

Draft Utilities Inventory

Dillingham Airport Master Plan Update

Project No. CFAPT00353/ AIP 3-02-0078-017-2018

Prepared for:



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List of Acronyms

- ALP – Airport Layout Plan
- AMP – Airport Master Plan
- ARFF – Aircraft Rescue and Fire Fighting
- DLG – Dillingham Airport
- DME – Distance Measuring Equipment
- DOT&PF – Department of Transportation & Public Facilities
- EEB – Electrical Equipment Building
- EPA – Environmental Protection Agency
- FAA – Federal Aviation Administration
- FSS – Flight Service Station
- GA – General Aviation
- GIS – Geographic Information Systems
- HDPE - High-Density Polyethylene
- LOC - Localizer
- PE – Polyethylene
- PFAS - Per- and Polyfluoroalkyl Substances
- SEF – State Equipment Fleet
- SWPPP - Stormwater Pollution Prevention Plan
- USDI – United States Department of the Interior
- WELTS – Well Log Tracking System

1.0 Introduction

The following report inventories and discusses the range of utilities available at Dillingham Airport (DLG). This inventory will support DLG's Airport Master Plan (AMP) and Airport Layout Plan (ALP) update by describing existing conditions and providing utility location information to inform airport alternatives development. Utilities data were collected through existing GIS and survey data, a site visit on May 18, 2021, and follow-up interviews. Attachment A shows a map combining existing utilities at DLG.

2.0 Water

While the City of Dillingham has a community water system that draws ground water, there are no municipal water system hook-ups extended to DLG. Tenants are responsible for providing water to their lease lots by drilling wells or storing water in tanks. The State of Alaska Department of Natural Resources' (DNR) Well Log Tracking System (WELTS) notes the presence of three wells on DLG property¹:

- USDI Fish & Wildlife Services: 100-foot well below ground surface
- Southwest Air: 80-foot well below ground surface
- Yute: 60-foot well below ground surface

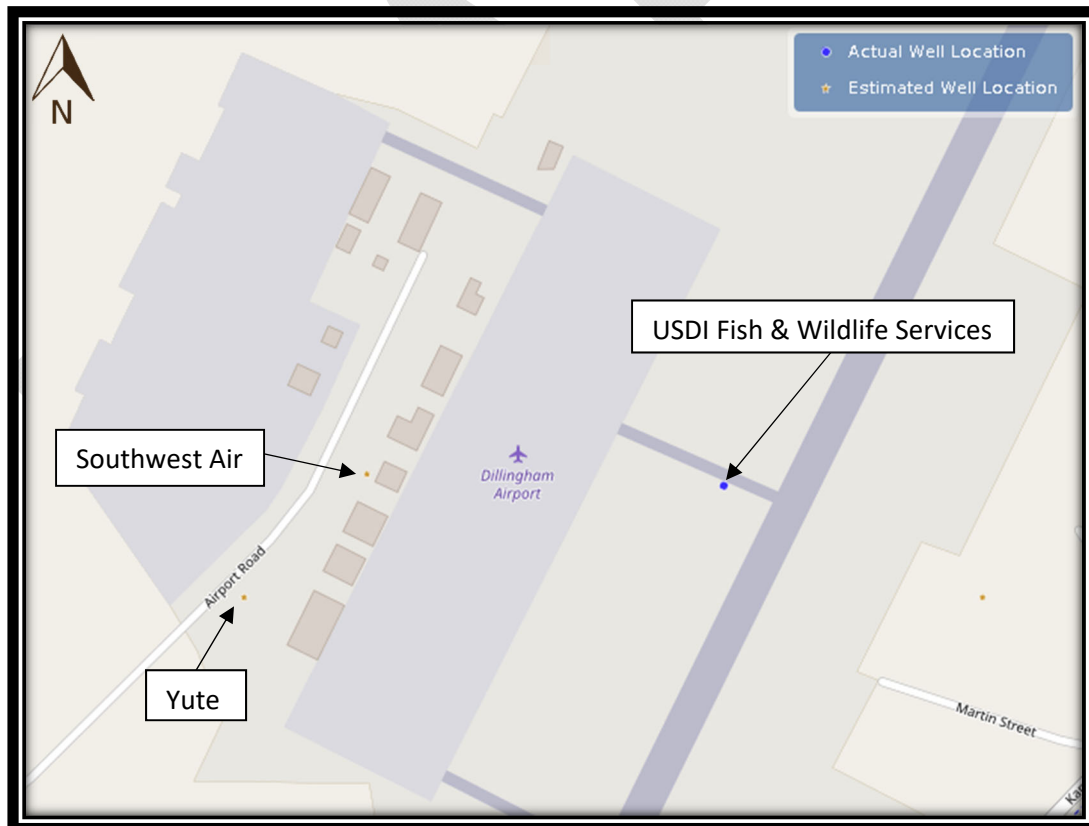


Figure 1: Reported Well Locations at DLG (WELTS)

¹ "Well Log Tracking System (WELTS)," Alaska Department of Natural Resources, Division of Mining Land & Water, Accessed April 30, 2021, <https://dnr.alaska.gov/welts/#show-welts-intro-template>.

Aeronautical survey and planimetric field survey data from previous years provided greater well location specificity than Alaska DNR’s WELTS map; it is assumed that the surveys provide more reliable location data. The 2020 DLG Land Occupancy figures indicate an additional well location between the Department of Transportation and Public Facilities (DOT&PF) maintenance garage and sand storage facility, with water lines connecting to fire hydrants.

The presence of active contaminated sites at and near DLG, including per- and polyfluoroalkyl substances (PFAS), past aviation gasoline (AvGas) spills, and potential for future spills may affect the supply of potable water. This may warrant connecting to the municipal water system or installing a community class well located away from potential contaminated areas, to ensure a reliable supply of potable water. See the DLG Environmental Overview report for additional contamination information.

3.0 Sanitary Sewer

DLG has access to the City of Dillingham’s wastewater service via an underground connection to the east of Runway 1-19 (Figure 2 and Appendix A). The sewer line is pressurized between the pump station (Figure 3 and Appendix A) and the manhole on the east side of Runway 1-19. There is a gravity line extending southwest from the pump station parallel to Airport Road. Sewer main piping is composed of 8-inch ductile iron, polyethylene (PE) and high-density polyethylene (HDPE). See Appendix C – City of Dillingham Water/Sewer Asbuilt Mapping for more information.

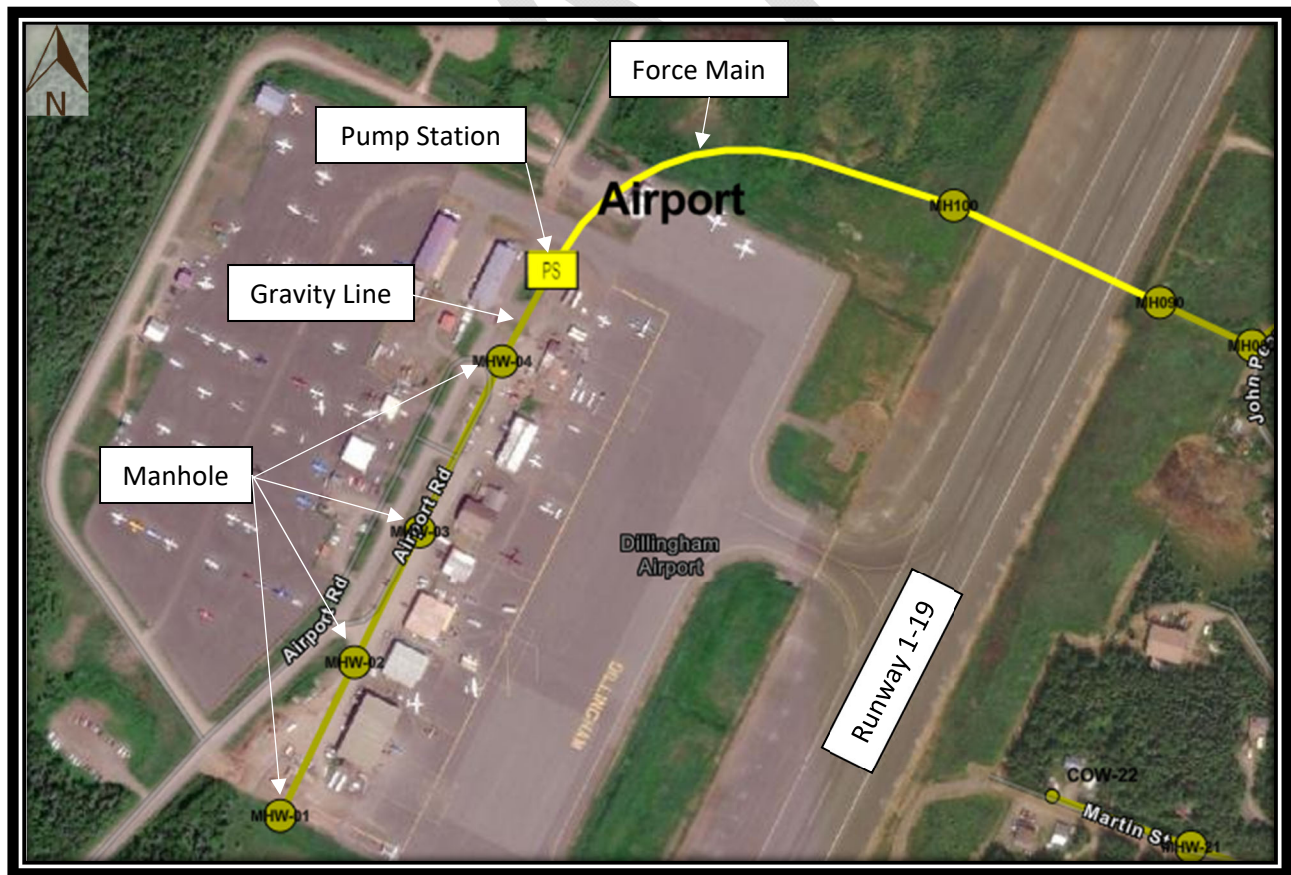


Figure 2: DLG Sewer Access from City of Dillingham GIS

There was a comment during the site visit about periodic backups due to a low point in the sewer service line to the Aircraft Rescue and Firefighting (ARFF) building.



Figure 3: Sewer Pump Station

4.0 Fuel

DLG tenants generally use heating oil furnaces supplied by heating oil tanks located on their lease lots. DOT&PF uses heating oil in all buildings with the exception of the electrical equipment building (EEB), which uses a small electric heater.

Natural gas is not supplied to DLG. Table 1 shows fuel storage at DLG.

Table 1: Fuel Storage at DLG

Company	Container Size (Gal)	Fuel Type
Alaska Airlines	1000	Heating Oil
	2000	Avgas 100LL Double Wall
	5000	Jet-A Mobile
Alaska Cargo Services	500	Heating Oil
	3000	Jet-A Mobile
	4000	Jet-A Mobile
Alaska Island Air	240	Avgas 100LL Mobile
	55	Heating Oil
Alaska Pride Air	2000	Heating Oil
	5000	Avgas 100LL Fireguard
	100	Unleaded Fuel
	200	Heating Oil
Antler Aviation and Wildlife Services	500	Avgas 100LL Mobile
Bay Air	500	Heating Oil
Bristol Bay Air	500	Avgas 100LL Mobile
	55	Heating Oil
DOT&PF	4000	Diesel Fuel Fireguard
	2000	Diesel Fuel Fireguard
	2000	Heating Fuel Fireguard
	1000	Heating Oil Double Wall
	3000	Heating Oil Double Wall
FAA	2000	Heating Oil
Freshwater Adventures	2000	Avgas 100LL Fireguard
	1100	Heating Fuel
	300	Heating Oil
Grant Aviation Hangar	1000	Heating Oil
	2800	Jet-A Mobile
Mulchatna Air	2000	Avgas 100LL Fireguard
	1000	Heating Oil
Seventh Day Adventists	220	Heating Oil
Shannons Air Taxi	500	Avgas 100LL Mobile
	300	Heating Oil
Starflite Air	1500	Heating Oil
	2000	Jet-A Mobile
Togiak National Wildlife Refuge	1000	Avgas 100LL
	550	Heating Fuel
Tucker Aviation	1000	Avgas 100LL Mobile
	500	Heating Oil
	500	Unleaded Fuel
Van Air	500	Avgas 100LL

5.0 Electric & Telecommunications

Nushagak Electric & Telephone Cooperative provides electricity, telephone, and internet distribution service to DLG. Both the electric and telephone connections for DLG originate from an underground line east of Runway 1-19 (Appendix A).

The electric line crosses under the runway and travels along the northeast edge of the Terminal Apron. It extends west beyond Airport Road, encompassing the north and most of the west perimeter of the GA Apron, and also extends along Airport Road to provide service connections for the lease lots. Electrical service also extends to residences near the airport and out Aleknagik Lake Road.

Relocation of three spans of overhead electric lines on poles along Kanakanak Road (south of the Runway 1 end) to underground lines was performed with the Dillingham Airport Improvements project (59304) in conjunction with RSA expansion and LOC/DME relocation. Utility relocation has occurred near the curve on Wood River Road near the city cemetery in anticipation of road realignment. Relocation of all utilities following the current road alignment will be completed as needed.

The telecom line extends to the northwest corner of the Terminal Apron, then runs southwest along Airport Road (Figure 4 and Appendix A).

Power and telecommunication are a combination of underground and overhead lines. Electrical circuits are on 3-phase power. Telecommunication lines are a combination of copper and fiber optic cables. There are a variety of surface and aboveground appurtenances and support structures, including poles, vaults, transformers, and electrical and telephone pedestals.

Airport Lighting

The airport lighting system is composed of high intensity runway lighting and medium intensity taxiway lighting. These circuits originate at the EEB building and are owned and maintained by DOT&PF. Navigational aids (NAVAIDS) owned by FAA are controlled out of the FAA equipment shelter.

The Flight Service Station (FSS), ARFF, and airport lighting system have emergency backup generators.

DOT&PF tested the airfield lighting system in December 2019 because it was past its minimum useful life. The system is nearing failure, with greatly reduced resistance readings, likely due to water inundating the system. Replacement of the system is recommended.

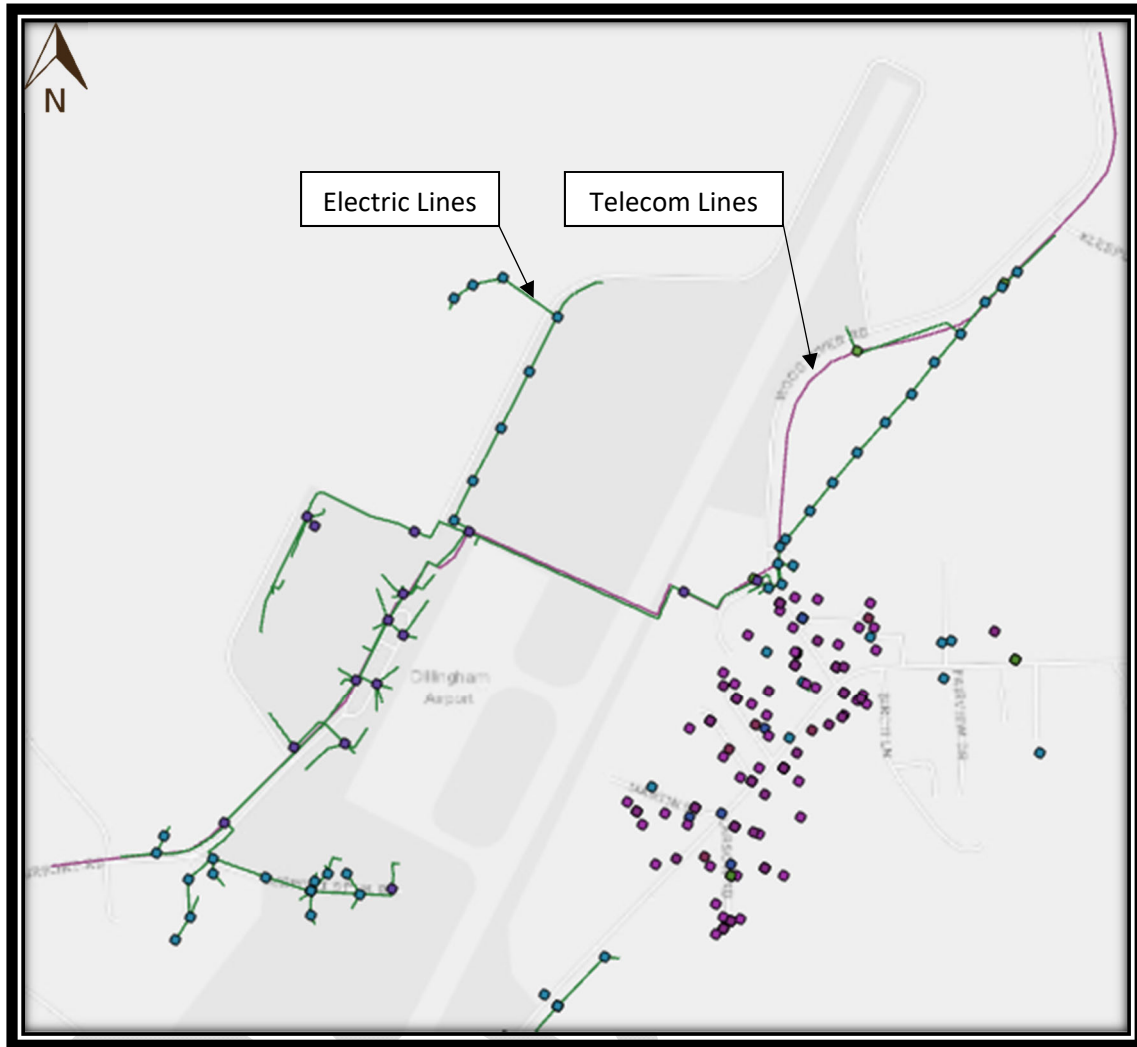


Figure 4: DLG Electric & Telecommunications Lines from Nushagak GIS

6.0 Stormwater Drainage

A storm drain system, including culverts and ditches, facilitates stormwater drainage at DLG. The storm drain and catch basins (Figure 5 & Appendix A) run parallel to Airport Road on the east side. The first intake is at the driveway between Freshwater Adventures and Alaska Airlines, with water running north and draining into a ditch from an open outfall at the north side of Taxiway C.



Figure 5: Storm Drain Catch Basin

Culverts are placed throughout DLG property (Appendix A). Key culvert locations include:

- Underneath the RSA north of Runway 1-19
- Spanning Runway 1-19, south of Taxiway A
- Spanning across Taxiway A
- Spanning across Taxiway B
- Spanning maintenance road east of Runway 1-19
- Spanning across the long-term parking access southwest of DLG
- Spanning across approach driveways west of the GA Apron
- Spanning several lease driveway approaches along Airport Road

While many of the culverts, including the larger diameter culverts moving stormwater near the runway, remain in good condition (Figures 6 and 7), several of the smaller culverts near property access points show signs of significant degradation (e.g. crushed ends, Figure 8).

The cross-runway culvert south of Taxiway A and the Taxiway C culvert were replaced in 2018 by the Dillingham Airport Runway Rehabilitation project (CFAPT00104).



Figure 6: Runway Culvert Inlet West of RW 1-19



Figure 7: Runway Culvert Outlet East of RW 1-19



Figure 8: Damaged Culvert under GA Apron Access Driveway

7.0 Waste Disposal

Solid Waste

Facility trash is emptied into on-site dumpsters. The dumpsters are serviced weekly by Dillingham Waste Management. Oil pads that are used to clean oil spills are either burned or disposed of in the dumpsters, once dry.

Universal Waste

Used batteries and light bulbs are stored inside within labeled plastic containers and disposed of at the local landfill once per year. The Dillingham Landfill is an ADEC permitted Class II Landfill, and is located about 3.75 miles northwest of DLG, with its access road starting along Waskey Road. Used battery containers are labeled with an accumulation start date. State Equipment Fleet (SEF) staff remove and replace all vehicle and equipment batteries, recycling them if possible.

Used aerosol cans were determined by EPA to be a universal waste as of December 2020. Per EPA, empty cans can no longer be punctured and recycled or thrown away unless each facility has a special puncturing container with an air filter that can contain all the residue. DLG does not have a special puncturing container. As this facility is a Very Small Quantity Generator under the Resource Conservation and Recovery Act (RCRA), its empty aerosol cans can be treated as household hazardous waste instead. As such, they are stored in a labeled container (no accumulation start date required) and are taken to the local landfill once per year, when the landfill accepts household hazardous waste.

Hazardous Waste

Solvents are not stored at DLG. There is a separate SEF facility that performs vehicle maintenance and has a solvent tank for cleaning tools and parts.

Liquid Waste

Human waste facilities are connected to the sewer line at DLG, which is part of the City of Dillingham domestic wastewater sewer system. Wastewater in the ARFF building, warm storage building, and chemical storage building passes through oil-water separators. The oil-water separators are cleaned out annually, and waste is taken to an approved disposal facility. Water from the oil-water separators is connected to the City of Dillingham domestic waste water sewer system. Sewage and wastewater are treated at the Dillingham Wastewater Treatment System.

For used oil, the SEF facility conducts all vehicle maintenance and burns all used oil in their used oil burner at their own facility away from DLG property.

For leftover road and airfield paint, DOT&PF had a contract with their paint manufacturer which stipulated that leftover paint totes could be returned at the end of the year for reuse; however, the waterborne paint currently used is stored in plastic disposable totes that the manufacturer does not accept. These totes are dried out once empty then crushed and disposed of at the landfill.

Deicing

DOT&PF personnel are responsible for deicing. Deicing is urea based, using both liquid and solid (i.e. pellets) materials.

8.0 Recycling and Solid Waste Minimization Plans

The DLG Stormwater Pollution Prevention Plan (SWPPP) details recycling activities and best management practices. At DLG, used vehicle and equipment batteries are recycled by SEF.

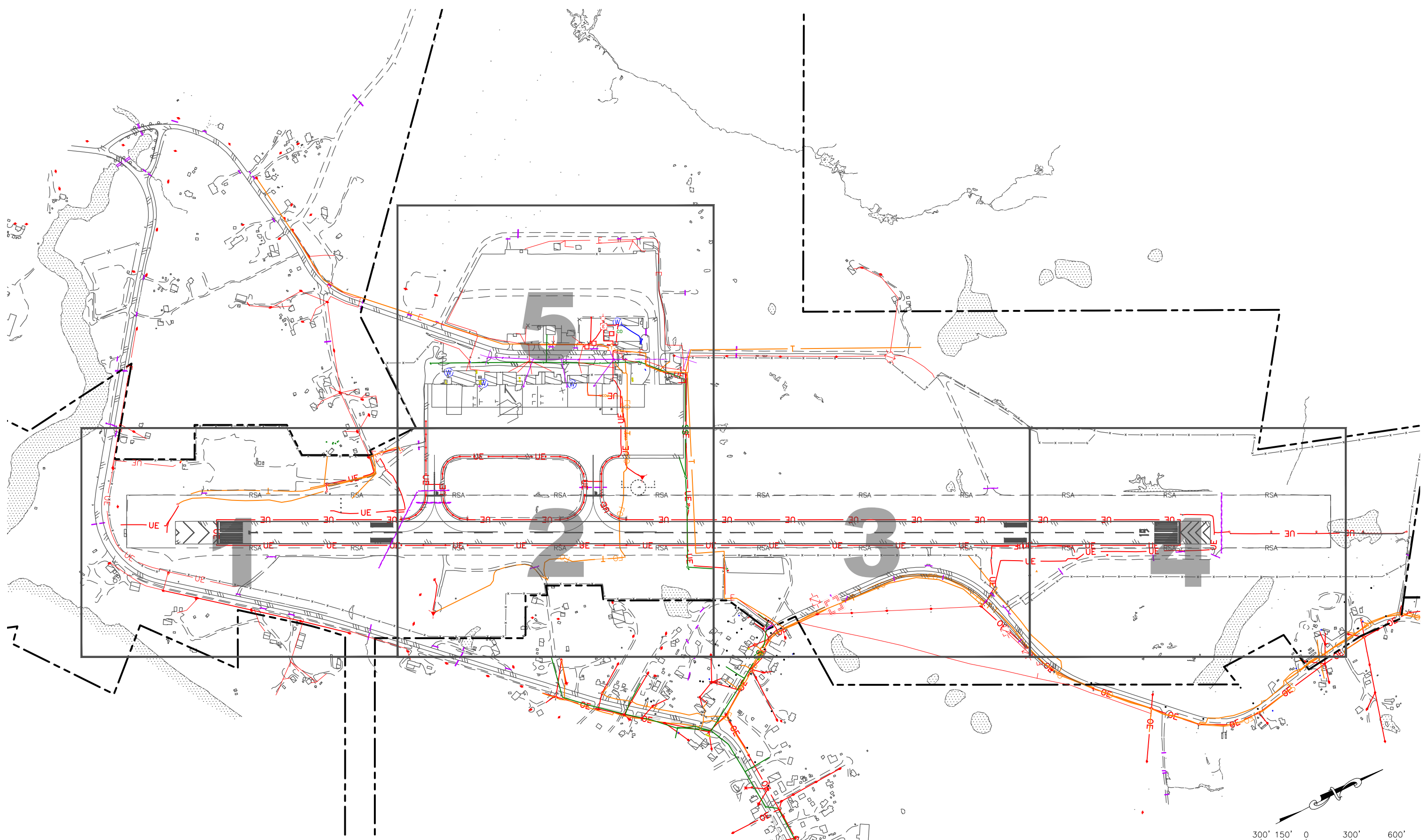
The Dillingham Landfill recycles aluminum cans, electronics, fluorescent bulbs, glass, refrigerators and freezers, scrap metal and appliances, tires, and vehicles. The feasibility of solid waste recycling for DLG beyond what is available at the Dillingham Landfill is limited due to the small community size as well as the distance and lack of a road connection to larger recycling facilities.

To minimize solid waste generation, DOT&PF staff will break down, flatten, and/or crush urea bags, empty boxes, and empty, dry paint totes. Staff also reuse metal paint tote cages for crack sealant and paint gun strainer bags.

Appendix A
Dillingham Airport Utility Map

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NOTE: UTILITY LOCATIONS ARE BASED ON THE FOLLOWING RESOURCES AND HAVE NOT BEEN FIELD VERIFIED.

- 2000 CITY OF DILLINGHAM WATER/SEWER ASBUILT MAPPING
- 2012 DILLINGHAM AIRPORT IMPROVEMENT PROJECT – EXISTING UTILITIES MAP
- 2006 AND 2017 DILLINGHAM AIRPORT AERONAUTICAL/PLANIMETRIC SURVEYS
- 2019 DILLINGHAM AIRPORT LAND OCCUPANCY DRAWING
- ELECTRIC AND TELCOM – NUSHAGAK GIS MAPPING

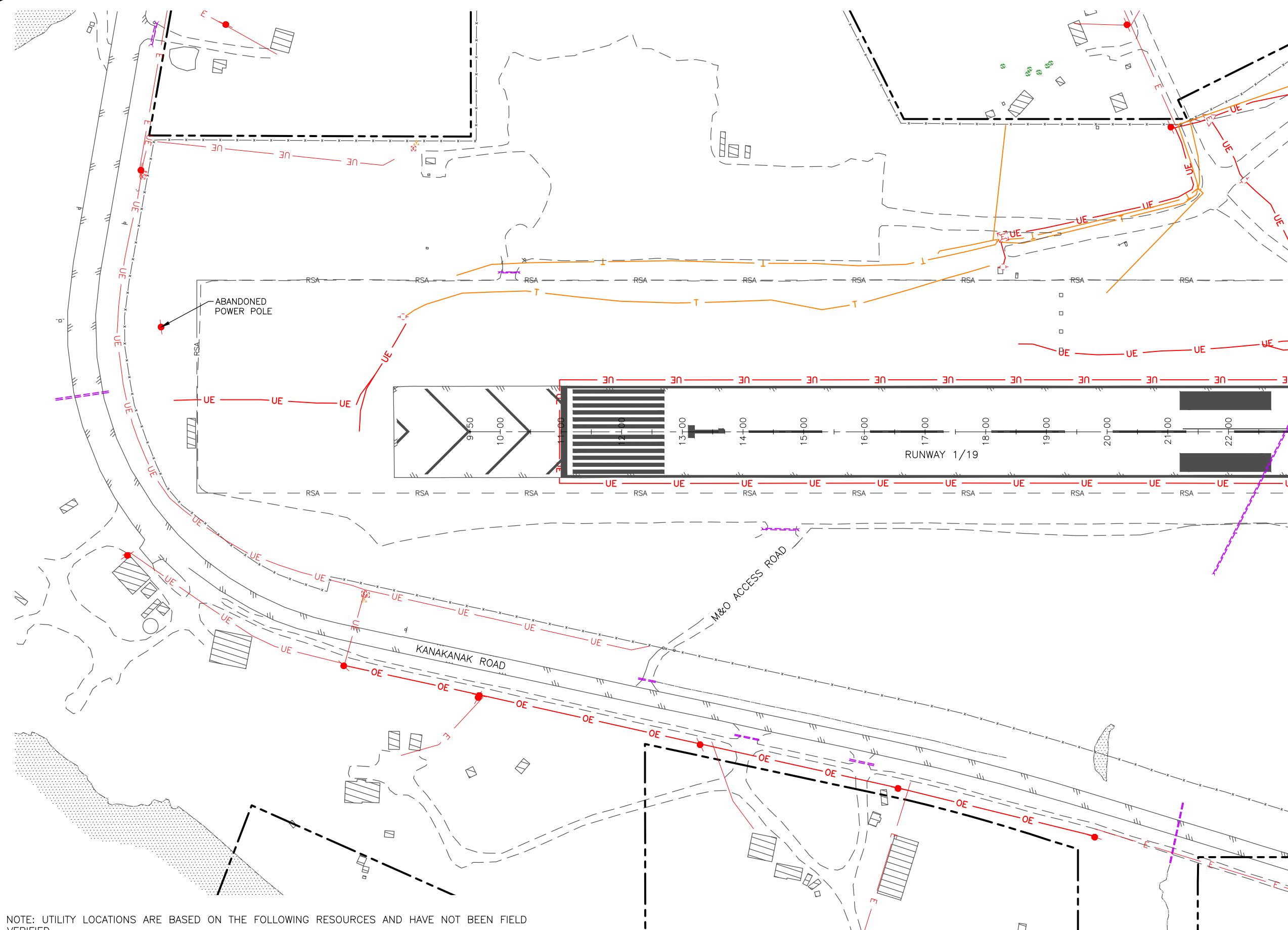
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 UTILITY MAP – OVERVIEW

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MATCH LINE STA 23+00

LEGEND:

- ELECTRIC
- GAS/FUEL TANKS
- TELECOMMUNICATION
- STORM DRAIN (CULVERTS INCLUDED)
- SANITARY SEWER
- WATER

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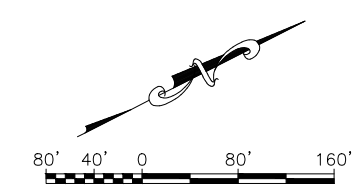
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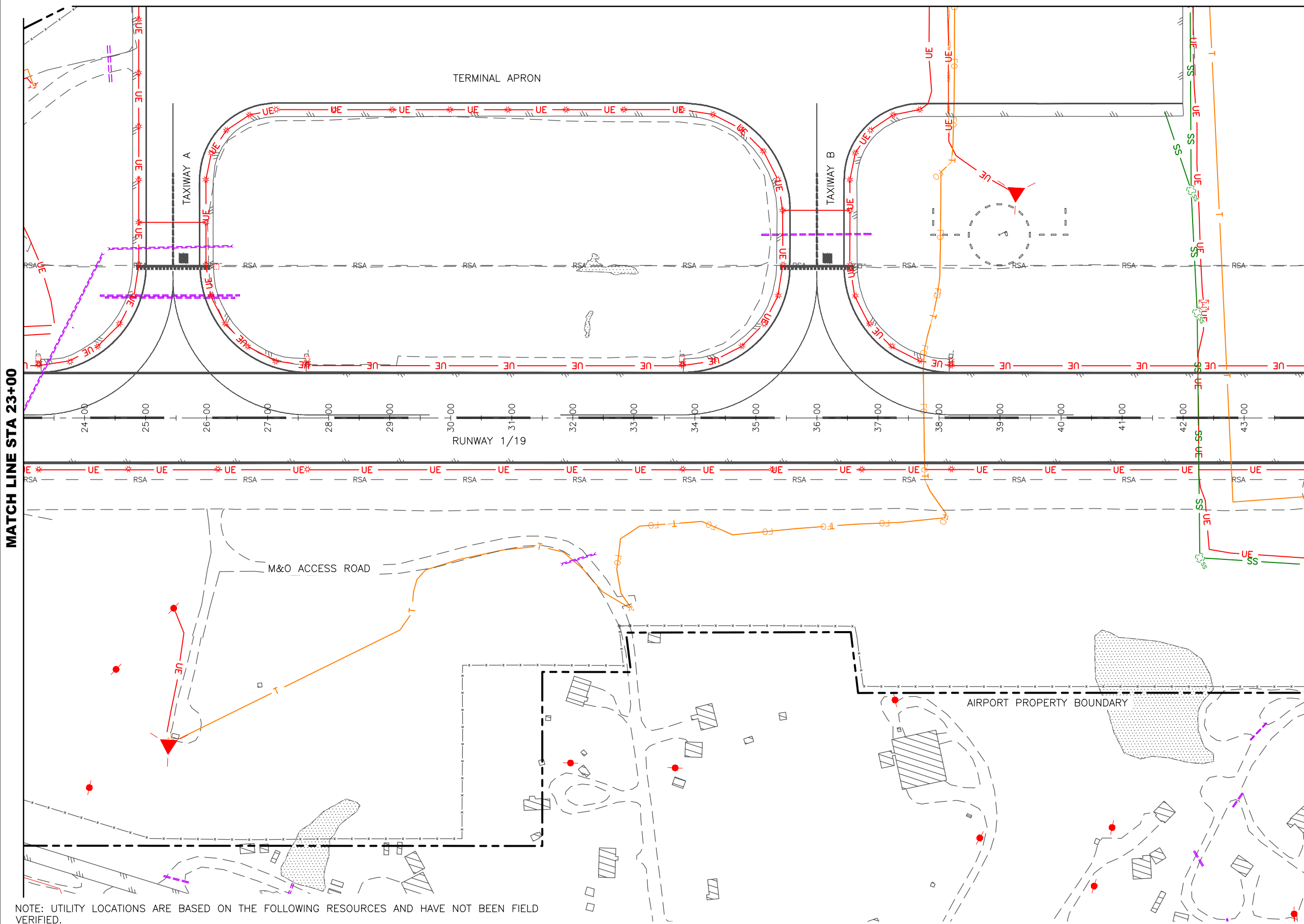
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 - GAS/FUEL TANKS —
 - TELECOMMUNICATION —
 - STORM DRAIN (CULVERTS INCLUDED) —
 - SANITARY SEWER —
 - WATER —

MATCH LINE STA 23+00

MATCH LINE STA 44+00

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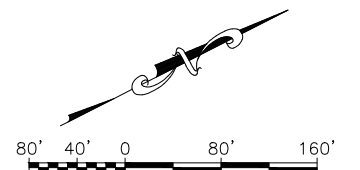
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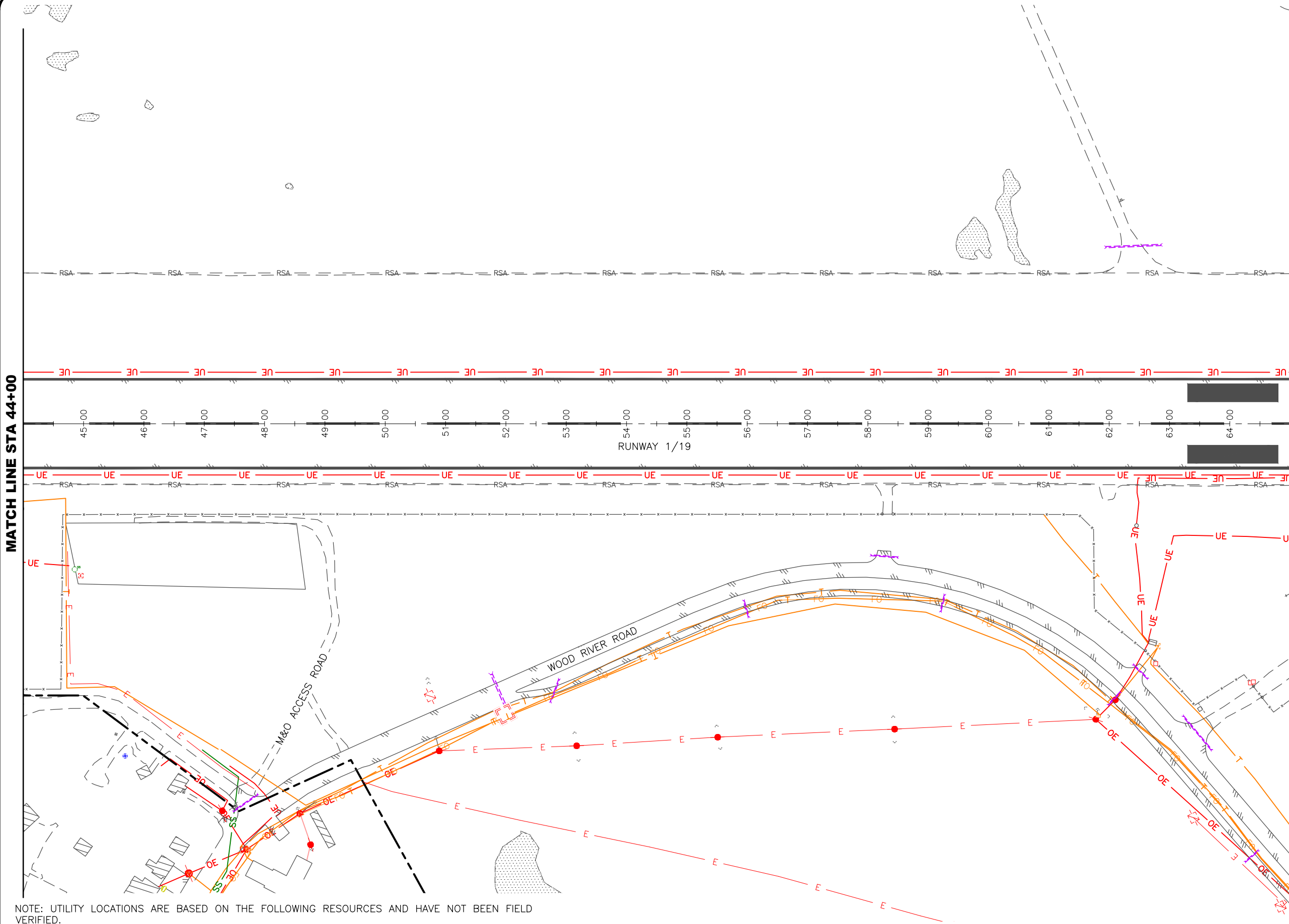
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 - GAS/FUEL TANKS █
 - TELECOMMUNICATION █
 - STORM DRAIN (CULVERTS INCLUDED) █
 - SANITARY SEWER █
 - WATER █

MATCH LINE STA 44+00

MATCH LINE STA 65+00

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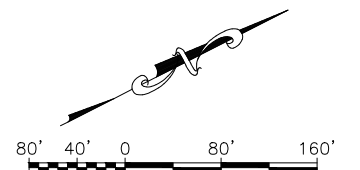
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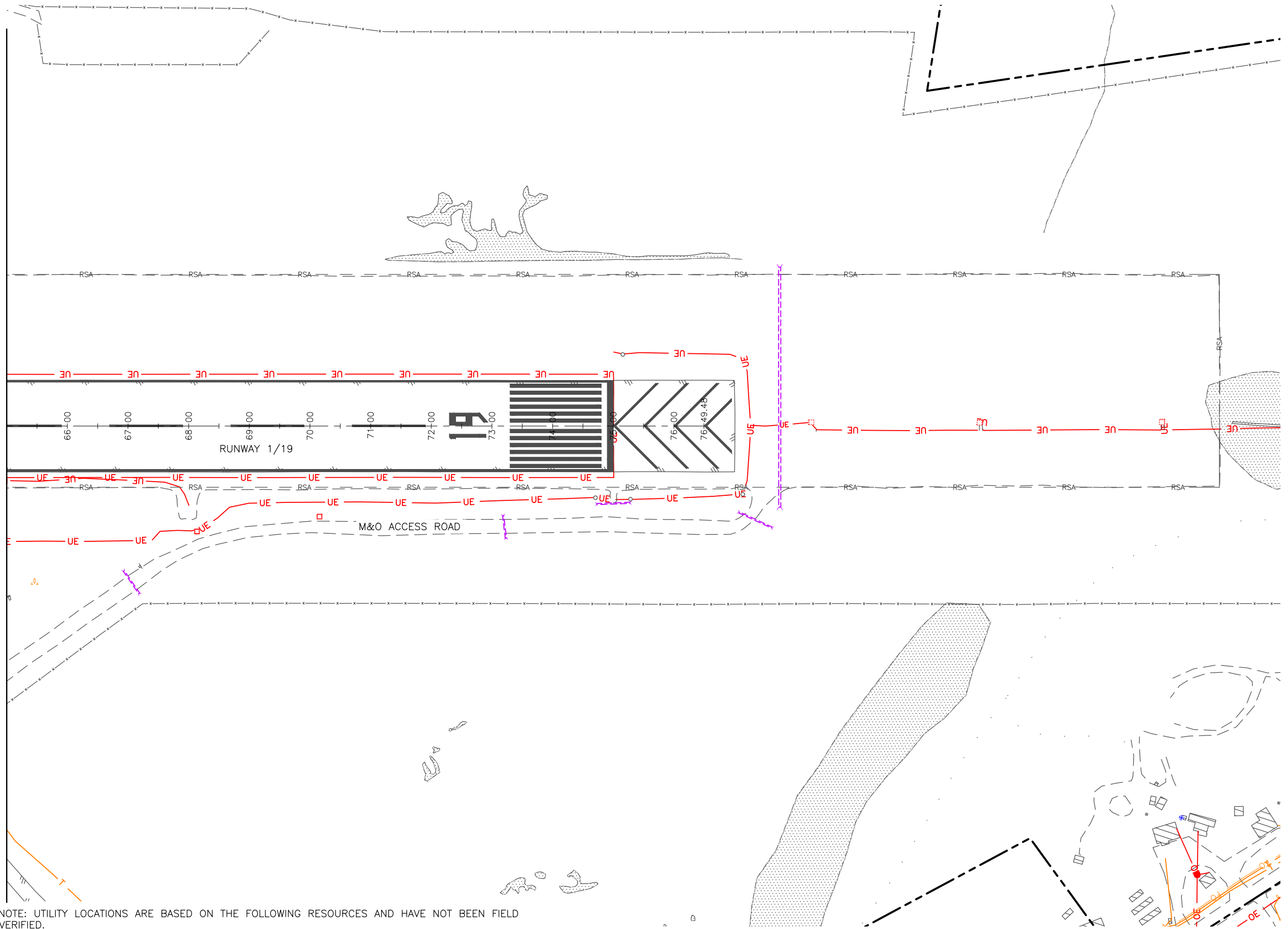
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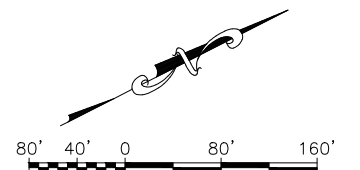
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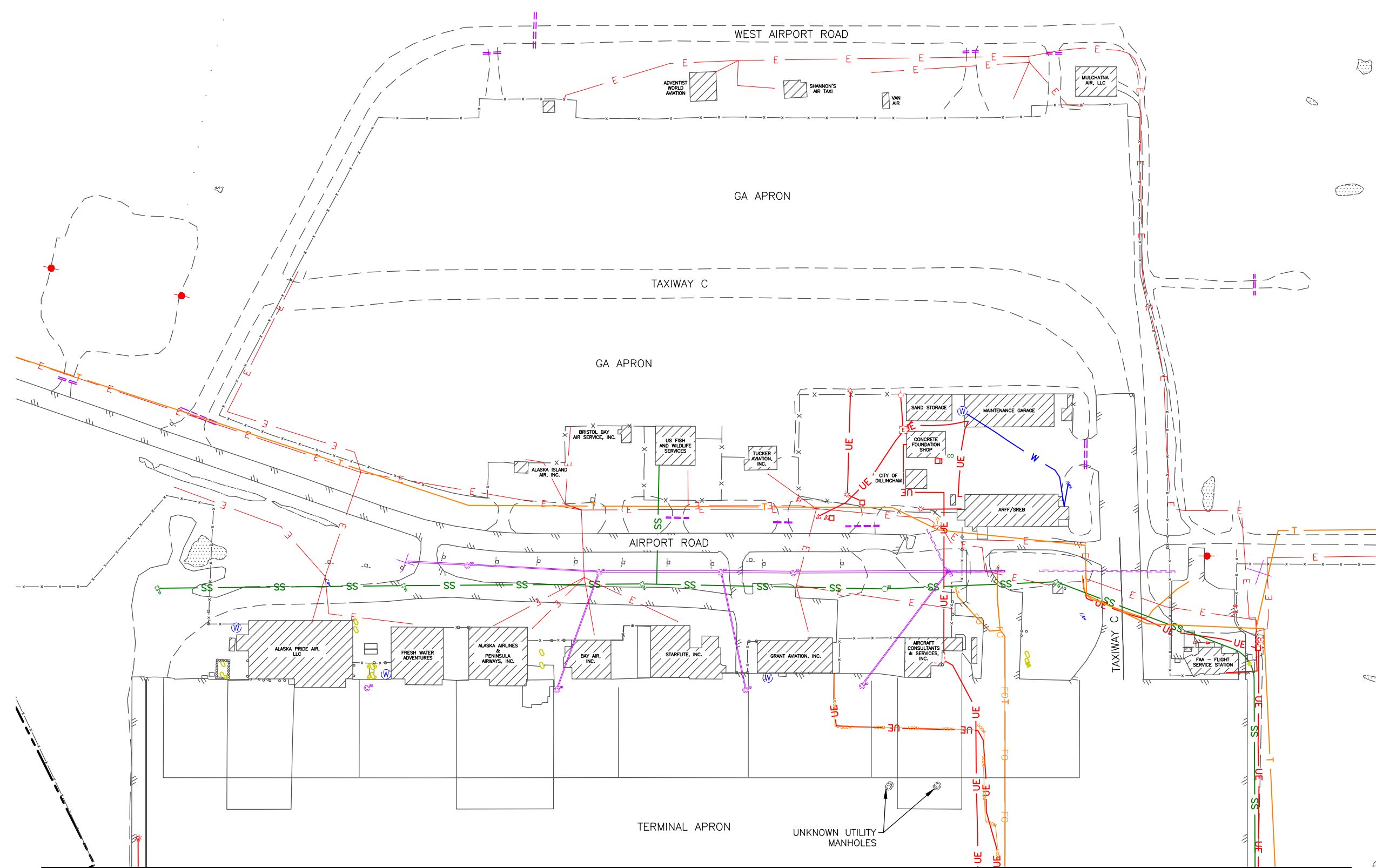
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Appendix B
Dillingham Airport Land Occupancy

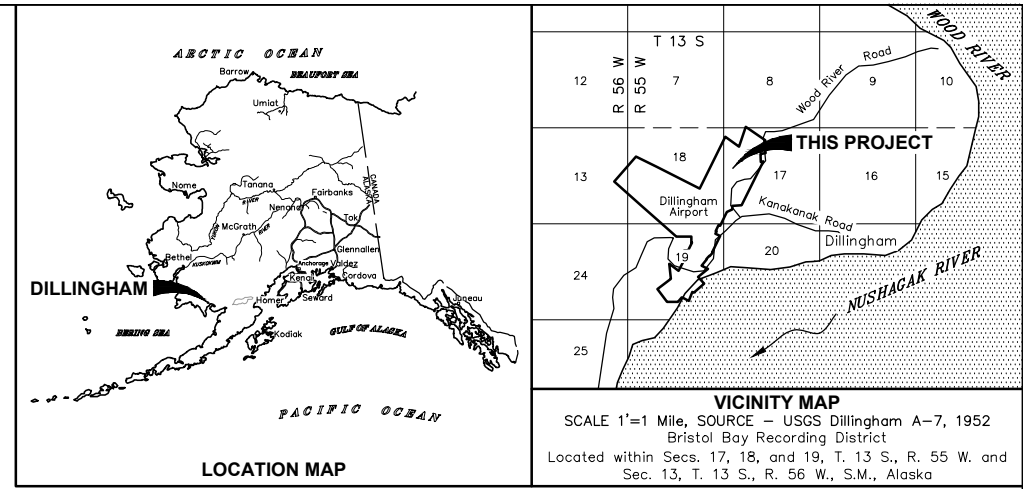
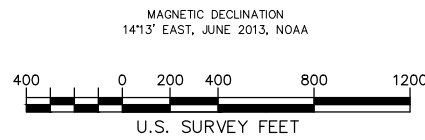
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LAND OCCUPANCY

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ITEM	1	06669	1600	FAA - PAPI, R/W 01	06/22/2006	09/30/2022
	2	07092	104,544	FAA - LOCALIZER	07/01/1994	09/30/2023
	3	07092		FAA - VASI, R/W 19	07/01/1994	09/30/2014
	4	06621	40,075	FAA - DIRECTION FINDER	07/01/1991	09/30/2030
	5	08342	612,018	FAA - ODALS & 10' CABLE ROW	10/01/2005	09/30/2024
	6	08730	16	FAA - SAWS SITE	06/17/2010	09/30/2030
	7	06669	2500	FAA - AWOS	06/01/1992	09/30/2022
	8			CLOSED WATER WELL		

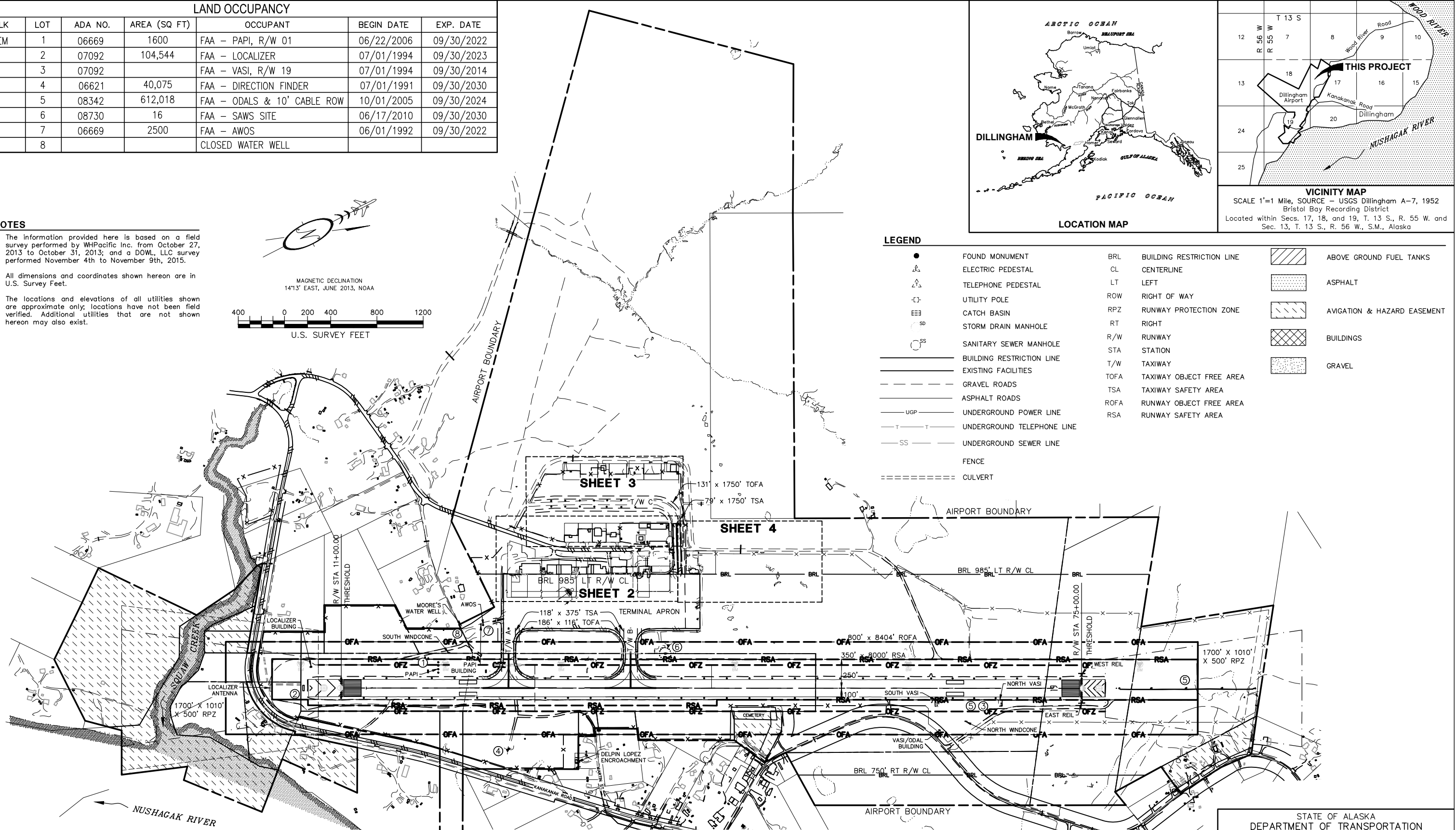
NOTES

- The information provided here is based on a field survey performed by WHPacific Inc. from October 27, 2013 to October 31, 2013; and a DOWL, LLC survey performed November 4th to November 9th, 2015.
- All dimensions and coordinates shown hereon are in U.S. Survey Feet.
- The locations and elevations of all utilities shown are approximate only; locations have not been field verified. Additional utilities that are not shown hereon may also exist.



LEGEND

●	FOUND MONUMENT	BRL	BUILDING RESTRICTION LINE		ABOVE GROUND FUEL TANKS
⊕	ELECTRIC PEDESTAL	CL	CENTERLINE		ASPHALT
⊕	TELEPHONE PEDESTAL	LT	LEFT		AVIGATION & HAZARD EASEMENT
⊕	UTILITY POLE	ROW	RIGHT OF WAY		BUILDINGS
⊕	CATCH BASIN	RPZ	RUNWAY PROTECTION ZONE		GRAVEL
⊕	STORM DRAIN MANHOLE	RT	RIGHT		
⊕	SANITARY SEWER MANHOLE	R/W	RUNWAY		
—	BUILDING RESTRICTION LINE	STA	STATION		
—	EXISTING FACILITIES	T/W	TAXIWAY		
—	GRAVEL ROADS	TOFA	TAXIWAY OBJECT FREE AREA		
—	ASPHALT ROADS	TSA	TAXIWAY SAFETY AREA		
—	UGP	ROFA	RUNWAY OBJECT FREE AREA		
—	UNDERGROUND TELEPHONE LINE	RSA	RUNWAY SAFETY AREA		
—	UNDERGROUND SEWER LINE				
—	FENCE				
—	CULVERT				

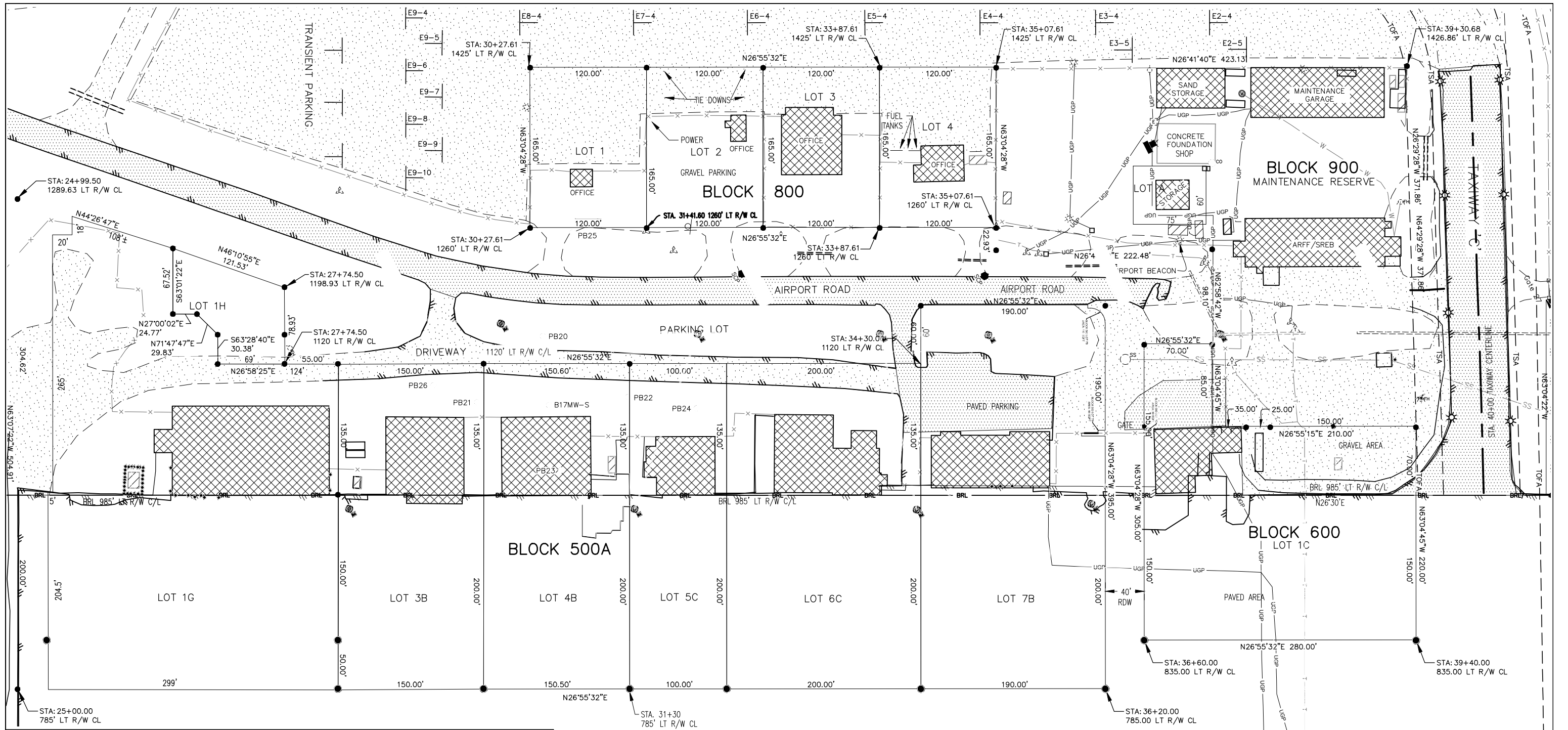


REFERENCE DOCUMENTS

This Land Occupancy Map (LO) was compiled from the following sources:
 Dillingham Airport Property Plan, dated 12/11/2003, and provided by the Department of Transportation
 Dillingham Airport, Record of Survey, Plat 2014-11, Bristol Bay Recording District
 Dillingham Land Occupancy Map, dated 08/10/2010, and provided by the Department of Transportation
 Dillingham Airport Lease documents provided by the Department of Transportation
 Dillingham Airport Lease Lot As-Built Surveys provided by the Department of Transportation
 Dillingham Airport Layout Plan, dated 06/15/2012, FAA Conditional Approval, dated 07/10/2012, and provided by the Department of Transportation.
 Dillingham Airport Survey Control Sheet, Runway Rehabilitation, Project 53424, dated 12/2005, and provided by the Department of Transportation.

APPROVED		NAME: _____	
TITLE: _____		DATE: _____	
BY	DATE	CHANGE	SCALE
REVISIONS			1" = 400'
			DWN BRM, JB
			DATE 09/26/19
			SHEET 1 OF 4

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION
 AND PUBLIC FACILITIES
 AVIATION LEASING
**DILLINGHAM AIRPORT
 LAND OCCUPANCY**

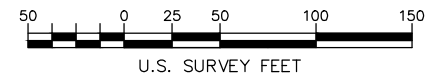


LAND OCCUPANCY

BLK	LOT	ADA NO.	AREA (SQ FT)	OCCUPANT	BEGIN DATE	EXP. DATE
500A	1G	07789	118,320	ALASKA PRIDE AIR, LLC	07/01/2000	06/30/2025
	1H	09236	9,235	ALASKA PRIDE AIR, LLC	04/01/2020	03/31/2025
	3B	07779	50,250	FRESH WATER ADEVENTURES	09/01/2000	08/31/2025
	4B	08841	50,455	PENINSULA AIRWAYS, INC.	06/01/2012	05/31/2017
	5C	09029	33,500	BAY AIR, INC.	07/01/2014	06/30/2045
	6C	09015	67,000	STARFLITE, INC.	08/01/2014	07/31/2069
	7B	09024	74,844	GRANT AVIATION, INC.	07/02/2014	07/01/2069
600	1C	07900	67,520	AIRCRAFT CONSULTANTS & SERVICES, INC. DBA ALASKA CARGO SERVICES	10/01/2001	09/30/2016
800	1	08561	19,800	ALASKA ISLAND AIR, INC.	01/02/2008	01/01/2018
	2	07196	19,800	BRISTOL BAY AIR SERVICE, INC.	10/27/1995	10/26/2020
	3	06825	19,800	US FISH AND WILDLIFE SERVICE	10/05/1992	10/05/2027
	4	06765	19,800	TUCKER AVIATION, INC.	10/15/1992	10/14/2017
900	A	07809	4,500	CITY OF DILLINGHAM	12/01/2000	11/30/2015
900				MAINTENANCE RESERVE		

TERMINAL APRON

MONITORING WELLS						
POINT	STATION	OFFSET	NORTHING	EASTING	CASE RIM ELEV	DESCRIPTION
1003	30+40.6	1148.7' L	202093.19	231301.56	73.13	PB20
1004	29+27.9	1098.1' L	201969.77	231295.58	74.27	PB26
1005	29+73.0	1080.7' L	202002.10	231331.51	74.71	PB21
1006	30+47.0	1077.8' L	202066.77	231367.62	74.55	B17MW-S
1007	31+28.5	1086.1' L	202143.27	231397.16	73.42	PB22
1008	31+99.1	1074.4' L	202200.87	231439.54	72.22	PB24
1009	30+71.2	1255.4' L	202168.82	231220.25	74.73	PB25
1010	30+59.2	1010.7' L	202047.31	231432.99	75.18	PB23



BY	DATE	CHANGE

REVISIONS

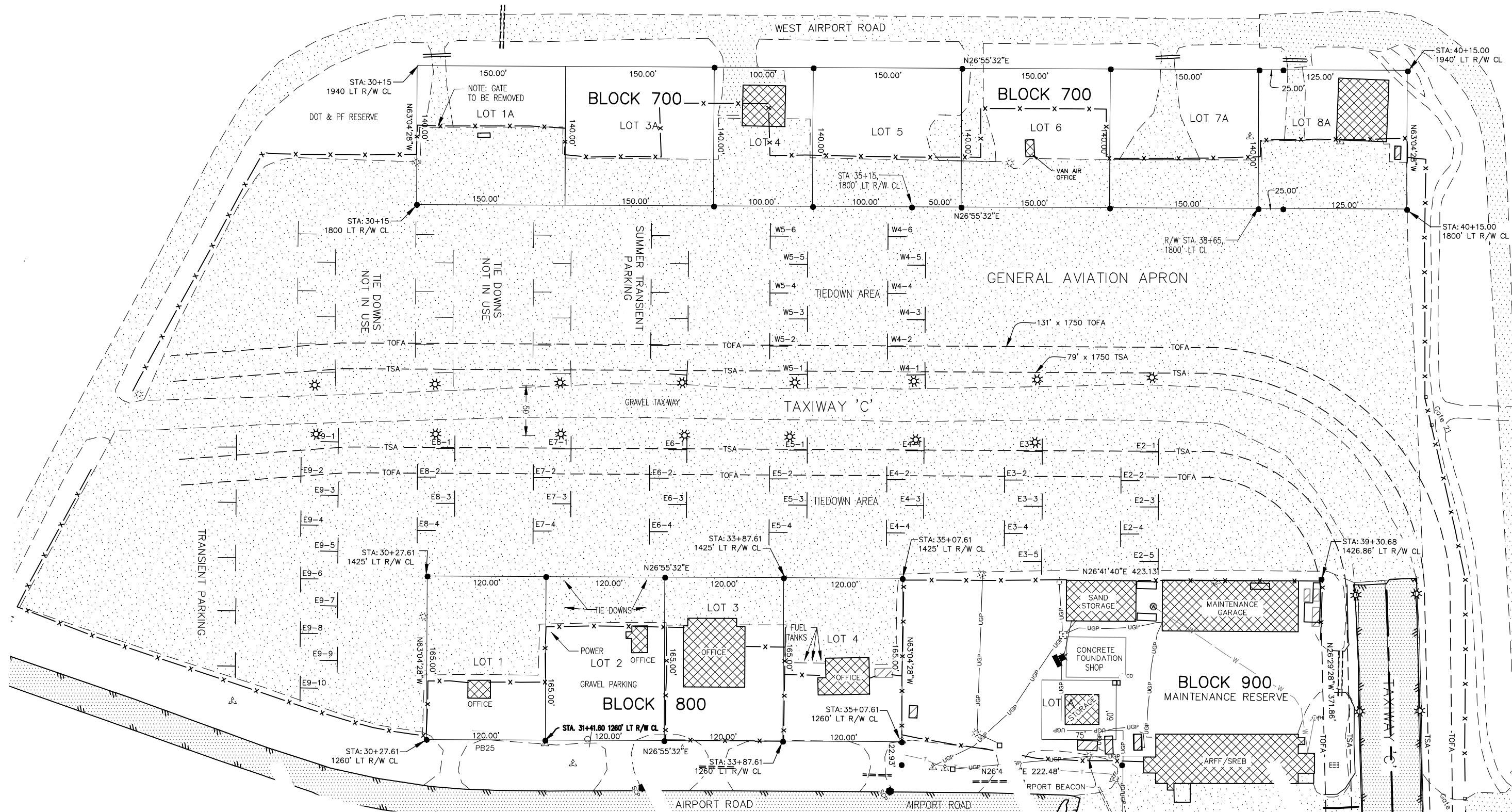
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
AVIATION LEASING

**DILLINGHAM AIRPORT
LAND OCCUPANCY**

APPROVED NAME: _____ TITLE: _____ DATE: _____

SCALE: 1" = 50'

DWN BRM, JB DATE 03/02/20 SHEET 2 OF 4

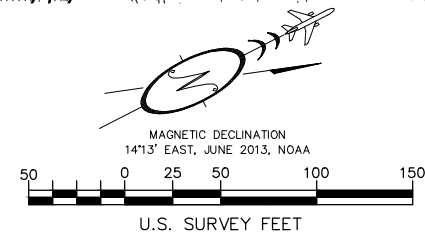


LAND OCCUPANCY

BLK	LOT	ADA NO.	AREA (SQ FT)	OCCUPANT	BEGIN DATE	EXP. DATE
700	1A		21,000			
	3A	09304	21,000	AK DEPT OF FISH & GAME	10/01/2019	09/30/2024
	4	08321	14,000	ADVENTIST WORLD AVIATION	09/01/2005	08/31/2020
	5	08791	21,000	ERIC L. SHADE DBA SHANNON'S AIR TAXI	11/15/2011	11/14/2017
	6	08040	21,000	MATTHEW S. VANDEVENTER DBA VAN AIR	03/12/2004	03/11/2027
	7A		21,000			
	8A	07689	21,000	MULCHATNA AIR LLC	10/22/1999	10/21/2030

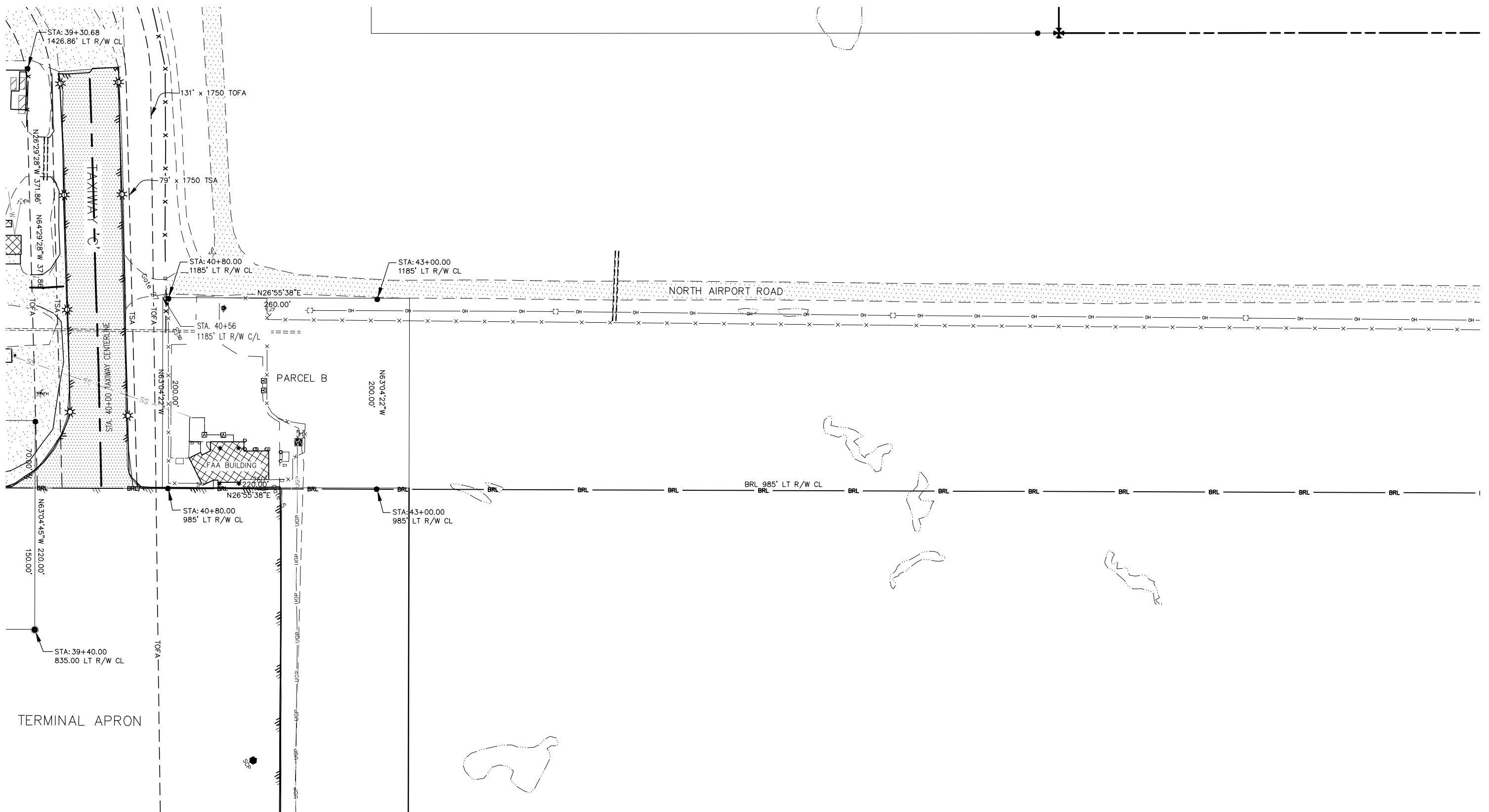
LAND OCCUPANCY

BLK	LOT	ADA NO.	AREA (SQ FT)	OCCUPANT	BEGIN DATE	EXP. DATE
800	1	08561	19,800	ALASKA ISLAND AIR, INC.	01/02/2008	01/01/2018
	2	07196	19,800	BRISTOL BAY AIR SERVICE, INC.	10/27/1995	10/26/2020
	3	06825	19,800	US FISH AND WILDLIFE SERVICE	10/05/1992	10/05/2027
	4	06765	19,800	TUCKER AVIATION, INC.	10/15/1992	10/14/2017
900	A	07809	4,500	CITY OF DILLINGHAM	12/01/2000	11/30/2015
900				MAINTENANCE RESERVE		

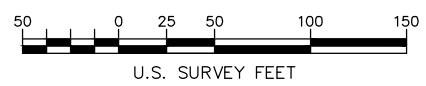


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
AVIATION LEASING
**DILLINGHAM AIRPORT
LAND OCCUPANCY**

APPROVED NAME: _____		DATE: _____	
BY: _____		DATE: _____	
DATE: _____		CHANGE: _____	
SCALE: 1" = 50'		DWN: _____	BRM, JB: _____
REVISIONS		DATE: 09/26/19	SHEET 3 of 4



MAGNETIC DECLINATION
141.3° EAST, JUNE 2013, NOAA



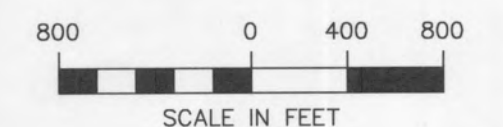
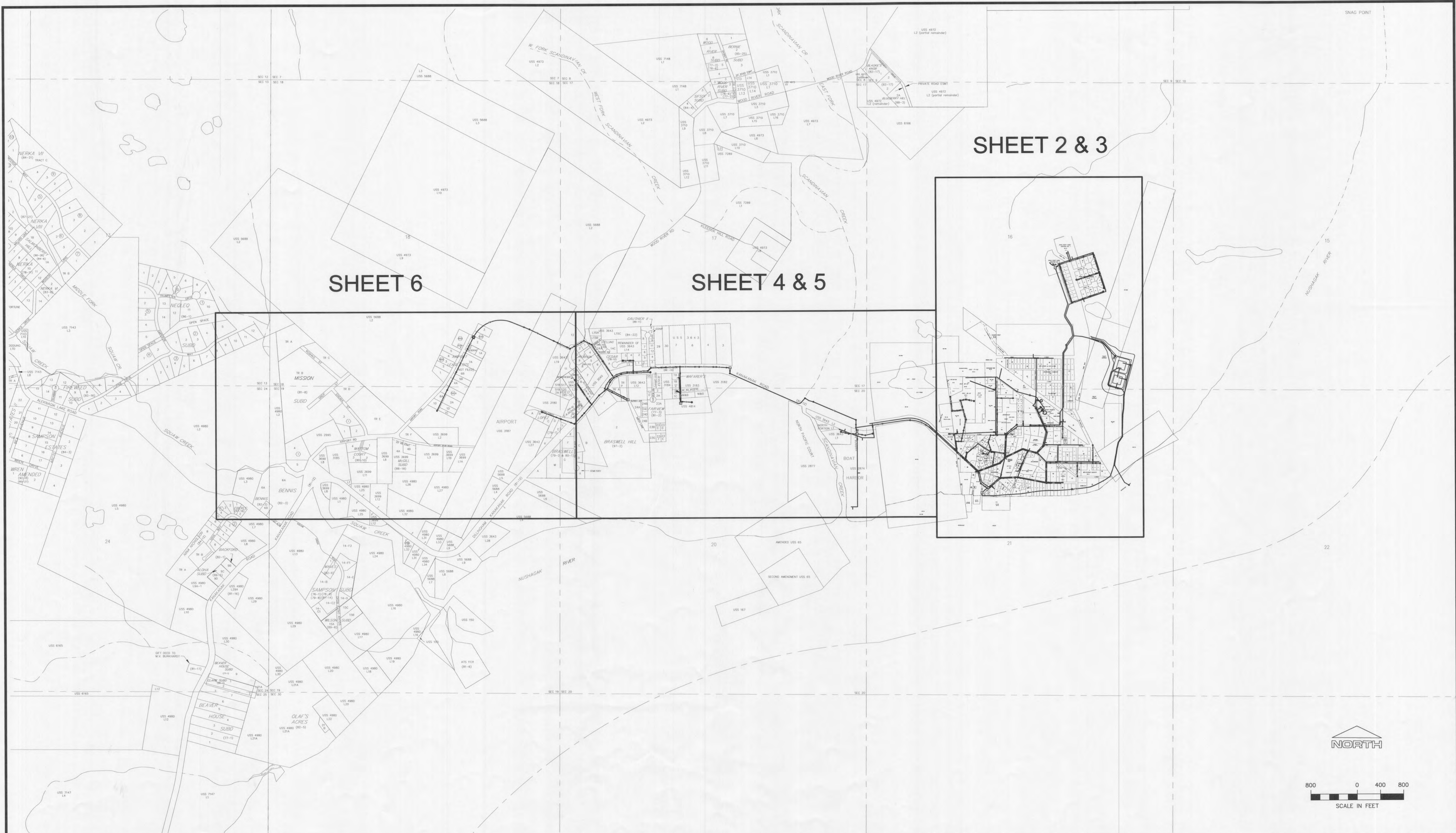
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES
AVIATION LEASING
**DILLINGHAM AIRPORT
LAND OCCUPANCY**

LAND OCCUPANCY						
BLK	LOT	ADA NO.	AREA (SQ FT)	OCCUPANT	BEGIN DATE	EXP. DATE
PARCEL	B	08797	44,000	FAA - FLIGHT SERVICE STATION	02/01/2012	01/31/2032

APPROVED		NAME:		DATE:	
BY		DATE		CHANGE	
SCALE		DWN		BRM, JB	
1" = 50'		DATE 09/26/19		SHEET 4 OF 4	

REVISIONS

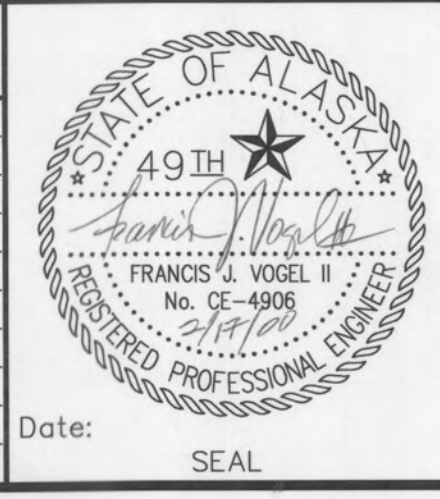
Appendix C
City of Dillingham Water/Sewer
Asbuilt Mapping



City of Dillingham Work Order Number(s):				CPR Inservice Date:			
FIELD BOOKS	REV	DATE	DESCRIPTION	BY	TBM's	LOCATION	ELEV.
DESIGN							
STAKING							
ASBUILT							
CONTRACTOR							
INSPECTOR							
CONSTRUCTION RECORD				REVISIONS			

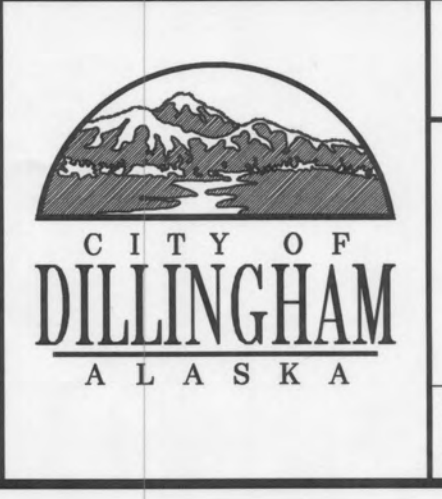
CADD File Name:		
DATA	DRAWN	CHK
BASE		TELE
TOPO		ELEC
PROFILE		DESIGN
SAN SEWER	CDS	J.V.
STORM SEWER		QUANTITIES
WATER	CDS	J.V.
GAS		CABLE
		OTHER
		PRELIMINARY
		FINAL
PLAN CHECK		

DILLINGHAM-WS_ASUBILT.DWG	
XREFS: DIL22x34.DWG,	
MAP9905.DWG AND PARC99.DWG	
Date:	SEAL



James Vogel, P.E.
Consulting Engineer

ENGINEERS



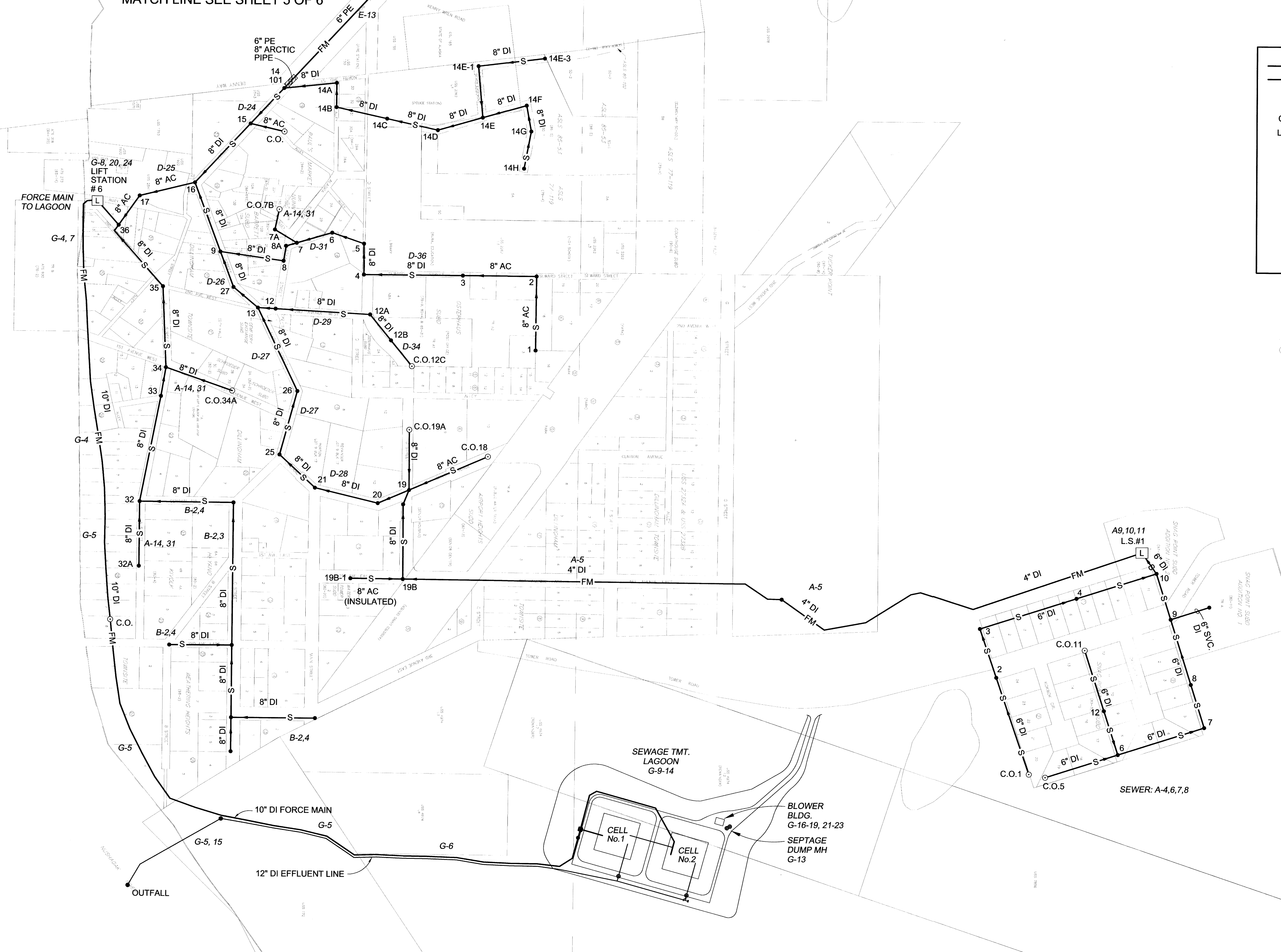
CITY OF DILLINGHAM
WATER & WASTEWATER UTILITY

**WATER & SEWER AS-BUILT MAPPING
COVER/ INDEX SHEET**

SCALE: 1"=800'	DATE: 2/2000	GRID:	SHEET 1 of 6
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MATCH LINE SEE SHEET 5 OF 6

LEGEND	
FM	SEWER (FORCE MAIN)
S	SEWER (GRAVITY)
▶	FLOW DIRECTION
10	MANHOLE
C.O.1	CLEANOUT
L.S.#	LIFT STATION
10" DI	SEWER LINE SIZE AND TYPE
E-11,12	AS-BUILT REFERENCE NUMBER
A=	PHS AN-77-944
B=	NELSON 1994
C=	DOT/PF AIRPORT SEWER 1990
D=	DATUM 1983 STREET IMPROVEMENTS
E=	PHS AN-77-628 (WINDMILL HILL)
F=	GALLIET, STANDPIPE 1985
G=	CH2M HILL DRAWINGS



City of Dillingham Work Order Number(s):

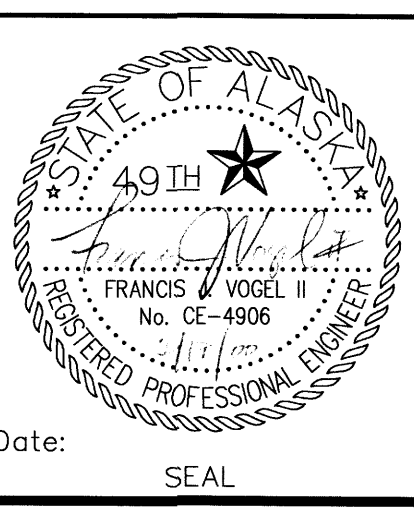
DESIGN	FIELD BOOKS	REV	DATE	DESCRIPTION	BY
DESIGN					
STAKING					
ASBUILT					
CONTRACTOR					
INSPECTOR					

CPR Inservice Date:

TBM's	LOCATION	ELEV.

CADD File Name: DILLINGHAM-WS_ASBUILT.DWG
 XREFS: DIL22x34.DWG
 MAP9905.DWG AND PARC99.DWG

DATA	DRAWN	CHK	DATA	DRAWN	CHK
BASE			TELE		
TOPO			ELEC		
PROFILE			DESIGN		
SAN SEWER	CDS	J.V.	QUANTITIES		
STORM SEWER			CABLE		
WATER	CDS	J.V.	OTHER		
GAS			PRELIMINARY		
			FINAL		



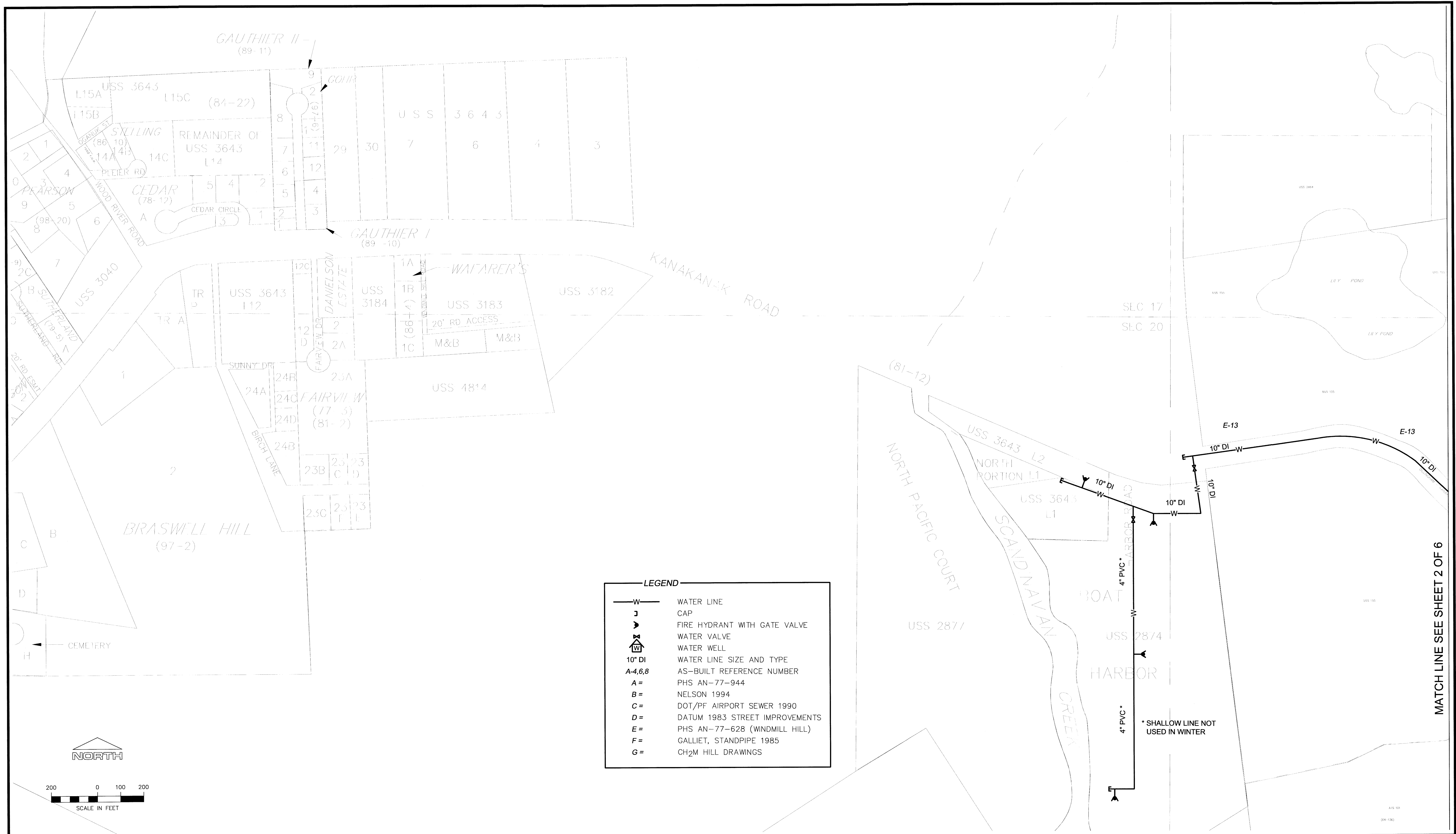
James Vogel, P.E.
 Consulting Engineer



CITY OF DILLINGHAM
 WATER & WASTEWATER UTILITY

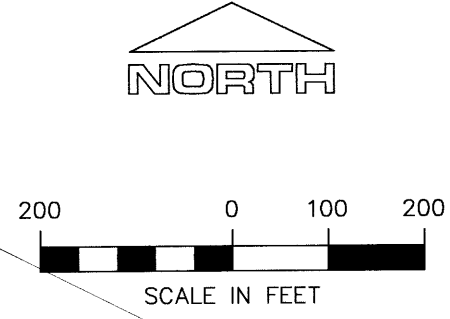
SEWER AS-BUILT MAPPING

SCALE: 1"=200'
 DATE: 2/2000
 GRID:
 SHEET 3 of 6



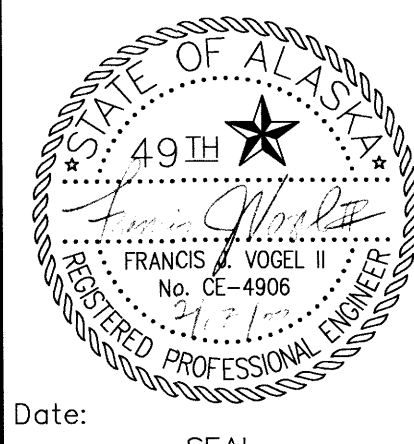
LEGEND

	WATER LINE
	CAP
	FIRE HYDRANT WITH GATE VALVE
	WATER VALVE
	WATER WELL
	10" DI WATER LINE SIZE AND TYPE
	AS-BUILT REFERENCE NUMBER
	PHS AN-77-944
	NELSON 1994
	DOT/PF AIRPORT SEWER 1990
	DATUM 1983 STREET IMPROVEMENTS
	PHS AN-77-628 (WINDMILL HILL)
	GALLIET, STANDPIPE 1985
	CH2M HILL DRAWINGS



MATCH LINE SEE SHEET 2 OF 6

City of Dillingham Work Order Number(s):				CPR Inservice Date:			CADD File Name: DILLINGHAM-WS_AS-BUILT.DWG XREFS: DIL22x34.DWG, MAP9905.DWG AND PARC99.DWG							
DESIGN	FIELD BOOKS	REV	DATE	DESCRIPTION	BY	TBM's	LOCATION	ELEV.	DATA	DRAWN	CHK	DATA	DRAWN	CHK
STAKING									BASE			TELE		
									TOPO			ELEC		
									PROFILE			DESIGN		
									SAN SEWER	CDS	J.V.	QUANTITIES		
									STORM SEWER			CABLE		
									WATER	CDS	J.V.	OTHER		
									GAS			PRELIMINARY		
												FINAL		
INSPECTOR	CONSTRUCTION RECORD			REVISIONS			VERTICAL DATUM					PLAN CHECK		



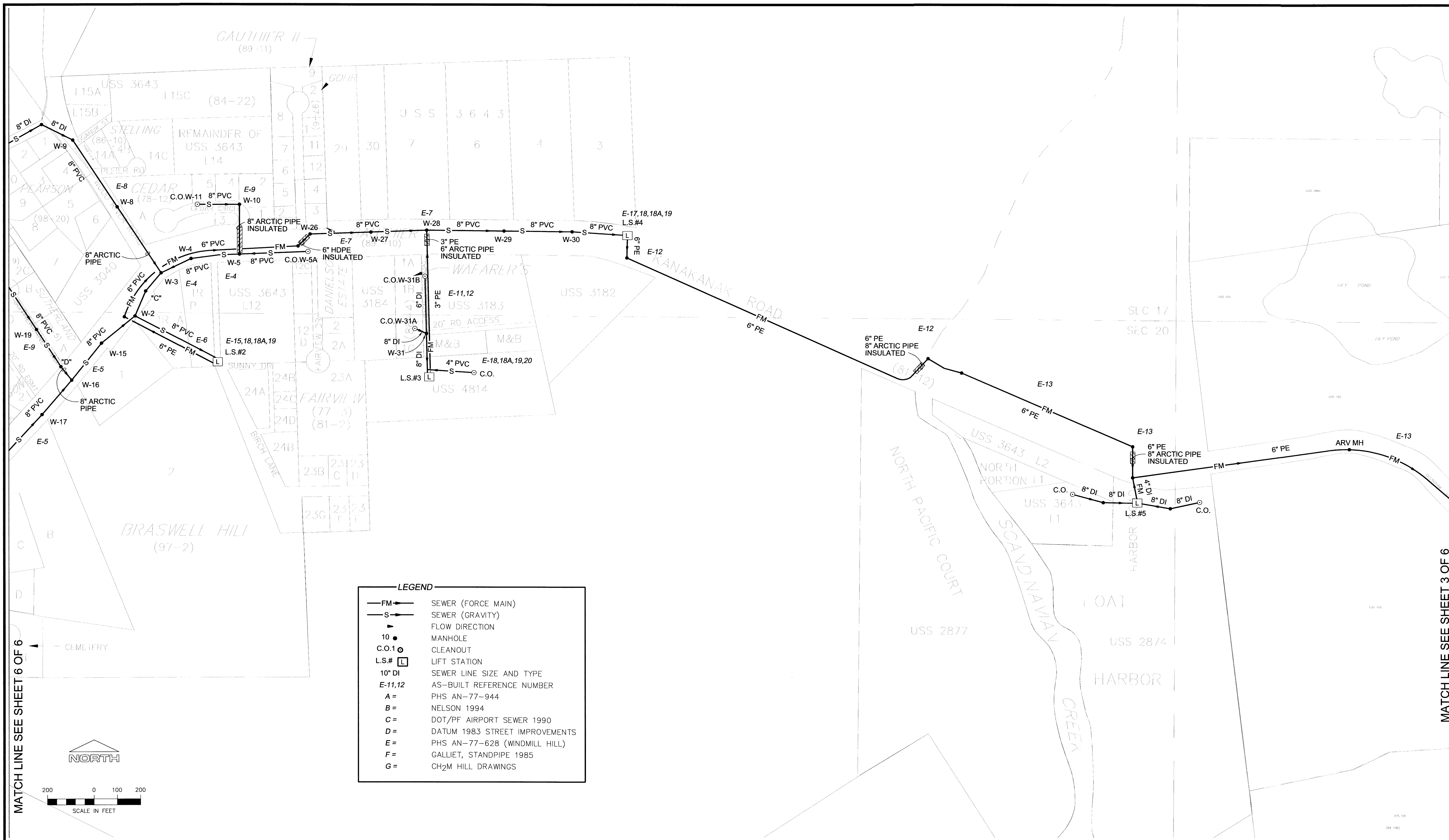
James Vogel, P.E.
Consulting Engineer



CITY OF DILLINGHAM
WATER & WASTEWATER UTILITY

WATER AS-BUILT MAPPING

SCALE: 1"=200' DATE: 2/2000 GRID: SHEET 4 of 6

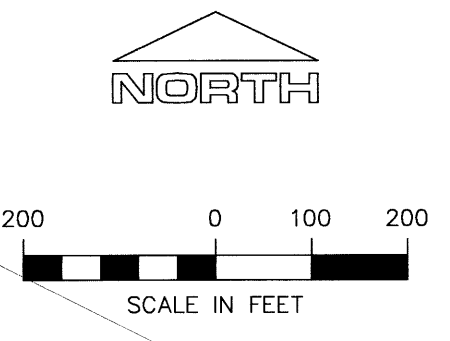


MATCH LINE SEE SHEET 6 OF 6

MATCH LINE SEE SHEET 3 OF 6

LEGEND

—FM—	SEWER (FORCE MAIN)
—S—	SEWER (GRAVITY)
▶	FLOW DIRECTION
10 ●	MANHOLE
C.O.# 1 ○	CLEANOUT
L.S.# □	LIFT STATION
10" DI	SEWER LINE SIZE AND TYPE
E-11,12	AS-BUILT REFERENCE NUMBER
A =	PHS AN-77-944
B =	NELSON 1994
C =	DOT/PF AIRPORT SEWER 1990
D =	DATUM 1983 STREET IMPROVEMENTS
E =	PHS AN-77-628 (WINDMILL HILL)
F =	GALLIET, STANDPIPE 1985
G =	CH2M HILL DRAWINGS



City of Dillingham Work Order Number(s):				CPR Inservice Date:			CADD File Name: DILLINGHAM-WS_AS-BUILT.DWG XREFS: DIL22x34.DWG, MAP9905.DWG AND PARC99.DWG							
DESIGN	FIELD BOOKS	REV	DATE	DESCRIPTION	BY	TBM's	LOCATION	ELEV.	DATA	DRAWN	CHK	DATA	DRAWN	CHK
STAKING									BASE			TELE		
ASBUILT									TOPO			ELEC		
CONTRACTOR									PROFILE			DESIGN		
INSPECTOR									SAN SEWER	CDS	J.V.	QUANTITIES		
									STORM SEWER			CABLE		
									WATER	CDS	J.V.	OTHER		
									GAS			PRELIMINARY		
												FINAL		
												PLAN		
												CHECK		

Date: _____ SEAL

James Vogel, P.E.
Consulting Engineer

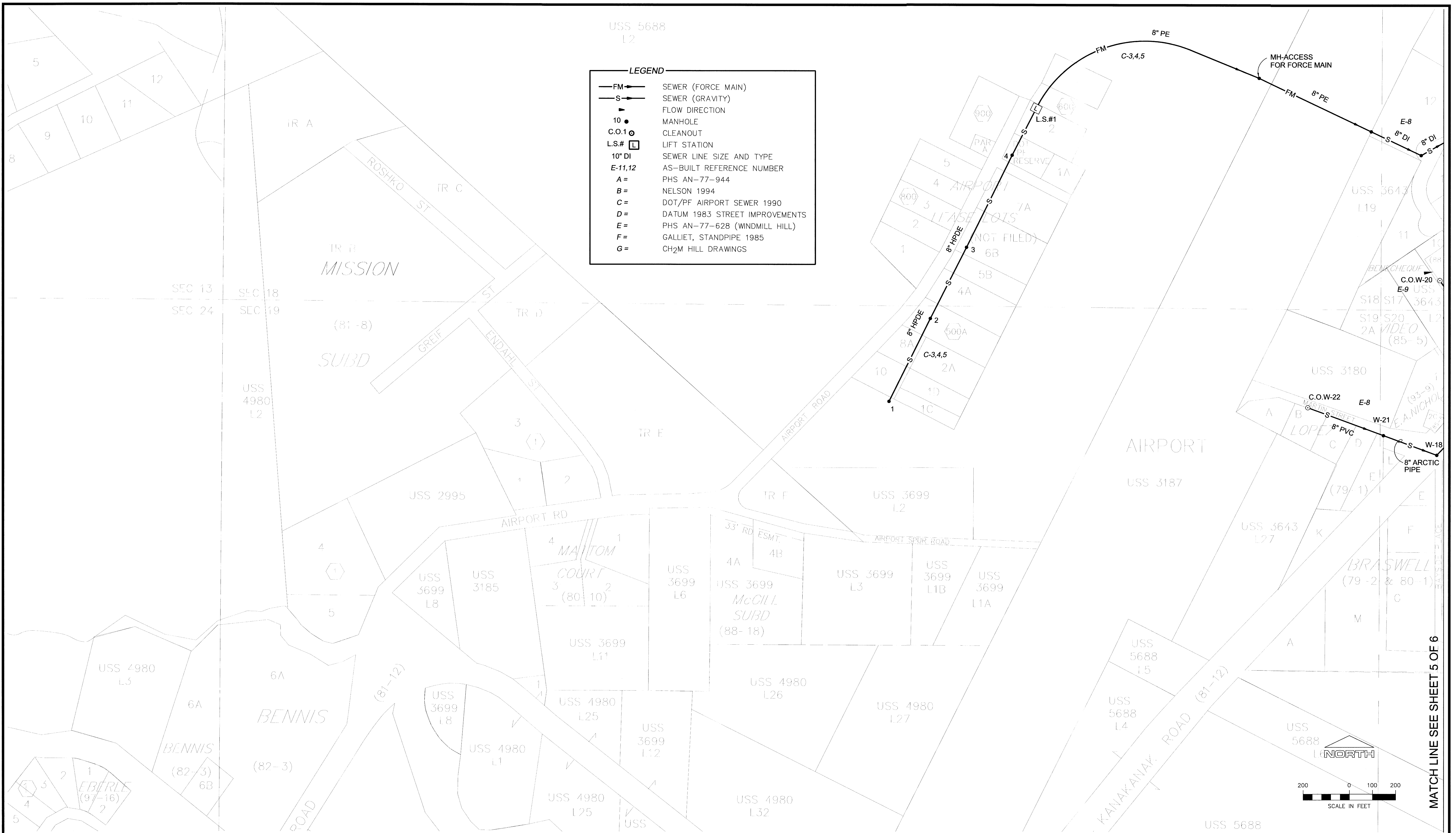
ENGINEERS

CITY OF DILLINGHAM
ALASKA

CITY OF DILLINGHAM
WATER & WASTEWATER UTILITY

SEWER AS-BUILT MAPPING

SCALE: 1"=200'	DATE: 2/2000	GRID:	SHEET 5 of 6
----------------	--------------	-------	--------------



LEGEND

- FM — SEWER (FORCE MAIN)
- S — SEWER (GRAVITY)
- ▶ FLOW DIRECTION
- 10 ● MANHOLE
- C.O.1 CLEANOUT
- L.S.# LIFT STATION
- 10" DI SEWER LINE SIZE AND TYPE
- E-11,12 AS-BUILT REFERENCE NUMBER
- A= PHS AN-77-944
- B= NELSON 1994
- C= DOT/PF AIRPORT SEWER 1990
- D= DATUM 1983 STREET IMPROVEMENTS
- E= PHS AN-77-628 (WINDMILL HILL)
- F= GALLIET, STANDPIPE 1985
- G= CH2M HILL DRAWINGS

MATCH LINE SEE SHEET 5 OF 6

City of Dillingham Work Order Number(s):

CPR Inservice Date:

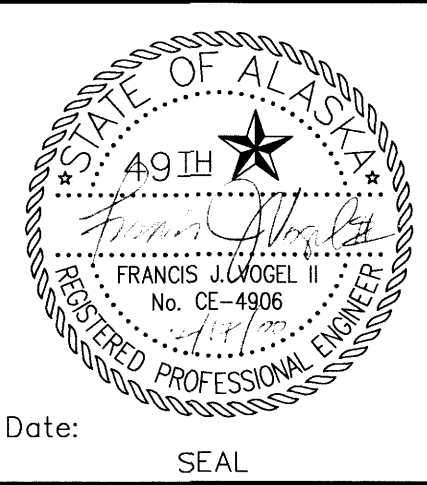
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DILLINGHAM-WS_ASBLT.DWG
 XREFS: DIL22x34.DWG,
 MAP9905.DWG AND PARC99.DWG

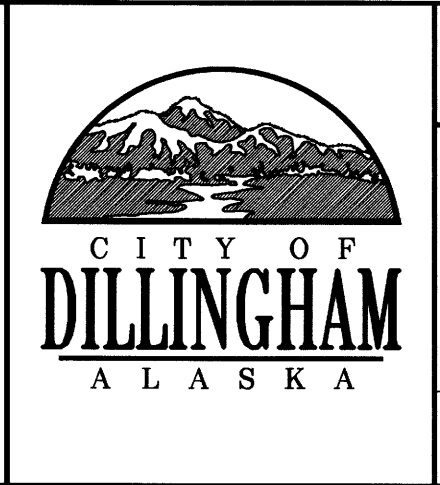
DESIGN	REV	DATE	DESCRIPTION	BY

TBM's	LOCATION	ELEV.

DATA	DRWN	CHK	DATA	DRWN	CHK
BASE			TELE		
TOPO			ELEC		
PROFILE			DESIGN		
SAN SEWER	CDS	J.V.	QUANTITIES		
STORM SEWER			CABLE		
WATER	CDS	J.V.	OTHER		
GAS			PRELIMINARY		
			FINAL		



James Vogel, P.E.
 Consulting Engineer



CITY OF DILLINGHAM WATER & WASTEWATER UTILITY			
SEWER AS-BUILT MAPPING			
SCALE: 1"=200'	DATE: 2/2000	GRID:	SHEET 6 of 6