APPLICATION for CAPACITY-RELATED AMENDMENT

BLUE LAKE HYDROELECTRIC PROJECT (FERC No. 2230) EXPANSION

VOLUME 1 of 2 (EXHIBITS A,B,C,D,F and G)

Prepared By:

CITY and BOROUGH of SITKA, ALASKA

November, 2010

INITIAL STATEMENT

BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

Application for Capacity-Related Amendment of FERC License

Blue Lake Hydroelectric Project Expansion

FERC No. 2230
City and Borough of Sitka Electric Department
Sitka, Alaska

November, 2010

The City and Borough of Sitka Electric Department (City) of Sitka, AK, applies to the Federal Energy Regulatory Commission (FERC) for a capacity-related Amendment to the existing FERC license for the Blue Lake Hydroelectric Project ("Project", FERC No. 2230) as described in the attached Exhibits.

The exact name, business address and telephone number of the Licensee is:

City & Borough of Sitka
100 Lincoln Street
Sitka, Alaska, 99835
Phone: 907-747-3294

The exact name, business address and contact numbers of the person authorized to act as agent for the Licensee is:

City & Borough of Sitka, Electric Department
Attn: Christopher Brewton, Utility Director
105 Jarvis Street
Sitka, Alaska 99835
Phone: 907-747-1870
Fax: 907-747-3208

The applicant is a municipality, licensee for the water power project, designated as Project No. 2230 in the records of the Federal Energy Regulatory Commission, issued on the first day of July 10, 2007.

REASONS for AMENDMENT

Recent energy needs analyses conducted by the City have shown that, in order to assure continued delivery of low cost electrical power in the face of rising energy needs in Sitka, it must expand its electrical generating base. Among other alternatives, the City is examining expansion of their Blue Lake hydroelectric project ["Project", Federal Energy Regulatory Commission (FERC) No. 2230] near Sitka, Alaska.

DESCRIPTION of ACTION

The primary actions of the Project expansion would be: 1) installing a new powerhouse and three, new, larger, generating turbines near the existing Project powerhouse (the existing turbines would be removed); and 2) raising the height of the Project dam. Together, these actions would result in more efficient use of Blue Lake and Sawmill Creek water resources and a significant gain in electrical generation potential.
The powerhouse/turbine replacement component is referred to in this document as the "New Powerhouse" and raising the Project dam is referred to as the "Dam Raise". Collectively, these actions and their related infrastructure and construction are referred to as the "Blue Lake Project Expansion", or simply "Expansion".

STATUTORY and REGULATORY REQUIREMENTS

The City has conducted three-stage consultation as required by USC 4.38, including initial consultation, study planning, report review and Scoping. Following are the statutory and regulatory requirements of Alaska that affect the project as proposed with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes:

Water Quality Certification

In Alaska, Water Quality Certification leading to Clean Water Act (CWA) Section 401 Certification is routinely waived for hydroelectric project proposals in the initial licensing and permitting phases. Instead, after the Commission has accepted the final application for amendment, CBS will initiate Coastal Zone Management Act Consistency review. Under this review, conducted by Alaska Department of Natural Resources (ADNR), all CWA requirements, including the possible need for 401 Certification, will be addressed among all potentially-responsible agencies, including US Army Corps of Engineers, (USCOE), Alaska Department of Environmental Conservation (ADEC) and ADNR.

Federal Power Act (FPA) Section 18 Prescriptions

Based on comments and issue deification throughout initial consultation and Scoping, agencies responsible for Section 18 (fish passage) Prescriptions (US Fish and Wildlife Service and National Marine Fisheries Service) have not indicated that they will make such prescriptions.

FPA Section 4(e) Conditions

At the time of this draft EA, USFS, the only agency with Section 4(e) authority on this action, has not discussed terms and conditions or 4(e) status. We expect to begin more intensive consultation with USFS after submittal of the Draft Amendment Application.

FPA Section 30(c) Conditions

We expect no Section 30 (c) conditions.

FPA Section 10(j) Recommendations

As with Section 4(e) conditions, above, we have not begun the process of negotiating terms and conditions with applicable agencies.

Endangered Species Act

Endangered species have been studied as part of the fish, wildlife and botanical field and literature reviews. During the study phase of these studies, our researchers have contacted US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS) and US Forest Service (USFS) to determine list of threatened, endangered or candidate plant or animal species, as well as species noted in the Alaska Natural Heritage Program (AKNHP) and other species of special concern. Draft resource reports contain sections on these species. After final amendment application, CBS will determine, in consultation with USFWS, NMFS and USFS, the potential need for one or more Biological Evaluations and decide on whether CBS or the respective agencies will prepare these documents. The FDEA contains a section on Threatened and Endangered Species, in which we document presence of such species based on results of our literature review, studies and agency documentation.

Coastal Zone Management Act (CZMA)

In Alaska, CZMA consistency review is done by the Alaska Department of Natural Resources (ADNR), and serves as "one stop shopping" for all state and federal permits necessary for construction. Recent experience has shown that, after a hydro project license or amendment application has been noticed for filing by FERC (after all additional information requests from final application are fulfilled) the applicant or owner will submit to ADNR a "Coastal Project Questionnaire" including detailed project descriptions and referencing all licensing documents at that time. Based on the described action, ADNR will at that time involve other agencies which may need to issue permits, including US Army Corps of Engineers (USACOE) for such permits as CWA Section 404, Alaska Department of Environmental Conservation (ADEC) water quality permits, ADF&G Habitat

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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
af	acre foot or feet
ALP	Alternative Licensing Process
APC	Alaska Pulp Company
APE	Area of Potential Effect (cultural resources)
BLU	Blue Lake (generating) Unit
cfs	Cubic foot or feet per second
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FVU	Fish Valve Unit
FWS	United States Fish and Wildlife Service
ICD	Initial Consultation Document
kW	kilowatt
kWh	kilowatt hour
mgd	Million gallons per day
MW	Megawatt
MWh	Megawatt hour
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
PDEA	Preliminary Draft Environmental Assessment
PMFU	Pulp Mill Feeder Unit
SCIP	Sawmill Cove Industrial Park
SD1	Scoping Document 1
SD2	Scoping Document 2
SHPO	State Historic Preservation Office
SM	Stream Mile
STA	Sitka Tribe of Alaska
USFS	United States Forest Service
USGS	United States Geological Survey

EXHIBIT A

DESCRIPTION OF THE PROJECT

In this section we first describe the existing Blue Lake Project as a basis for clarifying Expansion-related changes. We next describe the proposed changes and their associated construction.

Throughout this document, elevations are referenced as heights in feet above or below mean low sea level, denoted by the term "El". Reservoir and stream directions (left or right) are looking downstream. Project features on Sawmill Creek are described relative to their Stream Mile (SM), or the centerline distance on Sawmill Creek upstream from the Creek's mouth at tidewater, as determined from the project map.

1. DESCRIPTION of the EXISTING PROJECT

The Blue Lake Project is located approximately 5 miles east of the City of Sitka, Alaska, on Sawmill Creek, formerly the Medvetche River (Figure 2). The Project consists of: the dam, a submerged intake structure, a power conduit, three powerhouses, a switchyard and a primary and two secondary transmission lines (Figure 3).

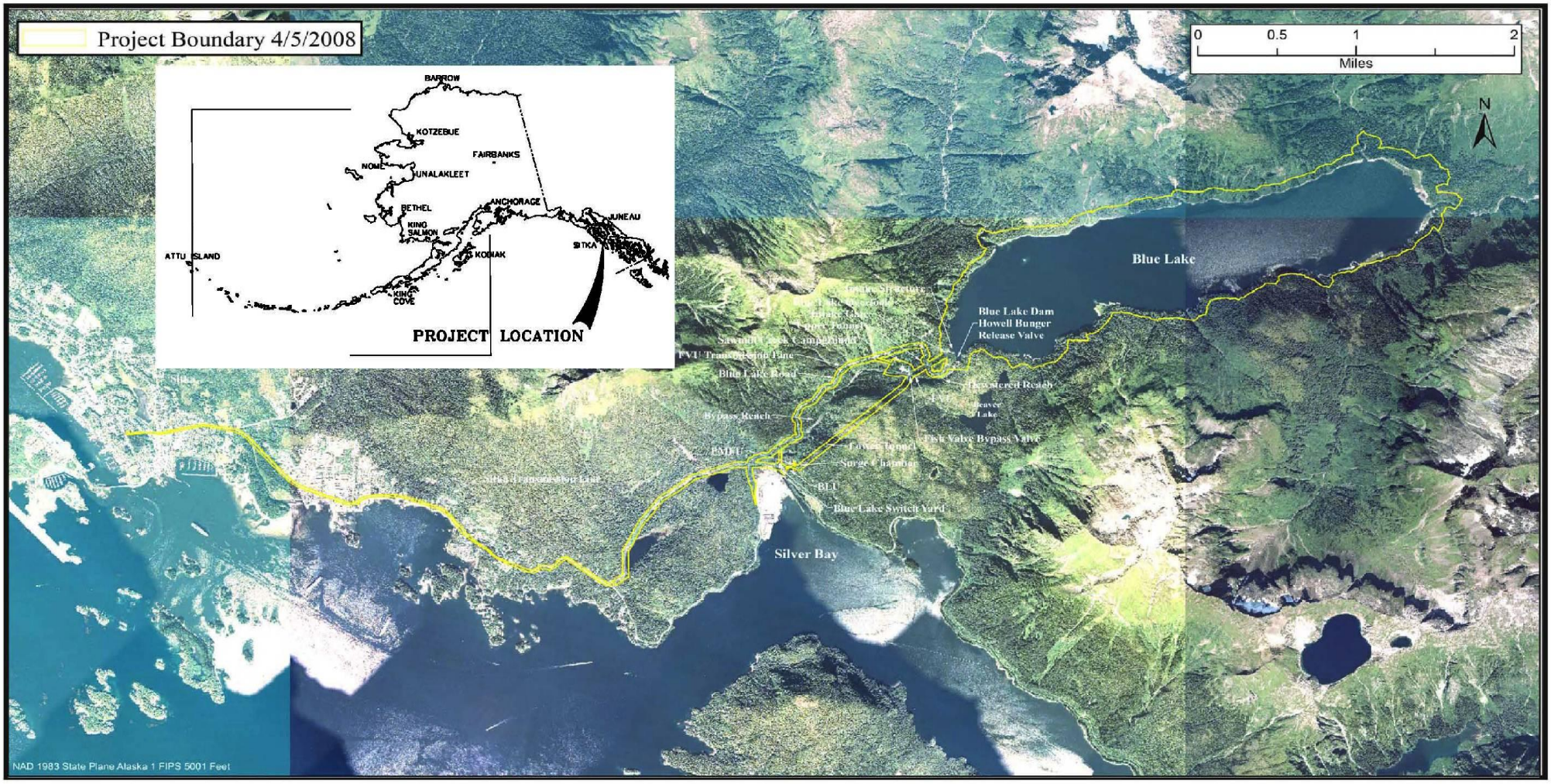


Figure 2. Blue Lake Project Area Map

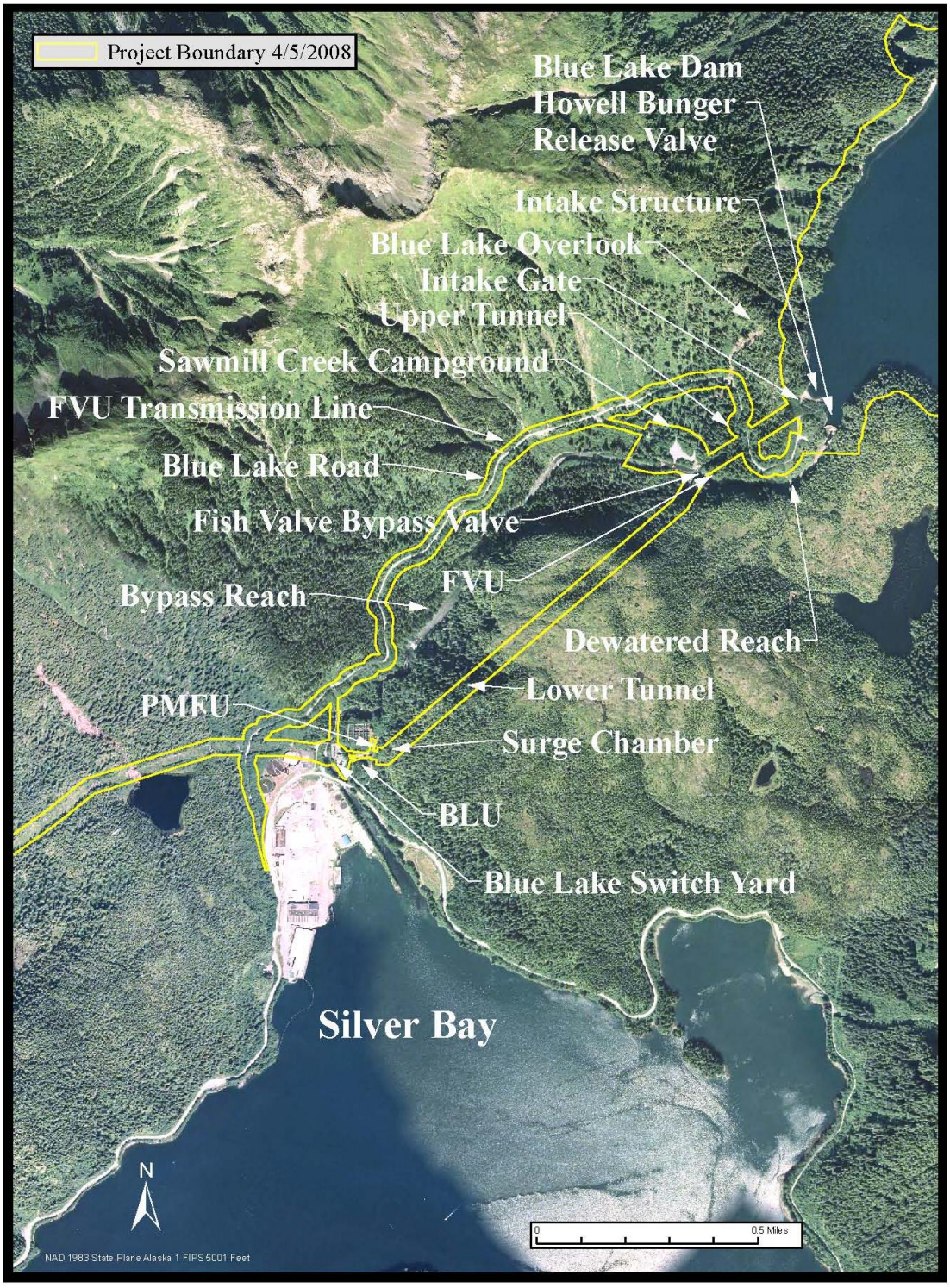


Figure 3. Blue Lake Project Map Showing Project Features and Waterways.

1.1 Dam

Located at SM 2.31 on Sawmill Creek, the existing concrete arch dam is 211 ft high with a base width of 25 ft and a crest width of 256 ft. The 140 ft wide spillway at El 342 is centrally located in the dam, and is sized to discharge 14,000 cubic feet per second (cfs). A release valve, installed at the base of the dam, is used to release water when the reservoir is below the spillway elevation. The valve capacity varies between 450 cfs and 650 cfs depending on lake level. A natural plunge pool is located downstream of the dam, to dissipate energy from the spillway discharge.

1.2 Reservoir

Blue Lake Reservoir was created when the dam raised the natural Blue Lake water surface from El 208 to El 342 and increased the lake surface area from 490 to 1284 surface acres, based on a LIDAR survey performed in 2007. Blue Lake is 3.25 mi long and 0.63 mi in average width. The deepest point is at El minus 126 at a depth of 468 feet below the lake surface at spill elevation. The reservoir has a gross storage capacity of 145,200 acre/feet (af) and a usable storage of 102,200 af at spill level. A submerged concrete intake structure is located approximately 400 feet north of the dam at invert El 204.

1.3 Power Conduit

A 7,110 ft. long power conduit extending from the intake structure to the Blue Lake powerhouse branches to provide water to the various powerhouses and other facilities described below. Figure 4 is a schematic representation of the Blue Lake Project power conduit system and associated taps and branches.

The power conduit consists of an upper tunnel with an unlined, 11.5 ft. diameter modified horseshoe cross-section extending 1,500 feet from the intake structure to the upper penstock on the right side of Sawmill Creek. The upper penstock, an 84 in. diameter, 460 ft. long, steel pipe crosses the stream supported on concrete piers and enters the lower tunnel on the left side of Sawmill Creek. The 4,650 ft. lower tunnel has an unlined, 10 ft. diameter modified horseshoe cross-section and extends to the lower penstock.

The lower penstock, an 84 in. diameter, 500 ft. long, steel pipe, has two taps immediately below the lower tunnel portal. A 36 in. tap supplies water to the Pulp Mill Feeder Unit and a 24 in. tap supplies water to the Sawmill Cove Industrial Park (SCIP), site of the former Alaska Pulp Company (APC) mill.

Approximately 90 feet below these two pipes is a 20 in. tap (the “water supply tap”) leading into the adjacent water treatment plant for municipal water supply. Approximately 50 ft below this tap is an 84 in. butterfly valve which allows shutdown of the main powerhouse and dewatering of the turbines while maintaining water to the

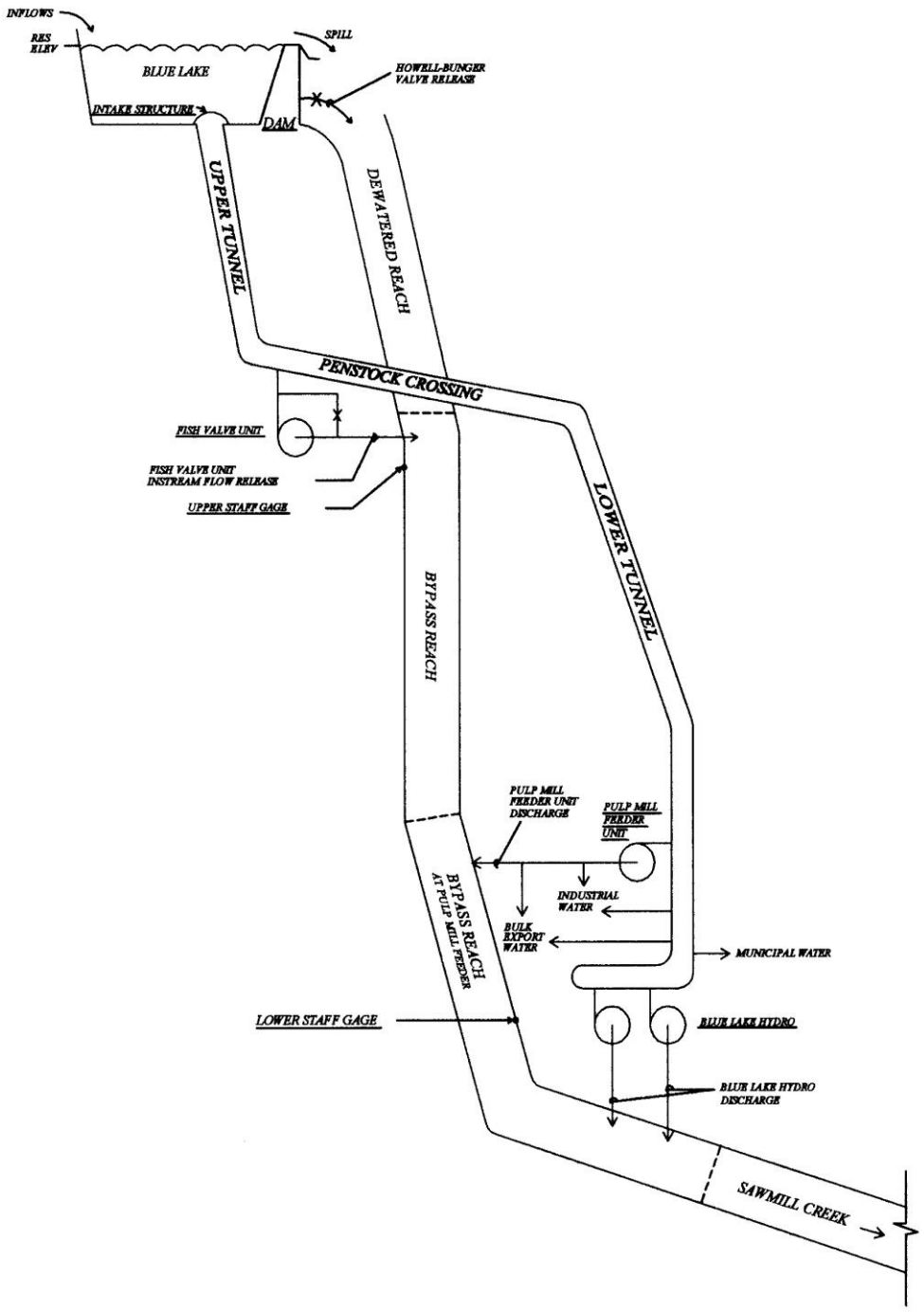


Figure 4. Blue Lake Project Power Conduit Schematic

Sawmill Creek Industrial Park and the Water Treatment Plant.

At the end of the lower penstock is a manually operated 24 in. conduit drain valve which discharges into Sawmill Creek.

1.4 Project Powerhouses

The existing project generates power using the Blue Lake Unit (BLU) and Fish Valve Unit (FVU powerhouses. The BLU is the primary generating facility. The FVU provides additional generation capacity, as described in detail below. A third generating unit, the Pulp Mill Feeder Unit, located near the BLU, was commissioned in 1992 along with the FVU, but has only been used intermittently since 1993. The PMFU is only operated when excess water is available.

1.4.1 BLU

The BLU houses the primary Project generating units. It is located on the left bank of Sawmill Creek at SM 0.32 and is a 35 ft. X 70 ft. building with steel superstructure, precast walls and concrete foundation structure. The powerhouse contains two horizontal shaft Francis turbines each rated at 3000 kilowatts (kW) with provision for future installation of a third unit (Figure 5). The turbines discharge water into the approximately 150 ft long tailrace which carries water from the turbines to Sawmill Creek.

The Blue Lake Switchyard, located adjacent to the powerhouse, receives generation energy from the Blue Lake powerhouse, and the two small hydro components described below. The switchyard includes two 12.47/4.16 kilovolt (kV) transformer banks comprised of a total of seven 2500 kilovolt amp (kVA) single phase, 4.16/69 kV transformers, with associated bus-work and disconnect switches. This provides for redundant installed transformers and a total capacity of 15,000 kVA. Power from the Green Lake Project, FERC No. 2818, another hydroelectric facility owned by CBS, is also transmitted to the Blue Lake switchyard at 69 kV.

1.4.2 Small Hydro Components

By License Amendment dated September 6, 1991, the Project was modified to include two additional generating units, the Fish Valve Unit (FVU) and the Pulp Mill Feeder Unit (PMFU), as described in the following:

1.4.2.1 FVU

The FVU, located at SM 1.62, generates power from flows released for instream purposes through a valve located about 1900 ft. downstream of the dam. It is housed in a concrete powerhouse located approximately 175 feet below the upstream end of the upper penstock on the right side of the stream. A 36 in. diameter wye branch on the upper penstock supplies water to the FVU. An automatic bypass valve opens when the Fish

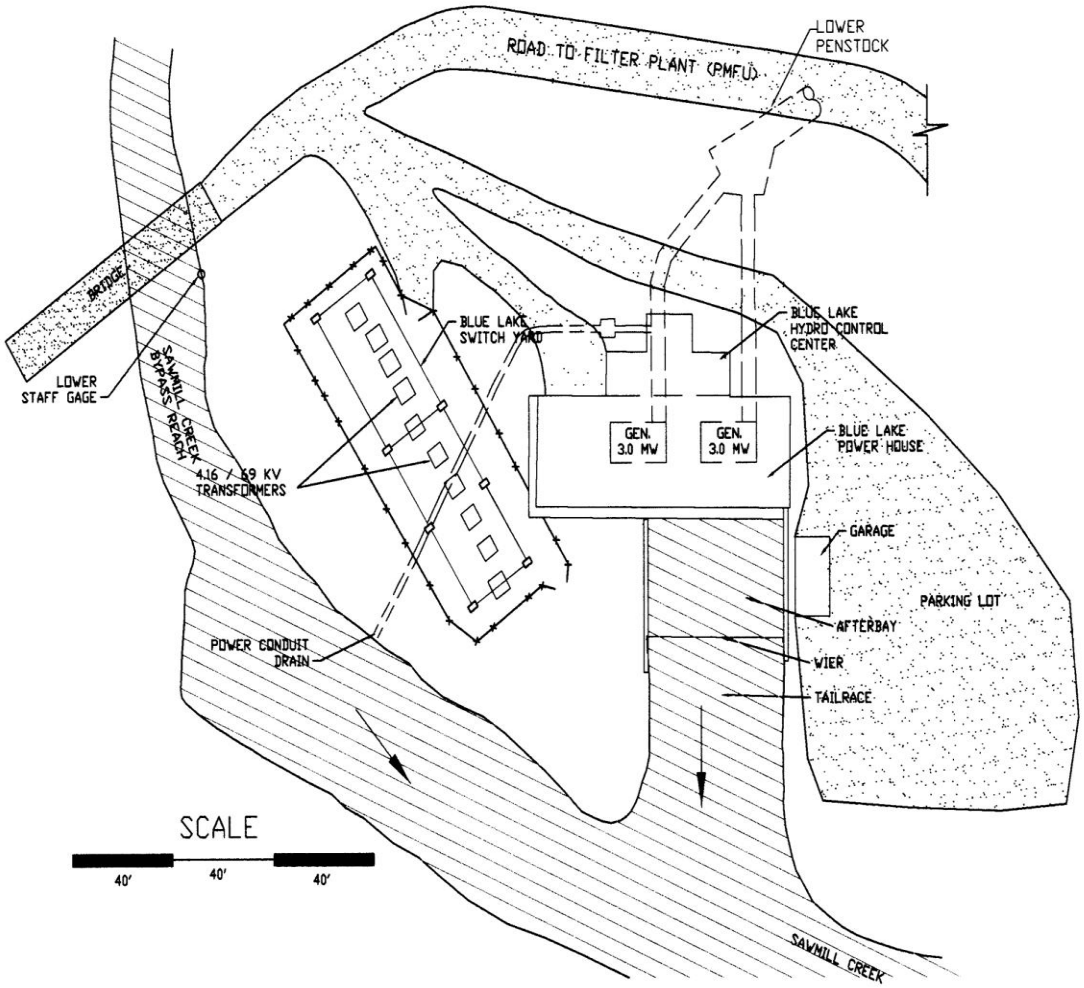


Figure 5. Blue Lake Generating Unit

Valve Unit is tripped off-line to maintain the required flow of 50 cfs in the stream at all times. A single Francis turbine spins a generator rated at 670 kW.

1.4.2.2 PMFU

The 870 kW PMFU, when in operatoin, generated power from the water supply to the former Alaska Pulp Corporation (APC) filter plant. Regular PMFU operation was discontinued in 1993 because of shutdown of the APC mill. The unit is operated only during periods when excess water is available.

1.5 Transmission Facilities

Existing transmission facilities are comprised of three separate lines. The primary transmission line connects the Blue Lake switchyard to distribution system in Sitka and two secondary lines connect the FVU and PMFU to the primary facilities at the BLU, as described in more detail below.

1.5.1 Blue Lake (Sitka) Transmission Line.

A 69 kV Blue Lake (Sitka) transmission line extends 5 mi. from the Blue Lake Switchyard to the Jarvis Street and Marine Street substations in Sitka. The line is carried on both H-frame and single pole wood structures. The transmission line right of way occupies 67.7 acres of land, 12.8 acres of lands administered by the U.S. Department of Agriculture Forest Service (USFS). The remainder of land within the primary transmission corridor is owned by the State of Alaska, CBS, and various private land owners.

1.5.2 Pulp Mill Feeder Unit Transmission Line.

Power from the PMFU is transmitted at 4.16 kV over a 470 ft. long, underground transmission line to the Blue Lake Powerhouse and connected to the main generation bus.

1.5.3 Fish Valve Unit Transmission Line.

Power from the FVU is transmitted over a 12.47 kV transmission line 7,700 ft. long to the Blue Lake switchyard where it is transformed to 4.16 kV and connected to the main generation bus. The first 1,400 feet of the transmission line through the U.S. Forest Service Sawmill Creek recreation area is underground. The remaining portion is overhead.

1.6 Access Roads

The dam access road is USFS road No. 5755 (Blue Lake Road) and extends 2.18 miles to the dam from Sawmill Creek Road. Just downstream of the FVU, a footbridge bridge crosses Sawmill Creek at SM 1.57. Access to the Blue Lake powerhouse and the PMFU is along a licensee-owned road connected to Sawmill Creek Road at mile 5.5; access to the FVU is via

USFS road No. 5755. At SM 0.38, the Blue Lake Powerhouse Bridge crosses Sawmill Creek just upstream of the Blue Lake powerhouse.

1.7 Project Lands

The existing facilities of the Blue Lake Project occupy a total of 1790 acres, consisting of 1676 acres of U.S. lands administered by USFS and 114.0 acres of non- federal lands.

The project lies within the U.S. Geological Survey (USGS) Sitka A-4 and A-5 Quadrangle maps, within the land descriptions presented in Table 1.

Table 1. Land Descriptions of Blue Lake Project Features.

Project Features	Map Locations
Dam, Spillway and Intake Structure	Section 35 of T55S, R64E, Copper River Meridian.
Power Conduit	Sections 34 and 35 of T55S, R64E, Copper River Meridian.
Fish Valve Unit	Section 34 of T55S, R64E, Copper River Meridian.
Pulp Mill Feeder Unit	Section 34 of T55S, R64E, Copper River Meridian.
Blue Lake Powerhouse	Section 34 of T55S, R64E, Copper River Meridian.
Primary Transmission Line	Section 33 & 34 of T55S, R64E, Copper River Meridian; Section 4, 5 and 6 of T56S, R64E, Copper River Meridian; Section 1 of T56S, R63E, Copper River Meridian; Section 35 & 36 of T55S, R63E, Copper River Meridian.

2. FEATURES EXPECTED to CHANGE or to be ADDED UNDER BLUE LAKE PROJECT EXPANSION

In the following design graphics, green is an existing feature, red is a proposed feature. Exact plans for decommissioning the existing powerhouse and generators have not been developed at this time.

2.1 Powerhouse Area Changes

2.1.1 New Powerhouse and Generators

The current proposal is to replace the existing BLU powerhouse and two generators with a new powerhouse and three new generators. The new powerhouse, approximately 65 by 140 feet in area and 40 feet tall, would be located on Sawmill Creek's left bank about 20 yards downstream from the existing BLU powerhouse (Figures 6 and 7).

The new powerhouse would house three new Francis turbine-generators with installed capacities of approximately 5.3 MW each. The turbines would release water into an afterbay and then into Sawmill Creek via a tailrace similar to that at the existing powerhouse.

2.1.1.1 FVU

The FVU turbine and generator will be replaced with a 1.0 MW turbine generator capable of supplying needed generation output and instream flow requirements at the higher water pressures resulting from increased head.

2.1.1.2 PMFU

The PMFU and PMFU transmission line will be decommissioned because the turbine is not suited for the increased pressure. The BLU generators have been sized to utilize the water designated to the PMFU and replace the generation previously derived from the PMFU. The PMFU and PMFU transmission line have been removed from the proposed project boundary.

2.1.1.3 Power Conduit

Due to the increased pressure associated with the dam raise, the steel liners at the portals of the power conduit must be lengthened. These modifications will only be noticeable inside the tunnel.

The existing lower penstock is 7 feet diameter. In order to decrease the pressure drop in this penstock a replacement 9-foot diameter penstock will be constructed between the lower portal and the new power house.

2.2 Surge Chamber

An underground 20 foot diameter surge chamber would be constructed near the lower portal (Figure 8). The surge chamber would be vented to the surface at about El 465. The surge chamber would be necessary to decrease water pressure in the power conduit resulting from load rejection and a consequent pressure spike which might damage the power conduit and generating equipment. The surge chamber would allow system operation at a higher average pressure and would improve the electrical frequency response of the Blue Lake Project. The surge chamber will be constructed from an adit located near the PMFU.

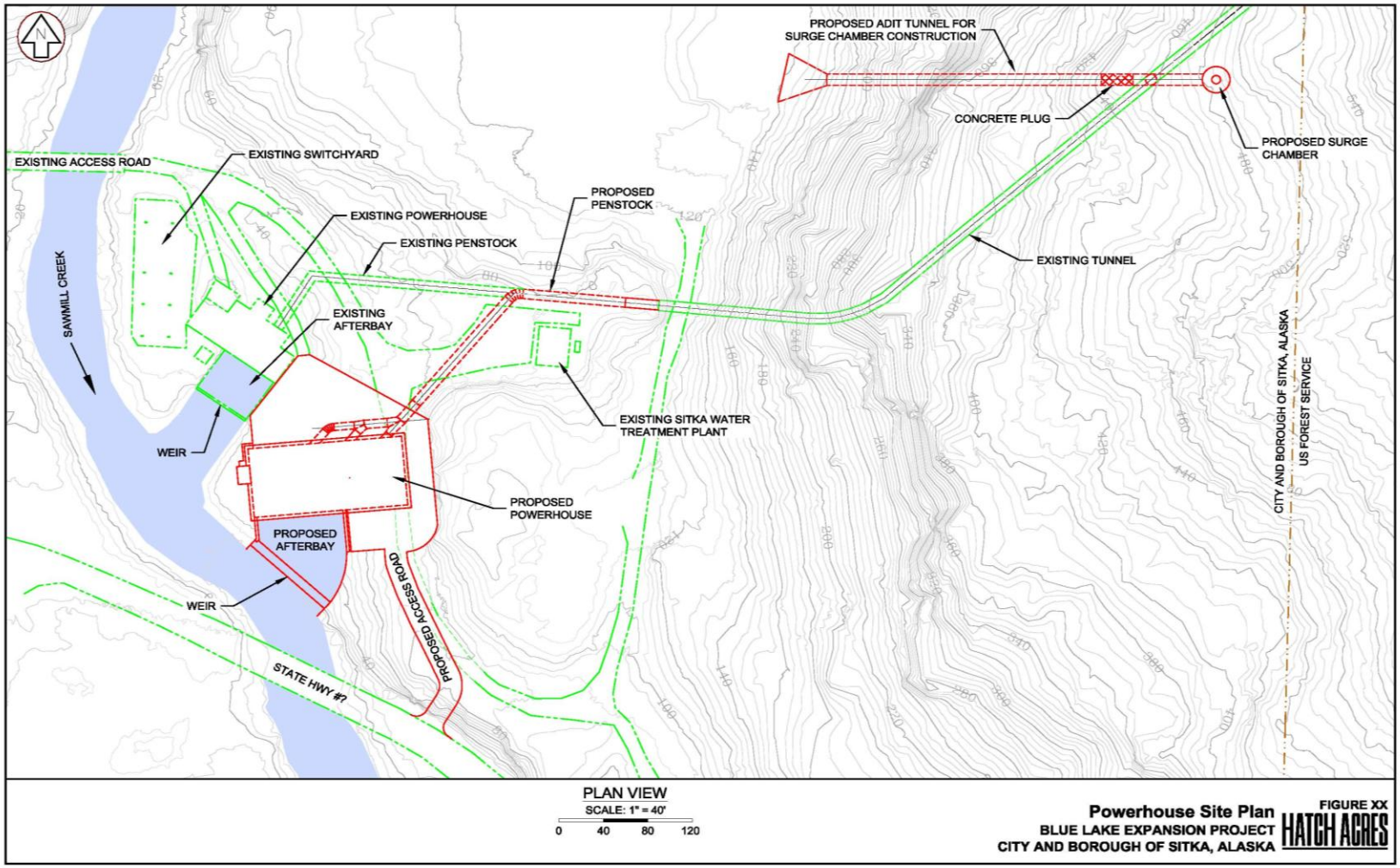


Figure 6. Powerhouse Area Site Plan

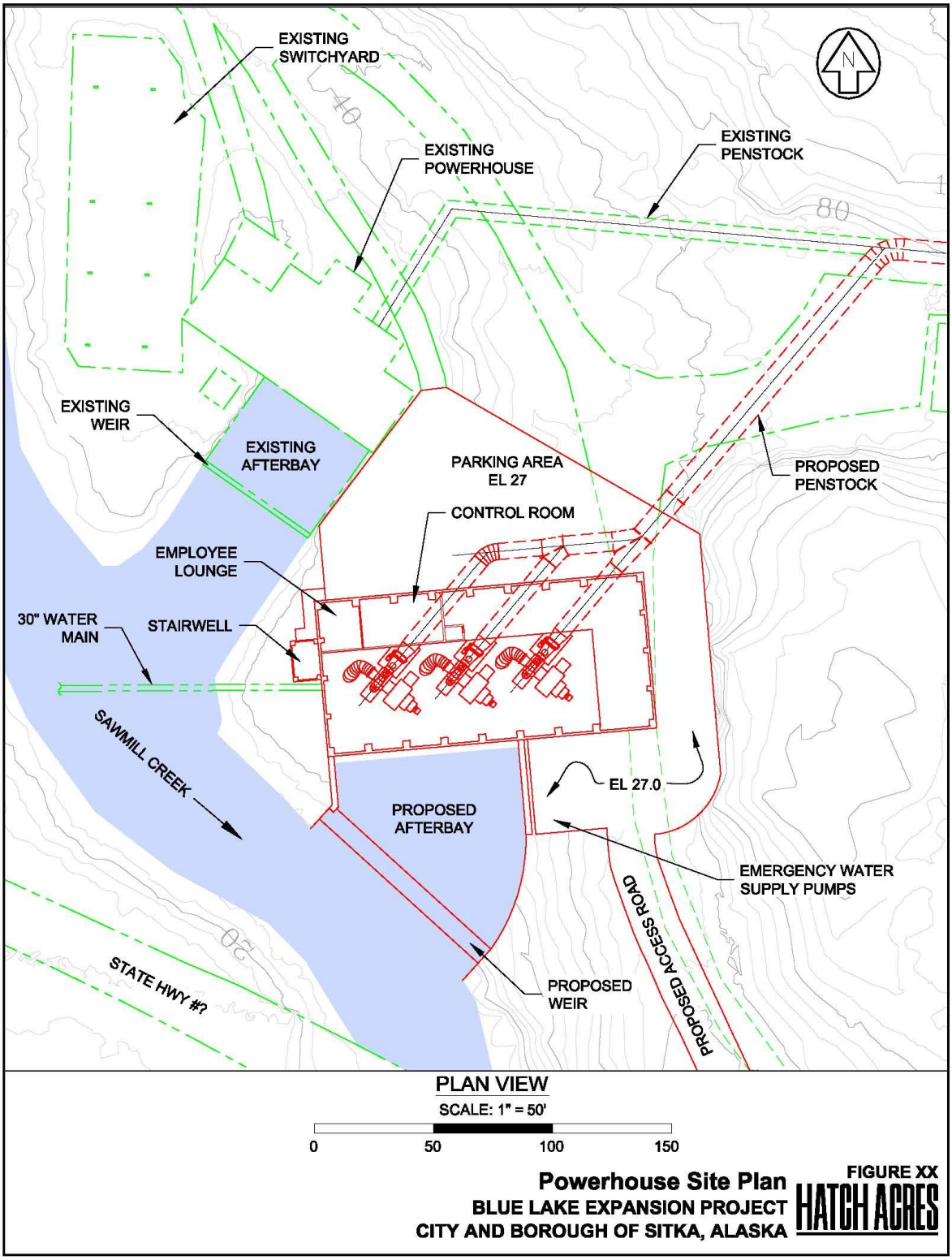


Figure 7. Detail of Powerhouse and Afterbay Arrangement.

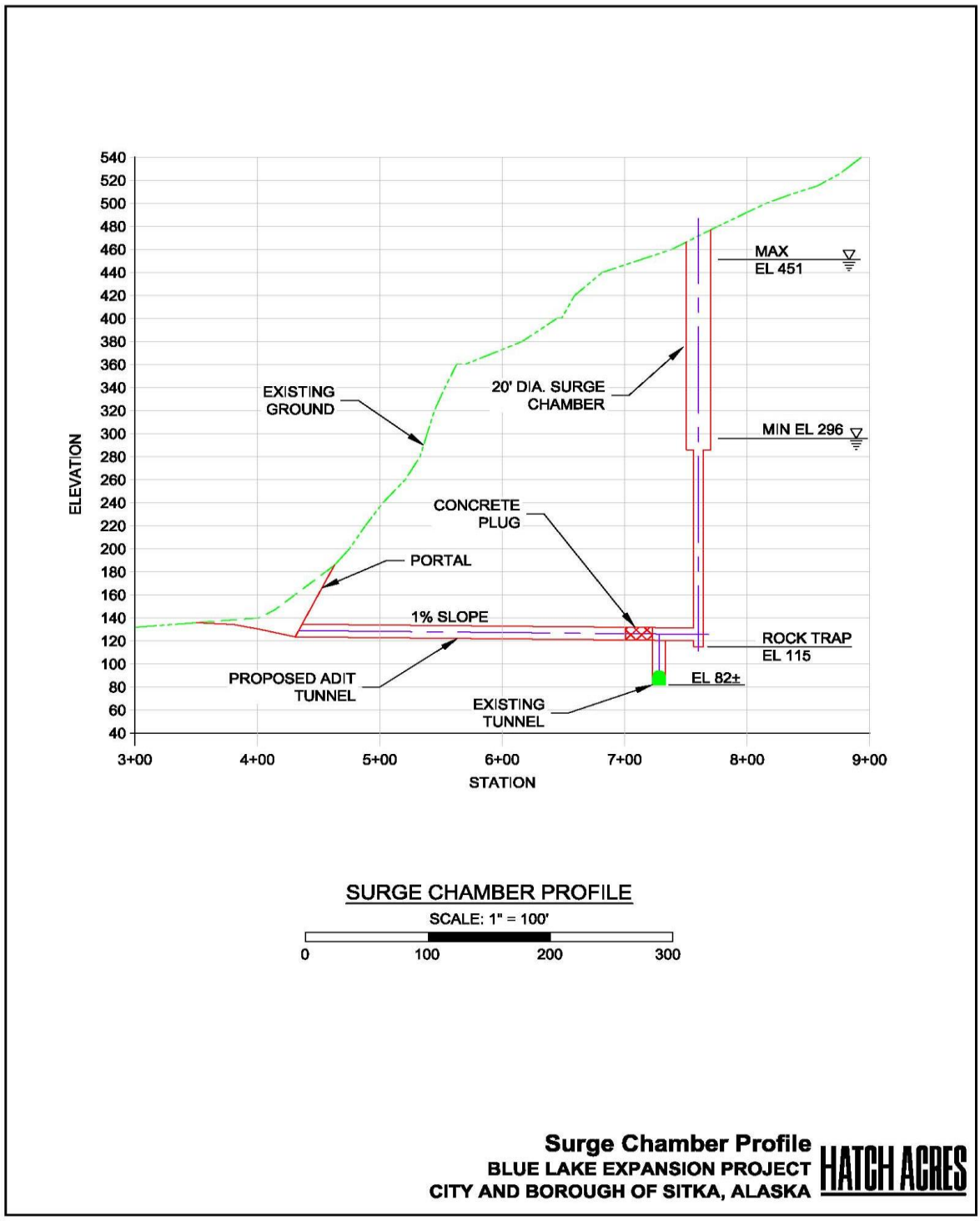


Figure 8. Surge Chamber Profile

2.3 Switchyard

New transformers will be installed in the location of the existing transformers next to the existing powerhouse (See Figure 6). The switchyard would transform the generation voltage (12.47 kV) to transmission voltage (69kV) and would connect to the existing transmission line from the Green Lake powerhouse.

2.4 Changes at Blue Lake

Expansion-related work in the Blue lake area would include 1) development of equipment access and dam site staging facilities; 2) dam raising; 3) construction of new intake facilities; and 4) timber clearing around the reservoir and in the Blue Lake Creek valley. These actions are described in detail in the following.

2.4.1 Development of New Access and Dam Site Staging Facilities for Dam Raising

Dam raise construction would generally be done using cranes positioned on the right abutment and at the downstream base of the existing dam (Figure 9). Access would be primarily via existing roads with some upgraded road construction leading to the right abutment and staging areas. An approximately 1.5 acre construction staging area would be developed by leveling a hill just south and west of the current Blue Lake overlook to EL 462. This area would be leveled and supplied with an appropriately-sized gravel base to support dam raising equipment. Reusable spoils will be used on site. Organic material will be disposed of offsite.

2.4.2 Proposed Dam Raising

It is the CBS's goal to raise the dam to the highest structurally feasible level because each foot of increased dam height would generate an additional 328 megawatt/hours per year (MWh/yr) of electricity. A dam height of El 425 would increase the Blue Lake Project average annual generation by 50 percent.

Geologic and engineering evaluations have suggested that the existing dam could be raised to El 425, (a raise of 83 feet above the existing spillway elevation) and that the existing dam would be competent to serve as the base of any dam structure rising to that height.

Figure 10 shows an elevation view of the existing dam with spillway at El 342 and the proposed dam with spillway at El 425. At that height, the raised dam top width would be about 215 feet.

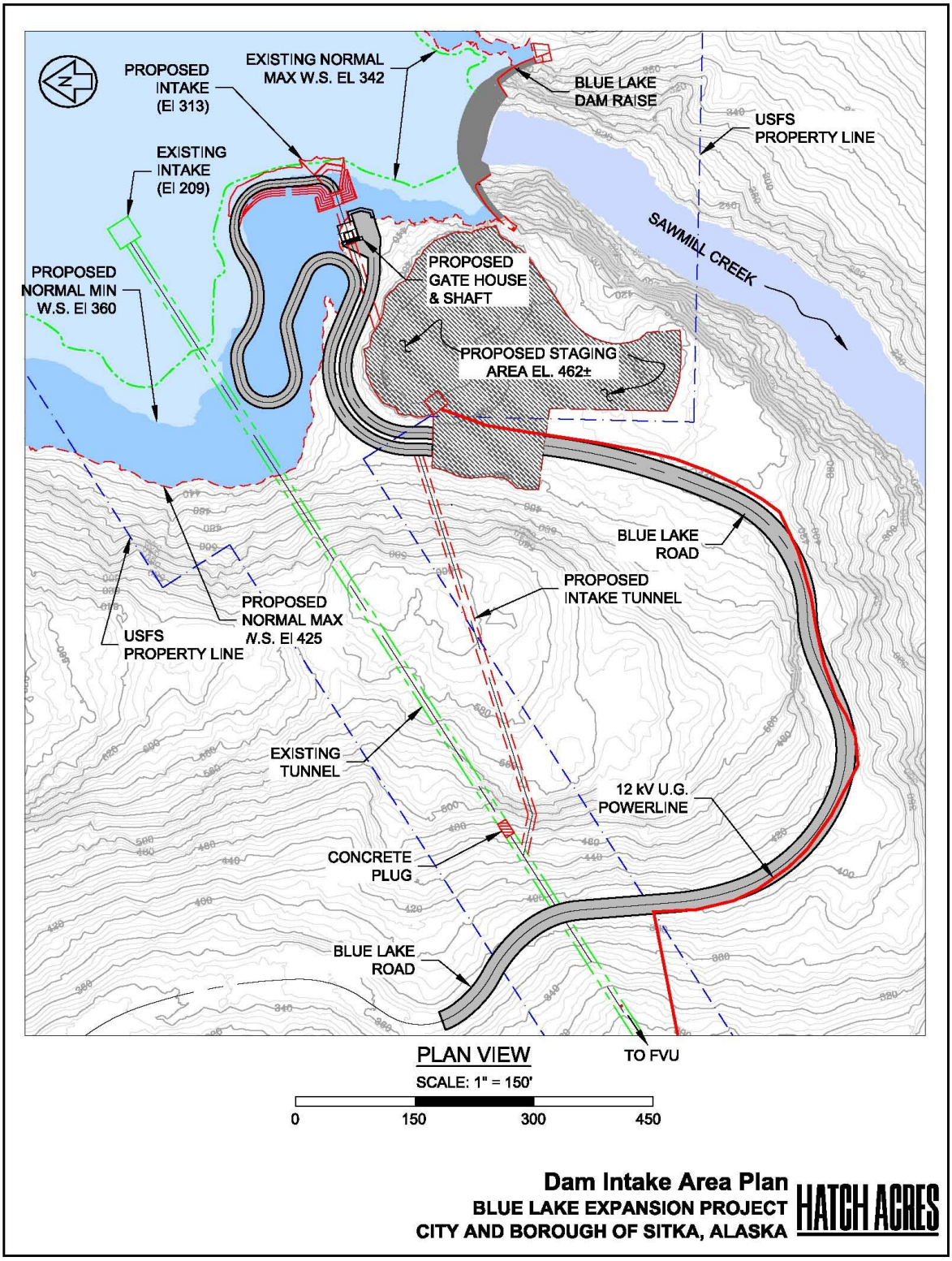


Figure 9. Dam Intake Area Plan

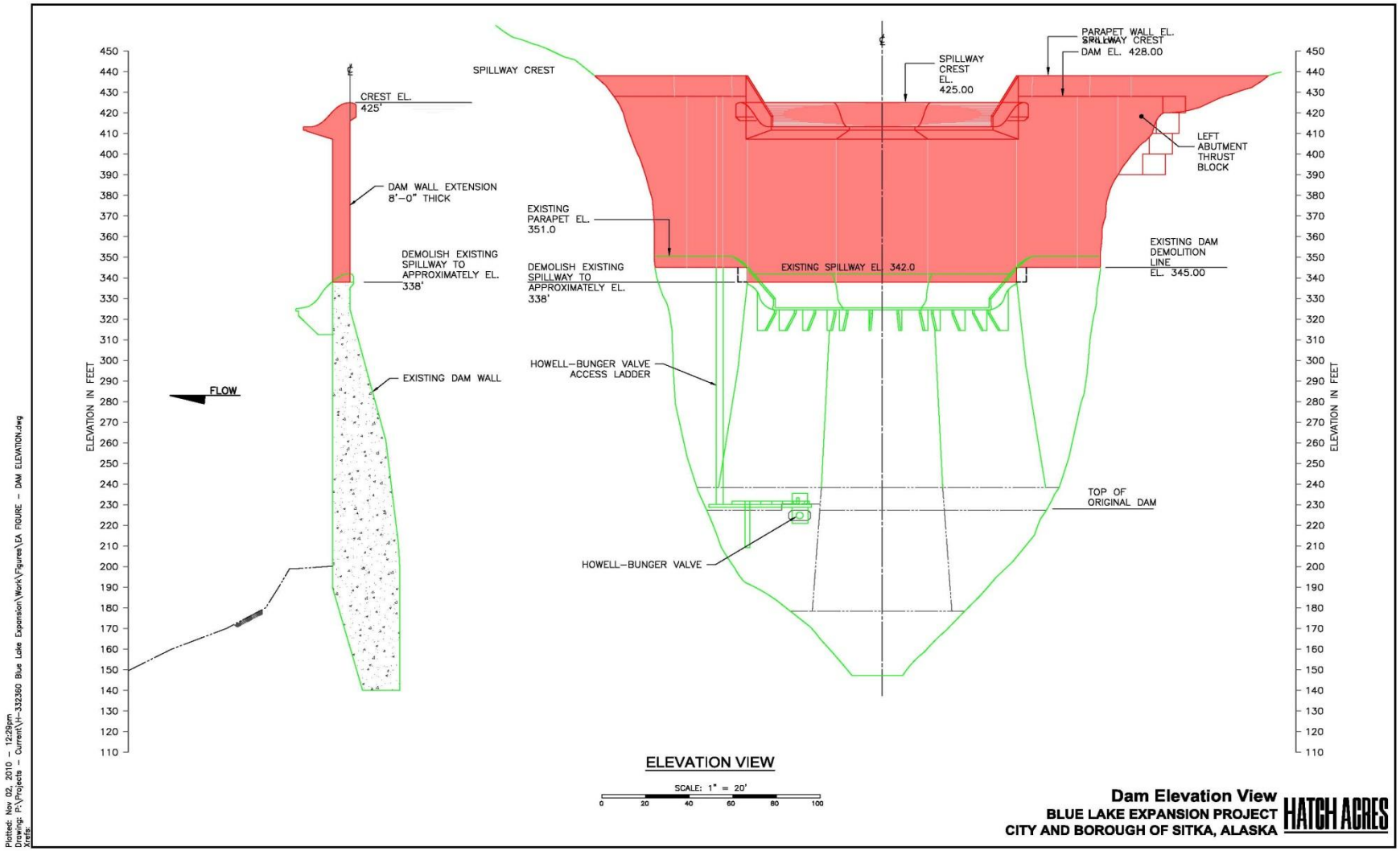


Figure 10. Elevation View of Existing and Expansion-Related Dam at El 425.

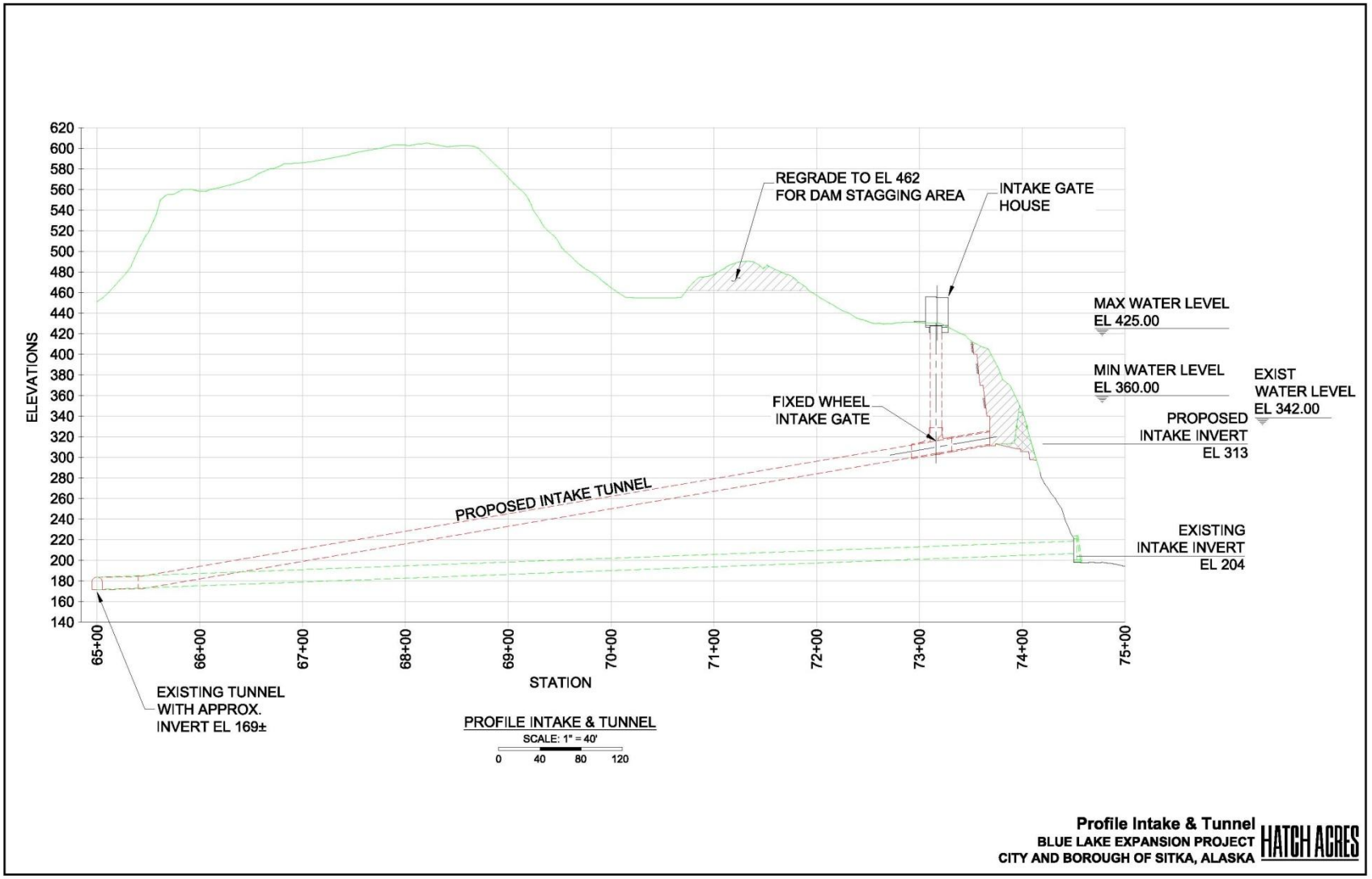


Figure 11. Profile of Existing and Proposed Intake Structures

2.4.3 Intake Structure Modifications

If the existing intake location and structure were retained, water temperature at the intake, and hence in Sawmill Creek below the FVU and BLU would be significantly colder than at present. In addition, CBS wishes to replace the current intake because of difficulty in maintaining it at a greater depth (possible only by divers) and to decrease the likelihood that construction-related contaminants and other inputs would compromise drinking water quality. The existing intake structure is located in an area that receives considerable overland runoff during rainstorms and snowpack melt. Because the intake is located at a juncture with the flat lake bottom, sediment and organic material tend to accumulate and impede the intake. Under the new design and location, the intake would be located on a steep slope, past which overland runoff material would continue without settling out.

The existing intake gate would be replaced with a new fixed wheel intake gate located within a gate shaft and a bulkhead gate at the intake location (Figure 11). The new intake arrangement and gates would offer a more reliable seal than the existing gate. The existing intake gates will be decommissioned in the closed position and winch house would be removed from service.

2.4.4 Dam Site Power Electrical Distribution Facilities

To operate the new gate winch, a 1400 ft-long dam site power distribution line would run from the FVU along the tunnel alignment to the Blue Lake Road, and would follow the Blue Lake road to the dam site (Figure 12). This line would be would be buried along its entire length eliminating the need for poles or other visible structures.

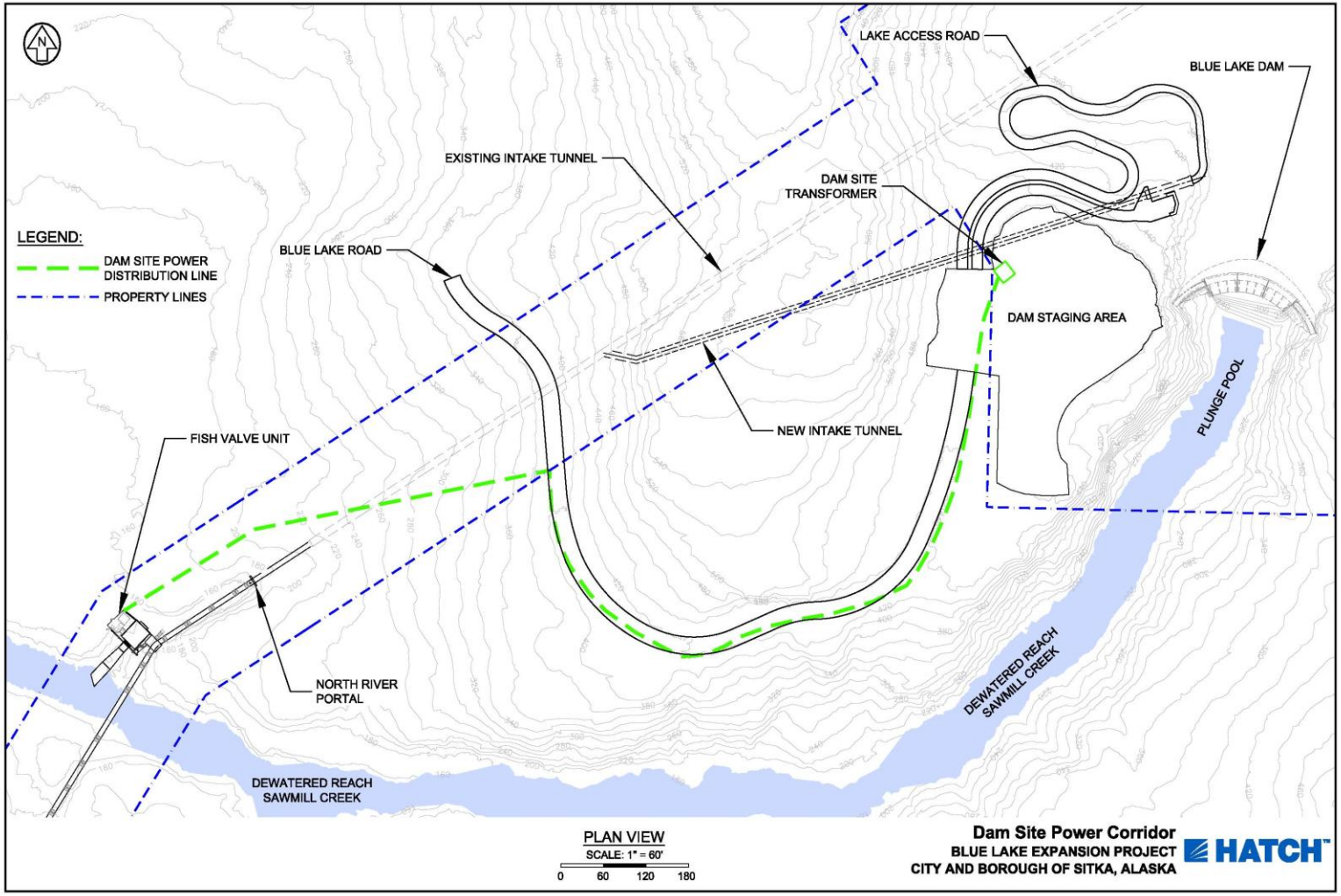


Figure 12. Dam Site Power Distribution Line Route

2.4.5 Changes in Blue Lake Road Alignment

To accommodate heavy equipment transport to the dam/intake construction site, alignment of the Blue Lake road will be changed, as shown in Figure 13.

2.4.6 Timber Clearing Around The Reservoir and in Blue Lake Creek Valley

Prior to reservoir filling, timber and other large vegetation in the potentially-inundated area will be removed. Large merchantable timber will be felled, yarded and stored in the inundation area at the east end of the lake. The timber will be floated to a retrieval area near the access road after the lake has been filled to El 415. Timber volume in the Blue Lake Creek valley has been cruised under USFS guidelines. The volume of timber is approximately 5000 MBF. Slash and understory material will be burned either in place or at the east end of the lake, depending on timber harvest technique. CBS is exploring a plan to make utility wood available for use as firewood, in conjunction with Stakeholders.

2.5 Affected Reservoir Area and Energy Production

Inundated area of Blue Lake reservoir would increase by approximately 35 percent with a dam height of El 425 (Table 2, Figure 14). Energy would increase by 32,000 MWh per year or 50 percent.

Table 2. Potential Energy and Inundated Area for Dam Height of El 425

Dam Height	Existing Reservoir Surface Area (acres)	Additional Inundated Area (acres)	Additional Inundated Area (percent)	Existing Energy Generation (MWh)	Energy Increase (MWh)	Energy Increase (Percent)
425	1,646	362	22	62,500	32,000	50

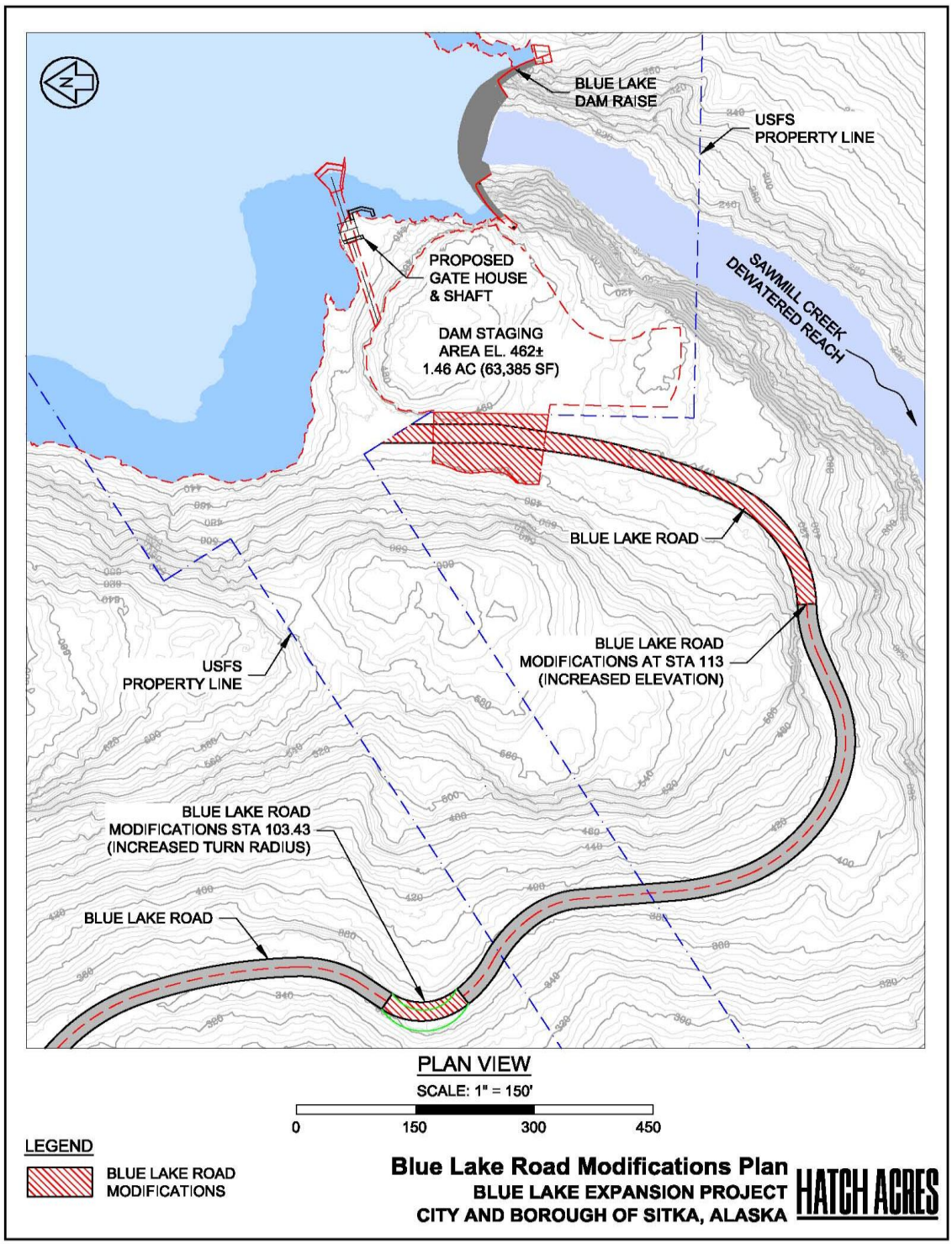


Figure 13. Proposed Blue Lake Access Road Modifications

Figure 14. Orthophoto of Blue Lake showing Existing (spill at El 342) and Expansion-related (spill at El 425) Water Surface Elevations and Inundated Areas

2.6 Expansion-Related Project Lands

Lands within the proposed Expansion Project Boundary would consist of the acreages shown in Table 3. Federal lands would all be on USFS lands of the Tongass National Forest. Non-Federal lands are largely owned by CBS.

Table 3. Land Ownership of Areas Within Proposed Expansion Project Boundary.

Area Description	Area in Acres
Total Within Project Boundary	1913
Federal Land	1798
Transmission Lines on Federal Land	25
Non-Federal Land	115

The proposed features of the Blue Lake Project Expansion will be constructed on CBS property except for:

- 1400 ft. of the 12kV distribution line that will supply power to the dam site. This distribution line will follow the tunnel alignment and Blue Lake Road; and
- The proposed intake tunnel which will not be visible from ground level.

3. BLUE LAKE EXPANSION RESERVOIR AREA CALCULATIONS

The original license for the Blue Lake Project defines the area of the Blue Lake reservoir as 1225 acres. This area determined in 1957 is not as accurate as an area determined today using modern surveying methods.

A LIDAR survey of the Blue Lake and its drainage was performed in 2007 by Aero Metric. This survey was used to generate a topographic map of the Blue Lake area with 5’ contours. The reservoir was spilling at the time of the survey so this survey starts at elevation 350’. This LIDAR survey is being used as the basis for the acreage calculations on the Blue lake Project Expansion because the survey is believed to be the most accurate information available.

3.1 Inundation area

Based on the LIDAR survey the area of the Blue Lake reservoir at a proposed spill elevation of 425’ is 1646 acres. The area of the reservoir at elevation 342’ was not available directly, from the LIDAR survey, so it was interpolated with ACAD using elevation 350’ and the slopes around the reservoir perimeter. The area of the reservoir at elevation 342’ has been determined to be 1284 acres. The difference between the areas at 425’ elevation and 342’ elevation is 362 acres. The inundated area for the Blue Lake Project Expansion is calculated to be 362 acres.

All of the areas included in the terrestrial studies and reports have been conducted based on an inundated area extending to elevation 425'. The 425' elevation area has not changed during the Blue Lake Project Expansion investigation.

3.2 Project Boundary

The Blue Lake Reservoir was added to the project boundary in the license issued in 2007. The reservoir area and location was established based on a 1957 survey done by Consulting Photogrammetrist in Eugene Oregon. This survey yielded a 342' elevation area of 1380 acres, and a project boundary of 1602 acres which includes a 200' buffer around elevation 342'.

The proposed project boundary for the Blue Lake Project Expansion is based on the 2007 LIDAR survey at elevation 425' plus a 50' buffer yielding a reservoir project boundary of 1730 acres. The expanded east end of the reservoir including Blue Lake Creek contains 206 acres. This 206 acres is included the 1730 acres of reservoir project boundary. The City has applied for a special use permit for this additional acreage on USFS land.

The proposed project boundary is described in Exhibit G of the license amendment application.

4. PROJECT OPERATION CHANGES

The CBS proposes no change in the existing instream flow release or ramping rate patterns at both the FVU and the BLU. Under the typical Expansion operation, the seasonal drawdown will be 55 to 65 feet, which is significantly less than the 70 to 80-ft drawdown typical of operations with the existing dam height.

After expansion, the Blue Lake project would more effectively serve to balance system electrical load between the Blue Lake and Green Lake projects. Generating units would be operated as the load following generator and all other generators would be base loaded. The load following generator continuously adjusts its output to match the load while the base loaded generators have a fixed output. With the addition of the new turbines operated as a load following generator, CBS would have multiple base loaded generators providing a wider range of efficient operation.

As explained previously, a goal of the Expansion is to improve the electrical system frequency with the installation of the surge chamber. CBS will also investigate the addition of other frequency improving features such as improved governors on existing generators, a synchronous motor and flywheel, and interruptible resistance loads.

As explained previously the PMFU will be decommissioned.

EXHIBIT B

PROJECT OPERATION and RESOURCE UTILIZATION

Current operation of the Blue Lake Project was prescribed in Articles and Conditions in the new FERC license issued in July of 2007. The City proposes no change in the existing instream flow release or ramping rate patterns at both the FVU and the BLU. Under the typical Expansion operation, the seasonal drawdown would be 55 to 65 feet, which is significantly less than the 70 to 80-ft drawdown typical of operations with the existing dam height.

After expansion, the Blue Lake project would more effectively serve to balance system electrical load between the Blue Lake and Green Lake projects. Blue Lake generating units would be operated as the load following generators and all other generators would be base loaded. The load following generators continuously adjusts its output to match the load while the base loaded generators have a fixed output. With the addition of the new turbines operated as a load following generators, the city would have multiple base loaded generators providing a wider range of efficient operation.

Manual or Automatic Operation

Plant will be manned at all time with an operator to oversee automatic load following operation. the plant factor is 1.33 based on the net design head and flow or 1.7 based on maximum flow.

Dependable Capacity and Average Annual Energy Production

In an average water year the estimated energy available after the Expansion would be 94,000 MWh/year. The total electric system (Blue Lake and Green Lake Projects combined) will be capable of generating about 154,000 MWh/yr

Minimum, Mean, and Maximum Recorded Flows

The minimum, mean and maximum recorded Sawmill Creek flows at the location of the lower staff gage are:

Minimum	9.1 cfs
Mean monthly	441 cfs
Maximum	7100 cfs

Maximum and minimum average daily flows measured at USGS gage No. 15088000 are shown in Table B-1.

Table B-1. Maximum and Minimum Average Daily Flows in Sawmill Creek, by Month, for 29-year Period of Record. Original USGS Gage 15088000.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max	2,270	2,410	1,250	1,050	1,640	1,780	2,170	4,940	4,980	5,500	4,430	3,770
Min	24	16	11	14	57	308	311	200	71	84	46	34

Three recent floods have had the following estimated flows:

Oct. 1972 12000 cfs
Aug. 1992 12000 cfs
Nov. 1993 10400 cfs

Flow Duration Curves

The streamflow duration curve based on water years 1921 and 1922 and the period 1929 through 1957, derived from USGS gage 15088000 is shown in Figure B-1. Figure B-2 shows average, minimum, and maximum monthly flows during the same data.

The minimum annual Blue Lake inflow recorded during the 1951 water year was 300 cfs. The maximum annual Blue Lake inflow recorded during the 1936 water year was 678 cfs.

Area Capacity and Rule Curve

Figure B-3 shows an Area-Capacity Curve for the Post-Expansion reservoir. The Plant will be operated based on the average year rule curve shown in Figure B-4, in conjunction with the Sitka electric system generation model which models the Blue Lake project and Green Lake projects to optimize total generation energy. During a drier year the reservoir will be drawn down less than the average year rule curve and during a wet year it may be drawn down slightly more. The objective is to operate both projects so that they both refill to spill elevation each year. Shown in Figure B-5 is a curve showing powerplant capability versus head and specifying maximum, normal, and minimum heads.

Tailwater Rating Curve

The Relationship between tailwater discharge and tailwater water surface elevation is depicted in Figure B-6.

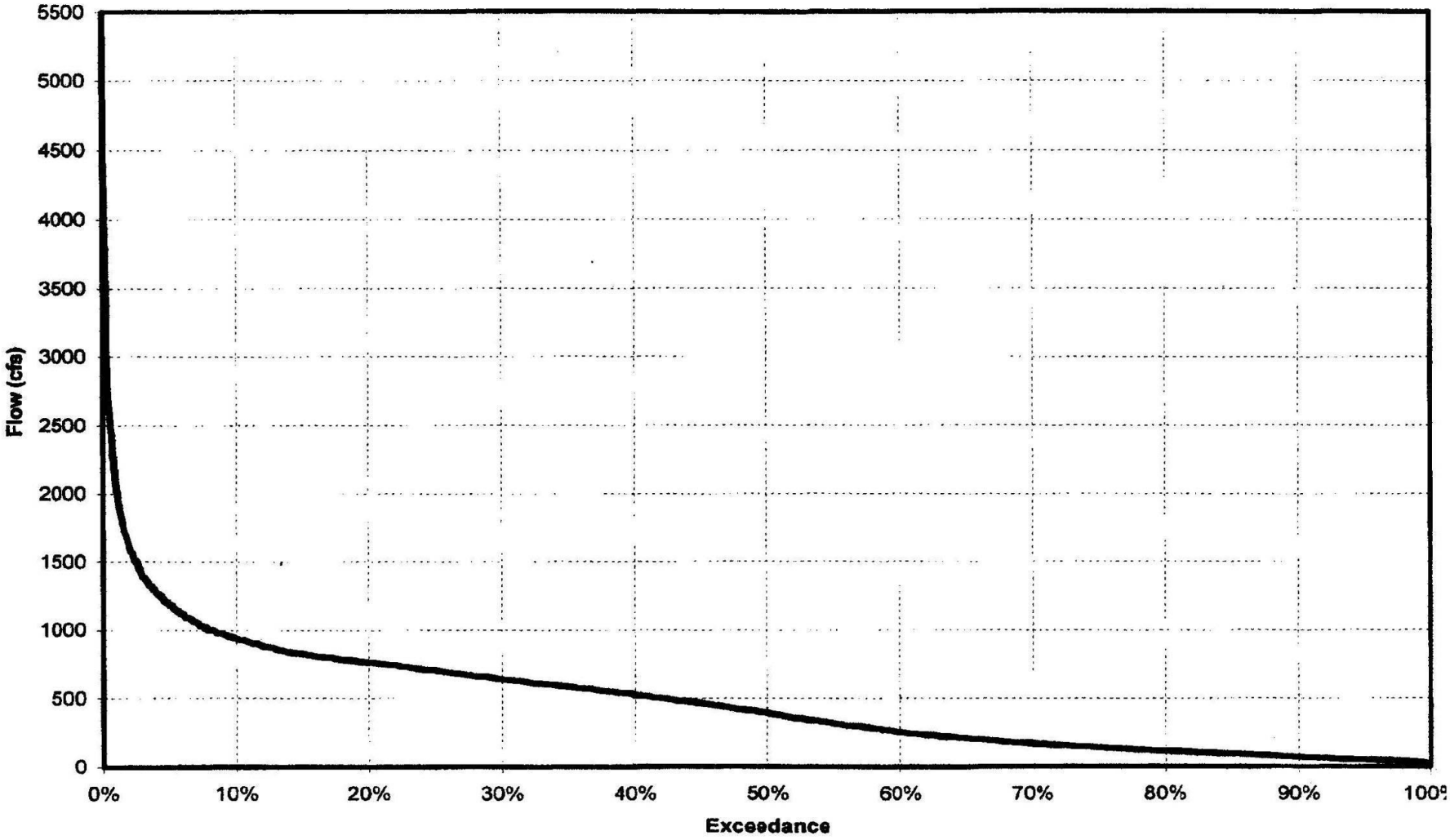


Figure B-1. Sawmill Creek Flow Duration Curve

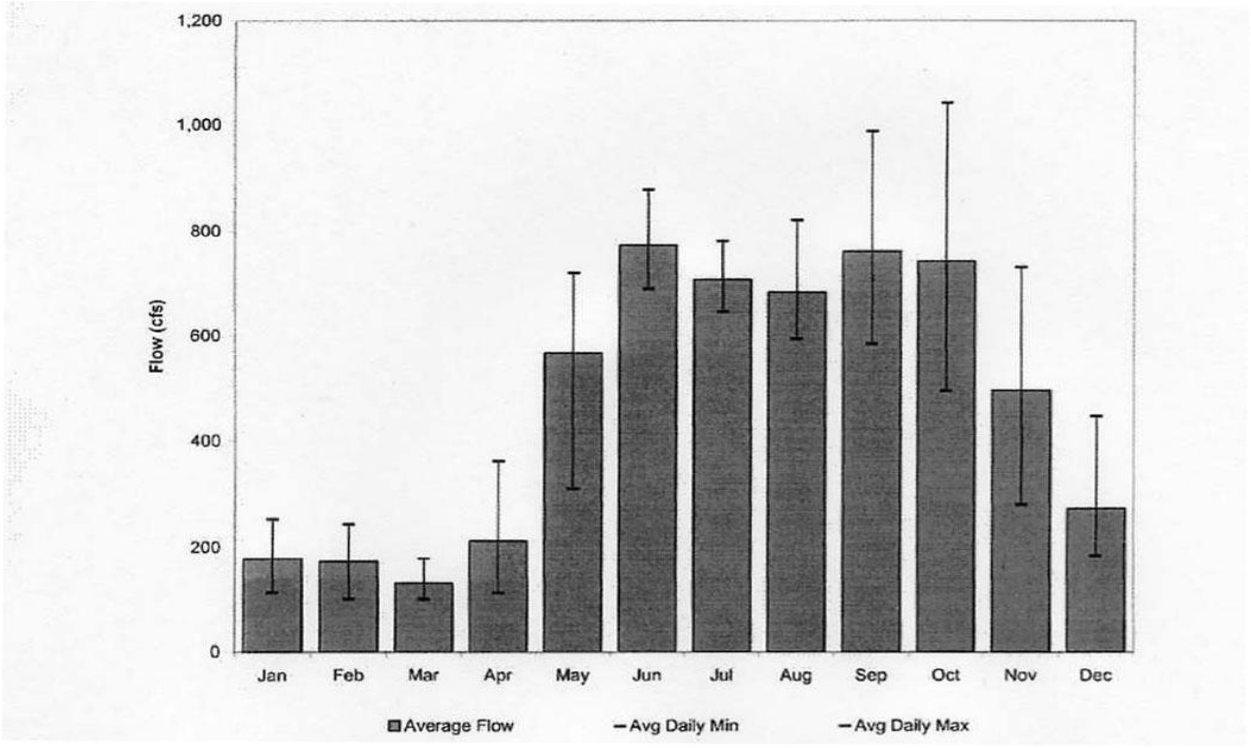


Figure B-2. Mean, Max and Min Sawmill Creek Flows

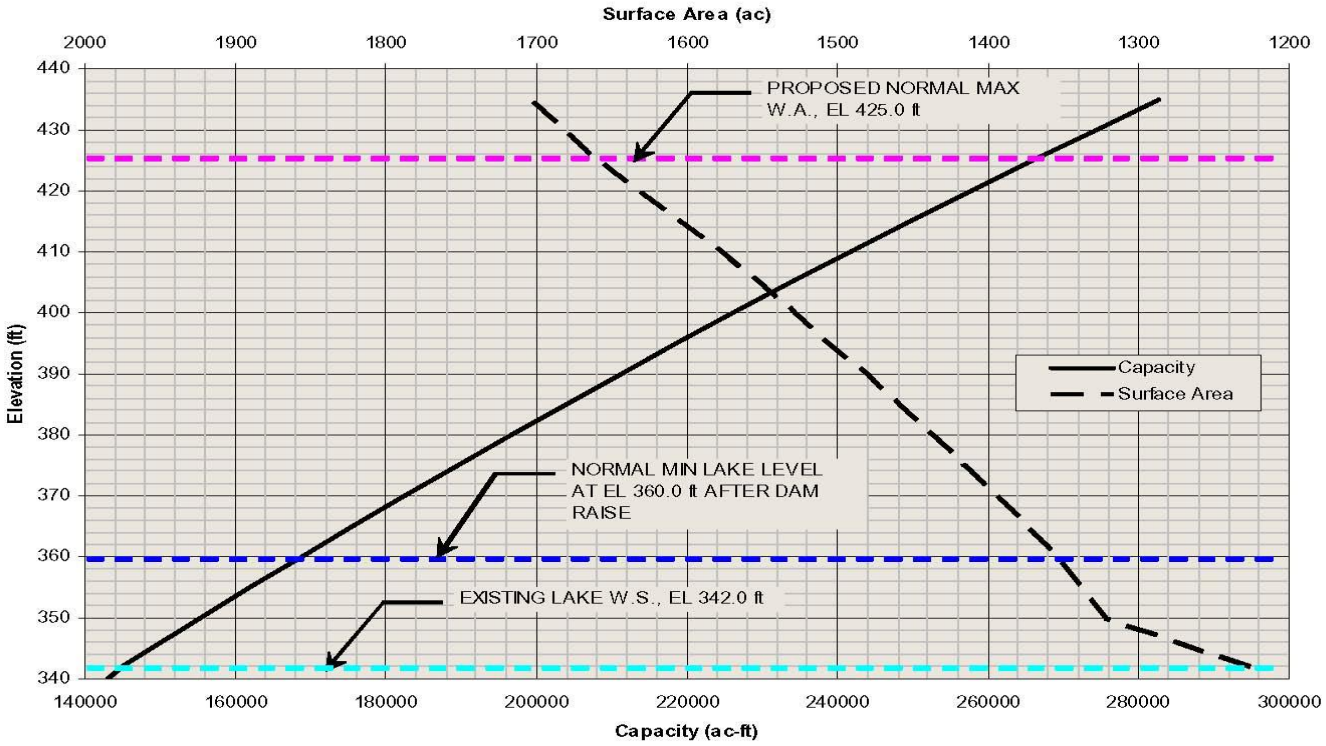


Figure B-3. Elevation-Capacity and Area-Capacity Curves for Blue Lake Reservoir Post-Expansion Conditions.

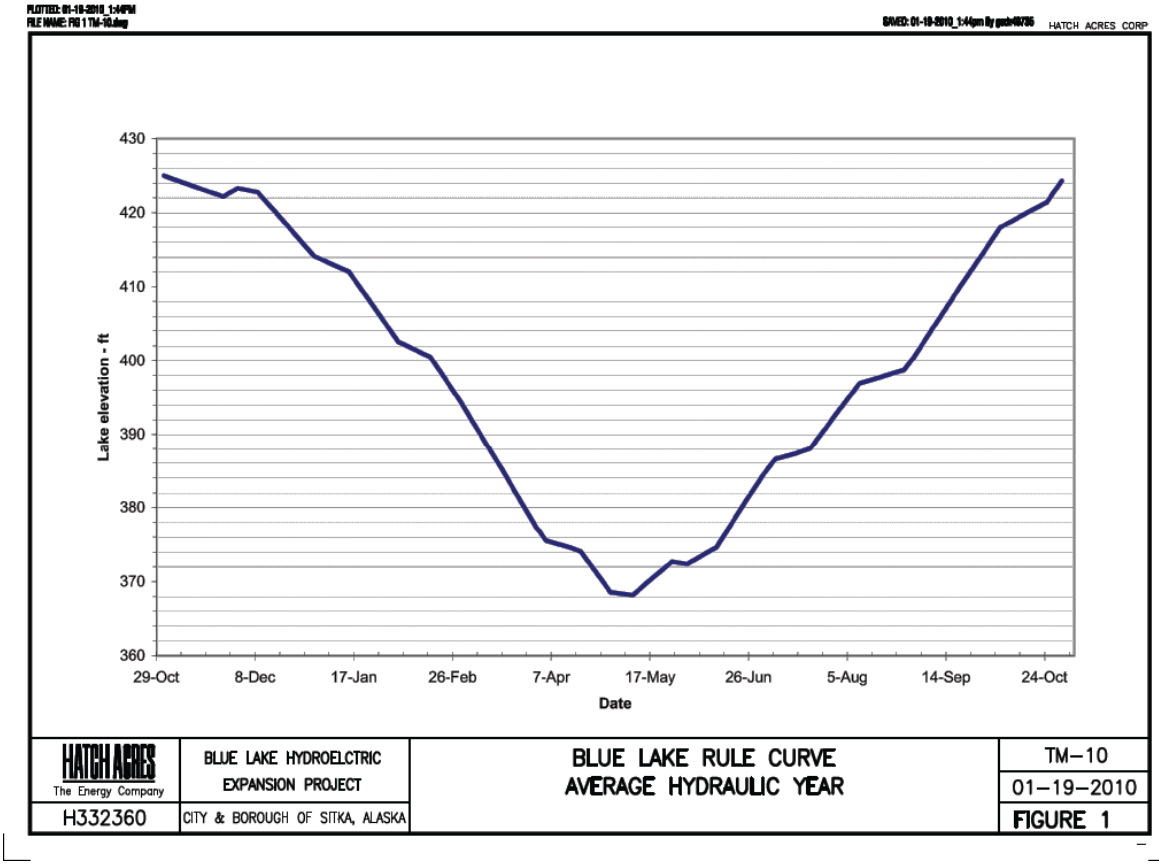


Figure B-4. Rule Curve for Average Hydrologic Conditions

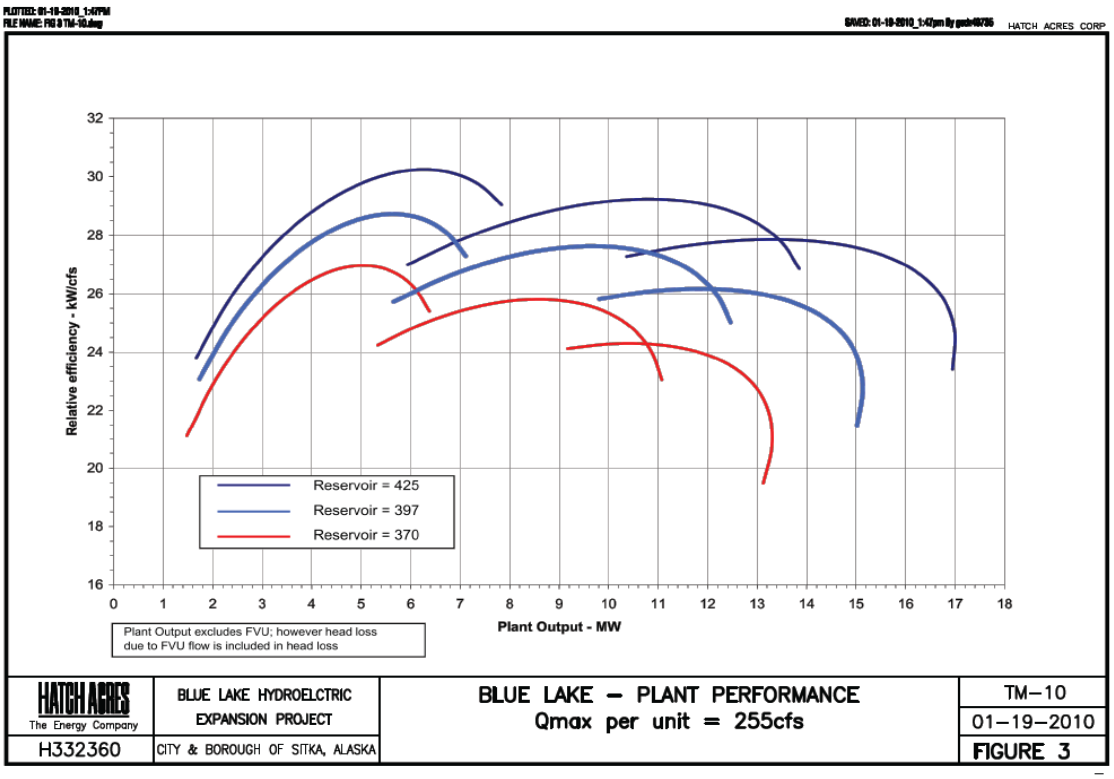


Figure B-5. Powerplant Capability Curve

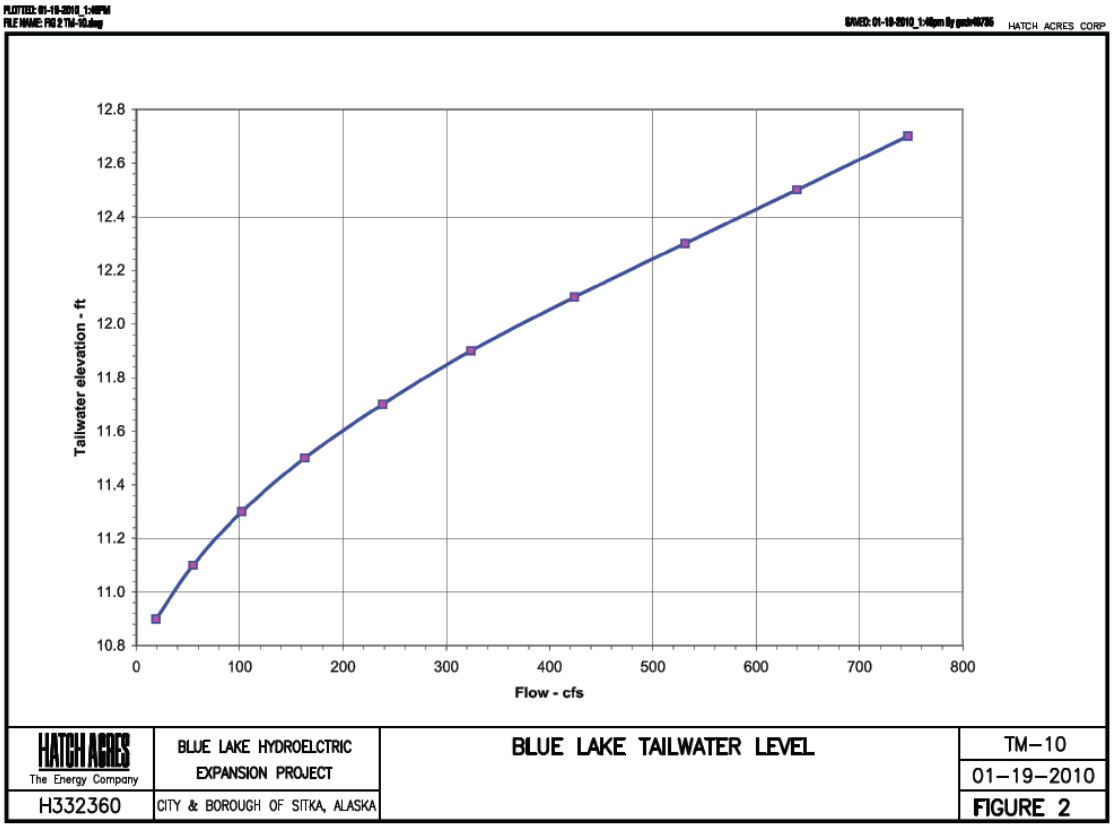


Figure B-6. Tailwater Rating Curve

Manner in Which The Power Generated at the Project is to be Utilized

All power generated at this facility must be sold to the municipal rate payers within the City and Borough of Sitka. The amount of power generated is dependent strictly on the requirements of this load. Table B-2 shows is a predicted monthly load distribution vs. maximum system generation capacity during an average water year under Expansion conditions.

Table B-2. Monthly Percent Load Distribution under Expansion-Related Generating Conditions.

Month	Percent of Annual Load	Load (MWh)
Jan	9.4	14,500
Feb	8.3	12,800
Mar	9.6	14,800
Apr	7.7	11,900
May	7.6	11,700
Jun	7.1	10,900
Jul	7.6	11,700

Aug	8.1	12,500
Sept	7.4	11,400
Oct	8.3	12,800
Nov	8.9	13,700
Dec	10.0	15,400
Total	100	154,100

The current system load is 124,000 MWh/yr, the Blue Lake Project supplies 62,000 MWh/yr of this load.
The Sitka electrical system is not interconnected to an electrical grid outside the Sitka area. Less than 1 percent of gross generation is used for station service power. System losses are estimated to be 5 percent.

Applicant's Plans for Future Development

The City currently holds a FERC Preliminary Permit for the Takatz Lake hydroelectric project (FERC No. 13234). This proposed 27 MW Project would supplement generation at Blue Lake and Green Lake and would help provide hydroelectric generation to meet load requirements beyond those met by the existing system.

EXHIBIT C

CONSTRUCTION HISTORY and PROPOSED CONSTRUCTION SCHEDULE

Work on the Blue Lake Project Expansion has progressed as follows:

- Feasibly studies conducted by Sitka and contractors in late 2007;
- The Notice of Intent was filed March 10, 2008;
- Resource study plans were prepared and resource studies were conducted in 2008;
- Scoping was conducted in November, 2008; and
- The Design Development study began in April 2009.

Generation Outage Constraints:

Due to reservoir and system load management, construction timing, and reservoir inflow constraints the Blue Lake Project Expansion, generation outage must take place during the rainy months of September and October of any year. This is because a portion of the Project Expansion includes installing a new intake at a higher elevation in the lake. The new intake must be submerged during the rainy season in conjunction with the generation outage (Figure C-1). If the outage is conducted at any other time of the year there will be inadequate inflow to submerge the intake and provide adequate water for the following seasons operation. The generation outage must be conducted in September and October of any year.

Following is a graphic representation on the Blue and Green Lake reservoir in conjunction with the expansion construction, generation outage and filling of the reservoirs.

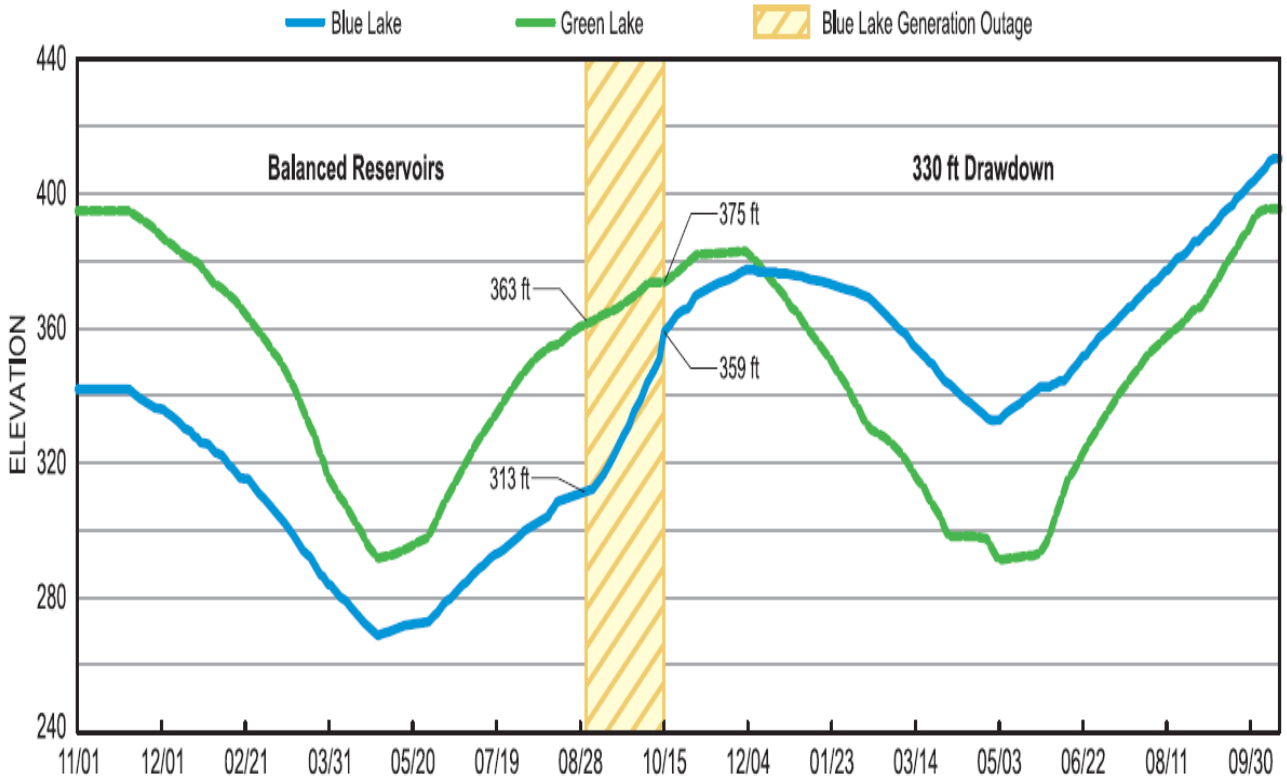


Figure C-1. Construction Schedule Showing Necessary Conditions for Generation Outage.

Based on the reservoir filling parameters it is planned to commission the Blue Lake Project Expansion in October, 2013. The following schedule has been developed to meet this commissioning date. Any delay in achieving the generation outage in September would delay the project by a full year.

Following are major milestones in several areas, including FERC amendment application and various engineering and construction activities.

Amendment Application

- Submit Draft Amendment Application March 1, 2010;
- Submit Final Amendment Application December 1, 2010;
- FERC review November, 2010- October 2011; and
- Amendment issued November 1, 2011 (estimated).

Engineering

- Final Design March 2010 – September 2011;
- Issue Turbine Generator and Penstock contracts September, 2010; and
- Order other owner supplied equipment November 1, 2011.

Construction

- CBS relocates utilities in powerhouse area: July, 2011;
- CBS runs dam site power distribution to dam site: October, 2011;
- Issue Notice to Proceed to General and Underground Contractors: January, 2012;
- General contractor begins work at Powerhouse site: February, 2012;
- Underground contractor begins work at intake area: February, 2012;
- Underground contractor completes underground work: July, 2012;
- General contractor begins work at dam site: October, 2012;
- General Contractor begins structural work at intake site and installs gates: March, 2013; and
- Intake structure and gates operational: July, 2013.

Generation Outage (September–October, 2013)

- Install steel tunnel linings;
- Remove existing lower penstock;
- Install new lower penstock;
- Connect surge chamber to lower tunnel;
- Connect new intake tunnel to upper tunnel; and
- Commission Blue Lake Unit 5.

Reservoir work

- Reservoir clearing: January, 2013 – June, 2013;
- Reservoir filling: October 2013- September, 2015;
- Manage floating debris: October, 2013- December, 2016; and
- Remove Timber: November, 2014.

The above schedule is illustrated on the Gantt chart shown in Figure 15. It should be noted that due to the long lead times on certain equipment, CBS plans to order some equipment (such as the turbine generator package and penstock manifold) and to relocate the project utilities with Sitka crews and local contractors prior to receiving the license amendment. This is necessary to conduct the generation outage prior to filling the reservoir as mentioned above.

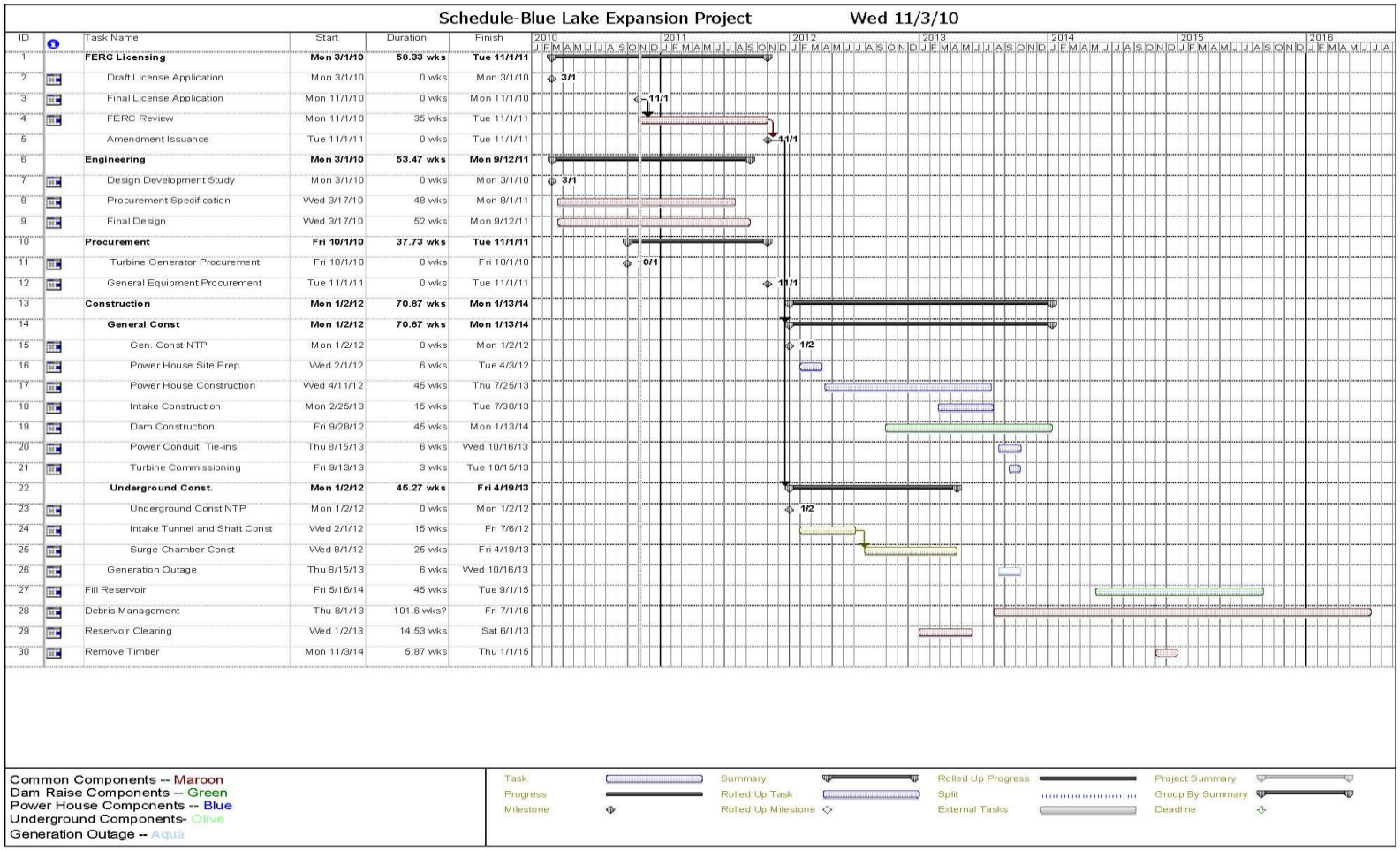


Figure 15. Proposed Blue Lake Expansion Regulatory and Construction Schedule.

EXHIBIT D COSTS and FINANCING

1. GENERAL

Construction costs were principally based on calculated quantities, prevailing labor rates, estimated production levels, and material and equipment requirements for construction. For miscellaneous items not estimated in this manner, quantities were generated, to which unit prices were applied. Mechanical and electrical equipment items were based on recent budget bid pricing for similar projects. Construction costs for tunnel and shaft excavation were provided by Redpath Construction.
The equipment cost estimates were prepared based on historical suppliers' prices for similar projects, but adjusted to a January 2010 bid price level. These costs were considered to have built-in escalation over a two-year period, which would permit the cost to reflect an in-service date of October 2012. The civil-works cost estimates prepared by Hatch and Redpath do not include such built in escalation during construction and this was thereby added. The total cost estimate was then further escalated over a 2-year period to reflect the scheduled completion of the Project works in October 2014.

2. BASIS of COST

2.1 Direct Construction Cost

This cost includes the total of all costs directly chargeable to the construction of the Project and in essence represents a contractor's bid.
Indirect costs are defined as those which are added to the Direct Construction Cost to result in the Total Construction Cost. Indirect costs include an allowance for contingencies, engineering and owner administration, and escalation where necessary.

2.2 Contingencies

To allow for unforeseen difficulties during construction and items not reflected in the estimate, an allowance of 25% for contingencies was applied to the Direct Construction Cost. Contingencies include but are not limited to risks from changes in market conditions during the bid process, changes from final design changes and from unforeseen conditions associated with the construction effort. Typically 15% is applied for when geotechnical investigations are completed; however, the 25% level of contingencies is provided to provide better cost certainty regarding several items not yet included in the estimate, e.g. diesel fuel for the generation outage.

2.3 Engineering and Owner Administration

The engineering and owner administration costs are based on actual experience with similar work. This item includes all preliminary engineering work, project feasibility and environmental studies, field investigations, processing of required permits and licenses, final design and preparation of construction contract documents, inspection of

construction, and owner administration. An allowance of 12.5% of the sum of the Direct Construction Cost plus contingencies is considered a reasonable estimate for this item. This amount includes the engineering, licensing and field investigations performed over the past 2 years.

2.4 Escalation

As discussed above, the Direct Construction Cost for the civil works components does not contain built-in escalation for their respective construction periods, and must be included. It was assumed to be 3% per year of its estimated cash flow. The construction and supply contracts were then further escalated from their bid price levels at 3% per year to reflect an early completion date of October 2014. Escalation of the preliminary works contract was ignored due to its small contract size even though this work would be completed 2 years earlier.

2.5 Total Construction Cost

The Total Construction Cost includes the Direct Construction Cost plus contingencies and engineering and owner administration costs.

2.6 Interest During Construction

Interest during Construction was determined from a cash flow analysis developed from the construction schedule. Interest during the construction period was based on an annual rate of 6%, which is the maximum value established for state financing of a municipal bond. While a portion of the Project payment would be from State and possibly Federal Grant, this payment contribution was ignored.

2.7 Total Investment Cost

The Total Investment Cost is the sum of the Total Construction Cost plus Interest During Construction. The Total Capital Requirements for a loan, including the reserve funds, are described in the Economic Analysis section.

3. CONSTRUCTION COST ESTIMATE

A cost estimate summary is shown in Table 1. The estimated Total Investment Cost for the Project with a bid date of January 2010 (current price level), corresponding to a construction completion in October 2012, is $88,320,000. The corresponding Total Investment Cost for the scheduled completion date of October 2014 is $93,700,000. The Total Capital Requirements of the loan from a municipal bond, assuming 100% financing, are $100,360,000.

Table D-1. Project Cost Estimate Summary

Item	Description	Amount
1	Preparatory Work	$8,320,000
2	Arch Dam Raise	$8,900,000
3	Intake Tunnel & Gate Shaft Excavation	$3,730,000
4	Surge Chamber Excavation	$4,060,000
5	Intake Civil Works & Equipment	$1,530,000
6	Tunnel Refurbishment	$1,950,000
7	New Penstock	$3,750,000
8	Powerhouse Civil and Access Road	$7,646,000
9	Powerhouse Mechanical Equipment	$8,938,000
10	Powerhouse Electrical Equipment	$8,500,000
11	Switchyard Upgrade	$1,732,000
SUBTOTAL (rounded)		**$59,060,000**
	Escalation During Construction	$780,000
DIRECT CONSTRUCTION COST		**$59,840,000**
	Contingencies (25%)	$14,960,000
	Engineering & Owner Admin. (12.5%)	$9,350,000
TOTAL CONSTRUCTION COST (Jan 2010 bid)		**$84,150,000**
	Interest During Construction	$4,170,000
TOTAL INVESTMENT COST (Jan 2010 bid)		**$88,320,000**
	Escalation	$5,380,000
TOTAL INVESTMENT COST (Jan 2012 bid)		**$93,700,000**

4. ECONOMIC ANALYSIS

4.1 General

The economic feasibility of the Project was determined based on a comparison of the annual costs with that of the most economic alternative generating source. For CBS, the most economical alternative source of generation is a diesel-electric unit located near the load center.

The cost of power is the estimated annual cost of construction and operation of the Project.

4.2 Project Capital Requirements

As described in the Construction Cost Estimate section, estimates of total construction costs were made for the Project on the basis of contract bids for the major items of work being received in January 2012, which corresponds to a commercial operation date for the Project in October 2014. A cash flow during construction was developed to permit determination of interest during construction payments. Project financing has been assumed based on municipal bond financing of 100% of the Total Capital Requirements. Interest payment of 6% was assumed over a 30-year bond repayment period.
The Total Capital Requirements consists of the Total Investment Cost plus a reserve fund equal to ½-year of interest on the debt plus the cost of issuance, assumed to be 3% of the Total Capital Requirements. The amount of the Total Capital requirements is derived below:

TOTAL INVESTMENT COST (Jan 2012 bid)	**$93,700,000**
Reserve Account	$3,650,000
Cost of Issuance	$3,010,000
TOTAL CAPITAL REQUIREMENTS	$100,360,000

Project Annual Cost and Cost of Power

Debt service was calculated for the 30-year bond period. Credit from the investment of the reserve was assumed at a 6% annual rate, the same rate interest rate as the bond.
In order to maintain a conservative approach to the economic analysis, it has been assumed that annual costs for operation and maintenance, administrative and general, insurance and interim replacements were assumed to be equivalent as for the current BLU. Both maintenance and interim replacement costs would undoubtedly be much higher for the existing project. Insurance costs would likely be lower, but not on par with these other costs.

For estimating the cost of energy, only the incremental margin above current average annual energy production of 63,680 MWh was assumed for the Blue Lake Project, inclusive of the FVU and PMFU. This ignores the fact that the new facilities should have a longer service life than for the existing facilities.

ANNUAL COSTS @6 percent Financing)	
Amortization of Debt:	
Annual Debt Service……	$7,291,000
less Interest Credit on Reserve……..	-219,000
Net Amortization Costs……..	$7,072,000
Incremental Energy Gain (MWh…….	32,000
Cost of Energy (cents/kWh)……	22.1

The cost of average annual energy generated by the Project is estimated to be 22.1 cents/kWh at its on-line date of October 2013. This cost is based on full utilization of the Project output, which, for the initial operating years, is an unreasonable reasonable assumption as it will take about 2½ years to fill Blue Lake to normal maximum pool El. 425 and because the expanded Project combined with the Green Lake Project will produce more hydroelectric energy than required by the CBS system load in the initial 10-years of operation based on load forecast projections. Nevertheless, this cost is significantly less than the 35 cents/kWh cost for diesel fuel alone (see Cost of Diesel Alternative) and, after 30 years of debt service payment, the incremental Project operating cost over existing operating expenses is zero.

4.3 Cost of Diesel Alternative

There are many cost components in overall diesel energy generating costs. All these components are taken at full value if the diesel power plant is operated at a high loading factor. Costs are divided into the two major categories:

- Fixed Costs, which are mostly independent of energy production and include investment related costs to build the plant (debt service, depreciation, etc.), administrative costs, building maintenance, administration, lighting and preheat costs, etc.; and

- Variable Costs, which are mostly directly related to running the plant to producing energy, including fuel, lube oil, engine/generator maintenance/overhaul, etc.

Labor is part of fixed cost for a standby plant with very low usage, but if the plant has extended periods of time, say days or weeks of operation per year required, additional labor or overtime can contribute to cost.

The most likely scenario related to the Sitka system is increasing diesel use until the expanded Project comes on line. Diesel will drop to emergency use only when the expanded Project is complete until the system load again rises to require it. As the percentage of diesel generated energy increases during those years, the increase in cost will limit system load growth. In a long range view, the cost of inefficiencies related to the expanded Project will be realized when the diesel generation is base loaded and not as a standby plant. There will be increased labor cost because the plant will need to run for months out of the year. Investment costs and depreciation will not apply because CBS would not run any particular machine enough to require replacement -- just overhauls.

The most significant unknown related to diesel generation cost is the cost of fuel oil. While substantial swings in price will likely occur, the five year outlook for diesel energy cost, assuming $3.30 delivered fuel price, and about 10,000 MWh of diesel generation per year would yield a cost per kWh of $0.35.

5. BENEFIT/COST RATIO

For the initial 30 years of Project operation, the resulting benefit/cost ratio for the Project is the ratio of the total net-present value of the diesel fuel cost stream ($139,759,000) to the total net-present value of the Project debt service ($79,615,000), which equals 1.76, as shown in Table D-2.

6. OPERATION and MAINTENANCE EXPENSES

The operation and maintenance expenses will not be significantly different than on the existing project because the project expansion will replace the existing project. The existing annual cost of operation and maintenance is about $3,000,000.

7. ESTIMATE of COST to DEVELOP the LICENSE APPLICATION;

The cost of licensing is included in the 12.5% Engineering & Owner Administration Cost. The licensing cost is estimated at $2,100,000.

8. ON-PEAK and OFF-PEAK VALUES of PROJECT POWER

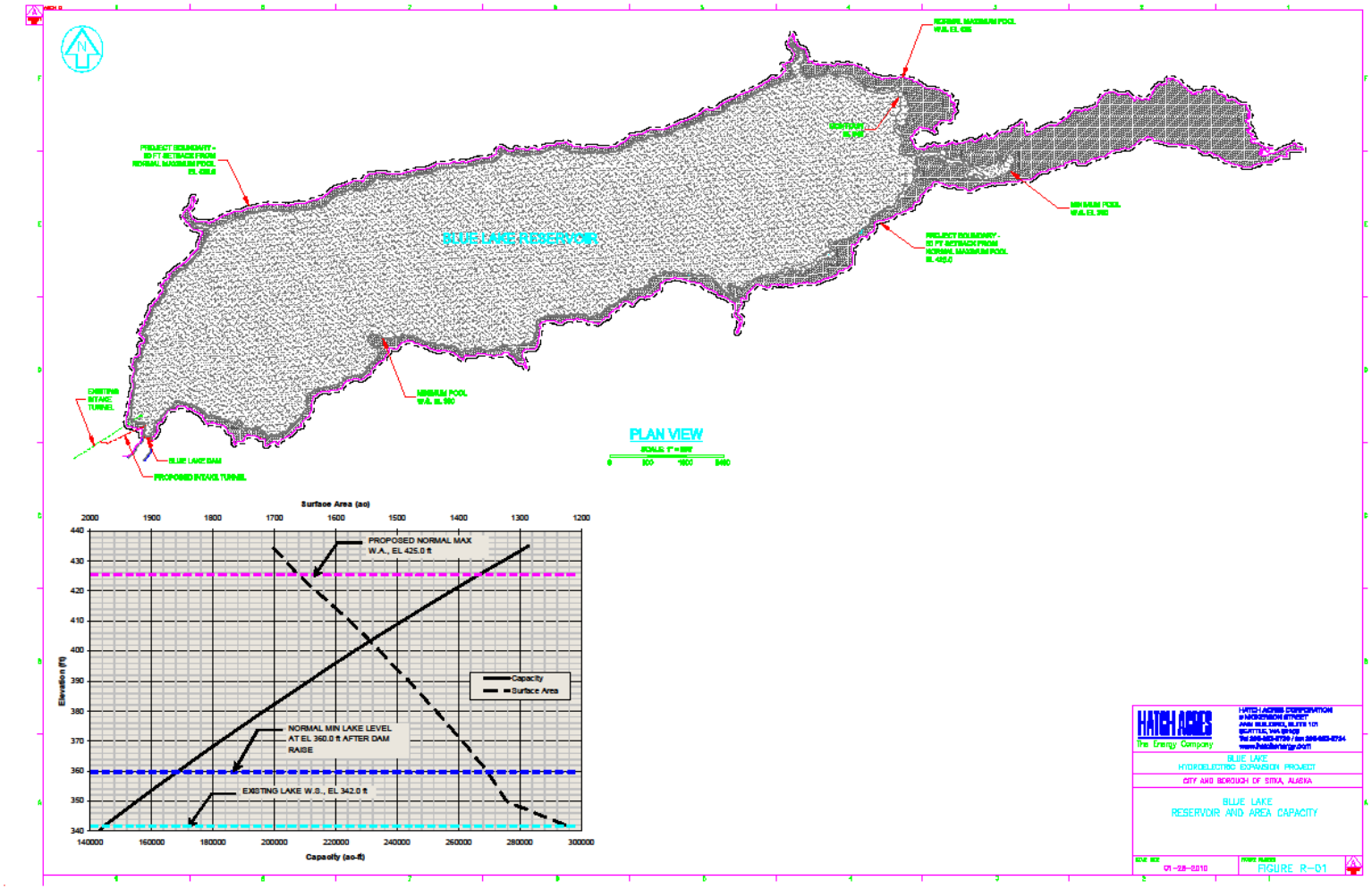
The nominal sales price to the rate payer is approximately $0.09/kWh and the incremental cost of the project expansion power is $0.22/kWh, as noted above. The aggregate cost to the rate payer will be about $0.12/kWh. The actual cost will likely be less than this because the bonds for the Green Lake Project will be retired at about the same time the Project expansion goes on line.

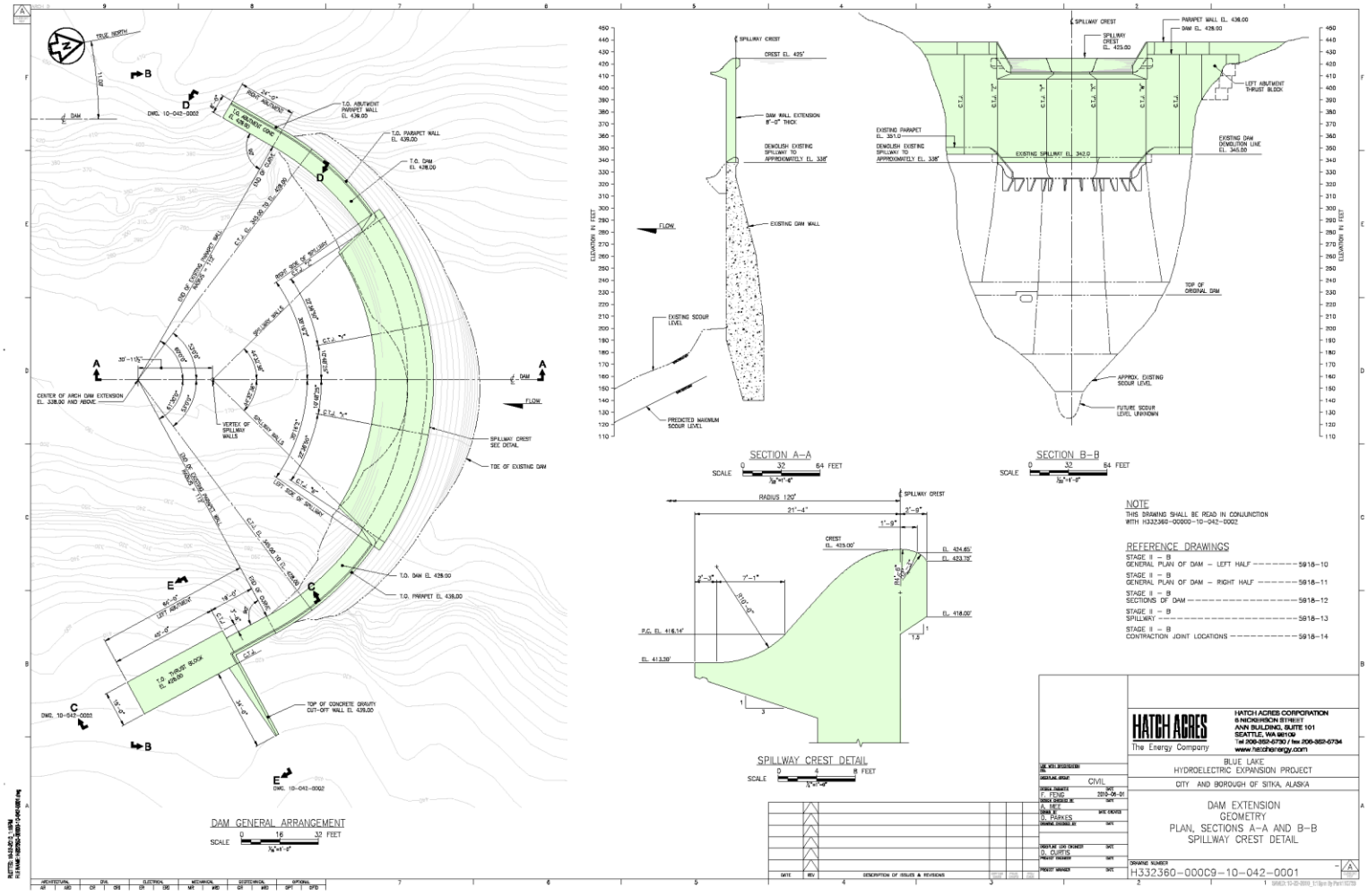
Table D-2. Present-Worth Analysis of the Project Development

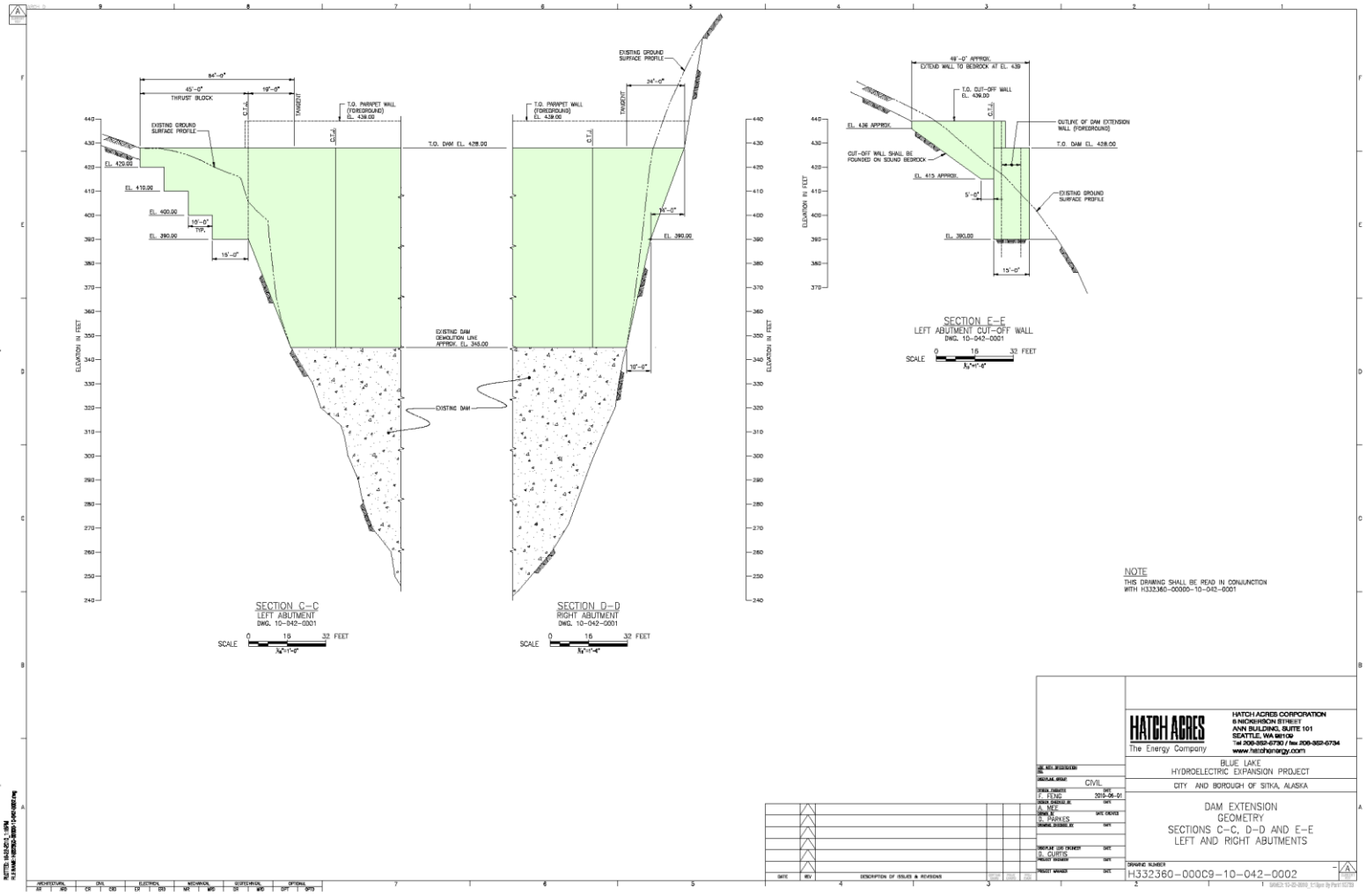
Year	Load (MWh)	BLU (MWh)	Add'l BLU (MWh)	Diesel Fuel Cost ($000)1	Debt Service ($000)	Net Cash Flow ($000)
2014	140,567	136,300	12,300	$4,305	$7,072	-$2,767
2015	143,392	143,392	19,392	$6,957	$7,072	-$115
2016	145,392	145,392	21,392	$7,866	$7,072	$794
2017	146,951	146,951	22,951	$8,651	$7,072	$1,579
2018	148,254	148,254	24,254	$9,370	$7,072	$2,298
2019	150,070	150,070	26,070	$10,324	$7,072	$3,252
2020	151,492	151,492	27,492	$11,159	$7,072	$4,087
2021	153,019	153,019	29,019	$12,073	$7,072	$5,001
2022	154,560	154,560	30,560	$13,032	$7,072	$5,960
2023	155,987	155,987	31,987	$13,982	$7,072	$6,910
2024	157,509	156,000	32,000	$14,337	$7,072	$7,265
2025	158,902	156,000	32,000	$14,695	$7,072	$7,623
2026	160,450	156,000	32,000	$15,063	$7,072	$7,991
2027	161,872	156,000	32,000	$15,439	$7,072	$8,367
2028	163,433	156,000	32,000	$15,825	$7,072	$8,753
2029	164,864	156,000	32,000	$16,221	$7,072	$9,149
2030		156,000	32,000	$16,626	$7,072	$9,554
2031		156,000	32,000	$17,042	$7,072	$9,970
2032		156,000	32,000	$17,468	$7,072	$10,396
2033		156,000	32,000	$17,905	$7,072	$10,833
2034		156,000	32,000	$18,353	$7,072	$11,281
2035		156,000	32,000	$18,811	$7,072	$11,739
2036		156,000	32,000	$19,282	$7,072	$12,210
2037		156,000	32,000	$19,764	$7,072	$12,692
2038		156,000	32,000	$20,258	$7,072	$13,186
2039		156,000	32,000	$20,764	$7,072	$13,692
2040		156,000	32,000	$21,283	$7,072	$14,211
2041		156,000	32,000	$21,815	$7,072	$14,743
2042		156,000	32,000	$22,361	$7,072	$15,289
2043		156,000	32,000	$22,920	$7,072	$15,848
		Net Present Value2		$139,759	$79,615	$60,143

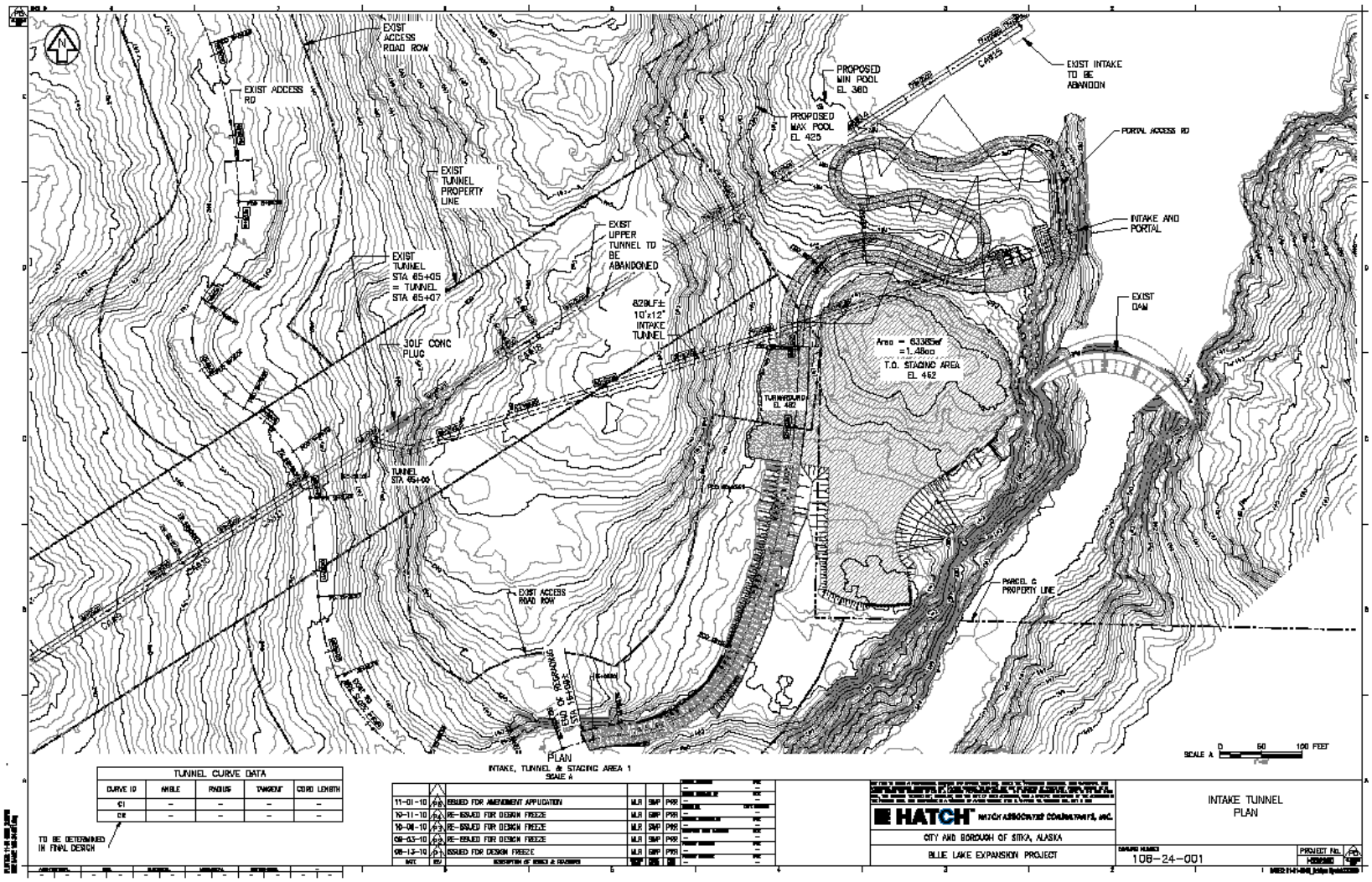
The cost of diesel fuel was assumed to be 35 cents/kWh in the first year of operation and escalates annually at 2.5% thereafter.
Discount rate was assumed to be 8% annually.

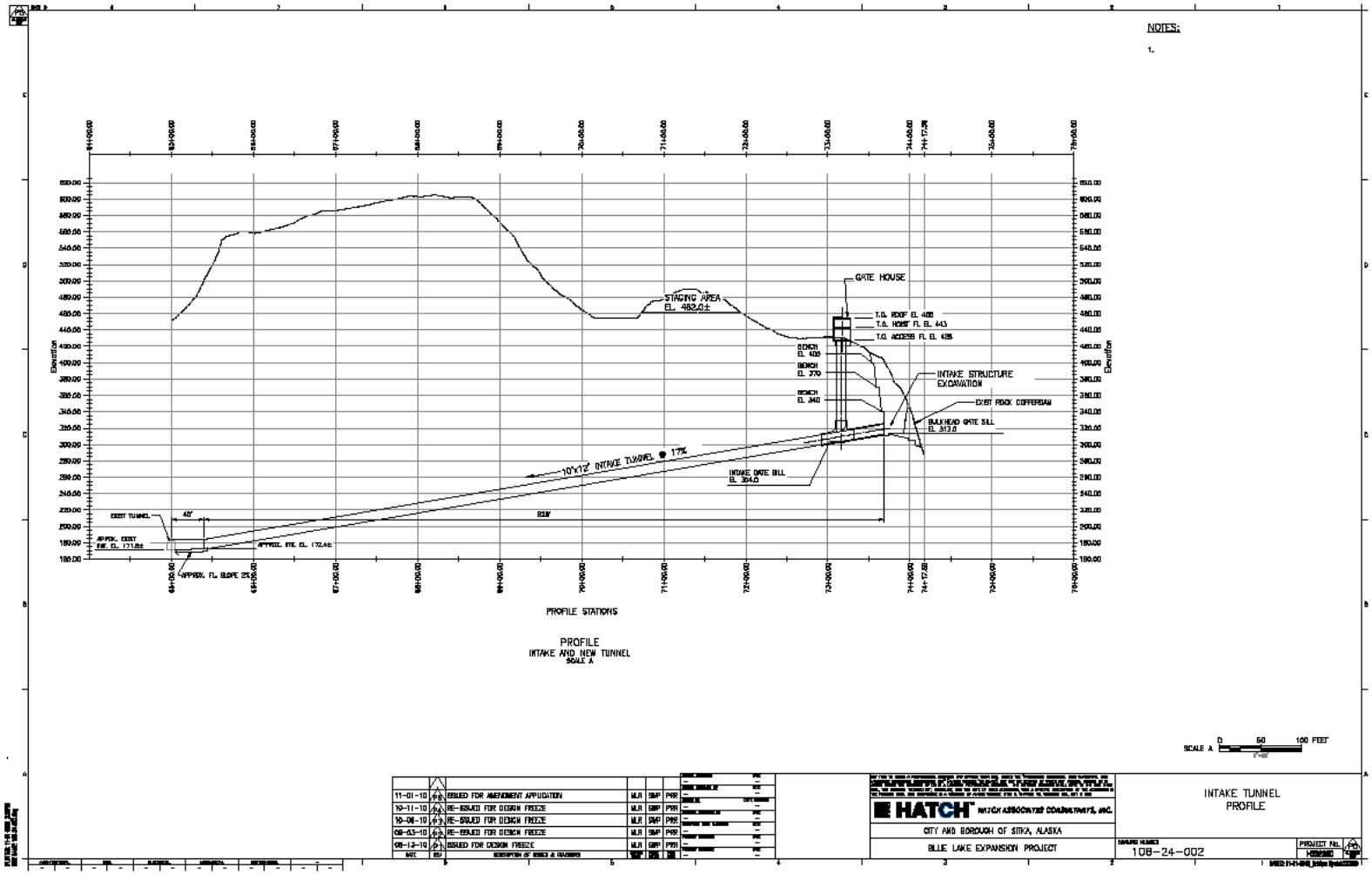
EXHIBIT F – PRELIMINARY DESIGN DRAWINGS

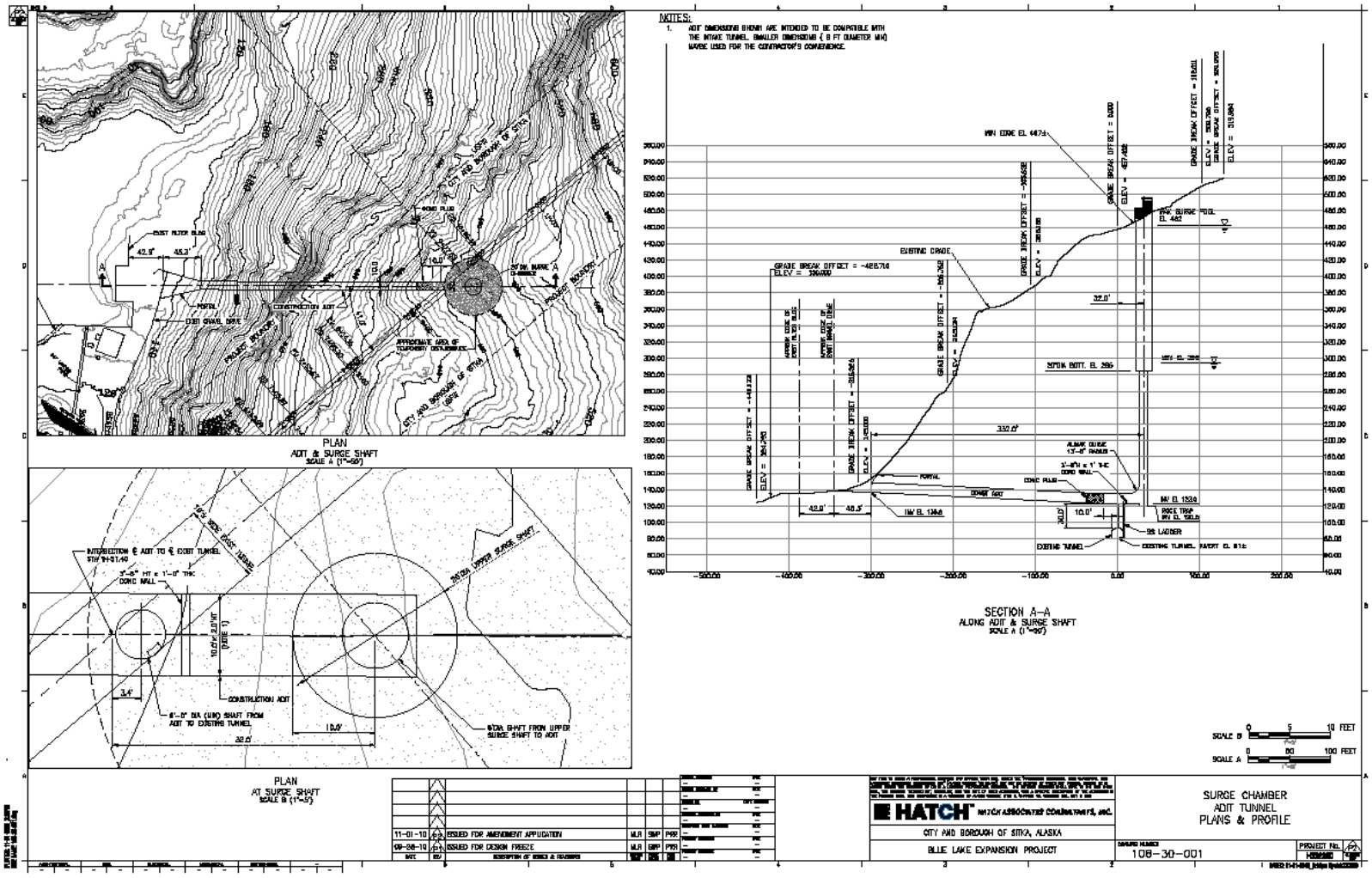

BLUE LAKE RESERVOIR
PLAN VIEW
BLUE LAKE DAM
PROPOSED INTAKE TUNNEL
MINIMUM POOL
W.S. EL 360
Surface Area (ac)
2000
1900
1800
1700
1600
1500
1400
1300
1200
440
430
420
410
400
390
380
370
360
350
340
Elevation (ft)
PROPOSED NORMAL MAX
W.S., EL 425.0 ft
Capacity
Surface Area
NORMAL MIN LAKE LEVEL
AT EL 360.0 ft AFTER DAM
RAISE
EXISTING LAKE W.S., EL 342.0 ft
140000
160000
180000
200000
220000
240000
260000
280000
300000
Capacity (ac-ft)
HATCH ACRES
The Energy Company
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
BLUE LAKE
RESERVOIR AND AREA CAPACITY
01-28-2010
FIGURE R-01

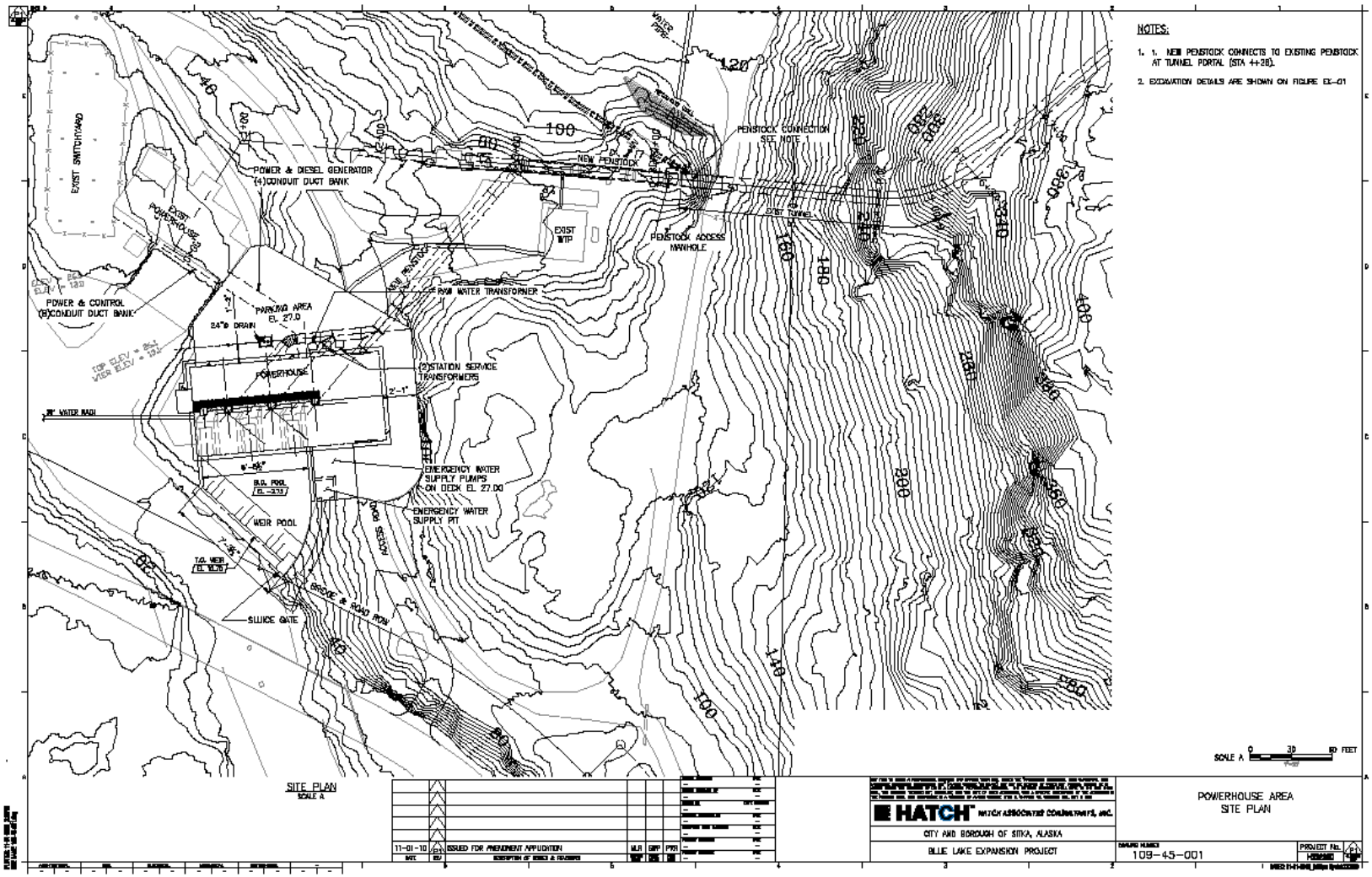

DAM GENERAL ARRANGEMENT
SCALE 0 16 32 FEET
SECTION A–A
SCALE 0 32 64 FEET
SECTION B–B
SCALE 0 32 64 FEET
SPILLWAY CREST DETAIL
SCALE 0 4 8 FEET
NOTE
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH H332360-00000-10-042-0002
REFERENCE DRAWINGS
STAGE II – B GENERAL PLAN OF DAM – LEFT HALF ---------- 5918-10
STAGE II – B GENERAL PLAN OF DAM – RIGHT HALF ---------- 5918-11
STAGE II – B SECTIONS OF DAM ---------- 5918-12
STAGE II – B SPILLWAY ---------- 5918-13
STAGE II – B CONTRACTION JOINT LOCATIONS ---------- 5918-14
HATCH ACRES
The Energy Company
HATCH ACRES CORPORATION
5 NICKERSON STREET
ANN BUILDING, SUITE 101
SEATTLE, WA 98109
Tel 206-352-6730 / fax 206-352-6734
www.hatchenergy.com
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
DAM EXTENSION
GEOMETRY
PLAN, SECTIONS A–A AND B–B
SPILLWAY CREST DETAIL
DRAWING NUMBER
H332360-00009-10-042-0001
CIVIL
F. FENG 2012-06-01
A. HAY
G. PARKES
Q. CURTIS

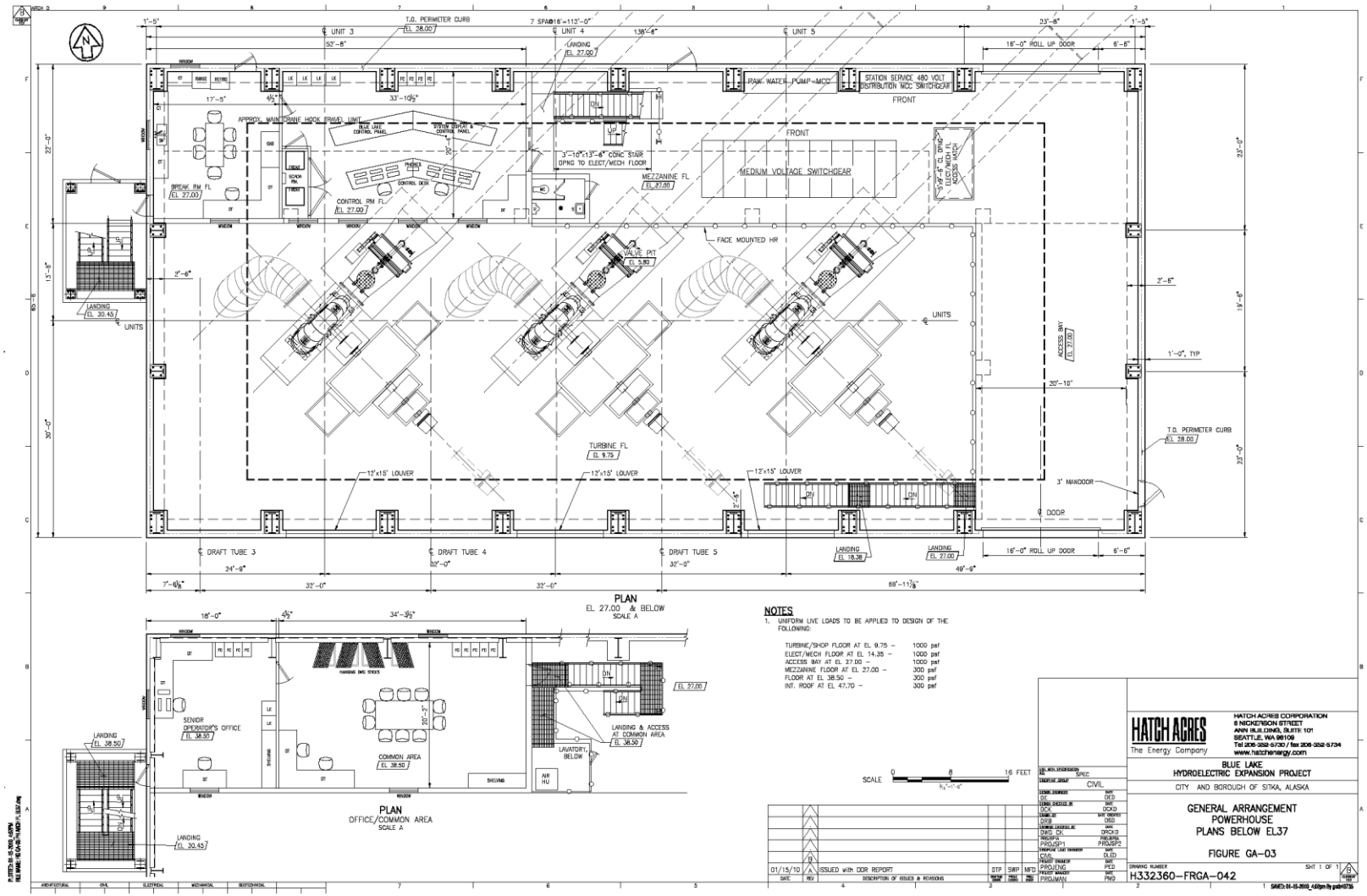

EXISTING GROUND SURFACE PROFILE
T.O. PARAPET WALL (TOERGROUND) EL. 438.00
T.O. DAM EL. 428.00
EXISTING DAM DEMOLITION LINE APPROX. EL. 348.00
EXISTING DAM
EL. 410.00
EL. 400.00
EL. 390.00
ELEVATION IN FEET
SECTION C–C
LEFT ABUTMENT
DWG. 10-042-0001
SECTION D–D
RIGHT ABUTMENT
DWG. 10-042-0001
SCALE 0 16 32 FEET
SECTION E–E
LEFT ABUTMENT CUT-OFF WALL
DWG. 10-042-0001
T.O. CUT-OFF WALL EL. 439.00
OUTLINE OF DAM EXTENSION WALL (TOERGROUND)
EL. 436 APPROX.
CUT-OFF WALL SHALL BE FOUNDED ON SOUND BEDROCK
EL. 413 APPROX.
NOTE
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH H332360-00000-10-042-0001
HATCH ACRES
The Energy Company
HATCH ACRES CORPORATION
6 NICKERSON STREET
ANN BUILDING, SUITE 101
SEATTLE, WA 98109
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
DAM EXTENSION
GEOMETRY
SECTIONS C–C, D–D AND E–E
LEFT AND RIGHT ABUTMENTS
DRAWING NUMBER
H332360-00009-10-042-0002


EXIST ACCESS ROAD ROW
EXIST ACCESS RD
EXIST TUNNEL PROPERTY LINE
EXIST TUNNEL STA 65+05 = TUNNEL STA 65+07
EXIST UPPER TUNNEL TO BE ABANDONED
828LF± 10'x12' INTAKE TUNNEL
30LF CONC PLUG
TUNNEL STA 65+00
PROPOSED MIN POOL EL 380
PROPOSED MAX POOL EL 425
EXIST INTAKE TO BE ABANDOON
PORTAL ACCESS RD
INTAKE AND PORTAL
EXIST DAM
Area = 63385sf = 1.48ac
T.O. STAGING AREA EL 462
TURNAROUND EL 462
EXIST ACCESS ROAD ROW
PARCEL C PROPERTY LINE
EXISTING SO GUEST HOUSE
PLAN
INTAKE, TUNNEL & STAGING AREA 1
SCALE A
SCALE A 0 50 100 FEET
TUNNEL CURVE DATA
CURVE ID | ANGLE | RADIUS | TANGENT | CORD LENGTH
C1 | – | – | – | –
C2 | – | – | – | –
TO BE DETERMINED IN FINAL DESIGN
11-01-10 P6 ISSUED FOR AMENDMENT APPLICATION MJR SMP PRR
10-11-10 P5 RE-ISSUED FOR DESIGN FREEZE MJR SMP PRR
10-04-10 P4 RE-ISSUED FOR DESIGN FREEZE MJR SMP PRR
09-03-10 P3 RE-ISSUED FOR DESIGN FREEZE MJR SMP PRR
08-13-10 P1 ISSUED FOR DESIGN FREEZE MJR SMP PRR
DATE REV DESCRIPTION OF ISSUES & REVISIONS
HATCH
CITY AND BOROUGH OF SITKA, ALASKA
BLUE LAKE EXPANSION PROJECT
INTAKE TUNNEL PLAN
DRAWING NUMBER 108-24-001
PROJECT NO. H351340


NOTES:
1.
GATE HOUSE
STAGING AREA
EL. 482.0±
T.O. ROOF EL. 466
T.O. HOIST FL EL. 443
T.O. ACCESS FL EL. 435
BENCH
EL. 400
BENCH
EL. 370
BENCH
EL. 340
INTAKE STRUCTURE
EXCAVATION
EXIST ROCK COFFERDAM
BULKHEAD GATE SILL
EL. 313.0
10'X12' INTAKE TUNNEL @ 17%
INTAKE GATE SILL
EL. 304.0
EXIST TUNNEL
40'
APPROX. EXIST
INV. EL. 171.8±
APPROX. INV. EL. 172.4±
APPROX. FL SLOPE 2%
Elevation
PROFILE STATIONS
PROFILE
INTAKE AND NEW TUNNEL
SCALE A
SCALE A
0
50
100 FEET
11-01-10 ISSUED FOR AMENDMENT APPLICATION
10-11-10 RE-ISSUED FOR DESIGN FREEZE
10-06-10 RE-ISSUED FOR DESIGN FREEZE
09-03-10 RE-ISSUED FOR DESIGN FREEZE
08-13-10 ISSUED FOR DESIGN FREEZE
HATCH
CITY AND BOROUGH OF SITKA, ALASKA
BLUE LAKE EXPANSION PROJECT
INTAKE TUNNEL
PROFILE
108-24-002


NOTES:
1. ADIT DIMENSIONS SHOWN ARE INTENDED TO BE COMPATIBLE WITH THE INTAKE TUNNEL. SMALLER DIMENSIONS (8 FT DIAMETER MIN) MAYBE USED FOR THE CONTRACTOR'S CONVENIENCE.
PLAN
ADIT & SURGE SHAFT
SCALE A (1"=50')
SECTION A-A
ALONG ADIT & SURGE SHAFT
SCALE A (1"=50')
PLAN
AT SURGE SHAFT
SCALE B (1"=5')
SURGE CHAMBER
ADIT TUNNEL
PLANS & PROFILE
HATCH
CITY AND BOROUGH OF SITKA, ALASKA
BLUE LAKE EXPANSION PROJECT
108-30-001
11-01-10 ISSUED FOR AMENDMENT APPLICATION
09-08-10 ISSUED FOR DESIGN FREEZE


NOTES:
1. 1. NEW PENSTOCK CONNECTS TO EXISTING PENSTOCK AT TUNNEL PORTAL (STA 4+28).
2. EXCAVATION DETAILS ARE SHOWN ON FIGURE EX-01
EXIST SWITCHYARD
POWER & DIESEL GENERATOR (4)CONDUIT DUCT BANK
EXIST POWERHOUSE
NEW PENSTOCK
PENSTOCK CONNECTION SEE NOTE 1
EXIST TUNNEL
EXIST WTP
PENSTOCK ACCESS MANHOLE
POWER & CONTROL (8)CONDUIT DUCT BANK
PARKING AREA EL. 27.0
24"ø DRAIN
RAW WATER TRANSFORMER
(2)STATION SERVICE TRANSFORMERS
POWERHOUSE
36" WATER MAIN
EMERGENCY WATER SUPPLY PUMPS ON DECK EL. 27.00
EMERGENCY WATER SUPPLY PIT
B.O. POOL EL. 4.19
WEIR POOL
T.O. WEIR EL. 10.75
SLUICE GATE
BRIDGE & ROAD ROW
SCALE A
0 30 60 FEET
SITE PLAN
SCALE A
11-01-10 ISSUED FOR AMENDMENT APPLICATION
HATCH
CITY AND BOROUGH OF SITKA, ALASKA
BLUE LAKE EXPANSION PROJECT
POWERHOUSE AREA SITE PLAN
109-45-001


PLAN
EL 27.00 & BELOW
SCALE A
PLAN
OFFICE/COMMON AREA
SCALE A
NOTES
1. UNIFORM LIVE LOADS TO BE APPLIED TO DESIGN OF THE FOLLOWING:
TURBINE/SHOP FLOOR AT EL 9.75 – 1000 psf
ELECT/MECH FLOOR AT EL 14.35 – 1000 psf
ACCESS BAY AT EL 27.00 – 1000 psf
MEZZANINE FLOOR AT EL 27.00 – 300 psf
FLOOR AT EL 38.50 – 300 psf
INT. ROOF AT EL 47.70 – 300 psf
SCALE 0 8 16 FEET
HATCH ACRES
The Energy Company
HATCH ACRES CORPORATION
6 NICKERSON STREET
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SEATTLE, WA 98109
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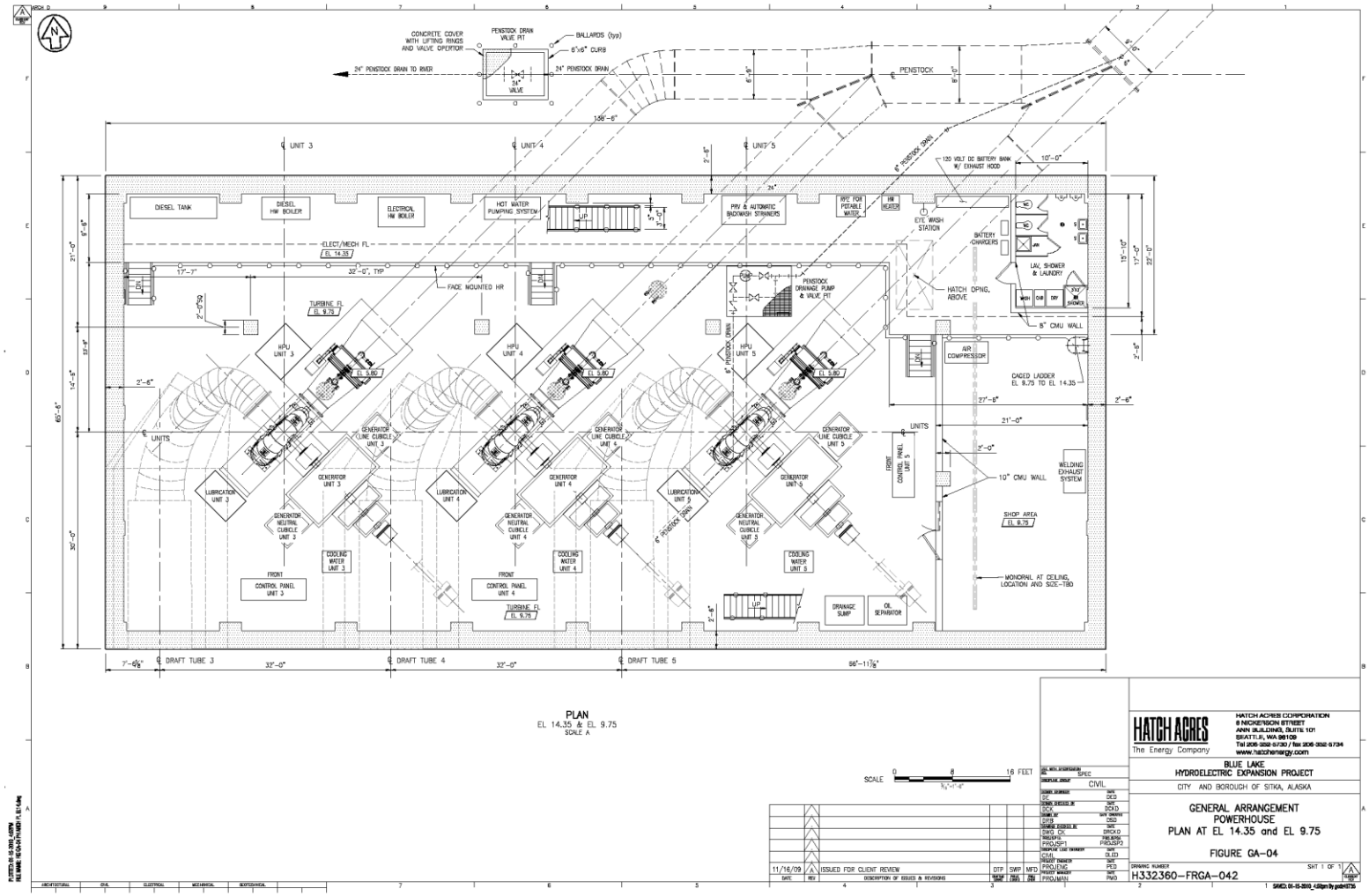
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
GENERAL ARRANGEMENT
POWERHOUSE
PLANS BELOW EL37
FIGURE GA–03
DRAWING NUMBER
H332360–FRGA–042
SHT 1 OF 1
01/15/10 A ISSUED with DDR REPORT DTP SWP MFD


PLAN
EL 14.35 & EL 9.75
SCALE A
HATCH ACRES
The Energy Company
HATCH ACRES CORPORATION
9 NICHETSON STREET
ANN BUILDING, SUITE 101
SEATTLE, WA 98109
Tel 206-352-5730 / fax 206-352-5734
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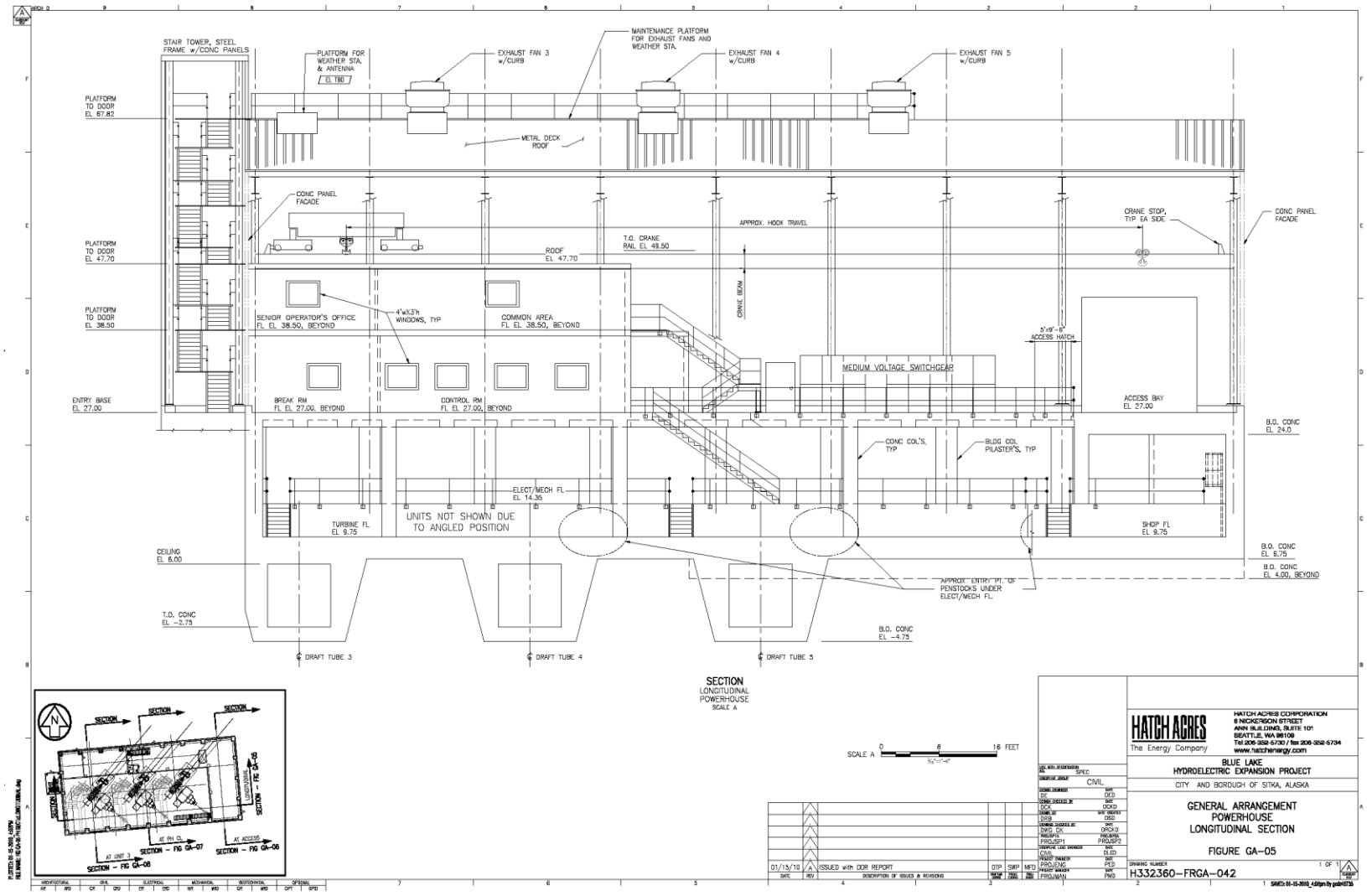
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
GENERAL ARRANGEMENT
POWERHOUSE
PLAN AT EL 14.35 and EL 9.75
FIGURE GA-04
H332360-FRGA-042
11/16/09
ISSUED FOR CLIENT REVIEW


STAIR TOWER, STEEL FRAME w/CONC PANELS
PLATFORM FOR WEATHER STA. & ANTENNA
EL TBD
EXHAUST FAN 3 w/CURB
MAINTENANCE PLATFORM FOR EXHAUST FANS AND WEATHER STA.
EXHAUST FAN 4 w/CURB
EXHAUST FAN 5 w/CURB
PLATFORM TO DOOR EL 67.82
METAL DECK ROOF
CONC PANEL FACADE
APPROX. HOOK TRAVEL
CRANE STOP, TYP EA SIDE
CONC PANEL FACADE
PLATFORM TO DOOR EL 47.70
ROOF EL 47.70
T.O. CRANE RAIL EL 49.50
CRANE BEAM
PLATFORM TO DOOR EL 38.50
SENIOR OPERATOR'S OFFICE FL EL 38.50, BEYOND
4'wX3'h WINDOWS, TYP
COMMON AREA FL EL 38.50, BEYOND
5'x9'-0" ACCESS HATCH
MEDIUM VOLTAGE SWITCHGEAR
ENTRY BASE EL 27.00
BREAK RM FL EL 27.00, BEYOND
CONTROL RM FL EL 27.00, BEYOND
ACCESS BAY EL 27.00
B.O. CONC EL 24.0
CONC COL'S, TYP
BLDG COL PILASTER'S, TYP
ELECT/MECH FL EL 14.35
TURBINE FL EL 9.75
UNITS NOT SHOWN DUE TO ANGLED POSITION
SHOP FL EL 9.75
CEILING EL 6.00
B.O. CONC EL 6.75
B.O. CONC EL 4.00, BEYOND
APPROX. ENTRY PT. OF PENSTOCKS UNDER ELECT/MECH FL.
T.O. CONC EL -2.75
B.O. CONC EL -4.75
℄ DRAFT TUBE 3
℄ DRAFT TUBE 4
℄ DRAFT TUBE 5
SECTION
LONGITUDINAL POWERHOUSE
SCALE A
SCALE A 0 8 16 FEET
SECTION – FIG GA-06
SECTION – FIG GA-07
SECTION – FIG GA-08
HATCH ACRES The Energy Company
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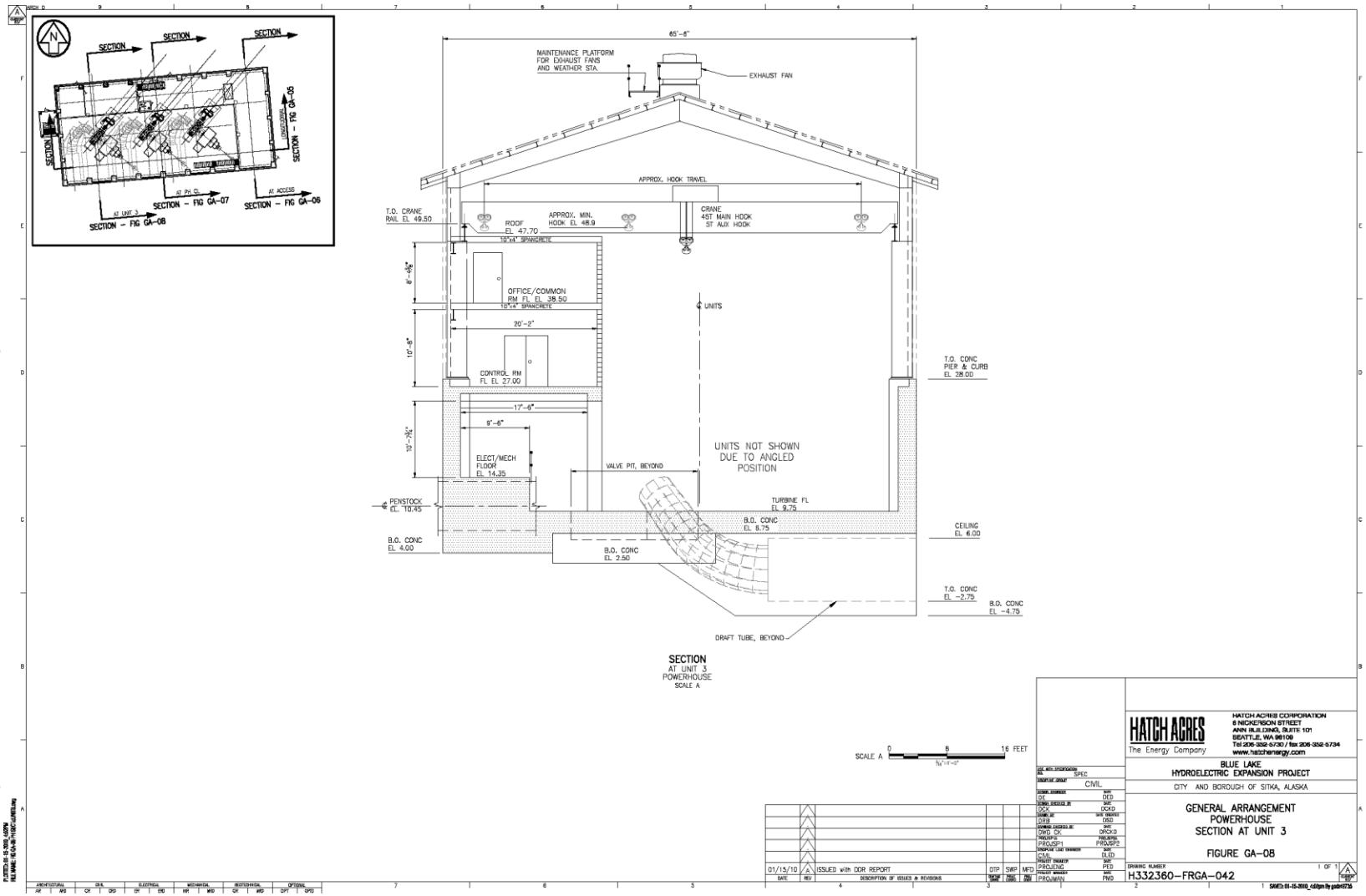
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
GENERAL ARRANGEMENT
POWERHOUSE
LONGITUDINAL SECTION
FIGURE GA-05
DRAWING NUMBER
H332360-FRGA-042
01/15/10 A ISSUED with DDR REPORT


SECTION
SECTION
SECTION
SECTION – FIG GA-05
SECTION – FIG GA-06
SECTION – FIG GA-07
SECTION – FIG GA-08
65'-6"
MAINTENANCE PLATFORM FOR EXHAUST FANS AND WEATHER STA.
EXHAUST FAN
APPROX. HOOK TRAVEL
T.O. CRANE RAIL EL 49.50
APPROX. MIN. HOOK EL 48.9
CRANE 45T MAIN HOOK 5T AUX HOOK
ROOF EL 47.70
12"x4" SPANCRETE
OFFICE/COMMON RM FL EL 38.50
12"x4" SPANCRETE
20'-2"
CONTROL RM FL EL 27.00
17'-6"
9'-6"
ELECT/MECH FLOOR EL 14.35
PENSTOCK EL. 10.45
B.O. CONC EL 4.00
VALVE PIT, BEYOND
UNITS NOT SHOWN DUE TO ANGLED POSITION
TURBINE FL EL 9.75
B.O. CONC EL 8.75
B.O. CONC EL 2.50
T.O. CONC PIER & CURB EL 38.00
CEILING EL 6.00
T.O. CONC EL –2.75
B.O. CONC EL –4.75
DRAFT TUBE, BEYOND
SECTION AT UNIT 3 POWERHOUSE
SCALE A
SCALE A
0
8
16 FEET
HATCH ACRES
The Energy Company
HATCH ACRES CORPORATION
6 NICKERSON STREET
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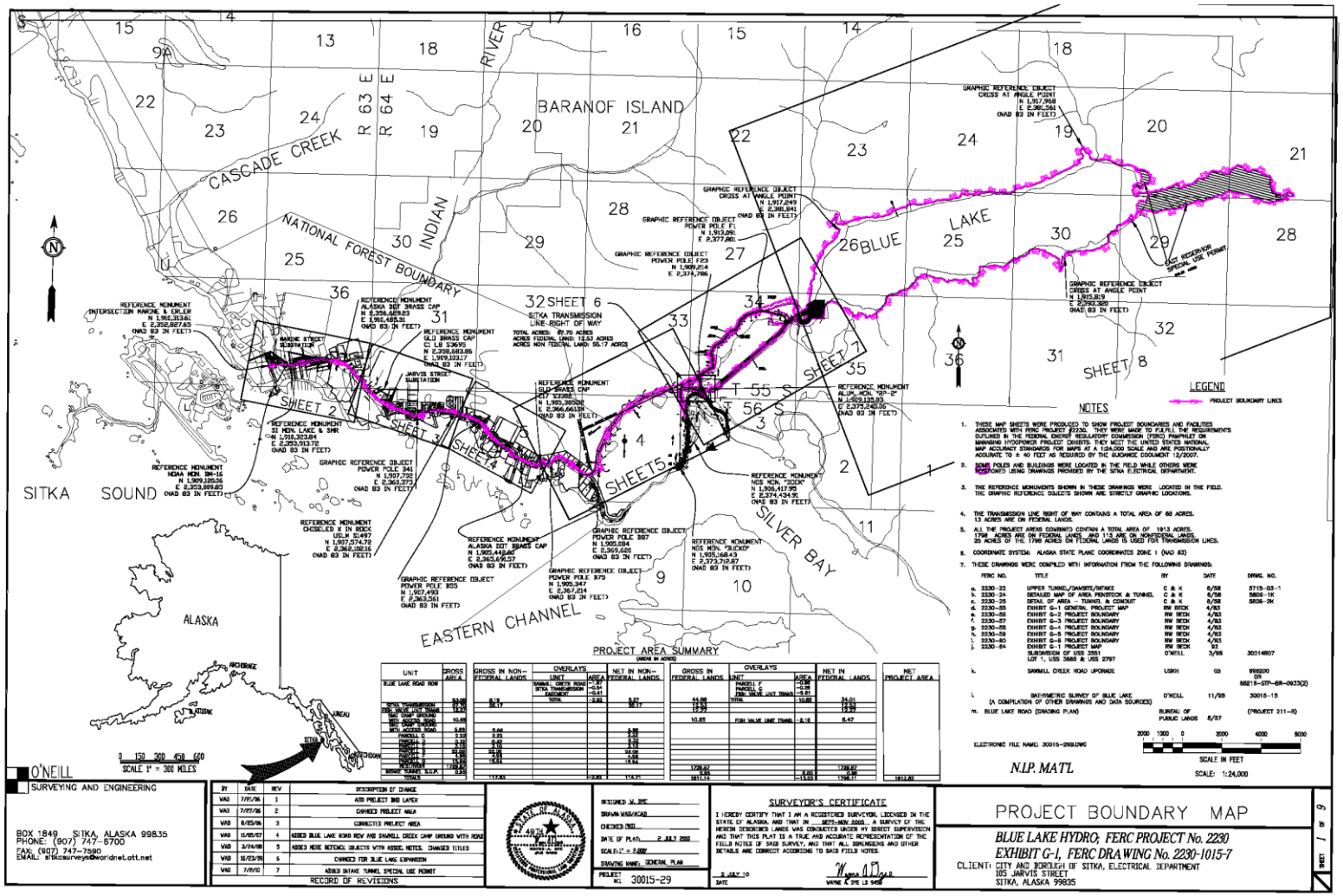
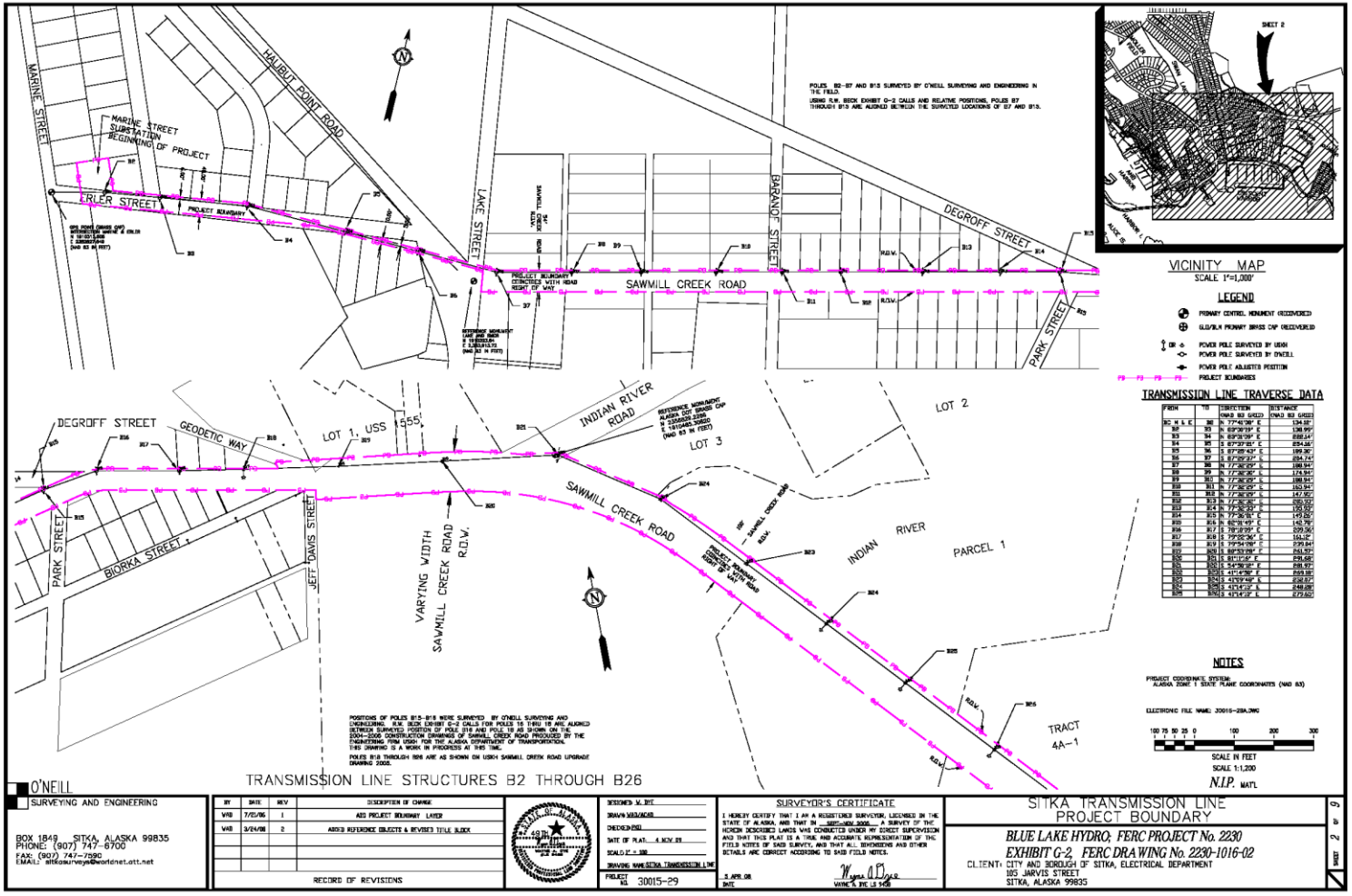
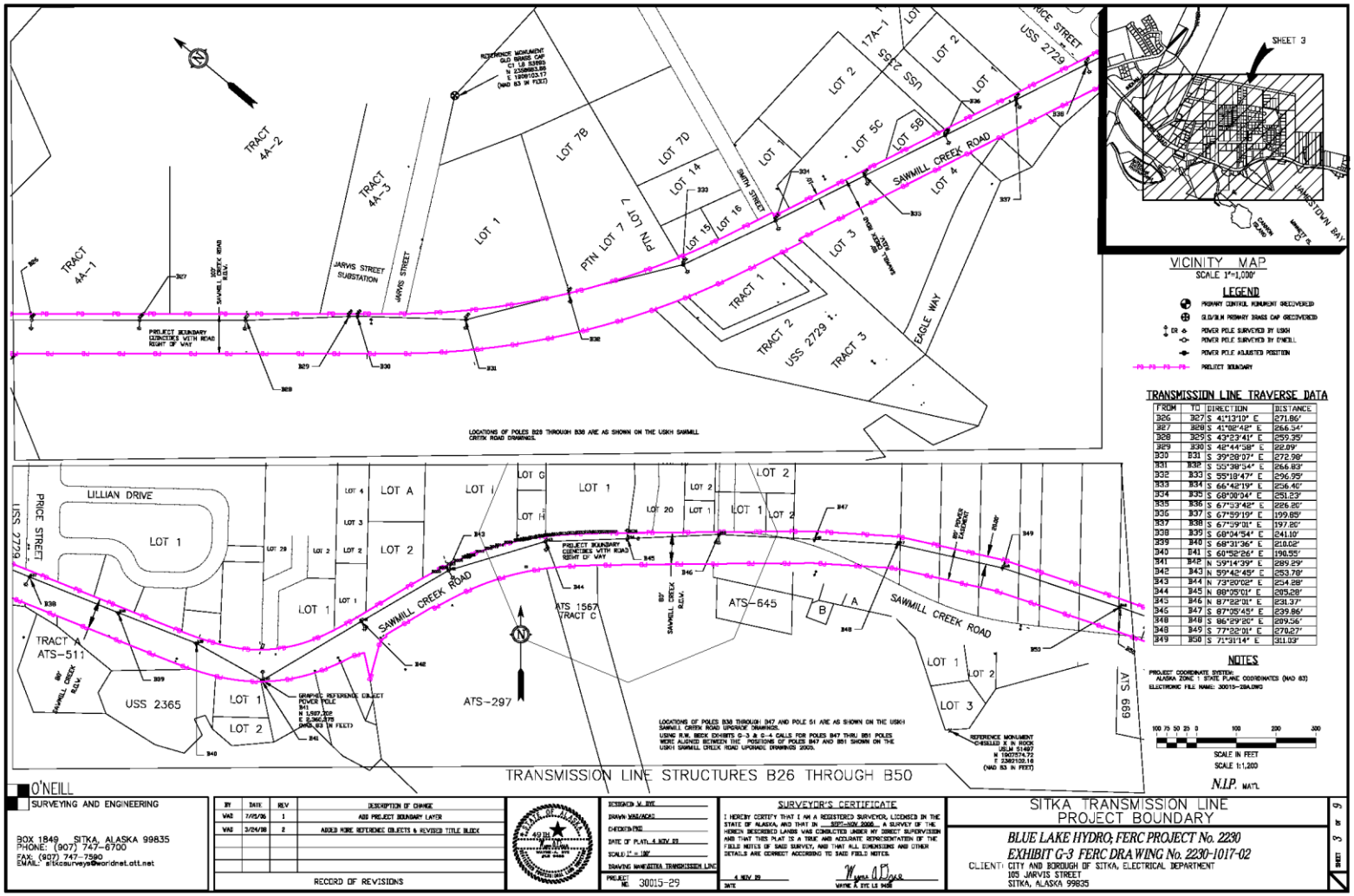
BLUE LAKE
HYDROELECTRIC EXPANSION PROJECT
CITY AND BOROUGH OF SITKA, ALASKA
GENERAL ARRANGEMENT
POWERHOUSE
SECTION AT UNIT 3
FIGURE GA–08
DRAWING NUMBER
H332360–FRGA–042
01/15/10
ISSUED with DDR REPORT

EXHIBIT G – PROJECT LOCATION AND PROJECT BOUNDARY DRAWINGS


BARANOF ISLAND
CASCADE CREEK
INDIAN RIVER
BLUE LAKE
SILVER BAY
SITKA SOUND
EASTERN CHANNEL
ALASKA
NATIONAL FOREST BOUNDARY
R 63 E
R 64 E
T 55 S
T 56 S
SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7
SHEET 8
LEGEND
PROJECT BOUNDARY LINES
NOTES
PROJECT AREA SUMMARY
PROJECT BOUNDARY MAP
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-1, FERC DRAWING No. 2230-1015-7
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
O'NEILL
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-5700
FAX: (907) 747-7590
EMAIL: sitkasurveys@worldnet.att.net
SURVEYOR'S CERTIFICATE
RECORD OF REVISIONS


MARINE STREET
HAUBUT POINT ROAD
ERLER STREET
LAKE STREET
BARANOF STREET
DEGROFF STREET
SAWMILL CREEK ROAD
PARK STREET
GEODETIC WAY
LOT 1, USS 1555
INDIAN RIVER ROAD
LOT 2
LOT 3
BIORKA STREET
JEFF DAVIS STREET
VARYING WIDTH SAWMILL CREEK ROAD R.O.W.
INDIAN RIVER
PARCEL 1
TRACT 4A-1
VICINITY MAP
SCALE 1"=1,000'
LEGEND
TRANSMISSION LINE TRAVERSE DATA
NOTES
SCALE IN FEET
SCALE 1:1,200
N.I.P.
TRANSMISSION LINE STRUCTURES B2 THROUGH B26
O'NEILL
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7590
RECORD OF REVISIONS
SURVEYOR'S CERTIFICATE
SITKA TRANSMISSION LINE
PROJECT BOUNDARY
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-2, FERC DRAWING No. 2230-1016-02
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835



FROM	TO	DIRECTION	DISTANCE
B26	B27	S 4°13'10" E	271.86'
B27	B28	S 41°08'42" E	266.54'
B28	B29	S 43°23'41" E	259.35'
B29	B30	S 42°44'58" E	22.09'
B30	B31	S 39°28'07" E	272.98'
B31	B32	S 55°38'34" E	266.83'
B32	B33	S 55°18'47" E	296.95'
B33	B34	S 66°42'19" E	256.40'
B34	B35	S 68°08'04" E	251.23'
B35	B36	S 67°53'42" E	226.26'
B36	B37	S 67°59'19" E	199.85'
B37	B38	S 67°59'01" E	197.26'
B38	B39	S 68°04'54" E	241.10'
B39	B40	S 68°31'36" E	210.02'
B40	B41	S 60°52'26" E	190.55'
B41	B42	N 59°14'39" E	289.29'
B42	B43	N 59°42'45" E	253.79'
B43	B44	N 73°20'02" E	254.28'
B44	B45	N 88°25'01" E	285.28'
B45	B46	N 87°22'01" E	231.37'
B46	B47	S 87°35'45" E	239.86'
B48	B48	S 86°29'20" E	209.56'
B48	B49	S 77°22'01" E	270.27'
B49	B50	S 71°31'14" E	311.03'

O'NEILL
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FAX: (907) 747-7590
EMAIL: sitkasurveys@worldnet.att.net

RECORD OF REVISIONS

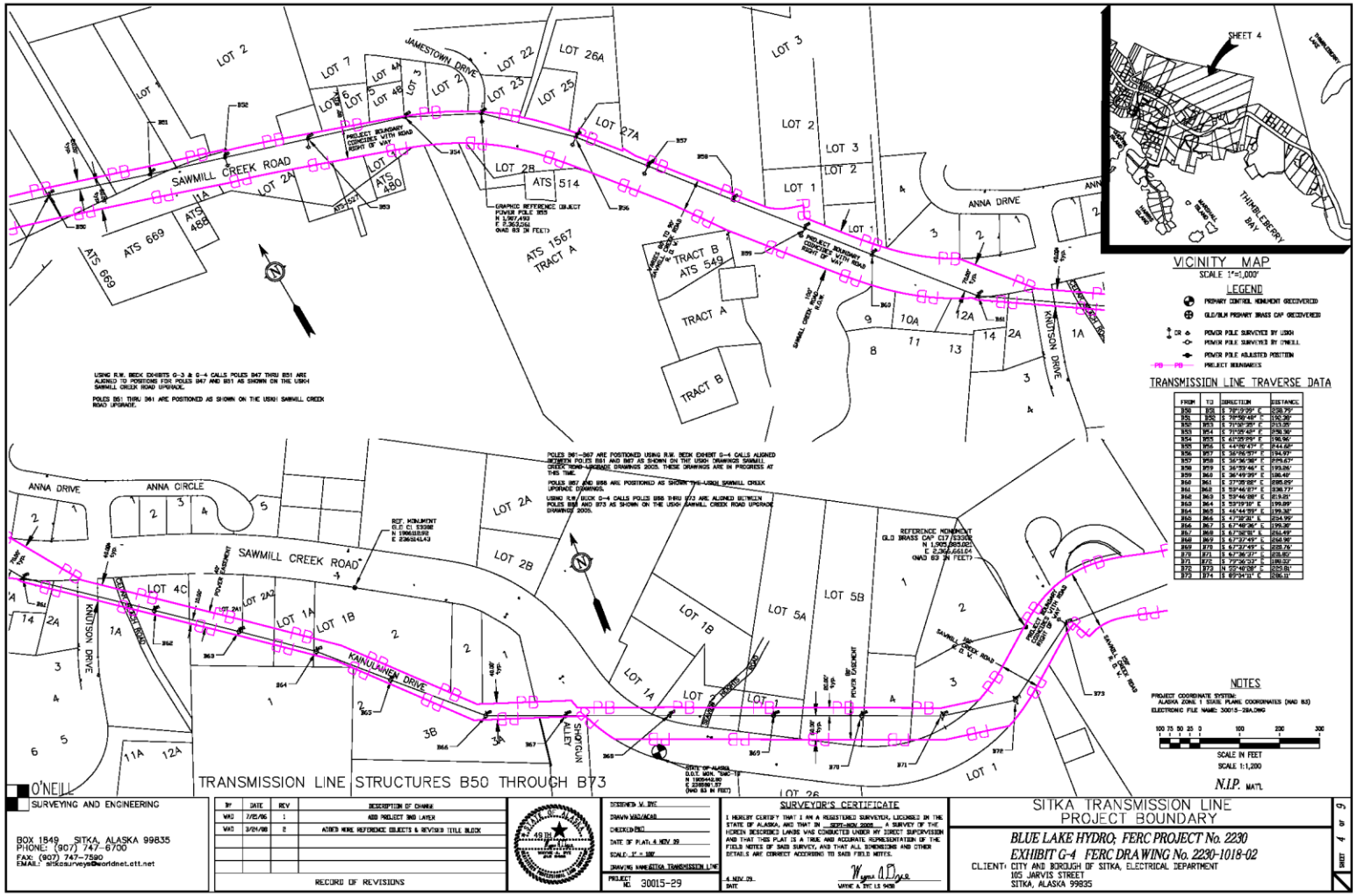
SURVEYOR'S CERTIFICATE

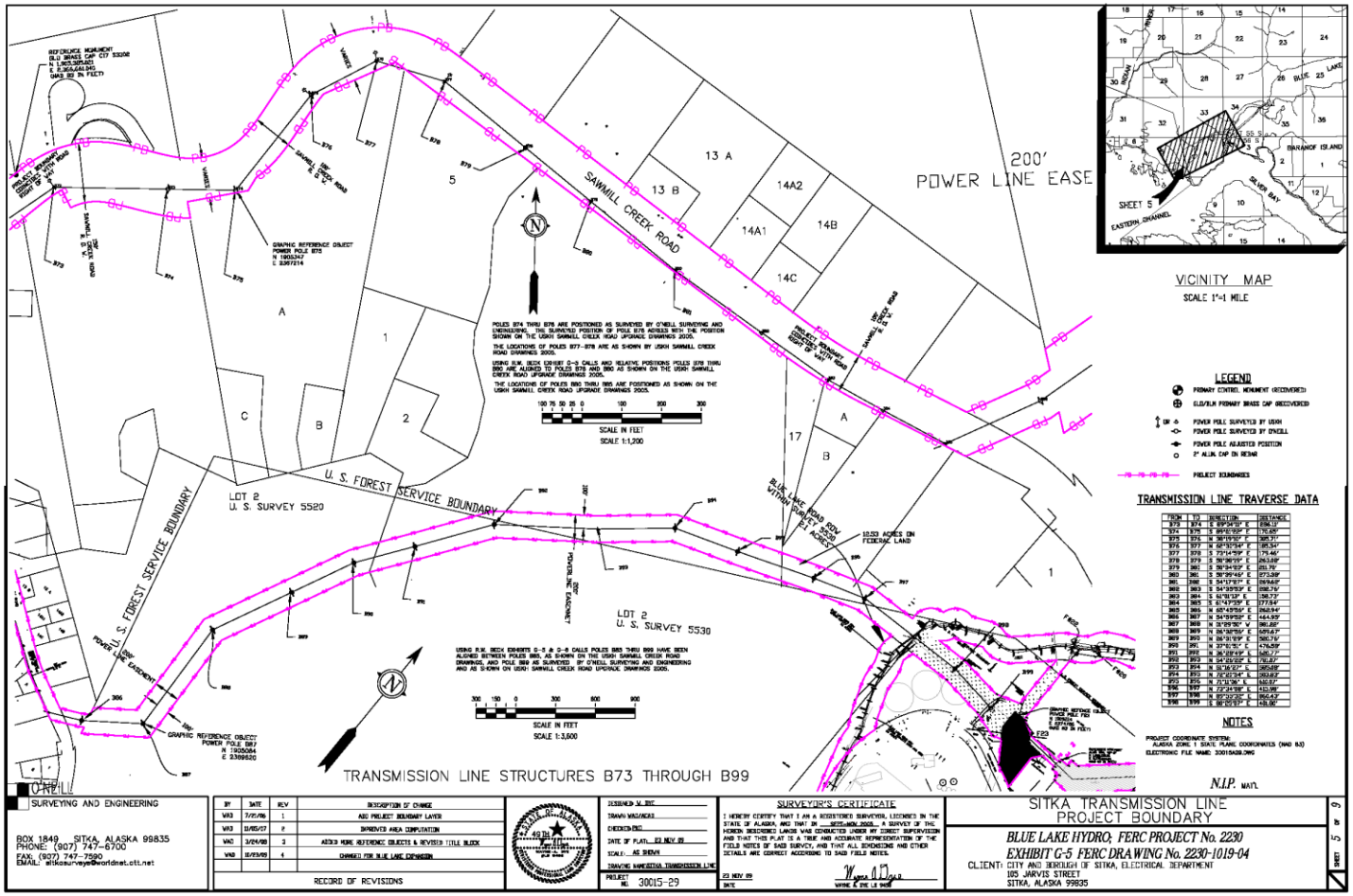
SITKA TRANSMISSION LINE
PROJECT BOUNDARY

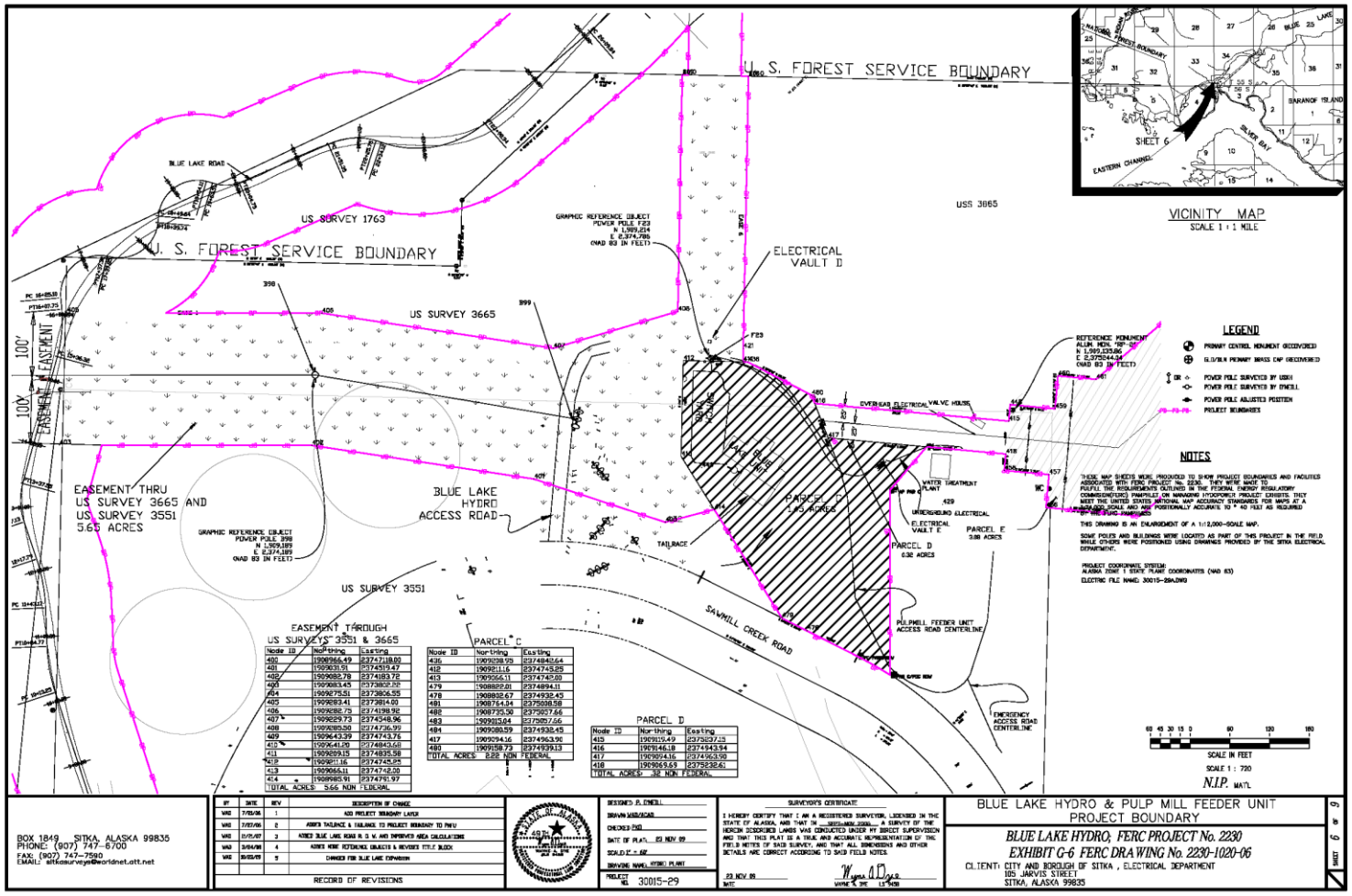
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-3 FERC DRAWING No. 2230-1017-02

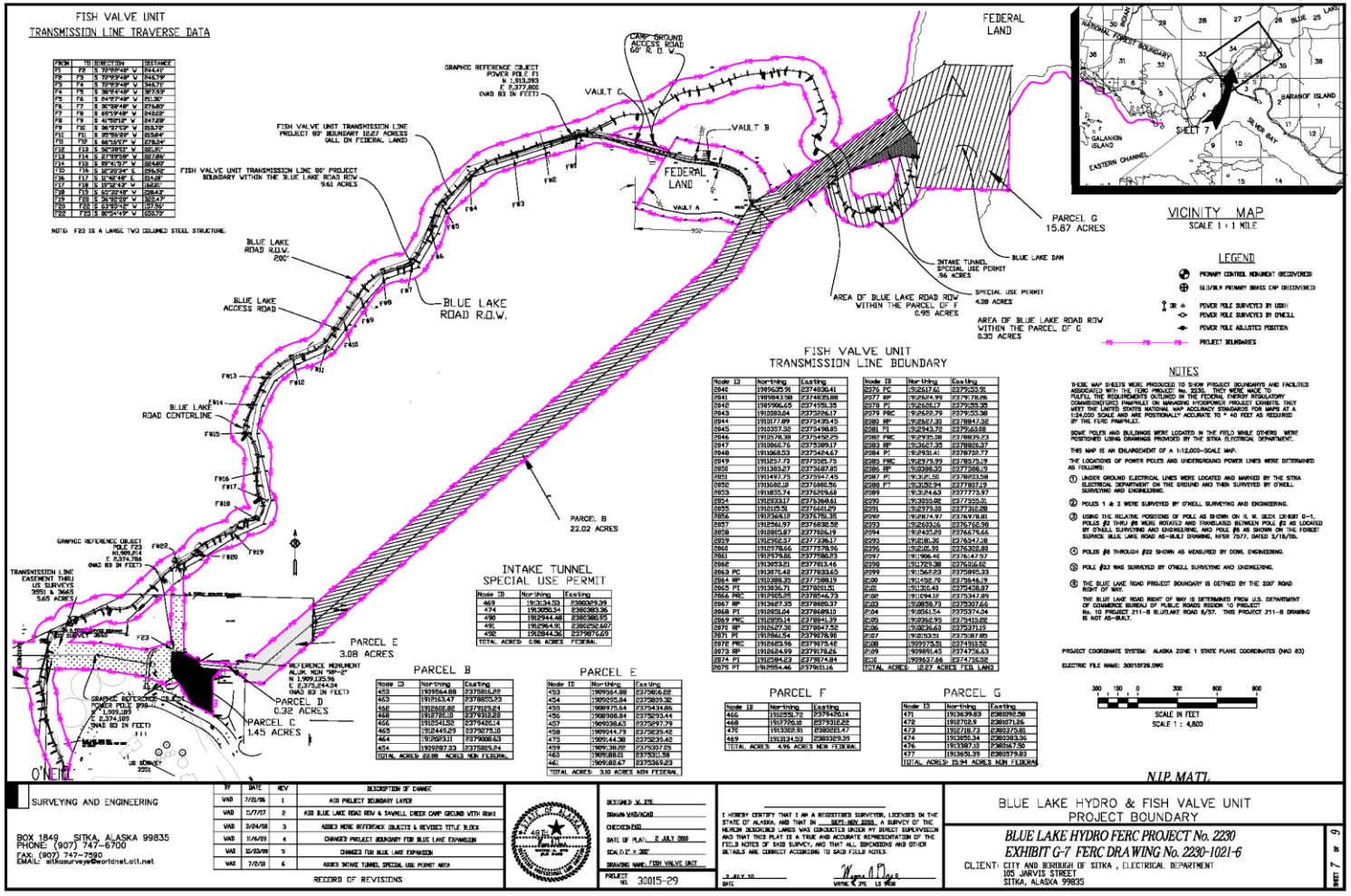
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835

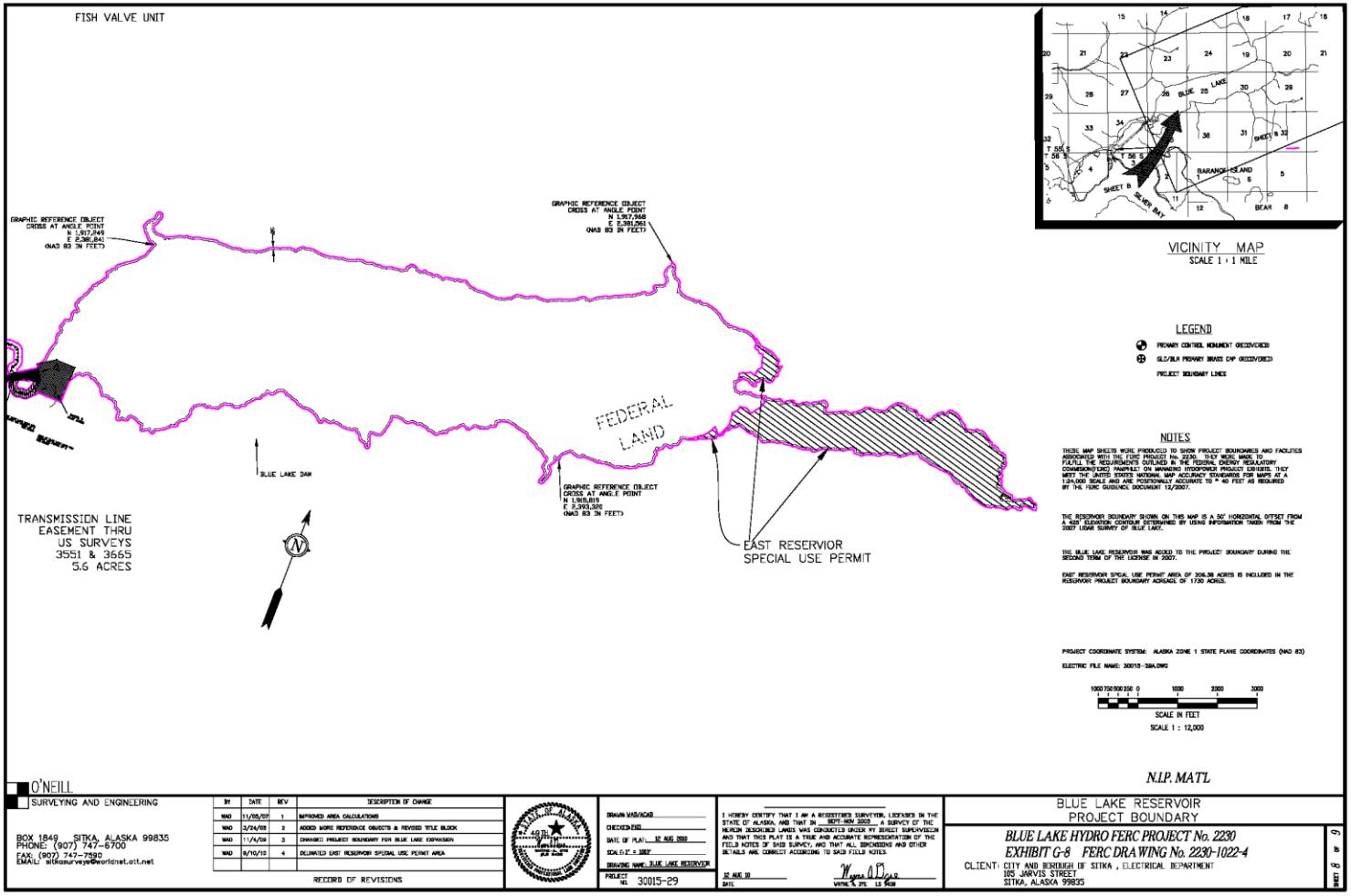
SHEET 3 OF 9


SAWMILL CREEK ROAD
ANNA DRIVE
ANNA CIRCLE
JAMESTOWN DRIVE
KNUTSON DRIVE
KANUTANEN DRIVE
SHOTGUN ALLEY
THIMBLEBERRY BAY
SHEET 4
VICINITY MAP
SCALE 1"=1,000'
LEGEND
TRANSMISSION LINE TRAVERSE DATA
NOTES
SCALE IN FEET
SCALE 1:1,200
N.I.P. MATL
TRANSMISSION LINE STRUCTURES B50 THROUGH B73
O'NEILL
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7590
RECORD OF REVISIONS
SURVEYOR'S CERTIFICATE
SITKA TRANSMISSION LINE
PROJECT BOUNDARY
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-4 FERC DRAWING No. 2230-1018-02
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
PROJECT NO. 30015-29
SHEET 4 OF 9


200' POWER LINE EASE
SAWMILL CREEK ROAD
U. S. FOREST SERVICE BOUNDARY
LOT 2 U. S. SURVEY 5520
LOT 2 U. S. SURVEY 5530
13 A
13 B
14A2
14A1
14B
14C
VICINITY MAP
SCALE 1"=1 MILE
LEGEND
TRANSMISSION LINE TRAVERSE DATA
NOTES
TRANSMISSION LINE STRUCTURES B73 THROUGH B99
SCALE IN FEET
SCALE 1:1,200
SCALE 1:3,600
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7580
EMAIL: sitkasurveys@worldnet.att.net
RECORD OF REVISIONS
SURVEYOR'S CERTIFICATE
SITKA TRANSMISSION LINE PROJECT BOUNDARY
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-5 FERC DRAWING No. 2230-1019-04
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
PROJECT NO: 30015-29
N.I.P. MAP


U. S. FOREST SERVICE BOUNDARY
BLUE LAKE ROAD
US SURVEY 1763
U. S. FOREST SERVICE BOUNDARY
US SURVEY 3665
100' EASEMENT
100' EASEMENT
EASEMENT THRU US SURVEY 3665 AND US SURVEY 3551 5.65 ACRES
BLUE LAKE HYDRO ACCESS ROAD
GRAPHIC REFERENCE OBJECT POWER POLE 398
N 1,909,189
E 2,374,189
(NAD 83 IN FEET)
US SURVEY 3551
TAILRACE
SAWMILL CREEK ROAD
GRAPHIC REFERENCE OBJECT POWER POLE F23
N 1,909,614
E 2,374,786
(NAD 83 IN FEET)
ELECTRICAL VAULT D
USS 3665
PARCEL C 1.45 ACRES
PARCEL D 0.32 ACRES
PARCEL E 3.88 ACRES
OVERHEAD ELECTRICAL
VALVE HOUSE
WATER TREATMENT PLANT
UNDERGROUND ELECTRICAL
ELECTRICAL VAULT E
PULPMILL FEEDER UNIT ACCESS ROAD CENTERLINE
EMERGENCY ACCESS ROAD CENTERLINE
REFERENCE MONUMENT ALUM. MON. "RP-20"
N 1,909,035.86
E 2,375,244.04
(NAD 83 IN FEET)
VICINITY MAP
SCALE 1 : 1 MILE
SHEET 6
BARANOF ISLAND
SILVER BAY
EASTERN CHANNEL
LEGEND
PRIMARY CONTROL MONUMENT (RECOVERED)
G.L.O./B.L.M. PRIMARY BRASS CAP (RECOVERED)
POWER POLE SURVEYED BY USGS
POWER POLE SURVEYED BY O'NEILL
POWER POLE ADJUSTED POSITION
PROJECT BOUNDARIES
NOTES
THESE MAP SHEETS WERE PRODUCED TO SHOW PROJECT BOUNDARIES AND FACILITIES ASSOCIATED WITH FERC PROJECT No. 2230. THEY WERE MADE TO FULFILL THE REQUIREMENTS OUTLINED IN THE FEDERAL ENERGY REGULATORY COMMISSION'S PAMPHLET ON MANUAL OF UNIFORM PRODUCT EXHIBITS. THEY MEET THE UNITED STATES NATIONAL MAP ACCURACY STANDARDS FOR MAPS AT A SCALE OF 1" = 200' AND ARE HORIZONTALLY ACCURATE TO ± 40 FEET AS REQUIRED BY THE C.F.R. PARAGRAPH.
THIS DRAWING IS AN ENLARGEMENT OF A 1:12,000-SCALE MAP.
SOME POLES AND BUILDINGS WERE LOCATED AS PART OF THIS PROJECT IN THE FIELD. WHILE OTHERS WERE POSITIONED USING DRAWINGS PROVIDED BY THE SITKA ELECTRICAL DEPARTMENT.
PROJECT COORDINATE SYSTEM:
ALASKA ZONE 1 STATE PLANE COORDINATES (NAD 83)
ELECTRIC FILE NAME: 30015-29A.DWG
SCALE IN FEET
SCALE 1 : 720
N.I.P. MAT'L
EASEMENT THROUGH US SURVEYS 3551 & 3665
Node ID | Northing | Easting
400 | 1909856.49 | 2374718.80
401 | 1909031.91 | 2374519.47
402 | 1909082.78 | 2374183.72
403 | 1909081.45 | 2373802.70
404 | 1909275.51 | 2373806.55
405 | 1909283.41 | 2373814.00
406 | 1909282.73 | 2374198.92
407 | 1909229.73 | 2374548.96
408 | 1909283.50 | 2374736.99
409 | 1909443.39 | 2374743.76
410 | 1909641.20 | 2374843.68
411 | 1909289.15 | 2374835.58
412 | 1909211.16 | 2374745.95
413 | 1909066.11 | 2374742.00
414 | 1908985.91 | 2374791.97
TOTAL ACRES: 5.66 NON FEDERAL
PARCEL C
Node ID | Northing | Easting
435 | 1909038.95 | 2374842.64
412 | 1909211.16 | 2374745.95
413 | 1909066.11 | 2374742.00
479 | 1908829.01 | 2374894.11
478 | 1908882.67 | 2374932.45
481 | 1908764.04 | 2375008.58
482 | 1908735.50 | 2375027.66
483 | 1908915.64 | 2375057.66
484 | 1909080.59 | 2374938.45
417 | 1909094.16 | 2374963.96
480 | 1909158.73 | 2374939.13
TOTAL ACRES: 2.22 NON FEDERAL
PARCEL D
Node ID | Northing | Easting
415 | 1909119.49 | 2375237.25
416 | 1909146.18 | 2374943.94
417 | 1909094.16 | 2374963.96
418 | 1909069.69 | 2375238.61
TOTAL ACRES: .32 NON FEDERAL
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7590
EMAIL: sitkosurveys@worldnet.att.net
BY | DATE | REV | DESCRIPTION OF CHANGE
WAS | 7/15/96 | 1 | ADD PROJECT BOUNDARY LAYER
WAS | 7/27/96 | 2 | ADD'S TAILRACE & FOREBAY TO PROJ BOUNDARY TO PWU
WAS | 11/15/97 | 3 | ADDED BLUE LAKE ROAD R. O. W. AND IMPROVED AREA CALCULATIONS
WAS | 2/24/98 | 4 | ADDED MORE REFERENCE OBJECTS & REVISED TITLE BLOCK
WAS | 10/22/99 | 5 | CHANGED FOR BLUE LAKE EXPANSION
RECORD OF REVISIONS
DESIGNED R. O'NEILL
DRAWN WAS/ACAD
CHECKED RWO
DATE OF PLAT: 23 NOV 99
SCALE 1" = 60'
DRIVING NAME: HYDRO1 PLANT
PROJECT NO. 30015-29
SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT I AM A REGISTERED SURVEYOR, LICENSED IN THE STATE OF ALASKA, AND THAT IN NORTHERN ZONE, A SURVEY OF THE HEREIN DESCRIBED LANDS WAS CONDUCTED UNDER MY DIRECT SUPERVISION AND THAT THIS PLAT IS A TRUE AND ACCURATE REPRESENTATION OF THE FIELD NOTES OF SAID SURVEY, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT ACCORDING TO SAID FIELD NOTES
23 NOV 99
DATE
WAYNE A. DYE LS-5430
BLUE LAKE HYDRO & PULP MILL FEEDER UNIT PROJECT BOUNDARY
BLUE LAKE HYDRO; FERC PROJECT No. 2230
EXHIBIT G-6 FERC DRAWING No. 2230-1020-06
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
SHEET 6 OF 9


FISH VALVE UNIT
TRANSMISSION LINE TRAVERSE DATA
FISH VALVE UNIT TRANSMISSION LINE BOUNDARY
INTAKE TUNNEL SPECIAL USE PERMIT
PARCEL B 22.02 ACRES
PARCEL C 1.45 ACRES
PARCEL D 0.32 ACRES
PARCEL E 3.08 ACRES
PARCEL F 4.38 ACRES
PARCEL G 15.87 ACRES
FEDERAL LAND
BLUE LAKE ROAD R.O.W.
BLUE LAKE ACCESS ROAD
BLUE LAKE ROAD CENTERLINE
BLUE LAKE ROAD R.O.W. 200'
BLUE LAKE DAM
VAULT A
VAULT B
VAULT C
CAMP GROUND ACCESS ROAD 60' R.O.W.
VICINITY MAP
SCALE 1 : 1 MILE
SHEET 7
LEGEND
NOTES
PROJECT COORDINATE SYSTEM: ALASKA ZONE 1 STATE PLANE COORDINATES (NAD 83)
SCALE IN FEET
SCALE 1 : 4,800
N.T.P. MAT'L.
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7590
EMAIL: sitkasurveys@worldnet.att.net
RECORD OF REVISIONS
BLUE LAKE HYDRO & FISH VALVE UNIT
PROJECT BOUNDARY
BLUE LAKE HYDRO FERC PROJECT No. 2230
EXHIBIT G-7 FERC DRAWING No. 2230-1021-6
CLIENT: CITY AND BOROUGH OF SITKA, ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
SHEET 7 OF 9


FISH VALVE UNIT
GRAPHIC REFERENCE OBJECT
CROSS AT ANGLE POINT
N 1,917,749
E 2,381,841
(NAD 83 IN FEET)
GRAPHIC REFERENCE OBJECT
CROSS AT ANGLE POINT
N 1,917,968
E 2,391,261
(NAD 83 IN FEET)
FEDERAL LAND
BLUE LAKE DAM
GRAPHIC REFERENCE OBJECT
CROSS AT ANGLE POINT
N 1,915,815
E 2,393,326
(NAD 83 IN FEET)
TRANSMISSION LINE
EASEMENT THRU
US SURVEYS
3551 & 3665
5.6 ACRES
EAST RESERVIOR
SPECIAL USE PERMIT
VICINITY MAP
SCALE 1 : 1 MILE
LEGEND
PRIMARY CONTROL MONUMENT (RECOVERED)
GLO/BLM PRIMARY BRASS CAP (RECOVERED)
PROJECT BOUNDARY LINES
NOTES
THESE MAP SHEETS WERE PRODUCED TO SHOW PROJECT BOUNDARIES AND FACILITIES ASSOCIATED WITH THE FERC PROJECT No. 2230. THEY WERE MADE TO FULFILL THE REQUIREMENTS OUTLINED IN THE FEDERAL ENERGY REGULATORY COMMISSION(FERC) PAMPHLET ON MANAGING HYDROPOWER PROJECT EXHIBITS. THEY MEET THE UNITED STATES NATIONAL MAP ACCURACY STANDARDS FOR MAPS AT A 1:24,000 SCALE AND ARE POSITIONALLY ACCURATE TO ± 40 FEET AS REQUIRED BY THE FERC GUIDANCE DOCUMENT 13/2007.
THE RESERVOIR BOUNDARY SHOWN ON THIS MAP IS A 50' HORIZONTAL OFFSET FROM A 425' ELEVATION CONTOUR DETERMINED BY USING INFORMATION TAKEN FROM THE 2007 LIDAR SURVEY OF BLUE LAKE.
THE BLUE LAKE RESERVOIR WAS ADDED TO THE PROJECT BOUNDARY DURING THE SECOND TERM OF THE LICENSE IN 2007.
EAST RESERVOIR SPCIAL USE PERMIT AREA OF 306.38 ACRES IS INCLUDED IN THE RESERVOIR PROJECT BOUNDARY ACREAGE OF 1730 ACRES.
PROJECT COORDINATE SYSTEM: ALASKA ZONE 1 STATE PLANE COORDINATES (NAD 83)
ELECTRIC FILE NAME: 30015-28A.DWG
1000 750 500 250 0 1000 2000 3000
SCALE IN FEET
SCALE 1 : 12,000
N.I.P. MATL
O'NEILL
SURVEYING AND ENGINEERING
BOX 1849 SITKA, ALASKA 99835
PHONE: (907) 747-6700
FAX: (907) 747-7590
EMAIL: sitkasurveys@worldnet.att.net
BY | DATE | REV | DESCRIPTION OF CHANGE
WAD | 11/05/07 | 1 | IMPROVED AREA CALCULATIONS
WAD | 3/24/08 | 2 | ADDED MORE REFERENCE OBJECTS & REVISED TITLE BLOCK
WAD | 11/4/08 | 3 | CHANGED PROJECT BOUNDARY FOR BLUE LAKE EXPANSION
WAD | 8/10/10 | 4 | DELINATED EAST RESERVOIR SPCIAL USE PERMIT AREA
RECORD OF REVISIONS
DRAWN WAD/KCAD
CHECKED EVD
DATE OF PLAT 12 AUG 2010
SCALE 1" = 1000'
DRAWING NAME: BLUE LAKE RESERVOIR
PROJECT NO. 30015-29
I HEREBY CERTIFY THAT I AM A REGISTERED SURVEYOR, LICENSED IN THE STATE OF ALASKA, AND THAT IN SEPT-NOV 2009 A SURVEY OF THE HEREIN DESCRIBED LANDS WAS CONDUCTED UNDER MY DIRECT SUPERVISION AND THAT THIS PLAT IS A TRUE AND ACCURATE REPRESENTATION OF THE FIELD NOTES OF SAID SURVEY, AND THAT ALL BEARINGS AND OTHER DETAILS ARE CORRECT ACCORDING TO SAID FIELD NOTES.
12 AUG 10
DATE
WAYNE A. ZYL L.S. 9098
BLUE LAKE RESERVOIR
PROJECT BOUNDARY
BLUE LAKE HYDRO FERC PROJECT No. 2230
EXHIBIT G-8 FERC DRAWING No. 2230-1022-4
CLIENT: CITY AND BOROUGH OF SITKA , ELECTRICAL DEPARTMENT
105 JARVIS STREET
SITKA, ALASKA 99835
SHEET 8 OF 9