLDING THE NGCS EPOCH 2003.00 CORRS RPK VALUES FIXED FOR "JUNEAU WACS 1" (NGS PID DMCB 367), "BOIKRA 2" (NGS PID DMCB 369) AND "LEWIS IDAL 1" (NGS PID ALAS 1). THE TIDAL BENCHMARK CONTROL WAS TRANSFORMED INTO THE NGCS EPOCH 2003.00 DATUM HOLDING USACE DOMECD BC "4201" \*N=1,175,821.681, E=2,281,086.008 AND USACE DOMECD BC "4202" AS N=1,753,633.738, E=2,281,681.89. CURRENT SURVEY WAS CONTROLLED HOLDING RECORDED VALUES FOR "N 753.637 2007 AS N=1,753,633.738, E=2,281,681.89 AND "SPIKE" AS N=1,753,445.78, E=2,281,615.58.
2. VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW+0'), BASED ON THE NOAA/NDS TIDAL BENCH MARK LIST; "945 1349 TIDAL SUMMIT, N.W. SUMMIT/IDA, ALASKA," PUBLISHED 09/17/2008. THIS TIDAL ELEVATION IS BASED ON THE 1985-2001 TIDAL EPOCH AND IS REFERENCED BY HOLDING NGCS "TIDAL BENCHMARK" "1349 TIDAL 1" (NGS PID ALAS 1) AT AN ELEVATION OF 1349 TIDAL 1' AS 15.55". ELLIPSOID DATUM COMPARISONS FROM LONG STATC GPS OBSERVATIONS ON MONUMENTS "IDEAL 3", "DE-1", AND "DE-3" ARE USED TO TRANSFER VERTICAL ELEVATIONS TO THE PROJECT SITE.
3. VERTICAL TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM ARE BASED ON PUBLISHED NAVD83 ELEVATIONS HOLDING NOAA/NDS TIDAL BENCHMARK "945 1349 TIDAL 1" AS 14.80' (PBHBBG28).
4. SOUNDINGS ARE IN FEET AND ARE MINUS UNLESS OTHERWISE INDICATED.
5. THE EXISTING PROJECT CONSISTS OF DEVIL'S ELBOW LOCATION IN ROCKY PASS, ALASKA.
6. THE SURVEY WAS CONDUCTED ON JULY 24, 2013. HYDROGRAPHIC SOUNDING DATA WAS COLLECTED USING AN ODOM 633 MULTI-BEAM ECHOSOUNDER (200KHZ, 120 DEGREE SWATH WIDTH WITH 480, 0.75 DEGREE BEAMS), POSITIONING AND VESSEL ATTITUDE WERE PROVIDED IN REAL TIME USING A TRIMBLE 481 RTK GPS RECEIVER OPERATING ON KINEMATIC CORRECTORS BROADCAST FROM A TRIMBLE RBN 1000 RTK RECEIVER SET AT CONTROL STATION "DE-3". SOUND VELOCITY PROFILE WAS PROVIDED USING AN ODOM DIGI-BAR PRO, AND WAS PROVIDED IN REAL TIME AT THE SOUNDER HEAD USING AN ODOM DIGI-BAR V. DATA COLLECTION AND NAVIGATION WERE PERFORMED USING HYPACK /HYSPACK 2013 SOFTWARE. MULTI-BEAM SURVEY DATA WAS POST-PROCESSED USING HYPACK/HYSWEP 2013 SOFTWARE.
7. HEAVY AREAS OF KELP SHOULD BE EXPECTED THROUGHOUT THE SURVEY AREA, PARTICULARLY AT LOWER STAGES OF THE TIDE.
8. ALL NAVIGATION AIDS APPEAR TO BE IN GOOD CONDITION AND IN THEIR SPECIFIED LOCATION.
9. THIS DRAWING INDICES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
10. MAP SOUNDINGS ARE BINNET AT 12 FEET AND ARE NEAREST CELL CENTER VALUE. VOLUME SOUNDINGS ARE BINNET AT 3 FEET AND ARE AVERAGE CELL VALUE.

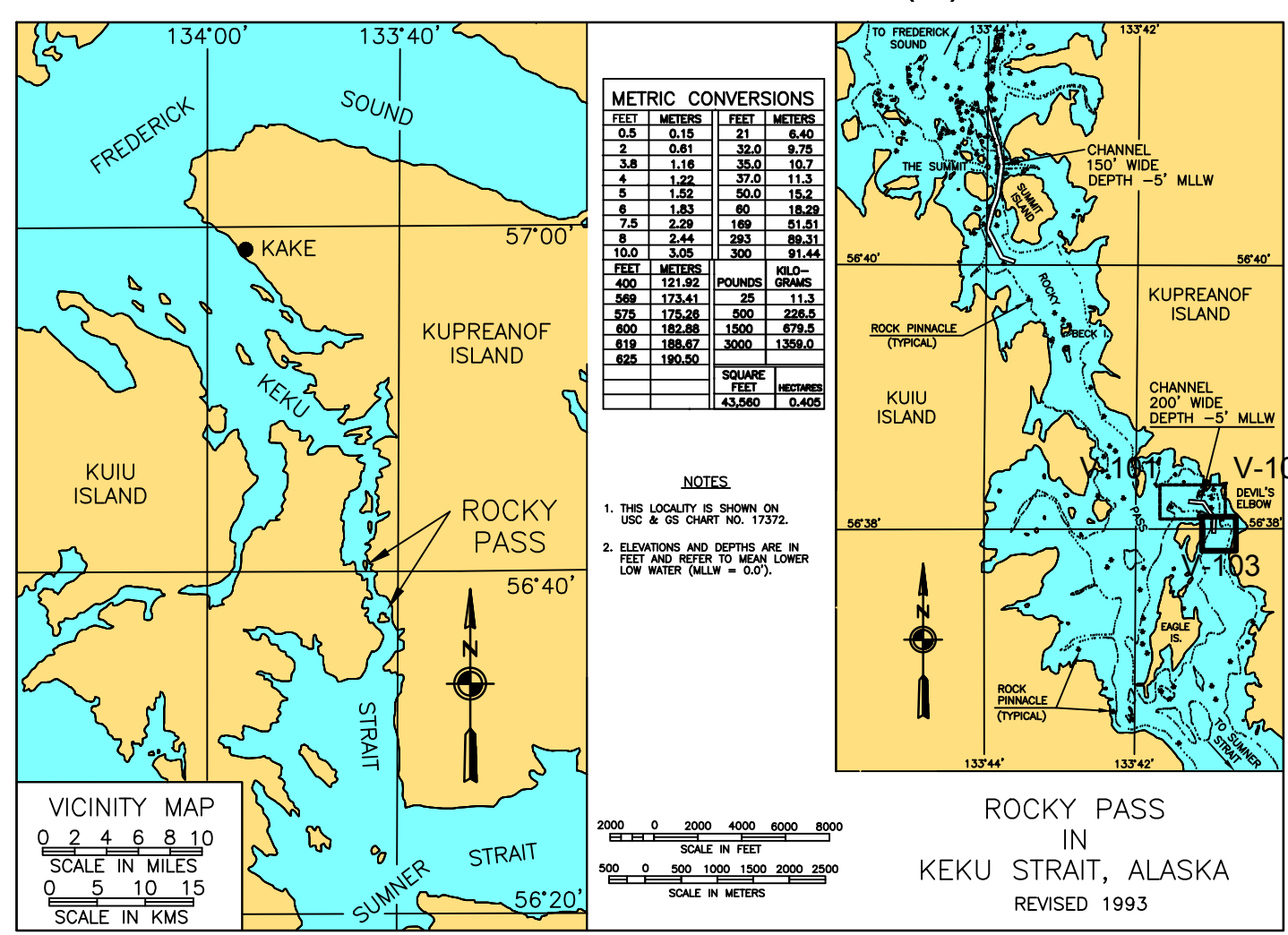
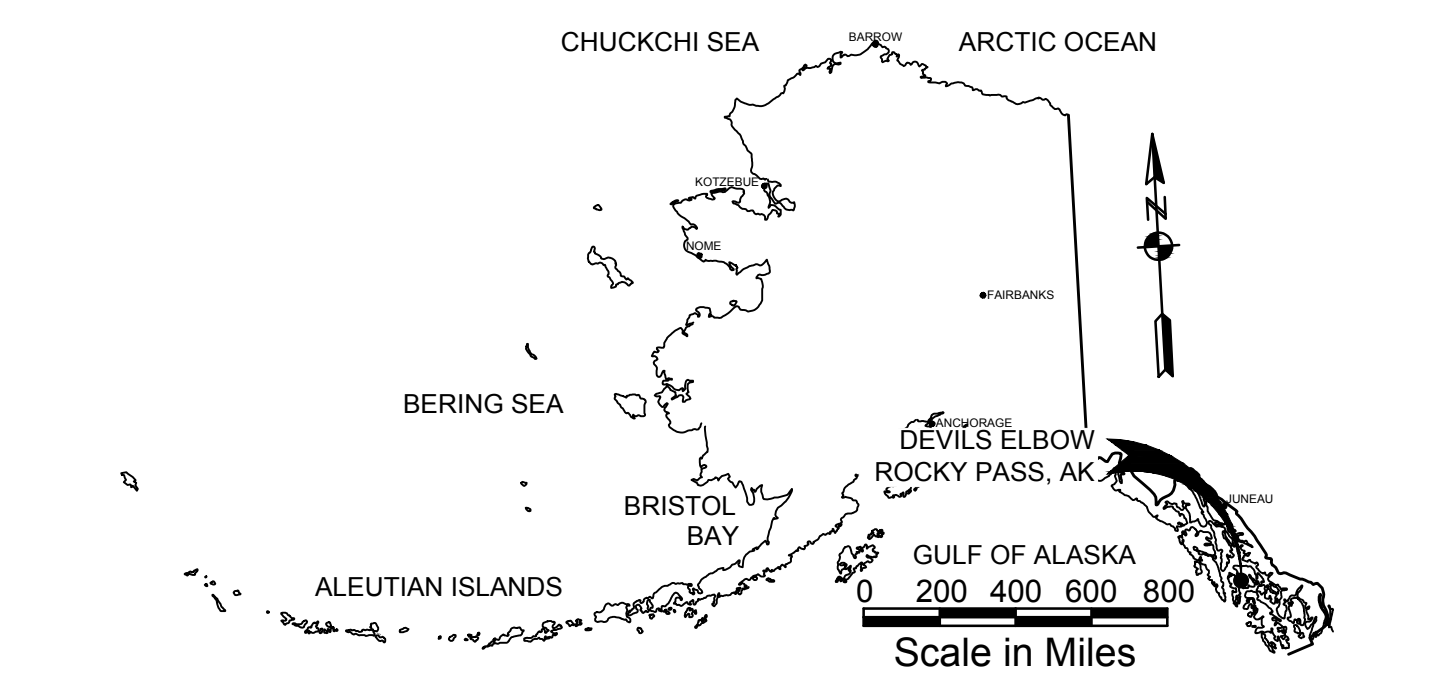
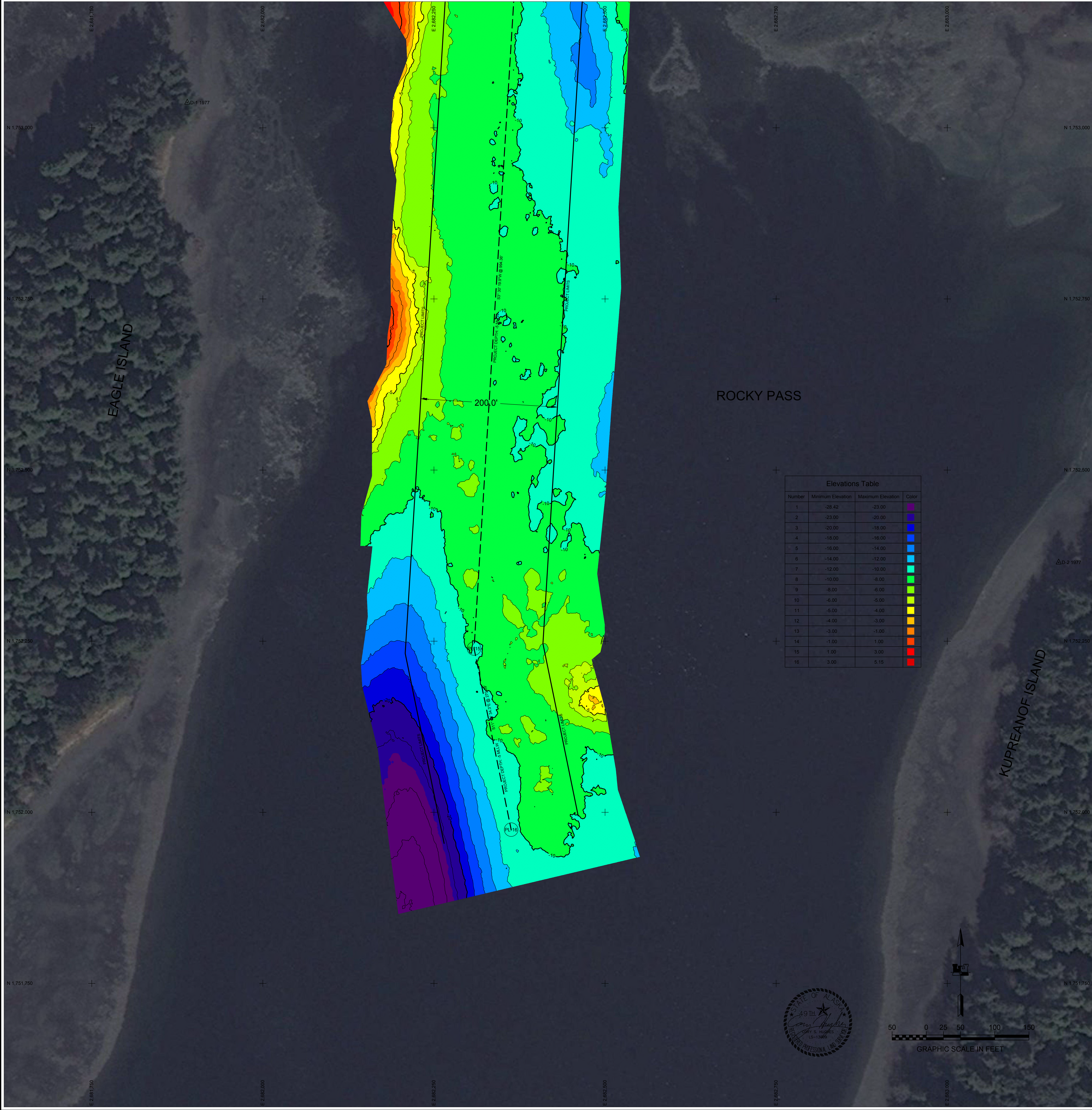
| SURVEY CONTROL DATA |              |              |       |                          |
|---------------------|--------------|--------------|-------|--------------------------|
| STATION             | NORTHING     | EASTING      | MLLW  | DESCRIPTION              |
| D-1 1977            | 1,753,036.96 | 2,681,889.48 | 17.07 | USACE SBC                |
| D-2 1977            | 1,752,365.10 | 2,683,162.77 | 12.86 | USACE SBC                |
| D-3 1977            | 1,754,219.15 | 2,682,766.21 | 15.37 | USACE SBC                |
| D-4 1977 /<br>2001  | 1,754,277.93 | 2,681,666.98 | 16.05 | DESTROYED                |
| DE-1 2001           | 1,754,921.62 | 2,681,006.69 | 20.62 | USACE DOMED BC           |
| DE-2 2001           | 1,753,067.07 | 2,681,051.56 | 15.78 | USACE DOMED BC           |
| DE-3 2007           | 1,753,633.78 | 2,681,681.89 | 18.10 | 3.25 INCH DOMED BC       |
| NICK 1958           | 1,753,449.30 | 2,681,631.96 | 0.00  | SEARCHED FOR & NOT FOUND |
| SPIKE               | 1,753,445.78 | 2,681,616.58 | 17.76 | IRON SPIKE               |

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| PROJECT LIMITS (CENTERLINE) |              |              |
|-----------------------------|--------------|--------------|
| CORNER#                     | NORTHING     | EASTING      |
| PL-12                       | 1,754,086.70 | 2,679,694.00 |
| PL-13                       | 1,753,921.00 | 2,681,828.30 |
| PL-14                       | 1,753,231.80 | 2,682,369.40 |
| PL-15                       | 1,752,239.30 | 2,682,308.60 |
| PL-16                       | 1,751,974.70 | 2,682,362.80 |

| VOLUME COMPUTATIONS   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |





| SURVEY CONTROL DATA |              |              |       |                          |
|---------------------|--------------|--------------|-------|--------------------------|
| STATION             | NORTHING     | EASTING      | MLLW  | DESCRIPTION              |
| D-1 1977            | 1,753,036.96 | 2,681,889.48 | 17.07 | USACE SBC                |
| D-2 1977            | 1,752,365.10 | 2,683,162.77 | 12.86 | USACE SBC                |
| D-3 1977            | 1,754,219.15 | 2,682,766.21 | 15.37 | USACE SBC                |
| D-4 1977 / 2001     | 1,754,277.93 | 2,681,666.98 | 16.05 | DESTROYED                |
| DE-1 2001           | 1,754,921.62 | 2,681,006.69 | 20.62 | USACE DOMED BC           |
| DE-2 2001           | 1,753,067.07 | 2,681,051.56 | 15.78 | USACE DOMED BC           |
| DE-3 2007           | 1,753,633.78 | 2,681,681.89 | 18.10 | 3.25 INCH DOMED BC       |
| NICK 1958           | 1,753,449.30 | 2,681,631.96 | 0.00  | SEARCHED FOR & NOT FOUND |
| SPIKE               | 1,753,445.78 | 2,681,616.58 | 17.76 | IRON SPIKE               |

| NAVIGATION AIDS |              |              |                           |
|-----------------|--------------|--------------|---------------------------|
| USCG NO.        | NORTHING     | EASTING      | DESCRIPTION               |
| 23305.9         | 1,753,257.98 | 2,682,183.33 | DAYBEACON 13 - SG ON PILE |
| 23305.95        | 1,753,939.34 | 2,682,093.75 | DAYBEACON 14 - TR ON PILE |
| 23306           | 1,753,729.46 | 2,681,811.14 | DAYBEACON 15 - SG ON PILE |
| 23306.1         | 1,753,865.80 | 2,680,309.76 | DAYBEACON 17 - SG ON PILE |

| PROJECT LIMITS (CENTERLINE) |              |              |
|-----------------------------|--------------|--------------|
| CORNER#                     | NORTHING     | EASTING      |
| PL-12                       | 1,754,086.70 | 2,679,694.00 |
| PL-13                       | 1,753,921.00 | 2,681,828.30 |
| PL-14                       | 1,753,231.80 | 2,682,369.40 |
| PL-15                       | 1,752,239.30 | 2,682,308.60 |
| PL-16                       | 1,751,974.70 | 2,682,362.80 |

| VOLUME COMPUTATIONS   |     |
|---|-----|
| PROJECT DEPTH - 5.0'  | CY  |
| AVAILABLE TO PROJECT DEPTH (-5.0')                                | 55  |
| AVAILABLE BETWEEN PROJECT DEPTH (-5.0') AND MAX PAY DEPTH (-6.0') | 416 |
| AVAILABLE WITHIN SIDE SLOPES (3:1)                                | 14  |
| TOTAL MATERIAL AVAILABLE  | 485 |

US Army Corps of Engineers of Engineers of Alaska DISTRICT

CONTRACT NO. W19H8-AUG-2013

CONTRACTOR: HUGHES & ASSOCIATES

CITY: WASILLA

STATE: ALASKA

APPROVAL: [Signature]

DATE: [Blank]

DATE: 2013

SURVEY NO.: 318-13

DESIGNED BY: KKKXX

PLotted DATE: 2013

FILE NAME: [Blank]

SIZE: [Blank]

U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT

BER, ALASKA 99506-0898

HUGHES & ASSOCIATES

WASILLA, ALASKA 99684

ROCKY PASS IN Keku Strait, Alaska

DEVIL'S ELBOW

PROJECT CONDITION SURVEY

JULY 22 - 27, 2013

SHEET IDENTIFICATION

V-106

Sheet 6 of 6