

Drawing S:\2017\Unalakleet\510_CAD FILES\514_DWG\Unalakleet River Revetment Phase 3 Post Con_20170911_Preliminary_Rev1.dwg last saved on 10/4/2017 9:38 AM

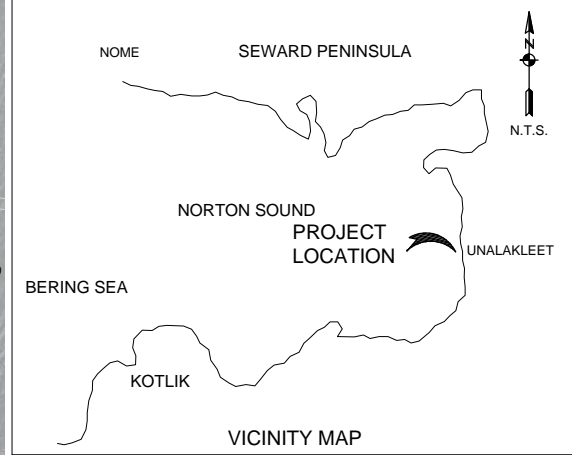
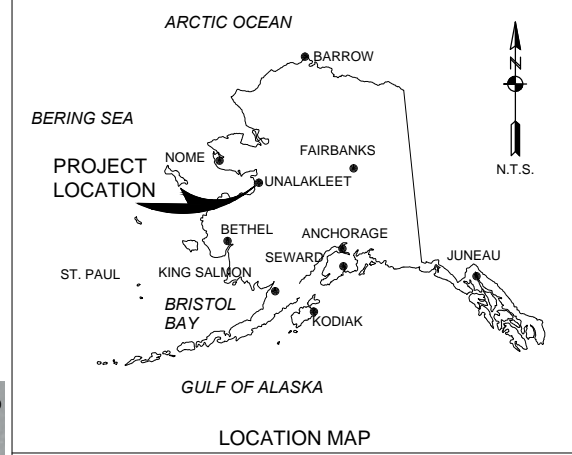
| LEGEND | |
|--------|------------------------|
| | 2017 SURVEY LIMITS |
| | 2017 SURVEY EXTENTS |
| | 2014 SURVEY EXTENTS |
| | 2010 SURVEY EXTENTS |
| | OVERHEAD POWER LINES |
| | EDGE OF ROAD |
| | EDGE OF GRAVEL PARKING |
| | EXISTING TRAIL |
| | EXISTING MONUMENT |

| PROJECT BASELINE COORDINATES | | | |
|------------------------------|--------------|--------------|------------|
| CORNER | NORTHING | EASTING | DESCRIPTOR |
| 0+00.00 | N 3609115.82 | E 1836486.43 | BEGIN PT. |
| 1+17.32 | N 3609001.58 | E 1836459.73 | ANGLE PT. |
| 2+97.61 | N 3608846.11 | E 1836368.43 | PT. CRV. * |
| 6+03.04 | N 3608801.51 | E 1836104.07 | PT. TAN. * |
| 7+12.92 | N 3608872.75 | E 1836020.41 | ANGLE PT. |
| 8+45.31 | N 3608942.20 | E 1835907.70 | ANGLE PT. |
| 12+72.78 | N 3609138.40 | E 1835527.91 | ANGLE PT. |
| 14+19.12 | N 3609221.01 | E 1835407.12 | ANGLE PT. |
| 14+79.70 | N 3609278.90 | E 1835389.80 | END PT. |

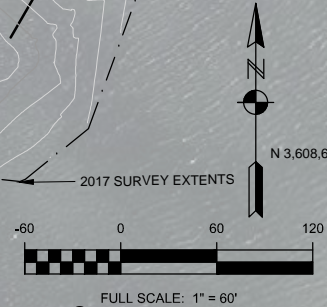
| TEMPORARY PROJECT CONTROL | | | | |
|---------------------------|--------------|--------------|-------|------------------------------|
| STATION | NORTHING | EASTING | ELEV | DESCRIPTION |
| 8333 E | 3,609,133.23 | 1,836,500.64 | 9.47 | 3 1/2" DOMED BRASS CAP |
| 8333 H | 3,608,819.78 | 1,836,295.22 | 13.70 | 9/16" BULLET HEAD IN MON BOX |
| BS-1 | 3,608,752.75 | 1,836,197.13 | 19.95 | 3 1/2" DOMED BRASS CAP |
| MONITOR 1 | 3,608,917.08 | 1,836,391.80 | 13.62 | |
| MONITOR 2 | 3,608,984.75 | 1,836,435.07 | 13.00 | 5/8" REBAR |
| PK NAIL | 3,609,120.31 | 1,836,456.94 | 13.78 | PK NAIL |

| 2017 SURVEY LIMITS | | |
|--------------------|--------------|--------------|
| POINT | NORTHING | EASTING |
| SL1 | 3,608,603.64 | 1,836,516.36 |
| SL2 | 3,608,769.09 | 1,836,229.80 |
| SL3 | 3,608,770.38 | 1,836,237.75 |
| SL4 | 3,608,809.36 | 1,836,329.12 |
| SL5 | 3,608,859.10 | 1,836,371.25 |
| SL6 | 3,608,921.97 | 1,836,400.63 |
| SL7 | 3,609,005.73 | 1,836,453.10 |
| SL8 | 3,609,148.67 | 1,836,448.15 |
| SL9 | 3,609,017.52 | 1,836,755.31 |

| SURVEY CONTROL DATA | | | | |
|---------------------|--------------|--------------|-------|---------------------------------------|
| STATION | NORTHING | EASTING | ELEV | DESCRIPTION |
| 8333D | 3,609,583.71 | 1,835,807.26 | 14.96 | BRASS CAP; SFNF |
| LOT COR. | 3,608,814.27 | 1,836,160.84 | 16.46 | ALCAP SFNF (DESTROYED) |
| NBASE | 3,625,416.56 | 1,830,481.06 | 20.29 | ALUM MON; NSF |
| NRCS 7 | 3,613,105.58 | 1,836,174.28 | 10.52 | 3 1/4" DOMED ALCAP; FND IN GOOD COND. |
| NRCS 9 | 3,612,226.07 | 1,834,933.55 | 19.61 | ALCAP SFNF (DESTROYED) |
| SITE 3A | 3,623,167.44 | 1,831,345.29 | 20.20 | 2 1/2" ALCAP; FND IN GOOD COND. |
| SITE 3B | 3,622,209.82 | 1,831,633.50 | 21.58 | 2" ALCAP; FND IN GOOD COND. |
| SITE 4A | 3,609,981.32 | 1,834,741.62 | 11.77 | 2" ALCAP; FND IN GOOD COND. |
| WCMC-1 | 3,611,906.95 | 1,834,154.61 | 16.77 | 3 1/4" DOMED ALCAP; FND IN GOOD COND. |



- SURVEY NOTES**
- EXCEPT AS NOTED BELOW FOR 2010 AND 2014 SURVEYS: SURVEY DATA FOR UPLANDS AND RIVER MOUTH AREAS TAKEN BY RPK CONSULTING ENGINEERS AND SURVEYORS DURING THE SUMMER OF 2006; AND HYDROGRAPHIC SURVEY DATA OFFSHORE TAKEN BY DOWL ENGINEERS DURING THE SUMMER OF 2003 (MONTH AND DAY UNKNOWN FOR 2006 AND 2003 SURVEYS). 2010 SURVEY EXTENTS TAKEN BY HUGHES AND ASSOCIATES DURING THE SUMMER OF 2010, DATED 29 AUG 2010. 2014 SURVEY EXTENTS TAKEN BY TERRASON PRECISION GEOSPATIAL SOLUTIONS IN THE SUMMER OF 2014, DATED 17 SEP 2014. 2017 SURVEY EXTENTS TAKEN BY HUGHES AND ASSOCIATES DURING THE FALL OF 2017 DATED 11 SEP 2017.
 - LOCAL PROJECT HORIZONTAL CONTROL IS ALASKA STATE PLANE, ZONE 7, NAD83 (2011), IN US SURVEY FEET HOLDING "SITE 4A" AS N 3,609,981.32', E 1,836,160.84' AND "WCWC-1" AS N 3,611,906.95', E 1,834,154.61'.
 - VERTICAL CONTROL IS MEAN LOWER LOW WATER (MLLW=0.0'), ALASKA STATE PLANE, ZONE 7, NAD83 (2011), IN US SURVEY FEET HOLDING "SITE 4A" AS 11.77'.
 - SOUNDINGS ARE IN U.S. SURVEY FEET AND ARE NEGATIVE UNLESS OTHERWISE INDICATED. CONTOURS SHOWN ARE IN FEET.
 - BATHYMETRY WAS COLLECTED ON SEPTEMBER 11, 2017. SOUNDINGS WERE COLLECTED USING A "CEE HYDROSYSTEMS CEE ECHO" SOUNDER WITH A 3" SINGLE BEAM TRANSDUCER. SOUND VELOCITY THROUGH THE WATER COLUMN WAS DETERMINED WITH AN ODOM DIGIBAR PRO SOUND VELOCITY PROBE. POSITIONING AND VESSEL ATTITUDE WERE MEASURED USING A "TRIMBLE R8 RTK" SYSTEM. RTK CORRECTIONS WERE BROADCAST FROM A LOCAL BASE STATION OCCUPYING "8333 H". DATA WAS COLLECTED AND FIELD PROCESSED USING "HYPACK 2017" SOFTWARE. TIDE ELEVATIONS WERE MEASURED USING A "TRIMBLE R8 RTK" SYSTEM.
 - THIS DRAWING INDICATES GENERAL CONDITIONS AT THE TIME OF THE SURVEY.
 - ITEMS SHOWN OUTSIDE THE 2017 SURVEY LIMITS INDICATED ARE FOR REFERENCE ONLY AND HAVE NOT BEEN VERIFIED BY THIS SURVEY.
 - BACKGROUND IMAGE IS A DIGITAL GLOBE GEO-REFERENCED IMAGE TAKEN ON 02 JUNE, 2016. IMAGE ADJUSTED TO MATCH 2006 UPLANDS SURVEY, BUILDING LOCATIONS, USING AUTOCAD'S RASTER DESIGN "CORRELATE" COMMAND.
 - MAP SOUNDINGS ARE SORTED AT 7.5 FOOT AND ARE SHOAL BIASED. CONTOURS ARE SORTED AT 3 FOOT AND ARE SHOAL BIASED.



THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACM/THOSQA CERTIFIED HYDROGRAPHER
Cory Hughes
CORRY S. HUGHES C.H. (245)



| | |
|--------------------------------|----------------------------|
| CONTRACT NO. W911KB-19-R-0015 | DATE: _____ |
| CONTRACTOR: ORION CONSTRUCTION | STATE: AK |
| CITY: ANCHORAGE | APPROVED: _____ |
| RECOMMENDED: _____ | REGISTERED ENGINEER: _____ |

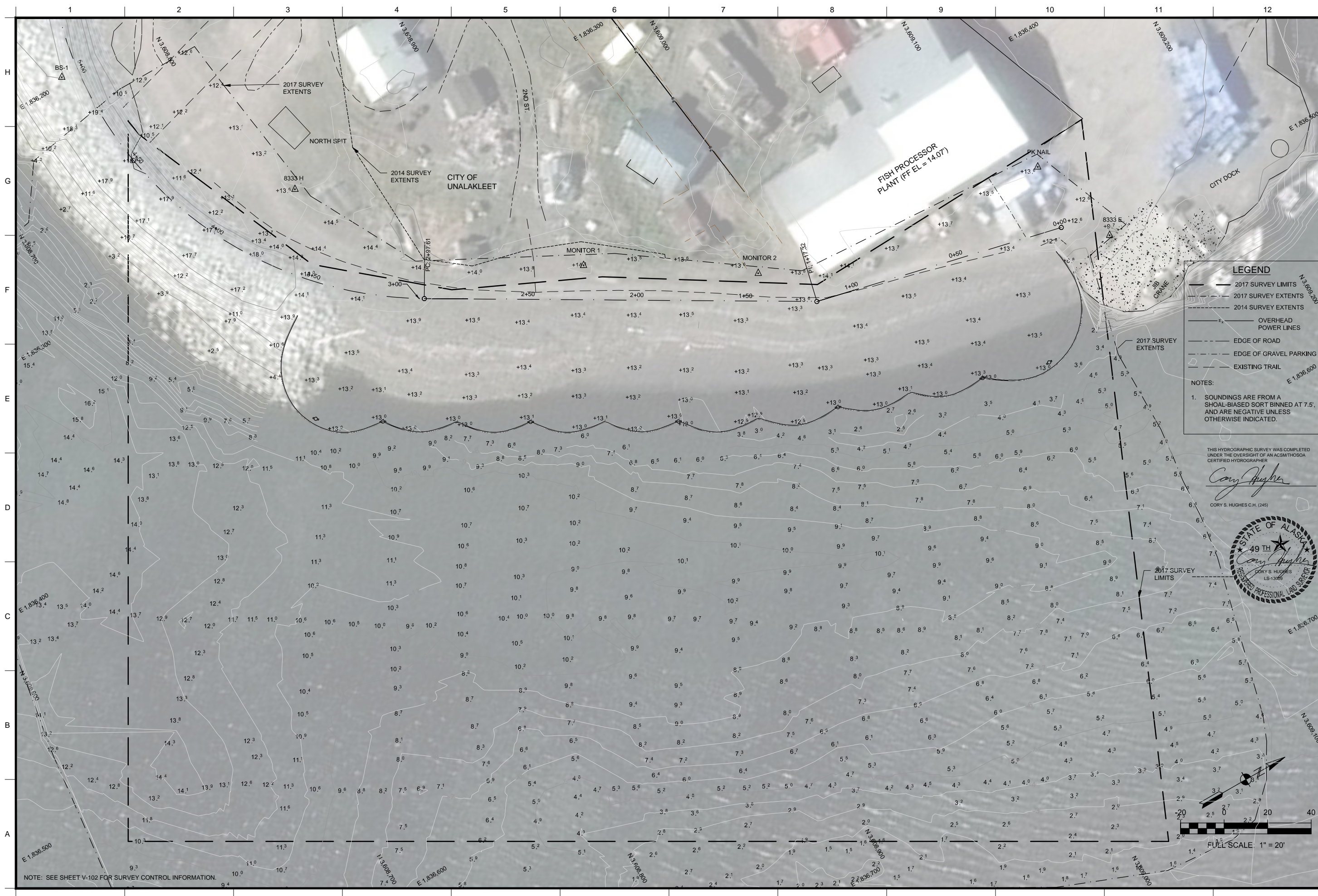
| DATE | APP'D | DESCRIPTION |
|------|-------|-------------|
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| DESIGNED: RCT | DATE: 18 SET 2017 |
| DRAWN: DCA | DWG SCALE: 1" = 60' |
| REVIEWED: C. HUGHES | PLOT SCALE: 1" = 60' |
| CHEF: C. HUGHES | FILE: \\mfs\alaska\2017\Phase3 |
| DRAWING #: | |
| PROJECT: UNALAKLEET RIVER REVETMENT PHASE III | |
| DESIGNER: RCT | |
| ENGINEER: C. HUGHES | |
| CORPS OF ENGINEERS | |
| ANCHORAGE, ALASKA | |
| HUGHES & ASSOCIATES | |
| 2970 COTTLE LOOP | |
| ANCHORAGE, ALASKA | |

UNALAKLEET, ALASKA
RIVER REVETMENT PHASE III
SURVEY AND MAPPING
PLANS
COMPOSITE POST-CONSTRUCTION SURVEY

REFERENCE NUMBER:
V-102
SHEET 4 OF 25

Drawing S:\2017\Unalakleet\510_CAD FILES\514_DWG\Unalakleet River Revatment Phase 3 Post Con_20170911_Preliminary_Rev1.dwg last saved on 10/4/2017 9:29 AM was plotted by CAD2 on 10/4/2017 9:40 AM



NOTE: SEE SHEET V-102 FOR SURVEY CONTROL INFORMATION.

LEGEND

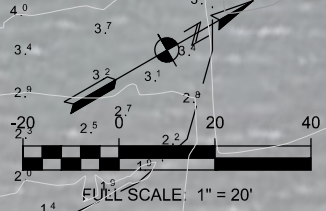
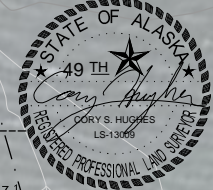
- 2017 SURVEY LIMITS
- 2017 SURVEY EXTENTS
- 2014 SURVEY EXTENTS
- OVERHEAD POWER LINES
- EDGE OF ROAD
- EDGE OF GRAVEL PARKING
- EXISTING TRAIL

NOTES:

- SOUNDINGS ARE FROM A SHOAL-BIASED SORT BINNED AT 7.5', AND ARE NEGATIVE UNLESS OTHERWISE INDICATED.

THIS HYDROGRAPHIC SURVEY WAS COMPLETED UNDER THE OVERSIGHT OF AN ACSM/TSSO/A CERTIFIED HYDROGRAPHER

Cory Hughes
CORY S. HUGHES C.H. (245)



| | |
|--------------|--------------------|
| CONTRACT NO. | W911KB-19-R-0015 |
| CONTRACTOR | ORION CONSTRUCTION |
| CITY | ANCHORAGE |
| STATE | AK |
| DATE | |
| APPROVED | |
| RECOMMENDED | |
| PREPARED BY | TELEST ENGINEER |

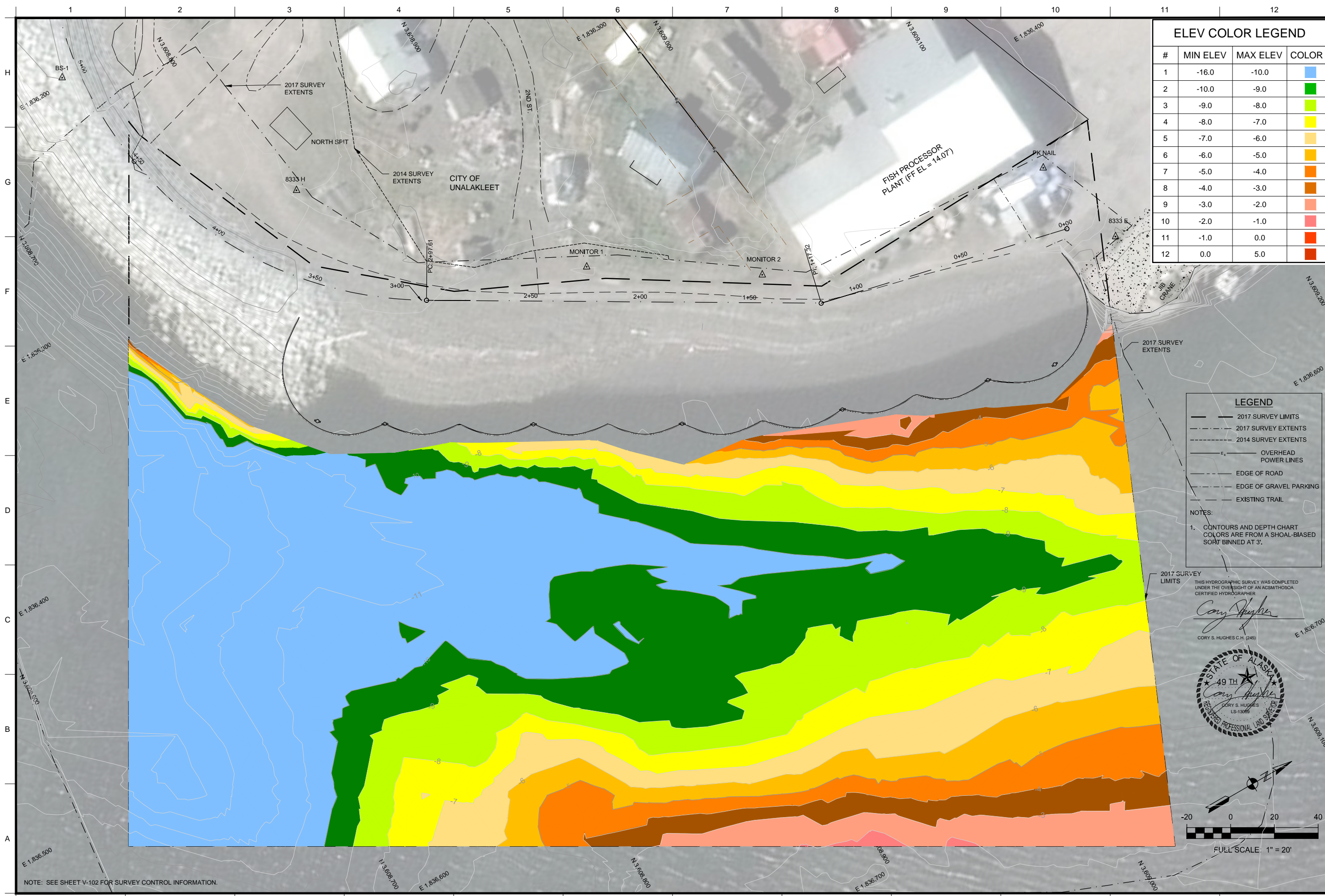
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|------|------|-------------|----|--------|
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| DESIGNED | RCT | DATE | 18 SET 2017 |
| DRAWN | DCA | DWG SCALE | 1:20 |
| REVIEWED | C. HUGHES | PLOT SCALE | 1:20 |
| CHECKED | SECTION | FILE | \\fileshare\proj\701\701.dwg |
| DATE | | DRAWING # | |
| | | | |
| | | | |
| | | | |

UNALAKLEET, ALASKA
RIVER REVETMENT PHASE III
SURVEY AND MAPPING
PLANS
PHASE III POST-CONSTRUCTION SURVEY

REFERENCE NUMBER:
V-103
SHEET 5 OF 25

Drawing S:\2017\Unalakleet\510_CAD FILES\514_DWG\Unalakleet River Revatment Phase 3 Post Con_20170911_Preliminary_Rev1.dwg last saved on 10/4/2017 9:29 AM was plotted by CAD2 on 10/4/2017 9:41 AM



ELEV COLOR LEGEND

| # | MIN ELEV | MAX ELEV | COLOR |
|----|----------|----------|--------------|
| 1 | -16.0 | -10.0 | Blue |
| 2 | -10.0 | -9.0 | Green |
| 3 | -9.0 | -8.0 | Light Green |
| 4 | -8.0 | -7.0 | Yellow |
| 5 | -7.0 | -6.0 | Light Orange |
| 6 | -6.0 | -5.0 | Orange |
| 7 | -5.0 | -4.0 | Dark Orange |
| 8 | -4.0 | -3.0 | Red-Orange |
| 9 | -3.0 | -2.0 | Red |
| 10 | -2.0 | -1.0 | Dark Red |
| 11 | -1.0 | 0.0 | Red-Black |
| 12 | 0.0 | 5.0 | Black |

LEGEND

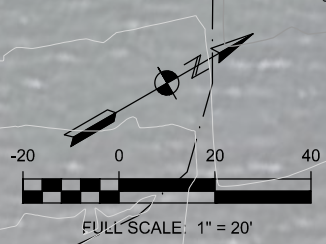
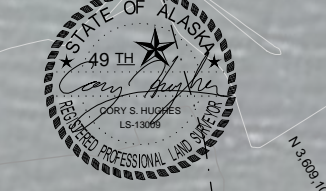
- 2017 SURVEY LIMITS
- - - 2017 SURVEY EXTENTS
- - - 2014 SURVEY EXTENTS
- OVERHEAD POWER LINES
- EDGE OF ROAD
- - - EDGE OF GRAVEL PARKING
- - - EXISTING TRAIL

NOTES:

- CONTOURS AND DEPTH CHART COLORS ARE FROM A SHOAL-BIASED SORT BINNED AT 3.

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

Cory Hughes
CORY S. HUGHES C.H. (245)



NOTE: SEE SHEET V-102 FOR SURVEY CONTROL INFORMATION.



| | |
|-------------------------------|-----------------|
| CONTRACT NO. W911KB-19-R-0015 | DATE |
| CONTRACTOR ORION CONSTRUCTION | APPROVED |
| CITY ANCHORAGE STATE AK | RECOMMENDED |
| PRIME CONTRACTOR | DESIGN ENGINEER |

| DATE | APP'D | DESCRIPTION | BY | ACTION |
|------|-------|-------------|----|--------|
| | | | | |

| | |
|---------------------|--------------------------------|
| DESIGNED: RCT | DATE: 18 SET 2017 |
| DRAWN: DCA | DWG SCALE: 1:20 |
| REVIEWED: C. HUGHES | PLOT SCALE: 1:20 |
| CHECKED: C. HUGHES | FILE: \\m\p\hughes\2017\Phase3 |
| CHEF: C. HUGHES | DRAWING #: |
| CHEF: C. HUGHES | |

UNALAKLEET, ALASKA
RIVER REVETMENT PHASE III
SURVEY AND MAPPING
PLANS
PHASE III POST-CONSTRUCTION COLOR DEPTH
CHART

REFERENCE NUMBER:
V-104
SHEET 6 OF 25