### **Brookfield**

Brookfield Renewable New England Regional Operations Center Rumford Falls Hydro LLC P.O. Box 280 Rumford, Maine 04276 Tel 207.364.3069 Fax 207.364.3058 www.brookfieldrenewable.com

March 6, 2023

### VIA E-FILING

Kimberly D. Bose, Secretary Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426

**Subject:** Rumford Falls Hydroelectric Project (FERC No. 2333-094)

Response to FERC Additional Information Requests for the Final License

**Application** 

Dear Secretary Bose:

Rumford Falls Hydro LLC (RFH), a subsidiary of Brookfield Renewable, herein files with the Federal Energy Regulatory Commission (FERC or Commission) its response to the Commission's additional information requests as they pertain to the Final License Application (FLA) for the Rumford Falls Hydroelectric Project (FERC No. 2333) (Project). The Project, which consists of two discrete developments – the Upper Station Development and the Lower Station Development, is located on the Androscoggin River in the Town of Rumford, Oxford County, Maine. The Project's existing FERC license expires on September 30, 2024, and RFH is pursuing a new license for the Project through the Commission's Integrated Licensing Process (ILP). In accordance with 18 Code of Federal Regulations (CFR) §5.17, RFH filed the FLA in support of the relicensing on September 29, 2022.

The Commission issued additional information requests on October 31, 2022. RFH's responses to the Commission's requests are attached. RFH is also providing a revised Exhibit A, F, and G in response to the Commission's requests. RFH is filing the Exhibit F drawings separately as Critical Energy Infrastructure Information (CEII). Additionally, as stated in the FLA, RFH completed the Angler Creel Survey and Recreation Study in 2022, during the second study season within the ILP schedule. The study reports for these two studies, and any protection, mitigation, and enhancement measures as they pertain to these two studies, will be filed with the Commission as an addendum to the FLA in the first quarter of 2023.

Finally, in addition to filing this additional information with the Commission, RFH is distributing this letter to those on the enclosed distribution list. This submittal is also available electronically in FERC's eLibrary system at https://elibrary.ferc.gov/idmws/search/fercgensearch.asp under docket number P-2333.

Rumford Falls Hydroelectric Project (FERC No. 2333)
Response to FERC Additional Information Requests for Final License Application March 6, 2023

If there are any questions or comments regarding this submittal, please contact me by phone at (207) 755-5613 or at luke.anderson@brookfieldrenewable.com.

Sincerely,

Luke Anderson Manager, Licensing Brookfield Renewable

cc: Distribution List Attachment (1)

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# A RESPONSE TO FERC ADDITIONAL INFORMATION REQUESTS

## Schedule A

### Exhibit A

1. Section 4.61(c) of the Commission's regulations requires that the Exhibit A include a detailed single-line electrical diagram. The single-line electrical diagram was filed as Critical Energy Infrastructure Information (CEII) in Exhibit F. The single-line diagram is not considered CEII and should be filed as public information as part of Exhibit A. Please revise Exhibit A to include the single-line electrical diagram, remove the single-line diagram (Exhibit F-9) from Exhibit F, and renumber Exhibit F-10 and F-11 and refile these drawings.

**Response:** Rumford Falls Hydro LLC (RFH) has incorporated the single-line electrical diagram into a revised Exhibit A (Appendix A). As stated in Exhibit F of the Final License Application (FLA), RFH anticipated updating the Exhibit F drawings with the Federal Energy Regulatory Commission (FERC or Commission) in the second quarter of 2023, or within 90 days of completing the construction of the battery storage system. However, in response to the Commission's comment, RFH has removed the single-line diagram from the Exhibit F drawings, which have also been updated as part of this response and are being filed separately as CEII.

### **Exhibit F**

2. The Exhibit F drawings do not conform to section 4.39(a) of the Commission's regulations because they are not appropriately sized (i.e., between 22 by 34 inches and 24 by 36 inches) and do not include a space that is five inches high by seven inches wide in the lower right hand corner of each sheet. The upper half of this space must bear the title, numerical and graphical scale, and other pertinent information concerning the drawing; and the lower half of the space must be left clear. Please revise the drawings to meet these requirements. Additionally, Section 4.39(a) requires a numerical and graphical scale for all Exhibit F drawings. Exhibit F-10 and F-11 do not include numerical and graphical scales. Therefore, please revise Exhibit F-10 and F-11 to include numerical and graphical scales.

**Response:** As stated in Exhibit F of the FLA, RFH anticipated updating the Exhibit F drawings with the Commission in the second quarter of 2023, or within 90 days of completing construction of the battery storage system. However, in response to the Commission's comment, RFH has revised Exhibit F (Appendix B) and the drawings have also been updated and are being filed separately as CEII. Since the Exhibit F drawings are being submitted at this time, the entirety of the CEII portion of Exhibit F that was included in the FLA has been replaced.

## Exhibit G

3. Section 4.41(h) of the Commission's regulations requires that all applications for licenses include the project boundary data in a georeferenced electronic file format and that Exhibit G maps must conform to the specifications of section 4.39 of the commission's regulations. You did not include the Exhibit G drawings in electronic format.

Georeferenced electronic file format include ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this License, and file extension in the following format [P-1234, boundary polygon/or point data, MM-DD-YYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this License, and file extension in the following format [P-1234, project boundary metadata, MM-DD-YYYY.TXT].

**Response:** As stated in the FLA, RFH anticipated updating and filing these drawings with the Commission after the construction of the battery storage system and/or completion of the final relicensing studies (i.e., Recreation Study and Angler Creel Survey) within the second quarter of 2023. RFH planned to file the Exhibit G drawings in electronic format at that time; however, in response to the Commission's comments, RFH has updated the Exhibit G drawings (Appendix C) and is filing the georeferenced electronic files pursuant to 18 CFR §4.41(h) concurrent with this filing.

4. Section 4.41(h)(2) of the Commission's regulations requires that Exhibit G include a project boundary that encloses all project works and other features described in Exhibit A that are to be licensed. The project boundary in the Exhibit G-1 drawing does not encompass the entirety of transmission lines 2 and 3 and the Generator Set Up (GSU) substation. Also, the project boundary shown in Exhibit G-2 does not encompass the entire project impoundment, specifically around the Logan Brook tributary. Please revise your Exhibit G to include a corrected project boundary or explain why these features were not included.

**Response:** The Commission's comments regarding the Project Boundary have been addressed in Exhibit G. As noted in RFH's response above, since the Exhibit G drawings are being submitted at this time, the entirety of Exhibit G has been replaced to be consistent with the Exhibit G drawings. Please refer to Exhibit G for a summary explanation of proposed modifications.

## Schedule B

#### Exhibit A

1. Exhibits A, F, and G of the FLA provide elevations in U.S. Geological Survey Datum. However, it is not clear what specific datum they are based on (e.g. North American Datum of 1983 or National Geodetic Vertical Datum of 1929). Please revise your license application to consistently reference the elevation in one current state-of-practice datum.

**Response:** Elevations in the FLA are described as the local datum (USGS). To maintain consistency with Project records, such as record design and construction drawings and documents, and avoid potential confusion with existing Project elevation data, RFH has provided a conversion reference note to the North American Vertical Datum of 1988 (NAVD88) in the requested Exhibits A, F, and G, while retaining the local datum elevations. To obtain NAVD88 elevations subtract 0.11 foot from the local datum elevations.

2. Section 1.1 of Exhibit A describes the upper station development which includes a gatehouse with headgates, two for each of the four active penstocks. However, it does not include the dimension of the gates. Please revise exhibit A to provide this information.

**Response:** Exhibit A has been revised to include the dimensions of the gates at the Upper Station Development.

3. Section 1.1 of Exhibit A states that there are four penstocks, three of which are 12 feet in diameter and one of 13 feet in diameter in the Upper Station development. This is consistent with the original license issued on October 18, 1994; however, HDR's Independent Consultant Safety Inspection Report filed on December 23, 2019, describes penstocks 1-3 as ranging from 9.5 feet to 12 feet in diameter. Section 1.2 of Exhibit A states that there are 16-inch flashboards on top of the Middle Dam structure. However, the original license order and HDR's report state that the flashboards are 12 inches high in the Middle Dam Structure. Please reconcile these discrepancies.

**Response:** Also updated in Section 1.1 of Exhibit A, there are four penstocks, three are 12 feet in diameter and one is 10 feet in diameter. RFH confirmed that there are 16-inch-high flashboards at the Middle Dam, which is also specified in Exhibit A.

### **Exhibit D**

4. Section 4 of Exhibit D provides the estimated average annual operation and maintenance (O&M) cost, which includes local property and real state taxes. The Commission also considers insurance to be an annual operation and maintenance cost. This cost is sometimes spelled out separately, included in the O&M cost, or forgotten. Please state whether the annual operation and maintenance cost includes insurance.

**Response:** The estimated average annual operation and maintenance cost for the Project provided in Section 4 of Exhibit D includes the cost of insurance.

#### Exhibit E

#### Recreation

5. Section 5.10.1.3 of the license application states: "The number of annual visits to the recreation areas at the Rumford Falls Project was estimated to be 5,410 daytime and zero nighttime visits in 2014. The specific recreational areas used for this estimate were not specified in the form; however, the identified recreation amenities included a boat launch area, portage, interpretive display, and an access point." Rumford Falls Hydro collected this data for the FERC Form 80 in 2014, therefore, this information likely exists. Please identify which access point this statement is referring and the location of the portage in the above statement.

**Response:** RFH reviewed the FERC Form 80 from 2014 and Project records for additional information in response to the Commission's comment. As noted, although the FERC Form 80 from 2014 provides the recreation amenity type (e.g., boat launch area, portage, interpretive display, access point), it does not identify the specific access point. To date, RFH has not been able to locate additional records to further clarify access points.

As previously reported, RFH completed the data collection phases of the recreation study conducted in 2022 (second study season within the ILP schedule). The study report will be filed with the Commission as an addendum to the FLA in the first quarter of 2023. RFH will also include any pertinent information to address FERC's request in the pending report.

6. The FERC Form 80 referenced in Section 5.10.1.3 defines the summer recreation season from May through September and the winter recreation season from December through April. Please provide how many of the 5,410 visits in 2014 were conducted in the winter season, as compared with the summer.

**Response:** No site visits occurred in the winter of 2014.

### **Whitewater Boating**

7. Rumford Falls Hydro proposes to, "build and maintain access and/or steps from behind the Rumford Public Library for river access, in consultation with the Town of Rumford." Table 4.6-1 lists \$75,000 for capital costs and \$2,500 for annual costs to construct and maintain the access. However, the application provides no details about these improvements to allow staff to evaluate the adequacy of the proposed measures or their costs. What will the steps and/or access consist of? How steep is the proposed access area? Will there be stairs with a handrail or will it be a natural trail access? How will users access the shoreline from the parking area? Please describe the improvements in greater detail and provide a conceptual design drawing and photos that illustrate the access route and site improvements.

**Response:** RFH's proposal in the FLA includes enhancing and maintaining river access behind the Rumford Public Library on land owned by the Town for the purpose of whitewater boating in the Class I/III segment of the Middle Dam lower bypass reach (as discussed in responses No. 8 and No. 9, this access point also provided access and egress related to the Class IV and V segments). Therefore, RFH included in its proposal in the FLA to consult with the Town of Rumford to design the access. RFH would conduct this consultation following issuance of the

new Project license and would submit the design plans with the additional details to the Commission for approval. While the consultation with the Town and design is pending, RFH's initial estimated cost for the construction and maintenance for access considers the following.

As it pertains to users' access to the shoreline area, the lower asphalt parking area behind the library consists of approximately 12 public parking spaces (Appendix D). The parking area is located immediately adjacent to the access point to the shoreline. Therefore, boaters can park at the shoreline access point and directly carry in. There is also an adjacent upper parking lot at the library with approximately 7 parking spots, which is closer to the main library entrance, and is connected to the lower parking area via a relatively short asphalt driveway. This area could potentially also be available when the library may be closed (i.e., on weekday evenings, Saturdays or Sundays). As described in the response to comment No. 8 below, additional public parking is available, if needed.

The proposed access is approximately 150 feet long, has an estimated slope of 14 percent, and is made up of a combination of soil, sand and gravel, cobble, and then small boulders and exposed bedrock outcrops as you approach the river embankment. RFH assumed for the purpose of developing a cost estimate for the FLA, that the access may include a combination of limited natural trail access near the upper portion of the access trail adjacent to the parking lot, wood crib and gravel and possibly stone steps, all comporting with the current landscape as much as feasible. RFH also assumed in its estimate that railings will be included where needed or feasible, and likely made of wood materials. Finally, RFH also assumes that the terminus of constructed access will need to consider the high-water mark and potential for damage during high flows and spring run-off (which also brings with it heavy ice and log debris). For the proposed location and photos of the access area, please refer to photographs 7 through 12 provided in Appendix E.4 of the FLA. Additionally, Section 5.2 of the Whitewater Boating Study Report in the Updated Study Report (USR) includes the results from the study participants evaluation of the various characteristics of this access location.

8. Figure 5.10-3 in the license application depicts where the proposed Class IV/V put-in, the Class IV/V take-out, and the Class I/III put-in will be located but there is no information about where boaters will park to access these facilities. Please include descriptions of parking areas, how users would access the river from the parking areas (including distance), and parking capacity limits for the Class IV/V put-in, the Class IV/V take-out, the Class I/III put-in, and the take-out at the Mexico boat launch.

Response: Figure 5.10-3 in the FLA depicts the put-ins and take-outs that were used for the whitewater study. As stated in the FLA, RFH proposes to build and maintain access and/or steps from behind the Rumford Public Library for river access in consultation with the Town of Rumford, which will provide access and egress from the Class I-III reach (please refer to response to comment No. 7 above for additional description of the proposed access). There is ample parking in the immediate vicinity of the whitewater Class I-III put-in and take-out. Specifically, parking is available at the Rumford Public Library lower asphalt lot, which has approximately 12 public parking spaces for immediate access to the Class I-III put-in and requires an approximately 150-foot walk to the river. Therefore, boaters can park at the shoreline access point and immediately carry in. There is also an adjacent upper parking lot at the library with approximately 7 parking spots, which is close to the main library entrance, and is connected to the lower parking area via a relatively short asphalt driveway. This area could

potentially also be available when the library is closed (i.e., weekday evenings, Saturdays or Sundays). For the proposed location and photos of the access area, including the put-in and take-out, please refer to photographs 7 through 12 provided in Appendix E.4 of the FLA. Additionally, Section 5.2 of the Whitewater Boating Study Report in the USR includes the results of the study participants evaluation of the various characteristics of this access location.

In addition, there is well over 100 public parking spaces available along the length of River Street, from Bridge Street/Route 108 to the Portland Street Bridge, which is approximately 0.3 mile long. Boaters can walk from River Street for approximately 750 feet across the Portland Street Bridge to the Rumford Public Library, where they can access the Class I-III put-in. River Street is a relatively wide, one-way road, with sidewalks located along the eastern side of the road. Portland Street Bridge is a two-way, single-lane traffic bridge with pedestrian sidewalks on each side of the bridge. The bridge is approximately 515 feet long and is within approximately 235 feet (also with pedestrian sidewalks) of the Rumford Public Library parking lot and access point.

Please note, the above-referenced Figure 5.10-3 from the FLA depicts the Whitewater Boating Study areas. The upper portion of the Middle Dam bypass reach, which is the first rapid or slide in the reach, was identified during the Whitewater Boating Study as Class IV and was also identified as being for advanced boaters. The second rapid was identified as Class V and was identified as being for expert boaters<sup>1</sup>.

RFH's focus in the FLA is on the Class I-III boating segment of the lower reach. As presented in the USR and the FLA, this stretch of the reach provides more opportunities in terms of skill level required, diversity of boats<sup>2</sup> that can be utilized, and duration of run along with play area opportunities. RFH also recognizes the Class IV/V segment for expert boaters. As provided in the USR and the FLA, this is a very short section of the reach (Class IV segment approximately 250 feet and Class V segment approximately 150 feet) with safety and rescue risk due to the steep gradient of the reach and shorelines in the vicinity of these two rapids. Should an expert boater choose to, they can access the upper reach put-in and take-out behind Rumford Town Hall or continue downstream to the Class I-III segment and then boat to the Maine Department of Agriculture, Conservation, and Forestry (MDACF) take-out. Finally, if boaters choose to, instead of taking out at the MDACF boat launch or behind the library, they can also put back in just above the Class V segment (see Figure 5.10-3 of the FLA).

As noted above, well over 100 public parking spaces are available for the Class IV/V segment within the upper reach, along the length of River Street, from Bridge Street/Route 108 to the Portland Street Bridge, which is approximately 1,600 feet long. Boaters can park and walk along River Street for approximately 1,600 feet or adjacent streets to access the Class IV/V reach. The informal access is short and approximately 30 feet in length, has an estimated slope of 20 percent (Appendix D), and is composed of cobble-sized rip rap near the top of the bank

<sup>&</sup>lt;sup>1</sup> As provided in the Whitewater Boating Study Report in the August 5, 2022 USR, one participant noted that an advanced boater would require good safety personnel supervising a run in order to paddle the upper reach; it was also noted that due to the steep gradient of the upper Middle Dam bypass reach and shorelines, rescues would prove to be difficult, placing the rescuer at risk as well.

<sup>&</sup>lt;sup>2</sup> Participants noted a variety of boats such as kayaks, canoes, and stand-up paddleboards could be used in the lower reach (Class I/III).

and transitioning to a vegetated pathway to exposed bedrock outcrops as you approach the river embankment. RFH is not proposing to enhance this informal path.

The take-out is located at the MDACF Boat Launch in the Town of Mexico. Immediately adjacent to the boat launch, there are approximately 19 parking spaces for cars adjacent to the river off of Riverside Avenue as well as 3 parking spaces for vehicles with trailers also immediately adjacent the boat launch. The boat launch is composed of concrete and is of modest slope, allowing boaters to easily carry out their boat and be approximately 110 to 450 feet from their vehicles. There is additional parking available in the nearby shopping plaza located between Riverside Avenue and U.S. Route 2.

As previously reported, RFH completed the data collection phases of the Recreation Study conducted in 2022 (second study season within the ILP schedule), which included the MDACF Boat Launch - Mexico. The study report will provide additional information on this site and will be filed with the Commission as an addendum to the FLA in the first quarter of 2023.

9. Rumford Falls Hydro proposes to install a take-out/access location above the Class V rapid, upstream from the Portland Street bridge. Can users who take out at this location then safely access the play area/Class I/III rapid put-in off Rumford Road? If so, please describe the proposed route between the two access points.

**Response:** As described in response to comment No. 8 above, RFH is not proposing to enhance the informal take-out/access location above the Class IV/V rapid upstream from the Portland Street Bridge. Class IV and V boaters have several options. As described in response to comment No. 8, Class IV/V boaters can access the IV/V segment via the existing 30-footlong path. As it pertains to the Class V segment, and as further described in response to comment No. 8, boaters can continue to boat to the Class I-III segment and take out at the MDACF boat launch. Class V boaters can also take out on river left from the Class I-III segment at the proposed access behind the Rumford library. Finally, if Class V boaters choose, instead of carrying out at the MDACF boat launch or behind the library, they can also put back in just above the Class V segment (see Figure 5.10-3 of the FLA).

10. Rumford Falls Hydro proposes to, "provide target flows of 1,200 to 1,500 cfs in the Middle Dam bypass reach during three days (total) in June through August from 10 am – 3 pm, to be determined based on consultation with the Town of Rumford and American Whitewater." A table in Appendix D.1 states that Rumford Falls Hydro's proposal for whitewater boating flow is 1,500 cfs in the Middle Dam bypass reach. Please indicate which flow proposal is correct for whitewater boating (1,200 to 1,500 cfs or 1,500 cfs). If you are proposing a flow range of 1,200 to 1,500 cfs for whitewater boating, please explain why you chose a range in flow and what criteria you would use to determine the exact release from within this range. Additionally, Table 4.6-1 lists the cost for this measure as \$3,000. Does this cost represent the cost of all three flow releases of 1,500 cfs, a cost for each release, or some other flow amount? Please provide the basis for this cost.

**Response:** RFH proposes to provide target flows of 1,200 to 1,500 cubic feet per second (cfs) in the Middle Dam bypass reach for whitewater boating. RFH will provide the maximum available flow within this range; however, in the event inflow to the Project is less than

1,500 cfs, this allows RFH to provide lower flows that are still desirable for whitewater boating. The cost listed in Table 4.6-1 of the FLA is for the three proposed flow releases (total).

11. You are proposing to release between 1,200 and 1,500 cfs on three days between June and August for whitewater boating. Page E-117 of the application states, "focus group participants suggested that weekends in June through August, specifically between 10:00 am – 3:00 pm, would be an optimal release timeframe." How did you determine that three days (total) of flow releases between June through August would be sufficient for providing whitewater boating flows at the project? How and when would you consult with the town of Rumford and American Whitewater to set the flow releases?

RFH reviewed the focus group participant feedback obtained during the **Response:** Whitewater Boating Study. As described in Section 5.10 of the FLA, participants determined that 1,500 cfs was the optimal flow for this reach. Flows of this level in the Middle Dam bypass reach occur naturally during certain times of the year, especially in the spring and during storm events. However, in July and August, the average daily flows in the river are at or below the maximum hydraulic capacity of the Lower Station (i.e., 3,100 cfs) with slightly higher flows in June. If the lower station is operating at its full maximum hydraulic capacity (3,100 cfs), flows of greater than 1,500 cfs in the Middle Dam bypass reach would be expected to occur between 3.9 percent to 78.5 percent of the time year round, and 29.4 percent (June), 12.6 percent (July), 7.6 percent (August), and 3.9 percent (September) of the time during the preferred time period for white water boating (Table 1, below). Additionally, as described in Section 5.10 of the FLA, there are 59 whitewater opportunities within 60 miles of the Project in the American Whitewater database, including a 12.3-mile-long reach of the Swift River, which is tributary to the Androscoggin River approximately 1,000 feet downstream of the Lower Station powerhouse. Therefore, in addition to the opportunities provided naturally in the river, RFH believes the proposal for providing three additional days of whitewater flow releases, when generation may need to be curtailed, is appropriate. RFH proposes to consult with the Town of Rumford and American Whitewater to establish flow release dates via meeting and/or conference calls within 6 months of license issuance.

## TABLE 1. RUMFORD FALLS PROJECT – PERCENT OF TIME FLOWS IN THE MIDDLE DAM BYPASS REACH WERE GREATER THAN 1,500 CFS FROM 2000 THROUGH 2021

Month	Percent of Time <sup>1,2,3</sup> 1,500 cfs
January	14.5%
February	12.4%
March	34.8%
April	78.5%
May	63.8%
June	29.4%
July	12.6%
August	7.6%
September	3.9%
October	18.2%
November	27.7%
December	25.1%

- 1. Data for period January 1, 2000 to December 31, 2021.
- 2. Based on daily average discharge data from USGS Androscoggin Gage.
- 3. Assumes Lower Station is operating at maximum capacity of 3,100 cfs (i.e., 3,100 cfs was subtracted from daily average).

Source: Rumford Falls Hydroelectric Project USR, August 5, 2022.

As proposed in the FLA, RFH will provide public information regarding flow releases in the Middle Dam bypass reach via SafeWaters (or a comparable system), a publicly accessible website and toll-free phone line operated by Brookfield. This will include additional posting notification of the scheduled whitewater boating flow releases, including any cancellations, in the event sufficient flow or circumstances arise in which these flow releases cannot be provided.

#### **Aesthetics**

12. Rumford Falls Hydro proposes to, "provide target flows of 1,200 to 1,500 cfs in the Upper Dam bypass reach during three days (total) in June through August from 10 am – 4 pm, to be determined based on consultation with the Town of Rumford," for aesthetic purposes. A table in Appendix D.1 states that the proposal for aesthetic flow is 1,500 cfs in the Upper Dam bypass reach. Please indicate which flow proposal is correct for aesthetic purposes (1,200 to 1,500 cfs or 1,500 cfs). If you are proposing a flow range of 1,200 to 1,500 cfs for aesthetic purposes, please explain the basis for this range of flows, and what criteria you would use to determine the exact release from within this range. Additionally, Table 4.6-1 lists the cost for this measure as \$3,000. Does this cost represent the cost of all three flow releases of 1,500 cfs, a cost for each release, or some other flow amount? Please provide the basis for this cost.

**Response:** RFH proposes to provide target flows of 1,200 to 1,500 cfs in the Upper Dam bypass reach for aesthetic purposes. RFH will provide the maximum available flow within this

range; however, in the event inflow to the Project is less than 1,500 cfs, this allows RFH to provide lower flows that were determined to still be desirable for aesthetic viewing by the focus group. The cost listed in Table 4.6-1 of the FLA is for the three proposed flow releases (total).

13. Page E-126 of the FLA states, "all study participants indicated they would like aesthetic flows provided in July and August. There was also a preference for flow releases in June, September, and October with slightly less interest in April and May and little interest in the other months of the year. Generally, participants indicated they would like to have aesthetic releases on the weekend (i.e., Friday, Saturday, Sunday) and from midday, afternoon, and evening." You are proposing to release between 1,200 and 1,500 cfs on three days between June and August for aesthetic purposes. Why did you choose three days of flow releases? How and when would you consult with the town of Rumford to set the flow releases?

Response: RFH reviewed the focus group participant feedback obtained during the Aesthetic Flow Study. As described in Section 5.11 of the FLA, the aesthetic quality of the falls in the Upper Dam bypass reach increased with the observed flows up to 1,500 cfs, when the aesthetic quality often plateaued or declined. Flows of this magnitude occur naturally during certain times of the year, especially in the spring and during storm events. However, during the summer months of July, August, and September, the daily average flows in the Androscoggin River have only exceeded the hydraulic capacity of the Upper Station (i.e., 4,550 cfs) 3.9 percent to 12.9 percent of the time. Therefore, in addition to the aesthetic viewing opportunities provided naturally in the river, RFH believes the proposal for providing three additional days of aesthetic flow releases, when generation may need to be curtailed, is appropriate. RFH proposes to consult with the Town of Rumford to establish flow release dates via meeting and/or conference calls within 6 months of license issuance.

As presented in the USR, when the Upper Station is operating at maximum capacity, flows greater than 1,500 cfs occur between 2.0 percent to 60.5 percent of the time (Table 2).

TABLE 2
RUMFORD FALLS PROJECT – PERCENT OF TIME FLOWS IN THE UPPER DAM
BYPASS REACH WERE GREATER THAN 1,500 CFS FROM 2000 THROUGH 2021

Month	Percent of Time <sup>1,2</sup> 1,500 cfs
January	5.9
February	3.1
March	15.2
April	60.5
May	43.8
June	19.4
July	7.9
August	5.0
September	2.0
October	11.7

Month	Percent of Time <sup>1,2</sup> 1,500 cfs
November	18.3
December	15.0

<sup>&</sup>lt;sup>1</sup>Based on daily average discharge data.

RFH will provide public information regarding aesthetic flow releases in the Upper Dam bypass reach via SafeWaters (or a comparable system), a publicly accessible website and toll-free phone line operated by Brookfield. This will include any cancellations, in the event sufficient flow or circumstances arise in which these flow releases cannot be provided.

14. You currently operate five spotlights which are installed along the banister of the West Viewing Area overlook. The spotlights are turned on at flows of 7,500 cfs and greater between 8PM and 12AM. Are you proposing to continue this measure as part of a new license? If so, is there a specific cost involved or is it covered under operation and maintenance? What is the purpose of this current lighting?

**Response:** As described in the Aesthetic Flow Study Report in Appendix A of the USR filed with the Commission on August 5, 2022, there are five spotlights installed along the banister of the West Viewing Area. These lights are turned on automatically at flows of 7,500 cfs and greater between 8 PM and 12 AM. The lighting was installed and is currently operated based on a request from the Town of Rumford prior to this relicensing. The lighting illuminates the flows in the Upper Dam bypass reach.

In the FLA, RFH proposed to expand the range of flows that would be illuminated, and as opposed to operating the lights at flows greater than 7,500 cfs, RFH is proposing to operate the lights at flows greater than 6,000 cfs between 8 PM and 12 AM year round.

In Table 4.6-1 of Exhibit D in the FLA, RFH estimates the capital costs and incremental operation and maintenance costs would be approximately \$250 each.

15. Rumford Falls Hydro documented the observed flows reviewed by the aesthetic study focus group using photos and videos (with sound). In order to fully analyze the aesthetic flows, please file these videos with the Commission.

**Response:** RFH is filing the videos of the flows observed during the Aesthetic Flow Study concurrent with this filing.

16. Rumford Falls Hydro proposes to, "provide flood lighting of the falls at the upper station at river flows greater than 6,000 cfs between 8PM – 12AM year round. What is the purpose of this proposed lighting? Where would the flood lights be installed and how many flood lights would be installed? How did you determine that 6,000 cfs would be the target flow to trigger the provision of lighting?

<sup>&</sup>lt;sup>2</sup>Assumes Upper Station was operating at full capacity of 4,550 cfs. Source: Rumford Falls Hydroelectric Project USR, August 5, 2022.

**Response:** RFH is not proposing to install new lighting at the Project. RFH is proposing to expand the schedule of the existing lighting as described further in the response to comment No. 14 above.

## Exhibit G

17. Section 4.1 of Exhibit A states that there are two energized transmission lines, lines 2 and 3, which are approximately 4,500-feet and 4,200-feet in length respectively from the upper station development to the GSU. Also, section 4.2 of same exhibit states that there is a 600-foot long transmission line (line 5) from the lower station development to the GSU. However, based on the scale provided in Exhibit G-1, the distance from the upper development powerhouse to the GSU generator (lines 2 and 3) and the distance from the lower development powerhouse to the same generator (line 5) appear to be shorter in length than stated in Exhibit A. Please either revise the exhibit A or G to provide the correct length of the transmission lines or explain the discrepancy.

**Response:** The lengths of the transmission lines have been corrected in Exhibit A and are consistent with Exhibit G.

18. Your Exhibit G does not show the location of the proposed battery storage system. The Commission order amending the current license to include the battery system, issued on June 3, 2021, stated that because the battery system is used and useful in connection with the project, the licensee must revise the Exhibit G drawings to include the entire battery system within the project boundary. Please revise your Exhibit G to show the location of the battery system and to include it in the project boundary.

**Response:** As stated in the FLA, separate from this relicensing, the Licensee will be revising the Exhibit G drawings to include the battery storage system within 90 days of completing construction pursuant to the Commission's June 3, 2021 order amending the license to include a battery system. However, in response to the Commission's comment, RFH has included the proposed battery storage system in the Exhibit G maps with a note that the Project Boundary will be amended pending completion of construction.

## APPENDIX A EXHIBIT A

(Revised March 2023)

# RUMFORD FALLS HYDROELECTRIC PROJECT (FERC NO. 2333) FINAL LICENSE APPLICATION EXHIBIT A – PROJECT DESCRIPTION

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## **APPENDICES**

Appendix A.1 Single-Line Diagram

## **Exhibit A**

## **Project Description**

Rumford Falls Hydro LLC (RFH or Licensee), a subsidiary of Brookfield Renewable (Brookfield), is the Licensee of the 44.5 megawatt (MW) Rumford Falls Hydroelectric Project (FERC No. 2333) (Project), a multi-development hydroelectric facility located on the Androscoggin River in Rumford, Maine.

Pursuant to the requirements of 18 Code of Federal Regulations (CFR) 4.51(b), the following is a description of the Project. There are two dams associated with this Project; hence each dam and its associated facilities are described as discrete developments. The facilities and structures of the Project are depicted in the Project drawings and single-line diagram. The Project drawings in Exhibit F, which are being filed with the Federal Energy Regulatory Commission (FERC or Commission) as Critical Energy Infrastructure Information (CEII) under 18 CFR §388.113-in this Final License Application. As requested by the Commission, the single-line diagram is included in Appendix A.1.

## 1.0 Project Structures

Project works consist of two discrete hydropower developments, the Upper Station Development and the Lower Station Development. The total nameplate capacity of the Project is 44.5 MW and the Project's maximum hydraulic capacity is 4,550 cubic feet per second (cfs) for the Upper Station Development and 3,100 cfs for the Lower Station Development.

## 1.1 Upper Station Development

The Upper Station Development's principal features consist of a dam, a forebay, a gatehouse, four short penstocks, a powerhouse, an impoundment, two overhead transmission lines, and appurtenant facilities. The development has a total installed nameplate capacity of 29.3 MW, and a maximum hydraulic capacity of 4,550 cfs.

The dam is a concrete gravity structure which utilizes 30-inch, pin-type, break-away flashboards and a 271-foot-long Obermeyer spillway system. The crest of the concrete dam is at elevation

598.74 feet U.S. Geological Survey Datum (USGS)<sup>1</sup>, with the flashboards in place and the Obermeyer inflated (the normal operating mode); spillage occurs when the water surface elevation exceeds 601.24 feet USGS. The length of the ogee-type spillway is 464 feet. The concrete dam is approximately 37 feet from its bedrock foundation and is approximately 42 feet wide at its base. The rounded crest of the spillway is 10 feet wide. The downstream face of the dam slopes downward before reaching a lip at elevation 569.74 feet USGS and then slopes sharply downward to the base of the dam.

The dam forms one side of the forebay of the Upper Station; the other side of the forebay consists of a concrete wall along the shoreline. The gatehouse to the Upper Station contains power-operated headgate hoists and gates, two for each of the four active penstocks<sup>2</sup>. The existing gates are 11.5 feet wide and 14.67 feet high. Screening of flow through the Upper Station is provided by bar racks to keep out debris.

The four penstocks are of riveted-plate steel, three of which are 12 feet in diameter and one of 13-10 feet in diameter. Each penstock is approximately 110 feet in length, extending underground from the gatehouse to the powerhouse.

There is a masonry powerhouse integral with the dam, occupying two adjoining sections of the dam: (a) the Old Station, about 30 feet wide, by 110 feet long, by 92 feet high, equipped with one generating unit, and (b) the New Station, about 60 feet wide by 140 feet long by 76 feet high, equipped with three generating units.

The tailrace of the Upper Station is located in the natural river channel and is within the Middle Dam Impoundment. The normal tailwater elevation is 502.74 feet USGS. Besides the bedrock channel, there are no specific structures associated with the tailrace.

### 1.2 Lower Station Development

The Lower Station Development's principal features consist of the Middle Dam, the Middle Canal headgate structure with a waste weir section, the Middle Canal, a gatehouse, two penstocks (each

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<sup>&</sup>lt;sup>1</sup> Elevations throughout the license application are based on a local datum referred to as USGS. Subtract 0.11 foot to convert elevations to North American Vertical Datum of 1988 (NAVD88).

<sup>&</sup>lt;sup>2</sup> There is an additional inactive penstock, which originally led to a second unit in the Old Station.

with a surge tank), a powerhouse, an impoundment, a short transmission line, and appurtenant facilities. The existing development has a total nameplate capacity of 15.2 MW and a total maximum hydraulic capacity of 3,100 cfs.

The Middle Dam is a rock-filled, wood-crib, gravity-type dam, capped and reinforced with concrete and topped with 16-inch-high, pin-type flashboards. The <u>normal maximum surface</u> elevation of <u>the Middle Dam impoundment crest with flashboards</u> is <u>the same as at</u> the normal tailwater elevation of the Upper Station Development (502.74 feet USGS). The length of the dam spillway is 328.6 feet. The dam rises approximately 20 feet above the river bottom and is approximately 105 feet in cross-sectional width at its base, including a gently sloping concrete apron on the downstream side that is approximately 38 feet wide. The cross-section of the dam is roughly triangular, with a concrete lip on the downstream face at elevation 490.74 feet USGS.

The Middle Canal headgate structure is adjacent to the Middle Dam and approximately 120 feet wide, and it contains a set of 10 headgates. The structure consists primarily of concrete masonry with steel gates. Within the Middle Canal and perpendicular to the Canal headgates is a waste weir, which allows floating debris to be diverted back to the natural river channel. There are normally twelve-inch-high flashboards on the crest of the waste weir, which brings the typical water surface elevation up to elevation 502.6 feet USGS. The spillway of the waste weir is approximately 120 feet long. The Middle Canal is approximately 2,400 feet long, with typical depths ranging from 8 to 11 feet. The width of the canal ranges from 75 to 175 feet with the upstream end of the canal being the widest.

The Lower Station gatehouse contains two (with provisions for a third) motorized gate hoists and headgates for Lower Station penstocks. Flow to the Lower Station is screened through bar racks. The canal level control transmitter to the Supervisory Control and Data Acquisition (SCADA) controls is located in the gatehouse. A selector switch is provided to allow for one of the units to supervise canal level control. Also located upstream of the gatehouse are the trashracks and a power-driven trash rake. From the gatehouse, two 12-foot diameter, welded-plate, steel penstocks extend for approximately 815 feet to surge tanks and then an additional 77 feet downward to the powerhouse. The two steel surge tanks are 36 feet in diameter and 50.5 feet tall as measured from the surface of the ground. The masonry powerhouse is equipped with two generating units.

The tailrace of the Lower Station is located in the natural Androscoggin River channel. Flow through the two turbines returns to the river after crossing an approximately 25-foot-wide concrete tailrace apron. The normal tailwater elevation is 423.24 feet USGS. Besides the tailrace apron, there are no other specific structures associated with the tailrace.

## 2.0 Impoundment Specifications

## 2.1 Upper Station Development

The normal maximum surface area of the Upper Dam impoundment is 419 acres, with a corresponding normal maximum surface elevation of 601.24 feet USGS. The estimated gross storage capacity of the Upper Dam impoundment is 2,900 acre-feet (ac-ft) with flashboards installed and the Obermeyer inflated. Since the Upper Station is operated as a run-of-river facility, there is, in essence, no usable storage capacity associated with this impoundment.

## 2.2 Lower Station Development

The normal maximum surface area of the Middle Dam impoundment is 21 acres, with a corresponding normal maximum surface elevation of 502.74 feet USGS. The estimated gross storage capacity of the Middle Dam impoundment is 141 ac-ft with flashboards. As with the Upper Station impoundment, there is no usable storage capacity associated with the Middle Dam impoundment, since the Lower Station is also operated as a run-of-the river facility.

## 3.0 Turbine and Generator Specifications

## 3.1 Upper Station Development

As mentioned previously, the powerhouse includes two sections, the Old Station and the New Station. The Old Station contains one horizontal generating unit with a capacity of 4.3 MW (Unit 4). The New Station contains three vertical generating units (Units 1, 2 and 3), two with a capacity of 8.1 MW each, and one with a capacity of 8.8 MW.

## 3.2 Lower Station Development

The Lower Station powerhouse contains two identical vertical units, each with 7.6 MW capacity (Units 1 and 2).

## 4.0 Transmission Line and Equipment Specifications

All primary transmission lines associated with the Project deliver electricity from both the Upper and Lower Stations to the RFH Generator Step-Up (GSU) substation. The voltage is stepped up from 11.5 kilovolt (kV) to 115 kV by passing through the 66 megavolt-amperes (MVA) GSU transformer. This transformer is tied to Central Maine Power's transmission point of interconnect.

## 4.1 Upper Station Development

Although a total of four 11.5 kV transmission lines extend from the Upper Station to the GSU substation, only two are energized at the present time (i.e., Lines 2 and 3). Line 2 extends approximately 4,5003,250 feet, sharing steel towers with de-energized Line 1. Line 3 extends approximately 4,2003,410 feet on single circuit steel towers. Line 4 is approximately 3,100 feet long and was owned and abandoned by Catalyst Paper.

## 4.2 Lower Station Development

Electricity from the Lower Station is submitted to the GSU substation by 11.5 kV Lines 5 A and B, which run 600-1,820 feet parallel on the same tower.

## 5.0 Specifications of Additional Mechanical, Electrical, and Transmission Equipment Appurtenant to the Project

## 5.1 Battery System

Separate from this relicensing, RFH requested a non-capacity amendment for the Project's license on April 27, 2021, and supplemented on May 18, 2021, to construct and maintain a battery storage system at the Project. On June 3, 2021, FERC issued an order amending the license to include the battery storage system. RFH initiated preliminary construction activities of the battery storage system along the transmission line adjacent to the Project's substation in the summer of 2022. It is currently anticipated that construction will be completed in the first quarter of 2023. The 8 MW battery storage system consists of 15 smaller battery enclosures with integrated heating/cooling and ventilation and have a rating of 372.7 kilowatt-hours each. The battery storage system also consists of DC-AC inverters, inverter step-up transformers, spill containment, and associated auxiliary equipment. Although this battery storage system will increase Project efficiency, it will not change the Project's authorized installed capacity nor its hydraulic capacity. All connection

points to the Independent System Operator New England electrical grid will remain unchanged. Implementation of the battery storage system will not change Project operations and will not impact the generating or water control capabilities of the dam or powerhouse.

### **5.2** Upper Station Development

Additional appurtenant equipment includes switch boards, switchgear, transformers, turbine governors, and other auxiliary equipment required for control of the units. Metal clad station switch gear includes 11.5 kV, 60 cycle, Westinghouse draw-out, air-vacuum, circuit breakers, with 1,200 A, 500,000 kilovolt ampere (kVA) interrupting capacity, and 4,160 volt, 60 cycle Allis Chalmers draw-out, air-magnetic, circuit breakers, type A.M.-150C, with 1,200 A, 150,000 kVA interrupting capacity. The control equipment consists of panels containing meters and relays, and a bench-board type control board for breaker, governor, and excitation control. This equipment is located in the control room above the generator floor. Also in this location is the SCADA Programmable Logic Controller (PLC) equipment for the Upper and Lower Stations. There is one 5,000 kVA, 60 cycle, 3-phase, 11,000 Delta, 4,160 volt, wye Allis Chalmers outdoor, oil-insulated transformer adjacent to the Upper Station, and one 11-kV/240-V, 225 MVA indoor station service transformer. A 130 kW, propane-fueled station service back-up generator is located near the intake gatehouse.

Auxiliary equipment associated with Units 1, 2 and 3 includes two L&S actuator turbine governors with a capacity of 50,000 foot-pounds (ft-lbs); automatic power factor controllers; automatic synchronizers; switchboard speed controllers; pressure gauges; and gate opening indicators. Voltage regulators for Units 1 and 2 are Siemens static exciters. Unit 3 has a Basler voltage regulator, and the exciter is direct-connected. The turbine governor for Unit 4 is a gate shaft positioner-type, with a capacity of 15,000 ft-lbs.

## 5.3 Lower Station Development

Additional appurtenant equipment includes switchgear, turbine governors, and auxiliaries required for control of the units. Control is provided for local manual, local automatic, and supervisory control from the Brookfield's National System Control Center. The control switchboard is located on the generator floor and is a General Electric tunnel-type design. The main and neutral switchgear of the Westinghouse metal-clad design are located on the turbine floor. Switchgear

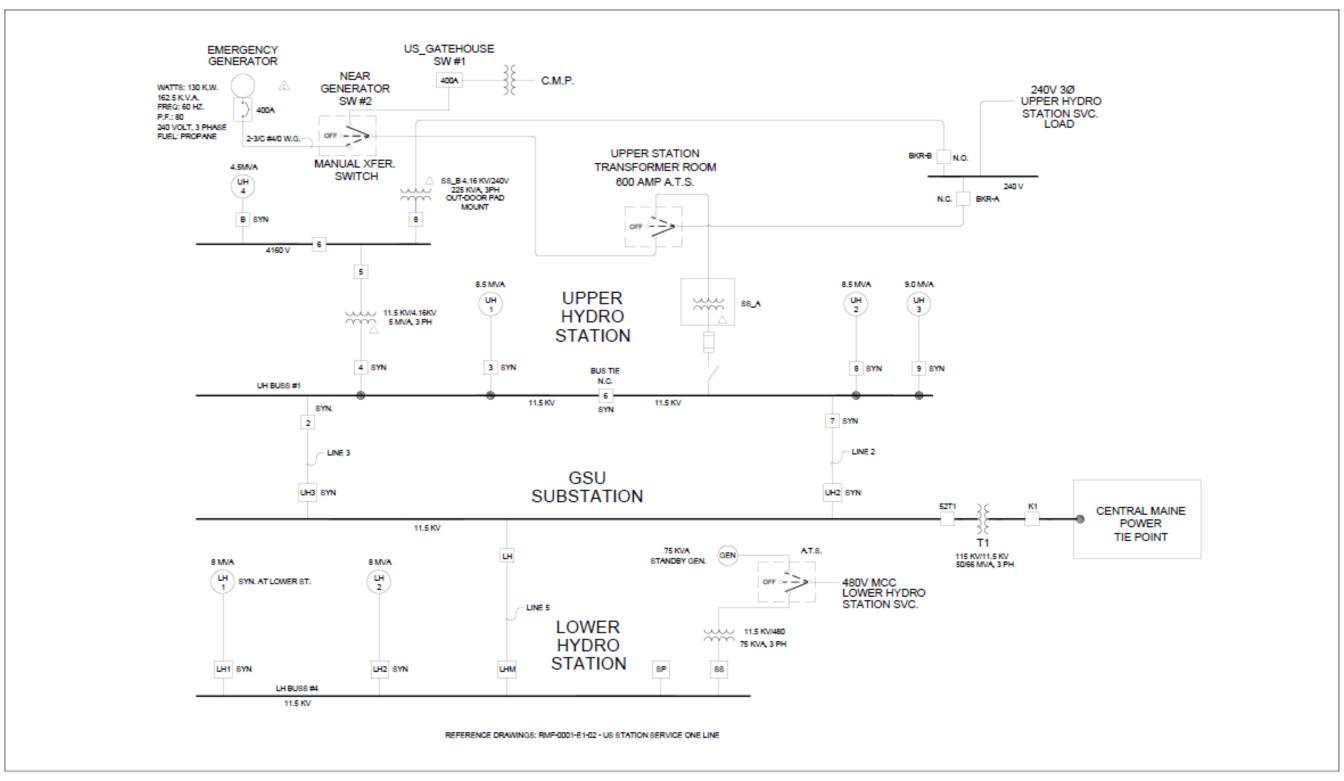
consists of a neutral circuit breaker, surge protector equipment, and termination of the generator phase leads. The main generator breakers are located in an enclosed building just outside of the station. This building houses the Powercon switchgear for Units 1 & 2, station service, and the breaker for Line 5. An 11-kV/ 480-V, 225 kVA station service transformer is located near the Line 5 tower. A 60 kW, propane-fueled station service generator is located just outside the powerhouse.

Both units at the Lower Station have gate shaft operators with a capacity of 30,000 ft-lbs. Additional auxiliary equipment includes a permanent magnet generator drive, motor-driven oil pumping system, gate limit switches, automatic generator brake control, governor oil pressure failure switch, and PLC control for automatic start and synchronizing.

## 6.0 United States Lands within the Project Boundary

No lands of the United States are located within the Project Boundary.

## APPENDIX A.1 SINGLE-LINE DIAGRAM



## APPENDIX B EXHIBIT F

(Revised March 2023)

## RUMFORD FALLS HYDROELECTRIC PROJECT (FERC NO. 2333) FINAL LICENSE APPLICATION EXHIBIT F – GENERAL DESIGN DRAWINGS

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## **Exhibit F**

## **General Design Drawings**

## 1.0 Exhibit F Drawings

The general design drawings showing the principal Project works of the Rumford Falls Hydroelectric Project (Project) are listed in Table 1.0-1. The Exhibit F drawings are being filed with the Commission as Critical Energy Infrastructure Information (CEII). Separate from this relicensing, the Licensee will be revising the Exhibit F drawings within 90 days of completing construction of the battery system pursuant to the Commission's June 3, 2021 order amending the license to include a battery system. Construction on the battery system is anticipated to be completed in the first quarter of 2023. Therefore, RFH anticipates filing updated drawings with the Commission within the second quarter of 2023, after the construction of the battery storage system is complete.

TABLE 1.0-1
GENERAL DESIGN DRAWINGS

<b>Exhibit</b>	<u>Title</u>
<u>F-1</u>	Detail Map Upper Dam and Upper Station
<u>F-2</u>	Sections thru Upper Dam, Powerhouse and Gatehouse
<u>F-3</u>	Elevations of Upper Station and Gatehouse
<u>F-4</u>	Detail Map Lower Station Grounds and Headworks
<u>F-5</u>	Sections and Profile Lower Station Development
<u>F-6</u>	Elevations of Lower Station and Gatehouse
<u>F-7</u>	Detail Map Middle Dam and Middle Canal Headworks
<u>F-8</u>	Sections of Middle Dam, Middle Canal and Headworks
<u>F-9</u>	Power Distribution Layout
<u>F-10</u>	Obermeyer Inflatable Flashboards and Blower House Plan View

## 2.0 Supporting Design Report

The Project is subject to the requirements of 18 Code of Federal Regulations (CFR) Part 12 – Safety of Water Power Projects and Project Works, Subpart D – Inspection by an Independent Consultant. In 2003, the Commission instituted a new program to be used in the context of the Part 12 Independent Consultant Safety Inspection Program entitled "Potential Failure Modes Analysis" (PFMA), which is a dam- and project-safety tool intended to broaden the scope of the safety evaluations to include potential failure scenarios that may have been overlooked in past investigations. In conjunction with these endeavors, the Commission also initiated a requirement for development of a Supporting Technical Information Document (STID) for projects subject to Part 12D of the Commission's regulations.

The STID includes sufficient information to understand the design and current engineering analyses for the Project such as:

- A complete copy of the PFMA report and associated addendums;
- A detailed description of the Project and Project works;
- A summary of the construction history of the Project;
- Summaries of Standard Operating Procedures;
- A description of geologic conditions affecting the Project works;
- A summary of hydrologic and hydraulic information;
- Summaries of instrumentation and surveillance for the Project;
- Summaries of stability and stress analyses for the Project works;
- A summary of the spillway gate analyses; and
- Pertinent dam safety correspondence.

Given that the Project is subject to Part 12D of the Commission's regulations, the Project has been inspected by an independent consultant within the past five years and an STID has been prepared and submitted to the Commission. For reference purposes, Table 2.0-1 provides the dates for which the Project's most recent Part 12 Safety Inspection Report and PFMA Report, which are included within the STID, were filed with the Commission. Based on these filings, a Supporting Design Report is not being included in this application for a new license for the Project.

TABLE 2.0-1
RECENT PART 12 SAFETY INSPECTION REPORTS AND PFMA REPORTS

Document Name	Filing Date
Initial PFMA Report	2004
Initial STID	2004
Most Recent STID Update	March 12, 2021
11th Part 12 Safety Inspection	December 23, 2019

## APPENDIX C EXHIBIT G

(Revised March 2023)

## RUMFORD FALLS HYDROELECTRIC PROJECT (FERC NO. 2333) FINAL LICENSE APPLICATION EXHIBIT G – PROJECT MAPS

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#### **Exhibit G**

#### **Project Maps**

#### 1.0 Project Maps

The Exhibit G drawings have been updated since the filing of the Final License Application and, therefore, the entirety of this exhibit has been replaced to be consistent with the Exhibit G drawings. The attached Exhibit G maps (Appendix G.1) denotes the proposed Rumford Falls Hydroelectric Project (Project) Boundary. Table 1.0-1 provides the drawing numbers and titles for the Exhibit G maps. The Project Boundary maps show the Project vicinity, location, and boundary in sufficient detail to provide a full understanding of the Project.

The Project Boundary maps have been prepared in accordance with the requirements of 18 Code of Federal Regulations (CFR) §§4.39 and 4.41(h) and applicable Federal Energy Regulatory Commission (FERC) guidance. Rumford Falls Hydro LLC (RFH) is proposing to make the following modifications to the Project Boundary:

- Expand the Project Boundary by approximately 2.8 acres to include the Project's transmission lines (i.e., lines 2, 3, and 5A/B), Generator Step-Up (GSU) substation, and CMP connection (See Figure 1.0-1 and Exhibit map G-1);
- Adjust the existing Project Boundary along the shoreline of the inlet of Logan Brook to follow the normal maximum surface elevation of the Upper Dam impoundment (i.e., 601.24 feet USGS<sup>1</sup>), which will result in the inclusion of approximately 0.6 acre of water into the Project Boundary (See Figure 1.0-2 and Exhibit maps G-1 and G-2);
- Remove a total of approximately 82 acres of land along the western and eastern shore (includes the land removed around Logan Brook) of the Upper Dam impoundment that extends above the normal maximum surface elevation of the impoundment (i.e., 601.24 feet USGS), consistent with the boundary on the rest of the impoundment (See

<sup>&</sup>lt;sup>1</sup> Elevations throughout the license application are based on a local datum referred to as USGS. Subtract 0.11 foot to convert elevations to North American Vertical Datum of 1988 (NAVD88).

Figure 1.0-2 and Exhibit maps G-1 and G-2). These lands are not necessary for the operation or maintenance of the Project or for other Project purposes; and

Remove approximately 0.3 acre of land located between the Middle Canal and Route 108
(See Figure 1.0-1 and Exhibit map G-1). These lands are not necessary for the operation or
maintenance of the Project or for other Project purposes.

Figures 1.0-1 to 1.0-3 below depict the existing and proposed Project Boundary for the Project.

Although separate from this relicensing and currently under construction, the proposed battery storage system is depicted on the Project maps. RFH will amend the Project Boundary to include the battery system within 90 days of completing construction of the battery system pursuant to the Commission's June 3, 2021 order amending the license to include a battery system and will make any necessary updates pending the completion of additional relicensing studies (i.e., the Angler Creel Survey and Recreation Study).

TABLE 1.0-1 RUMFORD FALLS PROJECT BOUNDARY MAPS

Exhibit Map	Project Boundary Map
G-1	Middle Dam, Canal and Lower Station
G-2	Upper Dam, Upper Station and Reservoir
G-3	Reservoir
G-4	Reservoir
G-5	Reservoir
G-6	Carlton Bridge Boat Launch
G-7	Property Ownership and Project Boundary Tables

Inset Overhead Transmission Line (10 ft. Width) Middle Dam, Lower Station Development Androscoggin River Sheet 1 of 3 Map Key See Inset Upper Dam, Upper Station Development **Rumford Falls Project** MAINE CANADA **FERC No. 2333** Proposed Added Area Project Facilities Municipal Boundary Proposed Removed Area Comparison of Existing and Project Location Proposed Project Boundary -**Proposed Project Boundaries** Railroad Existing Project Boundary Map information was compiled from the best available free sources.

No warranty is made for its accuracy and completeness. - Highway Prepared by: HDR | February 2023

FIGURE 1.0-1
EXPLANATION MAP FOR PROPOSED PROJECT BOUNDARY

Androscoggin Sheet 2 of 3 Map Key **Rumford Falls Project** MAINE CANADA FERC No. 2333 Project Facilities Proposed Added Area Municipal Boundary Proposed Removed Area Comparison of Existing and Proposed Project Boundaries Proposed Project Boundary -Railroad Map information was compiled from the best available free sources.

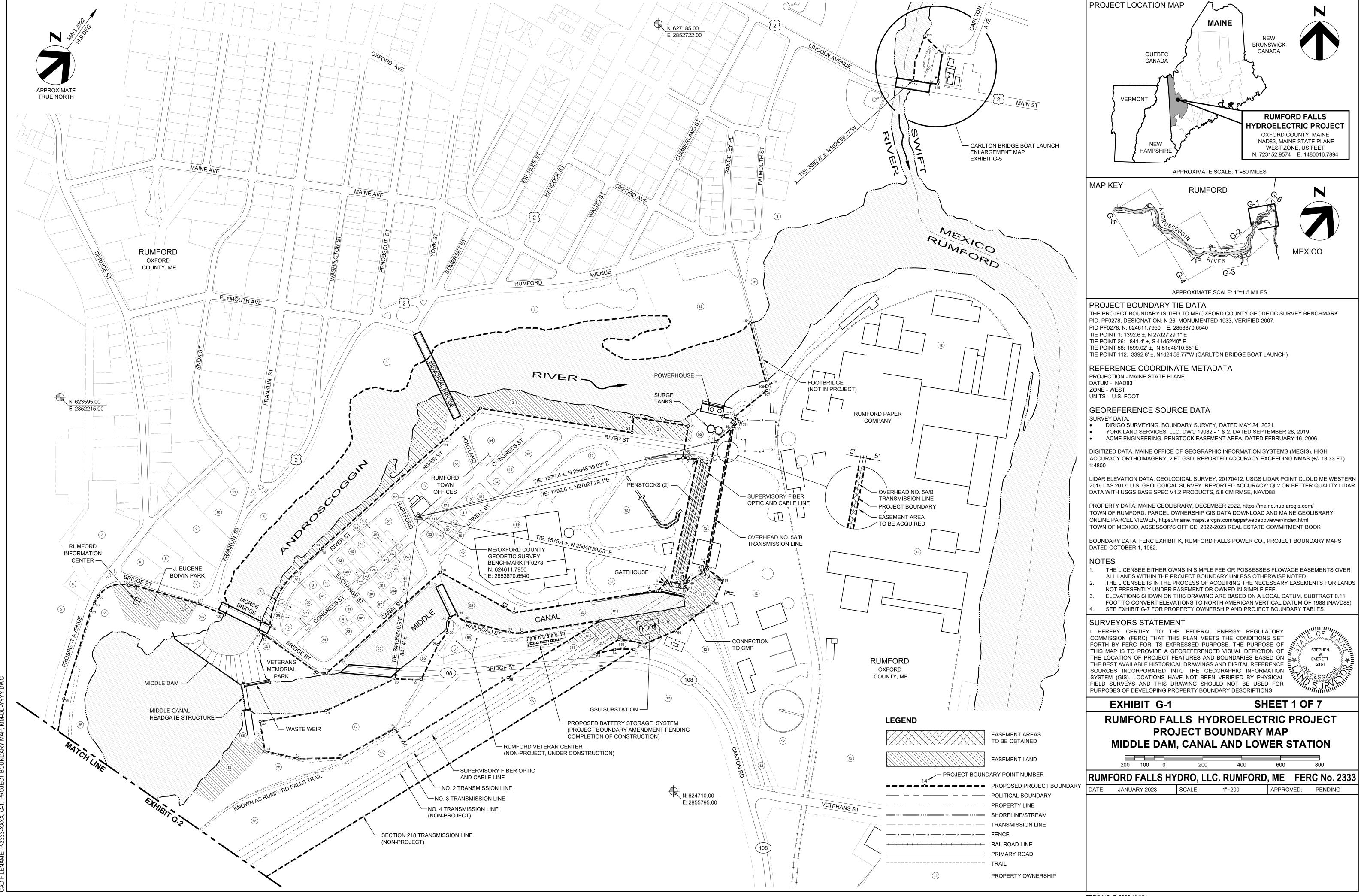
No warranty is made for its accuracy and completeness. Existing Project Boundary Highway Prepared by: HDR | February 2023

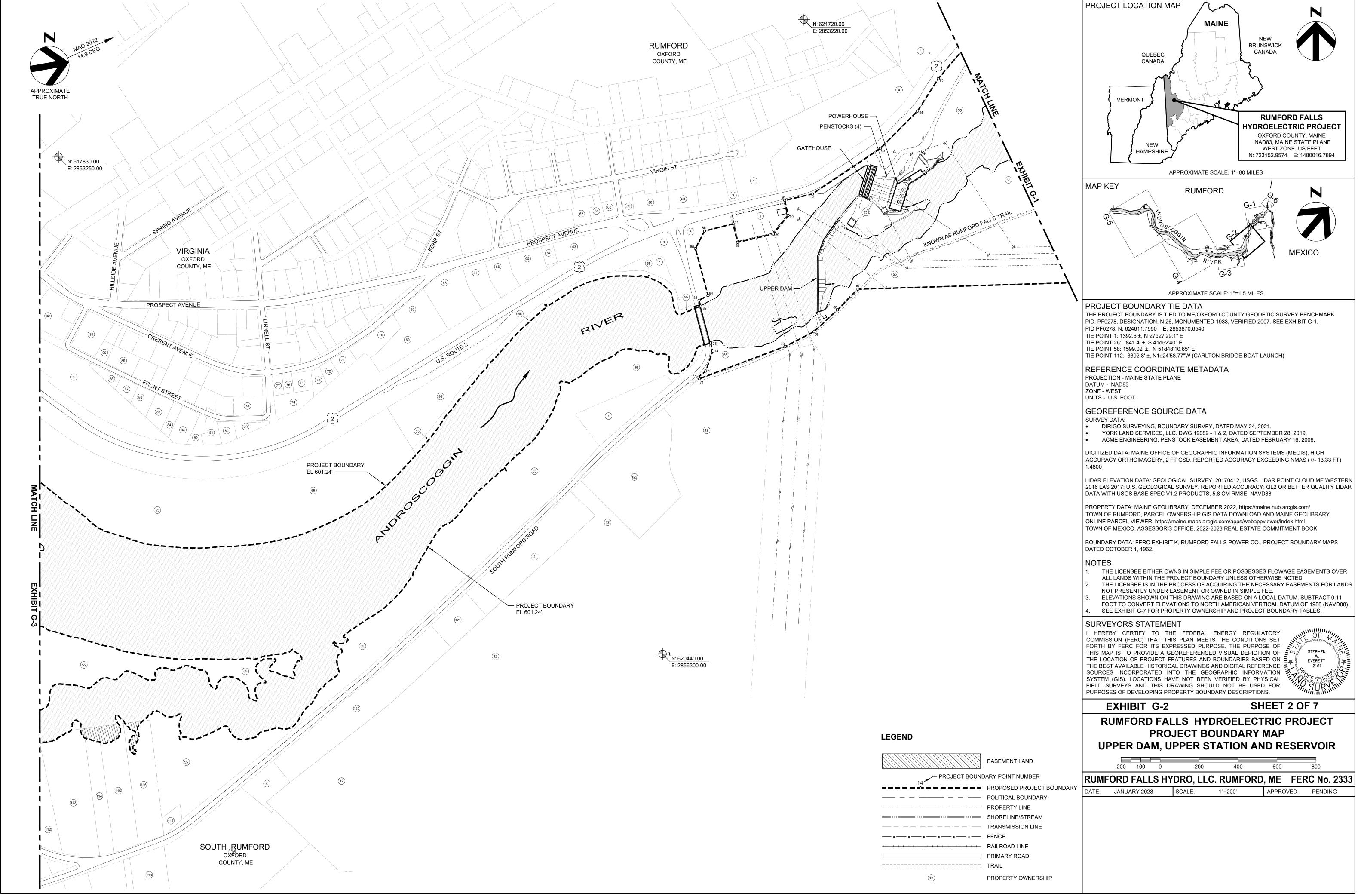
FIGURE 1.0-2
EXPLANATION MAP FOR PROPOSED PROJECT BOUNDARY

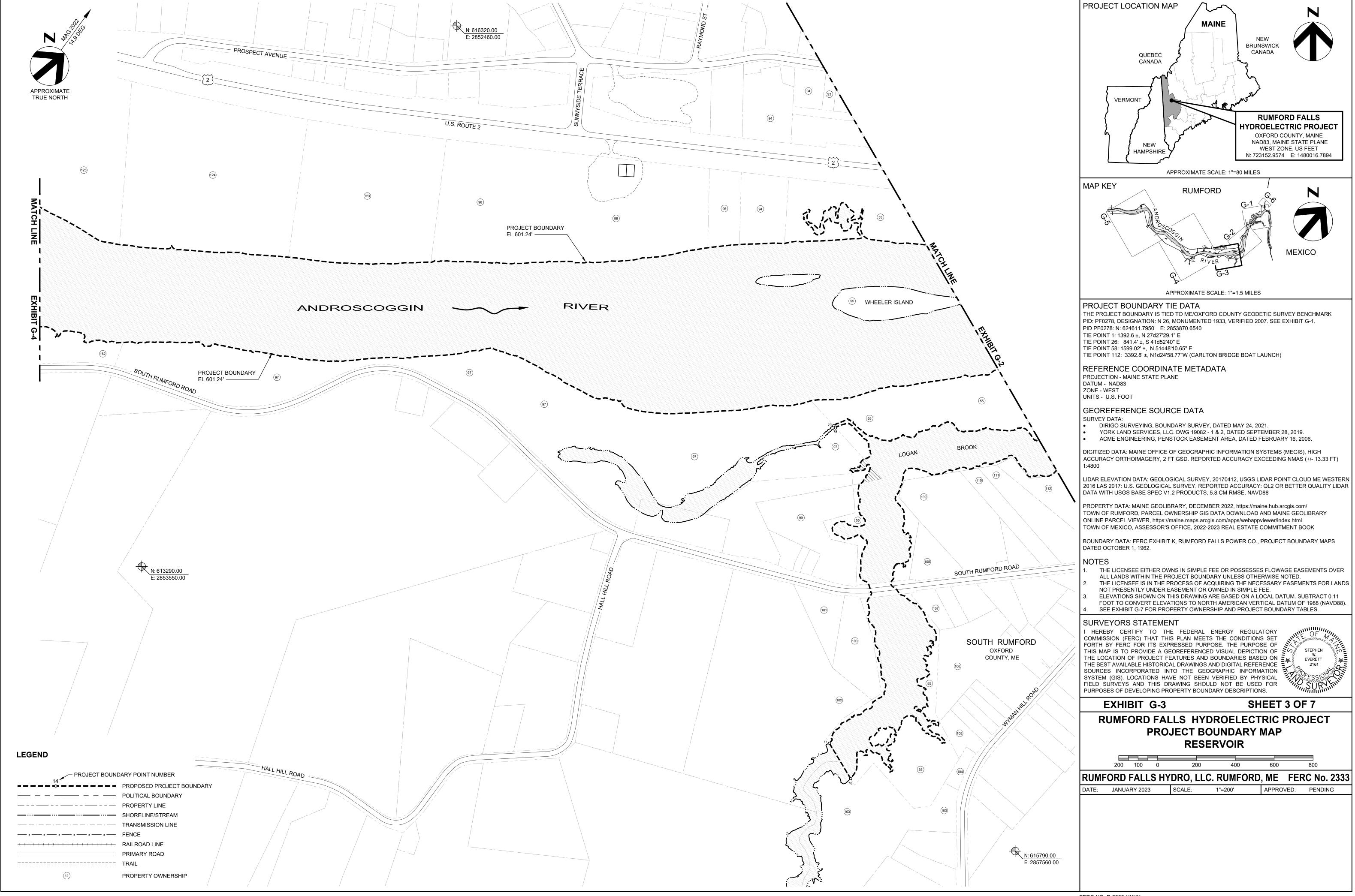
Androscoggin Sheet 3 of 3 Map Key **Rumford Falls Project** MAINE CANADA **FERC No. 2333** Project Facilities Proposed Added Area Municipal Boundary Proposed Removed Area Comparison of Existing and Proposed Project Boundary -Proposed Project Boundaries Railroad Existing Project Boundary Map information was compiled from the best available free sources. Highway No warranty is made for its accuracy and completeness. Prepared by: HDR | February 2023

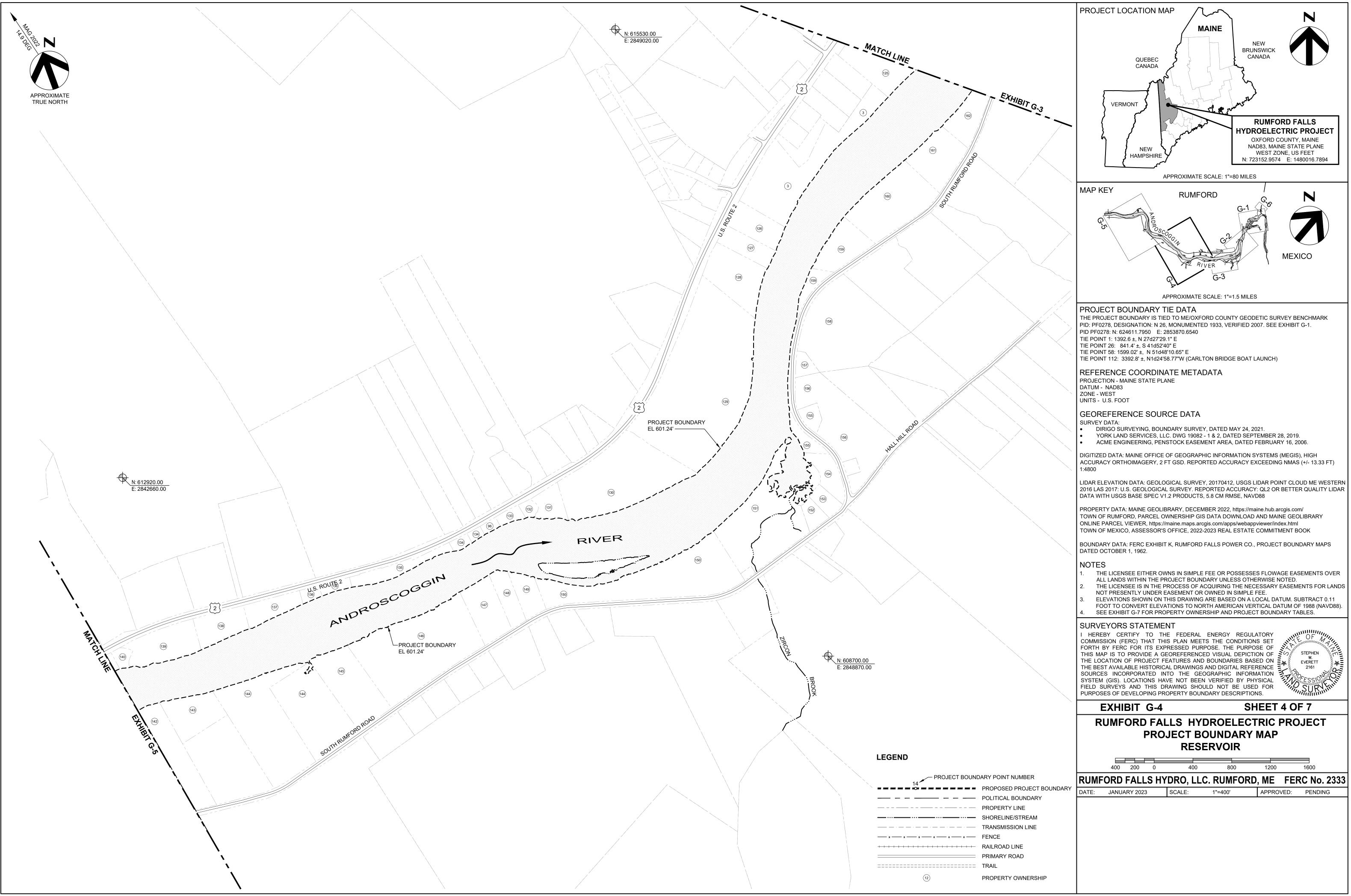
FIGURE 1.0-3
EXPLANATION MAP FOR PROPOSED PROJECT BOUNDARY

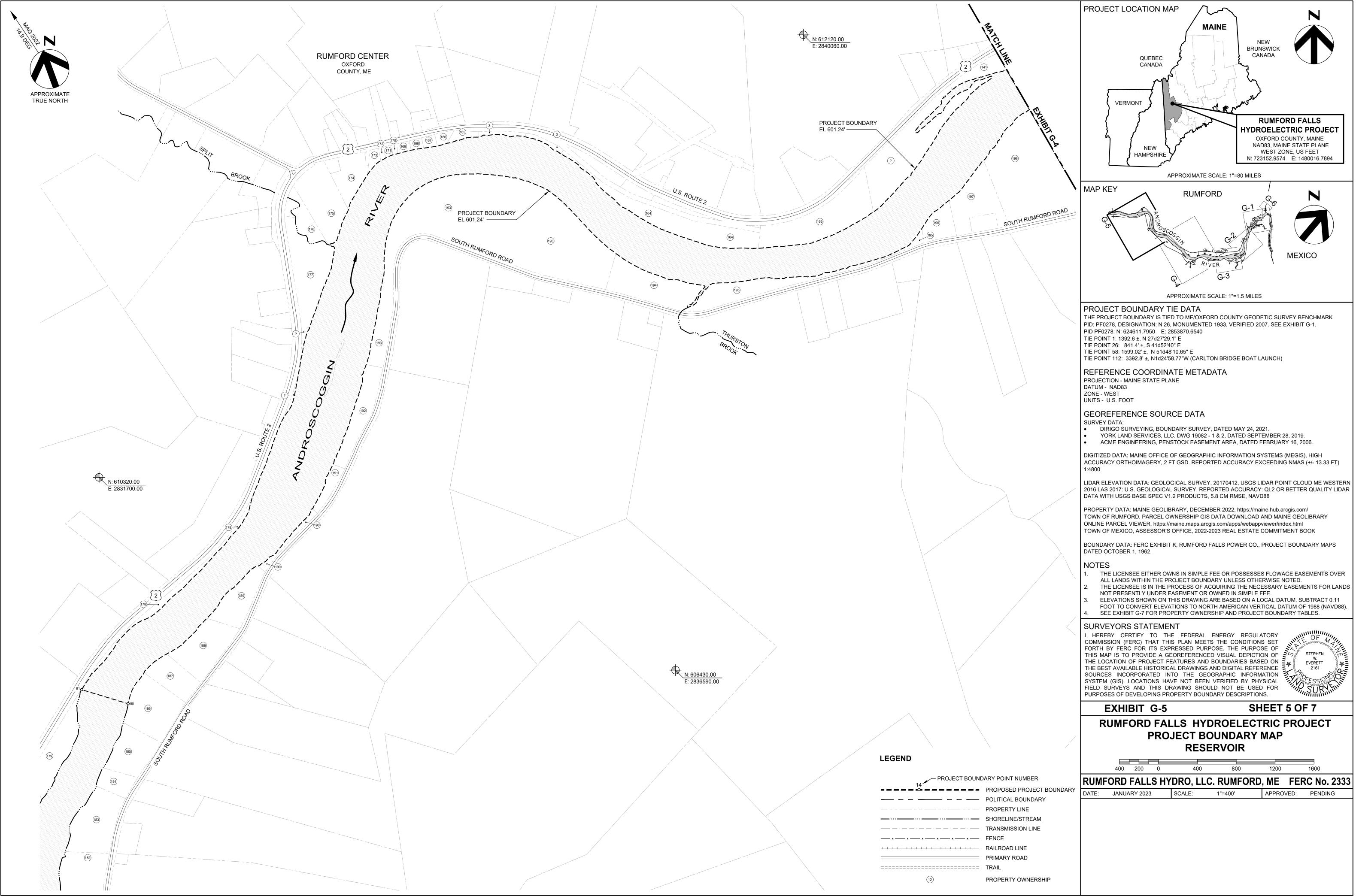
### APPENDIX G.1 PROJECT MAPS

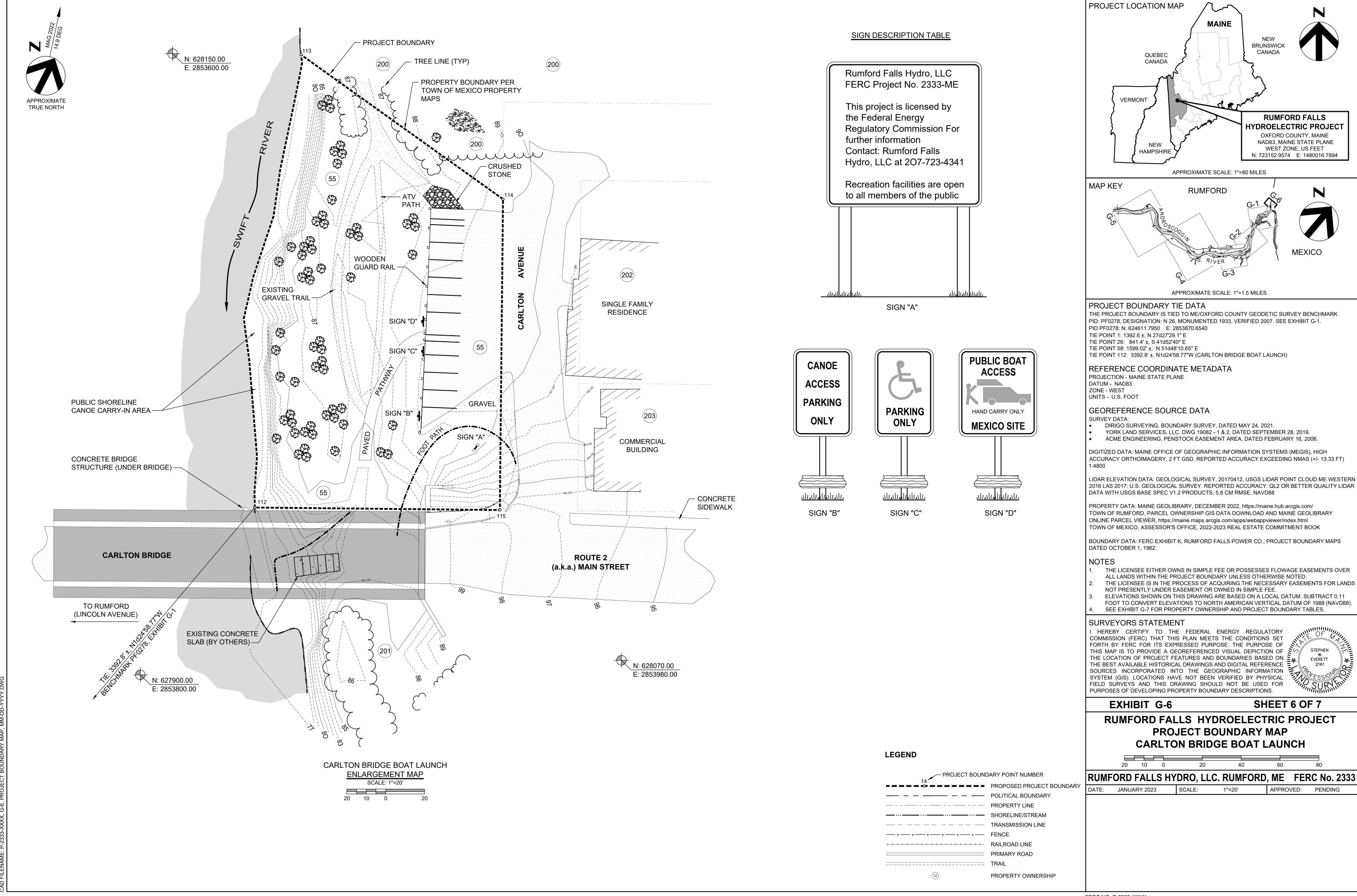












PRO	PERTY OWNERSHIP TABLE
NUMBER	PROPERTY OWNER
1	CENTRAL MAINE POWER COMPANY
2	BLANCHARD CHARLOTTE A
3	RUMFORD TOWN OF
4	RUMFORD FALLS POWER COMPANY
5	BAYROOT LLC
6	BRIGGETTE KENNETH SR
7	MJH LLC
8	DEAD RIVER INC
9	ESPINOZA BRENDA L
10	MEADER ARTHUR G
11	MEADER & SON INC
12 13	RUMFORD PAPER COMPANY
14	NAPOLEON OUELLETTE POST #24  COTE MARK J
15	CRT XXI LLC
16	CRT XXXVI LLC
17	OXFORD COUNTY MENTAL
18	COTE MARK J
19	THERIAULT RONALD J
20	MILLIGAN SHERRY
21	PARENT INVESTMENT GROUP LLC
22	PEREZ WENCESLAO
23	HARRIS HOTEL RUMFORD LLC
24	BANGOR SAVINGS BANK
25	SWEATT DALE M
26	BARTASH JOHN J JR
27	SOUCY JOHN D
28	HOPE ASSOCIATION
29	DICKSON JULIE ANN
30	HATZIS PETER A
31	GREATER RUMFORD
32	KLOA LLC
33	NORTHWEST PRECISION INC
34	RUMFORD ISLAND HSNG ASSN
35	KURAS LINDA
36	INSURANCE RENTAL PROPERTIES LLC
37	UPTON SERVICES LLC
38	TERRA HOLDING GROUP LLC
39	MANEMANUS GEORGE S
40	TRI-COUNTY MENTAL
41	ROULEAU ROBERT J
42	ELKS BPOE
43	WESTERN MAINE BROKERAGE SVCS L
44	C'S INC
45	STANLEY'S FURNITURE
46	VROTSOS MARIA A
47	JENNSAN PROPERTIES LTD
48	SATELLITE VALLEY LLC
49	TAG ALI
50	CHEN SUYUAN
51	KEY BANK OF MAINE
52	UNITED STATES OF AMERICA
53	FRANKLIN SAVINGS BANK
54	PHILLIPS REALTY ENTERPRISES
55	RUMFORD FALLS HYDRO LLC
56	BUOTTE PETER LEE
57	KAN, LLC
58	ADLEY FIVE LLC
59	THE ADLEY CREW LLC
60	WILLIAMS BETSEY L
61	FLEURY ROGER F
62	AUSTIN FAYLENE A
63	PELLERIN TINA
64	BLANCHARD SYLVIA L DEVISEES
65	WEBB RIVER MOUNTAIN
66	GORHAM CHRISTINE E
67	RUMLEW INC
07	TOURILLY INC

68 ZINCK PHILLIP H

	CONTINUED
69	PREVOST ALVIN J
70	RICHARD DANIEL
71	BLAMPIED PHILIP G
72	FROST EUGENE I SR
73	WELCH MARGUERITE
74	CAYER DOROTHEA L
75	BROUGHTON SARAH
76	LEGERE THERESA M
77	DUBE JOHN D
 78	GII BERT WILLIAM F
79	GERRISH TAMMY L
80	GILBERT HELEN M
81	JESELSKIS JEAN
82	TOWLE DEBRA C
83	MOORE BARRY G
84	GURNEY JENNIFER MOORE
85	CHASE BRIAN S
86	CAMPLE EDWIN B. ID
87	GAMBLE ERWIN R JR
88	DOLAN SHANNON
89	WARREN KAREN T
90	RIDEOUT PAMELA J
91	MURPHY WILLIAM P
92	HOLMAN LLOYD A
93	SULLIVAN GREGORY F
94	DAVIS MARY A ESTATE OF
95	DELEKTO PAUL J
96	ZINCK PHILLIP H
97	PUTNAM STEPHEN F
98	MAINE STATE OF
99	WELCH SHANNON N
100	BORDEAU M MARGARET
101	WHITNEY GARY L
102	FIRST UNITED
103	KILEY DANIEL
104	BOARDMAN DAVID C
105	FRISBIE WILLIAM A
106	FULLER CATALINA
107	BLANCHARD MARK P
108	BARNETT JAMES A
109	JAM COLE LLC
110	BARNETT GLORIA L
111	BELLEGARDE ROLAND J
112	CORNISH DONNA M
113	MILLIGAN MARJORIE R
114	FARRINGTON STEPHEN J
115	RICHARD JERRY E
116	MORGAN MARTIN L
117	CIHAK KURT E
118	CLEMENT GARY D
119	PALMER EDWARD & LYNN
120	ANDREWS JAMES H JR
121	FARRINGTON ROBERT C
122	MILLIGAN SHERRY
123	AHEARN FREDERICK J III
124	GORHAM CHRISTINE E
125	NOKES RICHARD S
126	LEDESMA BRANDIE M
127	HARTRANFT JEANNE B
128	LARIVIERE FREDA A
120	ABBOTT WILDER K
130	ABBOTT WILDER K  ABBOTT WALTER A ET AL
130	-
	SWAN GARY  BENEDIY DATRICIA E
132	BENEDIX PATRICIA E
133	PARR GREIG L
134	ROULEAU ROBERT J
135	KEMERAITIS CORLESS E DEVISEES
136	BILLINGS LLOYD A JR

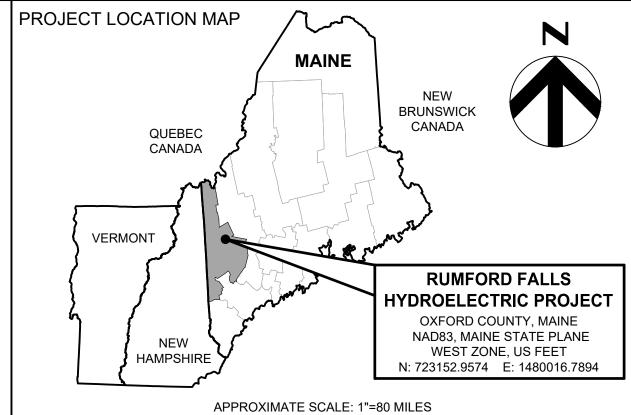
137 CAMP REAL ESTATE

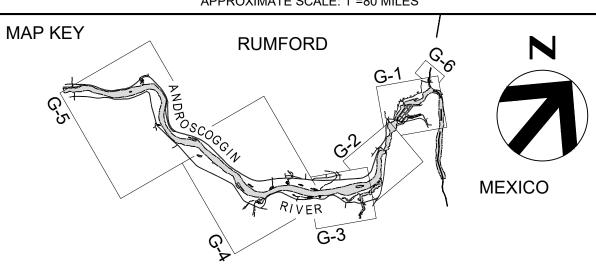
	CONTINUED
138	MCKINLEY JOHN S
139	CARUSO VINCENT J
140	RICHARD STEVEN J
141	COLLINS JAMES P
142	PEPIN JOHN C TRUSTEE
143	BERNARD LIVING TRUST
144	PERRY LAWRENCE J
145	BARNETT JAMES A
146	PEREZ WENCESLAO
147	LAMBERT GIRARD B
148	BOTKUS DAVID F
149	PRATT DONALD C
150	CAMERON ROBERT A
151	WEST FAMILY PROPERTIES LLC
152	ROWE THOMAS E
153	ACKERMAN STEPHENIE
154	CAYER FERNAND R
155	BEAUDET NORMAN J
156	CAYER FERNAND R
157	COULOMBE DONALD F
158	CAMERON SEAN M
159	PHILLIPS ERNEST W
160	POWERS JAMES F
161	SARGENT DENNIS R
162	WESTON GRETA A
163	THERIAULT RICHARD
164	SMITH KARL H
165	HOYT JOHN E
166	KINGSLAND JANE F
167	RACER JANEK Y
168	WOULFE JOHN C III
169	RUMFORD CENTER GRANGE HALL
170	DYER STEVEN M
171	WILLHOITE DAVID A & BOBBI L
172	RICHARD VICTOR J
173	HALL ERIN D
174	BELL WILLIAM F & JOAN H
175	SCOTT JAMES W SR
176	GARRETT LEVI A
177	DESALLE PETER
178	BRADFORD ROBERT F
179	RYAN PATRICK A
180	MAINE STATE OF
181	MAINE DEPARTMENT
182	WEST FAMILY PROPERTIES LLC
183	ROY NORMAN J
184	KERVIN DAVID
185	KILEY JULIE A
186	CHAMBERLAIN CRAIG F
100	
	ROY MAURICE P
187	ROY MAURICE P RIGGS LAURA
187 188	RIGGS LAURA
187	
187 188 189	RIGGS LAURA PLANTE ROGER L
187 188 189 190	RIGGS LAURA PLANTE ROGER L BARTLETT GARRY D
187 188 189 190 191	RIGGS LAURA PLANTE ROGER L BARTLETT GARRY D DOLLOFF MARIETTA
187 188 189 190 191 192	RIGGS LAURA PLANTE ROGER L BARTLETT GARRY D DOLLOFF MARIETTA DOLLOFF WILLIAM
187 188 189 190 191 192 193	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W
187 188 189 190 191 192 193 194	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E
187 188 189 190 191 192 193 194 195	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K
187 188 189 190 191 192 193 194 195 196 197	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J
187 188 189 190 191 192 193 194 195 196 197 198	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE
187 188 189 190 191 192 193 194 195 196 197 198 199	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE  RIVER VALLEY
187 188 189 190 191 192 193 194 195 196 197 198 199 200	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE  RIVER VALLEY  BUCKLAND, KYLE H
187 188 189 190 191 192 193 194 195 196 197 198 199	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE  RIVER VALLEY  BUCKLAND, KYLE H  COYOTE PROPERTIES, LLC
187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE  RIVER VALLEY  BUCKLAND, KYLE H  COYOTE PROPERTIES, LLC  DUGUAY, RAY AND JACKIE
187 188 189 190 191 192 193 194 195 196 197 198 199 200 201	RIGGS LAURA  PLANTE ROGER L  BARTLETT GARRY D  DOLLOFF MARIETTA  DOLLOFF WILLIAM  WELCH ANN E  RICHARD RAYNARD W  THIBODEAU KENRICK A K  ROY NORMAN  MCLAUGHLIN ELLEN J  PEPIN JOHN C TRUSTEE  RIVER VALLEY  BUCKLAND, KYLE H  COYOTE PROPERTIES, LLC

	PROJECT BOUNDARY TABLE	
POINT	COURSE	DISTANCE (FT
1-2	CURVE, 708.78' RAD, 26.64' ARC LENGTH, CHORD 26.64', N 43d14'3.01" E	26.64
2-3	CURVE, 708.78' RAD, 50.12' ARC LENGTH, CHORD 50.11, N 46d20'12.8008" E	50.12
3-4	S 37d42'30.00" E	655.98
4-5	S 52d17'30.00" W	25.00
5-6	S 37d42'30.00" E	2.59
6-7	S 2d51'0.00" E	56.16
7-8	S 33d31'55.04" W	39.23
8-9	S 31d9'0.00" W	707.63
9-10	S 68d55'0.00" W	432.69
10-11	S 1d35'0.00" E	
		781.60
11-12	S 44d43'15.00" W	51.68
12-13	S 75d34'37.39" W	322.59
13-14	S 66d52'0.00" W	42.49
14-15	N 33d33'0.00" W	60.00
15-16	N 68d32'1.69" E	50.00
16-17	CURVE, 400.00' RAD, 314.46' ARC LENGTH, CHORD 306.42, N 24d6'17.54" W	314.46
17-18	N 1d35'0.00" W	171.46
18-19	S 88d25'0.00" W	4.00
19-20	N 1d35'0.00" W	846.73
20-21	S 46d16'0.00" E	5.69
21-22	N 1d35'0.00" W	253.70
22-23	N 49d9'0.00" E	788.64
23-24	N 43d51'47.98" W	80.00
24-25	N 49d9'0.00" E	284.89
25-1	\$ 40d5'0.00" E CURVE, 1178.70' RAD, 134.47' ARC LENGTH,	167.05
26-27	CHORD 134.39, N 41d27'12.16" E	134.47
27-28	N 24d18'0.00" W	198.78
28-29	N 13d15'0.00" W	76.87
29-30	N 39d46'20.19" W	78.70
30-31	N 13d40'0.00" E	40.12
24.20	CURVE, 67.38' RAD, 58.17' ARC LENGTH,	E0 47
31-32 32-33	CHORD 56.38, N 78d55'55.50" E S 54d12'0.00" W	58.17 233.90
32-33	CURVE, 160.00' RAD, 64.37' ARC LENGTH,	255.90
33-34	CHORD 63.94, N 42d40'28.55" E	64.37
34-35	N 31d9'0.00" E	409.05
35-36	S 8d16'30.00" W	558.35
36-37	S 8d16'30.00" W	635.54
37-38	N 78d50'0.00" W	83.21
38-39	S 11d10'0.00" W	316.55
39-40	S 39d21'30.00" W	227.23
40-41	S 53d5'0.00" W	169.58
41-42	N 59d15'0.00" W	153.93
42-43	N 30d45'0.00" E	342.00
43-26	S 15d12'0.00" W	393.70
44-45	N 0d21'2.23" E	105.04
45-46	S 39d38'14.71" E	723.34
46-47	S 52d17'30.00" W	7.24
47-48	S 40d37'0.00" E	25.21
48-49	S 8d21'0.00" W	94.75
49-50		6.79
	S 52d17'30.00" W	· ·
50-51		
50-51	S 37d42'30.00" E	17.04
50-51 51-52	S 37d42'30.00" E S 52d12'30.00" W	17.04 5.00
50-51 51-52 52-53	S 37d42'30.00" E S 52d12'30.00" W S 37d42'36.00" E	17.04 5.00 16.33
50-51 51-52 52-53 53-54	S 37d42'30.00" E S 52d12'30.00" W S 37d42'36.00" E S 52d17'30.00" W	17.04 5.00 16.33 24.56
50-51 51-52 52-53 53-54 54-55	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W	17.04 5.00 16.33 24.56 33.33
50-51 51-52 52-53 53-54 54-55 55-56	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E	17.04 5.00 16.33 24.56 33.33 21.67
50-51 51-52 52-53 53-54 54-55	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W	17.04 5.00 16.33 24.56 33.33
50-51 51-52 52-53 53-54 54-55 55-56	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E	17.04 5.00 16.33 24.56 33.33 21.67
50-51 51-52 52-53 53-54 54-55 55-56 56-57	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W	17.04 5.00 16.33 24.56 33.33 21.67 646.68
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44 58-59	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W  S 26d9'13.89" E	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48 126.46
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44 58-59 59-60 60-61	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W  S 26d9'13.89" E  S 3d29'44.93" W  S 17d3'9.84" W  CURVE, 679.6' RAD, 133.57' ARC LENGTH,	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48 126.46 240.67 176.04
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44 58-59 59-60 60-61 61-62	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W  S 26d9'13.89" E  S 3d29'44.93" W  S 17d3'9.84" W  CURVE, 679.6' RAD, 133.57' ARC LENGTH, CHORD 133.36, S 50d18'1.06" W	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48 126.46 240.67 176.04 133.57
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44 58-59 59-60 60-61 61-62 62-63	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W  S 26d9'13.89" E  S 3d29'44.93" W  S 17d3'9.84" W  CURVE, 679.6' RAD, 133.57' ARC LENGTH, CHORD 133.36, S 50d18'1.06" W  S 8d32'25.01" W	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48 126.46 240.67 176.04 133.57 141.63
50-51 51-52 52-53 53-54 54-55 55-56 56-57 57-44 58-59 59-60 60-61 61-62	S 37d42'30.00" E  S 52d12'30.00" W  S 37d42'36.00" E  S 52d17'30.00" W  N 37d42'30.00" W  N 52d12'32.00" E  N 37d42'30.31" W  N 37d52'9.38" W  S 26d9'13.89" E  S 3d29'44.93" W  S 17d3'9.84" W  CURVE, 679.6' RAD, 133.57' ARC LENGTH, CHORD 133.36, S 50d18'1.06" W	17.04 5.00 16.33 24.56 33.33 21.67 646.68 84.48 126.46 240.67 176.04 133.57

	CONTINUED	
65-66	S 8d16'29.76" W	196.61
66-67	S 8d16'29.44" W	3106.98
67-68	S 35d38'30.00" E	138.44
68-69	S 32d56'30.00" E	164.81
69-70	S 17d3'0.00" E	165.62
70-71	S 10d38'0.00" E	470.96
71-72	S 61d36'56.91" W	10.37
72-73	N 28d23'3.09" W	50.60
73-74	N 60d38'30.00" W	109.07
74-75	S 84d49'30.00" W	43.63
75-76	ALONG SHORELINE, EL 601.24'	10593.07
76-77	N 81d0'0.00" W	212.52
77-78	ALONG SHORELINE, EL 601.24'	2656.45
78-79	S 87d41'0.00" W	14.29
79-80	ALONG SHORELINE, EL 601.24'	40842.81
80-81	N 53d9'28.68" W	498.36
81-82	ALONG SHORELINE, EL 601.24'	38012.84
82-83	S 84d49'30.00" W	31.42
83-84	N 17d4'49.00" W	52.05
84-85	S 84d57'44.00" W	250.00
85-86	N 52d29'9.00" W	101.03
86-87	N 4d15'19.97" W	151.43
87-88	N 86d47'20.81" E	98.07
88-89	N 3d7'30.00" W	188.98
89-90	N 41d24'30.00" W	122.32
90-91	S 86d52'0.00" W	79.04
91-92	N 3d7'30.00" W	145.52
92-93	N 23d46'0.00" W	420.00
93-94	N 35d8'0.00" W	271.00
94-95	N 47d26'0.00" W	197.00
95-96	N 39d49'30.00" W	346.50
96-97	N 33d1'0.00" W	474.00
97-98	N 23d28'24.80" W	40.50
98-99	N 21d54'33.23" W	42.17
99-100	CURVE, 142.0' RAD, 178.63' ARC LENGTH, CHORD 167.08, N 19d54'35.39" E	178.63
100-101	N 39d21'59.82" E	28.03
101-102	N 55d56'54.70" E	340.10
102-103	N 63d2'1.48" E	149.73
103-104	ALONG SHORELINE	4438.78
104-105	S 64d43'12.00" E	337.00
105-106	S 24d46'0.00" W	6.00
106-107	S 65d14'0.00" E	20.55
107-108	S 0d46'0.00" W	210.86
107-108	S 89d14'0.00" E	35.66
100-109	S 0d21'2.23" W	39.97
110-111	S 39d38'30" E	744.69
		99.40
	N 75437''30 00" <b>□</b>	JJ.4U
111-58	N 75d37'30.00" E	227 12
111-58 112-113	ALONG SHORELINE	237.12
111-58		237.12 127.76 160.00

CONTINUED





APPROXIMATE SCALE: 1"=1.5 MILES

#### PROJECT BOUNDARY TIE DATA

THE PROJECT BOUNDARY IS TIED TO ME/OXFORD COUNTY GEODETIC SURVEY BENCHMARK PID: PF0278, DESIGNATION: N 26, MONUMENTED 1933, VERIFIED 2007. SEE EXHIBIT G-1. PID PF0278: N: 624611.7950 E: 2853870.6540

TIE POINT 1: 1392.6 ±, N 27d27'29.1" E TIE POINT 26: 841.4' ±, S 41d52'40" E

TIE POINT 58: 1599.02' ±, N 51d48'10.65" E TIE POINT 112: 3392.8' ±, N1d24'58.77"W (CARLTON BRIDGE BOAT LAUNCH)

#### REFERENCE COORDINATE METADATA

PROJECTION - MAINE STATE PLANE DATUM - NAD83

ZONE - WEST UNITS - U.S. FOOT

#### GEOREFERENCE SOURCE DATA

DIRIGO SURVEYING, BOUNDARY SURVEY, DATED MAY 24, 2021.

YORK LAND SERVICES, LLC. DWG 19082 - 1 & 2, DATED SEPTEMBER 28, 2019. ACME ENGINEERING, PENSTOCK EASEMENT AREA, DATED FEBRUARY 16, 2006.

DIGITIZED DATA: MAINE OFFICE OF GEOGRAPHIC INFORMATION SYSTEMS (MEGIS), HIGH ACCURACY ORTHOIMAGERY, 2 FT GSD. REPORTED ACCURACY EXCEEDING NMAS (+/- 13.33 FT)

LIDAR ELEVATION DATA: GEOLOGICAL SURVEY, 20170412, USGS LIDAR POINT CLOUD ME WESTERN 2016 LAS 2017: U.S. GEOLOGICAL SURVEY. REPORTED ACCURACY: QL2 OR BETTER QUALITY LIDAR DATA WITH USGS BASE SPEC V1.2 PRODUCTS, 5.8 CM RMSE, NAVD88

PROPERTY DATA: MAINE GEOLIBRARY, DECEMBER 2022, https://maine.hub.arcgis.com/ TOWN OF RUMFORD, PARCEL OWNERSHIP GIS DATA DOWNLOAD AND MAINE GEOLIBRARY ONLINE PARCEL VIEWER, https://maine.maps.arcgis.com/apps/webappviewer/index.html TOWN OF MEXICO, ASSESSOR'S OFFICE, 2022-2023 REAL ESTATE COMMITMENT BOOK

BOUNDARY DATA: FERC EXHIBIT K, RUMFORD FALLS POWER CO., PROJECT BOUNDARY MAPS DATED OCTOBER 1, 1962.

THE LICENSEE EITHER OWNS IN SIMPLE FEE OR POSSESSES FLOWAGE EASEMENTS OVER

- ALL LANDS WITHIN THE PROJECT BOUNDARY UNLESS OTHERWISE NOTED. THE LICENSEE IS IN THE PROCESS OF ACQUIRING THE NECESSARY EASEMENTS FOR LANDS
- NOT PRESENTLY UNDER EASEMENT OR OWNED IN SIMPLE FEE.
- ELEVATIONS SHOWN ON THIS DRAWING ARE BASED ON A LOCAL DATUM. SUBTRACT 0.11 FOOT TO CONVERT ELEVATIONS TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

#### SURVEYORS STATEMENT

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FORTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON EVERETT 20151 THE LOCATION OF PROJECT FEATURES AND BOOKBARILE BROLE OF THE BEST AVAILABLE HISTORICAL DRAWINGS AND DIGITAL REFERENCE SOURCES INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS.



#### **EXHIBIT G-7**

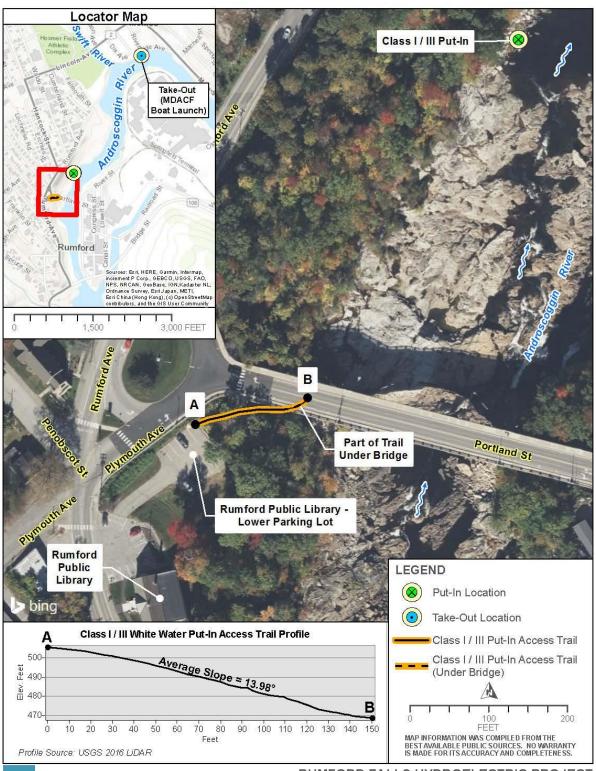
SHEET 7 OF 7

RUMFORD FALLS HYDROELECTRIC PROJECT PROJECT BOUNDARY MAP PROPERTY OWNERSHIP AND PROJECT BOUNDARY TABLES

RUMFORD FALLS HYDRO, LLC. RUMFORD, ME FERC No. 2333

DATE: JANUARY 2023 SCALE: NONE APPROVED: PENDING

# APPENDIX D FIGURE OF RUMFORD PUBLIC LIBRARY ACCESS TRAIL



HOR

RUMFORD FALLS HYDROELECTRIC PROJECT RUMFORD PUBLIC LIBRARY ACCESS TRAIL – WHITEWATER STUDY

FERC NO. 2333