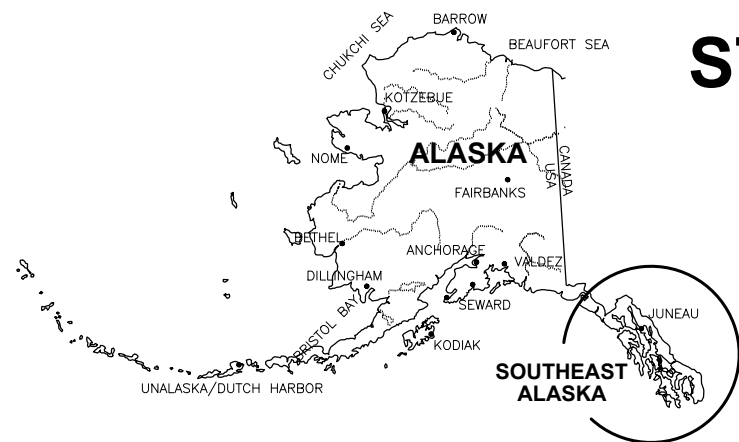


CITY & BOROUGH OF JUNEAU - DOCKS & HARBORS

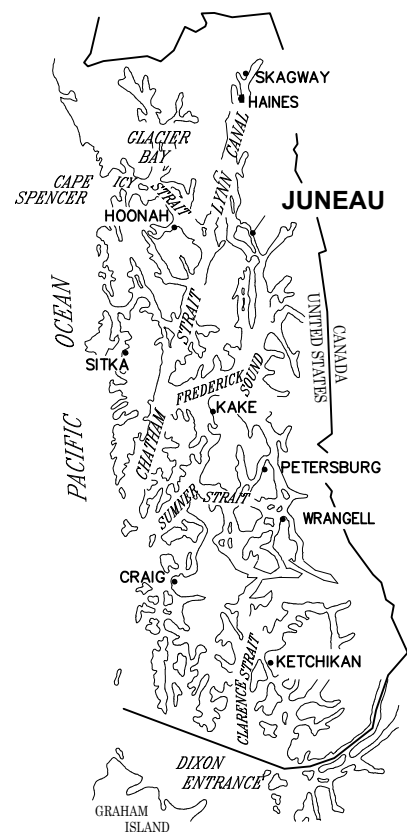
STATTER HARBOR IMPROVEMENTS PHASE III (A)

DREDGING AND RETAINING WALL

CBJ CONTRACT - DH18-013



VICINITY



SOUTHEAST ALASKA

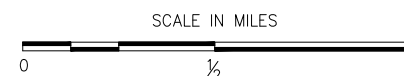
TIDAL DATA	
MAX. OBS	24.82'
MHHW	16.31'
MHW	15.34'
MLW	+1.6'
MLLW	0.0'
MIN. OBS	-5.89'

DATA REFERENCED FROM:
NOAA STATION 9452210 JUNEAU,
ALASKA 2014



AERIAL PHOTO FROM:
CITY AND BOROUGH OF JUNEAU, 2016

VICINITY MAP



DRAWING INDEX		
SHEET NO.	DWG. NO.	TITLE
GENERAL		
1 OF 25	1.01	TITLE SHEET, VICINITY MAPS, TIDAL DATA AND DRAWING INDEX
2 OF 25	1.02	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3 OF 25	1.03	EXISTING CONDITIONS AND SURVEY CONTROL
4 OF 25	1.04	DEMOLITION PLAN
5 OF 25	1.05	OVERALL SITE PLAN
GEOTECHNICAL		
6 OF 25	2.01	BOREHOLE AND PROBE LOCATIONS
7 - 9 OF 25	2.02- 2.04	STANDARD BOREHOLE LOG DETAILS
10-16 OF 25	2.05 - 2.11	BOREHOLE LOGS
DREDGING AND ROCK BLASTING		
17 OF 25	3.01	DREDGE PLAN
18 OF 25	3.02	DREDGE SECTIONS
19 OF 25	3.03	DREDGE OFFSHORE DISPOSAL PLAN
20 OF 25	3.04	ROCK BLASTING PLAN: PHASE I AND PHASE II
21 OF 25	3.05	ROCK BLASTING PROFILES
RETAINING WALL		
22 OF 25	4.01	RETAINING WALL PLAN AND PROFILE
23 OF 25	4.02	RETAINING WALL SECTIONS
24 OF 25	4.03	RETAINING WALL SECTIONS
25 OF 25	5.01	STORM DRAIN DETAILS

PROJECT SCHEDULE	
DESCRIPTION	SCHEDULE
EARLIEST FIELD START	SEPT. 28, 2020
SUBSTANTIAL COMPLETION	APRIL 30, 2021
FINAL COMPLETION	MAY 14, 2021

PND ENGINEERS, INC. (PND) IS NOT RESPONSIBLE FOR SAFETY PROGRAMS, METHODS OR PROCEDURES OF OPERATION, OR THE CONSTRUCTION OF THE DESIGN SHOWN ON THESE DRAWINGS. DRAWINGS ARE FOR THE USE OF THIS PROJECT ONLY AND ARE NOT INTENDED FOR REUSE WITHOUT WRITTEN APPROVAL FROM PND. DRAWINGS ARE ALSO NOT TO BE USED IN ANY MANNER THAT WOULD CONSTITUTE A DETRIMENT DIRECTLY OR INDIRECTLY TO PND.

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SCALE:
AS SHOWN

DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE:
**TITLE SHEET, VICINITY MAPS, TIDAL DATA
AND DRAWING INDEX**

1.01
SHEET
1 OF 25

PND PROJECT NO.: 152069.07

GENERAL NOTES

1. EROSION AND POLLUTION CONTROL PLANS

THE CONTRACTOR SHALL DEVELOP AND SUBMIT FOR ENGINEER AND AGENCY REVIEW AND APPROVAL A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THIS PLAN SHALL INCLUDE AN EROSION AND SEDIMENT CONTROL PLAN BASED UPON THE CONTRACTOR'S SCHEDULING, EQUIPMENT AND WORK. TO THE GREATEST EXTENT POSSIBLE FOLLOW THE ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT/PF) ALASKA STORM WATER POLLUTION PREVENTION PLAN GUIDE (ASWPPPG). THE PLAN SHALL CONSIDER FIRST PREVENTING EROSION, THEN MINIMIZING AND TRAPPING SEDIMENT PRIOR TO ITS ENTERING THE WATERWAYS. THE PLAN MUST ADDRESS THE SITE-SPECIFIC CONTROLS AND MANAGEMENT FOR THE CONSTRUCTION SITE AS WELL AS ALL MATERIAL SITES, WASTE DISPOSAL SITES AND AFFECTED AREAS. THE PLAN MUST INCORPORATE ALL THE REQUIREMENTS OF THE PROJECT PERMITS. BEST MANAGEMENT PRACTICES AS LISTED IN THE ASWPPPG SHALL BE USED.

THE CONTRACTOR SHALL PREPARE A HAZARDOUS MATERIAL CONTROL PLAN (HMCP) FOR THE HANDLING, STORAGE, CLEAN-UP AND DISPOSAL OF PETROLEUM AND OTHER HAZARDOUS SUBSTANCES. THE CONTRACTOR SHALL LIST AND GIVE LOCATIONS OF ALL HAZARDOUS MATERIALS, INCLUDING FIELD OFFICE MATERIALS, TO BE USED AND STORED ON-SITE AND THEIR ESTIMATED QUANTITIES. THE PLAN SHALL PROVIDE DETAILS FOR STORING THESE MATERIALS AS WELL AS DISPOSING WASTE PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS GENERATED BY THE PROJECT.

IDENTIFY THE LOCATIONS WHERE HAZARDOUS MATERIAL STORAGE, FUELING AND MAINTENANCE ACTIVITIES WILL TAKE PLACE. IF ON-SITE, DESCRIBE THE MAINTENANCE ACTIVITIES AND LIST ALL CONTROLS TO PREVENT THE ACCIDENTAL SPILLAGE OF OIL, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS. DETAIL PROCEDURES FOR CONTAINMENT AND CLEANUP OF HAZARDOUS SUBSTANCES INCLUDING A LIST OF THE TYPES AND QUANTITIES OF EQUIPMENT AND MATERIALS AVAILABLE ON-SITE TO BE USED.

THE PLAN SHALL PROVIDE DETAILS FOR PREVENTION, CONTAINMENT, CLEAN-UP AND DISPOSAL OF SOIL AND WATER CONTAMINATED BY ACCIDENTAL SPILLS AND FOR UNEXPECTED CONTAMINATED SOIL AND WATER ENCOUNTERED DURING CONSTRUCTION.

2. MATCH EXISTING GRADES AT PROJECT LIMITS AND WHERE REQUIRED TO MATCH ELEVATIONS AT EXISTING ROADS.

3. THE LOCATIONS OF EXISTING FEATURES AND UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADDITIONAL UTILITIES MAY BE PRESENT HOWEVER ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS IN THE FIELD AS NECESSARY, PRIOR TO BEGINNING WORK. THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED IN THE FIELD SHALL BE RECORDED ON THE CONTRACTOR'S RECORD DRAWINGS. CONTACT LOCAL UTILITY COMPANIES PRIOR TO ANY/ ALL EXCAVATIONS AT THE FOLLOWING TELEPHONE NUMBERS:

DIAL BEFORE YOU DIG!
586-1333

UNDERGROUND POWER, (TELEPHONE, T.V., GCI & ACS - 811, COMMUNICATIONS,) WATER AND SEWER LINES ARE IN THE AREA. UTILITIES SHOWN HERE DO NOT SUBSTITUTE FOR FIELD LOCATES.

4. CBJ ENGINEERING STANDARD DETAILS BOOK DATED APRIL, 2011 IS MADE A PART OF THIS CONTRACT, WITH CURRENT REVISIONS AS APPLICABLE.

5. PROPERTY DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ITS PRE-CONSTRUCTION CONDITION OR BETTER AT NO ADDITIONAL COST.

6. GRADING AND ALIGNMENT OF PIPE, STRUCTURES & FINAL SURFACING ARE SUBJECT TO MINOR REVISIONS BY THE ENGINEER TO FIT SITE CONDITIONS. GRADE ALL IMPROVEMENTS WITH POSITIVE DRAINAGE AWAY FROM STRUCTURES.

7. PROPERTY LINE LOCATIONS USED IN THESE PLANS ARE DERIVED FROM RECORD PLATS AND DO NOT REPRESENT A BOUNDARY SURVEY.

LEGEND

EXISTING	THIS PROJECT
	TELEPHONE PEDESTAL
	TELEVISION PEDESTAL
	ELECTRICAL PEDESTAL
	FENCE
	BURIED FUEL LINE
	ELECTRICAL (UNDERGROUND)
	ELECTRICAL (UNDERGROUND)
	WATER
	SANITARY SEWER
	RIGHT-OF-WAY
	COMMUNICATION (CABLE/TEL)
	STORM DRAIN
	FORCE MAIN
	FOUNDATION DRAIN PIPE
	OVERHEAD ELECTRICAL
	PROPERTY LINE
	GUY WIRE ANCHOR
	GUARDRAIL
	BOLLARD
	CURB & GUTTER
	ELECTRICAL TRANSFORMER
	ELECTRICAL VAULT
	ELECTRICAL HANDHOLE
	FIRE HYDRANT
	LAYOUT POINT
	LIGHT POLE
	SANITARY SEWER MANHOLE
	STORM DRAIN MANHOLE
	STORM DRAIN INLET
	STORM DRAIN STRUCTURE
	SIGN
	SURVEY CONTROL
	TREE/VEGETATION
	WATER VALVE
	DRAINAGE/ SWALE
	UTILITY POLE
	SECTION OR DETAIL CALLOUT
	LOCATION OF DETAIL OR REFERENCE DRAWING

ABBREVIATIONS

A	AT	H	H&T HUB & TACK	Q	QTY QUANTITY
@	ASBESTOS CEMENT PIPE	HD	HEAVY DUTY	R	RAD RADIUS
AC	ASPHALT CONCRETE PAVEMENT	HDG	HOT-DIPPED GALVANIZED	RE	RIM ELEVATION
ACP	AMERICANS WITH DISABILITIES ACT	HDPE	HIGH DENSITY POLYETHYLENE	REF	REFERENCE
ADA	ADJUSTABLE	HORIZ	HORIZONTAL	REINF	REINFORCEMENT
ADJ	ASSOCIATED PILE AND FITTING CORP.	HSE	HOUSE	REQD	REQUIRED
APF	APPROXIMATE	HT	HEIGHT	RET	RETAINING
APPROX. or APPX.	ALASKA TIDELANDS SURVEY	HWY.	HIGHWAY	RO	ROUGH OPENING
ATS	AIR RELEASE VALVE	I	IN ACCORDANCE WITH	ROW	RIGHT OF WAY
AV	BEGINNING OF CURB CUT	IAD	INSIDE DIAMETER	S	SOUTH
B	BUTTERFLY VALVE	IE	INVERT ELEVATION	S	SCHED/SCH SCHEDULE
BCC	BUILDING	IN	INCH	SD	STORM DRAIN
BFV	BEGINNING OF PROJECT	IP	IRON PIPE	SDI	STORM DRAIN INLET STRUCTURE
BLDG	BOTTOM	INCL	INCLUDE (D) (ING)	SDO	STORM DRAIN OUTLET STRUCTURE
BOP	BOTTOM	INSUL	INSULATE (D) (ION)	SDR	STANDARD DIMENSION RATIO
BTM, BOT	BOTTOM	INV	INVERT	SF	SQUARE FOOT
C	CURB & GUTTER	J	JUNCTION BOX	SHLDR	SHOULDER
C&G	CATCH BASIN	L	POUNDS	SI	STREET INTERSECTION
CB	CITY & BOROUGH OF JUNEAU	LBS	POUNDS	SPEC	SPECIFICATION (S)
CBJ	CAST IRON	LF	LINEAR FEET	SQ	SQUARE
CI	CAST-IN-PLACE	LL	LIVE LOAD	SRB	SHOT ROCK BORROW
CIP	CONTROL JOINT	LOC	LOCATION	SSC	SANITARY SEWER CONNECTION
CJ	CLEAR	LS	LUMP SUM	SS	STAINLESS STEEL, SANITARY SEWER
CL	CORRUGATED METAL PIPE	M	MAXIMUM	SDMH	STORM DRAIN MANHOLE
CLR	CLEANOUT	MAX	MAXIMUM	SSMH	SANITARY SEWER MANHOLE
CMP	CORPS OF ENGINEERS	M.E.	MATCH EXISTING	STA	STATION
CO	COMMUNICATION	MECH	MECHANICAL	STD	STANDARD
C.O.E.	CONCRETE	MFR	MANUFACTURE (R)	STL	STEEL
COMM	COMPLETE PENETRATION	MH	MANHOLE	STRG	STRONG
CONC	CORRUGATED POLYETHYLENE PIPE	MJ	MECHANICAL JOINT	SW	SIDEWALK
CP	CORNER	MI	MALLEABLE IRON	SWR	SEWER
CPEP/CPP	COUNTERSINK	MIN	MINIMUM	SY	SQUARE YARD
COR	CENTER	MLLW	MEAN LOWER LOW WATER	SYM	SYMMETRICAL
CSC	CUBIC YARD	MSF	1000 SQUARE FEET	T	THICK
CTR	DISSIMILAR PIPE COUPLING	MSE	MECHANICALLY STABILIZED EARTH	t	TONGUE AND BOTTOM
CY	DIAMETER	MTL	MATERIAL (S)	T&B	TONGUE AND GROOVE
D	DOUBLE	N	NORTH	TBC	TOP BACK OF CURB
DCP	DEMOLITION	N	NORTH	TBD	TO BE DETERMINED
D/DIA	DEAD LOAD	NFS	NON FROST SUSCEPTIBLE	TBM	TEMPORARY BENCH MARK
DBL	DUCTILE IRON PIPE	NIC	NOT IN CONTRACT	TD	TRENCH DRAIN
DEMO	DIMENSION	NO	NUMBER	TEL	TELEPHONE
DL	DOWN	NTS	NOT TO SCALE	TEMP	TEMPERATURE, TEMPORARY
DIP	DETAIL	O	OVERBURDEN	TH	TEST HOLE
DIM	EAST	OBD	ON CENTER	THK	THICK
DN	EACH	OC	OUTSIDE DIAMETER	TRANS	TRANSVERSE
DTL	EDGE OF CONCRETE	OD	ORIGINAL GOUND	TV	TELEVISION
E	END OF CURB CUT	OG	OVERHEAD ELECTRICAL	TYP	TYPICAL
E	EXISTING GRADE	OHE	OIL-WATER SEPARATOR	U	UNIFORM BUILDING CODE
EA.	EXPANSION JOINT	OWS	OPPOSITE	UBC	UNIFORM MECHANICAL CODE
EA.	ELEVATION	OPP	PIPE	UE	UNIFORM HIGH MOLECULAR WEIGHT
EC	ELECTRICAL	P	POINT OF CURVATURE, PIECE	UHMW	UNLESS OTHERWISE NOTED
ECC	END OF PAVEMENT	P	PIPE	UON/UNO	UNIFORM PLUMBING CODE
EG	EQUAL	PC	POINT OF CURVATURE, PIECE	UPC	UNIFORM PLUMBING CODE
EG	EQUIPMENT	PCC	PRECAST CONCRATE	V	VALVE BOX
EJ	EQUIPMENT	PE	POLYETHYLENE	VB	VERTICAL
EL/ELEV	ESTIMATE	PED	PEDESTAL	VG	VALLEY GUTTER
ELEL	EACH WAY	PER	PERIMETER	W	WEST
EOP	EXCAVATE	PERF	PERFORATE (D)	W/	WITH
EQ	EXISTING	PI	POINT OF INTERSECTION	WD	WOOD
EQUIP	FACE OF CURB	PLWD	PLYWOOD	WELDMT	WELDMENT
EST	FLOOR DRAIN	PL	PROPERTY LINE, PLATE	WL	WATERLINE
EW	FINISHED FLOOR	POC	POINT OF CURVE	WQU	WATER QUALITY UNIT
EXC	FINISHED GRADE	PP	POLYPROPYLENE	WV	WATER VALVE
EXIST	FIRE HYDRANT, FLAT HEAD	PRC	POINT OF REVERSE CURVATURE	WW	WATER WATER
F	FINISH (ED)	PRJ	PROJECT	WWTP	WASTE WATER TREATMENT PLANT
FC	FOUNDATION	PRKG	PARKING	W/O	WITHOUT
FD	FACE OF CURB	PRV	PRESSURE REDUCING VALVE	X	TRANSFORMER
FF	FOOT	PSI	POUND PER SQUARE INCH	<PT	ANGLE POINT
FG	FOOTING	PT	POINT, PRESSURE TREATED,		
FH	FLOWLINE OR FLANGE	PVC	POINT OF TANGENCY		
FIN	GALLON	PVI	POINT OF VERTICAL CURVATURE,		
FM	GALVANIZED		POLY-VINYL CHLORIDE		
FND	GRADE BREAK				
FOC	GALLONS PER MINUTE				
FT	GROUND				
FTG	GATE VALVE				
FL					
G					
GAL					
GALV					
GB					
GPM					
GRD					
GV					

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ENGINEERS, INC.

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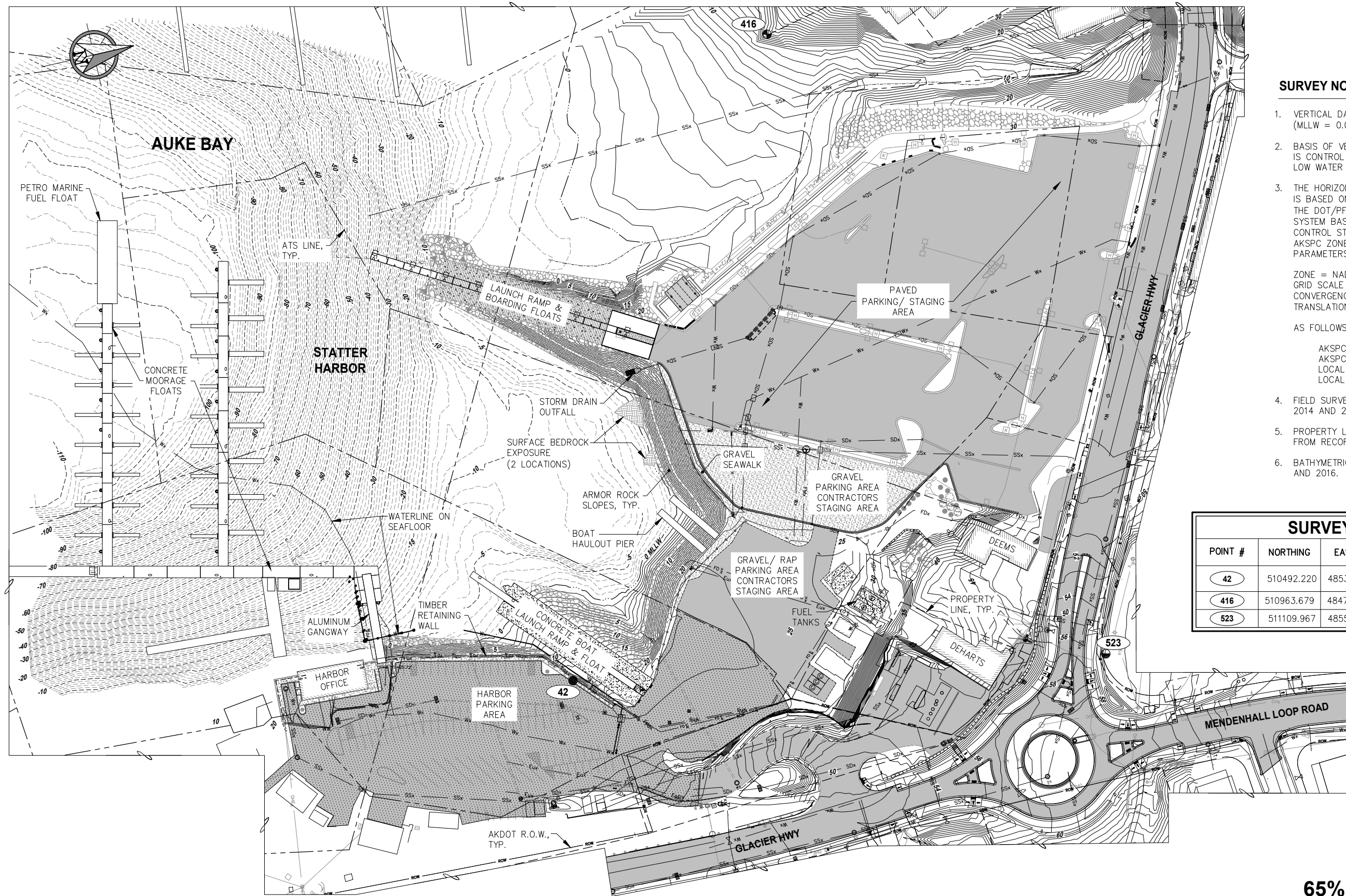
CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE: **GENERAL NOTES, LEGEND AND ABBREVIATIONS**

PND PROJECT NO.: 152069.07

1.02

SHEET 2 OF 25



SURVEY NOTES

1. VERTICAL DATUM IS MEAN LOWER LOW WATER (MLLW = 0.00').
2. BASIS OF VERTICAL DATUM FOR THIS PROJECT IS CONTROL POINT 523 WITH A MEAN LOWER LOW WATER ELEVATION OF 58.512 FEET.
3. THE HORIZONTAL CONTROL FOR THIS PROJECT IS BASED ON THE DOT/PF 2000 JUNEAU GRID. THE DOT/PF JUNEAU GRID IS A LOCAL GROUND SYSTEM BASED AT USC&GS FIRST ORDER CONTROL STATION "EDDIE". IT RELATES TO AKSPC ZONE 1 NAD83 THROUGH THE FOLLOWING PARAMETERS:

ZONE = NAD83 AKSPC ZONE 1
 GRID SCALE = 0.999928875
 CONVERGENCE = -0°45'27.26"
 TRANSLATION ABOUT USC&GS POINT

AS FOLLOWS:

AKSPC NORTHING = 2383469.17310 FT US
 AKSPC EASTING = 2512570.06318 FT US
 LOCAL NORTHING = 500000.0000 FT US
 LOCAL EASTING = 500000.0000 FT US

4. FIELD SURVEYS PERFORMED 2010, 2011, 2012, 2014 AND 2016 BY PND & OTHERS.
5. PROPERTY LINES AND EASEMENTS ARE DERIVED FROM RECORD PLATS.
6. BATHYMETRIC SURVEY PERFORMED BY PND 2010 AND 2016.

SURVEY CONTROL

POINT #	NORTHING	EASTING	ELEV. (FT)	DESCRIPTION
42	510492.220	485365.881	24.67	SET PK NAIL W/FLASHER
416	510963.679	484704.175	—	B.C. MONUMENT
523	511109.967	485541.616	58.51	AKDOT AL. CAP

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 0 60 120 FT.

DATE: March 21, 2018

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STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

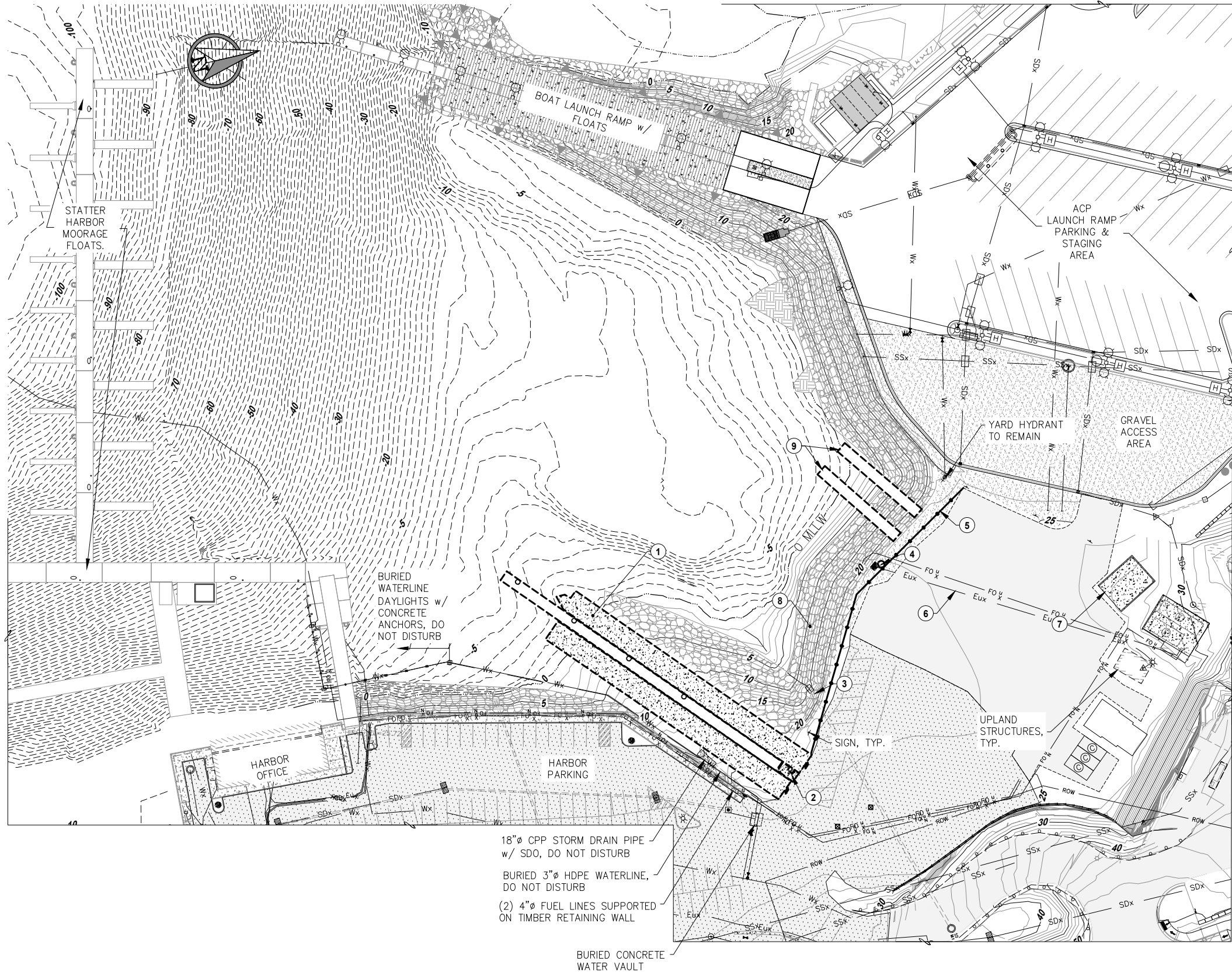
SHEET TITLE:
EXISTING CONDITIONS AND SURVEY CONTROL

1.03

SHEET
3 OF 25

PND PROJECT NO.: 152069.07





DEMOLITION SUMMARY TABLE	
MARK	ITEM
①	DEMO TWO LANE CONCRETE BOAT LAUNCH RAMP WITH (4) STEEL PILES AND TIMBER BOARDING FLOAT CAP WITH IFT LAYER CLASS A SHOT ROCK BORROW.
②	DEMO TIMBER LUMINAIRE POLE, ELECTRICAL BOX, CONCRETE APRON & SLAB
③	DEMO 24"Ø CMP OUTFALL AND A TIMBER CRIB OUTFALL.
④	ABANDONED TIMBER POWER POLE, ELECTRICAL BOX AND WATER LINE (TBD)
⑤	REMOVE AND SALVAGE FENCE.
⑥	ABANDONED BURIED ELECTRICAL LINE TO BE PARTIALLY DEMO'D AND STUBBED FOR FUTURE USE CBJ TO COORDINATE.
⑦	DEMOLISH CONCRETE WASH DOWN PAD / FILL WITH CLASS A SHOT ROCK BORROW TO MATCH ADJACENT GRADE.
⑧	SALVAGE EXISTING ARMOR ROCK ON SLOPES, TYP. (PAY ITEM NO 2205.3)
⑨	DEMO TIMBER BOAT HAULOUT PIER & ALL TIMBER PILES

DEMOLITION PLAN

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0 40 80 FT.

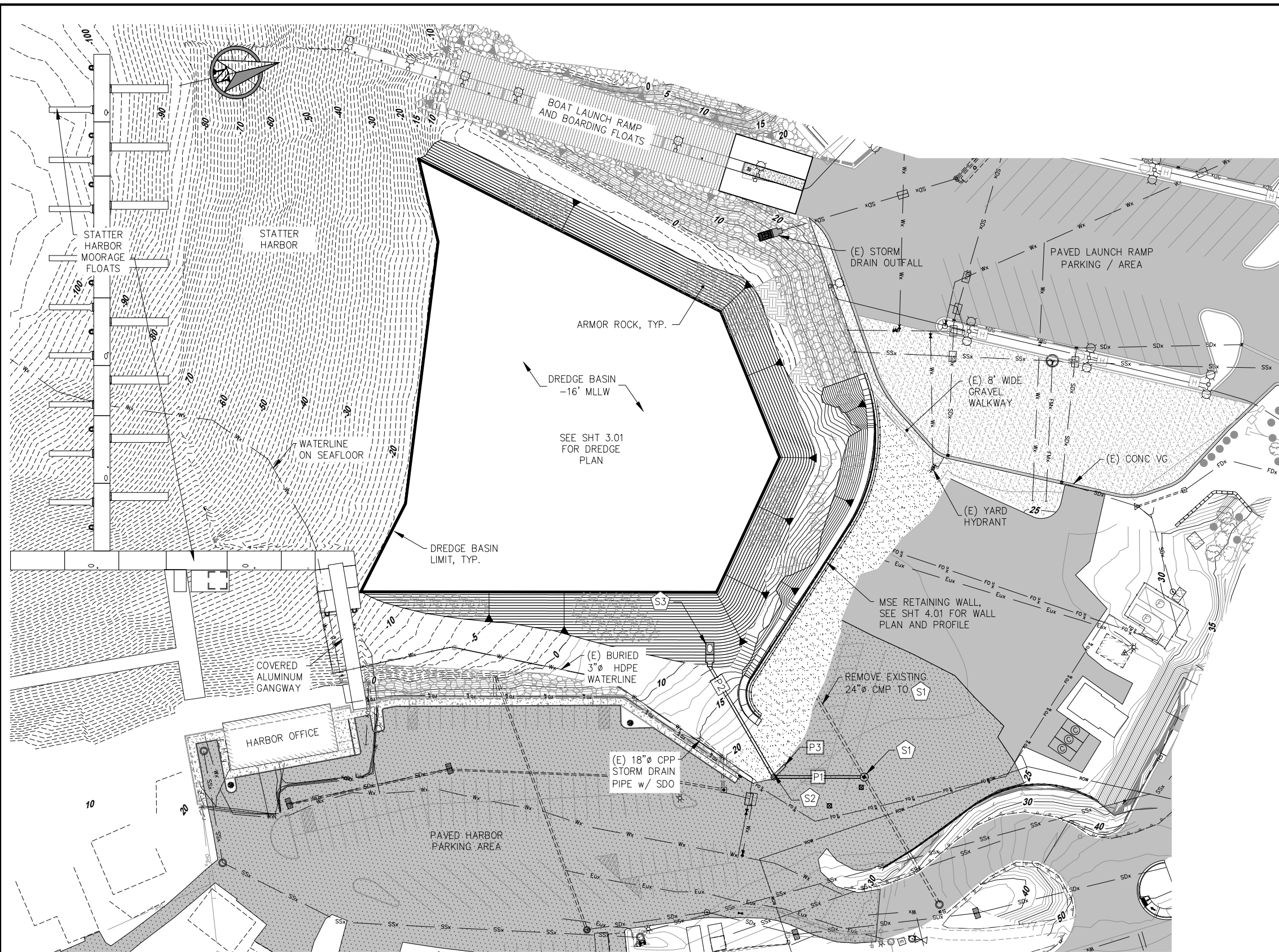
DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA
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SHEET TITLE: **DEMOLITION PLAN**

PND PROJECT NO.: 152069.07

1.04
SHEET
4 OF 25

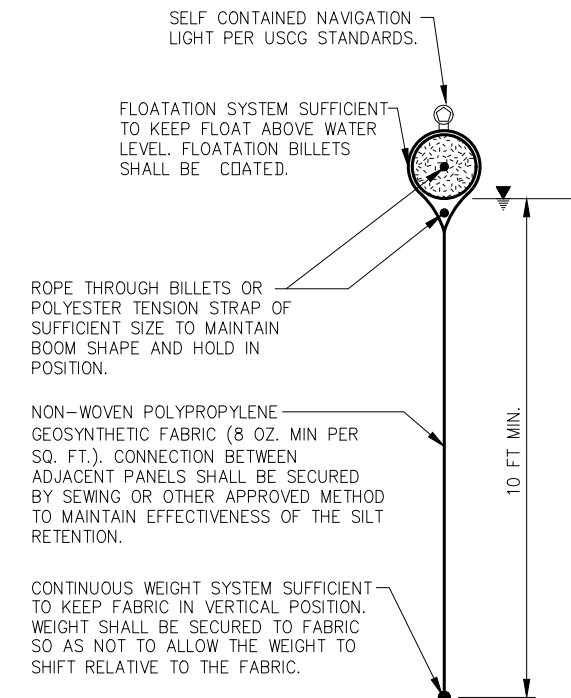


OVERALL SITE PLAN

STORM DRAIN STRUCTURES				
STRUCTURE DESIGNATION	NORTHING	EASTING	RIM ELEVATION	TYPE
S1	510617.21	485439.15	24.50	TYPE I MH, SOLID LID.
S2	510554.06	485417.69	22.90	TYPE II MH, SOLID LID.
S3	510535.48	485325.21		STORM DRAIN OUTFALL

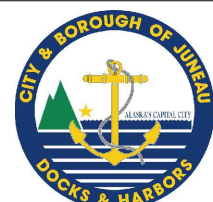
MH = MANHOLE

STORM DRAIN PIPING						
PIPE DESIGNATION	NOMINAL Ø	LENGTH	FROM	IE	TO	IE
P1	24" CPEP	70	S1	15.20	S2	14.50
P2	24" CPEP	100	S2	14.40	S3	13.50
P3	24" CPEP	10	S2	14.40	S3	14.50



- SILT CONTAINMENT BOOM**
- NOTES:
1. GENERAL REQUIREMENTS SHOWN, SEE SPECIFICATIONS. FINAL DESIGN BY CONTRACTOR.
 2. PLACE AND SECURE BOOM APPROXIMATELY 10' SEAWARD OF TOE OF ALL SLOPES. MONITOR AND MAINTAIN POSITION AND INTEGRITY DURING ALL FILL PLACEMENT OPERATIONS.
 3. REMOVE AND DISPOSE BOOM UPON COMPLETION OF ALL FILL PLACEMENT.

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0 40 80 FT.

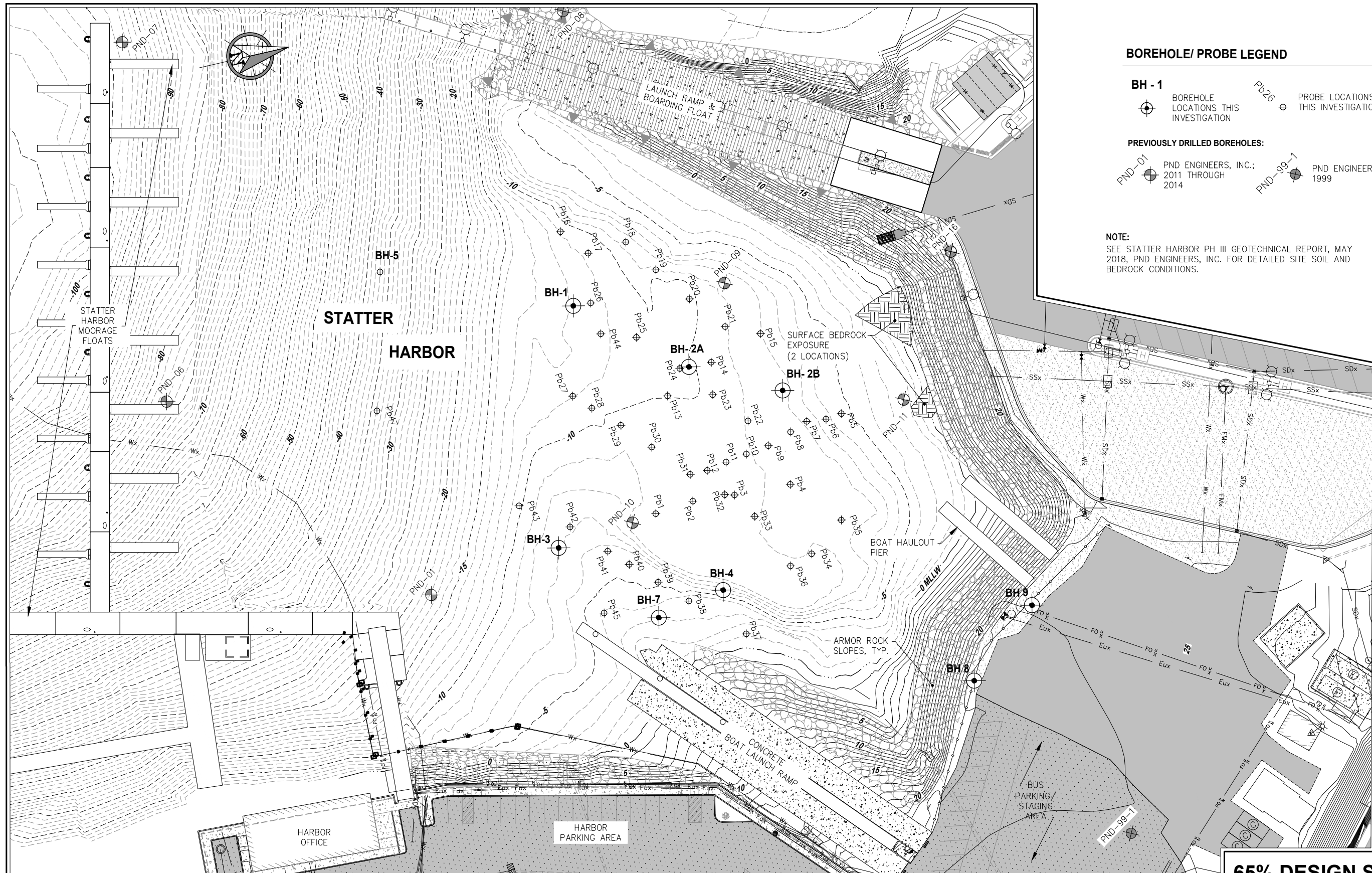
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CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE: **OVERALL SITE PLAN**

PND PROJECT NO.: 152069.07

1.05
SHEET 5 OF 25



BOREHOLE/ PROBE LEGEND

BH - 1
 BOREHOLE LOCATIONS THIS INVESTIGATION

Pb26
 PROBE LOCATIONS THIS INVESTIGATION

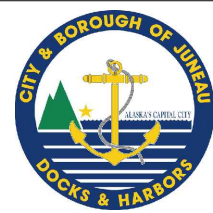
PREVIOUSLY DRILLED BOREHOLES:

PND-01
 PND ENGINEERS, INC.; 2011 THROUGH 2014

PND-99-1
 PND ENGINEERS, INC.; 1999

NOTE:
 SEE STATTER HARBOR PH III GEOTECHNICAL REPORT, MAY 2018, PND ENGINEERS, INC. FOR DETAILED SITE SOIL AND BEDROCK CONDITIONS.

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 0 30 60 FT.

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CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE:
BOREHOLE AND PROBE LOCATIONS

PND PROJECT NO.: 152069.07

2.01
 SHEET
 6 OF 25

SOILS CLASSIFICATION, CONSISTENCY AND SYMBOLS

CLASSIFICATION

Identification and classification of the soil is accomplished in general accordance with the ASTM version of the Unified Soil Classification System (USCS) as presented in ASTM Standard D2487. The standard is a qualitative method of classifying soil into the following major divisions (1) coarse grained, (2) fine grained, and (3) highly organic soils. Classification is performed on the soils passing the 75 mm (3 inch) sieve and if possible the amount of oversize material (> 75 mm particles) is noted on the soil logs. This is not always possible for drilled test holes because the oversize particles are typically too large to be captured in the sampling equipment. Oversize materials greater than 300 mm (12 inches) are termed boulders, while materials between 75 mm and 300 mm are termed cobbles. Coarse grained soils are those having 50% or more of the non-oversize soil retained on the No. 200 sieve (0.075 mm); if a greater percentage of the coarse grains is retained on the No. 4 (4.76 mm) sieve the coarse grained soil is classified as gravel, otherwise it is classified as sand. Fine grained soils are those having more than 50% of the non-oversize material passing the No. 200 sieve; these may be classified as silt or clay depending their Atterberg liquid and plastic limits or observations of field consistency. Refer to the most recent version of ASTM D2487 for a complete discussion of the classification method.

SOIL CONSISTENCY - CRITERIA

Soil consistency as defined below and determined by normal field and laboratory methods applies only to non-frozen material. For these materials, the influence of such factors as soil structure, i.e. Fissure systems, shrinkage cracks, slickensides, etc., must be taken into consideration in making any correlation with the consistency values listed below. In permafrost zones, the consistency and strength of frozen soils may vary significantly and unexplainably with ice content, thermal regime and soil type.

Standard Penetration Test (Blows/ft) Relative to Density/Consistency			Undrained Shear Strength		
N60 Density	Relative Density	N60 Consistency			psf
0-4	Very Loose	0-15%	< 2	Very Soft	< 250
4-10	Loose	15-35%	2 - 4	Soft	250 - 500
10-30	Medium	35-65%	4 - 8	Medium	500 - 1000
30-50	Dense	65-85%	8 - 15	Stiff	1000 - 2000
> 50	Very Dense	>85%	15 - 30	Very Stiff	2000 - 4000
			> 30	Hard	> 4000

Ref: Terzaghi and Peck, Soil Mechanics in Engineering Practice, 3rd Edition, pg 60-63
 ASTM D1586 Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils
 ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (USCS)

SAMPLER TYPE SYMBOLS

A	Auger Sample	Pb	Pitcher Barrel	St	1.4" Split Spoon w/ 47# Hammer
Bs	Bulk (grab) Sample	Sl	2.5" Split Spoon w/ 140# Hammer	Sx	2.0" Split Spoon w/ 47# Hammer
Cs	Core Barrel w/ Single Tube	Sm	2.5" Split Spoon w/ 300# Hammer	Sz	1.4 Split Spoon w/ 340# Hammer
Cd	Core Barrel w/ Double Tube	Sh	2.5" Split Spoon w/ 340# Hammer	Ts	Shelby Tube
Ct	Core Barrel w/ Triple Tube	Sp	2.5" Split Spoon, Pushed	Tm	Modified 2.5 O.D. Shelby Tube
Hl	2.5" Split Spoon w/ Air Hammer	Ss	1.4" Split Spoon w/ 140# Hammer		
Hs	1.4" Split Spoon w/ Air Hammer				

Note: Split Spoon size refers to sampler inside diameter.



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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-1

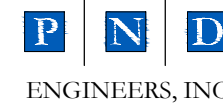
Depth (feet)	Water Table	GRAPHIC SYMBOL	SOIL DESCRIPTION	SAMPLES				GRAPH	COMMENTS	Elevation (feet)
				Number	Type	Location	Recovery (%)			
0		[Symbol]	0' - 0.30' A.C. PAVEMENT					[Symbol]	Begin drilling 10/24/03 8:00 a.m.	24.43
2		[Symbol]	POORLY-GRADED GRAVEL W/ SILT AND SAND Gray, Dry, Subangular, Medium Dense, GP-GM	1	Ss	30	6-6-5-4 (9)	[Symbol]	2' to 3' - Hard, loud drilling 1-ft min. boulder encountered	22.43

COLUMN DESCRIPTIONS

- [1] Depth Depth (in feet) below the ground surface.
- [2] Water Level Groundwater level recorded while drilling. Depths and times are recorded in comments column.
- [3] Graphic Log Graphic depiction of materials encountered.
- [4] Soil Description Description of materials encountered, including USCS soil descriptions.
- [5] Sample Number Sample identification number.
- [6] Sample Type Type of soil sample collected at depth interval depicted; symbols explained on Fig. B-01.
- [7] Sample Location Location soil sample taken.
- [8] Sample Recovery Percentage of sample recovered.
- [9] Sample Blows Number of blows to advance driven sampler each 6-inch interval using sampler type specified with a 30-inch drop. Blows per foot given in parentheses.
- [10] Graphs Graphic log depicting blow counts per foot with a specified split spoon, Pocket Penetration and Vane Shear tests depicted where taken on fine grained soils.
- [11] Comments Comments or observations on drilling/sampling by driller or PND field personnel.
- [12] Elevation Elevation (in feet) with respect to Mean Lower Low Water (MLLW) or other datum where specified.

GENERAL NOTES

1. Field descriptions may have been modified to reflect laboratory test results.
2. Descriptions on these boring logs apply only at the specific locations at the time the borings were drilled. They are not warranted to be representative of subsurface conditions at other locations or times.
3. Split spoon blow counts shown are uncorrected raw data. Various hammer sizes and split spoon sizes were used and have not been corrected to a Standard Penetration Test (SPT). Blow counts may vary substantially between SPT and these methods.

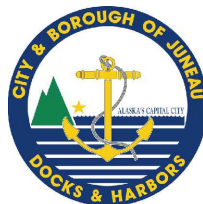


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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-2

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CBJ CONTRACT NO. DH18-013

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LOG DETAILS**

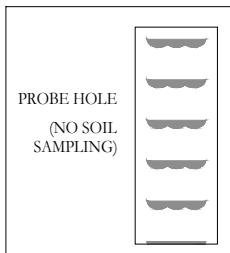
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SHEET
7 OF 25

Soil Legend

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	Well-graded gravels, gravel sand mixtures, little or no fines
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE (4.75mm)	CLEAN SANDS (LITTLE OR NO FINES)		GM	Silty gravels, gravel-sand-silt mixtures
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GC	Clayey gravels, gravel-sand-clay mixtures
MORE THAN 50% RETAINED ON NO. 200 SIEVE (0.075mm)	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	Well-graded sands, gravelly sands, little or no fines
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SP	Poorly graded sands, gravelly sands, little or no fines
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE (4.75mm)	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	Silty sands, sand-silt mixtures
		CLAYEY SANDS (APPRECIABLE AMOUNT OF FINES)		SC	clayey sands, sand-clay mixtures
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		LIQUID LIMIT LESS THAN 50		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		LIQUID LIMIT LESS THAN 50		OL	Organic silts and organic silty clays of low plasticity
	MORE THAN 50% PASSING NO. 200 SIEVE (0.075mm)	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH
LIQUID LIMIT GREATER THAN 50				CH	Inorganic clays of high plasticity, fat clays
HIGHLY ORGANIC SOILS	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		OH	Organic clays of medium to high plasticity, organic silts
		LIQUID LIMIT GREATER THAN 50		PT	Peat and other highly organic soils



NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Stratigraphic Contact

- Distinct contact between soil strata or geologic units
- Gradual change between soil strata or geologic units
- Approximate location of soil strata change within a geologic soil unit

Laboratory / Field Tests List of Abbreviations

%F	Percent Fines	HA	Hydrometer Analysis	PP	Pocket Penetrometer
AL	Atterberg Limits	LMA	Limited Mechanical Analysis	SA	Sieve Analysis
CP	Laboratory Compaction test	MC	Moisture Content	TV	Torvane
CO	Consolidation test	MD	Moisture content and Dry density	TX	Triaxial Shear
DP	Depth "Peat" Probe	OC	Organic Content	UC	Unconfined Compression
DS	Direct Shear	PM	Permeability or Hydraulic Conductivity	VS	Vane Shear

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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-3

METRIC CONVERSIONS

Length	1 inch = 25.4 mm	1 mm = 0.0394 inch
	1 foot = 0.3048 m	1 m = 3.281 feet
	1 mile = 1.6093 km	1 km = 0.621 mile
Area	1 sq. inch = 6.452 cm ²	1 cm ² = 0.155 sq. inch
	1 sq. foot = 0.0929 m ²	1 m ² = 10.764 sq. foot
	1 acre = 0.4047 hectare	1 hectare = 2.47 acre
	1 sq. mile = 2.59 km ²	1 km ² = 0.386 sq. mile
Volume	1 cu. inch = 16.387 cm ³ (cc)	1 cm ³ = 0.061 cu. inch
	1 cu. foot = 0.0283 m ³	1 m ³ = 35.31 cu. foot
	1 cu. yard = 0.7646 m ³	1 m ³ = 1.308 cu. yard
	1 U.S. gallon = 3.785 liters	1 liter = 0.264 U.S. gallon
Mass	1 lb. = 0.4536 kg	1 kg = 2.205 lb.
Force	1 lb. = 4.448 N	1 N = 0.225 lb.
	1 ton = 8.896 kN	1 kN = 0.1124 U.S. ton
Density	1 lb./cu. ft. = 16.019 kg/m ³	1 kg/m ³ = 0.0624 lb./cu. foot
	= 0.1571 kN/m ³	1 kN/m ³ = 6.365 lb./cu. foot
Pressure/Stress	1 lb./sq. in. = 0.0703 kg/cm ²	1 kg/cm ² = 14.22 lb./sq. inch
	(= 6.895 kPa)	1 kPa = 0.145 lb./sq. inch
	1 lb./sq. ft. = 4.882 kg/cm ²	1 kg/cm ² = 0.2048 lb./sq. ft.
	(= 0.04788 kPa)	1 kPa = 20.886 lb./sq. foot
	1 U.S. ton/sq. ft. = 95.76 kPa	1 kPa = 0.01044 U.S. ton/sq. foot
	[Note: 1 kPa = 1 kN/m ²	
Flow Velocity	1 gal./min. = 6.309 x 10 ⁻⁵ m ³ /sec	1 m ³ /sec = 15,850 gallons per minute
	1 ft./sec. = 0.3048 m/sec	1 m/sec = 3.28 ft./sec
Coefficient of Compressibility M _v	1 sq. ft./U.S. ton = 0.0104 m ² /kN	
	1 sq. in./lb = 14.22 cm ² /kg	
Coefficient of consolidation C _v	1 sq. ft./year = 0.0929 m ² /year	1 m ² /year = 10.76 sq. ft./year
	(= 0.002946 mm ² /sec)	1 mm ² /sec = 339.4 sq. ft./year
Moment	1 lb.-ft. = 0.1383 kq-m	1 kq-m = 7.23 lb.-foot
	(= 1.3558 Nm)	1 N-m = 0.7376 lb.-foot
Speed	1 mile/hour = 1.609 km/hour	1 km/hour = 0.622 mile/hour
	(=0.447 m/sec)	1 m/sec = 2.237 mph
	1 foot/sec = 0.3048 m/sec	1 m/sec = 3.281 feet/sec

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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-4

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 SHEET 8 OF 25

ROCK DESCRIPTIVE INDEX

STANDARD SYMBOLS AND NOMENCLATURE

The Standard Graphic Symbols used in this report are consistent with those used by the U.S. Geological Survey. Other nomenclature and categorical descriptions follow those presented by the American Society of Civil Engineers, the International Society of Rock Mechanics and others.

DESCRIPTION OF RELATIVE WEATHERING

Modified from the Geological Society Engineering Group, Great Britain:

- BX-U - Fresh, no visible sign of weathering;
- BX-W -
 - FW Faintly weathered: weathering limited to the surface of major discontinuities;
 - SW Slightly weathered: penetrative weathering developed on open discontinuity surfaces, but only slight weathering of rock material;
 - MW Moderately weathered: weathering extends throughout the rock mass, but the rock material is not friable;
 - HW Highly weathered: rock is wholly decomposed and in a friable condition, but the rock texture and structure are preserved;
- BX-R - Residual soil: a soil material with the original texture, structure and mineralogy of the rock completely destroyed.

DESCRIPTION OF HARDNESS

ASCE Field Measurements, unrelated to Moh's scale for minerals. Material must be unfrozen for this determination.

- very hard - Can not be scratched with knife or sharp pick.
- hard - Can be scratched with knife or pick only with difficulty.
- moderately hard - Can be scratched readily with knife or pick.
- medium - Can be grooved or gouged by firm pressure on knife or pick point.
- soft - Can be gouged or grooved readily with knife or pick point.
- very soft - Can be carved with knife. Can be excavated readily with point of pick.

DESCRIPTION OF UNIT THICKNESS

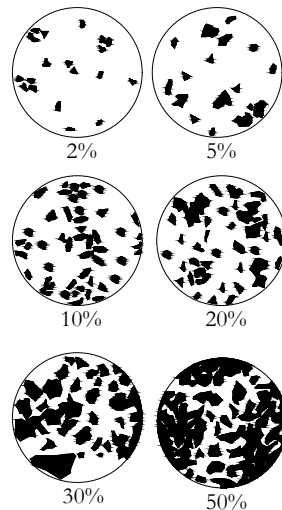
Modified from the Geological Society Engineering Group, Great Britain:

Measurement Parameters (equal to and less than)	Bedding Plane Spacing	Discontinuity Spacing (joints, fractures, fissures)
>78.7 inches	>2000 mm	massive
78.7 inches	2000 mm	very thick
23.6 inches	600 mm	thick
7.9 inches	200 mm	medium
2.4 inches	60 mm	thin
0.8 inches	20 mm	very thin
0.2 inches	6 mm	thickly laminated
0.1 inches	2 mm	thinly laminated

Discontinuity filling material and surface roughness should also be noted whenever possible.

COMPARISON CHART FOR ESTIMATING COMPOSITION

Modified from R.D. Terry and others, Journal of Sedimentary Petrology, 1955.



ROCK DESCRIPTIVE INDEX

BEDDING OF FRACTURE ATTITUDE

- Very Gentle = 1° to 5°
- Gentle = 5° to 20°
- Moderate = 20° to 45°
- Steep = 45° to 80°
- Very Steep = 80° to 90°

Note:
The angle is measured perpendicular to the core axis.

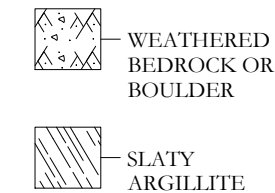
ROCK QUALITY DETERMINATION (RQD)

The figure is derived by adding the lengths of cored rock pieces which measure over 4 inches (10 cm) and dividing the sum by the total length of core recovered. Mechanical breaks are refitted to count as one piece, provided they form the requisite length of 4 inches.

* Performed on core not less than 2" diameter.

RQD (%)	DESCRIPTION OF ROCK QUALITY
0 - 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

BEDROCK LITHOLOGIES



GEOLOGIC TIME SCALE:

Era	Period	Epoch	Duration in millions of years	Time B.P. *	
CENOZOIC	Quaternary	Holocene	1.8	1.8	
		Pleistocene	1.8	1.8	
	Tertiary	Neogene	Pliocene	3.7	5.3
			Miocene	18.4	23.7
		Paleogene	Oligocene	12.9	36.6
			Eocene	21.2	57.8
		Paleocene	8.6	66.4	
MESOZOIC	Cretaceous		78	144	
	Jurassic		64	208	
	Triassic		37	245	
PALEOZOIC	Permian		41	286	
	Carboniferous	Pennsylvanian	34	320	
		Mississippian	40	360	
	Devonian		48	409	
	Silurian		30	438	
	Ordovician		67	505	
Cambrian		65	570		
PRECAMBRIAN				570	

* ESTIMATED TIME BEFORE THE PRESENT (B.P.) MILLIONS OF YEARS



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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-5



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STANDARD BOREHOLE LOG DETAILS

BOREHOLE LOGS FIGURE B-6

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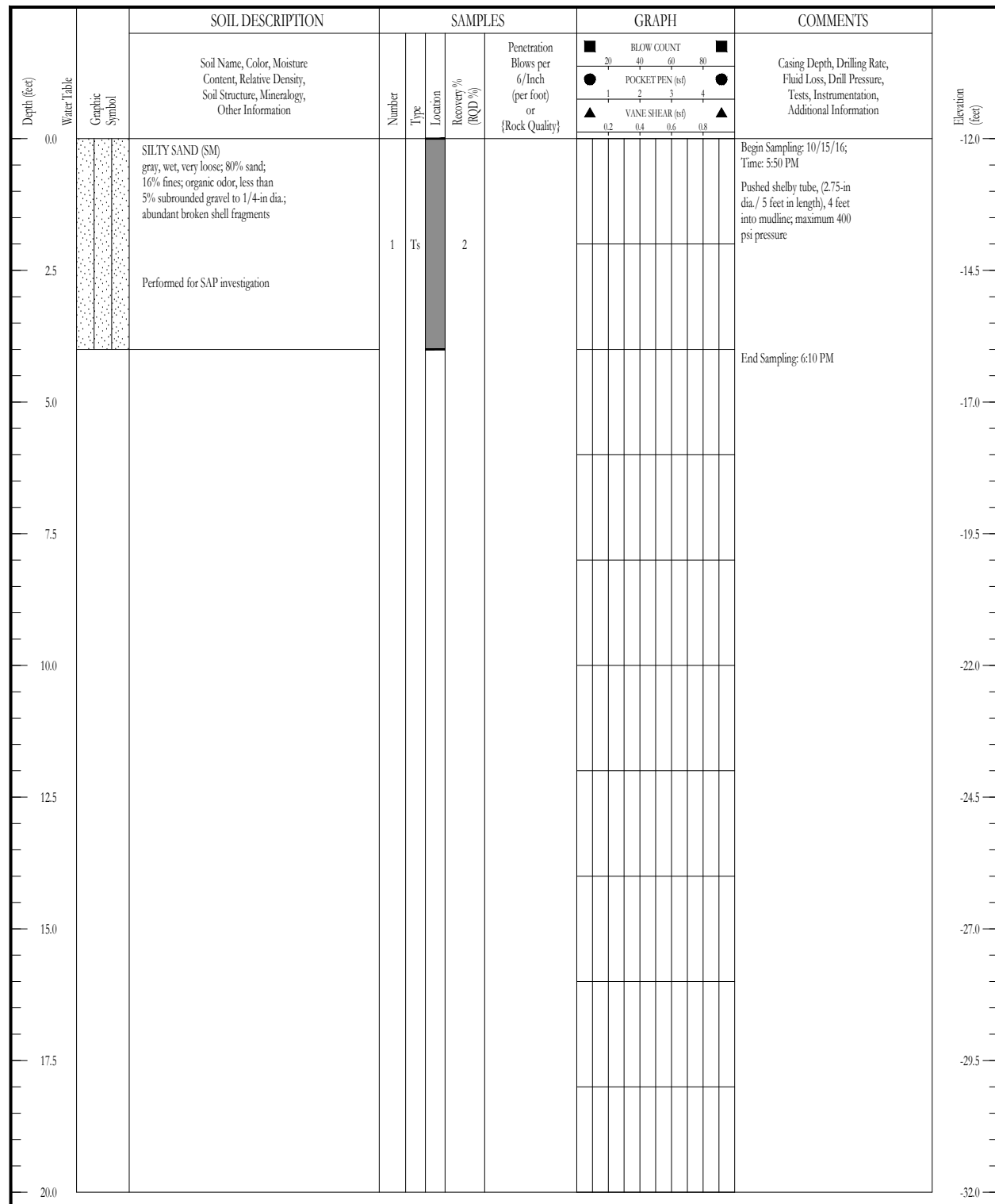
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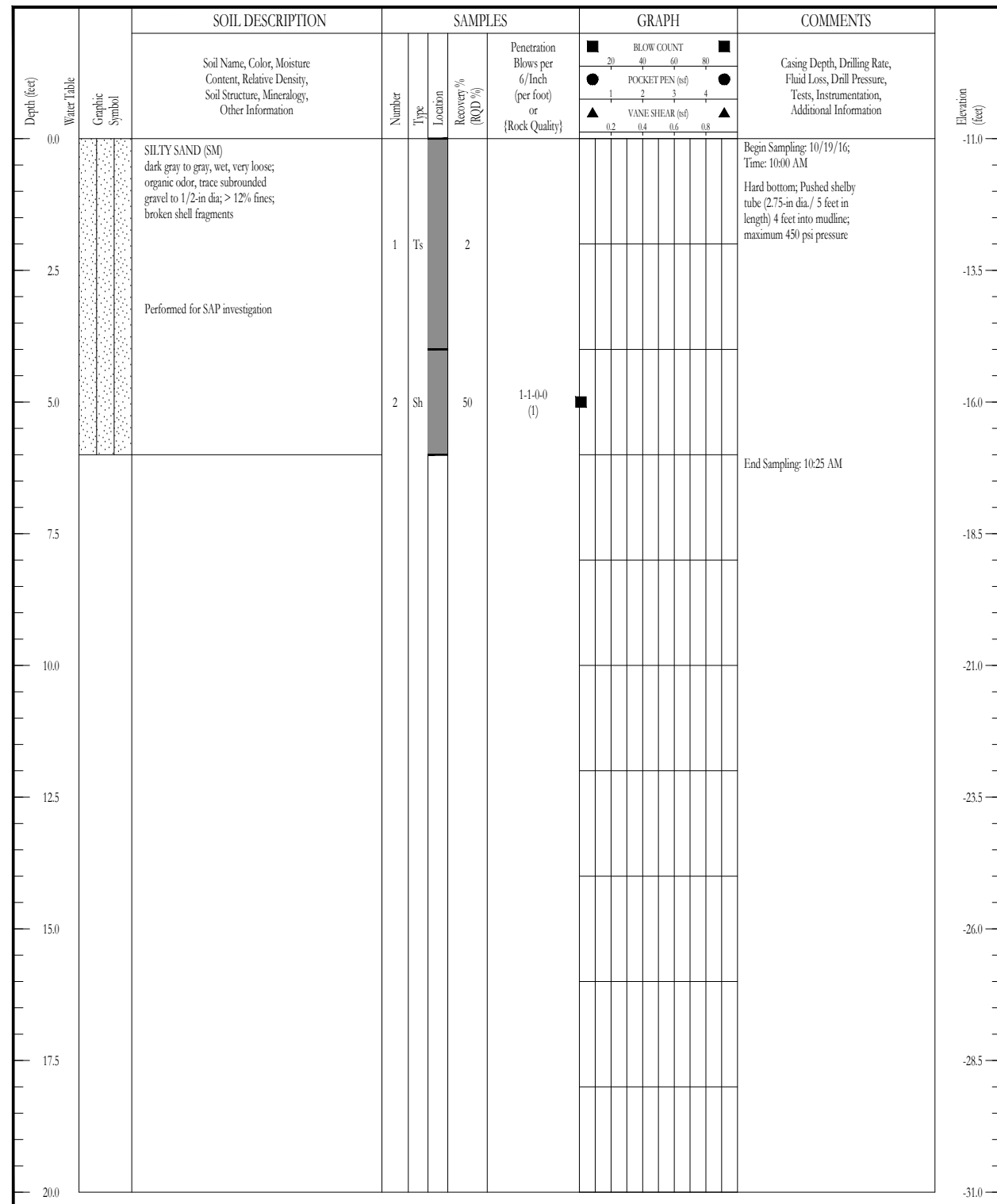
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9 OF 25



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-1	FIGURE B-7 1 of 1



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-2A	FIGURE B-8 1 of 1

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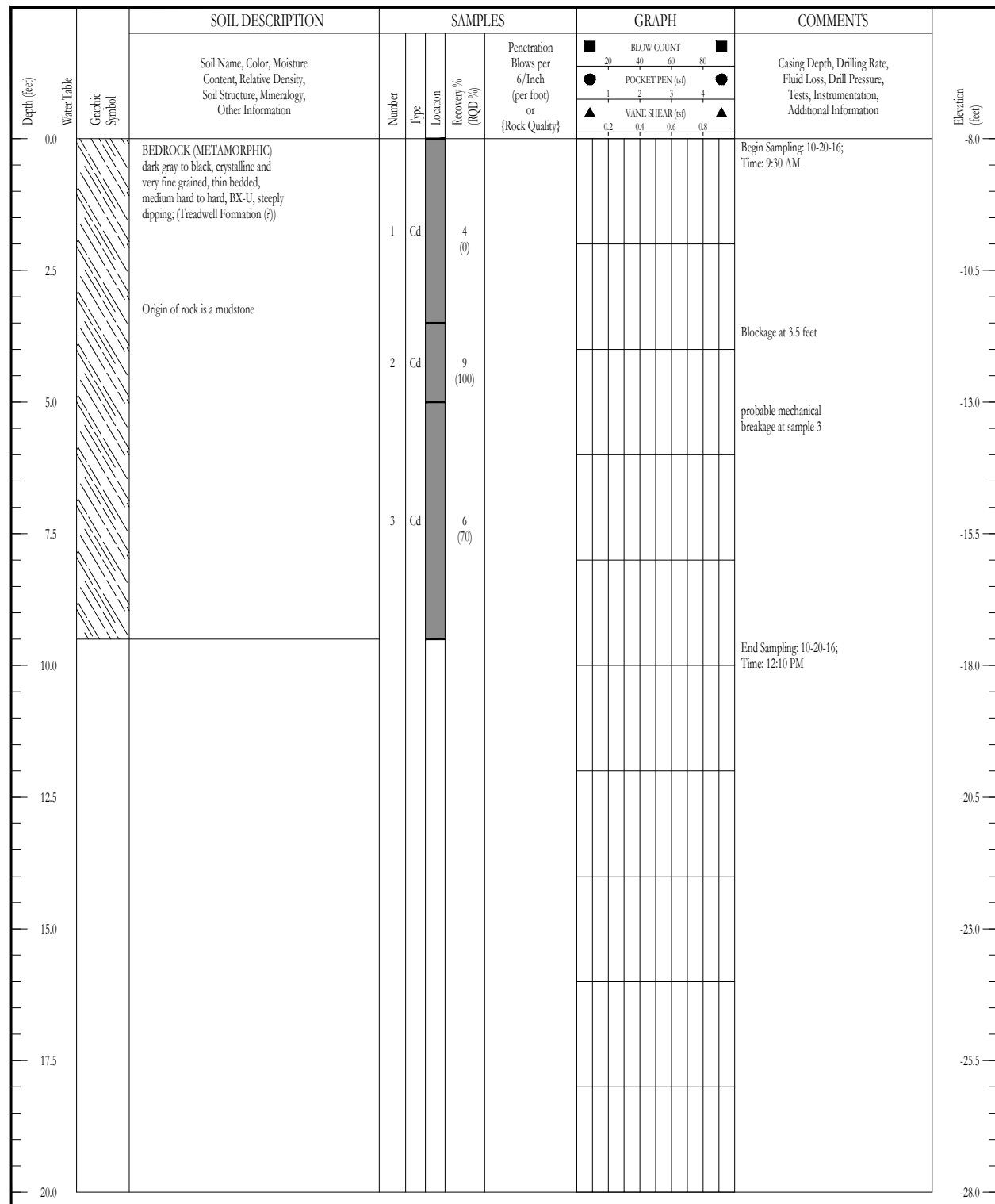


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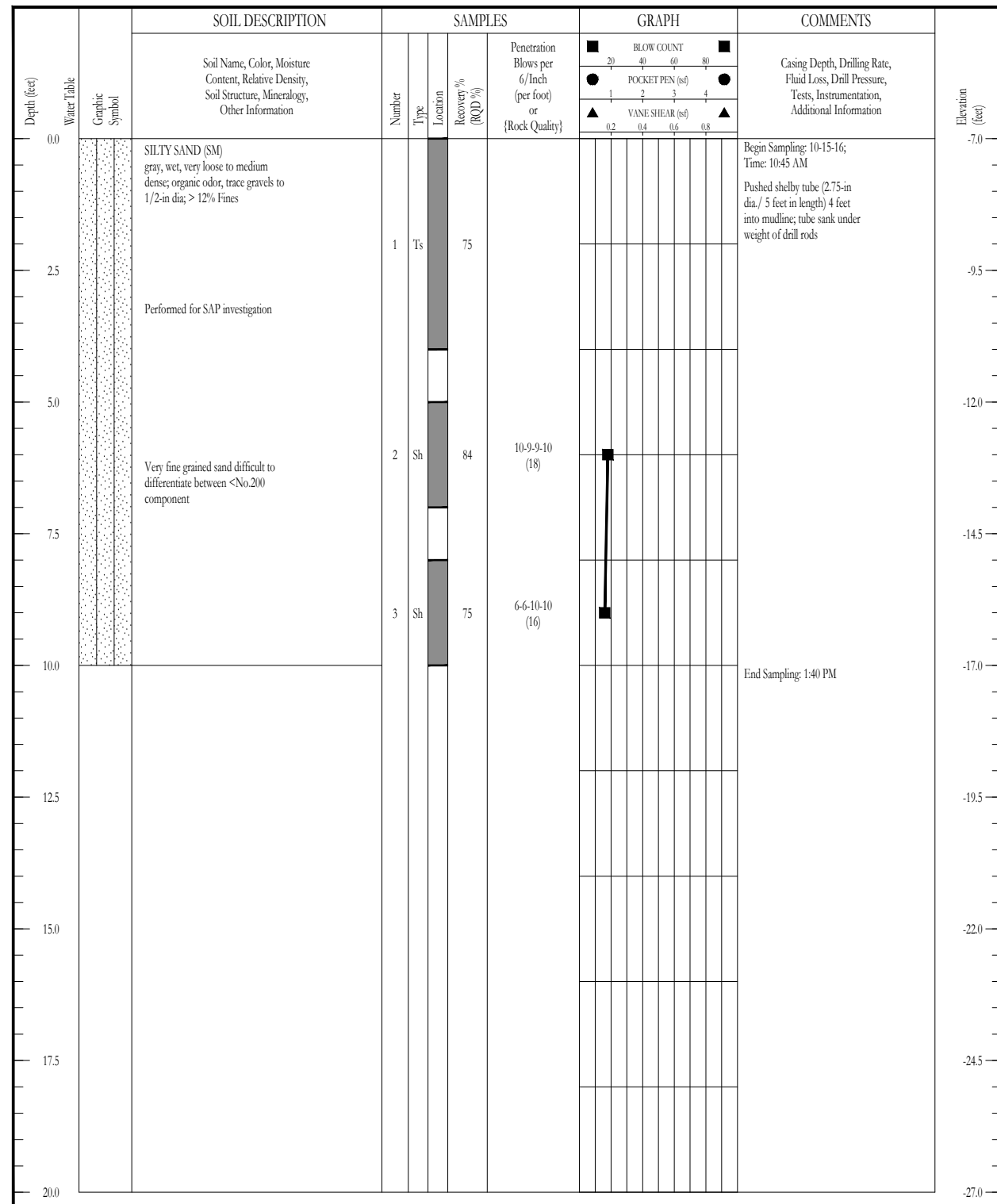
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PND PROJECT NO.: 152069.07	



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-2B	FIGURE B-9 1 of 1



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		BH-3	FIGURE B-10 1 of 1

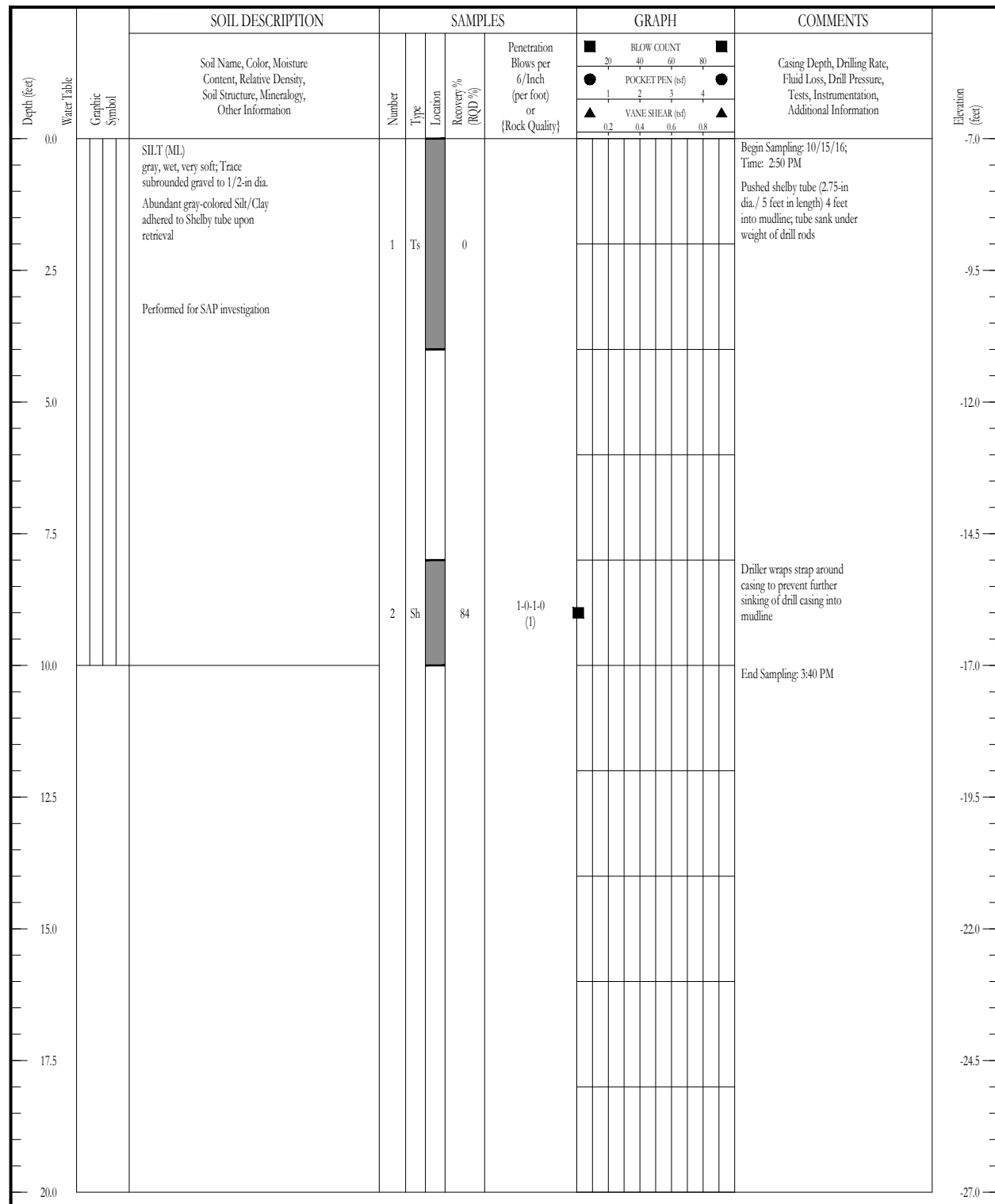
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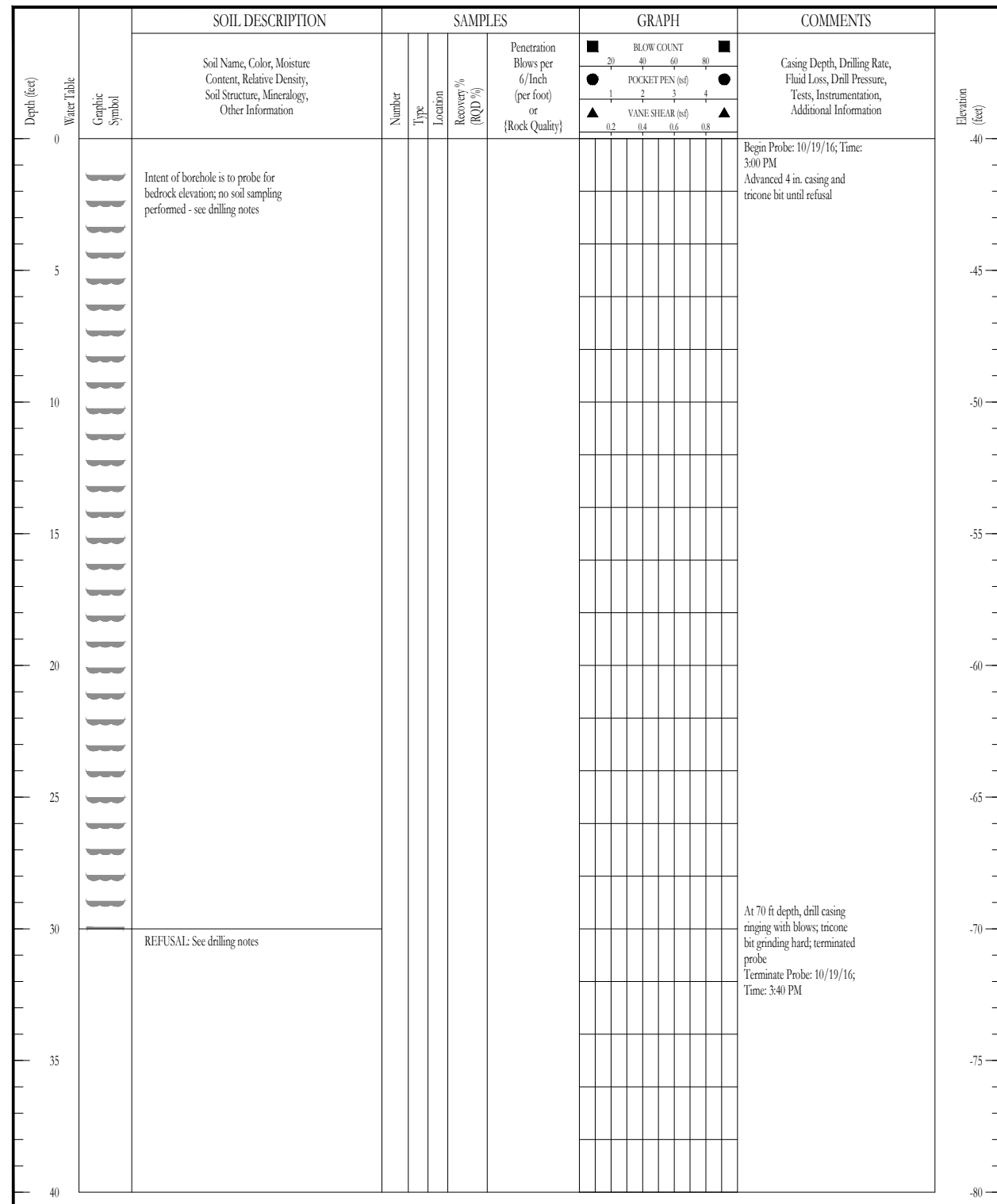
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SHEET TITLE: BOREHOLE LOGS	2.06
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SHEET 11 OF 25	



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-4	FIGURE B-11 1 of 1



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-5	FIGURE B-12 1 of 1

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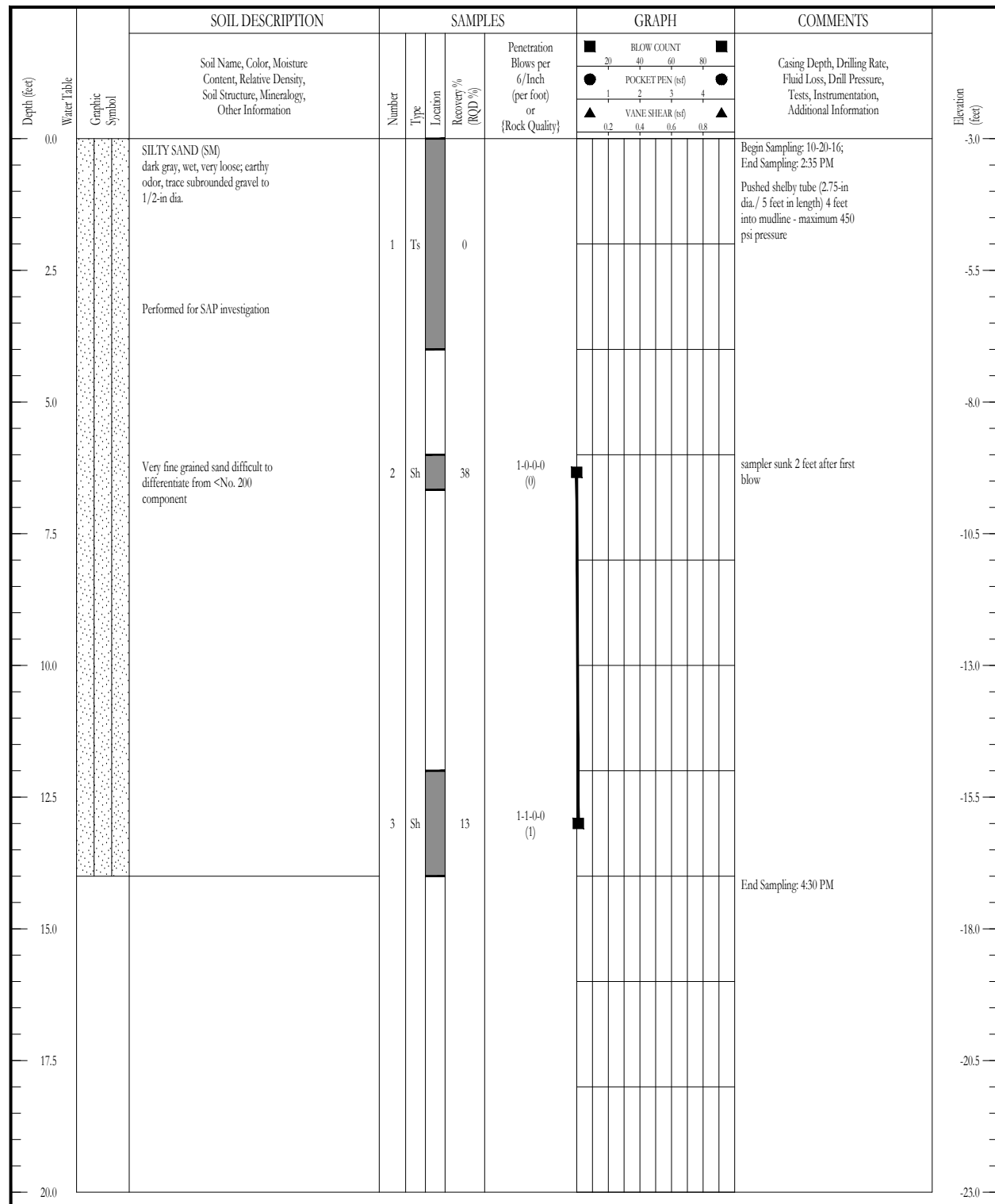


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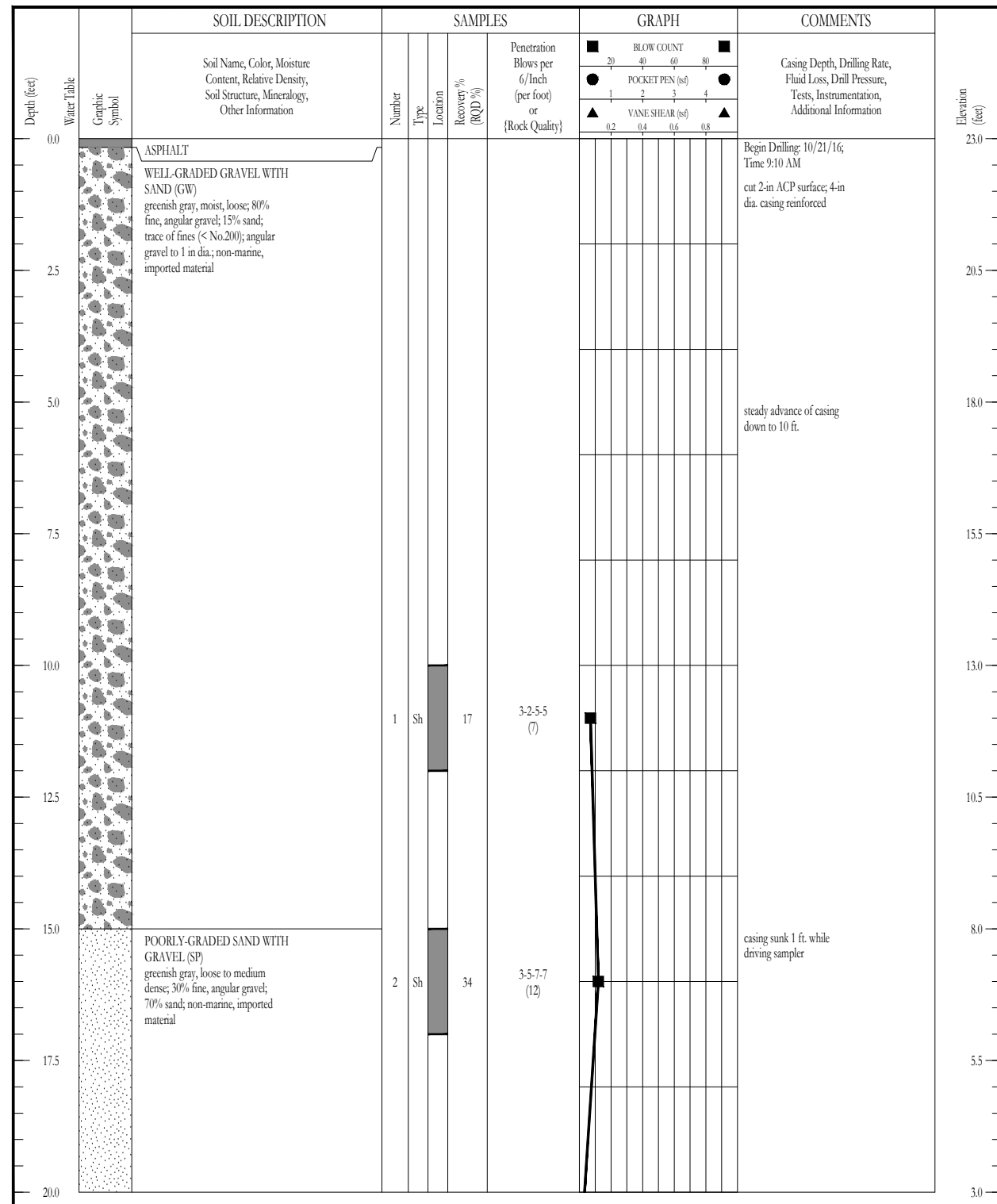
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SHEET TITLE: BOREHOLE LOGS	2.07 <small>SHEET</small> 12 OF 25
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		BH-7	FIGURE B-14 1 of 1



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-8	FIGURE B-15 1 of 4

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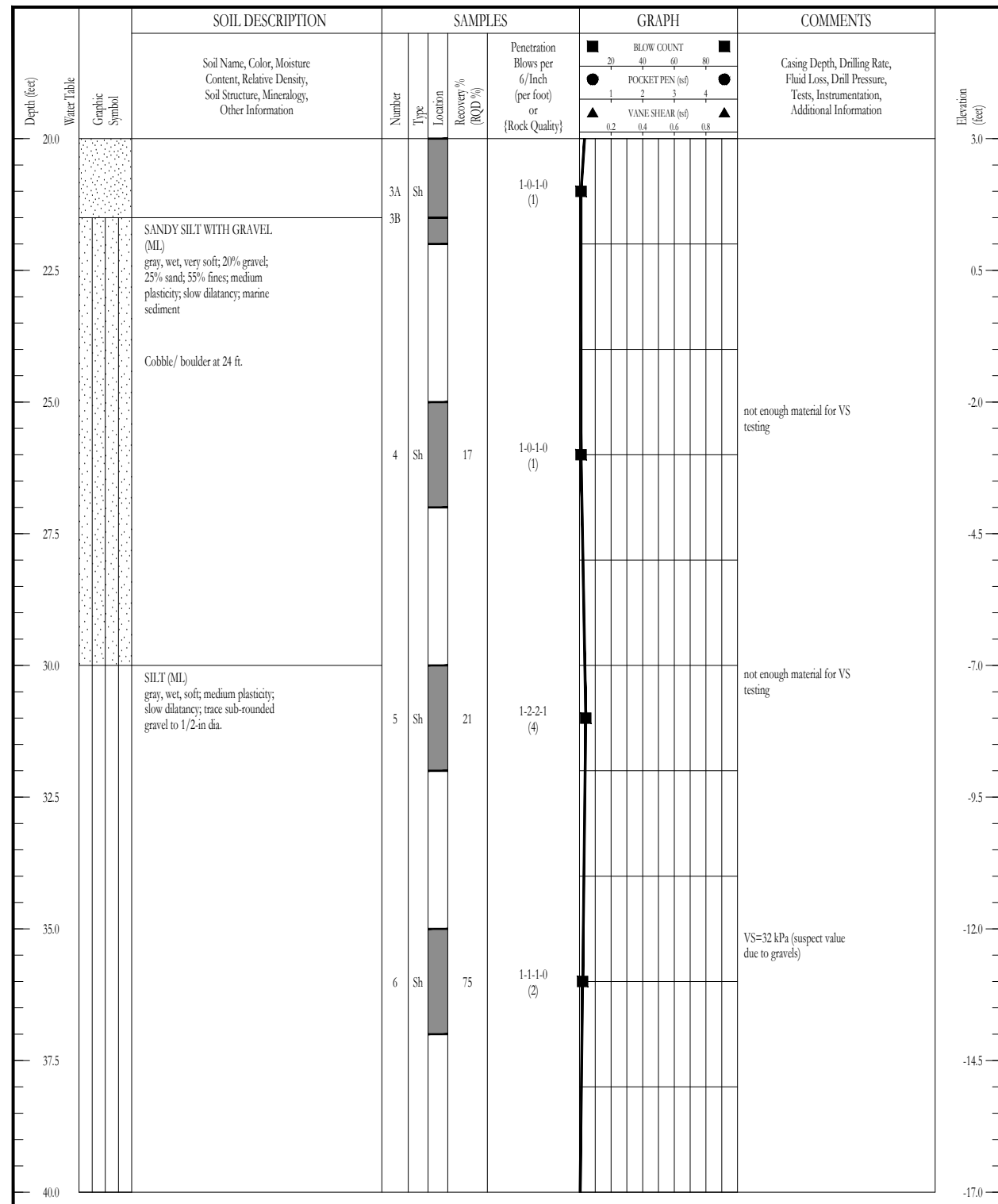


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REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

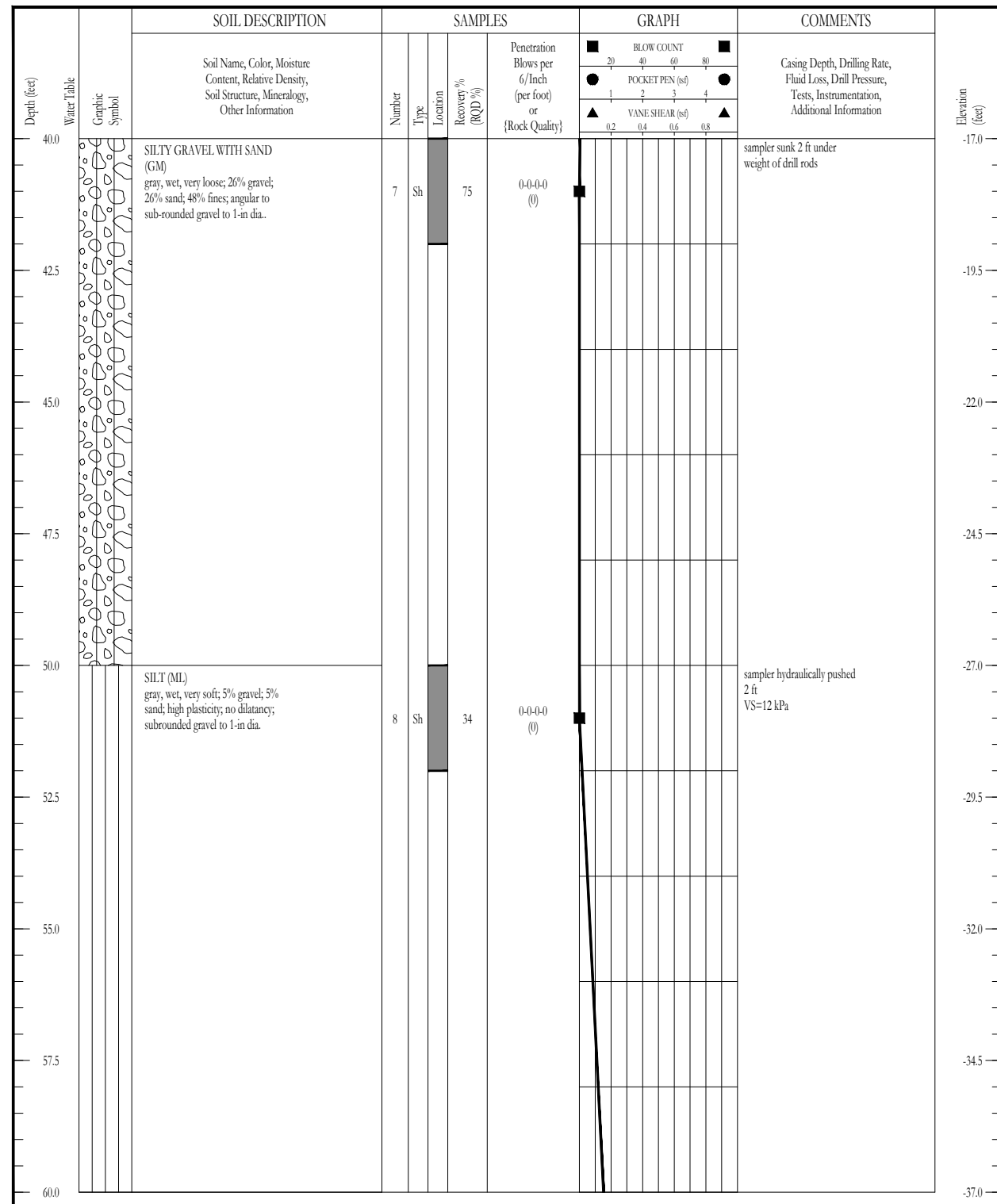
	9360 Glacier Highway Ste 100 Juneau, Alaska 99801 Phone: 907-586-2093 Fax: 907-586-2099 www.pndengineers.com	
	DESIGN: PJD DRAWN: PJD	CHECKED: CRS APPROVED: CRS

DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA STATTER HARBOR IMPROVEMENTS PH III(A) CBJ CONTRACT NO. DH18-013	
SHEET TITLE: BOREHOLE LOGS	2.08 SHEET 13 OF 25
PND PROJECT NO.: 152069.07	



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-8	FIGURE B-15 2 of 4



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-8	FIGURE B-15 3 of 4

65% DESIGN SUBMITTAL

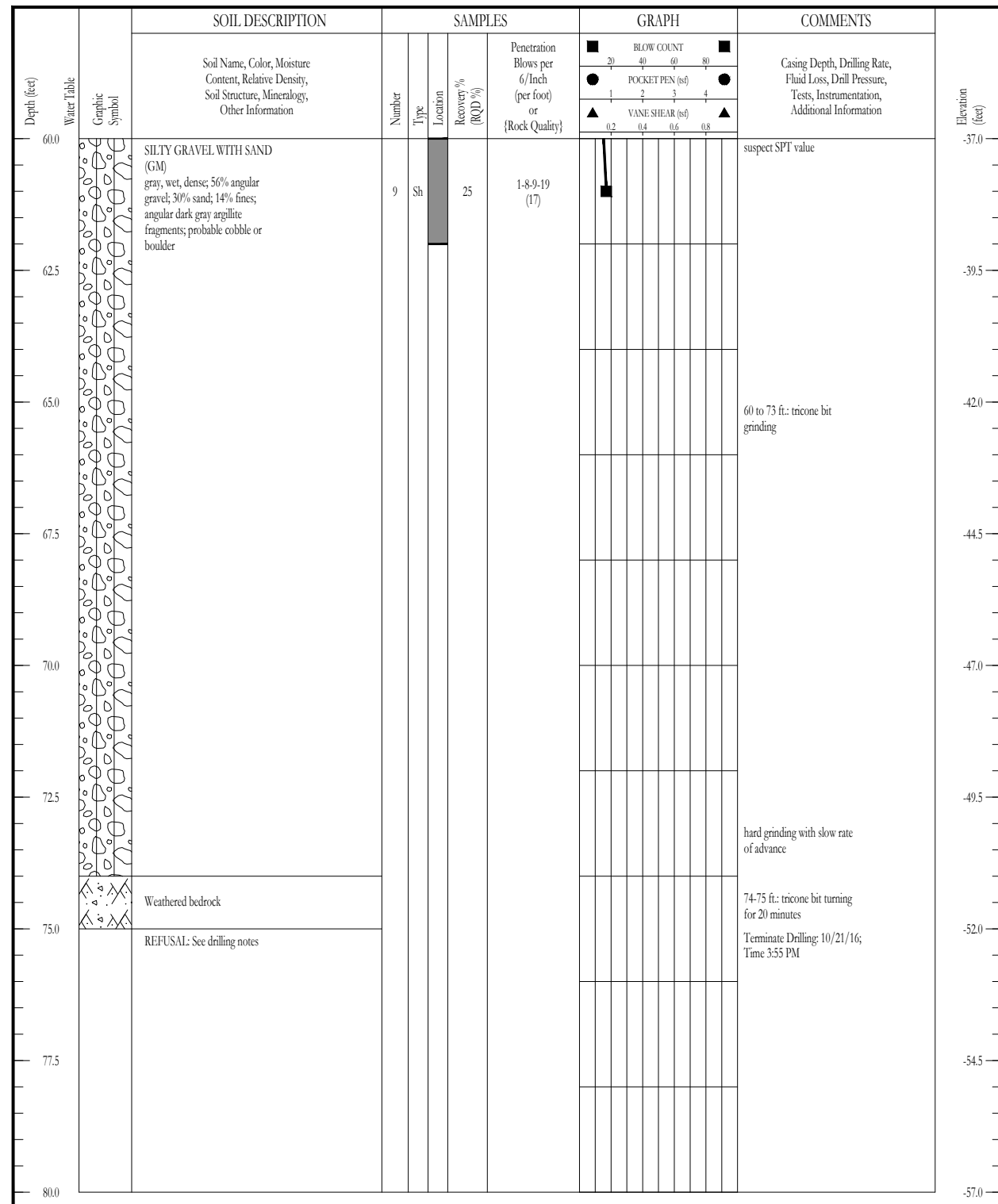


REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

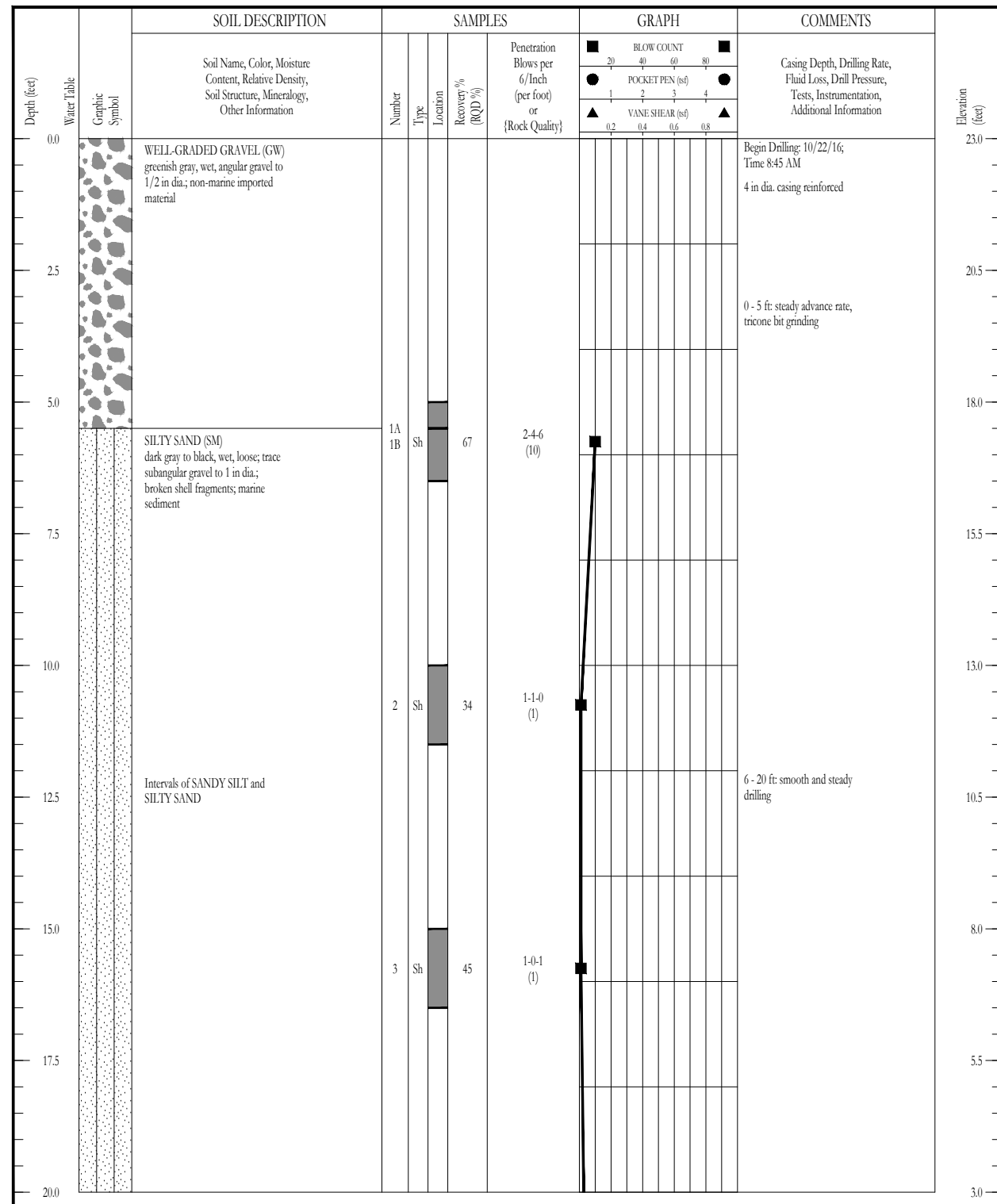
	9360 Glacier Highway Ste 100 Juneau, Alaska 99801 Phone: 907-586-2093 Fax: 907-586-2099 www.pndengineers.com
	DESIGN: PJD CHECKED: CRS DRAWN: PJD APPROVED: CRS

SCALE: NTS
DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA STATTER HARBOR IMPROVEMENTS PH III(A) CBJ CONTRACT NO. DH18-013	
SHEET TITLE: BOREHOLE LOGS	2.09 SHEET 14 OF 25
PND PROJECT NO.: 152069.07	



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-8	FIGURE B-15 4 of 4



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-9	FIGURE B-16 1 of 2

65% DESIGN SUBMITTAL

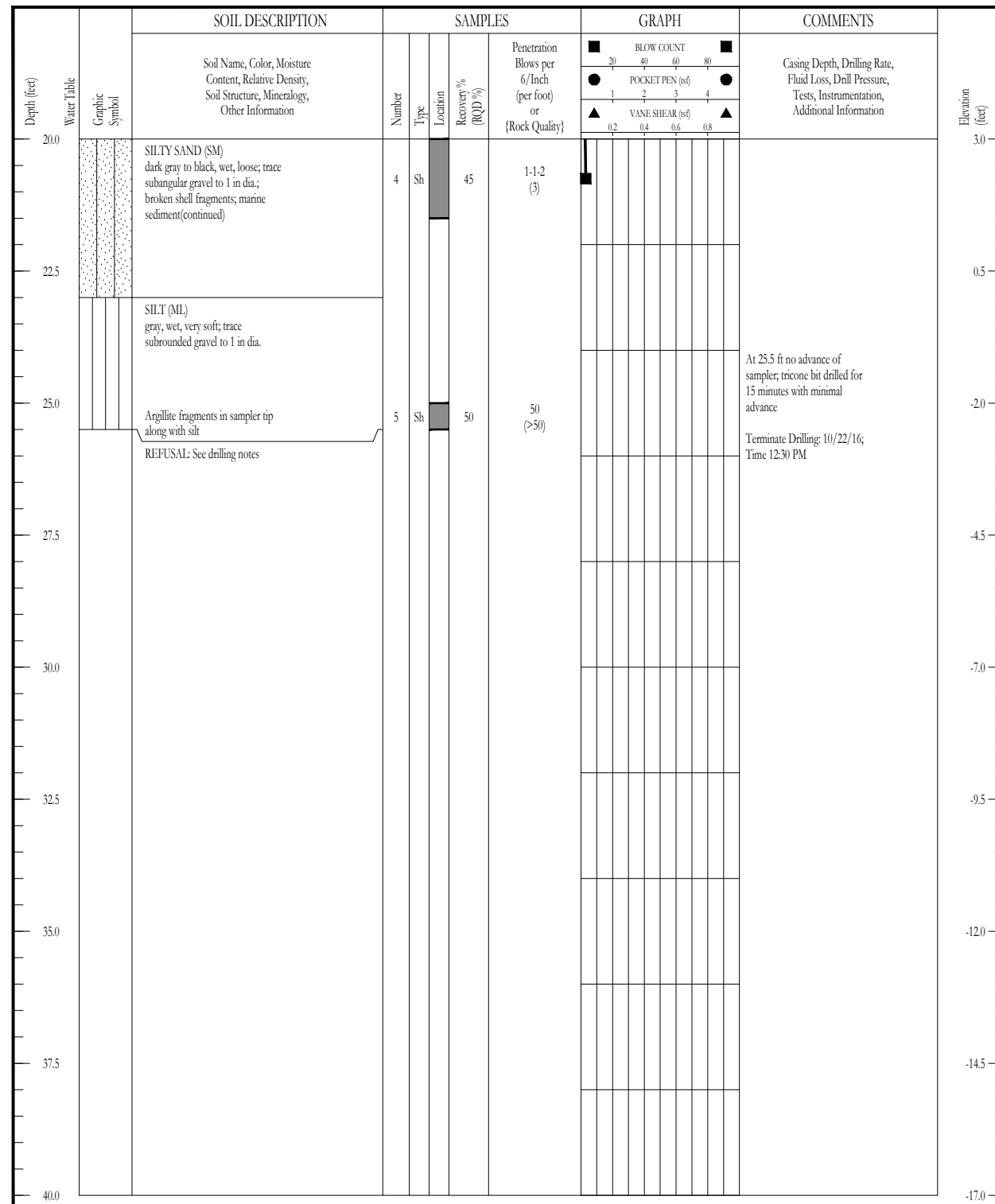


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REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

	9360 Glacier Highway Ste 100 Juneau, Alaska 99801 Phone: 907-586-2093 Fax: 907-586-2099 www.pndengineers.com	
	DESIGN: PJD DRAWN: PJD	CHECKED: CRS APPROVED: CRS

DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA STATTER HARBOR IMPROVEMENTS PH III(A) CBJ CONTRACT NO. DH18-013	
SHEET TITLE: BOREHOLE LOGS	2.10 SHEET 15 OF 25
PND PROJECT NO.: 152069.07	



	Logged By: PJD Data Entry: PJD Checked: SCS Project No.: 152069 Date: Oct. 2016	STATTER HARBOR IMPROVEMENTS PH III AUKE BAY Juneau, Alaska	
		BH-9	FIGURE B-16 2 of 2

65% DESIGN SUBMITTAL

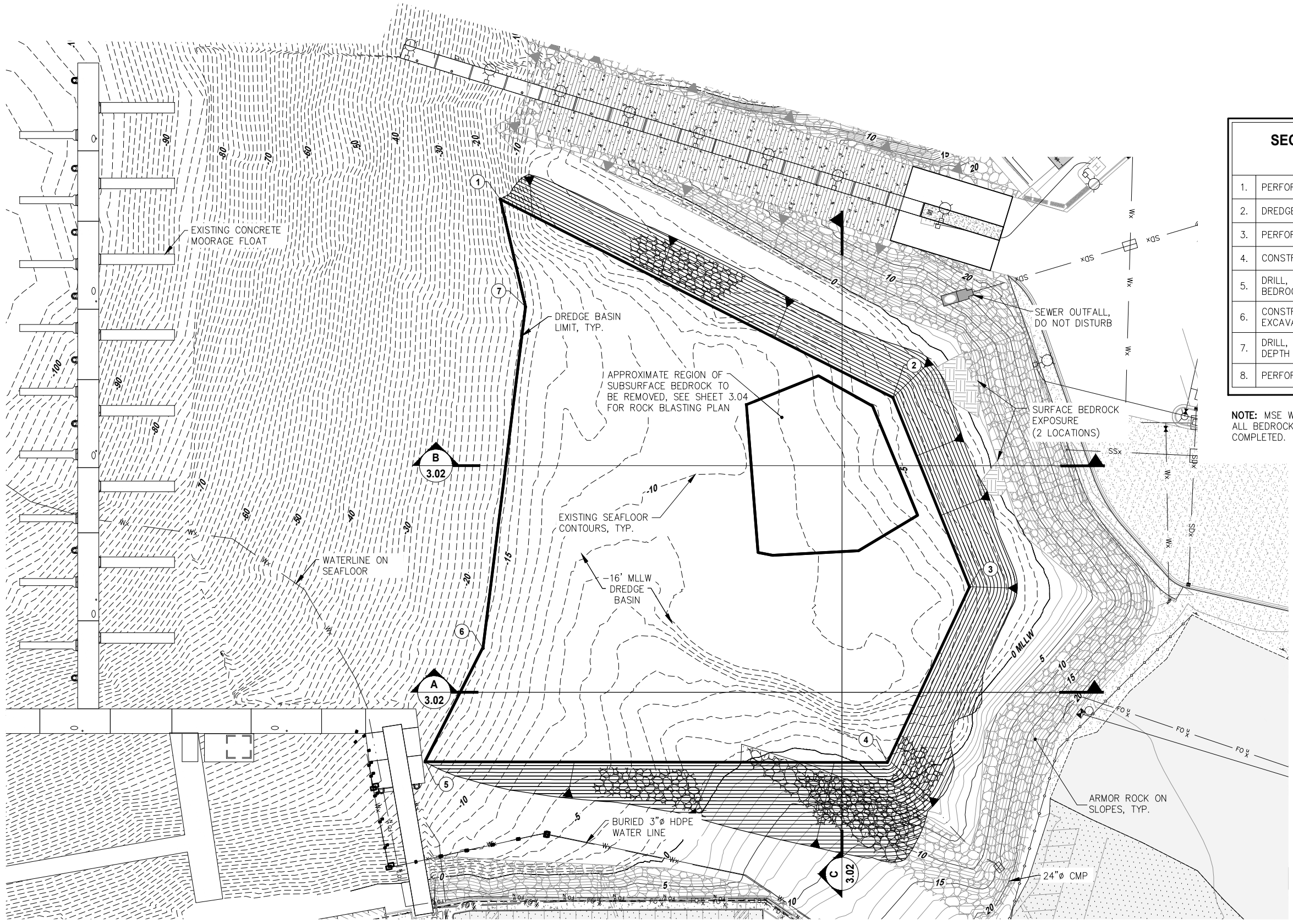


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	DESIGN: PJD DRAWN: PJD	CHECKED: CRS APPROVED: CRS

DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA STATTER HARBOR IMPROVEMENTS PH III(A) CBJ CONTRACT NO. DH18-013	
SHEET TITLE: BOREHOLE LOGS	2.11 SHEET 16 OF 25
PND PROJECT NO.: 152069.07	

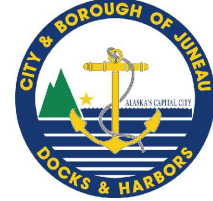


SEQUENCING OF DREDGE OPERATIONS SUMMARY	
1.	PERFORM PRE-DREDGE SURVEY
2.	DREDGE BASIN TO DESIGN DEPTH OR BEDROCK INTERFACE
3.	PERFORM POST DREDGE PRE-BEDROCK REMOVAL SURVEY
4.	CONSTRUCT PHASE 1 DRILL PAD FILL (SEE SHEET 3.05)
5.	DRILL, BLAST & REMOVE PORTION OF PHASE 1 DRILL PAD AND BEDROCK TO DESIGN DEPTH
6.	CONSTRUCT PHASE 2 DRILL PAD FILL FROM PH1 USABLE EXCAVATION
7.	DRILL, BLAST & REMOVE ALL FILL AND BEDROCK TO DESIGN DEPTH
8.	PERFORM POST BEDROCK REMOVAL SURVEY

NOTE: MSE WALL CONSTRUCTION SHALL NOT PROCEED UNTIL ALL BEDROCK BLASTING HAS BEEN SATISFACTORILY COMPLETED.

DREDGE BASIN LAYOUT TABLE		
MARK	NORTHING	EASTING
①	510452.53	484901.12
②	510627.33	485079.40
③	510633.95	485195.37
④	510557.69	485274.68
⑤	510309.24	485189.92
⑥	510361.38	485138.91
⑦	510446.45	484963.49

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 DRAWN: PJD APPROVED: CRS

SCALE: SCALE IN FEET
 0 30 60 FT.

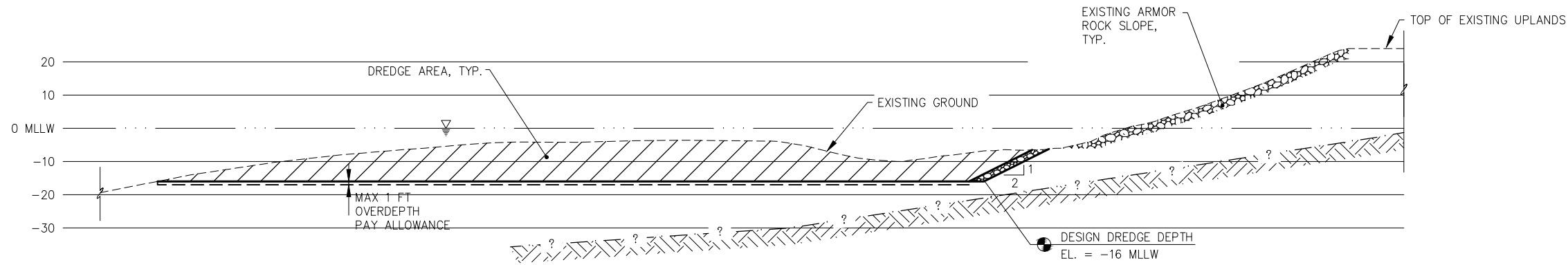
DATE: March 21, 2018

**CITY & BOROUGH OF JUNEAU, ALASKA
 STATTER HARBOR IMPROVEMENTS PH III(A)
 CBJ CONTRACT NO. DH18-013**

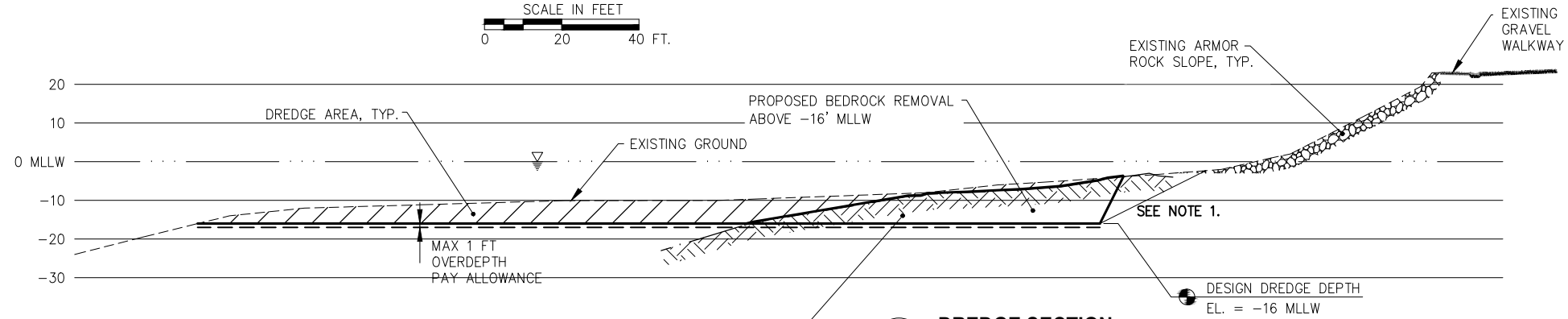
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PND PROJECT NO.: 152069.07

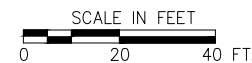
3.01
 SHEET
 17 OF 25



A
3.01
DREDGE SECTION

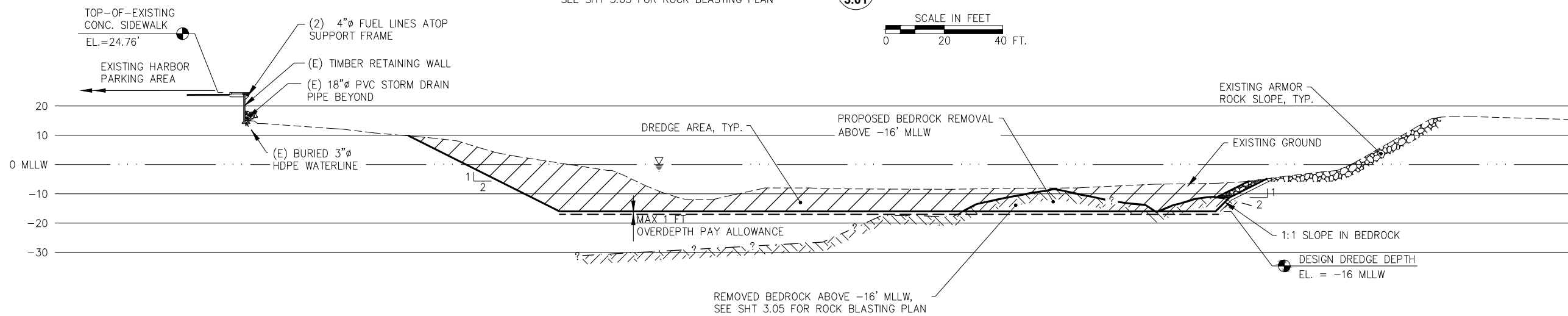


B
3.01
DREDGE SECTION

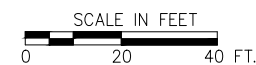


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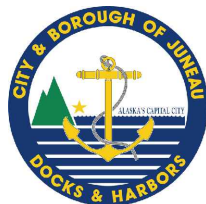
1. WHERE BEDROCK: SLOPE CUT 1H:2V; WHERE SOIL: SLOPE 2H:1V AND PLACE ARMOR ROCK ON DREDGE SLOPES AS SHOWN SECTION A
2. NEW MSE WALL NOT SHOWN FOR CLARITY.



C
3.01
DREDGE SECTION



65% DESIGN SUBMITTAL



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SCALE: AS SHOWN

DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE: **DREDGE SECTIONS**

3.02

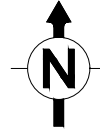
PND PROJECT NO.: 152069.07

SHEET 18 OF 25

OFFSHORE DISPOSAL SITE TARGET CENTER:

LAT: N 58°22'19"
 LONG: W 134°39'58"

NOTE:
 DISPOSE WITHIN 240 FEET +/- FROM CENTER ONLY



PERMITTED AREA FOR DREDGE MATERIAL FOOTPRINT ON SEAFLOOR:

NORTHWEST CORNER:

LAT: N 58°22'30.37"
 LONG: W 134°40'7.03"

NORTHEAST CORNER:

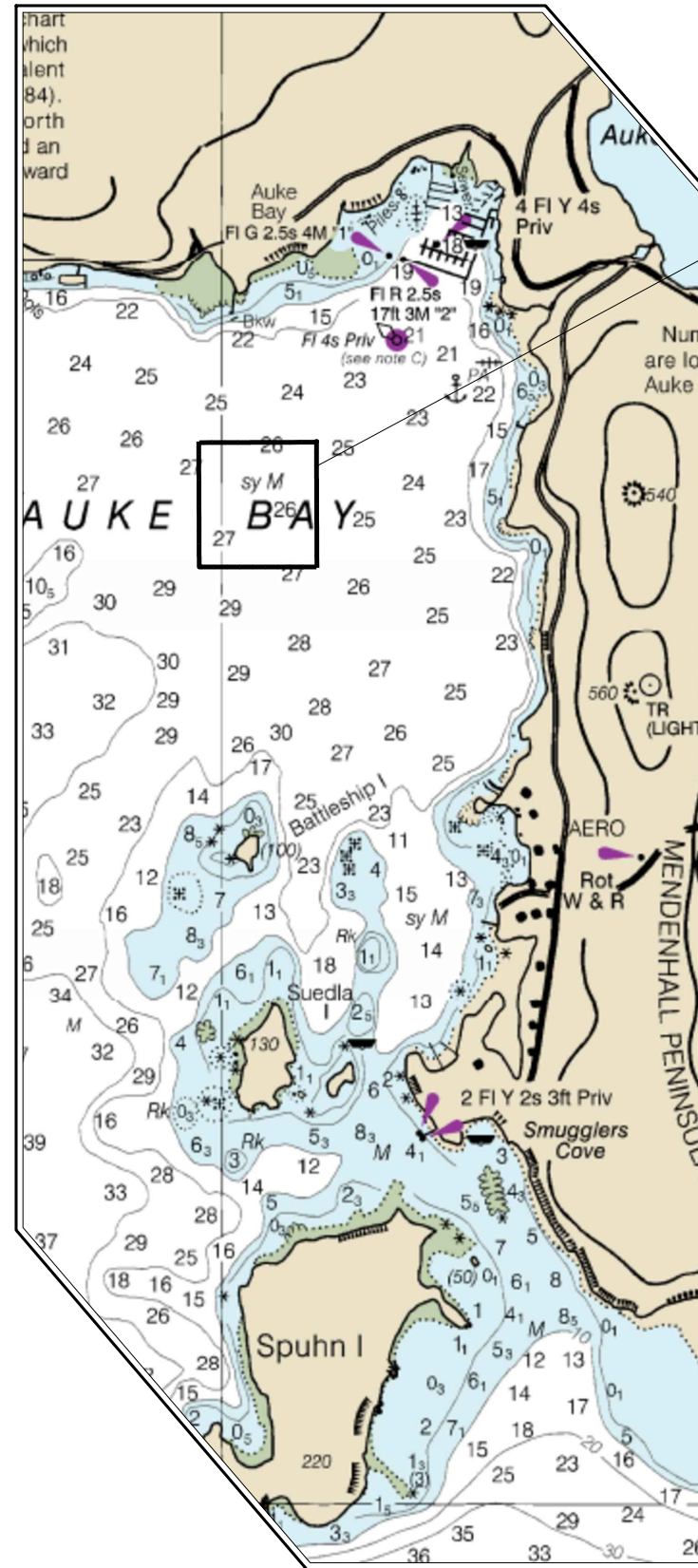
LAT: N 58°22'30.39"
 LONG: W 134°39'35.64"

SOUTHEAST CORNER:

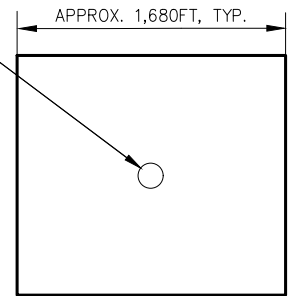
LAT: N 58°22'12.64"
 LONG: W 134°39'34.98"

SOUTHWEST CORNER:

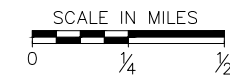
LAT: N 58°22'12.42"
 LONG: W 134°40'5.82"



PROPOSED OFFSHORE DISPOSAL SITE CENTER ± 65 ACRES



OFFSHORE DISPOSAL SITE



BATHYMETRY FROM: NOAA 17315
 GASTINEAU CHANNEL AND TAKU INLET

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REVISIONS					
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SCALE: AS SHOWN

DATE: March 21, 2018

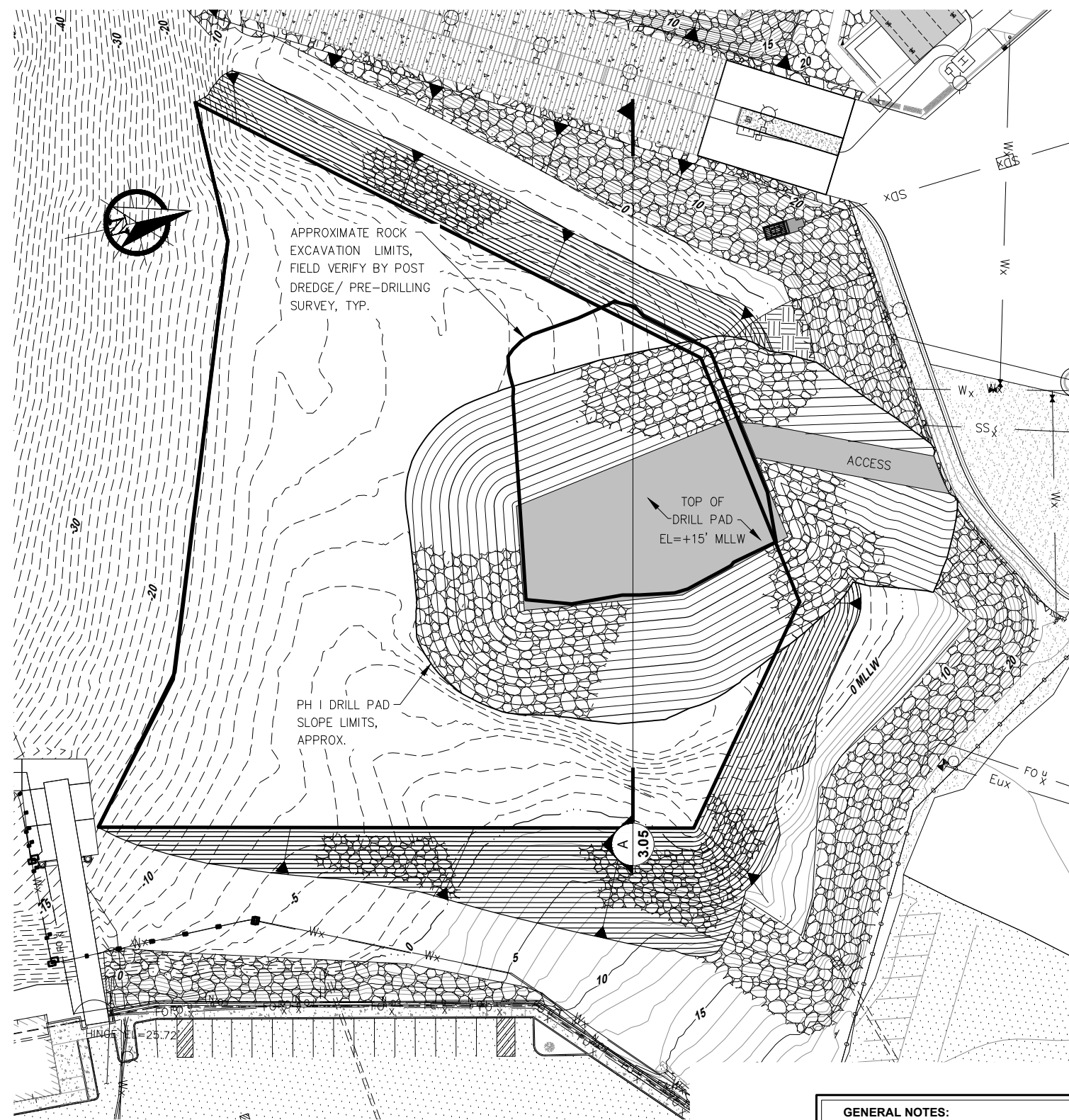
CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE:
DREDGE OFFSHORE DISPOSAL PLAN

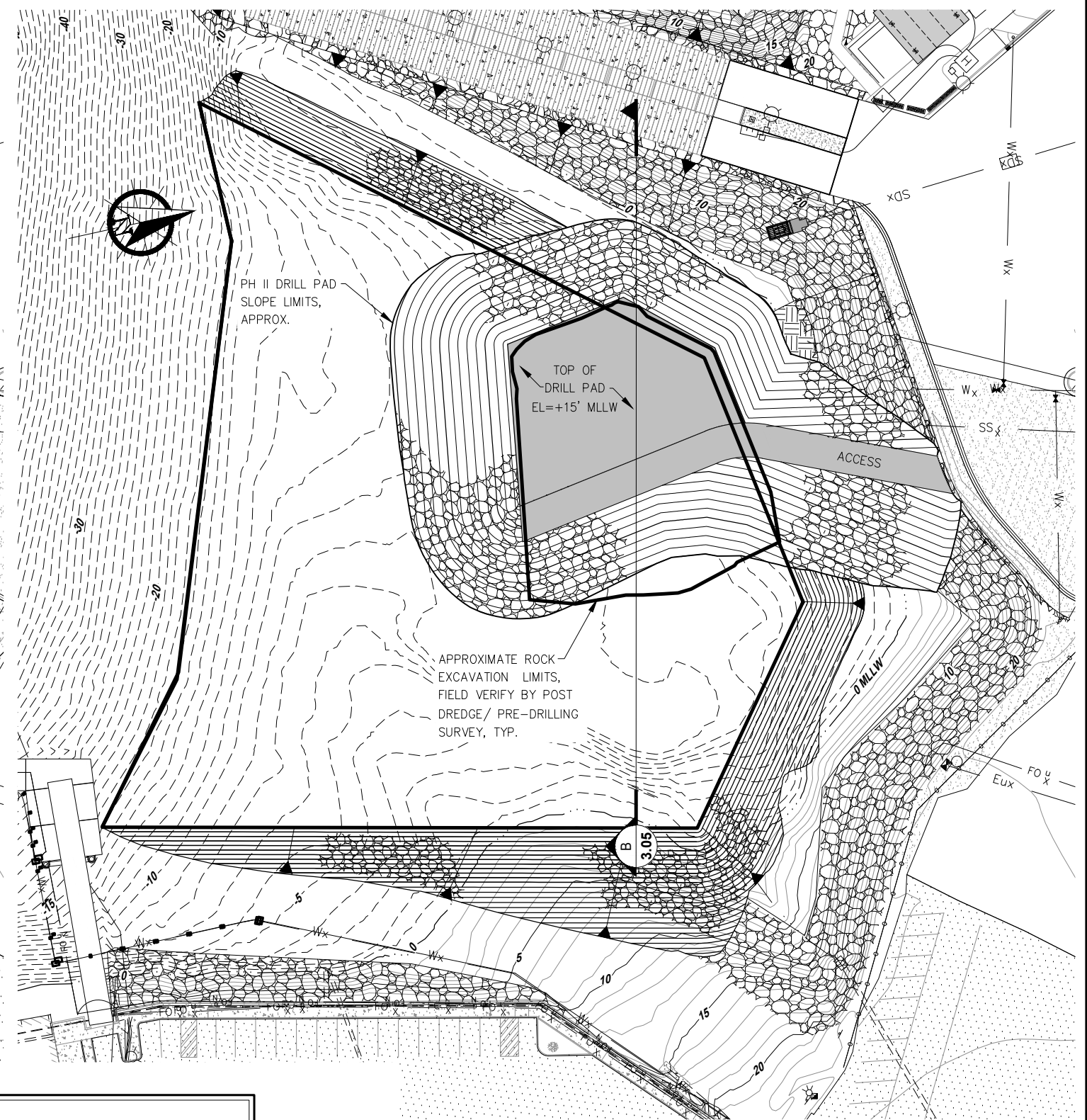
PND PROJECT NO.: 152069.07

3.03

SHEET
19 OF 25



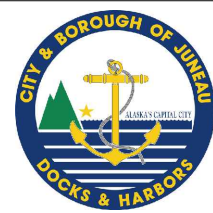
BEDROCK EXCAVATION SITE PLAN - PHASE I



BEDROCK EXCAVATION SITE PLAN - PHASE II

- GENERAL NOTES:**
1. ADJUST DRILL PAD LIMITS AS REQUIRED BY ENGINEER FOLLOWING POST DREDGE/PRE-DRILLING SURVEY
 2. CONSTRUCT PH 1 DRILL PAD FIRST
 3. CONSTRUCT PH 2 DRILL PAD FROM PH 1 USABLE EXCAVATION

65% DESIGN SUBMITTAL



REVISIONS					
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DESIGN: PND CHECKED: CRS
DRAWN: PJD APPROVED: CRS

SCALE: SCALE IN FEET
0 30 60 FT.

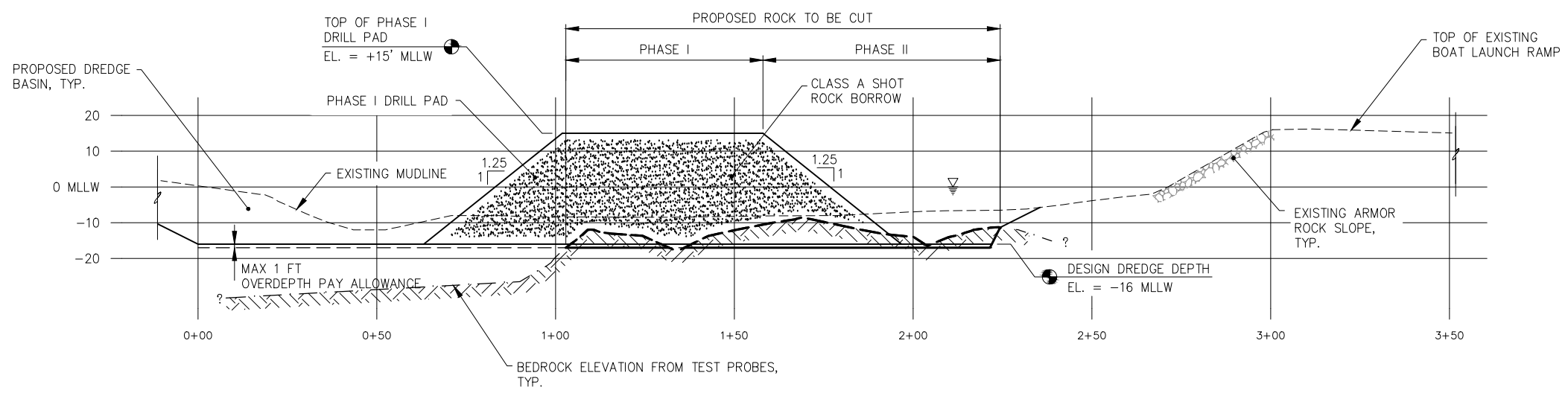
DATE: March 21, 2018

**CITY & BOROUGH OF JUNEAU, ALASKA
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CBJ CONTRACT NO. DH18-013**

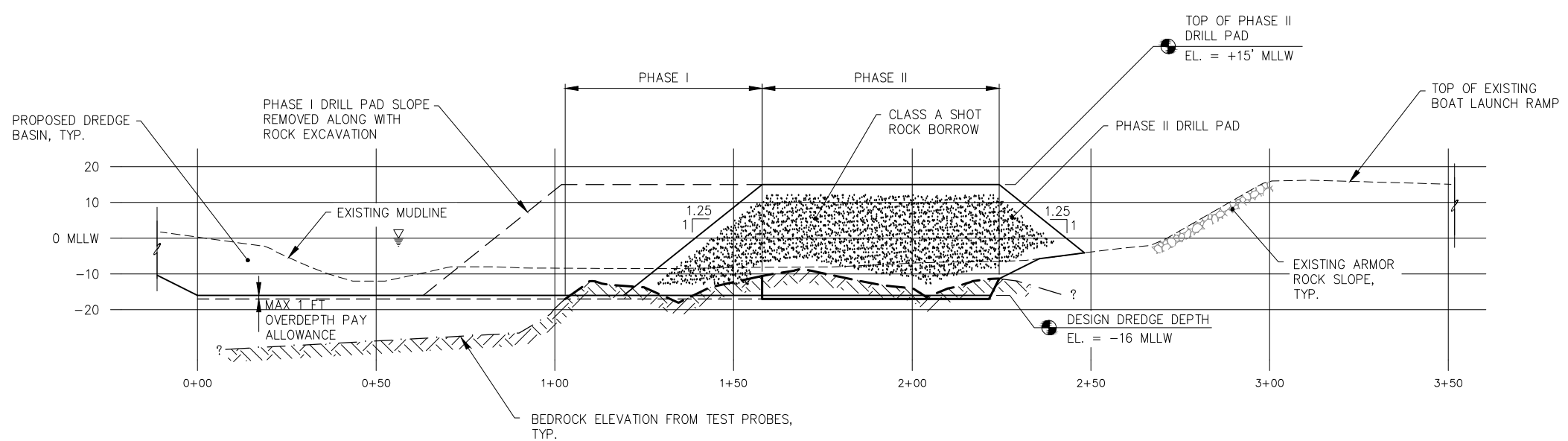
SHEET TITLE: **ROCK BLASTING PLAN:
PHASE I AND PHASE II**

PND PROJECT NO.: 152069.07

3.04
SHEET
20 OF 25

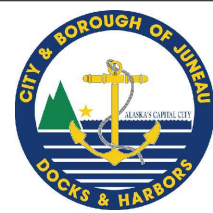


A
3.04
PROFILE WITH PHASE I DRILL PAD - VIEW SOUTH



B
3.04
PROFILE WITH PHASE II DRILL PAD - VIEW SOUTH

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DRAWN: PJD APPROVED: CRS

SCALE: SCALE IN FEET
0 20 40 FT.

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STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE:
ROCK BLASTING PROFILES

DATE: March 21, 2018

PND PROJECT NO.: 152069.07

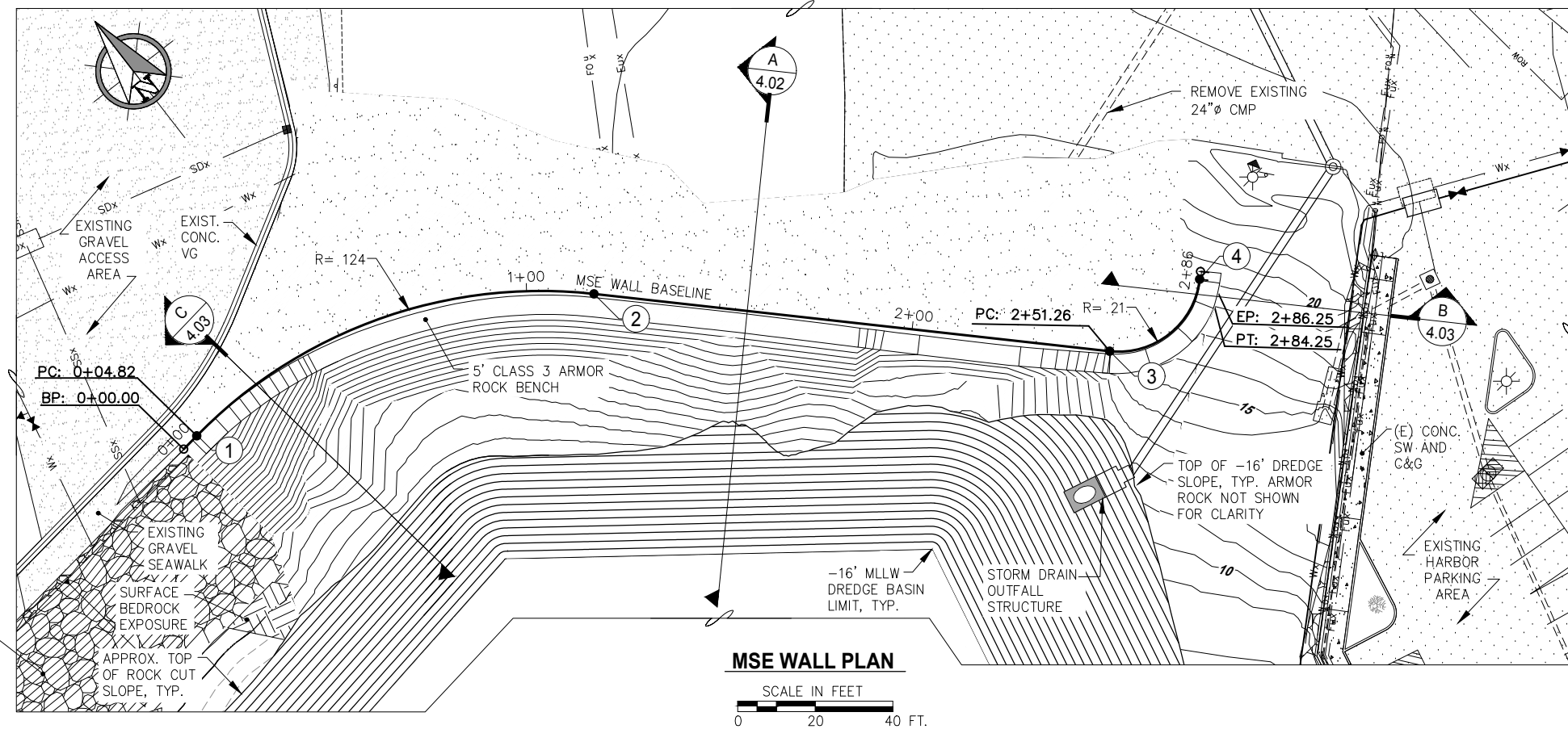
3.05
SHEET
21 OF 25

MSE TOP OF WALL LAYOUT POINT SUMMARY				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	510712.77	485161.75		BEGIN WALL, PC
2	510665.97	485259.98		PT
3	510561.28	485343.33		PT
4	510557.99	485372.84		END WALL, PC

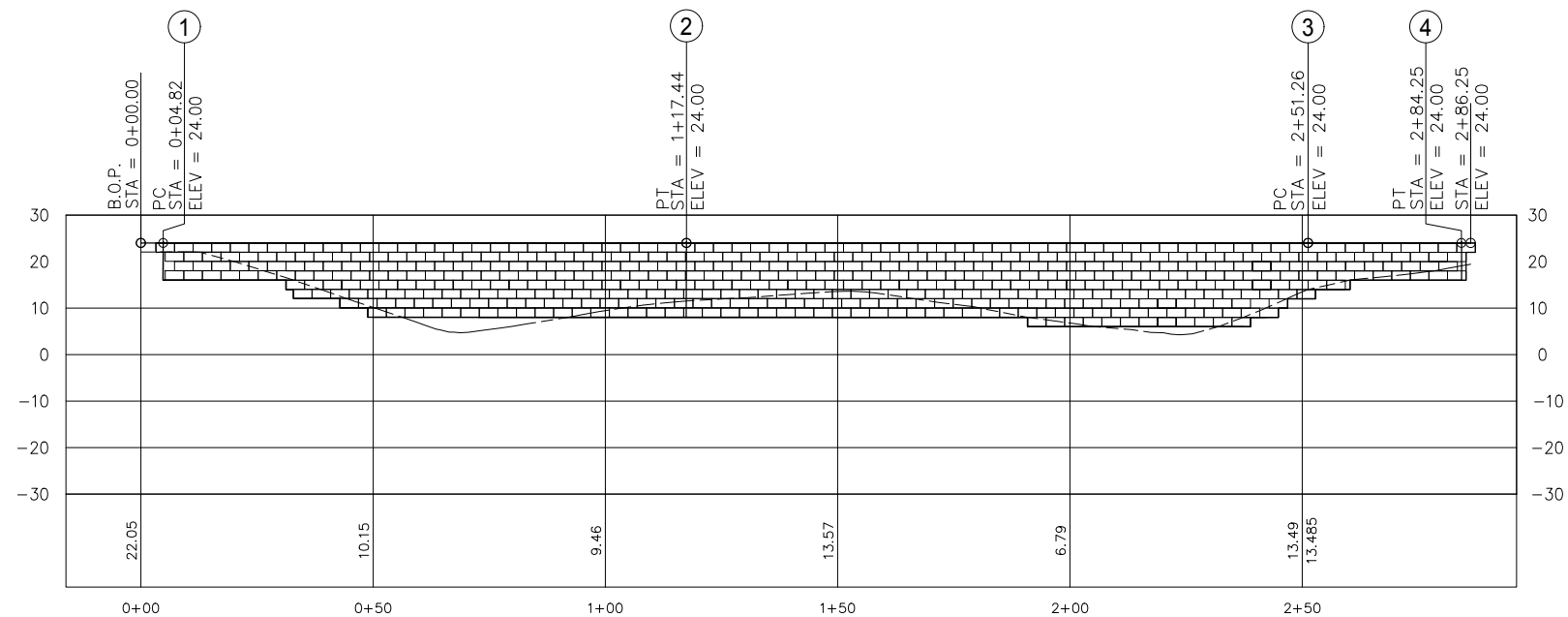
WALL SEQUENCE PLAN REQUIREMENTS

1. COMPLETE BEDROCK DREDGING IN ITS ENTIRETY PRIOR TO PLACING MSE WALL CONCRETE BLOCKS INCLUDING DREDGE SURVEY REQUIREMENTS AND OBTAIN ENGINEER APPROVAL PRIOR TO WALL CONSTRUCTION.

(E) ARMOR ROCK SLOPE, TYP.



MSE WALL PLAN



MSE WALL PROFILE

NOTE: HORIZONTAL SCALE EQUALS VERTICAL SCALE.



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SCALE: AS SHOWN

DATE: March 21, 2018

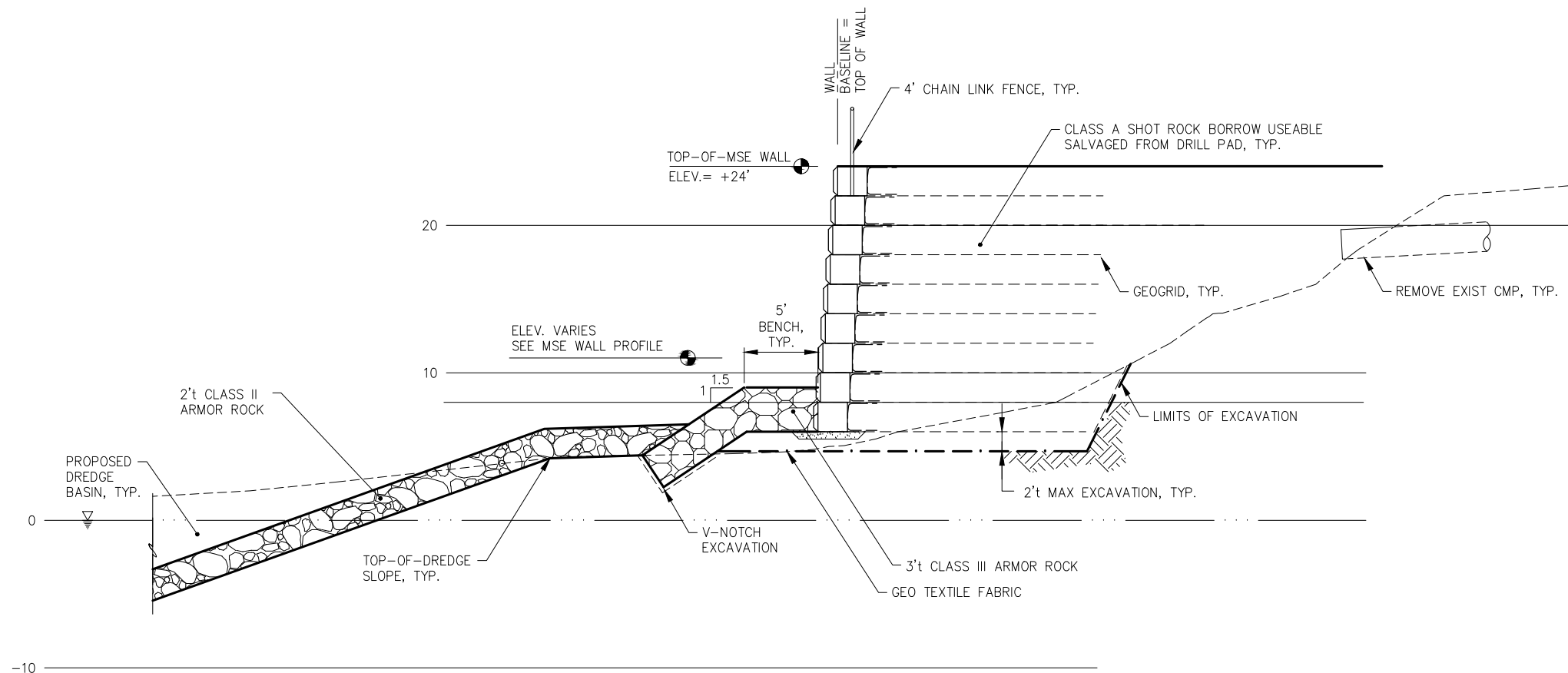
CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE: **RETAINING WALL PLAN AND PROFILE**

4.01

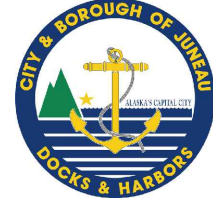
SHEET **22** OF **25**

PND PROJECT NO.: 152069.07



A
4.01
WALL SECTION
SCALE IN FEET
0 5 10 FT.

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SCALE: AS SHOWN

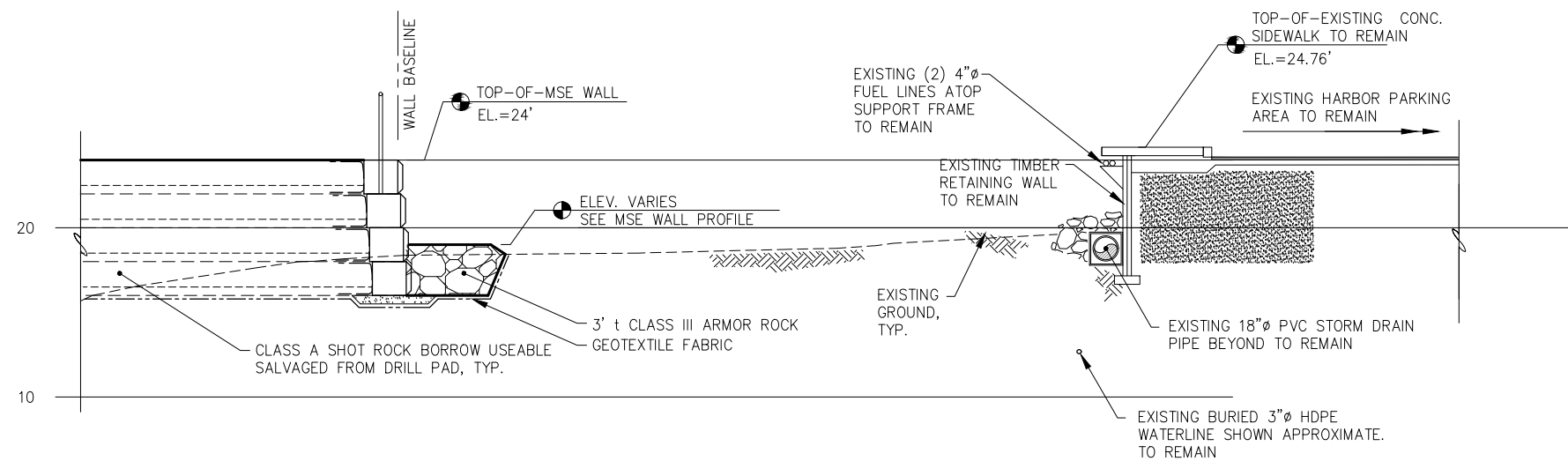
DATE: March 21, 2018

CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

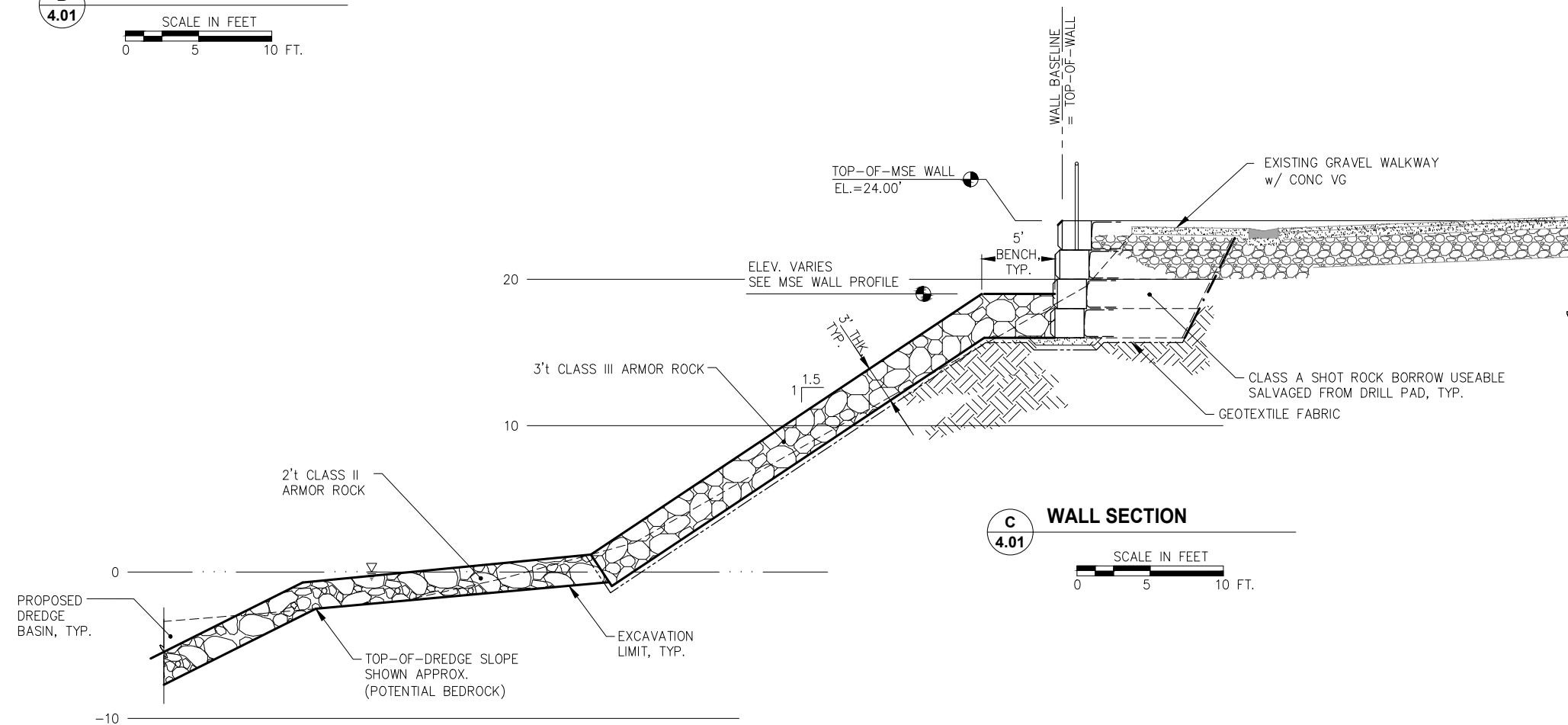
SHEET TITLE: **RETAINING WALL SECTIONS**

PND PROJECT NO.: 152069.07

4.02
SHEET
23 OF 25

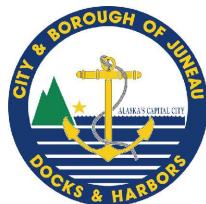


B
4.01
WALL SECTION
SCALE IN FEET
0 5 10 FT.



C
4.01
WALL SECTION
SCALE IN FEET
0 5 10 FT.

65% DESIGN SUBMITTAL



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SCALE:
AS SHOWN

DATE: March 21, 2018

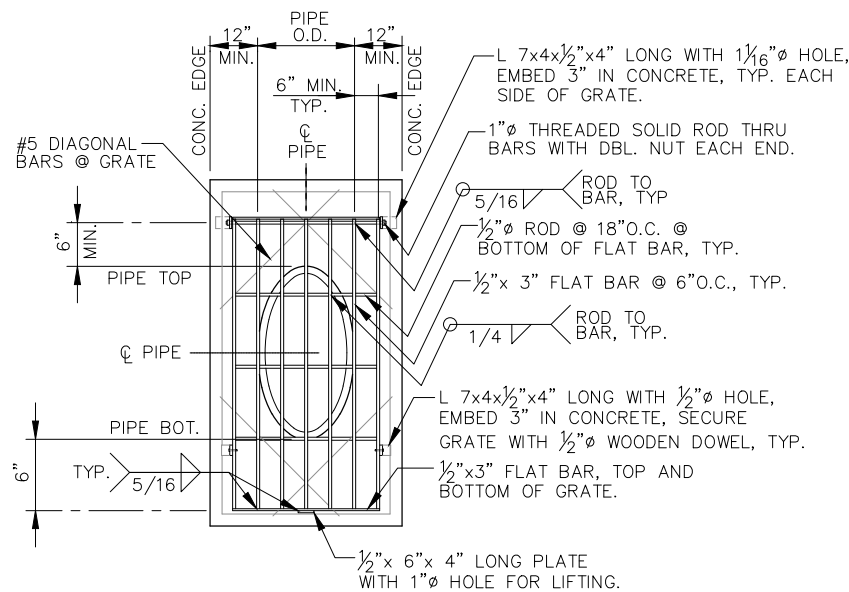
CITY & BOROUGH OF JUNEAU, ALASKA
STATTER HARBOR IMPROVEMENTS PH III(A)
CBJ CONTRACT NO. DH18-013

SHEET TITLE: **RETAINING WALL SECTIONS**

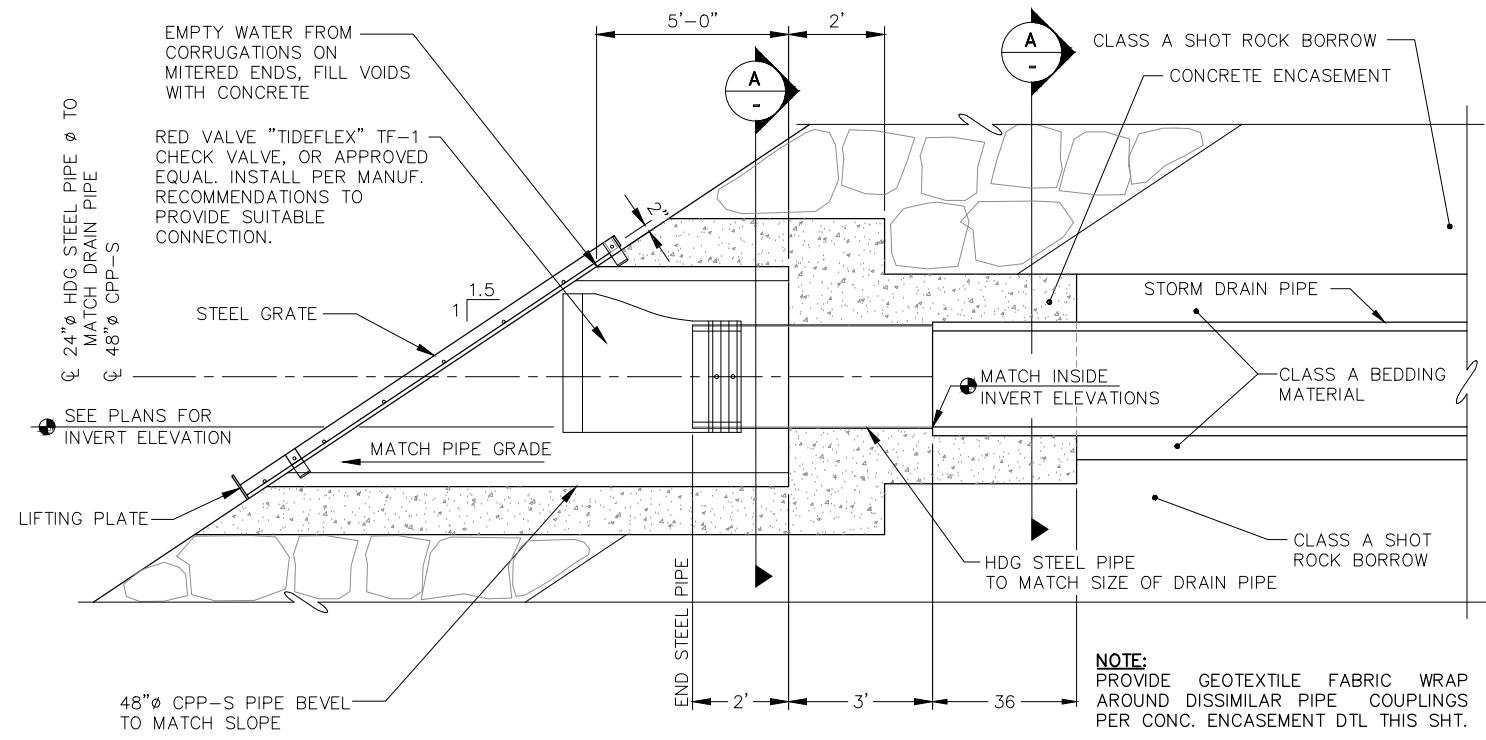
4.03

SHEET
24 OF 25

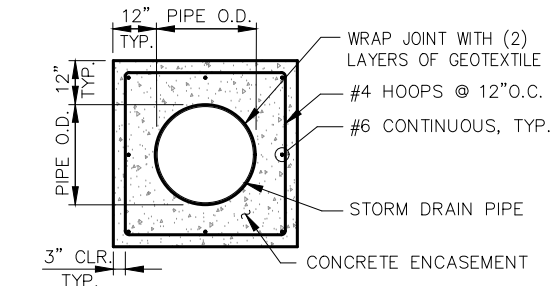
PND PROJECT NO.: 152069.07



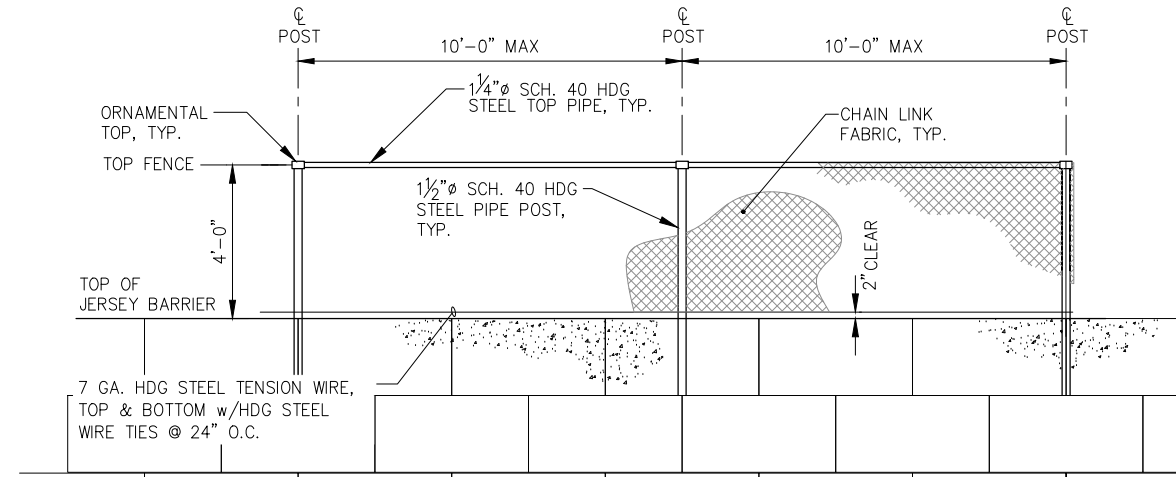
STEEL GRATE



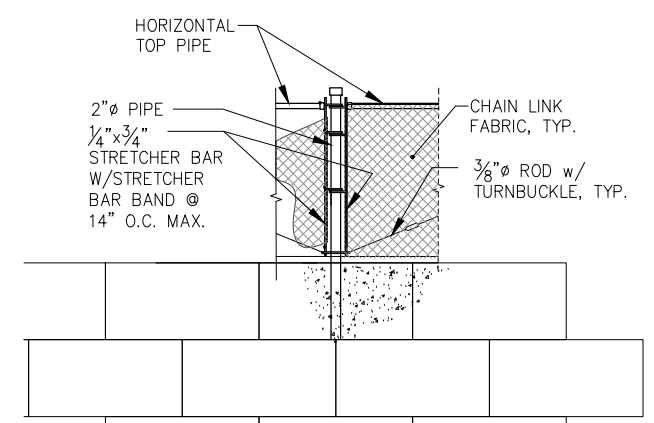
TYPICAL SECTION - STORM DRAIN OUTFALL STRUCTURE



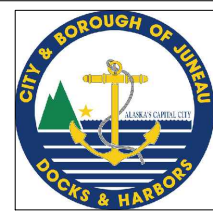
A CONCRETE ENCASEMENT SECTION



FENCE ELEVATION



CORNER AND END FENCE POST CONNECTIONS



REVISIONS					
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SCALE: SCALE IN FEET
0 40 80 FT.

DATE: March 21, 2018

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CBJ CONTRACT NO. DH18-013

SHEET TITLE: **STORM DRAIN DETAILS**

SHEET **5.01**
25 OF 25

PND PROJECT NO.: 152069.07