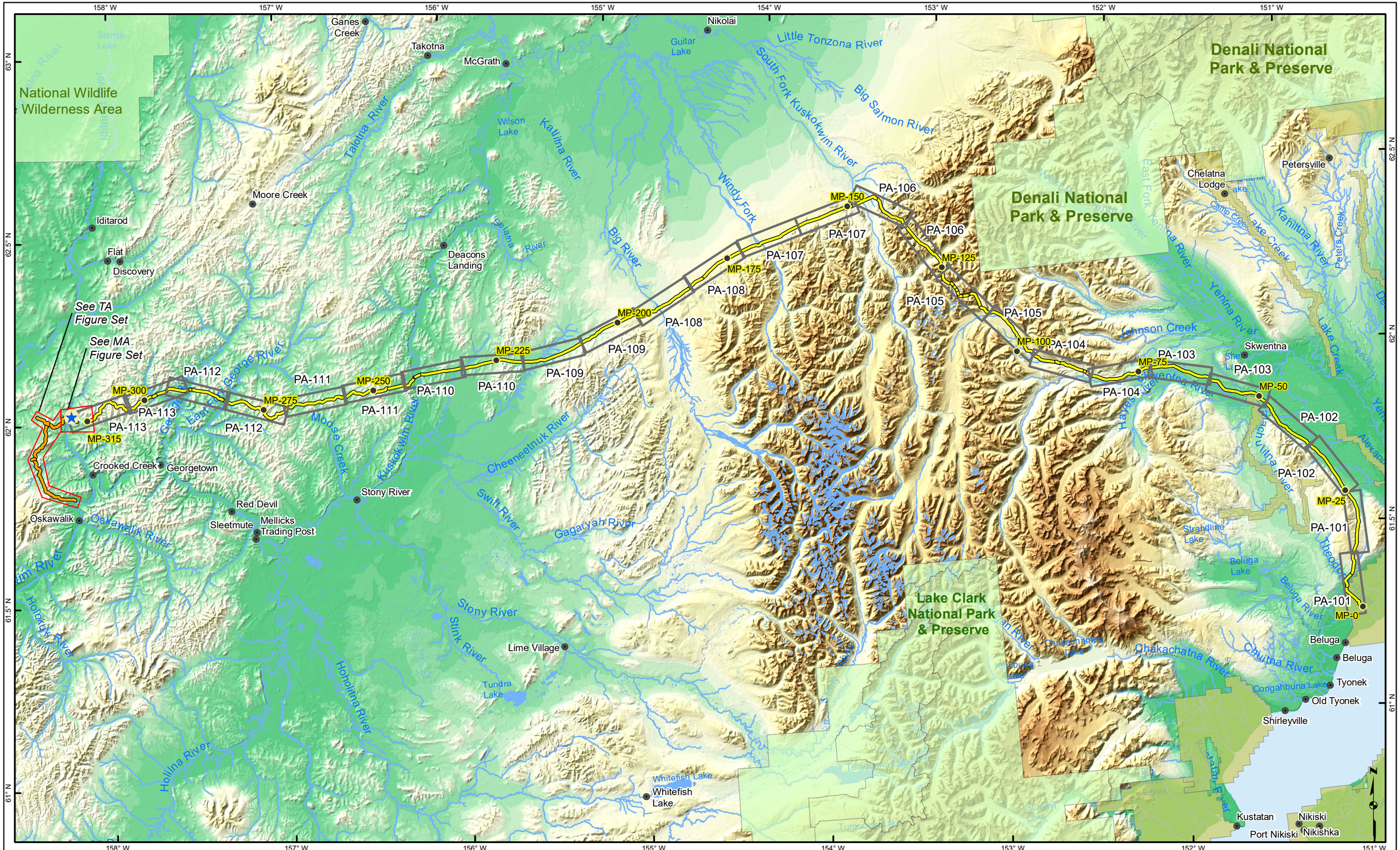
Engineering Drawings: Pipeline Area



- USA Populated Places
- Proposed Mine Area (MA)
- Pipeline Milepost (MP)
- Proposed Natural Gas Pipeline
- Proposed Jungjuk Road
- Federal Administrative Boundary
- State Administrative Boundary
- River/Stream

Associated Engineering Drawings

0 8 16 Miles

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

NAD 1983 UTM Zone 4N

SCALE: 1 inch = 16 miles

DATE: 12/22/2017

DRAWING TITLE: **PLAN VIEW PIPELINE INDEX MAP**

FIGURE NO. **PA-100G**

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

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_100G_Index_ABR_20171006.mxd

Basemap Source: USGS, NGA, NASA, CGIAR,N Robinson,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA and the GIS User Community; Sources: Esri, USGS, NOAA

PRELIMINARY PLAN NOT FOR CONSTRUCTION

61.42° N | 61.41° N | 61.4° N | 61.39° N | 61.38° N | 61.37° N | 61.36° N | 61.35° N | 61.34° N | 61.33° N | 61.32° N | 61.31° N | 61.3° N | 61.29° N | 61.28° N | 61.27° N | 61.26° N

150.93° W | 150.96° W | 150.99° W

MP-12
MP-11
MP-10
MP-9
MP-8
MP-7
MP-6
MP-5
MP-4
MP-3
MP-2
MP-1
MP-0

316-PA
Pipeline MS-02

315-PA
Water Extraction Site
Access WES-0030

317-PA
Shoofly Road-0010

314-PA
Water Extraction Site
Access WES-0031

312-PA
PSY-01

311-PA
Pipeline MS-01

622-PA
Metering Station

309-PA
Laydown
(Compressor Station)

Lewis River

Theodore River

Wolverine Creek

S015N009W
S014N009W

S014N009W
S013N009W

S015N009W
S015N010W

S014N009W
S014N010W

DOT Public
Easement
400' Wide

Cook Inlet
Energy, LLC

Hilcorp Alaska, LLC.,
State of Alaska
Oil & Gas Leases

Hilcorp
Alaska,
LLC

Charles Poulson,
Last Chance 8

150.84° W | 150.87° W | 150.9° W

MP-24
MP-23
MP-22
MP-21
MP-20
MP-19
MP-18
MP-17
MP-16
MP-15
MP-14
MP-13

325-PA
Water Extraction
Site Access WES-0080

326-PA
Pipe Storage Yard
PSY-04-Alexander Creek

327-PA
Water Extraction Site
Access WES-0085

324-PA
Pipeline MS-04

323-PA
Shoofly
Road-0040

328-PA
Main Gas Line

320-PA
Pipe Storage Yard

321-PA
Pipeline MS-03

322-PA
Shoofly
Road-0030

318-PA
PSY-02 Susitna River
Frontal Cook Inlet

31MP-14
Shoofly
Road-0020

State-Owned, Tentatively
Approved (TA) or
Patented Lands

State-Owned, Tentatively
Approved (TA) or
Patented Lands

State-Owned, Tentatively
Approved (TA) or
Patented Lands

Wolverine Creek

Lewis River

Wolverine Creek

S017N009W
S016N009W

S016N009W
S015N009W

61.58° N | 61.56° N | 61.54° N | 61.52° N | 61.5° N | 61.48° N | 61.46° N | 61.44° N | 61.42° N

- Gas Pipeline Milepost
- Proposed Natural Gas Pipeline
- Proposed HDD Natural Gas Pipeline
- Cut/Fill Limit
- Work Area/Vegetation Clearing
- Parcel
- Stream Flow Direction
- 100' Contour

Wetland Status
- WOUS
- Upland
- Wetland
- River/Stream
- Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

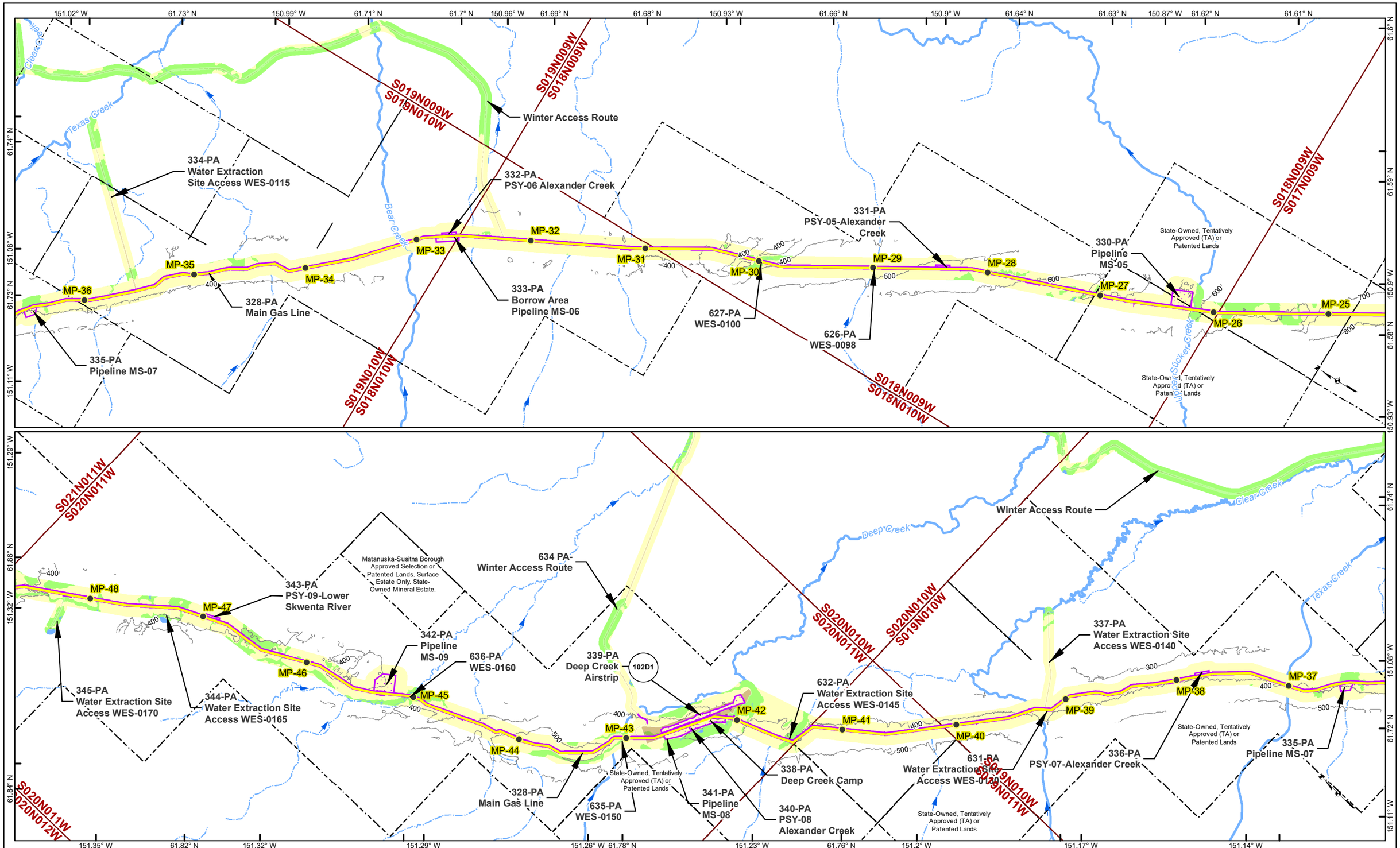
FIGURE NO.
PA-101A

FILE NO.
POA-1995-120

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

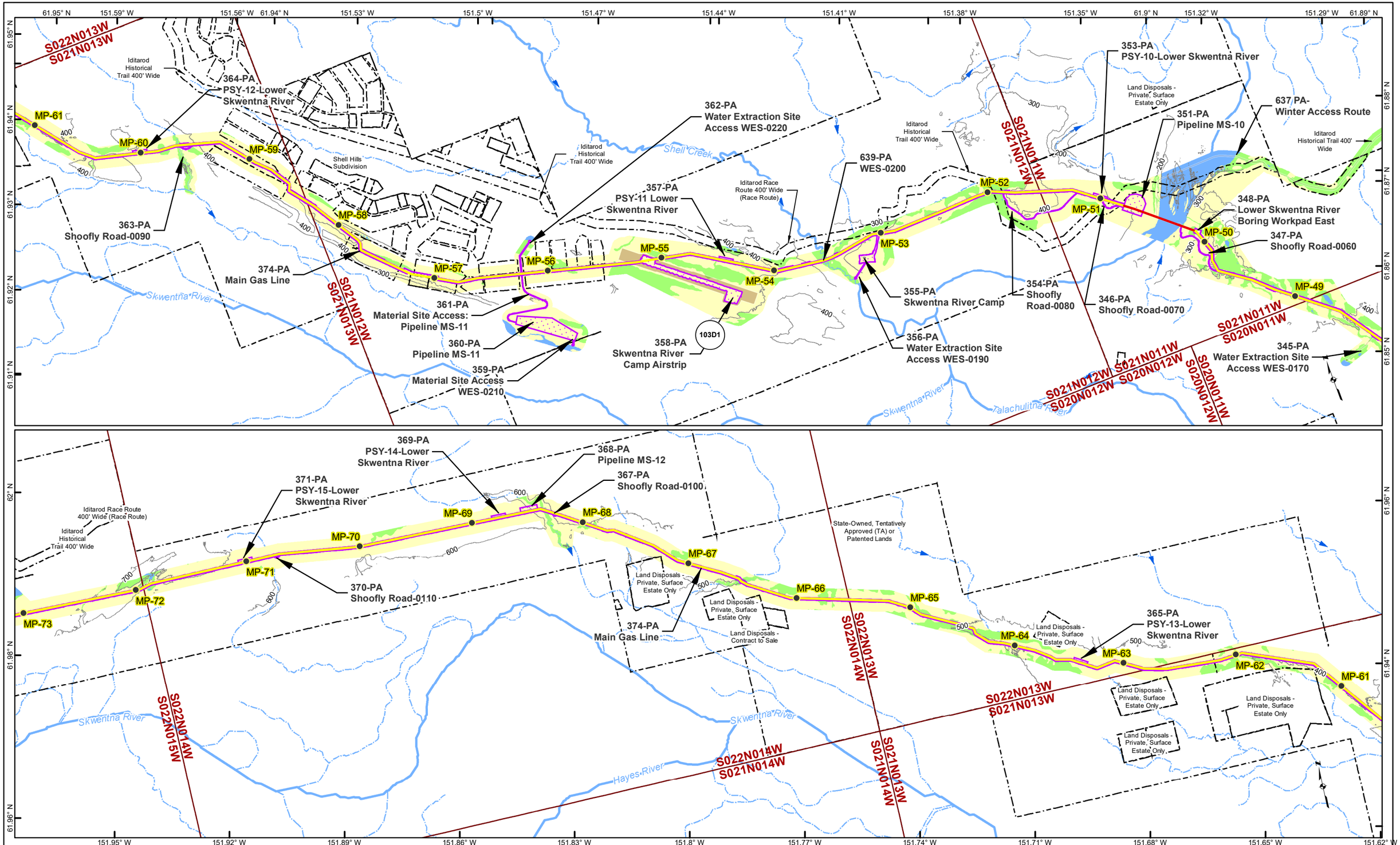
FIGURE NO.: **PA-102A**

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

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

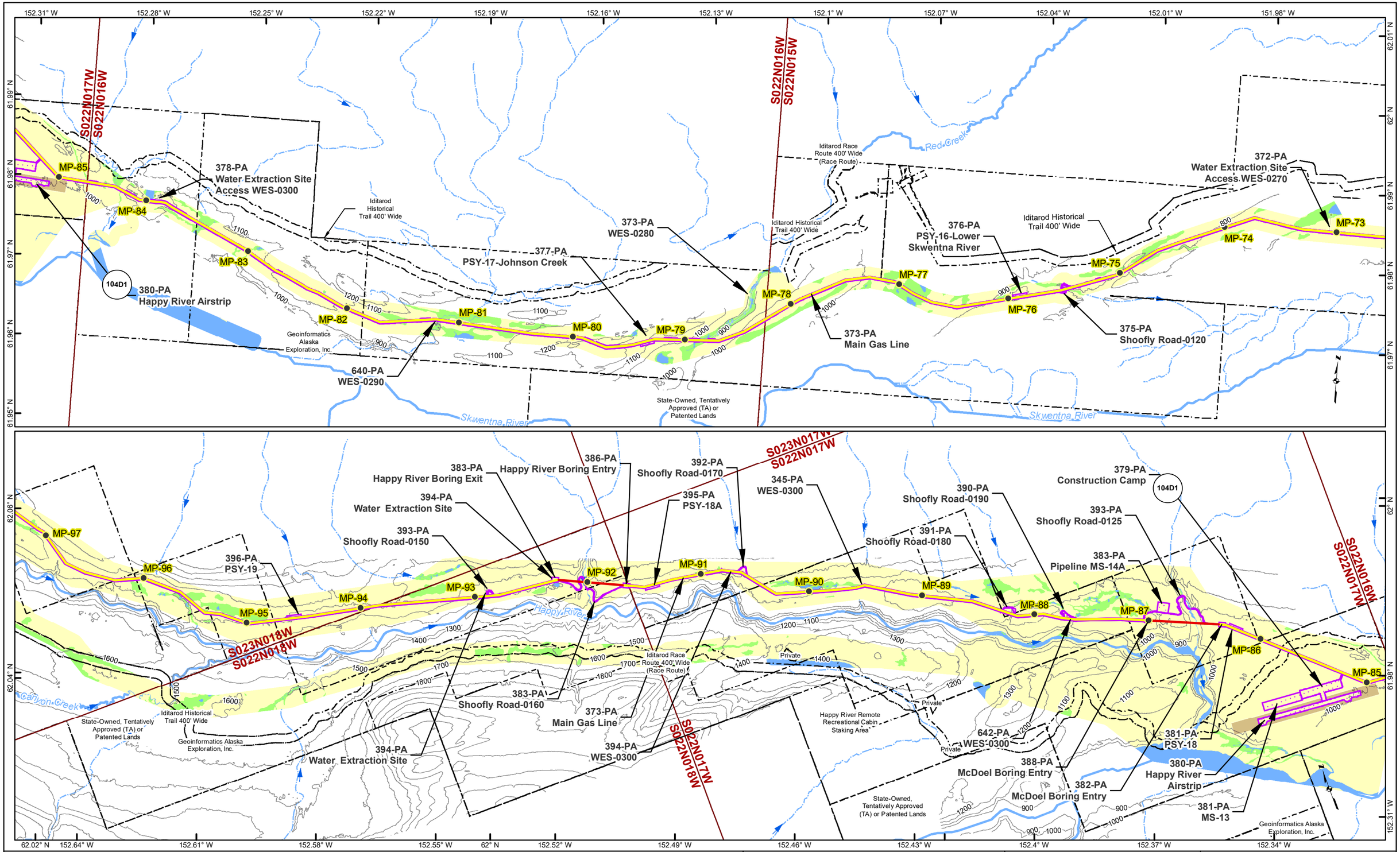
DRAWING TITLE:
PLAN VIEW PIPELINE AREA

FIGURE NO.
PA-103A

FILE NO.
POA-1995-120

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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

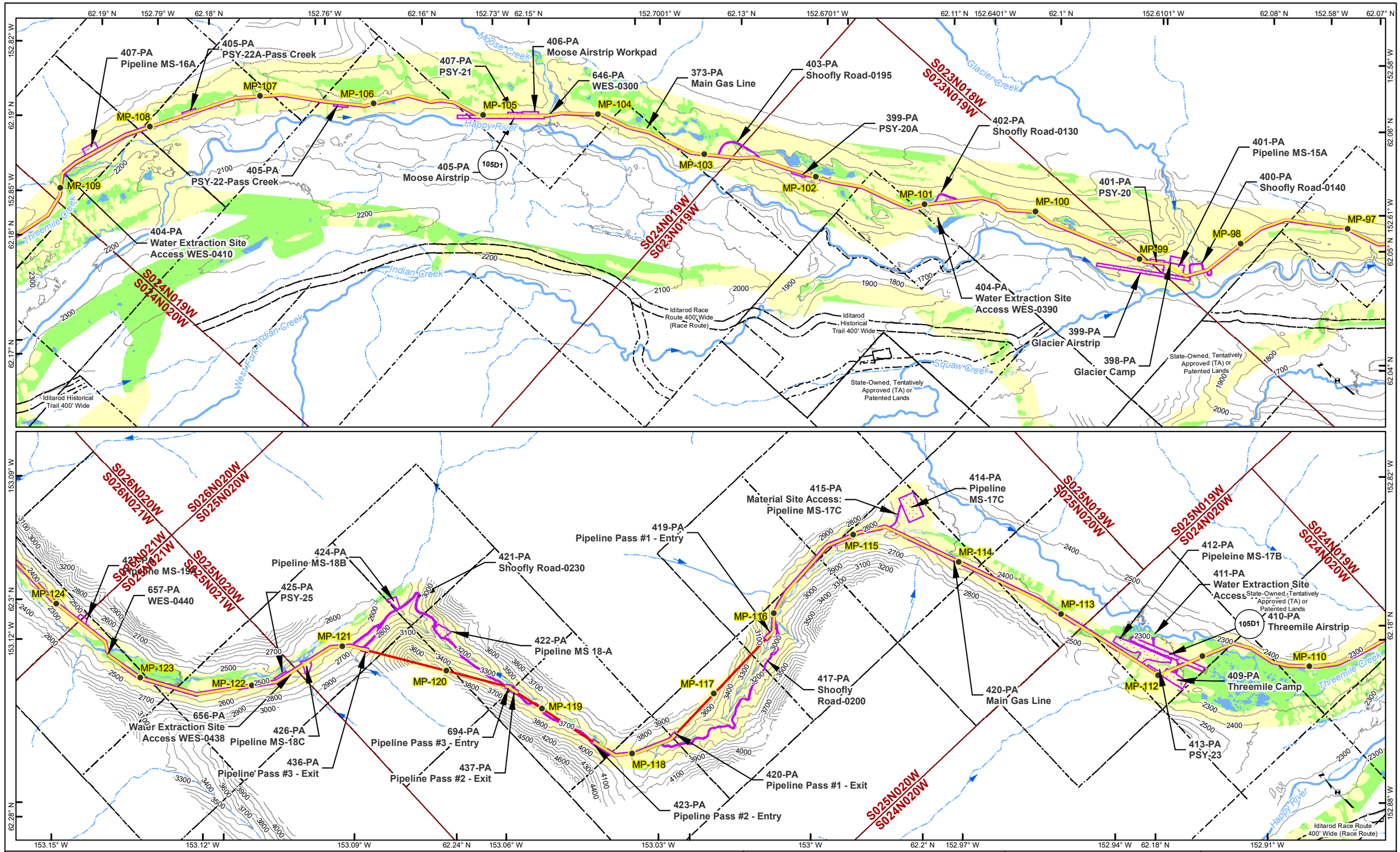
NAD 1983 UTM Zone 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

DRAWING TITLE:
PLAN VIEW PIPELINE AREA

FIGURE NO.: **PA-104A**
FILE NO.: **POA-1995-120**

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

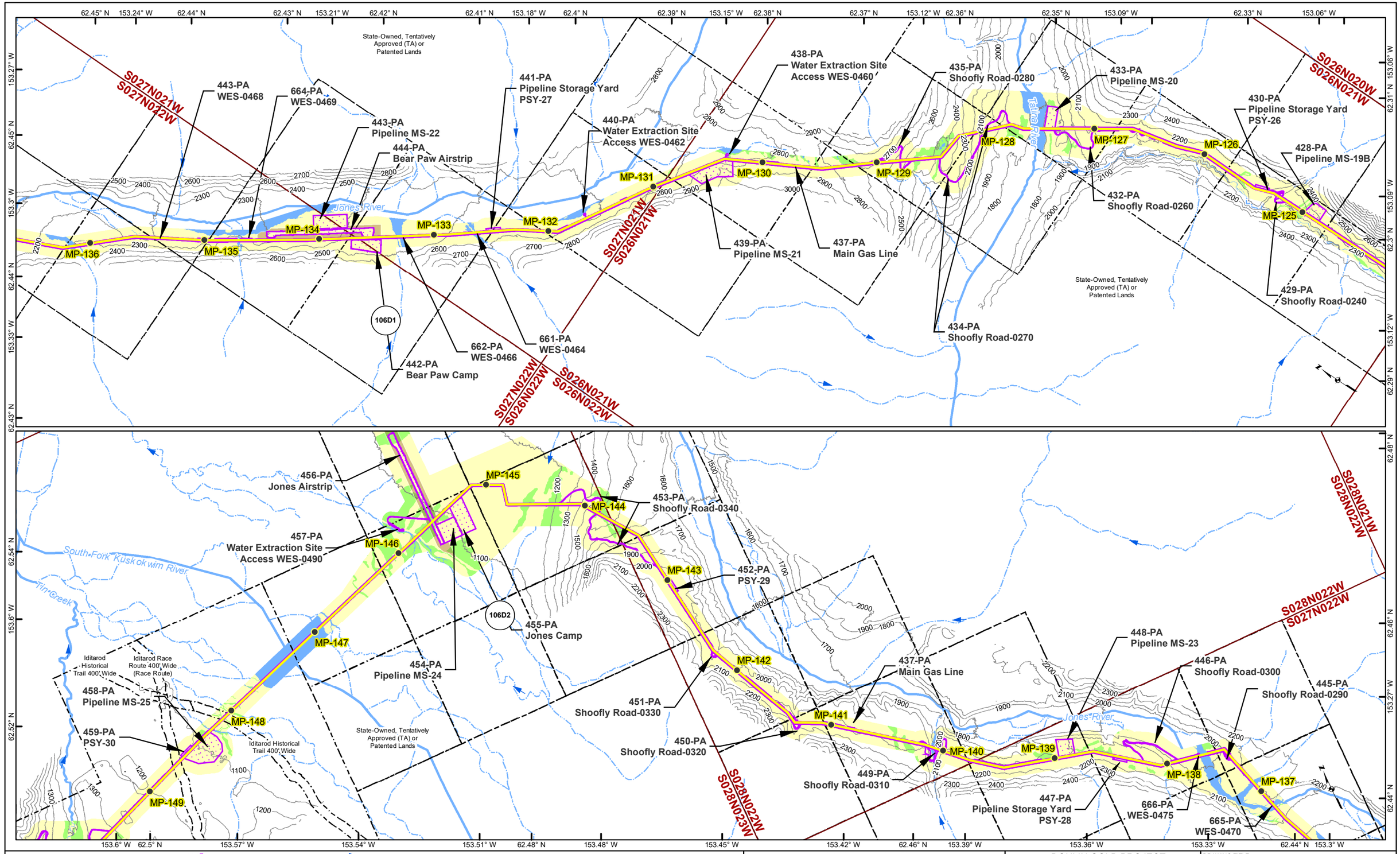
DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

FIGURE NO.: **PA-105A**

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

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour

Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

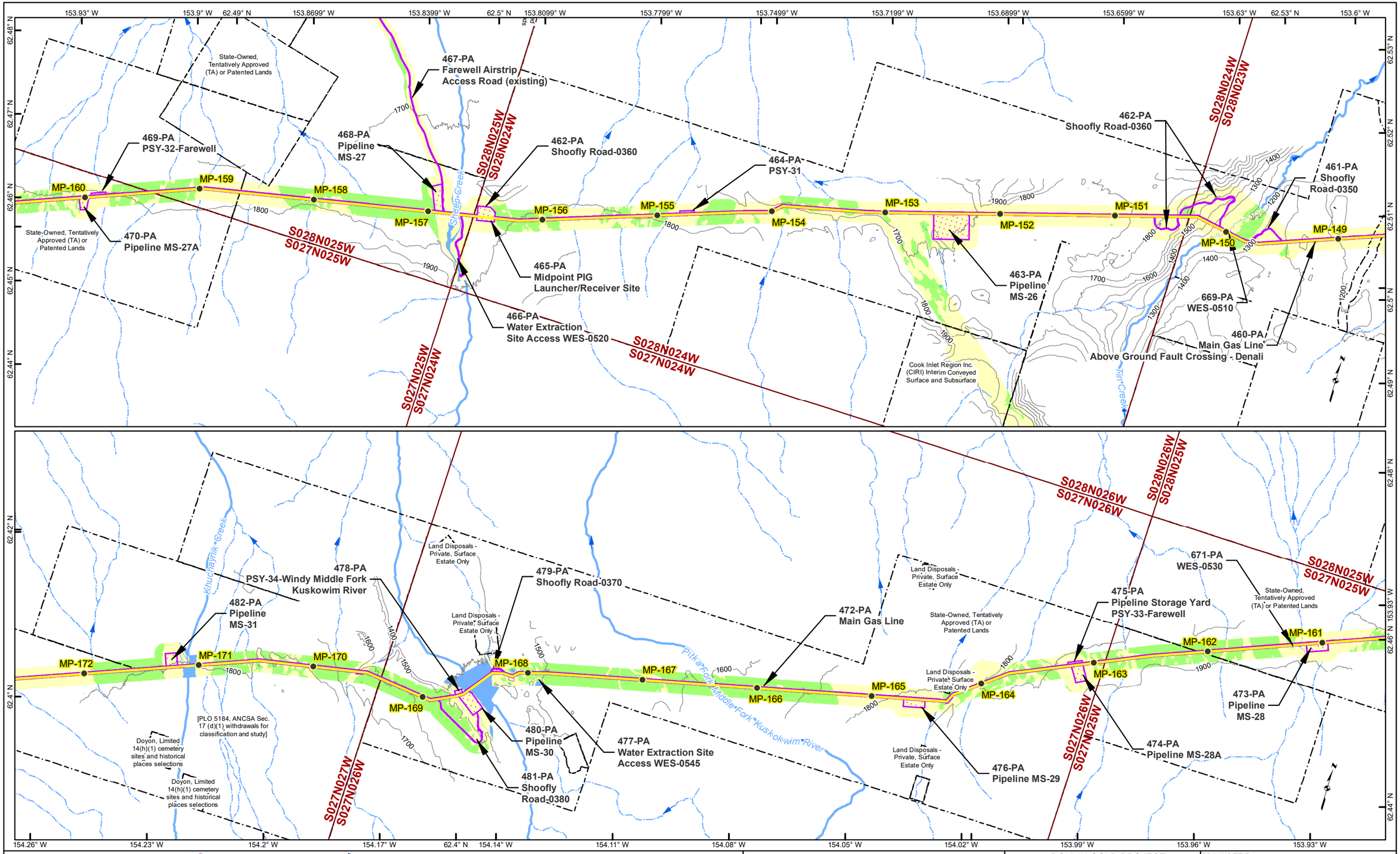
DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO. **PA-106A**
FILE NO. **POA-1995-120**

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

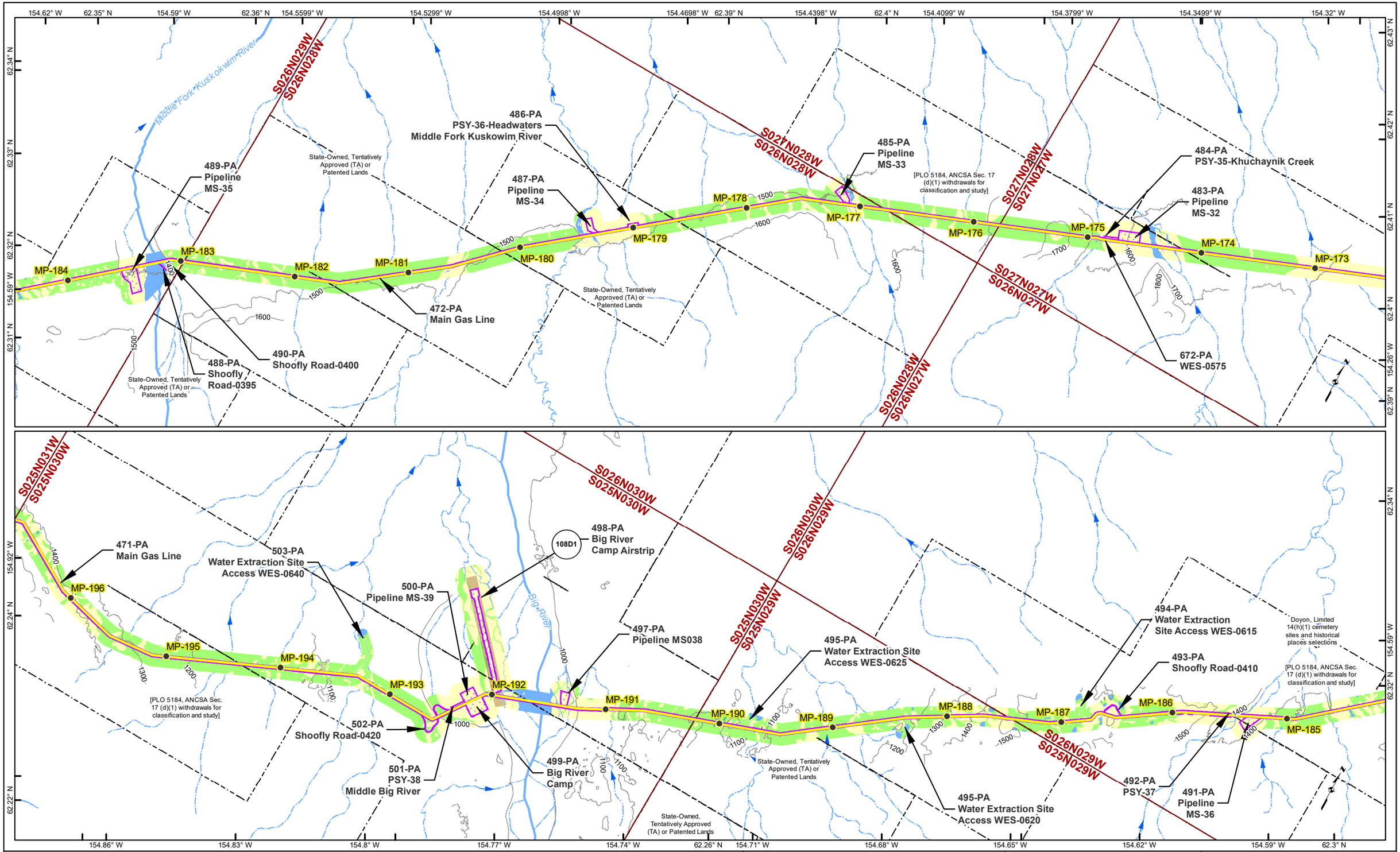
FIGURE NO.: **PA-107A**

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

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO.: **PA-108A**
FILE NO.: **POA-1995-120**

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION

155.25° W | 155.22° W | 62.21° N | 155.1899° W | 155.1599° W | 155.1299° W | 62.23° N | 155.0999° W | 155.0699° W | 155.0399° W | 62.25° N | 155.0099° W | 154.9799° W | 154.95° W | 62.27° N

62.19° N | 62.18° N | 62.17° N | 62.16° N | 155.22° W | 62.27° N | 62.26° N | 62.25° N | 62.24° N | 62.23° N

S025N032W S024N032W
S025N032W S025N031W
S024N033W S024N032W
S025N031W S024N032W
S024N032W S024N031W
S025N031W S024N031W
S025N031W S025N030W

MP-208 MP-207 MP-206 MP-205 MP-204 MP-203 MP-202 MP-201 MP-200 MP-199 MP-198 MP-197

900 900 1000 1000 1100 1200 1300 1400 1500 1600 1500 1400

State-Owned, Tentatively Approved (TA) or Patented Lands

508-PA
Water Extraction Site
Access WES-0660

507-PA
Pipeline MS-40

505-PA
Shoofly
Road-0430

506-PA
Headwaters
Tatlawiksuk River

509-PA
Headwaters
Tatlawiksuk River

517-PA
Main Gas Line

510-PA
Pipeline
MS-41

670-PA
WES-0670

504-PA
Water Extraction Site
Access WES-0650

517-PA
Water Extraction Site
Access WES-0650

62.16° N | 62.14° N | 62.12° N | 155.58° W | 155.55° W | 155.52° W | 155.49° W | 155.46° W | 155.43° W | 155.4° W | 155.37° W | 155.34° W | 155.31° W | 155.28° W | 155.25° W | 62.18° N | 62.16° N

S024N035W S024N034W
S024N034W S024N033W
S024N034W S023N034W
S024N033W S024N032W

MP-220 MP-219 MP-218 MP-217 MP-216 MP-215 MP-214 MP-213 MP-212 MP-211 MP-210 MP-209

600 700 800 800 900

678-PA
WES-0715

677-PA
WES-0710

Tatlawiksuk River

514-PA
PSY-42-Headwaters
Tatlawiksuk River

515-PA
Pipeline
MS-43

512-PA
Material Site Access
Pipeline MS-42

512-PA
Pipeline
MS-42

State-Owned, Tentatively Approved (TA) or Patented Lands

State-Owned, Tentatively Approved (TA) or Patented Lands

511-PA
PSY-41-Headwaters
Tatlawiksuk River

517-PA
Main Gas Line

Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

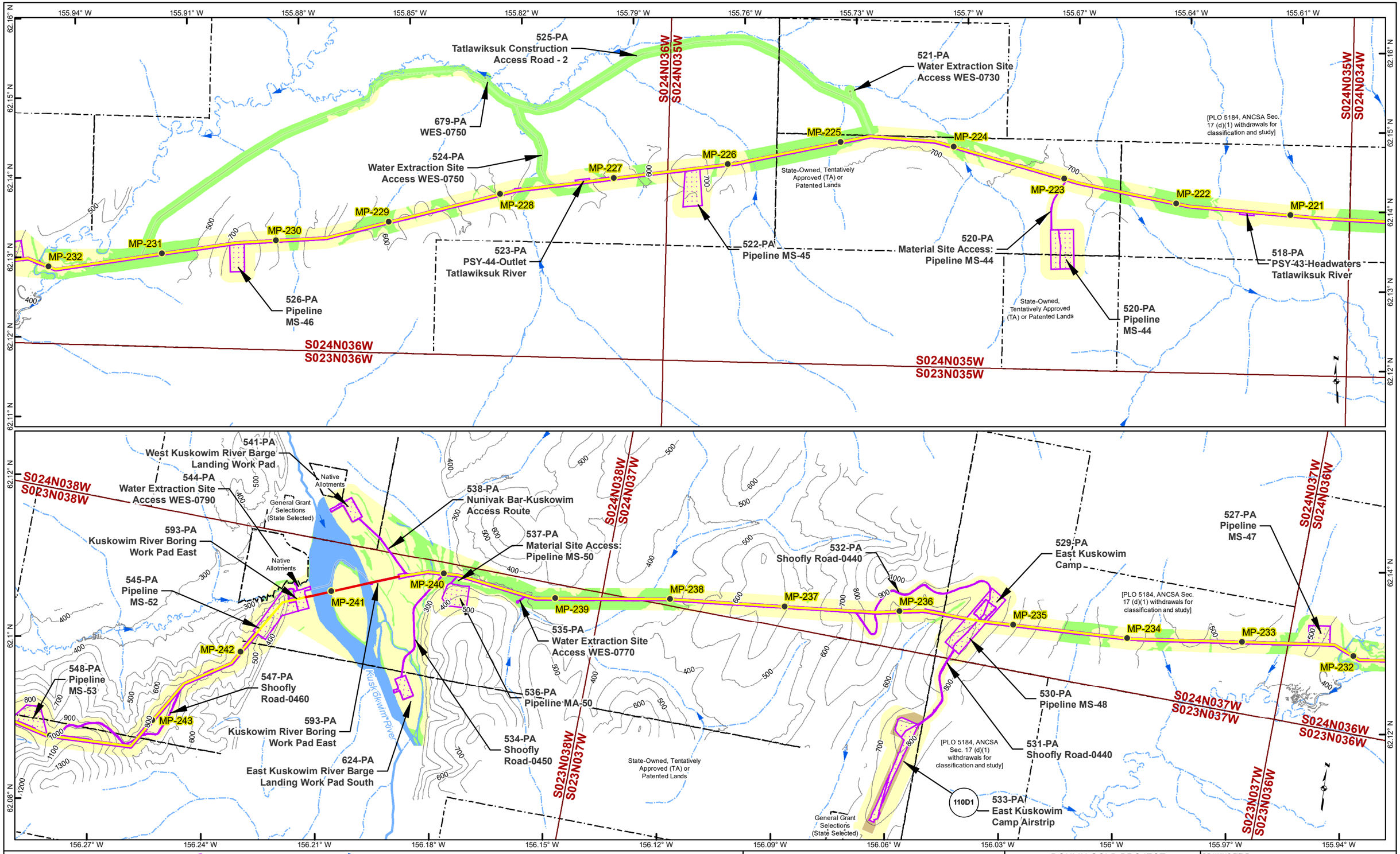
FIGURE NO. **PA-109A**

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

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

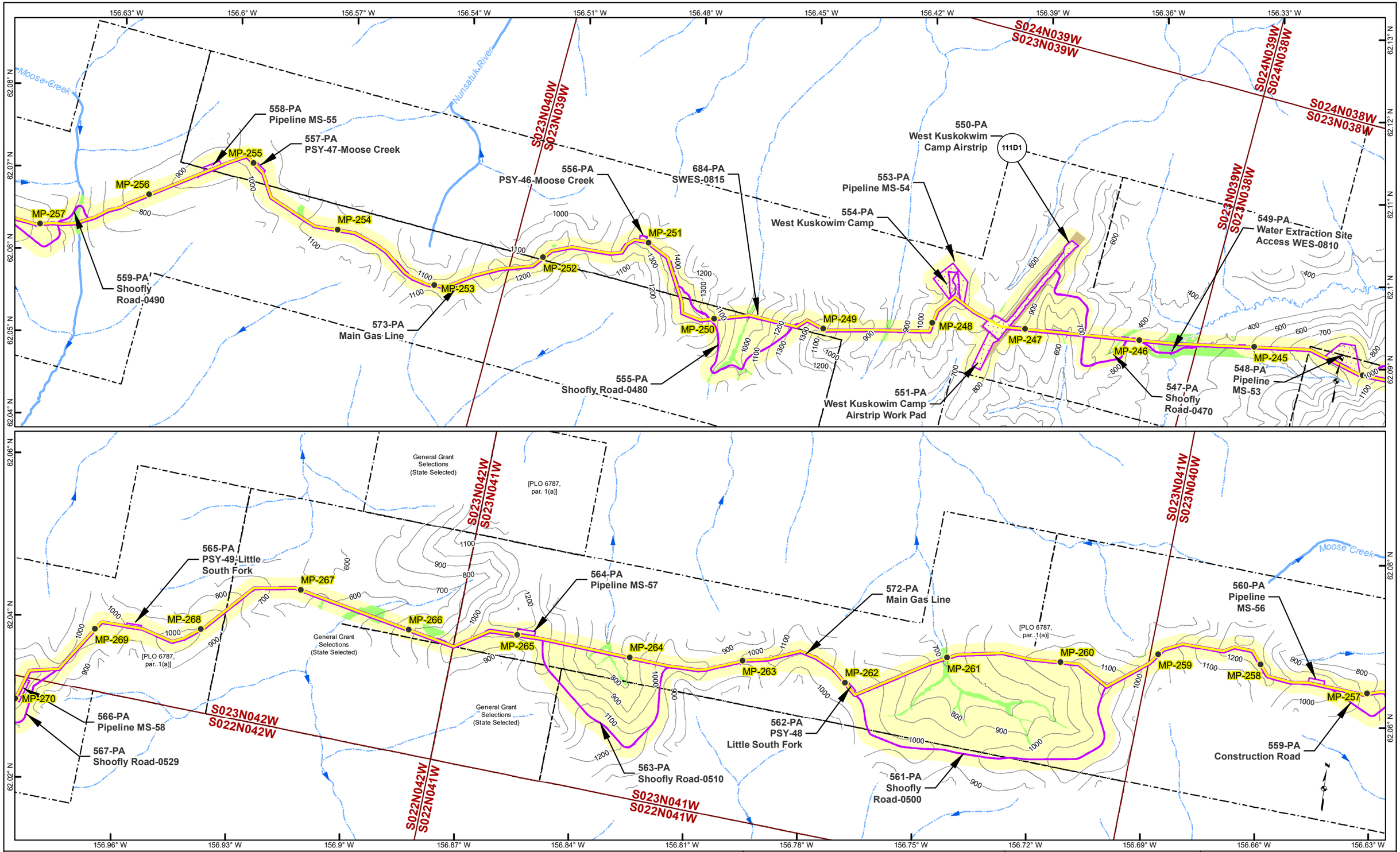
DRAWING TITLE:
PLAN VIEW PIPELINE AREA

FIGURE NO. PA-110A
FILE NO. POA-1995-120

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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 5N

SCALE: 1 inch = 4,000 feet

DATE: 12/22/2017

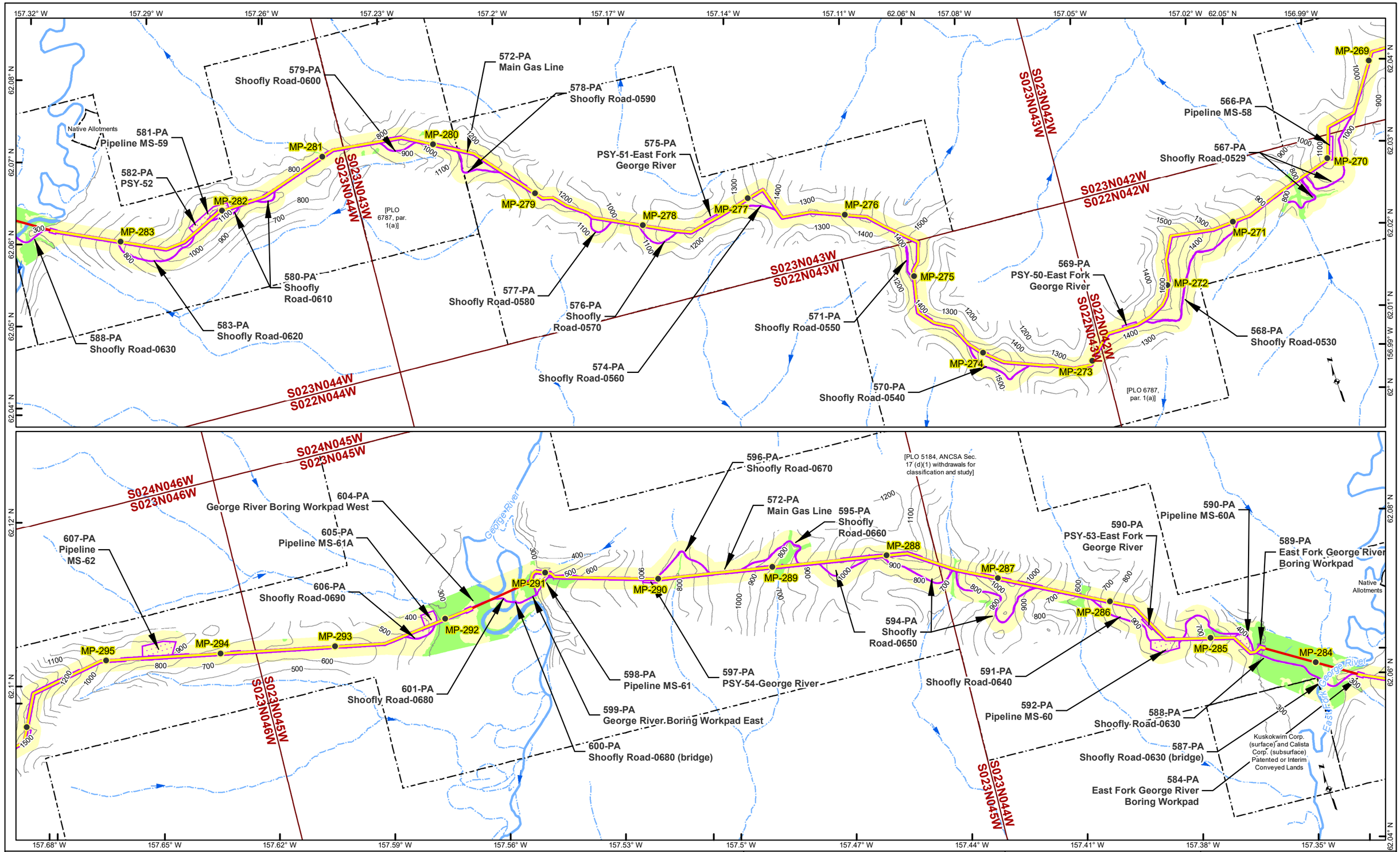
DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

FIGURE NO.
PA-111A

FILE NO.
POA-1995-120

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd

PRELIMINARY PLAN NOT FOR CONSTRUCTION



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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

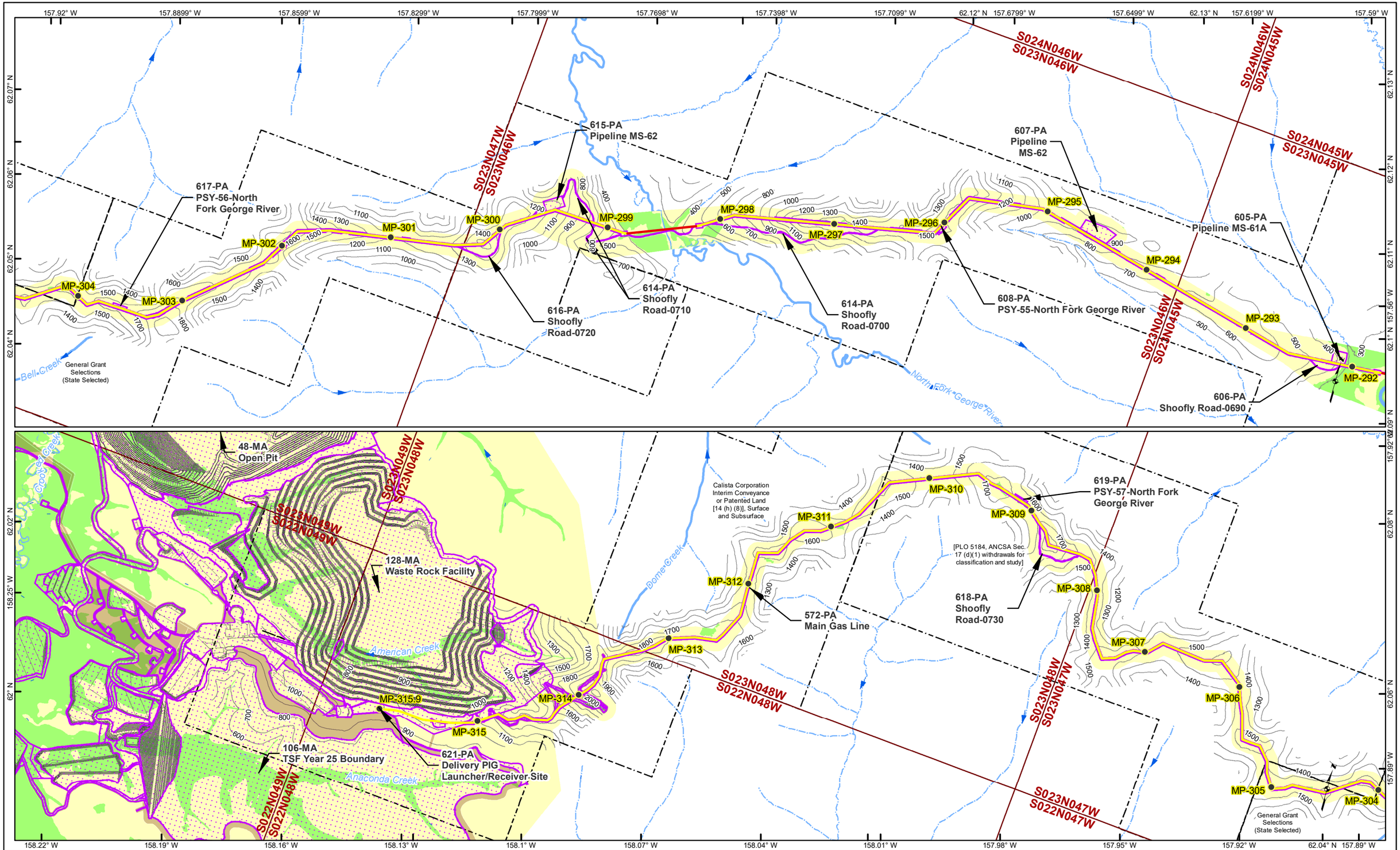
NAD 1983 UTM Zone 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

DRAWING TITLE:
PLAN VIEW
PIPELINE AREA

FIGURE NO.: **PA-112A**
FILE NO.: **POA-1995-120**

PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd



Gas Pipeline Milepost
Proposed Natural Gas Pipeline
Proposed HDD Natural Gas Pipeline
Cut/Fill Limit
Work Area/Vegetation
Parcel
Stream Flow Direction
100' Contour
Wetland Status
WOUS
Upland
Wetland
River/Stream
Unnamed River/Stream

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

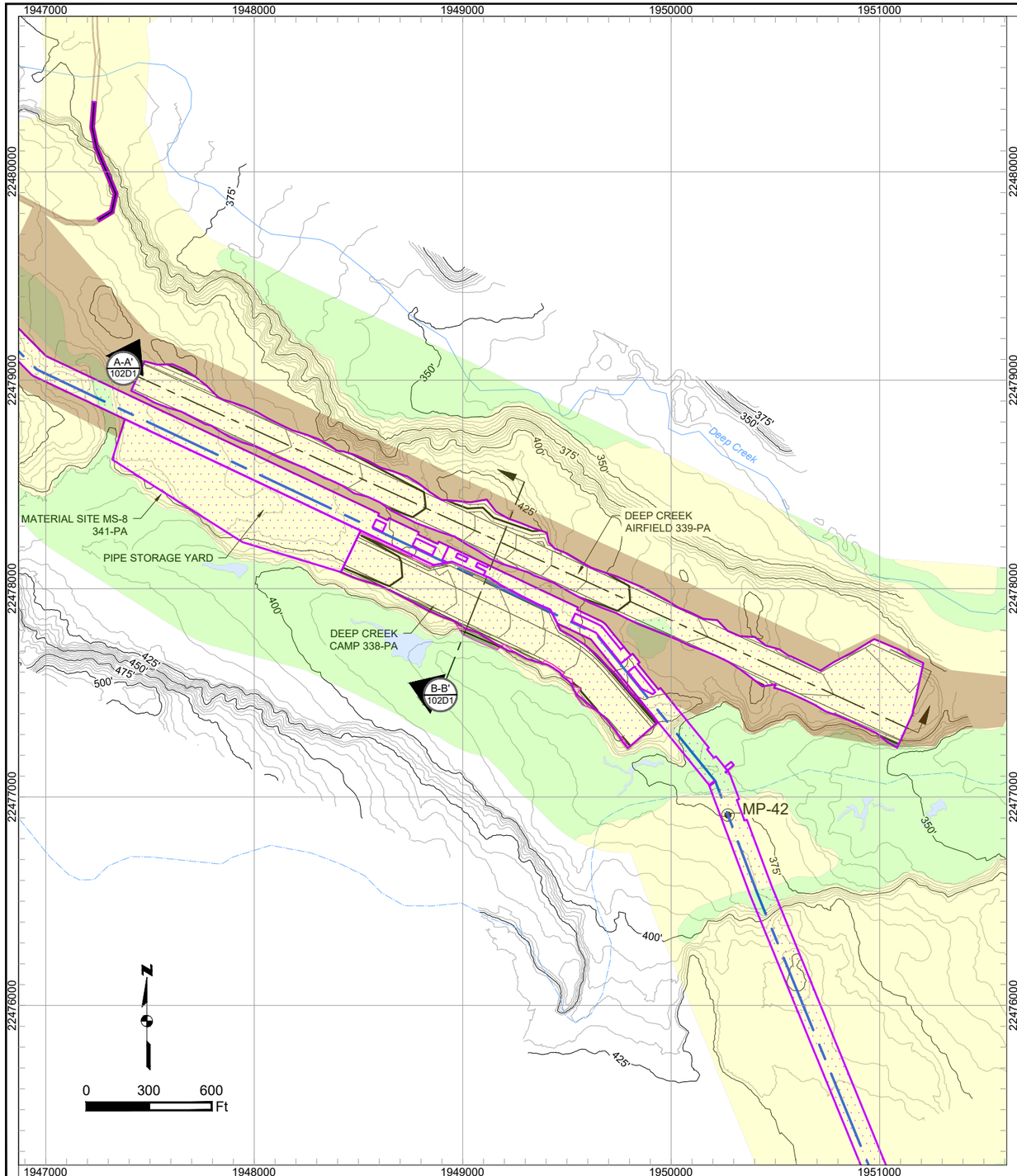
NAD 1983 UTM Zone 5N

SCALE: 1 inch = 4,000 feet
DATE: 12/22/2017

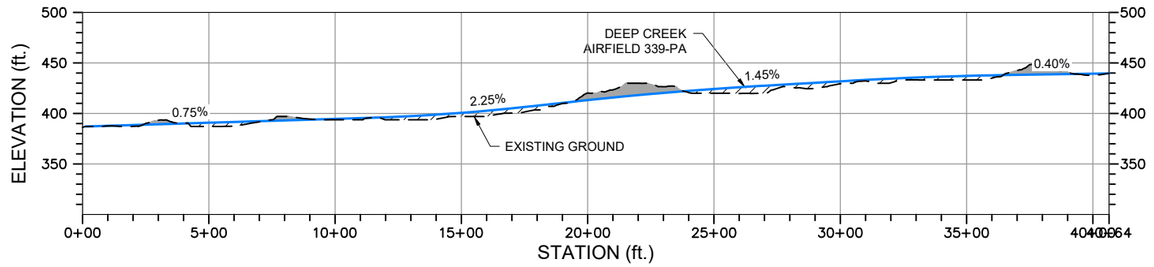
DRAWING TITLE: **PLAN VIEW PIPELINE AREA**

FIGURE NO. **PA-113A**
FILE NO. **POA-1995-120**

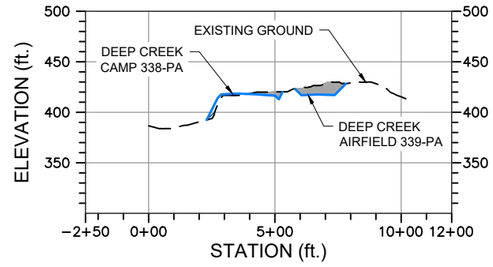
PATH: D:\Dropbox\181202_010_Mapping_404_Support\Revision_A\PA_1xxA_Pipe_ABR_20171106.mxd



DEEP CREEK AIRFIELD & CAMP PLAN
SCALE 1" = 600'



A-A' 102D1 **DEEP CREEK AIRFIELD & CAMP SECTION A-A'**
HORIZONTAL SCALE 1" = 600'
VERTICAL SCALE 1" = 150'



B-B' 102D1 **DEEP CREEK AIRFIELD & CAMP SECTION B-B'**
HORIZONTAL SCALE 1" = 600'
VERTICAL SCALE 1" = 150'

NOTE: ALL GRADING IS PRELIMINARY AND SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.

PLAN LEGEND:

- Uplands
- Wetlands
- Waters of U.S.
- Pipeline Alignment
- Existing 5' Contours
- 700' Existing 25' Contours
- Proposed 5' Contours
- 700' Proposed 25' Contours
- Work Area/Vegetation Clearing
- Cut/Fill Limit
- Unnamed River/Stream
- Named River/Stream

SECTION VIEW LEGEND:

- Fill Area
- Cut Area
- Exisitng Ground
- Proposed Grade

Associated Engineering Drawings
Deep Creek Airfield_Camp.dwg (RECON) MAY 2016

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

NAD 1983 UTM Zone 5N (US Survey Feet)

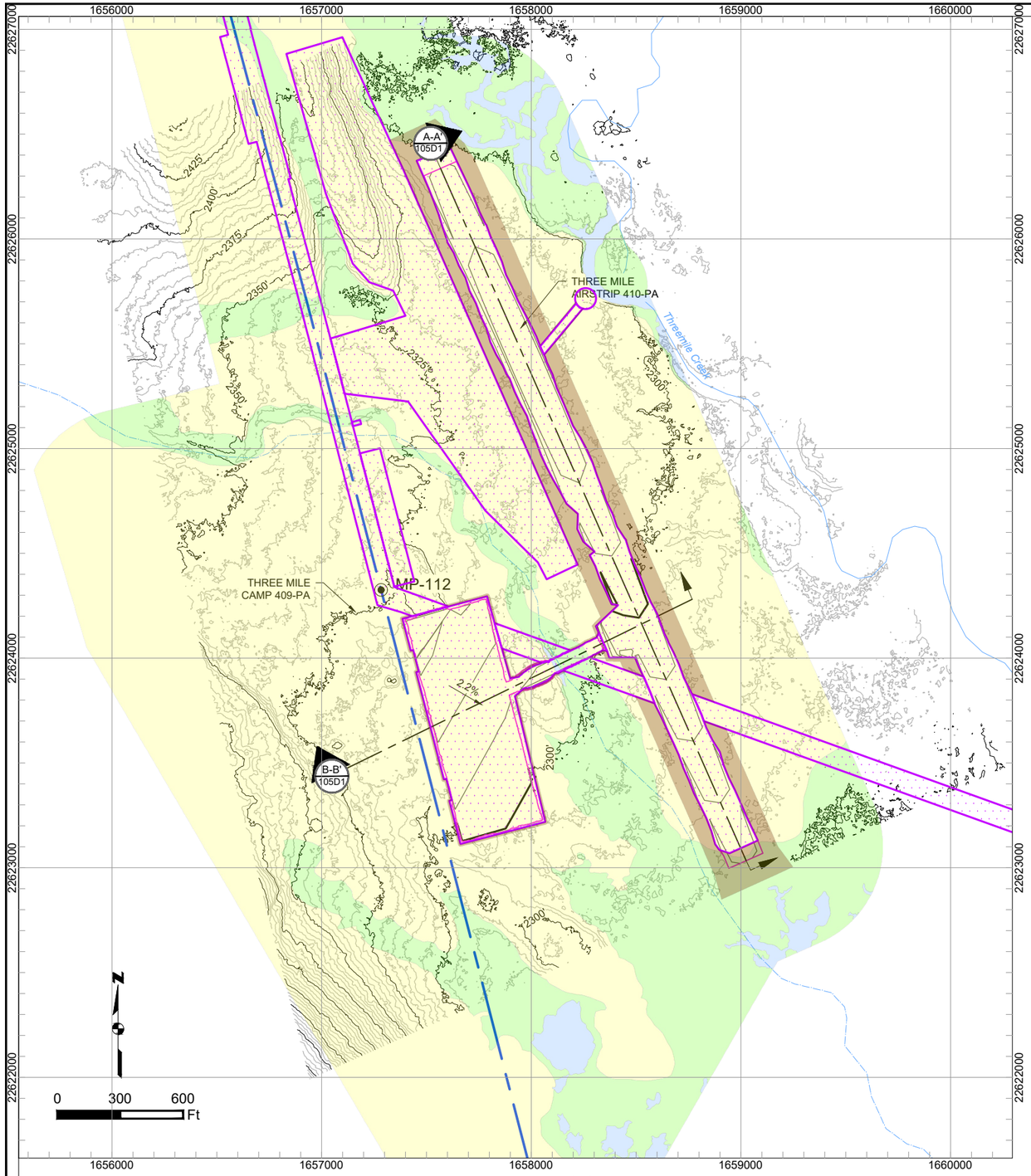
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DRAWING TITLE: **DEEP CREEK AIRFIELD & CAMP DETAIL**

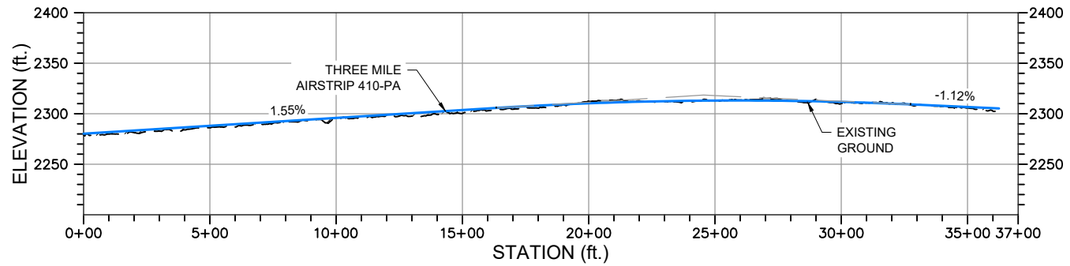
FIGURE NO. **PA-102D1**

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

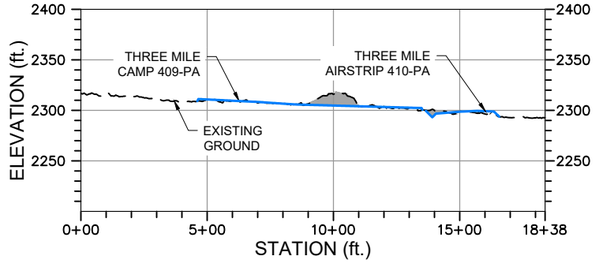
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THREE MILE AIRFIELD & CAMP PLAN
SCALE 1" = 600'



THREE MILE AIRFIELD & CAMP SECTION A-A'
A-A' 105D1
HORIZONTAL SCALE 1" = 600'
VERTICAL SCALE 1" = 150'



THREE MILE AIRFIELD & CAMP SECTION B-B'
B-B' 105D1
HORIZONTAL SCALE 1" = 600'
VERTICAL SCALE 1" = 150'

NOTE: ALL GRADING IS PRELIMINARY AND SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.

PLAN LEGEND:
- Uplands
- Wetlands
- Waters of U.S.
- Pipeline Alignment
- Existing 5' Contours
- Existing 25' Contours
- Proposed 5' Contours
- Proposed 25' Contours
- Work Area/Vegetation Clearing
- Cut/Fill Limit
- Unnamed River/Stream
- Named River/Stream

SECTION VIEW LEGEND:
- Fill Area
- Cut Area
- Exisitng Ground
- Proposed Grade

Associated Engineering Drawings
ThreeMile Airfield_Camp 140314.dwg (RECON) MAY 2016

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

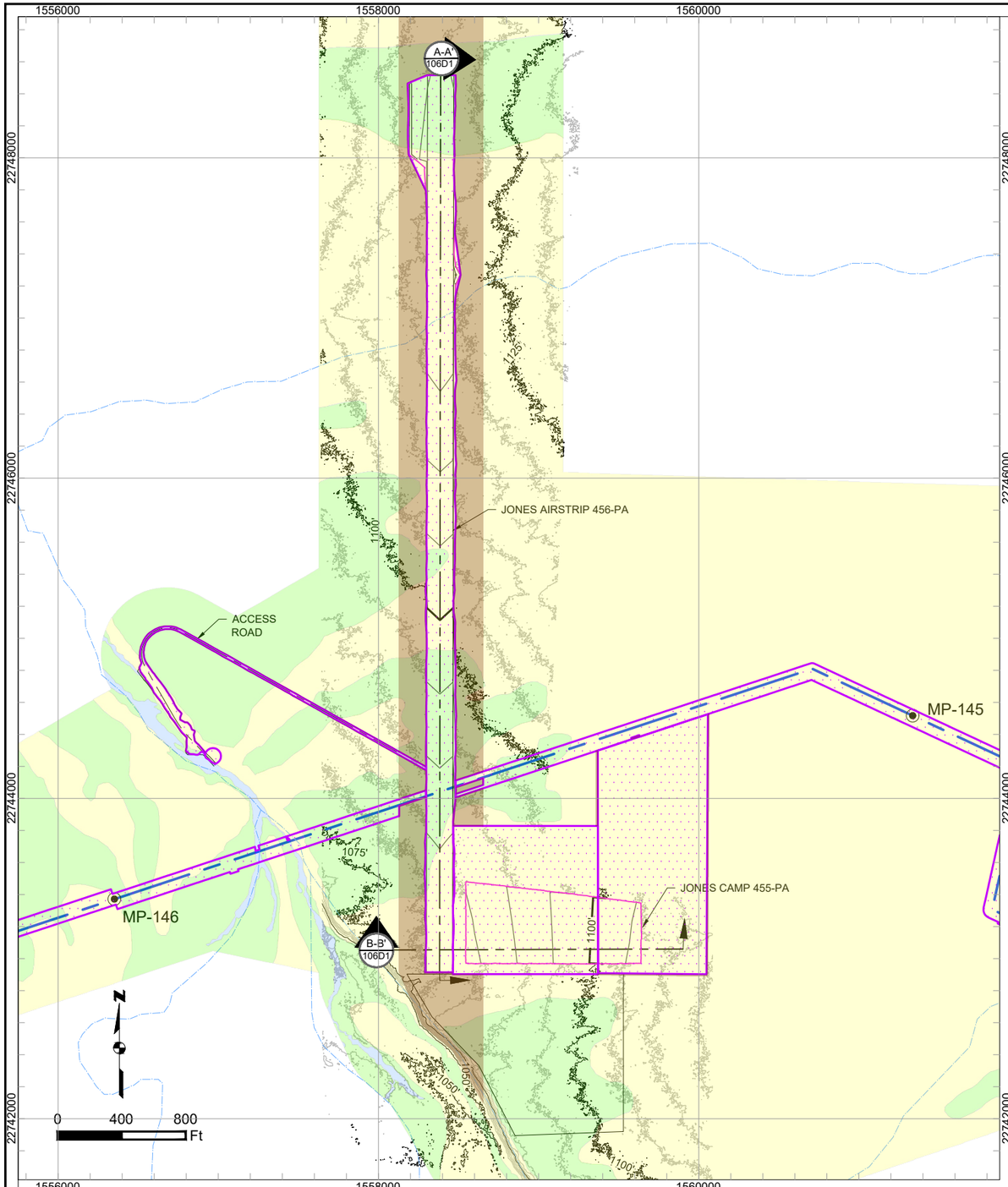
NAD 1983 UTM Zone 5N (US Survey Feet)

SCALE: AS SHOWN
DATE: 12/22/2017

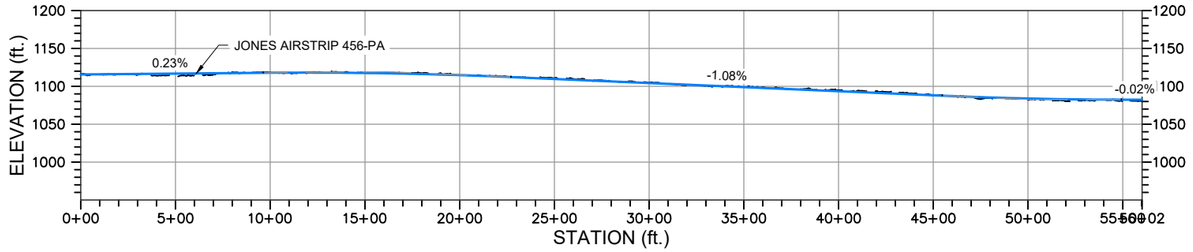
DRAWING TITLE:
THREE MILE AIRFIELD & CAMP DETAIL

FIGURE NO. **PA-105D1**
FILE NO. **POA-1995-120**

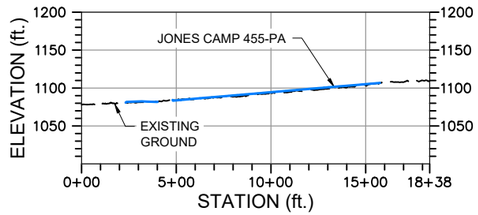
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JONES AIRFIELD & CAMP PLAN
SCALE 1" = 800'



A-A' 106D1 **JONES AIRFIELD & CAMP SECTION A-A'**
HORIZONTAL SCALE 1" = 800'
VERTICAL SCALE 1" = 200'



B-B' 106D1 **JONES AIRFIELD & CAMP SECTION B-B'**
HORIZONTAL SCALE 1" = 800'
VERTICAL SCALE 1" = 200'

NOTE: ALL GRADING IS PRELIMINARY AND SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.

PLAN LEGEND:
- Uplands
- Wetlands
- Waters of U.S.
- Pipeline Alignment
- Existing 5' Contours
- 700' Existing 25' Contours
- Proposed 5' Contours
- 700' Proposed 25' Contours
- Work Area/Vegetation Clearing
- Cut/Fill Limit
- Unnamed River/Stream
- Named River/Stream

SECTION VIEW LEGEND:
- Fill Area
- Cut Area
- Exisitng Ground
- Proposed Grade

Associated Engineering Drawings
Jones Airfield_Camp.dwg (RECON) MAY 2016

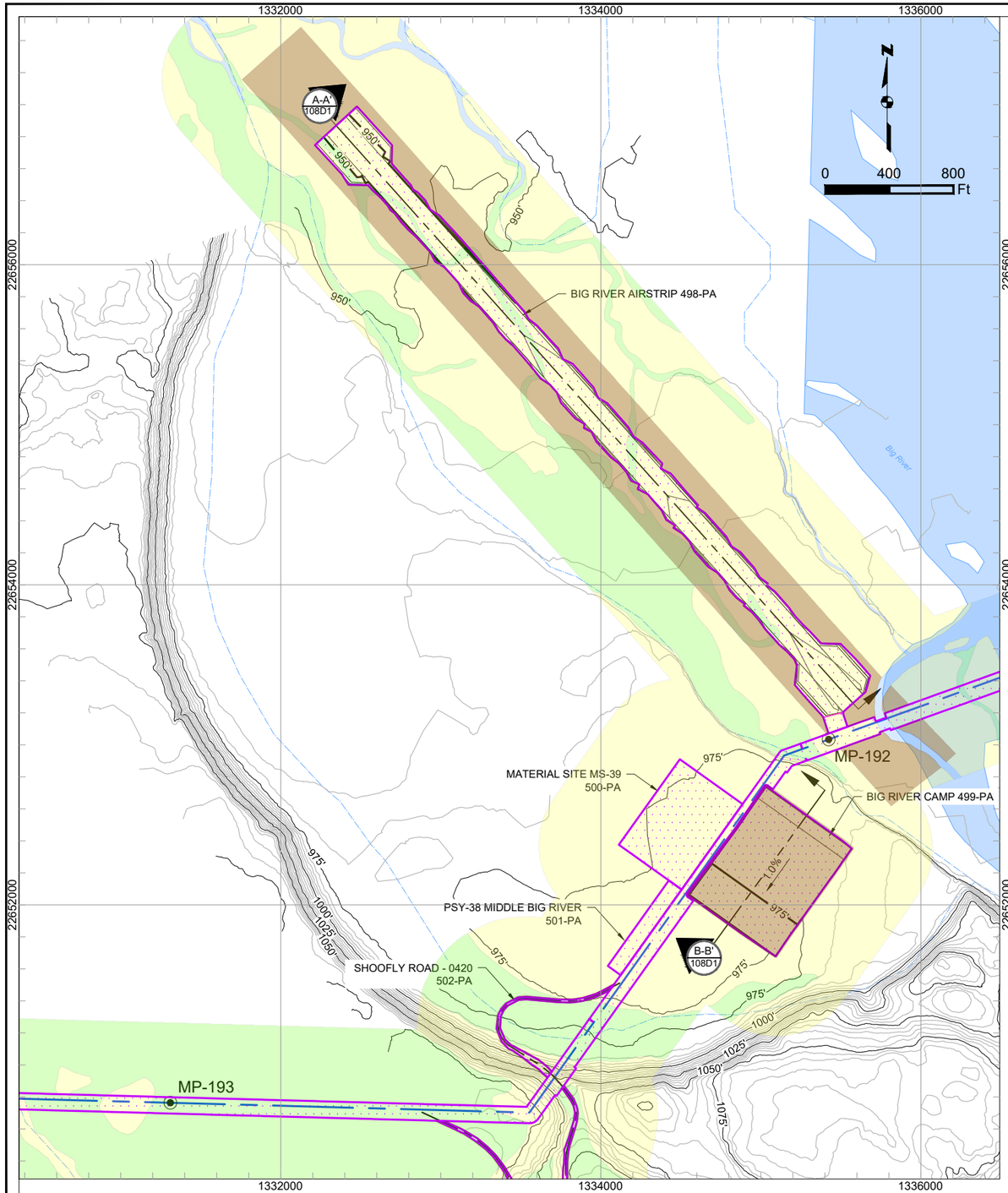
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

NAD 1983 UTM Zone 5N (US Survey Feet)

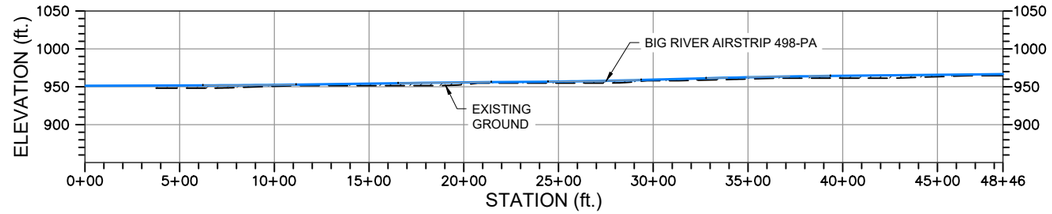
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DATE: 12/22/2017

DRAWING TITLE: **JONES AIRFIELD & CAMP DETAIL**
FIGURE NO. **MA-106D1**
FILE NO. **POA-1995-120**

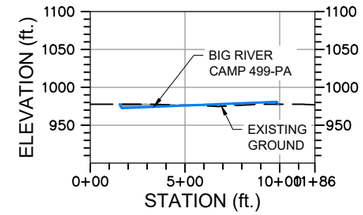
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BIG RIVER AIRFIELD & CAMP PLAN
SCALE 1" = 800'



A-A' 108D1 **BIG RIVER AIRFIELD & CAMP SECTION A-A'**
HORIZONTAL SCALE 1" = 800'
VERTICAL SCALE 1" = 200'



B-B' 108D1 **BIG RIVER AIRFIELD & CAMP SECTION B-B'**
HORIZONTAL SCALE 1" = 800'
VERTICAL SCALE 1" = 200'

NOTE: ALL GRADING IS PRELIMINARY AND SUBJECT TO CHANGE PRIOR TO FINAL DESIGN.

PLAN LEGEND:
- Uplands
- Wetlands
- Waters of U.S.
- Pipeline Alignment
- Existing 5' Contours
- 700' Existing 25' Contours
- Proposed 5' Contours
- 700' Proposed 25' Contours
- Work Area/Vegetation Clearing
- Cut/Fill Limit
- Unnamed River/Stream
- Named River/Stream

SECTION VIEW LEGEND:
- Fill Area
- Cut Area
- Exisitng Ground
- Proposed Grade

Associated Engineering Drawings
Big Rvr Airfield_Camp.dwg (RECON) MAY 2016

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

NAD 1983 UTM Zone 5N (US Survey Feet)

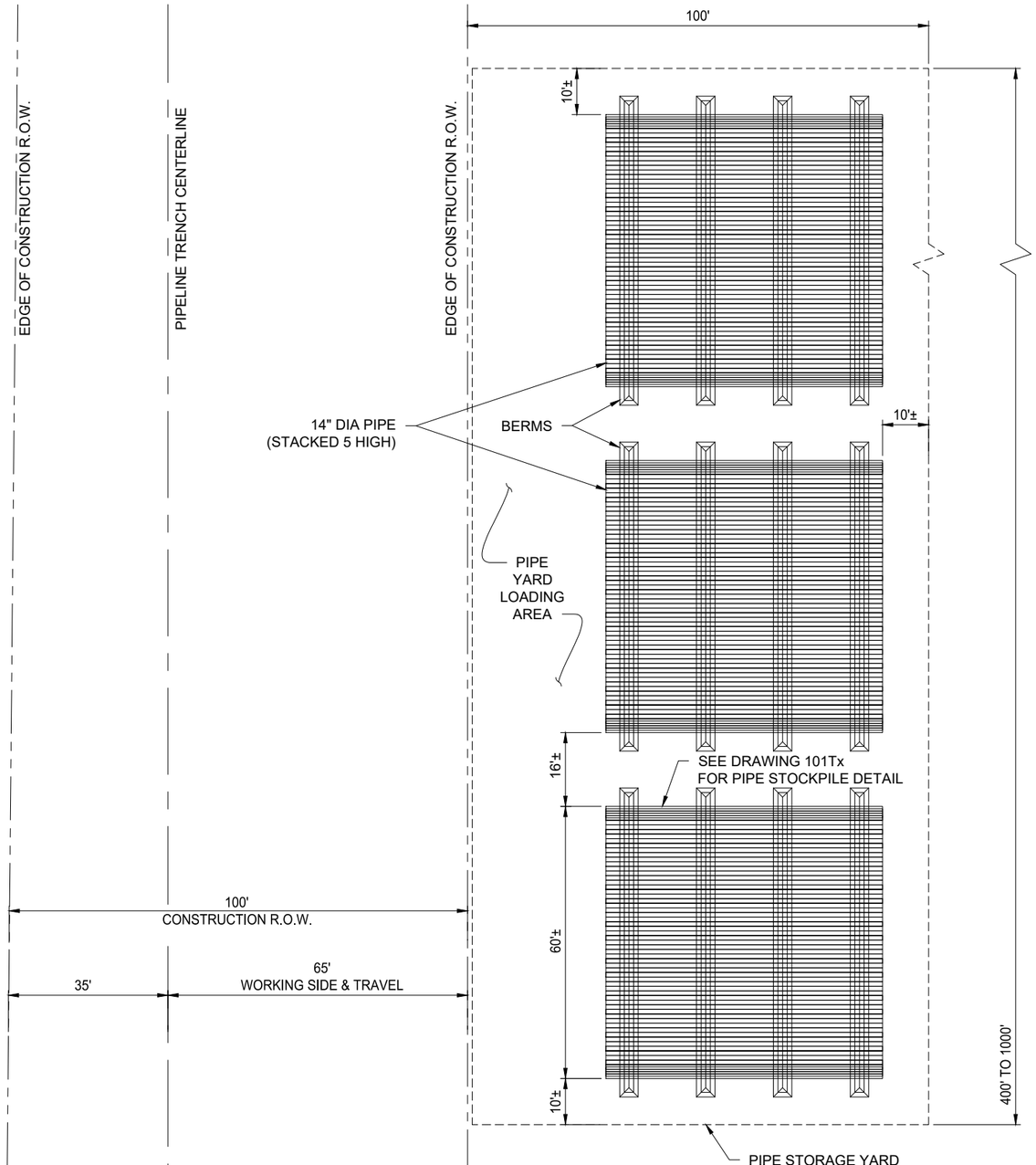
SCALE: AS SHOWN | DATE: 12/22/2017

DRAWING TITLE: **BIG RIVER AIRFIELD & CAMP DETAIL**

FIGURE NO. **MA-108D1**

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

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Big_River_Airfield_Camp.dwg



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

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

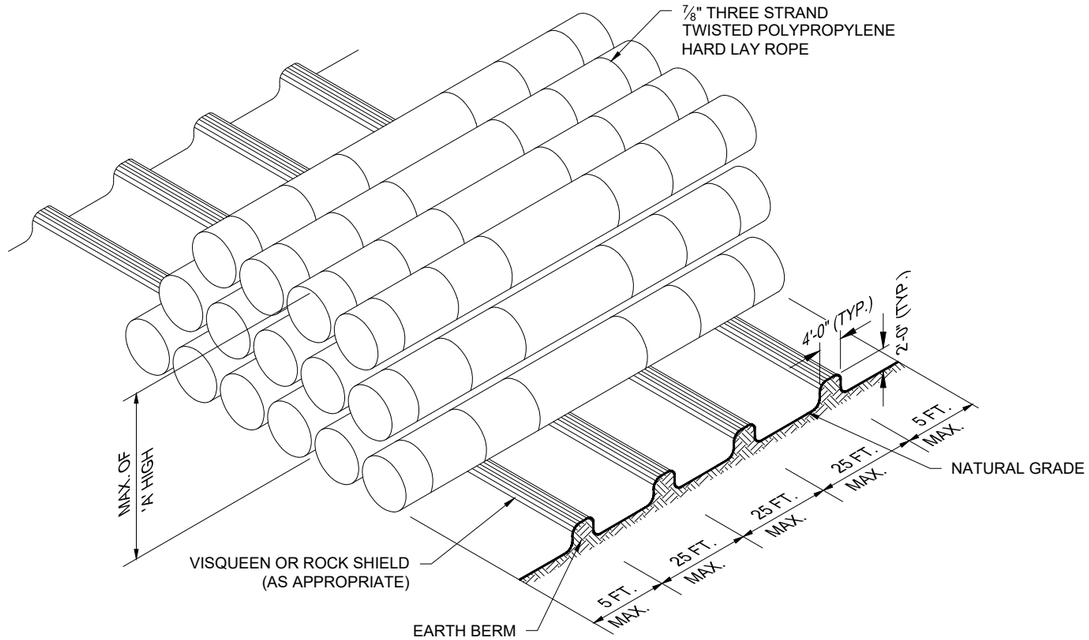
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

DRAWING TITLE: **TYPICAL PIPE STORAGE YARD**

SCALE: AS SHOWN | DATE: 12/22/2017

FIGURE NO. **PA-130T** | FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\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

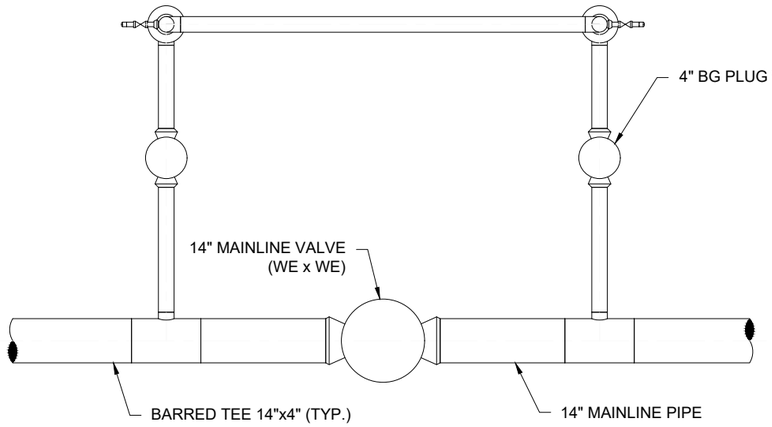
NOTES:

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.

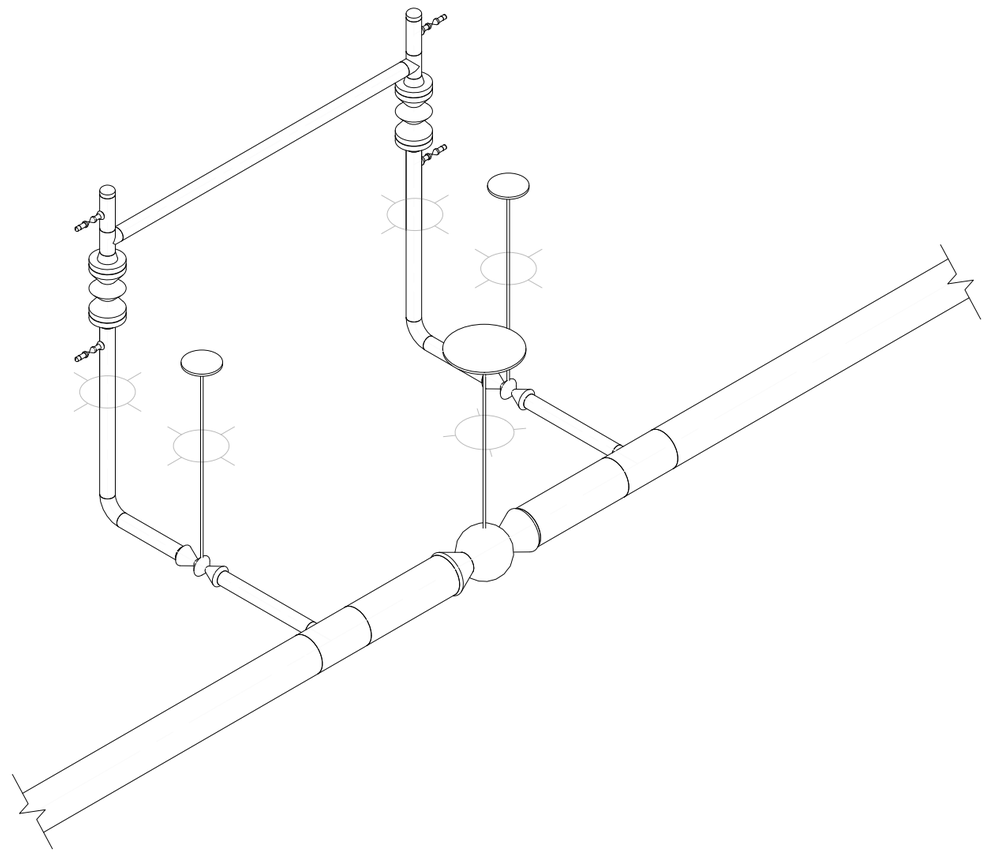
Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P04W-TYPT-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL PIPE STOCK PILE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-131T** FILE NO. **POA-1995-120**

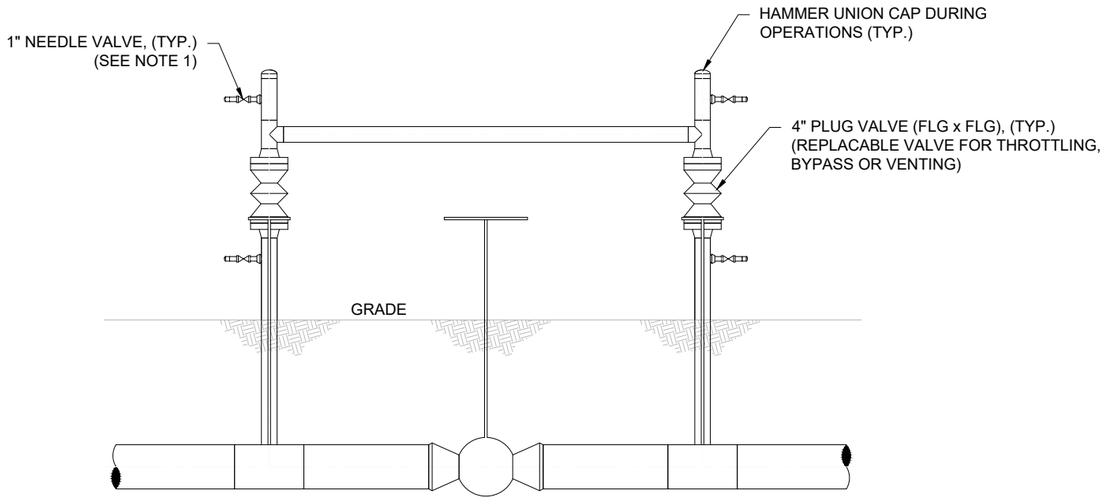
PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Pipe_Stock_Pile.dwg



(HANDWHEELS NOT SHOWN FOR CLARITY)

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

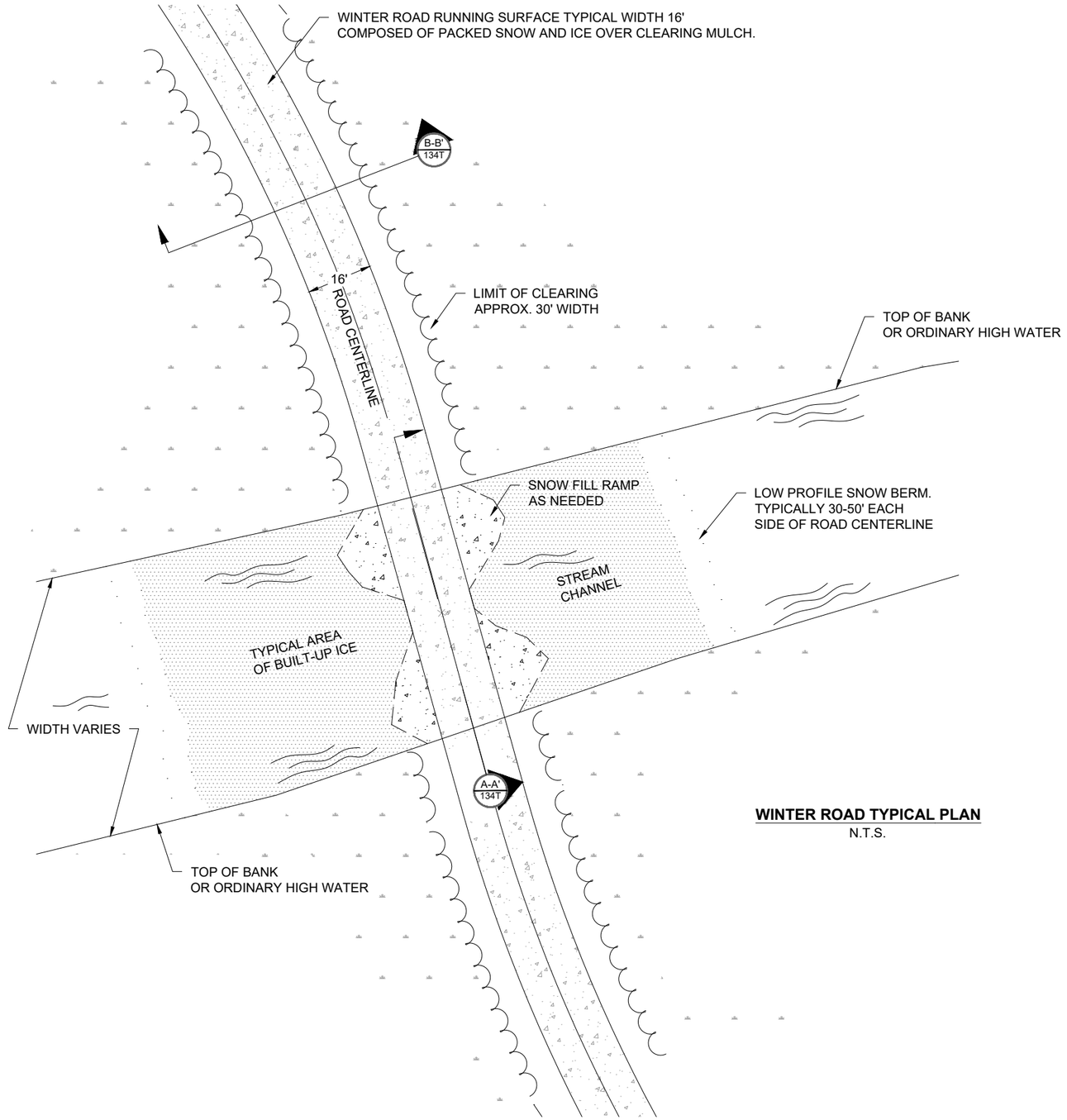




B / 132T **MAINLINE BLOCK VALVE ASSEMBLY - ELEVATION**
SCALE 1/4" = 1'-0"

	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: 12/22/2017	FIGURE NO.: **PA-132T** / FILE NO.: **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Mainline_Block_Valve_Assembly.dwg



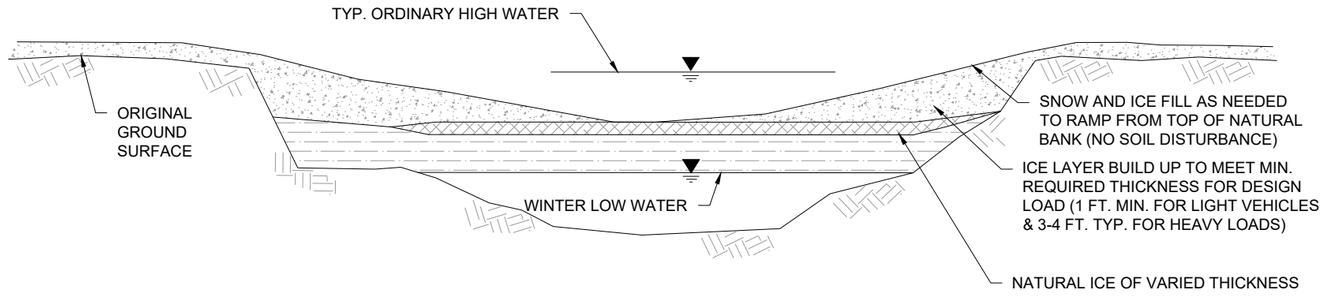
WINTER ROAD TYPICAL PLAN
N.T.S.

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: 12/22/2017	FIGURE NO. **PA-133T** FILE NO. **POA-1995-120**

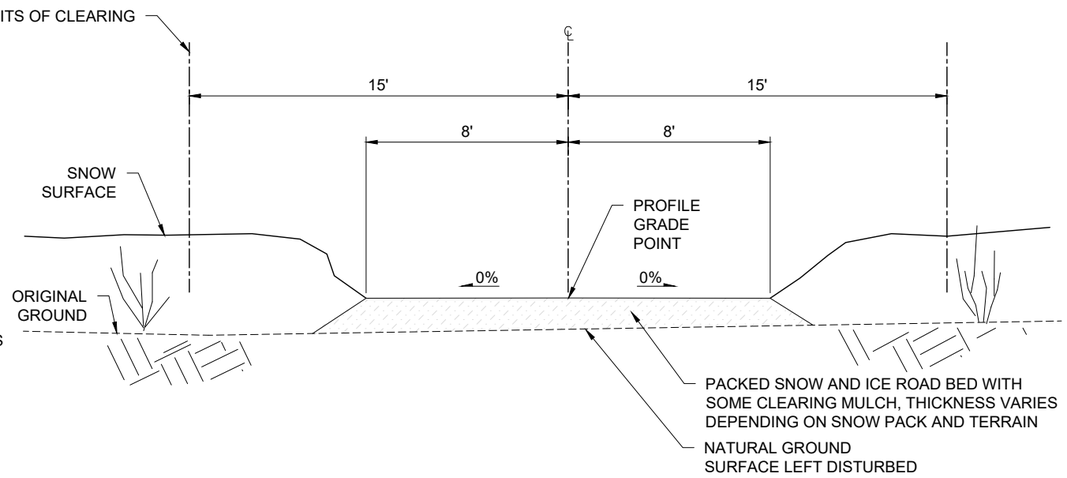
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A-A' 133T **WINTER ROAD TYPICAL STREAM CROSSING SECTION A-A'**
N.T.S.

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.



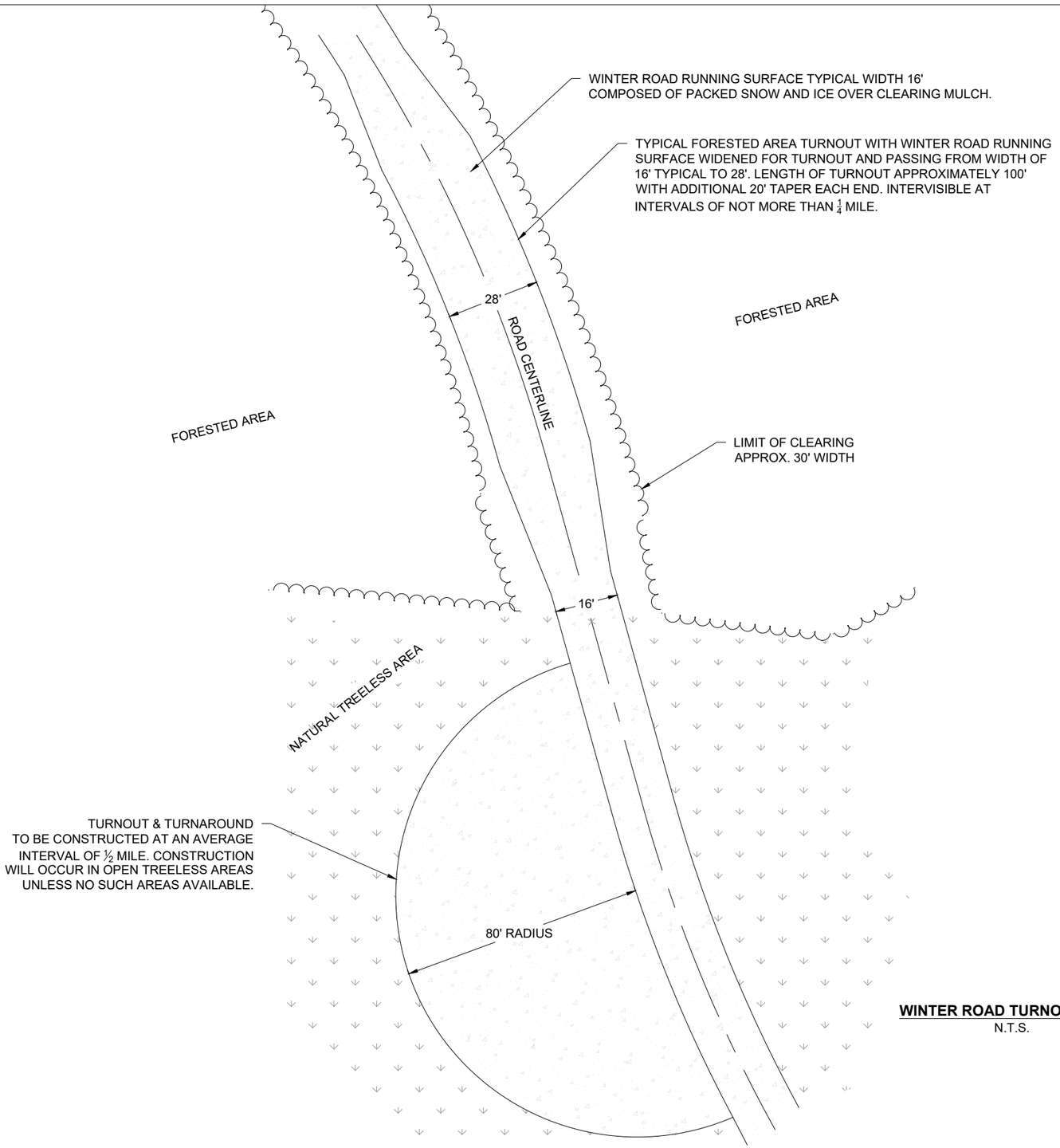
A-A' 133T **WINTER ROAD TYPICAL SECTION B-B'**
N.T.S.

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: 12/22/2017	FIGURE NO. **PA-134T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Winter_Roads.dwg



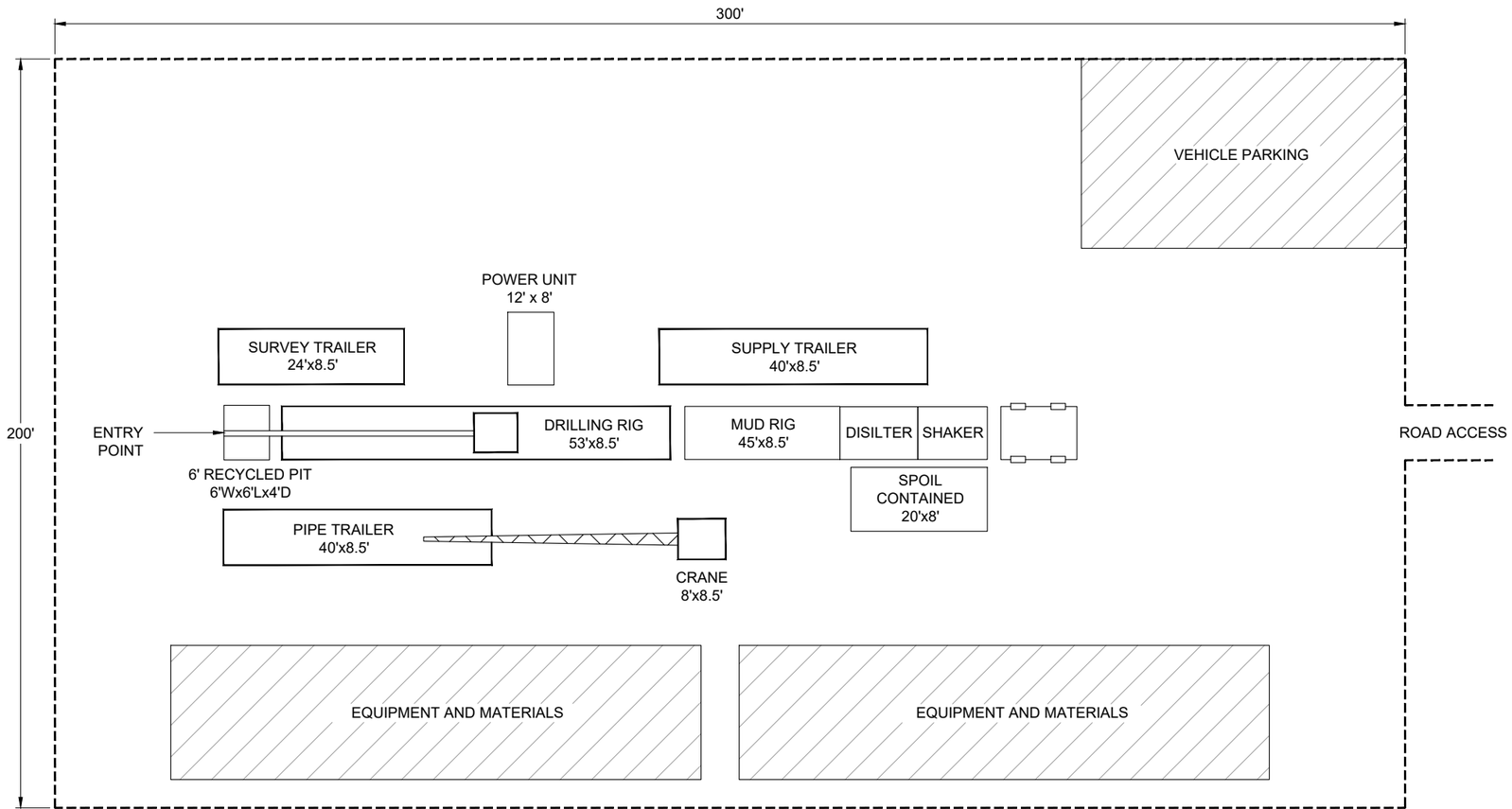
WINTER ROAD TURNOUT PLAN
N.T.S.

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	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **WINTER ROAD TURNOUT DETAIL**
P07C-TYTOW-01.dwg (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-135T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Winter_Roads.dwg

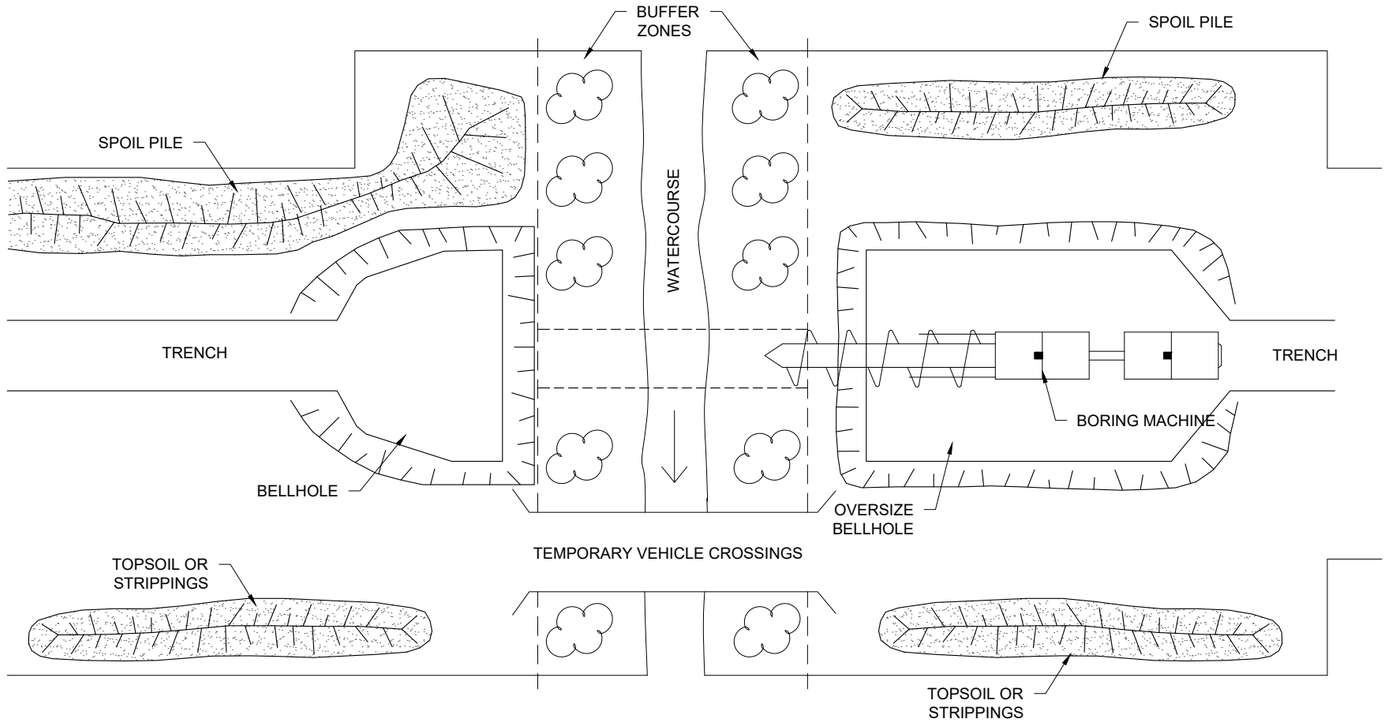


NOTE:
- THIS IS A TYPICAL SITE SET-UP. THERE ARE VARIOUS CONFIGURATIONS USED DEPENDING UPON SITE RESTRICTIONS. FIELD MODIFICATIONS TO SUIT SITE.
- CUT/FILL SLOPES ARE 2:1 (HORIZ:VERT), TYPICAL.

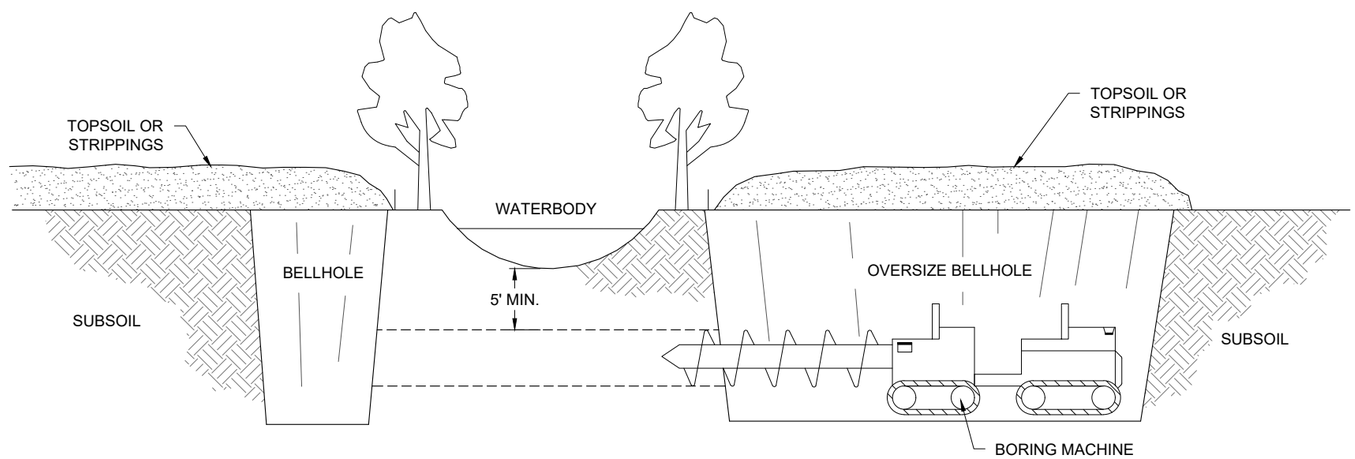
TYPICAL HDD ENTRY SITE EQUIPMENT LAYOUT
N.T.S.

	Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **TYPICAL HDD ENTRY SITE EQUIPMENT LAYOUT**
	P04Q-SPHD-01.DWG (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-136T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_HDD_Entry_Site.dwg



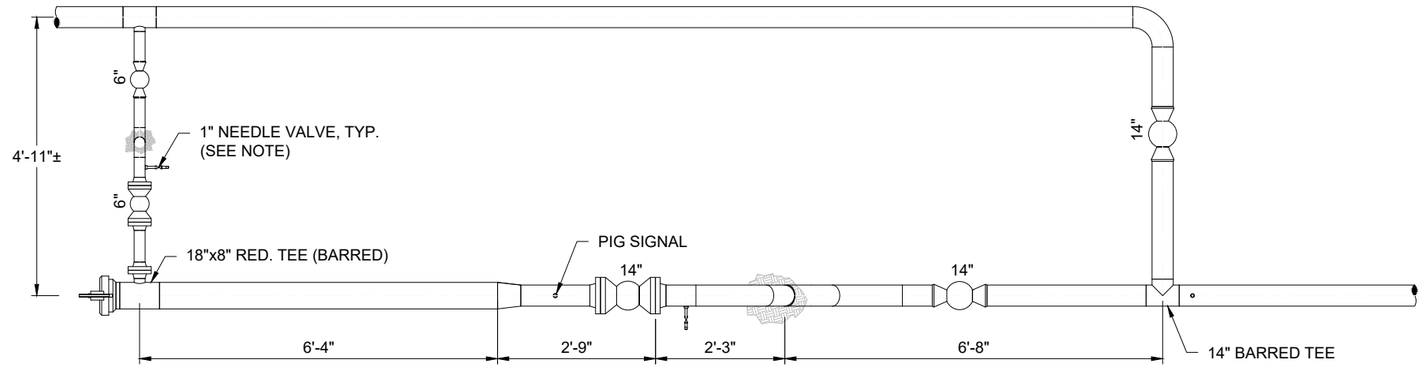
TYPICAL WATERBODY CROSSING HORIZONTAL BORE PLAN
N.T.S.



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

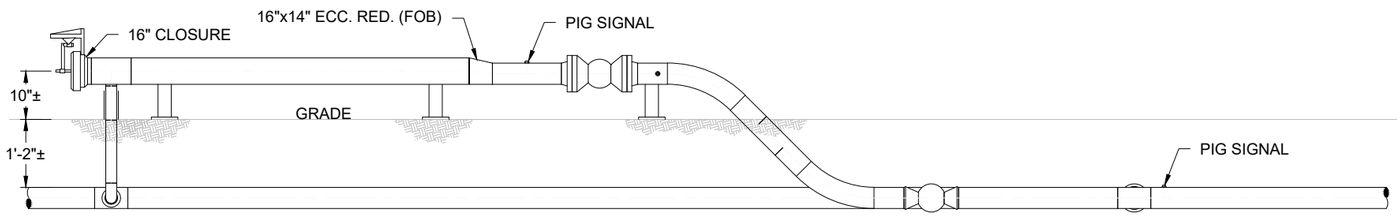
Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **TYPICAL WATERBODY CROSSING HORIZONTAL BORE**
P01C-TYWC-06.DWG (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-137T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Waterbody_Horiz_Bore.dwg



TYPICAL 16"x14" PIG LAUNCHER PLAN

SCALE: 3/8" = 1'-0"

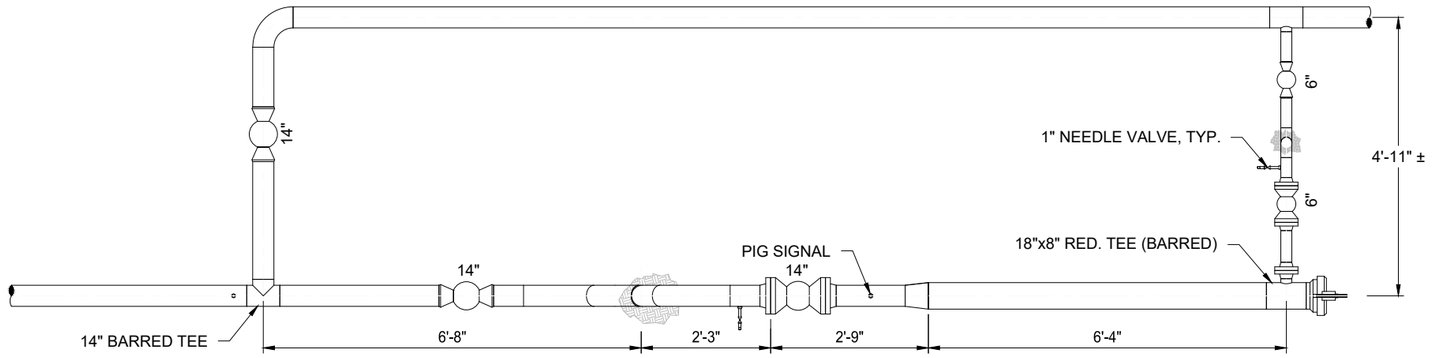


TYPICAL 16"x14" PIG LAUNCHER ELEVATION

SCALE: 3/8" = 1'-0"

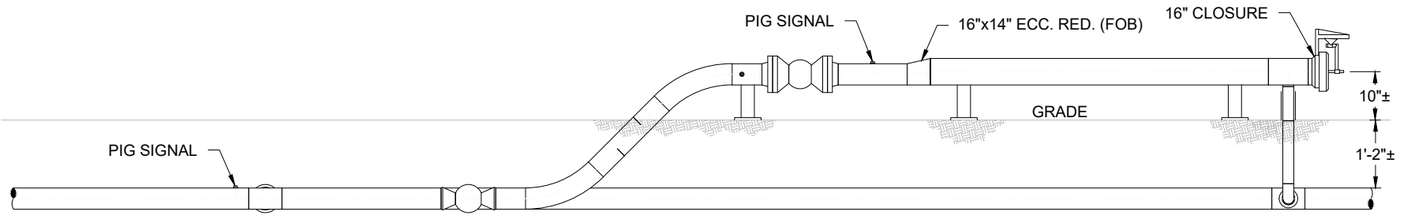
	Associated Engineering Drawings P01M-TYPL-01.DWG (BAKER) OCT 2013	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **TYPICAL 16x14 PIG LAUNCHER**
		SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-138T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Pig_Launcher.dwg



TYPICAL 16"x14" PIG LAUNCHER PLAN

SCALE: ⅜" = 1'-0"

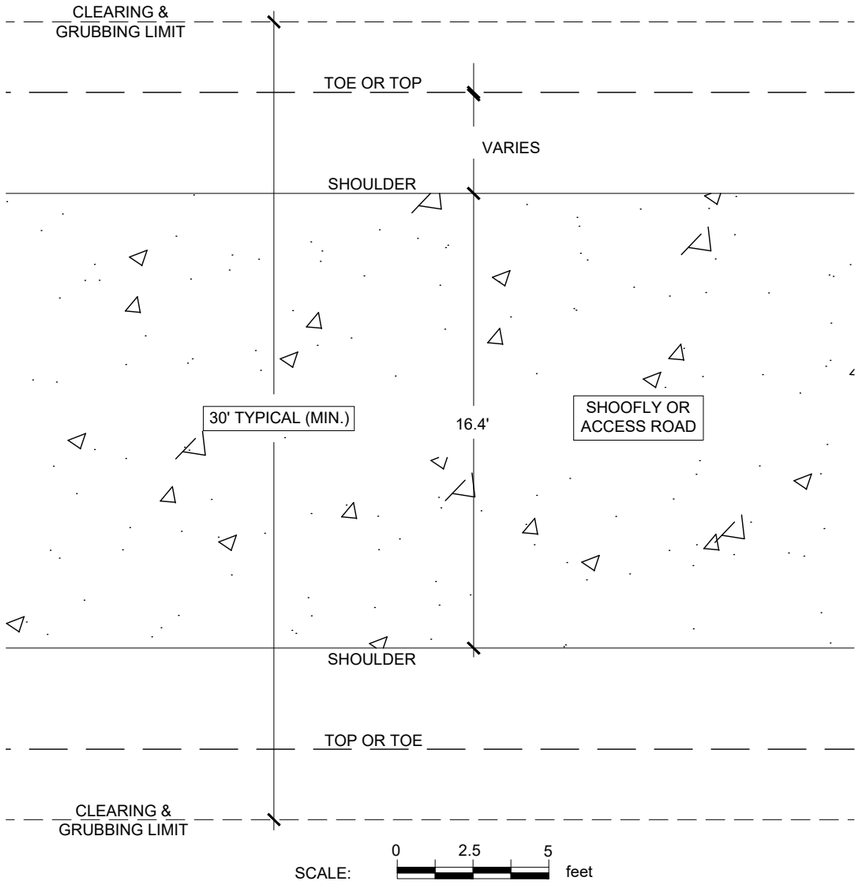


TYPICAL 16"x14" PIG LAUNCHER ELEVATION

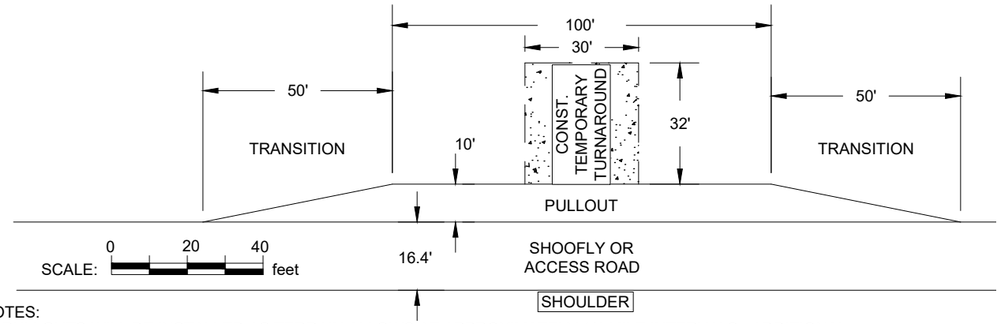
SCALE: ⅜" = 1'-0"

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01M-TYPL-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL 16x14 PIG LAUNCHER**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-139T** — FILE NO. **POA-1995-120**

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A 140T **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

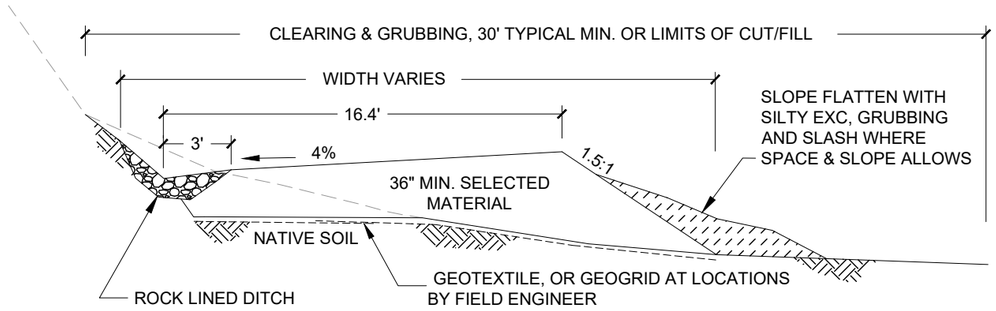
B 140T **PULLOUT PLAN VIEW**
SCALE: 1" = 40'

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 140T **TEMPORARY CONSTRUCTION TURNAROUND**
SCALE 1" = 40'

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 OR ACCESS ROAD DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2013	FIGURE NO. **PA-140T** — FILE NO. **POA-1995-120**

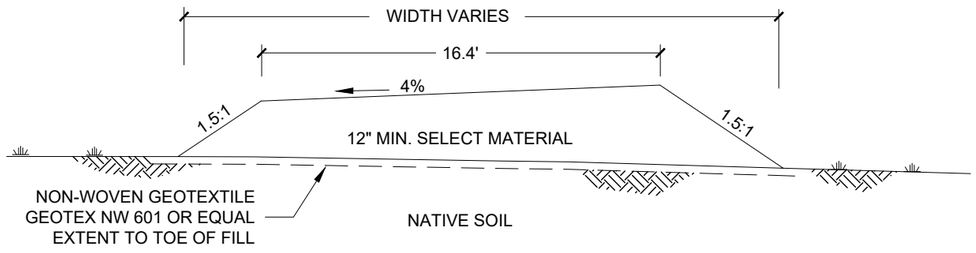
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NOTES:
1. MAX ROAD CLEARING WIDTH IS TOP OF CUT OR TOE OF FILL. IN NEARLY LEVEL TERRAIN, REDUCE CLEARING WIDTH TO 30 FT.
2. CUT SLOPES WILL VARY DEPENDING ON SOIL OR ROCK TYPE AND CHARACTER. MIN 0.25:1.
3. FILL SHALL BE UNDERLAIN WITH GEOTEXTILE WHERE 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)

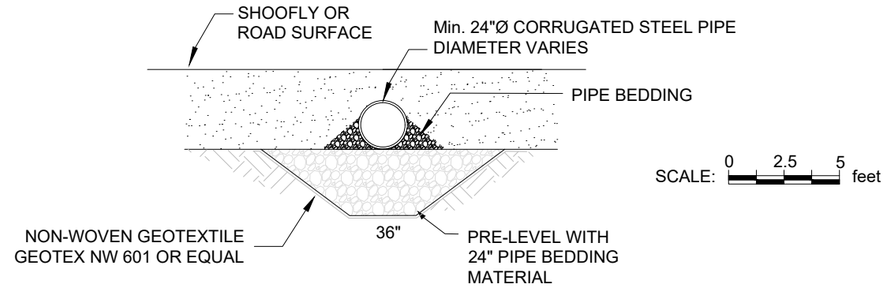
A / 141T N.T.S.



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.

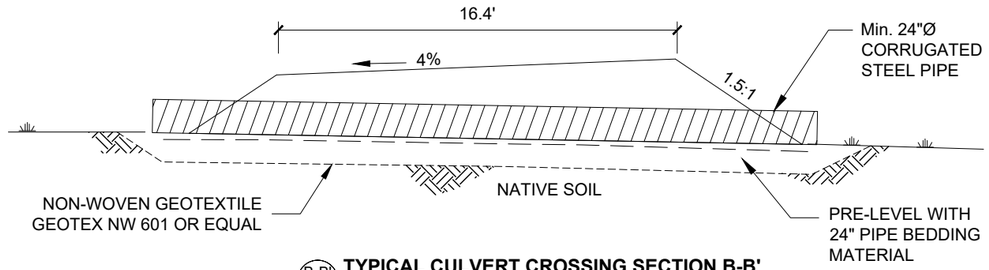
SHOOFLY OR ACCESS ROAD TYPICAL SECTION LEVEL TERRAIN (FILL)

B / 141T N.T.S.



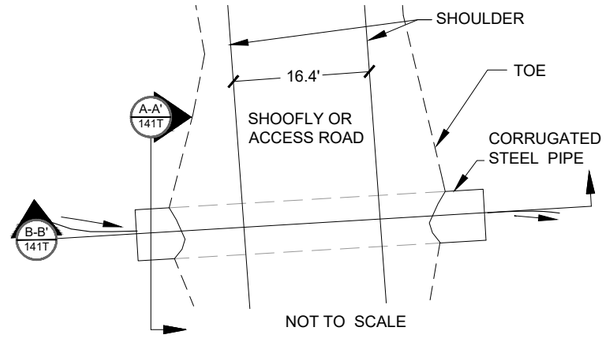
TYPICAL CULVERT CROSSING SECTION A-A'

A-A' / 141T N.T.S.



TYPICAL CULVERT CROSSING SECTION B-B'

B-B' / 141T N.T.S.



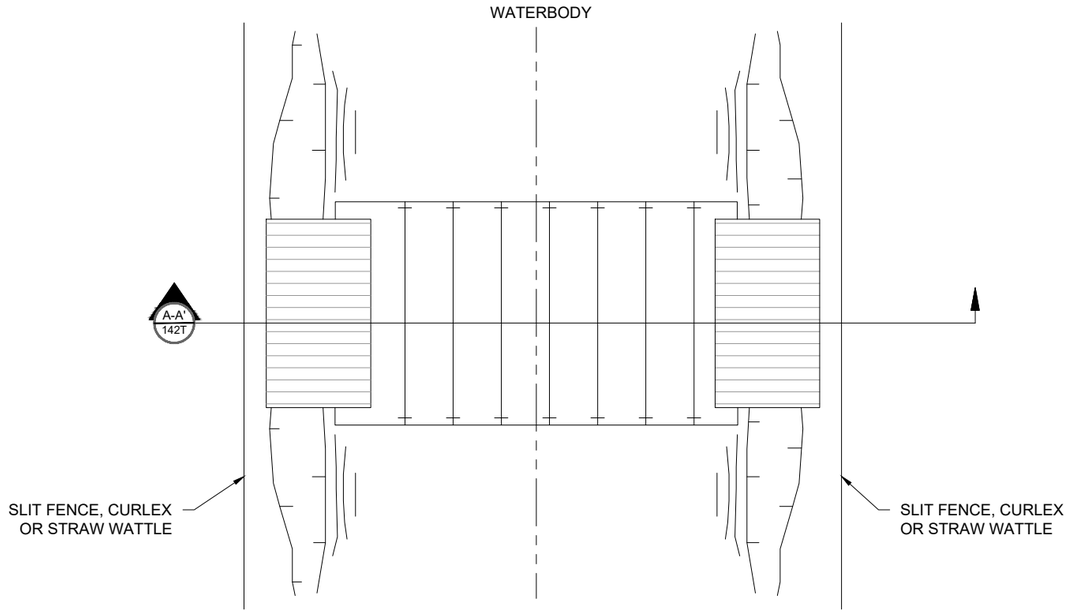
1. ALL CULVERTS SHALL BE CORRUGATED STEEL AS APPROVED BY PROJECT ENGINEER.
2. PRE-LEVEL WITH 24" OF COARSE ROCK PIPE BEDDING MATERIAL AND ENSURE MIN. 12" OF COVER
3. CROSS CULVERTS IN UPLANDS SHALL BE INSTALLED WITH AN ENLARGED (BELL HOLE) DITCH SECTION ON THE INLET END. FILL TO 6" DEPTH WITH DITCH LINER 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

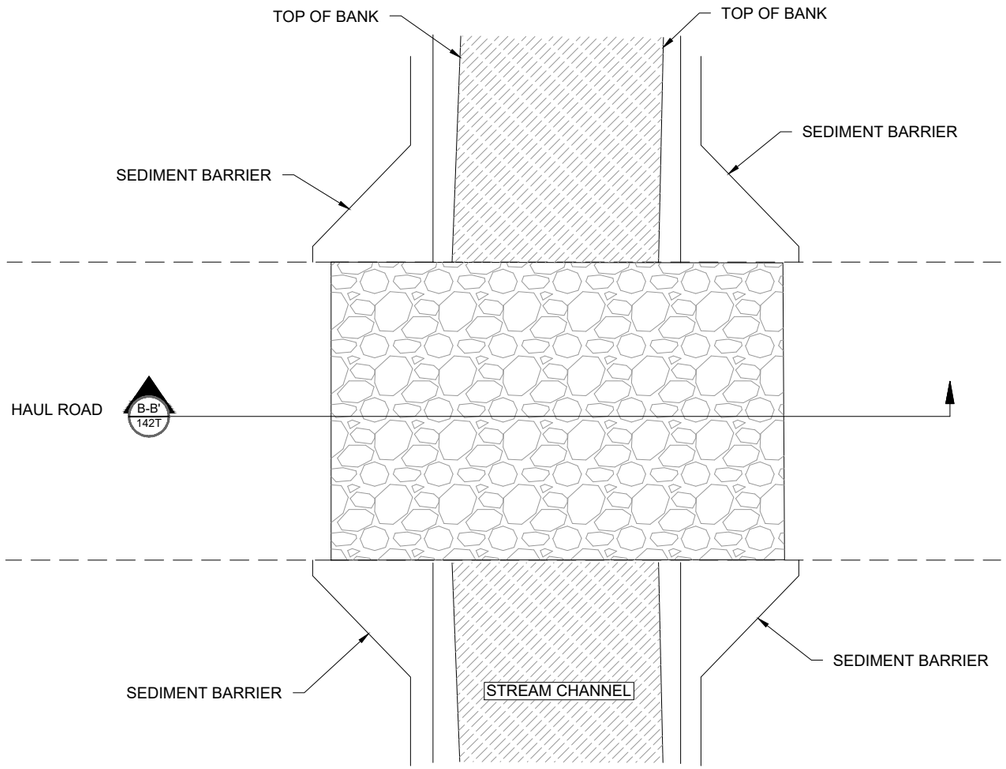
C / 141T N.T.S.

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: 12/22/2017	FIGURE NO. **PA-141T** — FILE NO. **POA-1995-120**

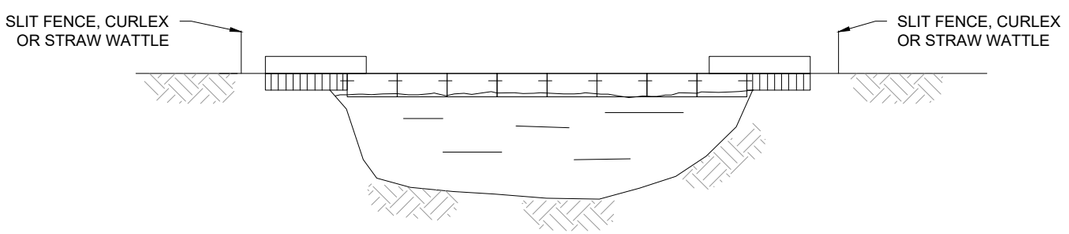
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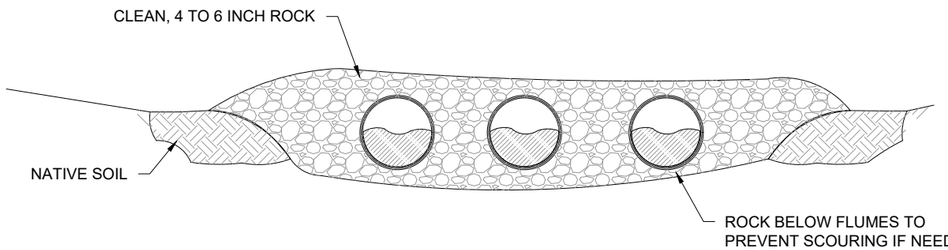
TYPICAL FLEX-FLOAT BRIDGE PLAN
N.T.S.



TYPICAL ROCK FLUME BRIDGE PLAN
N.T.S.



A-A' 142T **TYPICAL FLEX-FLOAT BRIDGE SECTION A-A'**
N.T.S.



B-B' 142T **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.

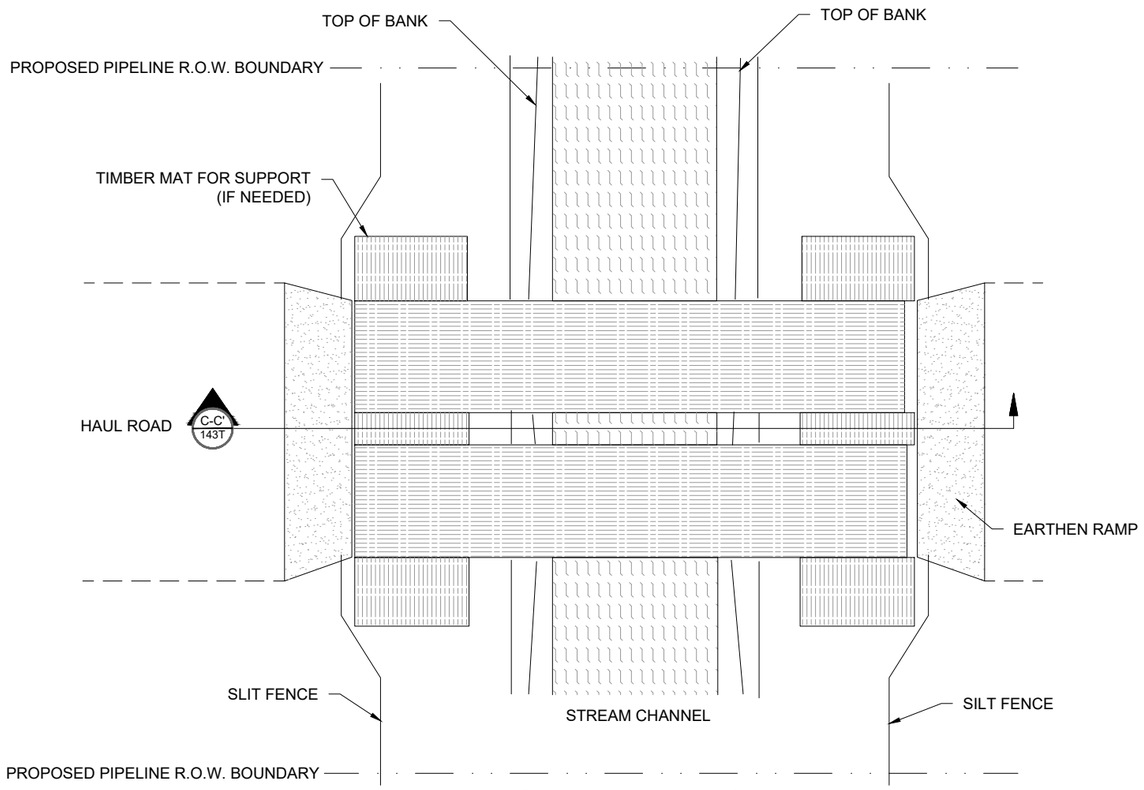
Associated Engineering Drawings
P01C-TYBD-01.DWG, P01C-TYBD-02.DWG, P01C-TYBD-03.DWG
(BAKER) OCT 2013

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

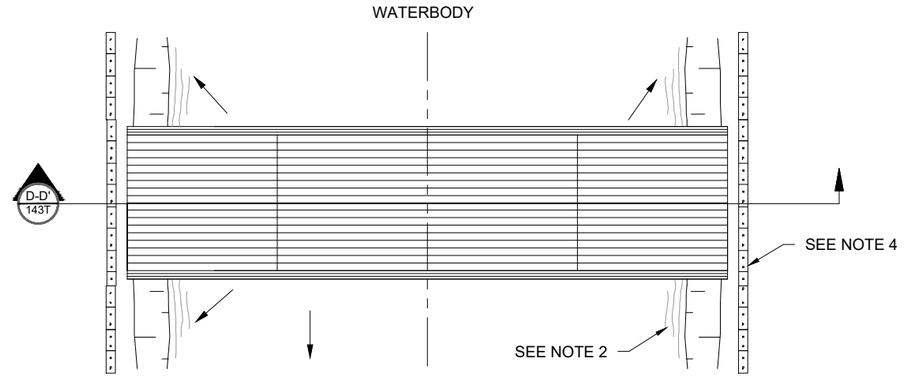
DRAWING TITLE:
TYPICAL FLEX-FLOAT AND ROCK FLUME BRIDGE DETAIL

SCALE: AS SHOWN
DATE: 12/22/2017
FIGURE NO. **PA-142T**
FILE NO. **POA-1995-120**

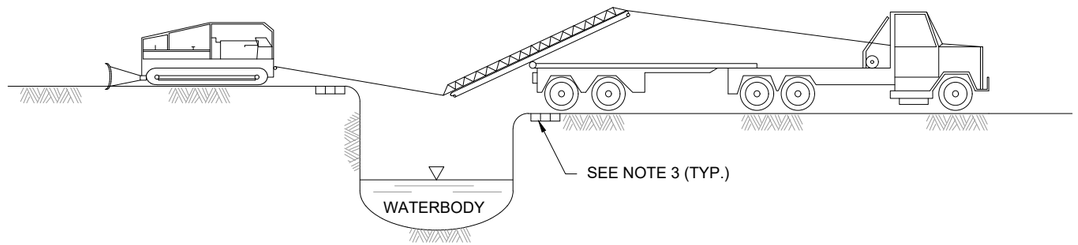
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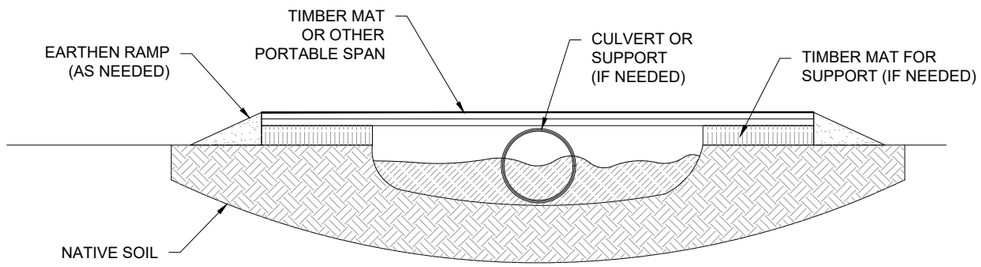
TYPICAL TIMBER MAT BRIDGE PLAN
N.T.S.



TYPICAL PORTABLE WATERBODY BRIDGE PLAN
N.T.S.



D-D' 143T TYPICAL PORTABLE WATERBODY BRIDGE SECTION D-D'
N.T.S.



C-C' 143T 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

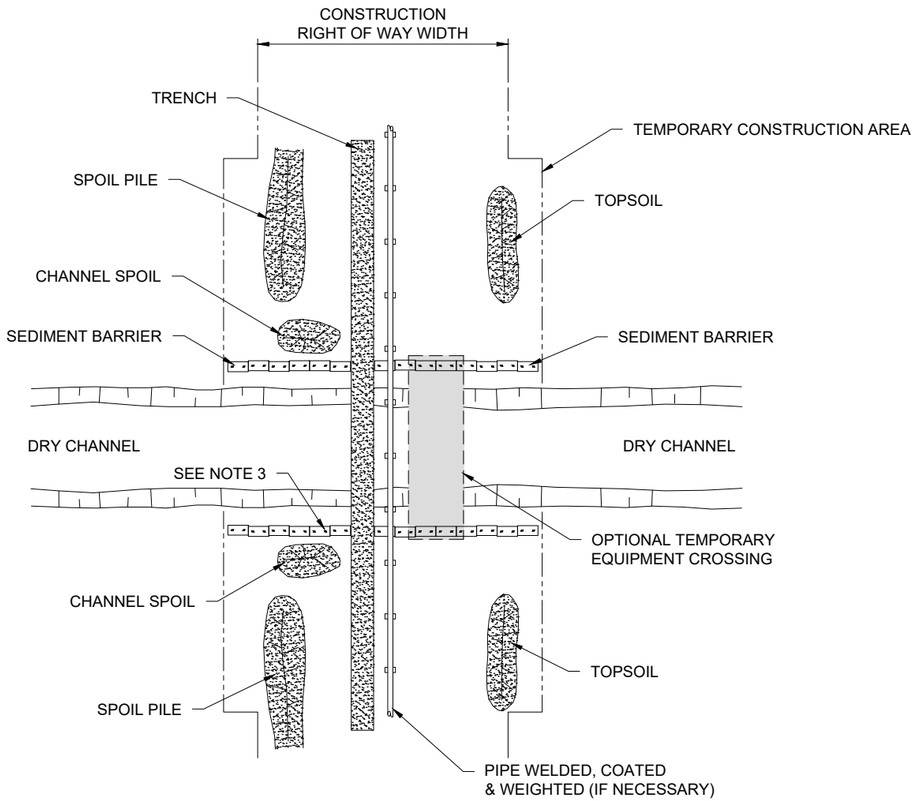
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

SCALE: AS SHOWN
DATE: 12/22/2017

DRAWING TITLE:
TYPICAL TIMBER MAT AND PORTABLE WATERBODY BRIDGE DETAIL

FIGURE NO.: **PA-143T**
FILE NO.: **POA-1995-120**

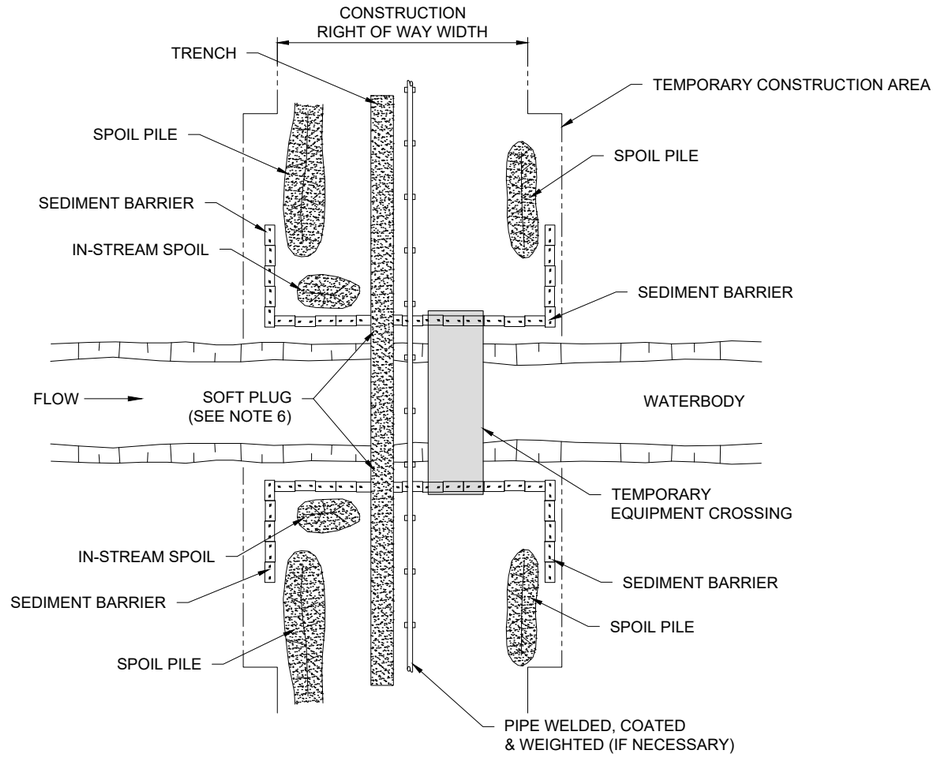
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A 144T **TYPICAL NON-FLOWING WATERBODY CROSSING OPEN-CUT**
N.T.S.

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.



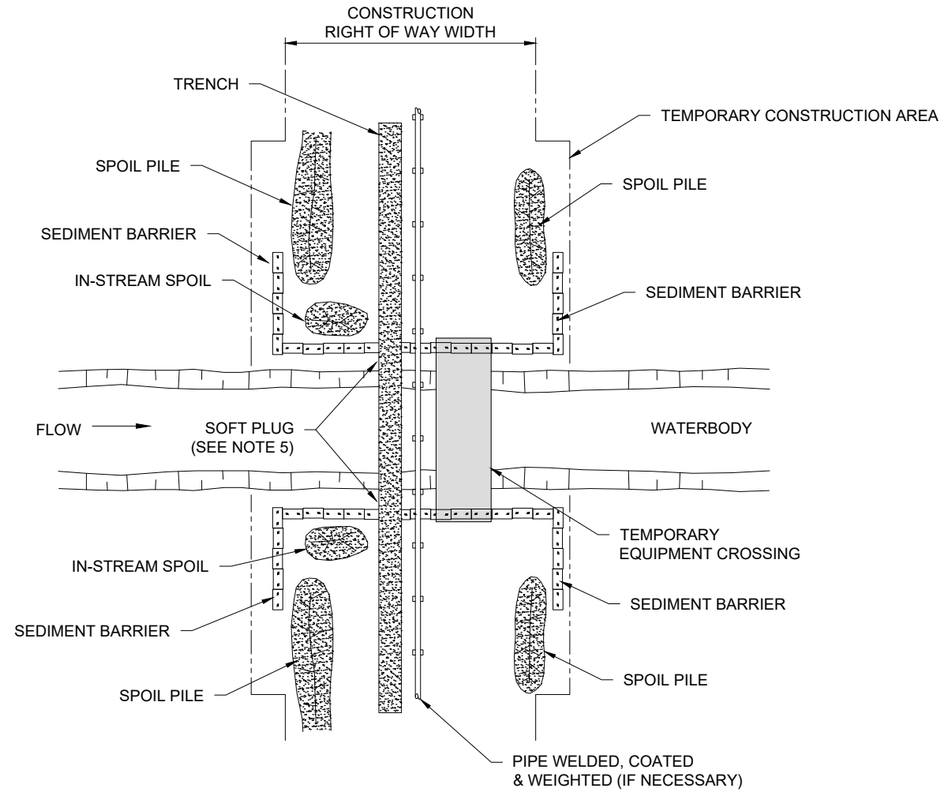
B 144T **TYPICAL FLOWING WATERBODY CROSSING OPEN-CUT**
N.T.S.

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: 12/22/2017	FIGURE NO. **PA-144T** — FILE NO. **POA-1995-120**

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

NOTES:

1. METHOD APPLIES TO WATERBODIES THAT ARE NOT STATE DESIGNATED FISHERIES WHERE FLUME CROSSINGS ARE NOT REQUIRED. IF TOPOGRAPHY PERMITS TEMPORARY EQUIPMENT BRIDGE INSTALLATION, THE CONTRACTOR SHALL TRENCH, STRING, WELD, COAT, WEIGHT (IF NECESSARY). LOWER IN AND BACKFILL UTILIZING THE MAIN LINE CREW TRAVELING OVER THE BRIDGE. IF TOPOGRAPHY PROHIBITS INSTALLATION OF A TEMPORARY EQUIPMENT BRIDGE, CONTRACTOR SHALL TRENCH UP TO BOTH SIDES OF CROSSING; STRING, WELD, COAT AND WEIGHT (IF NECESSARY) USING THE MAINLINE CREW. IN STREAM EXCAVATION, LOWER IN, AND BACKFILL WILL UTILIZE A CLAM OR HOES WORKING FROM THE BANKS.
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. 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.
4. IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL.
5. INSTALL TEMPORARY (SOFT) PLUGS AT THE EDGE OF STREAM BANKS UNTIL JUST PRIOR TO PIPE INSTALLATION TO CONTROL WATER FLOW & TRENCH SLOUGHING.
6. TRENCH THROUGH WATERBODY USING MAINLINE EXCAVATION EQUIPMENT WHERE PRACTICAL.
7. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
8. RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
9. RESTORE STREAM BANKS TO APPROPRIATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

Associated Engineering Drawings
P01C-TYWC-03.DWG (BAKER) OCT 2013

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

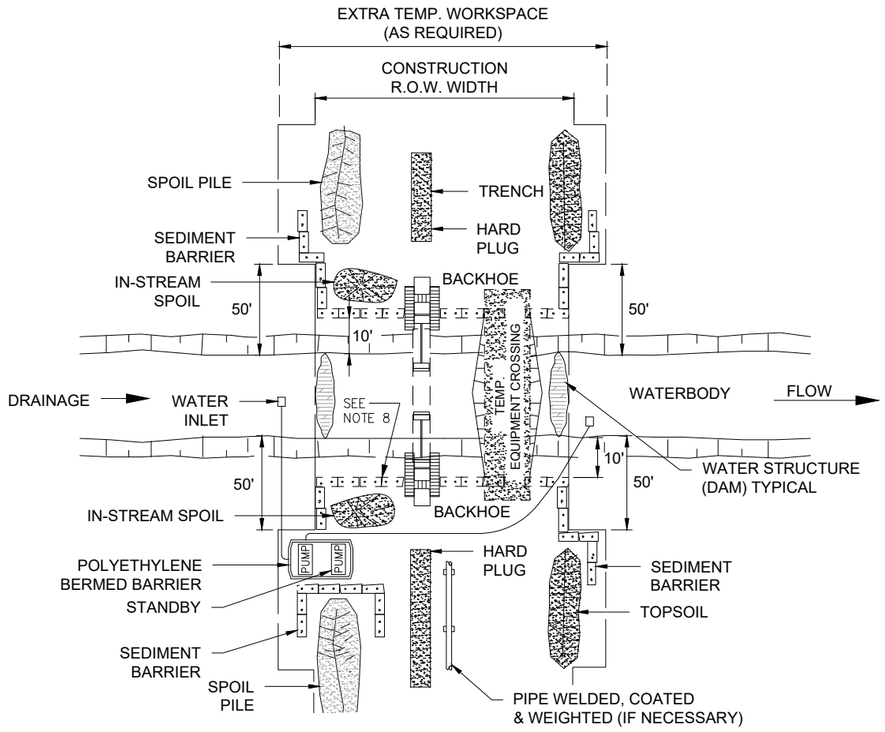
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DRAWING TITLE:
TYPICAL FLOWING WATERBODY CROSSING OPEN-CUT DETAIL

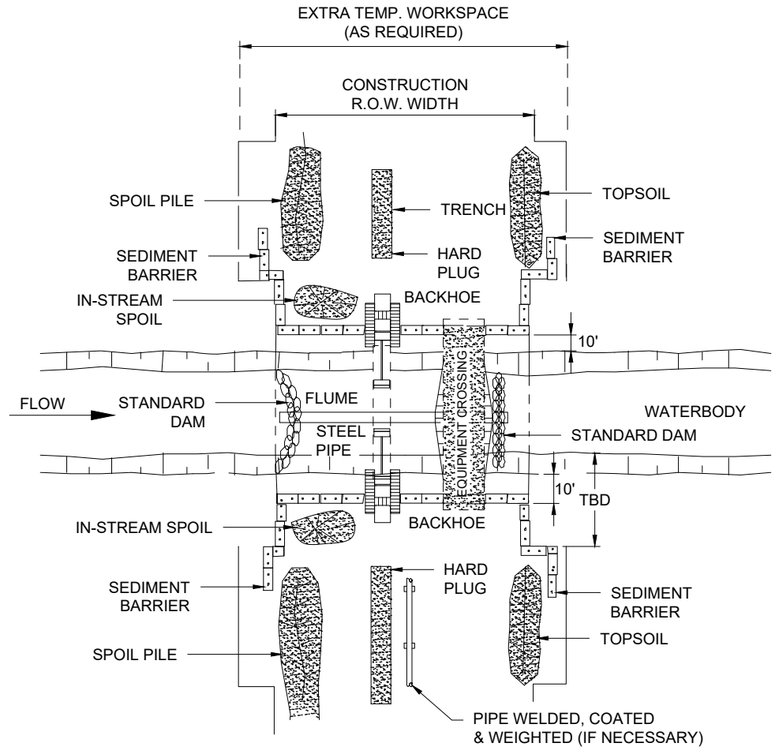
FIGURE NO. **PA-145T**

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

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Waterbody_Crossings.dwg



A 146T **TYPICAL WATERBODY CROSSING OPEN-CUT DAM & PUMP**
N.T.S.

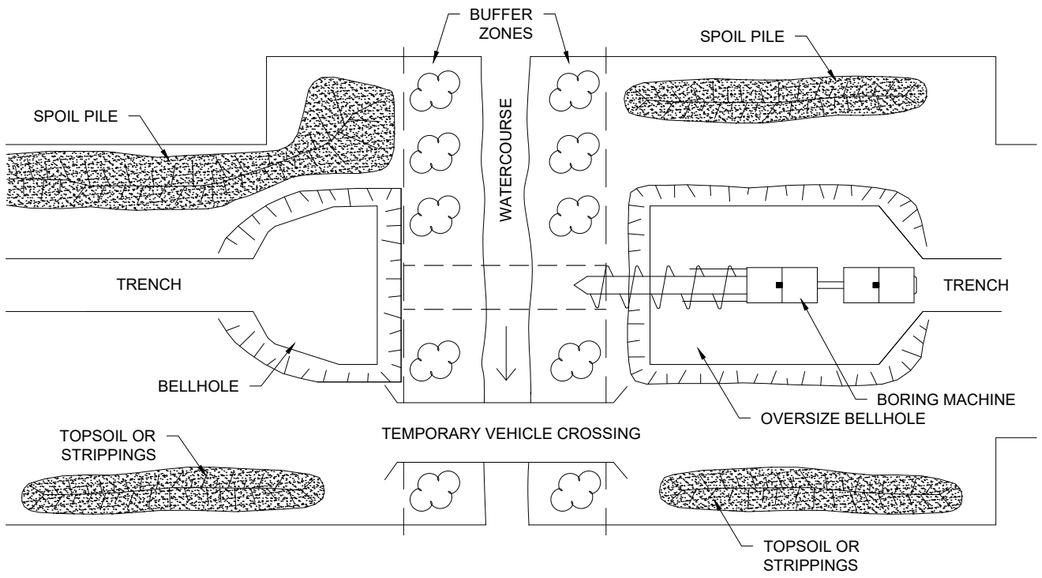


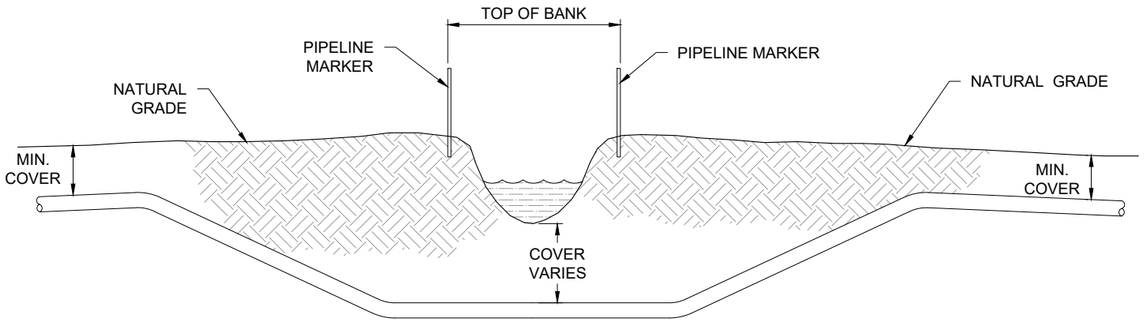
B 146T **TYPICAL WATERBODY CROSSING OPEN-CUT DRY FLUME**
N.T.S.

NOTES:

1. THIS METHOD APPLIES TO SWALES, DRAINS, SMALL STREAMS OR CREEKS WITH LIMITED FLOW AT TIME OF CONSTRUCTION WHERE DOWNSTREAM SILTATION MUST BE AVOIDED AND THE CROSSING WIDTH IS NOT PROHIBITIVE.
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. COMPLETE ALL IN-STREAM ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
4. INSTALL TEMPORARY VEHICLE CROSSING, IF REQUIRED.
5. IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN THE SITE SPECIFIC CROSSING PLANS.
6. CONSTRUCT SEDIMENT BARRIERS TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING INTO WATERBODY. CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE SPOIL AND TOPSOIL STOCKPILES AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
7. CONSTRUCT UPSTREAM STRUCTURE (DAM) FOLLOWED BY DOWNSTREAM STRUCTURE (DAM). WATER STRUCTURES' (AQUA DAM, JERSEY BARRIERS, SAND BAGS, STEEL PLATE, POLYETHYLENE LINER, ETC.) FINAL LOCATION WILL BE APPROVED BY THE COMPANY INSPECTOR.
8. SIZE PUMPS FOR DIVERSION OF ENTIRE STREAM FLOW. CONTRACTOR SHALL MAINTAIN 100% SPARE PUMPING CAPACITY ON SITE. PUMPS SHALL BE INSTALLED ON POLYETHYLENE BARRIERS FOR FUEL/OIL SPILL CONTAINMENT. PUMP INTAKES WILL BE SCREENED TO PREVENT ENTRAPMENT OF FISH. CONTRACTOR SHALL MONITOR PUMPS AND WATER STRUCTURES ON A 24 HOUR BASIS UNTIL THE CROSSING INSTALLATION IS COMPLETE. SHOULD LEAKAGE AT THE DAM STRUCTURES OCCUR, CONTRACTOR SHALL DEWATER BETWEEN THE STRUCTURES THROUGH AN APPROPRIATE FILTER AND ONTO A WELL VEGETATED UPLAND AREA.
9. LEAVE HARD PLUGS AT STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
10. COMPLETE CONSTRUCTION OF IN-STREAM PIPE SECTION. WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN-STREAM ACTIVITY.
11. TRENCH THROUGH WATERBODY AS EXPEDIENTLY AS PRACTICAL. INSTALL TEMPORARY (SOFT) PLUGS, IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
12. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
13. LOWER-IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
14. RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
15. DISMANTLE DOWNSTREAM WATER STRUCTURE (DAM) AND UPSTREAM WATER STRUCTURE (DAM) AFTER TRENCH BACKFILL.
16. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION. STABILIZE WATERBODY BANKS AND INSTALL TEMPORARY BARRIERS.

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **TYPICAL WATERBODY CROSSING OPEN-CUT DETAIL**
P01C-TYWC-04.DWG, P01C-TYWC-05.DWG (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-146T** FILE NO. **POA-1995-120**

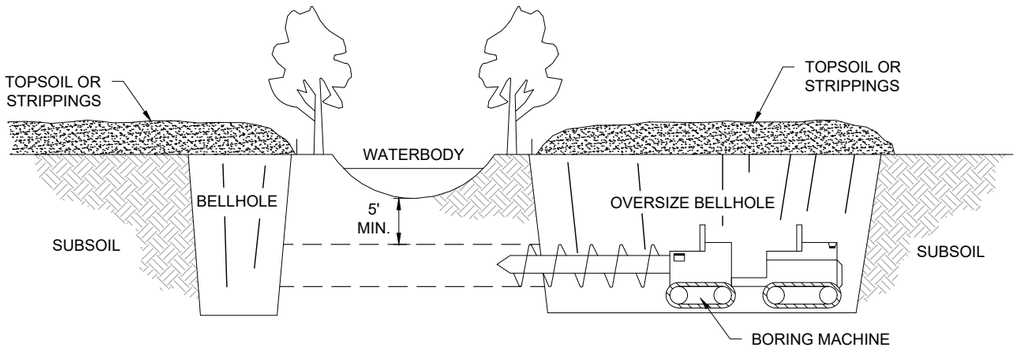




B / 147T **TYPICAL SMALL CREEK CROSSING SECTION**
N.T.S.

NOTES:

1. NORMAL FLOW OF DRAINAGE NOT TO BE CHANGED FOLLOWING PIPELINE CONSTRUCTION OPERATIONS.
2. CONSTRUCT ALL CROSSINGS IN ACCORDANCE WITH ENVIRONMENTAL PERMIT REQUIREMENTS AND CONDITIONS.
3. PIPELINE TO BE INSTALLED BY OPEN-CUT METHOD.

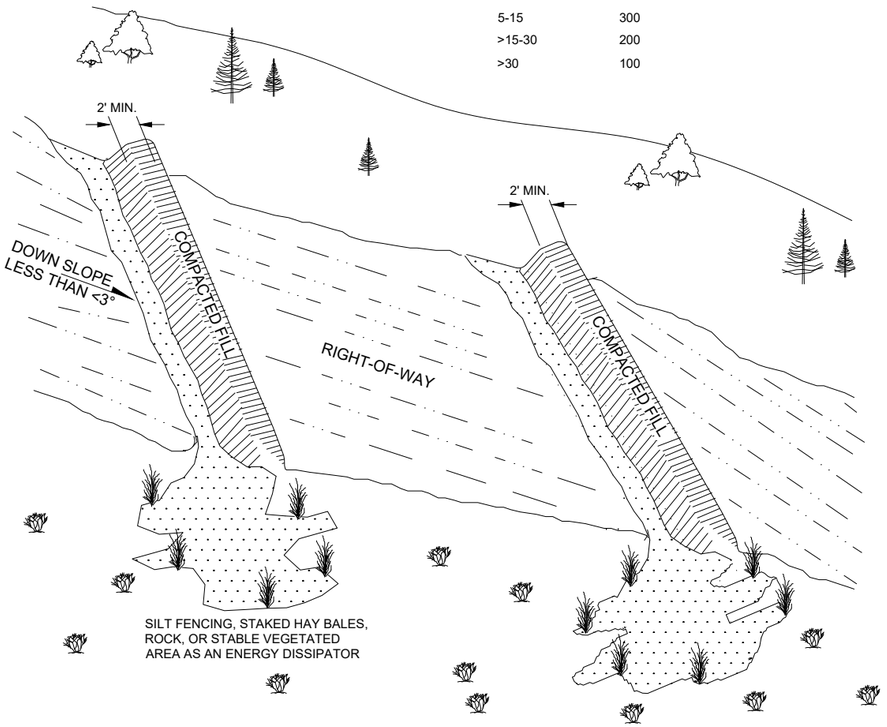


A / 147T **TYPICAL WATERBODY CROSSING HORIZONTAL BORE PLAN AND SECTION**
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYWC-06.DWG, P01C-TYWC-07.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: 12/22/2017	FIGURE NO. **PA-147T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Waterbody_Crossings.dwg

SLOPE(%)	SPACING (FEET)
5-15	300
>15-30	200
>30	100

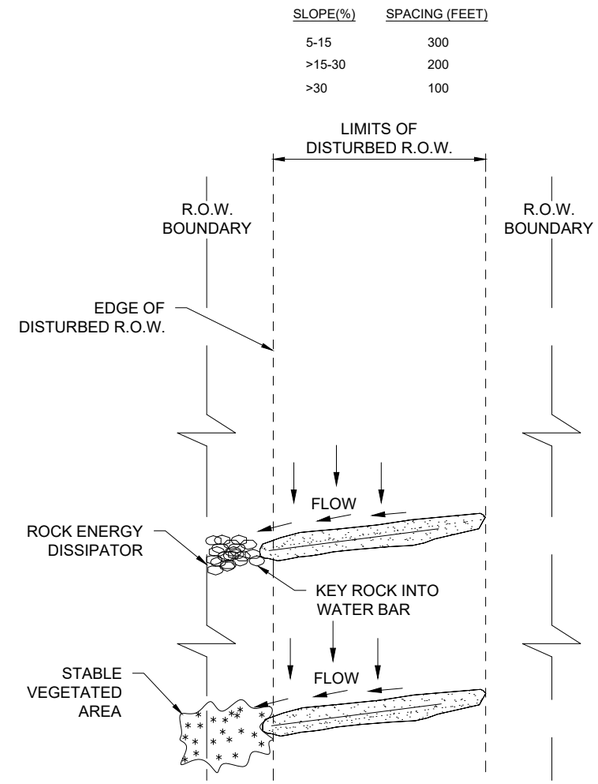


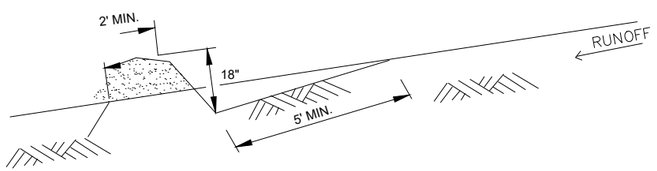
A 148T **TYPICAL SLOPE BREAKER WITH LONGITUDINAL CROSS SLOPES**
N.T.S.

SLOPE BREAKER NOTES:

1. SLOPE BREAKERS SHALL BE CONSTRUCTED OF NATIVE SOIL AND INSTALLED AT LOCATIONS AS SHOWN ON THE CONSTRUCTION DRAWINGS, OR AS REQUIRED.
2. SLOPE BREAKER SHALL BE ORIENTED AS SHOWN OR OTHER PATTERN AS REQUIRED.
3. SLOPE BREAKERS SHALL BE CONSTRUCTED AT A 2-8% GRADIENT ACROSS THE SLOPE.
4. THE SLOPE BREAKERS SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER). THE TROUGH WILL BE A MINIMUM OF 5' WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.
5. THE OUTLET OF THE SLOPE BREAKER MUST FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED R.O.W. INTO A STABLE, WELL VEGETATED AREA OR INTO AN ENERGY DISSIPATOR.
6. WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION R.O.W. TO DIRECT RUNOFF INTO STABLE, WELL VEGETATED AREAS, THESE LOCATIONS MUST BE APPROVED.

SLOPE(%)	SPACING (FEET)
5-15	300
>15-30	200
>30	100





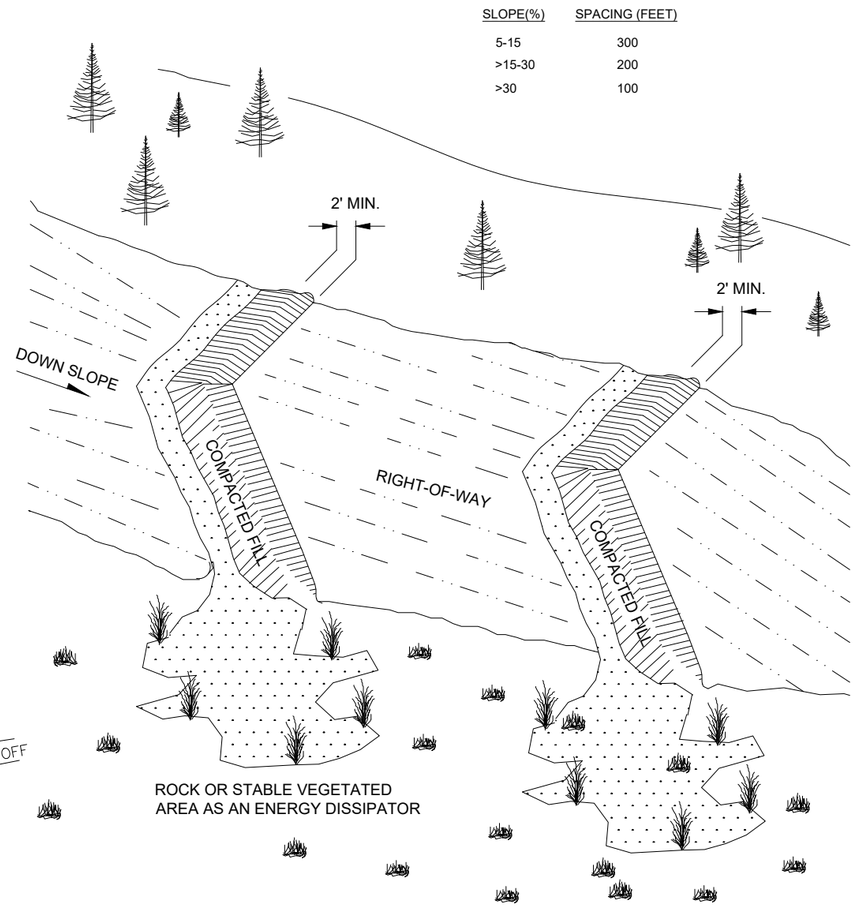
B 148T **TYPICAL SLOPE BREAKER WITH LONGITUDINAL CROSS SLOPES**
N.T.S.

FLOW ENERGY DISSIPATOR NOTES:

1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATOR IF THE COMPANY DETERMINES EXISTING VEGETATION IS NOT SUFFICIENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATOR SHALL BE CONSTRUCTED AS FOLLOWS:

- OUTFALL END OF DISSIPATOR SHOULD BE LOWER THAN SLOPE BREAKER END.
- SILT FENCE, STRAW BALE OR ROCK DISSIPATORS SHOULD BE KEYED INTO THE END OF THE SLOPE
- BREAKER. PROVIDE ENOUGH AREA INSIDE "L" TO CAPTURE AND HOLD SEDIMENT.

SLOPE(%)	SPACING (FEET)
5-15	300
>15-30	200
>30	100



C 148T **TYPICAL SLOPE BREAKER WITH LONGITUDINAL CROSS SLOPES**
N.T.S.

Associated Engineering Drawings
P01W-TYEC-10.DWG, P01W-TYEC-11.DWG, P01W-TYEC-12.DWG (BAKER) OCT 2013

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

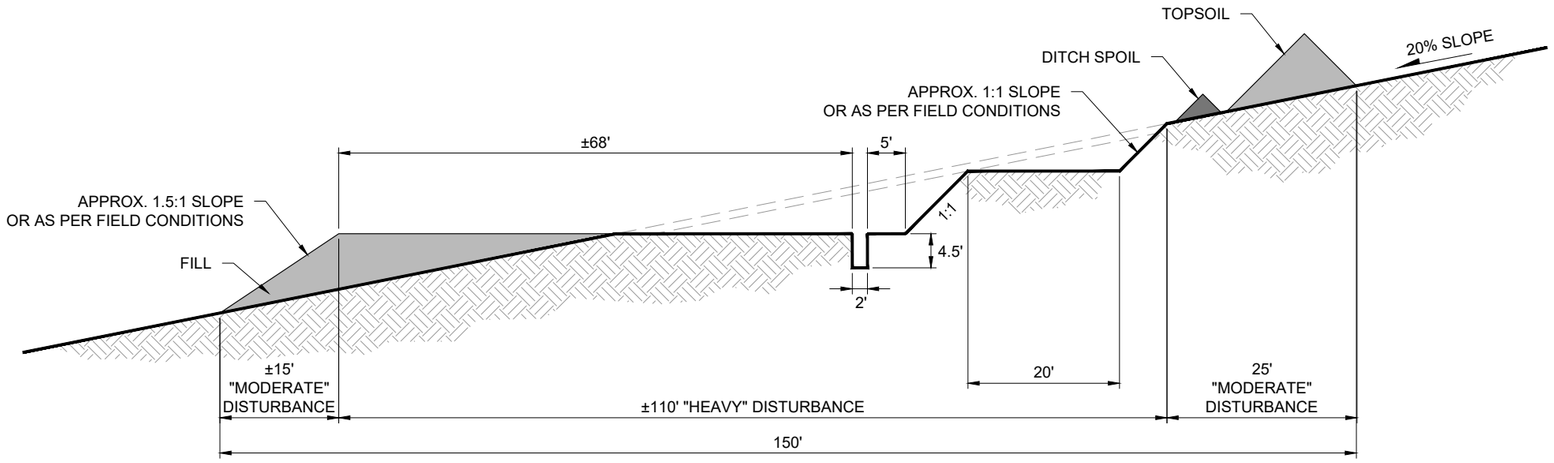
SCALE: AS SHOWN | DATE: 12/22/2017

DRAWING TITLE:
TYPICAL SLOPE BREAKER WITH LONGITUDINAL CROSS SLOPES DETAIL

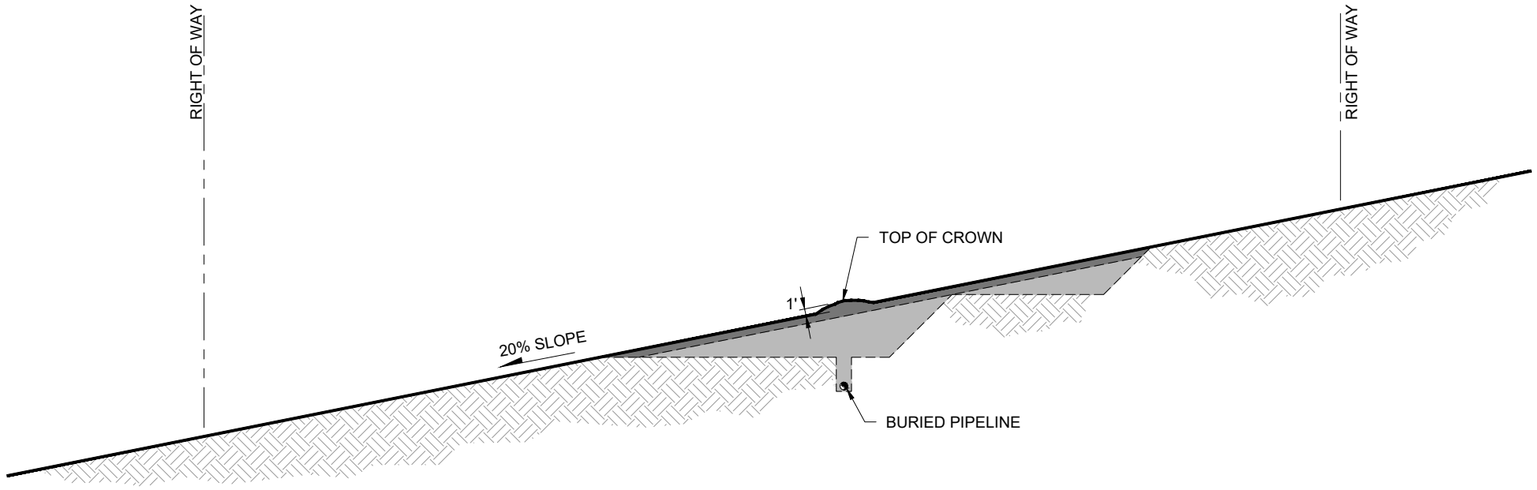
FIGURE NO. **PA-148T**

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

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Slope_Breaker.dwg



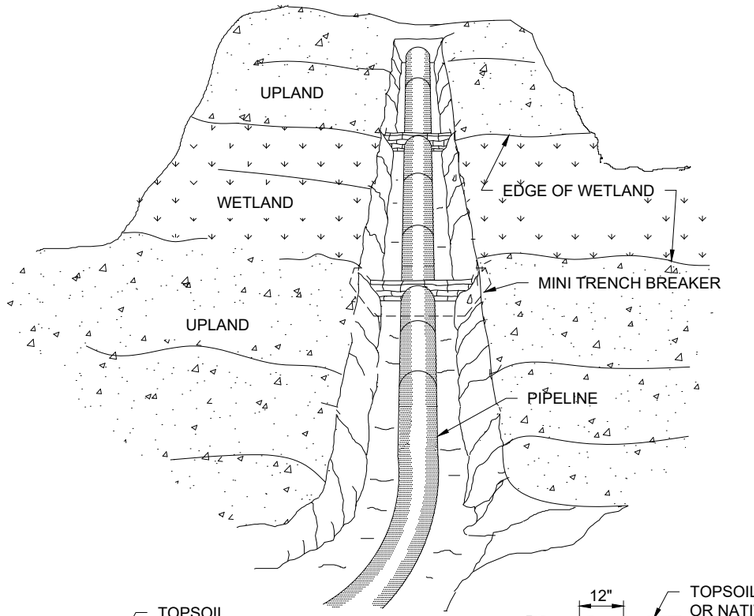
A / 149T **ACTIVE CONSTRUCTION RIGHT OF WAY**
N.T.S.

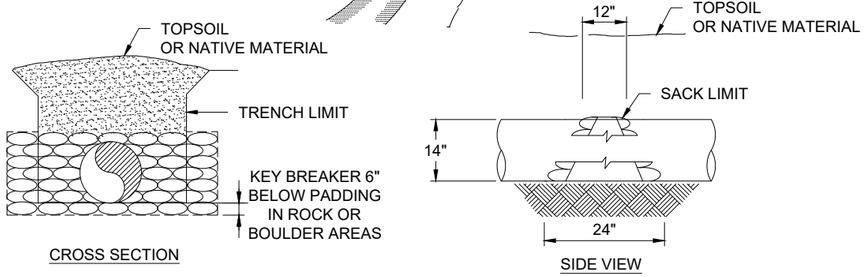


B / 149T **RECLAIMED RIGHT OF WAY**
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01W-TYRW-01.DWG, P01W-TYRW-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL SIDE SLOPE SECTION - TWO TONED DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-149T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Side_Slope_Section.dwg

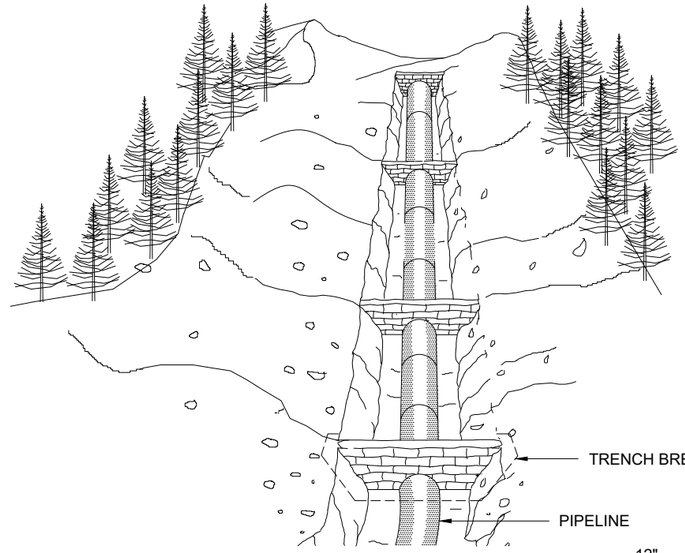


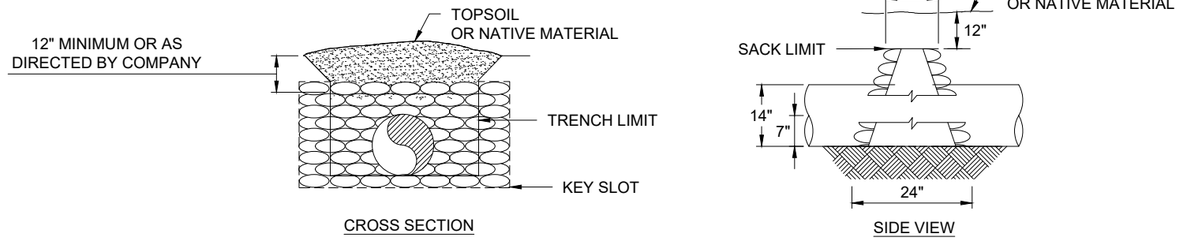


A 150T **ACTIVE CONSTRUCTION RIGHT OF WAY**
N.T.S.

NOTES:

1. MINI-TRENCH BREAKERS SHALL BE INSTALLED AT EDGE OF EACH WETLAND.
2. OPEN WEAVE HEMP OR JUTE SACKS SHALL BE FILLED WITH A MINIMUM OF 55lbs. OF SAND OR SUBSOIL.
3. BREAKER CONFIGURATION MAY BE CHANGED TO INCLUDE KEYING AS DETERMINED BY COMPANY ENGINEER.





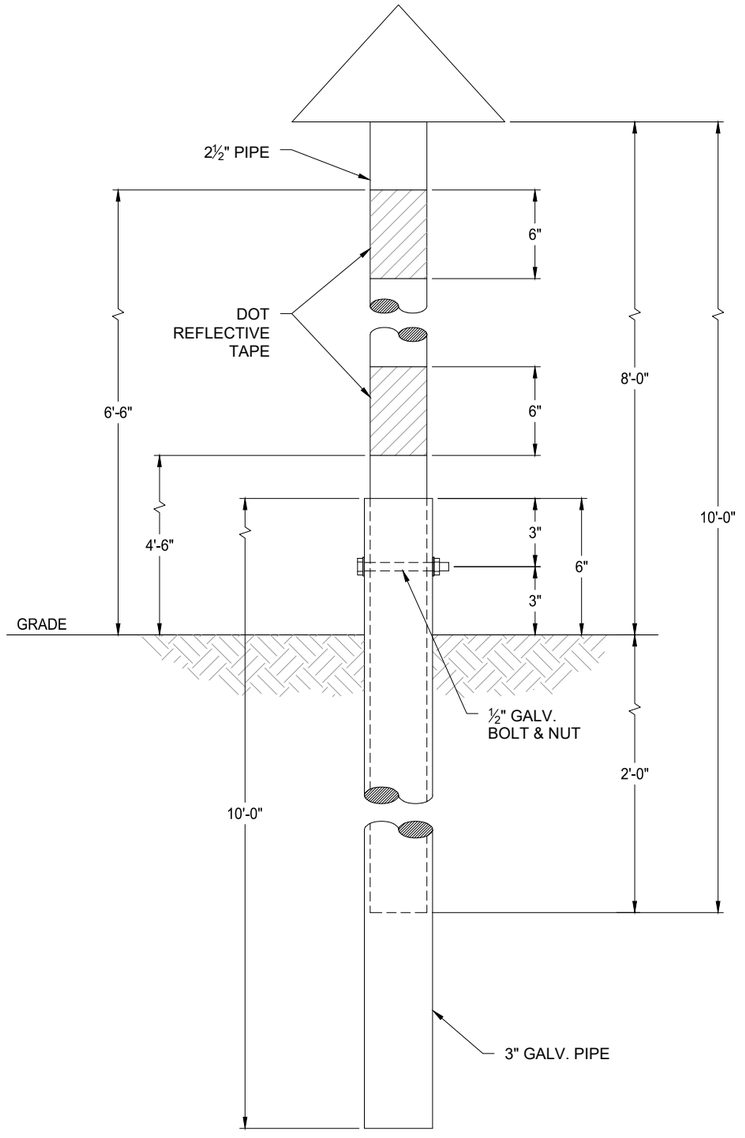
B 150T **TYPICAL TRENCH BREAKER REQUIREMENTS**
N.T.S.

NOTES:

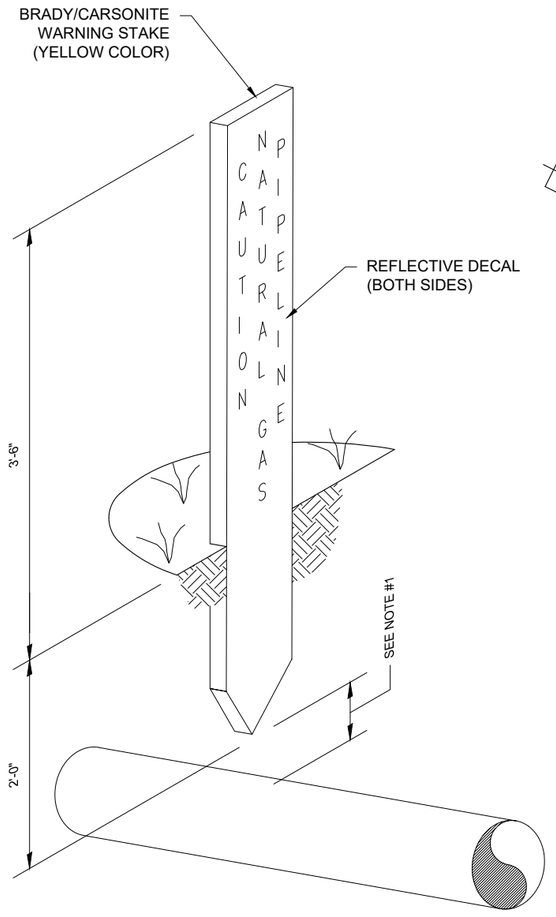
1. TRENCH BREAKERS SHALL BE INSTALLED:
   - ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN
   - AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS
   - WHERE NEEDED TO AVOID DRAINING A WETLAND
2. OPEN WEAVE HEMP OR JUTE SACKS SHALL BE FILLED WITH A MINIMUM OF 55lbs IN A MIXTURE OF SAND & SUBSOIL.
3. BREAKER SPACING AND CONFIGURATION, INCLUDING THE NEED TO KEY THE BREAKER INTO THE UNDISTURBED SOIL AT THE SIDES AND BOTTOM OF THE TRENCH, MAY CHANGE AS DETERMINED BY COMPANY ENGINEER.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01W-TYTR-01.DWG, P01W-TYTR-02.DWG, P01W-TYTR-03.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL TRENCH BREAKER DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-150T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Trench_Breaker.dwg



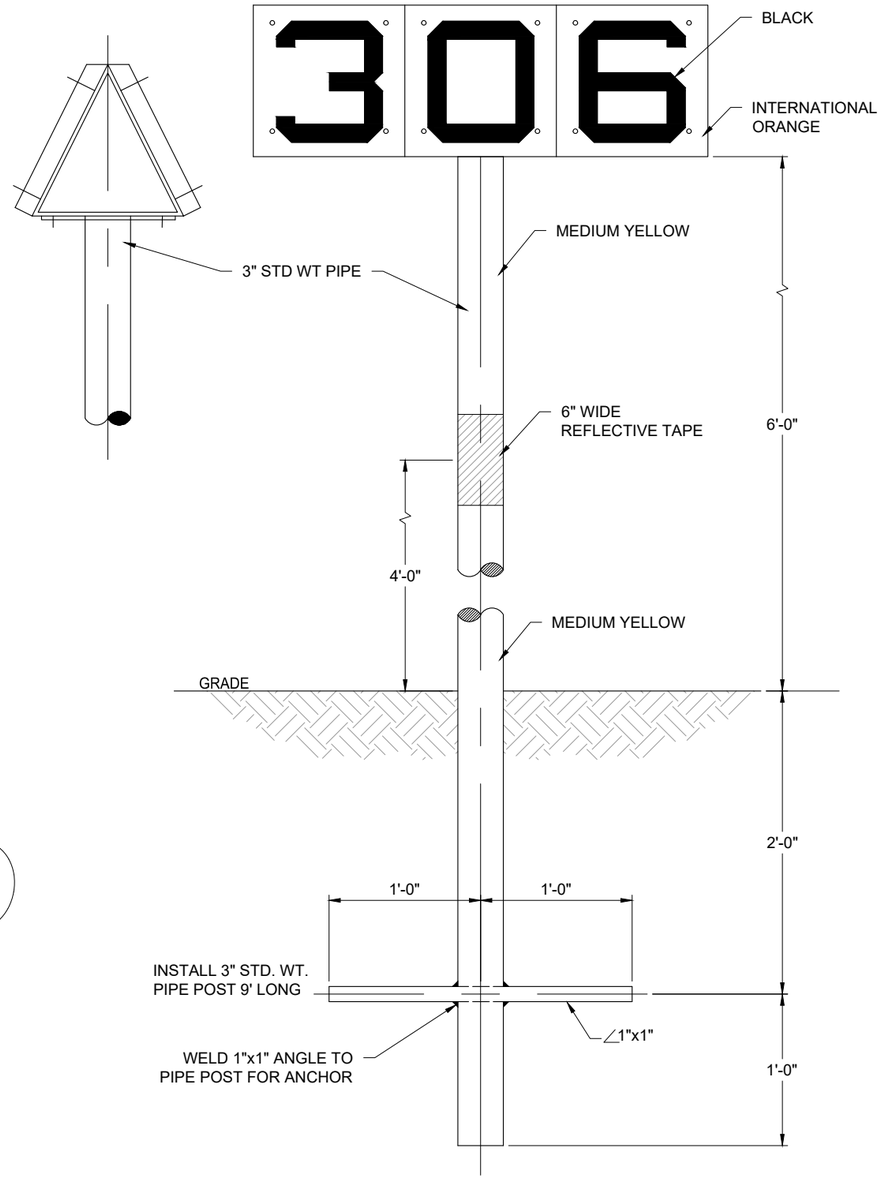
A 151T **TYPICAL PIPELINE MARKER**
N.T.S.



B 151T **TYPICAL PIPELINE WARNING MARKER**
N.T.S.

NOTES:

1. MARKERS SHALL BE PLACED DIRECTLY OVER THE PIPELINE WHEN THERE IS AT LEAST 1'-0" OF CLEARANCE BETWEEN THE TOP OF THE PIPE.
2. PIPE AND THE BOTTOM OF THE MARKER. MARKERS SHALL BE SLIGHTLY OFFSET IF THE CLEARANCE IS LESS THAN 1'-0". MARKERS WILL BE OFFSET IF THE PIPELINE IS IN A ROADWAY.



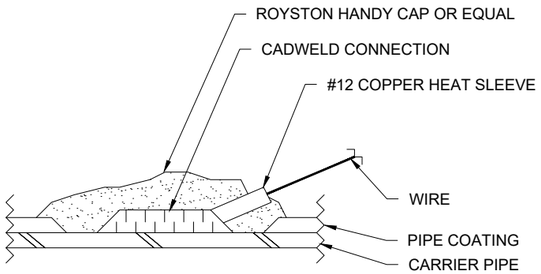
C 151T **TYPICAL PIPELINE AERIAL MARKER**
N.T.S.

NOTES:

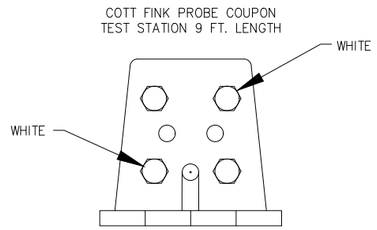
1. CONTRACTOR TO ASSEMBLE SIGN AND MOUNT ON POST.
2. REFLECTIVE STRIPING SHOULD BE ADDED ON ALL SIDES OF POST.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYMK-01.DWG, P01C-TYMK-02.DWG, P01C-TYMK-03.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL PIPELINE MARKER DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-151T** — FILE NO. **POA-1995-120**

PRELIMINARY PLAN NOT FOR CONSTRUCTION

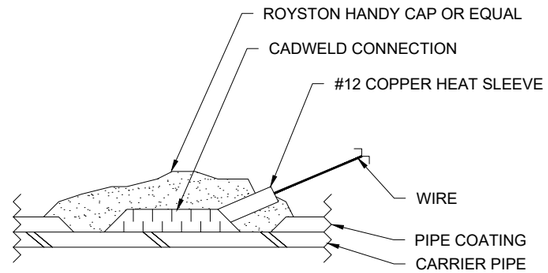


PIPE CONNECTION DETAIL
(SEE NOTES 3,4, & 5)

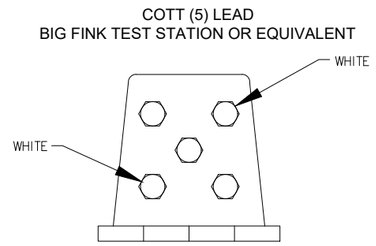


TERMINAL DETAIL

NOTE:
WIRES TO BE TERMINATED WITH RING TERMINALS.

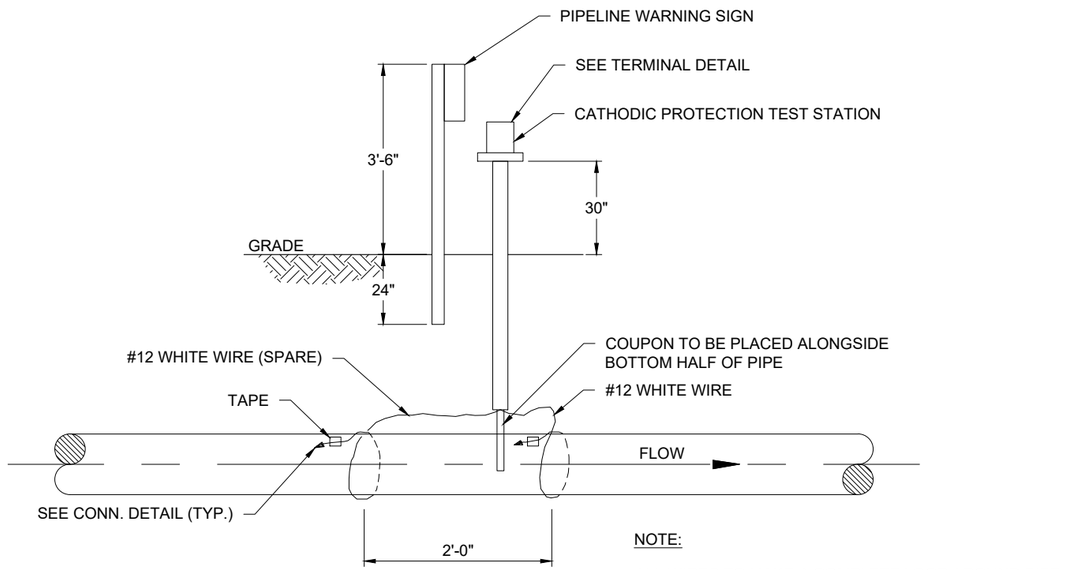


PIPE CONNECTION DETAIL
(SEE NOTES 3,4, & 5)



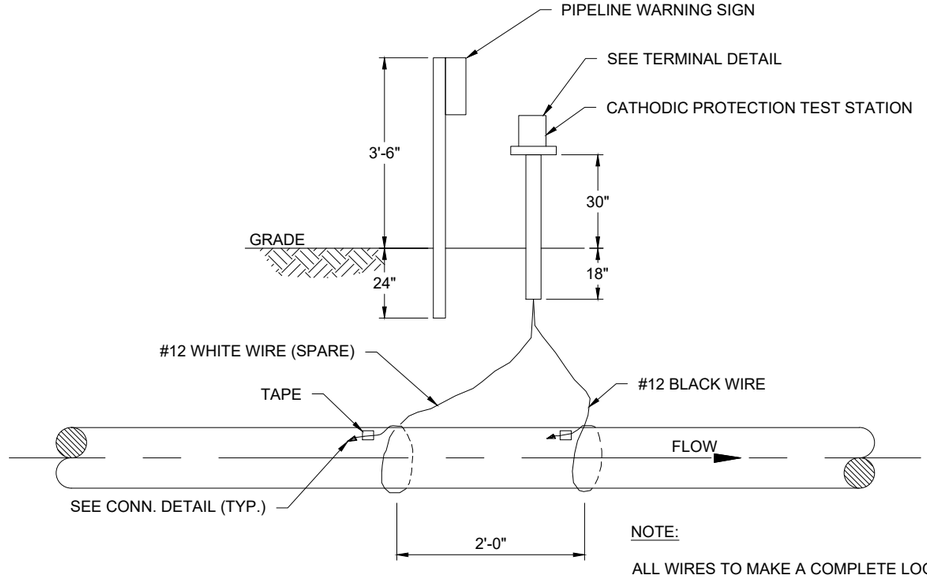
TERMINAL DETAIL

NOTE:
WIRES TO BE TERMINATED WITH RING TERMINALS.



NOTE:

ALL WIRES TO MAKE A COMPLETE LOOP AROUND PIPE.



NOTE:

ALL WIRES TO MAKE A COMPLETE LOOP AROUND PIPE.

A 152T TYPICAL CATHODIC PROTECTION COUPON TEST STATION
N.T.S.

NOTES:

1. ALL WIRE SHALL BE INSULATED STRANDED COPPER #12 THHN AS SHOWN ABOVE.
2. TERMINAL BLOCK SHALL BE WIRED BY CONTRACTOR AS SHOWN IN TERMINAL DETAIL ABOVE.
3. ALL WIRE CONNECTIONS TO CARRIER PIPE SHALL BE MADE AS SHOWN IN DETAIL ABOVE. WIRE SHALL BE CONNECTED TO PIPE BY CADWELD PROCESS WITH COPPER HEAT SLEEVE.
4. CADWELD WIRE CONNECTIONS SHALL BE PRIMED WITH ROYSTON SPRAY PRIMER OR EQUAL AND ALLOWED TO DRY 3 TO 4 MINUTES OR UNTIL TACKY, AND COVERED WITH ROYSTON HANDY CAP OR EQUAL.
5. WIRE INSULATION SHALL BE PROTECTED FROM DAMAGE.
6. LAY WIRES ALONGSIDE PIPE. NOT OVER OR UNDER PIPE.
7. CATHODIC PROTECTION TEST STATION AND ALL OTHER MATERIALS SHALL BE FURNISHED BY CONTRACTOR.
8. INSTALL AT ALL LOCATIONS INDICATED ON ALIGNMENT SHEETS.

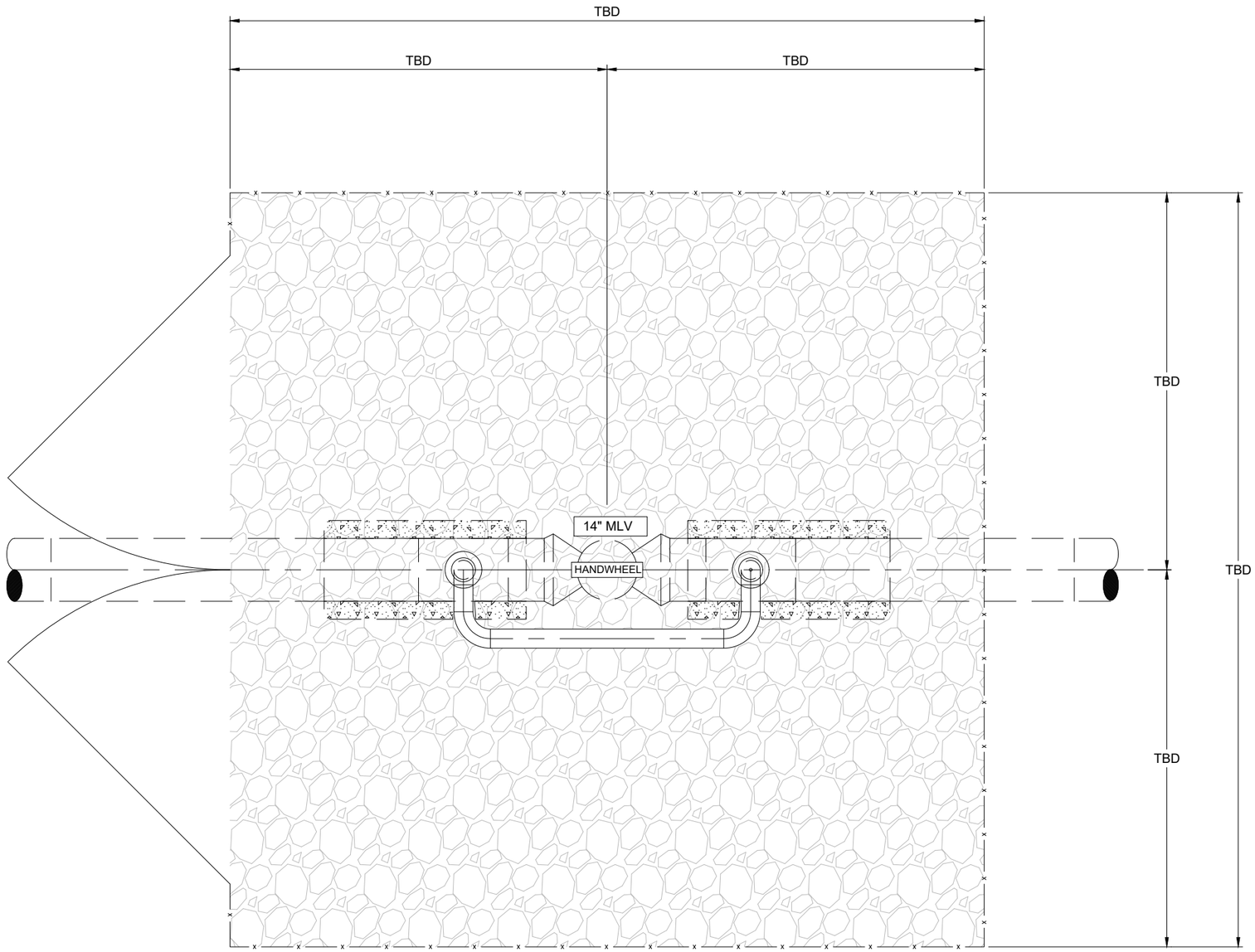
B 152T TYPICAL PIPELINE WARNING MARKER
N.T.S.

NOTES:

1. ALL WIRE SHALL BE INSULATED STRANDED COPPER #12 THHN AS SHOWN ABOVE.
2. TERMINAL BLOCK SHALL BE WIRED BY CONTRACTOR AS SHOWN IN TERMINAL DETAIL ABOVE.
3. ALL WIRE CONNECTIONS TO CARRIER PIPE SHALL BE MADE AS SHOWN IN DETAIL ABOVE. WIRE SHALL BE CONNECTED TO PIPE BY CADWELD PROCESS WITH COPPER HEAT SLEEVE.
4. CADWELD WIRE CONNECTIONS SHALL BE PRIMED WITH ROYSTON SPRAY PRIMER OR EQUAL AND ALLOWED TO DRY 3 TO 4 MINUTES OR UNTIL TACKY, AND COVERED WITH ROYSTON HANDY CAP OR EQUAL.
5. WIRE INSULATION SHALL BE PROTECTED FROM DAMAGE.
6. LAY WIRES ALONGSIDE PIPE. NOT OVER OR UNDER PIPE.
7. CATHODIC PROTECTION TEST STATION AND ALL OTHER MATERIALS SHALL BE FURNISHED BY CONTRACTOR.
8. INSTALL AT ALL LOCATIONS INDICATED ON ALIGNMENT SHEETS.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYTS-01.DWG, P01C-TYTS-02.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL CATHODIC PROTECTION DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-152T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Cathodic_Protection.dwg



A 153T **TYPICAL MLV FENCING**
N.T.S.

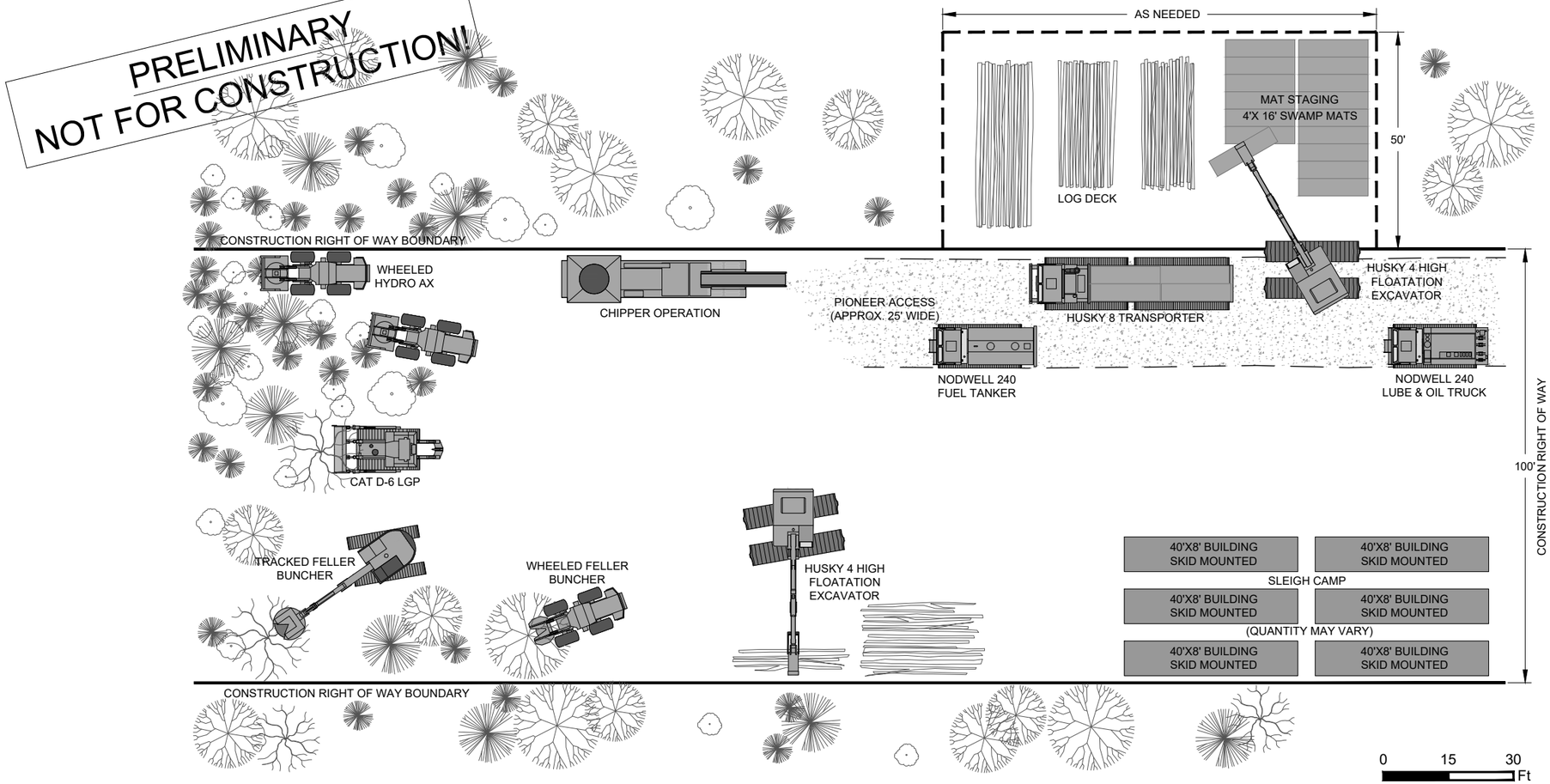
NOTES:

1. REFERENCE DRAWING (DONLIN PIPELINE MLV DWG) AND CONSTRUCTION SPECIFICATIONS FOR DETAILED CONSTRUCTION GUIDELINES.
2. LOCATION OF GATE TO BE FIELD DETERMINED.

	Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **TYPICAL MLV FENCING DETAIL**
	P01M-DTVA-01.DWG (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-153T** FILE NO. **POA-1995-120**

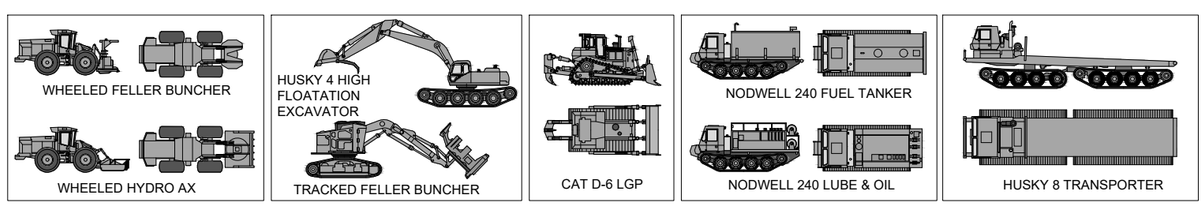
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PRELIMINARY
NOT FOR CONSTRUCTION!



NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.

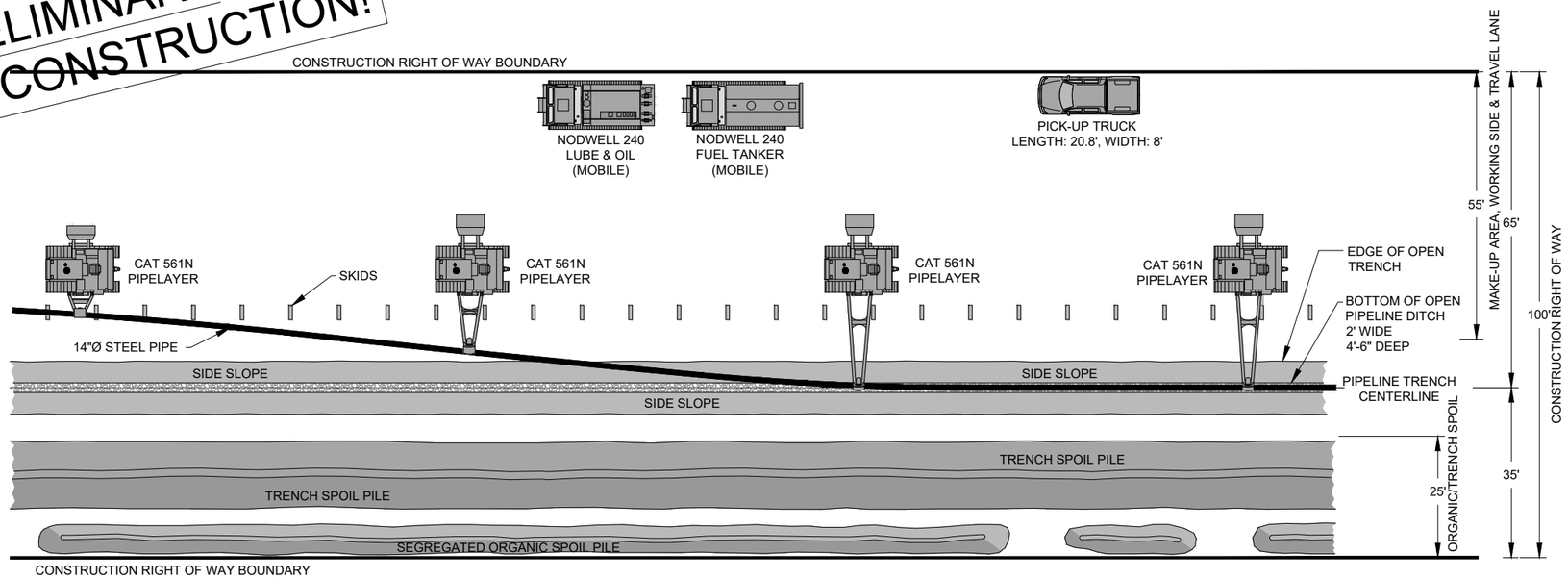
LEGEND
PERMANENT RIGHT OF WAY BOUNDARY
TEMPORARY USE AREA



Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-01.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN SUMMER GRADED R.O.W.MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-154T** FILE NO. **POA-1995-120**

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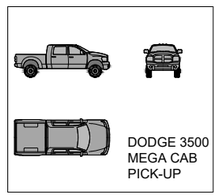
PRELIMINARY
NOT FOR CONSTRUCTION!

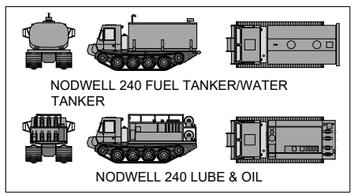


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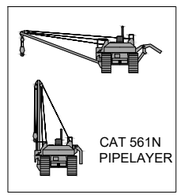
LEGEND
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.


DODGE 3500
MEGA CAB
PICK-UP


NODWELL 240 FUEL TANKER/WATER TANKER

NODWELL 240 LUBE & OIL


CAT 561N
PIPELAYER

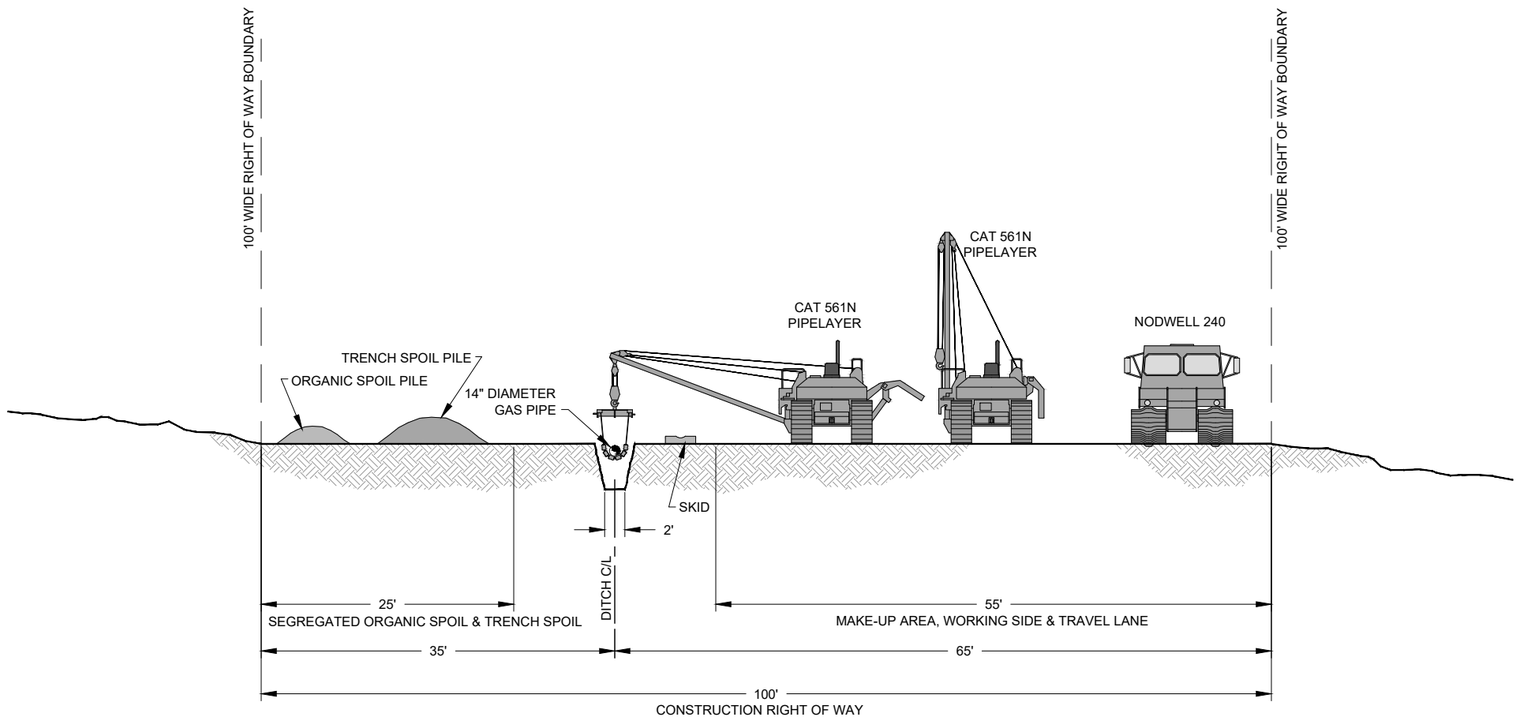
	Associated Engineering Drawings P01C-TYRWS-05.DWG (BAKER) OCT 2013	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503
		SCALE: AS SHOWN DATE: 12/22/2017

DRAWING TITLE:
RIGHT OF WAY PLAN SUMMER GRADED R.O.W. MODE

FIGURE NO. **PA-155T**

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

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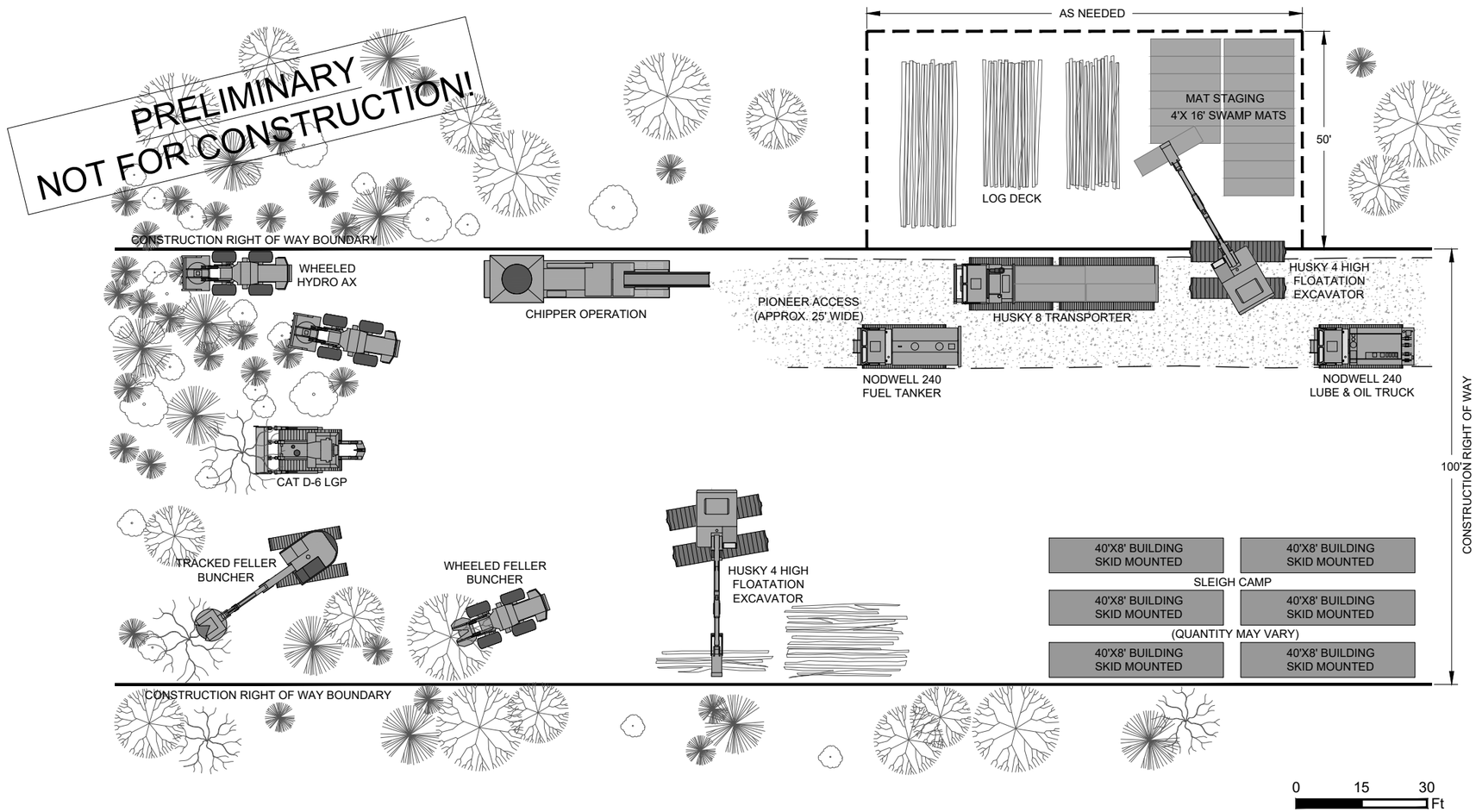


PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-07.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**CROSS SECTION SUMMER GRADED R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-156T** FILE NO. **POA-1995-120**

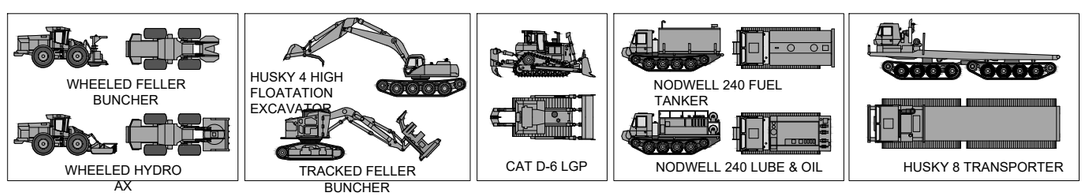
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PRELIMINARY
NOT FOR CONSTRUCTION!



NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.

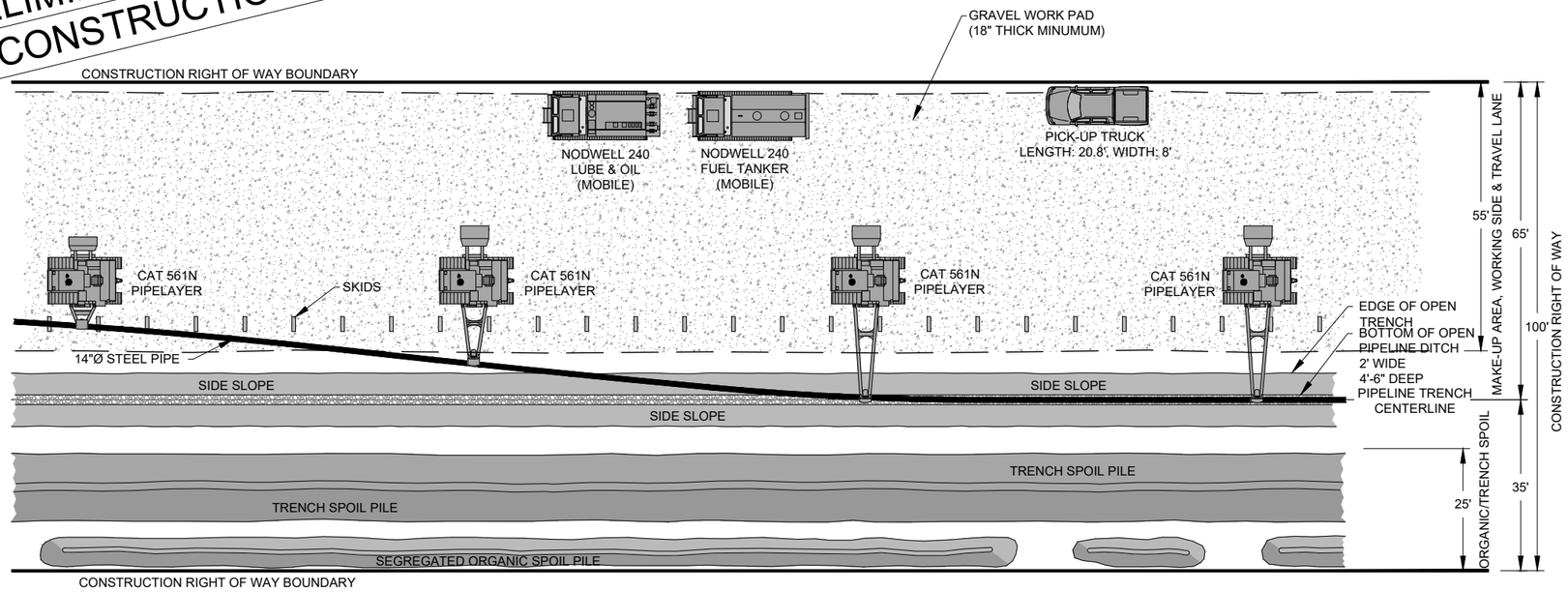
LEGEND
PERMANENT RIGHT OF WAY BOUNDARY
TEMPORARY USE AREA



Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-08.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN SUMMER PERMAFROST R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-157T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

PRELIMINARY
NOT FOR CONSTRUCTION!

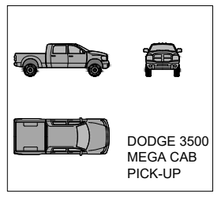


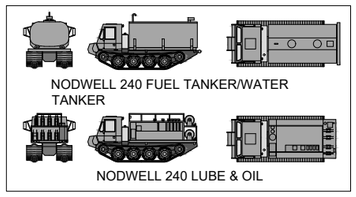
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LEGEND

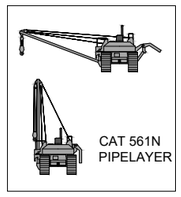
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.


DODGE 3500
MEGA CAB
PICK-UP

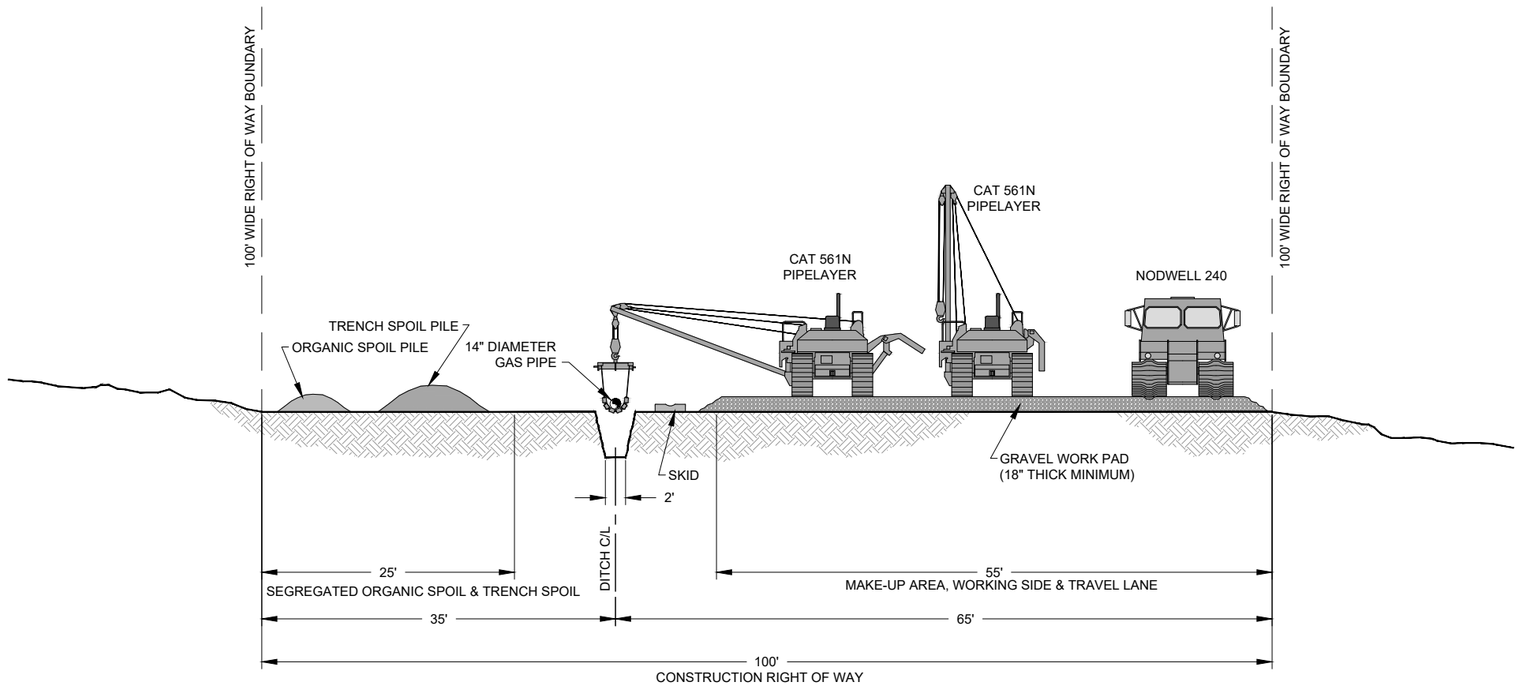

NODWELL 240 FUEL TANKER/WATER
TANKER

NODWELL 240 LUBE & OIL


CAT 561N
PIPELAYER

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-12.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN SUMMER PERMAFROST R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-158T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

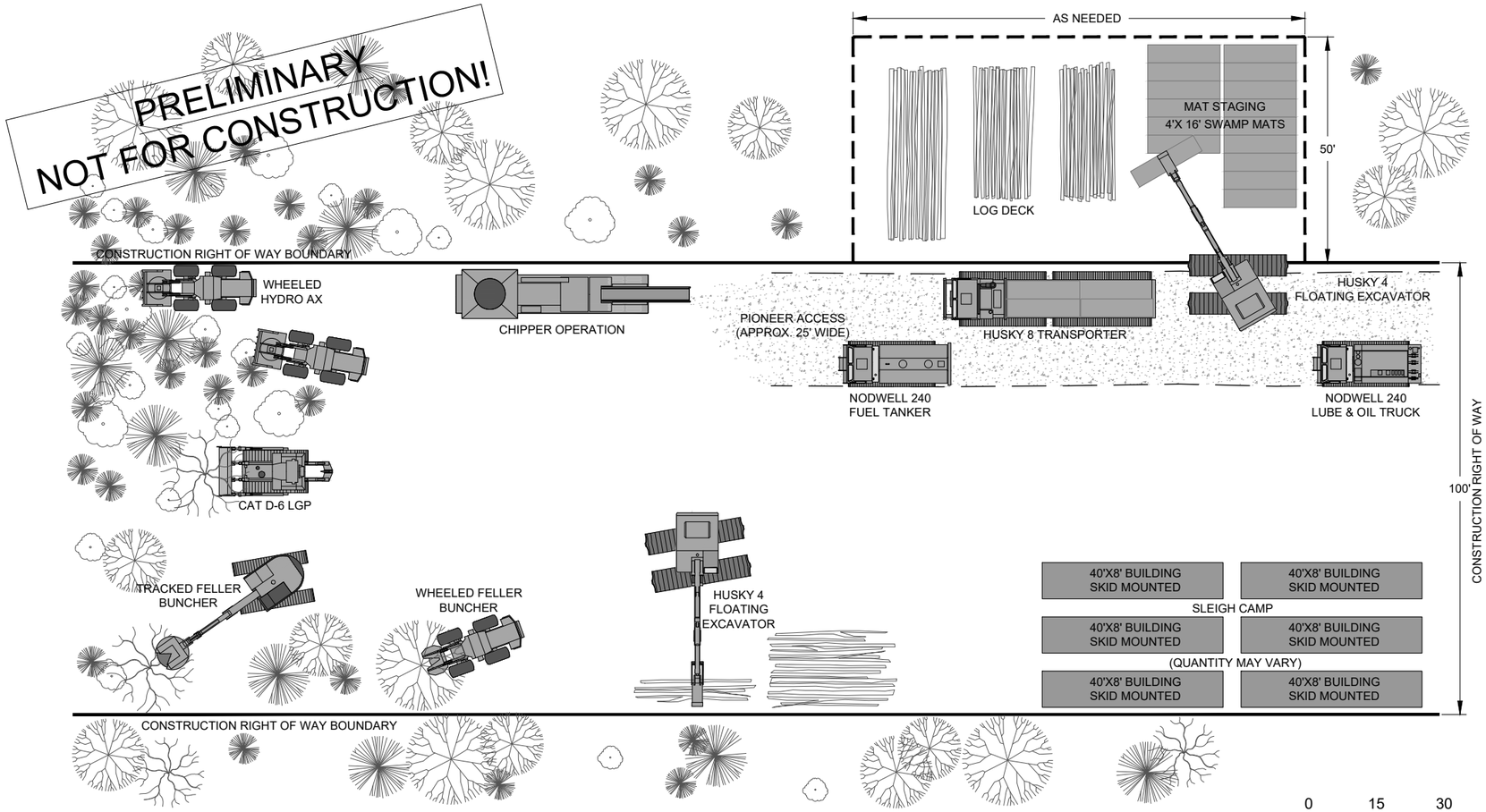


0 7.5 15
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PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-14.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**CROSS SECTION SUMMER PERMAFROST R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-159T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

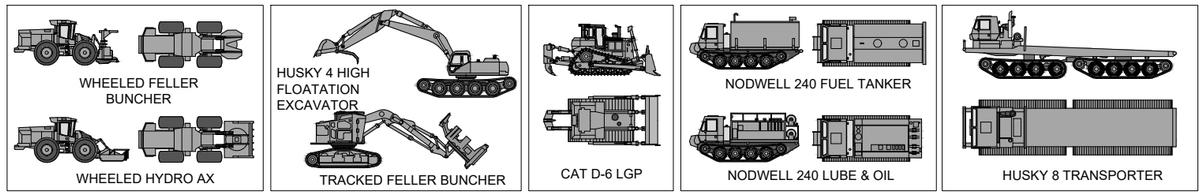


NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.

LEGEND

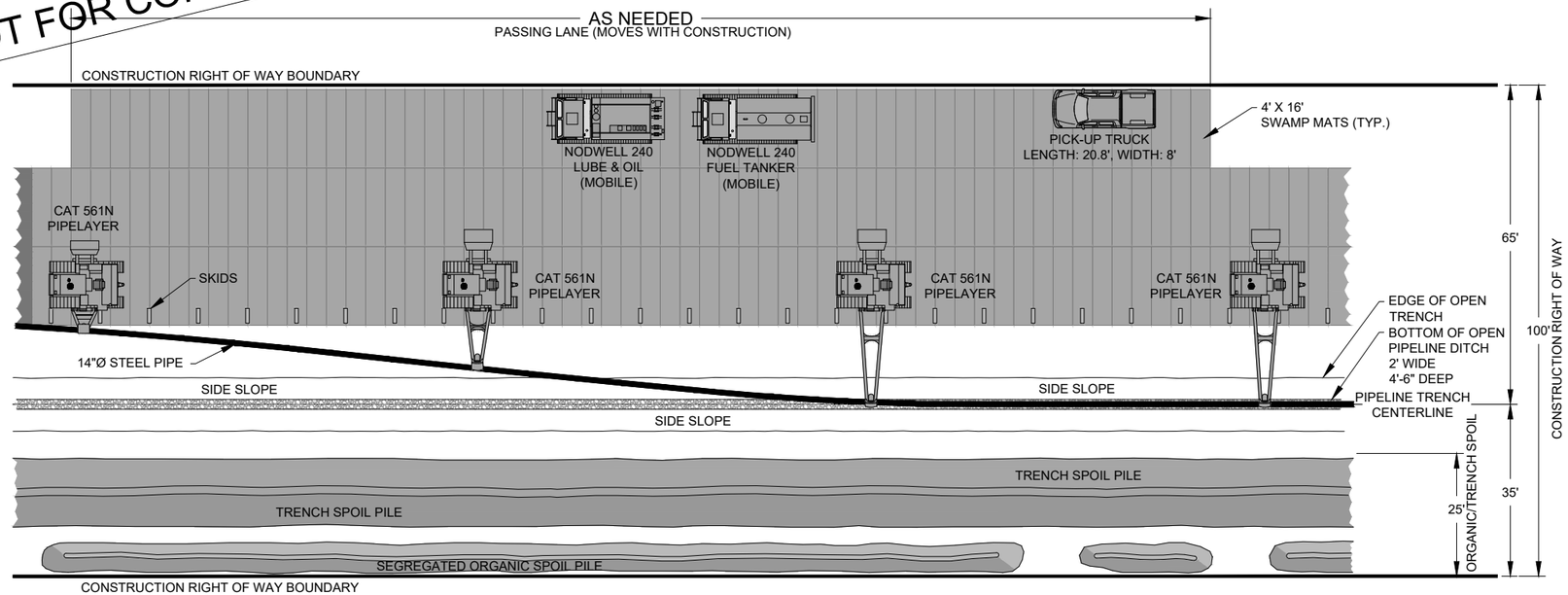
CONSTRUCTION RIGHT OF WAY BOUNDARY

TEMPORARY USE AREA



	Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: RIGHT OF WAY PLAN SUMMER WETLANDS R.O.W. MODE
	P01C-TYRWS-15.DWG (BAKER) OCT 2013	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. PA-160T FILE NO. POA-1995-120

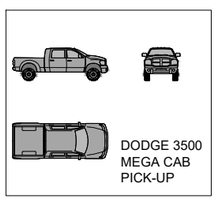
PRELIMINARY
NOT FOR CONSTRUCTION!

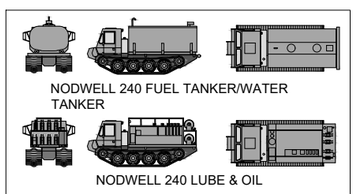


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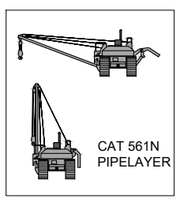
LEGEND
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. MATS OR CORDUROY TIMBER AS NEEDED.
2. EQUIPMENT QUANTITY AND TYPE MAY VARY.


DODGE 3500
MEGA CAB
PICK-UP

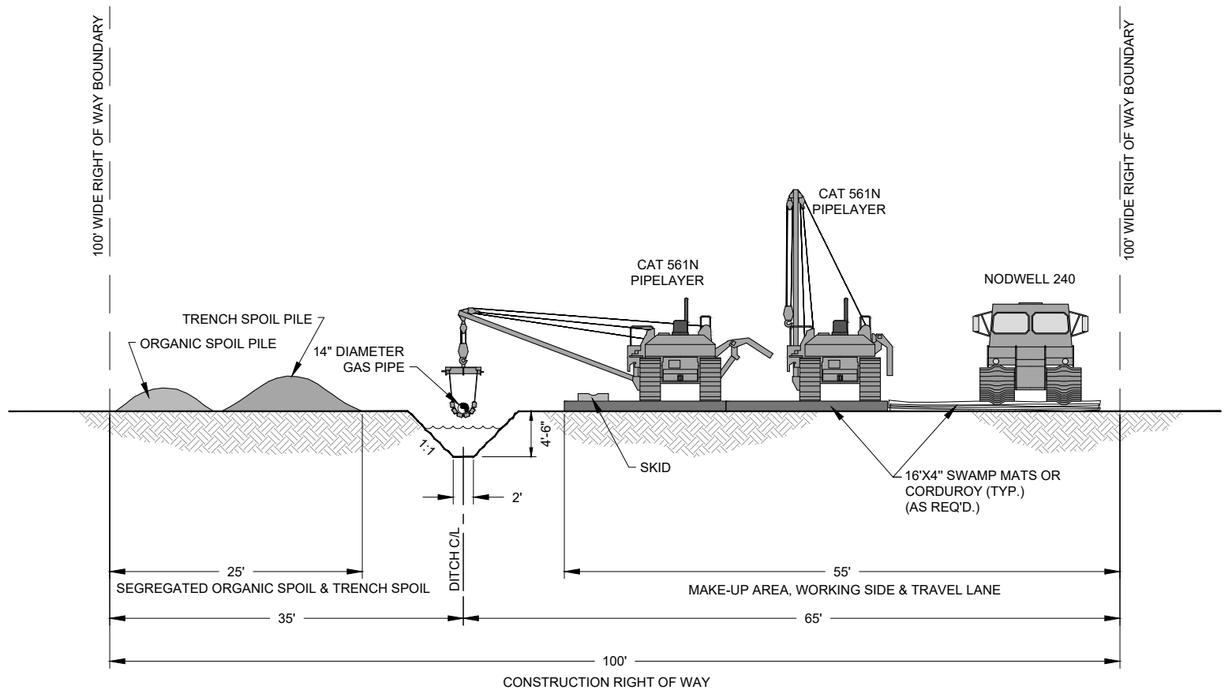

NODWELL 240 FUEL TANKER/WATER
TANKER

NODWELL 240 LUBE & OIL


CAT 561N
PIPELAYER

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWS-19.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	RIGHT OF WAY PLAN SUMMER WETLANDS R.O.W. MODE
	SCALE: AS SHOWN / DATE: 12/22/2017	FIGURE NO. PA-161T / FILE NO. POA-1995-120

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg



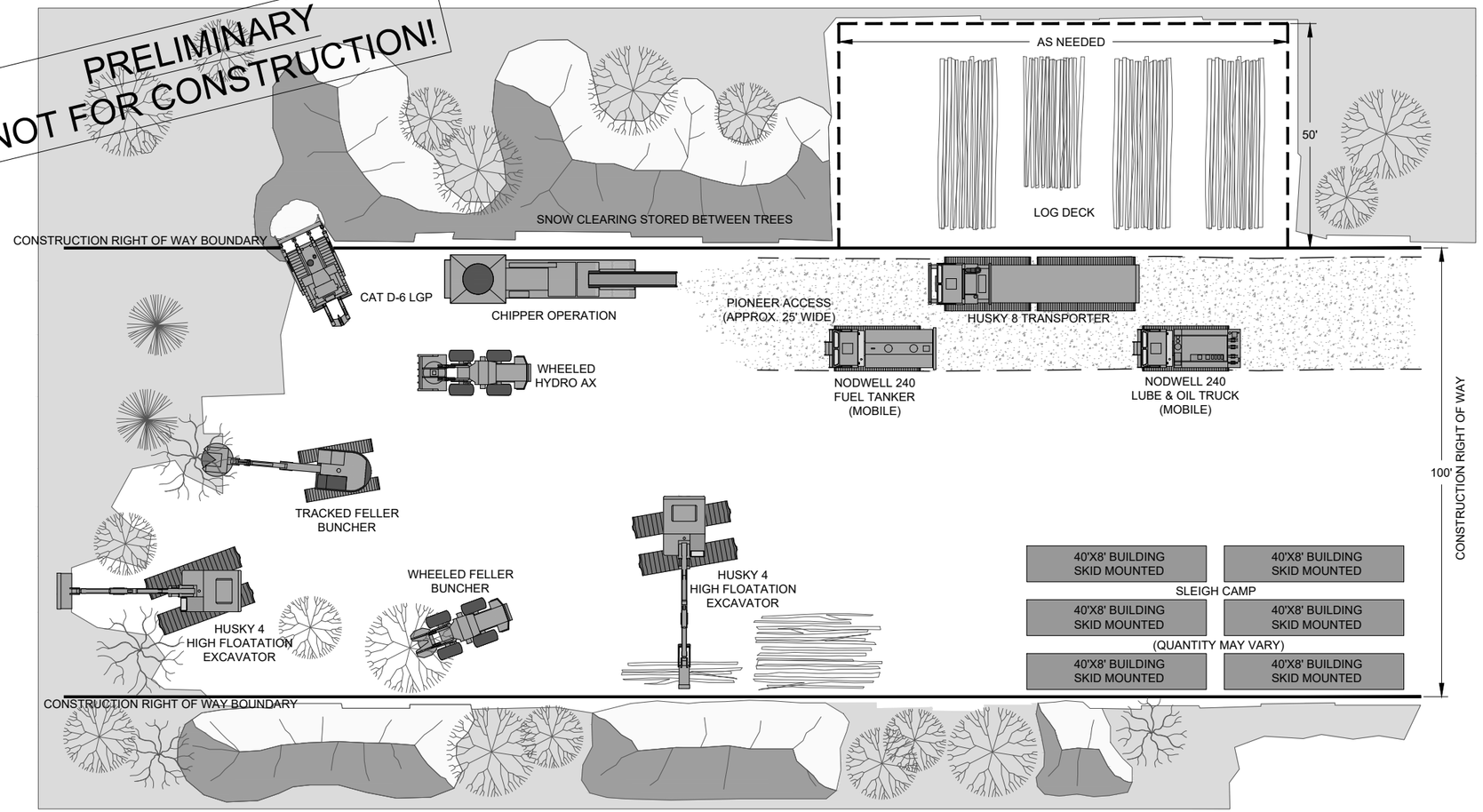
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PRELIMINARY
NOT FOR CONSTRUCTION!

	Associated Engineering Drawings P01C-TYRWS-21.DWG (BAKER) OCT 2013	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **CROSS SECTION SUMMER WETLANDS R.O.W. MODE**
		SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO.: **PA-162T** FILE NO.: **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

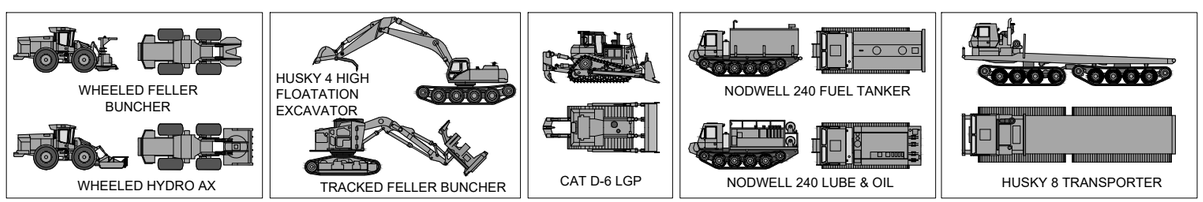
PRELIMINARY
NOT FOR CONSTRUCTION!



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LEGEND
PERMANENT RIGHT OF WAY BOUNDARY
TEMPORARY USE AREA

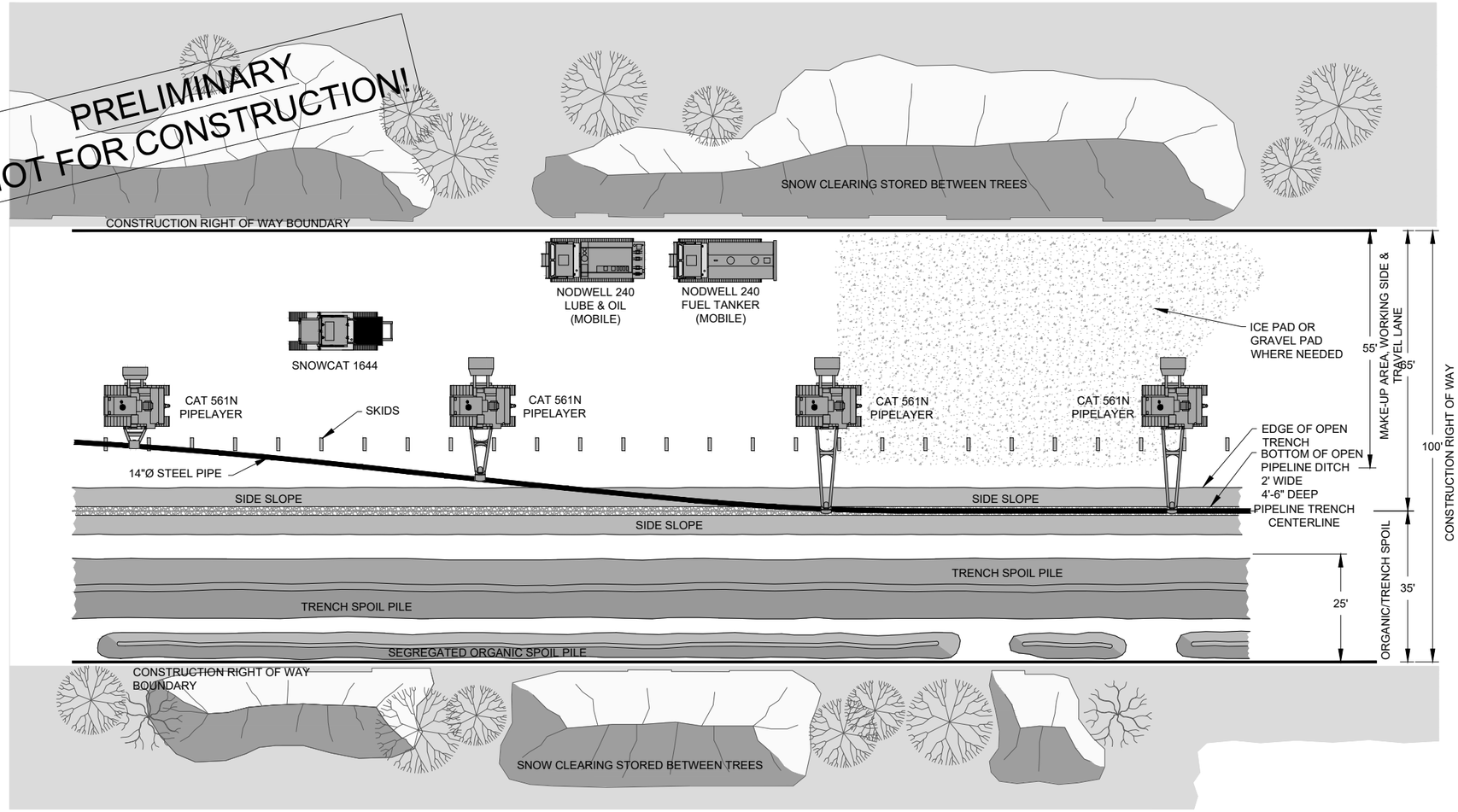
NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.



Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-01.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN WINTER GRADED R.O.W MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-163T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

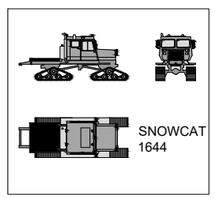
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NOT FOR CONSTRUCTION!

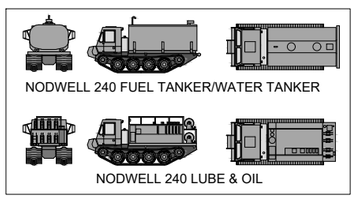


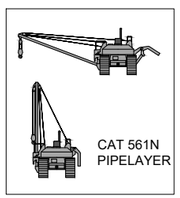
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LEGEND
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.

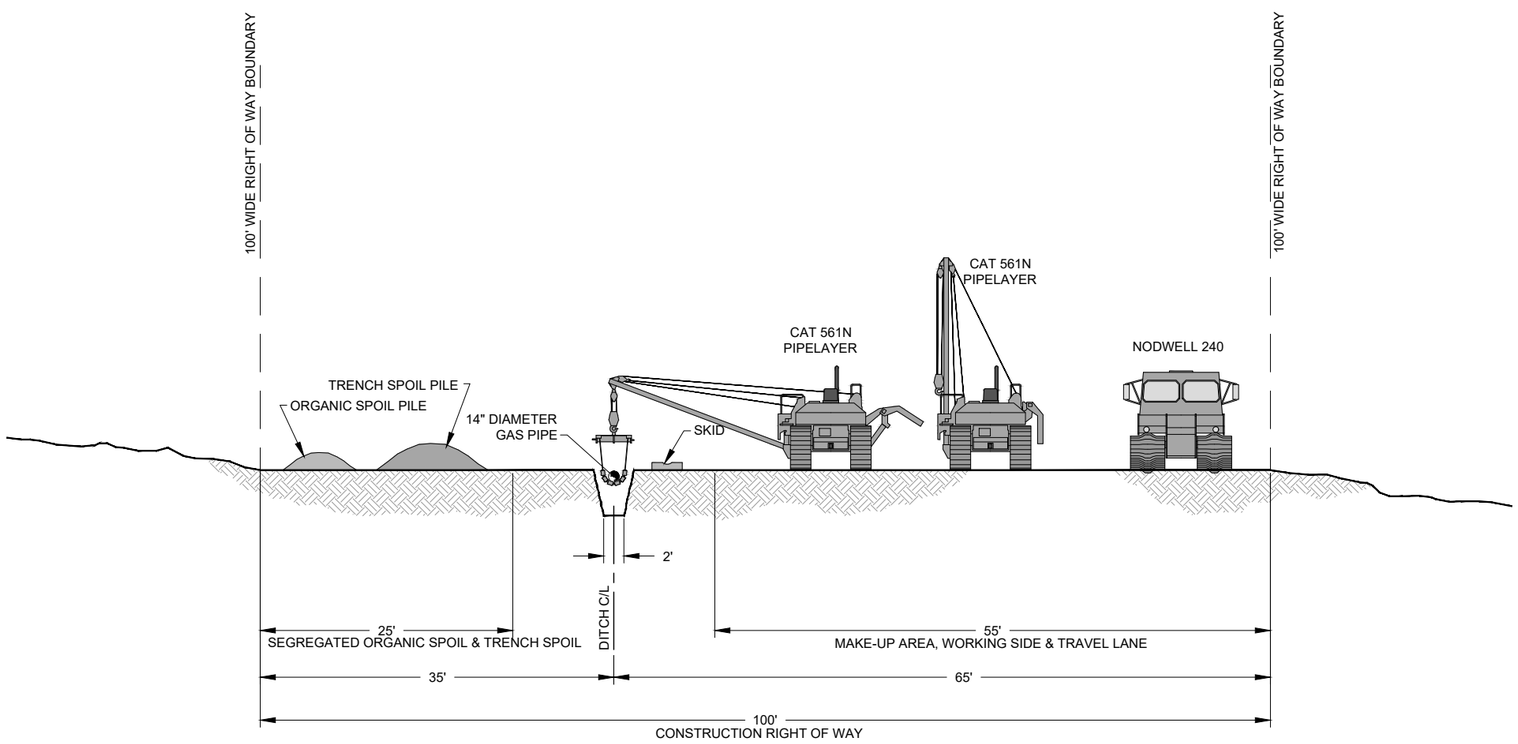






Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-06.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN WINTER GRADED R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-164T** FILE NO. **POA-1995-120**

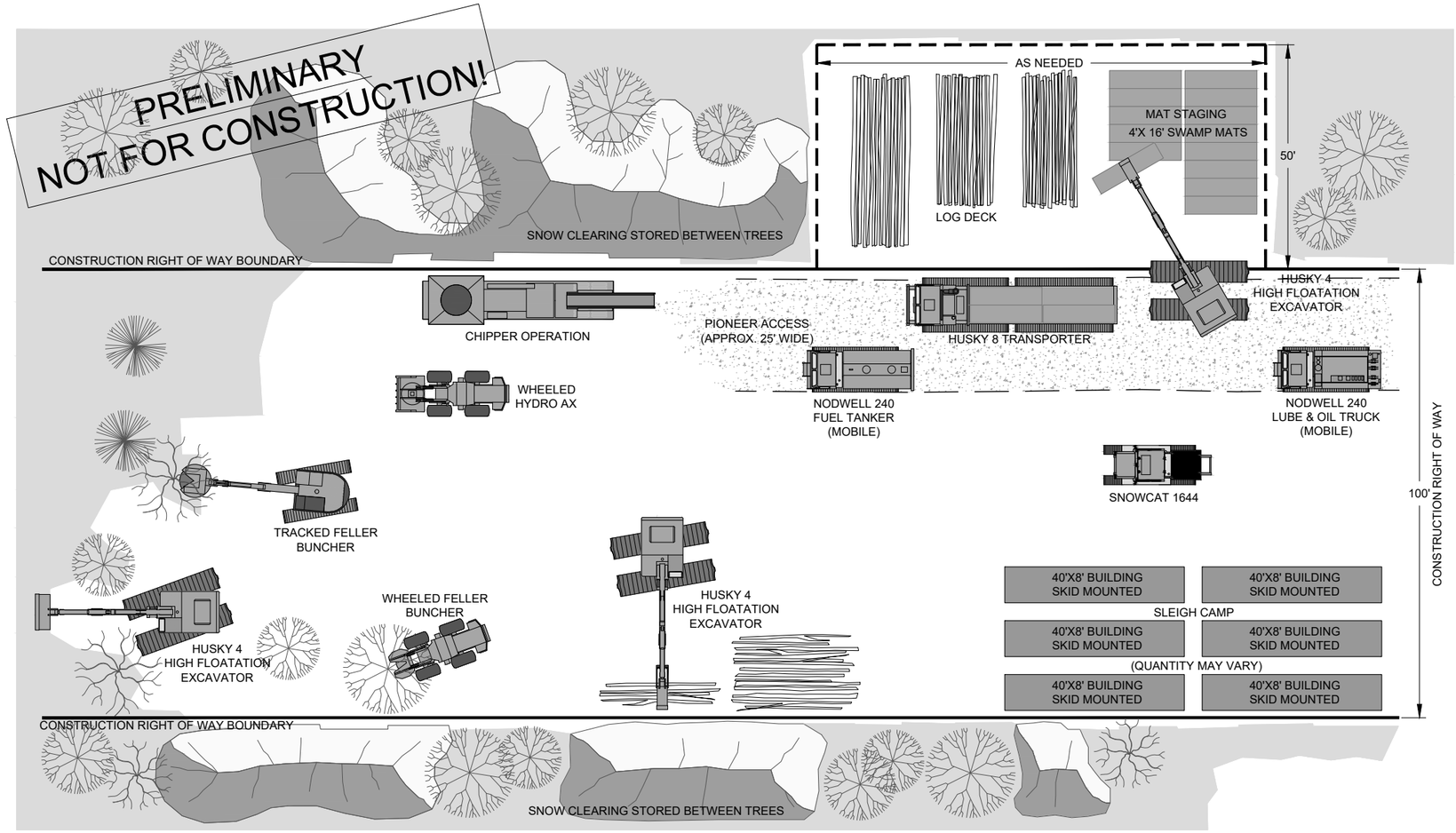
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PRELIMINARY
NOT FOR CONSTRUCTION!

	Associated Engineering Drawings P01C-TYRWW-08.DWG (BAKER) OCT 2013	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **CROSS SECTION R.O.W MODE** FIGURE NO. **PA-165T** FILE NO. **POA-1995-120** SCALE: AS SHOWN DATE: 12/22/2017

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg



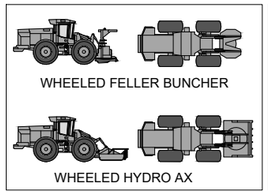
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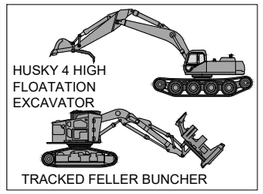
PERMANENT RIGHT OF WAY BOUNDARY

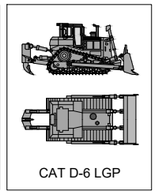
TEMPORARY USE AREA

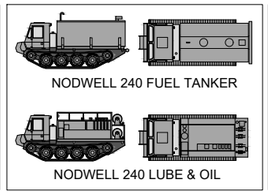
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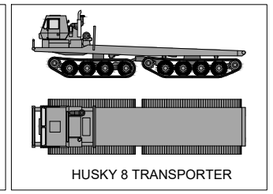
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.







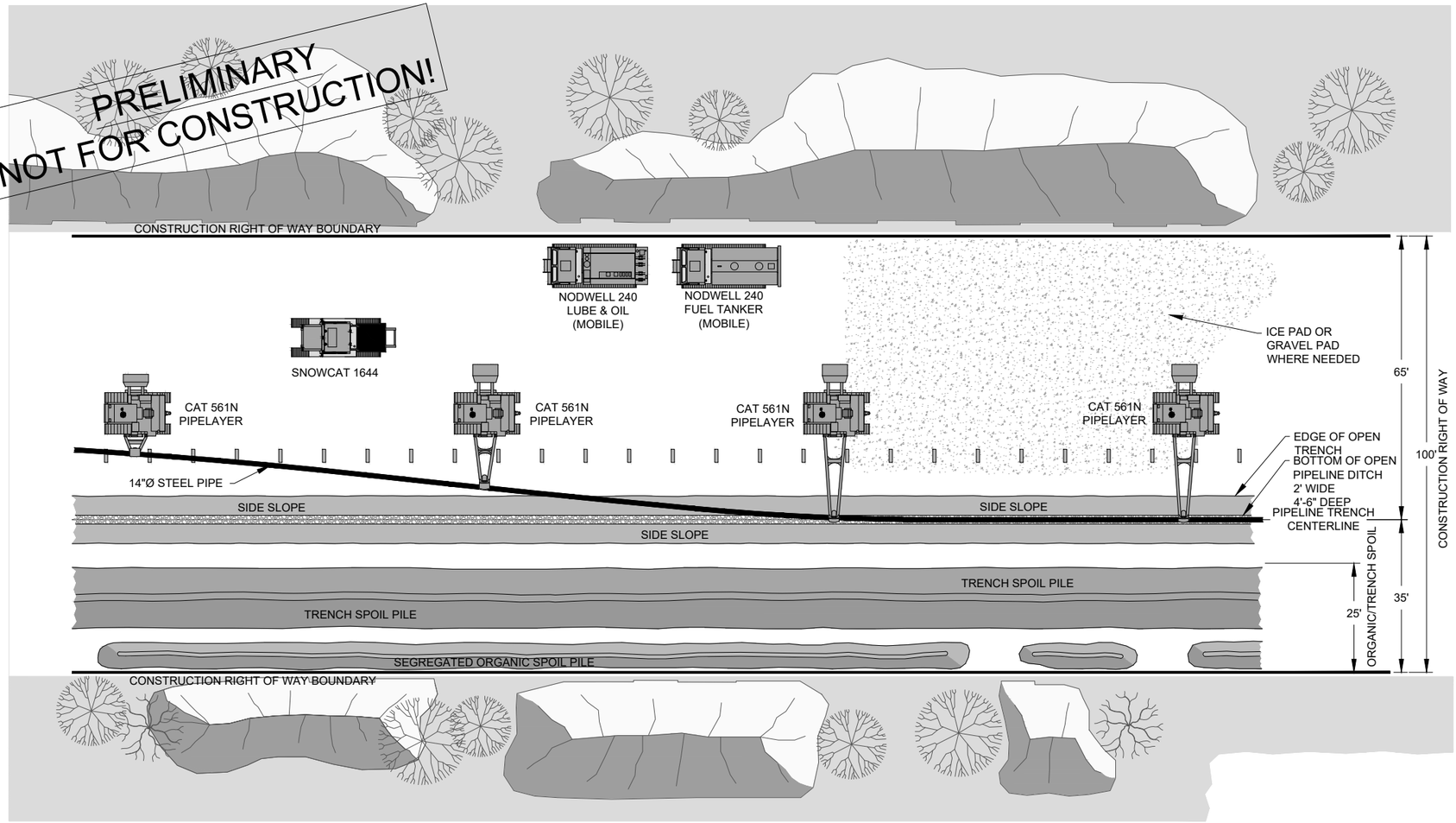




Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-09.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN WINTER PERMAFROST R.O.O.W. MODE**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-166T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

PRELIMINARY
NOT FOR CONSTRUCTION!

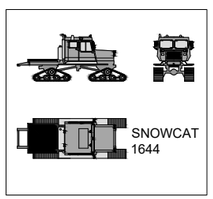


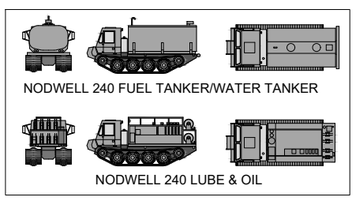
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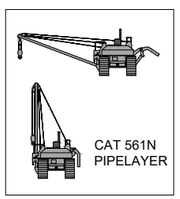
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. MATS OR CORDUROY TIMBER AS NEEDED.
2. EQUIPMENT QUANTITY AND TYPE MAY VARY.

0 15 30 Ft

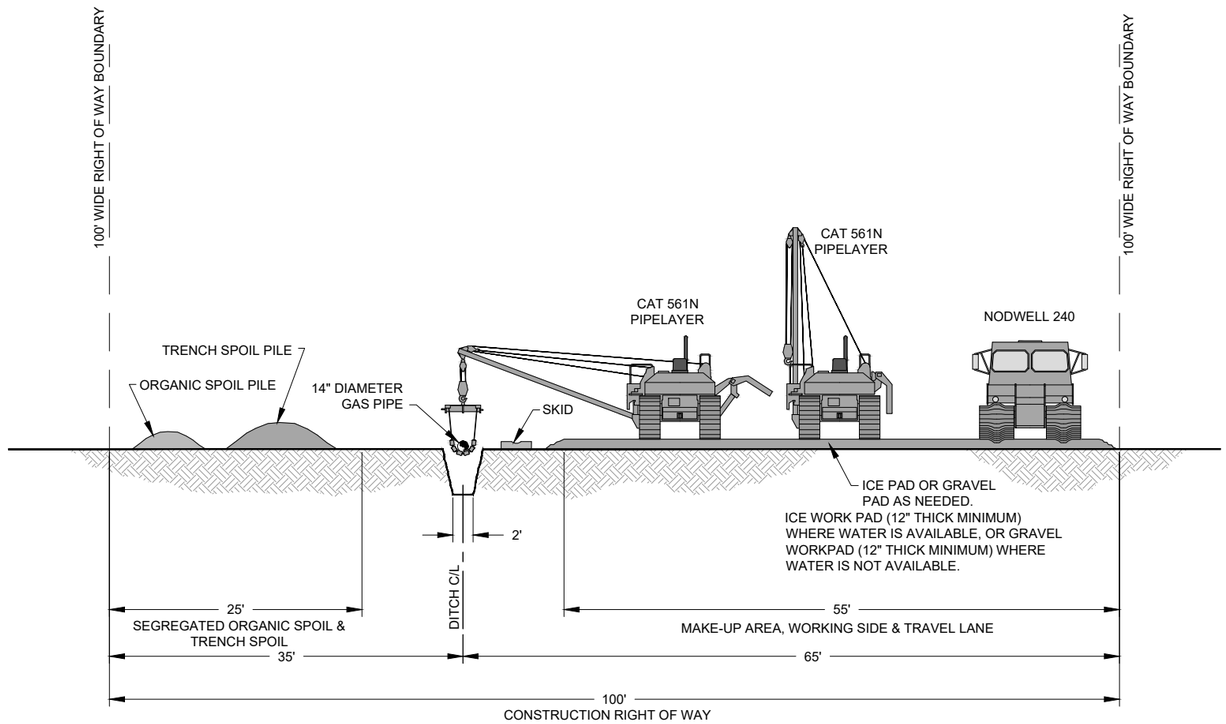






Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-14.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN WINTER PERMAFROST R.O.W. MODE**
	SCALE: AS SHOWN / DATE: 12/22/2017	FIGURE NO. **PA-167T** / FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg



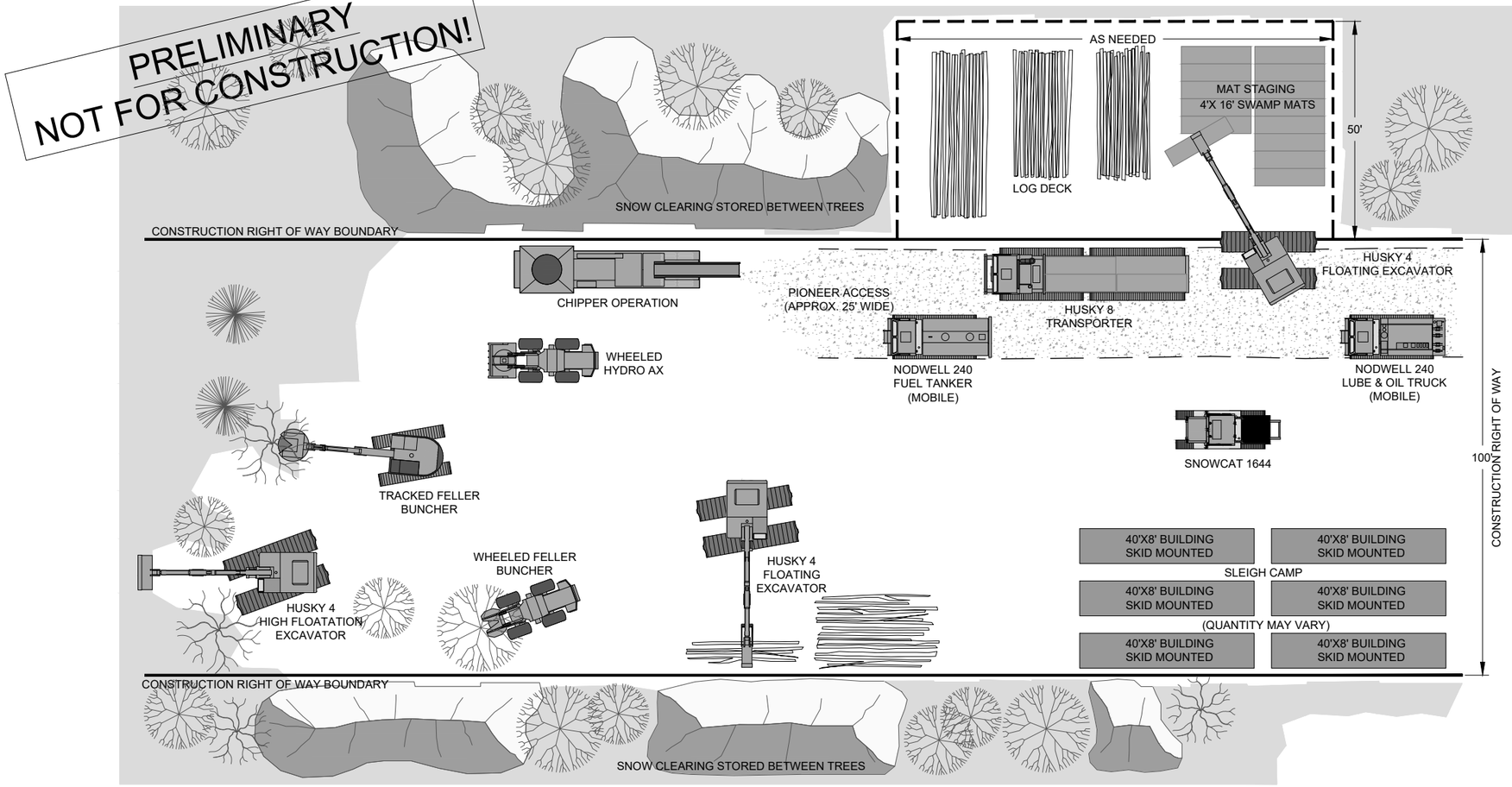
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PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-16.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**CROSS SECTION WINTER PERMAFROST R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-168T** FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

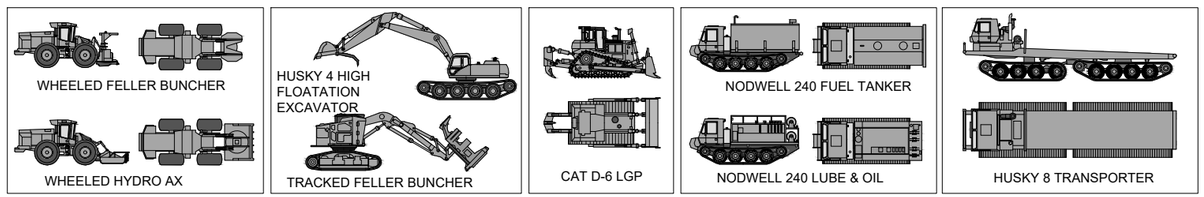
PRELIMINARY
NOT FOR CONSTRUCTION!



NOTES:
1. EQUIPMENT QUANTITY AND TYPE MAY VARY.

0 15 30 Ft

LEGEND
PERMANENT RIGHT OF WAY BOUNDARY
TEMPORARY USE AREA



Associated Engineering Drawings
P01C-TYRWW-17.DWG (BAKER) OCT 2013

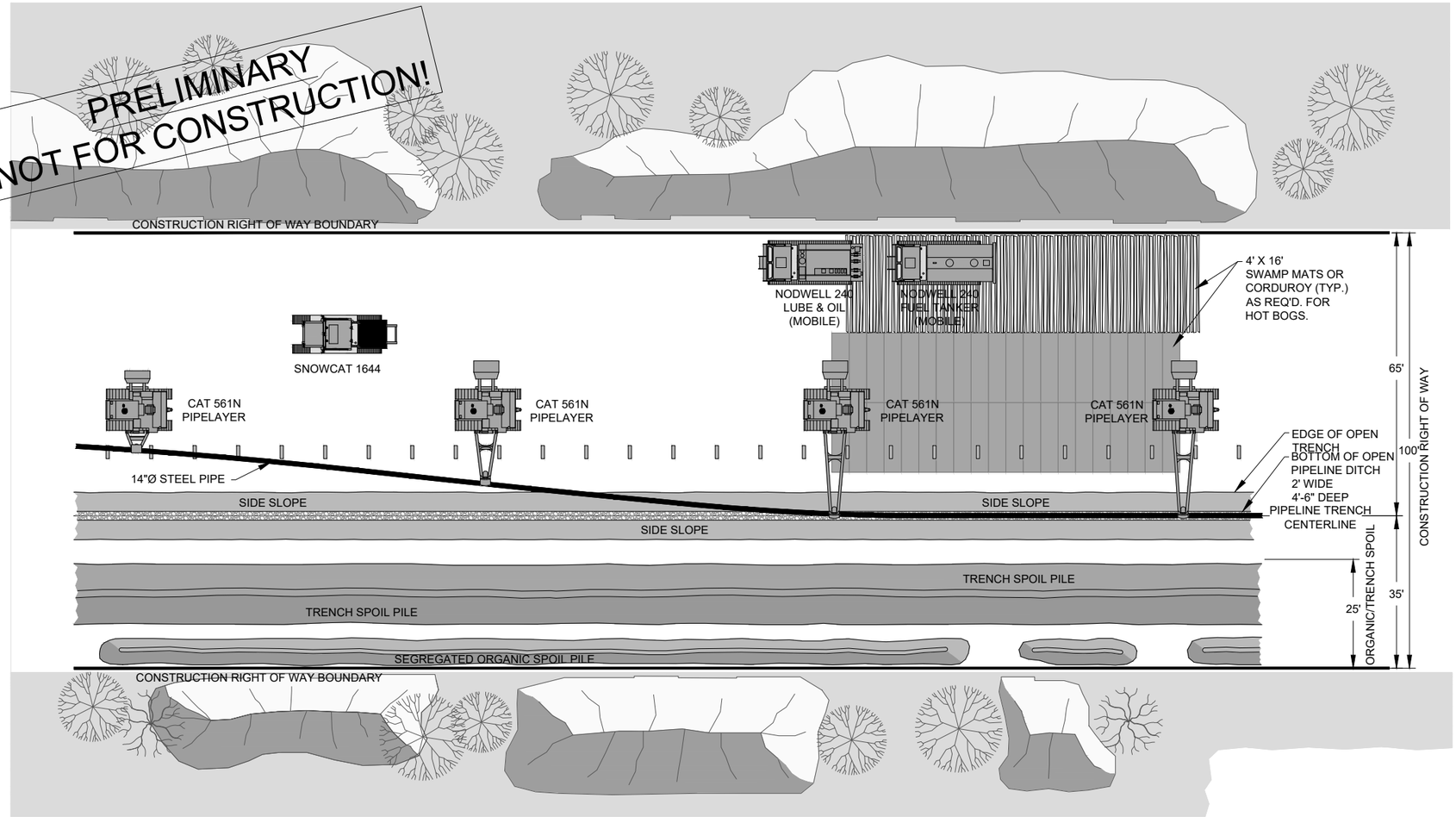
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

DRAWING TITLE:
RIGHT OF WAY PLAN WINTER WETLANDS R.O.W. MODE

SCALE: AS SHOWN | DATE: 12/22/2017 | FIGURE NO. PA-169T | FILE NO. POA-1995-120

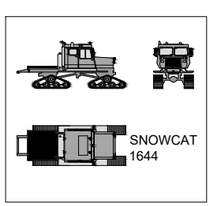
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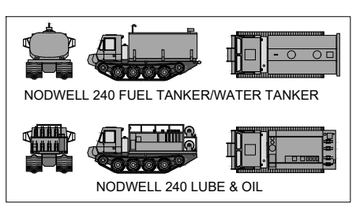
PRELIMINARY
NOT FOR CONSTRUCTION!

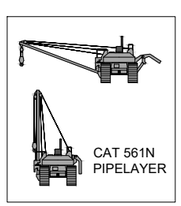


LEGEND
- PIPELINE/TRENCH CENTERLINE
- CONSTRUCTION R.O.W. BOUNDARY
- TRENCH SPOIL PILE
- ORGANIC SPOIL PILE
- BOTTOM OF OPEN PIPELINE TRENCH
- SIDESLOPES OF OPEN TRENCH

NOTES:
1. MATS OR CORDUROY TIMBER AS NEEDED.
2. EQUIPMENT QUANTITY AND TYPE MAY VARY.

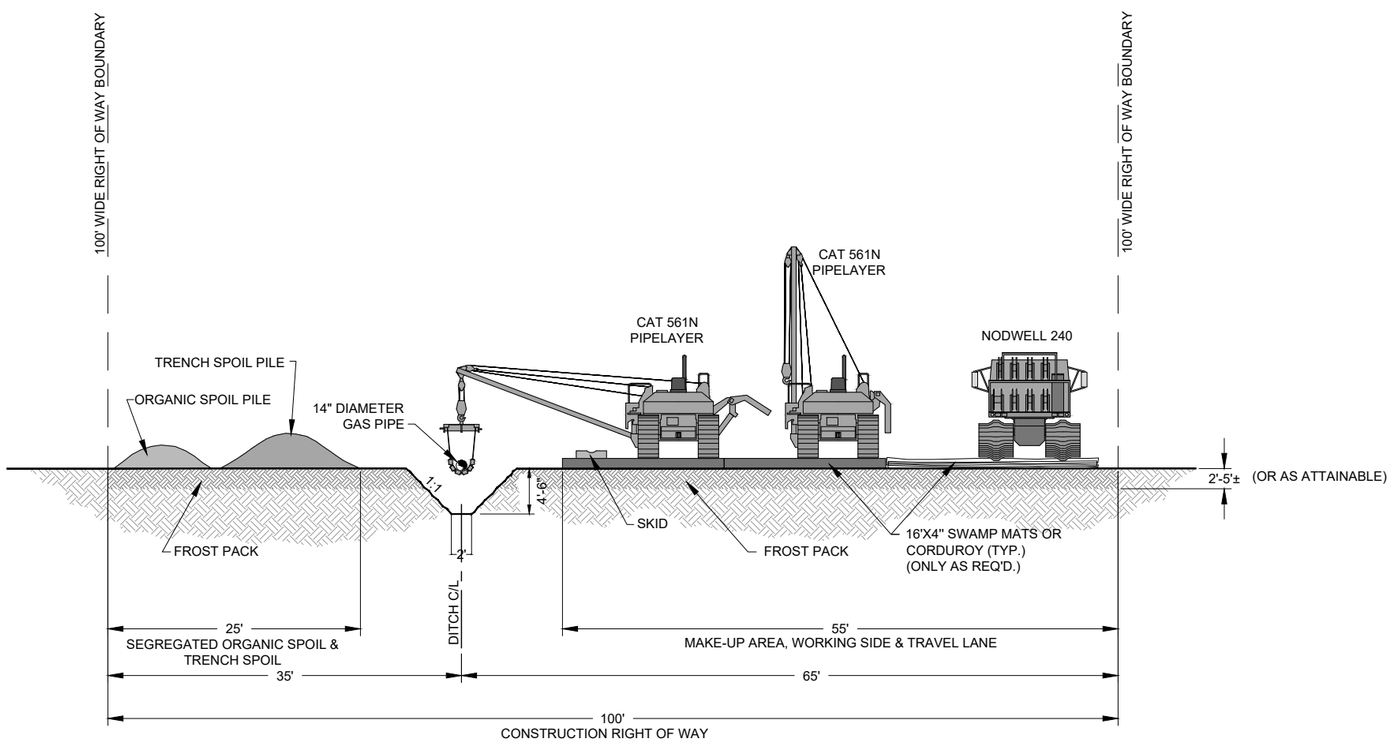






Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-22.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**RIGHT OF WAY PLAN WINTER WETLANDS R.O.W. MODE**
	SCALE: AS SHOWN / DATE: 12/22/2017	FIGURE NO. **PA-170T** / FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg

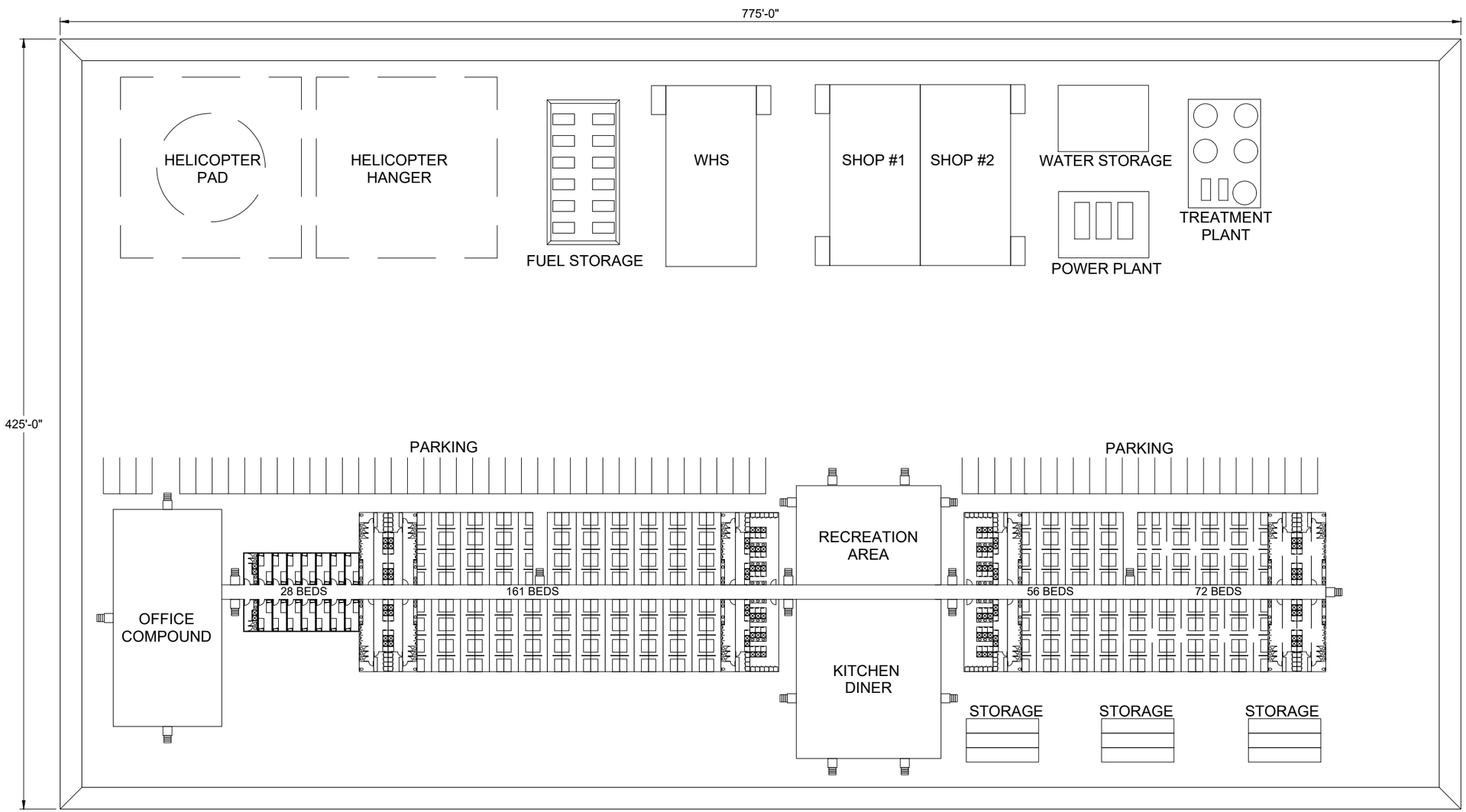


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PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-TYRWW-24.DWG (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**CROSS SECTION WINTER WETLANDS R.O.W. MODE**
	SCALE: AS SHOWN DATE: 12/22/2017	FIGURE NO. **PA-171T** FILE NO. **POA-1995-120**

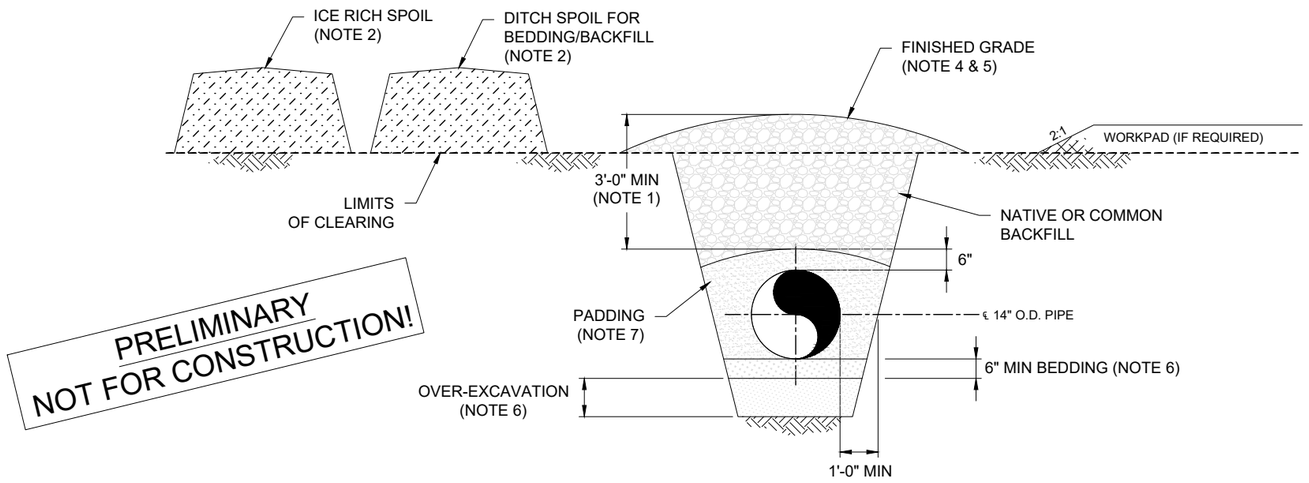
PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW.dwg



A / 172T **TYPICAL CAMP PLOT PLAN 200 TO 300 MAN CAMP**
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
Camp 1.dwg (?) MAR 2012	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL CAMP PLOT PLAN 200 TO 300 MAN CAMP DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-172T** — FILE NO. **POA-1995-120**

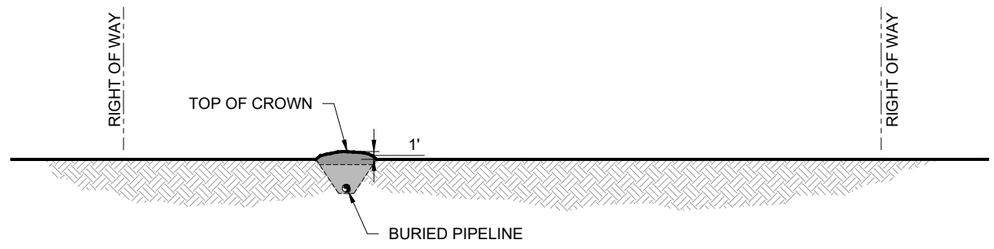
PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Camp_Layout.dwg



A / 173T **TYPICAL PIPE TRENCH SECTION**
N.T.S.

NOTES:

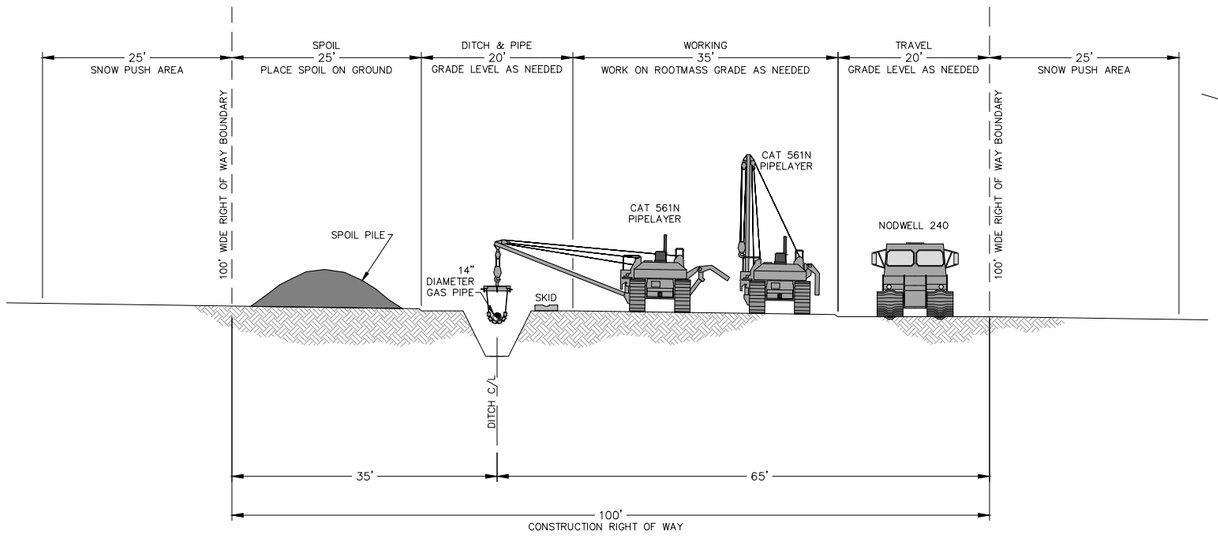
1. MINIMUM DEPTH OF COVER: 36". ADDITIONAL COVER MAY BE REQUIRED FOR BUOYANCY CONTROL. RIVER AND STREAM SCOUR, AND BENDS.
2. EXCAVATION:
   LOG THE TRENCH MATERIAL AS IT IS DUG. SEGREGATE ICE RICH MATERIAL IN A SPOIL PILE SEPARATE FROM DITCH SPOIL WHICH IS ACCEPTABLE FOR BACKFILL. IN EXTREME CASES OF ICE CONTENT, IT MAY BE NECESSARY TO HAUL IN ADDITIONAL SELECT MATERIAL AND/OR TO HAUL THE ICE RICH SPOIL TO AN APPROVED DISPOSAL SITE, SUCH AS AN ABANDONED MATERIAL SITE, COULD BE CONSIDERED.
3. PRIOR TO FINAL DESIGN:
   GEOTECHNICAL LOGGING OF BORE HOLES TO DETERMINE ICE CONTENT IN THE DITCH PROFILE AND BELOW THE DITCH BOTTOM FOR AN ADDITIONAL 10' OR WHATEVER DEPTH WAS DETERMINED TO AFFECT PIPELINE SETTLEMENT IN THE EVENT OF THAWING BELOW THE PIPELINE.
4. PLACE AND ROACH THE REMAINING DITCH SPOIL. INCLUDING THE ICE RICH SPOIL, OVER TOP OF THE PADDING AND ALLOW IT TO THAW DURING SUMMER SEASON.
5. PLACE APPROPRIATE EROSION CONTROL DEVICES (ECDs) ALONG THE ROACH DITCH LINE WHERE ICE RICH SPOIL MIGHT FLOW INTO AN EXISTING DRAINAGE WHEN IT MELTS. SEED THE ROACHED SPOIL PILE AND ANY DISTURBED RIGHT OF WAY. INSPECT THE DITCH LINE IN THE SUMMER/FALL FOLLOWING WINTER CONSTRUCTION AND USE LOW GROUND PRESSURE EQUIPMENT TO DRESS UP OR RE-SHAPE THE ROACHED SPOIL OVER THE DITCH AS NEEDED. RE-SEED AND RE-PLACE ECDs IF NECESSARY. REPEAT INSPECTION ANNUALLY FOR THE FIRST THREE SEASONS OR AS NEEDED TO MAINTAIN SOIL STABILITY.
6. PLACEMENT OF SELECT, THAW STABLE FILL FOR PIPE BEDDING IN ANY OVER-EXCAVATED SECTIONS TO PROPERLY SUPPORT AND BED THE PIPE.
7. PLACEMENT OF SELECT, THAW STABLE PADDING AROUND THE PIPE TO 6" ABOVE THE PIPE. ACCEPTABLE DITCH SPOIL WOULD BE PREFERRED. IMPORTED MATERIAL MIGHT BE NEEDED IF DITCH SPOIL IS NOT ACCEPTABLE.
8. OVER-EXCAVATE 3 FEET BELOW TARGET DITCH DEPTH WHERE VISIBLE SEGREGATED ICE (FROZEN GROUND CLASSIFICATION Vx) IS DISCOVERED IN THE DITCH BOTTOM. BACKFILL OVER-EXCAVATION WITH THAW-STABLE BEDDING. PLACE GEOGRID, IF SO DIRECTED BY THE ENGINEER, TO SPAN AREAS OF OVER-EXCAVATION.



B / 173T **TYPICAL RECLAIMED TRENCH SECTION**
N.T.S.

Associated Engineering Drawings	DONLIN GOLD PROJECT	DRAWING TITLE:
P01C-SCIS-01.dwg (BAKER) OCT 2013	APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	**TYPICAL PIPE TRENCH DETAIL**
	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-173T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_Pipe_Buried.dwg



ROW MODE 0

LIGHT GRADE, NON-PERMAFROST, ≤3% SIDE SLOPE, WINTER OR SUMMER

A / 174T SCALE 1" = 20'

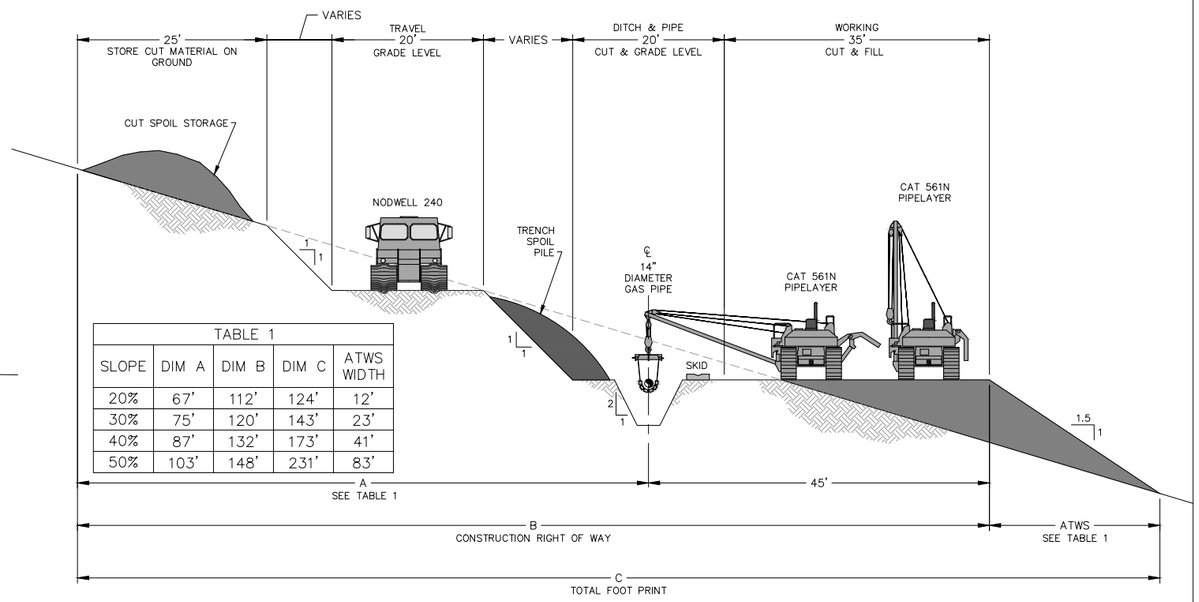


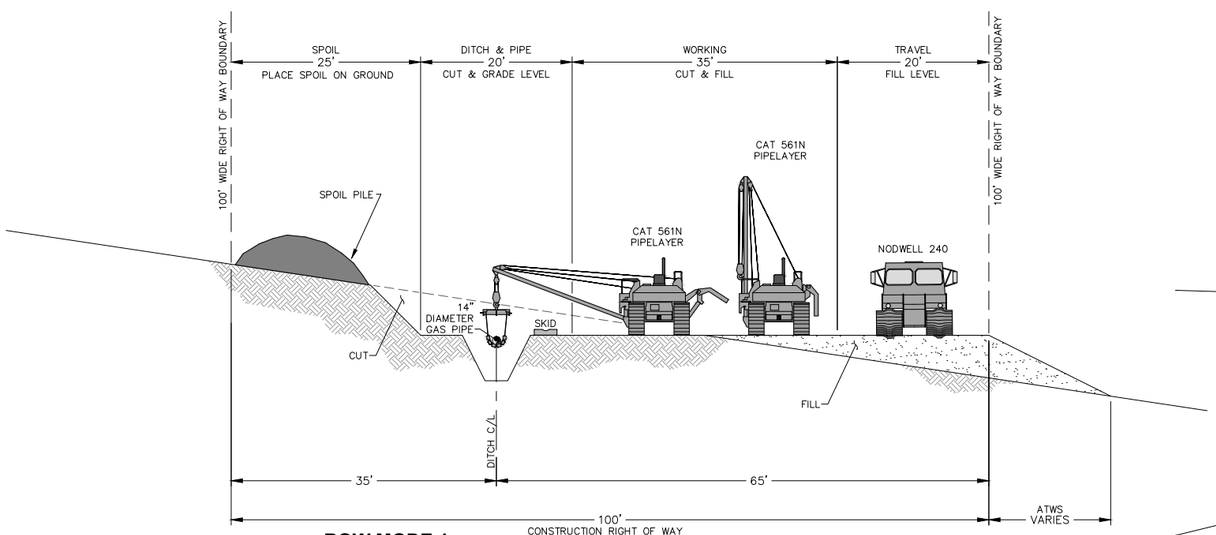
TABLE 1

SLOPE	DIM A	DIM B	DIM C	ATWS WIDTH
20%	67'	112'	124'	12'
30%	75'	120'	143'	23'
40%	87'	132'	173'	41'
50%	103'	148'	231'	83'

ROW MODE 2

TWO TONE, NON-PERMAFROST, BENCHED GRADE ON STEEP SIDE SLOPE, 20% TO 50% SIDE SLOPE

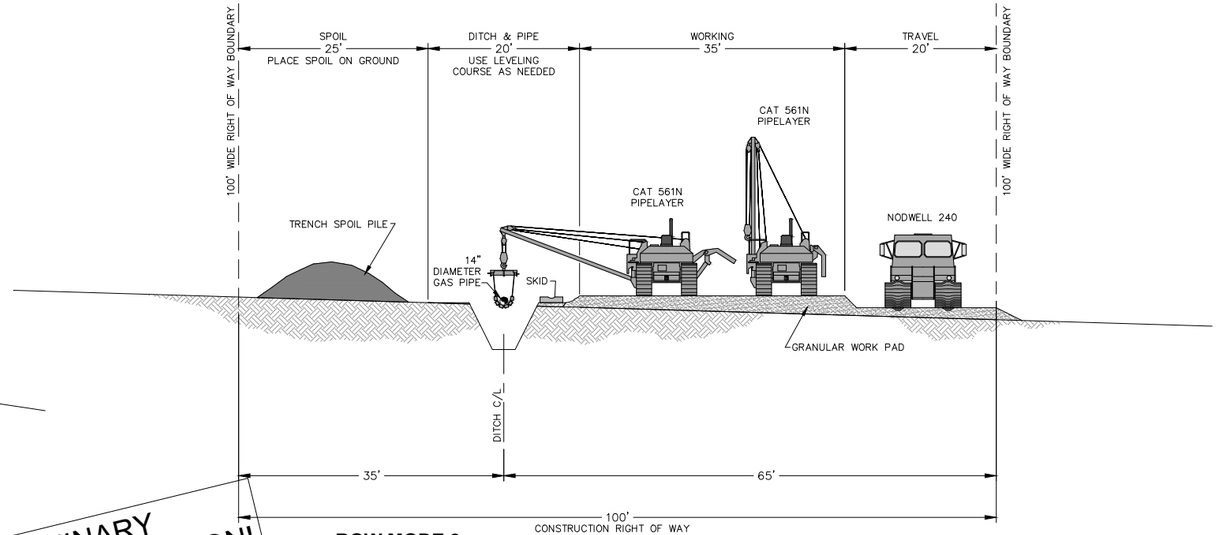
C / 174T SCALE 1" = 20'



ROW MODE 1

GRADED, NON-PERMAFROST, 3% TO 20% SIDE SLOPE, WINTER OR SUMMER

B / 174T SCALE 1" = 20'



ROW MODE 3

GRANULAR WORKPAD PERMAFROST, 0% TO 15% SIDE SLOPE, WINTER OR SUMMER

D / 174T SCALE 1" = 20'

PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings
ROW MODE 0.DWG (BAKER) SEP 2017
ROW MODE 1.DWG (BAKER) SEP 2017
ROW MODE 2.DWG (BAKER) SEP 2017
ROW MODE 3.DWG (BAKER) SEP 2017

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

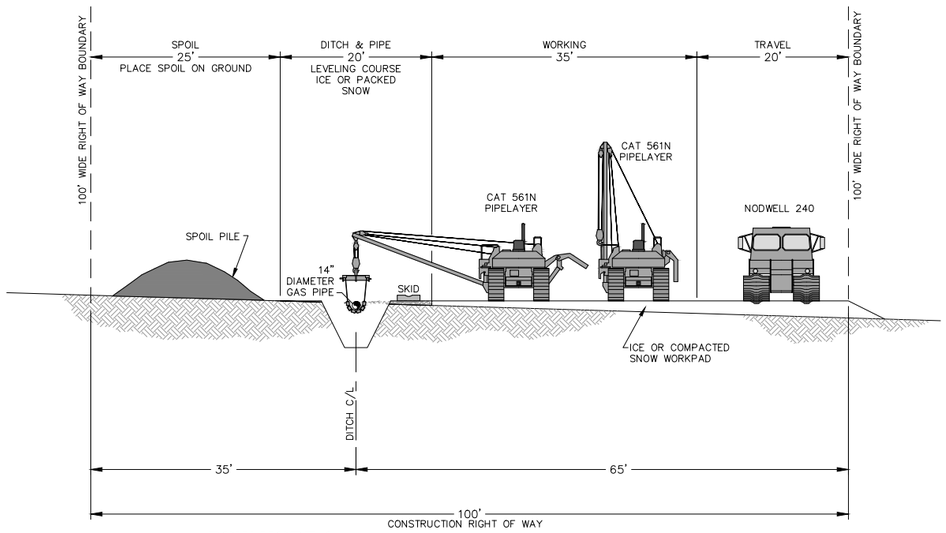
SCALE: AS SHOWN | DATE: 12/22/2017

DRAWING TITLE: **ROW MODE 0, 1, 2, & 3**

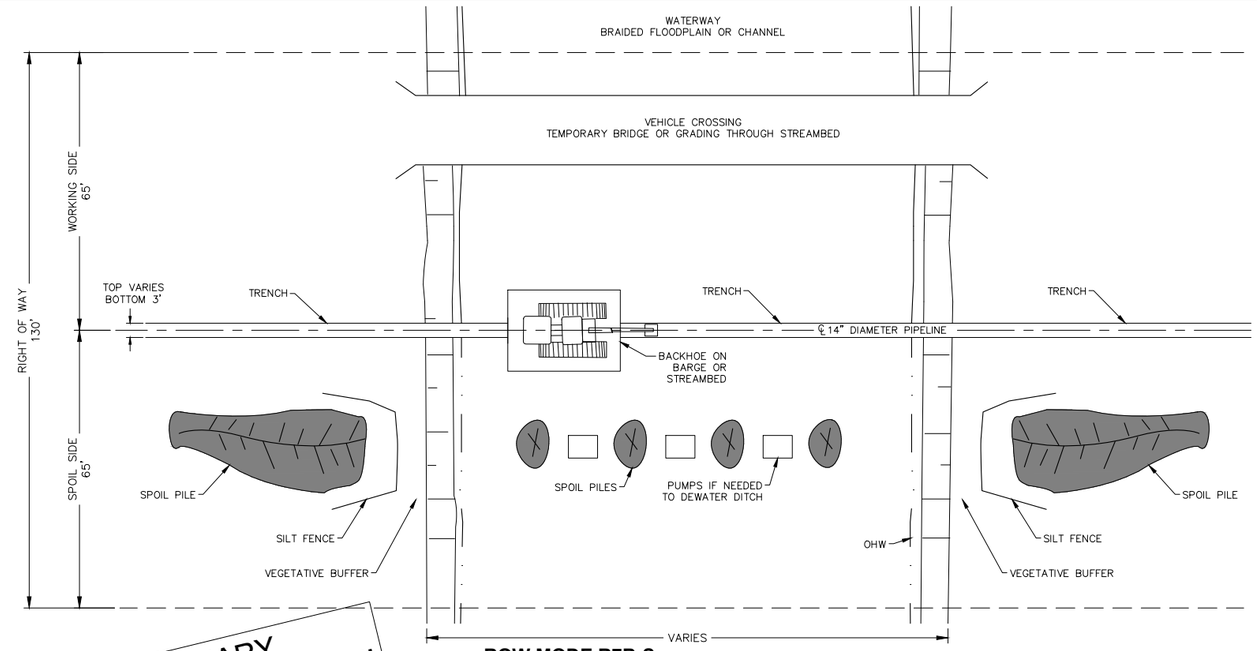
FIGURE NO. **PA-174T**

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

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW_1.dwg

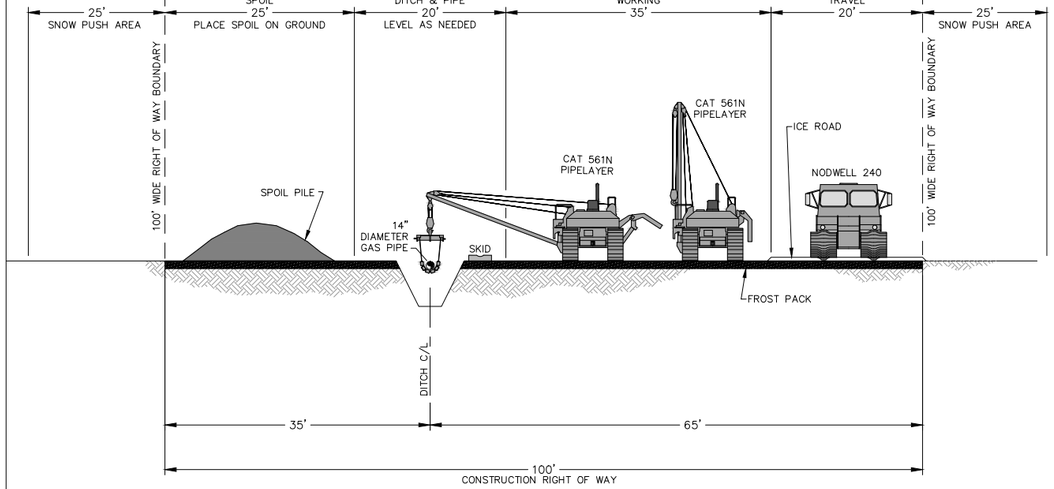


ROW MODE 4
ICE OR SNOW WORKPAD, PERMAFROST OR NON-PERMAFROST, ≤ 3% SIDE SLOPE
A / 175T SCALE 1" = 20'

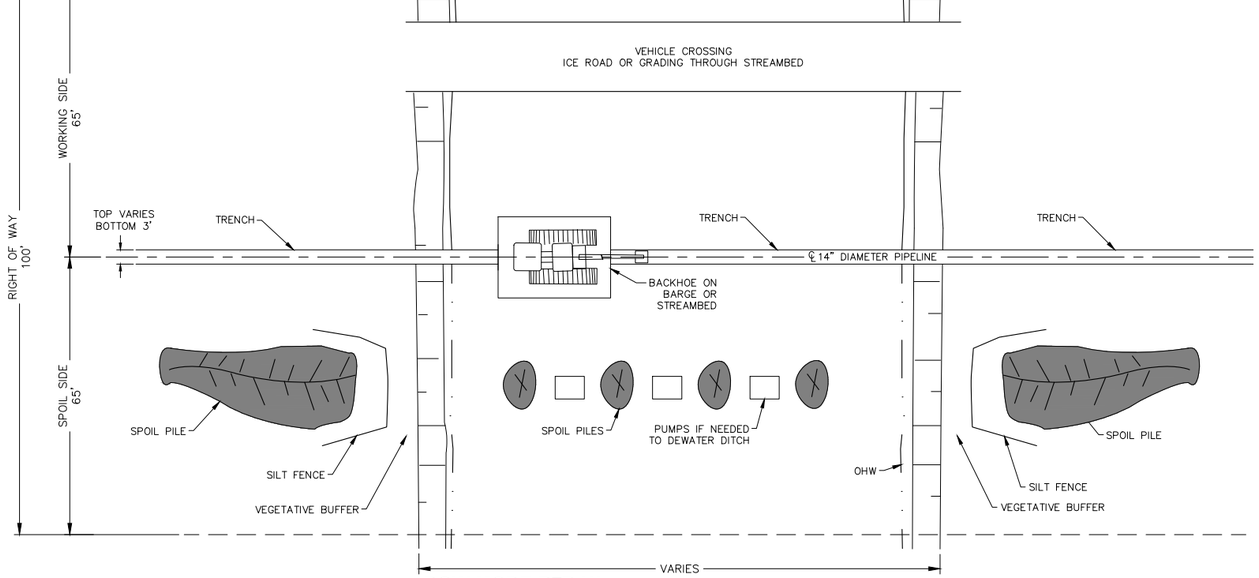


ROW MODE R7B-S
LARGE STREAM CROSSING, SUMMER, OPEN CUT
C / 175T SCALE 1" = 20'

PRELIMINARY
NOT FOR CONSTRUCTION!



ROW MODE 5
FROST PACK, FLAT WETLANDS, SLOPE ≤ 2%, ICE ROAD TRAVEL LANE
B / 175T SCALE 1" = 20'



ROW MODE R7B-W
LARGE STREAM CROSSING, WINTER, OPEN CUT
D / 175T SCALE 1" = 20'

Associated Engineering Drawings
ROW MODE 4.DWG (BAKER) SEP 2017
ROW MODE 5.DWG (BAKER) SEP 2017
ROW MODE 7BS.DWG (BAKER) SEP 2017
ROW MODE 7BW.DWG (BAKER) SEP 2017

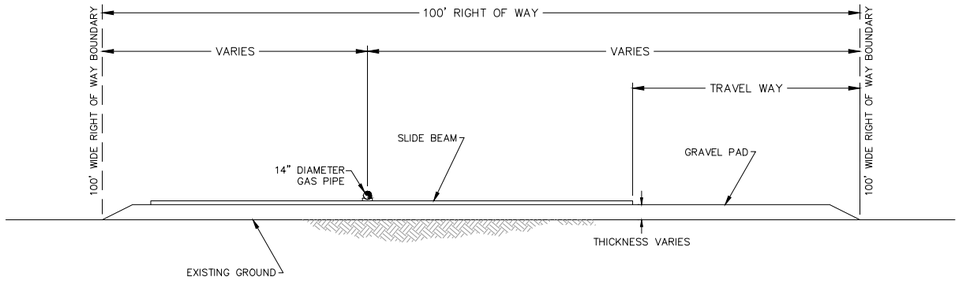
DONLIN GOLD PROJECT
APPLICANT: Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

DRAWING TITLE: **ROW MODE 4, 5, R7B-S, & R7B-W**

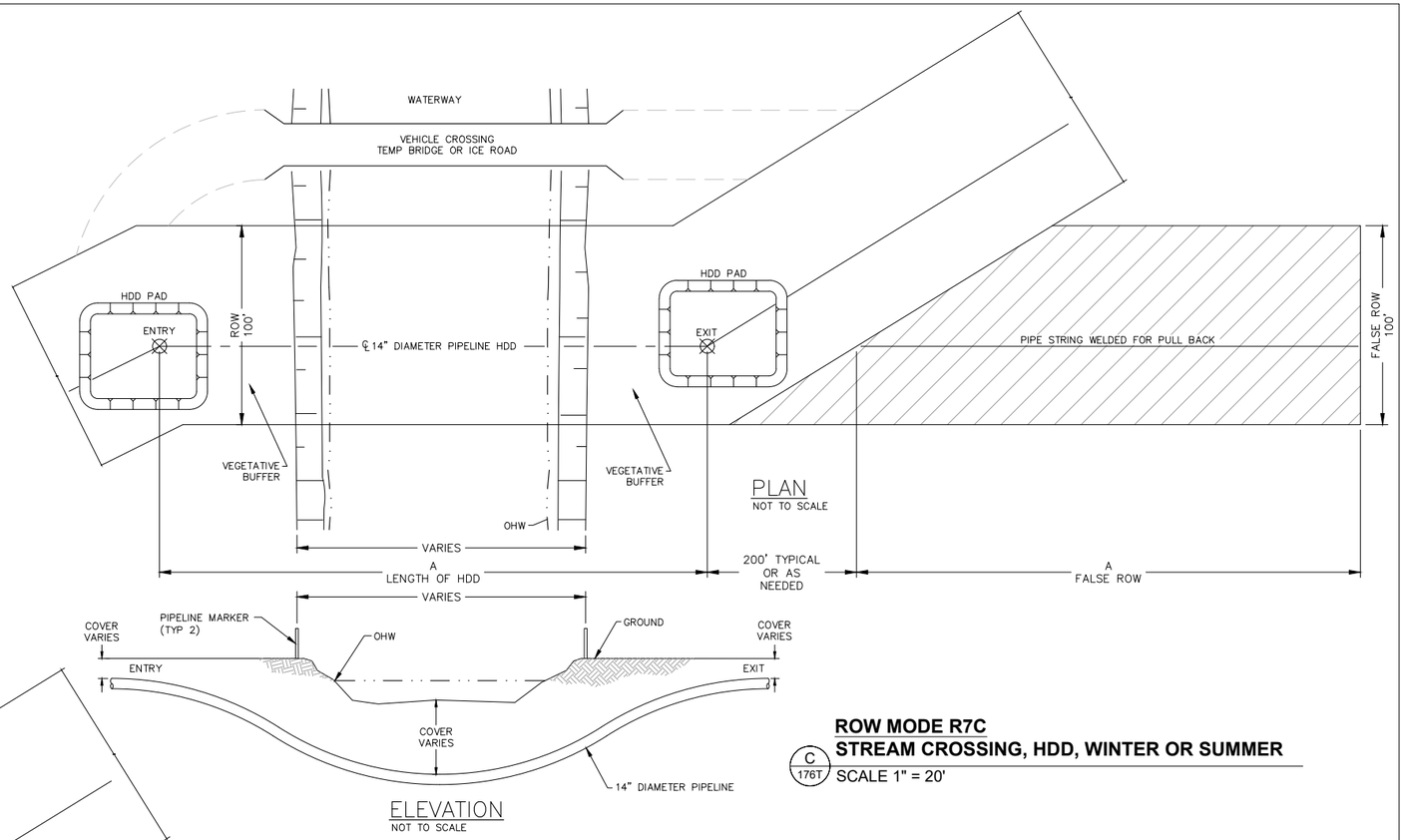
SCALE: AS SHOWN | DATE: 12/22/2017

FIGURE NO. **PA-175T** | FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW_1.dwg



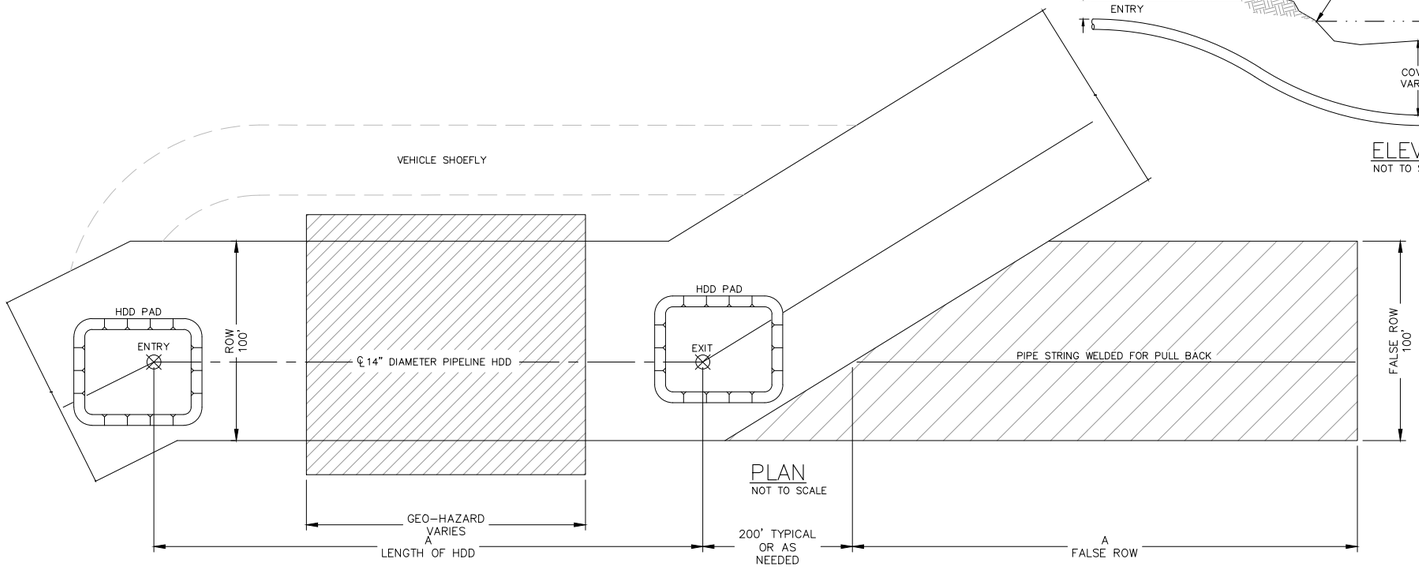
ROW MODE 8
LIGHT GRADE, FAULT CROSSING, WINTER OR SUMMER
A / 176T SCALE 1" = 20'



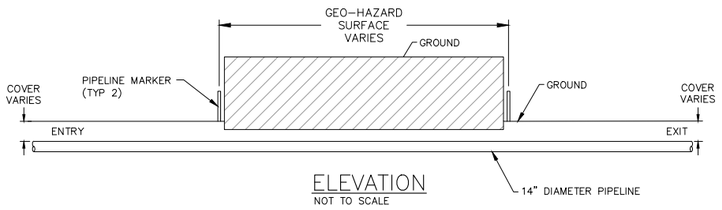
PLAN
NOT TO SCALE

ELEVATION
NOT TO SCALE

ROW MODE R7C
STREAM CROSSING, HDD, WINTER OR SUMMER
C / 176T SCALE 1" = 20'



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

ROW MODE R7D
GEO-HAZARD CROSSING, HDD, WINTER OR SUMMER
B / 176T SCALE 1" = 20'

PRELIMINARY
NOT FOR CONSTRUCTION!

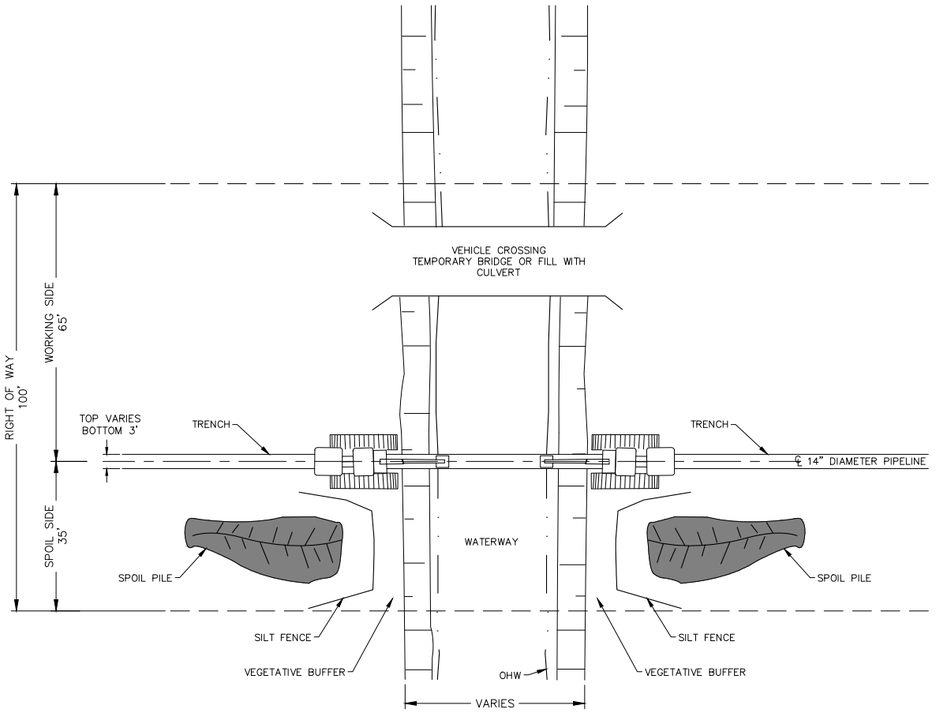
Associated Engineering Drawings
ROW MODE 8.DWG (BAKER) SEP 2017
ROW MODE R7D.DWG (BAKER) SEP 2017
ROW MODE HDD.DWG (BAKER) SEP 2017

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

SCALE: AS SHOWN
DATE: 12/22/2017

DRAWING TITLE: **ROW MODE 8, R7D, & R7C**
FIGURE NO. **PA-176T**
FILE NO. **POA-1995-120**

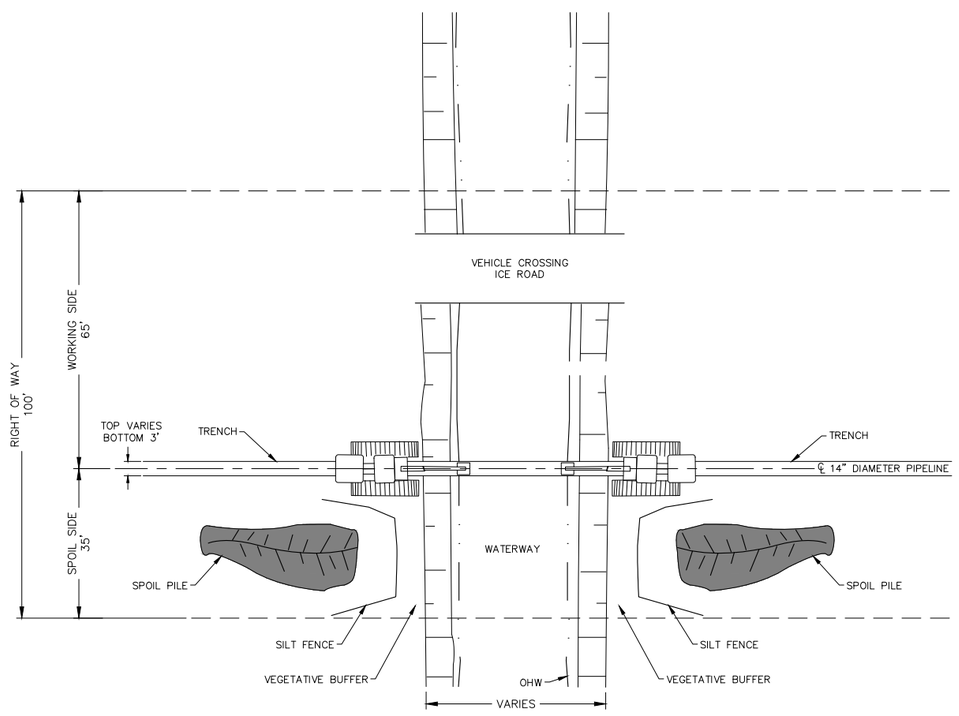
PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW_1.dwg



PLAN
NOT TO SCALE

NOTE:
1. SPOIL PILE MATERIAL IS TAKEN FROM TRENCH SECTION BETWEEN ORDINARY HIGH WATER (OHW) BANKS. NOT DEPOSITED IN STREAM.

ROW MODE 7A-S
SMALL STREAM CROSSING, SUMMER, OPEN CUT
A / 177T SCALE 1" = 20'



PLAN
NOT TO SCALE

NOTE:
1. SPOIL PILE MATERIAL IS TAKEN FROM TRENCH SECTION BETWEEN ORDINARY HIGH WATER (OHW) BANKS. NOT DEPOSITED IN STREAM.

ROW MODE R7A-W
STREAM CROSSING, WINTER, OPEN CUT
B / 177T SCALE 1" = 20'

PRELIMINARY
NOT FOR CONSTRUCTION!

Associated Engineering Drawings	DONLIN GOLD PROJECT APPLICANT: Donlin Gold, LLC 4720 Business Park Blvd., Suite G-25 Anchorage, Alaska 99503	DRAWING TITLE: **ROW MODE R7A-S, & R7A-W**
ROW MODE SS.DWG (BAKER) SEP 2017 ROW MODE WA.DWG (BAKER) SEP 2017	SCALE: AS SHOWN — DATE: 12/22/2017	FIGURE NO. **PA-177T** — FILE NO. **POA-1995-120**

PATH: d:\Dropbox\181202_040_task_400_phase_2\PA_ROW_1.dwg