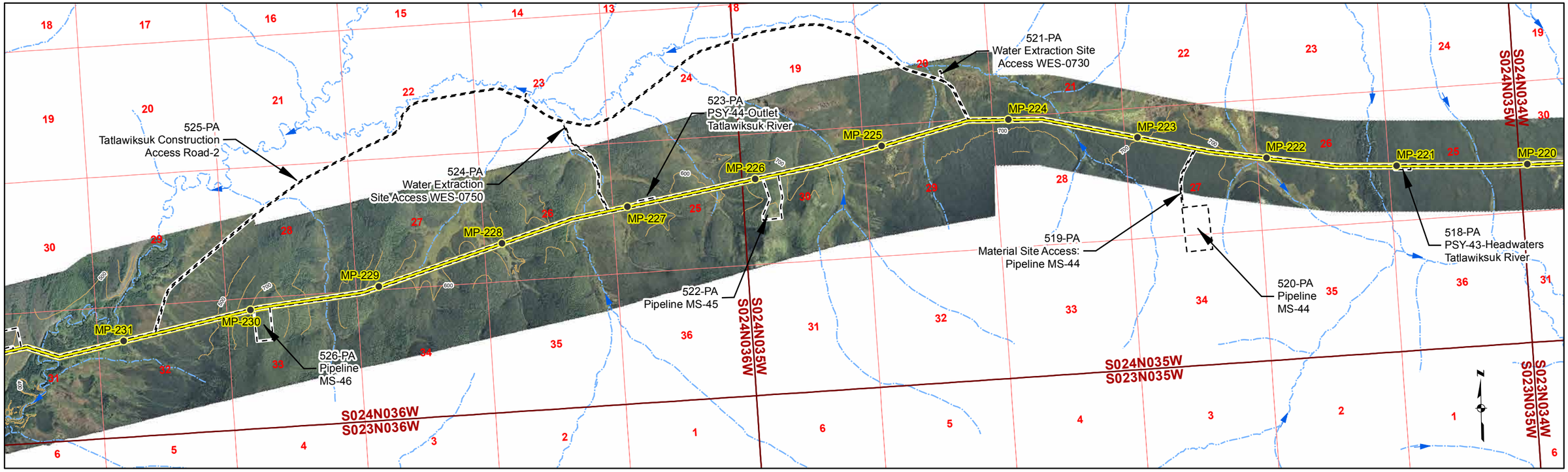
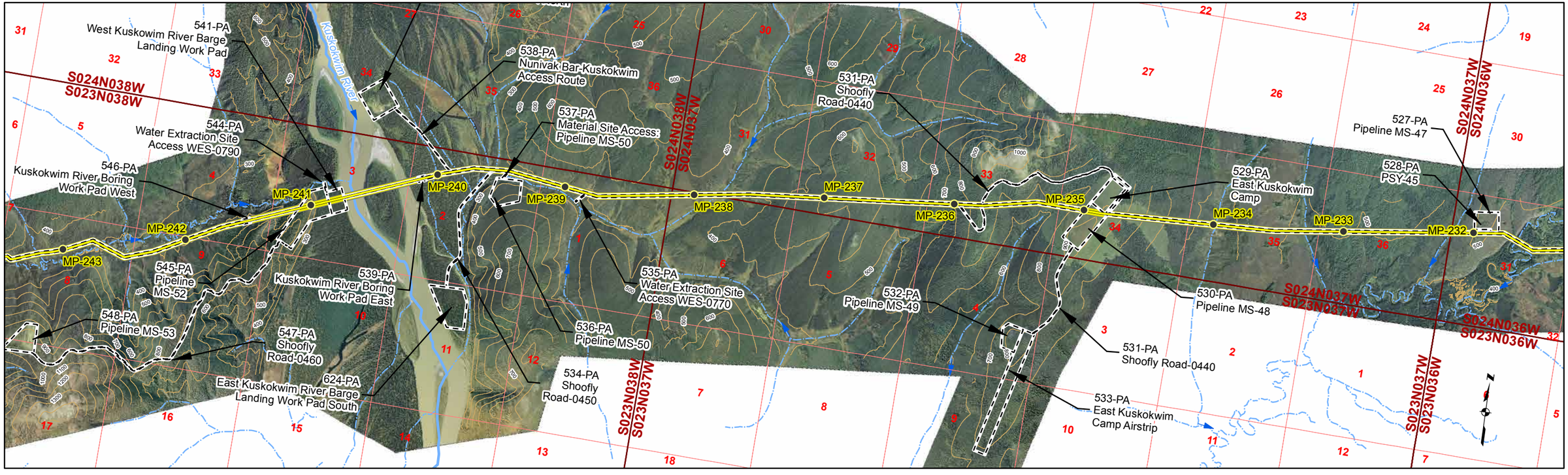




Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

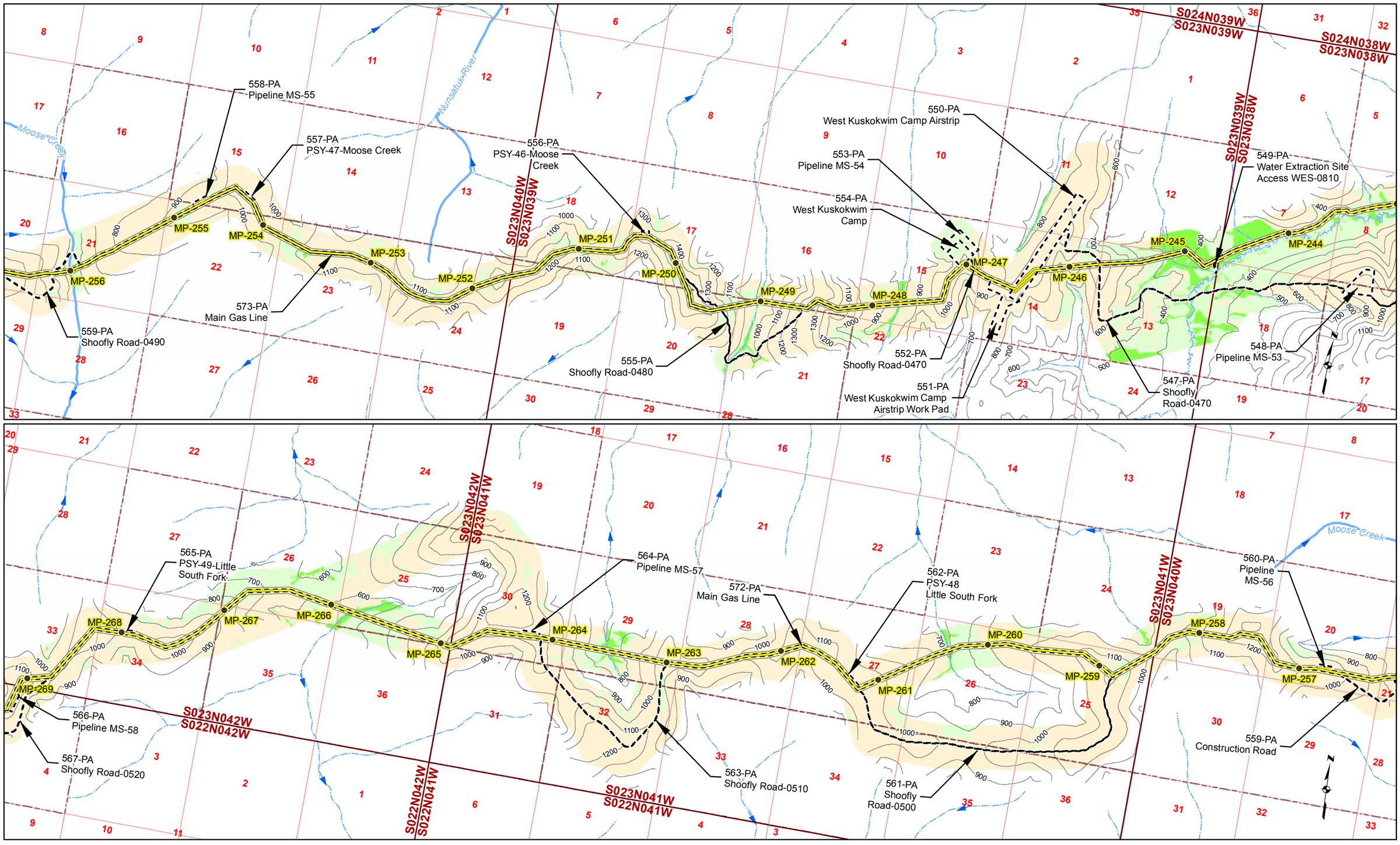
SCALE: 1 inch = 4,000 feet
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-110C**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxC_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
100' Contour
Pipeline Study Corridor
Parcel
Stream Flow Direction
River/Stream
Unnamed River/Stream
Mosaic
Upland
Waters
Wetlands

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet

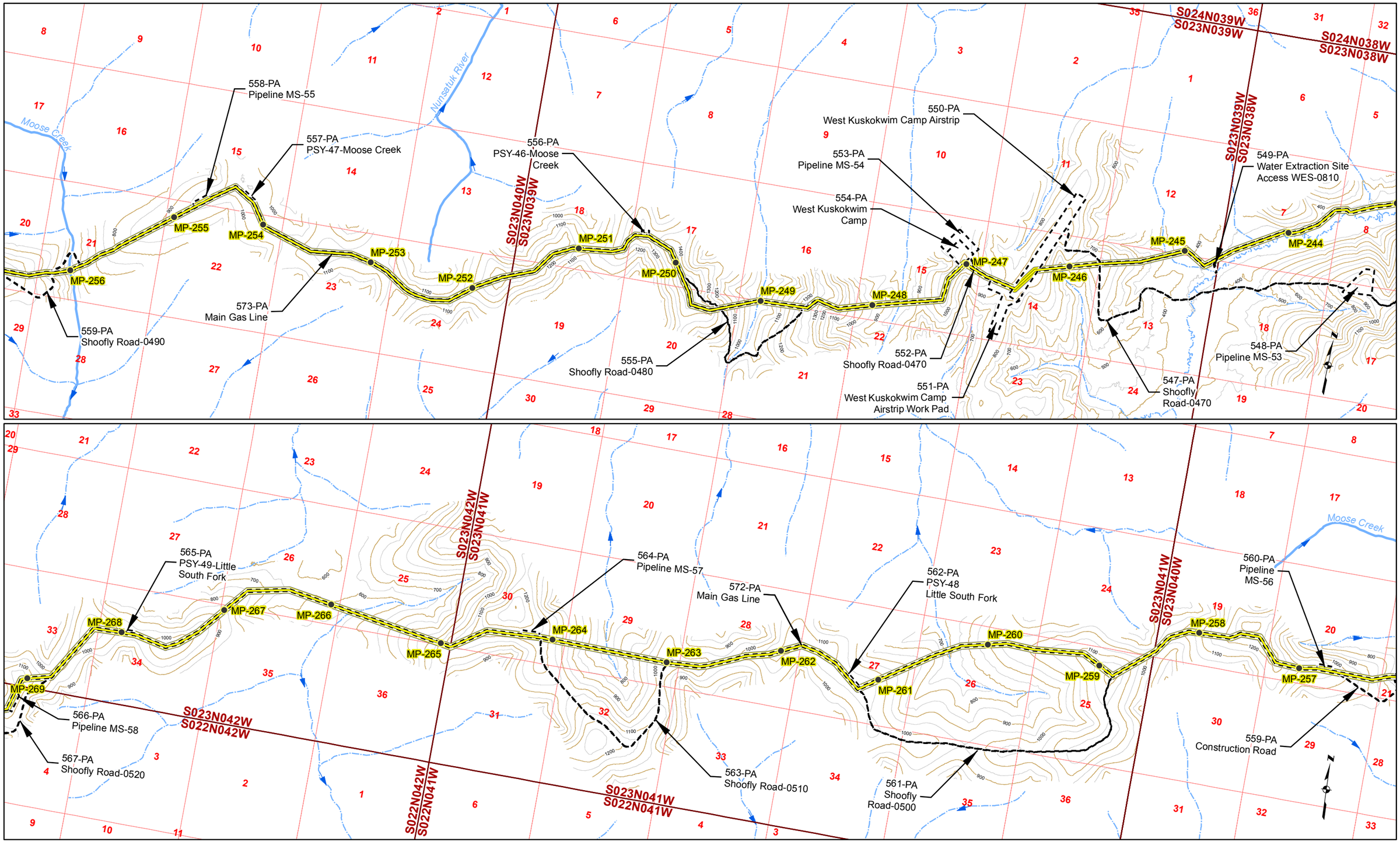
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO. **PA-111A**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
50' Contour
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet

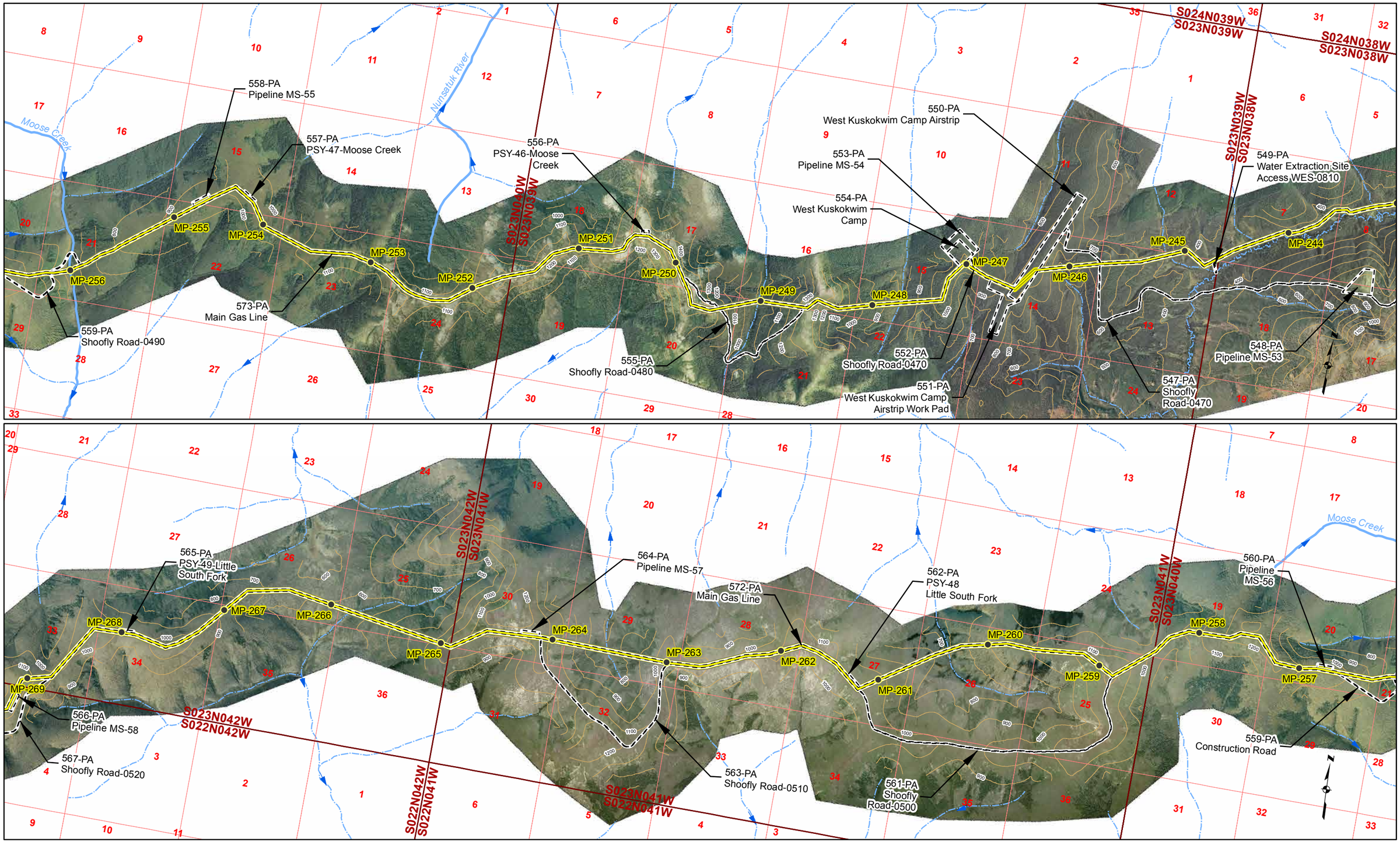
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-111B**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxB_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet

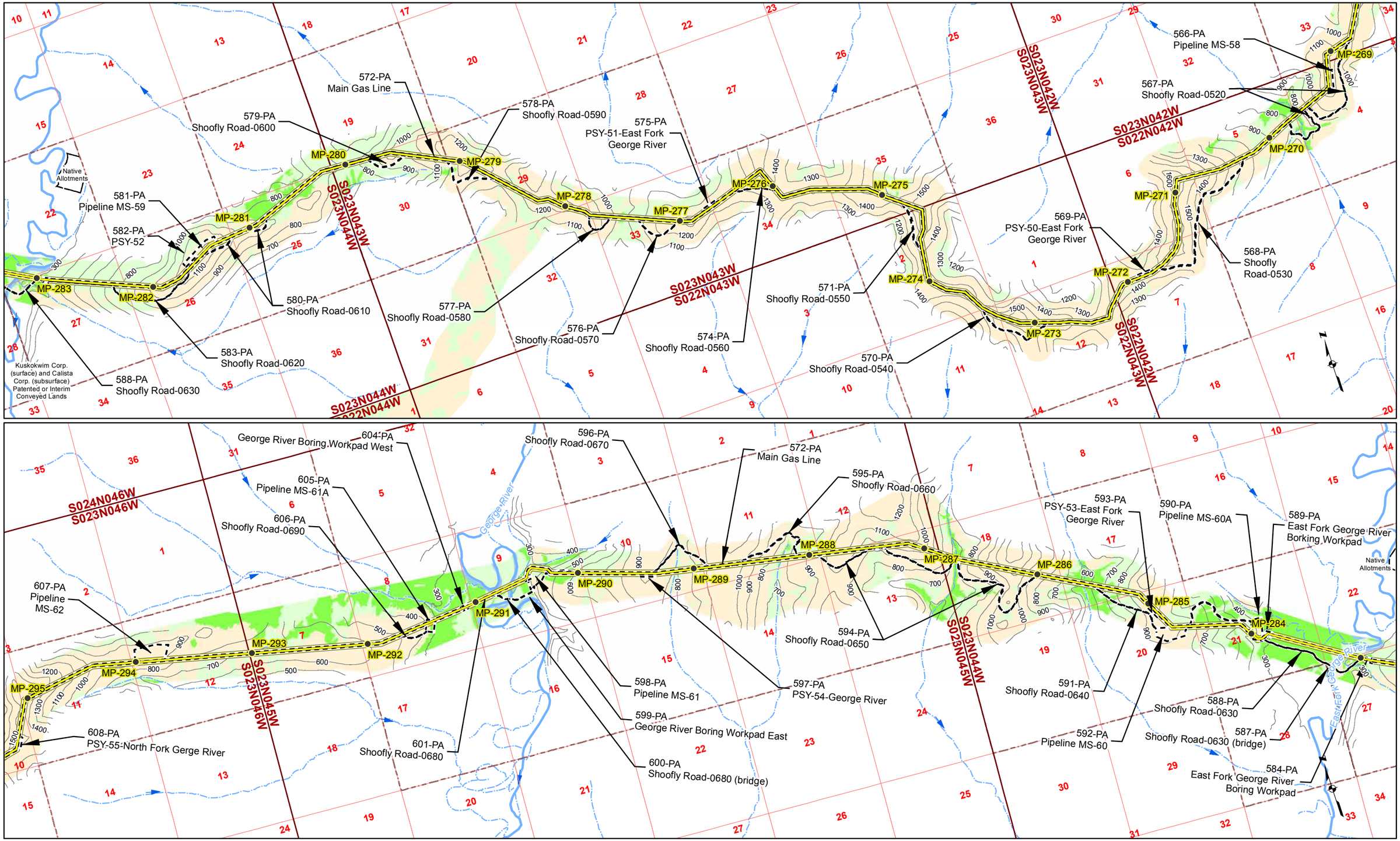
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-111C**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxC_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
100' Contour
Pipeline Study Corridor
Parcel
Stream Flow Direction
River/Stream
Unnamed River/Stream
Mosaic
Upland
Waters
Wetlands

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet

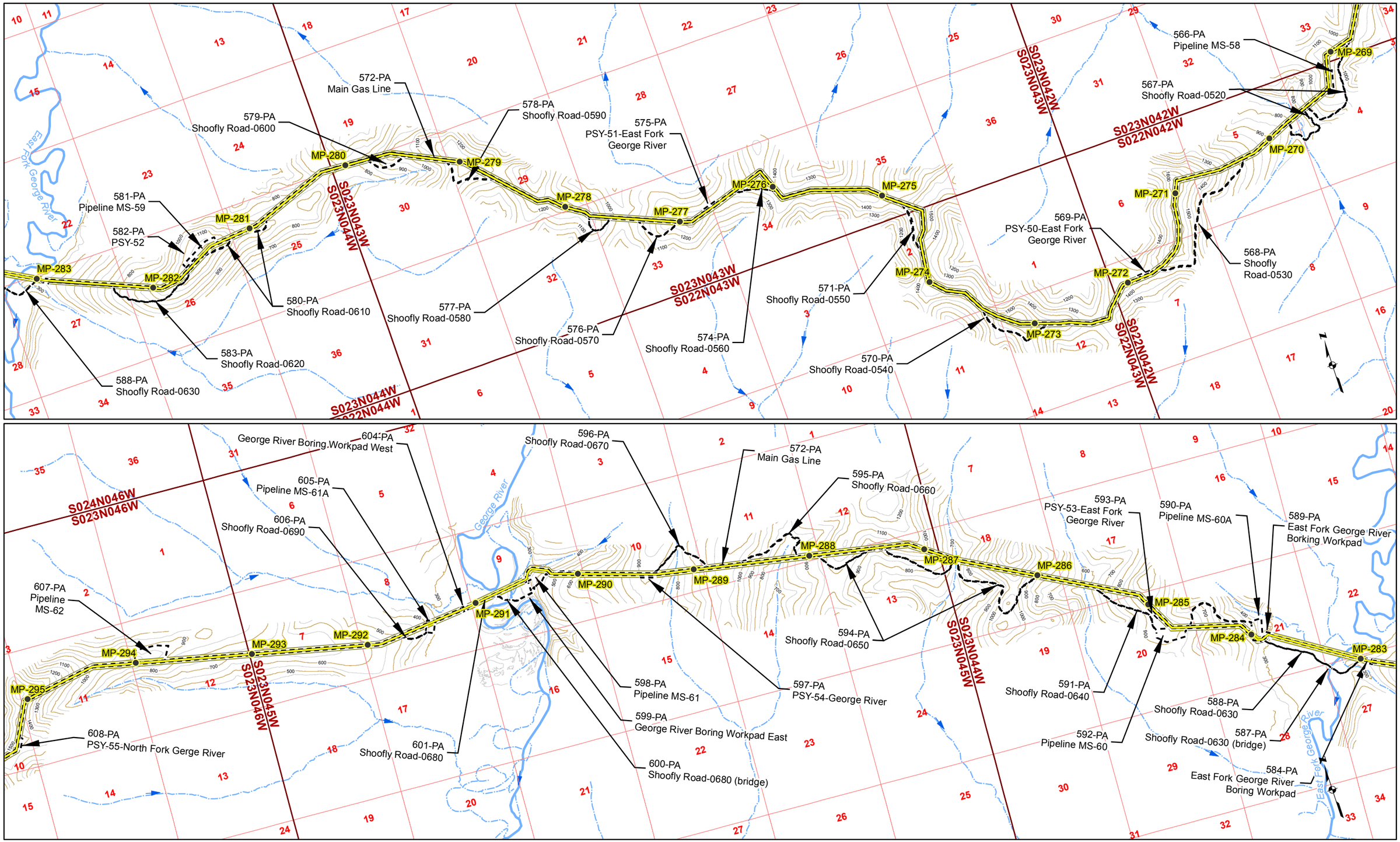
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO. **PA-112A**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
50' Contour
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-112B**
FILE NO. **POA-1995-120**

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MP-270
MP-271
MP-272
MP-273
MP-274
MP-275
MP-276
MP-277
MP-278
MP-279
MP-280
MP-281
MP-282
MP-283
566-PA
Pipeline MS-58
567-PA
Shoofly Road-0520
568-PA
Shoofly
Road-0530
569-PA
PSY-50-East Fork
George River
570-PA
Shoofly Road-0540
571-PA
Shoofly Road-0550
572-PA
Main Gas Line
574-PA
Shoofly Road-0560
575-PA
PSY-51-East Fork
George River
576-PA
Shoofly Road-0570
577-PA
Shoofly Road-0580
578-PA
Shoofly Road-0590
579-PA
Shoofly Road-0600
580-PA
Shoofly Road-0610
581-PA
Pipeline MS-59
582-PA
PSY-52
583-PA
Shoofly Road-0620
588-PA
Shoofly Road-0630
East Fork George River
S023N042W
S023N043W
S022N042W
S022N043W
S023N043W
S022N043W
S023N044W
S022N044W
S022N042W
S022N043W
S023N044W
S023N045W
S024N046W
S023N046W
George River Boring Workpad West
604-PA
605-PA
Pipeline MS-61A
606-PA
Shoofly Road-0690
607-PA
Pipeline
MS-62
608-PA
PSY-55-North Fork Gerge River
596-PA
Shoofly Road-0670
595-PA
Shoofly Road-0660
594-PA
Shoofly Road-0650
593-PA
PSY-53-East Fork
George River
590-PA
Pipeline MS-60A
589-PA
East Fork George River
Borking Workpad
591-PA
Shoofly Road-0640
592-PA
Pipeline MS-60
588-PA
Shoofly Road-0630
Shoofly Road-0630 (bridge)
587-PA
584-PA
East Fork George River
Boring Workpad
MP-283
MP-284
MP-285
MP-286
MP-287
MP-288
MP-289
MP-290
MP-291
MP-292
MP-293
MP-294
MP-295
597-PA
PSY-54-George River
598-PA
Pipeline MS-61
599-PA
George River Boring Workpad East
600-PA
Shoofly Road-0680 (bridge)
601-PA
Shoofly Road-0680
George River

Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

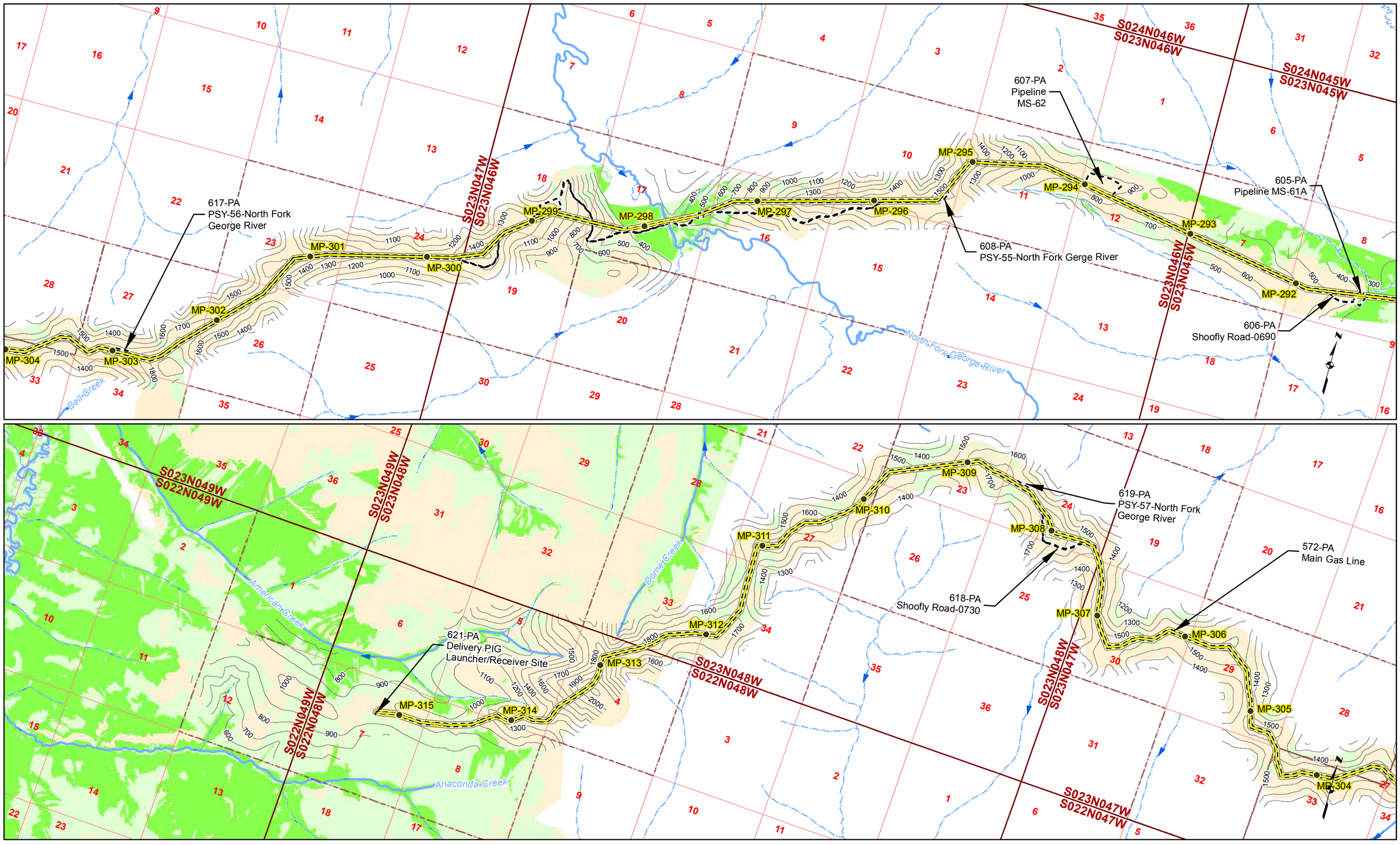
NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-112C**
FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxC_Pipe_ABR_20150819.mxd



- Gas Pipeline Milepost
- Proposed Natural Gas Pipeline
- Project Disturbance Limit
- 100' Contour
- Pipeline Study Corridor
- Parcel
- Stream Flow Direction
- River/Stream
- Unnamed River/Stream
- Mosaic
- Upland
- Waters
- Wetlands

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet

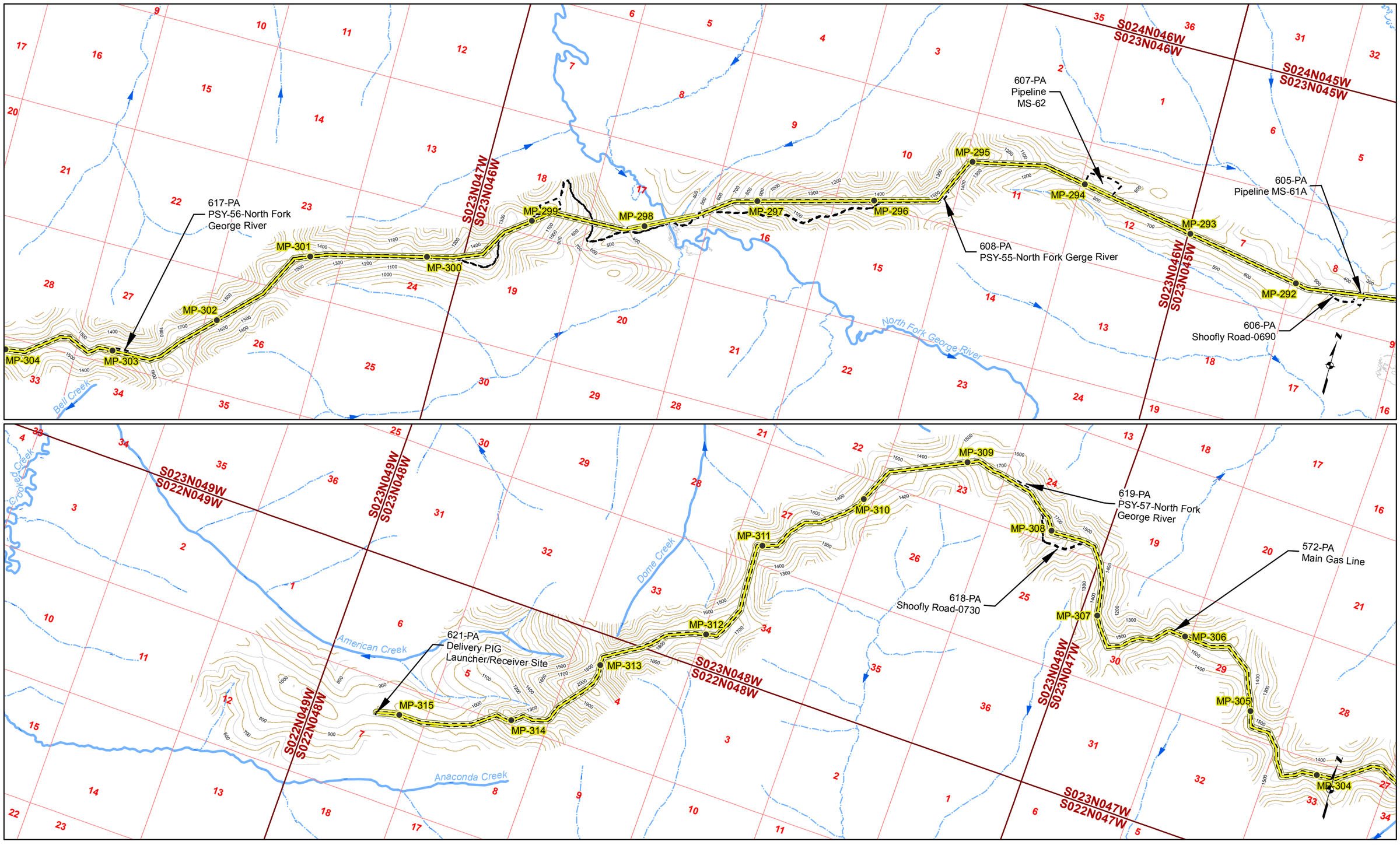
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO. **PA-113A**

FILE NO. **POA-1995-120**

PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20150819.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
50' Contour
100' Contour

Acronyms
MS-Material Site
PSY- Pipe Storage Yard

Associated Engineering Figures

0 2,000 4,000 Ft

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 4,000 feet
DATE: 10/20/2015

DRAWING TITLE: **PLAN VIEW PIPELINE AREA ENGINEERING MAP**

FIGURE NO. **PA-113B**

FILE NO. **POA-1995-120**

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MP-293
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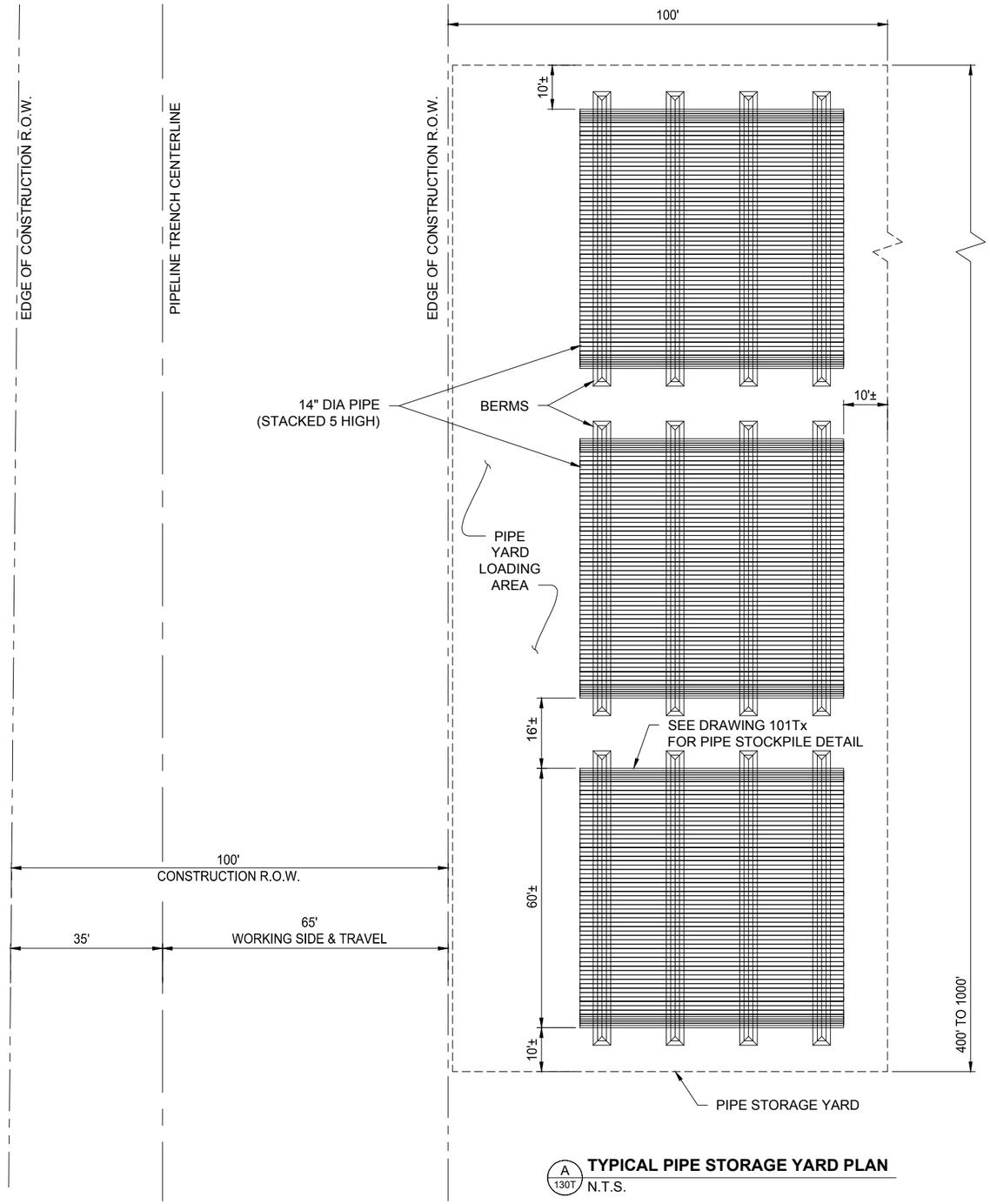
MP-299
MP-298
MP-297
MP-296
MP-301
MP-300
MP-302
MP-303
MP-304
607-PA
Pipeline
MS-62
605-PA
Pipeline MS-61A
608-PA
PSY-55-North Fork Gerge River
606-PA
Shoofly Road-0690
617-PA
PSY-56-North Fork
George River
North Fork George River
Bell Creek
S024N046W
S023N046W
S024N045W
S023N045W
S023N047W
S023N046W
S023N046W
S023N045W
MP-309
MP-310
MP-311
MP-312
MP-313
MP-314
MP-315
MP-308
MP-307
MP-306
MP-305
MP-304
619-PA
PSY-57-North Fork
George River
572-PA
Main Gas Line
618-PA
Shoofly Road-0730
621-PA
Delivery PIG
Launcher/Receiver Site
Crooked Creek
American Creek
Dome Creek
Aneconda Creek
S023N049W
S022N049W
S023N049W
S023N048W
S023N048W
S022N048W
S023N048W
S022N048W
S023N047W
S022N047W
Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Project Disturbance Limit
Pipeline Study Corridor
Stream Flow Direction
River/Stream
Unnamed River/Stream
100' Contour
Acronyms
MS-Material Site
PSY- Pipe Storage Yard
Associated Engineering Figures
0 2,000 4,000 Ft
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4710 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503
NAD 1983 UTM Zone 4N
SCALE: 1 inch = 4,000 feet
DATE: 10/20/2015
DRAWING TITLE: PLAN VIEW PIPELINE AREA ENGINEERING MAP
FIGURE NO. PA-113C
FILE NO. POA-1995-120
PATH: D:\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_1xxC_Pipe_ABR_20150819.mxd



A / 130T **TYPICAL PIPE STORAGE YARD PLAN**
N.T.S.

Associated Engineering Drawings
P04W-TYPT-01.DWG (BAKER) OCT 2013

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

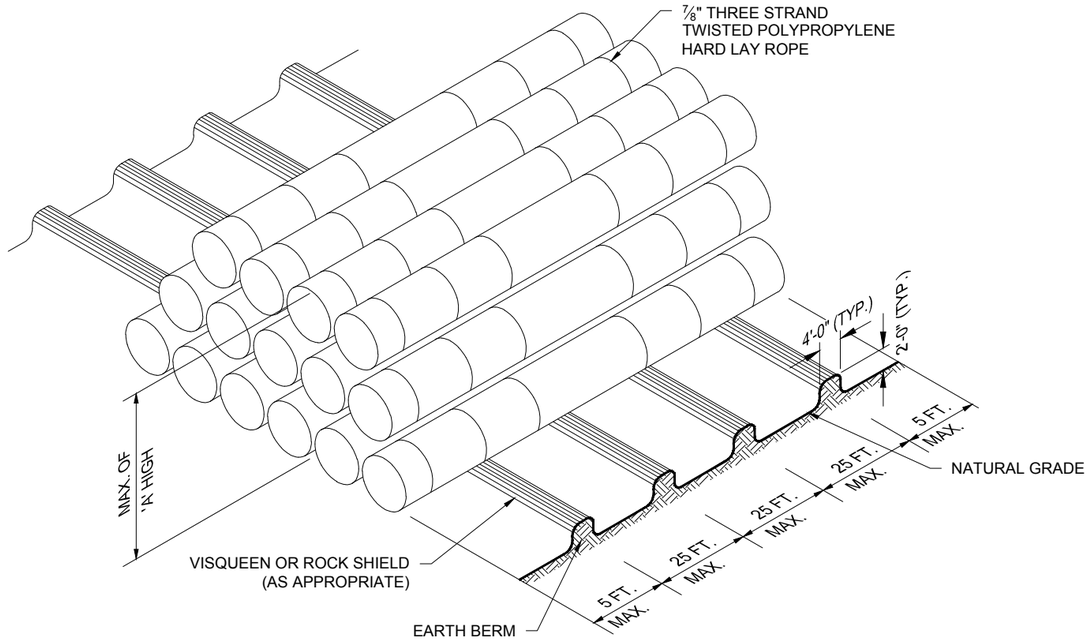
SCALE: AS SHOWN | DATE: 8/31/2015

DRAWING TITLE: **TYPICAL PIPE STORAGE YARD**

FIGURE NO. **PA-130T**

FILE NO. **POA-1995-120**

PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Pipe_Storage_Yard.dwg



ROPE INSTALLATION

1. ROPE SPACING SHOULD BE A MAXIMUM OF 6.0 FEET FROM THE PIPE ENDS.
2. THE INTERVALS BETWEEN RINGS SHOULD BE BETWEEN 10.0 FEET AND 20.0 FEET WITH A MINIMUM OF SIX LOOPS SPACED OVER A STANDARD TRIPLE RANDOM LENGTH (60 FEET).
3. THE INTERVALS MUST BE ADJUSTED TO INSURE THERE IS NO PIPE TO PIPE CONTACT. ROPE ENDS SHALL BE FUSED WITH A BLOW TORCH PRIOR TO SLIPPING THE LOOP OVER THE PIPE.

PIPE SIZE	'A' (NO. OF ROWS)
4"	10
6"	8
8"	6
10"	6
12"	5
16"	4

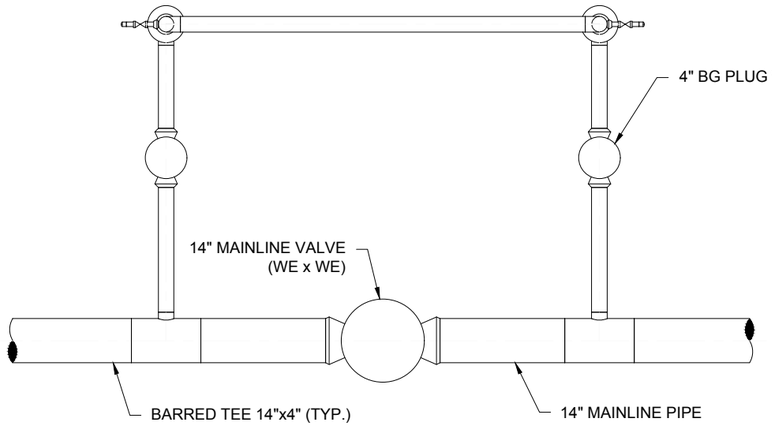
NOTES:

1. THE USE OF ALTERNATE METHODS FOR STOCKPILING PIPE AND/OR THE USE OF ALTERNATE MATERIALS FOR PREVENTING PIPE TO PIPE CONTACT SHALL REQUIRE WRITTEN APPROVAL OF THE COMPANY.
2. PIPE SHALL BE STOCKPILED AND SECURED (AS NECESSARY) TO PRECLUDE MOVEMENT OF PIPE.
3. ALL MATERIALS SHALL BE FURNISHED BY THE CONTRACTOR.

A 131T **TYPICAL TEMPORARY PIPE STOCK PILES**
N.T.S.

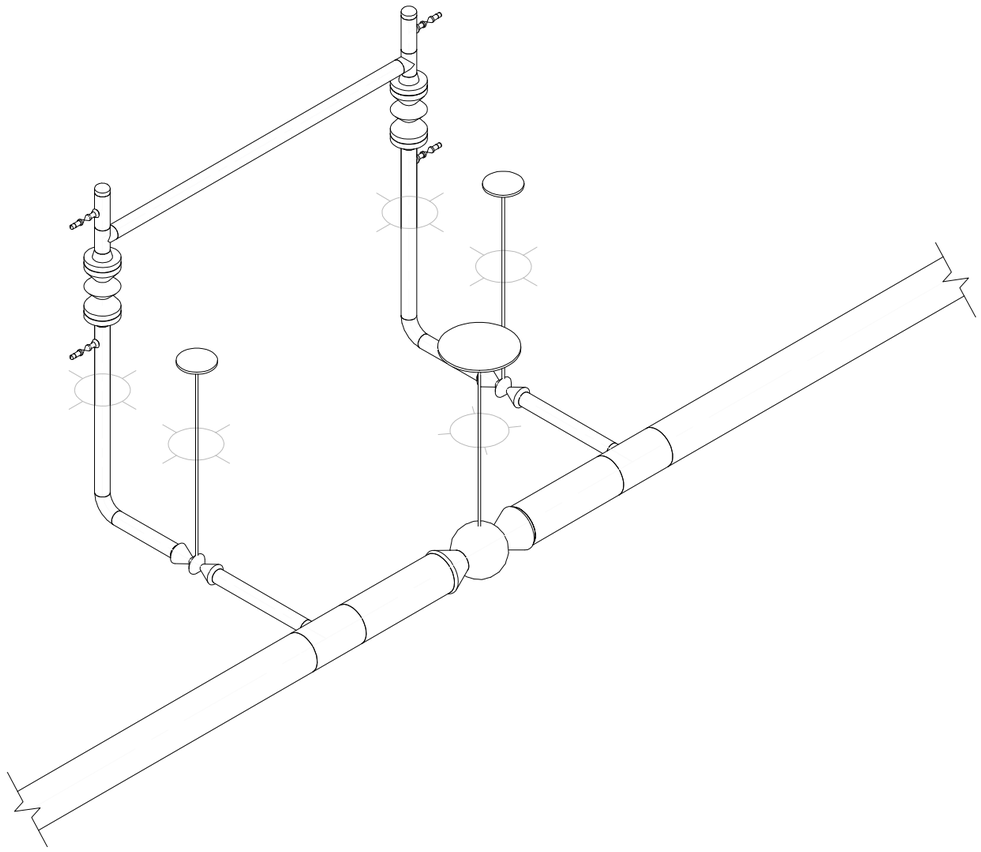
Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P04W-TYPT-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL PIPE STOCK PILE**
	SCALE: AS SHOWN DATE: 8/31/2015	FIGURE NO. **PA-131T** FILE NO. **POA-1995-120**

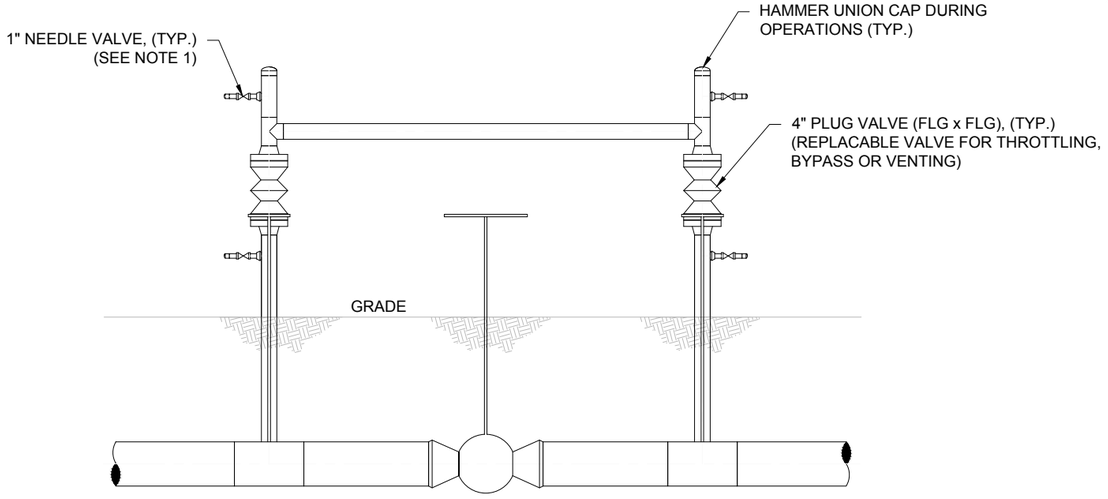
PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Pipe_Stock_Pile.dwg



(HANDWHEELS NOT SHOWN FOR CLARITY)

A 132T **MAINLINE BLOCK VALVE ASSEMBLY - PLAN**
SCALE 1/4" = 1'-0"

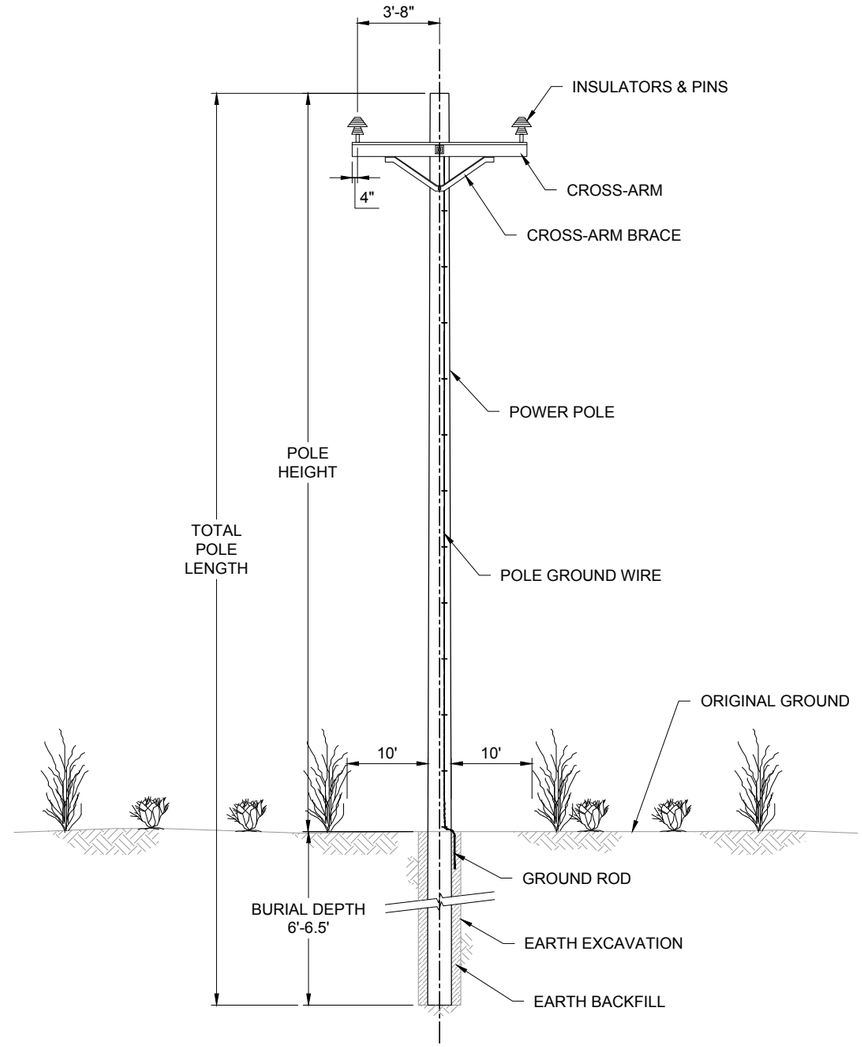




B 132T **MAINLINE BLOCK VALVE ASSEMBLY - ELEVATION**
SCALE 1/4" = 1'-0"

	Associated Engineering Drawings P01M-DTVA-02.DWG (BAKER) OCT 2013	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **MAINLINE BLOCK VALVE ASSEMBLY**
		SCALE: AS SHOWN DATE: 8/31/2015	FIGURE NO. **PA-132T** FILE NO. **POA-1995-120**

PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_Mainline_Block_Valve_Assembly.dwg

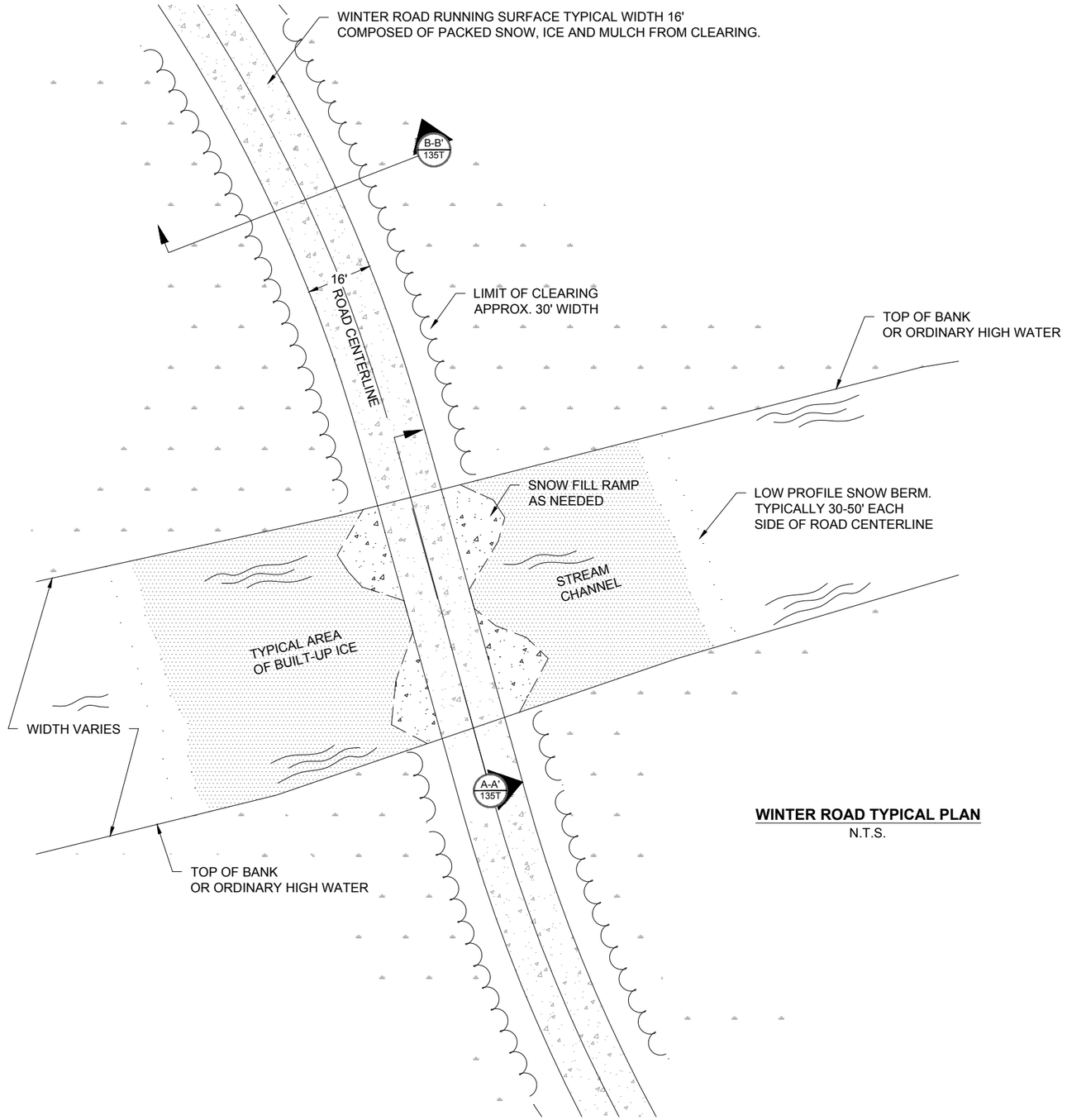


NOTES:

1. CLEARING LIMITS TO BE MIN. 10' EACH SIDE OF POWER POLE.
2. MULCH AND ORGANIC DEBRIS FROM CLEARING TO REMAIN ON GROUND SURFACE.
3. SOIL NOT TO BE DISTURBED EXCEPT AT SPECIFIC LOCATIONS AS PERMITTED.
4. DIMENSIONS ARE APPROXIMATE.

A 133T **POWERPOLE SECTION**
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **POWERLINE TYPICAL POLE CLEARING LIMITS DETAIL**
P09E-DT-EE_01.dwg (BAKER) SEP 2014	SCALE: AS SHOWN DATE: 10/23/2015	FIGURE NO. **PA-133T** FILE NO. **POA-1995-120**



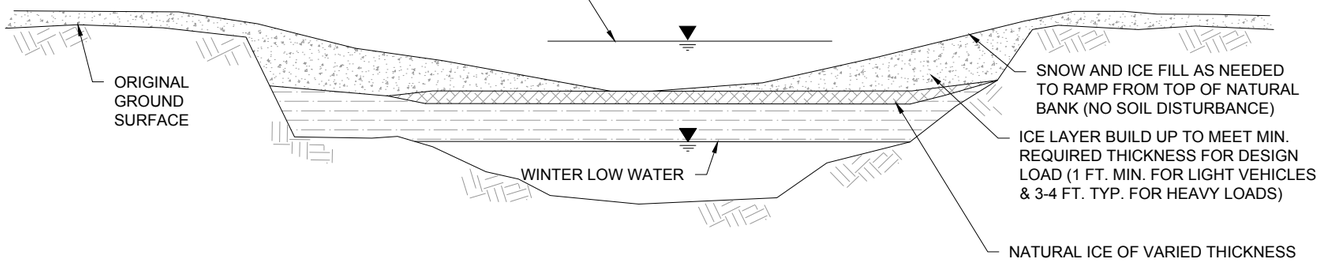
WINTER ROAD TYPICAL PLAN
N.T.S.

NOTES:

1. REFER TO CROSS SECTION DETAILS (A) & (B).
2. ICE SURFACE TO BE CLEARED OF SNOW 30-50' EACH SIDE OF ROAD CENTERLINE TO AUGMENT ICE THICKENING.
3. CLEAN SNOW FOR FILL MAY BE ACCUMULATED FROM NATURAL OPEN AREAS NEAR CROSSING SITE AND ICE SURFACE.
4. TO THE EXTENT POSSIBLE, CROSSING TO BE ORIENTED PERPENDICULAR TO ACTIVE CHANNEL.
5. WATER FOR BUILDING ICE TO BE TAKEN FROM STREAM AT CROSSING LOCATION.
6. SNOW BERMS TO BE SHAPED FOR PASSAGE OF SNOWMACHINES AND SIGNAGE PLACED WARNING OF CROSSING.
7. SNOW BERMS TO DEFINE CROSSING SITE AND AID IN CONTAINING WATER DURING FLOODING TO BUILD ICE.
8. CROSSINGS SHALL BE DEVELOPED IN ACCORDANCE WITH STATE OF ALASKA FOREST RESOURCES AND PRACTICES REGULATIONS AS THEY ADDRESS WINTER ROADS/TRAILS AND STREAM CROSSINGS.

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **WINTER ROAD TYPICAL DETAIL**
P07C-TYSCW-01.dwg (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 9/9/2015	FIGURE NO. **PA-134T** FILE NO. **POA-1995-120**

PATH: C:\Users\mtengiewicz\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_AIPA_Winter_Roads.dwg

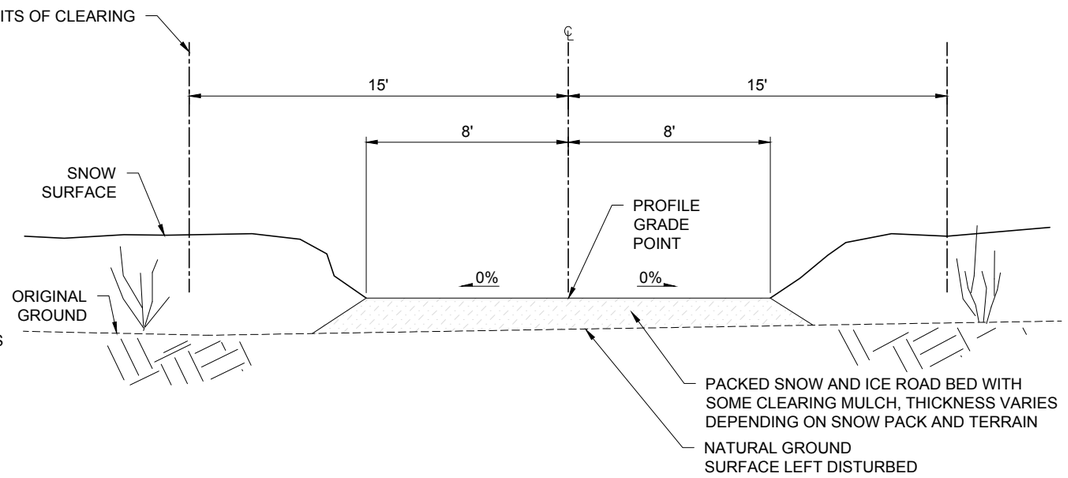


A-A' 134T WINTER ROAD TYPICAL STREAM CROSSING SECTION A-A'

N.T.S.

NOTES:

BEFORE DEVELOPMENT, ALL CROSSING LOCATIONS SHALL BE TESTED FOR ICE THICKNESS, WATER DEPTH AND EXTENT OF GROUNDED ICE. CLEAN SNOW FOR RAMP CONSTRUCTION MAY BE GATHERED FROM OPEN AREAS ADJACENT TO THE CROSSING SITE AND TRAIL. CROSSINGS SHALL BE DEVELOPED IN ACCORDANCE WITH STATE OF ALASKA FOREST RESOURCES AND PRACTICES REGULATIONS AS THEY ADDRESS WINTER ROADS/TRAILS AND STREAM CROSSINGS. ALL CROSSINGS SHALL BE ASSESSED BY A QUALIFIED ENGINEER AND APPROVED FOR USE.



A-A' 134T WINTER ROAD TYPICAL SECTION B-B'

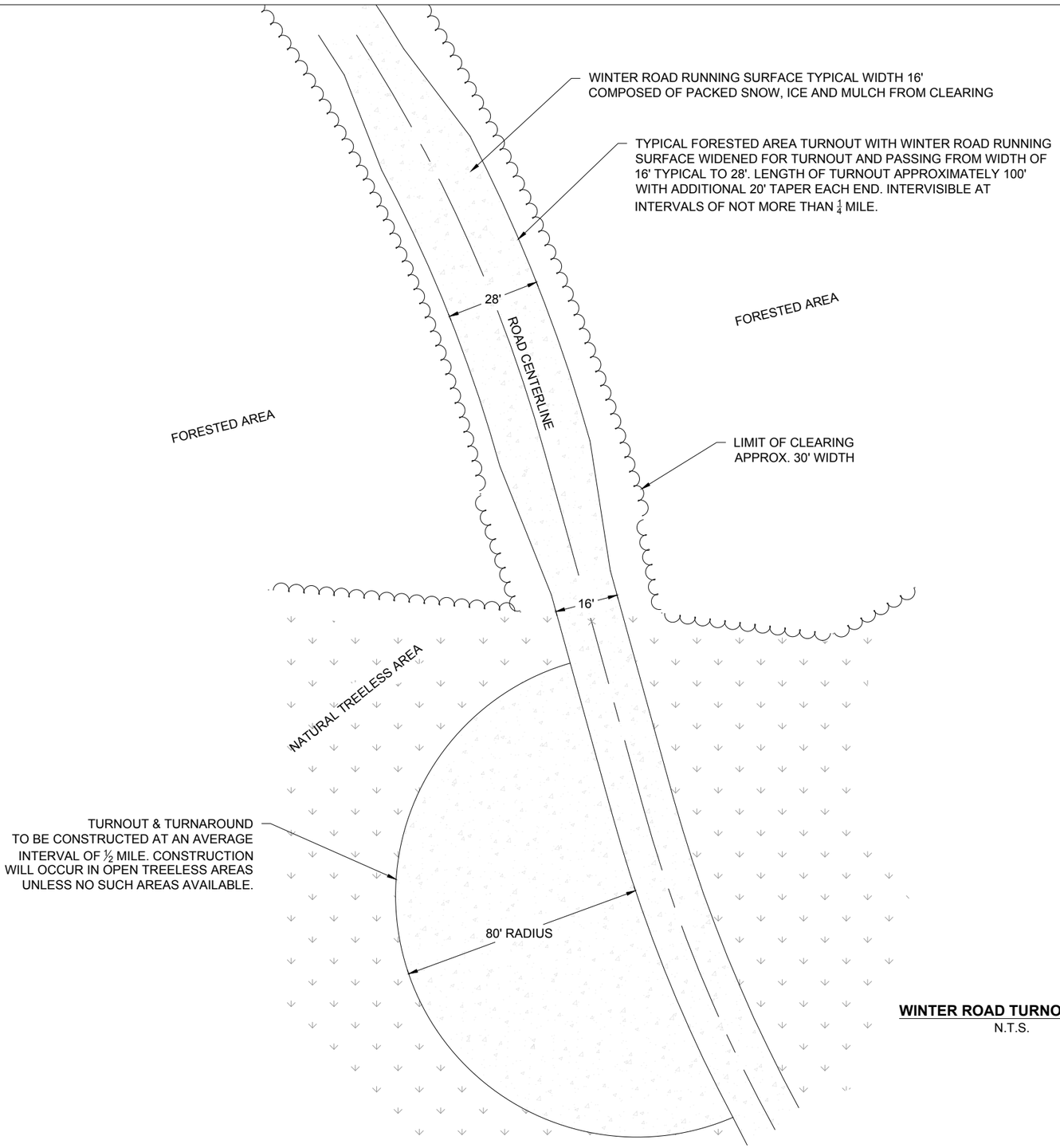
N.T.S.

NOTES:

1. CLEARING LIMITS TO BE MIN. 15' EACH SIDE OF CENTERLINE OR MAX. 30' TOTAL WIDTH.
2. MULCH AND ORGANIC DEBRIS FROM CLEARING TO REMAIN ON GROUND SURFACE.
3. DEPTH OF PACKED SNOW AND ICE FOR RUNNING SURFACE WILL VARY.
4. SOIL NOT TO BE DISTURBED EXCEPT AT SPECIFIC LOCATIONS AS PERMITTED.
5. ADD TURNOUT LANE AT LOCATIONS DETERMINED BY ENGINEER. SURFACE WIDTH INCREASED TO 28' FOR TURNOUT. (APPROX. ONE PER 1/4 MILE).

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P07C-TYSCW-02.dwg (BAKER) OCT 2013; P07C-TYSCW-03.dwg (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**WINTER ROAD TYPICAL DETAIL**
	SCALE: AS SHOWN — DATE: 9/9/2015	FIGURE NO. **PA-135T** — FILE NO. **POA-1995-120**

PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_Mapping_404_Support\Revision_A\PA_Winter_Roads.dwg



WINTER ROAD TURNOUT PLAN
N.T.S.

NOTES:

1. TURNOUTS TO BE FIELD LOCATED BY ENGINEER TO BEST FIT TERRAIN CONDITIONS AND MAXIMIZE OPERATIONAL SAFETY.
2. TURNOUTS TO BE CONSTRUCTED SIMILAR TO ROAD RUNNING SURFACE.
3. OPEN AREA TURNOUTS MAY BE SHAPED AND SIZED TO BEST FIT TERRAIN AND NATURAL CLEARINGS. RADIUS IS REPRESENTATIVE ONLY.

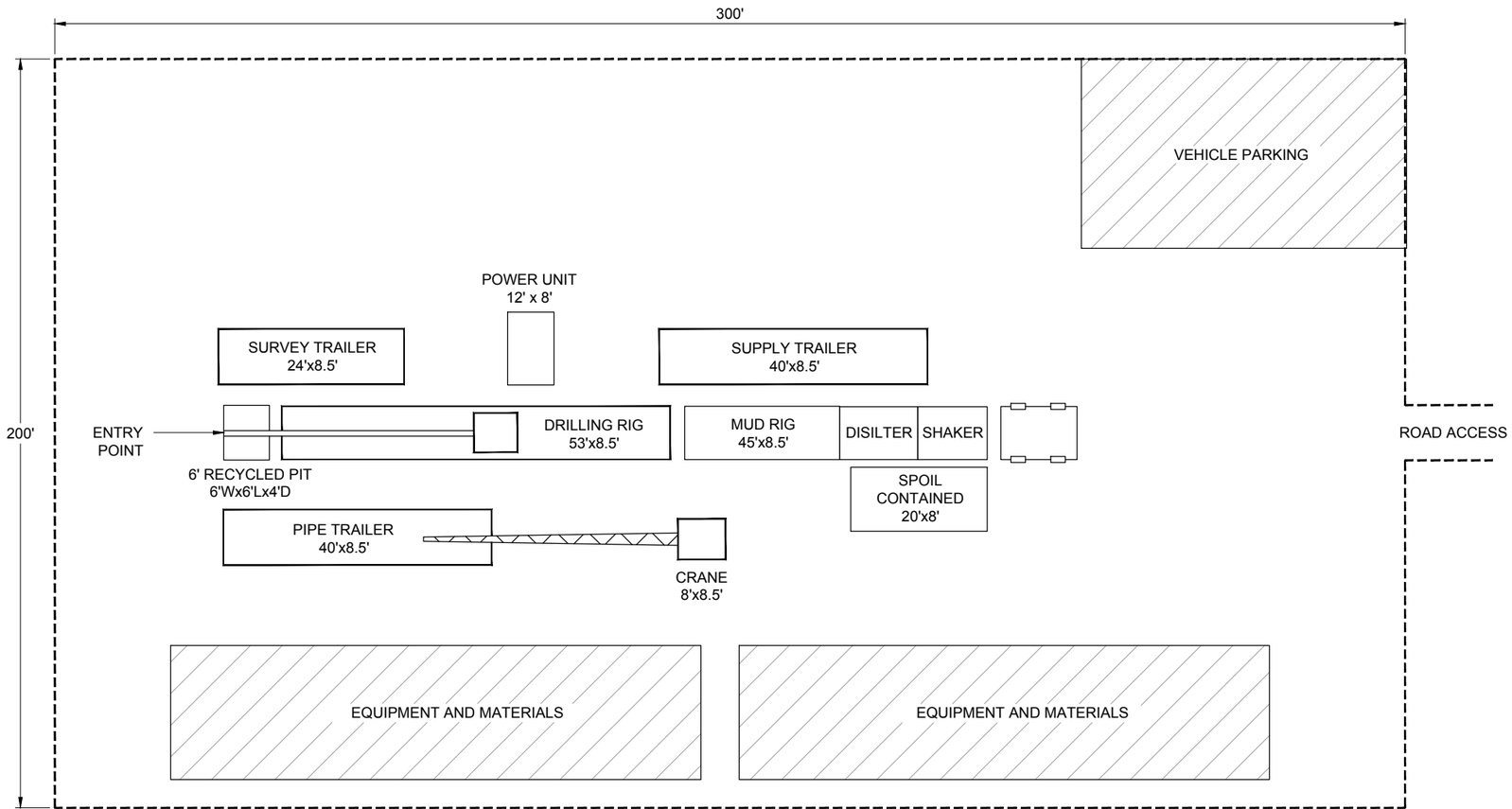
Associated Engineering Drawings
P07C-TYTOW-01.dwg (BAKER) OCT 2013

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

DRAWING TITLE: **WINTER ROAD TURNOUT DETAIL**

SCALE: AS SHOWN | DATE: 10/19/2015 | FIGURE NO. **PA-136T** | FILE NO. **POA-1995-120**

PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Winter_Roads.dwg

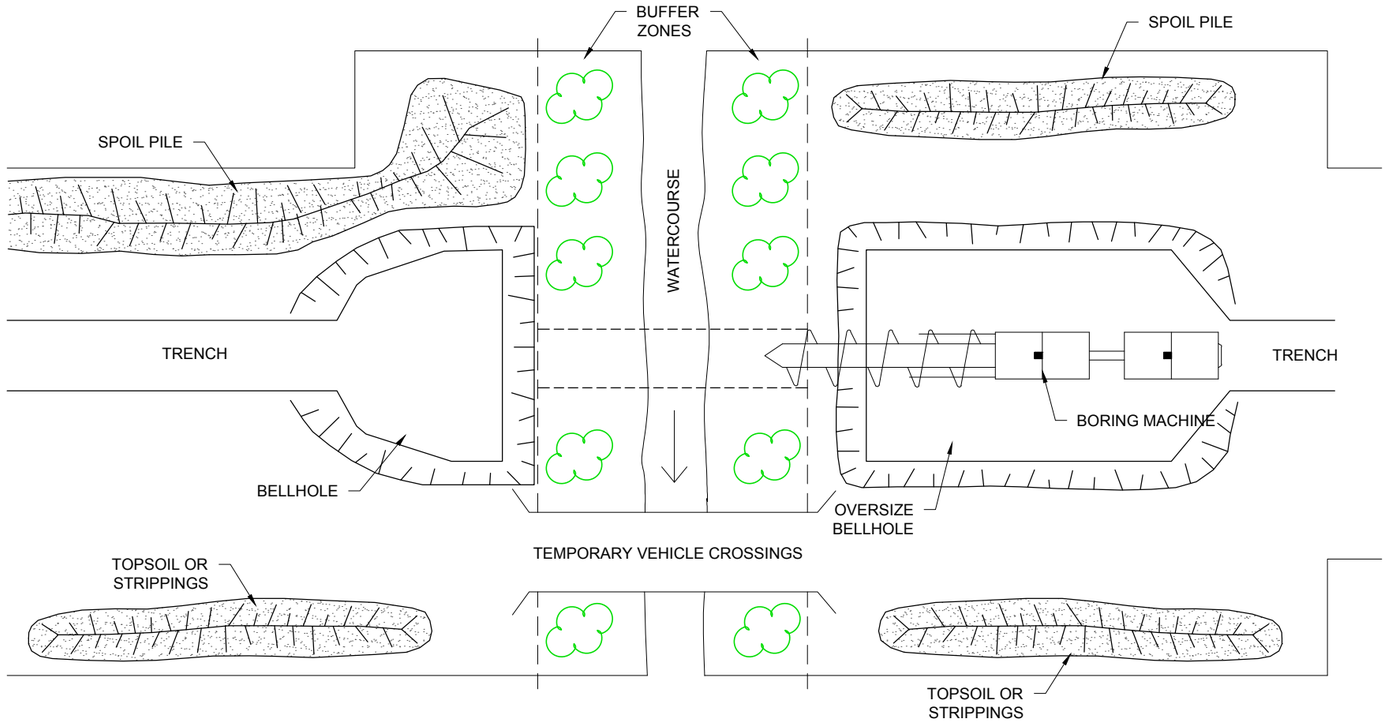


NOTE:
- THIS IS A TYPICAL SITE SET-UP. THERE ARE VARIOUS CONFIGURATIONS USED DEPENDING UPON SITE RESTRICTIONS. FIELD MODIFICATIONS TO SUIT SITE.
- CUT/FILL SLOPES ARE 2:1 (HORIZ:VERT), TYPICAL.

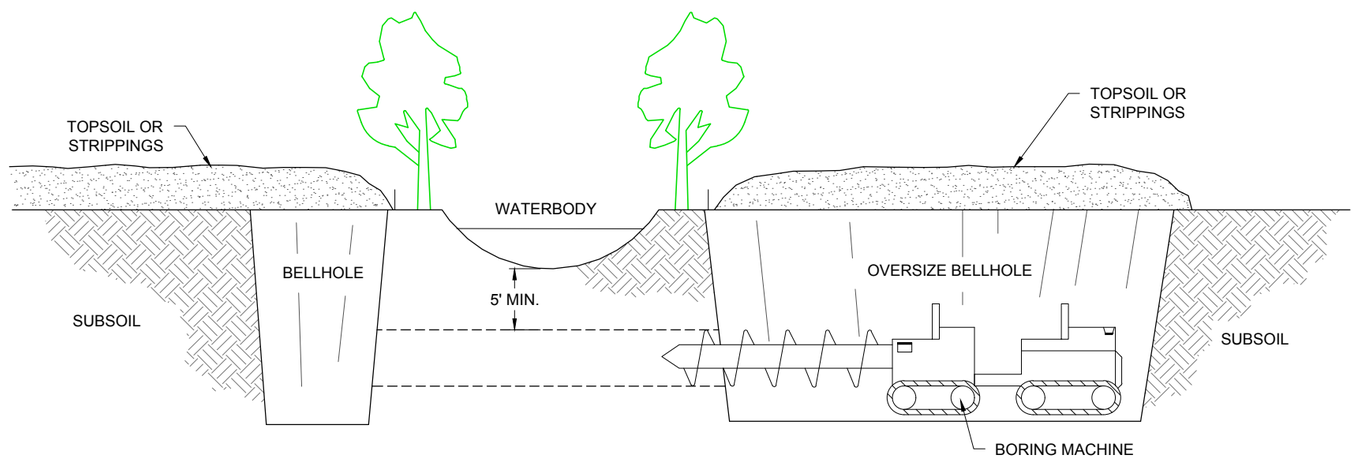
TYPICAL HDD ENTRY SITE EQUIPMENT LAYOUT
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P04Q-SPHD-01.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL HDD ENTRY SITE EQUIPMENT LAYOUT**
	SCALE: AS SHOWN DATE: 10/19/2015	FIGURE NO. **PA-137T** FILE NO. **POA-1995-120**

PATH: C:\Users\mlenglewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_HDD_Entry_Site.dwg



TYPICAL WATERBODY CROSSING HORIZONTAL BORE PLAN
N.T.S.



TYPICAL WATERBODY CROSSING HORIZONTAL BORE PROFILE
N.T.S.

Associated Engineering Drawings
P01C-TYWC-06.DWG (BAKER) OCT 2013

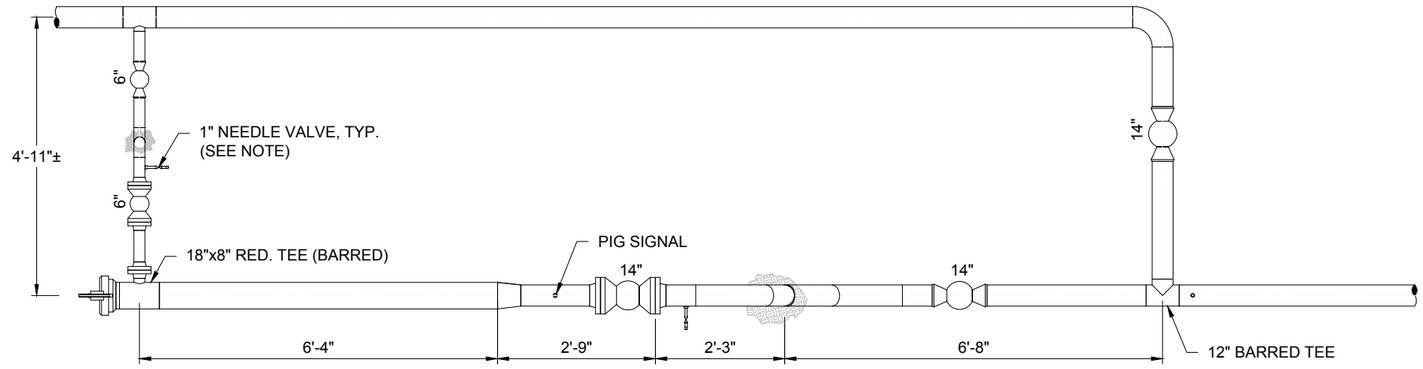
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

SCALE: AS SHOWN
DATE: 10/23/2015

DRAWING TITLE:
TYPICAL WATERBODY CROSSING HORIZONTAL BORE

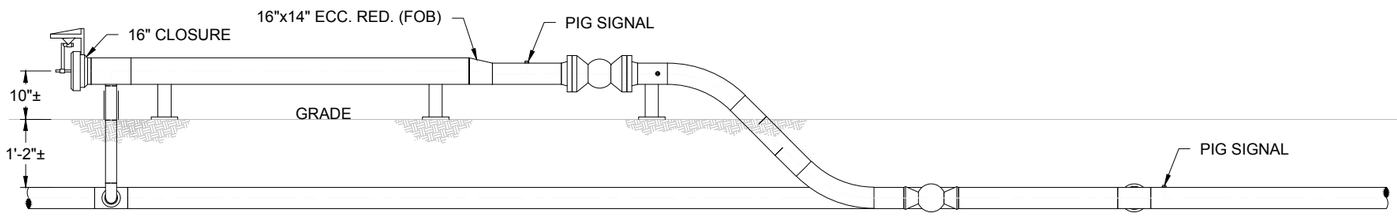
FIGURE NO.: **PA-138T**
FILE NO.: **POA-1995-120**

PATH: C:\Users\mengrewicz\Dropbox\Donlin\181202_010_mapping_404_supportrevision_a\PA_Waterbody_Horiz_Bore.dwg



TYPICAL 16"x14" PIG LAUNCHER PLAN

SCALE: $\frac{3}{8}$" = 1'-0"



TYPICAL 16"x14" PIG LAUNCHER ELEVATION

SCALE: $\frac{3}{8}$" = 1'-0"

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: TYPICAL 16x14 PIG LAUNCHER
P01M-TYPL-01.DWG (BAKER) OCT 2013	SCALE: AS SHOWN — DATE: 10/23/2015	FIGURE NO. PA-139T — FILE NO. POA-1995-120

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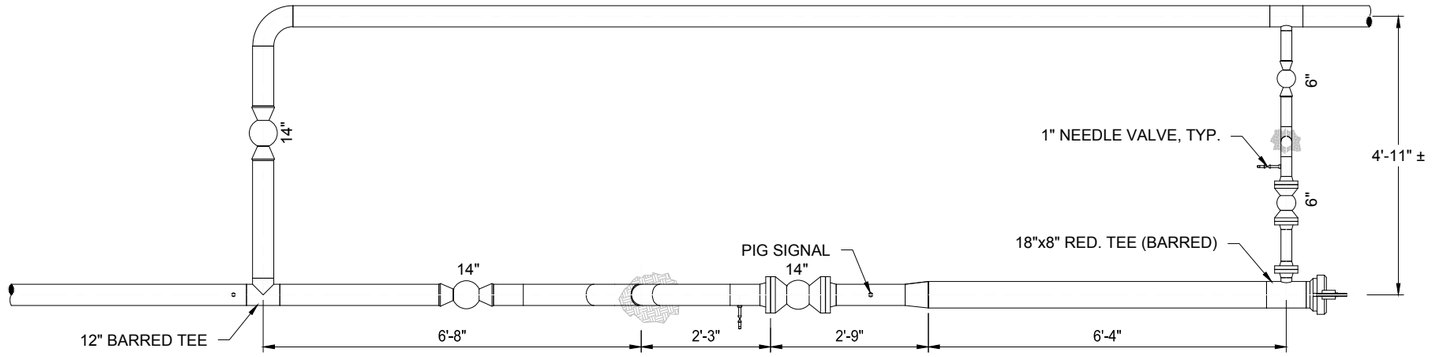
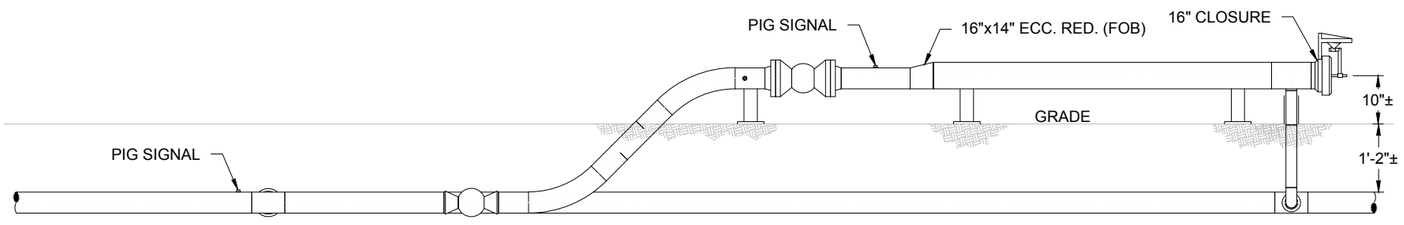


TYPICAL 16"x14" PIG LAUNCHER PLAN

SCALE: ⅜" = 1'-0"

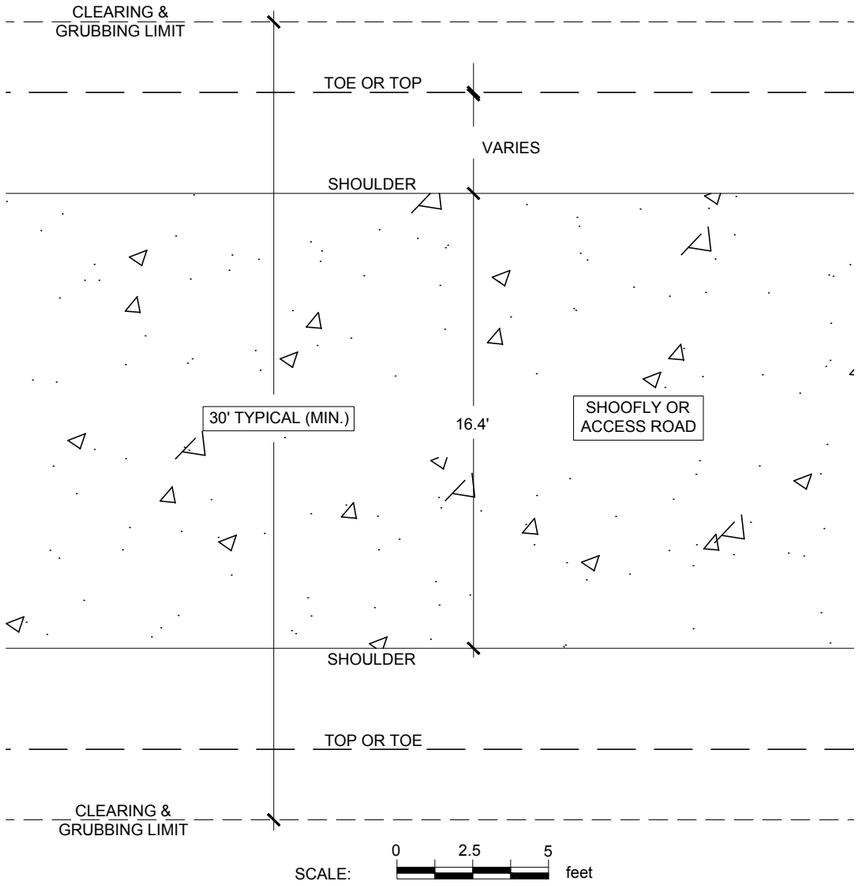


TYPICAL 16"x14" PIG LAUNCHER ELEVATION

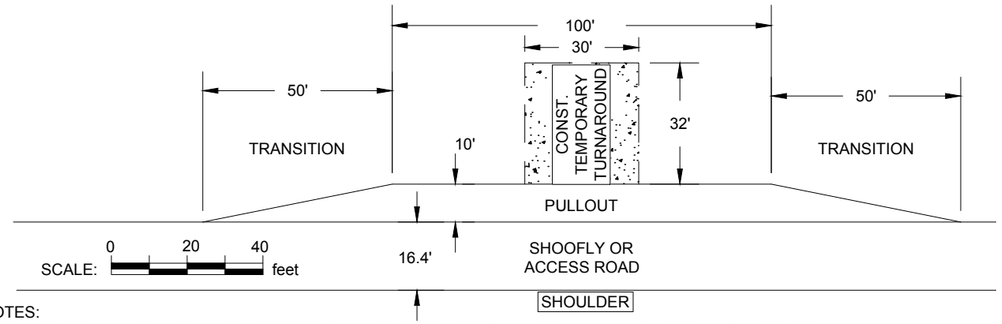
SCALE: ⅜" = 1'-0"

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: TYPICAL 16x14 PIG LAUNCHER
P01M-TYPL-02.DWG (BAKER) OCT 2013	SCALE: AS SHOWN — DATE: 10/23/2015	FIGURE NO. PA-140T — FILE NO. POA-1995-120

PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Pig_Launcher.dwg

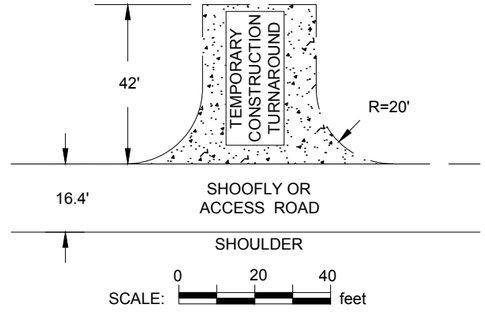


A 141T **SHOOFLY OR ACCESS ROAD PLAN VIEW**
SCALE: 1" = 5'



NOTES:
1. PULLOUTS WILL BE INSTALLED AS TERRAIN ALLOWS AT APPROXIMATELY 1/4 MILE INTERVALS ADDITIONAL PULLOUTS WILL BE CONSTRUCTED WHERE HILLY TERRAIN AND LIMITED SITE DISTANCE ARE PREVALENT.
2. TEMPORARY CONSTRUCTION TURNAROUNDS WILL BE BUILT AT EACH PULLOUT AND FIELD FIT TO MINIMIZE CLEARING.
3. ROCK FILL SHALL BE PLACED IN NO GREATER THAN 12" LIFTS AND COMPACTED.
4. ROCK FILL SHALL BE UNDERLAIN WITH GEOTEXTILE WHEN DIRECTED BY PROJECT ENGINEER.
5. PULLOUTS TO MAY BE WIDENED OR LENGTHENED WHERE NATURAL CONDITION PERMIT AND AS DIRECTED BY PROJECT ENGINEER.
6. TEMP TURNAROUND GRUB ONLY LARGE STUMPS AND PLACE FILL SUFFICIENT TO SUPPORT VEHICLES, CLEAR TO TOE OF FILL OR TOP OF CUT

B 141T **PULLOUT PLAN VIEW**
SCALE: 1" = 40'



NOTES:
1. FIELD FIT AT 400-500' INTERVALS TO MINIMIZE CLEARING AND EXCAVATION.
2. PLACE FILL SUFFICIENT TO SUPPORT VEHICLES. CLEAR TO TOE OF FILL OR TOP OF CUT
3. TEMPORARY CONSTRUCTION TURNAROUNDS WILL BE BUILT AT EACH PULLOUT AND FIELD FIT TO MINIMIZE CLEARING.
4. ROCK FILL SHALL BE PLACED IN NO GREATER THAN 12" LIFTS AND COMPACTED.
5. ROCK FILL SHALL BE UNDERLAIN WITH GEOTEXTILE WHEN DIRECTED BY PROJECT ENGINEER.
6. TEMP TURNAROUND GRUB ONLY LARGE STUMPS AND PLACE FILL SUFFICIENT TO SUPPORT VEHICLES, CLEAR TO TOE OF FILL OR TOP OF CUT

C 141T **TEMPORARY CONSTRUCTION TURNAROUND**
SCALE 1" = 40'

Associated Engineering Drawings
ShooflyTypicals_SheetLayout_toDG.dwg (RECONN) OCT 2014

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

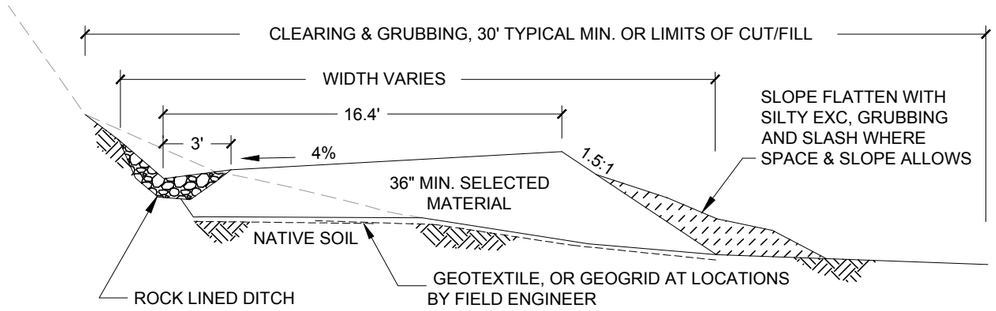
SCALE: AS SHOWN | DATE: 9/11/2015

DRAWING TITLE:
SHOOFLY OR ACCESS ROAD DETAIL

FIGURE NO. **PA-141T**

FILE NO. **POA-1995-120**

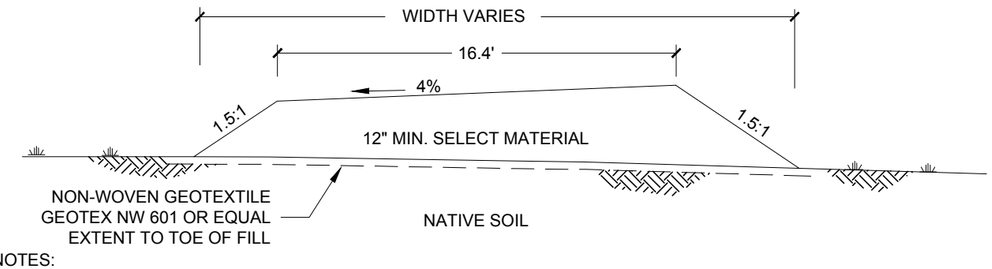
PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Shoofly.dwg



NOTES:
1. MAX ROAD CLEARING WIDTH IS TOP OF CUT OR TOE OF FILL. IN NEARLY LEVEL TERRAIN, REDUCE CLEARING WIDTH TO 30 FT.
2. CUT SLOPES WILL VARY DEPENDING ON SOIL OR ROCK TYPE AND CHARACTER. MIN 0.25:1.
3. FILL SHALL BE UNDERLAIN WITH GEOTEXTILE WHERE SOFT UNDERLYING SOILS ARE ENCOUNTERED.
4. RESERVE TOPSOIL AND ORGANIC MATERIAL FOR STABILIZATION AND SEEDING ON CUT SLOPES.
5. CROSS DRAINS SHALL BE ARMORED WATER BARS OR CULVERTS INSTALLED AT LOCATIONS DETERMINED BY FIELD ENGINEER.

SHOOFLY OR ACCESS ROAD TYPICAL SECTION VARIABLE TERRAIN (CUT/FILL)

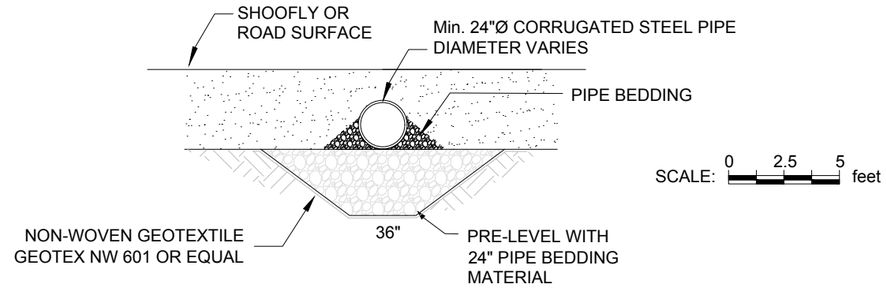
A / 142T N.T.S.



NOTES:
1. "SELECT MATERIAL" TO BE APPROVED GRANULAR SOIL
2. QUARRY ROCK FILL SHALL BE UNDERLAIN WITH NON-WOVEN GEOTEXTILE, GEOTEX NW 601 OR EQUAL.
3. IN WETLAND AREAS GEOGRID, BX 1100 OR EQUAL, MAY BE USED TO STABILIZE FILL AS DETERMINED BY THE ENGINEER.
4. 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.
5. CLEARING LIMITS ARE TOP OF CUT AND TOE OF FILL.
6. DEPTH OF FILL TO VARY DEPENDIG ON SUBGRADE CONDITIONS AND SOIL CHARACTERISTICS. ENGINEER TO FIELD SPECIFY.

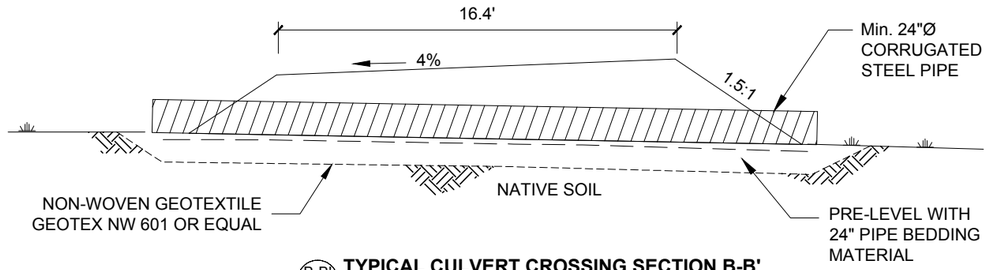
SHOOFLY OR ACCESS ROAD TYPICAL SECTION LEVEL TERRAIN (FILL)

B / 142T N.T.S.



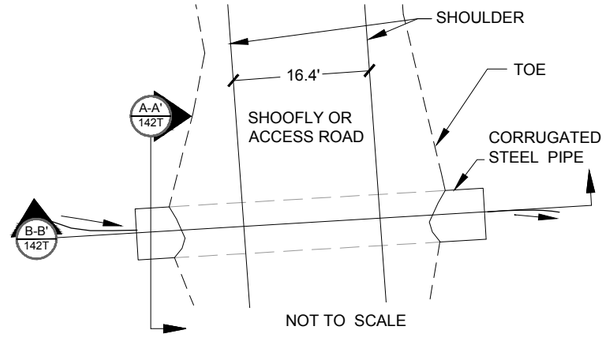
TYPICAL CULVERT CROSSING SECTION A-A'

A-A' / 142T N.T.S.



TYPICAL CULVERT CROSSING SECTION B-B'

B-B' / 142T N.T.S.



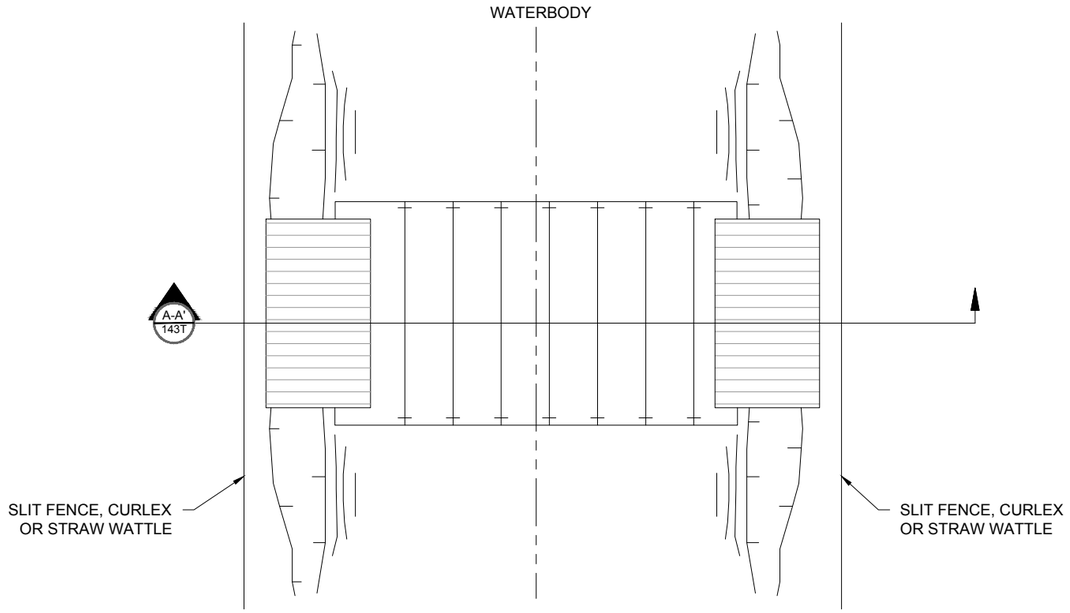
1. ALL CULVERTS SHALL BE CORRUGATED STEEL AS APPROVED BY PROJECT ENGINEER.
2. PRE-LEVEL WITH 24" OF COARSE ROCK PIPE BEDDING MATERIAL AND ENSURE MIN. 12" OF COVER
3. CROSS CULVERTS IN UPLANDS SHALL BE INSTALLED WITH AN ENLARGED (BELL HOLE) DITCH SECTION ON THE INLET END. FILL TO 6" DEPTH WITH DITCH LINER MATERIAL.
4. CULVERT GRADIENT TO MATCHED NATURAL DRAINAGE GRADIENT OR AS SPECIFIED BY PROJECT ENGINEER (MIN. 2%)
5. 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.
6. CULVERT DIA. AND LOCATION PER SUMMARY PROVIDED BY PROJECT ENGINEER

TYPICAL CULVERT CROSSING PLAN

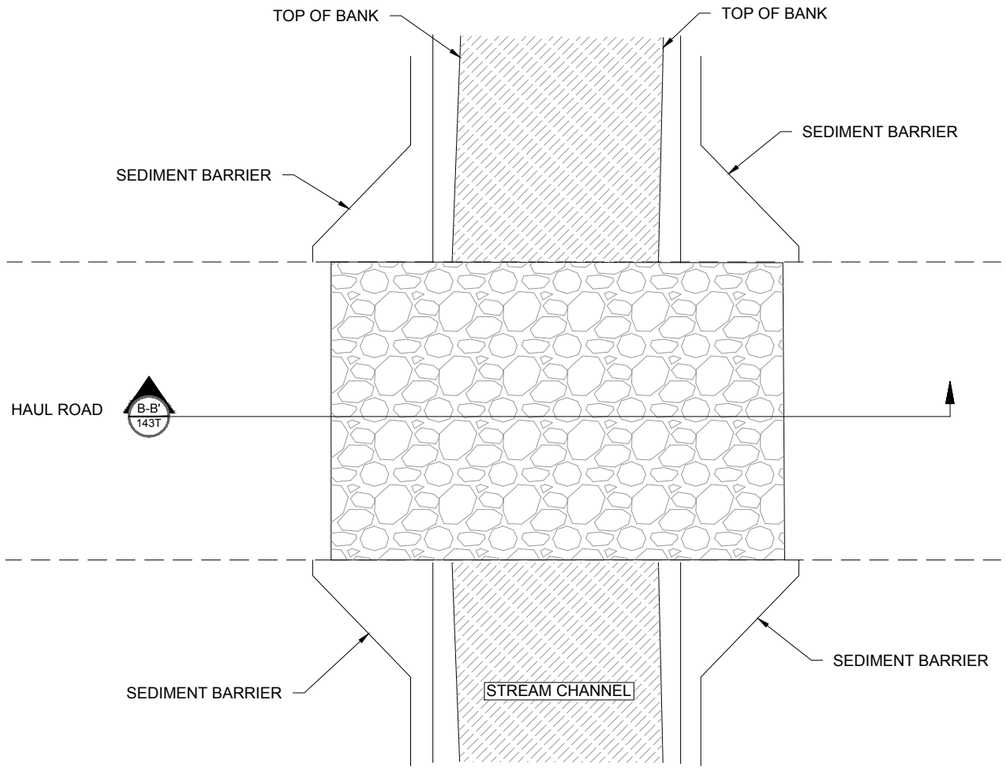
C / 142T N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
ShooflyTypicals_SheetLayout_toDG.dwg (RECONN) OCT 2014	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**SHOOFLY TYPICAL SECTIONS**
	SCALE: AS SHOWN DATE: 9/11/2015	FIGURE NO. **PA-142T** FILE NO. **POA-1995-120**

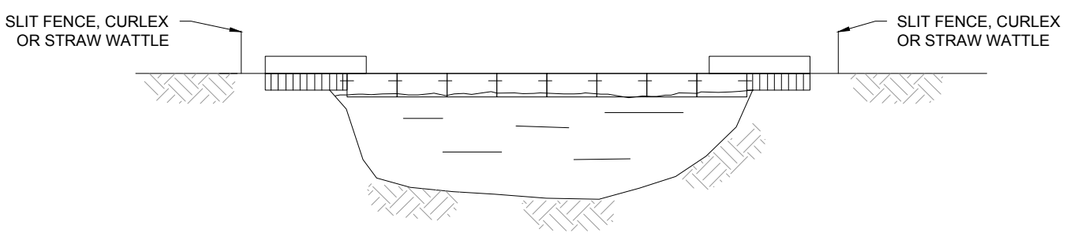
PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Shoofly.dwg



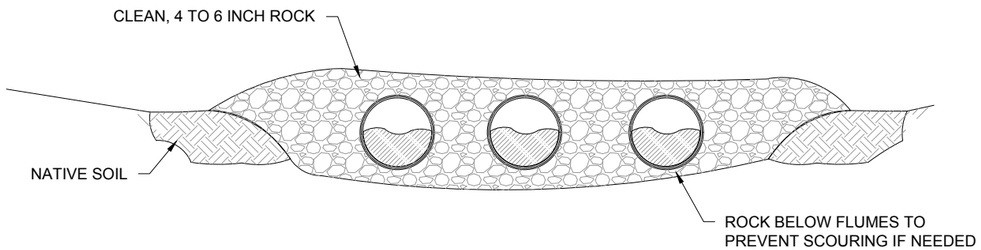
TYPICAL FLEX-FLOAT BRIDGE PLAN
N.T.S.



TYPICAL ROCK FLUME BRIDGE PLAN
N.T.S.



A-A' 143T **TYPICAL FLEX-FLOAT BRIDGE SECTION A-A'**
N.T.S.



B-B' 143T **TYPICAL ROCK FLUME BRIDGE SECTION B-B'**
N.T.S.

BRIDGE DETAIL NOTES:

1. DESIGN AND MAINTAIN BRIDGE TO WITHSTAND AND PASS THE HIGHEST ANTICIPATED FLOW THAT MAY OCCUR WHILE THE BRIDGE IS IN PLACE. CULVERTS MUST BE ALIGNED TO PREVENT BANK EROSION OR STREAM BED SCOUR.
2. INSPECT BRIDGE ELEVATION SO BRIDGE REMAINS SUPPORTED ABOVE HIGH BANK, AND DOES NOT SINK INTO BANK. ADDITIONAL SUPPORT MUST BE ADDED ON TOP OF BANK AND UNDER SPAN IF INITIAL SUPPORT STARTS TO SETTLE. ALL BRIDGES MUST BE ANCHORED FOR STABILITY.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. SILT FENCE OR SANDBAGS MAY BE USED INTERCHANGEABLY.
4. BRIDGE DECKS WILL BE KEPT FREE OF SOIL.
5. EQUIPMENT BRIDGES WILL CONSIST OF ONE OF THE FOLLOWING: CLEAN ROCK PLACED OVER FLUME PIPES; PREFABRICATED CONSTRUCTION MATS; OR FLEX-FLOAT OR OTHER TEMPORARY BRIDGING, SUCH AS BAILEY BRIDGES.
6. REMOVE EQUIPMENT BRIDGES AND ASSOCIATED MATERIAL AS SOON AS POSSIBLE. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.
7. DISPOSE OF ANY ROCK AS DIRECTED.

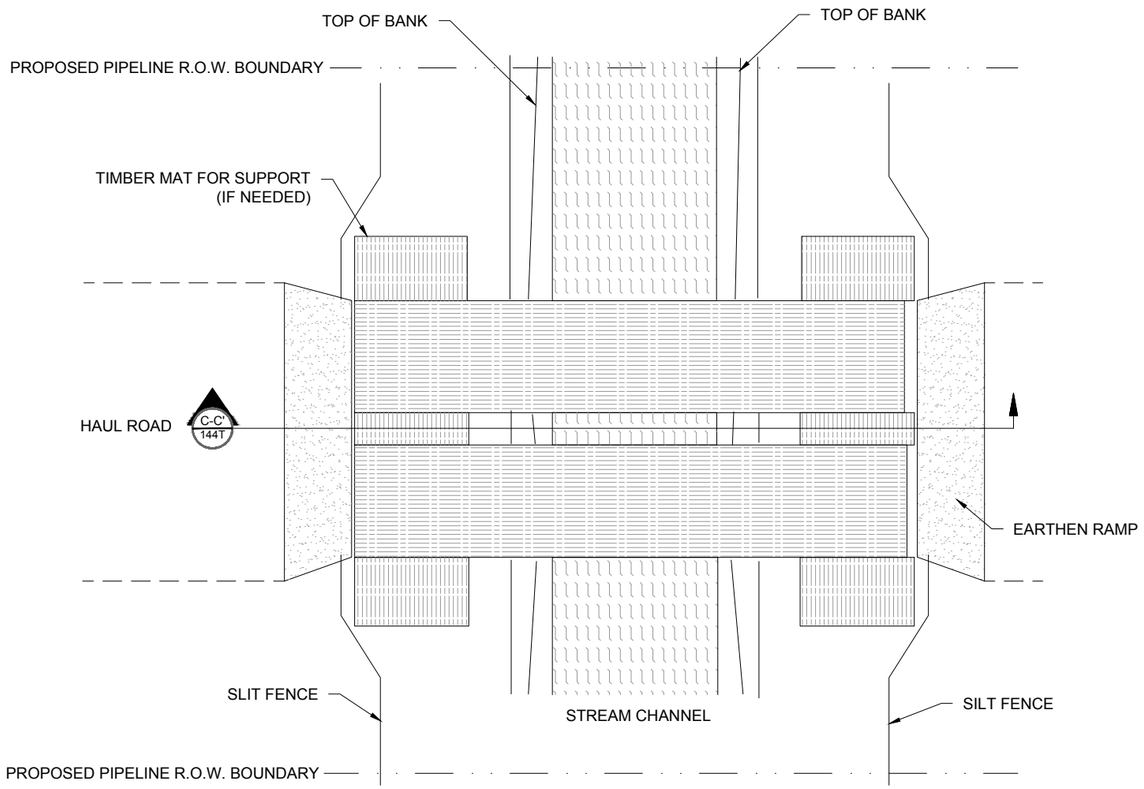
Associated Engineering Drawings
P01C-TYBD-01.DWG, P01C-TYBD-02.DWG, P01C-TYBD-03.DWG
(BAKER) OCT 2013

DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

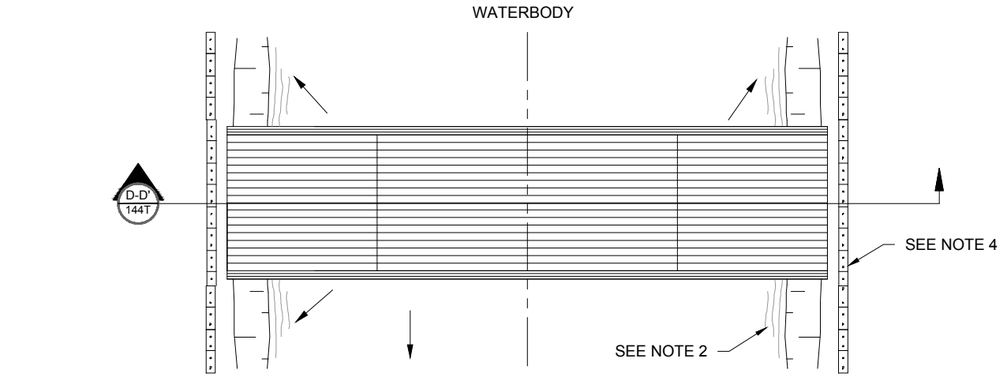
DRAWING TITLE:
TYPICAL FLEX-FLOAT AND ROCK FLUME BRIDGE DETAIL

SCALE: AS SHOWN
DATE: 9/30/2015
FIGURE NO. **PA-143T**
FILE NO. **POA-1995-120**

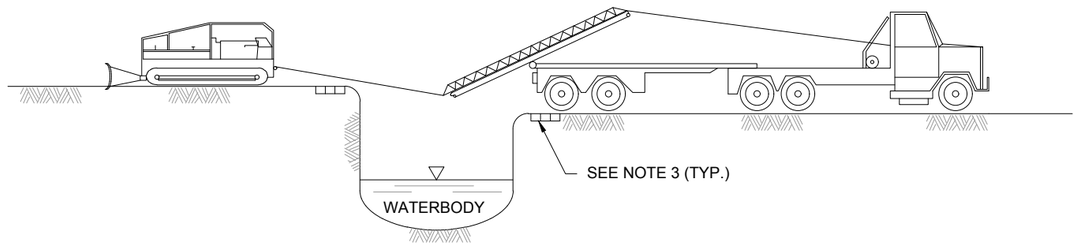
PATH: C:\Users\mlenglewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Bridges.dwg



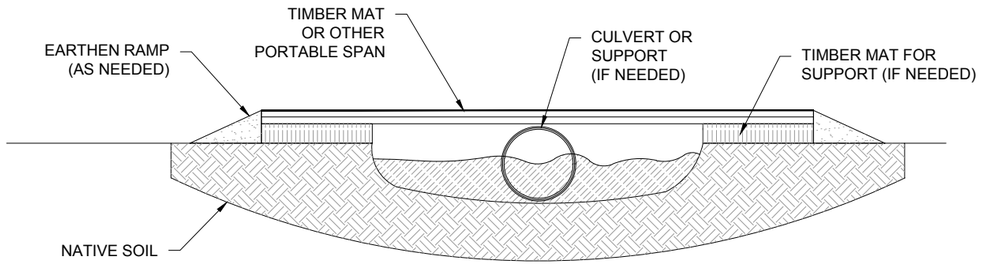
TYPICAL TIMBER MAT BRIDGE PLAN
N.T.S.



TYPICAL PORTABLE WATERBODY BRIDGE PLAN
N.T.S.



D-D' 144T TYPICAL PORTABLE WATERBODY BRIDGE SECTION D-D'
N.T.S.



C-C' 144T TYPICAL TIMBER MAT BRIDGE SECTION C-C'
N.T.S.

BRIDGE DETAIL NOTES:

1. DESIGN AND MAINTAIN BRIDGE TO WITHSTAND AND PASS THE HIGHEST ANTICIPATED FLOW THAT MAY OCCUR WHILE THE BRIDGE IS IN PLACE. CULVERTS MUST BE ALIGNED TO PREVENT BANK EROSION OR STREAM BED SCOUR.
2. INSPECT BRIDGE ELEVATION SO BRIDGE REMAINS SUPPORTED ABOVE HIGH BANK, AND DOES NOT SINK INTO BANK. ADDITIONAL SUPPORT MUST BE ADDED ON TOP OF BANK AND UNDER SPAN IF INITIAL SUPPORT STARTS TO SETTLE. ALL BRIDGES MUST BE ANCHORED FOR STABILITY.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. SILT FENCE OR SANDBAGS MAY BE USED INTERCHANGEABLY.
4. BRIDGE DECKS WILL BE KEPT FREE OF SOIL.
5. EQUIPMENT BRIDGES WILL CONSIST OF ONE OF THE FOLLOWING: CLEAN ROCK PLACED OVER FLUME PIPES; PREFABRICATED CONSTRUCTION MATS; OR FLEX-FLOAT OR OTHER TEMPORARY BRIDGING, SUCH AS BAILEY BRIDGES.
6. REMOVE EQUIPMENT BRIDGES AND ASSOCIATED MATERIAL AS SOON AS POSSIBLE. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.
7. DISPOSE OF ANY ROCK AS DIRECTED.

Associated Engineering Drawings
P01C-TYBD-01.DWG, P01C-TYBD-04.DWG, P01C-TYBD-05.DWG
(BAKER) OCT 2013

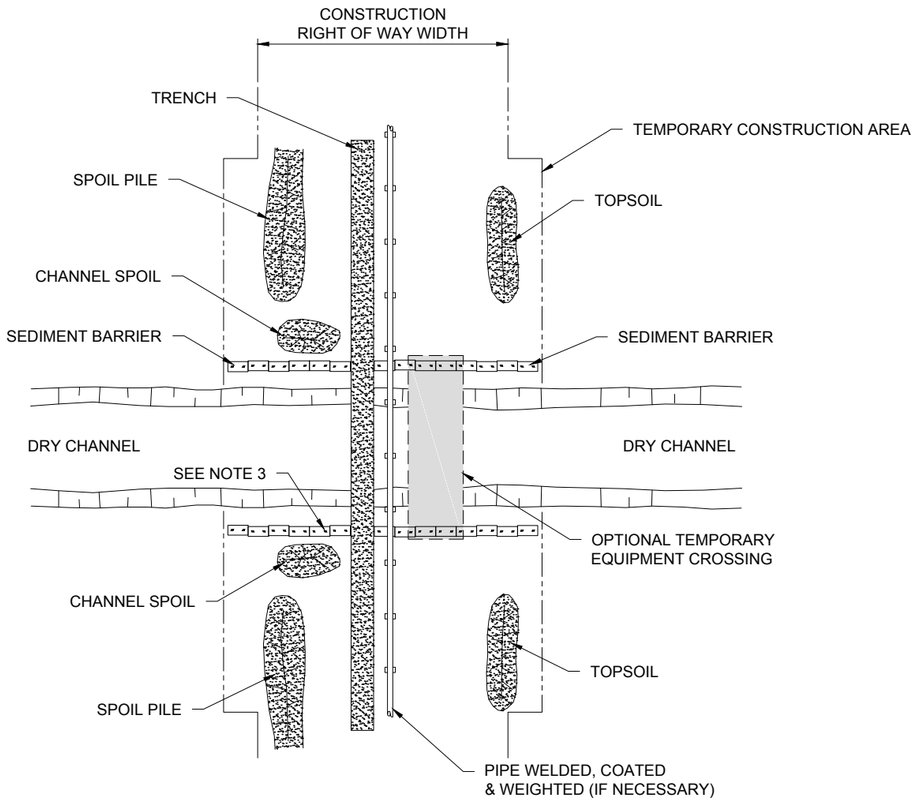
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

SCALE: AS SHOWN
DATE: 10/19/2015

DRAWING TITLE:
TYPICAL TIMBER MAT AND PORTABLE WATERBODY BRIDGE DETAIL

FIGURE NO. **PA-144T**
FILE NO. **POA-1995-120**

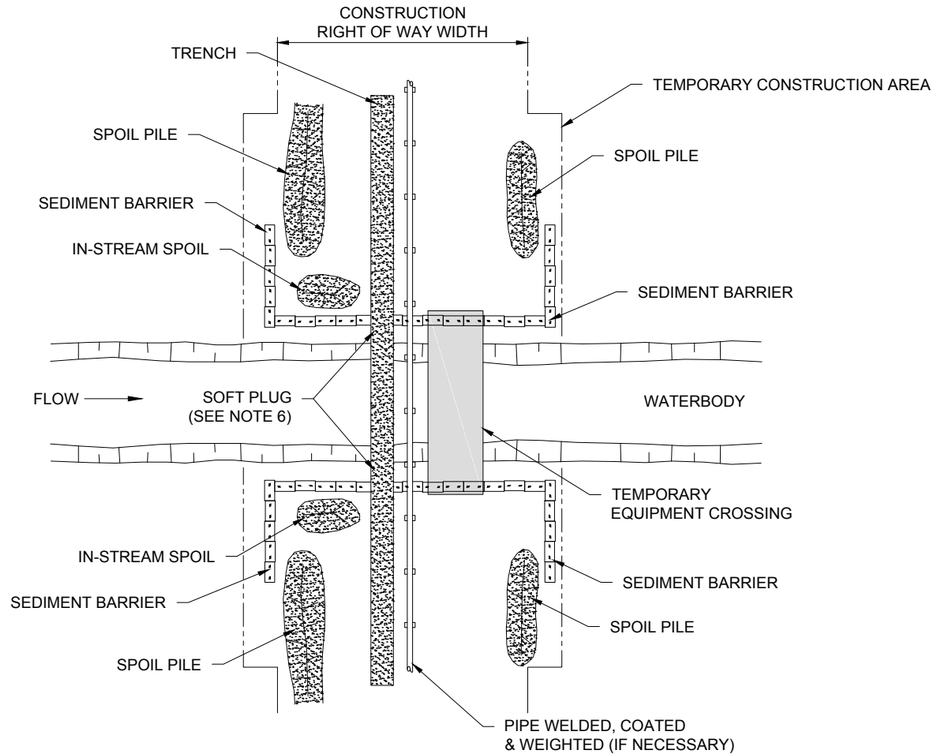
PATH: C:\Users\mlengiewicz\Dropbox\Donlin\181202_010_mapping_404_support\revision_a\PA_Bridges.dwg



A 145T TYPICAL NON-FLOWING WATERBODY CROSSING OPEN-CUT
N.T.S.

NOTES:

1. METHOD APPLIES TO CROSSING WHERE NO FLOWING WATER IS PRESENT AT THE TIME OF CROSSING.
2. CONTRACTOR MAY "MAINLINE THROUGH" THE CROSSING OR UP TO BOTH SIDES OF THE CROSSING; STRING, WELD, COAT, AND WEIGHT (IF NECESSARY), USING THE MAINLINE CREW WITH THE PIPE SKIDDED OVER THE CROSSING.
3. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAIN UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS.
4. TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL.
5. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
6. BACKFILL WITH NATIVE MATERIAL.
7. RESTORE CROSSING CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
8. RESTORE CROSSING BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.



B 145T TYPICAL FLOWING WATERBODY CROSSING OPEN-CUT
N.T.S.

NOTES:

1. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
2. COMPLETE ALL IN-STREAM ACTIVITIES WITHIN 24 HOURS IF FEASIBLE.
3. NO REFUELING OF MOBILE EQUIPMENT WITHIN 200 FEET OF WATERBODY. REFUEL STATIONARY EQUIPMENT AS PER THE HAZARDOUS MATERIALS MANAGEMENT AND SPCCC PLAN.
4. CONSTRUCT SEDIMENT BARRIERS ALONG THE SIDES OF STOCKPILES AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
5. IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL AND WITHIN THE CONSTRUCTION R.O.W.
6. INSTALL SOFT PLUGS AT THE EDGE OF STREAM BANKS UNTIL JUST PRIOR TO PIPE INSTALLATION TO CONTROL WATER FLOW & TRENCH SLOUGHING, IF NEEDED.
7. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
8. BACKFILL WITH NATIVE MATERIAL.
9. RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
10. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.
11. ALL DIMENSIONS INDICATED SHALL BE DETERMINED BY ACTUAL CONSTRUCTION CONDITIONS.
12. FOLLOW REQUIREMENTS FROM THE ARMY CORPS OF ENGINEERS.
13. DRAWING DEPICTED IS SUPERSEDED BY WRITTEN STANDARD, SCOPE OF WORK OR LINE LIST.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYWC-01.DWG, P01C-TYWC-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL WATERBODY CROSSING DETAIL**
	SCALE: AS SHOWN — DATE: 10/19/2015	FIGURE NO. **PA-145T** — FILE NO. **POA-1995-120**

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