



Operations Branch

Public Notice

OCT 27 2016

Alaska District
U.S. Army Corps of Engineers

Date _____ Identification No. O-17-001
Please refer to the identification number when replying.


North Extension Stabilization Step 1 Port of Anchorage Section 408 Permission Request

The Alaska District, U. S. Army Corps of Engineers has received a request pursuant to Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408), hereafter referred to as a Section 408 permission request, from the Port of Anchorage to modify the existing federal project by replacing and modernizing their docks using a phased approach. This request for permission is for Phase 1 North Extension Stabilization Step 1.

Section 408 authorizes the Secretary of the Army, on the recommendation of the Chief of Engineers of the U.S. Army Corps of Engineers, to grant permission for the alteration or occupation or use of a U.S. Army Corps of Engineers Civil Works project if the Secretary determines the activity will not be injurious to the public interest and will not impair the usefulness of the Federal project. In accordance with Engineering Circular (EC) 1165-2-216, Change 1, dated 21 June 2016, this Section 408 permission request must be considered and granted prior to the Alaska District's issuance of a decision for a Department of the Army permit pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act.

The proposed project, titled "North Extension Stabilization Step 1" by the Port of Anchorage, is part of Phase 1 of the Anchorage Port Modernization Program. The Anchorage Port Modernization Program will replace in-kind the existing docks at the Port of Anchorage and consists of five phases. The North Extension Stabilization Step 1 involves installing a new 30-foot high closed-cell sheet pile bulkhead on a new alignment to create a globally stable area landward of this structure and removing approximately 1.33 million cubic yards of fill and associated sheet pile. This work will result in a revision to the federal dredging limits.

This public notice will expire 15 days after the date of this notice. If you have any questions about the proposed action, please contact me at (907) 753-5685 or at Julie.L.Anderson@usace.army.mil.

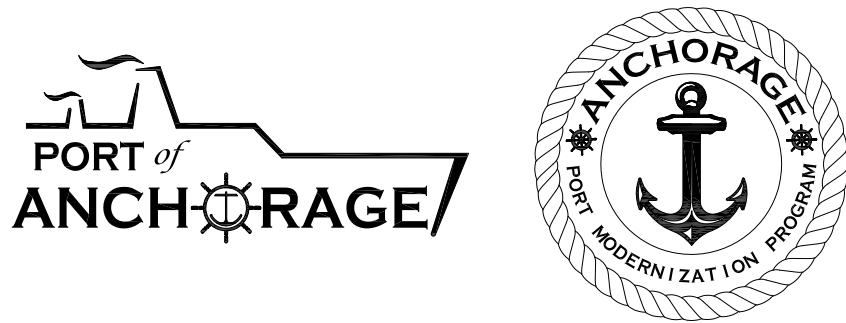

Julie L. Anderson, P.E.
Chief, Operations Branch

ANCHORAGE PORT MODERNIZATION PROGRAM

ANCHORAGE, ALASKA

PHASE 1

NORTH EXTENSION STABILIZATION (NES) STEP 1



SCHEDULE OF DRAWINGS

NE1 SHEET LIST TABLE		
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE
1	NE1-001	COVER SHEET
2	NE1-002	POINT TRANSLATION TABLES
3	NE1-003	APMP OVERALL SITE PLAN
4	NE1-004	APMP OVERALL SITE PLAN NES STEP 1
5	NE1-005	DREDGING PLAN NES STEP 1
6	NE1-C-1001	DEMOLITION PLAN
7	NE1-C-2001	GENERAL SITE LAYOUT
8	NE1-C-2002	GRADING PLAN
9	NE1-C-3001	TYPICAL SECTIONS
10	NE1-S-0001	GENERAL NOTES
11	NE1-S-2001	GENERAL STRUCTURAL LAYOUT
12	NE1-S-3001	TYPICAL SECTIONS CELLULAR SHEET PILE BULKHEAD
13	NE1-S-5001	NORTH Z-PILE RETAINING WALL
14	NE1-S-5002	SOUTH Z-PILE RETAINING WALL

- GENERAL NOTES:
- VERTICAL CONTROL POINTS WITH PID
 - "B 75 1964" - TT0712
 - "NO 15 RESET 1966" - TT0711
 - "CB 2A" - NOT FOUND IN NGS DATABASE
 - "TIDAL 12" - TT0721
 - HORIZONTAL CONTROL POINTS WITH PID
 - "O'MALLEY" - TT4671
 - "LOOP 2 USE RM 3 1964" - UV4446
 - BATHYMETRY SURVEY 9-1-2014 PROVIDED BY USACE. FILENAME:ANCEXP11_C3D2014MODEL_TENCZA.DWG.

VERTICAL CONTROL STATEMENT

THE VERTICAL DATUM FOR THIS PROJECT IS MEAN LOWER LOW WATER (MLLW=0.00') BASED ON NOAA/NOS TIDAL BENCHMARK STATION ID 9455920, ANCHORAGE, KNIK ARM, DATED 10/24/2011. HOLDING THE FOLLOWING BENCHMARKS:

"B 75 1964", USCGS STANDARD BRASS CAP SET FLUSH WITH THE CONCRETE SURFACE OF THE ANCHORAGE CITY DOCK, 12' EAST OF THE NE CORNER OF THE NORTH END OF THE APPROACH TO THE DOCK AND 81' SOUTH OF THE SE CORNER OF THE PORT OF ANCHORAGE OFFICE BUILDING. ELEV.=36.81', POINT NO. 601.

"NO 15 RESET 1966", USCGS STANDARD BRASS CAP SET FLUSH WITH THE CONCRETE SURFACE OF THE ANCHORAGE CITY DOCK, 31' SOUTH OF THE NORTH EDGE OF THE DOCK AND 15.9' NW OF THE NE CORNER OF THE PORT OF ANCHORAGE OFFICE BUILDING. ELEV.=37.14', POINT NO. 602.

DATUM CONVERSION:
TO CONVERT MLLW ELEVATION TO MUNICIPALITY OF ANCHORAGE (MOA) 1972 NGS ADJUSTMENT ELEVATION, SUBTRACT 17.39'. THE MOA BENCHMARKS HELD TO DETERMINE THE CONVERSION ARE:

"CB 2A" BEGINNING AT THE INTERSECTION OF NORTH C STREET AND WHITNEY ROAD AND OCEAN DOCK ROAD, THENCE EASTERLY 0.2 MILES ALONG WHITNEY ROAD, THENCE NORTHERLY 32' TO THE SE CORNER OF A CEMENT BUILDING. THE BRASS CAP IS SET VERTICALLY IN THE SOUTH FACE, 0.4' WEST OF SAID SE CORNER. MOA ELEV. =22.32', MLLW ELEV.=39.71'.

"TIDAL 12", AT THE ALASKA RAILROAD STATION IN ANCHORAGE, AT THE NORTH ENTRANCE TO THE STATION AND 111' WEST OF THE NORTHEAST CORNER OF THE STATION. THE BRASS CAP IS SET 0.5' EAST OF THE WEST FRAME OF THE DOUBLE DOOR ENTRANCE. MOA ELEV.=22.14' MOA, MLLW ELEV.=39.53'.

HORIZONTAL CONTROL STATEMENT

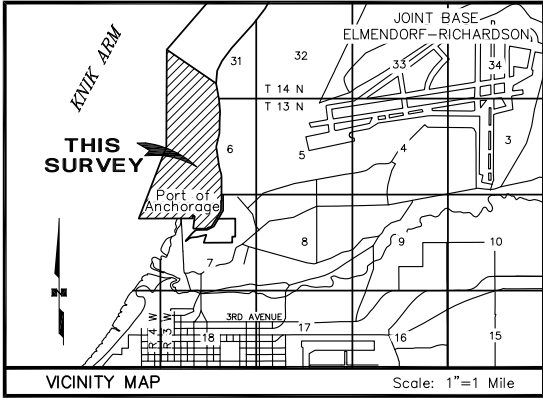
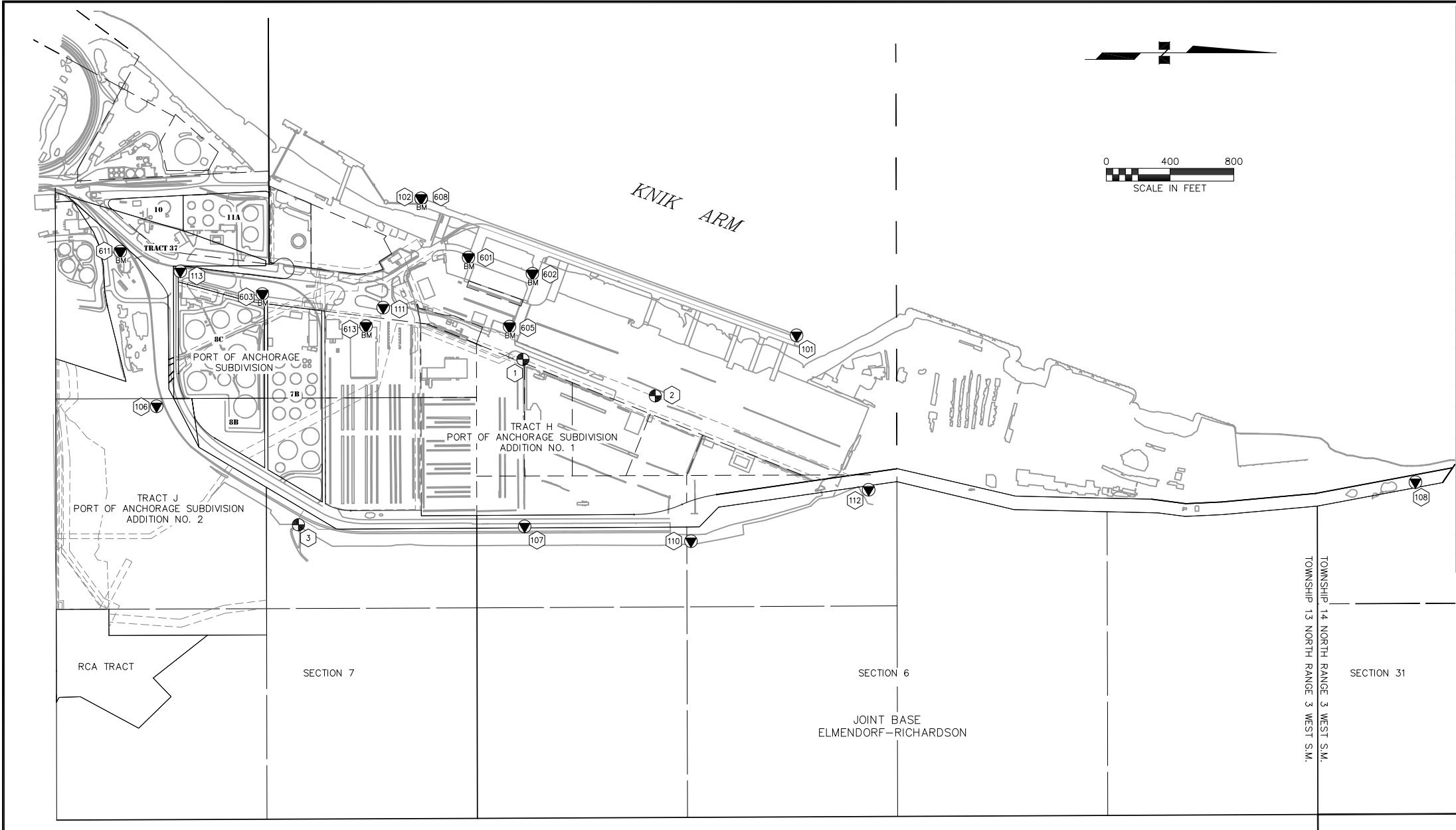
COORDINATE SYSTEM
THIS PROJECT IS LOCATED ENTIRELY WITHIN THE ANCHORAGE BOWL 2000 ADJUSTMENT, A LOCAL SURFACE GRID COORDINATE SYSTEM EXPRESSED IN U.S. SURVEY FEET UNITS DEVELOPED BY THE ALASKA DEPARTMENT OF TRANSPORTATION.

BASIS OF COORDINATES
THE BASIS OF COORDINATES IS NGS STATION O'MALLEY, LOCATED NEAR THE INTERSECTION OF THE NEW SEWARD HIGHWAY AND O'MALLEY ROAD. SAID STATION HAS ANCHORAGE BOWL 2000 COORDINATES OF 303939.2310 N, 353362.5446 E. (U.S. SURVEY FEET).

BASIS OF BEARINGS
THE BASIS OF BEARINGS IS A LOCAL PLANE BEARING BETWEEN NGS STATION O'MALLEY AND NGS STATION LOOP 2 USE RM 3 1964. NGS STATION LOOP 2 USE RM 3 1964 BEARS N 01°43'26.4" E A DISTANCE OF 49488.4476 FEET FROM NGS STATION O'MALLEY. NGS STATION LOOP 2 USE RM 3 1964 HAS ANCHORAGE BOWL 2000 COORDINATES OF 353405.2778 N, 354851.3982 E. (U.S. SURVEY FEET).

PROJECT BASIS OF COORDINATES
THE BASIS OF COORDINATES FOR THIS PROJECT IS POINT NO. 551, LOOP 2 USE RM 3 1964 HOLDING THE COORDINATES STATED ABOVE IN THE BASIS OF BEARINGS.

TRANSLATION PARAMETERS
TO CONVERT THE LOCAL COORDINATES TO NAD83 (92) STATE PLANE COORDINATES EXPRESSED IN U.S. SURVEY FEET, TRANSLATE USING +2,296,868.6878 N, +1,312,517.4904 E, AND SCALE USING 0.9998910192.



- LEGEND**
- FOUND CONTROL MONUMENT
 - FOUND BENCHMARK
 - SET CONTROL MONUMENT
 - SURVEY CONTROL POINT NUMBER

Survey Control - Alaska State Planes - Zone 4					
See last paragraph of HORIZONTAL CONTROL STATEMENT on NE1-001 for Translation Parameters to convert from Anchorage Bowl to Alaska State Planes					
Project Control					
POINT	NORTHING	EASTING	MLLW	DESCRIPTION	MONUMENT DESIGNATION
1	2644933.5211	1660736.2734	35.88	Set Aluminum Cap Monument	CP 1
2	2645763.6072	1660965.0655	38.61	Set Brass Cap Monument	CP 2
3	2643525.6689	1661773.1817	46.15	Set Brass Cap Monument	CP 3
101	2646649.5794	1660585.2133	41.50	Found Brass Cap Monument	N END
102	2644295.9800	1659728.4190	40.56	Found Brass Cap Monument	S END
106	2642635.6625	1661029.8974	44.75	Found Brass Cap Monument	CRAIG
107	2644943.7997	1661783.3826	38.91	Found Brass Cap Monument	DOUG
108	2650531.2961	1661506.1960	36.54	Found Brass Cap Monument	GARY
110	2645987.4265	1661875.8765	48.38	Found Brass Cap Monument	MIKE
111	2644056.6300	1660411.8636	37.41	Found Brass Cap Monument	RICH
112	2647101.8324	1661553.4646	64.00	Found Brass Cap Monument	STEVE
113	2642784.4267	1660184.2712	37.20	Found Aluminum Cap Monument	THERMO
551	2649985.1366	1667187.1774		Found Brass Cap Monument	LOOP 2 USE RM 3 1964
603	2643299.3834	1660325.8144	37.30	Found Brass Cap Monument	5920 G
Vertical Control					
POINT	NORTHING	EASTING	MLLW	DESCRIPTION	MONUMENT DESIGNATION
601	2644592	1660097	36.81	Found Brass Cap Monument	B 75 1964
602	2644993	1660199	37.14	Found Brass Cap Monument	NO 15 RESET 1966
603	2643299	1660326	37.30	Found Brass Cap Monument	5920 G
605	2644849	1660530	38.96	Found Brass Cap Monument	5920 B
608	2644295	1659726	40.53	Found Brass Cap Monument	TIDAL 16
611	2642408	1660060	38.83	Found Brass Cap Monument	945 5920K
613	2643949	1660528	40.32	Found Brass Cap Monument	945 5920J

Survey Control - Anchorage Bowl 2000 Adjustment

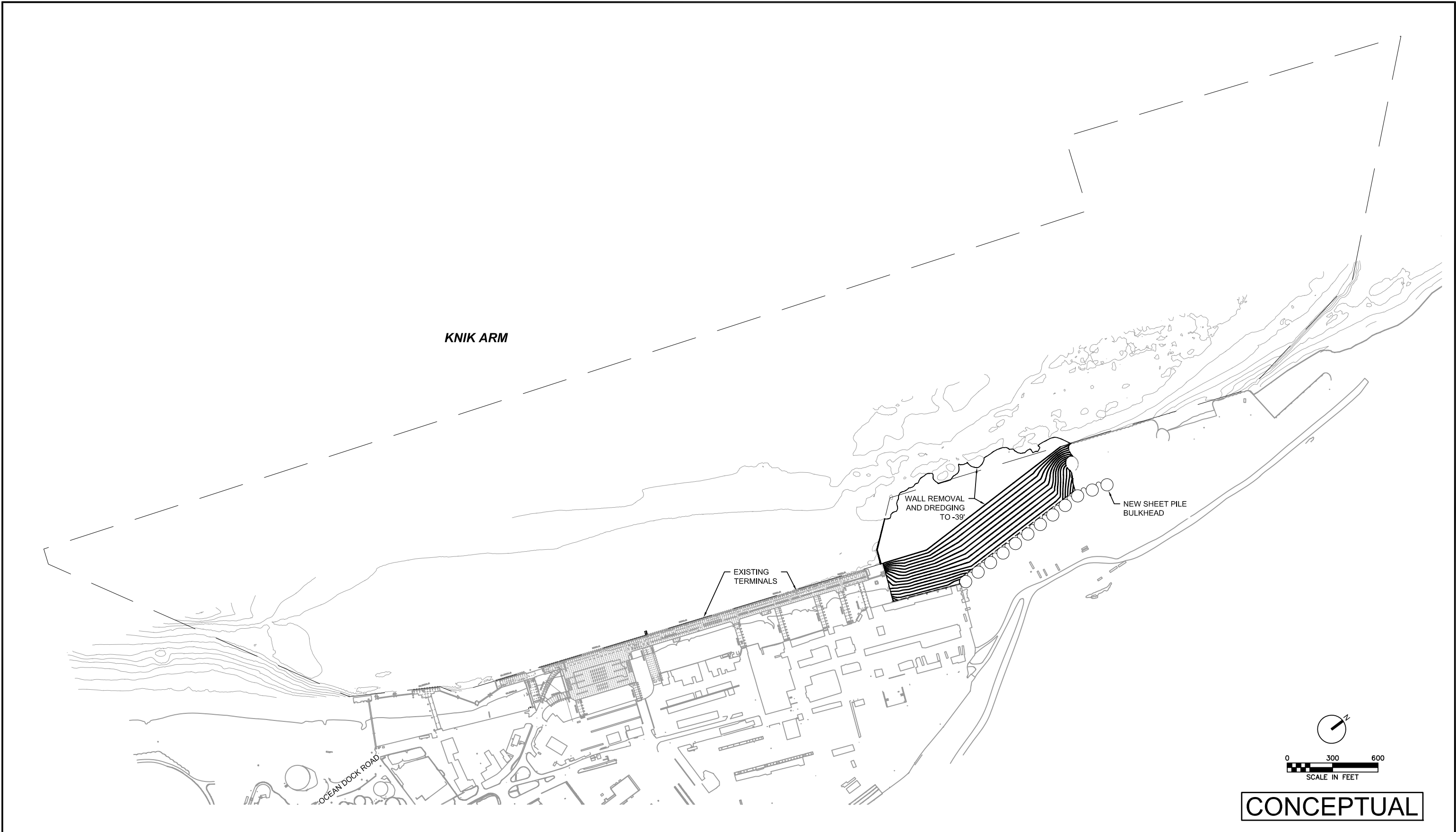
Survey Control Provided by R&M Consultants

See last paragraph of HORIZONTAL CONTROL STATEMENT on NE1-001 for Translation Parameters to convert from Anchorage Bowl to Alaska State Planes

Project Control					
POINT	NORTHING	EASTING	MLLW	DESCRIPTION	MONUMENT DESIGNATION
1	348353.1117	348399.7911	35.88	Set Aluminum Cap Monument	CP 1
2	349183.2883	348628.6081	38.61	Set Brass Cap Monument	CP 2
3	346945.1060	349436.8124	46.15	Set Brass Cap Monument	CP 3
101	350069.3570	348248.7145	41.50	Found Brass Cap Monument	N END
102	347715.5011	347391.8268	40.56	Found Brass Cap Monument	S END
106	346055.0026	348693.4471	44.75	Found Brass Cap Monument	CRAIG
107	348363.3914	349447.0144	38.91	Found Brass Cap Monument	DOUG
108	353951.4968	349169.7976	36.54	Found Brass Cap Monument	GARY
110	349407.1320	349539.5184	48.38	Found Brass Cap Monument	MIKE
111	347476.1250	348075.3459	37.41	Found Brass Cap Monument	RICH
112	350521.6593	349217.0714	64.00	Found Brass Cap Monument	STEVE
113	346203.7831	347847.7287	37.20	Found Aluminum Cap Monument	THERMO
551	353405.2778	354851.3982		Found Brass Cap Monument	LOOP 2 USE RM 3 1964
603	346718.7959	347989.2874	37.30	Found Brass Cap Monument	5920 G
Vertical Control					
POINT	NORTHING	EASTING	MLLW	DESCRIPTION	MONUMENT DESIGNATION
601	348012	347760	36.81	Found Brass Cap Monument	B 75 1964
602	348413	347862	37.14	Found Brass Cap Monument	NO 15 RESET 1966
603	346719	347989	37.30	Found Brass Cap Monument	5920 G
605	348269	348194	38.96	Found Brass Cap Monument	5920 B
608	347714	347390	40.53	Found Brass Cap Monument	TIDAL 16
611	345827	347723	38.83	Found Brass Cap Monument	945 5920K
613	347369	348192	40.32	Found Brass Cap Monument	945 5920J

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	REV	DATE	DESCRIPTION	BY	APVD			NOT FOR CONSTRUCTION			POINT TRANSLATION TABLES	PORT OF ANCHORAGE		
												ANCHORAGE PORT MODERNIZATION PROGRAM NORTH EXTENSION STABILIZATION (NES) STEP 1		
												ANCHORAGE, ALASKA		
	REVISIONS					DSGN M. HAAPALA	DR J. MCCURTAIN	CHK J. TAYLOR	APVD D. PLAYTER			HORIZ SCALE: N/A	DATE: 10/14/16	NE1-002
						CONSULTANT				SEAL			SHEET: 2 OF 14	

FILE NO.-



CONCEPTUAL

<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div>	REV	DATE	DESCRIPTION	BY	APVD	<div>ch2m</div> <div>DSGN M. HAAPALA DR J. MCCURTAIN CHK J. TAYLOR APVD D. PLAYTER</div> <div>CONSULTANT</div>	NOT FOR CONSTRUCTION	<div>PORT of ANCHORAGE</div>	<div>ANCHORAGE</div> <div>PORT MODERNIZATION PROGRAM</div>	PORT OF ANCHORAGE		
										ANCHORAGE PORT MODERNIZATION PROGRAM		NE1-004
										NORTH EXTENSION STABILIZATION (NES) STEP 1		
										ANCHORAGE, ALASKA		
	REVISIONS									APMP OVERALL SITE PLAN NES STEP 1		

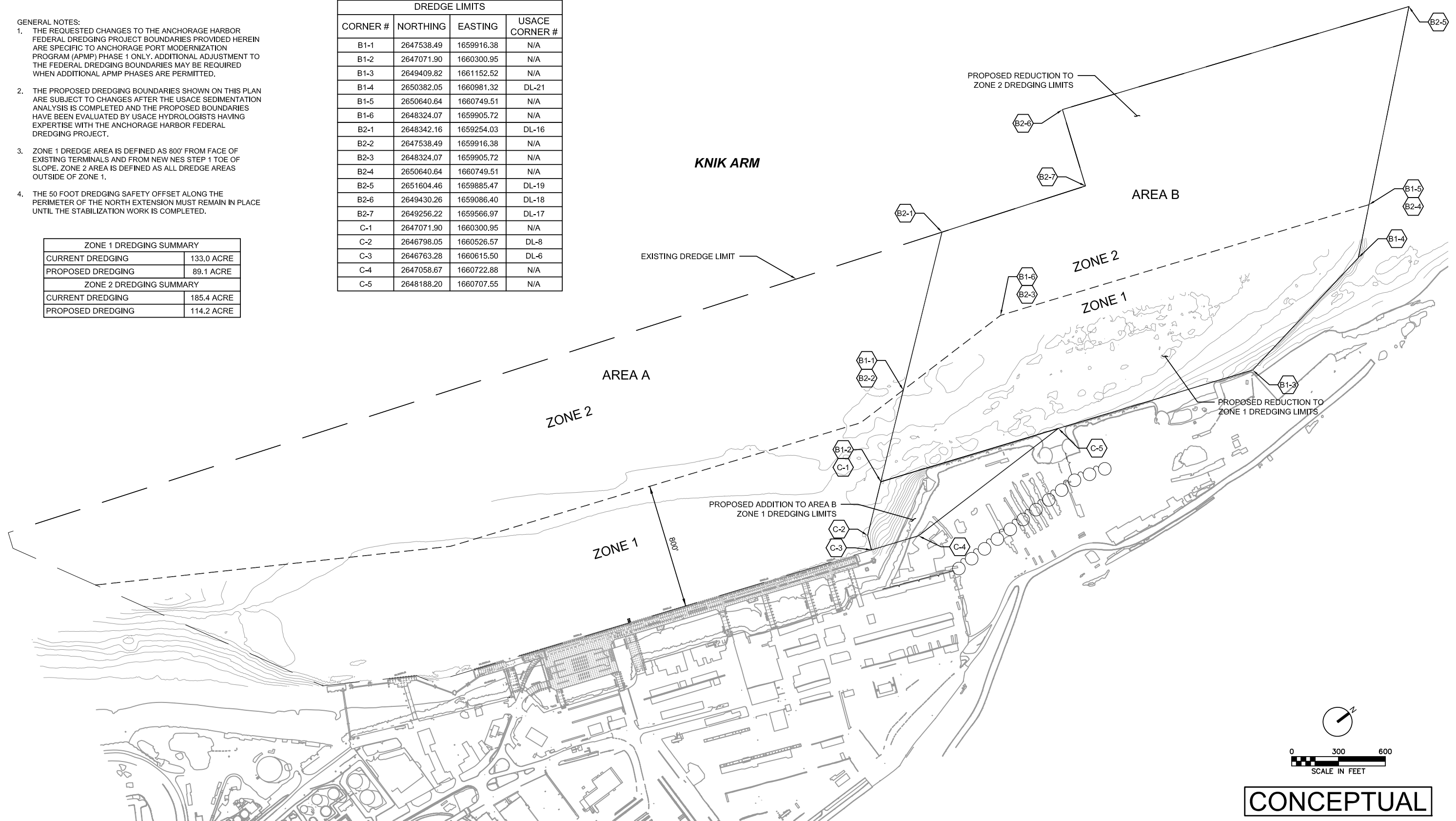
FILE NO.-

Drawing: 04_APMP-LAYOUT_PERMITTING-PH1.DWG
Date: Oct 14, 2016 - 12:13pm

1. THE REQUESTED CHANGES TO THE ANCHORAGE HARBOR FEDERAL DREDGING PROJECT BOUNDARIES PROVIDED HEREIN ARE SPECIFIC TO ANCHORAGE PORT MODERNIZATION PROGRAM (APMP) PHASE 1 ONLY. ADDITIONAL ADJUSTMENT TO THE FEDERAL DREDGING BOUNDARIES MAY BE REQUIRED WHEN ADDITIONAL APMP PHASES ARE PERMITTED.
2. THE PROPOSED DREDGING BOUNDARIES SHOWN ON THIS PLAN ARE SUBJECT TO CHANGES AFTER THE USACE SEDIMENTATION ANALYSIS IS COMPLETED AND THE PROPOSED BOUNDARIES HAVE BEEN EVALUATED BY USACE HYDROLOGISTS HAVING EXPERTISE WITH THE ANCHORAGE HARBOR FEDERAL DREDGING PROJECT.
3. ZONE 1 DREDGE AREA IS DEFINED AS 800' FROM FACE OF EXISTING TERMINALS AND FROM NEW NES STEP 1 TOE OF SLOPE. ZONE 2 AREA IS DEFINED AS ALL DREDGE AREAS OUTSIDE OF ZONE 1.
4. THE 50 FOOT DREDGING SAFETY OFFSET ALONG THE PERIMETER OF THE NORTH EXTENSION MUST REMAIN IN PLACE UNTIL THE STABILIZATION WORK IS COMPLETED.

ZONE 1 DREDGING SUMMARY	
CURRENT DREDGING	133.0 ACRE
PROPOSED DREDGING	89.1 ACRE
ZONE 2 DREDGING SUMMARY	
CURRENT DREDGING	185.4 ACRE
PROPOSED DREDGING	114.2 ACRE

DREDGE LIMITS			
CORNER #	NORTHING	EASTING	USACE CORNER #
B1-1	2647538.49	1659916.38	N/A
B1-2	2647071.90	1660300.95	N/A
B1-3	2649409.82	1661152.52	N/A
B1-4	2650382.05	1660981.32	DL-21
B1-5	2650640.64	1660749.51	N/A
B1-6	2648324.07	1659905.72	N/A
B2-1	2648342.16	1659254.03	DL-16
B2-2	2647538.49	1659916.38	N/A
B2-3	2648324.07	1659905.72	N/A
B2-4	2650640.64	1660749.51	N/A
B2-5	2651604.46	1659885.47	DL-19
B2-6	2649430.26	1659086.40	DL-18
B2-7	2649256.22	1659566.97	DL-17
C-1	2647071.90	1660300.95	N/A
C-2	2646798.05	1660526.57	DL-8
C-3	2646763.28	1660615.50	DL-6
C-4	2647058.67	1660722.88	N/A
C-5	2648188.20	1660707.55	N/A

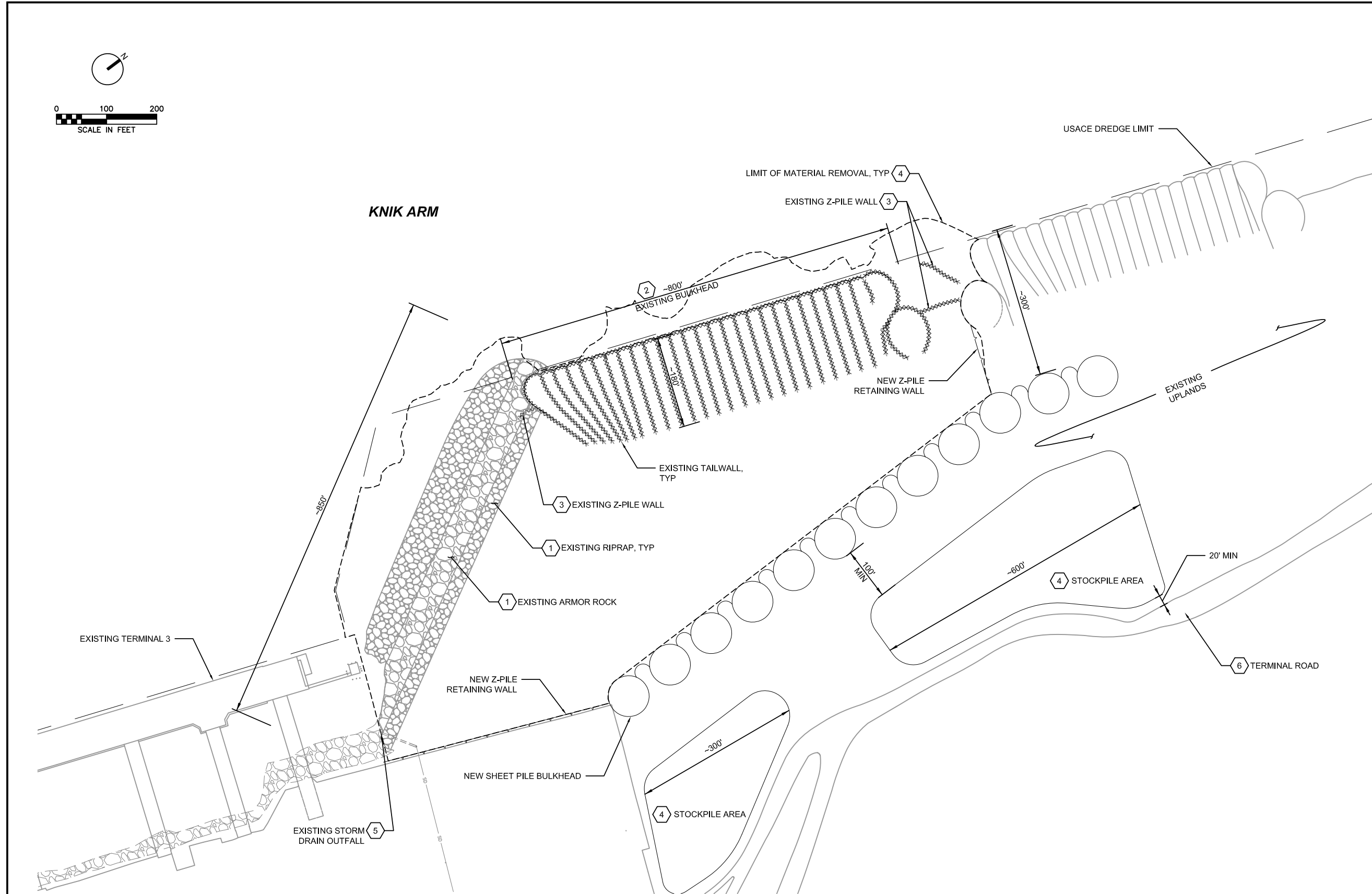


CONCEPTUAL

<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 <div>1"</div></div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div>	REV	DATE	DESCRIPTION	BY	APVD	<div>ch2mSM</div>	<div>NOT FOR CONSTRUCTION</div>	<div>PORT of ANCHORAGE</div>	<div>ANCHORAGE PORT MODERNIZATION PROGRAM</div>	<div>DREDGING PLAN</div> <div>NES STEP 1</div>	PORT OF ANCHORAGE		
											ANCHORAGE PORT MODERNIZATION PROGRAM		
											NORTH EXTENSION STABILIZATION (NES) STEP 1		
											ANCHORAGE, ALASKA		
	REVISIONS					DSGN M. HAAPALA	DR J. MCCURTAIN	CHK J. TAYLOR	APVD D. PLAYTER		HORIZ SCALE: AS SHOWN VERT SCALE: N/A	DATE: 10/14/16 SHEET: 5 OF 14	NE1-005
						CONSULTANT				SEAL			

FILE NO.-

Drawing: 05_APMP-PH1-DREDGE.DWG
Date: Oct 14, 2016 - 1:01pm



1. DISPOSAL OF SHEET PILES, DREDGED MATERIAL, NON-STOCKPILED MATERIAL, CONCRETE, ASPHALT AND OTHER CONSTRUCTION DEBRIS IS THE RESPONSIBILITY OF THE CONTRACTOR. THERE IS NO ONSITE DISPOSAL AVAILABLE AND DISPOSAL AREA IS UNKNOWN. DISPOSE OF NON-HAZARDOUS DEBRIS AT THE LOCAL LANDFILL OR OTHER APPROVED DISPOSAL SITE.

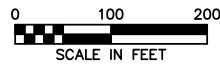
1. SALVAGE ARMOR ROCK FOR REUSE AS SLOPE PROTECTION. STOCKPILE SALVAGED ROCK ON SITE AT A LOCATION DETERMINED BY OWNER. DEPTH OF ROCK TO BE SALVAGED IS ASSUMED TO BE 3 FEET PER AS-BUILT DRAWINGS. QUANTITY OF ARMOR ROCK TO BE SALVAGED IS APPROXIMATELY 1,500 CY. APPROXIMATELY 9,100 CY OF RIPRAP ALONG SLOPE AVAILABLE TO BE SALVAGED.
2. REMOVE THE OPEN CELL SHEET PILE STRUCTURE, INCLUDING SECTIONS OF TRADITIONAL DRIVEN PILE WALL AND ALL ASSOCIATED TAIL WALLS. THE FACE OF THE SHEET PILE STRUCTURE AS SHOWN IS APPROX 800 LF, WHICH DOES NOT INCLUDE THE LENGTH OF THE TAIL WALLS. REFER TO DESIGN DRAWINGS AND PROJECT AS-BUILT RECORD DRAWINGS FOR INFORMATION ON EMBEDMENT DEPTHS AND OVERALL LENGTHS OF SHEETS TO BE REMOVED.
3. REMOVE THE Z-PILE WALL STRUCTURES. THE FACE OF THE Z-PILE STRUCTURES AS SHOWN ARE APPROX 250 LF. REFER TO DESIGN DRAWINGS AND PROJECT AS-BUILT RECORD DRAWINGS FOR INFORMATION ON EMBEDMENT DEPTHS AND OVERALL LENGTHS OF SHEETS TO BE REMOVED.
4. EXCAVATE AND REMOVE THE EMBANKMENT BEHIND THE EXISTING OPEN CELL SHEET PILE WALL TO THE FACE OF THE NEW SHEET PILE BULKHEAD WALL OR NEW SLOPE. THE ACTUAL EXCAVATION LIMITS AND ESTIMATED QUANTITIES ARE SHOWN ON THE GRADING PLAN. STOCKPILE 80,000 CY OF MATERIAL MEETING SPECIFICATIONS FOR TYPE II CLASSIFIED FILL ON SITE. STOCKPILE SIZE AND LOCATION SHOWN ARE APPROXIMATE. DISPOSAL OF THE REMAINDER OF EXCAVATED MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. RECONSTRUCT EXISTING STORM DRAIN SYSTEM AS REQUIRED TO MAINTAIN OUTFALL NEAR LOCATION SHOWN.
6. MAINTAIN ACCESS TO DRY BARGE BERTH.

PORT OF ANCHORAGE	
AGE PORT MODERNIZATION PROGRAM	
EXTENSION STABILIZATION (NES) STEP 1	
ANCHORAGE, ALASKA	
AS SHOWN	DATE: 10/14/16
I/A	SHEET: 6 OF 14
NE1-C-1001	

[illegible]

DSGN M. HAAPALA	DR J. MCCURTAIN	CHK J. TAYLOR	APVD D. PLAYTER
CONSULTANT			

FILE NO.-



- GENERAL SHEET NOTES
1.

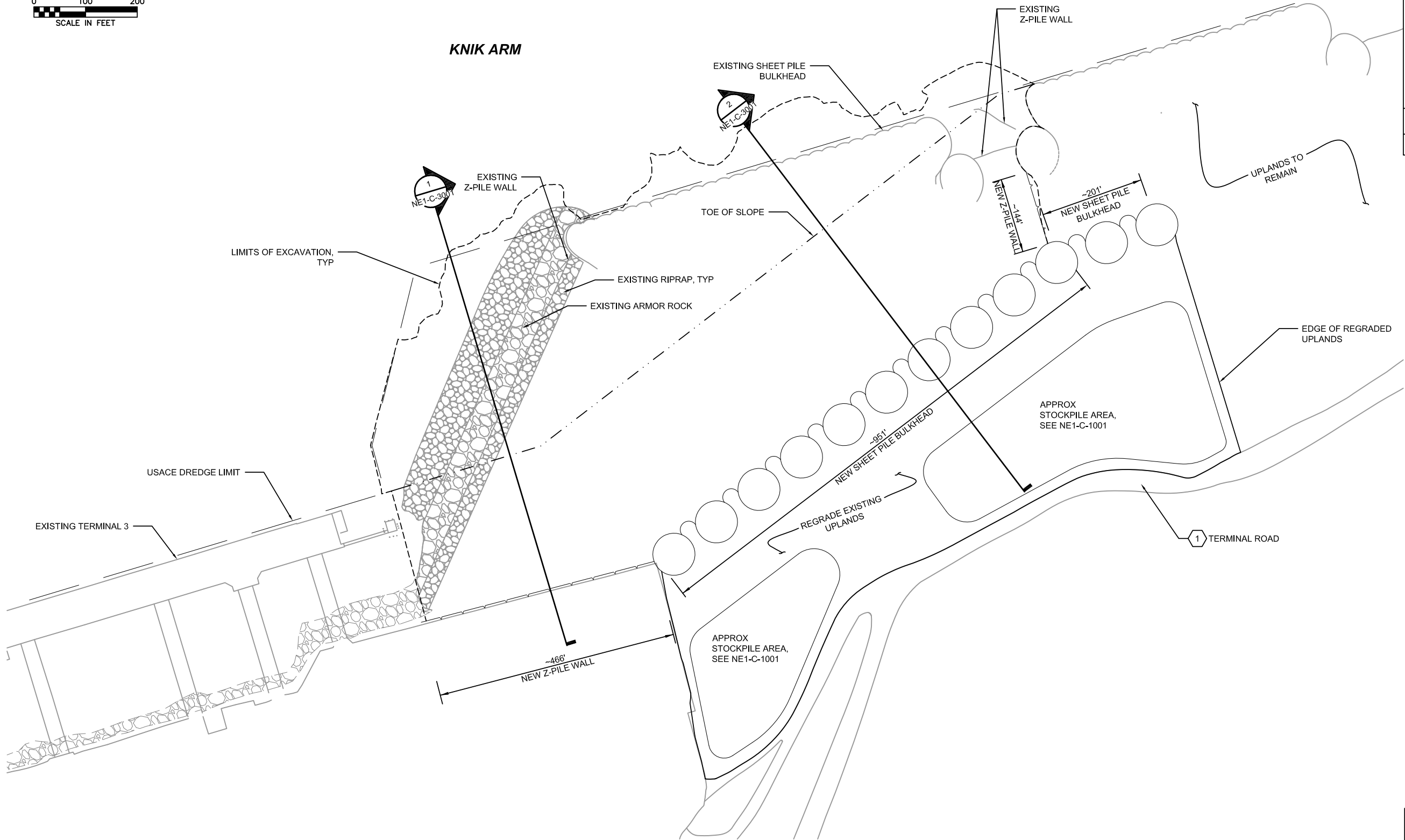
THE EXISTING SHEET PILE WALLS, TAIL WALLS, EARTH EMBANKMENT AND OTHER EXISTING FEATURES ARE NOT SHOWN ON GENERAL SITE LAYOUT FOR CLARITY. REFER TO THE DEMOLITION PLANS FOR DETAILS ON FEATURES TO BE REMOVED.
2.

SEE THE GRADING PLAN FOR ESTIMATE OF EARTHWORK QUANTITIES.
3.

AREA OF EXISTING UPLANDS INCLUDES UPLAND AREA WITHIN RAILROAD AND KABATA ROW.
4.

SEE STRUCTURAL FOR BULKHEAD AND RETAINING WALL DETAILS.
- SHEET KEYNOTES
1.

MAINTAIN ACCESS TO DRY BARGE BERTH.



CONCEPTUAL

<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div>	REV	DATE	DESCRIPTION	BY	APVD	<div>ch2m</div> <div>DSGN M. HAAPALA DR J. MCCURTAIN CHK J. TAYLOR APVD D. PLAYTER</div> <div>CONSULTANT</div>	<div>NOT FOR CONSTRUCTION</div> <div>SEAL</div>	<div>PORT of ANCHORAGE</div>	<div>ANCHORAGE</div>	CIVIL GENERAL SITE LAYOUT	PORT OF ANCHORAGE		
											ANCHORAGE PORT MODERNIZATION PROGRAM		
											NORTH EXTENSION STABILIZATION (NES) STEP 1		
											ANCHORAGE, ALASKA		
			REVISIONS								HORIZ SCALE: AS SHOWN	DATE: 10/14/16	NE1-C-2001
											VERT SCALE: N/A	SHEET: 7 OF 14	

FILE NO.-







- ## CONCEPTUAL

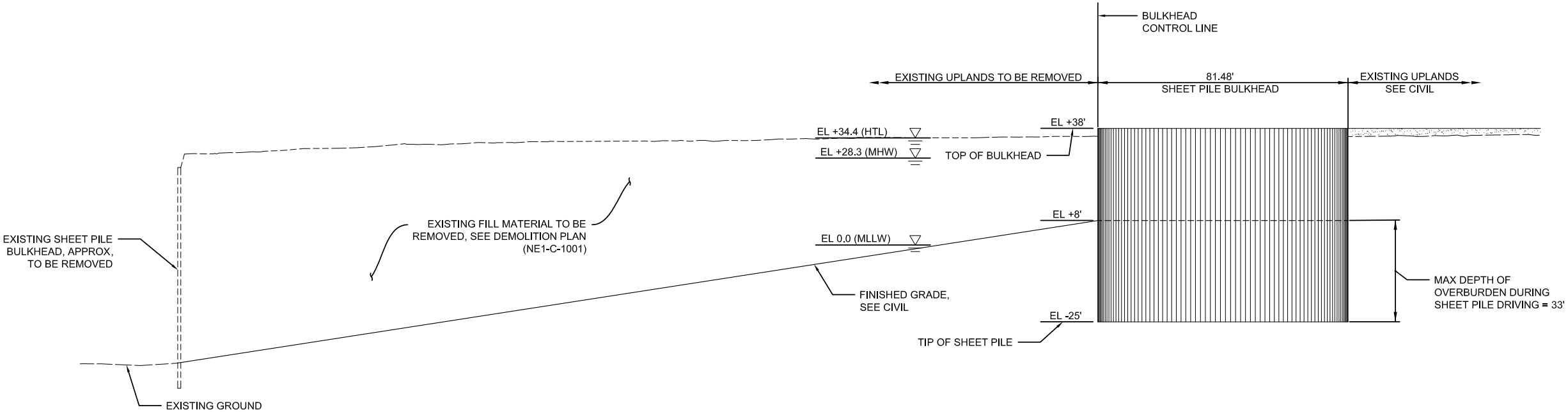
GENERAL STRUCTURAL NOTES

1. DESIGN CRITERIA:
 - A. THE DESIGN OF CELLULAR SHEET PILE BULKHEAD IS PERFORMED IN ACCORDANCE WITH NAVAL FACILITIES ENGINEERING COMMAND DESIGN MANUAL 7.02 "FOUNDATIONS & EARTH STRUCTURES".
 - B. THE DESIGN LOADS, SEISMIC DESIGN REQUIREMENTS, AND OTHER STRUCTURAL DESIGN REQUIREMENTS, SHALL BE IN ACCORDANCE WITH ANCHORAGE PORT MODERNIZATION PROJECT SEISMIC DESIGN MANUAL.
2. MATERIALS:
 - A. PORT OF ANCHORAGE HAS AN EXISTING STOCK PILE OF SHEET PILES. CONTRACTOR SHALL PROVIDE ADDITIONAL SHEET PILES AS REQUIRED TO COMPLETE THE PROJECT.
 - B. ALL SHEET PILES AND ACCESSORIES SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
 1. ASTM A328 "STANDARD SPECIFICATION FOR STEEL SHEET PILING" WITH ASTM A572 GRADE 50 STEEL CHEMISTRY.
 - C. FLAT SHEET PILE SHALL BE PS31 (0.50 INCH WEB THICKNESS) OR PS27.5 (0.40 INCH WEB THICKNESS) SHEETS UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
 - D. Z-PILE SHALL BE NEW PZC-13 OR PZC-18 SHEETS AS INDICATED ON THESE PLANS.
 - E. ALL INTERLOCK GROUP TESTS SHALL PROVIDE A MINIMUM OF 20,000 POUNDS PER LINEAR INCH ULTIMATE INTERLOCK TENSILE STRENGTH. INTERLOCKS SHALL PROVIDE A MINIMUM SWING ANGLE OF +10 AND -10 DEGREES.
 - F. ALL SHEET PILES AND ACCESSORIES SHALL BE HOT-DIP GALVANIZED.
 1. GALVANIZED STEEL SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A385, ASTM A123 OR ASTM A153 AS APPROPRIATE. PROVIDE A MINIMUM OF 4.5 OUNCES OF ZINC COATING PER SQUARE FOOT PER SIDE. ALL SHEET PILE INTERLOCKS SHALL BE CLEANED AFTER GALVANIZATION AS NECESSARY TO ENSURE FULL INTERLOCK FUNCTION.
 - G. FILL MATERIALS SHALL BE HARD, DURABLE PARTICLES, NON-PLASTIC, FREE OF MUCK, ORGANICS, ICE, SNOW, ROOTS, SOD, HYDROCARBONS OR OTHER DELETERIOUS MATERIALS. GRANULAR FILL SHALL BE CLEAN AND WELL-GRADED WITH NOT MORE THAN 10% BY WEIGHT PASSING THE NO. 200 SIEVE, 20-70% BY WEIGHT NOT PASSING THE NO. 4 SIEVE, NOT LARGER THAN 12 INCHES, AND NOT LARGER THAN 3 INCHES WITHIN ONE FOOT OF FINISHED GRADE.
3. GROUND IMPROVEMENT:
 - A. AS AN ALTERNATIVE TO EXTENDING SHEET PILES TO THE TOP OF THE GLACIOFLUVIAL DEPOSITS (GF), ESTIMATED AT ELEVATION -25 FEET, CONTRACTOR SHALL PROVIDE GROUND IMPROVEMENT WITHIN THE LIMITS SHOWN ON THE PLANS PRIOR TO THE CONSTRUCTION OF CELLULAR SHEET PILE BULKHEAD. THE BOTTOM OF THE GROUND IMPROVEMENT SHALL EXTEND TO THE TOP OF THE GLACIOFLUVIAL DEPOSITS (GF). GROUND IMPROVEMENT SHALL PROVIDE MINIMUM COMPOSITE FRICTION ANGLE OF 38 DEGREES OR UNDRAINED SHEAR STRENGTH OF 5000 POUNDS PER SQUARE FOOT. CONTRACTOR SHALL DESIGN GROUND IMPROVEMENT PATTERNS SO THAT SHEET PILE DRIVING WILL NOT BE HINDERED.
4. SHEET PILE CONSTRUCTION:
 - A. CONTRACTOR SHALL REMOVE ROCK OR OTHER OBSTRUCTIONS UNDER THE FOOTPRINT PRIOR TO DRIVING SHEETS. CONTRACTOR SHALL NOT PLACE ANYTHING IN THE SHEET PILE FOOTPRINT THAT SHEET CANNOT BE DRIVEN THROUGH.
 - B. SHEET PILES SHALL BE DRIVEN USING A TEMPLATE SUCH THAT PILES ARE NOT DRIVEN MORE THAN 3 INCHES FROM PLAN LOCATION AT CUTOFF ELEVATION, NOR MORE THAN A 1/4-INCH-PER-FOOT LENGTH OUT OF PLUMB.
 - C. SHEET PILES SHALL BE DRIVEN IN THREE POINT CONTACT FULL LENGTH TO TIP ELEVATION WITH A VIBRATORY HAMMER AND/OR IMPACT HAMMER WITH A SUITABLE DRIVING HEAD, AT LOCATIONS SHOWN ON THE PLANS, BY METHODS THAT WILL ACHIEVE PENETRATION WITHOUT PILE DAMAGE. METHODS, SUCH AS PRE BORING AT INTERLOCK LOCATIONS, OR TRENCHING AND BACKFILLING, MAY BE REQUIRED IF DRIVING BECOMES DIFFICULT.
5. ALTERNATIVE BULKHEAD DESIGNS:
 - A. THROUGH THE PROGRESSIVE DESIGN BUILD PROCESS THE CONTRACTOR MAY PROPOSE AN ALTERNATE DESIGN. IF THE ALTERNATE DESIGN IS ACCEPTED BY THE PORT OF ANCHORAGE, IT SHALL FOLLOW THE SAME GEOMETRIC LAYOUT AND WALL HEIGHT AS SHOWN IN THESE PLANS. SIDE SLOPES, DREDGE DEPTHS, AND DREDGE AREAS SHALL ALSO REMAIN AS SHOWN IN THESE PLANS.

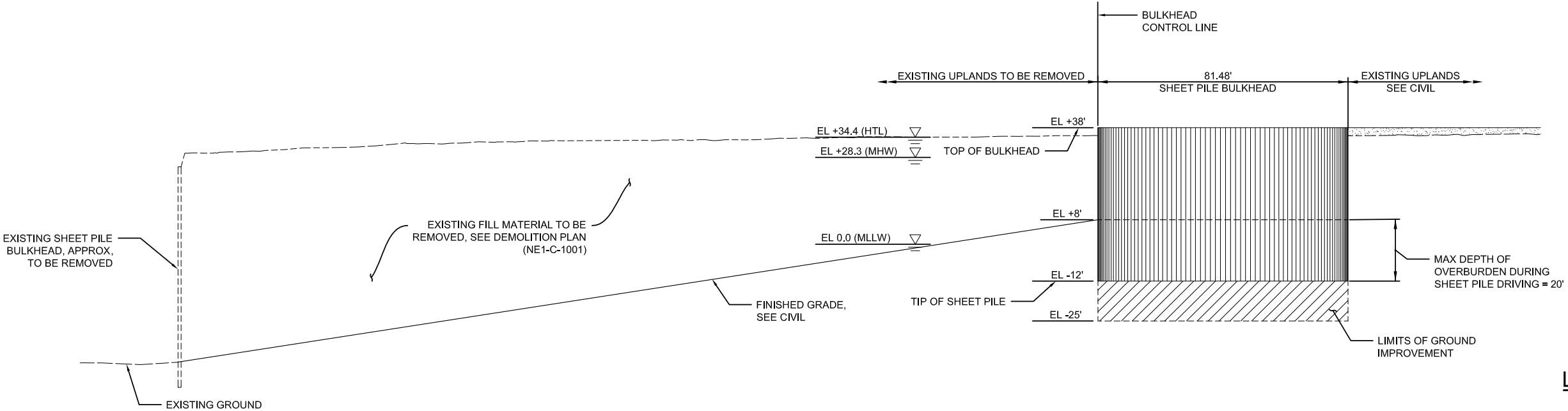
PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
NORTH EXTENSION STABILIZATION (NES) STEP 1		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/14/16	NE1-S-0001
VERT SCALE: N/A	SHEET: 10 OF 14	

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0  1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	REV	DATE	DESCRIPTION	BY	APVD		NOT FOR CONSTRUCTION			STRUCTURAL GENERAL NOTES
			DSGN V. PHAN	DR T. CHANCELLOR	CHK H. GUAN	APVD D. PLAYLER				
	REVISIONS					CONSULTANT		SEAL		

Drawing: 10_NE1-S-0001.DWG
Date: Oct 14, 2016 - 9:44am



1 CELLULAR SHEET PILE BULKHEAD (OPTION 1)
1" = 10'
NE1-S-2001



1 CELLULAR SHEET PILE BULKHEAD (OPTION 2)
1" = 10'
NE1-S-2001

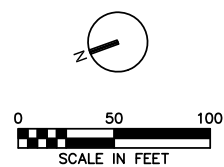
LEGEND

 GROUND IMPROVEMENT

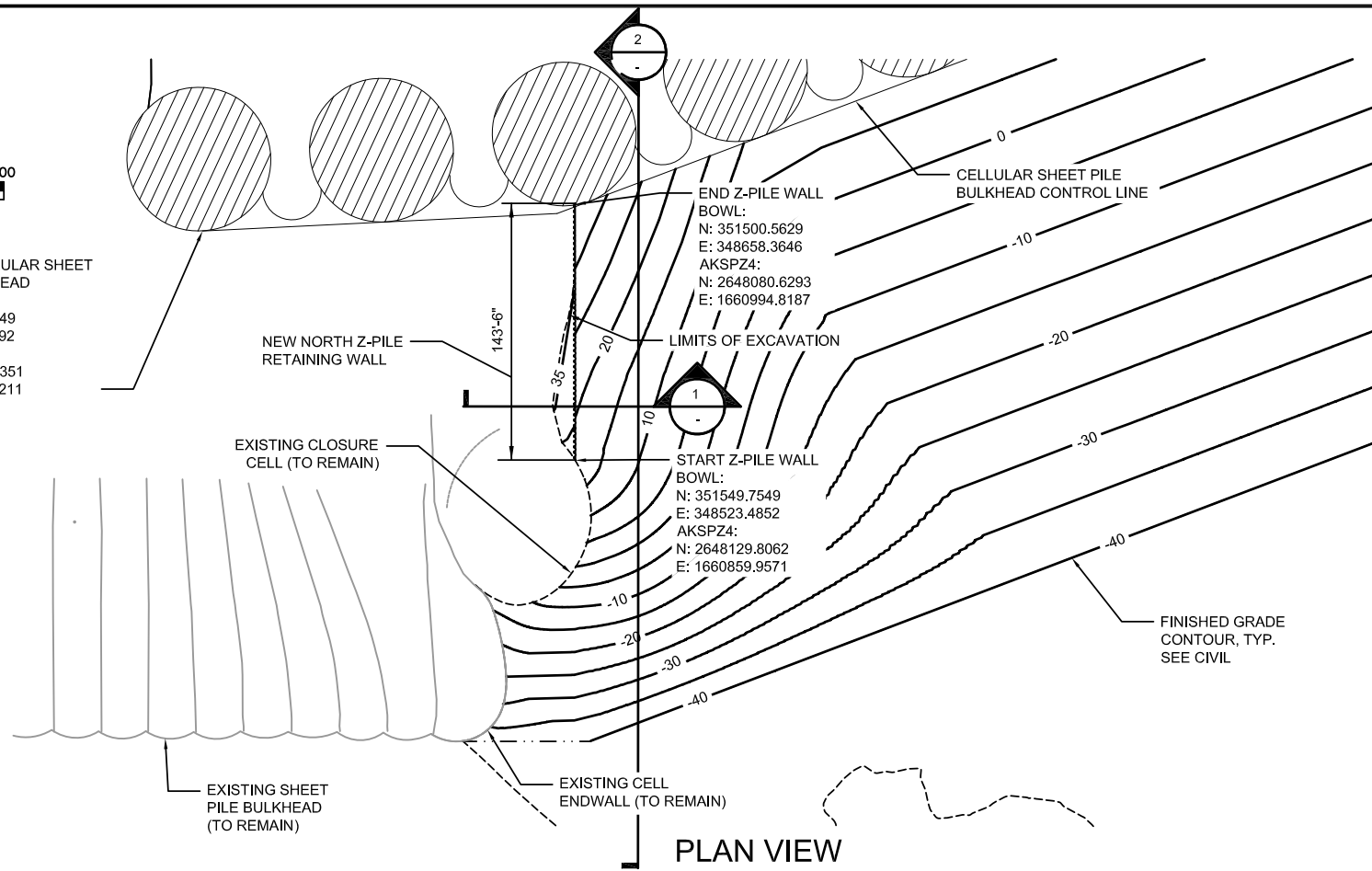
CONCEPTUAL

<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div>	REV	DATE	DESCRIPTION	BY	APVD	<div>ch2m</div>	<div>NOT FOR CONSTRUCTION</div>	<div>PORT of ANCHORAGE</div>	<div>ANCHORAGE PORT MODERNIZATION PROGRAM</div>	PORT OF ANCHORAGE		
										ANCHORAGE PORT MODERNIZATION PROGRAM		
										NORTH EXTENSION STABILIZATION (NES) STEP 1		
										ANCHORAGE, ALASKA		
	REVISIONS					DSGN V. PHAN	DR T. HEDGLIN	CHK H. GUAN	APVD D. PLAYTER			
						CONSULTANT			SEAL			
										STRUCTURAL TYPICAL SECTIONS CELLULAR SHEET PILE BULKHEAD		
									</			

FILE NO.-



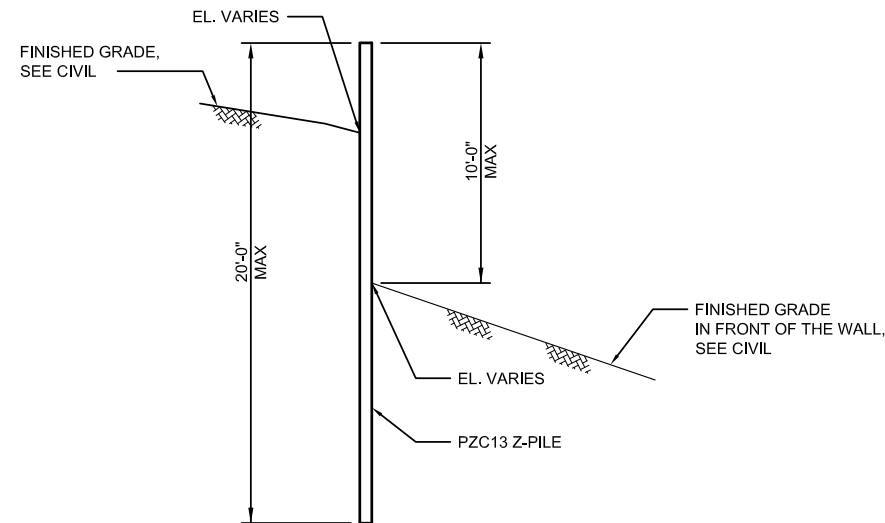
START CELLULAR SHEET
PILE BULKHEAD
BOWL:
N: 351549.5849
E: 348523.5492
AKSPZ4:
N: 2648129.6351
E: 1660860.0211



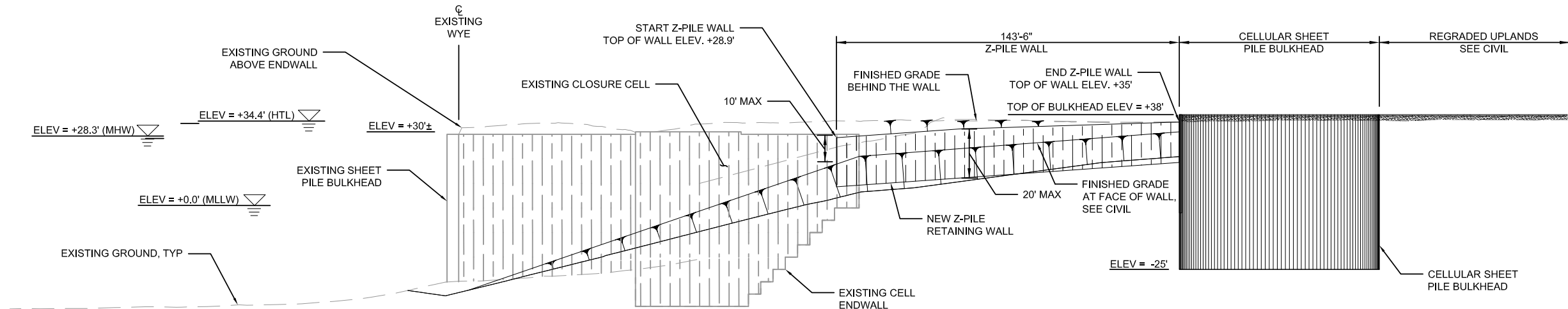
PLAN VIEW

LEGEND

GROUND IMPROVEMENT (OPTION 2)






1 SECTION THROUGH Z-PILE WALL
3" = 1'-0"



2 SECTION
1" = 25'

NOTES:
1. EXISTING SHEET PILE BULKHEAD SHOWN FOR REFERENCE ONLY.

CONCEPTUAL

<div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</div>	REV	DATE	DESCRIPTION	BY	APVD		<div>NOT FOR CONSTRUCTION</div> 		STRUCTURAL NORTH Z-PILE RETAINING WALL	PORT OF ANCHORAGE		
										ANCHORAGE PORT MODERNIZATION PROGRAM NORTH EXTENSION STABILIZATION (NES) STEP 1		
										ANCHORAGE, ALASKA		
										HORIZ SCALE: AS SHOWN	DATE: 10/14/16	NE1-S-5001
										VERT SCALE: AS SHOWN	SHEET: 13 OF 14	
REVISIONS						CONSULTANT			SEAL			
						DSGN V. PHAN	DR T. HEDGLIN	CHK H. GUAN	APVD D. PLAYTER			

FILE NO.-

