

Municipality of Anchorage

Port of Alaska

ENVIRONMENTAL SITE ASSESSMENT SERVICES REQUEST FOR PROPOSAL NO. 2022P034

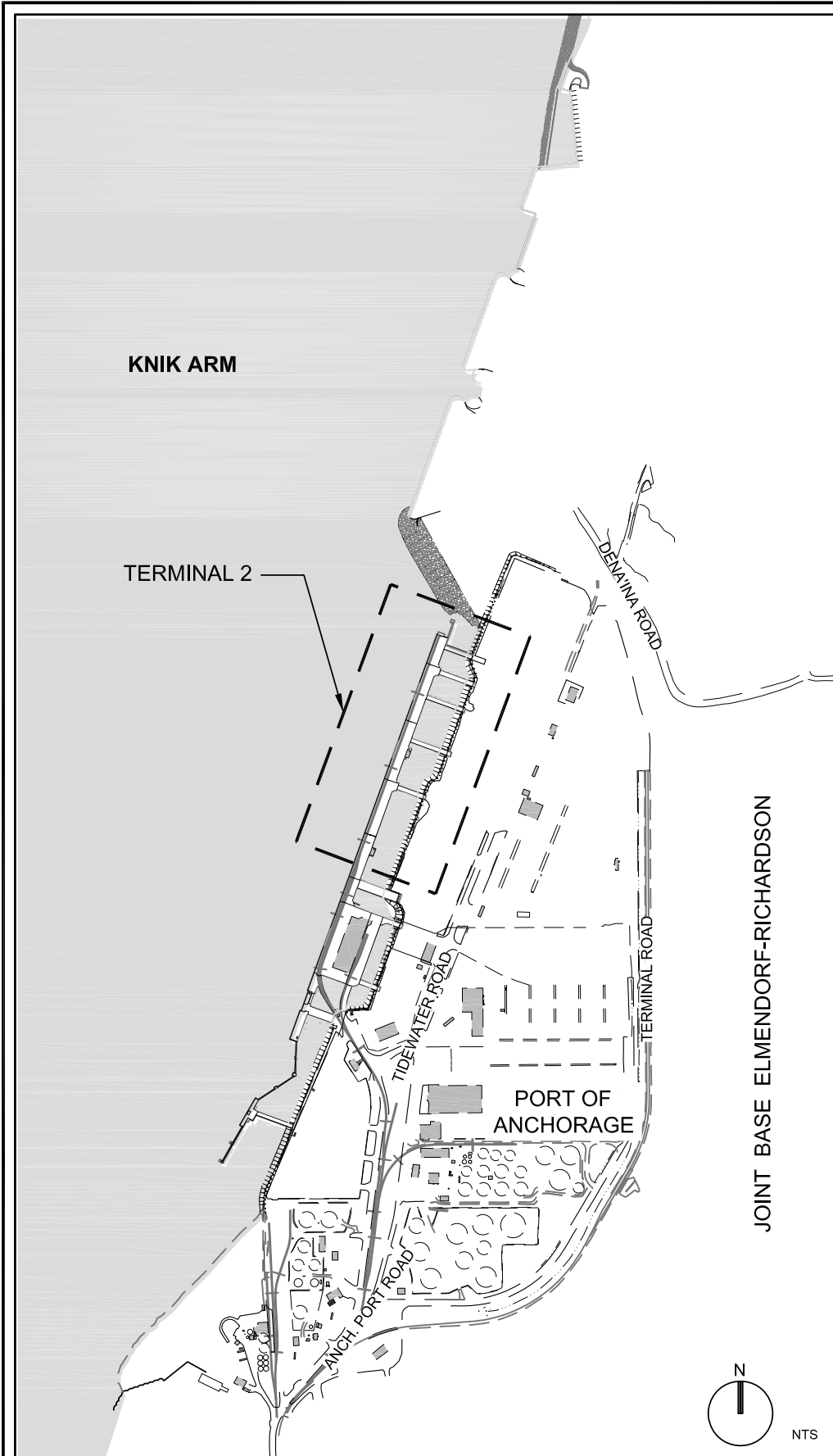
ATTACHMENT 06

Terminal 2 (T2) Preliminary Design Plans

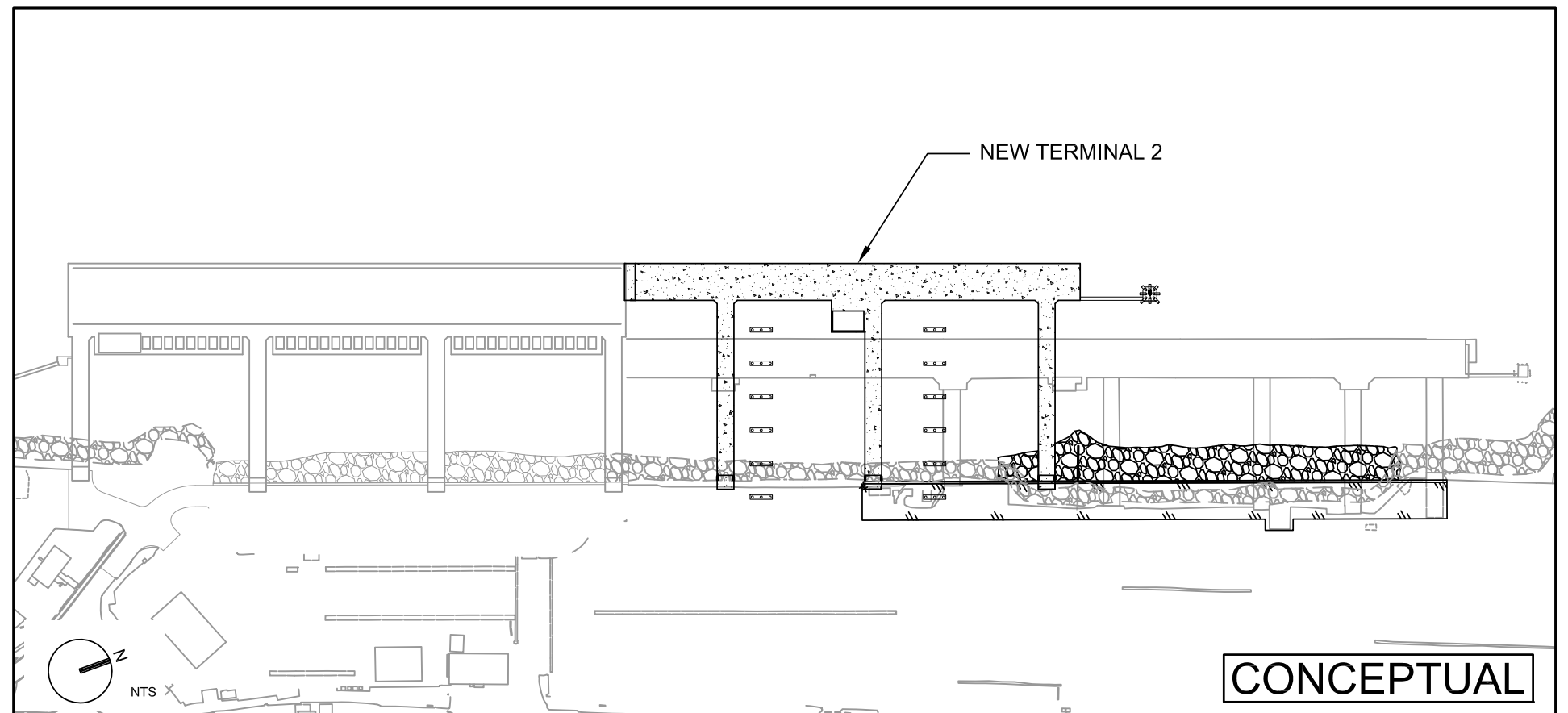


ANCHORAGE PORT MODERNIZATION PROGRAM

TERMINAL 2 (T2) PROJECT (NUMBER)



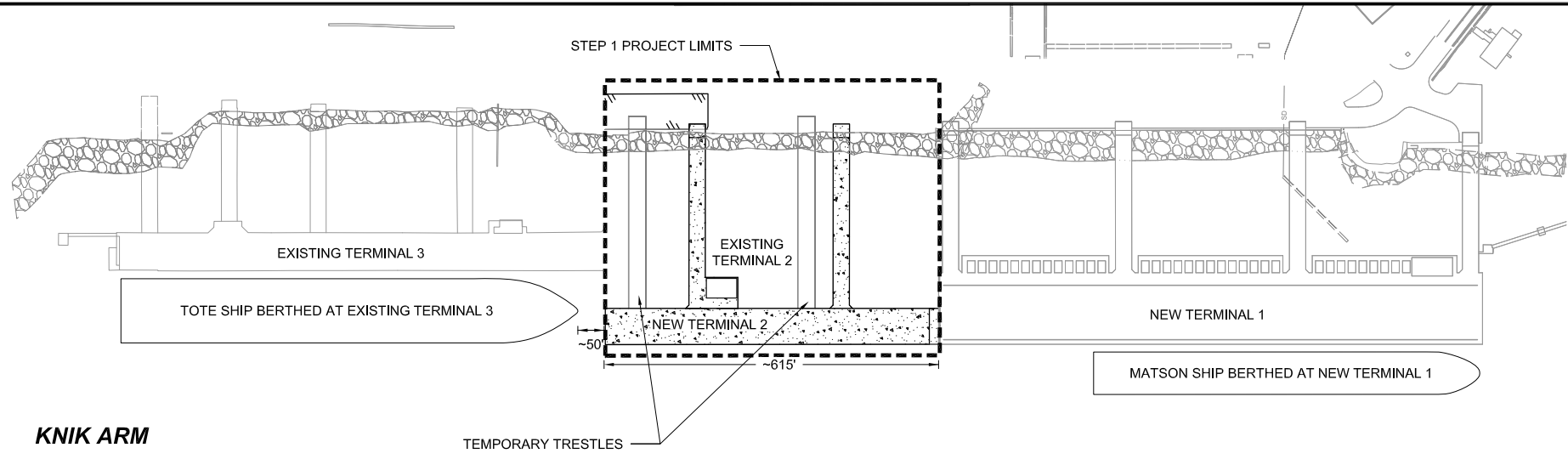
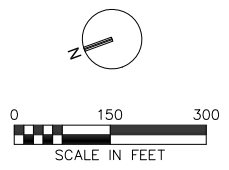
VICINITY MAP



LOCATION MAP

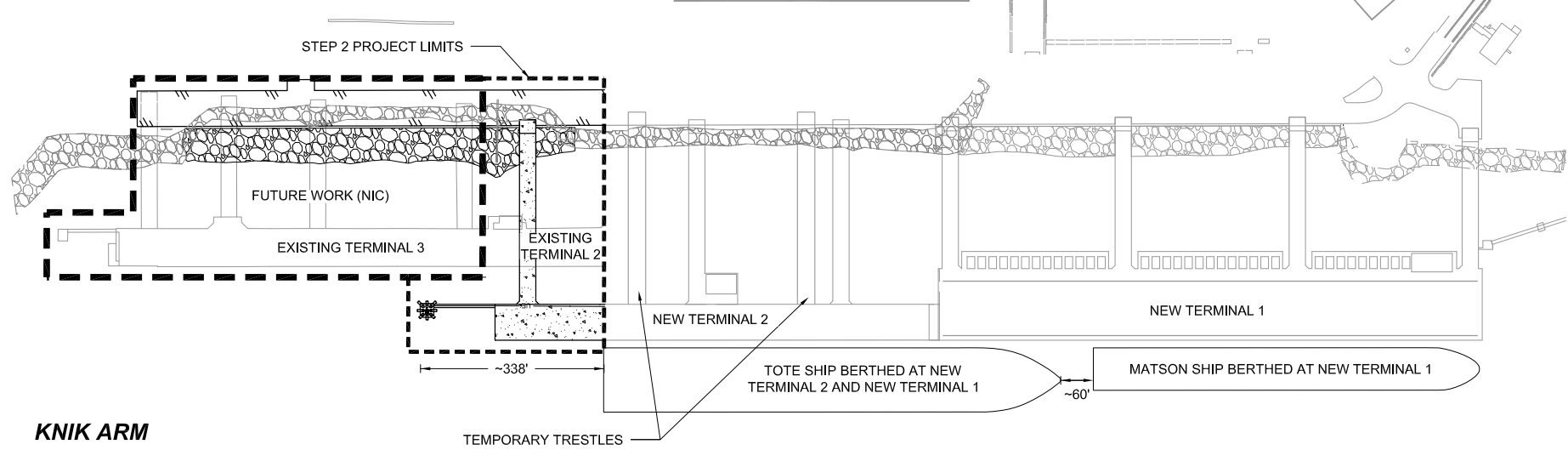
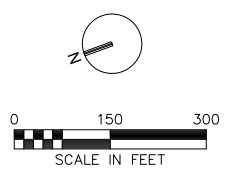
CONCEPTUAL

NOT FOR
CONSTRUCTION



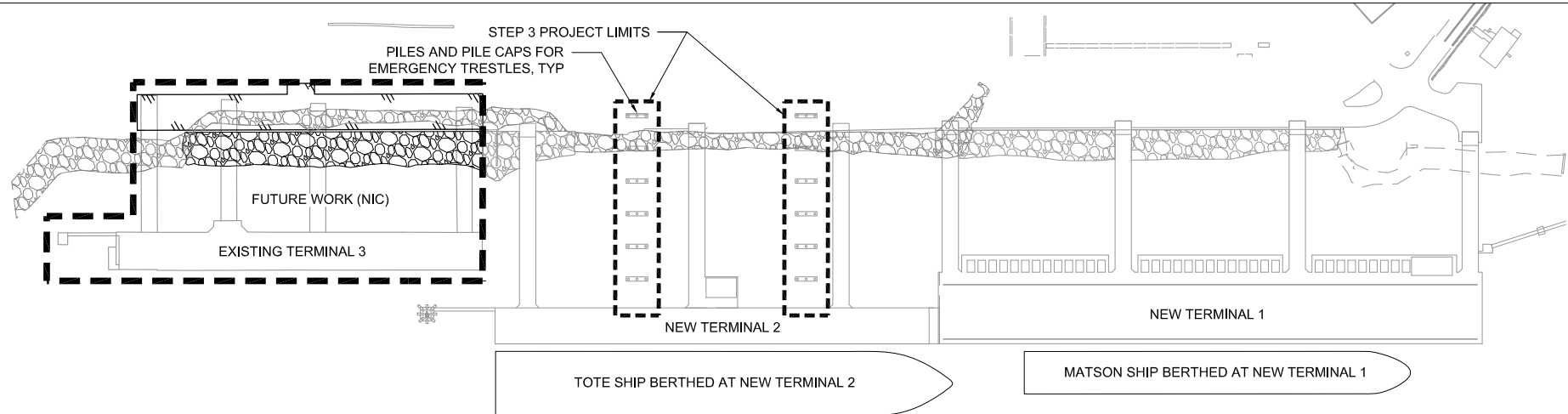
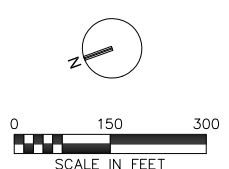
- STEP 1**
- MAINTAIN MATSON OPERATIONS AT NEW TERMINAL 1 AND TOTE OPERATIONS AT EXISTING TERMINAL 3.
 - CONSTRUCT 615 LF OF NEW TERMINAL 2, INCLUDING THE TEMPORARY TRESTLES. DEMOLISH EXISTING TERMINAL 2 WITHIN PROJECT LIMITS.

KNIK ARM



- STEP 2**
- RELOCATE TOTE OPERATIONS TO NEW T2 AND NEW T1, UTILIZING THE TEMPORARY T2 TRESTLES AND THE NORTHERN T1 TRESTLE.
 - COMPLETE NEW T2. DEMOLISH EXISTING TERMINALS 2 AND 3 WITHIN PROJECT LIMITS AND CONSTRUCT UPLAND EXPANSION.

KNIK ARM



- STEP 3**
- RELOCATE TOTE OPERATIONS TO NEW T2.
 - DISASSEMBLE TEMPORARY TRESTLE SUPERSTRUCTURE (STEEL TRUSS BRIDGE) AND DELIVER TO POA FOR STORAGE AND FUTURE USE. PILES AND PILE CAPS FOR TEMPORARY TRESTLES TO REMAIN FOR FUTURE EMERGENCY USE.

KNIK ARM

CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD
REVISIONS				

ch2m

DSGN: M. HAAPALA | DR: E. VILCE | CHK: J. TAYLOR | APVD: D. PLAYER

CONSULTANT

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SEAL



GENERAL

CONSTRUCTION SEQUENCING PLAN

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 5/15/2017	T2-G-2002
VERT SCALE: N/A	SHEET: 4 OF 41	

Drawing: DE-DWG-20161028-T2G2002.DWG
Date: May 15, 2017 - 1:31 pm

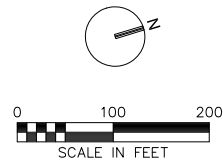
FILE NO.-

GENERAL SHEET NOTES

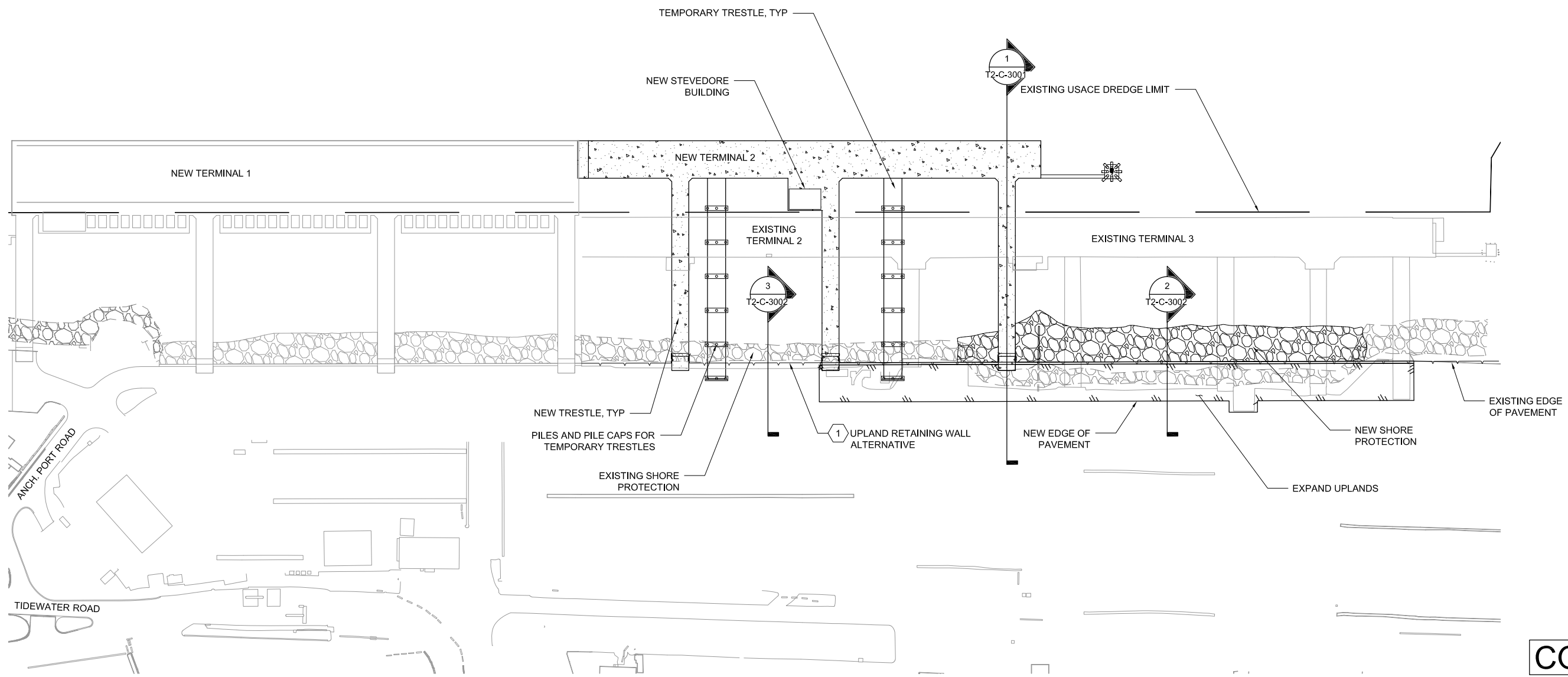
1. CONSTRUCT NEW CONCRETE WHARF AND TRESTLES ON PILES.
2. PROVIDE UTILITY SERVICES FOR DOMESTIC WATER, SEWER, ELECTRIC, TELE/COMM, PORT SECURITY, LIGHTING, AND FIRE SUPPRESSION. SEE T2-C-2801.
3. MULTIPLE STORM DRAIN SYSTEMS AND OUTFALLS ARE LOCATED IN THE PROJECT LIMITS. RECONSTRUCT THESE SYSTEMS AS REQUIRED. REFER TO THE GRADING PLAN (T1-C-2002) FOR ADDITIONAL INFORMATION.
4. UPLAND RETAINING WALL SHOWN IS AN ALTERNATIVE DESIGN. VERIFY FINAL DESIGN CONCEPT WITH OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

SHEET KEYNOTES

1. SEE T2-C-3001 AND T2-C-3002 FOR RETAINING WALL ALTERNATIVE TYPICAL SECTION. ALTERNATIVE WILL REMOVE RIPRAP FROM SLOPE AND REPLACE WITH GRADING.



KNIK ARM



CONCEPTUAL

Drawing: DE-DWG-20161028-T2C2001.DWG Date: May 13, 2017 - 11:59am

REV	DATE	DESCRIPTION	BY	APVD
REVISIONS				

ch2m

DSGN M. HAAPALA	DR E. VILCE	CHK J. TAYLOR	APVD D. PLAYER
CONSULTANT			

NOT FOR CONSTRUCTION



CIVIL
GENERAL SITE LAYOUT

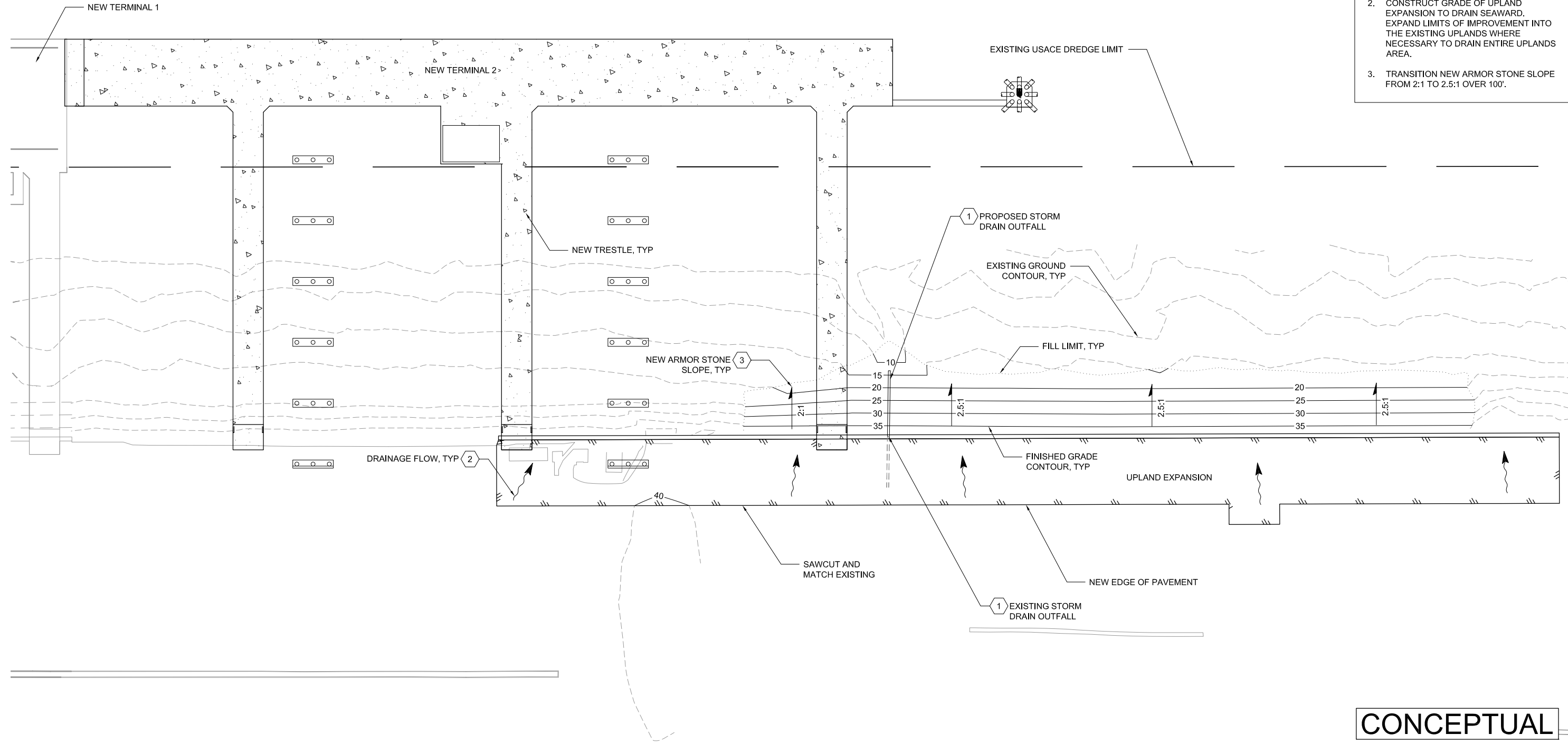
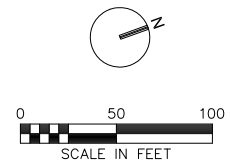
PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 5/15/2017	T2-C-2001
VERT SCALE: N/A	SHEET: 7 OF 41	

FILE NO.-

KNIK ARM

APPROXIMATE EARTHWORK SUMMARY	
ITEM	QUANTITY
ARMOR STONE	8,800 CY
AC PAVEMENT (CLASS E)	500 CY
AC PAVEMENT (CLASS A)	1,200 CY
LEVELING COURSE	2,000 CY
EXCAVATION	15,400 CY
TYPE II CLASSIFIED FILL	23,100 CY

- GENERAL SHEET NOTES**
1. CONSTRUCT NEW UPLANDS AND FINISHED GRADE SLOPES AS SHOWN.
 2. CONTOURS ARE SHOWN AT 5' INTERVALS.
 3. SHORE PROTECTION IS NOT SHOWN FOR CLARITY. SEE SHEET T2-C-3001 FOR UPLAND EXPANSION TYPICAL SECTION.
- SHEET KEYNOTES**
1. EXTEND EXISTING STORM DRAIN OUTFALL AS REQUIRED.
 2. CONSTRUCT GRADE OF UPLAND EXPANSION TO DRAIN SEAWARD. EXPAND LIMITS OF IMPROVEMENT INTO THE EXISTING UPLANDS WHERE NECESSARY TO DRAIN ENTIRE UPLANDS AREA.
 3. TRANSITION NEW ARMOR STONE SLOPE FROM 2:1 TO 2.5:1 OVER 100'.



CONCEPTUAL

Drawing: DE-DWG-20161028-TZC2002.DWG Date: May 13, 2017 - 12:02pm

REV	DATE	DESCRIPTION	BY	APVD

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

ch2m

DSGN M. HAAPALA	DR E. VILCE	CHK J. TAYLOR	APVD D. PLAYER
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CONSULTANT

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CIVIL GRADING PLAN

PORT OF ANCHORAGE

ANCHORAGE PORT MODERNIZATION PROGRAM

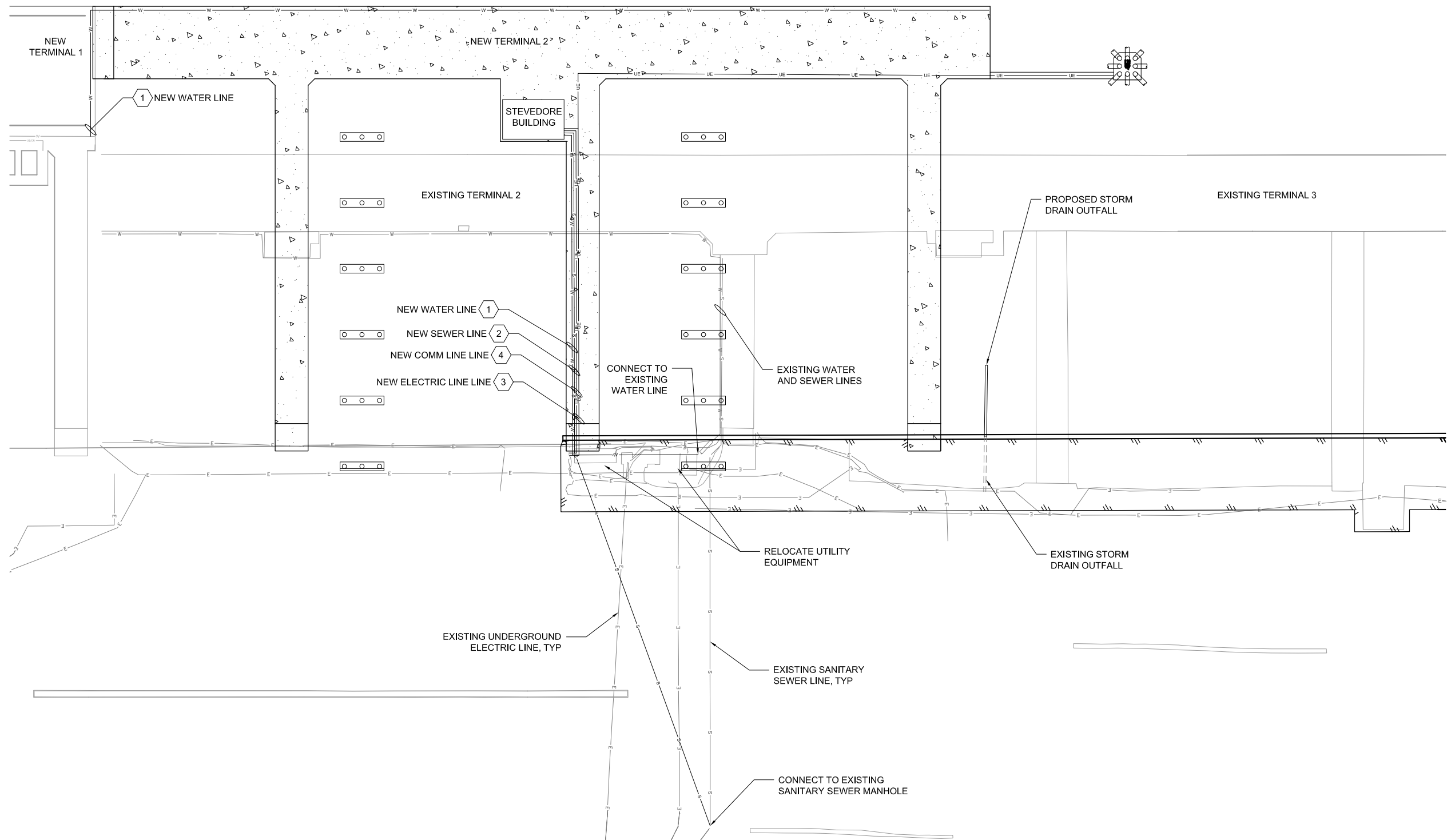
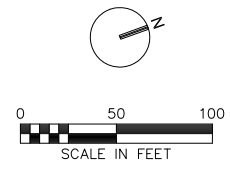
TERMINAL 2 (T2)

ANCHORAGE, ALASKA

HORIZ SCALE: AS SHOWN	DATE: 5/15/2017	T2-C-2002
VERT SCALE: N/A	SHEET: 8 OF 41	

FILE NO.-

KNIK ARM



GENERAL SHEET NOTES

1. REMOVE UTILITY SERVICE LINES ALONG THE EXISTING WHARF AND TRESTLES AS NECESSARY. MAINTAIN EXISTING TERMINALS AND ASSOCIATED UTILITY SERVICES AS NEEDED TO MAINTAIN OPERATIONS PER THE SEQUENCING PLAN.
2. PROPOSED UTILITY ROUTING IS CONCEPTUAL IN NATURE. FINAL DESIGN, INCLUDING BUT NOT LIMITED TO LINE, GRADE, UTILITY SIZE, AND TIE-IN LOCATION TO BE DETERMINED BY THE DESIGNER OF RECORD.
3. TRESTLE, WHARF, AND CATWALKS TO BE PROVIDED WITH ILLUMINATION.

SHEET KEYNOTES

1. INSTALL NEW DOMESTIC AND FIRE WATER LINES FROM EXISTING WATER MAIN AND ROUTE ALONG NEW TERMINAL 2. CONNECT TO NEW STEVEDORE BUILDING AND CONNECT TO TERMINAL 1 CAPPED WATER LINES AT SOUTH END.
2. INSTALL NEW SEWER LINE FROM EXISTING SEWER MAIN AND CONNECT TO NEW STEVEDORE BUILDING.
3. INSTALL NEW ELECTRIC SERVICE TO STEVEDORE BUILDING AND DOLPHIN.
4. INSTALL NEW COMMUNICATION LINES FROM UPLANDS TO STEVEDORE BUILDING.

CONCEPTUAL

Drawing: DE-DWG-20161028-TZC2801.DWG
Date: May 13, 2017 - 12:03pm

REV	DATE	DESCRIPTION	BY	APVD
REVISIONS				

ch2m

DSGN M. HAAPALA	DR E. VILCE	CHK J. TAYLOR	APVD D. PLAYER
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CIVIL
UTILITY PLAN

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 5/15/2017	T2-C-2801
VERT SCALE: N/A	SHEET: 9 OF 41	

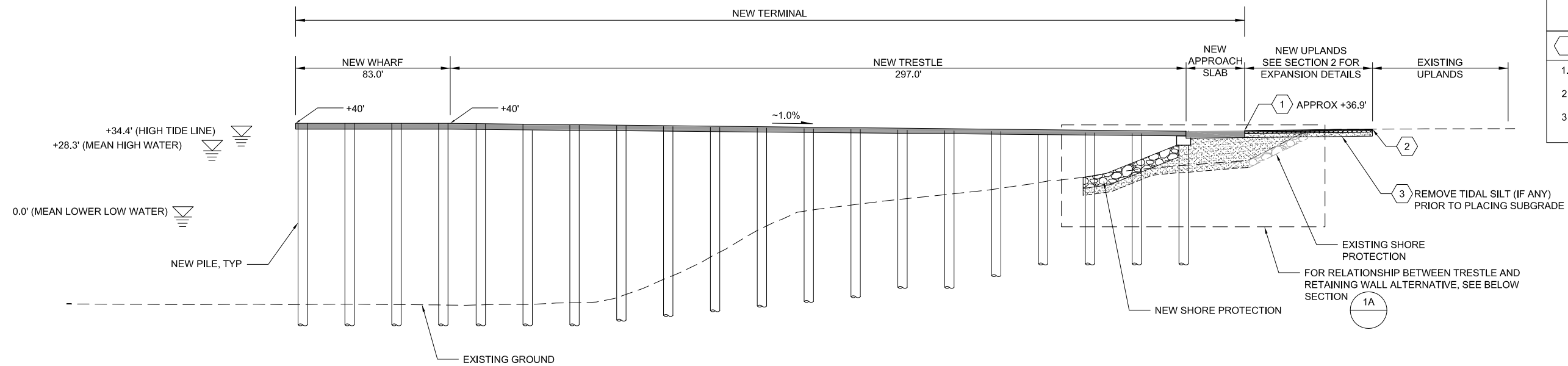
FILE NO.-

GENERAL SHEET NOTES

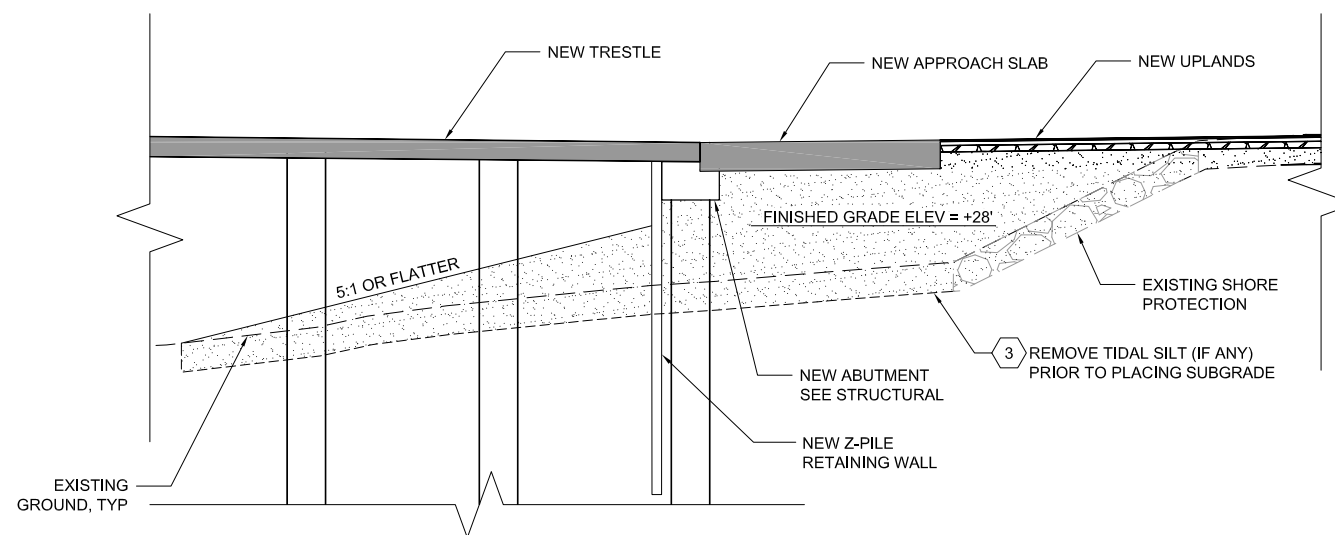
1. NEW TERMINAL IS SHOWN FOR REFERENCE ONLY AND IS NOT TO SCALE. SEE STRUCTURAL FOR DETAILS.
2. REFER TO SECTION 2 ON T2-C-3002 FOR PAVEMENT STRUCTURAL SECTION.
3. UPLAND RETAINING WALL SHOWN IS AN ALTERNATIVE DESIGN. VERIFY FINAL DESIGN CONCEPT WITH OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

SHEET KEYNOTES

1. ELEVATION VARIES. SEE GRADING PLAN.
2. KEY NEW UPLANDS INTO EXISTING SLOPE.
3. ESTIMATED DEPTH OF 3' SUBEXCAVATION - CONTRACTOR TO CONFIRM.



1 **TERMINAL 2**
1" = 25'
T2-C-2001



1A **UPLAND RETAINING WALL ALTERNATIVE - TRESTLE**
1" = 10'

CONCEPTUAL

Drawing: DE-DWG-20161028-T2C3001.DWG
Date: May 13, 2017 - 12:04pm

REV	DATE	DESCRIPTION	BY	APVD

REVISIONS

ch2m

DSGN M. HAAPALA	DR E. VILCE	CHK J. TAYLOR	APVD D. PLAYER
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SEAL



CIVIL
TYPICAL SECTIONS

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 5/15/2017	T2-C-3001
VERT SCALE: AS SHOWN	SHEET: 10 OF 41	

FILE NO.-

DESIGN LOADS (CONT.)

2. BERTHING LOADS

BERTHING LOAD IS BASED ON THE FOLLOWING SHIP CHARACTERISTICS:

	CONTAINER VESSEL	MILITARY VESSEL (LARGE, MEDIUM SPEED, RO-RO)
LENGTH (FT)	1,000	950
BEAM (FT)	140	106
DRAFT (FT)	45	36
DISPLACEMENT (DEADWEIGHT LONG TONS)	76,000	62,000
APPROACH SPEED PERPENDICULAR TO WHARF (FT/SEC)	0.46	0.50
APPROACH ANGLE (DEGREES)	10	10

3. MOORING LOADS

MOORING BOLLARD CAPACITY = 200 METRIC TONS

4. THERMAL LOADS

A. FOR CONCRETE SUPERSTRUCTURE:

MAX DESIGN TEMPERATURE = 80°F

MIN DESIGN TEMPERATURE = -30°F

B. FOR STEEL SUPERSTRUCTURE AND STEEL/CONCRETE COMPOSITE SUPERSTRUCTURE:

MAX DESIGN TEMPERATURE = 90°F

MIN DESIGN TEMPERATURE = -35°F

5. ICE LOADS

A. HORIZONTAL ICE LOADS ARE COMPUTED USING THE FOLLOWING ICE CHARACTERISTICS

- MAX DESIGN ICE FLOE SIZE = 750 FEET

- DESIGN ICE THICKNESS = 36 INCHES

- DESIGN ICE CRUSHING STRENGTH = 300 PSI

- DESIGN ICE FLEXURAL STRENGTH = 100 PSI

B. VERTICAL ICE LOADS DUE TO ACCRETION

- MAX ICE ACCRETION ON CYLINDRICAL PILES = 3 FEET RADIAL GROWTH

6. EARTHQUAKE LOADS

SUMMARY OF DESIGN EARTHQUAKE PARAMETERS				
EARTHQUAKE	RETURN PERIOD (YEARS)	PEAK HORIZONTAL GROUND ACCELERATION (g)		
		WATERSIDE	MID-SLOPE	LANDSIDE
¹ OLE	72	V/N ¹	V/N ¹	V/N ¹
CLE	475	V/N ¹	V/N ¹	V/N ¹
MCE _R	2,475	0.56	0.91	0.56

SEISMIC PERFORMANCE REQUIREMENTS		
STRUCTURES	SEISMIC HAZARD LEVEL	SEISMIC HAZARD LEVEL
PILE-SUPPORTED WHARVES, AND TRESTLE	OLE	MINIMAL DAMAGE
	CLE	MINIMAL DAMAGE
	DE	MINIMAL DAMAGE/CONTROLLED AND REPAIRABLE DAMAGE ²

NOTES:

OLE = OPERATING LEVEL EARTHQUAKE.

CLE = CONTINGENCY LEVEL EARTHQUAKE.

DE = DESIGN EARTHQUAKE = 2/3 x MCE_R

MCE_R = RISK TARGETED MAXIMUM CONSIDERED EARTHQUAKE.

¹ VALUES NOT USED. DE LOADS CONTROLS.

² WITH THE PROVISION TO BRING THE FACILITIES BACK INTO SERVICE WITHIN 1 WEEK AFTER THE EARTHQUAKE.

DESIGN RESPONSE SPECTRA

WATERSIDE LOCATION	
PERIOD (sec)	DE SA (g)
0	0.37
0.05	1.23
0.15	1.47
0.4	1.51
0.5	1.5
1	0.9
1.25	0.69
1.5	0.58
2	0.43
3	0.29
4	0.21
5	0.17

MID-SLOPE LOCATION	
PERIOD (sec)	DE SA (g)
0	0.61
0.05	1.23
0.15	1.55
0.4	1.59
0.5	1.61
1	0.9
1.25	0.69
1.5	0.58
2	0.43
3	0.29
4	0.21
5	0.17

LANDSIDE LOCATION	
PERIOD (sec)	DE SA (g)
0	0.37
0.05	1.15
0.15	1.15
0.4	1.17
0.5	1.19
1	0.9
1.25	0.77
1.5	0.73
2	0.51
3	0.29
4	0.21
5	0.17

NOTES:

SA = SPECTRAL ACCELERATION

LOAD FACTORS FOR LOAD COMBINATIONS

LRFD LOAD FACTORS FOR ALL LOAD COMBINATIONS SHALL BE AS SHOWN BELOW.

LOAD TYPE	VACANT CONDITION		MOORING & BREASTING CONDITION	BERTHING CONDITION	EARTHQUAKE CONDITION	
	MAX	MIN			MAX	MIN
DEAD LOAD (D)	1.2	0.9	1.2	1.2	1.0+k ^a	1.0-k ^a
LIVE LOAD (L)	1.6 ^b	-	1.6 ^b	1.0	0.1 ^c	-
THERMAL LOAD (T) ^d	1.0	1.0	1.0	1.0	-	-
SHRINKAGE (SH) ^d	1.0	1.0	1.0	1.0	-	-
CREEP (CR) ^d	1.0	1.0	1.0	1.0	-	-
BUOYANCY (B)	1.2	1.0	1.2	1.2	1.2 ^a	0.9 ^a
EARTH PRESSURE ON STRUCTURE (H) ^e	1.6	1.6	1.6	1.6	1.6 ^e	1.6 ^e
WIND ON STRUCTURE (W)	1.6	1.6	1.6	1.6	-	-
CURRENT ON STRUCTURE (C)	1.2	1.2	1.2	1.2	1.2	0.9
WAVE ON STRUCTURE (C)	1.2	1.2	1.2	1.2	1.2	0.9
SNOW LOAD (S)	1.6	-	1.6	1.0	-	-
ICE LOAD (ICE)	1.0	1.0	1.0 ^f	1.0 ^f	1.0 ^f	-
MOORING/BREASTING LOAD (M)	-	-	1.6	-	-	-
BERTHING LOAD (B _b)	-	-	-	1.6	-	-
EARTHQUAKE LOAD (E)	-	-	-	-	1.0	1.0

- a. THE K FACTOR (k = 0.5 (PGA) AND BUOYANCY (B) WILL BE APPLIED TO THE VERTICAL DEAD LOAD (D) ONLY, AND NOT TO THE INERTIAL MASS OF THE STRUCTURE.
- b. THE LOAD FACTOR FOR CRANE RAIL LIVE LOAD WILL BE 1.3. THE LIVE LOAD (L) FACTOR MAY BE REDUCED TO 1.3 FOR THE MAXIMUM OUTRIGGER FLOAT LOAD FROM A TRUCK CRANE.
- c. THE 0.1 LOAD FACTOR APPLIES TO UNIFORM LIVE LOADS ONLY.
- d. THE LOAD FACTORS ASSOCIATED WITH SUPERIMPOSED DEFORMATION (T, SH, CR) SHOULD BE USED WITH EFFECTIVE SECTION PROPERTIES.
- e. AN EARTH PRESSURE ON THE STRUCTURE FACTOR (H) OF 1.0 MAY BE USED FOR PILE OR BULKHEAD STRUCTURE.
MAX = MAXIMUM
MIN = MINIMUM
- f. FOR VERTICAL ICE LOAD ONLY. HORIZONTAL ICE CRUSHING LOAD SHOULD NOT BE COMBINED W/ MOORING, BERTHING, OR EARTHQUAKE LOADS.

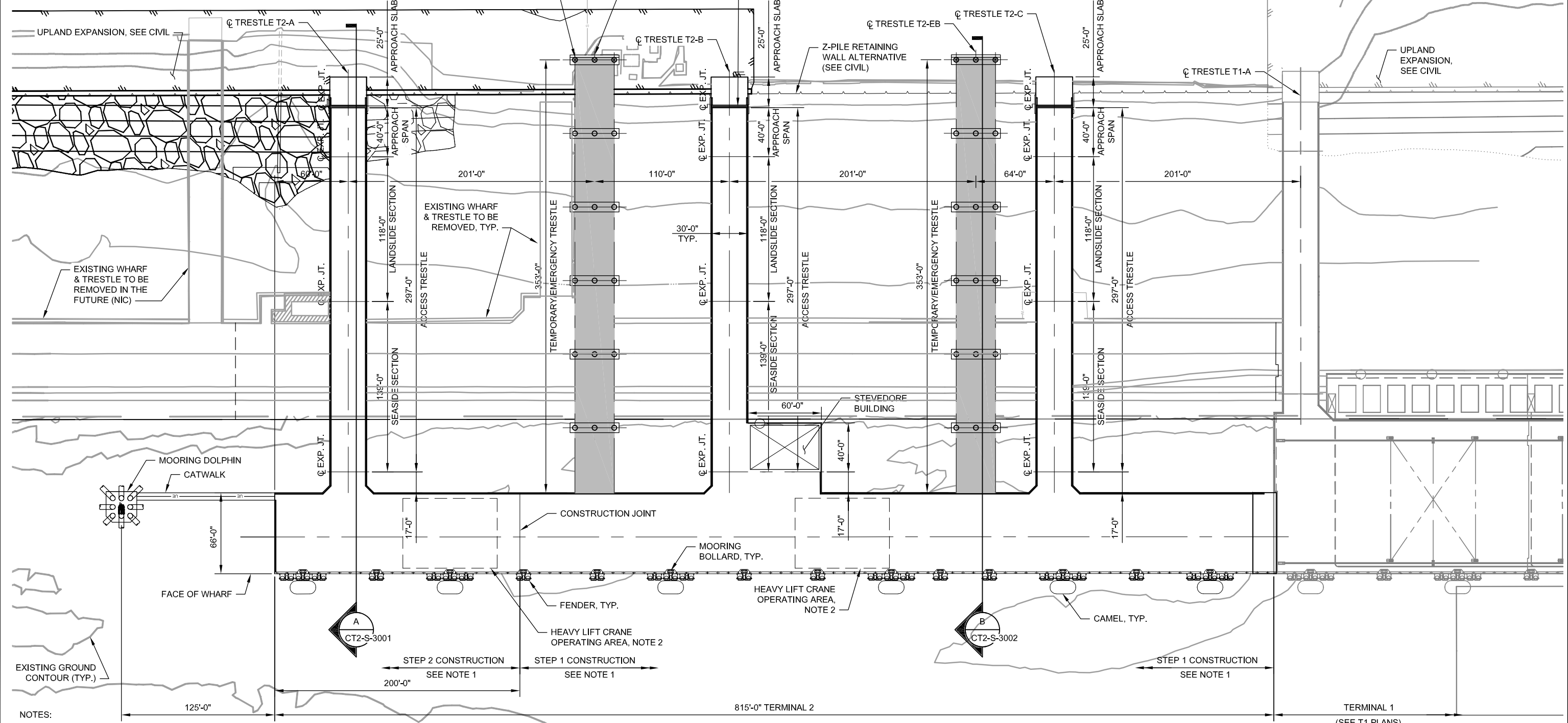
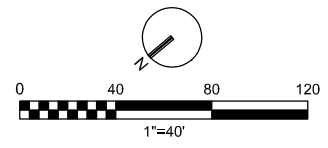
MATERIALS

1. CONCRETE
 - 1.1 CONCRETE USED FOR STRUCTURES SHALL CONFORM TO REQUIREMENTS OF ACI 318.
 - 1.2 THE 90-DAY CHLORIDE PERMEABILITY FOR THE CONCRETE MIX USED IN WHARF, TRESTLE, PILE, AND OTHER MAJOR STRUCTURAL COMPONENTS SHALL NOT EXCEED 1,000 COULOMBS.
 - 1.3 THE CLASS OF CONCRETE SHALL BE THE FOLLOWING, UNLESS SHOWN OTHERWISE:
 - A. PRECAST CONCRETE PANELS: f'c = 10,000 PSI.
 - B. CAST-IN-PLACE CONCRETE PILE: f'c = 4,000 PSI.
 - C. CAST-IN-PLACE OR PRECAST CONCRETE PILE CAP: f'c = 4,000 PSI.
2. REINFORCING STEEL
 - 2.1 ASTM A706, LOW ALLOY STEEL DEFORMED BARS FOR CONCRETE REINFORCEMENT, SHALL BE USED FOR ALL CAST-IN-PLACE CONCRETE CONSTRUCTION UNLESS OTHERWISE NOTED.
 - 2.2 CONFINEMENT STEEL (SPIRALS AND HOOPS) SHALL CONFORM TO ASTM A706.
 - 2.3 ALL REINFORCING STEEL FOR PILE, WHARF, AND TRESTLE SHALL BE EPOXY COATED.
 - 2.4 UNLESS OTHERWISE SPECIFIED THE MINIMUM CLEAR COVER FROM THE FACE OF CONCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE AS FOLLOWS:
 - A. DIRECT EXPOSURE TO SALTWATER, AND CAST-IN-PLACE CONCRETE PILE: 4-INCH.
 - B. OTHER: 3 1/2"-INCH.
3. PRESTRESSING STEEL
 - 3.1 PRESTRESSING REINFORCEMENT SHALL BE HIGH-TENSILE-STRENGTH, SEVEN WIRE LOW-RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF AASHTO M203, GRADE 270.
4. STRUCTURAL STEEL AND MISCELLANEOUS METAL
 - 4.1 ROLLED WIDE FLANGE SHAPES: ASTM A992.
 - 4.2 HP SHAPES, CHANNELS, ANGLES, AND PLATES: ASTM A572, GRADE 50.
 - 4.3 STEEL PIPE PILES: ASTM A572, GRADE 50.
 - 4.4 STEEL SHEET PILES: ASTM A572, GRADE 50. STEEL SHEET PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A328 STEEL SHEET PILING AND ASTM A6 GENERAL REQUIREMENTS FOR ROLLED STRUCTURAL STEEL BARS, PLATES, SHAPES, AND SHEET PILING. ALL INTERLOCK GROUP TEST SHALL PROVIDE A MINIMUM OF 20,000 LBS PER LINEAR INCH ULTIMATE INTERLOCK TENSILE STRENGTH.
 - 4.5 HOLLOW STRUCTURAL SHAPES: ASTM A500, GRADE B. WELDING OF HOLLOW STRUCTURAL SECTION SHALL BE PER AWS D1.1. HSS SHALL NOT BE USED FOR DYNAMIC LOADING CONDITIONS WITHOUT ADDITIONAL MINIMUM CVN REQUIREMENTS BEING SPECIFIED.
 - 4.6 STRUCTURAL BOLTS: AASHTO M164 OR ASTM A325 WITH RECOMMENDED NUTS, WASHERS AND DIRECT TENSION INDICATORS.
 - 4.7 ANCHOR BOLTS: ASTM F1554, HOT DIPPED GALVANIZED PER ASTM A153A OR AASHTO M232 WITH RECOMMENDED NUTS AND WASHERS. BOLT GRADES WITH TENSILE STRENGTHS OVER 145 KSI SHALL BE TESTED FOR EMBRITTLEMENT IN ACCORDANCE WITH ASTM A143.
 - 4.8 GALVANIZING: HOT DIP GALVANIZING FOR STEEL PIPE PILES (FOR DOLPHINS), STEEL SHEET PILES AND OTHER STRUCTURAL STEEL ATTACHMENTS SHALL CONFORM TO ASTM A123 OR ASTM A153 AS APPLICABLE.

CONCEPTUAL

<p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>		<p>NOT FOR CONSTRUCTION</p>			<p>STRUCTURAL GENERAL NOTES (2 OF 2)</p>	<p>PORT OF ANCHORAGE</p> <p>ANCHORAGE PORT MODERNIZATION PROGRAM</p> <p>TERMINAL 2 (T2)</p> <p>ANCHORAGE, ALASKA</p>																																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>APVD</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	DESCRIPTION	BY	APVD																					<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DSGN</th> <th>DR</th> <th>CHK</th> <th>APVD</th> </tr> </thead> <tbody> <tr> <td>H. GUAN</td> <td>T. CHANCELLOR</td> <td>K. JUMPAWONG</td> <td>D. PLAYER</td> </tr> </tbody> </table>	DSGN	DR	CHK	APVD	H. GUAN	T. CHANCELLOR	K. JUMPAWONG	D. PLAYER	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	REVISIONS										<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">CONSULTANT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	CONSULTANT										<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">SEAL</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	SEAL										<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>HORIZ SCALE:</th> <th>DATE:</th> <th>T2-S-0002</th> </tr> </thead> <tbody> <tr> <td>AS SHOWN</td> <td>10/28/2016</td> <td rowspan="2">13 OF 41</td> </tr> <tr> <td>VERT SCALE: N/A</td> <td>SHEET:</td> </tr> </tbody> </table>	HORIZ SCALE:	DATE:	T2-S-0002	AS SHOWN	10/28/2016	13 OF 41	VERT SCALE: N/A	SHEET:
REV	DATE	DESCRIPTION	BY	APVD																																																																								
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CONSULTANT																																																																												
SEAL																																																																												
HORIZ SCALE:	DATE:	T2-S-0002																																																																										
AS SHOWN	10/28/2016	13 OF 41																																																																										
VERT SCALE: N/A	SHEET:																																																																											

Drawing: DE-DWG-20161028-1250002.DWG
 Date: May 11, 2017 - 11:34am



- NOTES:
- FOR CONSTRUCTION SEQUENCING, SEE SHEET T2-G-2002.
 - HEAVY LIFT CRANE OPERATING AREA DESIGNED TO SUPPORT OUTRIGGER LOADS AND TREAD LOADS OF GROVE GMK-7550, LIEBHERR LHM-550, AND MANITOWOC 999, FINAL DESIGNER OF RECORD TO VERIFY ACTUAL HEAVY LIFT CRANE LOADING REQUIREMENTS.

CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD

ch2m

DSGN: H. GUAN | DR: R. BENFIELD | CHK: K. JUMPWONG | APVD: D. PLAYER

CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL GENERAL PLAN

PORT OF ANCHORAGE

ANCHORAGE PORT MODERNIZATION PROGRAM

TERMINAL 2 (T2)

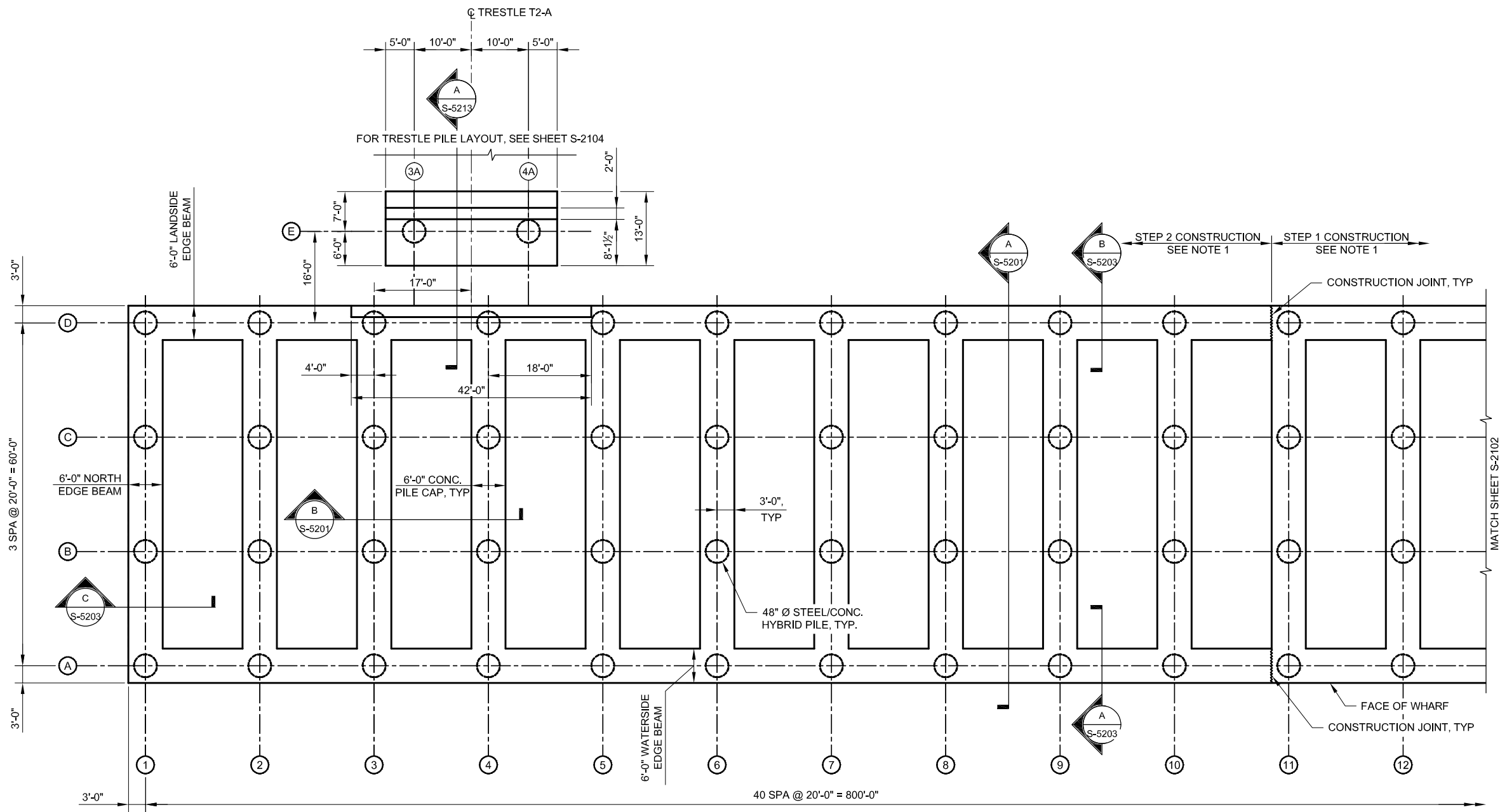
ANCHORAGE, ALASKA

HORIZ SCALE: AS SHOWN | DATE: 10/28/2016 | T2-S-2001

VERT SCALE: NA | SHEET: 15 OF 41

Drawing: DE-DWG-20161028-T2S2001.DWG Date: May 12, 2017 - 9:56am

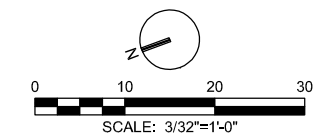
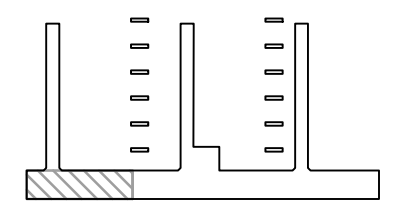
FILE NO.-



PARTIAL WHARF PILE AND PILE CAP PLAN

NOTES:
 1. FOR CONSTRUCTION SEQUENCING, SEE SHEET T2-G-2002.

KEY PLAN



CONCEPTUAL

Drawing: DE-DWG-20161026-12S2101.DWG Date: May 11, 2017 - 11:24am

REV	DATE	DESCRIPTION	BY	APVD

REVISIONS

ch2m

DSGN H. GUAN	DR D. MONK	CHK K. JUMPAWONG	APVD D. PLAYER
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CONSULTANT

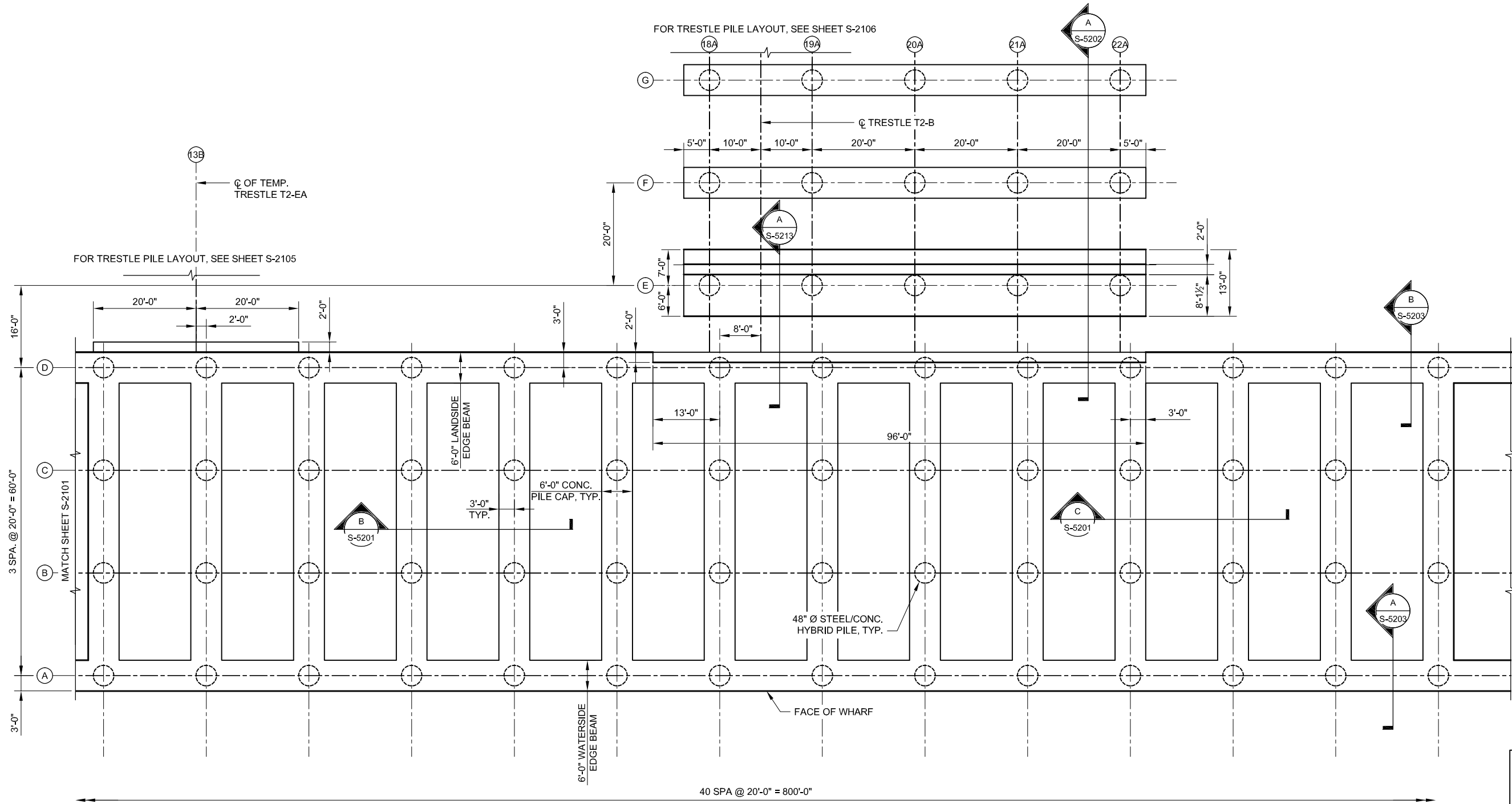
NOT FOR CONSTRUCTION



STRUCTURAL
 PARTIAL PILE & PILE CAP LAYOUT
 (1 OF 8)

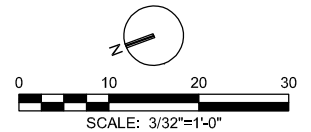
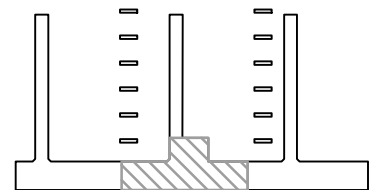
PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2101
VERT SCALE: N/A	SHEET: 16 OF 41	

FILE NO.-



PARTIAL WHARF PILE AND PILE CAP PLAN

KEY PLAN



CONCEPTUAL

Drawing: DE-DWG-20161026-1252102.DWG Date: May 11, 2017 - 11:53am

REV	DATE	DESCRIPTION	BY	APVD

VERIFIY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

ch2m

DSGN H. GUAN	DR D. MONK	CHK K. JUMPAWONG	APVD D. PLAYTER
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CONSULTANT

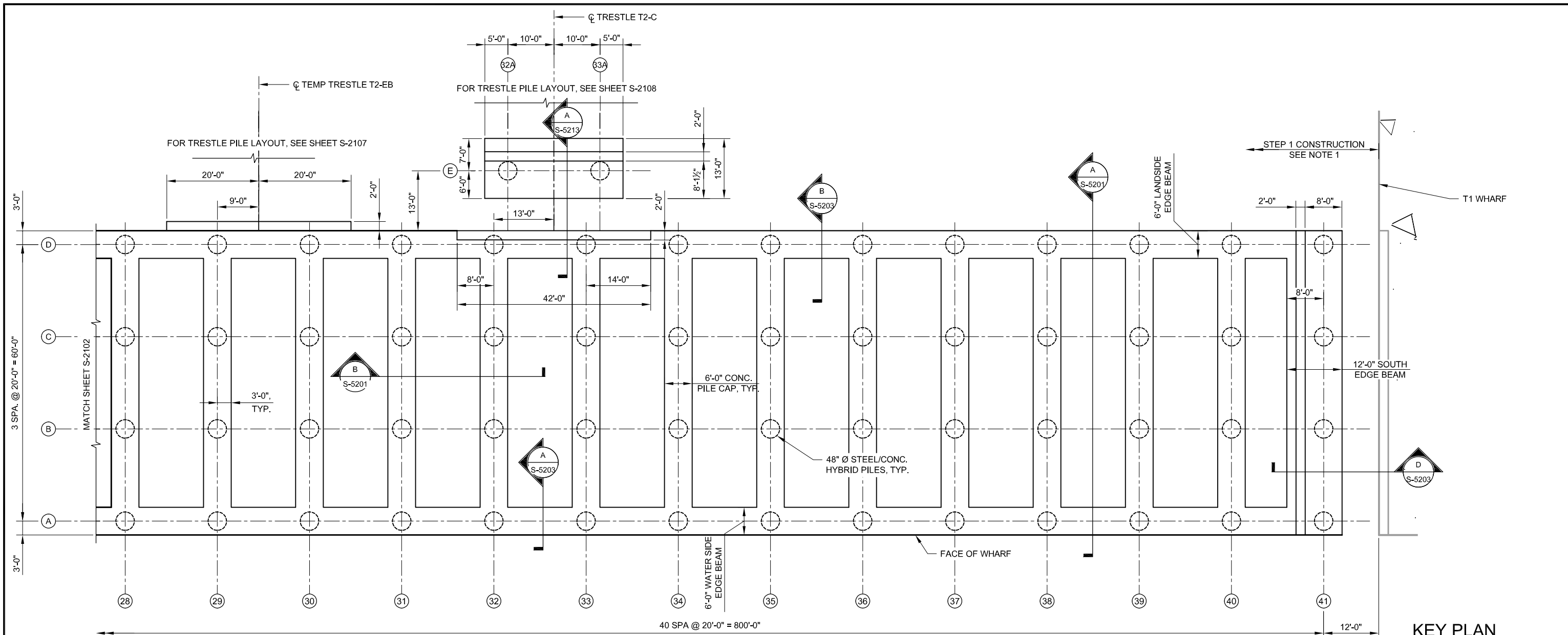
NOT FOR CONSTRUCTION



STRUCTURAL
 PARTIAL PILE & PILE CAP LAYOUT
 (2 OF 8)

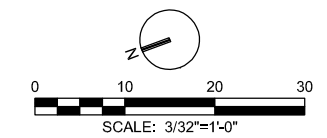
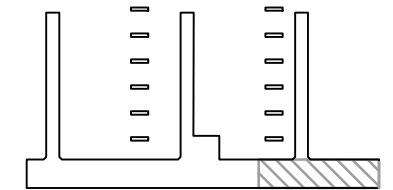
PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2102
VERT SCALE: N/A	SHEET: 17 OF 41	

FILE NO.-



PARTIAL WHARF PILE AND PILE CAP PLAN

NOTES:
 1. FOR CONSTRUCTION SEQUENCING, SEE SHEET T2-G-2002.



CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD

ch2m

DSGN: H. GUAN DR: D. MONK CHK: K. JUMPAWONG APVD: D. PLAYER

CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL
 PARTIAL PILE & PILE CAP LAYOUT
 (3 OF 8)

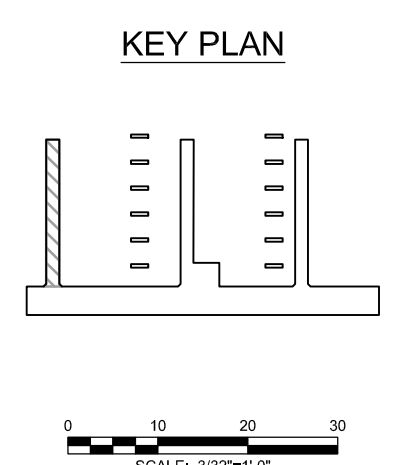
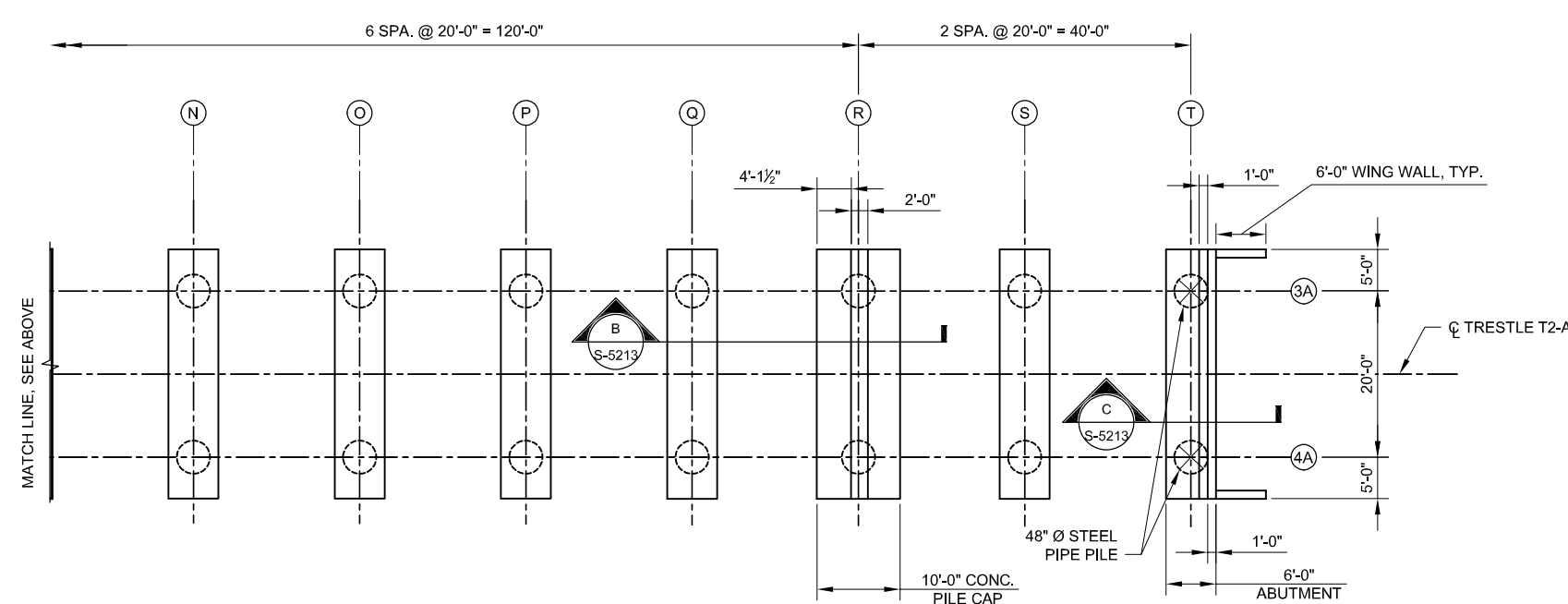
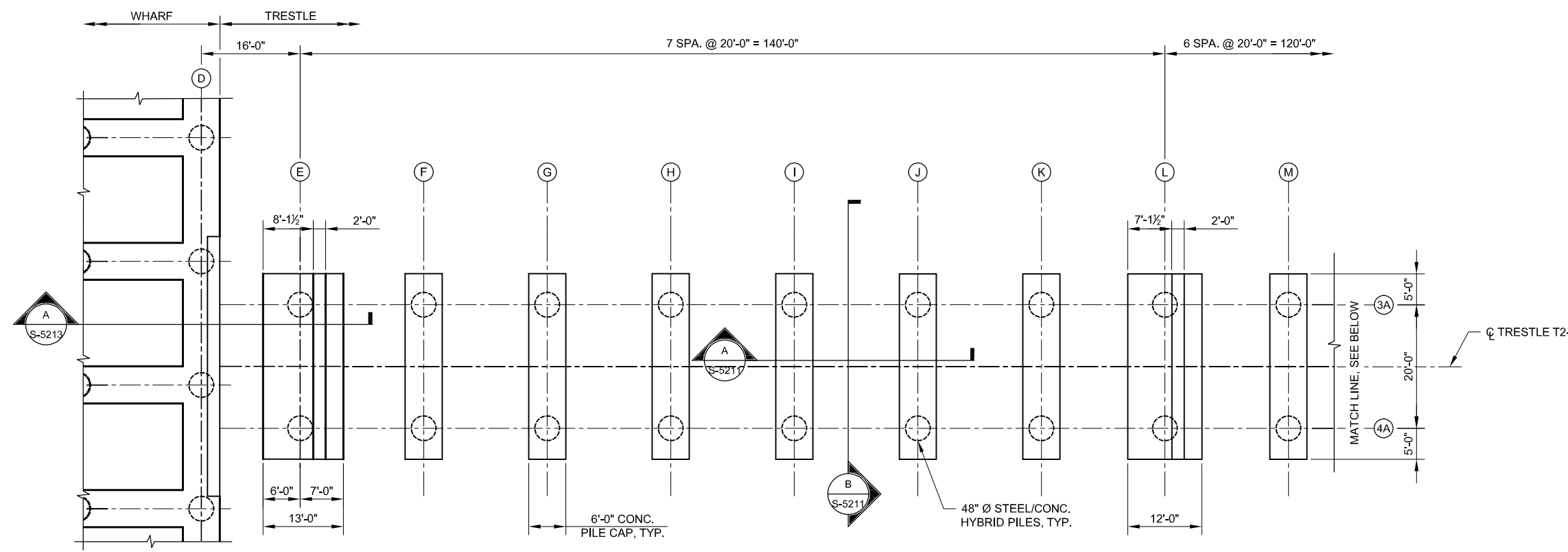
PORT OF ANCHORAGE
 ANCHORAGE PORT MODERNIZATION PROGRAM
 TERMINAL 2 (T2)
 ANCHORAGE, ALASKA

HORIZ SCALE: AS SHOWN DATE: 10/28/2016
 VERT SCALE: N/A SHEET: 18 OF 41

T2-S-2103

Drawing: DE-DWG-20161026-12S2103.DWG Date: May 11, 2017 - 11:55am

FILE NO.-



TRESTLE T2-A PILE AND PILE CAP PLAN

CONCEPTUAL

Drawing: DE-DWG-20161028-12S2104.DWG
Date: May 11, 2017 - 1:10pm

REV	DATE	DESCRIPTION	BY	APVD

REVISIONS

ch2m

DSGN H. GUAN	DR D. MONK	CHK K. JUMPAWONG	APVD D. PLAYER
CONSULTANT			

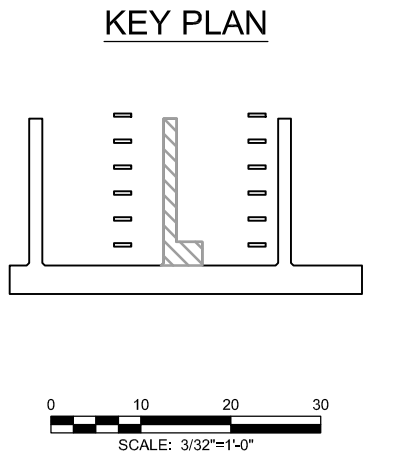
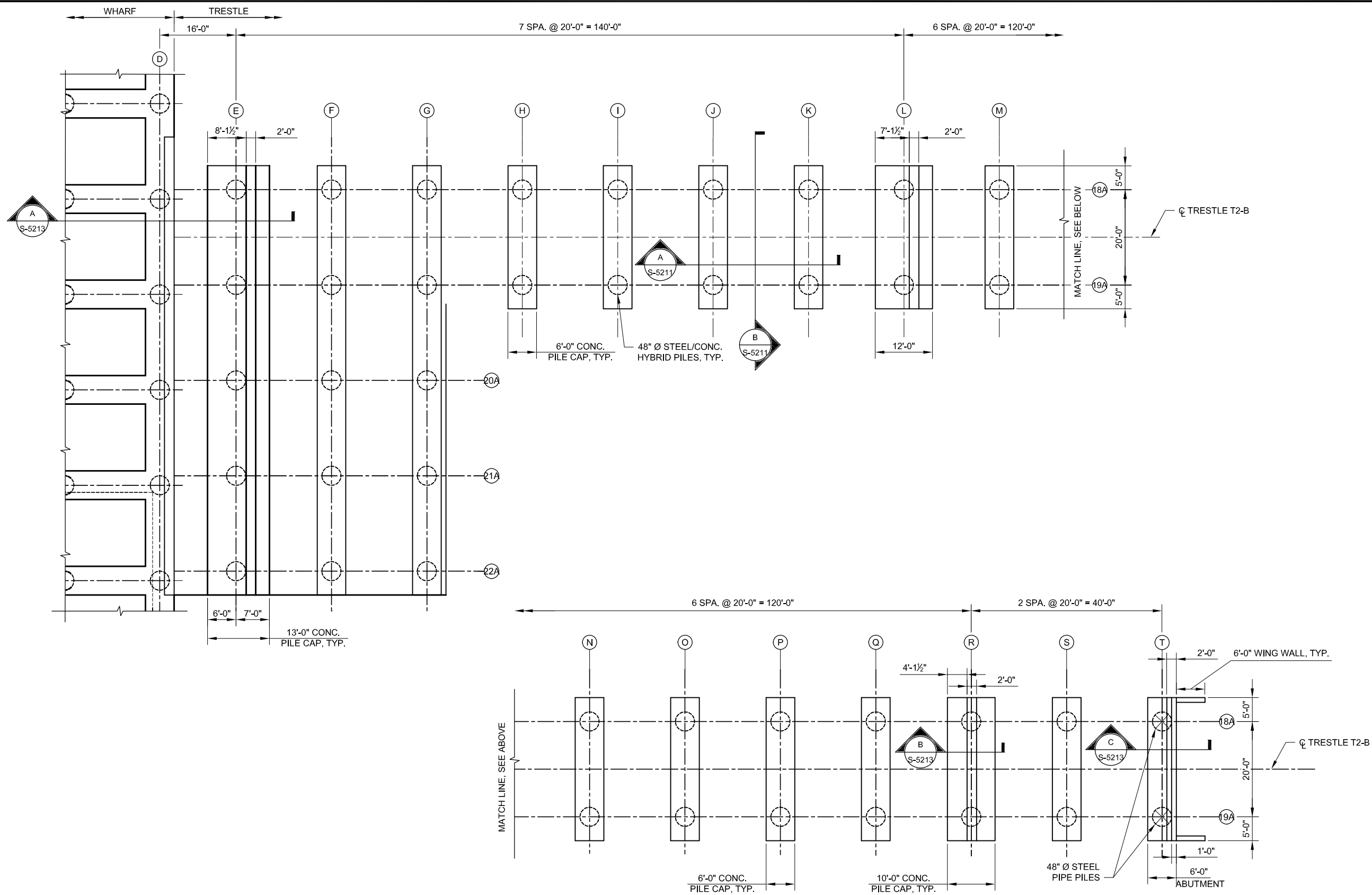
NOT FOR CONSTRUCTION



STRUCTURAL
PARTIAL PILE & PILE CAP LAYOUT
(4 OF 8)

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2104
VERT SCALE: N/A	SHEET: 19 OF 41	

FILE NO.-



TRESTLE T2-B PILE AND PILE CAP PLAN

CONCEPTUAL

Drawing: DE-DWG-20161028-12S2106.DWG
Date: May 11, 2017 - 1:15pm

REV	DATE	DESCRIPTION	BY	APVD

REVISIONS

ch2m

DSGN H. GUAN	DR D. MONK	CHK K. JUMPAWONG	APVD D. PLAYER
CONSULTANT			

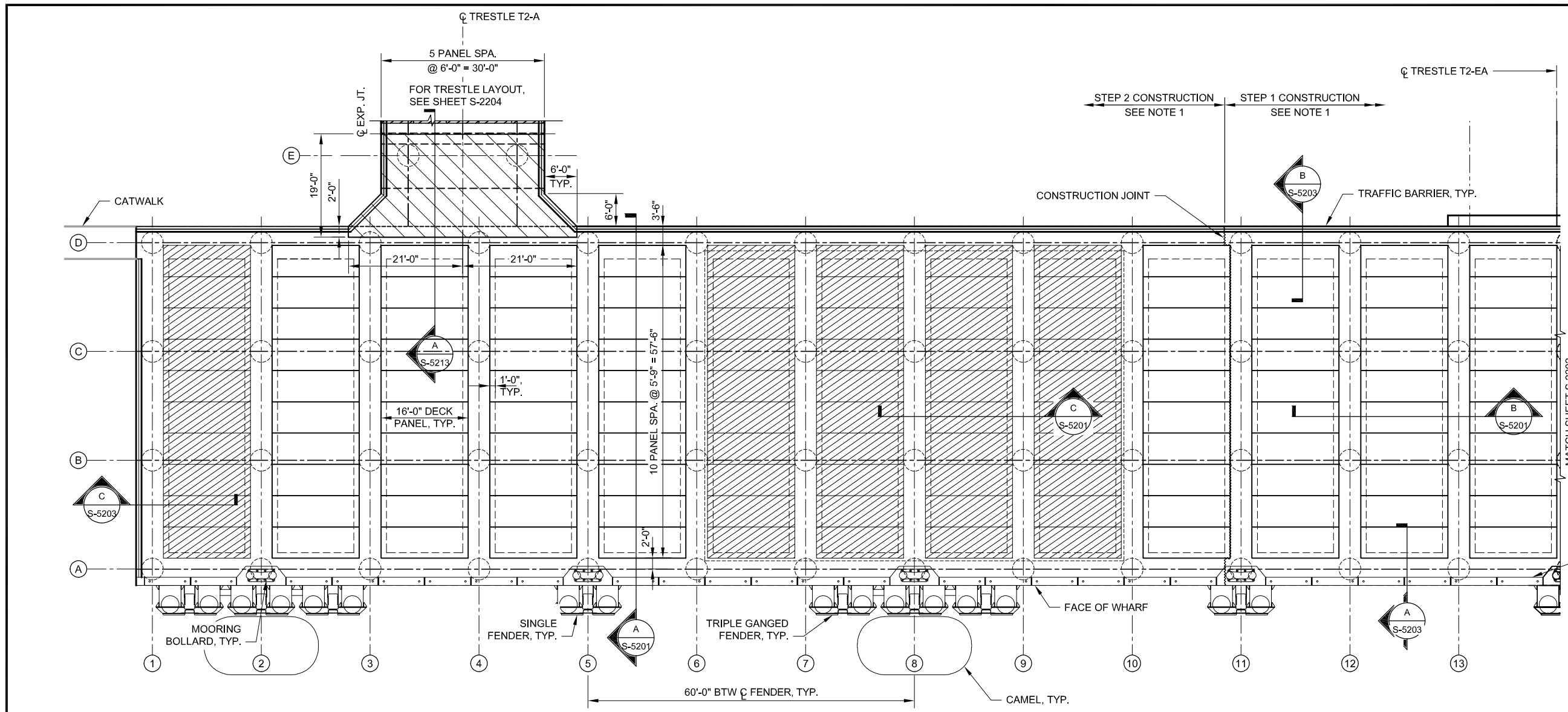
NOT FOR CONSTRUCTION



STRUCTURAL
PARTIAL PILE & PILE CAP LAYOUT
(6 OF 8)

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2106
VERT SCALE: N/A	SHEET: 21 OF 41	

FILE NO.-



LEGEND

- 24" PRECAST CONCRETE HAUNCHED DECK PANEL
- 24" PRECAST CONCRETE FLAT DECK PANEL
- CONC. LINK SLAB
- TRAFFIC BARRIER
- BULL RAIL

NOTES:
1. FOR CONSTRUCTION SEQUENCING, SEE SHEET T2-G-2002.

PARTIAL WHARF DECK PANEL PLAN

KEY PLAN

SCALE: 3/32"=1'-0"


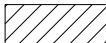
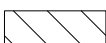
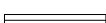
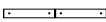
CONCEPTUAL

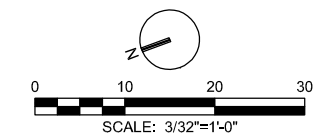
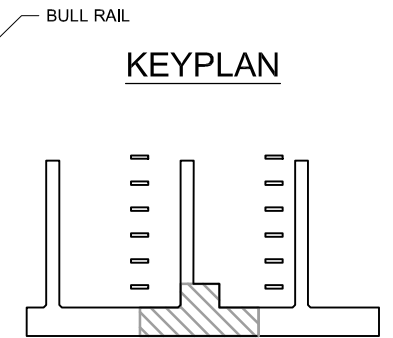
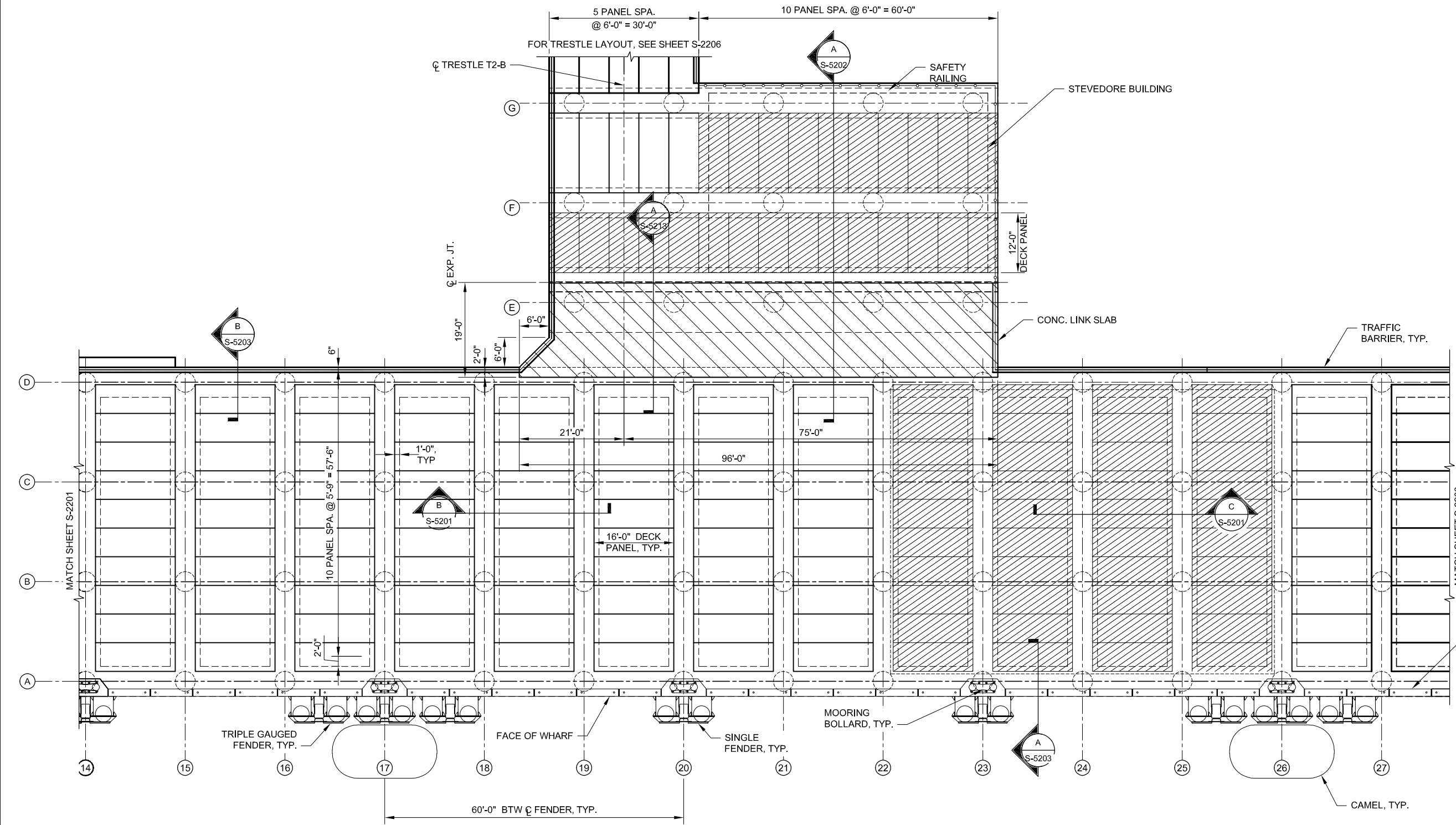
<p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>	REV	DATE	DESCRIPTION	BY	APVD		<p>NOT FOR CONSTRUCTION</p>		<p>STRUCTURAL</p> <p>PARTIAL DECK PANEL LAYOUT</p> <p>(1 OF 6)</p>	PORT OF ANCHORAGE			
										<p>ANCHORAGE PORT MODERNIZATION PROGRAM</p> <p>TERMINAL 2 (T2)</p> <p>ANCHORAGE, ALASKA</p>			
										<p>HORIZ SCALE: AS SHOWN</p> <p>VERT SCALE: N/A</p>	<p>DATE: 10/28/2016</p> <p>SHEET: 24 OF 41</p>	<p>T2-S-2201</p>	
REVISIONS													

Drawing: DE-DWG-20161028-T2S2201.DWG Date: May 11, 2017 - 1:19pm

FILE NO.-

LEGEND

-  24" PRECAST CONCRETE HAUNCHED DECK PANEL
-  24" PRECAST CONCRETE FLAT DECK PANEL
-  CONC. LINK SLAB
-  TRAFFIC BARRIER
-  BULL RAIL



PARTIAL WHARF DECK PANEL PLAN

CONCEPTUAL

Drawing: DE-DWG-20161028-12S2202.DWG
Date: May 11, 2017 - 1:20pm

REV	DATE	DESCRIPTION	BY	APVD

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



DSGN: H. GUAN DR: D. MONK CHK: K. JUMPAWONG APVD: D. PLAYER
CONSULTANT

NOT FOR CONSTRUCTION








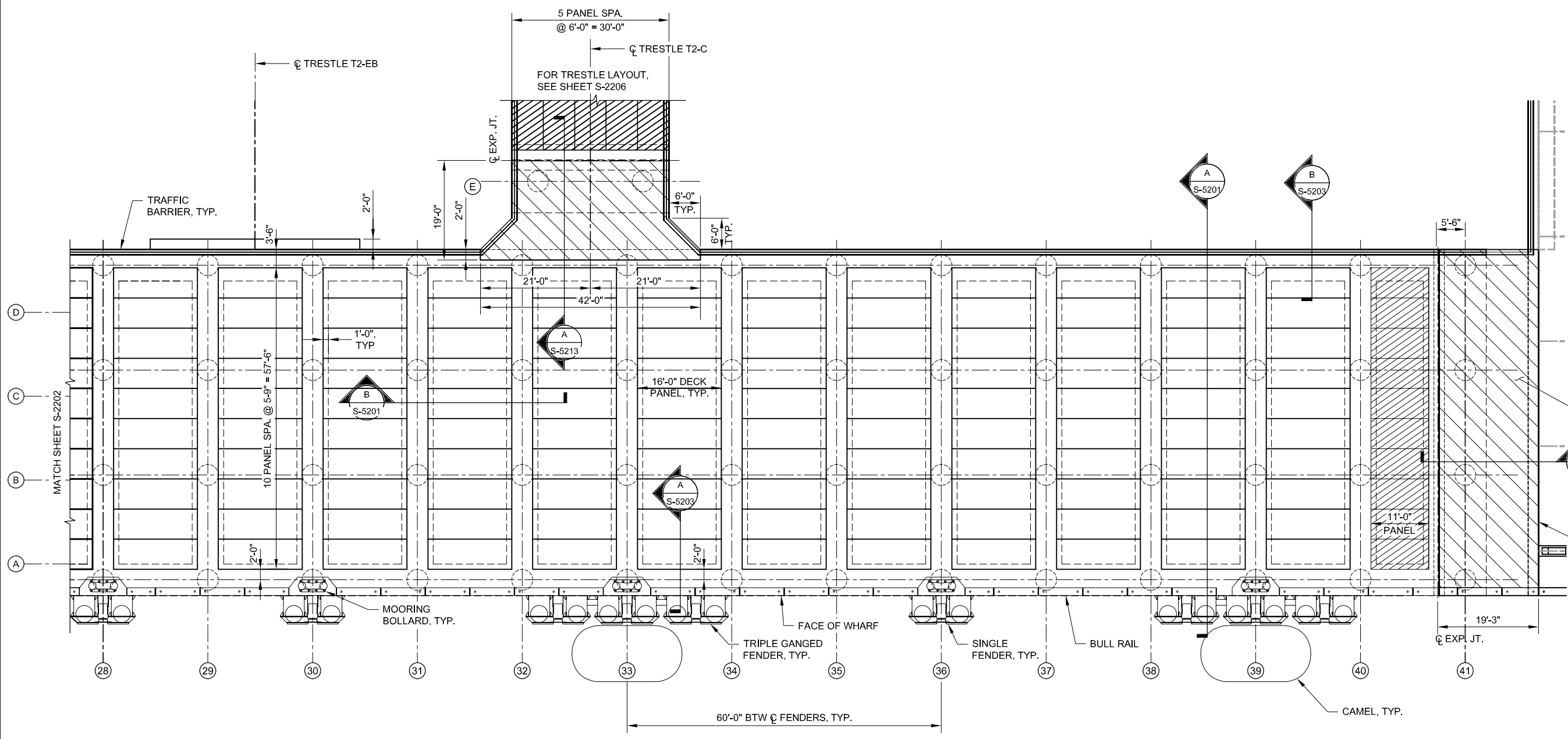
STRUCTURAL
PARTIAL DECK PANEL LAYOUT
(2 OF 6)

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2202
VERT SCALE: N/A	SHEET: 25 OF 41	

FILE NO.-

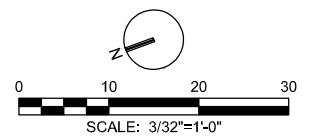
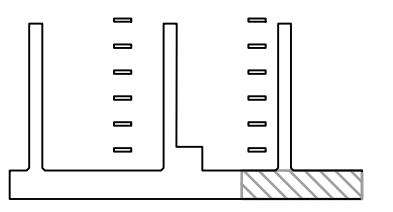
LEGEND

-  24" PRECAST CONCRETE HAUNCHED DECK PANEL
-  24" PRECAST CONCRETE FLAT DECK PANEL
-  CONC. LINK SLAB
-  TRAFFIC BARRIER
-  BULL RAIL



PARTIAL WHARF DECK PANEL PLAN

KEY PLAN



CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

ch2m

DSGN: H. GUAN DR: D. MONK CHK: K. JUMPAWONG APVD: D. PLAYER

CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL
 PARTIAL DECK PANEL LAYOUT
 (3 OF 6)

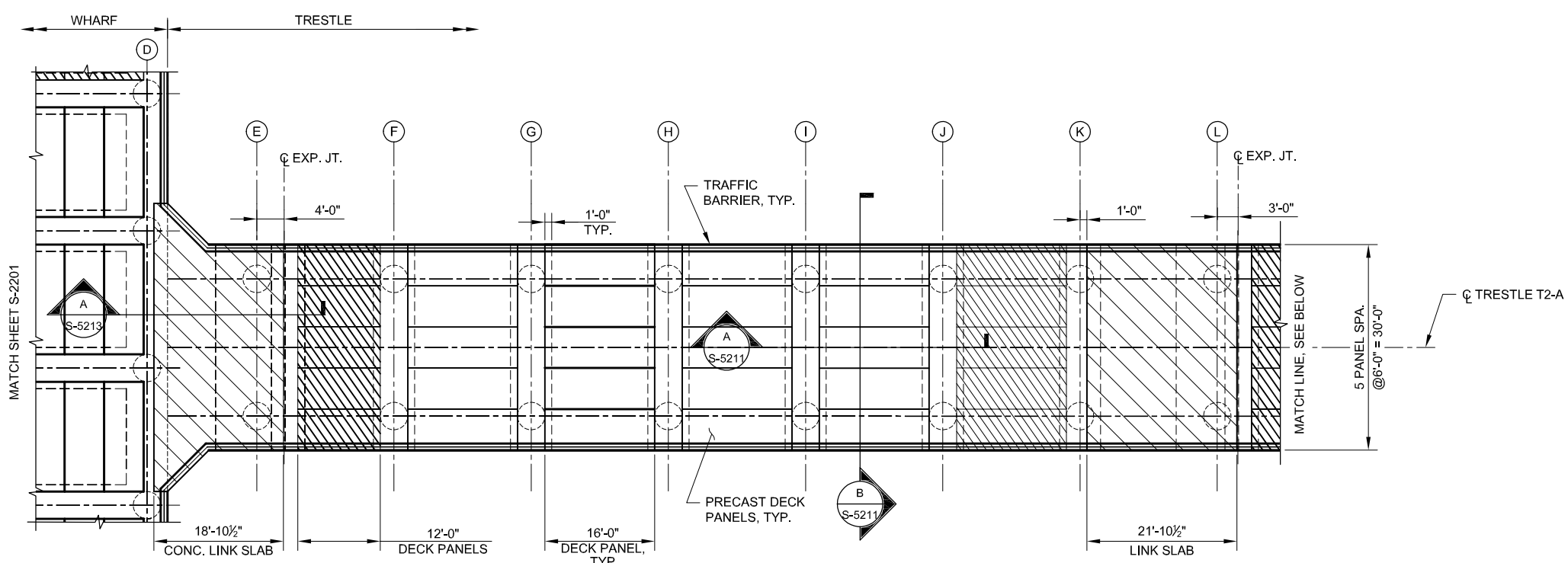
PORT OF ANCHORAGE
 ANCHORAGE PORT MODERNIZATION PROGRAM
 TERMINAL 2 (T2)
 ANCHORAGE, ALASKA

HORIZ SCALE: AS SHOWN DATE: 10/28/2016
 VERT SCALE: N/A SHEET: 26 OF 41

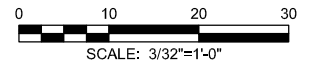
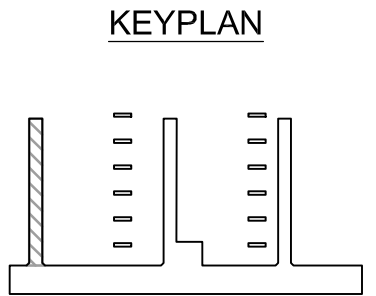
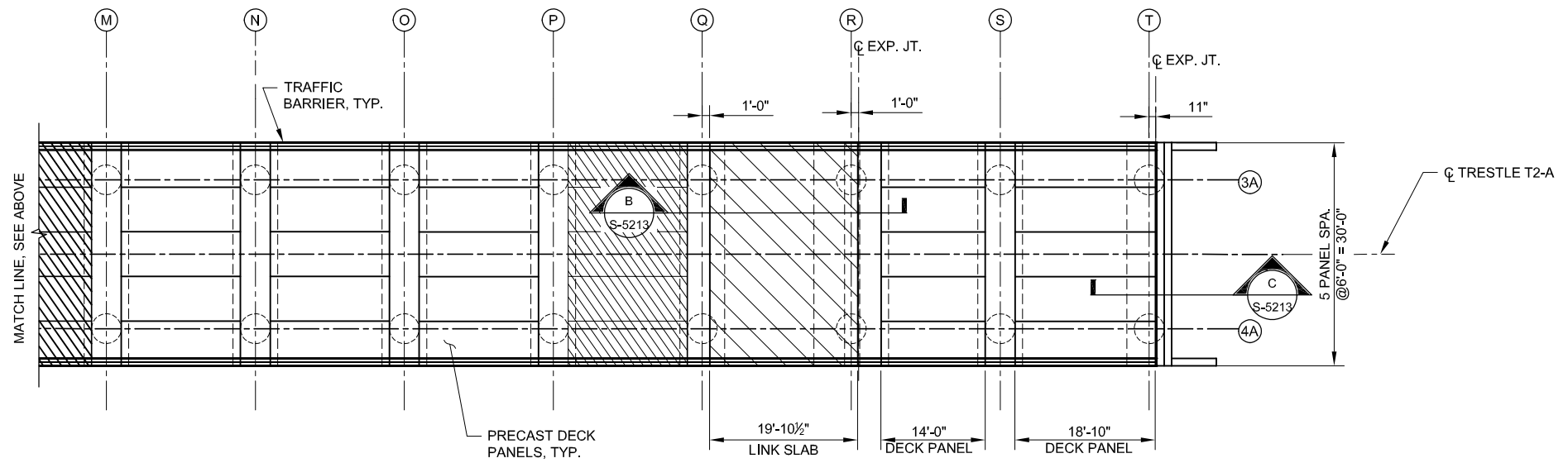
T2-S-2203

Drawing: DE-DWG-20161028-T2S2203.DWG
 Date: May 11, 2017 - 1:22pm

FILE NO.-



- LEGEND**
- 24" PRECAST CONCRETE HAUNCHED DECK PANEL
 - 24" PRECAST CONCRETE FLAT DECK PANEL
 - CONC. LINK SLAB
 - TRAFFIC BARRIER



TRESTLE T2-A DECK PANEL PLAN

CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD

REVISIONS

DSGN: H. GUAN DR: D. MONK CHK: K. JUMPAWONG APVD: D. PLAYER
 CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL
 PARTIAL DECK PANEL LAYOUT
 (4 OF 6)

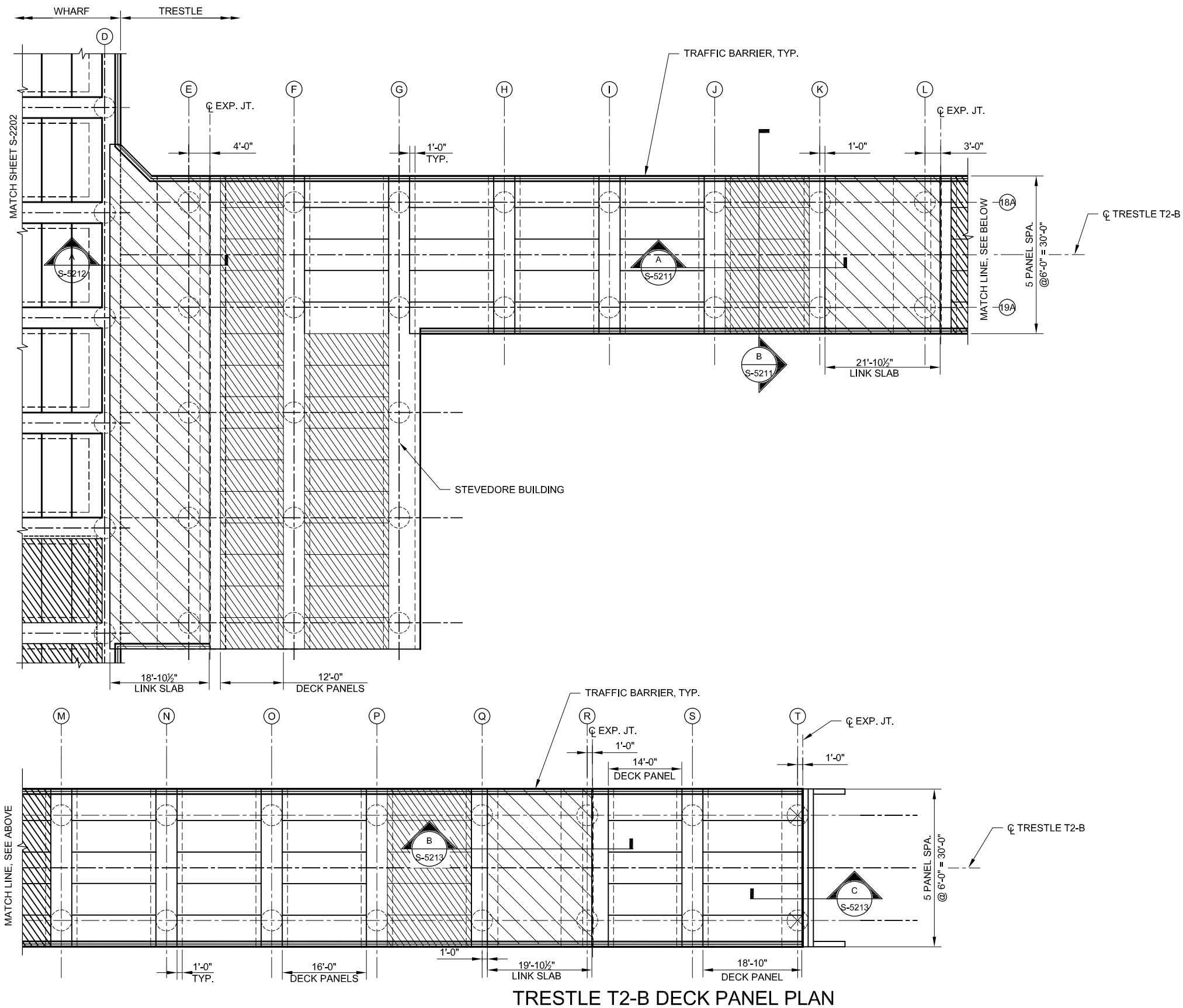
PORT OF ANCHORAGE
 ANCHORAGE PORT MODERNIZATION PROGRAM
 TERMINAL 2 (T2)
 ANCHORAGE, ALASKA

HORIZ SCALE: AS SHOWN DATE: 10/28/2016
 VERT SCALE: N/A SHEET: 27 OF 41





T2-S-2204

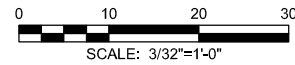
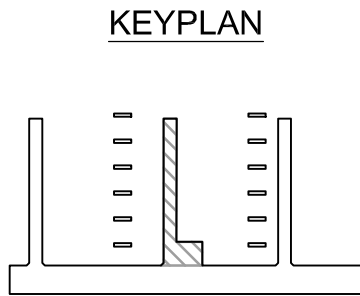
Drawing: DE-DWG-20161028-12S2204.DWG
 Date: May 11, 2017 - 12:40pm

FILE NO.-



LEGEND

-  24" PRECAST CONCRETE HAUNCHED DECK PANEL
-  24" PRECAST CONCRETE FLAT DECK PANEL
-  CONC. LINK SLAB
-  TRAFFIC BARRIER



TRESTLE T2-B DECK PANEL PLAN

CONCEPTUAL

Drawing: DE-DWG-20161028-T2S2205.DWG
Date: May 11, 2017 - 1:26pm

REV	DATE	DESCRIPTION	BY	APVD

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

ch2m

DSGN: H. GUAN DR: D. MONK CHK: K. JUMPAWONG APVD: D. PLAYER

CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL
PARTIAL DECK PANEL LAYOUT
(5 OF 6)

PORT OF ANCHORAGE
ANCHORAGE PORT MODERNIZATION PROGRAM
TERMINAL 2 (T2)
ANCHORAGE, ALASKA

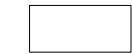


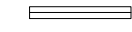
HORIZ SCALE: AS SHOWN DATE: 10/28/2016
VERT SCALE: N/A SHEET: 28 OF 41

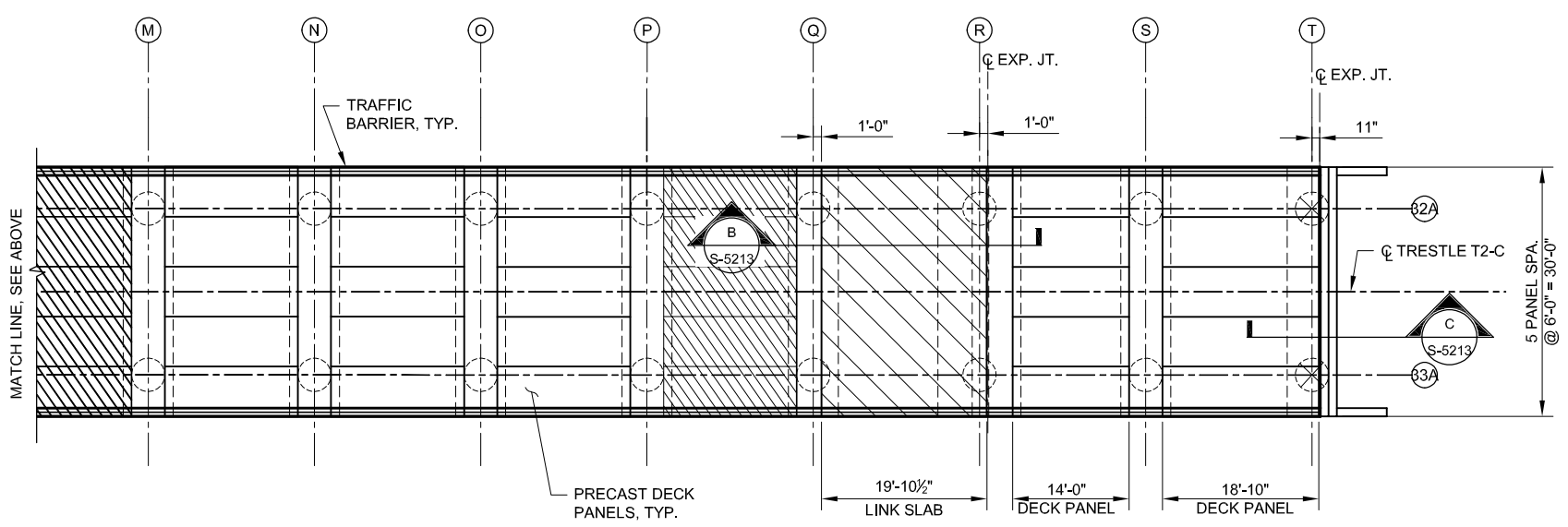
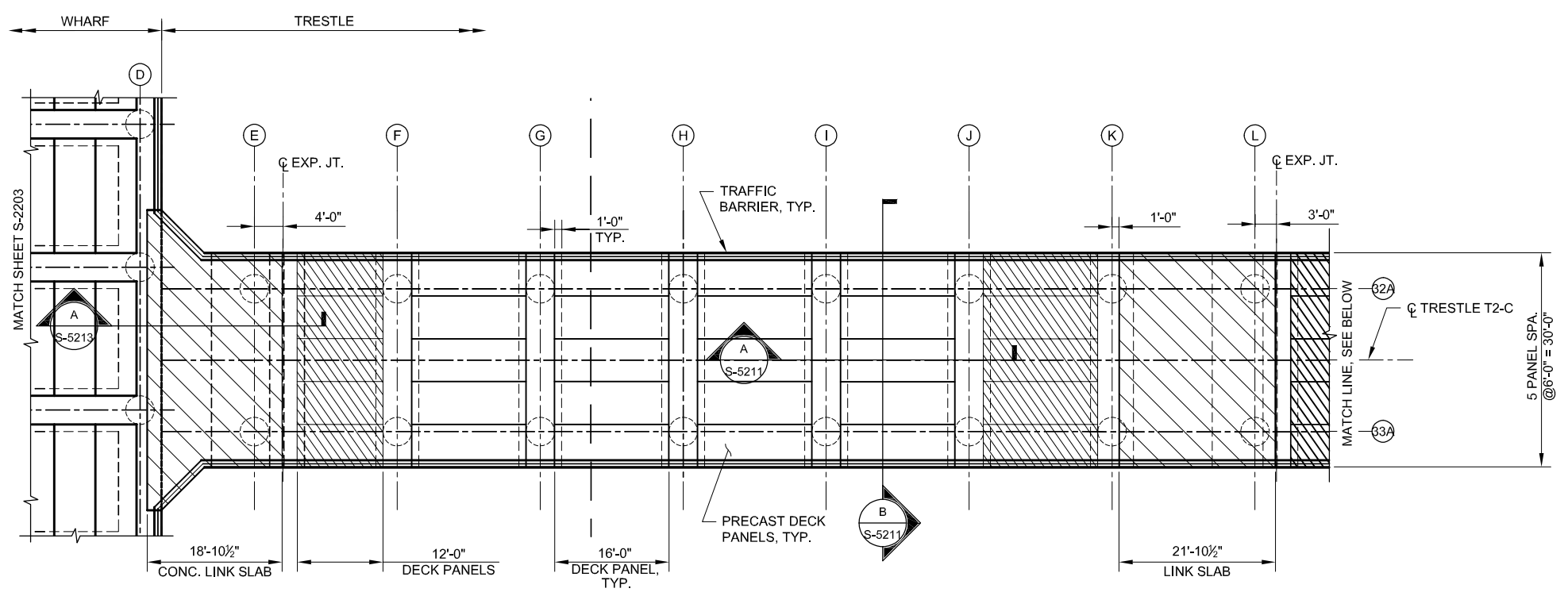
T2-S-2205

FILE NO.-



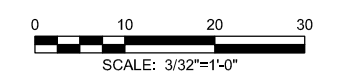
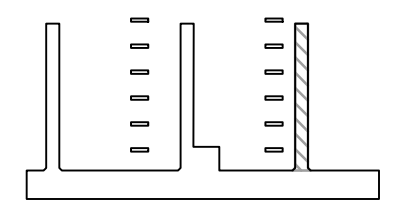
LEGEND

-  24" PRECAST CONCRETE HAUNCHED DECK PANEL
-  24" PRECAST CONCRETE FLAT DECK PANEL
-  CONC. LINK SLAB
-  TRAFFIC BARRIER



TRESTLE T2-C DECK PANEL PLAN

KEYPLAN



CONCEPTUAL

Drawing: DE-DWG-20161028-12S2206.DWG Date: May 11, 2017 - 1:27pm

REV	DATE	DESCRIPTION	BY	APVD
<p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>				
REVISIONS				

ch2m

DSGN H. GUAN	DR D. MONK	CHK K. JUMPAWONG	APVD D. PLAYER
CONSULTANT			

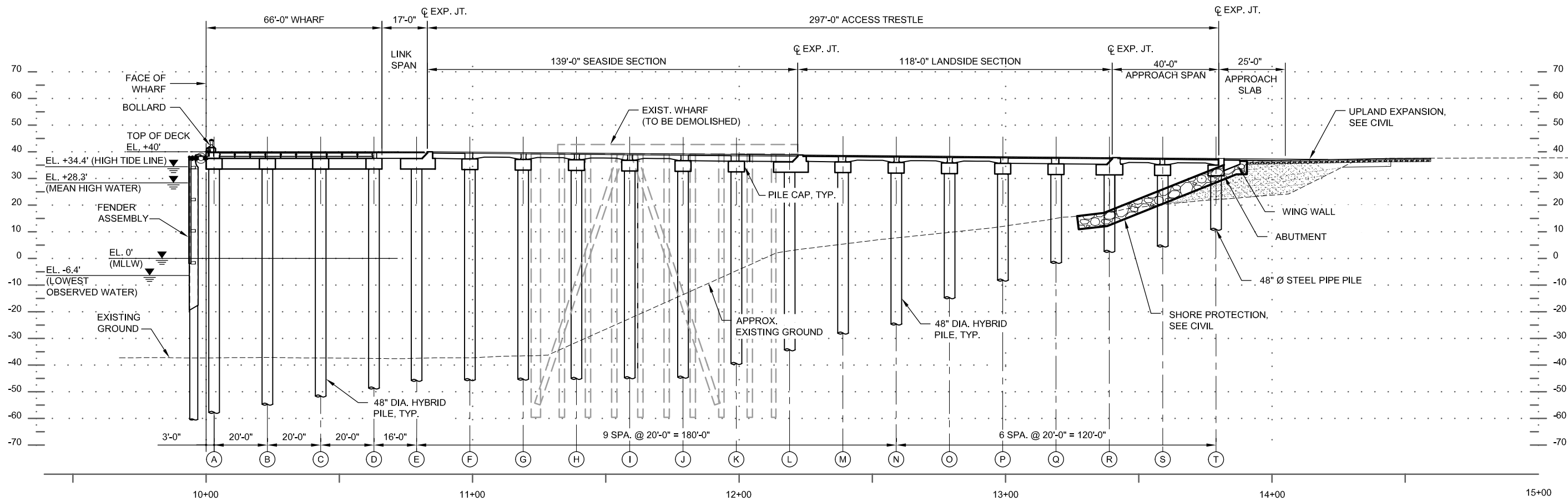
NOT FOR CONSTRUCTION



STRUCTURAL
PARTIAL DECK PANEL LAYOUT
(6 OF 6)

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-2206
VERT SCALE: N/A	SHEET: 29 OF 41	

FILE NO.-



A TYPICAL SECTION THROUGH ACCESS TRESTLE
 1" = 20'-0"
 S-2001

CONCEPTUAL

REV	DATE	DESCRIPTION	BY	APVD

ch2m

DSGN H. GUAN	DR T. HEDGLIN	CHK K. JUMPAWONG	APVD D. PLAYER
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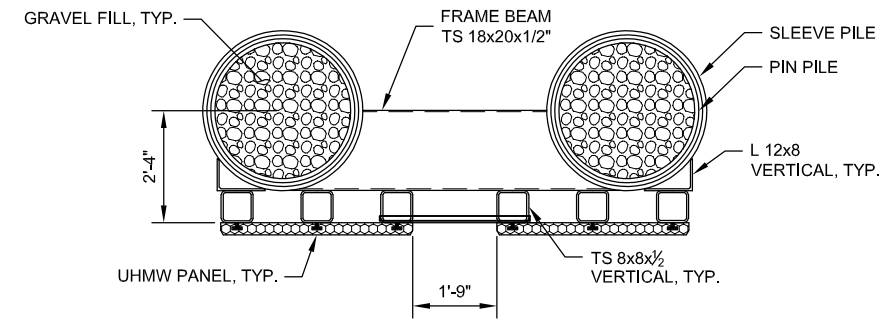
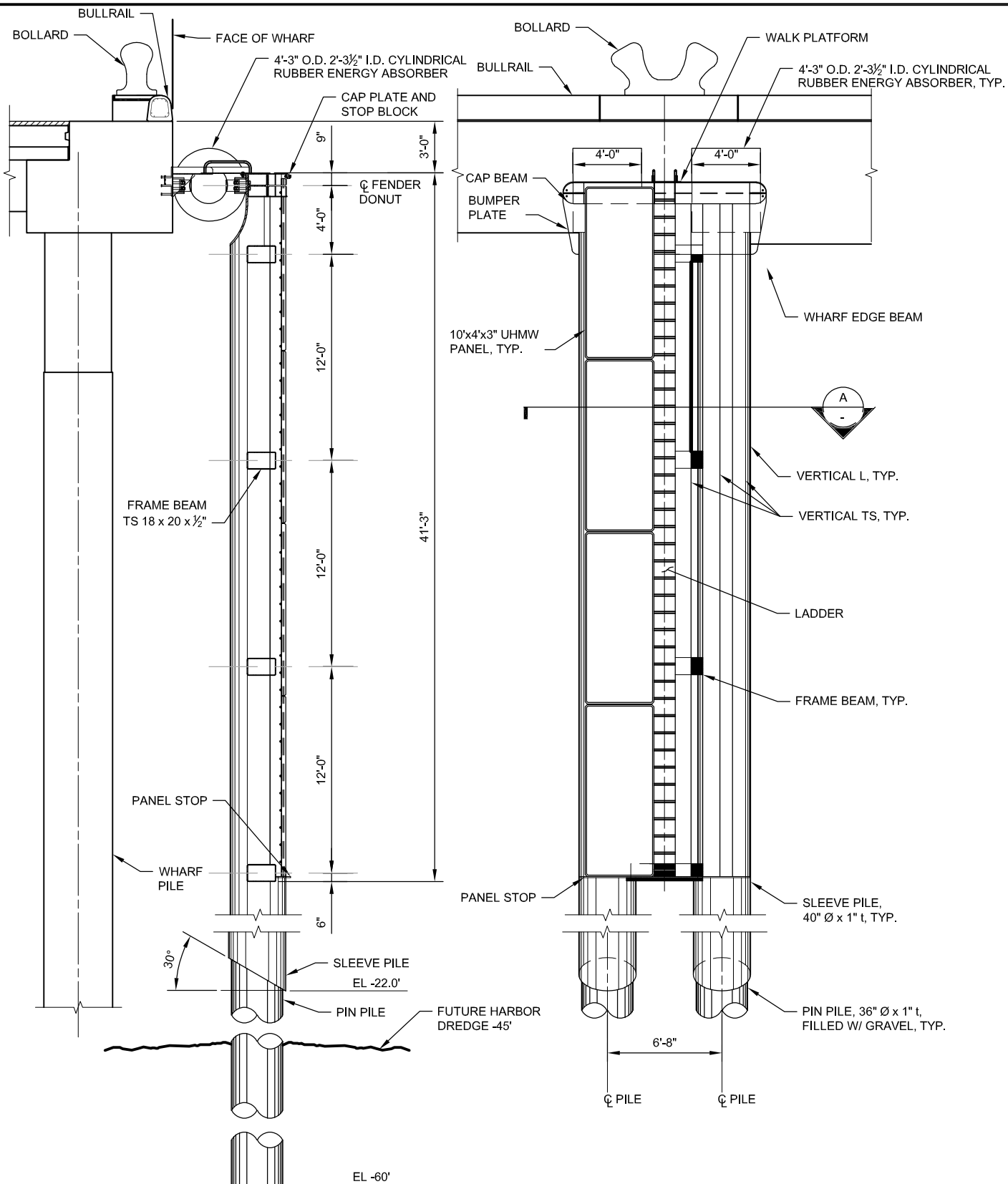


STRUCTURAL
 TYPICAL SECTION
 (1 OF 2)

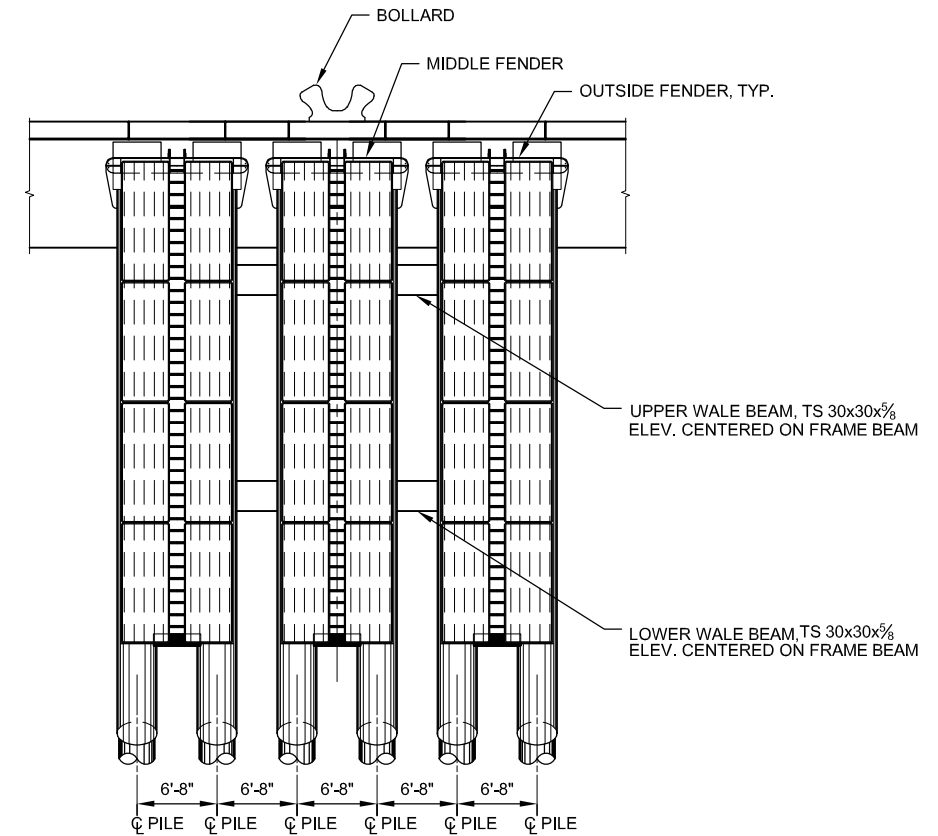
PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-3001
VERT SCALE: AS SHOWN	SHEET: 30 OF 41	

Drawing: DE-DWG-20161028-1253001.DWG
 Date: May 11, 2017 - 1:28pm

FILE NO.-



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



TRIPLE GANGED FENDER FRONT ELEVATION

1/2" = 1'-0"

NOTE: GANGED FENDERS ARE THE SAME AS SINGLE FENDERS EXCEPT AS NOTED.

CONCEPTUAL

FENDER SIDE ELEVATION

1/4" = 1'-0"

NOTE: FENDER PILE BATTER NOT SHOWN FOR CLARITY.

SINGLE FENDER FRONT ELEVATION

1/4" = 1'-0"

Drawing: DE-DWG-20161028-1255301.DWG
Date: May 11, 2017 - 1:42pm

REV	DATE	DESCRIPTION	BY	APVD
<p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.</p>				
REVISIONS				

ch2m

DSGN	DR	CHK	APVD
H. GUAN	T. HEDGLIN	K. JUMPAWONG	D. PLAYER

CONSULTANT

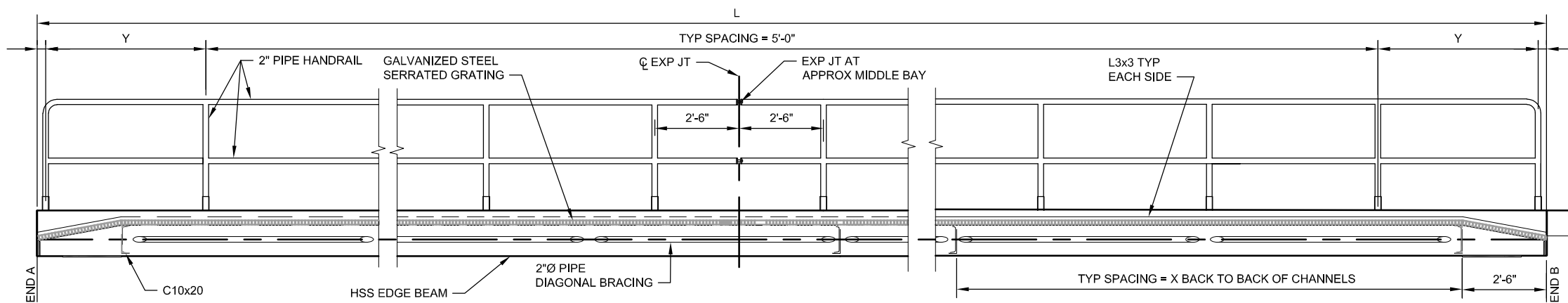
NOT FOR CONSTRUCTION



STRUCTURAL FENDER DETAILS

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-5301
VERT SCALE: AS SHOWN	SHEET: 39 OF 41	

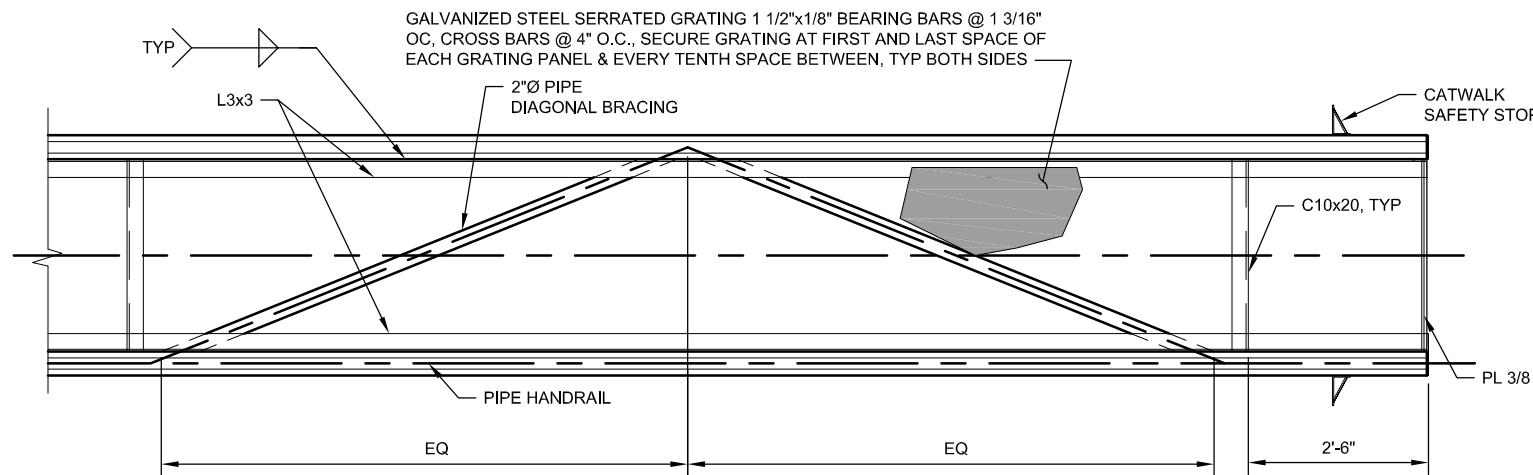
FILE NO.-



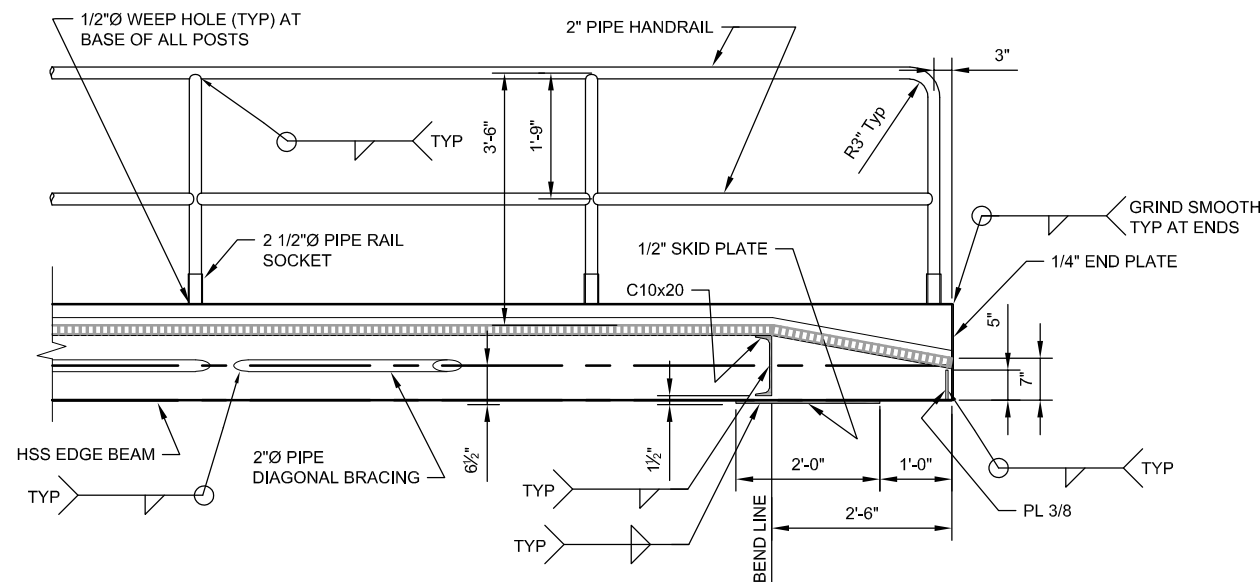
TYP CATWALK ELEVATION
RIGHT SIDE SHOWN

CATWALK TABLE								
ID	SUPPORT	END	SIDE	L	X	Y	APPROX WEIGHT	CAMBER*
X	X	X	X	X	X	X	X	X
			X					
			X					

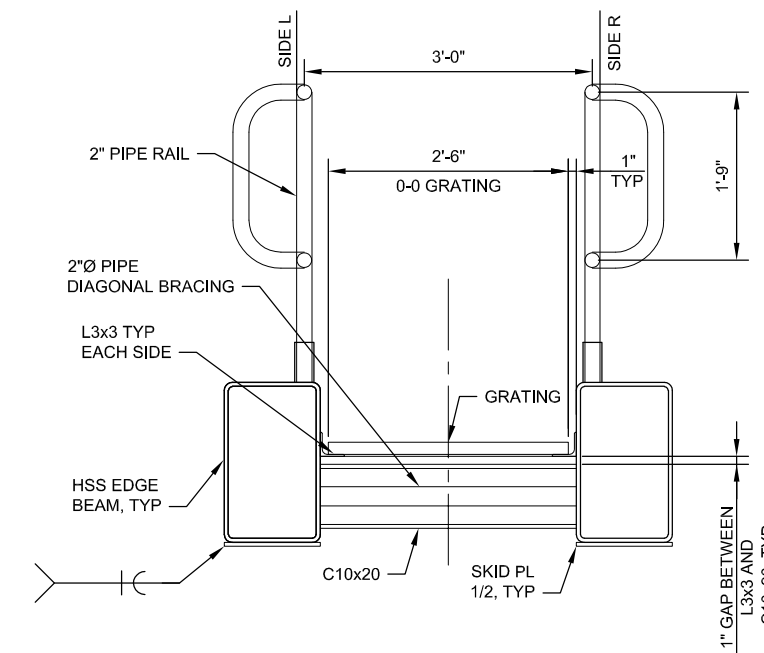
* PROVIDE CAMBER TO COMPENSATE FOR DEAD LOAD DEFLECTION AT CENTER OF CATWALK.



TYP END PLAN
DIMENSIONS SHOWN FROM CENTERLINE



A SECTION



SECTION AT CATWALK
LOOKING FROM END A

CONCEPTUAL

Drawing: DE-DWG-20161028-1255402.DWG
Date: May 11, 2017 - 1:43pm

REV	DATE	DESCRIPTION	BY	APVD

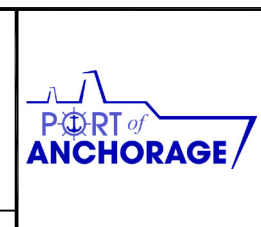
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

ch2m

DSGN K. JUMPAWONG	DR T. HEDGLIN	CHK H. GUAN	APVD D. PLAYER
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CONSULTANT

NOT FOR CONSTRUCTION



STRUCTURAL
CATWALK DETAILS

PORT OF ANCHORAGE		
ANCHORAGE PORT MODERNIZATION PROGRAM		
TERMINAL 2 (T2)		
ANCHORAGE, ALASKA		
HORIZ SCALE: AS SHOWN	DATE: 10/28/2016	T2-S-5402
VERT SCALE: AS SHOWN	SHEET: 41 OF 41	

FILE NO.-