


**ANC027**  
**WORK PACKAGE 5**  
**15% CONCEPT SITE DEVELOPMENT**

DEMOLITION OF EXISTING WHARFS, TRESTLES AND SHEET PILE WALLS,  
CONSTRUCTION OF NEW WHARFS, TRESTLES, AND SHEET PILE WALLS,  
MASS EXCAVATION, GRADING, PAVING, DRAINAGE, AND UTILITIES



<b>CH2MHILL®</b>  TITLE SHEET / VICINITY MAP / LOCATION MAP / INDEX OF DRAWINGS  DESIGN	PORT OF ANCHORAGE  GENERAL	US ARMY CORPS OF ENGINEERS PORT OF ANCHORAGE  INTERMODAL EXPANSION PROJECT STUDY ANCHORAGE, ALASKA
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<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING.</p> <p>0  1"</p>		<p>PRELIMINARY</p>
DATE	FEBRUARY 2013	
PROJ	462130	
DWG	G-01	
SHEET	1 of 20	

CONCEPT STUDY  
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[illegible]

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

# CH2MHILL®

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## PORT OF ANCHORAGE

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### GENERAL

#### TITLE SHEET / VICINITY MAP /

#### LOCATION MAP / INDEX OF DRAWINGS

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## DESIGN

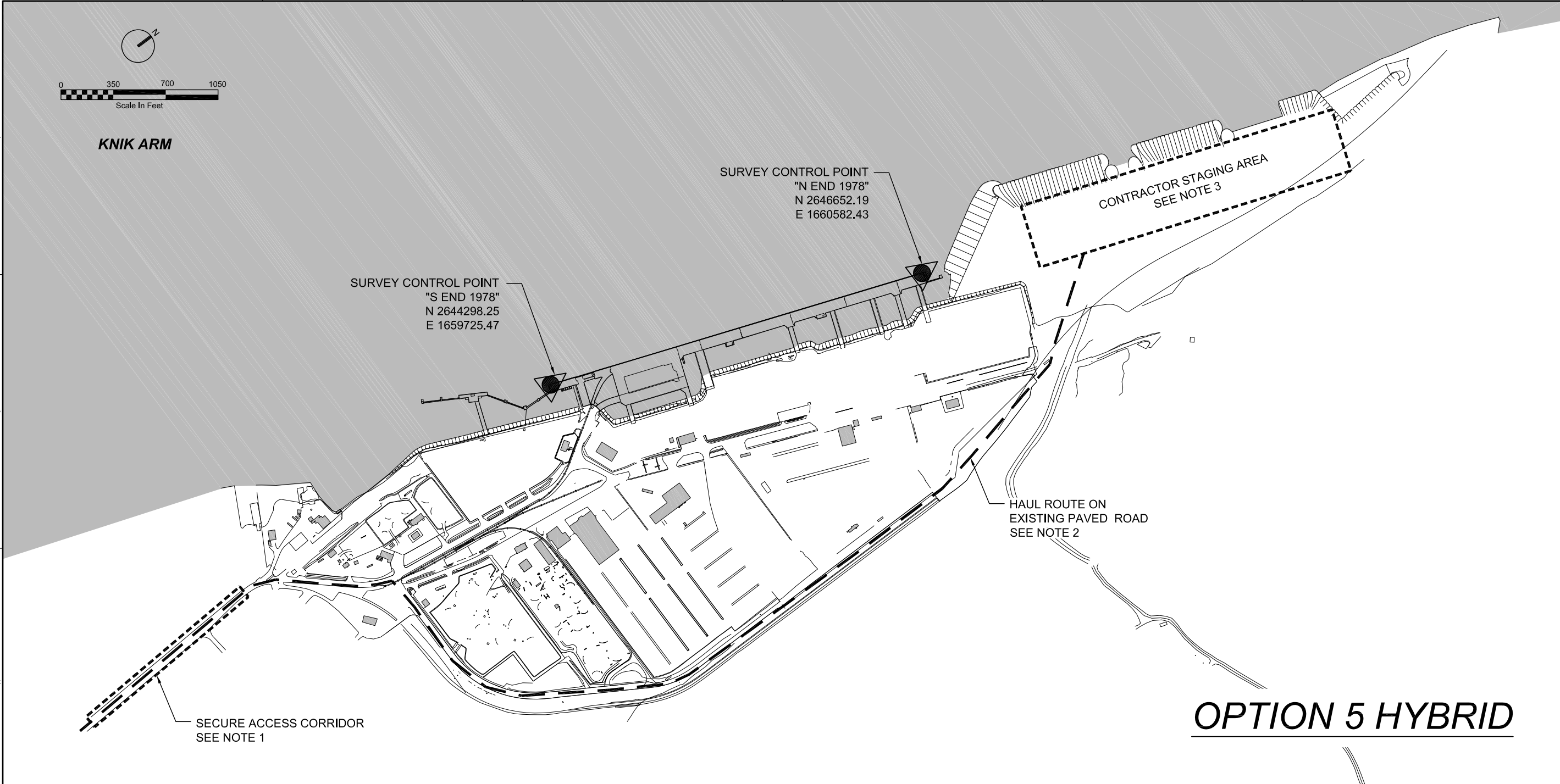
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GENERAL NOTES

1. THE PORT OF ANCHORAGE IS A RESTRICTED FACILITY AND SECURITY CLEARANCE IS REQUIRED FOR PROJECT ACCESS. PORT ACCESS MAY BE LIMITED OR RESTRICTED AT ANY TIME. COORDINATE AND COMPLY WITH CONTRACTOR ACCESS AND SECURITY PROTOCOLS THROUGHOUT CONSTRUCTION.
2. MUNICIPAL AND STATE LOAD RESTRICTIONS APPLY. ALL LOADS ARE TO BE SECURED TO PREVENT DEBRIS FROM SCATTERING ON ROADWAYS. MANAGE FUGITIVE DUST FROM EARTH MOVING OPERATIONS ACCORDING TO THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
3. THE CONTRACTOR STAGING AREA IS LOCATED WITHIN THE PROJECT LIMITS AS SHOWN. DO NOT STAGE EQUIPMENT OR MATERIALS OUTSIDE OF THE DESIGNATED STAGING AREA WITHOUT OBTAINING PERMISSION SO AS NOT TO INTERRUPT EXISTING OPERATIONS.
4. DISPOSAL OF CONCRETE, ASPHALT AND OTHER CONSTRUCTION DEBRIS IS THE RESPONSIBILITY OF THE CONTRACTOR. THERE IS NO ONSITE DISPOSAL AVAILABLE. DISPOSE OF NON-HAZARDOUS DEBRIS AT THE LOCAL LANDFILL OR OTHER APPROVED DISPOSAL SITE.

SURVEY CONTROL

1. THE SURVEY CONTROL FOR THIS PROJECT IS BASED ON THE *95% PS&E PORT OF ANCHORAGE NORTH EXTENSION PAVEMENT AND UTILITIES DESIGN - PROJECT CONTROL* DEVELOPED BY DOWL HKM IN JUNE OF 2009.
2. THE TOPOGRAPHY AND BASE MAPPING SHOWN HAVE BEEN DEVELOPED UTILIZING MULTIPLE CONSTRUCTION, DESIGN AND AS-BUILT SURVEYS. THE ACTUAL TOPOGRAPHY AND LOCATION OF UTILITIES AND FEATURES WILL VARY FROM THOSE SHOWN IN THE PLANS.
3. PRESERVE FROM INJURY OR DEFACEMENT SURVEY CONTROL MONUMENTATION ENCOUNTERED DURING CONSTRUCTION.
4. THE COORDINATE SYSTEM IS ALASKA STATE PLANE ZONE 4, NAD83 DATUM. ALL COORDINATES AND ELEVATIONS ARE EXPRESSED IN U.S. SURVEY FEET.
5. "N END 1978" AND "S END 1978" ARE USACE BRASS CAP MONUMENTS. THE BASIS OF BEARINGS IS THE LINE BETWEEN "N END 1978" AND "S END 1978" HAVING A BEARING OF S20°00'15"W. THE COORDINATE VALUE FOR "S END 1978" **SHOULD NOT BE USED** FOR ANY PURPOSE OTHER THAN LOCATING THE MONUMENT.
6. PROJECT ELEVATIONS ARE BASED ON MEAN LOWER LOW WATER (MLLW). ELEVATION DATA IS FROM THE NOAA/NOS TIDAL BENCH MARK SHEET 9455920 FOR ANCHORAGE, KNIK ARM, COOK INLET, ALASKA DATED 21 APRIL 2003.
7. THE BASIS OF ELEVATIONS IS NOAA/NOS TIDAL BENCH MARK "TIDAL 16 1966", A USACE BRASS CAP MONUMENT HAVING A VALUE OF 40.53 FEET AND TIDAL BENCHMARK "B 75 1964", A USACE BRASS CAP MONUMENT HAVING A VALUE OF 36.82 FEET.

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PORT OF ANCHORAGE  
CIVIL  
HAUL ROUTES, TRAFFIC CONTROL,  
AND SURVEY CONTROL

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

NO. DATE DSGN J. TAYLOR  
REVISION CHK M. HAAPALA  
BY APVD J. TAYLOR  
APVD D. PLAYER

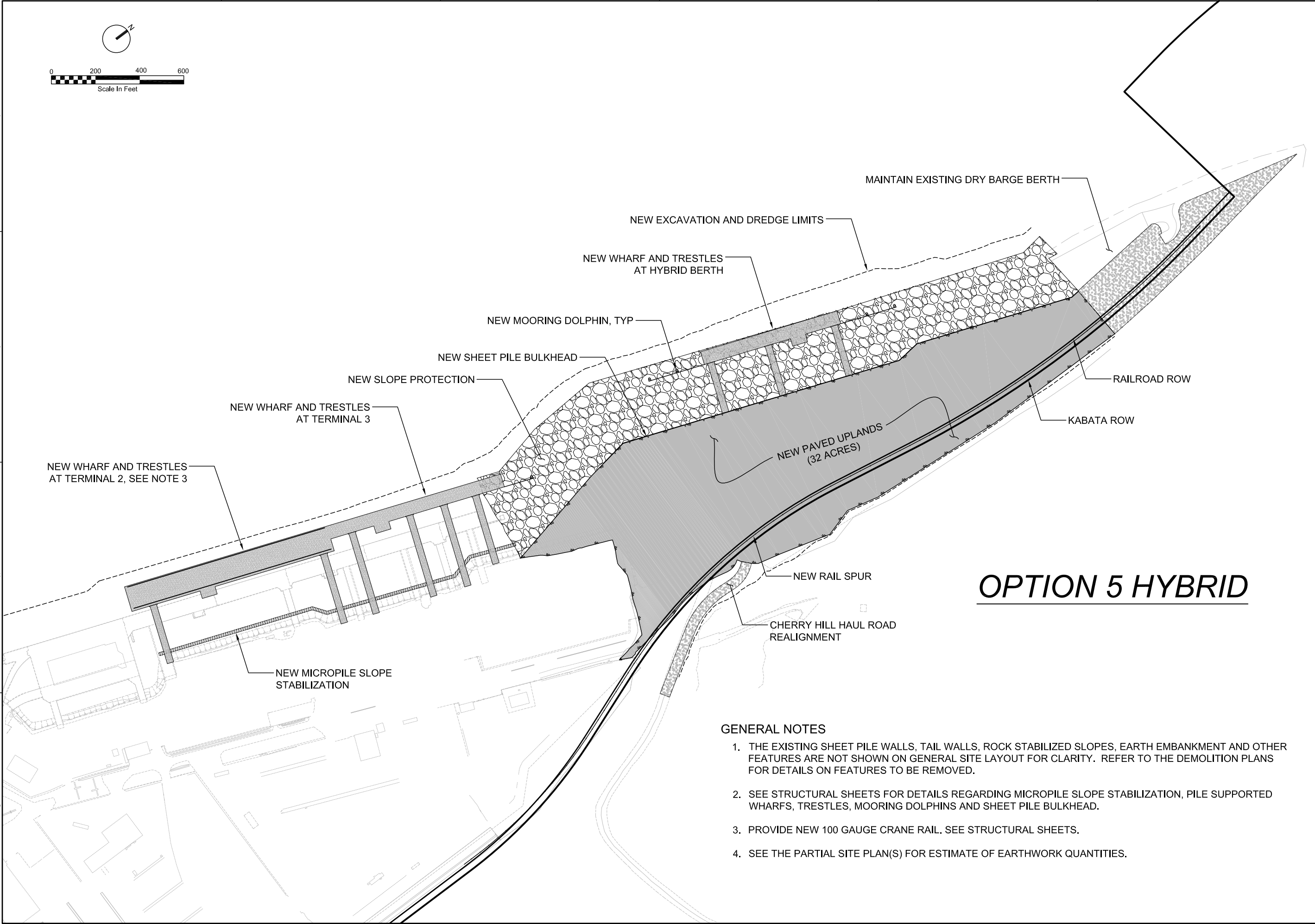
VERIFY SCALE  
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SHEET 3 of 20

PRELIMINARY DESIGN

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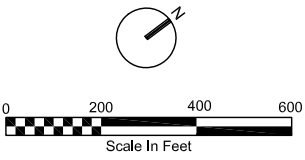
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OPTION 5 HYBRID

GENERAL NOTES

1. THE EXISTING SHEET PILE WALLS, TAIL WALLS, ROCK STABILIZED SLOPES, EARTH EMBANKMENT AND OTHER FEATURES ARE NOT SHOWN ON GENERAL SITE LAYOUT FOR CLARITY. REFER TO THE DEMOLITION PLANS FOR DETAILS ON FEATURES TO BE REMOVED.
2. SEE STRUCTURAL SHEETS FOR DETAILS REGARDING MICROPILE SLOPE STABILIZATION, PILE SUPPORTED WHARFS, TRESTLES, MOORING DOLPHINS AND SHEET PILE BULKHEAD.
3. PROVIDE NEW 100 GAUGE CRANE RAIL. SEE STRUCTURAL SHEETS.
4. SEE THE PARTIAL SITE PLAN(S) FOR ESTIMATE OF EARTHWORK QUANTITIES.



US ARMY CORPS OF ENGINEERS

PORT OF ANCHORAGE

INTERMODAL EXPANSION PROJECT STUDY

ANCHORAGE, ALASKA

PORT OF ANCHORAGE

CIVIL

GENERAL SITE LAYOUT

VERIFY SCALE

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4 of 20

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DATE

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DR

J. TAYLOR

CHK

M. HAAPALA

APVD

J. TAYLOR

APVD

D. PLAYER

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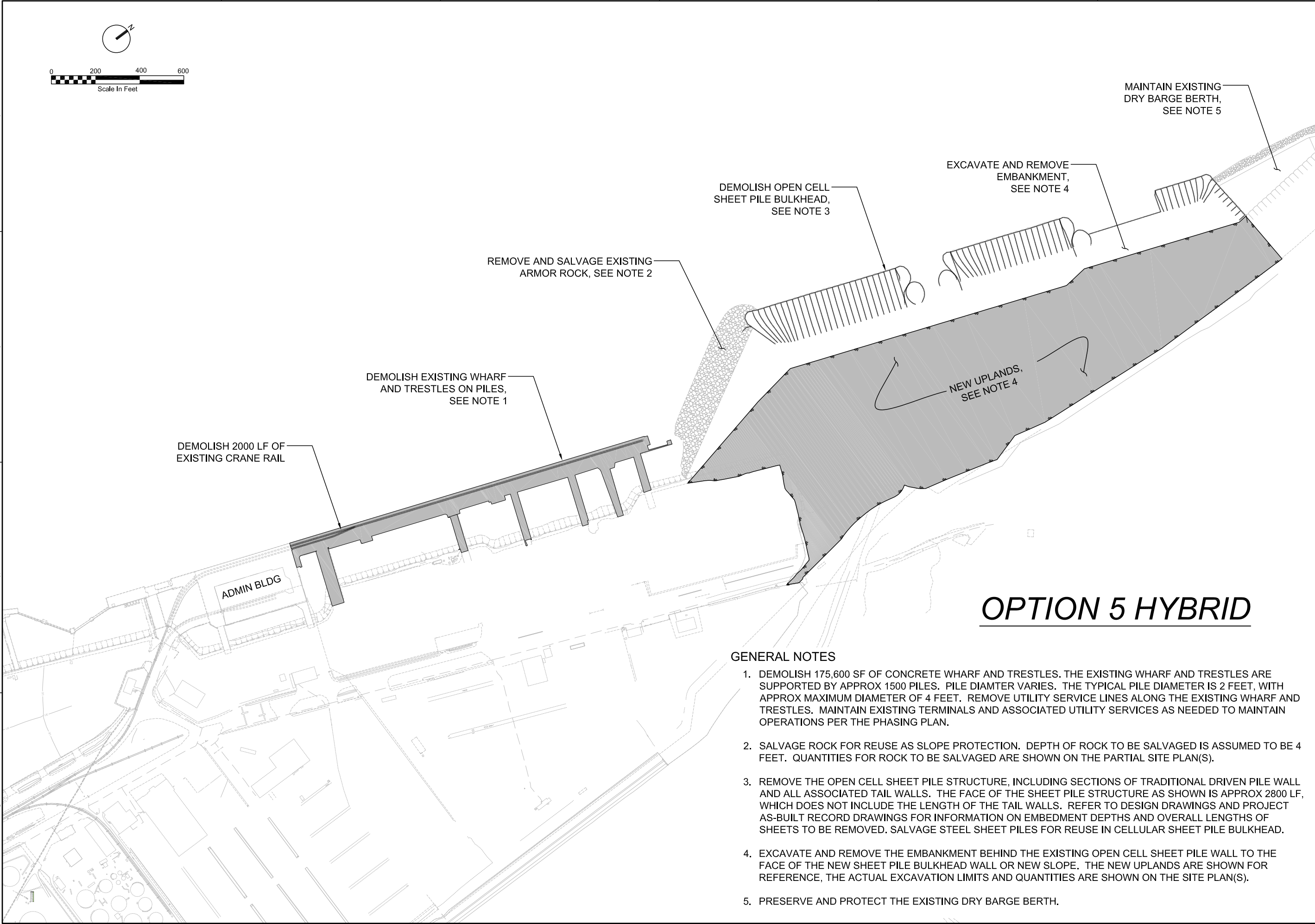
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OPTION 5 HYBRID

GENERAL NOTES

- 1. DEMOLISH 175,600 SF OF CONCRETE WHARF AND TRESTLES. THE EXISTING WHARF AND TRESTLES ARE SUPPORTED BY APPROX 1500 PILES. PILE DIAMTER VARIES. THE TYPICAL PILE DIAMETER IS 2 FEET, WITH APPROX MAXIMUM DIAMETER OF 4 FEET. REMOVE UTILITY SERVICE LINES ALONG THE EXISTING WHARF AND TRESTLES. MAINTAIN EXISTING TERMINALS AND ASSOCIATED UTILITY SERVICES AS NEEDED TO MAINTAIN OPERATIONS PER THE PHASING PLAN.
- 2. SALVAGE ROCK FOR REUSE AS SLOPE PROTECTION. DEPTH OF ROCK TO BE SALVAGED IS ASSUMED TO BE 4 FEET. QUANTITIES FOR ROCK TO BE SALVAGED ARE SHOWN ON THE PARTIAL SITE PLAN(S).
- 3. 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 2800 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. SALVAGE STEEL SHEET PILES FOR REUSE IN CELLULAR SHEET PILE BULKHEAD.
- 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 NEW UPLANDS ARE SHOWN FOR REFERENCE, THE ACTUAL EXCAVATION LIMITS AND QUANTITIES ARE SHOWN ON THE SITE PLAN(S).
- 5. PRESERVE AND PROTECT THE EXISTING DRY BARGE BERTH.

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PORT OF ANCHORAGE  
CIVIL  
DEMOLITION PLAN

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

NO. DATE DSGN J. TAYLOR  
REVISION CHK M. HAAPALA  
BY APVD J. TAYLOR  
APVD D. PLAYER

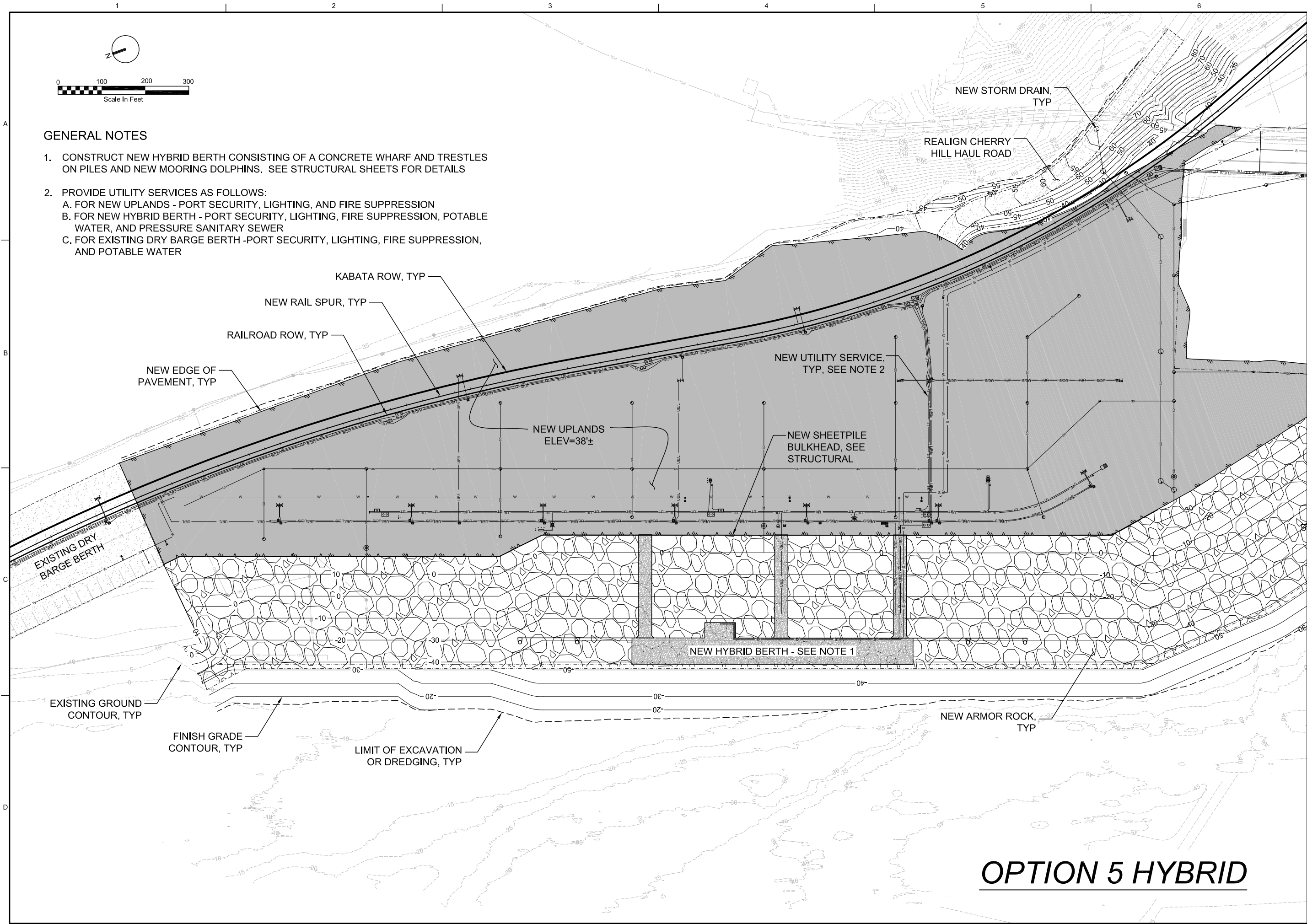
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0 1"

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OPTION 5 HYBRID

GENERAL NOTES

1. CONSTRUCT NEW HYBRID BERTH CONSISTING OF A CONCRETE WHARF AND TRESTLES ON PILES AND NEW MOORING DOLPHINS. SEE STRUCTURAL SHEETS FOR DETAILS
2. PROVIDE UTILITY SERVICES AS FOLLOWS:
  - A. FOR NEW UPLANDS - PORT SECURITY, LIGHTING, AND FIRE SUPPRESSION
  - B. FOR NEW HYBRID BERTH - PORT SECURITY, LIGHTING, FIRE SUPPRESSION, POTABLE WATER, AND PRESSURE SANITARY SEWER
  - C. FOR EXISTING DRY BARGE BERTH -PORT SECURITY, LIGHTING, FIRE SUPPRESSION, AND POTABLE WATER

CONCEPT STUDY  
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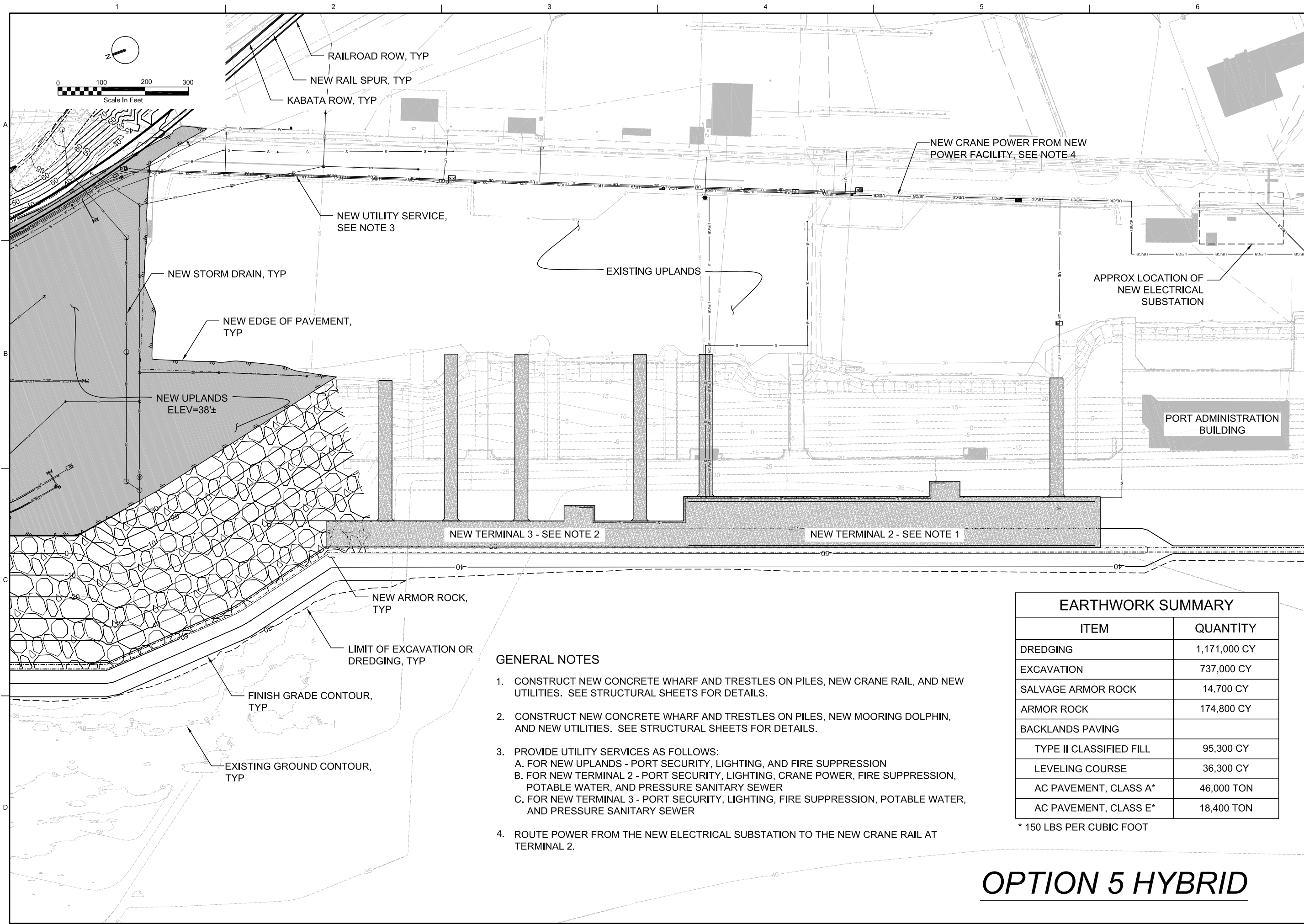
NO.	DATE	DR	CHK	REVISION	APVD	BY	APVD
		J. TAYLOR	M. HAAPALA				D. PLAYER

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

CH2MHILL®  
PORT OF ANCHORAGE  
CIVIL  
PARTIAL SITE PLAN A

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PROJ	462130
DWG	C-05
SHEET	7 of 20

PRELIMINARY DESIGN



GENERAL NOTES

1. CONSTRUCT NEW CONCRETE WHARF AND TRESTLES ON PILES, NEW CRANE RAIL, AND NEW UTILITIES. SEE STRUCTURAL SHEETS FOR DETAILS.
2. CONSTRUCT NEW CONCRETE WHARF AND TRESTLES ON PILES, NEW MOORING DOLPHIN, AND NEW UTILITIES. SEE STRUCTURAL SHEETS FOR DETAILS.
3. PROVIDE UTILITY SERVICES AS FOLLOWS:  
A. FOR NEW UPLANDS - PORT SECURITY, LIGHTING, AND FIRE SUPPRESSION  
B. FOR NEW TERMINAL 2 - PORT SECURITY, LIGHTING, CRANE POWER, FIRE SUPPRESSION, POTABLE WATER, AND PRESSURE SANITARY SEWER  
C. FOR NEW TERMINAL 3 - PORT SECURITY, LIGHTING, FIRE SUPPRESSION, POTABLE WATER, AND PRESSURE SANITARY SEWER
4. ROUTE POWER FROM THE NEW ELECTRICAL SUBSTATION TO THE NEW CRANE RAIL AT TERMINAL 2.

EARTHWORK SUMMARY	
ITEM	QUANTITY
DREDGING	1,171,000 CY
EXCAVATION	737,000 CY
SALVAGE ARMOR ROCK	14,700 CY
ARMOR ROCK	174,800 CY
BACKLANDS PAVING	
TYPE II CLASSIFIED FILL	95,300 CY
LEVELING COURSE	36,300 CY
AC PAVEMENT, CLASS A*	46,000 TON
AC PAVEMENT, CLASS E*	18,400 TON

\* 150 LBS PER CUBIC FOOT

OPTION 5 HYBRID

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

CH2MHILL®  
PORT OF ANCHORAGE  
CIVIL  
PARTIAL SITE PLAN B

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SHEET 8 of 20

PRELIMINARY DESIGN





1. CLASSIFIED NPS MATERIAL COMPACTED AS REQUIRED BY PROJECT SPECIFICATIONS.
2. UNCLASSIFIED MATERIAL COMPACTED AS REQUIRED BY PROJECT SPECIFICATIONS.
3. WATER, SEWER, GAS, ELECTRIC, AND COMMUNICATIONS PIPE BEDDING SHALL BE COMPACTED AS REQUIRED BY PROJECT SPECIFICATIONS.
4. SIDE SLOPES SHALL BE CONSTRUCTED AS REQUIRED PER OSHA.
5. WHERE NONMETALIC PIPE IS INSTALLED, FURNISH AND INSTALL A COPPER TRACER LOOPED AROUND THE PIPE EVERY 3M (10'), AND SECURELY TAPED TO PIPE EVERY 3M (10').
6. SAWCUT EXISTING PAVEMENT WHERE REQUIRED. REMOVE AND REPLACE EXISTING PAVEMENT AND BASE MATERIAL IN KIND WITH MATERIAL OF THE SAME THICKNESS.
7. GEOTEXTILE SHALL CONFORM TO AASHTO M288 FOR SUBSURFACE DRAINAGE. OVERLAP GEOTEXTILE ENDS A MINIMUM OF 300mm (12").
8. GRANULAR BACKFILL SHALL CONFORM TO PROJECT SPECIFICATIONS.

NTS

1. BURY BOTTOM OF FILTER FABRIC 150mm (6") VERTICALLY BELOW FINISHED GRADE.
2. 50mm x 100mm (2" x 4") DOUGLAS FIR OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED DOWNHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FILTER FABRIC TRENCH.

NTS

NTS

CH2MILL®

PORT OF ANCHORAGE  
CIVIL  
DETAILS

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT SITE  
ANCHORAGE, ALASKA

CONCEPT STUDY  
NOT FOR CONSTRUCTION

13	30	08	PRELIMINARY DESIGN
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VERIFY SCALE
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PROJ	462130
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DWG	C-08
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SHEET 10 of 20



## DESIGN CODES AND REFERENCES

- ## SERVICE LIFE

- ## DESIGN LIVE LOADS

- 

## WIND LOAD

- MOORING LOADS FROM VESSELS:

- ### BERTHING LOAD

BERTHING LOAD IS BASED ON THE FOLLOWING SHIP CHARACTERISTICS:

- ICE LOAD

- ## EARTHQUAKE LOAD

### DESIGN RESPONSE SPECTRA (SEASIDE)

### DESIGN RESPONSE SPECTRA (LANDSIDE)

## MATERIALS

- ## CATHODIC PROTECTION

1. AN IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM SHALL BE PROVIDED TO CONTROL CORROSION OF THE SHEET PILE BULKHEAD STRUCTURE.

## TIDAL INFORMATION

1. HIGHEST OBSERVED WATER: EL +34.6 MLLW
2. MEAN LOWER LOW WATER: EL 0' MLLW
3. LOWEST OBSERVED WATER: EL -6.4' MLLW

## DESIGN LOAD FACTORS FOR LOAD COMBINATIONS

## OPTION 5 HYBRID

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[illegible]

US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT SITE  
ANCHORAGE, ALASKA

## PORT OF ANCHORAGE STRUCTURAL DESIGN CRITERIA

# CH2MHILL®

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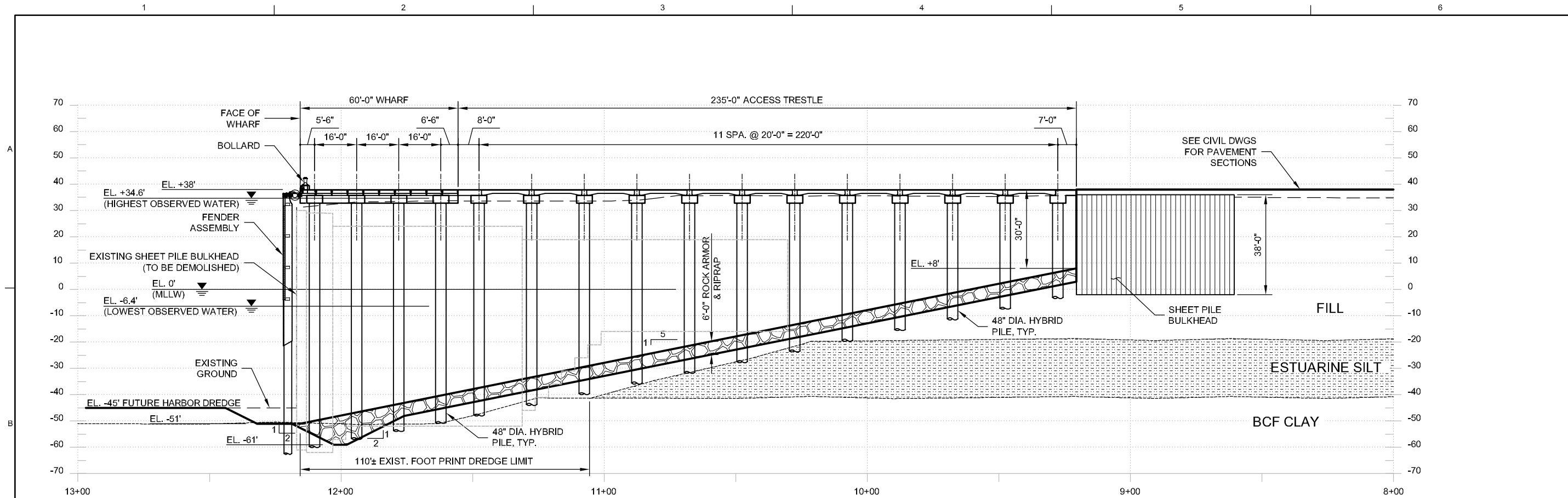
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SHEET 11 of 20

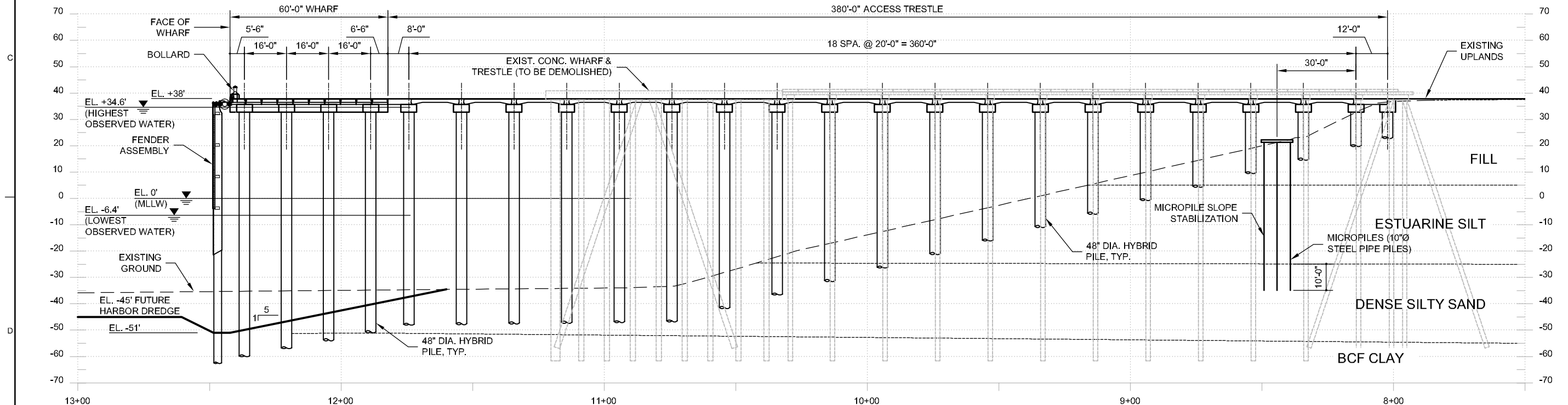
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**A** SECTION  
1" = 20'-0"  
S-02



**B** SECTION  
1" = 20'-0"  
S-02

# OPTION 5 HYBRID

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US ARMY CORPS OF ENGINEERS  
PORT OF ANCHORAGE  
INTERMODAL EXPANSION PROJECT STUDY  
ANCHORAGE, ALASKA

PORT OF ANCHORAGE  
STRUCTURAL  
TYPICAL SECTIONS (1 OF 2)

VARIES  
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3" CLR

48" OD STEEL PIPE PILE  
(1" WALL THICKNESS)

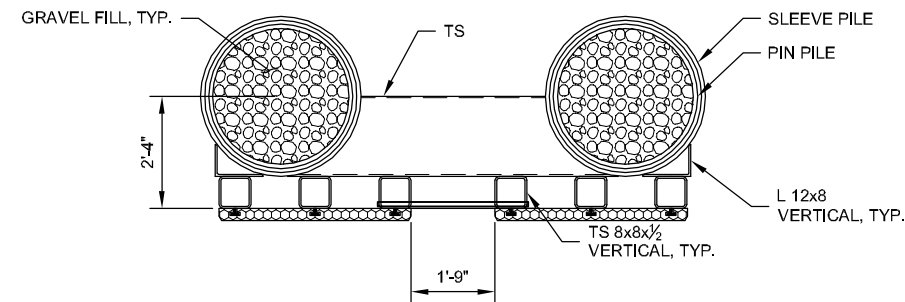
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3/4" = 1'-0"

**B** SECTION  
3/4" = 1'-0"

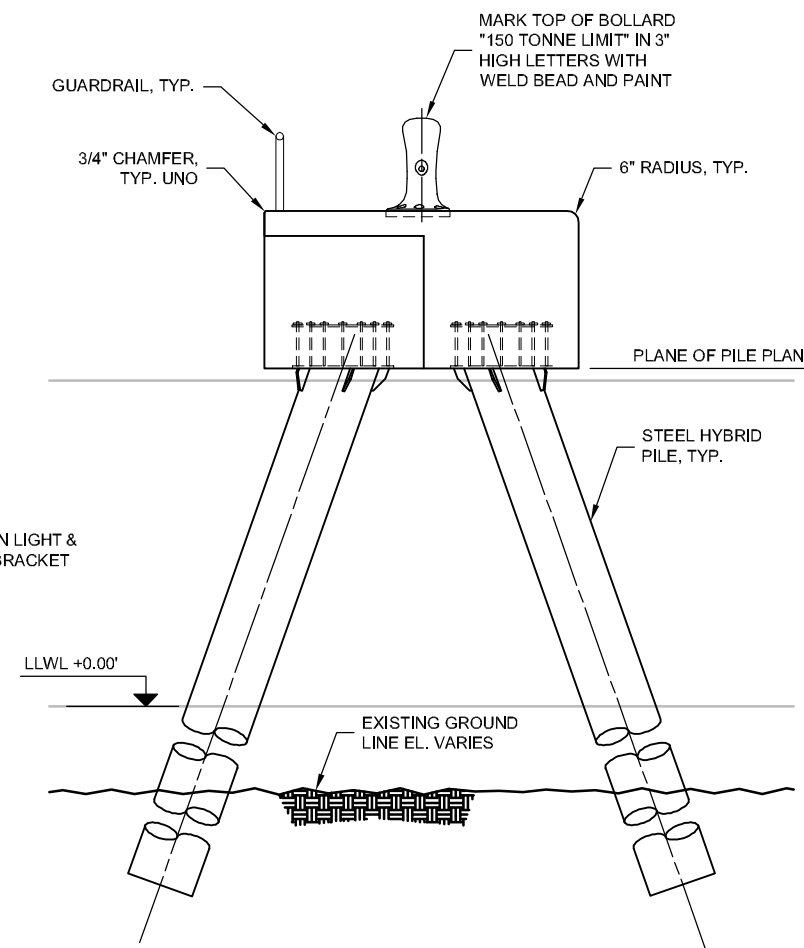
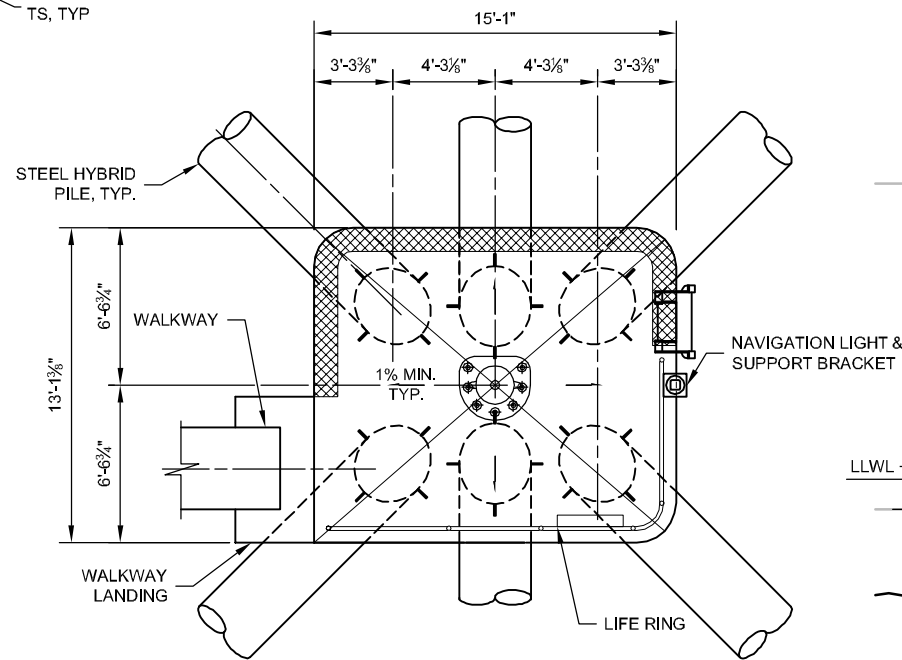
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B1-B41	41	33	-165	198
B42-B89	48	33	-180	213
C1-C41	41	33	-165	198
C42-C89	48	33	-170	203
D1-D41	41	33	-160	193
D42-D89	48	33	-165	198
E6A-E36A	12	33	-175	208
E42-E89	48	33	-160	193
F6A-F36A	12	33	-170	203
F42-F89	48	33	-160	193
G6A-G36A	8	33	-165	198
G42-G89	95	33	-170	203
H6A-H36A	8	33	-160	193
H43A-H84A	8	33	-165	198
I6A-I36A	8	33	-155	188
I43A-I84A	8	33	-160	193
J6A-J36A	8	33	-150	183
J43A-J84A	4	33	-155	188
K6A-K36A	8	33	-145	178
K43A-K84A	4	33	-150	183
L6A-L36A	8	33	-140	173
L43A-L84A	4	33	-145	178
M6A-M36A	8	33	-135	168
M43A-M84A	4	33	-140	173
N6A-N36A	8	33	-130	163
N43A-N84A	4	33	-135	168
O6A-O36A	8	33	-125	158
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P6A-P36A	8	33	-135	168
P43A-P84A	4	33	-125	158
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Q43A-Q84A	4	33	-140	173
R6A-R36A	8	33	-125	158
R43A-R84A	4	33	-135	168
S6A-S36A	8	33	-120	153
S43A-S84A	4	33	-130	163
T6A-T36A	8	33	-115	148
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V43A-V84A	2	33	-115	148
W14A-W36A	6	33	-105	138
W43A-W84A	2	33	-115	148
X43A-X44A	2	33	-90	123

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PART OF ANCHORAGE <b>STRUCTURAL PILE DETAILS</b>	US ARMY CORPS OF ENGINEERS PORT OF ANCHORAGE INTERMODAL EXPANSION PROJECT STUDY ANCHORAGE, ALASKA															
3/4" = 1'-0"																
VERIFY SCALE																
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<b>PRELIMINARY DESIGN</b>																





**A** SECTION  
1/2" = 1'-0"



**ELEVATION**  
 $\frac{1}{4}'' = 1'-0''$

## OPTION 5 HYBRID

[illegible]

PRELIMINARY DESIGN

