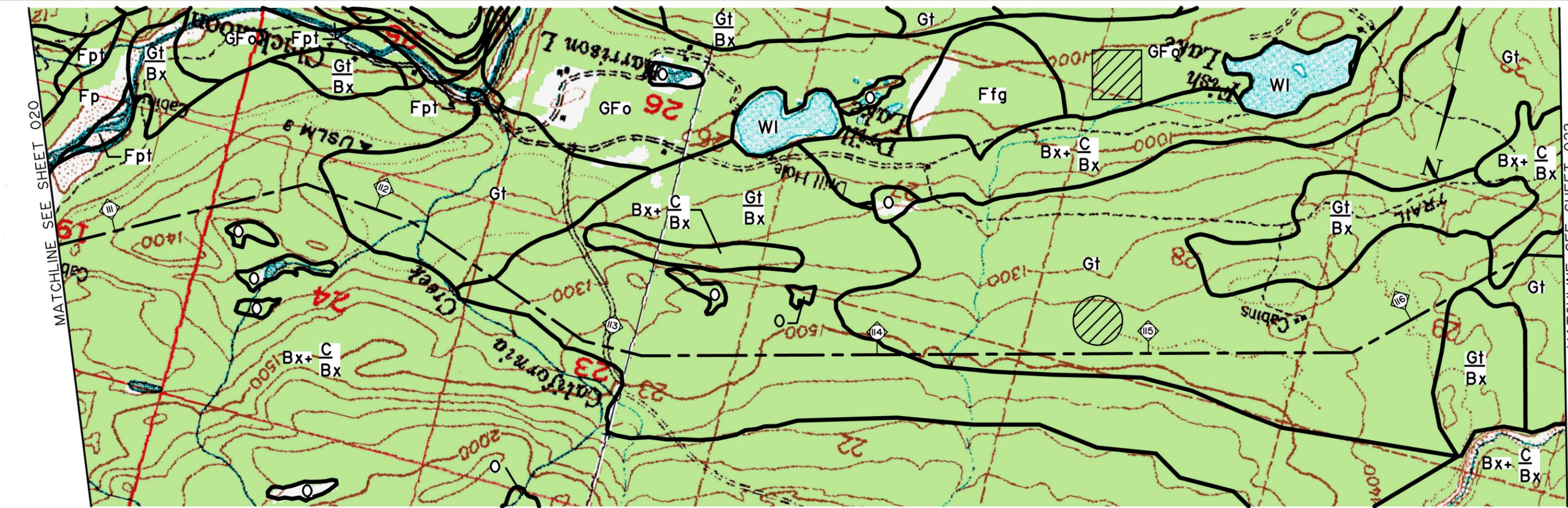


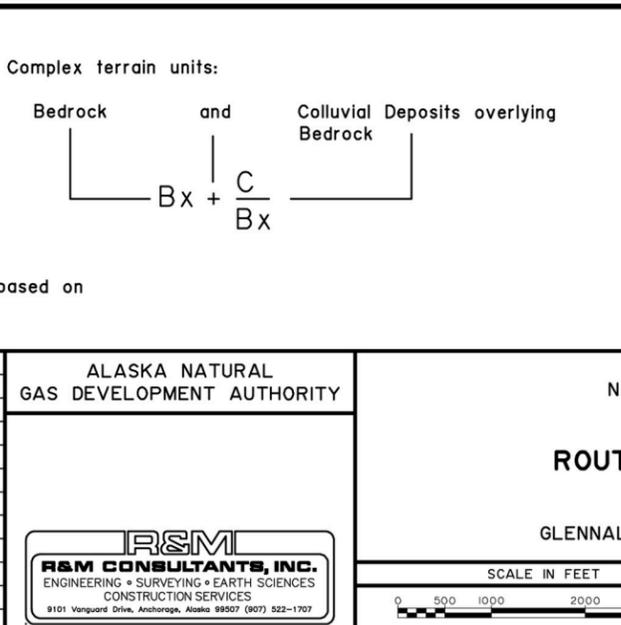
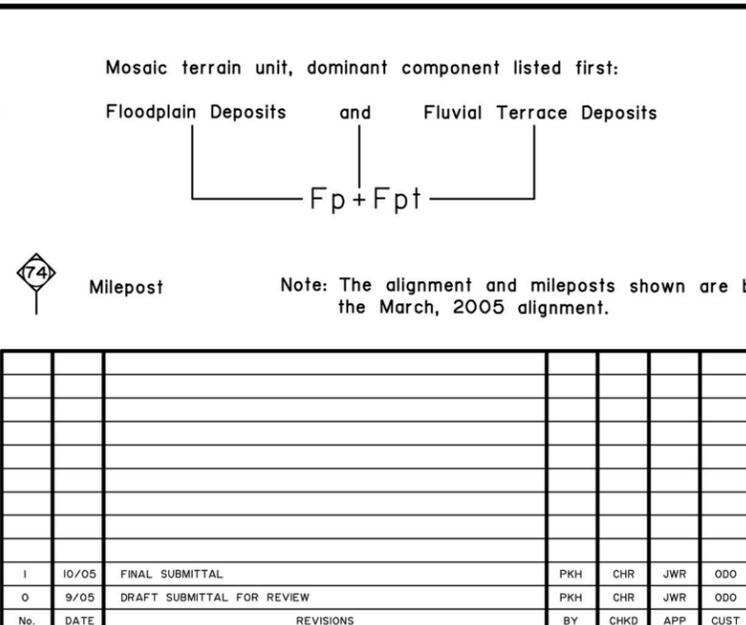
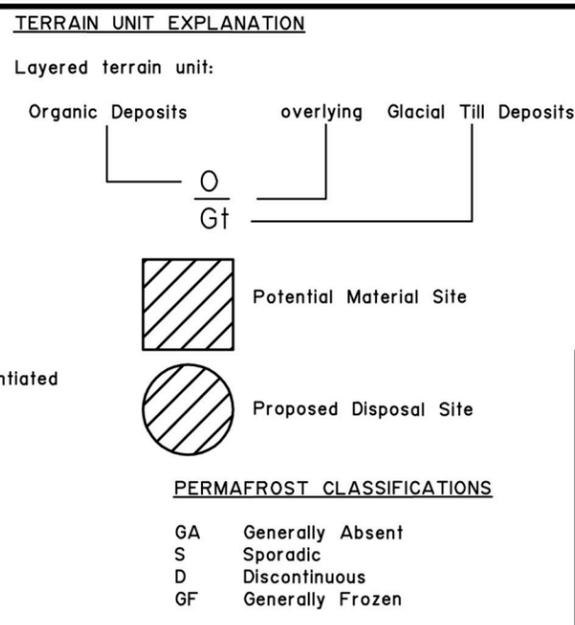
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 SPECIFICATIONS
 STANDARDS
 COMPUTER DESIGNATION project\291\01\Geo\1291-overall_1=1000_10/14/05 at 16:25 by cdb
 DESIGNED BY
 CHECKED BY
 DRAFTED BY



TERRAIN UNIT	Bx + C / Bx	Gt	Gt / Bx	Gt	Gt
BEDROCK	Tc COAL BEARING FORMATION				
HAZARDS					
PERMAFROST	S				
COMMENTS	CALIFORNIA CREEK XING		CHICKLOON-KING RIVER ROAD	SEE PROPOSED CHICKLOON RIVER CROSSING REALIGNMENT SECTION 5.2.2, VOL. I, MAIN REPORT	
POTENTIAL MATERIAL SITES	MP 114.9				
PROPOSED DISPOSAL SITES	MP 114.8				

TERRAIN UNIT SYMBOLS/NAMES

Bx	Bedrock
C	Colluvium
Cf	Colluvial Fan Deposits
Cl	Landslide
Cs	Solifluction Deposits
Ct	Talus
El	Loess
Es	Eolian Sand
Ffg	Alluvial Fan (Granular)
Ffs	Alluvial Fan (Fine-Grained)
Fp	Floodplain (Granular)
Fpf	Floodplain (Fine-Grained)
Fpt	Terrace
GL	Glacial Lacustrine (glacial lake) Deposits
Gt	Glacial Till
GF	Glacio Fluvial (meltwater) Deposits, Undifferentiated
GFo	Outwash Deposits
GFe	Esker Deposits
GFk	Kame Deposits
GFl	Lowland Glacio Fluvial (meltwater) Deposits
Ht	Mine Tailings
L	Lacustrine Deposit
Lt	Lacustrine Thaw Basin/Lake Deposits
Me	Marine Estuarine Deposits
O	Organic Deposits
Vm	Mud Volcano
WI	Water (Lake)



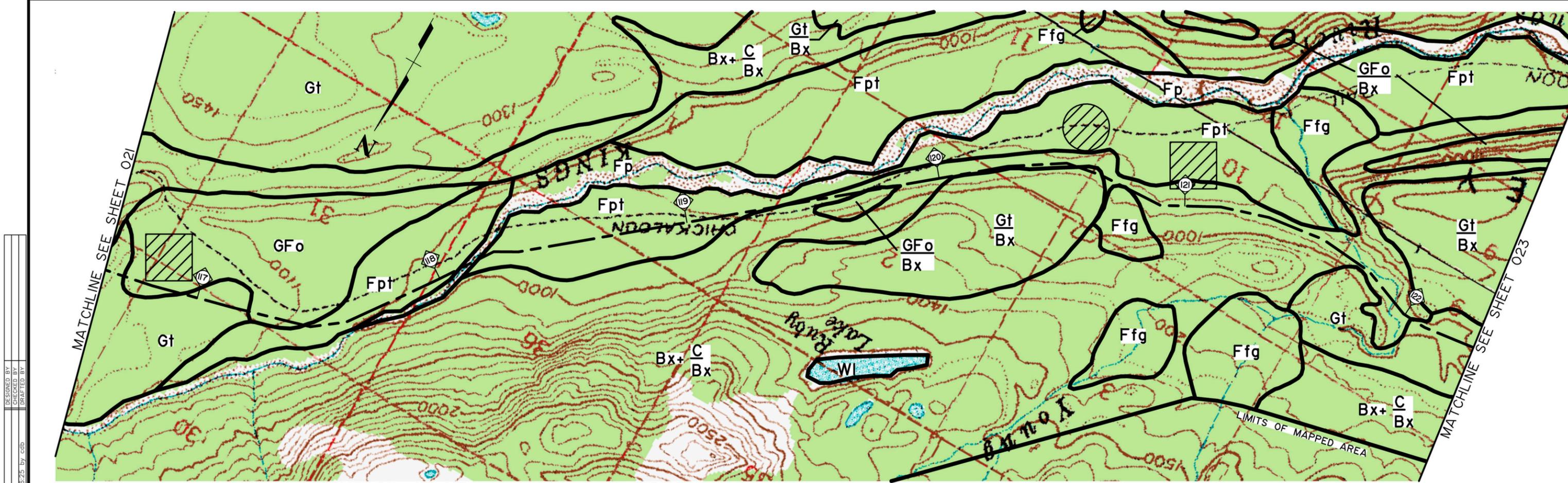
LIMITATIONS

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				ALASKA NATURAL GAS DEVELOPMENT AUTHORITY			
				NATURAL GAS PIPELINE			
				ROUTE SOIL CONDITIONS			
				GLENNALLEN TO PALMER SPUR LINE			
				SCALE IN FEET			
				DRAWING NO.			
				REV.			
				0 500 1000 2000 3000			
				021			
				I			

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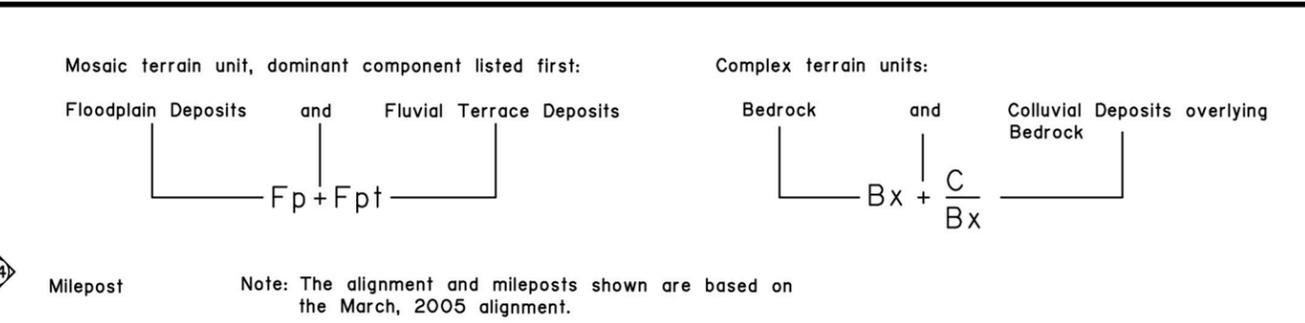
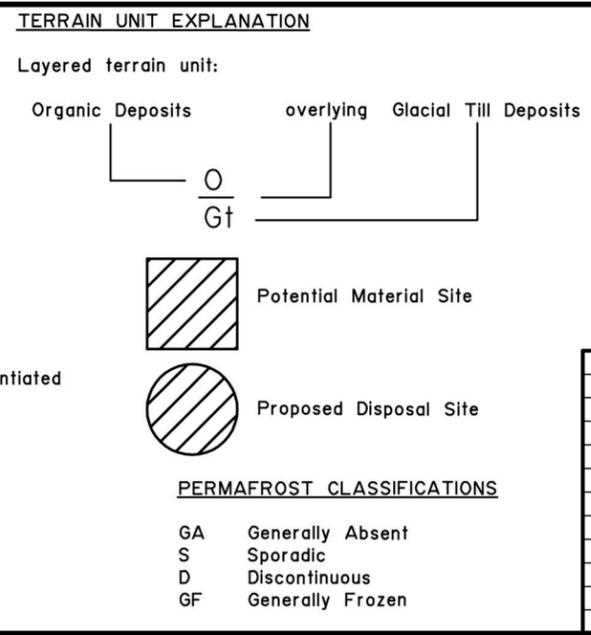
No.	DATE	REVISIONS	BY	CHKD	APP	CUST
1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO



SPECIFICATIONS DESIGNED BY CHECKED BY DRAFTED BY
 STANDARDS
 COMPUTER DESIGNATION PROJECT 1291-01-Geo 1291-overall 1=1000 10/14/05 at 16:25 by cad
 XREF: 1291-ARPHOTOS, 1291-BD02, 1291-US05-IMAGE, SID

TERRAIN UNIT	Gt	GFo	Gt	GFo	Fpt	Fp	Fpt	Bx+C/Bx	Gt/Bx	Bx+C/Bx	Gt	
BEDROCK	Qu						Tim MAFIC ROCKS					
HAZARDS	SLOPE STABILITY											
PERMAFROST	S											
COMMENTS	KINGS RIVER XING						YOUNG CREEK XING					
POTENTIAL MATERIAL SITES	MP 116.9									MP 121.0		
PROPOSED DISPOSAL SITES							MP 120.6					

- TERRAIN UNIT SYMBOLS/NAMES**
- Bx Bedrock
 - C Colluvium
 - Cf Colluvial Fan Deposits
 - Cl Landslide
 - Cs Solifluction Deposits
 - Ct Talus
 - El Loess
 - Es Eolian Sand
 - Ffg Alluvial Fan (Granular)
 - Ffs Alluvial Fan (Fine-Grained)
 - Fp Floodplain (Granular)
 - Fpf Floodplain (Fine-Grained)
 - Fpt Terrace
 - GL Glacial Lacustrine (glacial lake) Deposits
 - Gt Glacial Till
 - GF Glacio Fluvial (meltwater) Deposits, Undifferentiated
 - GFo Outwash Deposits
 - GFs Esker Deposits
 - GFk Kame Deposits
 - GFl Lowland Glacio Fluvial (meltwater) Deposits
 - Ht Mine Tailings
 - L Lacustrine Deposit
 - Lt Lacustrine Thaw Basin/Lake Deposits
 - Me Marine Estuarine Deposits
 - O Organic Deposits
 - Vm Mud Volcano
 - WI Water (Lake)



LIMITATIONS

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No.	DATE	REVISIONS	BY	CHKD	APP	CUST
1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO

ALASKA NATURAL GAS DEVELOPMENT AUTHORITY

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NATURAL GAS PIPELINE

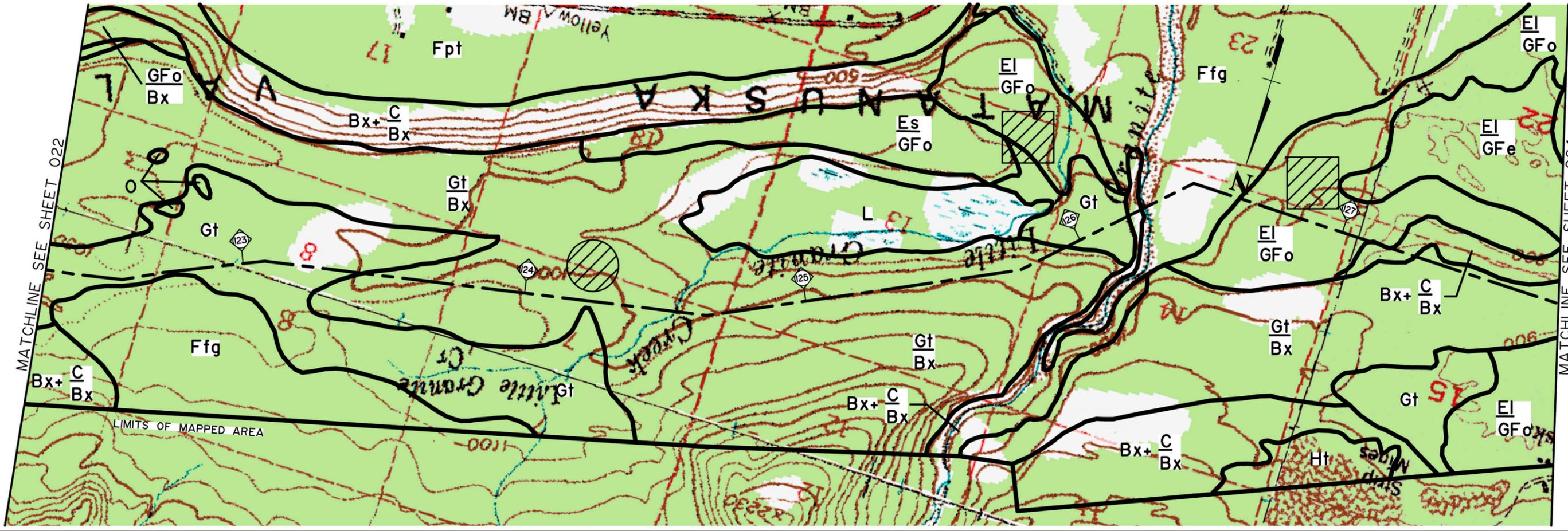
ROUTE SOIL CONDITIONS

GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **022** REV. **1**

XREF: 1291-AIRPHOTOS, 1291-BD02, 1291-USGS-IMAGE, SID
 SPECIFICATIONS
 STANDARDS
 COMPUTER DESIGNATION: Project 1291-01\Geop\1291-overall.dwg 10/14/05 at 10:00, 10/14/05 at 16:25 by cdb

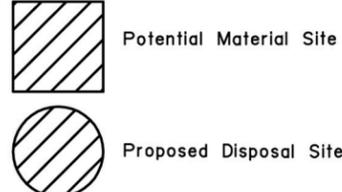
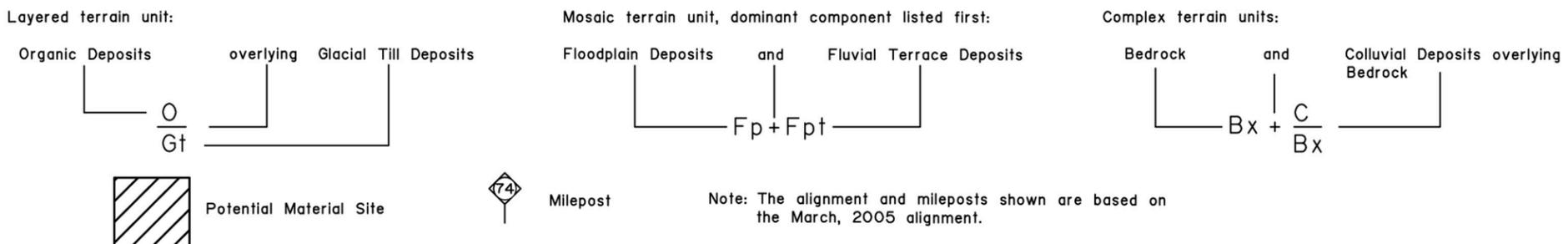


TERRAIN UNIT	Gt	Gt/Bx	Gt	Ffg	EI/GFo	Gt/Bx
BEDROCK	Qu	Tc COAL BEARING FORMATION	Bx+C/Bx	Km SEDIMENTARY ROCKS	Bx+C/Bx	
HAZARDS						
PERMAFROST	S					
COMMENTS	● LITTLE GRANITE CREEK XING		● GRANITE CREEK XING			
POTENTIAL MATERIAL SITES			MP 125.8		MP 126.9	
PROPOSED DISPOSAL SITES	MP 124.3					

TERRAIN UNIT SYMBOLS/NAMES

- Bx Bedrock
- C Colluvium
- Cf Colluvial Fan Deposits
- Cl Landslide
- Cs Solifluction Deposits
- Ct Talus
- EI Loess
- Es Eolian Sand
- Ffg Alluvial Fan (Granular)
- Ffs Alluvial Fan (Fine-Grained)
- Fp Floodplain (Granular)
- Fpf Floodplain (Fine-Grained)
- Fpt Terrace
- GL Glacial Lacustrine (glacial lake) Deposits
- Gt Glacial Till
- GF Glacio Fluvial (meltwater) Deposits, Undifferentiated
- GFo Outwash Deposits
- GFe Esker Deposits
- GFk Kame Deposits
- GFf Lowland Glacio Fluvial (meltwater) Deposits
- Ht Mine Tailings
- L Lacustrine Deposit
- Lt Lacustrine Thaw Basin/Lake Deposits
- Me Marine Estuarine Deposits
- O Organic Deposits
- Vm Mud Volcano
- WI Water (Lake)

TERRAIN UNIT EXPLANATION



PERMAFROST CLASSIFICATIONS

- GA Generally Absent
- S Sporadic
- D Discontinuous
- GF Generally Frozen



Note: The alignment and mileposts shown are based on the March, 2005 alignment.

LIMITATIONS
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No.	DATE	REVISIONS	BY	CHKD	APP	CUST
1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO

ALASKA NATURAL GAS DEVELOPMENT AUTHORITY

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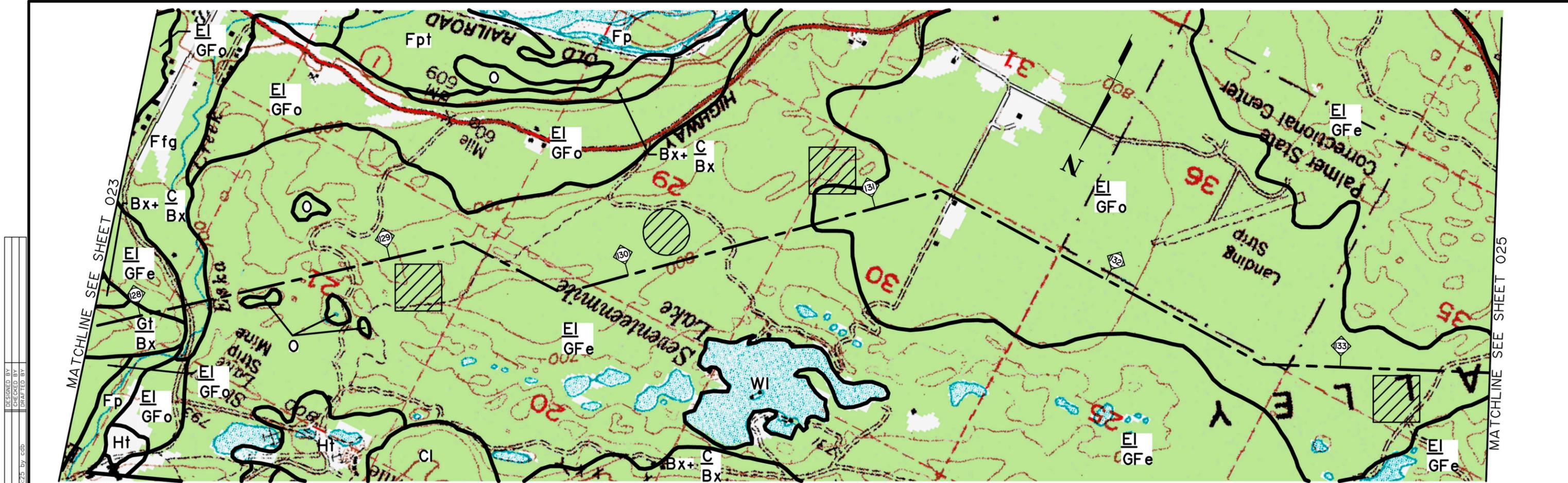
NATURAL GAS PIPELINE

ROUTE SOIL CONDITIONS

GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **023** REV. **1**



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 CHECKED BY: [blank]
 DRAFTED BY: [blank]
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 COMPUTER DESIGNATION: Project\1291\01\Geo\1291-overall_1=1000_10/14/05 at 16:25 by: cad

MATCHLINE SEE SHEET 023

MATCHLINE SEE SHEET 025

TERRAIN UNIT	Gt Bx	EI GFo	Ffg	EI GFe	EI GFo
BEDROCK	Km		Qu		
HAZARDS					
PERMAFROST	GA				
COMMENTS	JONESVILLE MINE ROAD		ESKA CREEK XING		SEE PROPOSED MOOSE CREEK CROSSING REALIGNMENT SECTION 5.2.3, VOL. I, MAIN REPORT
POTENTIAL MATERIAL SITES	MP 129.1		MP 130.8		MP 133.2
PROPOSED DISPOSAL SITES			MP 130.2		

- TERRAIN UNIT SYMBOLS/NAMES**
- Bx Bedrock
 - C Colluvium
 - Cf Colluvial Fan Deposits
 - Cl Landslide
 - Cs Solifluction Deposits
 - Ct Talus
 - EI Loess
 - Es Eolian Sand
 - Ffg Alluvial Fan (Granular)
 - Ffs Alluvial Fan (Fine-Grained)
 - Fp Floodplain (Granular)
 - Fpf Floodplain (Fine-Grained)
 - Fpt Terrace
 - GL Glacial Lacustrine (glacial lake) Deposits
 - Gt Glacial Till
 - GF Glacio Fluvial (meltwater) Deposits, Undifferentiated
 - GFo Outwash Deposits
 - GFe Esker Deposits
 - GFk Kame Deposits
 - GFl Lowland Glacio Fluvial (meltwater) Deposits
 - Ht Mine Tailings
 - L Lacustrine Deposit
 - Lt Lacustrine Thaw Basin/Lake Deposits
 - Me Marine Estuarine Deposits
 - O Organic Deposits
 - Vm Mud Volcano
 - WI Water (Lake)

TERRAIN UNIT EXPLANATION

Layered terrain unit:
 Organic Deposits overlying Glacial Till Deposits
 $\frac{O}{Gt}$

Mosaic terrain unit, dominant component listed first:
 Floodplain Deposits and Fluvial Terrace Deposits
 $Fp + Fpt$

Complex terrain units:
 Bedrock and Colluvial Deposits overlying Bedrock
 $Bx + \frac{C}{Bx}$

PERMAFROST CLASSIFICATIONS

- GA Generally Absent
- S Sporadic
- D Discontinuous
- GF Generally Frozen

Legend:
 [Hatched Box] Potential Material Site
 [Circle with Hatching] Proposed Disposal Site
 [Diamond with 74] Milepost

Note: The alignment and mileposts shown are based on the March, 2005 alignment.

LIMITATIONS
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No.	DATE	REVISIONS	BY	CHKD	APP	CUST
1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO

ALASKA NATURAL GAS DEVELOPMENT AUTHORITY

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NATURAL GAS PIPELINE

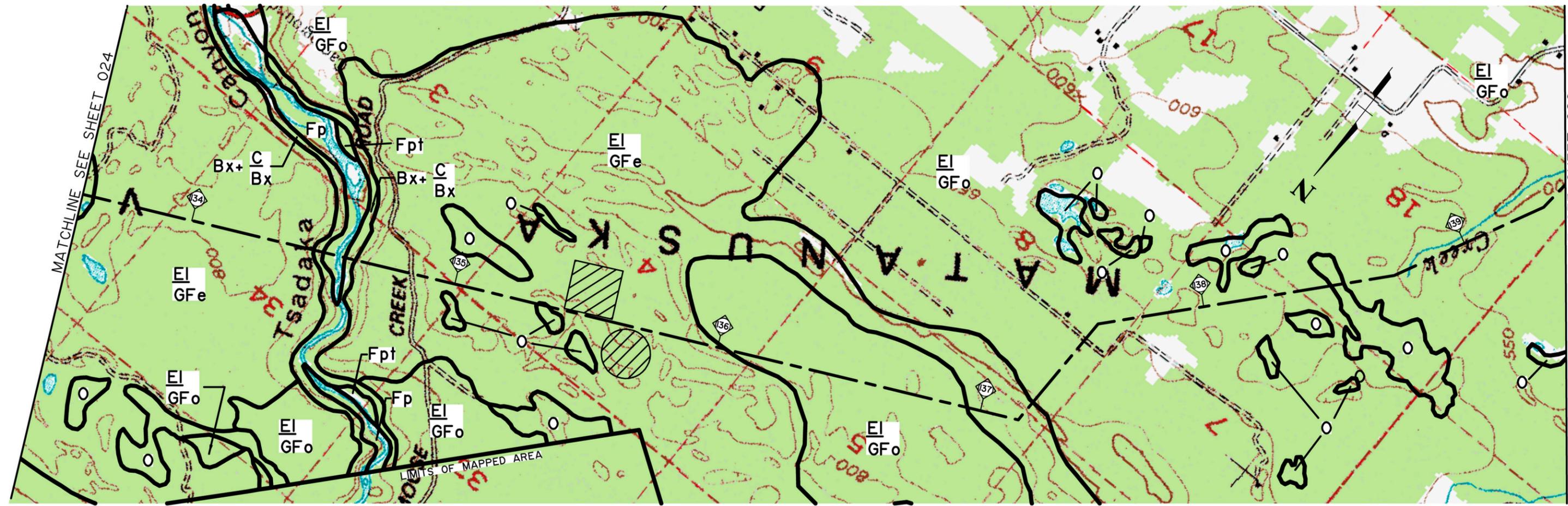
ROUTE SOIL CONDITIONS

GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **024** REV. **1**

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 COMPUTER DESIGNATION: [blank]
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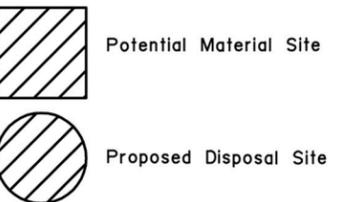
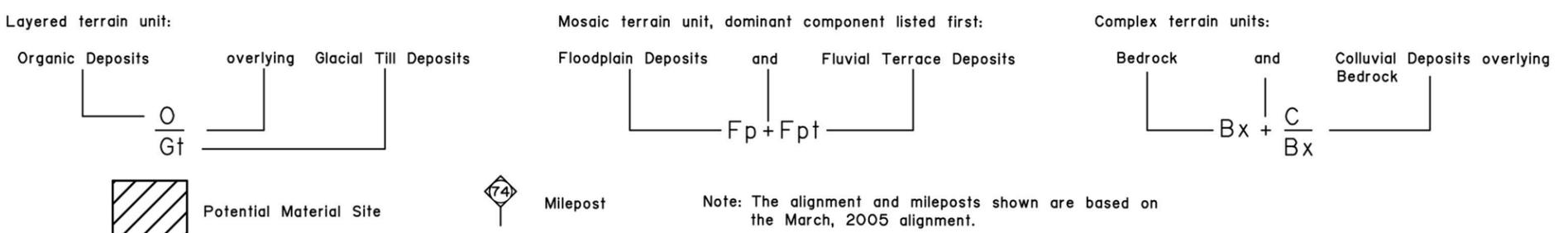


TERRAIN UNIT	El GFe	Fp	El GFe	El GFo	El GFe	El GFo	O	El GFo
BEDROCK	El GFo	Bx+C/Bx	Bx+C/Bx	Qu				
HAZARDS								
PERMAFROST				GA				
COMMENTS	SEE PROPOSED MOOSE CREEK CROSSING REALIGNMENT SECTION 5.2.3, VOL. I, MAIN REPORT MOOSE CREEK XING			UPPER MATANUSKA VALLEY	COOK INLET - SUSITNA LOWLAND			
POTENTIAL MATERIAL SITES			MP 135.6					
PROPOSED DISPOSAL SITES			MP 135.7					

TERRAIN UNIT SYMBOLS/NAMES

- Bx Bedrock
- C Colluvium
- Cf Colluvial Fan Deposits
- Cl Landslide
- Cs Solifluction Deposits
- Ct Talus
- El Loess
- Es Eolian Sand
- Ffg Alluvial Fan (Granular)
- Ffs Alluvial Fan (Fine-Grained)
- Fp Floodplain (Granular)
- Fpf Floodplain (Fine-Grained)
- Fpt Terrace
- GL Glacial Lacustrine (glacial lake) Deposits
- Gt Glacial Till
- GF Glacio Fluvial (meltwater) Deposits, Undifferentiated
- GFo Outwash Deposits
- GFe Esker Deposits
- GFk Kame Deposits
- GFl Lowland Glacio Fluvial (meltwater) Deposits
- Ht Mine Tailings
- L Lacustrine Deposit
- Lt Lacustrine Thaw Basin/Lake Deposits
- Me Marine Estuarine Deposits
- O Organic Deposits
- Vm Mud Volcano
- WI Water (Lake)

TERRAIN UNIT EXPLANATION



PERMAFROST CLASSIFICATIONS

- GA Generally Absent
- S Sporadic
- D Discontinuous
- GF Generally Frozen



Note: The alignment and mileposts shown are based on the March, 2005 alignment.

I	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO	
O	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO	
No.	DATE	REVISIONS	BY	CHKD	APP	CUST	

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NATURAL GAS PIPELINE

ROUTE SOIL CONDITIONS

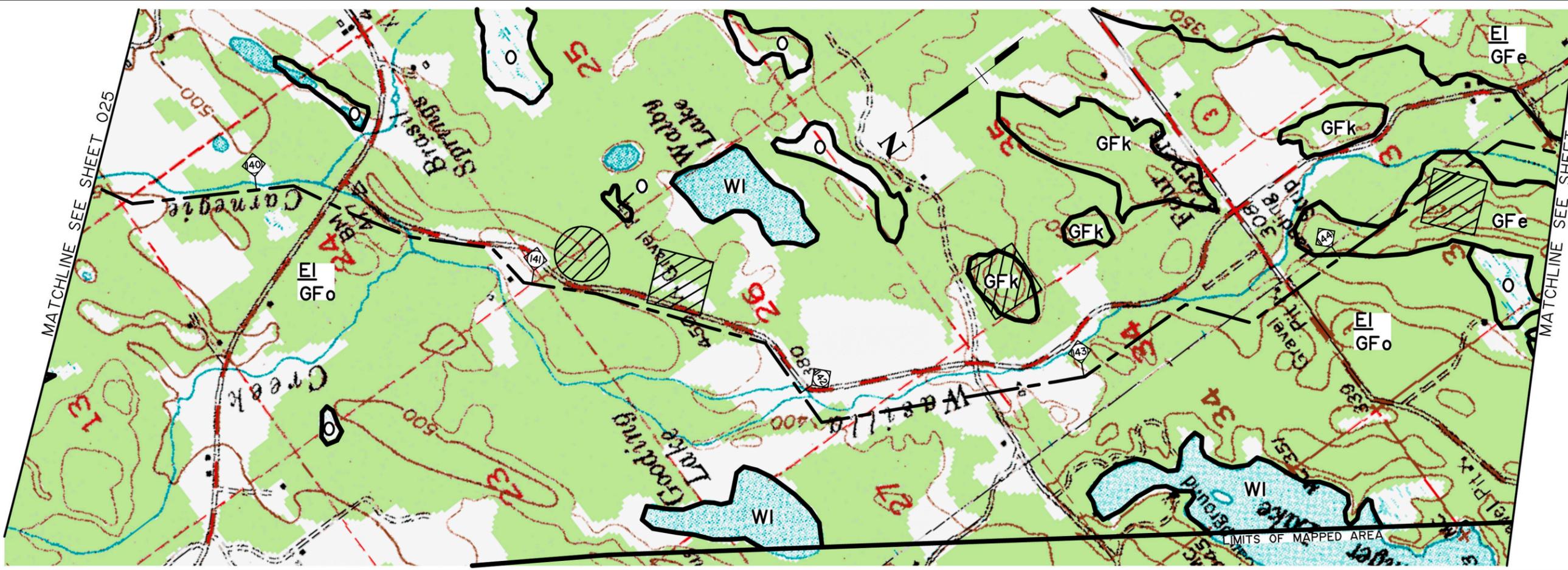
GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **025** REV. **1**

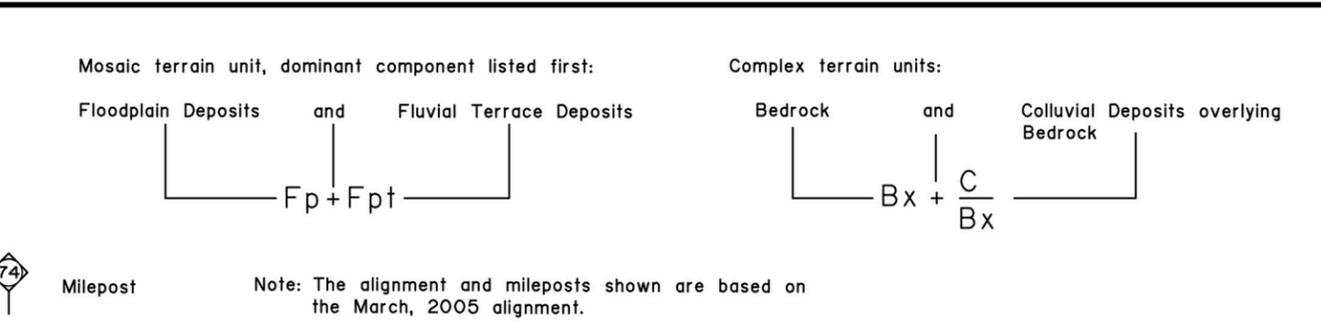
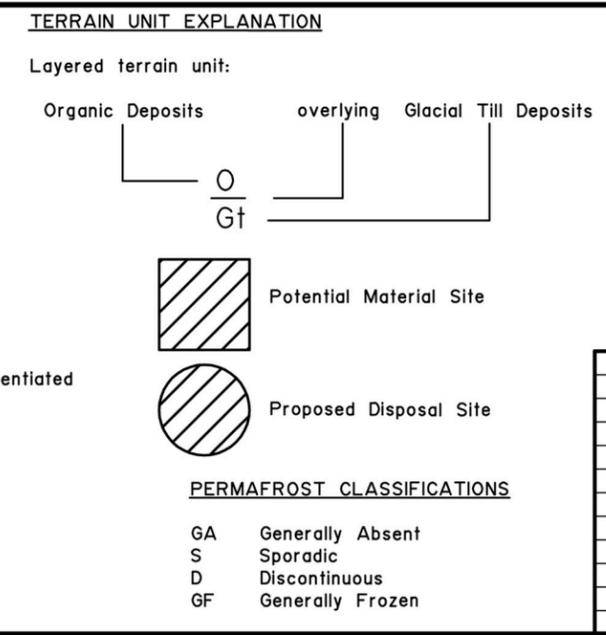
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SPECIFICATIONS: 1291-ARPHOTOS, 1291-BD02, 1291-USGS-IMAGE, SID
 STANDARDS: 1291-ARPHOTOS, 1291-BD02, 1291-USGS-IMAGE, SID
 COMPUTER DESIGNATION: 1291-01-Geo\291-overall_1=1000_10/14/05 at 16:25 by cdb
 DESIGNED BY: [blank]
 CHECKED BY: [blank]
 DRAFTED BY: [blank]



TERRAIN UNIT	EI GFo	GFe	EI GFo
BEDROCK	Qu		
HAZARDS			
PERMAFROST	GA		
COMMENTS	PALMER FISHHOOK ROAD	CARNEGIE CREEK XING	BOGARD ROAD
POTENTIAL MATERIAL SITES		MP 141.5	MP 142.8
PROPOSED DISPOSAL SITES	MP 141.2		MP 144.4

- TERRAIN UNIT SYMBOLS/NAMES**
- Bx Bedrock
 - C Colluvium
 - Cf Colluvial Fan Deposits
 - Cl Landslide
 - Cs Solifluction Deposits
 - Ct Talus
 - EI Loess
 - Es Eolian Sand
 - Ffg Alluvial Fan (Granular)
 - Ffs Alluvial Fan (Fine-Grained)
 - Fp Floodplain (Granular)
 - Fpf Floodplain (Fine-Grained)
 - Fpt Terrace
 - GL Glacial Lacustrine (glacial lake) Deposits
 - Gt Glacial Till
 - GF Glacio Fluvial (meltwater) Deposits, Undifferentiated
 - GFo Outwash Deposits
 - GFe Esker Deposits
 - GFK Kame Deposits
 - GF1 Lowland Glacio Fluvial (meltwater) Deposits
 - Ht Mine Tailings
 - L Lacustrine Deposit
 - Lt Lacustrine Thaw Basin/Lake Deposits
 - Me Marine Estuarine Deposits
 - O Organic Deposits
 - Vm Mud Volcano
 - WI Water (Lake)



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No.	DATE	REVISIONS	BY	CHKD	APP	CUST
1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO

ALASKA NATURAL GAS DEVELOPMENT AUTHORITY

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NATURAL GAS PIPELINE

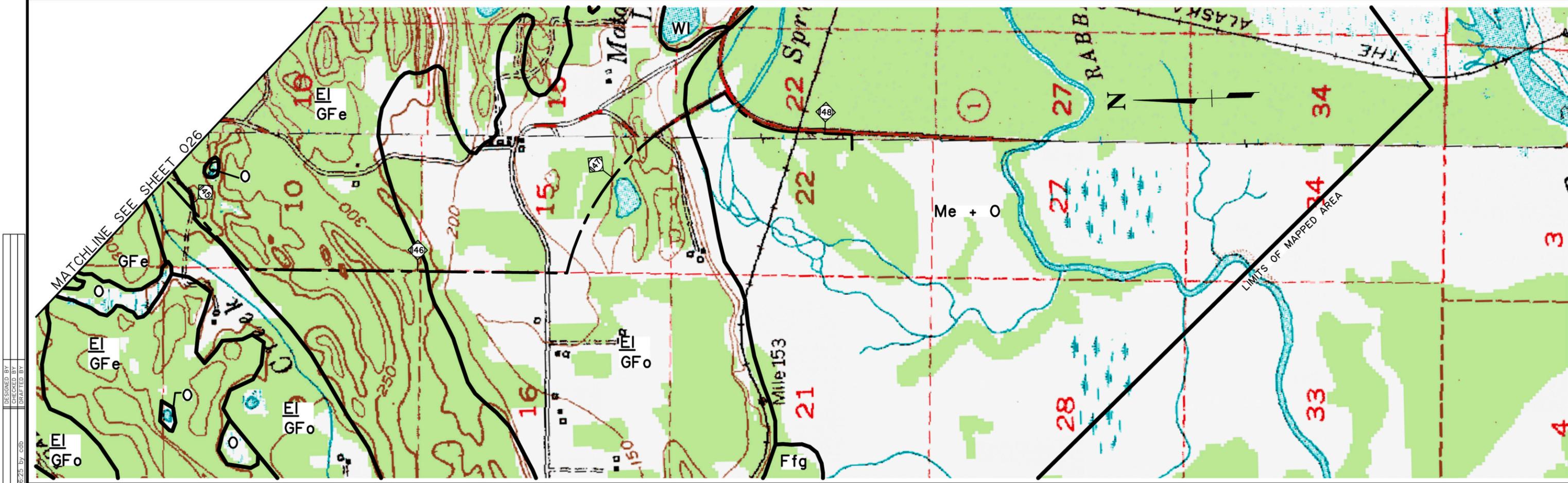
ROUTE SOIL CONDITIONS

GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **026**

REV. **1**

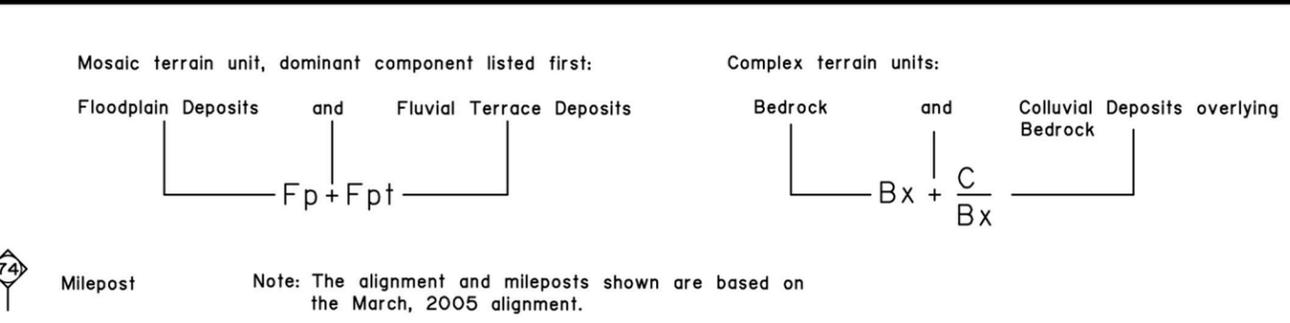
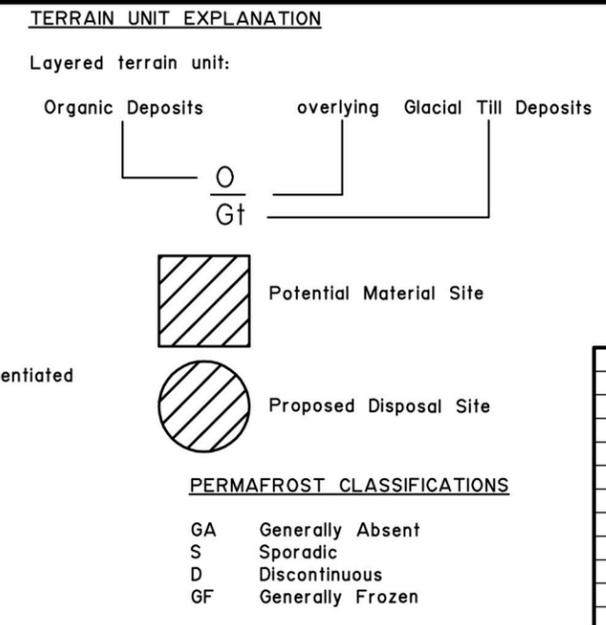


DESIGNED BY: []
 CHECKED BY: []
 DRAFTED BY: []
 SPECIFICATIONS: []
 STANDARDS: []
 COMPUTER DESIGNATION: []
 XREF: 1291-ARPHOTOS, 1291-BD02, 1291-USGS-IMAGE, SID

TERRAIN UNIT	EI GFo	EI GFe	EI GFo	Me + O
BEDROCK			Qu	
HAZARDS				
PERMAFROST			GA	
COMMENTS			PARKS HWY XING	SPRING CREEK XING
POTENTIAL MATERIAL SITES				COOK INLET - SUSITNA LOWLAND
PROPOSED DISPOSAL SITES				

TERRAIN UNIT SYMBOLS/NAMES

Bx	Bedrock
C	Colluvium
Cf	Colluvial Fan Deposits
Cl	Landslide
Cs	Solifluction Deposits
Ct	Talus
EI	Loess
Es	Eolian Sand
Ffg	Alluvial Fan (Granular)
Ffs	Alluvial Fan (Fine-Grained)
Fp	Floodplain (Granular)
Fpf	Floodplain (Fine-Grained)
Fpt	Terrace
GL	Glacial Lacustrine (glacial lake) Deposits
Gt	Glacial Till
GF	Glacio Fluvial (meltwater) Deposits, Undifferentiated
GFo	Outwash Deposits
GFe	Esker Deposits
Gfk	Kame Deposits
Gfl	Lowland Glacio Fluvial (meltwater) Deposits
Ht	Mine Tailings
L	Lacustrine Deposit
Lt	Lacustrine Thaw Basin/Lake Deposits
Me	Marine Estuarine Deposits
O	Organic Deposits
Vm	Mud Volcano
WI	Water (Lake)



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1	10/05	FINAL SUBMITTAL	PKH	CHR	JWR	ODO
0	9/05	DRAFT SUBMITTAL FOR REVIEW	PKH	CHR	JWR	ODO

ALASKA NATURAL GAS DEVELOPMENT AUTHORITY

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NATURAL GAS PIPELINE

ROUTE SOIL CONDITIONS

GLENNALLEN TO PALMER SPUR LINE

SCALE IN FEET: 0 500 1000 2000 3000

DRAWING NO. **027** REV. **1**