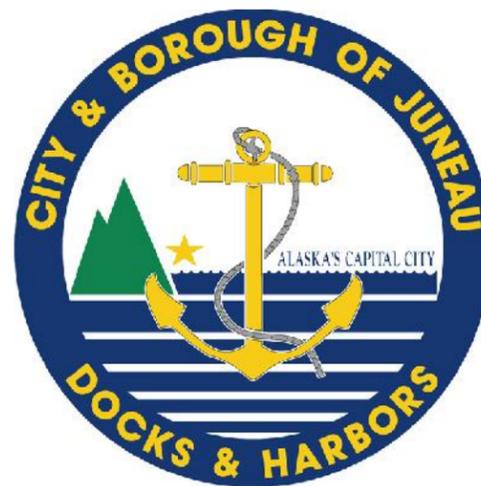


CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II

VOLUME II of II

Contract No. DH13-017

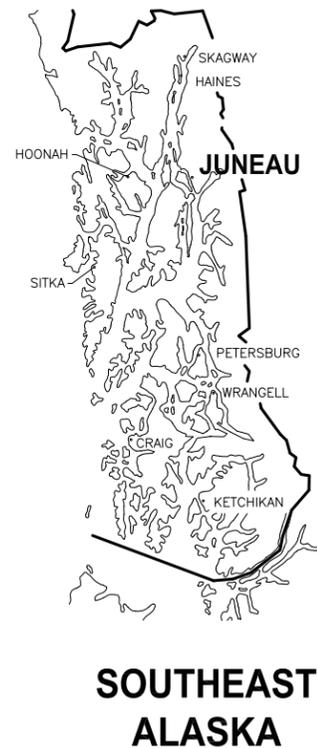


JULY 2013

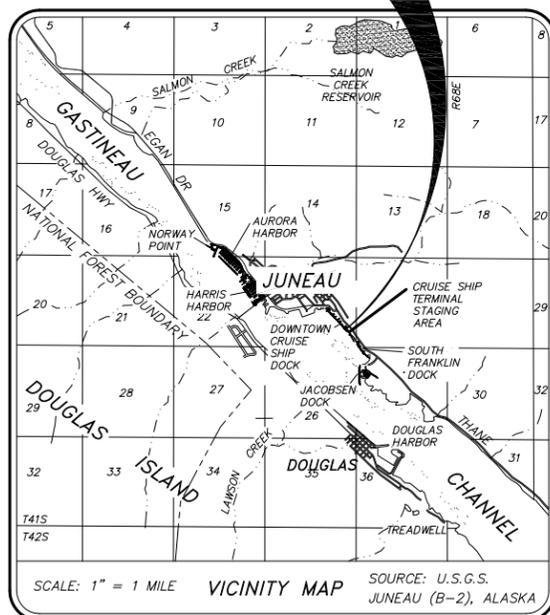
CITY & BOROUGH OF JUNEAU, ALASKA

CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II

CONTRACT NO. DH13-017



THIS PROJECT

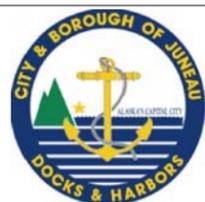


DRAWING INDEX		
SHEET NO.	DWG. NO.	TITLE
GENERAL		
1 OF 52	1.01	COVER SHEET, VICINITY MAPS, DRAWING INDEX
2 OF 52	1.02	GENERAL NOTES, LEGEND AND ABBREVIATIONS
3 OF 52	1.03	EXISTING CONDITIONS, SURVEY CONTROL AND BOREHOLE LOCATIONS
4 OF 52	1.04	GENERAL IMPROVEMENT OVERVIEW
5 OF 52	1.05	STANDARD BOREHOLE LOG DETAILS
6 OF 52	1.06	BOREHOLE LOGS
7 OF 52	1.07	BOREHOLE LOGS
8 OF 52	1.08	DEMOLITION SITE PLAN
9 OF 52	1.09	DEMOLITION SUMMARY TABLE
STAGING AREA		
10 OF 52	2.01	PARTIAL SITE PLAN
11 OF 52	2.02	PARTIAL SITE PLAN
12 OF 52	2.03	ENLARGED PLAN DETAILS
13 OF 52	2.04	ENLARGED PLAN DETAILS
14 OF 52	2.05	ENLARGED PLAN DETAILS
15 OF 52	2.06	ENLARGED PLAN DETAILS
16 OF 52	2.07	POINT LAYOUT TABLE
17 OF 52	2.08	POINT LAYOUT TABLE
18 OF 52	2.09	STORM DRAIN PLAN
19 OF 52	2.10	STORM DRAIN PLAN
20 OF 52	2.11	WATERLINE PLAN AND DETAILS
21 OF 52	2.12	SANITARY SEWER CROSSING
22 OF 52	2.13	LIGHT POLE & ELECTRICAL VAULT LOCATIONS
23 OF 52	2.14	LIGHT POLE & ELECTRICAL VAULT LOCATIONS
24 OF 52	2.15	PARTIAL STRIPING AND SIGNAGE PLAN
25 OF 52	2.16	PARTIAL STRIPING AND SIGNAGE PLAN
26 OF 52	2.17	STRIPING AND SIGNAGE DETAILS
27 OF 52	2.18	TYPICAL SECTIONS
28 OF 52	2.19	TYPICAL SECTIONS
29 OF 52	2.20	TYPICAL SECTIONS
30 OF 52	2.21	TYPICAL DETAILS
31 OF 52	2.22	TYPICAL DETAILS
32 OF 52	2.23	TYPICAL DETAILS
33 OF 52	2.24	TYPICAL DETAILS

DRAWING INDEX		
SHEET NO.	DWG. NO.	TITLE
COVERED SHELTER		
34 OF 52	A3.01	SHUTTLE PARKING CANOPY ENLARGED PLAN AND SECTION
35 OF 52	A3.02	CANOPY DETAILS
36 OF 52	A3.03	BUS CANOPY ENLARGED PLAN AND SECTION
LANDSCAPE		
37 OF 52	L4.01	LANDSCAPE DEMOLITION PLAN
38 OF 52	L4.02	SOILS AND LAYOUT PLAN
39 OF 52	L4.03	PLANTING PLAN
40 OF 52	L4.04	PLANTING PLAN
41 OF 52	L4.05	LANDSCAPE DETAILS
42 OF 52	L4.06	LANDSCAPE DETAILS
ELECTRICAL		
43 OF 52	E5.01	EXISTING OVERALL SITE PLAN
44 OF 52	E5.02	EXISTING PARTIAL SITE PLAN
45 OF 52	E5.03	EXISTING PARTIAL SITE PLAN
46 OF 52	E5.04	NEW PARTIAL SITE PLAN
47 OF 52	E5.05	NEW PARTIAL SITE PLAN
48 OF 52	E5.06	DETAILS
49 OF 52	E5.07	DETAILS
50 OF 52	E5.08	DUCTBANK DETAILS
51 OF 52	E5.09	MANHOLE DETAILS
52 OF 52	E5.10	MANHOLE DETAILS

PROJECT SCHEDULE	
DESCRIPTION	SCHEDULE
1. EARLIEST FIELD START	SEPTEMBER 19, 2013
2. FULL FIELD START	OCTOBER 1, 2013
3. SUBSTANTIAL COMPLETION	MAY 2, 2014
4. FINAL COMPLETION OF ALL WORK UNDER THIS CONTRACT.	MAY 30, 2014

NOTE:
SEE DEMOLITION SITE PLAN FOR ADDITIONAL SCHEDULE PROVISIONS.



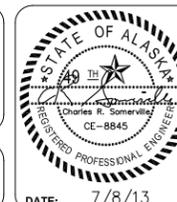
REVISIONS				
REV.	DATE	DESCRIPTION	DWN.	APP.

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DRAWN: PJD APPROVED: CRS



CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II
CONTRACT NO. DH13-017

SHEET TITLE:
COVER SHEET, VICINITY MAPS, DRAWING INDEX

PND PROJECT NO.: 102081

1.01
SHEET
1 OF 52

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)'S 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 FINISH GRADES AT PROJECT LIMITS AND WHERE REQUIRED TO MATCH ELEVATIONS AT EXISTING ROADS.

3. ALL EXISTING ASPHALT CONCRETE MATERIALS TO BE REMOVED SHALL BE DELIVERED TO THE CBJ ASPHALT STOCKPILE AT LEMON CREEK GRAVEL PIT. ALL OTHER REMOVED MATERIALS THAT ARE NOT SUITABLE FOR REUSE ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND PROPERLY DISPOSED OF AT AN APPROVED SITE.

4. 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.,
COMMUNICATIONS, WATER AND SEWER LINES
ARE IN THE AREA. UTILITIES SHOWN HERE DO
NOT SUBSTITUTE FOR FIELD LOCATES.

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

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

7. 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.

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

LEGEND

EXISTING	THIS PROJECT	
		SURVEY CONTROL
		BOLLARD
		CURB & GUTTER
		ELECTRICAL VAULT COVER
		FIRE HYDRANT
		LAYOUT POINT
		LIGHT POLE
		SANITARY SEWER MANHOLE
		SAWCUT
		STORM DRAIN MANHOLE
		STORM DRAIN INLET
		SIGN
		TEST HOLE
		TREE/VEGETATION
		WATER VALVE
		LAYOUT RADIUS
		ELECTRICAL (UNDERGROUND)
		WATER
		SANITARY SEWER
		COMMUNICATION (CABLE/TEL)
		STORM DRAIN
		FORCE MAIN
		GRADE BREAK
		SIGN POST (POST ONLY)

ABBREVIATIONS

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

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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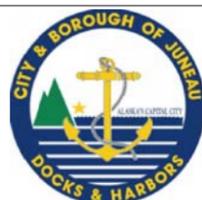


CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II
CONTRACT NO. DH13-017

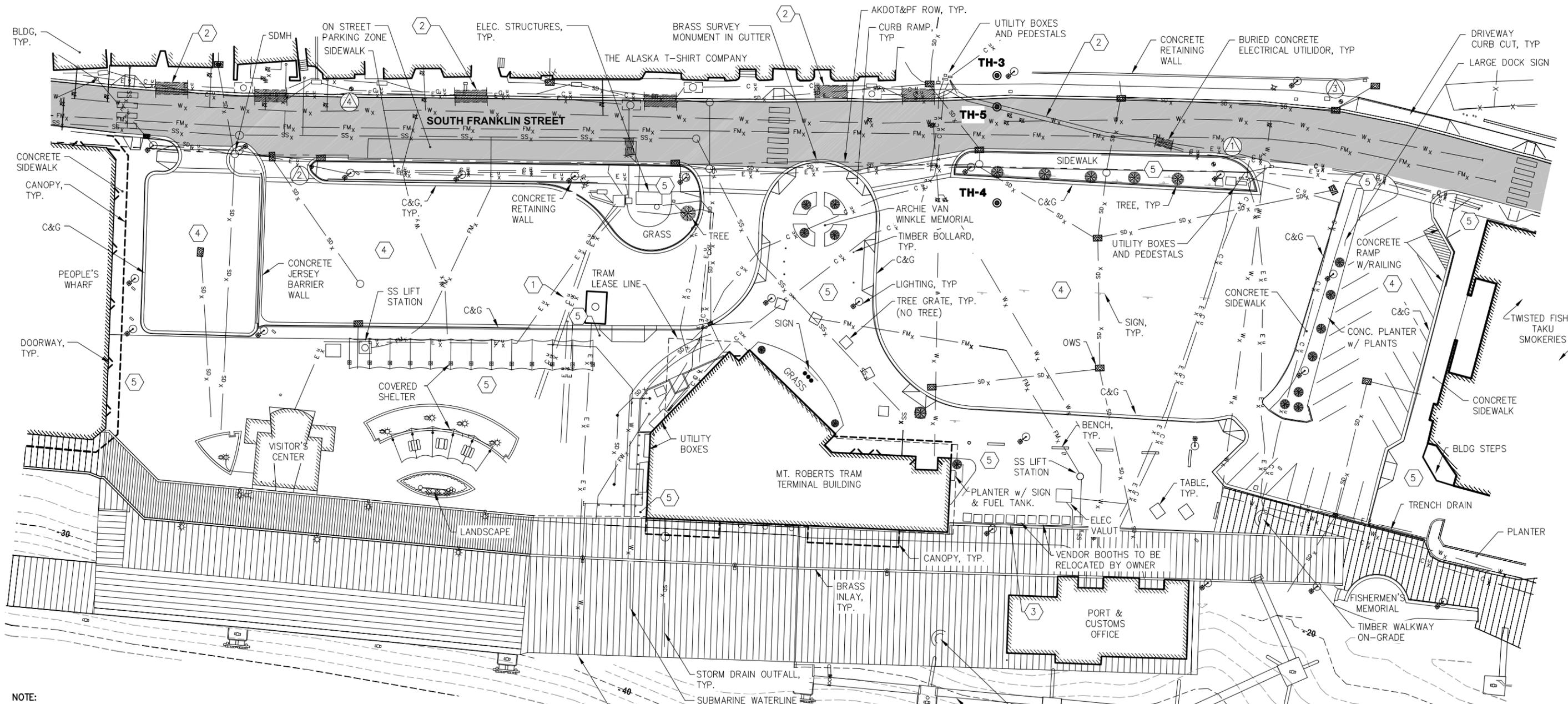
SHEET TITLE:
GENERAL NOTES, LEGEND AND ABBREVIATIONS

PND PROJECT NO.: 102081

1.02
 SHEET
2 OF 52



DATE: 7/8/13



- NOTE:**
- EXISTING CONDITIONS AND UTILITY LOCATIONS SHOWN ARE BASED ON FIELD SURVEYS BY PND AND OTHERS, UTILITY LOCATES, PROPERTY INFORMATION AND AS-BUILT RECORDS PROVIDED BY THE CITY AND BOROUGH OF JUNEAU AND THE STATE OF ALASKA DEPARTMENT OF TRANSPORTATION. FIELD VERIFY ALL EXISTING CONDITIONS AND UTILITIES.
 - HORIZONTAL CONTROL ESTABLISHED ON A LOCAL COORDINATE SYSTEM.
 - VERTICAL CONTROL ESTABLISHED ON NAVD 88 VERTICAL DATUM, REFERENCED TO THE NOAA TIDAL BENCHMARK 945 2210 TIDAL 9. THE BENCH MARK IS A DISK SET VERTICALLY IN THE SOUTH CORNER OF THE GASTINEAU APARTMENTS BUILDING AT 127 SOUTH FRANKLIN STREET. BENCHMARK EL=32.185' MLLW.
 - PROPERTY LINE LOCATIONS AND RIGHT-OF-WAY (ROW) ARE SHOWN APPROXIMATE AND ARE BASED ON RECORD PLATS AND FOUND MONUMENTS. A PROPERTY SURVEY WAS NOT CONDUCTED AS PART OF TOPOGRAPHIC SURVEY WORK.



SURVEY CONTROL				
POINT	NORTHING	EASTING	ELEV. (MLLW)	DESCRIPTION
①	478065.88'	532656.98'	29.63'	PK NAIL IN CONTROL JOINT IN SIDEWALK
②	478370.36'	532333.21'	26.82'	MAGNAIL IN TBC JOINT IN SIDEWALK
③	478045.12'	532723.74'	30.86'	PK W/WASHER IN SIDEWALK
④	478384.65'	532373.72'	28.05'	PK W/WASHER IN SIDEWALK

EXISTING CONDITIONS SUMMARY TABLE	
NOTE	DESCRIPTION
①	BURIED UTILITY CONDUITS: (3) ELEC, (2) TV, (2) COMM.
②	BURIED CONCRETE ELECTRICAL CONDUIT CORRIDOR
③	CONCRETE RETAINING WALL BELOW DECK
④	ACP SURFACING
⑤	CONCRETE SURFACING

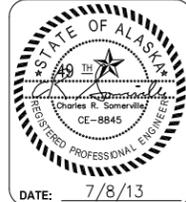
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REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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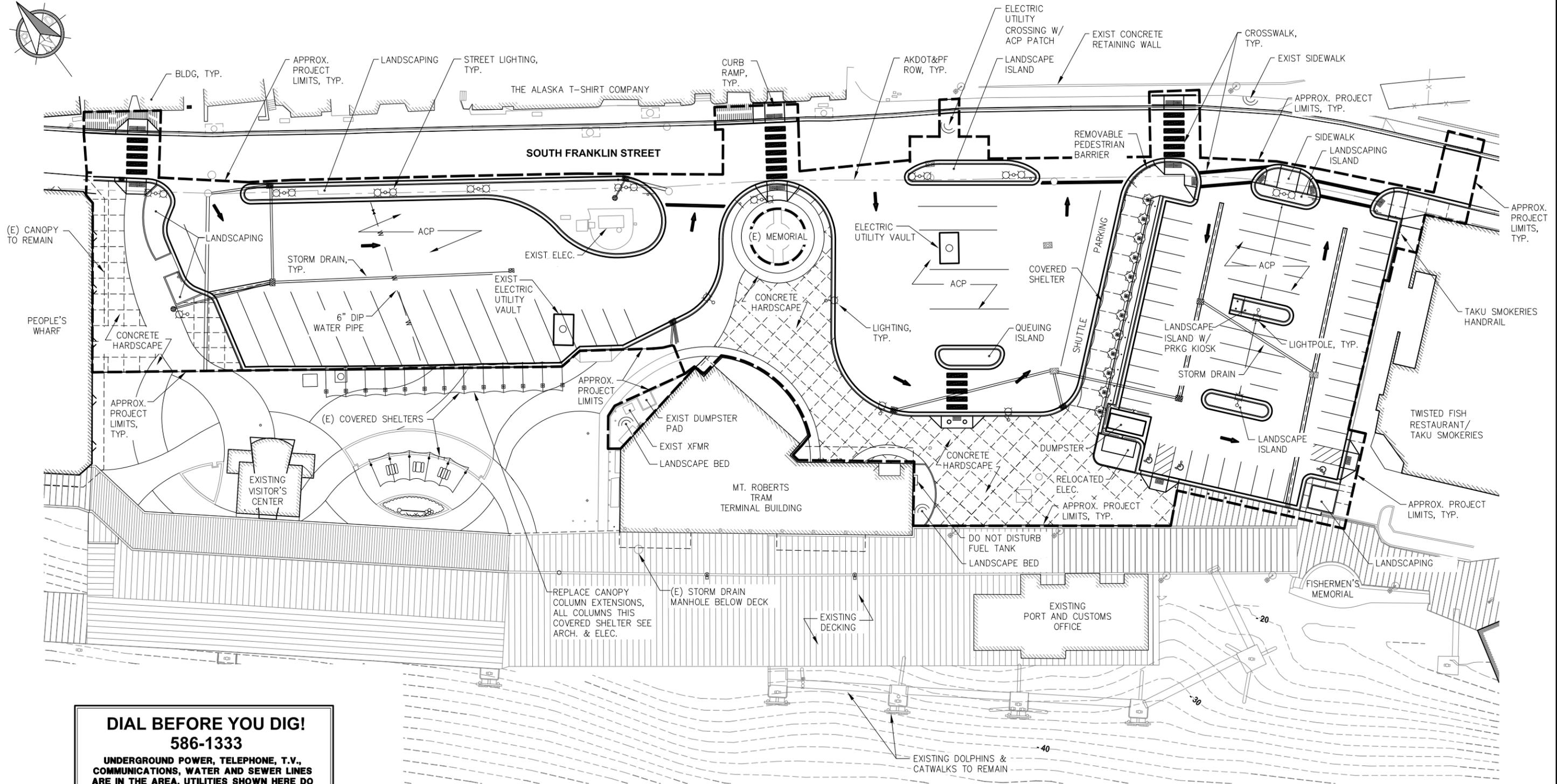


CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II CONTRACT NO. DH13-017

SHEET TITLE:
EXISTING CONDITIONS SURVEY CONTROL AND BOREHOLE LOCATIONS

PND PROJECT NO.: 102081





DIAL BEFORE YOU DIG!
586-1333
 UNDERGROUND POWER, TELEPHONE, T.V.,
 COMMUNICATIONS, WATER AND SEWER LINES
 ARE IN THE AREA. UTILITIES SHOWN HERE DO
 NOT SUBSTITUTE FOR FIELD LOCATES.

GENERAL SITE PLAN

NOTE:
 1. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO DOT&PF ROW
 TO OBTAIN APPROVAL PRIOR TO ANY CONSTRUCTION WITHIN THE DOT&PF ROW.

REVISIONS

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.



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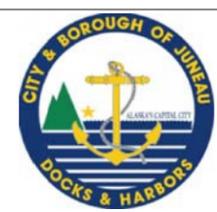
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**CRUISE SHIP TERMINAL STAGING AREA
 IMPROVEMENTS PHASE II
 CONTRACT NO. DH13-017**

SHEET TITLE:
GENERAL IMPROVEMENT OVERVIEW
 PND PROJECT NO.: 102081

1.04
 SHEET
 4 OF 52



DATE: 7/8/13

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		
N ₆₀	Density	Relative Density	N ₆₀	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, Peck, and Mesri 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.

	Designed: PND Drawn: PND Checked: PND Project No.: 102081 Date: Oct 2012	STANDARD BOREHOLE LOG DETAILS
ENGINEERS, INC.		BOREHOLE LOGS FIGURE B-1

Depth (Feet)	Water Table	GRAPHIC SYMBOL	SOIL DESCRIPTION	SAMPLES				Penetration Blows per 6/Inch (per Foot)*	GRAPH	COMMENTS	Elevation (Feet)
				Number	Type	Location	Recovery (%)		■ BLOW COUNT (BPF)* 20 40 60 80 ● POCKET PEN. (TSF) 1 2 3 4 ▲ VANE SHEAR (TSF) 2 4 6 8		
0			0' - 0.30' A.C. PAVEMENT							Begin drilling 10/24/03 8:00 a.m.	24.43
2			POORLY-GRADED GRAVEL W/ SILT AND SAND (GP-GM) Gray, Moist, Dense, Subangular	1	Ss		30	20-20-25 (45)		2' to 3' - Hard, loud drilling (Cobbles/Boulder encountered)	22.43
				1	2	3	4	5	6	7	8

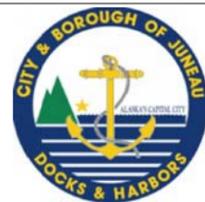
COLUMN DESCRIPTIONS

- 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-1.
- 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.

	Designed: PND Drawn: PND Checked: PND Project No.: 102029.04 Date: Oct 2012	STANDARD BOREHOLE LOG DETAILS
ENGINEERS, INC.		BOREHOLE LOGS FIGURE B-2



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
ENGINEERS, INC.	
DESIGN: PJD CHECKED: TCB DRAWN: PJD APPROVED: CRS	SCALE: AS SHOWN



CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II CONTRACT NO. DH13-017	
SHEET TITLE:	STANDARD BOREHOLE LOG DETAILS
PND PROJECT NO.: 102081	1.05 SHEET 5 OF 52

Soil Legend

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS <small>(LITTLE OR NO FINES)</small>	CLEAN GRAVELS		GW	Well-graded gravels, gravel sand mixtures, little or no fines
		GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	SAND AND SANDY SOILS <small>(LITTLE OR NO FINES)</small>	CLEAN SANDS		SW	Well-graded sands, gravelly sands, little or no fines
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SM	Silty sands, sand-silt mixtures
FINE GRAINED SOILS	SILTS AND CLAYS <small>LIQUID LIMIT LESS THAN 50</small>	GRAVELS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		GM	Silty gravels, gravel-sand-silt mixtures
		CLEAN SANDS		GC	Clayey gravels, gravel-sand-clay mixtures
		SANDS WITH FINES <small>(APPRECIABLE AMOUNT OF FINES)</small>		SC	clayey sands, sand-clay mixtures
	SILTS AND CLAYS <small>LIQUID LIMIT GREATER THAN 50</small>	GRAVELLY SILT (ML) <small>greenish gray, wet, very soft; 15% fine to coarse, angular gravel; 10% sand; 75% fines; low plasticity; no dilatancy</small>		ML	Inorganic silts and very fine sands, rock flour, silt or clayey fine sands or clayey silts with slight plasticity
		CLAYEY SILT (CL) <small>Inorganic clays of low to medium plasticity; gravelly clays, sandy clays, silty clays, lean clays</small>		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		ORGANIC SILT (OL) <small>Organic silts and organic silty clays of low plasticity</small>		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS <small>LIQUID LIMIT GREATER THAN 50</small>	MEDIUM HEAVY (MH) <small>Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts</small>		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
	HEAVY (CH) <small>Inorganic clays of high plasticity, fat clays</small>		CH	Inorganic clays of high plasticity, fat clays	
SILTS AND CLAYS <small>LIQUID LIMIT GREATER THAN 50</small>	ORGANIC HEAVY (OH) <small>Organic clays of medium to high plasticity, organic silts</small>		OH	Organic clays of medium to high plasticity, organic silts	
	HIGHLY ORGANIC SOILS		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
- 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	DD	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



Designed: PND
 Drawn: PND
 Checked: PND
 Project No.: 102029.04
 Date: Oct 2012

STANDARD BOREHOLE LOG DETAILS
 BOREHOLE LOGS FIGURE B-3

BOREHOLE TH-3

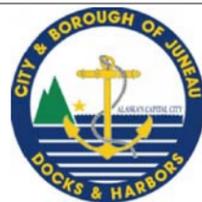
1 of 1

Depth (feet)	Water Table	Graphic Symbol	SOIL DESCRIPTION Soil Name, Color, Moisture Content, Relative Density, Soil Structure, Mineralogy, Other Information	SAMPLES				GRAPH				COMMENTS Casing Depth, Drilling Rate, Fluid Loss, Drill Pressure, Tests, Instrumentation, Additional Information	Elevation (feet)
				Number	Type	Location	Recovery % (ROD %)	Penetration Blows per 6/Inch (per foot) or {Rock Quality}	BLOW COUNT 20 40 60 80 POCKET PEN (tsf) 1 2 3 4 VANE SHEAR (tsf) 0.2 0.4 0.6 0.8				
0.0			ASPHALT										29.0
2.5			FILL brown, dry, loose; 70% fine to coarse, angular gravel; 25% sand; 5% fines										26.5
5.0			GRAVELLY SILT (ML) greenish gray, wet, very soft; 15% fine to coarse, angular gravel; 10% sand; 75% fines; low plasticity; no dilatancy										24.0
			@ 5 ft REFUSAL: no auger advance - drill rig bouncing - no coring performed; auger bit sitting on either large boulder or probable bedrock; when pulling auger sections, borehole filled with water										

Begin Drilling: 10/5/11;
Time: 10:30 AM

@ 3 ft. depth: auger cuttings begin forming a billowing, ropy mass

Terminate Drilling: 10/5/11;
Time: 10:50 AM



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CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II CONTRACT NO. DH13-017

SHEET TITLE: **BOREHOLE LOGS**

PND PROJECT NO.: 102081

DATE: 7/8/13

1.06
SHEET 6 OF 52

BOREHOLE TH-4

1 of 2

Depth (feet)	Water Table	Graphic Symbol	SOIL DESCRIPTION	SAMPLES				GRAPH	COMMENTS	Elevation (feet)
				Number	Type	Location	Recovery % (RQD %)			
0.0			ASPHALT						28.0	
0.0 - 1.0			Initial 6 inches - gray colored, dry, angular gravel to 1 inch dia.							
5.0			FILL brown, dry to moist, loose; 75% fine to coarse, angular gravel; 20% sand; 5% fines						23.0	
10.0			Contact based on auger cuttings						18.0	
15.0			SILT WITH GRAVEL (ML) greenish gray, wet, very soft; 10% fine to coarse, angular to subrounded gravel; 5% sand; 85% fines; low plasticity; no dilatancy						13.0	
20.0									8.0	

BOREHOLE TH-4

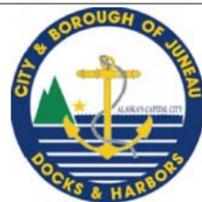
2 of 2

Depth (feet)	Water Table	Graphic Symbol	SOIL DESCRIPTION	SAMPLES				GRAPH	COMMENTS	Elevation (feet)
				Number	Type	Location	Recovery % (RQD %)			
20.0			SILT WITH GRAVEL (ML) bluish gray, wet, very soft; 10% fine to coarse, angular to subrounded gravel; 5% sand; 85% fines; low plasticity; no dilatancy						8.0	
22.5			@ 22 ft REFUSAL: no advance of auger bit, drill rig bouncing, no coring performed; either large boulder or probable bed rock; residual dry, greenish powder (metavolcanic rock?) coating auger bit teeth						5.5	

BOREHOLE TH-5

1 of 1

Depth (feet)	Water Table	Graphic Symbol	SOIL DESCRIPTION	SAMPLES				GRAPH	COMMENTS	Elevation (feet)
				Number	Type	Location	Recovery % (RQD %)			
0.0			ASPHALT						28.0	
2.5			SAND WITH GRAVEL (SW) brown and greenish gray, moist, medium dense; 20% fine to coarse, angular to subangular gravel; 75% sand; 5% fines; occasional angular cobbles to 3.5 inch dia.; visual estimate of soils limited						25.5	
5.8			@ 5.8 ft visually observed top of concrete utilidor						23.0	



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CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II CONTRACT NO. DH13-017

SHEET TITLE: **BOREHOLE LOGS**

PND PROJECT NO.: 102081

DATE: 7/8/13

1.07
SHEET 7 OF 52

DEMOLITION SUMMARY TABLE

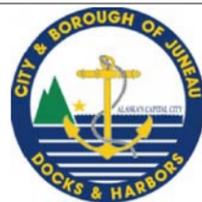
ITEM	DESCRIPTION
1	DEMOLISH CONCRETE WALKWAYS, SIDEWALKS, CURB, GUTTER & CURB CUTS.
2	REMOVE PAINTED MARKING ONLY, NO ACP DEMO.
3	DEMOLISH ACP.
4	DEMOLISH CONCRETE BARRIER WALL, CURBS.
5	DEMOLISH CONCRETE SIDEWALK, RETAINING WALLS, CURB & GUTTER.
6	DEMOLISH ACP. REMOVE AND DISPOSE UNSUITABLE MATERIAL, AND EXTRACT PILES, PER TYP SECTION.
7	DEMOLISH CONCRETE WALKWAY, CURBS & CURB WALLS.
8	DEMOLISH CONCRETE APRON.
9	DEMOLISH LANDSCAPE GRATES.
10	DEMOLISH CONCRETE APRON, CURB & CURB CUT.
11	SALVAGE ALL SITE FURNISHINGS & STORE.
12	SALVAGE ALL SIGNS ON SITE, INVENTORY & STORE.
13	DEMOLISH CONCRETE PLANTER AND SIDEWALK, SALVAGE PLANTINGS, SEE LANDSCAPE DEMOLITION PLAN.
14	SALVAGE LIGHTPOLE AND RELOCATE, SEE ELEC. DRAWINGS.
15	DEMOLISH CURB & GUTTER.
16	DEMOLISH CAST IRON WATER LINE, SEE WATER DETAILS.
17	DEMOLISH PLANTER & BICYCLE RACK, SALVAGE PLANTING, SIGN & RACK, SEE LANDSCAPE DEMOLITION PLAN.
18	DEMOLISH STORMDRAIN CATCHBASIN.
19	DEMOLISH STORMDRAIN PIPE.
20	DEMOLISH STORMDRAIN INLET. CATCHBASIN STRUCTURE TO REMAIN UNDISTURBED.
21	DEMOLISH HANDRAIL.

DEMOLISH = REMOVE & DISPOSE AT CONTRACTOR PROVIDED DISPOSAL SITE

SALVAGE = REMOVE, SALVAGE & SUITABLY STORE AT OWNER DESIGNATED LOCATION OR RELOCATE AS SHOWN ON PLANS. OWNER'S DESIGNATED STORAGE LOCATION SHALL BE AT OR NEARBY THE AURORA HARBOR HARBOR MASTER'S OFFICE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRANSPORTING, LOADING, UNLOADING AND GENERAL HANDLING OF SALVAGED MATERIALS. STORAGE OF SALVAGED MATERIALS SHALL BE COORDINATED WITH THE OWNER AT ALL TIMES. SPECIFIC LOCATIONS FOR MATERIALS TO BE SALVAGED AND STORED SHALL BE DICTATED BY THE OWNER AND SHALL BE AT THE OWNER'S SOLE DISCRETION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED DUE TO HIS ACTIVITIES. DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER.

NOTE:

VENDOR BOOTHS SHALL BE REMOVED & SALVAGED BY OWNER, COORDINATE AS REQUIRED.



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CRUISE SHIP TERMINAL STAGING AREA IMPROVEMENTS PHASE II
CONTRACT NO. DH13-017

SHEET TITLE:
DEMOLITION SUMMARY TABLE

PND PROJECT NO.: 102081

1.09
SHEET
9 OF 52