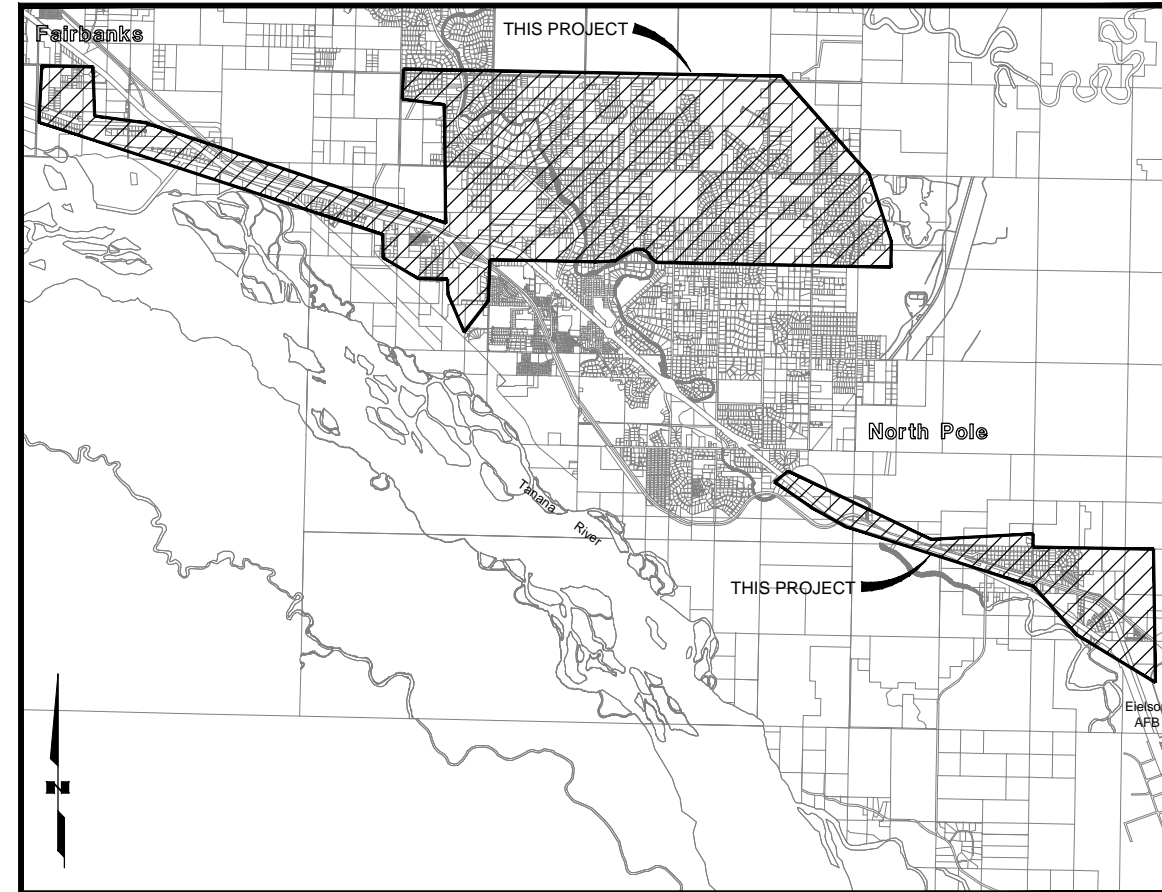


NATURAL GAS DISTRIBUTION SYSTEM PHASE II

FOR:
INTERIOR GAS UTILITY



PROJECT LOCATION



P.O. Box 70200
Fairbanks, Alaska 99707
907-374-4474

Michael Baker
INTERNATIONAL

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PACKAGE

REVISIONS

REV. #	DATE	DESCRIPTION

DESIGNED BY: GAT SCALE:
DRAWN BY: JAM
CHECKED BY: DMC NOT TO SCALE

SITE NAME:
NATURAL GAS DISTRIBUTION SYSTEM PHASE II
FAIRBANKS NORTH STAR BOROUGH, ALASKA

DRAWING TITLE:
COVER SHEET

DRAWING NO:
T-01



SHEET INDEX

SHEET #	DESCRIPTION
T-01	COVER SHEET
G-01	ABBREVIATIONS, LEGEND, AND GENERAL NOTES
G-02	MAP INDEX
G-03	MAP INDEX ZONE A
G-04	MAP INDEX ZONE B
G-05	MAP INDEX ZONE C
V-01	SURVEY CONTROL LOCATION MAP
V-02	SURVEY CONTROL MONUMENT DETAILS
B-01	BOREHOLE LOCATION MAP
B-02 / B-05	BOREHOLE LOGS
C-001 / C-250	SITE MAP (1" = 100')
D-001 / D-013	CROSSING SITE DETAILS
D-014 / D-019	TYPICAL DETAILS



Design Alaska
Architects Engineers Surveyors
601 College Road Fairbanks, Alaska 99701
Telephone 907 452 1241
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ABBREVIATIONS

ADOT&PF	ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AGA	AMERICAN GAS ASSOCIATION
API	AMERICAN PETROLEUM INSTITUTE
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BOP	BEGINNING OF PROJECT
BOT	BOTTOM
CFR	CODE OF FEDERAL REGULATIONS
CL	CENTERLINE
CLR	CLEAR
COMM	COMMUNICATION
DEG	DEGREE
DIA	DIAMETER
DIM	DIMENSION
DNR	DEPARTMENT OF NATURAL RESOURCES
E	EASTING
EA	EACH
EL/ELEV	ELEVATION
ELEC	ELECTRIC
EOP	END OF PROJECT
EXIST	EXISTING
F	FAHRENHEIT
FAB	FABRICATION
FBE	FUSION BONDED EPOXY
FS	FAR SIDE
FT	FEET
Fy	YIELD STRENGTH
GA	GAUGE
GR	GRADE
HDD	HORIZONTAL DIRECTIONAL DRILL
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INV	INVERT ELEVATION
L	ANGLE
LB/LBS	POUND
LF	LINEAR FEET
LG	LONG
LNG	LIQUEFIED NATURAL GAS
MAX	MAXIMUM
MIN	MINIMUM
N	NORTHING
NAD	NORTH AMERICAN DATUM
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NS	NEAR SIDE
OB	OVERBEND
OC	ON CENTER
OD	OUTSIDE DIAMETER
OT	OIL TRANSIT
PI	POINT OF INTERSECTION
PT	POINT ON TANGENT
PC	POINT ON CURVE
PL	PLATE
PTFE	POLYTETRAFLUOROETHYLENE
R	RADIUS
REQ'D	REQUIRED
ROW	RIGHT OF WAY
SCH	SCHEDULE
SPEC	SPECIFICATION
SQ	SQUARE
SQ-FT	SQUARE FOOT
SS	STAINLESS STEEL
STA	STATION
TAPS	TRANS-ALASKA PIPELINE SYSTEM
THICK/TK	THICKNESS
TOP	TOP OF PIPE
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
UNC	UNIFIED COARSE THREAD
VERT	VERTICAL
VIV	VORTEX INDUCED VIBRATION
W/	WITH

LEGEND

	CENTER LINE
	EXISTING CONTOUR
	EXISTING PUBLIC UTILITY EASEMENT
	EXISTING RAILROAD
	NEW VALVE
	BOREHOLE
	TEST PIT
	BOREHOLE (SURVEYED)
	TEST PIT (SURVEYED)
	EXISTING HYDRANT
	EXISTING WELL
	EXISTING SEWER MANHOLE
	EXISTING STORM DRAIN MANHOLE
	EXISTING GUY ANCHOR
	EXISTING UTILITY PEDESTAL
	EXISTING LUMINAIRE
	EXISTING SIGN
	EXISTING PIPELINE MARKER
	EXISTING BOLLARD
	EXISTING MAILBOX
	SURVEY MONUMENT
	EXISTING SURVEY MONUMENT
	LETTER INDICATES SECTION ARROW INDICATES DIRECTION OF CUTTING PLANE
	INDICATES DRAWING NUMBER WHERE SECTION IS DRAWN " - " INDICATES DRAWN ON SAME SHEET
	NUMBER/LETTER INDICATES DETAIL
	INDICATES DRAWING NUMBER WHERE DETAIL IS DRAWN " - " INDICATES DRAWN ON SAME SHEET
	8" BURIED GASLINE (PROPOSED)
	4" BURIED GASLINE (PROPOSED)
	2" BURIED GASLINE (PROPOSED)
	ACS BURIED LINE (FIBER)
	ACS BURIED LINE (COPPER)
	GCI BURIED CABLE LINE
	GVEA BURIED ELECTRIC LINE
	PIPELINE ALYESKA
	PIPELINE MAPCO EIELSON
	PIPELINE CANOL
	WATER LINE
	SEWER LINE
	UTILITY POLE
	HYD WETLAND AREA

GENERAL NOTES:

- PROJECT UTILITY MAPPING IS BASED ON BEST AVAILABLE INFORMATION ACQUIRED FROM UTILITY COMPANIES, AERIAL IMAGERY, AND FIELD VISITS BY OUR ENGINEERING AND SURVEY TEAM. THIS UTILITY MAPPING IS NOT APPROPRIATE FOR PRECISE ON THE GROUND LOCATION OF UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR CALLING THE 811 ALASKA DIG LINE TO FIELD VERIFY THE NATURE AND LOCATION OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- DISTRIBUTION MAINS SHALL BE PLACED PARALLEL AND OFFSET 5' FROM ROW BOUNDARY LINES AS SHOWN IN THE DRAWINGS UNLESS OTHERWISE NOTED.
- PURGE FITTINGS SHALL BE INSTALLED AT ALL 2" DISTRIBUTION MAIN DEADENDS. ALL 4" AND 8" PIPE DEADENDS SHALL BE CAPPED. INSTALL PURGE AND HIGH VOLUME TAPPING TEE.
- TRACING STATIONS SHALL BE LOCATED APPROXIMATELY EVERY 100 FEET OF DISTRIBUTION MAIN. ABOVE TRACING STATIONS SHALL BE LOCATED OUTSIDE OF THE CLEAR ZONE.
- ALL CROSSINGS UNDER ADOT&PF ROADWAYS SHALL BE DRILLED/MOLED. NO OPEN TRENCHING WILL BE ALLOWED.
- ALL CROSSINGS UNDER IMPROVED FNSB ROADWAYS SHALL BE DRILLED/MOLED.
- DRILL/MOLE UNDER ALL DRIVEWAYS WITHIN ADOT&PF ROW.
- EXTEND DISTRIBUTION MAINS 10' PAST THE PROPERTY CORNER OF THE LAST PROPERTY BEING SERVED UNLESS OTHERWISE NOTED.
- MATERIALS LISTED IN THE BILL OF MATERIALS WILL BE PROVIDED BY IGU AND MUST BE OBTAINED THROUGH IGU INVENTORY CONTROL DEPARTMENT. ALL OTHER MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR AND COMPLY WITH PROJECT SPECIFICATIONS.
- THE BACKGROUND MAP INFORMATION PRESENTED IN THESE DOCUMENTS IS A COMPILATION OF SYSTEM MAP INFORMATION FROM UTILITIES AND PROPERTY INFORMATION FROM THE FNSB ADJUSTED TO IMPROVE THE FIT TO LIMITED FIELD SURVEY TIES AND RECORDED ADOT&PF RIGHT-OF-WAY MAPS OVERLAID OVER THE FNSB AERIAL IMAGERY. THIS COMPILATION IS NOT A TOPOGRAPHIC SURVEY AND WAS ONLY INTENDED TO INDICATE THE WORK EFFORT TO THE CONTRACTOR AND ALLOW THEM TO IDENTIFY POTENTIAL UTILITY CONFLICTS ALONG THE ROUTE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATES OF ALL UTILITIES ALONG THE DISTRIBUTION MAIN ALIGNMENT, AVOIDING OR COORDINATING CONFLICTS, AND RESTORATION OF ITEMS DISTURBED ALONG THE ROUTE TO PRE-EXISTING CONDITIONS OR BETTER.
- CALL THE DIG LINE (1-907-459-6400) AS WELL AS:
 - * ADOT&PF (STREET LIGHTS, ETC) (1-907-453-2323)
 - * US ARMY CORPS OF ENGINEERS (HAINES TO FAIRBANKS, CANOL PIPELINES) (1-907-488-8593)
 - * GVEA PIPELINES (FROM TAPS TO REFINERY) (1-907-458-5752)
 - * GVEA DISPATCH (WHEN WORKING NEAR POWER LINES) (1-907-458-5752)
- VALVE LOCATIONS ON MAPS ARE APPROXIMATE.



P.O. Box 70200
Fairbanks, Alaska 99707
907-374-4474



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REVISIONS		
REV. #	DATE	DESCRIPTION

DESIGNED BY: GAT	SCALE:
DRAWN BY: JAM	NOT TO SCALE
CHECKED BY: DMC	

SITE NAME:
**NATURAL GAS
DISTRIBUTION SYSTEM
PHASE II**
FAIRBANKS NORTH STAR BOROUGH, ALASKA

DRAWING TITLE:
**ABBREVIATIONS,
LEGEND, AND
GENERAL NOTES**

DRAWING NO:
G-01



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Fairbanks, Alaska 99707
907-374-4474

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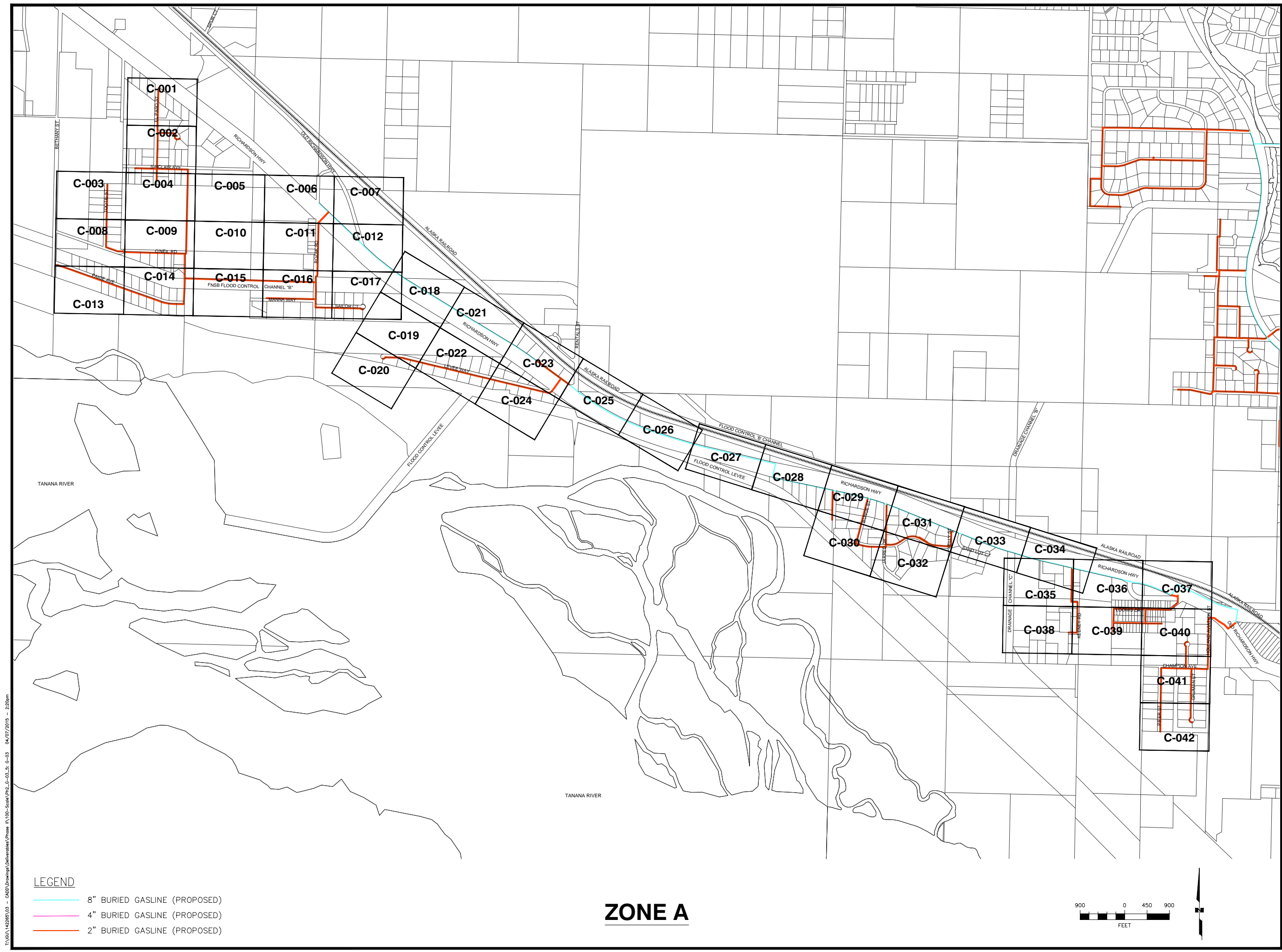
REV. #	DATE	DESCRIPTION

DESIGNED BY: G.A.T. SCALE:
DRAWN BY: J.A.M. 1" = 100'
CHECKED BY: D.M.C.

SITE NAME:
**NATURAL GAS
DISTRIBUTION SYSTEM
PHASE II**
FAIRBANKS NORTH STAR BOROUGH, ALASKA

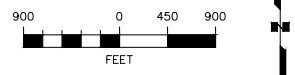
DRAWING TITLE:
**MAP INDEX
ZONE A**

DRAWING NO:
G-03



ZONE A

- LEGEND**
- 8" BURIED GASLINE (PROPOSED)
 - 4" BURIED GASLINE (PROPOSED)
 - 2" BURIED GASLINE (PROPOSED)



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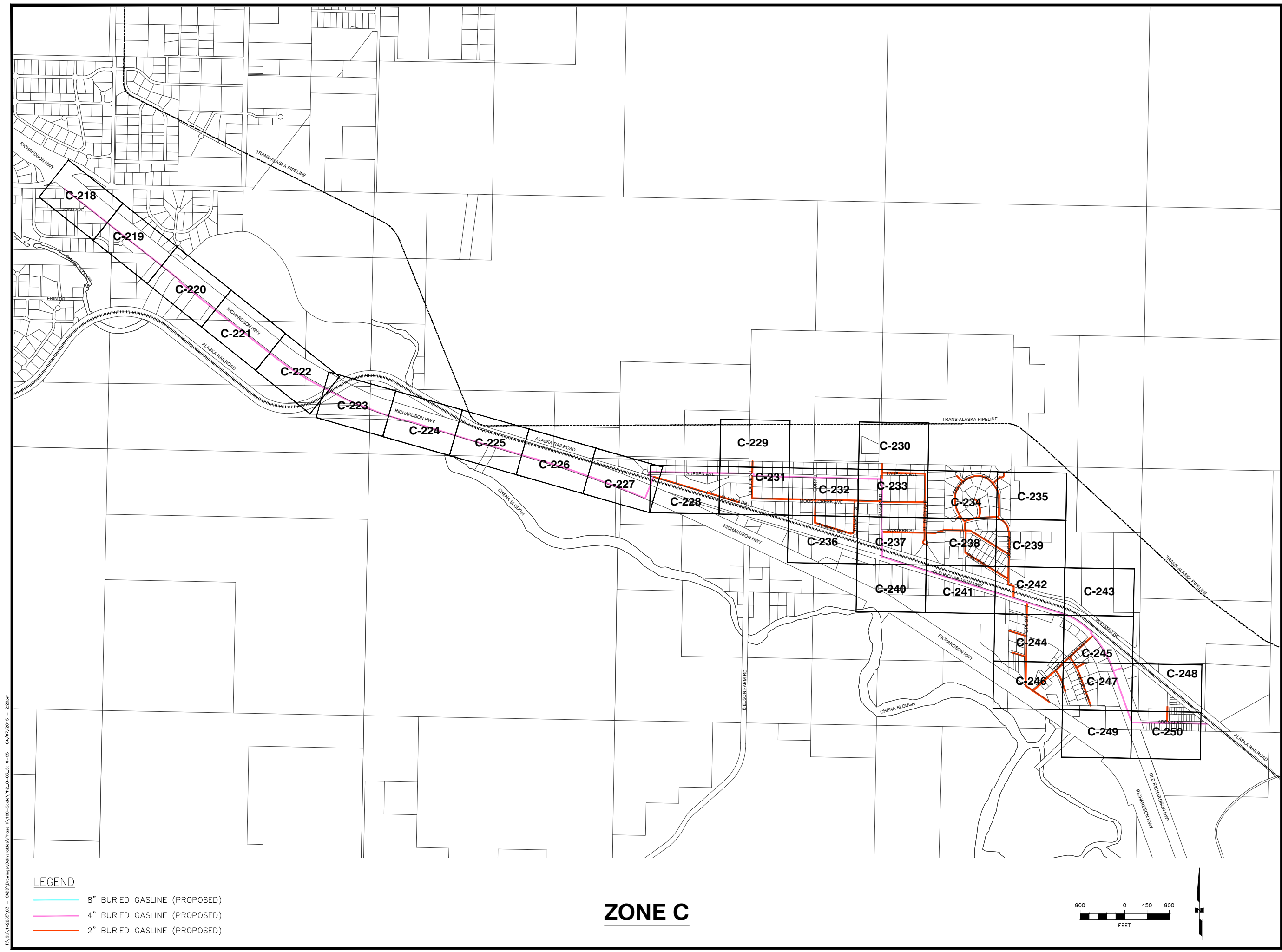
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DESIGNED BY: G.A.T. SCALE:
DRAWN BY: J.A.M. 1" = 100'
CHECKED BY: D.M.C.

SITE NAME:
**NATURAL GAS
DISTRIBUTION SYSTEM
PHASE II**
FAIRBANKS NORTH STAR BOROUGH, ALASKA

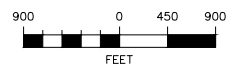
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**MAP INDEX
ZONE C**

DRAWING NO:
G-05



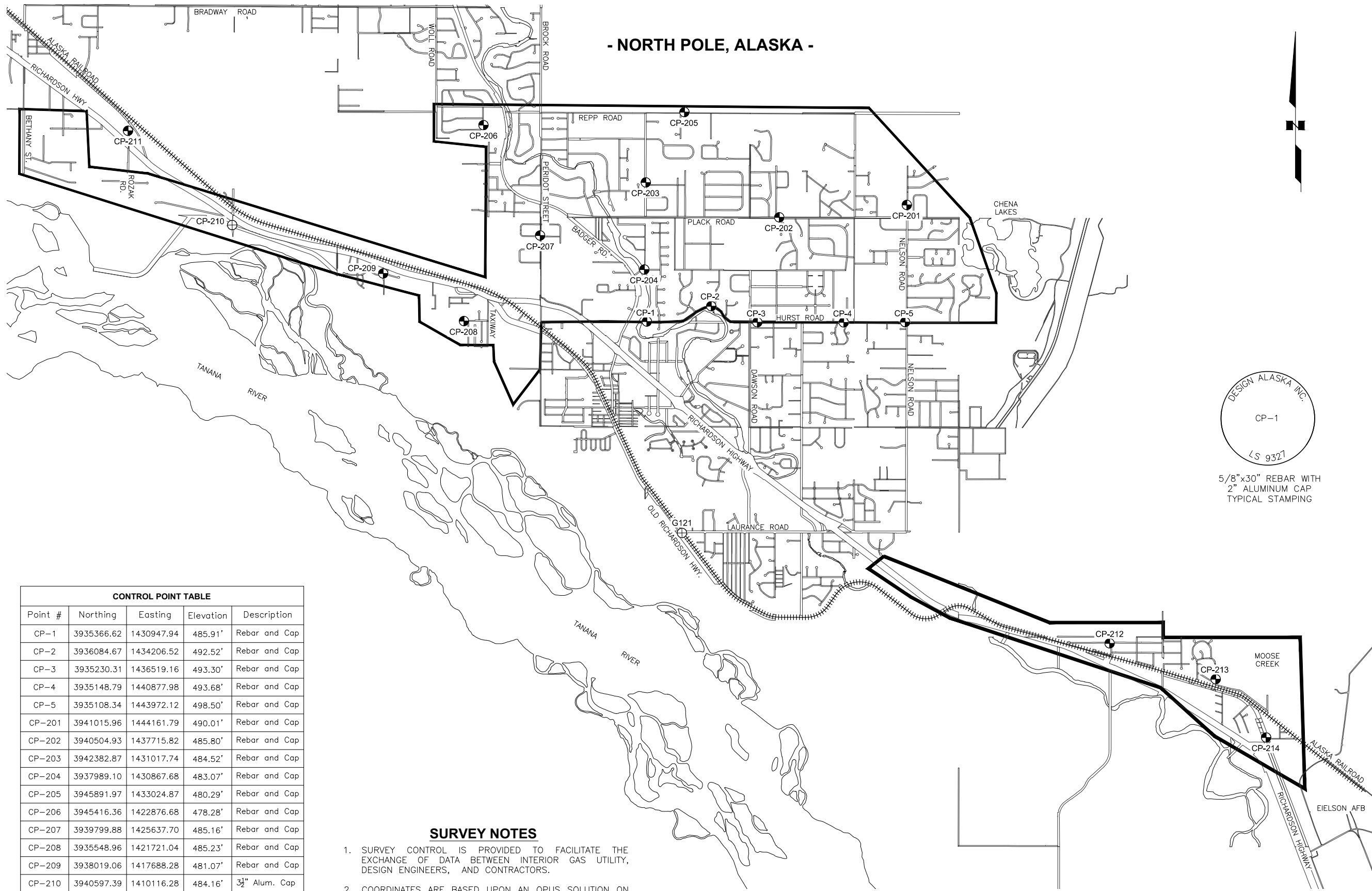
ZONE C

- LEGEND**
- 8" BURIED GASLINE (PROPOSED)
 - 4" BURIED GASLINE (PROPOSED)
 - 2" BURIED GASLINE (PROPOSED)



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- NORTH POLE, ALASKA -





5/8"x30" REBAR WITH
2" ALUMINUM CAP
TYPICAL STAMPING

CONTROL POINT TABLE				
Point #	Northing	Easting	Elevation	Description
CP-1	3935366.62	1430947.94	485.91'	Rebar and Cap
CP-2	3936084.67	1434206.52	492.52'	Rebar and Cap
CP-3	3935230.31	1436519.16	493.30'	Rebar and Cap
CP-4	3935148.79	1440877.98	493.68'	Rebar and Cap
CP-5	3935108.34	1443972.12	498.50'	Rebar and Cap
CP-201	3941015.96	1444161.79	490.01'	Rebar and Cap
CP-202	3940504.93	1437715.82	485.80'	Rebar and Cap
CP-203	3942382.87	1431017.74	484.52'	Rebar and Cap
CP-204	3937989.10	1430867.68	483.07'	Rebar and Cap
CP-205	3945891.97	1433024.87	480.29'	Rebar and Cap
CP-206	3945416.36	1422876.68	478.28'	Rebar and Cap
CP-207	3939799.88	1425637.70	485.16'	Rebar and Cap
CP-208	3935548.96	1421721.04	485.23'	Rebar and Cap
CP-209	3938019.06	1417688.28	481.07'	Rebar and Cap
CP-210	3940597.39	1410116.28	484.16'	3/4" Alum. Cap
CP-211	3945440.29	1404943.87	467.97'	Rebar and Cap
CP-212	3918725.52	1454004.26	517.49'	Rebar and Cap
CP-213	3916829.31	1459323.01	522.21'	Rebar and Cap
CP-214	3913845.12	1461816.96	526.10'	Rebar and Cap
G121	3924670.29	1432532.17	499.66'	NGS Brass Cap

SURVEY NOTES

1. SURVEY CONTROL IS PROVIDED TO FACILITATE THE EXCHANGE OF DATA BETWEEN INTERIOR GAS UTILITY, DESIGN ENGINEERS, AND CONTRACTORS.
2. COORDINATES ARE BASED UPON AN OPUS SOLUTION ON NGS MONUMENT G121 BY PDC INC. ENGINEERS. ELEVATIONS ARE NAVD88 VERTICAL DATUM BASED UPON THE PUBLISHED ELEVATION OF NGS MONUMENT G121, 499.66'.

LEGEND

-  5/8"x30" REBAR AND CAP SET THIS SURVEY
-  EXISTING MONUMENT RECOVERED THIS SURVEY

COORDINATES ARE ALASKA STATE PLANE, ZONE 3, NAD83, USFT
ELEVATIONS ARE NAVD88 VERTICAL DATUM, FEET

**SEE SHEET V-02 FOR
SURVEY CONTROL MONUMENT DETAILS**

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CONSTRUCTION**

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PACKAGE**

REVISIONS

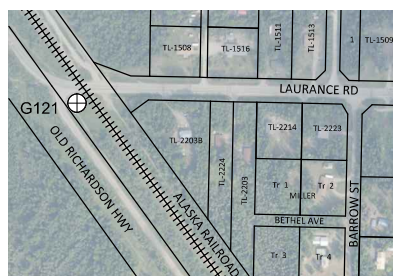
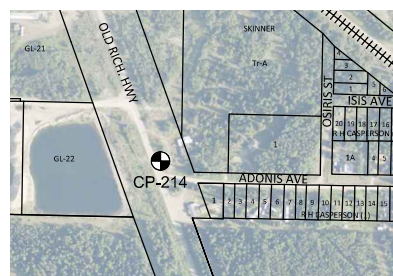
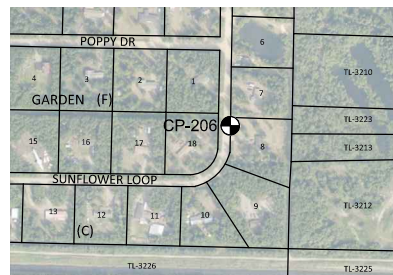
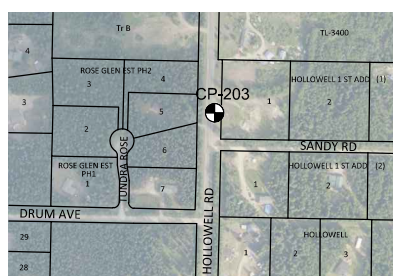
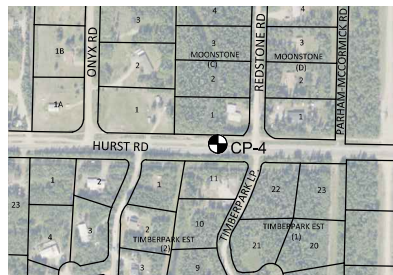
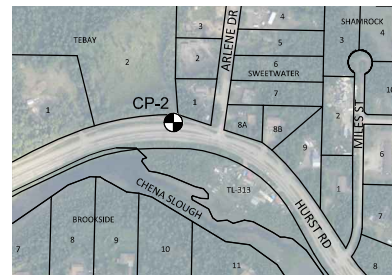
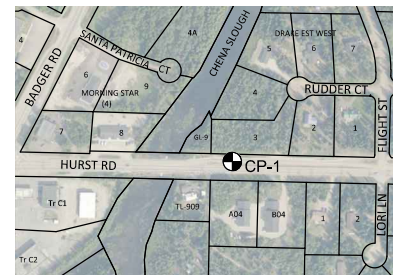
REV. #	DATE	DESCRIPTION

DESIGNED BY: ELG SCALE:
DRAWN BY: ELG AS SHOWN
CHECKED BY: WHI

SITE NAME:
**NATURAL GAS
DISTRIBUTION SYSTEM
PHASE II**
FAIRBANKS NORTH STAR BOROUGH, ALASKA

DRAWING TITLE:
**SURVEY CONTROL
LOCATION MAP**

DRAWING NO:
V-01



CONTROL POINT TABLE				
Point #	Northing	Easting	Elevation	Description
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COORDINATES ARE ALASKA STATE PLANE, ZONE 3, NAD83, USFT
ELEVATIONS ARE NAVD88 VERTICAL DATUM, FEET

SURVEY NOTES

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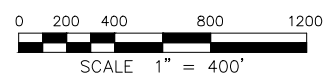
LEGEND

- 5/8"x30" REBAR AND CAP SET THIS SURVEY
- ⊕ EXISTING MONUMENT RECOVERED THIS SURVEY



5/8"x30" REBAR WITH
2" ALUMINUM CAP
TYPICAL STAMPING

SEE SHEET V-01 FOR LOCATION MAP



**Michael Baker
INTERNATIONAL**

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REVISIONS

REV. #	DATE	DESCRIPTION

DESIGNED BY: ELG SCALE: AS SHOWN
DRAWN BY: ELG
CHECKED BY: WHI

SITE NAME:
**NATURAL GAS
DISTRIBUTION SYSTEM
PHASE II**
FAIRBANKS NORTH STAR BOROUGH, ALASKA

DRAWING TITLE:
**SURVEY CONTROL
MONUMENT DETAILS**

DRAWING NO:
V-02