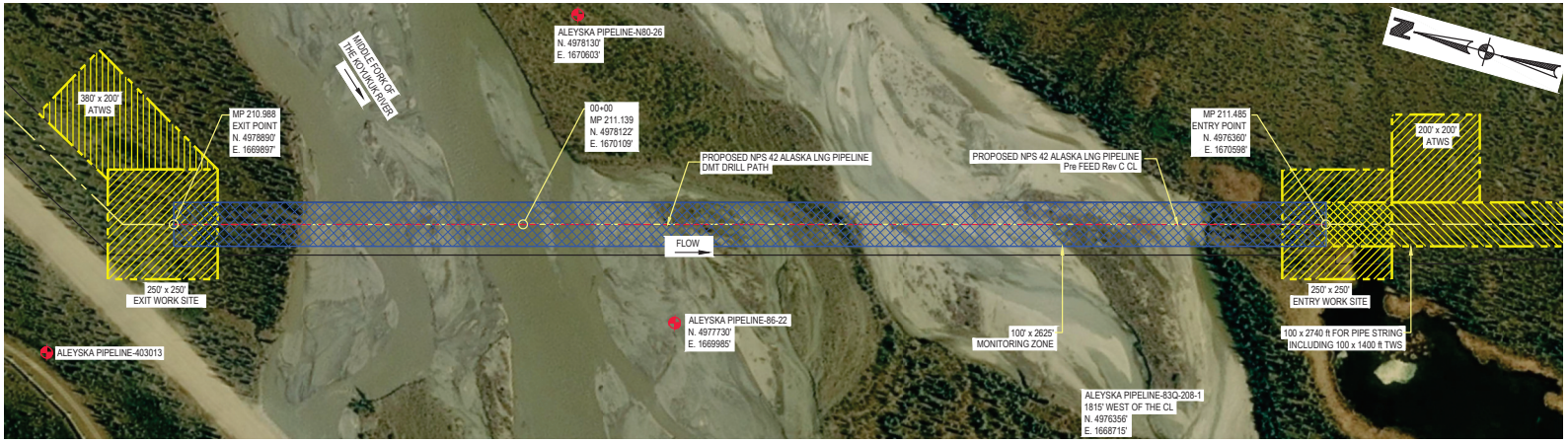
APPENDIX G

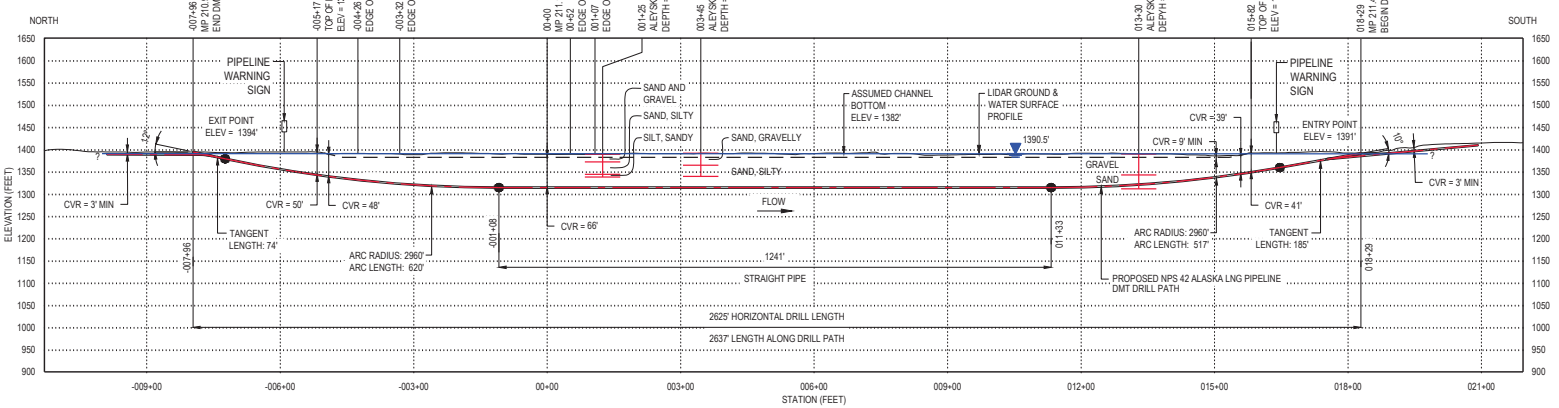
Site-Specific Trenchless Crossing Plans

APPENDIX G: Site-Specific Trenchless Crossing Plans

List of Figures



DETAIL PLAN
SCALE: 1" = 128'



PROFILE ALONG PROPOSED NPS 42 ALASKA LNG PIPELINE
HORIZONTAL SCALE 1" = 128'
VERTICAL SCALE 1" = 128'

PIPE SPECIFICATION TABLE

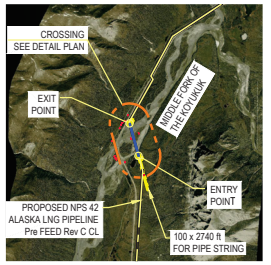
PIPE TYPE	PIPE SIZE	OD inch	WT inch	PIPE SPECIFICATION	MOP psig	DESIGN PRESSURE psig	COATING	CATHODIC PROTECTION
LINE PIPE	NPS 42	42	0.677	API 5L Grade X80M PSL2	2075	2075	3 LPE	YES
HEAVY WALL	NPS 42	42	1.24	API 5L Grade X70M PSL2	2075	2075	3 LPE	YES

COORDINATES TABLE

COORD. SYSTEM	DATUM	ZONE
GCS_NAD_1983_NSRS 2007	NAD 83_NSRS 2007	ALASKA ZONE 4
CROSSING COORDINATES @ MP 211.139 N. 4978122' E. 1670109'		

NOTES:

1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. LIMITED SUBSOIL INFORMATION IS AVAILABLE.
3. THE GROUND PROFILE IS BASED ON LIDAR OBTAINED IN 2014. ELEVATIONS ARE GEODETIC.
4. THE CROSSING DESIGN IS CONCEPTUAL AND IS TO BE CONFIRMED DURING DETAILED ENGINEERING.
5. THE CONSTRUCTION PERIOD IS TENTATIVELY SCHEDULED DURING SUMMER.
6. THE EXPECTED SOIL CONDITIONS, BASED ON AVAILABLE SUBSURFACE DATA OR TERRAIN MAPPING, CONSIST OF FLOODPLAIN RIVERBED DEPOSITS OF GRAVEL AND SAND WITH FREQUENT COBBLES AND BOULDERS OVER GLACIOFLUVIAL GRAVEL AND SAND WITH FREQUENT COBBLES AND BOULDERS OVER LACUSTRINE SILT AND CLAY. THE SOIL IS GENERALLY FROZEN OUTSIDE THE CHANNEL WITH UP TO 20% ICE. FURTHER INVESTIGATION IS REQUIRED TO CONFIRM THE EXPECTED CONDITIONS.
7. FOR ADDITIONAL GEOTECHNICAL INFORMATION SEE FEDERAL ENERGY REGULATORY COMMISSION MAJOR WATERBODIES SITE CHARACTERISTICS AND INSTALLATION METHODOLOGY REPORT - USAP-WP-GRZZZ-00-000054-000.



LOCATION PLAN
NTS

REFERENCE DRAWINGS

ABBREVIATIONS & ACRONYMS

API	-	AMERICAN PETROLEUM INSTITUTE
ATWS	-	ADDITIONAL TEMPORARY WORK SPACE
CVR	-	COVER
DMT	-	DIRECTIONAL MICROTUNNELLING
HDD	-	HORIZONTAL DIRECTIONAL DRILLING
LIDAR	-	LIGHT DETECTION AND RANGING
MIN.	-	MINIMUM
MP	-	MILE POST
MOP	-	MAXIMUM OPERATING PRESSURE
MSL	-	MEAN SEA LEVEL
NAD	-	NORTH AMERICAN DATUM
NAVD88	-	NORTH AMERICAN VERTICAL DATUM OF 1988
NSRS 2007	-	NATIONAL SPATIAL REFERENCE SYSTEM 2007
psig	-	POUNDS PER SQUARE INCH GAUGE
3LPE	-	THREE LAYER POLYETHYLENE

LEGEND:

- BOREHOLE

PRELIMINARY ONLY NOT FOR CONSTRUCTION

ISSUE	DATE	BY / CHK'D	DESCRIPTION	REVR / ENG'R	RESP. CODE	APP'D
3	20191206	LW / du	RE-ISSUED FOR USE	-	-	-
2	20160629	LW / du	RE-ISSUED FOR USE	-	-	JT
1	20160602	LW / du	RE-ISSUED FOR USE	-	-	JT
0	20151103	LW / du	ISSUED FOR USE	-		JT

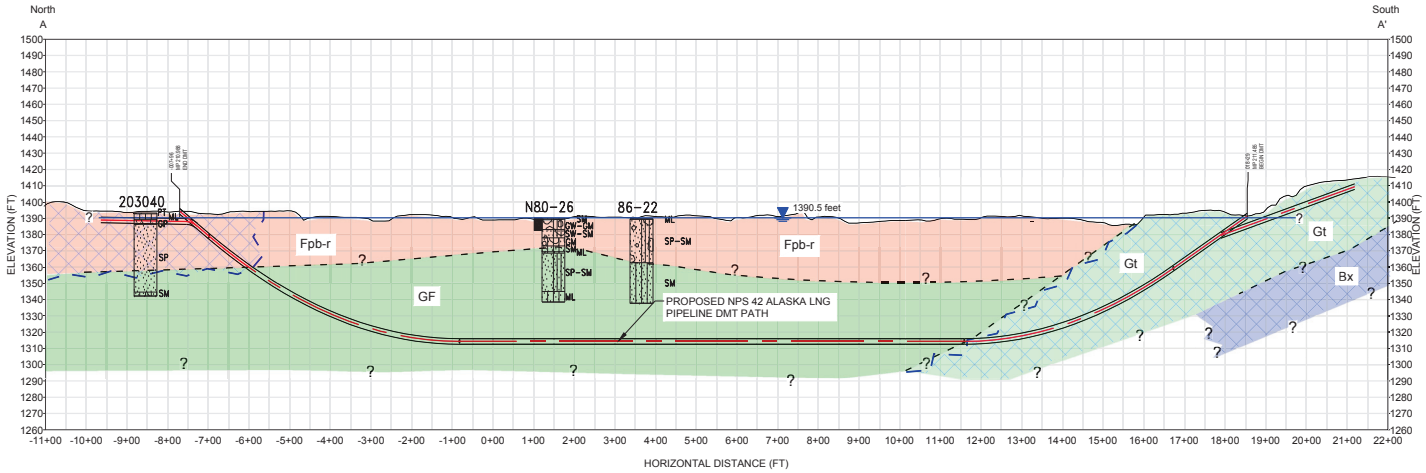
ALASKA LNG PROJECT
LNG FACILITIES
Nikiski, Alaska

ALASKA LNG

ALASKA LNG PIPELINE PROJECT
MIDDLE FORK OF THE KOYUKUK RIVER @ MP 211.139
WPC 127
DMT CROSSING PLAN & PROFILE

DRAWN BY	DATE	SCALE	CHK'D / APP'D
LW	20150303	AS SHOWN	/

DRAWING NO.	ISSUE NO.
USAP-WP-YDPLX-00-000026-000	2



LEGEND

- Fpb-r - BRAIDED FLOODPLAIN RIVERBED DEPOSITS
- GF - GLACIOFLUVIAL
- Gt - GLACIAL TILL
- Bx-w - WEATHERED BEDROCK
- INFERRED BOUNDARY OF PERMAFROST
- FROZEN

HORIZONTAL 1" = 280' — 0 — 140 — 280 FEET

VERTICAL 1" = 70' — 0 — 35 — 70 FEET

REFERENCE(S)

1. ASSUMED CHANNEL BOTTOM LINE FROM DRAWING NO. USAP-WP-YDPLX-00-000026-000, KOYUKUK RIVER @ MP 211.139 DMT CROSSING PLAN & PROFILE, DATED 20150303, FROM RESOURCE REPORT NO 2, APPENDIX I – SITE-SPECIFIC CONSTRUCTION DRAWINGS - SITE-SPECIFIC WATERBODY CROSSING PLANS, DOC NO: SAI-PE-SRREG-00-000002-000, DATED 2017-04-14, REV 0.

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REVR/ ENG'R	RESP. CODE	APP'D

GOLDER

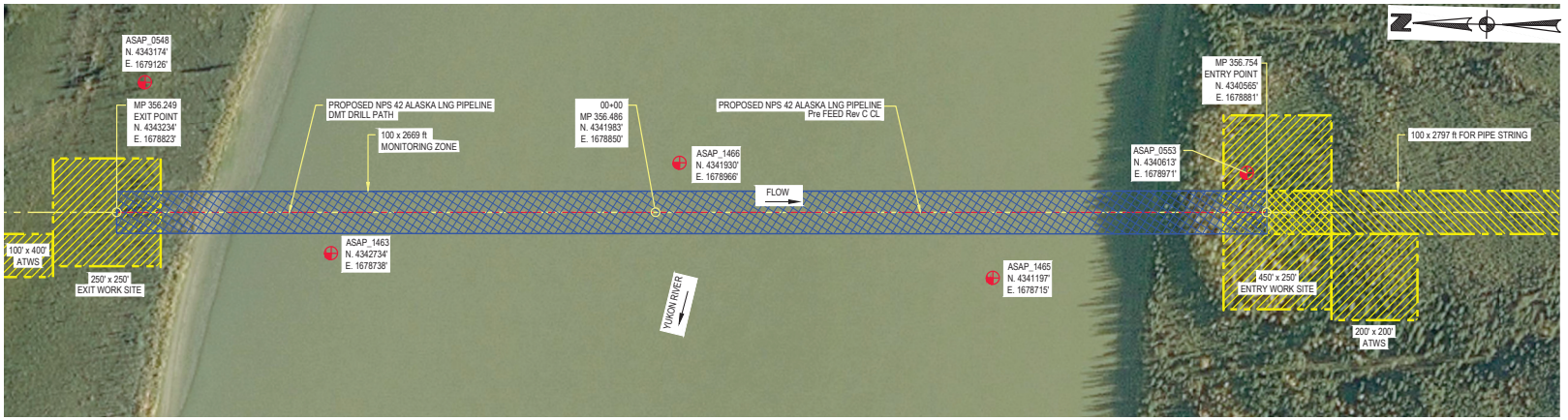
ALASKA LNG PROJECT
MIDDLE FORK OF THE KOYUKUK RIVER
ALASKA

ALASKA LNG

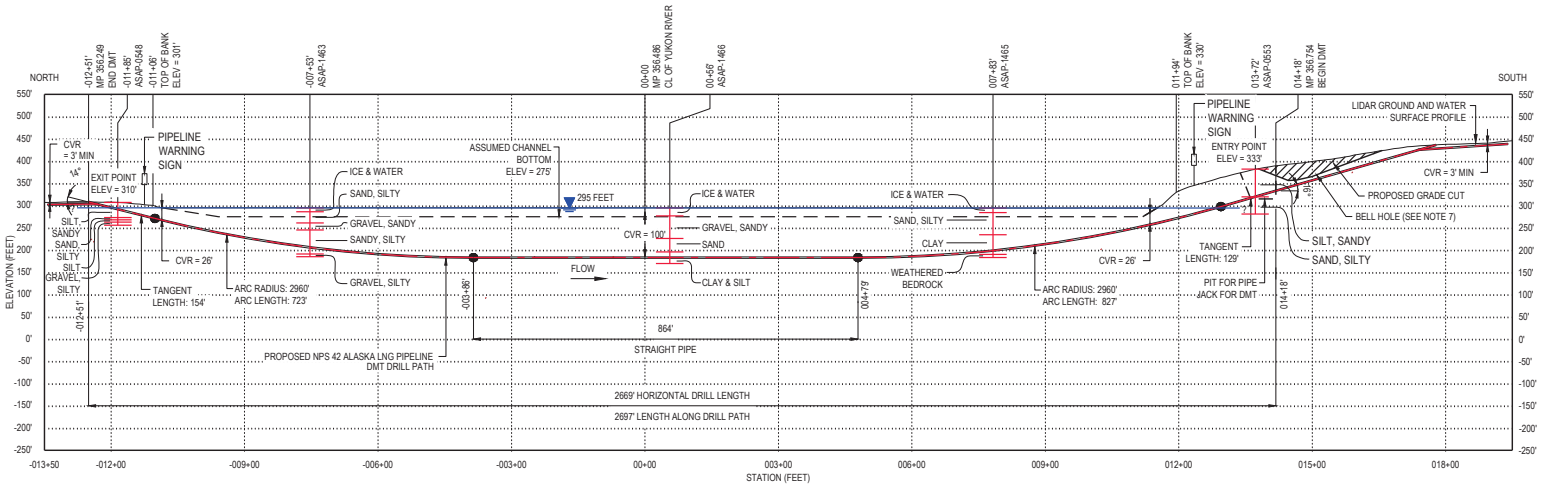
ALASKA LNG PIPELINE PROJECT
MIDDLE FORK OF THE KOYUKUK RIVER @MP 211.139
DMT CROSSING
GENERALIZED GEOLOGIC PLAN AND PROFILE

DRAWN BY	DATE	SCALE	CHK'D
APG	20191206	AS SHOWN	ECC

DRAWING NO. - FIGURE NO. 6



DETAIL PLAN
SCALE: 1" = 128'



PROFILE ALONG PROPOSED NPS 42 ALASKA PIPELINE
HORIZONTAL SCALE 1" = 128'
VERTICAL SCALE 1" = 128'

PIPE SPECIFICATION TABLE

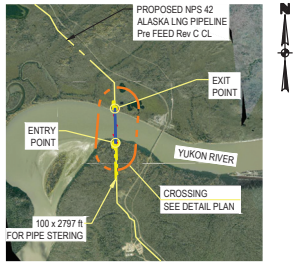
PIPE TYPE	PIPE SIZE	OD inch	WT inch	PIPE SPECIFICATION	MOP psig	DESIGN PRESSURE psig	COATING	CATHODIC PROTECTION
LINE PIPE	NPS 42	42	0.677	API 5L Grade X80M PSL2	2075	2075	3 LPE	YES
HEAVY WALL	NPS 42	42	1.24	API 5L Grade X70M PSL2	2075	2075	3 LPE	YES

COORDINATES TABLE

COORD. SYSTEM	DATUM	ZONE
GCS_NAD_1983_NSRS 2007	NAD 83_NSRS 2007	ALASKA ZONE 4
CROSSING COORDINATES @ MP 356.486 N. 4341983' E. 1678850'		

NOTES:

1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. SUBSOIL INFORMATION IS AVAILABLE.
3. THE GROUND PROFILE IS BASED ON LIDAR OBTAINED IN 2014. ELEVATIONS ARE GEODETIC.
4. THE CROSSING DESIGN IS CONCEPTUAL AND IS TO BE CONFIRMED DURING DETAILED ENGINEERING.
5. THE CONSTRUCTION PERIOD IS TENTATIVELY SCHEDULED DURING SUMMER.
6. THE EXPECTED SOIL CONDITIONS, BASED ON AVAILABLE SUBSURFACE DATA OR TERRAIN MAPPING, CONSIST OF RIVERBED DEPOSITS OF GRAVEL AND SAND WITH FREQUENT COBBLES AND BOULDERS OVER WEATHERED IGNEOUS AND SEDIMENTARY BEDROCK. A THAW BULB IS EXPECTED BELOW THE YUKON RIVER THAT MAY EXTEND INTO THE NORTH FLOODPLAIN. THE SOUTH BANK CONSISTS OF SILTS WITH INTERMITTENT GRAVEL LAYERS WITH SIGNIFICANT SUBSURFACE ICE.
7. CURRENT TECHNOLOGY LIMITS THE DMT TO MAXIMUM LENGTH OF APPROXIMATELY 2700 ft. HENCE, A BELL HOLE AND SLOPE GRADING ARE REQUIRED. FUTURE TECHNOLOGY MAY REDUCE THE REQUIRED BELL HOLE LENGTH.
8. FOR ADDITIONAL GEOTECHNICAL INFORMATION SEE FEDERAL ENERGY REGULATORY COMMISSION MAJOR WATERBODIES SITE CHARACTERISTICS AND INSTALLATION METHODOLOGY REPORT - USAP-WP-GRZZZ-00-000054-000.



LOCATION PLAN
NTS

REFERENCE DRAWINGS

-	-

ABBREVIATIONS & ACRONYMS

API	-	AMERICAN PETROLEUM INSTITUTE
ATWS	-	ADDITIONAL TEMPORARY WORK SPACE
CVR	-	COVER
DMT	-	DIRECTIONAL MICROTUNNELLING
HDD	-	HORIZONTAL DIRECTIONAL DRILLING
LIDAR	-	LIGHT DETECTION AND RANGING
MIN.	-	MINIMUM
MP	-	MILE POST
MOP	-	MAXIMUM OPERATING PRESSURE
MSL	-	MEAN SEA LEVEL
NAD	-	NORTH AMERICAN DATUM
NAVD88	-	NORTH AMERICAN VERTICAL DATUM OF 1988
NSRS 2007	-	NATIONAL SPATIAL REFERENCE SYSTEM 2007
psig	-	POUNDS PER SQUARE INCH GAUGE
3LPE	-	THREE LAYER POLYETHYLENE

LEGEND:

- BOREHOLE

PRELIMINARY ONLY NOT FOR CONSTRUCTION

ISSUE	DATE	BY / CHK'D	DESCRIPTION	REVR / ENG'R	RESP. CODE	APP'D
2	20191206	LW / JM	RE-ISSUED FOR USE	-	-	-
1	20160803	LW / JM	RE-ISSUED FOR USE	-	-	JT
0	20160628	LW / JM	ISSUED FOR USE	-	-	JT

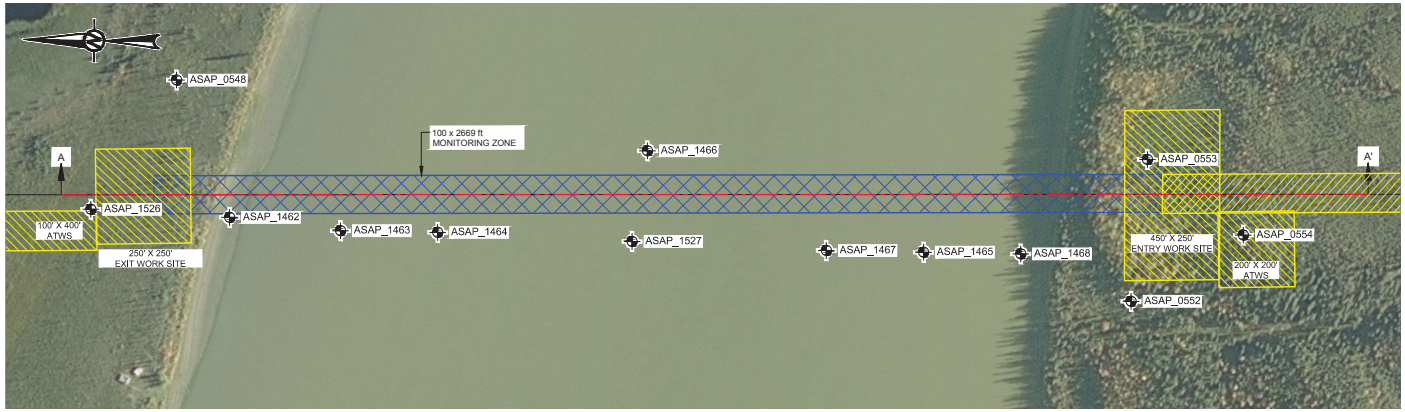
ALASKA LNG PROJECT
LNG FACILITIES
Nikiski, Alaska

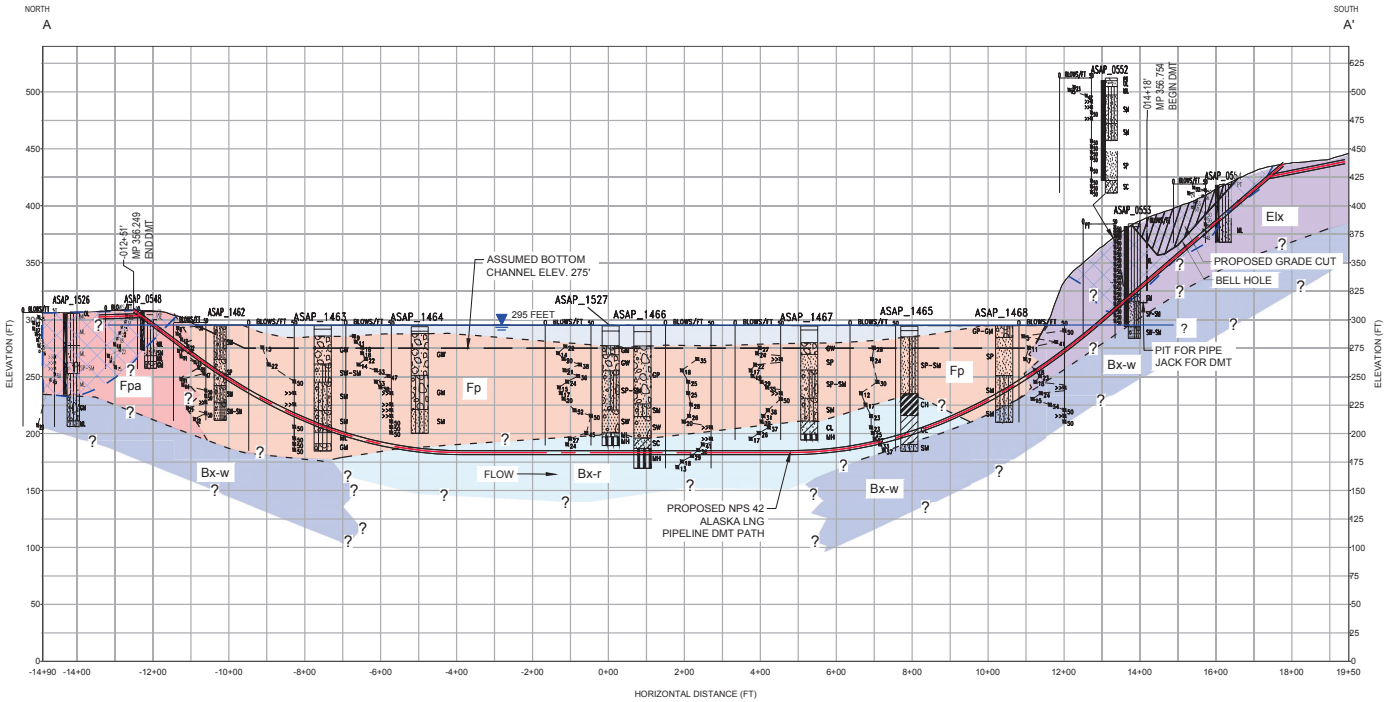
ALASKA LNG

ALASKA LNG PIPELINE PROJECT
YUKON RIVER @ MP 356.486
WPC 217
DMT CROSSING PLAN & PROFILE

DRAWN BY	DATE	SCALE	CHK'D / APP'D
LW	20160421	AS SHOWN	/

DRAWING NO. USAP-WP-YDPLX-00-000062-000
ISSUE NO. 1





CONFIDENTIAL - RESTRICTED USE

LEGEND

- WATER
- Fp - FLOODPLAIN DEPOSITS, UNDIFFERENTIATED
- Fpa -ABANDONED FLOODPLAIN RIVER DEPOSITS
- Elx - FROZEN UPLAND LOESS
- Bx-r - UNDIFFERENTIATED BEDROCK RESIDUAL SOILS
- Bx-w - WEATHERED BEDROCK
- INFERRED BOUNDARY OF PERMAFROST
- FROZEN

HORIZONTAL 1" = 300' FEET (0, 150, 300)

VERTICAL 1" = 100' FEET (0, 50, 100)

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REVR/ ENG'R	RESP. CODE	APP'D

GOLDER

ALASKA LNG PROJECT

YUKON RIVER, ALASKA

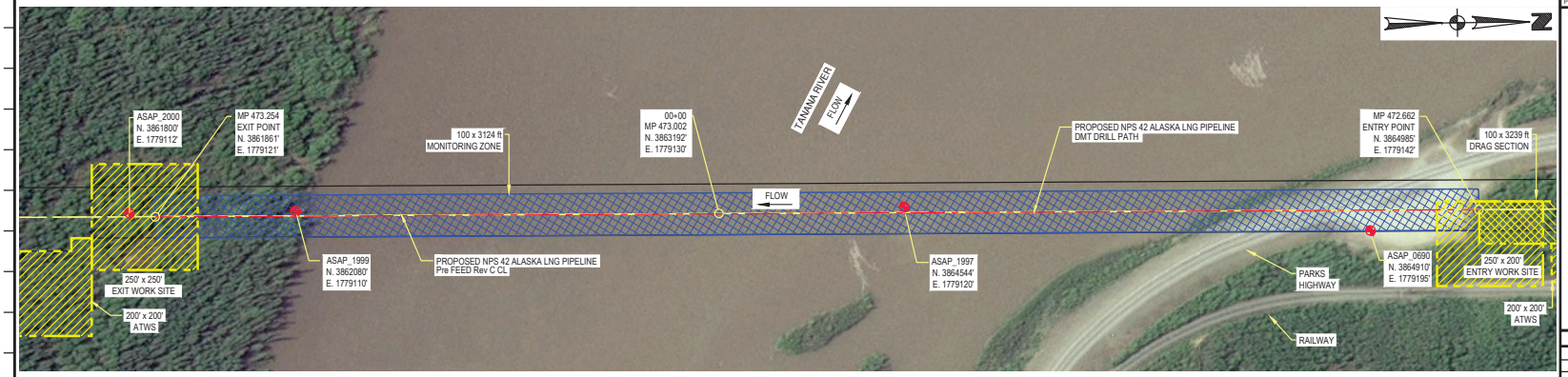
ALASKA LNG

ALASKA LNG PIPELINE PROJECT
YUKON RIVER @ MP356.486
DMT CROSSING
GENERALIZED GEOLOGIC PLAN AND PROFILE

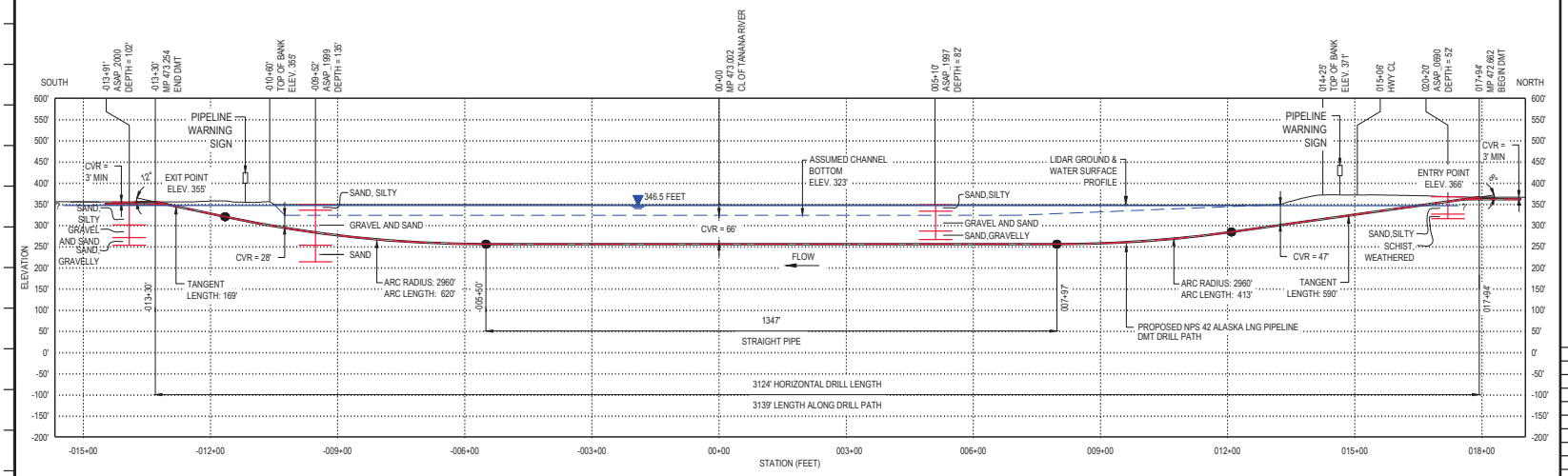
DRAWN BY	DATE	SCALE	CHK'D
APG	20191206	AS SHOWN	ECC

DRAWING NO. -

FIGURE NO. 6



DETAIL PLAN
SCALE: 1" = 128'



PROFILE ALONG PROPOSED NPS 42 ALASKA LNG PIPELINE
HORIZONTAL SCALE 1" = 128'
VERTICAL SCALE 1" = 128'

PIPE SPECIFICATION TABLE

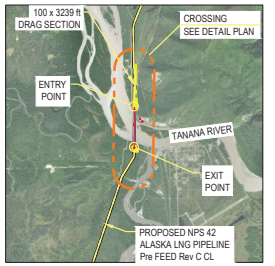
PIPE TYPE	PIPE SIZE	OD inch	WT inch	PIPE SPECIFICATION	MOP psig	DESIGN PRESSURE psig	COATING	CATHODIC PROTECTION
LINE PIPE	NPS 42	42	0.677	API 5L Grade X80M PSL2	2075	2075	3 LPE	YES
HEAVY WALL	NPS 42	42	1.24	API 5L Grade X70M PSL2	2075	2075	3 LPE	YES

COORDINATES TABLE

COORD. SYSTEM	DATUM	ZONE
GCS_NAD_1983_NSRS 2007	NAD 83_NSRS 2007	ALASKA ZONE 4
CROSSING COORDINATES @ MP 473.002 N. 3863192' E. 1779130'		

NOTES:

1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. LIMITED SUBSOIL INFORMATION IS AVAILABLE.
3. THE GROUND PROFILE IS BASED ON LIDAR OBTAINED IN 2014. ELEVATIONS ARE GEODETIC.
4. THE CROSSING DESIGN IS CONCEPTUAL AND IS TO BE CONFIRMED DURING DETAILED ENGINEERING.
5. THE CONSTRUCTION PERIOD IS TENTATIVELY SCHEDULED DURING SUMMER.
6. THE EXPECTED SOIL CONDITIONS, BASED ON AVAILABLE SUBSURFACE DATA OR TERRAIN MAPPING, CONSIST OF SAND, SILT AND FINE TO COARSE, SUB-ANGULAR GRAVEL OVERLYING HIGHLY WEATHERED SCHIST. SOILS ARE GENERALLY UNFROZEN.
7. FOR ADDITIONAL GEOTECHNICAL INFORMATION SEE FEDERAL ENERGY REGULATORY COMMISSION MAJOR WATERBODIES SITE CHARACTERISTICS AND INSTALLATION METHODOLOGY REPORT - USAP-WP-GRZZZ-00-000054-000.



LOCATION PLAN
NTS

REFERENCE DRAWINGS

ABBREVIATIONS & ACRONYMS

API	- AMERICAN PETROLEUM INSTITUTE
ATWS	- ADDITIONAL TEMPORARY WORK SPACE
CVR	- COVER
DMT	- DIRECTIONAL MICROTUNNELLING
HDD	- HORIZONTAL DIRECTIONAL DRILLING
LIDAR	- LIGHT DETECTION AND RANGING
MIN.	- MINIMUM
MP	- MILE POST
MOP	- MAXIMUM OPERATING PRESSURE
MSL	- MEAN SEA LEVEL
NAD	- NORTH AMERICAN DATUM
NAVD88	- NORTH AMERICAN VERTICAL DATUM OF 1988
NSRS 2007	- NATIONAL SPATIAL REFERENCE SYSTEM 2007
psig	- POUNDS PER SQUARE INCH GAUGE
3LPE	- THREE LAYER POLYETHYLENE

LEGEND:

- BOREHOLE

PRELIMINARY ONLY NOT FOR CONSTRUCTION

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REV'R/ ENG'R	RESP. CODE	APP'D
2	20191206	-	RE-ISSUED FOR USE	-	-	-
1	20181130	-	RE-ISSUED WITH FINALIZED ASAP BOREHOLE LOCATIONS	-	-	-
0	20150708	LW / JM	ISSUED FOR USE	-	-	JT

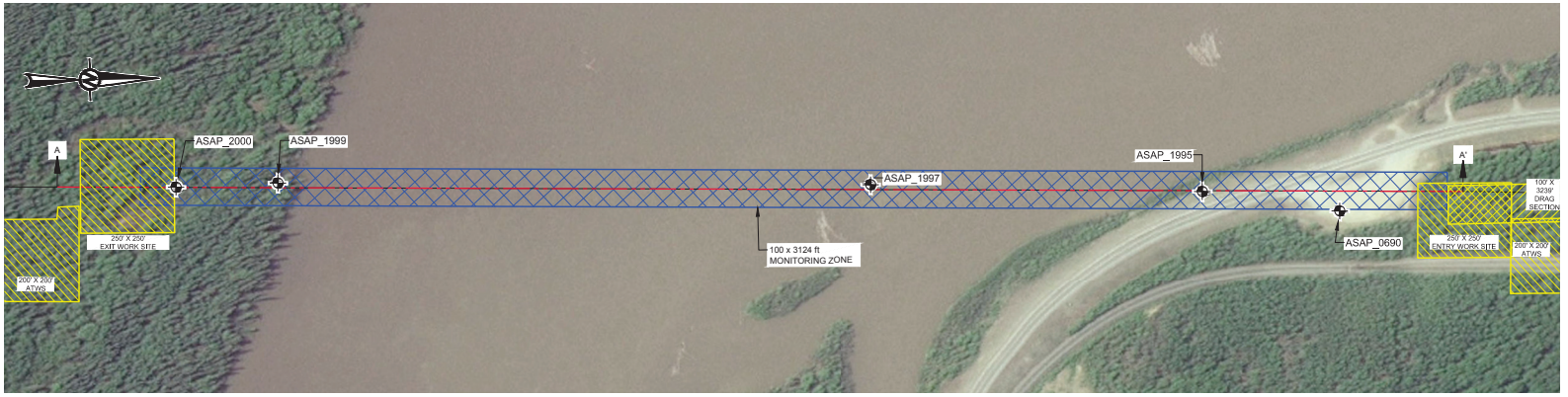
ALASKA LNG PROJECT
LNG FACILITIES
Nikiski, Alaska

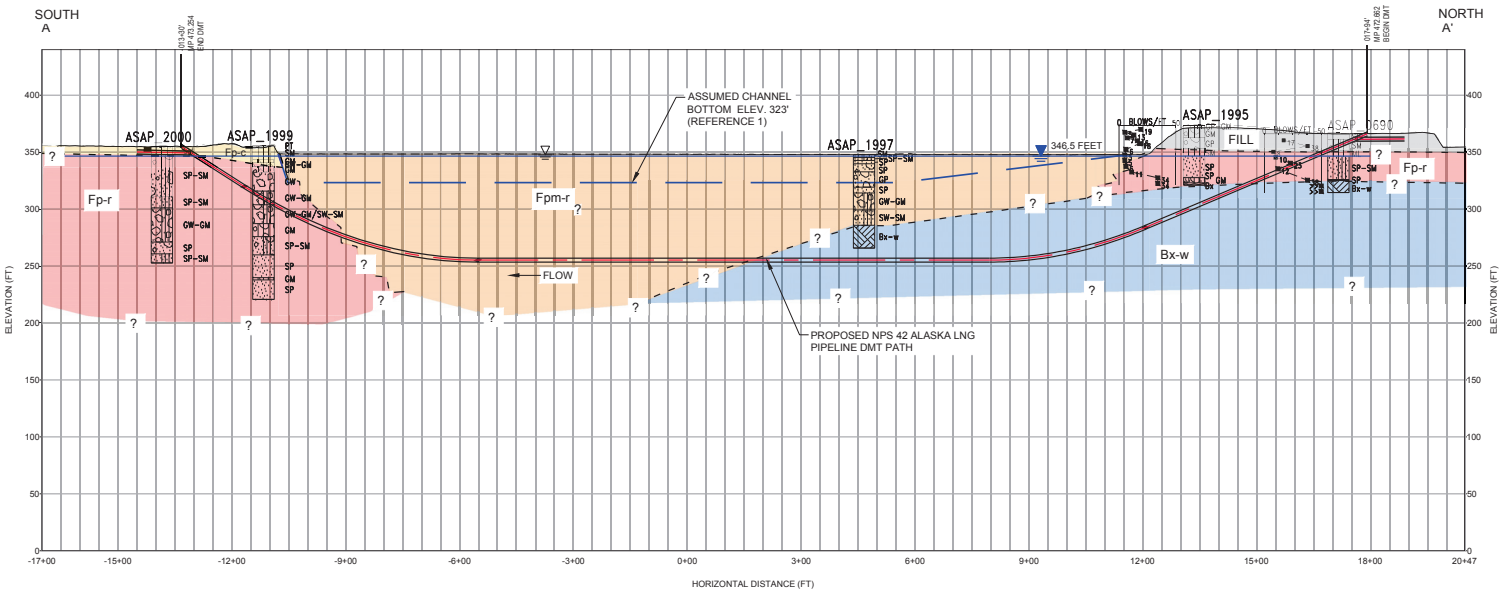
ALASKA LNG

ALASKA LNG PIPELINE PROJECT
TANANA RIVER @ MP 473.002
WPC 276 - B
DMT CROSSING PLAN & PROFILE

DRAWN BY	DATE	SCALE	CHK'D / APP'D
LW	20150303	AS SHOWN	/

DRAWING NO. USAP-WP-YDPLX-00-000029-000
ISSUE NO. 0





LEGEND

- FILL
- Fp-c - FLOODPLAIN COVER DEPOSITS
- Fp-r FLOODPLAIN RIVERBED DEPOSITS
- Fpm-r - MEANDER FLOODPLAIN RIVERBED
- Bx-w - WEATHERED BEDROCK

HORIZONTAL 1" = 300' — 0 150 300 FEET

VERTICAL 1" = 100' — 0 50 100 FEET

REFERENCE(S)

1. ASSUMED CHANNEL BOTTOM LINE FROM DRAWING NO. USAP-WP-YDPLX-00-000029-000, TANANA RIVER @ MP 473 DMT CROSSING PLAN & PROFILE, DATED 20150303, FROM RESOURCE REPORT NO 2, APPENDIX I – SITE-SPECIFIC CONSTRUCTION DRAWINGS - SITE-SPECIFIC WATERBODY CROSSING PLANS, DOC NO: SAI-PE-SRREG-00-000002-000, DATED 2017-04-14, REV 0.

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REVR/ ENG'R	RESP CODE	APP'D

GOLDER

ALASKA LNG PROJECT
TANANA RIVER, ALASKA

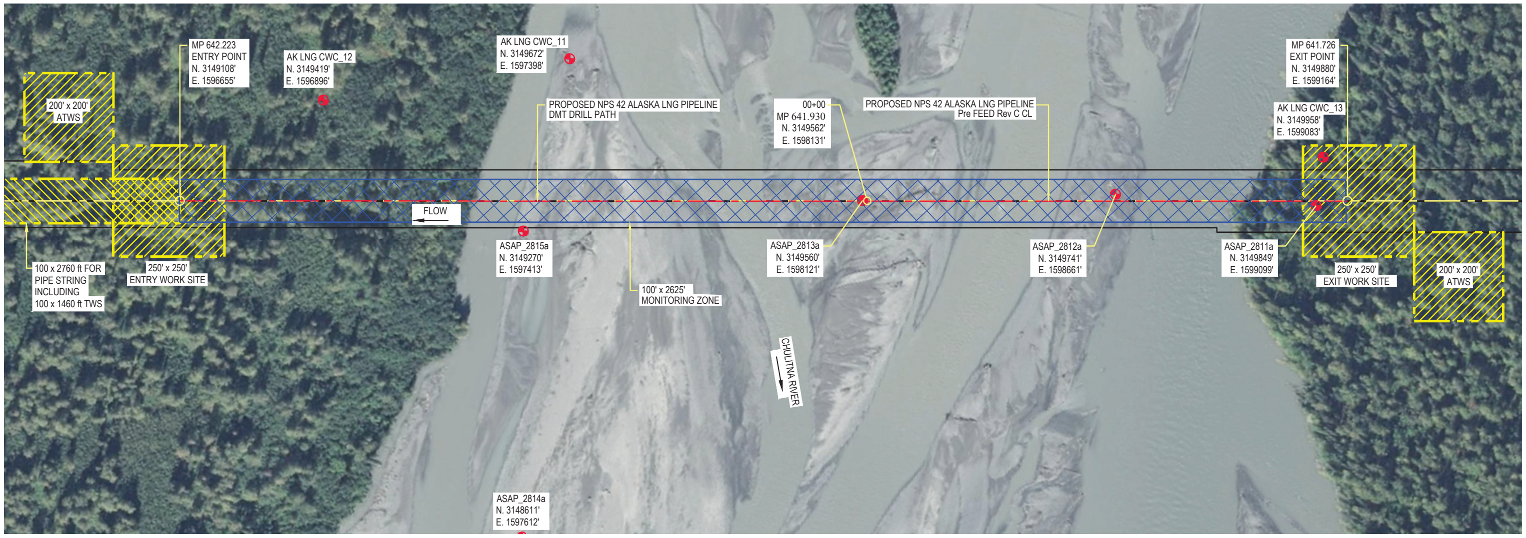
ALASKA LNG

ALASKA LNG PIPELINE PROJECT
TANANA RIVER @ MP473.002
DMT CROSSING
GENERALIZED GEOLOGIC PLAN AND PROFILE

DRAWN BY	DATE	SCALE	CHK'D
APG	20191206	AS SHOWN	ECC

DRAWING NO. - FIGURE NO. 6

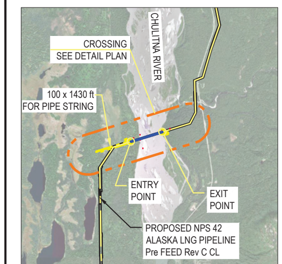
G-7



DETAIL PLAN
SCALE: 1" = 128'

CONFIDENTIAL - RESTRICTED USE

THIS DOCUMENT IS THE PROPERTY OF ALASKA LNG AND CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION WHICH MUST NEITHER BE MADE AVAILABLE NOR DISCLOSED TO OR DISCUSSED WITH ANYONE OUTSIDE OF ALASKA LNG, ITS DIVISIONS AND WHOLLY OWNED AFFILIATES NOR USED FOR ANY PURPOSE EXCEPT AS AUTHORIZED BY ALASKA LNG UNDER DULY-EXECUTED AGREEMENTS PERMITTING SUCH DISCLOSURE OR USE AND THE DOCUMENT SHALL BE SAFEGUARDED TO PREVENT SUCH UNATHORIZED AVAILABILITY, DISCLOSURE OR DISCUSSION.



LOCATION PLAN
NTS

REFERENCE DRAWINGS

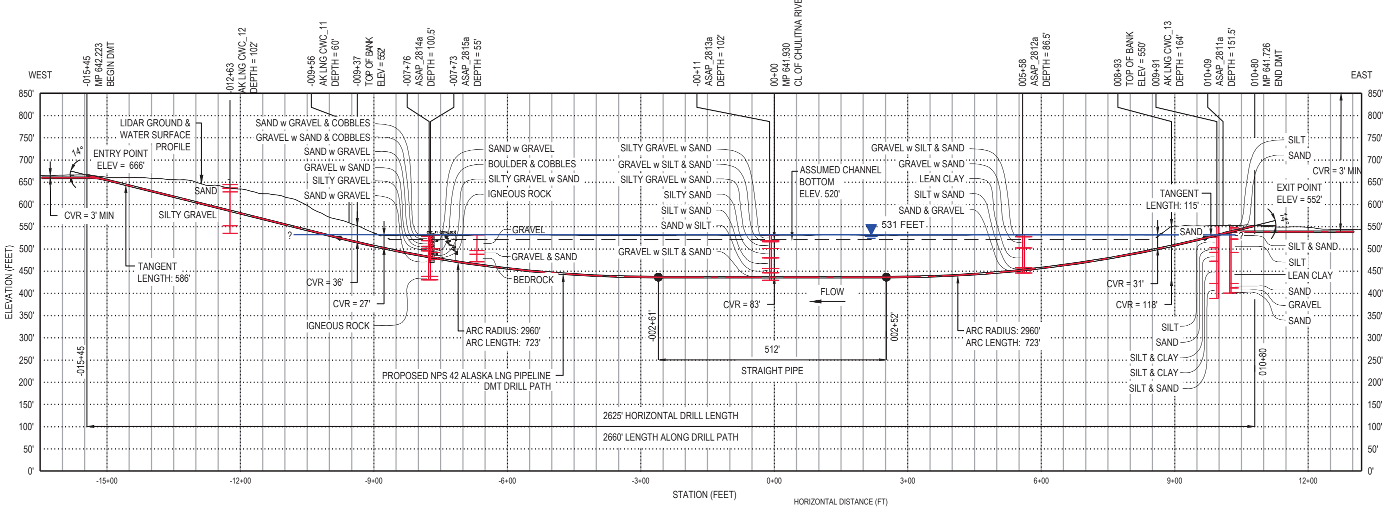
-	-

ABBREVIATIONS & ACRONYMS

- API - AMERICAN PETROLEUM INSTITUTE
- ATWS - ADDITIONAL TEMPORARY WORK SPACE
- CVR - COVER
- DMT - DIRECTIONAL MICROTUNNELLING
- HDD - HORIZONTAL DIRECTIONAL DRILLING
- LIDAR - LIGHT DETECTION AND RANGING
- MIN. - MINIMUM
- MP - MILE POST
- MOP - MAXIMUM OPERATING PRESSURE
- MSL - MEAN SEA LEVEL
- NAD - NORTH AMERICAN DATUM
- NAVD88 - NORTH AMERICAN VERTICAL DATUM OF 1988
- NSRS 2007 - NATIONAL SPATIAL REFERENCE SYSTEM 2007
- psig - POUNDS PER SQUARE INCH GAUGE
- 3LPE - THREE LAYER POLYETHYLENE

LEGEND:

- BOREHOLE



PROFILE ALONG PROPOSED NPS 42 ALASKA LNG PIPELINE
HORIZONTAL SCALE 1" = 128'
VERTICAL SCALE 1" = 128'

PIPE SPECIFICATION TABLE

PIPE TYPE	PIPE SIZE	OD	WT	PIPE SPECIFICATION	MOP	DESIGN PRESSURE	COATING	CATHODIC PROTECTION
		inch			psig	psig		
LINE PIPE	NPS 42	42	0.677	API 5L Grade X80M PSL2	2075	2075	3 LPE	YES
HEAVY WALL	NPS 42	42	1.24	API 5L Grade X70M PSL2	2075	2075	3 LPE	YES

COORDINATES TABLE

COORD. SYSTEM	DATUM	ZONE
GCS_NAD_1983_NSRS 2007	NAD 83_NSRS 2007	ALASKA ZONE 4
CROSSING COORDINATES @ MP 641.930 N. 3149562' E. 1598131'		

NOTES:

1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. SUBSOIL INFORMATION IS AVAILABLE.
3. THE GROUND PROFILE IS BASED ON LIDAR OBTAINED IN 2014. ELEVATIONS ARE GEODETIC.
4. THE CROSSING DESIGN IS CONCEPTUAL AND IS TO BE CONFIRMED DURING DETAILED ENGINEERING.
5. THE CONSTRUCTION PERIOD IS TENTATIVELY SCHEDULED DURING SUMMER.
6. THE EXPECTED SOIL CONDITIONS WITHIN THE CHANNEL, BASED ON AVAILABLE SUBSURFACE DATA OR TERRAIN MAPPING, CONSIST OF SILT AND SAND OVERLYING SILTY CLAY. IGNEOUS ROCK IS EXPECTED AT DEPTH NEAR THE WEST BANK. FURTHER INVESTIGATION IS REQUIRED TO CONFIRM THE EXPECTED CONDITIONS.
7. FOR ADDITIONAL GEOTECHNICAL INFORMATION SEE FEDERAL ENERGY REGULATORY COMMISSION MAJOR WATERBODIES SITE CHARACTERISTICS AND INSTALLATION METHODOLOGY REPORT - USAP-WP-GRZZZ-00-000054-000.

PRELIMINARY ONLY NOT FOR CONSTRUCTION

ISSUE	DATE	BY/CHK'D	DESCRIPTION	REV'R/END'R	RESP. CODE	APP'D
2	20191205	- / -	RE-ISSUED FOR USE	- / -	-	-
3	20181112	- / -	RE-ISSUED WITH FINALIZED CWC # BOREHOLE LOCATIONS	- / -	-	-
2	20160629	LW / JM	RE-ISSUED FOR USE	- / -	-	JT
1	20160602	LW / JM	RE-ISSUED FOR USE	- / -	-	JT
0	20160114	LW / JM	ISSUED FOR USE	- / -	-	JT

ALASKA LNG PROJECT
LNG FACILITIES
Nikiski, Alaska

ALASKA LNG

ALASKA LNG PIPELINE PROJECT
CHULITNA RIVER @ MP 641.930
WPC 350
DMT CROSSING PLAN & PROFILE

DRAWN BY	DATE	SCALE	CHKD / APPVD
LW	20150908	AS SHOWN	JT / -

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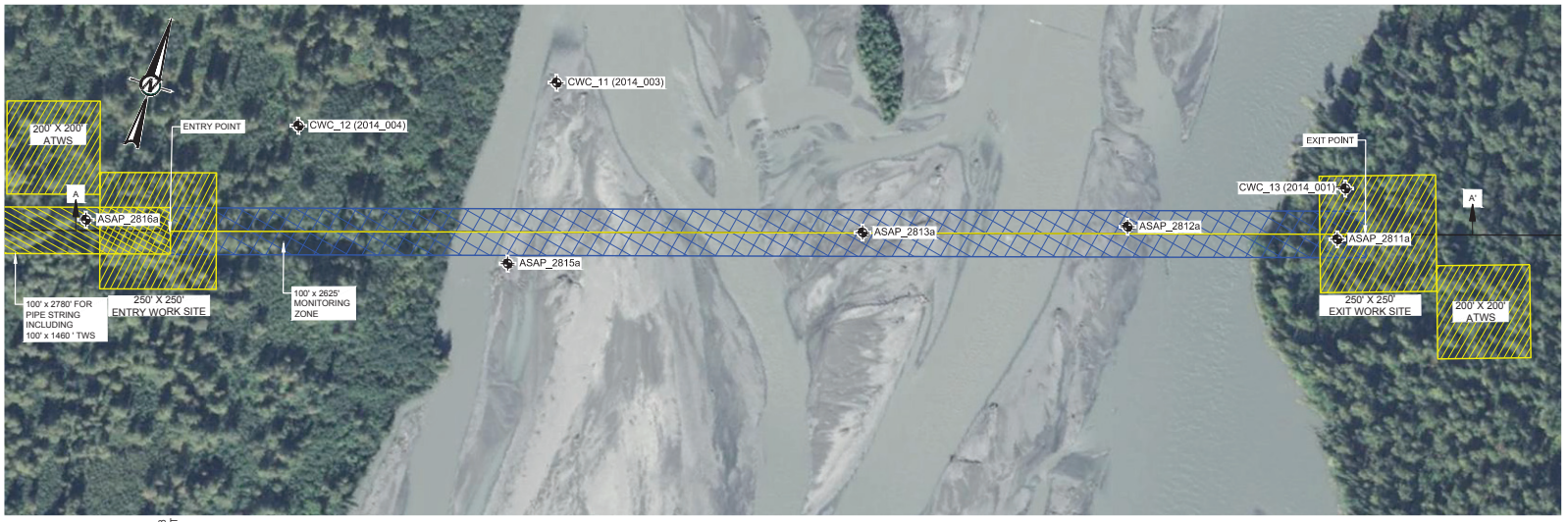

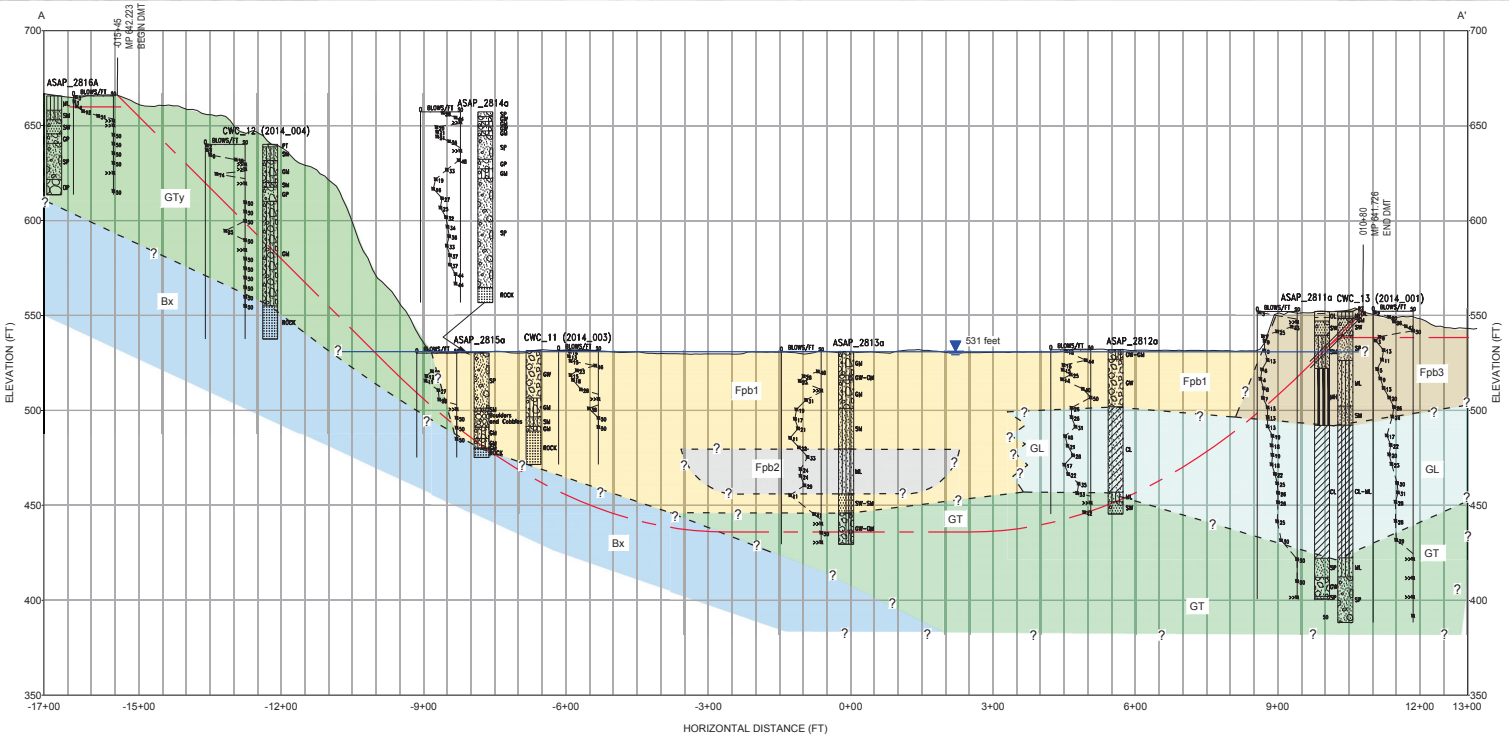

LEGEND

- Fpb1 - BRAIDED FLOODPLAIN DEPOSITS
- Fpb2 - SILT WITH SAND DEPOSITS
- Fpb3 - ABANDONED BRAIDED FLOODPLAIN DEPOSITS
- GTy - GLACIAL TILL DEPOSITS, NAPTOWNE STADE
- GT - GLACIAL TILL DEPOSITS
- GL - GLACIOLACUSTRINE DEPOSITS
- Bx - BEDROCK

HORIZONTAL 1" = 240' (0, 110, 240 FEET)
VERTICAL 1" = 60' (0, 30, 60 FEET)

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REVR/ ENG'R	RESP. CODE	APP'D

GOLDER

ALASKA LNG PROJECT
CHULITNA RIVER, Alaska

ALASKA LNG

ALASKA LNG PIPELINE PROJECT
CHULITNA RIVER @ MP 641.930
DMT CROSSING
GENERALIZED GEOLOGIC PLAN AND PROFILE

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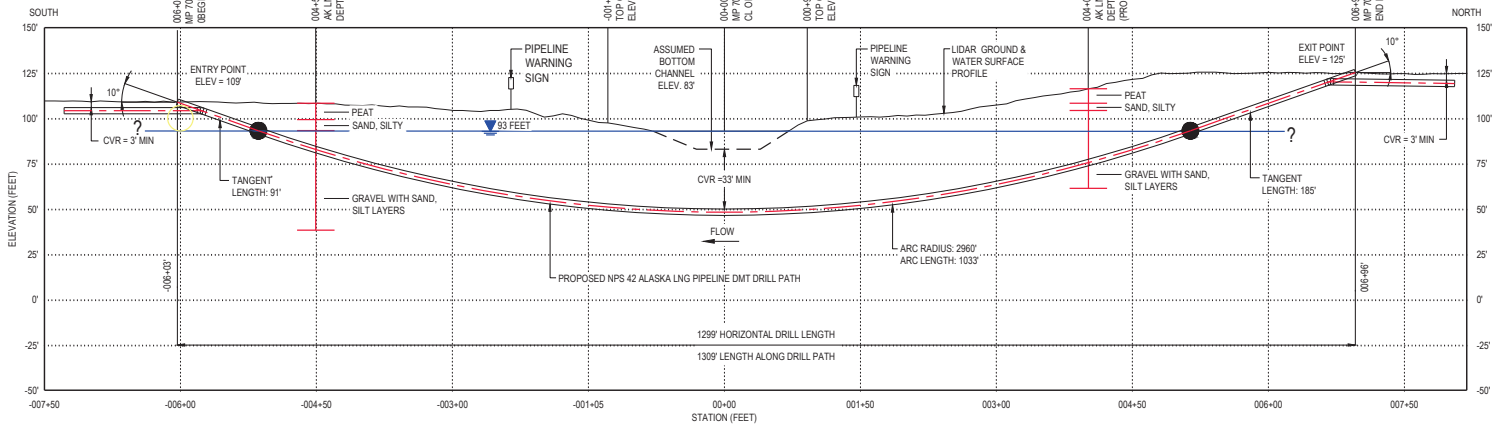
APG	20191204	AS SHOWN	ECC

DOCUMENT NO. AKLNG-4020-YYY-STD-DOC-00086
FIGURE NO. 6

DETAIL PLAN
SCALE: 1" = 64'



PROFILE ALONG PROPOSED NPS 42 ALASKA LNG PIPELINE
HORIZONTAL SCALE 1" = 64'
VERTICAL SCALE 1" = 32'

PIPE SPECIFICATION TABLE

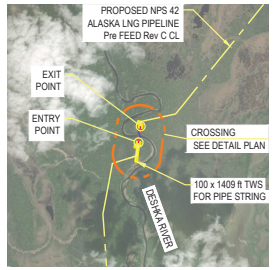
PIPE TYPE	PIPE SIZE	OD inch	WT inch	PIPE SPECIFICATION	MOP psig	DESIGN PRESSURE psig	COATING	CATHODIC PROTECTION
LINE PIPE	NPS 42	42	0.677	API 5L Grade X80M PSL2	2075	2075	3 LPE	YES
HEAVY WALL	NPS 42	42	1.24	API 5L Grade X70M PSL2	2075	2075	3 LPE	YES

COORDINATES TABLE

COORD. SYSTEM	DATUM	ZONE
GCS_NAD_1983_NSRS 2007	NAD 83_NSRS 2007	ALASKA ZONE 4
CROSSING COORDINATES @ MP 704.867 N. 2847593' E. 1580878'		

NOTES:

1. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.
2. SUBSOIL INFORMATION IS LIMITED.
3. THE GROUND PROFILE IS BASED ON LIDAR OBTAINED IN 2014. ELEVATIONS ARE GEODETIC.
4. THE CROSSING DESIGN IS CONCEPTUAL AND IS TO BE CONFIRMED DURING DETAILED ENGINEERING.
5. THE CONSTRUCTION PERIOD IS TENTATIVELY SCHEDULED DURING SUMMER.
6. THE EXPECTED SOIL CONDITIONS, BASED ON AVAILABLE SUBSURFACE DATA OR TERRAIN MAPPING, CONSIST OF SAND OVERLYING SILTY SAND AND GRAVEL. FURTHER INVESTIGATION IS REQUIRED TO CONFIRM THE EXPECTED CONDITIONS.
7. FOR ADDITIONAL GEOTECHNICAL INFORMATION SEE FEDERAL ENERGY REGULATORY COMMISSION MAJOR WATERBODIES SITE CHARACTERISTICS AND INSTALLATION METHODOLOGY REPORT - USAP-WP-GRZZZ-00-000054-000.



LOCATION PLAN
NTS

REFERENCE DRAWINGS

ABBREVIATIONS & ACRONYMS

API	-	AMERICAN PETROLEUM INSTITUTE
ATWS	-	ADDITIONAL TEMPORARY WORK SPACE
CVR	-	COVER
DEM	-	DIGITAL ELEVATION MODEL
DMT	-	DIRECTIONAL MICROTUNNELLING
HDD	-	HORIZONTAL DIRECTIONAL DRILLING
LIDAR	-	LIGHT DETECTION AND RANGING
MOP	-	MAXIMUM OPERATING PRESSURE
MSL	-	MEAN SEA LEVEL
NAVD88	-	NORTH AMERICAN VERTICAL DATUM OF 1988
NDZ	-	NO DRILL ZONE
psig	-	POUNDS PER SQUARE INCH GAUGE
3LPE	-	THREE LAYER POLYETHYLENE
3LPP	-	THREE LAYER POLYPROPYLENE

LEGEND:

- 2016 BOREHOLE

PRELIMINARY ONLY NOT FOR CONSTRUCTION

ISSUE	DATE	BY/CHK'D	DESCRIPTION	REVR/ENG'R	RESP. CODE	APP'D
2	20191206	/	ISSUED FOR USE	/	-	-
1	20181127	/	RE-ISSUED WITH FINALIZED TWB-# BOREHOLE LOCATIONS	/	-	-
0	20160628	LW / JM	ISSUED FOR USE	/	-	JT

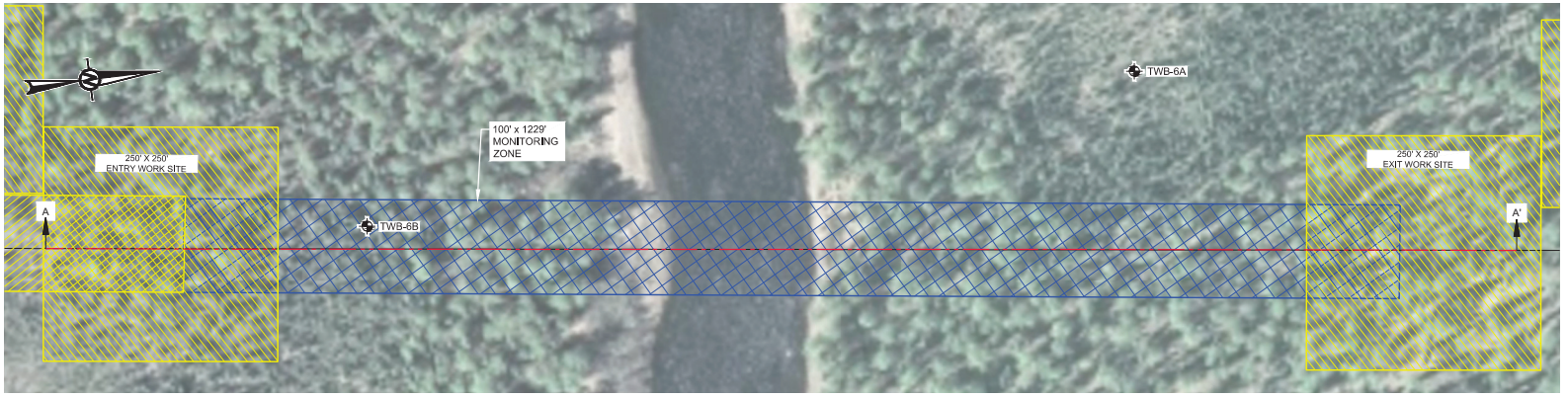
ALASKA LNG PROJECT
LNG FACILITIES
Nikiski, Alaska

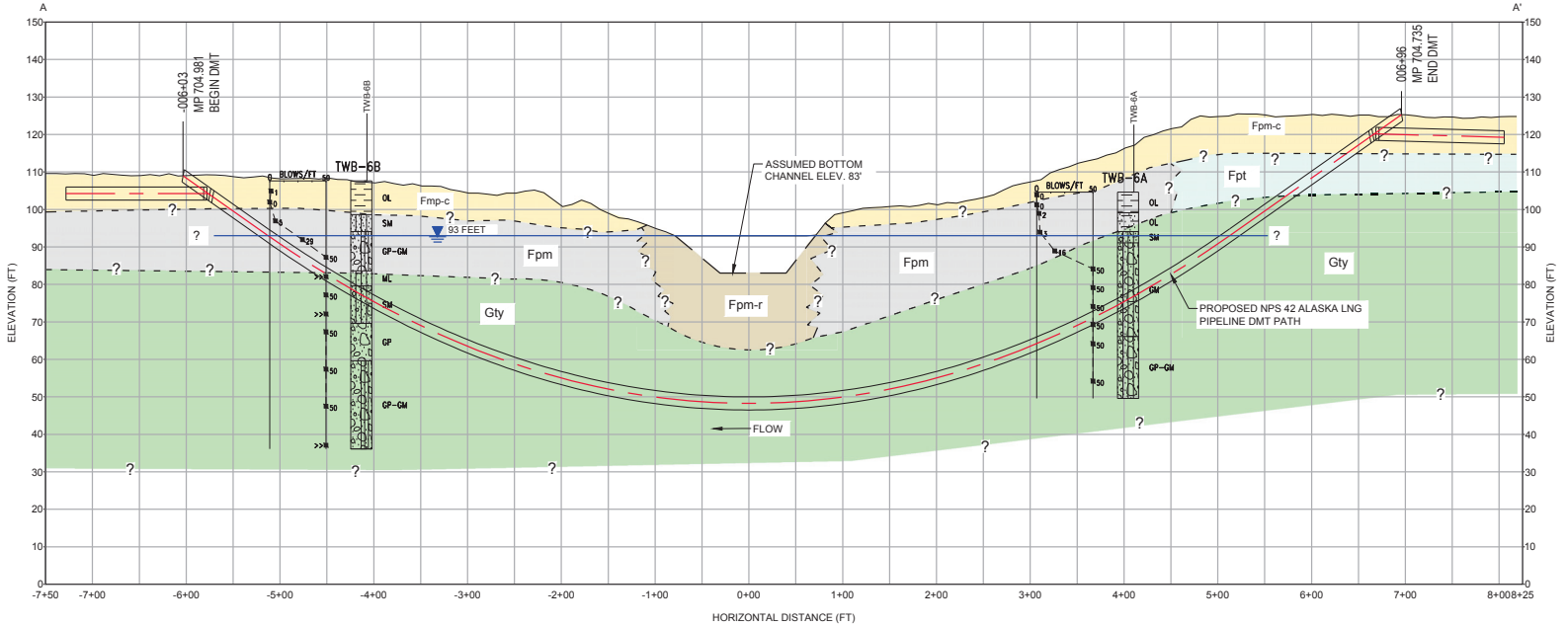
ALASKA LNG

ALASKA LNG PIPELINE PROJECT
DESHKA RIVER @ MP 704.867
WPC 373-B
DMT CROSSING PLAN & PROFILE

DRAWN BY	DATE	SCALE	CHKD / APP'VD
LW	20160418	AS SHOWN	JT / -

DRAWING NO. USAP-WP-YDPLX-00-000065-000
ISSUE NO. 0





LEGEND

- Fpm-c - MEANDER FLOODPLAIN COVER DEPOSITS
- Fpm - MEANDER FLOODPLAIN DEPOSITS
- Fpm-r -MEANDER FLOODPLAIN RIVERBED DEPOSITS
- Fpt - FLUVIAL DEPOSITS (OLD HIGH LEVEL TERRACE
- Gty - GLACIAL TILL DEPOSITS, NAPTOWNE GLACIATION

HORIZONTAL 1" = 120' — 0, 60, 120 FEET

VERTICAL 1" = 30' — 0, 15, 30 FEET

ISSUE	DATE	BY/ CHK'D	DESCRIPTION	REVR/ ENG'R	RESP. CODE	APP'D

GOLDER

ALASKA LNG PROJECT

DESHKA RIVER, ALASKA

ALASKA LNG

ALASKA LNG PIPELINE PROJECT
DESHKA RIVER @ MP704.867
DMT CROSSING
GENERALIZED GEOLOGIC PLAN AND PROFILE

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APG	20191206	AS SHOWN	ECC

DRAWING NO. -

FIGURE NO. 6