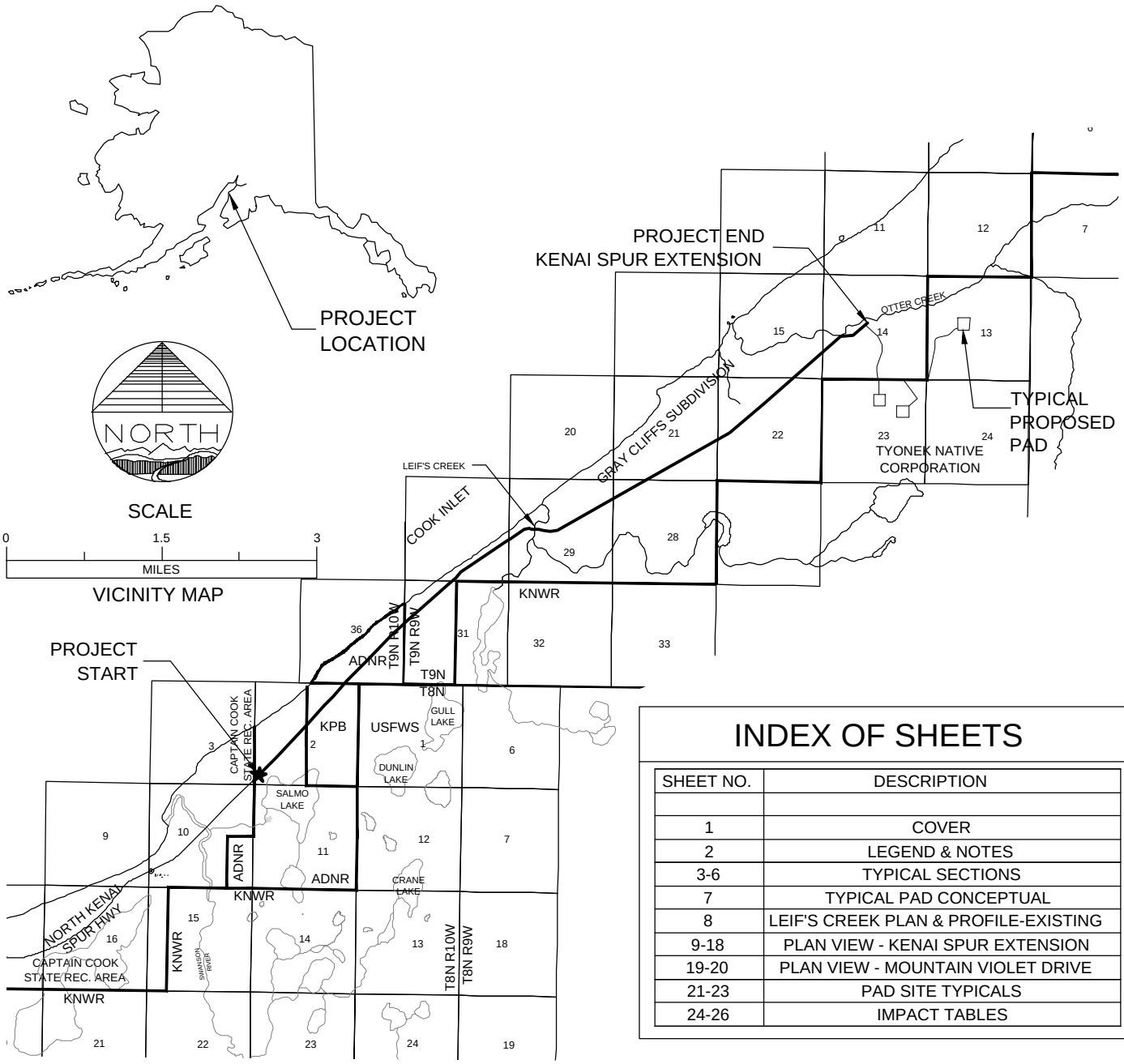
APACHE ALASKA CORPORATION

KENAI SPUR EXTENSION



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Apache

DESCRIPTION
FILE: POA-2014-460
WATERBODY: COOK INLET

LOCATION
T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN
LAT/LONG; 60.8714, 150.8252

APPLICANTS
APACHE ALASKA CORPORATION
510 L STREET SUITE 310; ANCHORAGE, AK 99501

McLANE

MCLANE CONSULTING INC.

REVISION: 3
DATE: 12/12/2014
DRAWN BY: GMD
SCALE: 1"=1.5 Miles
PROJECT NO. 143126

SHEET 1 OF 26

DESIGN LEGEND

1 — TURNOUT

2 — DRAINAGE CROSSING

3 — CULVERT (18" TYPICAL)

4 — DRAINAGE MAT (10' WIDE TYPICAL)

5 — OPEN WATERS

6 — SUBDIVISION ROAD APPROACH
18' WIDE x 30' LONG

LINE LEGEND

SECTION LINE

EDGE OF RIGHT-OF-WAY

PROPERTY LINE

PROPOSED CENTERLINE

CUT / FILL DAYLIGHT, TYPICAL

EXISTING TREE LINE

PL — PIPELINE

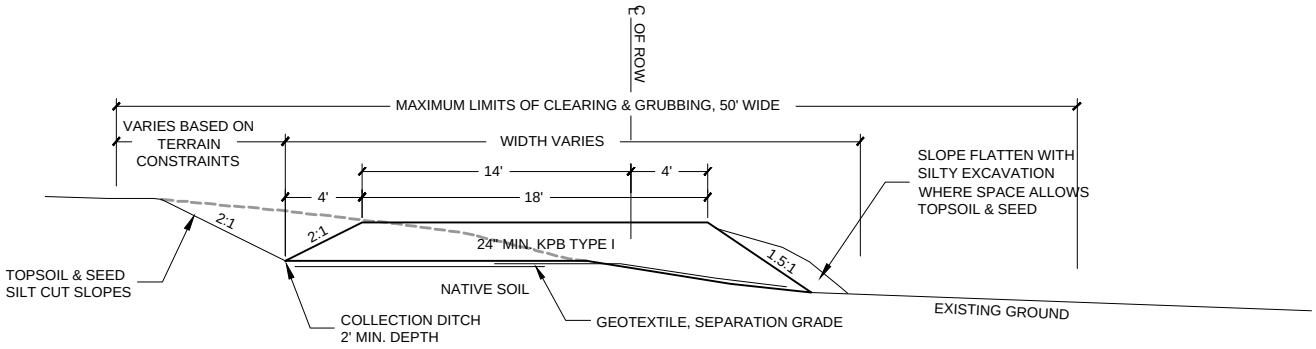
DRAINAGE / STREAM

WETLAND DELINEATION

WETLAND

02530008 — KPB PARCEL ID (TYPICAL)

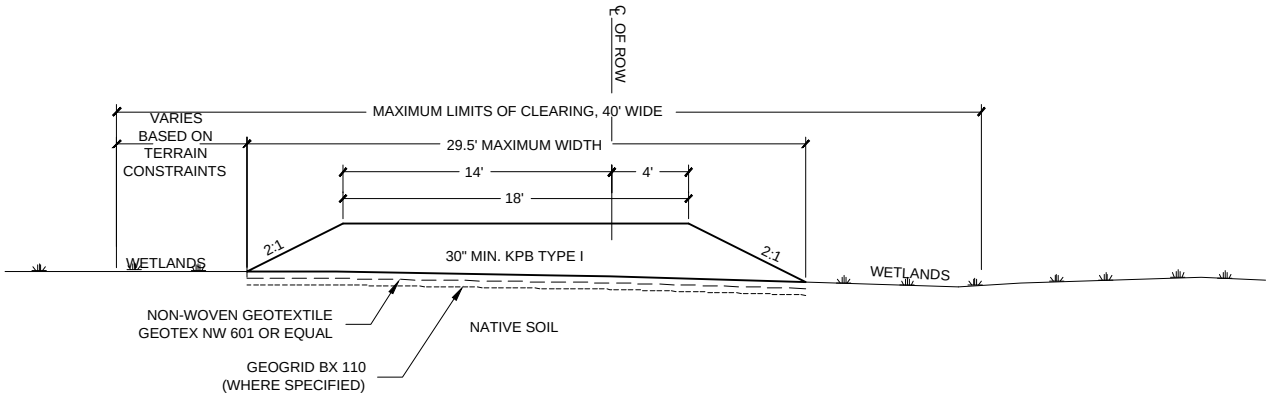
Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: 1"=1.5 Miles
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		PROJECT NO. 143126
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 2 OF 26



NOTES:
1. MAXIMUM ROAD CLEARING WIDTH IS 50 FT. IN NEARLY LEVEL TERRAIN, REDUCE CLEARING WIDTH TO 40 FT.
2. UTILIZE MULCHING MACHINES FOR CLEARING AND GRUBBING WHERE FEASIBLE.
3. GRAVEL FILL SHALL BE PLACED IN NO GREATER THAN 8" LIFTS AND COMPACTED TO 95% OF MAXIMUM DENSITY.
4. TOP 4" SELECTED MATERIAL TYPE A SHALL BE COBBLE FREE (3" MINUS).
5. GRAVEL FILL SHALL BE UNDERLAIN WITH GEOTEXTILE, SEPARATION GRADE, WHERE SOFT UNDERLYING SOILS ARE ENCOUNTERED.
6. RESERVE TOPSOIL FOR STABILIZATION AND SEEDING ON CUT SLOPES.

A/3 18' WIDE ROAD & APPROACH SECTION - UPLANDS

SCALE: 1" = 10'

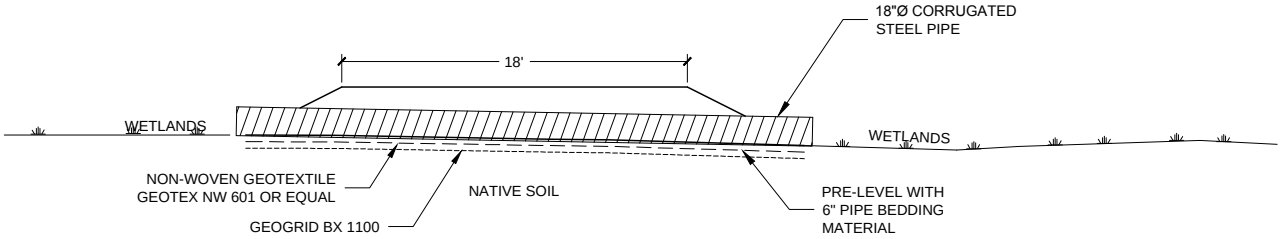


NOTES:
1. GRAVEL FILL SHALL BE PLACED IN NO GREATER THAN 12" LIFTS AND COMPACTED TO 95% OF MAXIMUM DENSITY, AS DETERMINED BY AASHTO T 180, METHOD D.
2. TOP 4" SELECTED MATERIAL TYPE A SHALL BE COBBLE FREE (3" MINUS).
3. GRAVEL FILL SHALL BE UNDERLAIN WITH NON-WOVEN GEOTEXTILE, GEOTEX NW 601 OR EQUAL.
4. IN WETLAND AREAS GEOGRID, BX 1100 OR EQUAL, MAY BE USED TO HELP STABILIZE GRAVEL FILL AS DETERMINED BY THE ENGINEER IN THE FIELD.
5. IN WETLAND AREAS CONTRACTOR MAY NOT PLACE FILL, REMOVE NATIVE MATERIAL, OR RUN EQUIPMENT OUTSIDE DESIGNATED CONSTRUCTION ZONE AS MARKED IN FIELD BY THE ENGINEER.

B/3 18' WIDE ROAD & APPROACH SECTION - WETLANDS

SCALE: 1" = 10'

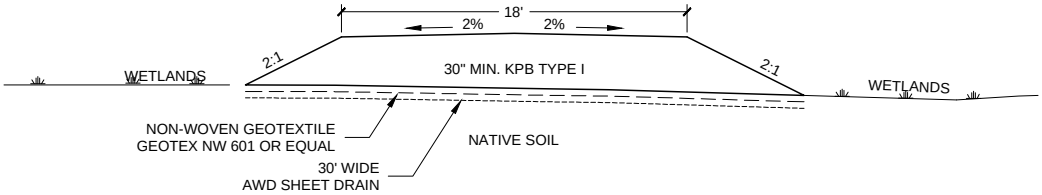
Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: N/A
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		PROJECT NO. 143126
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 3 OF 26



1. ALL CULVERTS SHALL BE CORRUGATED STEEL.
2. PRE-LEVEL WITH 6" OF PIPE BEDDING MATERIAL.
3. CROSS CULVERTS IN UPLANDS SHALL BE INSTALLED WITH AN ENLARGED (BELL HOLE) DITCH SECTION ON THE INLET END. FILL TO 6" DEPTH WITH DITCH LINER MATERIAL.
4. CULVERT PLACEMENT FILL IS 1.1 CUBIC YARDS PER CULVERT.

A/4 18' WIDE ROAD-WETLAND W/ CROSS CULVERT SECTION

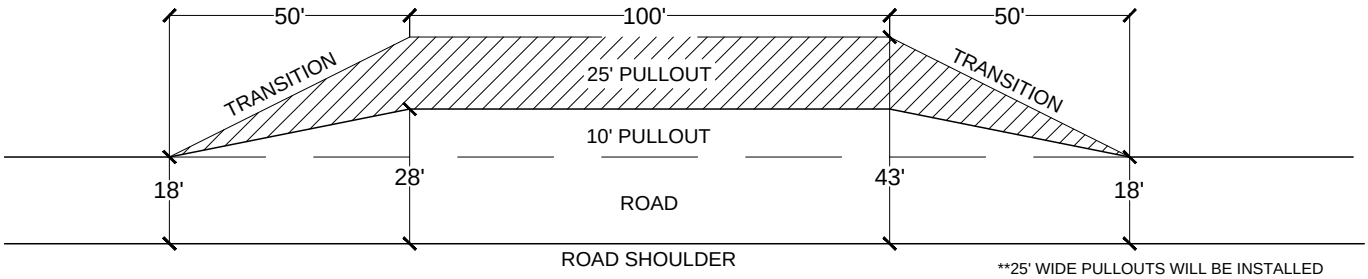
SCALE: 1" = 10'



NOTES:
1. SHEET DRAIN SECTIONS IN ROADWAY SHALL BE 15' IN LENGTH.
2. INSTALL NON-WOVEN GEOTEXTILE ABOVE THE SHEET DRAIN MATERIAL.

B/4 DRAINAGE MAT ROAD SECTION

SCALE: 1" = 10'



**25' WIDE PULLOUTS WILL BE INSTALLED AT THE FOLLOWING STATIONS:
STA 124+00
STA 212+00
STA 241+00
STA 297+50
STA 369+00

NOTES:
1. PULLOUTS WILL BE INSTALLED IN UPLANDS AT APPROXIMATELY 1/4 MILE INTERVALS.
2. ADDITIONAL PULLOUTS WILL BE CONSTRUCTED WHERE HILLY TERRAIN AND LIMITED SITE DISTANCE ARE PREVALENT TO ASSIST TRANSPORTATION NEEDS.
3. PULLOUTS SHALL BE CONSTRUCTED PER TYPICAL SECTION A/3.
4. GRAVEL FILL SHALL BE PLACED IN NO GREATER THAN 12" LIFTS AND COMPACTED.
5. GRAVEL FILL SHALL BE UNDERLAIN WITH GEOTEXTILE.

C/4 18' WIDE ROAD W/ PULLOUT

SCALE: 1" = 40'

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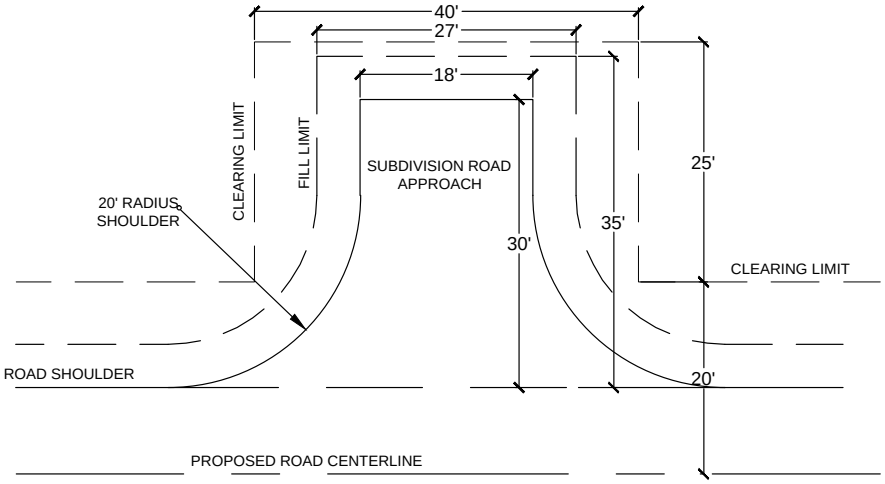
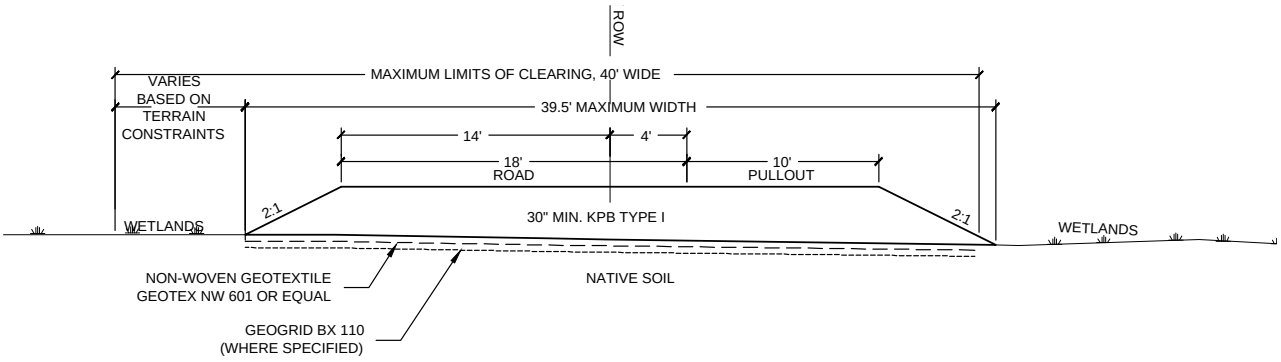
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 4 OF 26



NOTES:
1. CONSTRUCT SUBDIVISION ROAD APPROACHES IN UPLANDS PER TYPICAL SECTION A/3 AND IN WETLANDS PER TYPICAL SECTION B/3.

A/5 TYPICAL SUBDIVISION ROAD APPROACH

SCALE: 1" = 20'



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B/5 18' WIDE ROAD & PULLOUT - WETLANDS (STA 65+00)

SCALE: 1" = 10'

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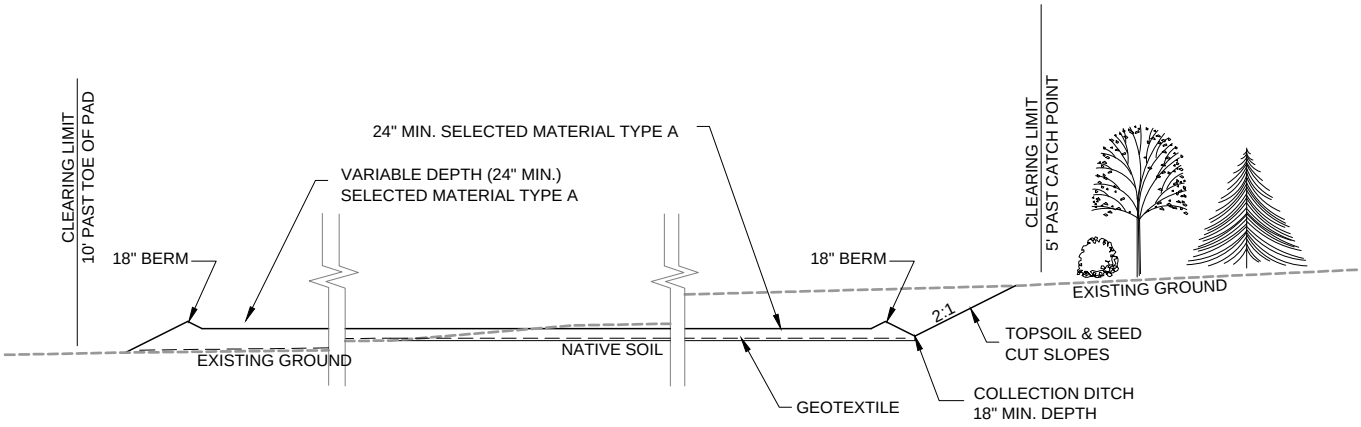
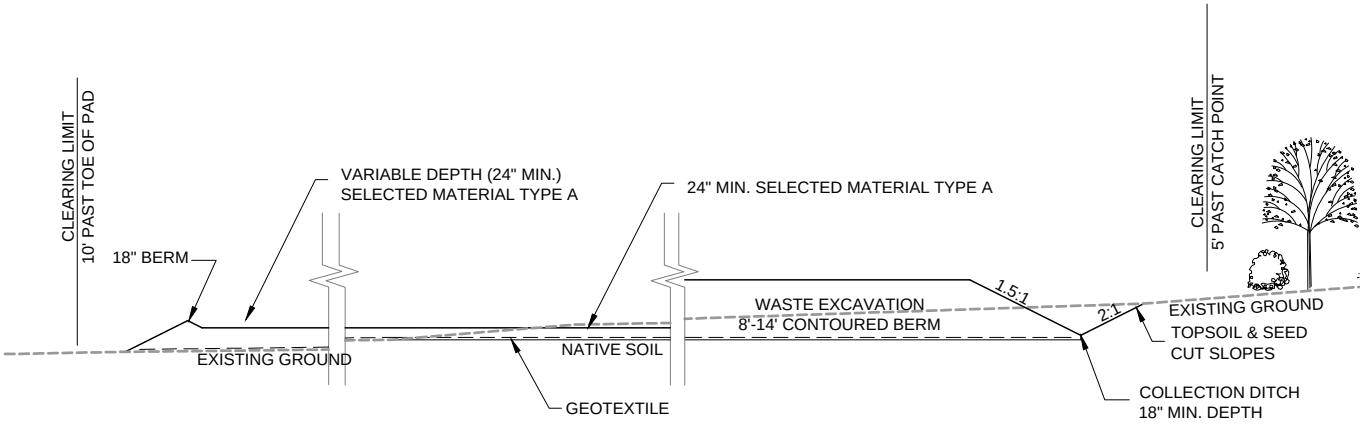


A/6 TYPICAL PAD SECTION A-A

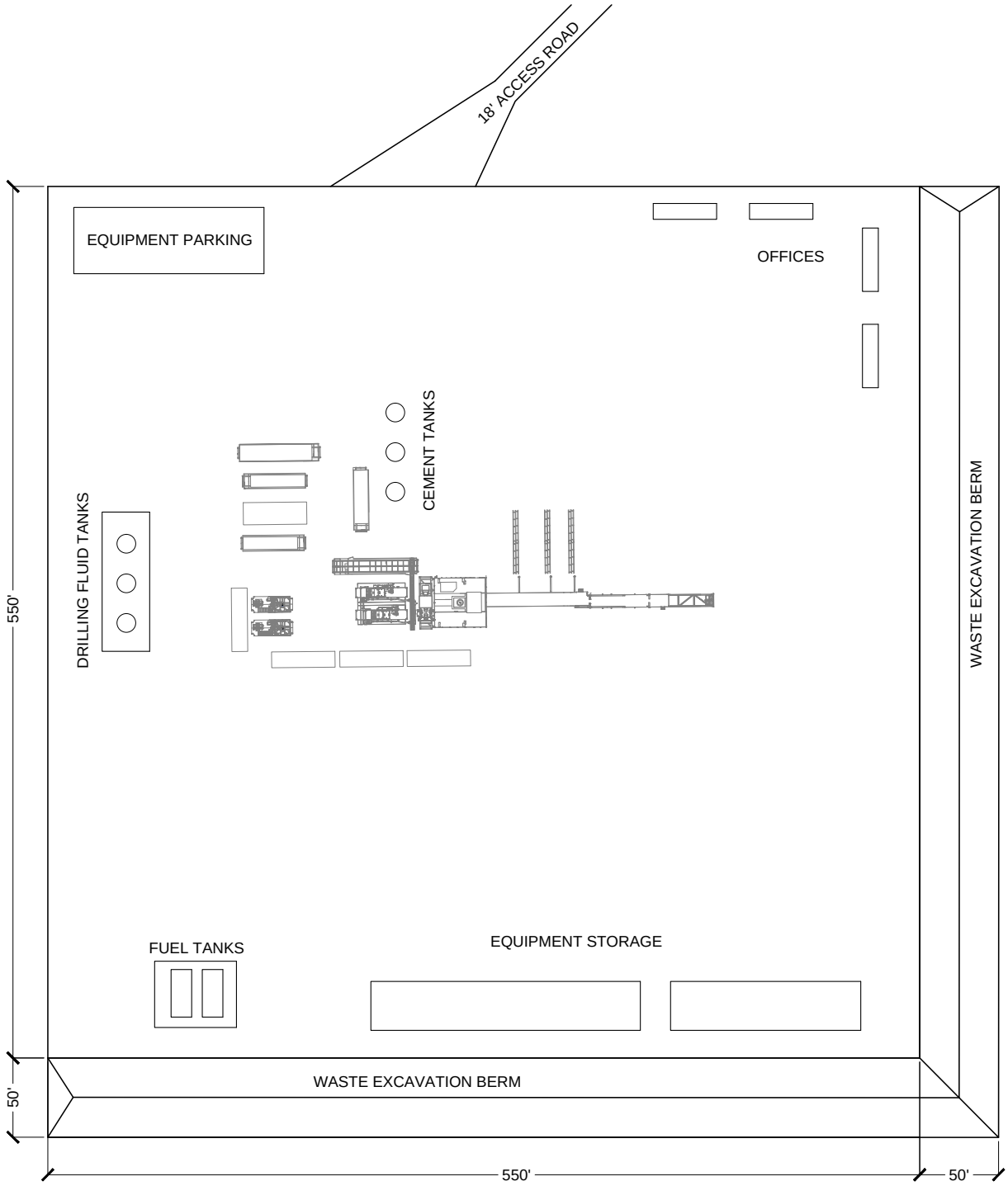
SCALE: 1" = 40'



B/6 TYPICAL PAD SECTION B-B

SCALE: 1" = 40'

Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: N/A
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		PROJECT NO. 143126
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 6 OF 26

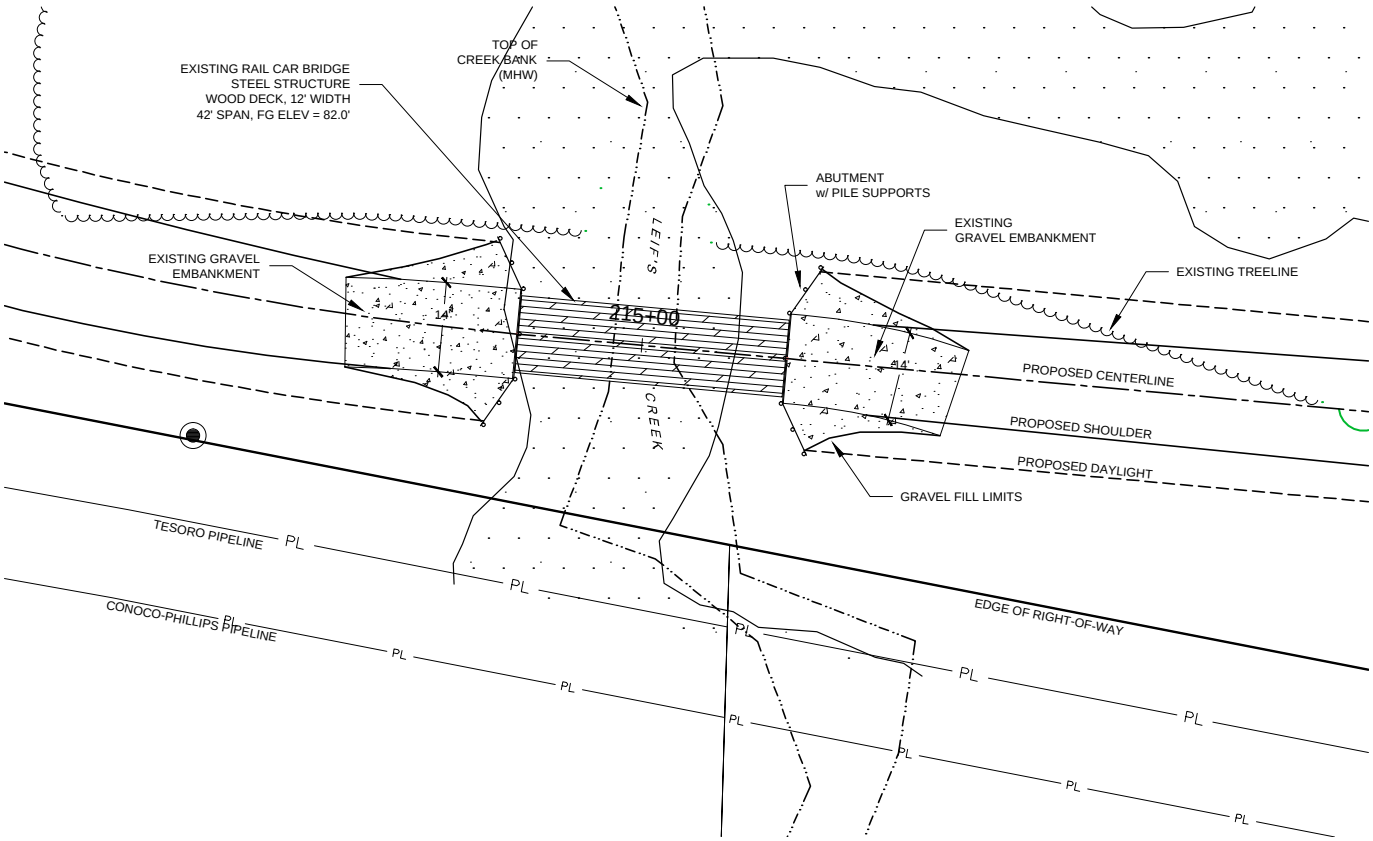


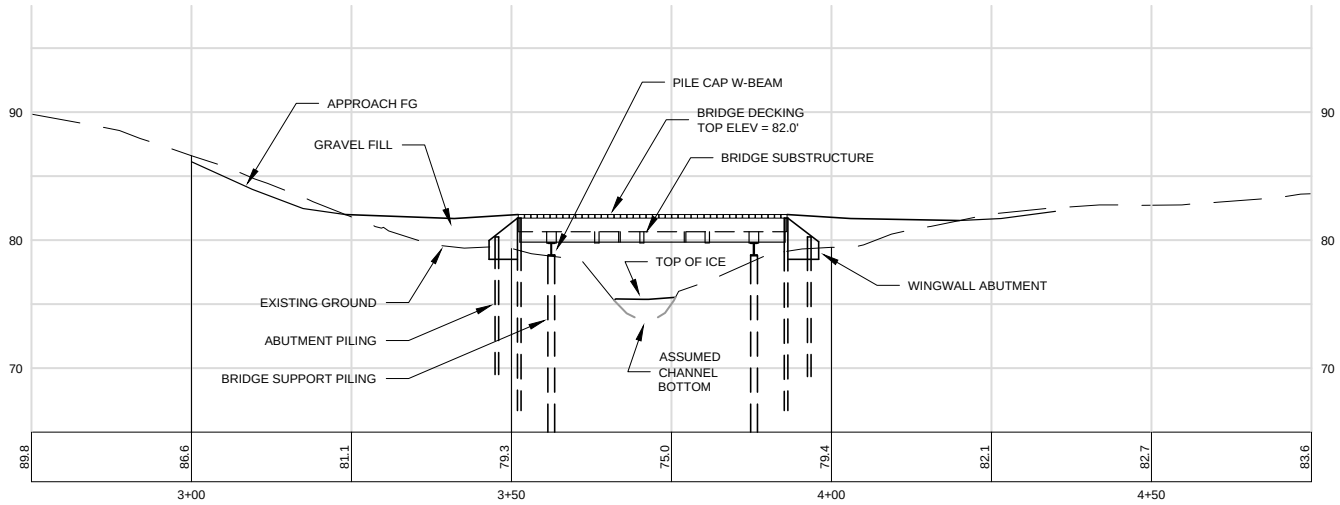
A/7 CONCEPTUAL PAD LAYOUT

SCALE: 1" = 100'

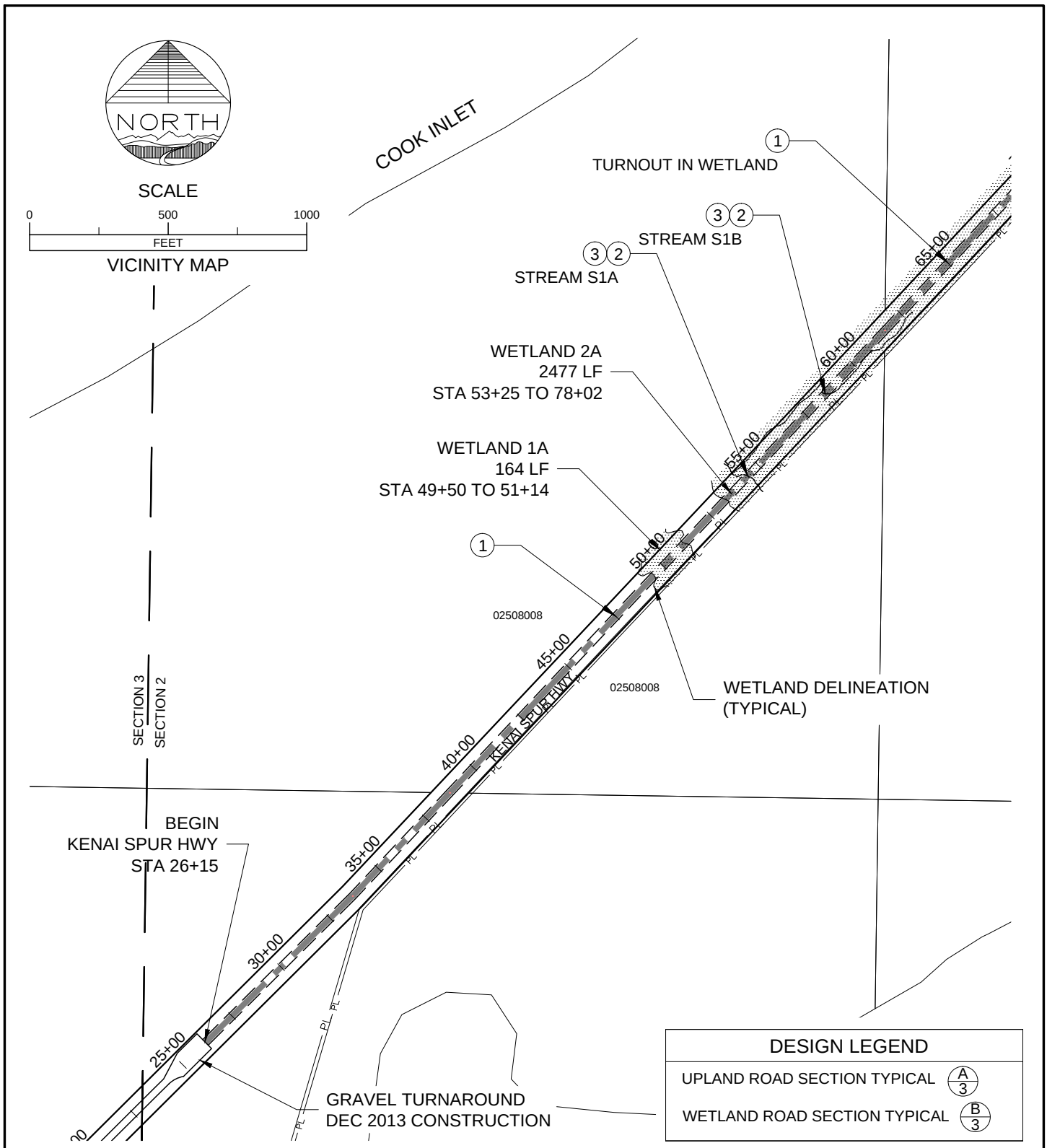
Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: N/A
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		PROJECT NO. 143126
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 7 OF 26

LEIF'S CREEK
EXISTING RAILCAR BRIDGE





Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: 1" = 30' PROJECT NO. 143126
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 8 OF 26



Apache

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FILE: POA-2014-460
WATERBODY: COOK INLET

LOCATION
T8N, R10W, S2; T9N, R10W, S36; T9N, R9W,
S13-15, 21-24, 28-31 SEWARD MERIDIAN
LAT/LONG; 60.8714, 150.8252

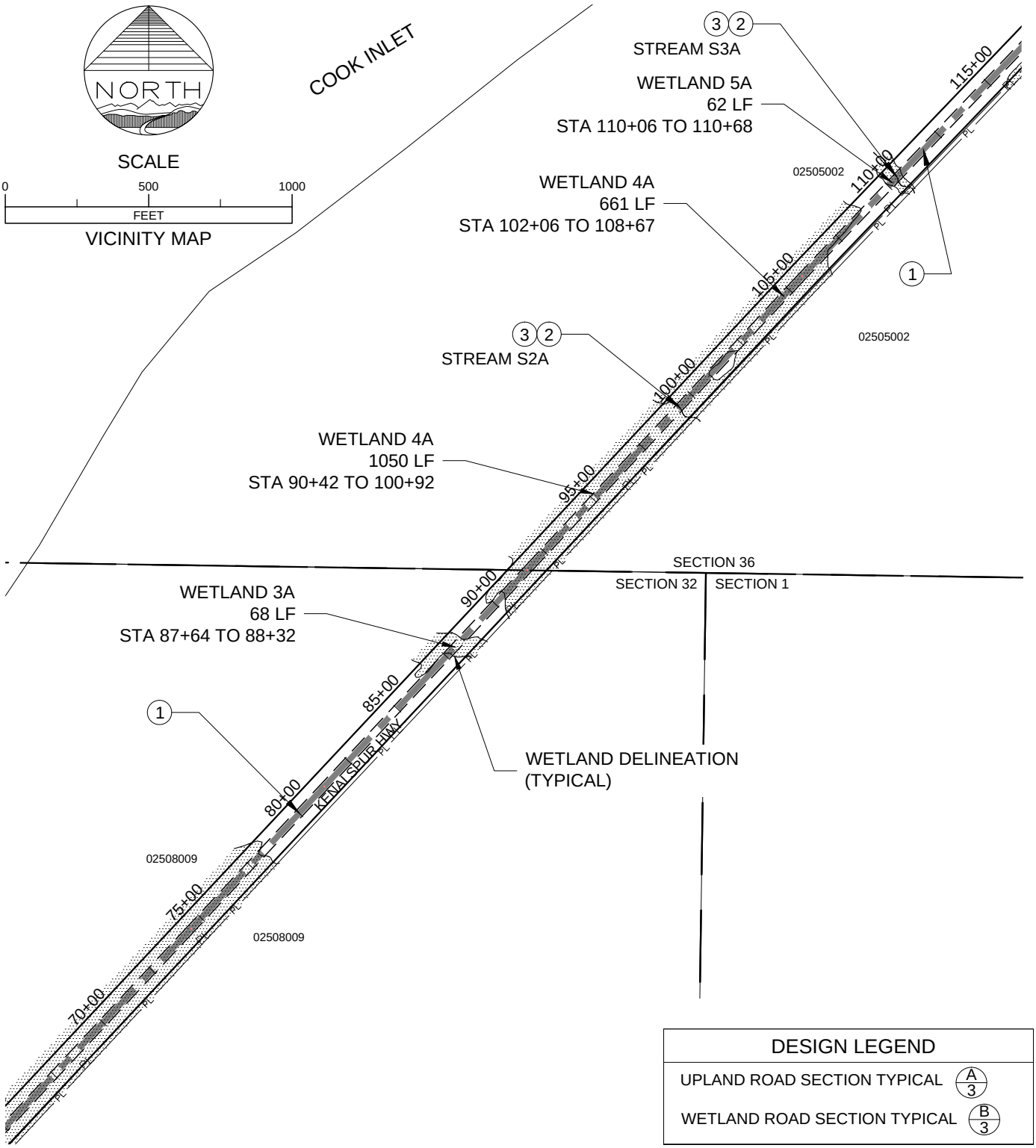
APPLICANTS
APACHE ALASKA CORPORATION
510 L STREET SUITE 310; ANCHORAGE, AK 99501

McLANE

MCLANE
CONSULTING INC.

REVISION: 3
DATE: 12/12/2014
DRAWN BY: GMD
SCALE: 1"=500'
PROJECT NO. 143126

SHEET 9 OF 26



DESIGN LEGEND	
UPLAND ROAD SECTION TYPICAL	A/3
WETLAND ROAD SECTION TYPICAL	B/3

Apache

DESCRIPTION
FILE: POA-2014-460
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LOCATION
T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN
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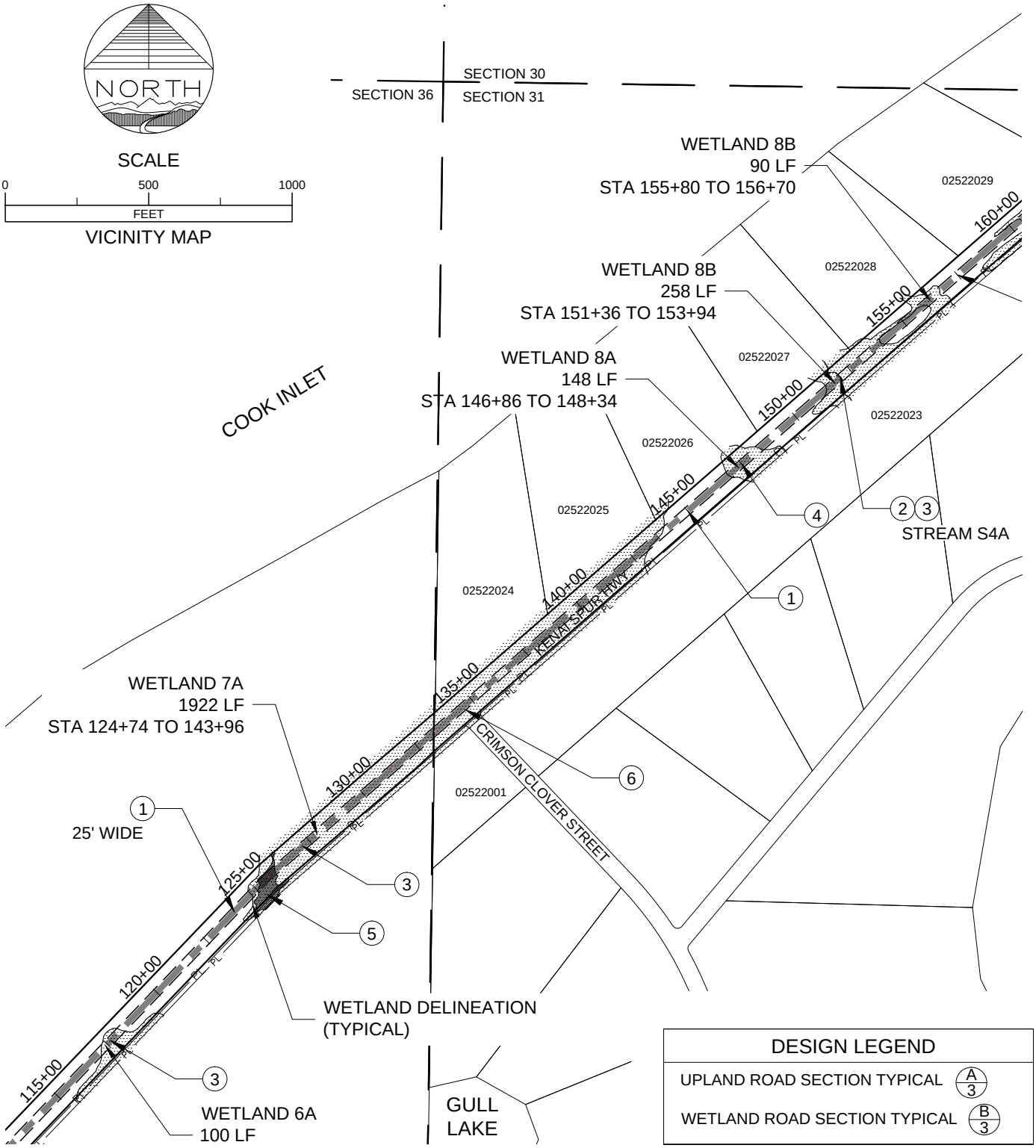

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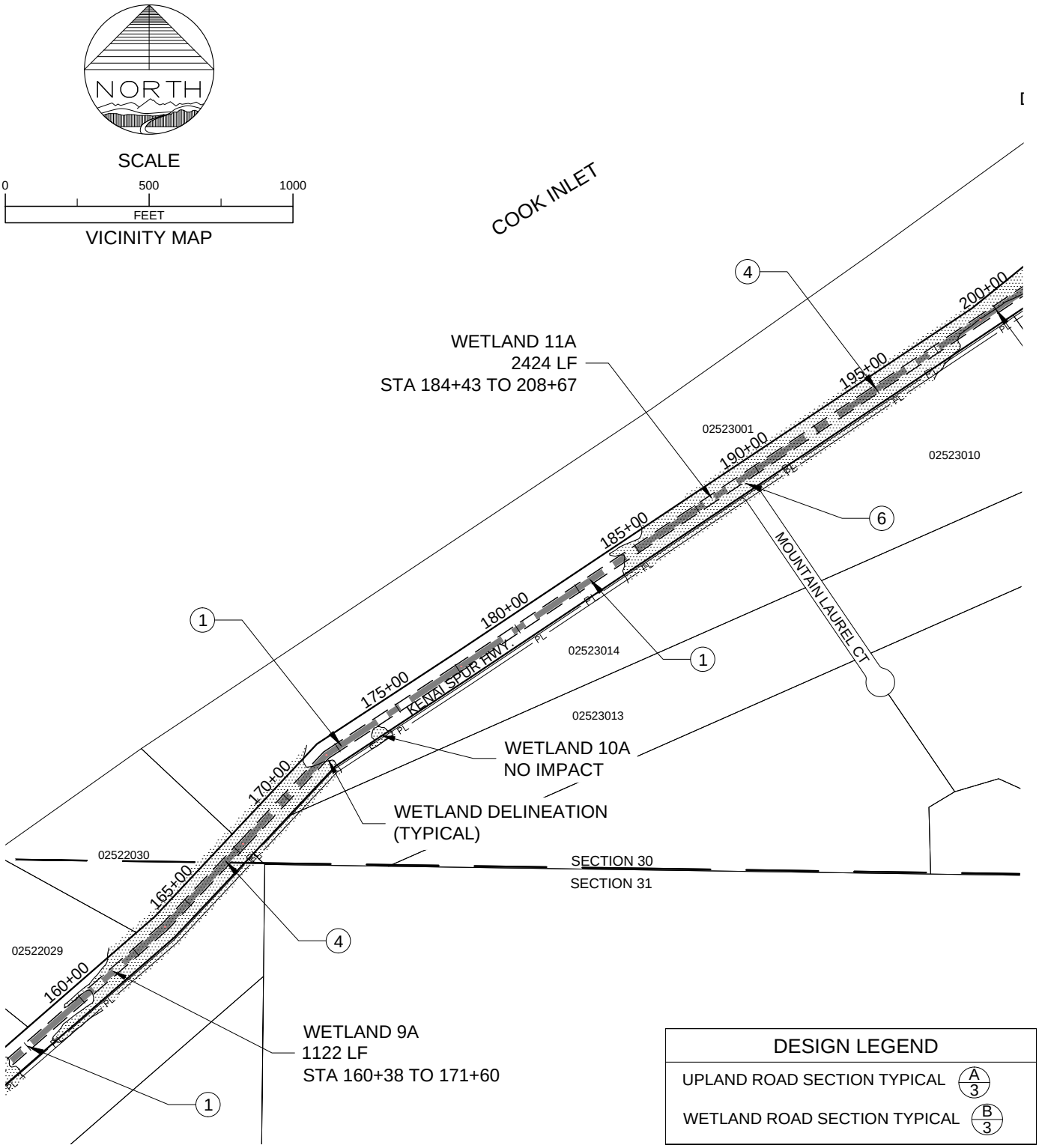
SHEET 11 OF 26



DESIGN LEGEND	
UPLAND ROAD SECTION TYPICAL	A/3
WETLAND ROAD SECTION TYPICAL	B/3

Apache

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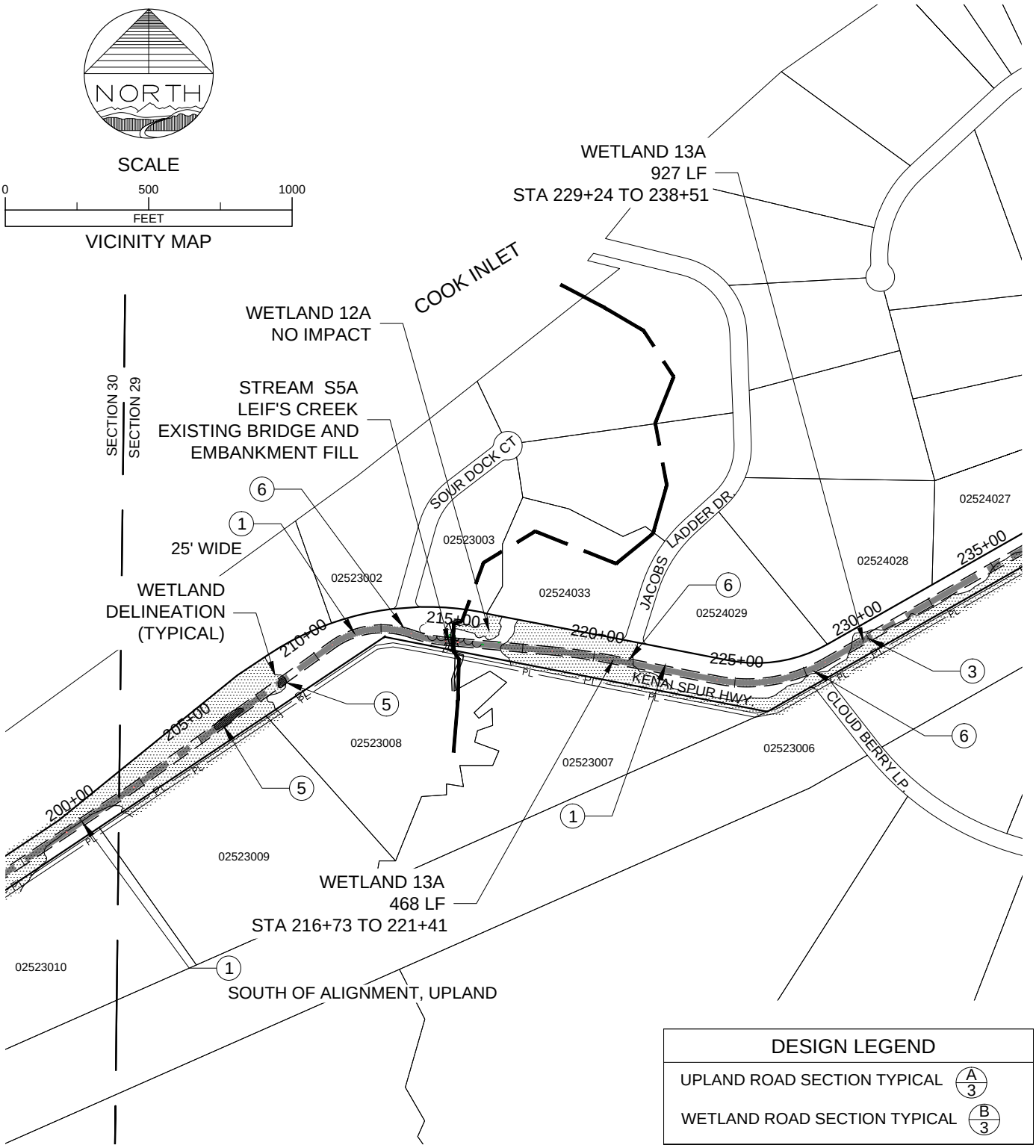
SHEET 12 OF 26



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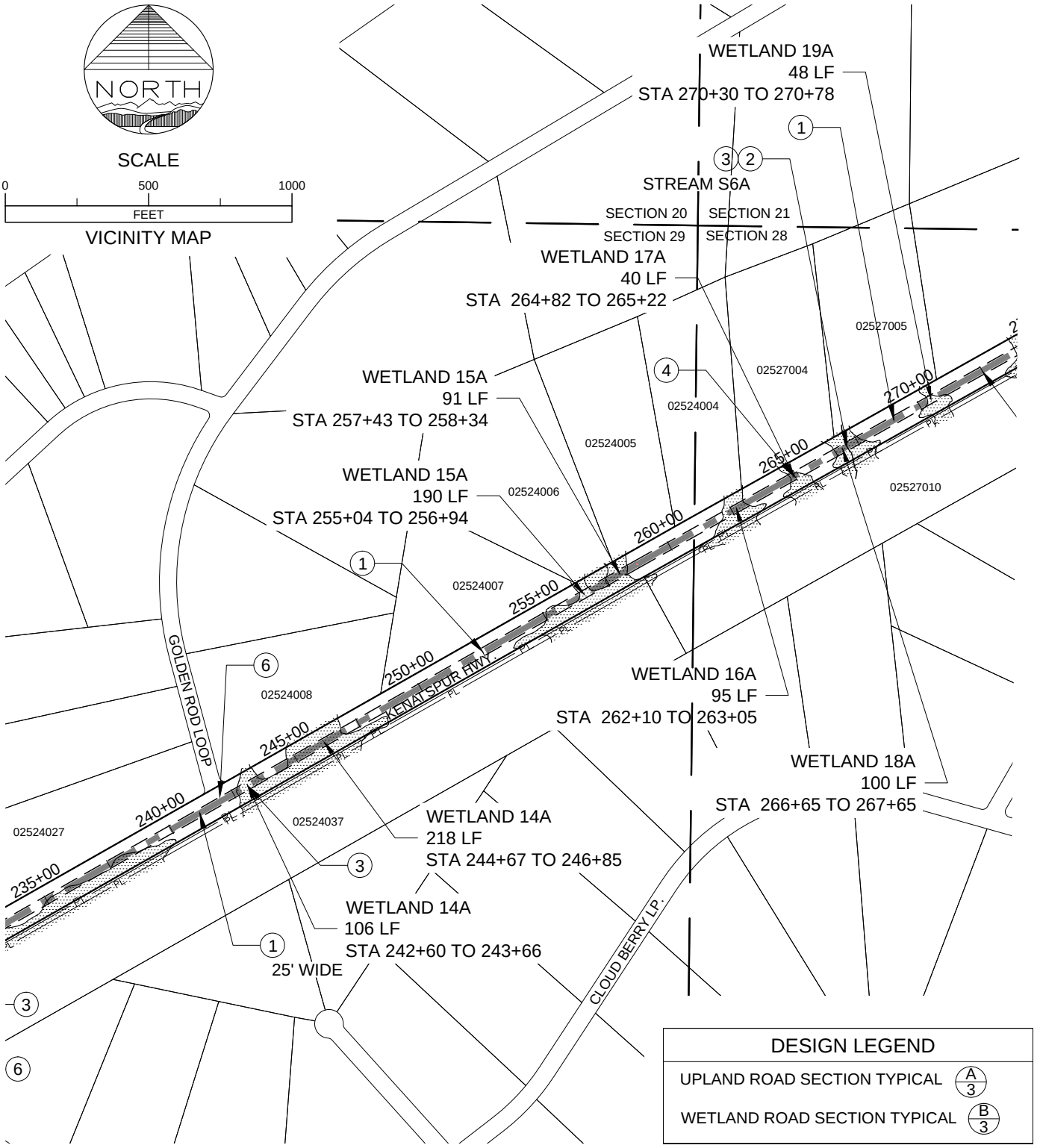
SHEET 13 OF 26



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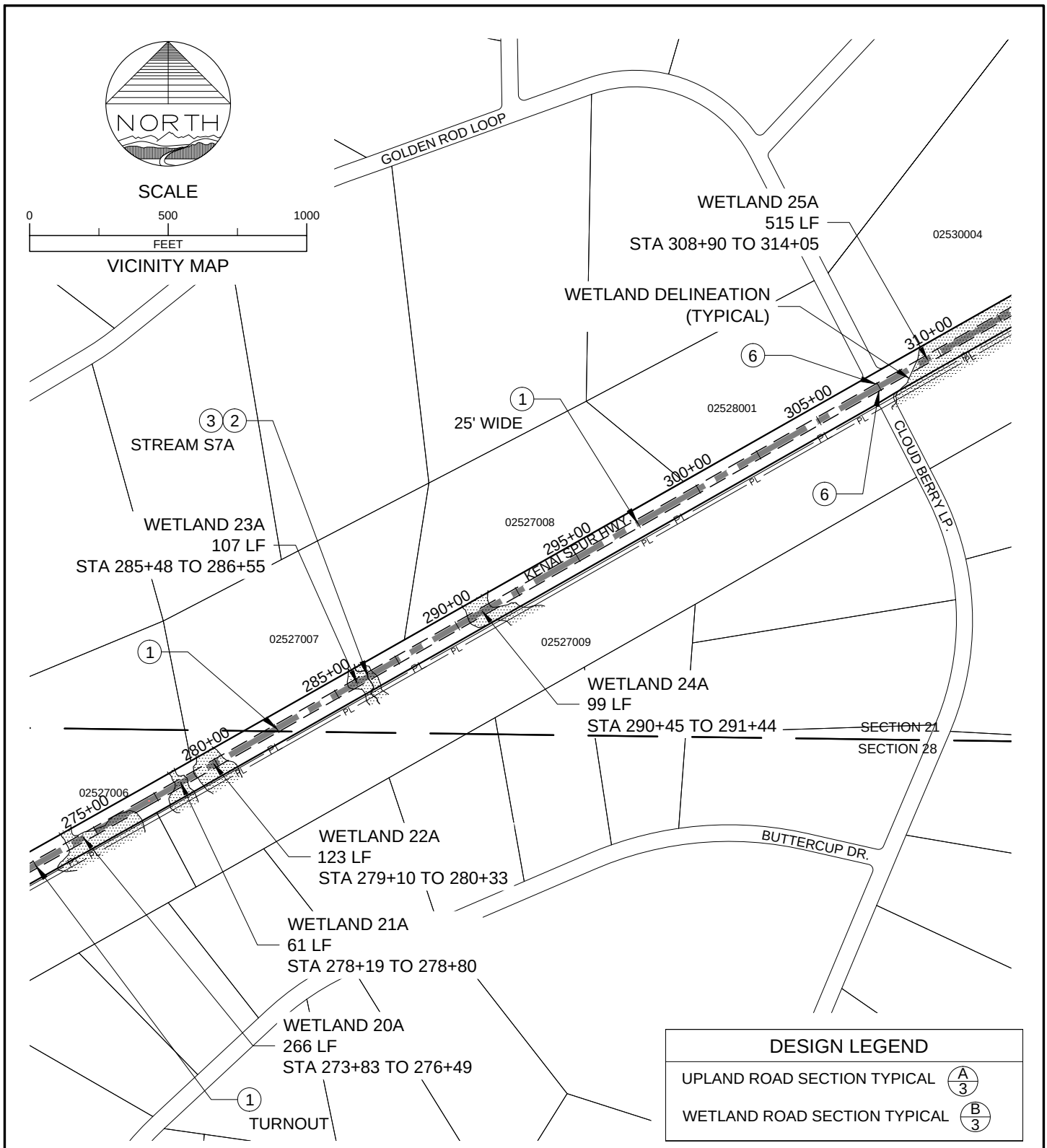
SHEET 14 OF 26



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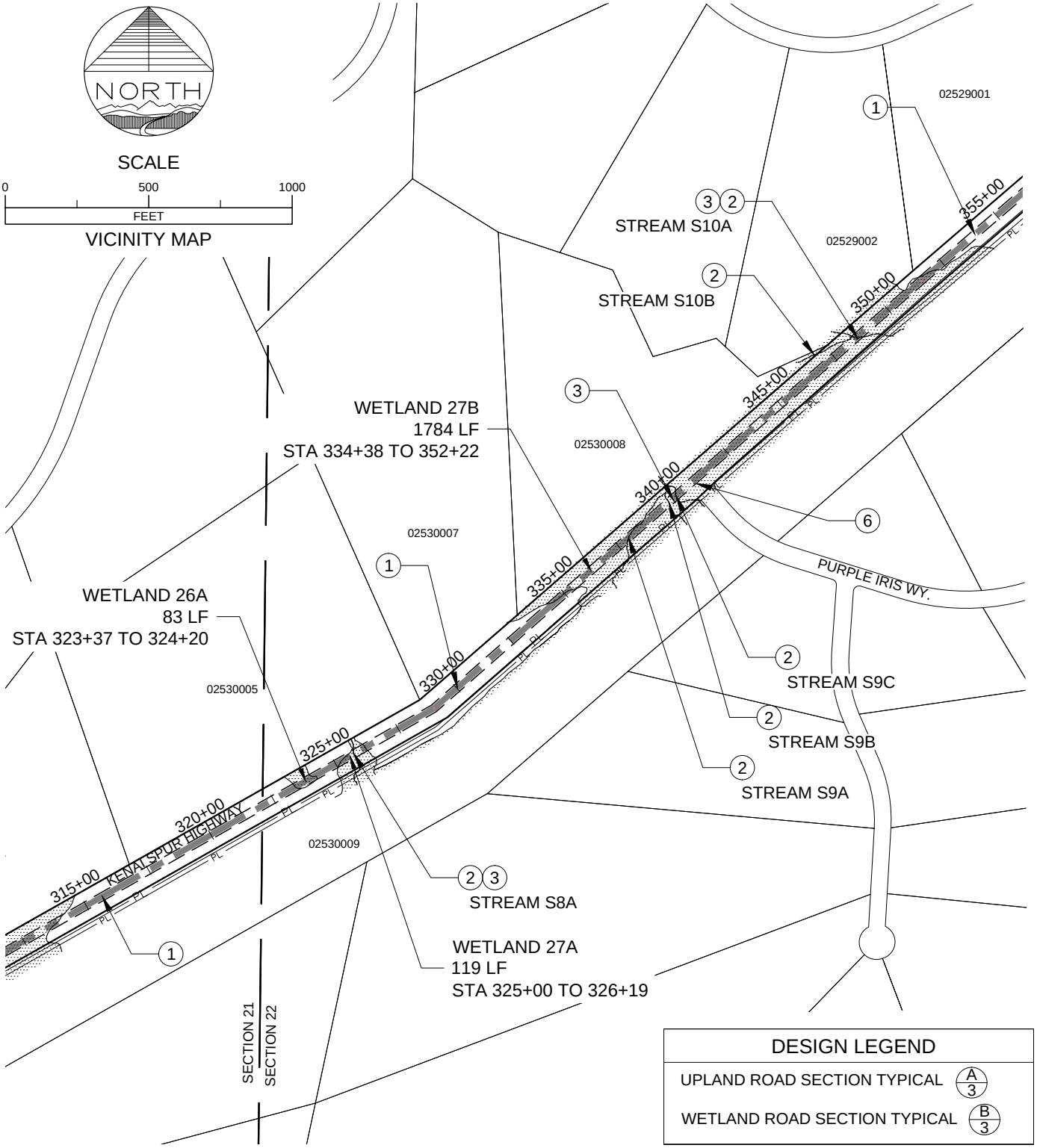
SHEET
15 OF 26



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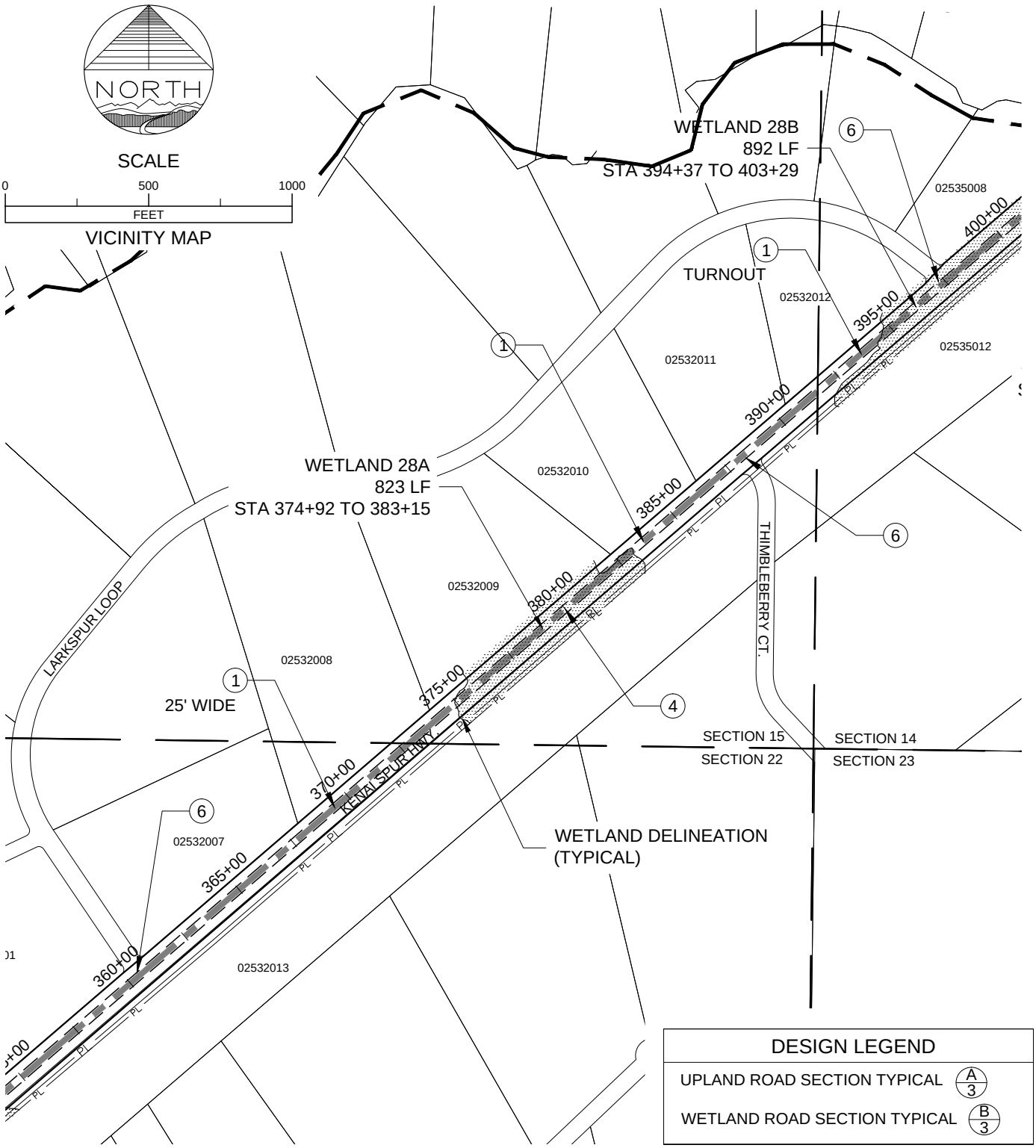

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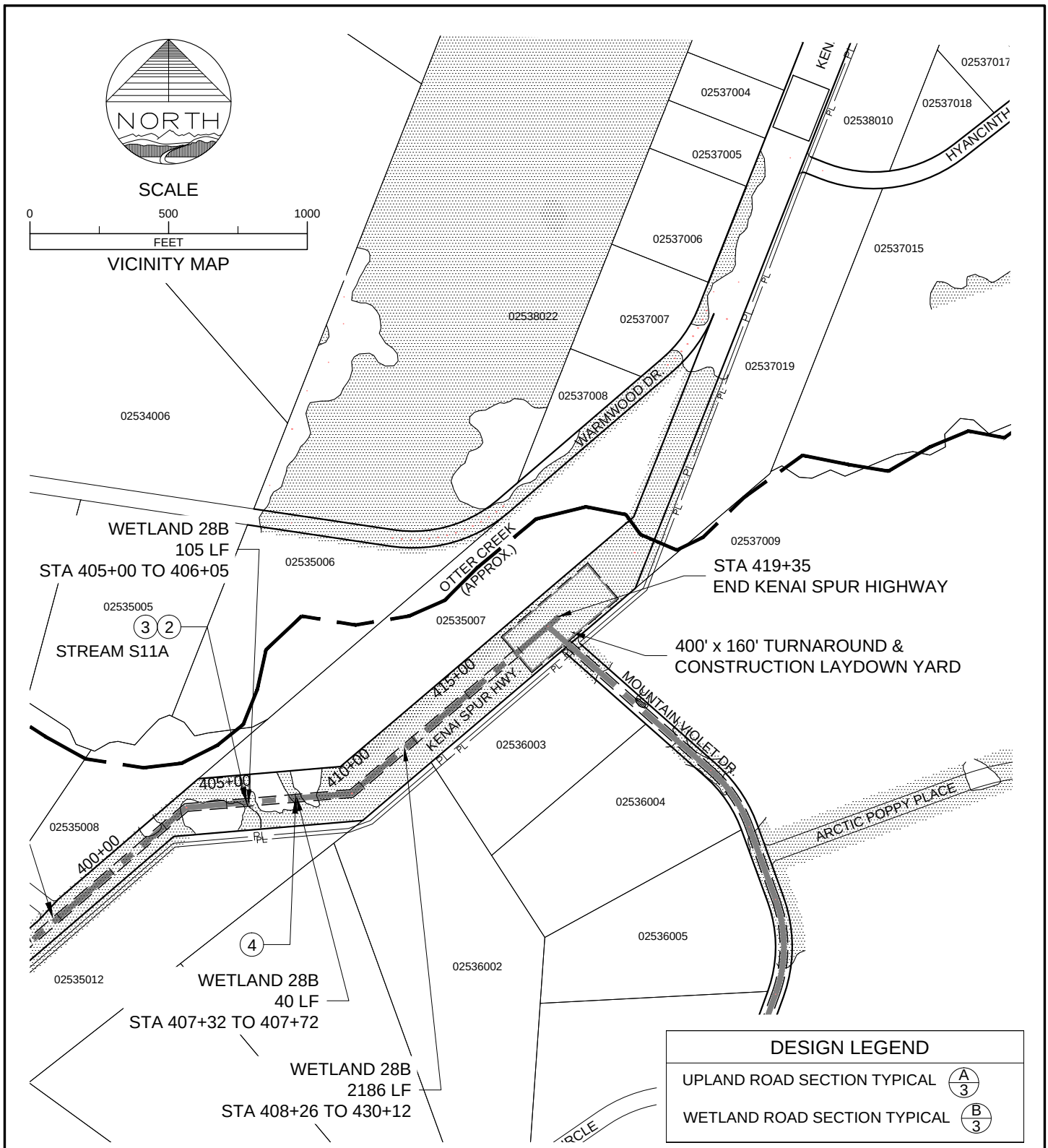
APACHE ALASKA CORPORATION
510 L STREET SUITE 310; ANCHORAGE, AK 99501

McLANE
MCLANE CONSULTING INC.

REVISION: 3
DATE: 12/12/2014
DRAWN BY: GMD
SCALE: 1"=500'
PROJECT NO. 143126

SHEET 17 OF 26



Apache

DESCRIPTION
FILE: POA-2014-460
WATERBODY: COOK INLET

LOCATION
T8N, R10W, S2; T9N, R10W, S36; T9N, R9W,
S13-15, 21-24, 28-31 SEWARD MERIDIAN
LAT/LONG; 60.8714, 150.8252

APPLICANTS
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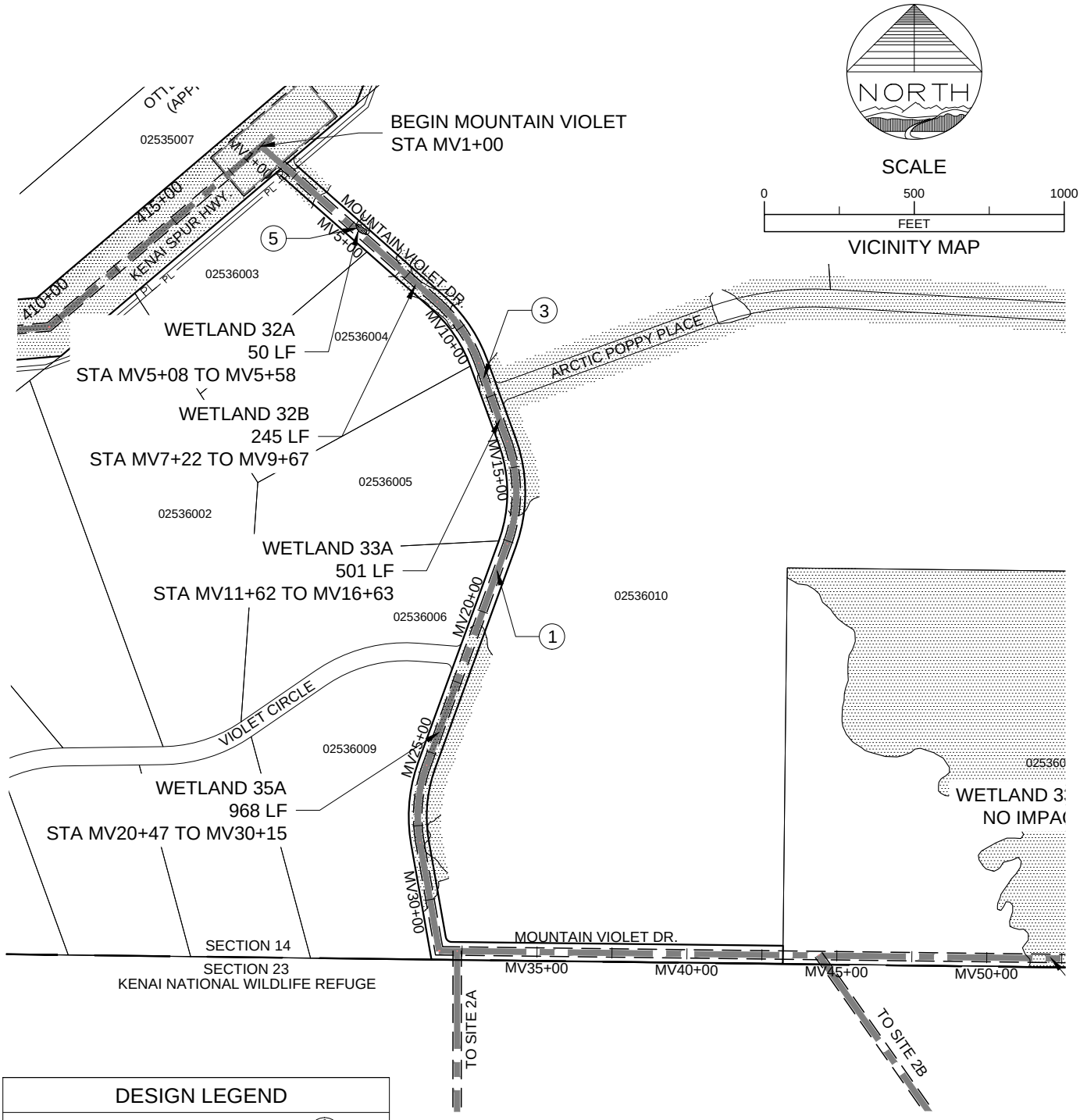

DESIGN LEGEND	
UPLAND ROAD SECTION TYPICAL	A/3
WETLAND ROAD SECTION TYPICAL	B/3

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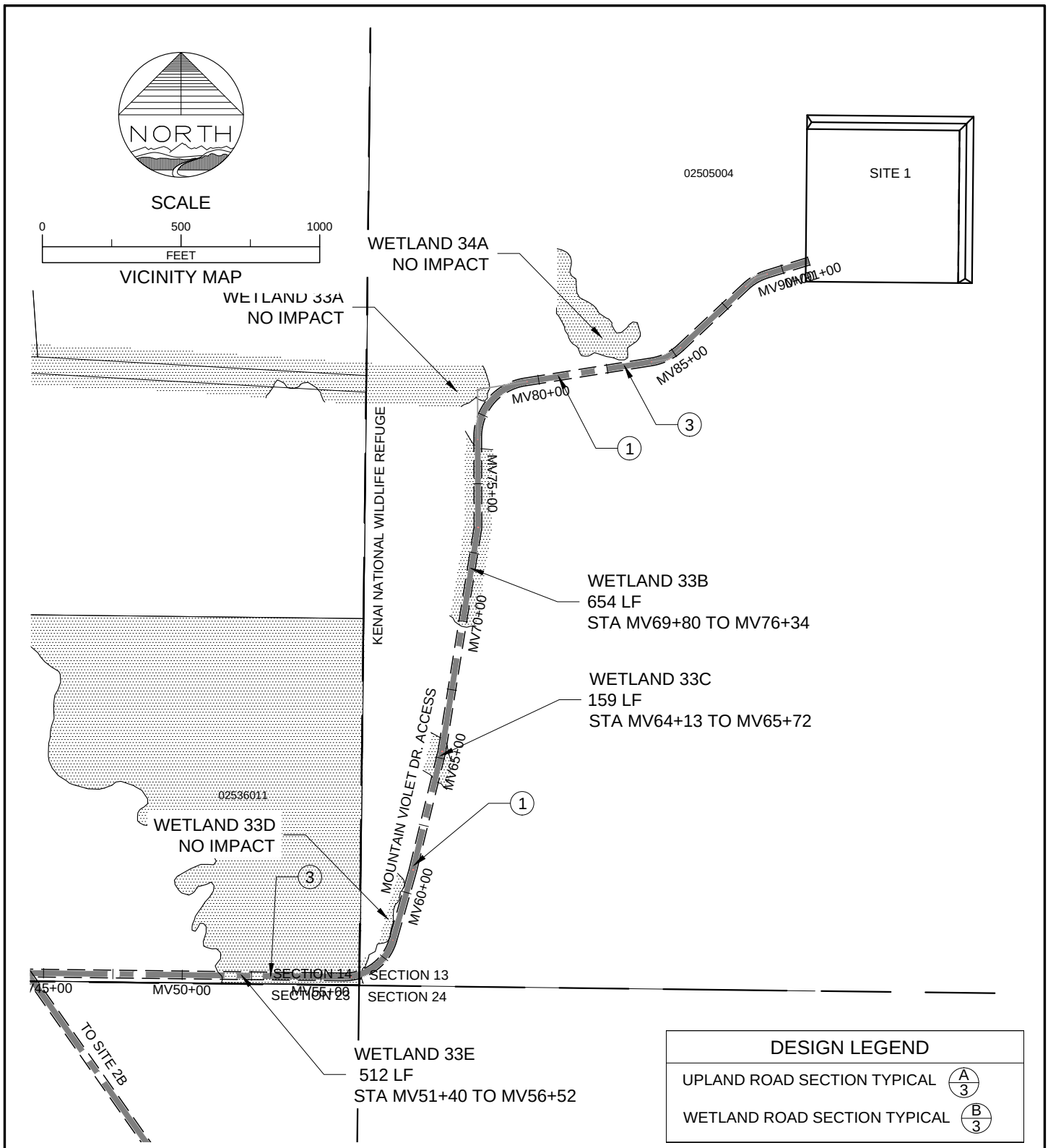

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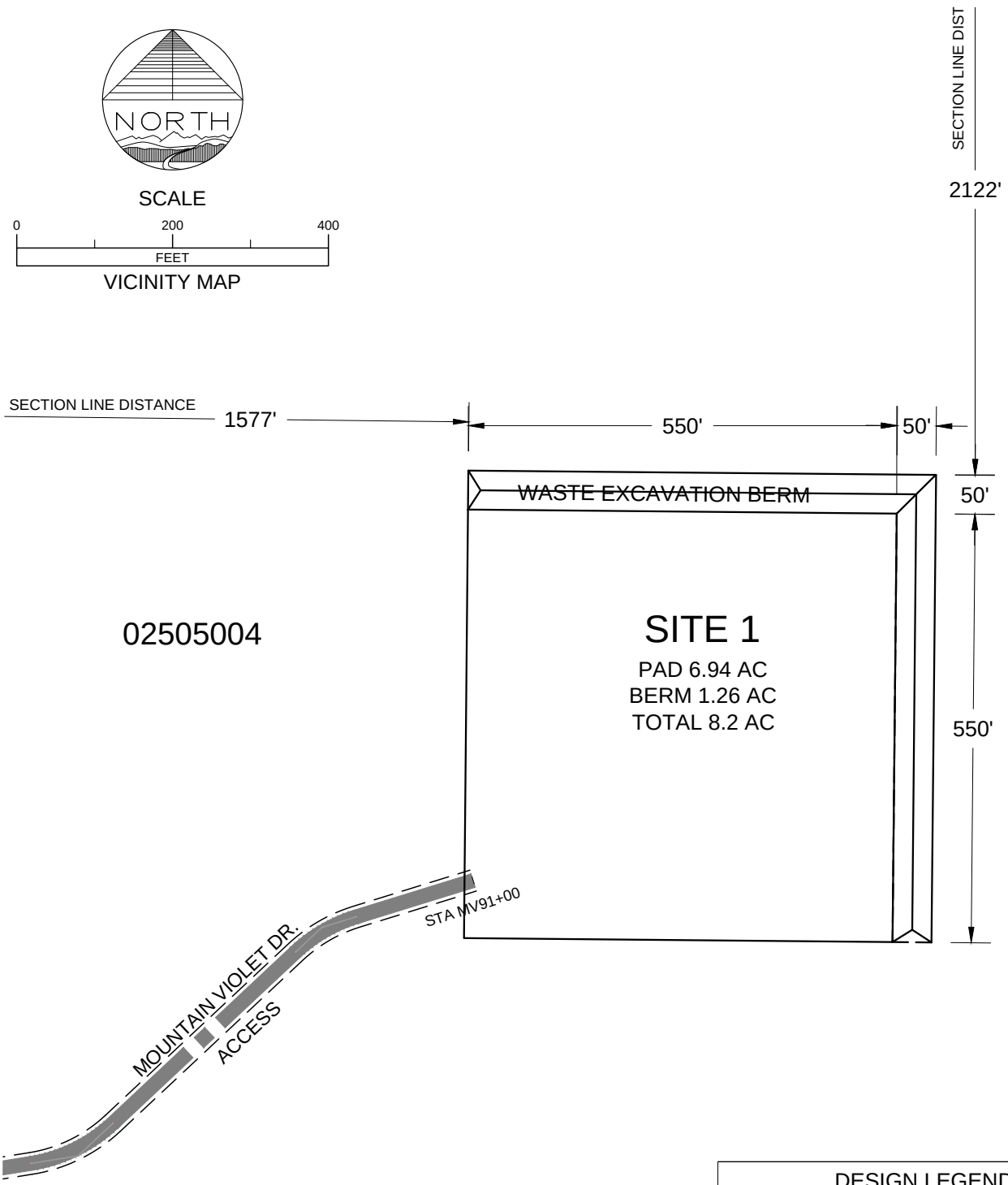
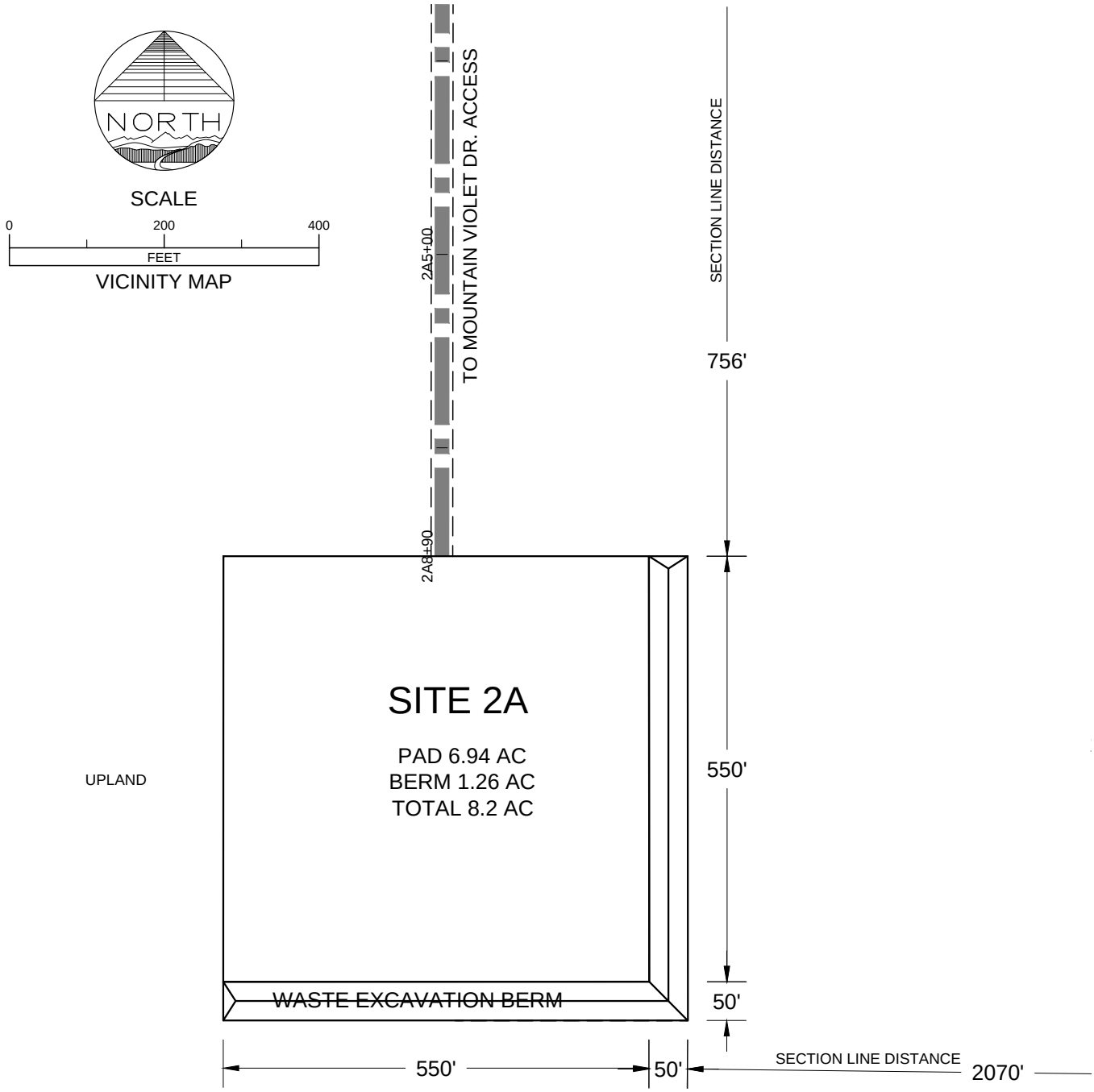


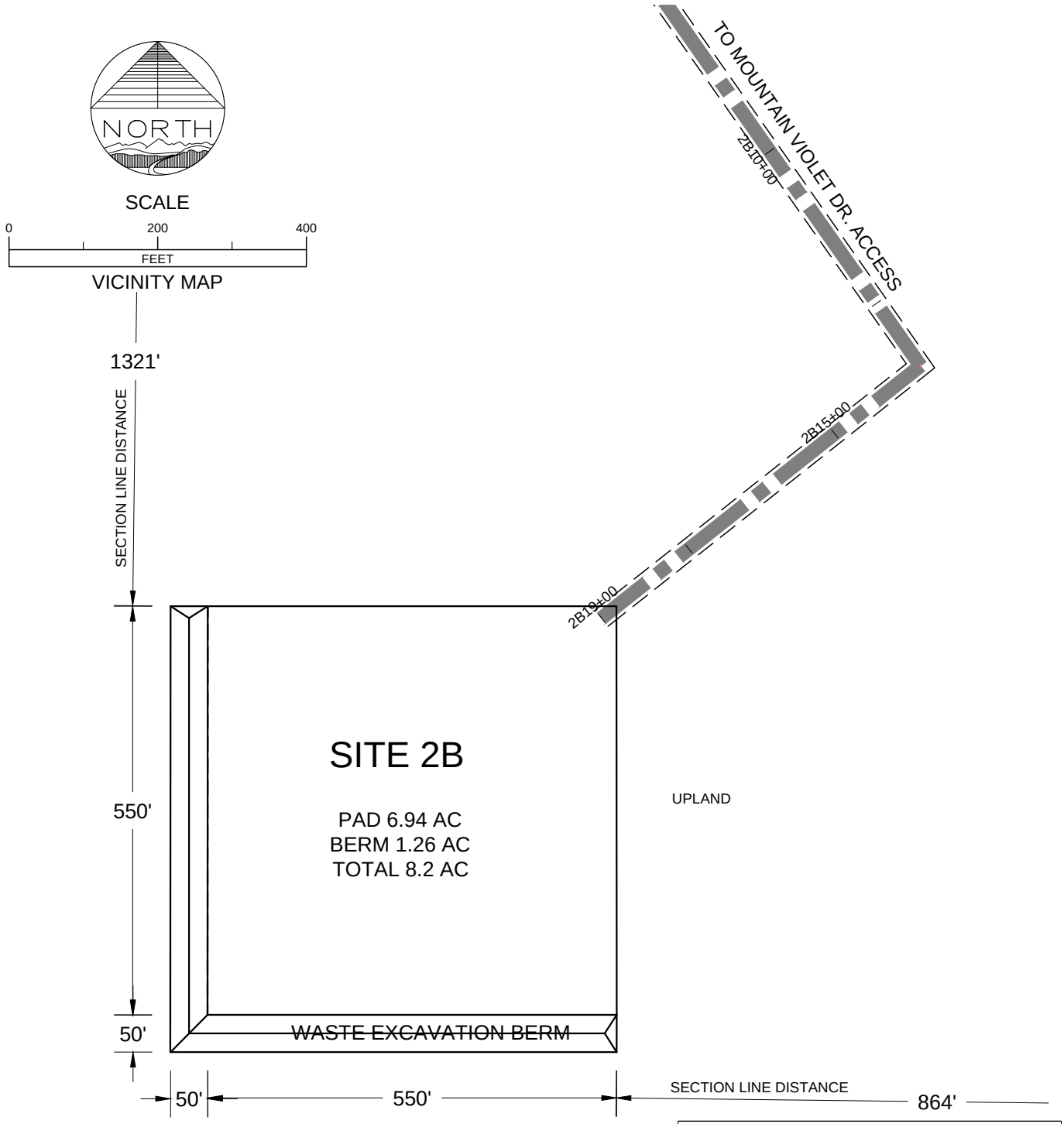
DESIGN LEGEND
PAD CONSTRUCTION TYPICALS A/6 B/6

Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: 1"=200' PROJECT NO. 143126
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 21 OF 26



DESIGN LEGEND
PAD CONSTRUCTION TYPICALS A/6 B/6

Apache	DESCRIPTION FILE: POA-2014-460 WATERBODY: COOK INLET	McLANE	REVISION: 3 DATE: 12/12/2014 DRAWN BY: GMD SCALE: 1"=200' PROJECT NO. 143126
	LOCATION T8N, R10W, S2; T9N, R10W, S36; T9N, R9W, S13-15, 21-24, 28-31 SEWARD MERIDIAN LAT/LONG; 60.8714, 150.8252		
	APPLICANTS APACHE ALASKA CORPORATION 510 L STREET SUITE 310; ANCHORAGE, AK 99501	MCLANE CONSULTING INC.	SHEET 22 OF 26



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PAD CONSTRUCTION TYPICALS A/6 B/6

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APPLICANTS
APACHE ALASKA CORPORATION
510 L STREET SUITE 310; ANCHORAGE, AK 99501

MCLANE CONSULTING INC.

REVISION: 3
DATE: 12/12/2014
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SCALE: 1"=200'
PROJECT NO. 143126

KENAI SPUR HIGHWAY EXTENSION 39,320 LF TOTAL LENGTH, BEGIN STA 26+15 END STA 419+35					
Wetland ID	Start Station	End Station	Length	Area (SF)	Volume (CY)
1A	49+50	51+14	164	4,838	377
2A	53+25	78+02	2,477	73,072	5,697
3A	87+64	88+32	68	2,006	156
4A	90+42	100+92	1,050	30,975	2,415
4A	102+06	108+67	661	19,500	1,520
5A	110+06	110+68	62	1,829	143
6A	117+18	118+18	100	2,950	230
7A	124+74	143+96	1,922	56,699	4,421
8A	146+86	148+34	148	4,366	340
8B	151+36	153+94	258	7,611	593
8B	155+80	156+70	90	2,655	207
9A	160+38	171+60	1,122	33,099	2,581
11A	184+43	208+67	2,424	71,508	5,575
13A	216+73	221+41	468	13,806	1,076
13A	229+24	238+51	927	27,347	2,132
14A	242+60	243+66	106	3,127	244
14A	244+67	246+85	218	6,431	501
15A	255+04	256+94	190	5,605	437
15A	257+43	258+34	91	2,685	209
16A	262+10	263+05	95	2,803	219
17A	264+82	265+22	40	1,180	92
18A	266+65	267+65	100	2,950	230
19A	270+30	270+78	48	1,416	110
20A	273+83	276+49	266	7,847	612
21A	278+19	278+80	61	1,800	140
22A	279+10	280+33	123	3,629	283
23A	285+48	286+55	107	3,157	246
24A	290+45	291+44	99	2,921	228
25A	308+90	314+05	515	15,193	1,185
26A	323+37	324+20	83	2,449	191
27A	325+00	326+19	119	3,511	274
27B	334+38	352+22	1,784	52,628	4,103
28A	374+92	383+15	823	24,279	1,893
28B	394+37	403+29	892	26,314	2,052
28B	405+00	406+05	105	3,098	242

Continued next page

Continued from previous page

28B	407+32	407+72	40	1,180	92
28B	408+25	419+35	1,110	32,745	2,553
Turnout	65+00			1,500	150
Turnaround	419+35			55,900	5,590
TOTAL KENAI SPUR HWY EXTENSION WETLAND FILL & VOLUME IMPACTS			**18,956** LF	**616,602** SF	**49,339** CY
				14.1 ACRES	

NOTES:
1. WETLAND IMPACT AREA IS ESTIMATED AT 29.5 FT/LF OF ROAD EMBANKMENT.
2. WETLAND IMPACT VOLUME IS ESTIMATED AT 2.3 CY/LF OF ROAD EMBANKMENT.
3. WETLAND IMPACT VOLUME FOR TURNOUT & TURNAROUND IS EST. AT 0.1 CY/SF.

MOUNTAIN VIOLET DR.

9,000 LF TOTAL LENGTH, BEGIN STA MV1+00 END STA MV91+00

Wetland ID	Start Station	End Station	Length	Area (SF)	Volume (CY)
28B	MV1+00	MV3+53	253	7,464	582
32A	MV5+08	MV5+58	50	1,475	115
32B	MV7+22	MV9+67	245	7,228	564
33A	MV11+62	MV16+63	501	14,780	1,152
35A	MV20+47	MV30+15	968	28,556	2,226
33E	MV51+40	MV56+52	512	15,104	1,178
33C	MV64+13	MV65+72	159	4,691	366
33B	MV69+80	MV76+34	654	19,293	1,504
TOTAL MOUNTAIN VIOLET DR. WETLAND FILL & VOLUME IMPACTS			**3,342** LF	**98,589** SF	**7,687** CY
				2.3 ACRES	

NOTES:
1. WETLAND IMPACT AREA IS ESTIMATED AT 29.5 FT/LF OF ROAD EMBANKMENT.
2. WETLAND IMPACT VOLUME IS ESTIMATED AT 2.3 CY/LF OF ROAD EMBANKMENT.

SUBDIVISION APPROACH IMPACT

STREET ID	Station	Area (SF)	Area (Ac)	Volume (CY)
Crimson Clover St.	134+55 RT	1030	0.02	103
Mountain Laurel Ct.	189+40 RT	1030	0.02	103
Jacobs Ladder Dr.	221+20 LT	1030	0.02	103
Cloud Berry Lp.	227+75 RT	1030	0.02	103
Purple Iris Wy.	341+10 RT	1030	0.02	103
Larkspur Lp.	397+35 LT	1030	0.02	103
TOTAL SUBDIVISION APPROACH WETLAND FILL & VOLUME IMPACTS		**6,180** SF	**0.1** AC	**618** CY

NOTE: WETLAND IMPACT VOLUME IS ESTIMATED AT 0.1 CY/SF.

STREAM IMPACTS

Stream ID	Station	Length (LF)
S1A	54+45	30.2
S1B	58+53	38.1
S2A	99+39	28.6
S3A	110+43	31.0
S4B	152+07	30.1
S6A	267+09	28.1
S7A	286+28	30.0
S8A	325+72	30.7
S9A	337+96	114.7
S9B	339+83	30.8
S9C	340+17	33.1
S10A	348+51	42.7
S11A	405+72	29.4
TOTAL Length		**497.5**

OPEN WATERS IMPACT

FEATURE ID	Start Station	EndStation	Length	Area (SF)	Volume (CY)
7A (PUBH)	125+19	125+93	74	2,183	170
11A (PUBH)	205+67	206+86	119	3,511	274
11A (PUBH)	208+36	208+67	31	915	71
32A (PUBF)	MV5+08	MV5+58	50	1,475	115
TOTAL OPEN WATERS IMPACT			**274** LF	**8,083** SF	**630** CY
				0.19 ACRES	

NOTES:
1. WATERS IMPACT AREA IS ESTIMATED AT 29.5 FT/LF OF ROAD EMBANKMENT.
2. WATERS IMPACT VOLUME IS ESTIMATED AT 2.3 CY/LF OF ROAD EMBANKMENT.

PADS IMPACTS

Pad ID	Wetland Area (SF)	Wetland Area (AC)	Volume (CY)
1	0	0.0	0
2A	0	0.0	0
2B	0	0.0	0
	SF	AC	CY

NOTE: WETLAND IMPACT VOLUME IS ESTIMATED AT 0.1 CY/SF.

TOTAL PROJECT IMPACTS

Wetland Length (LF)	Wetland Area (SF)	Wetland Area (AC)	Volume (CY)
22,298	**721,371**	**16.6**	**57,643**