

**EXH. CPC-8HC  
DOCKETS UE-240004/UG-240005  
2024 PSE GENERAL RATE CASE  
WITNESS: COLIN P. CROWLEY**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY,**

**Respondent.**

**Docket UE-240004  
Docket UG-240005**

**SEVENTH EXHIBIT (HIGHLY CONFIDENTIAL) TO THE  
PREFILED DIRECT TESTIMONY OF**

**COLIN P. CROWLEY**

**ON BEHALF OF PUGET SOUND ENERGY**

**REDACTED VERSION**

**FEBRUARY 15, 2024**



# Beaver Creek Wind Project

EMC Decisional

**Colin Crowley & Jim Hogan**

Director, Energy Resource Development & Director, Major Projects

October 23, 2023



**Highly Confidential**

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## Background

- On Aug. 3, 2023 the Board of Directors authorized PSE to execute the following contract:
  - Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with the Beaver Creek wind project:
- PSE and Caithness executed the MIPA on September 14
- Conditions precedent to closing are largely on track for a MIPA closing on or before December 4. Select condition precedent highlights include:
  - Lease amendments and estoppel certificates under review by six landowners
  - Conditional Use Permit approved and set to be non-appealable on or around November 10<sup>th</sup>
  - BOP and TSA contracts are on track to be in form and substance satisfactory to PSE
  - Northwestern transmission study for requested PTP transmission delayed beyond closing.
    - PSE mitigating by having Power Engineers perform power flow study to understand what a Northwestern study may conclude (preliminary results available week of 10/23)
  - Caithness provided microwave study for FCC registered paths. Voluntary filing through NTIA covers non-FCC registered federal paths. PSE requesting Caithness to submit.



## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the EMC authorize PSE to seek board approval, at a date to be determined, to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

3 | <sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.



## Balance of Plant Agreement

- PSE selected Wanzek (a Mas-Tec company) as the BOP contractor from a field of [REDACTED] RFP finalists
  - Wanzek has extensive experience building wind generation facilities [REDACTED] across the United States
- BOP is a [REDACTED] agreement between PSE and Wanzek with an indicative price [REDACTED] for the detailed engineering, procurement, and construction of all project BOP components including site civil work, wind turbine erection, O&M building, electrical collection system, plant substation, and generation interconnect transmission line
  - Supply of the wind turbines not included in BOP contractor scope of supply
  - Main transformer and certain substation equipment to be procured by PSE due to equipment lead times
  - All other plant components to be procured by Wanzek
  - Pricing will be finalized by year end after design is advanced and materials and equipment are sourced
- Includes liquidated damages (LDs) for milestone delays up to an Aggregate LD cap of [REDACTED] of the contract price
- Includes customary termination rights subject to the termination payment<sup>1</sup>
  - Notably, PSE may terminate for failure to meet key milestones and if Wanzek's liability for LDs [REDACTED]
- Includes standard EPC warranty for 2 years after substantial completion of project, including all equipment (other than wind turbine generators), and includes serial defect warranty for equipment [REDACTED]
- Requesting authorization to proceed with engineering under limited notice to proceed until BOP is executed in December.

<sup>1</sup>Termination Payment shall equal the sum of the following: (a) portion of the Contract Price for completed but unpaid work; (b) Wanzek's reasonable demobilization expenses plus [REDACTED] and (c) expenses reasonably incurred by Wanzek in terminating contracts with Subcontractors plus [REDACTED] of such expenses, except to the extent PSE has instructed Contractor not to terminate such contracts. Termination payment terms remain subject to negotiation.

<sup>2</sup>Includes [REDACTED] adjustments to increase size for O&M building, double handling turbines and yard, and foundation blasting.



## Letter of Intent

- Letter of Intent executed between GE and PSE with limited notice to proceed on September 22, 2023
- TSA to be signed at Closing on or before December 4, 2023
  - Model: GE 2.8-127 (89 meter hub height)
  - Total price: [REDACTED]
  - Turbine deliveries scheduled to begin May 2024
  - GE milestone payment schedule:

Milestone	Est. date	%	Cumulative (\$/%)
Down Payment on signing of LOI	Sep. 22, 2023	[REDACTED]	[REDACTED]
Calendar Payment due <sup>2</sup>	[Dec. 4, 2023]		
Calendar payment due	Dec. 15, 2023		
Delivery to Carrier	Est Q2 2024		
Turbine Completion	Est Q1 2025		
Final Project Completion	Est Q1 2025		



- Pricing will decrease by [REDACTED] if buyer executes both a separate [REDACTED] FSA Agreement and separate BESS purchase and services agreements with GE affiliates<sup>3</sup>
  - No discount will apply if FSA Agreement is not executed [REDACTED] and BESS purchase and services agreement is not executed [REDACTED]



5 | <sup>1</sup>All pricing is predicated on receipt of payment in accordance with the payment schedule above and TSA execution with full NTP by Dec 4, 2023

<sup>2</sup>Subject to execution of a new LOI with GE

<sup>3</sup>BESS agreements may be for Beaver Creek or an alternate project of comparable size in the coterminous U.S.

## Turbine Supply Agreement

- Turbine supply will consist of 88 newly manufactured GE 2.82 MW-127M turbines
- Pricing for new machines is [REDACTED] compared with [REDACTED] forecast in August for combination of new and previously titled turbines
- PSE technical team is finalizing turbine option selections (examples of selected options include [REDACTED])
- Accounting for turbine options and spare parts at [REDACTED] results in an expected total turbine cost of [REDACTED]
- PSE can terminate the TSA in whole or as to any Unit(s) for convenience prior to the delivery of such Unit subject to a Termination Amount

### Termination Schedule

- In the event PSE terminates the TSA with respect to any Unit(s) and the FSA has been executed, the FSA would automatically terminate with respect to such Unit(s) and a termination charge would also apply under the FSA (see slide 7 for FSA termination amount)

<sup>1</sup>The purchase price shown [REDACTED] is for a base model without available options.

<sup>2</sup>The LOI allows PSE to purchase 88 turbines with the flexibility to reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.

<sup>3</sup>Subject to execution of an amendment to the GE LOI currently being drafted



## Full-Service Agreement

- Full Service Agreement (FSA) with GE for service, maintenance and monitoring of the wind turbines acquired under the TSA including all labor, parts and components, materials, consumable items, tools, equipment and field, fleet and performance engineering resources
  - Additional coverage for specific balance of plant (BOP) scope of work is offered and being evaluated
  - GE will utilize internal management and specialized technicians, and third-party independent service contractors to perform planned and unplanned maintenance
  - Remote 24/7 performance and reliability monitoring is included
- Currently evaluating [REDACTED] and [REDACTED] options to minimize risk, maintain reliability and enable service provider flexibility with GE turbines
- Liquidated damages are due to PSE if turbine availability is less than [REDACTED] and [REDACTED] of the FSA
- Either Party may terminate the FSA for the other Party's material breach where (i) such breach cannot be cured; (ii) the defaulting party fails to cure such breach within [REDACTED] of notice of the breach; or (iii) if a reasonable cure plan is in place, within [REDACTED] of notice of the breach. This would include PSE's failure to make the Facility available to GE to perform its obligations.
  - Termination Amount: [REDACTED] of the total expected price to be paid between the termination date and the end of the agreed contract term
  - PSE does not have an express right to terminate the FSA for convenience, but it does have a right to terminate the TSA for convenience and upon such termination, the FSA would also terminate with respect to the terminated Units

## Construction budget estimate for 248MWac

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement			
GE Contract Option & Spare Parts			
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price			
Step-up Transformer			
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>			
<b>Contingency</b>			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	534,260	2,153	100.0%

### Key budget updates since Aug BOD

Increase in project size decreases forecast per unit cost by [REDACTED] and increases overall project costs by [REDACTED]

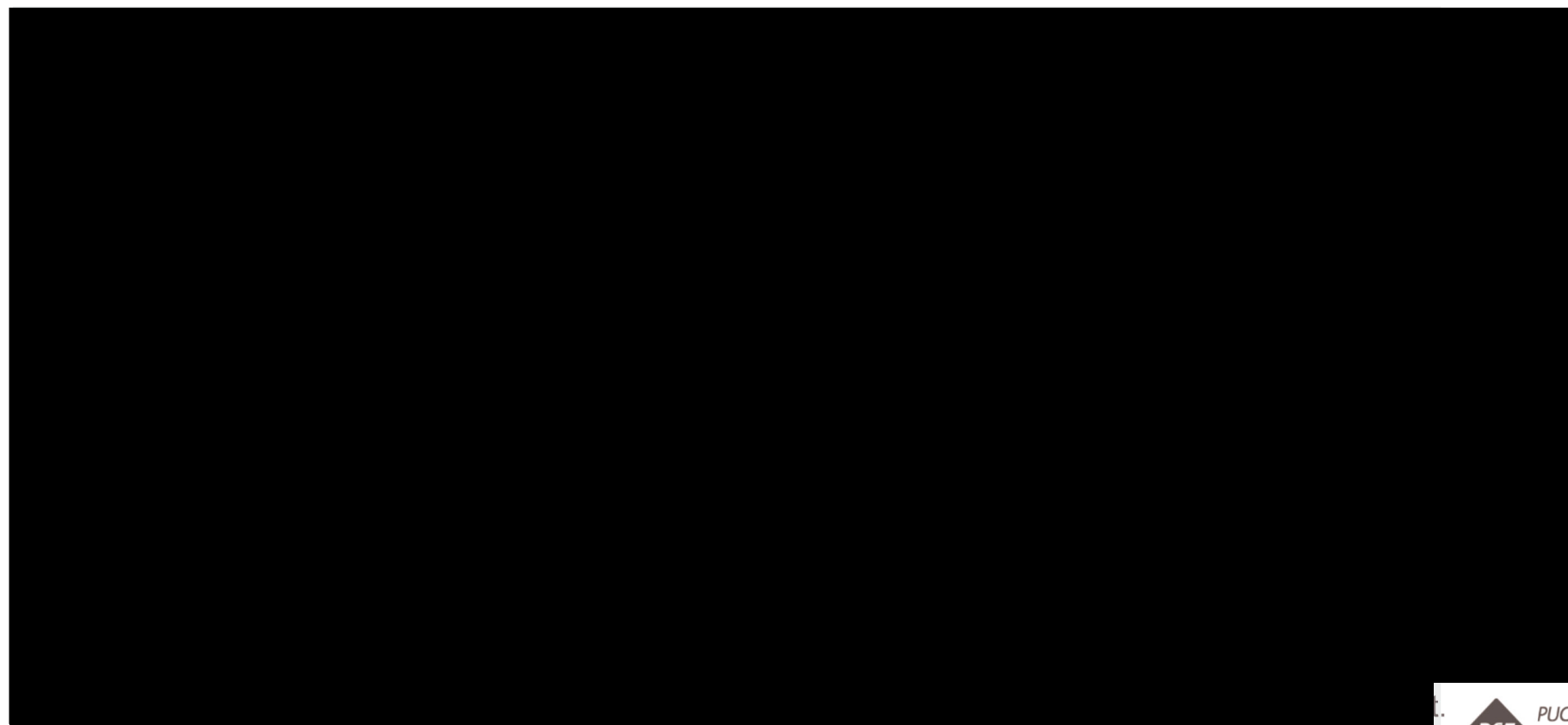
- Development budget reflects reimbursables to Caithness [REDACTED]
- GE contract reflects the higher nameplate, updated pricing and contract options [REDACTED]
- BOP contract reflects selected EPC and transformer pricing [REDACTED]
- PSE project management plus contingency reflects updated forecast and inclusion of remaining interconnection upgrade [REDACTED]
- AFUDC reflects decreases due to earlier COD [REDACTED]





## Detailed cash out forecast and funding commitment

---



9 |



## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the EMC authorize PSE to seek board approval, at a date to be determined, to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

<sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.

# Appendices

- Project overview slide
- Project schedule
- Permitting update
- Interconnection and transmission update
- Detailed cash out forecast and funding commitment

## Project overview / Commercial terms

### PROJECT PROFILE

**Resource Type:** Wind (w/battery option)  
**Developer/Seller:** Caithness Energy LLC  
**Location:** Stillwater County, MT  
**Nameplate Capacity:** 248 MW<sup>1</sup>  
+ optional BESS  
**COD:** March 31, 2025

### PRICE AND PRODUCT

**Product:** Purchase of construction NTP-ready development rights

**Price:** [REDACTED] (50% at closing, 50% at substantial completion)<sup>2</sup>

**NCF:** [REDACTED]

**Expected Output:** 803,000 MWh/yr

**Transaction Type:** Membership Interest Purchase Agreement

### DEVELOPMENT STATUS

- Site control secured
- Conditional Use Permit approved by County Board of Commissioners on October 10, 2023
- Project to be acquired at construction NTP-ready state



### ENERGY DELIVERY

**POI:** New substation on Northwestern  
**Transmission Plan:** NWMT wheel to Colstrip or Garrison, then share PSE's 713 MW CTS and BPA transmission rights to PSE's system. Assumption of 100 MW TSR queue position from Garrison to PGE provides incremental transmission that can be re-directed to MIDC.

12 |

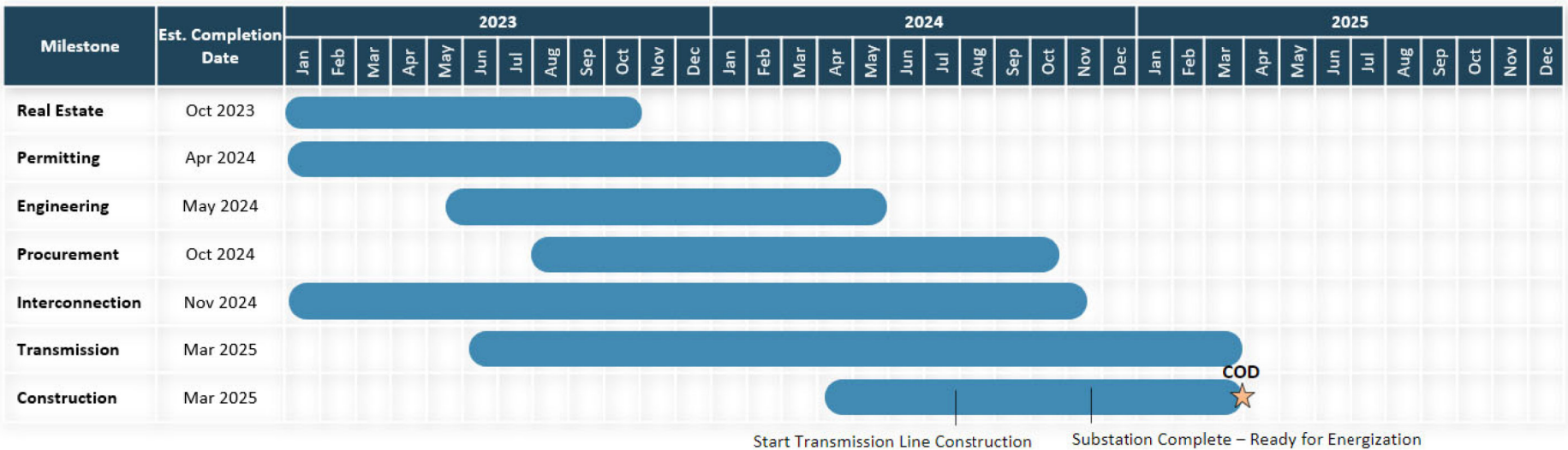
<sup>1</sup>PSE may elect to reduce the number of turbines by [REDACTED] provided GE receives written notification from PSE by January 10, 2024

<sup>2</sup>Final purchase price will be adjusted up or down at substantial completion by [REDACTED] to reflect final nameplate capacity [REDACTED]

<sup>3</sup>DNV high-level resource assessment check shows a [REDACTED] NCF, indicating potential for higher annual production. PSE used the more conservative ArcVera NCF forecast for modeling purposes. PSE has engaged DNV to perform a full resource assessment and expects to receive the results in late October.



Estimated project schedule appears to be reasonable to meet a March 31, 2025 COD



## Closing permitting is generally on track for completion

---

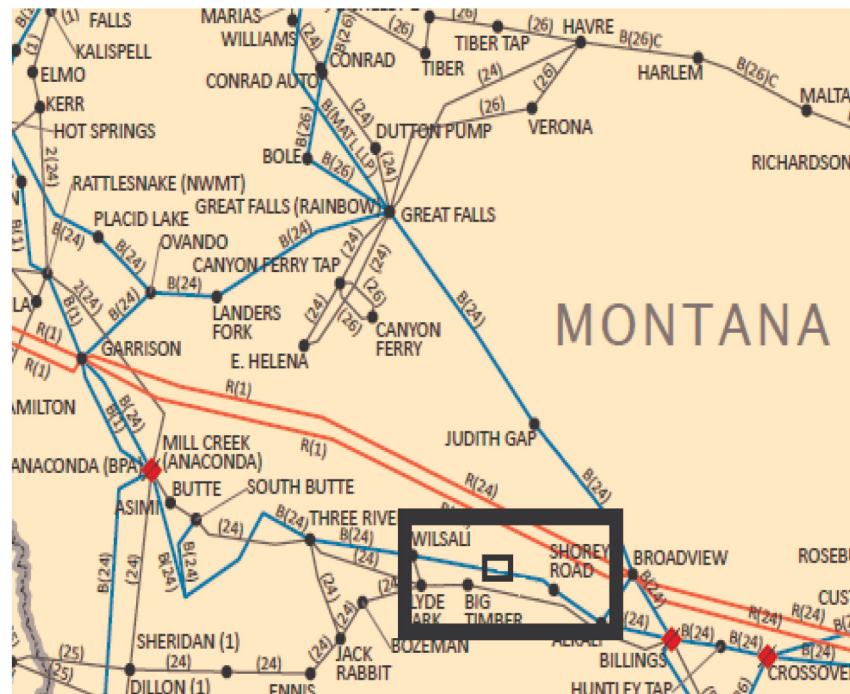
- Conditional Use Permit (CUP) from Stillwater County for the full 248 MW project with 100 MW battery energy storage system (BESS) approved on October 10, 2023.
- Permit is non-appealable after [REDACTED] days.
- Additional baseline environmental information will be required to complete permit review and obtain an Eagle Incidental Take Permit (needed for long-term operations)
- All FAA Determinations of No Hazard are complete and have been received for 82 turbines
- PSE consultants are working with BOP contractor to ensure that waters of the U.S. can be avoided to preclude the need for a Clean Water Act Section 404 permit
- Caithness has delivered a Phase 1 Environmental Site Assessment



## Interconnection: On track to meet March 2025 COD

**Point of Interconnection (POI):** New 230kV substation on NorthWestern between Wilsall and Columbus Rapelje Substation

- Executed (LGIA) for 315 MW of network resource interconnection service (NRIS).
- Total upgrade cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of system impact and facility study approximately [REDACTED]
- Transmission Provider's Network Upgrades In-Service: November 15, 2024
- Interconnection Facilities In-Service: November 15, 2024
- Initial Synchronization Date: March 15, 2025
- COD (in LGIA): August 2025<sup>1</sup>



### Key milestones

- ✓ Feasibility Study – completed 9/23/16
- ✓ Revised Feasibility Study – completed 9/29/16
- ✓ System Impact Study – completed 4/13/17
- ✓ Revised System Impact Study – completed 5/9/2017
- ✓ Facility Study – completed 11/17/17
- ✓ Optional Load Study – completed 5/12/21
- ✓ Optional Interconnection Study – completed 4/21/22
- ✓ LGIA Executed

15 | <sup>1</sup>The expected project COD in the current Beaver Creek schedule is March 31, 2025.

## Transmission: Leveraging PSE's existing 713 MW of capacity from Montana to PSE's system

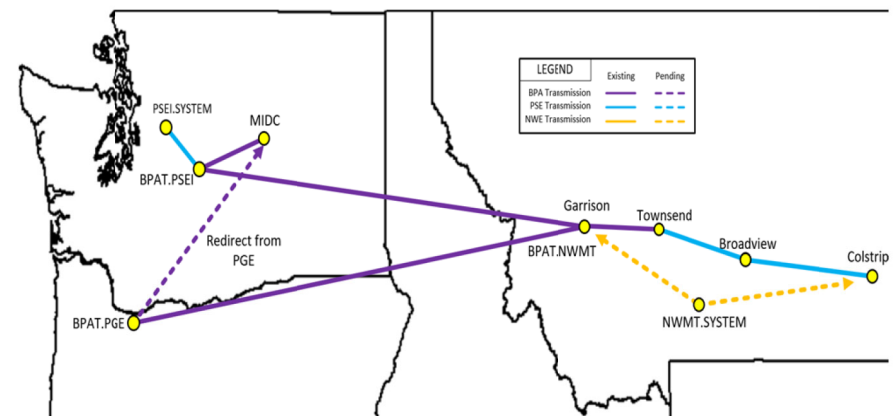
**PSE will leverage its existing 713 MW of transmission rights on the Colstrip Transmission System (CTS), BPA Eastern Intertie, and BPA Main Grid to deliver project output to PSE's load.**

- PSE has requested 220 MW of new NWMT transmission service from the POI to the Colstrip 500 kV substation
- PSE has also requested 220 MW of NWMT transmission service from the POI to Garrison (BPAT.NWMT) as alternative path, avoiding the CTS and Eastern Intertie.
- Previous studies for NRIS interconnection service and Network Integration Transmission Service have not identified any significant network upgrades to NWMT's system to support such services.
- NorthWestern Energy is encountering study delays and will not be able to complete the study by closing date. PSE is engaging an engineering consultant to run an independent study to assess risk to secure transmission. Consultant study results expected by closing.

**Assumption of Caithness's 100 MW transmission service request (TSR) position in the BPA queue from Garrison to PGE provides potential incremental transmission capacity to deliver Project output to MID-C**

- The 100 MW TSR is third in BPA's Montana transmission queue and within ~500 MW of incremental transmission from Montana to the PNW under the scope of BPA's M2W project, with a projected in-service date of 2028-29.
- PSE has assessed redirecting this 100 MW transmission to MID-C to connect with PSE's existing ~1500 MW transmission rights to PSE's system as a viable option

**Transmission path options to deliver Beaver Creek from Colstrip or Garrison to PSE's system and MID-C**





## Detailed cash out forecast and funding commitment

(\$ in millions)

	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Q1-24	Q2-24	Q3-24	Q4-24	Q1-25	Q2-25	Q3-25	Q4-25	Total
<b>Cash Out Categories</b>														
Turbine supply		2.7			217.9		6.0	18.2	19.8	11.0				275.7
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Quarterly Cash Total														
Cumulative Cash														
<b>Commitment Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Commitment Total														

- At the end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to TSA commitment.
- Cash out and funding commitment for BOP and PM, IT, Ops, Equip, Contingency and other is assumed to occur at the same time.

# Beaver Creek Wind Project

## Recommendation for Board Approval

**Colin Crowley**

Director, Energy Resource Development

August 3, 2023



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

Highly Confidential

## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors to authorize PSE to execute the following contract:

Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] million for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with:

- 1) construction-ready approximately 232 MW nameplate wind project located in Stillwater, Montana with anticipated COD in August 2025;
- 2) permitting to support a lithium-ion battery energy storage system (“BESS”)
- 3) real estate rights in adjacent Sweet Grass County anticipated to support 100-150 MW of future development and expansion; and
- 4) a transmission service request (“TSR”) queue position for 100 MW of BPA transmission service from Garrison at BPAT.NWMT to Portland at BPAT.PGE

## Beaver Creek is a time-sensitive opportunity of unique value

- Only identified new build resource that can reach commercial operations in 2025.
- Will help PSE meet its Clean Energy Transformation Act ("CETA") compliance targets for 2025 and 2030 at the lowest reasonable cost compared to other reviewed alternatives
- The [REDACTED] purchase includes additional rights to support future expansion:
  - **Additional real estate rights** in Sweet Grass County to support a future PSE expansion of Beaver Creek.
    - Caithness layout indicates additional turbine locations have been identified on the Sweet Grass footprint of the additional real estate rights, representing 100-150 MW\*
    - Future phase would not be construction ready at closing; PSE responsible for perfecting real estate rights and finalizing permits
  - **Attractive Transmission Service Request ("TSR") queue position** for 100 MW of transmission capacity from Montana at Garrison (BPAT.NWMT) to Portland (BPAT.PGE)
    - High position in BPA's Montana transmission queue would guarantee transmission service of 100 MW available starting in 2030, if PSE stays in queue and agrees to fund its pro-rata share of upgrades.
- **Fully permitted for Battery Energy Storage System ("BESS")** through Conditional Use Permit, assumed at 100 MW for planning purposes

\* Depending upon final equipment selection and permitting

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160


Project overview / Commercial terms

PROJECT PROFILE

**Resource Type:** Wind (w/battery option)  
**Developer/Seller:** Caithness Energy LLC  
**Location:** Stillwater County, MT  
**Nameplate Capacity:** ~232 MW  
+ optional BESS  
**COD:** August 2025

DEVELOPMENT STATUS

- Site control secured
- CUP secured and in process of being modified to represent changes in project configuration.
- Project to be acquired at construction NTP-ready state



PRICE AND PRODUCT


**Product:** Purchase of construction NTP-ready development rights  
**Price:** [REDACTED] (50% at closing, 50% at substantial completion)<sup>1</sup>  
**NCF:** [REDACTED]  
**Expected Output:** 756,860 MWh/yr  
**Transaction Type:** Membership Interest Purchase Agreement

ENERGY DELIVERY

**POI:** New substation on Northwestern  
**Transmission Plan:** NWMT wheel to Colstrip or Garrison, then share PSE's 713 MW CTS and BPA transmission rights to PSE's system. Assumption of 100 MW TSR queue position from Garrison to PGE provides incremental transmission that can be re-directed to MIDC.

4 |

<sup>1</sup> Final purchase price will be adjusted up or down at substantial completion by [REDACTED] per MW to reflect final nameplate capacity (e.g., 220 MW = [REDACTED] 240 MW = [REDACTED])  
<sup>2</sup> DNV high-level resource assessment check shows a [REDACTED] NCF, indicating potential for higher annual production. PSE used the more conservative ArcVera NCF forecast for modeling purposes



REDACTED VERSION

## Anticipated future recommendations for approval

---

Approval to execute the MIPA would not commit PSE to construct the Project. PSE would seek separate board approvals for the following contracts and construction funding prior to constructing the Project:

- **Balance of Plant Agreement (“BOP”)** to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
- Caithness has administered a BOP RFP and PSE is reviewing proposals with Caithness. If purchase is approved, PSE would negotiate, make final BOP selection and execute the BOP agreement shortly after closing.
- **GE Turbine Supply Agreement (“TSA”)** to purchase 48 x 2.5 MW-127M and 40 x 2.8 MW-127M turbines for a total turbine count of 88 and a total nameplate of 232 MW<sub>AC</sub> (Note: final mix of 2.5 & 2.8 may change through negotiation)
  - TSA is in draft form and PSE has provided input on negotiable items. If purchase is approved, PSE would negotiate terms directly with GE and anticipates contract execution shortly after closing.
- **Full Service Agreement (“FSA”)** for certain operation and maintenance services for the turbines supplied under the TSA.



## Beaver Creek Analysis – Draft Results

- PSE Integrated Resource Planning (“IRP”) team has conducted Aurora portfolio optimization modelling for all active resources (RFP and bilateral) in the deal pipeline, incorporating:
  - Need updates published in the 2023 IRP Electric Progress Report
  - Pricing, COD and other updates received for projects in the deal pipeline
- Beaver Creek was demonstrated to be cost effective across several scenarios<sup>1</sup>
  - Portfolio results show that Beaver Creek reduces the overall portfolio cost by ~\$1 billion
    - Does not include the social cost of greenhouses gases, which would add another ~\$180 million to Beaver Creeks' value.
  - One-year COD delay risk was tested, and Beaver Creek was still selected

Portfolio	Beaver Creek Selected as Least Cost solution?	Portfolio Cost (\$Billions) 2024 – 2045
1. Reference – 950 MW nameplate limit on resources from Montana including Clearwater and all RFP with commercial online as stated from bid	Yes	\$19.1
2. Reference without Beaver Creek	No (forced out)	\$20.1
3. Reference + Montana nameplate limit increased to 1550 MW including Clearwater	Yes	\$19.1

<sup>1</sup> Updated cost estimates for Beaver Creek (adjusted property tax assumptions and new guidance from Treasury on qualification for energy community bonus in the IRA) show an NPV increase of the Project of approximately [REDACTED] which will not have a material effect on the portfolio optimization results.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Preliminary construction budget estimate

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Development Rights			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
Wind Turbines			
GE Contract Price			
Balance Of Plant			
Step-up Transformers			
EPC Contract Price			
PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead			
Sales Tax			
Contingency			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	515,272	2,342	100.0%

- The basis of the budget is Caithness's June 27 budget
- Step-up Transformer and EPC contract estimates have been revised upwards by [REDACTED] and [REDACTED] respectively following PSE SME review
- Contingency includes additional [REDACTED] per PSE's generic 2.5% contingency assumption
- AFUDC is calculated by PSE based on the projected cash payouts.

7 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## Financial analysis shows Beaver Creek ownership is a cheaper option for PSE's customers compared to Caithness's PPA offer

- Ownership provides a more favorable economic profile even with less favorable assumptions
- Beaver Creek ownership's levelized cost is [REDACTED] MWh vs. PPA of [REDACTED] MWh
- The PPA offer dated 04-17-23 was based on a higher estimated NCF [REDACTED] and the assumption that the Project will qualify for both the domestic content and energy community PTC bonuses; however, the ownership levelized cost analysis only assumed the domestic content bonus and is based on a lower [REDACTED] NCF.
- The Own vs PPA analysis is based on the PPA Ownership Evaluation Model that was developed by consultant Thorndike Landing. The model determines the relative cost / benefit to PSE customers over a defined timeframe under the different commercial structures including:

### For owned assets

- Expected capital costs
- Operating costs including property tax and insurance
- Tax incentives
- Financing costs
- Integration and Transmission upgrade costs
- Expected residual value

### For PPAs

- Expected cost of power purchased under proposed PPAs
- Impact of debt imputed under long-term contracts
- Replacement resource costs of post PPA period (if applicable)



8 |

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

Mark-to-market estimate shows cost saving for customers over next 5-10 years

Energy Only MTM NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Cost (Bus Bar + Trans.)		
Net Value		
Energy, Capacity, Environmental Attribute NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Value of Capacity/RA		
Value of CETA/REC		
Cost (Bus Bar + Trans.)		
Net Value		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Social Cost of Carbon		
<b>Assumptions</b>		
1. REC price: \$/MWh in 2023, escalated at 2.5%/year thereafter		
2. RA capacity price: \$/kW-month		
3. QCC: (winter), (summer)		
4. MIDC forward curve from Platts as of 6/1/2023		
5. Discount rate: 6.62%		
6. All calculations assuming output configuration		
<ul style="list-style-type: none"><li>Based on the latest forward MIDC curves, on an energy-only basis, for the five-year period from 2025-2029, the net value to customers is million in savings, and million over a 10-year period.</li><li>Accounting for the additional estimated value of capacity and RECs, for the five-year period from 2025-2029, the net value to customers is million in savings, and over a 10-year period.</li><li>The project also brings measurable social economical values in terms of avoided social cost of carbon, as shown at the bottom of table on the left.</li></ul>		



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Equity and Customer Benefit: Beaver Creek will address three of the CETA Customer Benefit Indicators categories

---

### **CETA requires that electric utilities:**

*“ensure that all customers are benefiting from the transition to clean energy; Through the equitable distribution of energy and nonenergy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency (RCW 19.405.040(8)).*

### **1. Energy security and resiliency:**

- Unlocks approximately 756 GWh of new clean energy with an option for batteries to complement the operational limitations of hydro power and solar.
- Increases the diversity of renewable energy resources. Montana wind projects are most productive during the winter months when compared to Washington wind projects, which are more productive in the spring.

### **2. Energy and non-energy benefits:**

- Creates employment opportunities during the year-long construction phase and an ongoing need for permanent, on-site workers after COD.
- PSE plans to use a project labor agreement or community workforce agreement and has committed to using local and diverse suppliers when available. PSE commits to labor standards in RCW 82.08.962 and 82.12.962 to qualify for 100 percent remittance of its state and local taxes.

### **3. Environment and public health benefits:**

- Beaver Creek is projected to displace approximately 535,764 metric tons of carbon dioxide (CO<sub>2</sub>) in its first full year of operations if the same electricity had been generated with natural gas.
- Initial screening using the Co-Benefits Risk Assessment (COBRA) tool indicates that the Project result in an estimated \$1.6M to \$3.6M in avoided costs related to health effects

## Regulatory recovery plan

---

- PSE will likely seek a determination of prudence for the Project and cost recovery in an upcoming General Rate Case (“GRC”) with the Washington Utilities and Transportation Commission (“WUTC”)
  - A GRC is expected to be filed in January 2024 and will include a multiyear rate plan
  - Regulatory approval of new rates would occur eleven months after filing
- Commercial operation of the Project is expected to be achieved in 2025, the first year of the upcoming GRC multiyear rate plan
- Concurrent with the rate filing, PSE may also file an accounting petition with the WUTC to request regulatory treatment of any development rights or transmission deposits if needed

## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors to authorize PSE to execute the following contract:

Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with:

- 1) construction-ready 232 MW nameplate wind project located in Stillwater, Montana with anticipated COD in August 2025;
- 2) permitting to support a lithium-ion battery energy storage system (“BESS”)
- 3) real estate rights in adjacent Sweet Grass County anticipated to support 100-150 MW of future development and expansion; and
- 4) a transmission service request (“TSR”) queue position for 100 MW of BPA transmission service from Garrison at BPAT.NWMT to Portland at BPAT.PGE

## Appendices

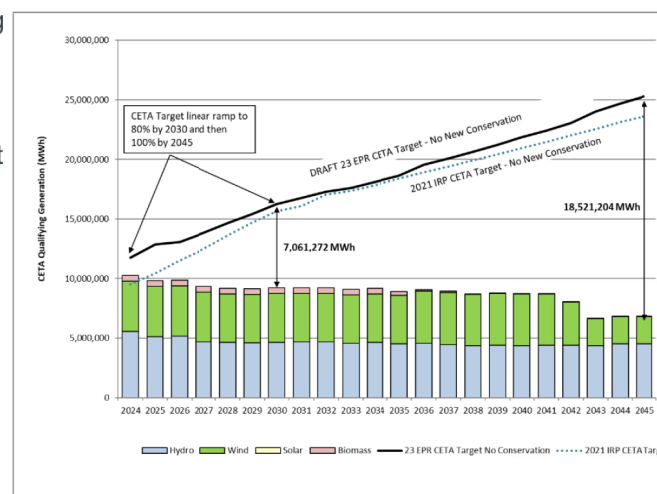
- Risk detail slides
- Community outreach
- Inflation reduction act and associated incentives
- Regulatory recovery plan



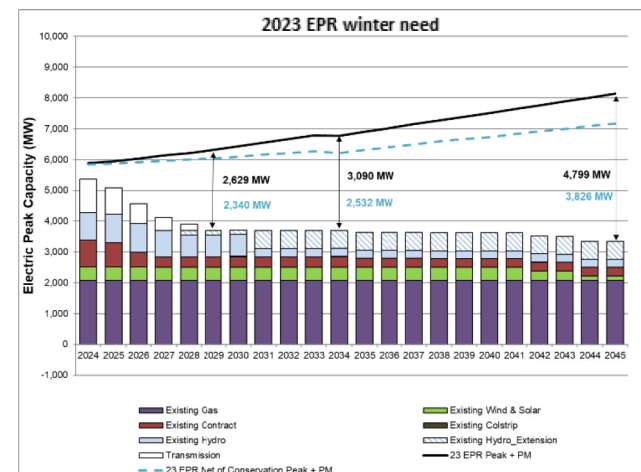
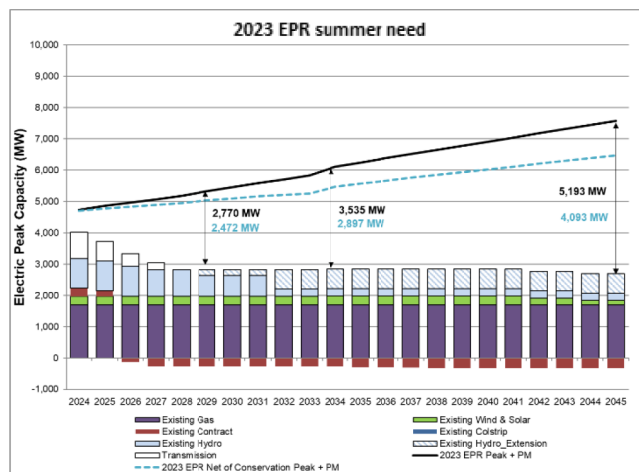
## Beaver Creek expected to contribute 24% of the 2025 forecast need and ~10.7% of the 2030 forecast need for additional clean energy resources

Beaver Creek is the only identified new build resource that could contribute to the CEIP 2025 target

- CETA requires utilities to meet 80% of electric sales using non-emitting or renewable resources by 2030
  - Before new conservation, 2023 IRP Electric Progress Report projects PSE will need >7M MWh clean energy to meet the CETA 2030 target
  - Beaver Creek ("BC") expected to produce 756,860 MWh annually (~10.7% of CETA need for 2030)
- PSE's CEIP set target to meet 63% of electric sales (~1.6M MWh) in 2025 using non-emitting or renewable sources
  - Beaver Creek is expected to contribute 383,480 MWh (~24% of CEIP 2025 target) in 2025
  - Beaver Creek combined with Vantage wind PPA would contribute ~57% of CEIP 2025 target
  - Shortfall to meet 63% CEIP target would be met with short to medium-term off-take contracts



Beaver Creek expected to contribute [REDACTED] of winter and [REDACTED] of summer peak need forecast for 2029 net of conservation\*



- PSE's 2023 IRP Electric Progress Report projects a potential peak capacity shortfall starting in 2024 due to market reliance reductions
- PSE moving toward alignment with Western Resource Adequacy Program ("WRAP"), which does not count transmission capacity to a market hub—such as MIDC—as capacity. In 2029 there is no peak capacity credit applied to MIDC transmission capacity.
- Project expected to contribute [REDACTED] MW peak capacity credit in winter and [REDACTED] MW peak capacity credit in summer\*

15 |

\*Based on Beaver Creek's probable initial phase nameplate of 233 MW and using generic ELCC values for Montana Central wind resources calculated by consulting firm, Energy and Environmental Economics, Inc. ("E3").



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

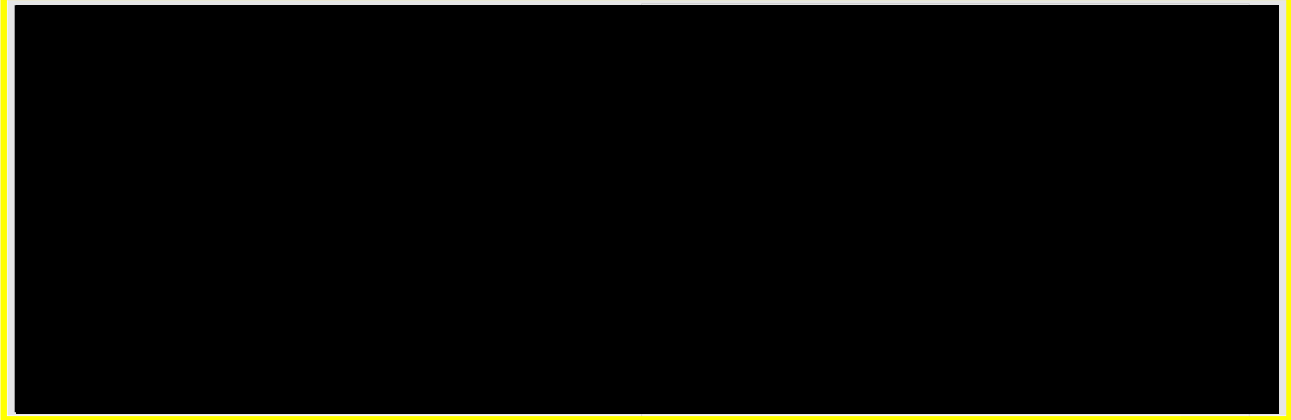
REDACTED VERSION



Estimated project schedule appears to be reasonable to meet an August 2025 COD

---

Beaver Creek and [REDACTED] investment ([REDACTED] in total) will be financed with [REDACTED]



\* PGA impact was adjusted out of 2023 and 2024 ratios; Moody's considers PGA cash flow similar to working capital

- Source of financing determination is prioritized with utilizing PSE/PE debt first and then PIH SH Loan distribution and equity contribution from owners
  - Financing strategy for the two projects is consistent with our recommended strategy in Scenario 1a
  - Assumes the repayment of the two [REDACTED] will be paid in Q4 2023. Depending on cash flows and other potential upcoming resource acquisition activities, management may need to delay partial or full repayments for PSE equity ratio support. Final recommendation will be made at the November board meeting
- 17 | More PSE/PE debt, SH Loan interest PIK and equity contribution will be needed for incremental resource acquisition project investments



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

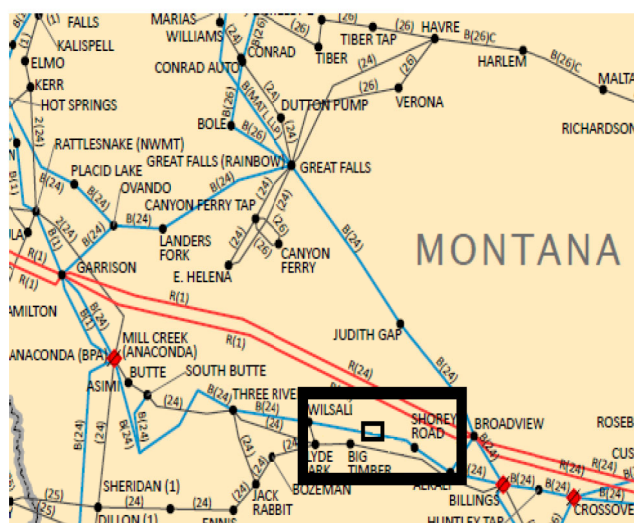
SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Interconnection: On track to meet August 2025 COD

**Point of Interconnection (POI):** New 230kV substation on Northwestern between Wilsall and Columbus Rapelje Substation

- Executed (LGIA) for 315MW of network resource interconnection service (NRIS).
- Total upgrades cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of system impact and facility study approximately [REDACTED]
- Transmission Provider's Network Upgrades In-Service: November 15, 2024
- Interconnection Facilities In-Service: November 15, 2024
- Initial Synchronization Date: March 15, 2025
- Commercial Operation Date: August 15, 2025



### Key milestones

- ✓ Feasibility Study – completed 9/23/16
- ✓ Revised Feasibility Study – completed 9/29/16
- ✓ System Impact Study – completed 4/13/17
- ✓ Revised System Impact Study – completed 5/9/2017
- ✓ Facility Study – completed 11/17/17
- ✓ Optional Load Study – completed 5/12/21
- ✓ Optional Interconnection Study – completed 4/21/22
- ✓ LGIA Executed



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Transmission: Leveraging PSE's existing 713 MW of capacity from Montana to PSE's system

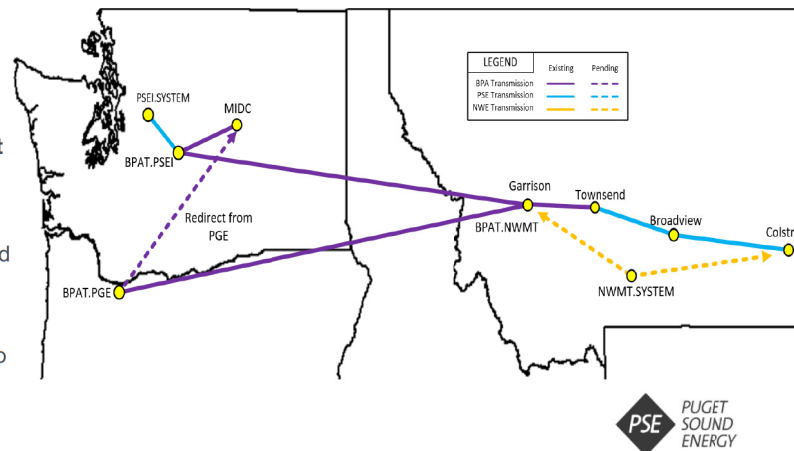
**PSE will leverage its existing 713 MW of transmission rights on the Colstrip Transmission System ("CTS"), BPA Eastern Intertie, and BPA Main Grid to deliver project output to PSE's load.**

- PSE has requested 220 MW of new NWMT transmission service from the POI to the Colstrip 500 kV substation
- PSE has also requested 220 MW of NWMT transmission service from the POI to Garrison (BPAT.NWMT) as alternative path, avoiding the CTS and Eastern Intertie.
- Previous studies for NRIS interconnection service and Network Integration Transmission Service have not identified any significant network upgrades to NWMT's system to support such services.

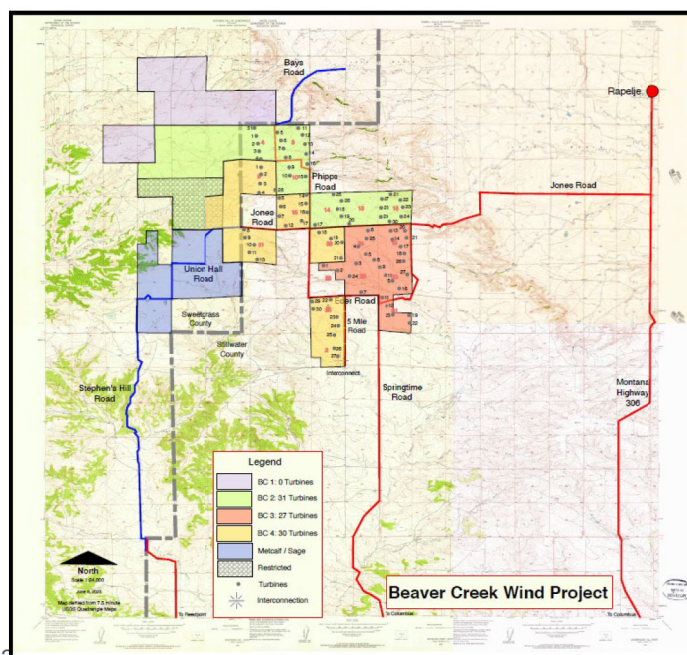
**Assumption of Caithness's 100 MW transmission service request ("TSR") position in the BPA queue from Garrison to PGE provides potential incremental transmission capacity to deliver Project output to MIDC**

- The 100MW TSR is third in BPA's Montana transmission queue and within ~500 MW of incremental transmission from Montana to the PNW under the scope of BPA's M2W project, with a projected in-service date of 2028-29.
- PSE has assessed redirecting this 100MW transmission to MIDC to connect with PSE's existing ~1500 MW transmission rights to PSE's system as a viable option

**Transmission path options to deliver Beaver Creek from Colstrip or Garrison to PSE's system and MIDC**



## Siting and wind resource



### Siting

Approximately 15,000 acres of leased property on the high plains in Stillwater County, Montana. Primary use of the land is for cattle grazing and hay production.

- **Site control:** 100% (per ongoing review/verification)
- **Status:** With limited exception, real estate rights have been secured with recorded wind facility ground leases.
- **Title report** for all leased lands has been received and under review.
- **ALTA survey** of the leased lands has been received and being analyzed in conjunction with both the lease documents and exceptions to title as shown on the title report.

### Wind resource

- Third-party wind resource assessment study performed for Caithness by ArcVera.
- PSE engaged DNV to conduct a review and "reasonableness" check of ArcVera's study. DNV's conclusion is that the NCF is reasonable and in fact estimated an NCF above



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Permitting and cultural resource review

- Stillwater County CUPs are in hand for 160MW of wind (79-81 turbines) and 200 MWh of batteries. Additional CUP amendment required for full buildout.
- Additional baseline environmental information required to complete permit review and to obtain Eagle Take Permit (needed for long-term operations).
- All FAA DNHs Received; Will require review to confirm still valid if turbines move and they expire in March 2024.
- **As a condition to closing, Caithness is required to have all permits updated reflect PSE planned site layout and project size.**

	Stillwater County			Sweet Grass County
<sup>1</sup> May be required, discussing with County <sup>2</sup> Expected in August 2023	BCW II	BCW III	BCW IV	BCW I
Road Use Agreement	Complete	Complete	In Process <sup>2</sup>	Complete
Impact Fee Agreement	Complete	Complete	Submitted	Submitted
New Industry Classification – Tax Abatement	Complete	Complete	Submitted	Submitted
Weed Abatement Agreement	Complete	Complete	In Process <sup>2</sup>	Reviewing <sup>1</sup>
Conditional Use Permit	Complete	Complete	Complete; Amendment required; no application in for required amendment.	Wind Energy Conversion System Ordinance Permit likely required; No application in but would require significant addition studies.

### Environmental Studies Completed; Additional Studies Needed

- ✓ RRC Prelim Geotech Report – 2016 Nov
- ✓ Pilz & Co Desktop Environmental Review – 2019 Sep\*
- ✓ Bionomics Cultural Resources Report – 2017 Dec\*
- ✓ Power Engineers Ph 1 Environmental Assessment – 2016 Jul
- ✓ Power Engineers Ph 1 Screening Report and PII Score – 2007 Oct
- ✓ Bionomics Fall 2017 Avian Survey–2018 Aug\*
- ✓ Bionomics Spring/Summer 2018 Avian Survey – 2018 Jul\*
- ✓ Viewshed Analysis – 2019 Jan\*

\*Incomplete or updates required.

### Wind Resource Studies Completed

- ✓ Nierenberg BCW I Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW II Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW III Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW IV Wind Resource Assessment Report – 2017 May
- ✓ UL Energy Production Summary–2021 Nov
- ✓ ArcVera Preliminary Wind Energy Resource Assessment – 2021 Jul

### Battery Studies Completed

- ✓ GE Capacity Contribution Report for BCW I and II – 2019 Apr
- ✓ GE Capacity Contribution Report for BCW I and II – 2019 Jun
- ✓ GE Capacity Contribution Report – Beaver Creek Analysis – 2020 Mar



## Construction: Project is ready to be built with relatively low risk to meet a 2025 COD

### EPC Contractor Selection and Scope

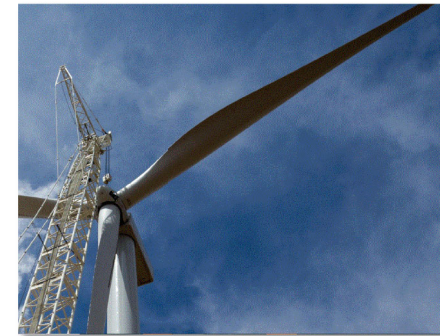
- Construction will be performed by an engineering, procurement, and construction (“EPC”) contractor to be selected by PSE through a procurement process initiated by Caiithness.
- An EPC RFP was released in early June 2023, with bids received at the end of June from Wanzek, [REDACTED] and [REDACTED]. All have extensive experience building wind generation facilities across the United States.
- EPC contractor will be responsible for the detailed design, procurement, and construction of all project balance of plant (“BOP”) components.
- Supply of the wind turbines are not included in EPC contractor scope of supply. The main transformer and certain substation equipment are being procured separately and will be assigned to the EPC contractor once selected.

### Site Visit Assessment

- A team of PSE employees including Director of Major Projects, toured the site on July 12, 2023.
- Roads found to be generally suitable to deliver materials and equipment to the project site after planned improvements are made.
- No terrain features identified that presented particularly challenges to build.
- Boring activity observed at wind turbine locations to inform the foundation design, as well as grading and construction activity organized by NorthWestern for the switchyard to meet the LGIA milestone schedule.
- Pattern’s nearby operational 80 MW Stillwater Wind projects an example of a wind project built in the area.
- Project site location about 40 miles northwest of Billings, Montana should allow for good opportunities to source local labor.

## Major equipment: GE turbines selected and TSA in progress

- Caithness selected GE 2.5 and 2.8 MW, 60 Hz, 690 wind turbines with a 127-meter rotor diameter and an 89-meter hub height
  - 232 MW site output will be generated by 88 turbines
  - GE has determined that the turbines are suitable for the site and a Turbine Supply Agreement ("TSA") with GE is in progress
  - PSE is seeking a [REDACTED] warranty period, if available, to help minimize the risk of reliability issues with the turbine platform
- A Full Service Agreement ("FSA") is planned for inclusion in the GE contract, which obligates GE to provide all O&M services for the turbines for 10 years following turbine commissioning
  - Agreement covers labor, parts, equipment and consumables for the turbines
  - GE will provide and maintain spare parts during the warranty period
  - GE warrants [REDACTED] availability in [REDACTED] of operation and [REDACTED] availability in [REDACTED]
- Caithness is soliciting bids to supply main transformer and 230 kV circuit breakers; remaining electrical components will be procured by the EPC contractor
- Optional BESS System: Proposals for a 20 MW, 3.5-hour (70 MWh) and a 100 MW, 4-hour (400 MWh) BESS system designed and supplied by GE have been included as Project options in addition to the wind turbine generators. Pricing for the two options is scalable; i.e., the 100 MW option is five times the cost of the 20 MW option



23 |

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## PSE will prepare a robust plan for community outreach

### Advantages

- Four public meetings held on the project – no significant opposition identified
- Population in immediate area is low, which helps to mitigate risks
- Compliance with CUP and Road Use Agreement expected to address certain concerns associated with road use
- Viewshed analysis determined proposed turbines will not be visible from the community of Big Timber (19 miles away)

### Challenges

- Limited documentation of stakeholder support and community outreach
- Local community and county commissioners have expressed concerns in the CUP process about increased traffic during development and safety for residents and vehicles, which has been picked up in the local news
- Additional concerns include dust control, road standards, road maintenance, battery storage safety, site decommissioning and hiring local workforce
- No record of consultation or outreach with area tribes - Crow Reservation is ~2 hours away and Project is likely located on Crow ancestral land

### PSE public affairs strategy

- PSE will develop a robust public affairs plan to mitigate local concerns and reputational risk, and to promote project benefits, including:
  - activating support from stakeholders (local and state elected officials, chambers or economic development associations, etc.),
  - a media strategy to promote and generate coverage of the project, updates to leverage PSE's existing *PSE in Montana website* to share information about the project and its local benefits, and
  - completing tribal outreach, among other strategies and tactics.
- Plan will tout project benefits such as job creation and economic diversification, property taxes and impact fees, among other benefits.

## Inflation Reduction Act (“IRA”) significantly increased federal income tax incentives for renewable energy projects

- The Project qualifies for the Production Tax Credit (“PTC”) or the Investment Tax Credit (“ITC”)
  - PSE’s modelling indicates that the PTC is more beneficial to customers
  - The NPV of project cost with PTC election is [REDACTED] vs. ITC election with normalization of [REDACTED]
- Beaver Creek is expected to qualify for the following:
  - PTC at a rate of \$27.50 per MWh, plus an annual IRS inflation adjustment
  - Domestic content bonus credit which would increase the PTC rate by +10% to \$30.25 per MWh
- Project does not currently appear to qualify for the 10% “energy communities” bonus benefit
  - PSE Management will monitor evolution of the tax credit to maximize the value for the benefit of customers
- PTCs claimed under IRA are transferable, which will allow PSE to convert PTCs to cash regardless of taxable income by selling to an unrelated 3<sup>rd</sup> party
  - May be a source of significant value to customers by vastly accelerating timing of pass-back through bill credits
  - PSE’s modeling assumes PTCs will be sold when earned at 95% of face value, and 92% for ITC
- PTCs are passed to customers under a separate tariff, Schedule 95A. The Schedule resets each October with all PTC that have been realized in a cash benefit, either through usage on a tax return or sold to a third party, being passed to customers over the following 12 months

25 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

# Projected power cost impact

- In partial year 2025, the project is expected to reduce power cost by [REDACTED]
- In 2026-2028, the annual power cost reduction ranges [REDACTED] per year
- The analysis is based on forward price curve for the 2024 multiyear rate plan filing as of June 2023
- The power cost impact doesn't include costs such as return on rate base, depreciation and O&M, which do not flow through power cost.

Power cost impact of proposed Beaver Creek Wind project				
	2025	2026	2027	2028
Total annual energy output (MWh)	343,912	756,860	756,860	756,860
Energy benefit (reduction to power costs)	[REDACTED]			
Northwestern purchased transmission (increase to power costs)	[REDACTED]			
BPA balancing charge (increase to power costs)	[REDACTED]			
Net <i>benefit/reduction</i> to power costs	[REDACTED]			



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

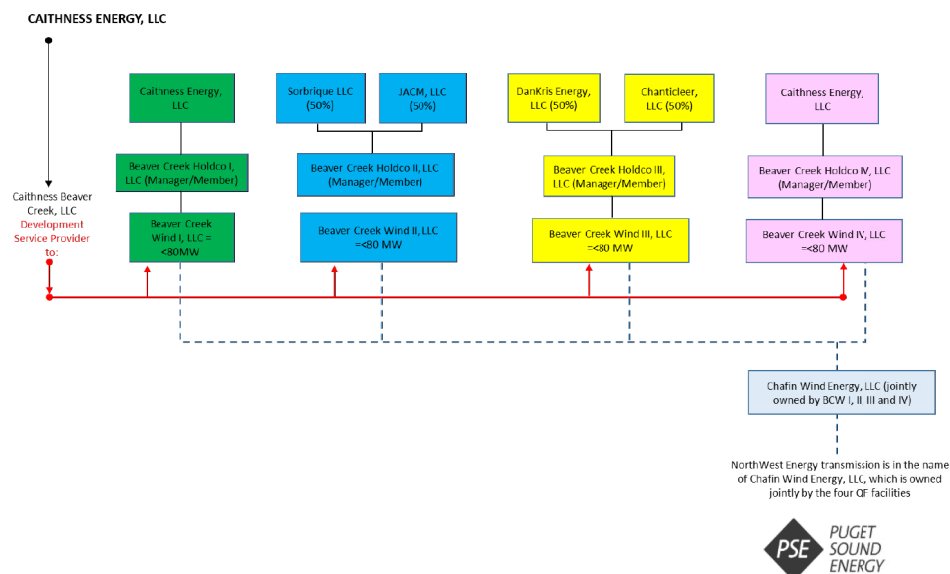
REDACTED VERSION

## Counterparty profile

### CAITHNESS ENERGY, L.L.C.

- Caithness Energy, L.L.C. (“Caithness”) is a privately-held Independent Power Producer specializing in the development, acquisition, operation, and management of power generation assets in North America.
- Portfolio consists of 3,595 MW of renewable and fossil-fueled energy projects in the United States.
- The company was formerly known as Caithness Corporation. Caithness Equities Corporation was founded in 1975 and is based in New York, New York.

### BEAVER CREEK WIND FARMS CURRENT STRUCTURE







Key risks and mitigation plans: Real estate (Low to Acceptable Risk)

Risk	Mitigation Plan
Wind lease and easement documents are currently under review for sufficiency and completeness. Additionally, PSE recently received a title report for all leased lands that is currently under review. An ALTA survey of the leased lands, which depict property lines, exceptions to title, non-title items (fence lines etc.) was received on July 17, 2023 and is being analyzed in conjunction with both the lease documents and exceptions to title as shown on the title report.	<p>All documents are under review for content and sufficiency. Lease amendments will be needed to incorporate royalty terms that coincide with a utility model (presently the leases contemplate a PPA model). PSE will address and resolve any items of concern prior to closing. Insofar as there are six landowners, it is anticipated that items requiring resolution can be handled in a timely manner and in conjunction with the ultimate transaction schedule.</p> <p>Caithness is pursuing estoppel certificates and subordination agreements with the landowners as a condition to closing the MIPA.</p> <p>Caithness is required, as a condition to closing, to deliver a title policy insuring the real property in the amount of [REDACTED] and inclusive of the endorsements outlined in the MIPA. PSE will increase the title policy to the full value of the project.</p>



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Key risks and mitigation plans: Permitting, environmental, cultural resources, and community relations (Acceptable Risk)



Risk	Mitigation Plan
No consultation with State and Federal Wildlife Agencies or use of Federal Wind Siting Guidelines. Limited wildlife studies do not follow the U.S. Wildlife Wind Power Guidelines. As a result, eagle and sensitive species fatality risks are unknown.	<p>PSE intends to consult with the Montana Fish and Game and U.S. Fish and Wildlife Service to determine whether there are issues of concern prior to final layout and construction, so sensitive areas can be avoided.</p> <p>PSE intends to conduct avian point count and nest surveys per federal Wind Siting Guidelines prior to final layout and construction, so sensitive areas can be avoided.</p>
Aviation, radar and microwave studies will need to be completed for the consolidated layout Stillwater County.	<p>The following studies will need to be completed before finalizing the layout to avoid interfering with radar, microwave and military flight paths:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Department of Defense radar study</li> <li><input type="checkbox"/> Federal Aviation Administration aeronautical study</li> <li><input type="checkbox"/> Military fly zone analysis</li> <li><input type="checkbox"/> Microwave beam path study</li> </ul>
Road, underground, or overhead line crossings that require disturbance or fill over waters of the state or United States (drainages or wetlands) are unknown. The risk is that permits may be required that could cause construction delays.	PSE will hire an environmental consultant to complete a delineation of any waters of the United States. To the extent that waters of the United States are identified, Caithness will demonstrate to PSE's reasonable satisfaction that the Project may be constructed without obtaining any required permits, or they will obtain any necessary permits.

## Key risks and mitigation plans: Permitting, environmental, cultural resources, and community relations, cont. (Acceptable Risk)



Risk	Mitigation Plan
Native American tribes were never contacted to determine whether wind development activities would impact areas—which have mostly been under private ownership for decades—of significance to them. The Crow Reservation appears to be about two hours away, and the Project is likely on Crow ancestral land.	PSE intends to consult on cultural resources with affected tribes.
Caithness provided a basic literature review summary report as a cultural resources review. This report contained limited information about the area and the possibility of encountering cultural resource materials. The report covers 22 thousand acres, cited only six surveys and identified one archaeological site. The studies are inadequate to make determinations of risk to cultural resources for such a large area.	PSE will conduct a cultural resource study that allows the appropriate level of decision about effects to cultural resources prior to construction so that PSE can avoid impacts to these resources or provide mitigation should avoidance not be possible. The Project site is largely disturbed agricultural land, which generally reduces the overall cultural resource risk.
While some local community members and county commissioners have expressed concern through the Conditional Use Permit (“CUP”) process about increased traffic during development, and safety for residents and their vehicles, the CUP was approved and outlined requirements to help mitigate these concerns.  Siting renewable energy projects in rural areas can be difficult or controversial, raising concerns about infrastructure blight, use of agricultural land, support for conventional resources like coal, and misinformation about renewable energy sources.	PSE intends to develop a public affairs and community relations plan to mitigate potential local concerns and reputational risk. A robust public affairs plan would include activating support from stakeholders, a media strategy to promote and generate coverage of the Project, updates to leverage PSE’s existing PSE in Montana website to share information about the Project and its local benefits, and possibly completing tribal outreach, among other strategies and tactics.

Key risks and mitigation plans: Transmission and integration  
(Acceptable Risk)



Risk	Mitigation Plan
Network upgrades on NorthWestern Energy's ("NorthWestern") transmission system for delivery to Colstrip or Garrison point of delivery are unknown.	PSE is submitting and requesting transmission service to both Colstrip and Garrison for the total project output through NorthWestern to evaluate better delivery path. Previous studies for NRIS interconnection service and Network Integration Transmission Service ("NITS") have not identified any significant network upgrades. Further, PSE is requesting options for bridge conditional firm service which could, if offered, allow earlier delivery options. <div></div>
Dynamic Transfer Capability ("DTC") is needed for dynamic transfers on the Eastern Intertie and will be necessary to place the project PSE's balancing area. Due to limited DTC, Bonneville Power Administration ("BPA") will require studies and contracting for dynamic transfer. The study may trigger a need for new voltage controls on existing reactive devices or new reactive devices to support the dynamic transfer. The current term for a DTC award is two years without any rollover rights and will present a continued risk on PSE's ability to pseudo-tie the resource.	PSE is submitting DTC request to BPA to initiate the study process to daylight DTC availability, and identify any upgrades to support PSE's DTC needs over BPA's intertie. Once awarded, PSE will continue to request DTC through BPA before the term end date. PSE could also work with BPA to fund upgrades to enable additional DTC at Garrison. <div></div>



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

Key risks and mitigation plans: Transmission and integration,  
cont. (Acceptable Risk)



Risk	Mitigation Plan
The Beaver Creek wind project will need to be pseudo-tied to PSE's balancing authority area ("BAA"), as would any other Montana resources. This is a complex effort across multiple PSE departments that requires extensive coordination, design, and implementation. It affects the metering, communications, operations, transmission, and energy trading groups.	PSE can initiate these efforts after closing to help reduce COD risks. PSE has gained recent experience pseudo-tying a Montana wind resource (Clearwater) that can be leveraged for the Beaver Creek integration. <div></div>
PSE has point-to-point transmission rights on the Colstrip Transmission System CTS that will need to be studied by the CTS owners to allow PSE to pair the rights with a new generating resource.	PSE Merchant has submitted a change of source request to PSE's Transmission Provider function to initiate the study and identify any potential impacts.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## Key risks and mitigation plans: Major equipment (Acceptable Risk)

Risk	Mitigation Plan
Development phase equipment selection is incomplete; permitting/technical requirements could cause additional cost or lead time.	Work with project team and equipment vendors to ensure equipment is reasonably priced and available.
Actual annual energy production may be less than expected.	<p>PSE to review site suitability and design documentation when the counterparty delivers it. Require contractual performance guarantees from vendors/contractors.</p> <p>PSE hired DNV to review forecast annual energy assessment. DNV results indicate a higher forecast product than Caithness provided energy assessment report from ArcVera.</p>
TSA and FSA terms may not meet PSE's standards and requirements.	Engage and re-negotiate TSA and FSA agreement with GE.





Key risks and mitigation plans: Construction (Low Risk)

Risk	Mitigation Plan
Permitting or contracting issues may prevent construction from starting in Q4 2023.	If permitting or equipment issues delay construction start to spring 2024 and/or extend construction duration, there is still adequate time to meet late 2025 COD, as current engineering, procurement, and construction schedules contemplate 18 months start to finish (including one winter).

CAITHNESS  
ENERGY, L.L.C.



Report to the Board of Directors

# Beaver Creek Wind Project

*August 3, 2023*



SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## TABLE OF CONTENTS

## Table of Contents

<b>1. Executive Summary .....</b>	<b>1</b>
<b>2. Key Contract Terms and Counterparty .....</b>	<b>3</b>
Counterparty .....	3
Project overview .....	3
Summary of key contracts and terms .....	4
<b>3. Project Description.....</b>	<b>6</b>
General description of facility and footprint .....	6
<b>4. Determination of Need .....</b>	<b>8</b>
PSE's 2023 EPR identified a need for new capacity resources .....	8
PSE's 2023 EPR identified a need for new clean energy resources .....	9
<b>5. Alternatives Analysis .....</b>	<b>11</b>
Financial analysis.....	14
<b>6. Project Development .....</b>	<b>16</b>
Summary project schedule .....	16
Development plan and progress.....	16
<b>7. Decision and Execution .....</b>	<b>26</b>
Construction of the project.....	26
Financing .....	27
Federal tax incentive accounting and treatment.....	27
Accounting treatment.....	28
Regulatory recovery plan .....	28
Independent evaluator .....	28
Management and operation of the project .....	29
Insurance program.....	29
<b>8. Project Risks and Benefits .....</b>	<b>31</b>
Project risks.....	31
Project benefits.....	32

PSE Report to the Board of Directors: Beaver Creek Wind Project

TABLE OF CONTENTS

<b>9. Equity and Customer Benefits of the Project.....</b>	<b>34</b>
Energy security and resilience .....	34
Energy and non-energy benefits.....	34
Additional economic benefits .....	35
Environment and public health .....	35
<b>10. Rate Impact and Recommendation.....</b>	<b>36</b>
Rate impact .....	36
Recommendation.....	36

PSE Report to the Board of Directors: Beaver Creek Wind Project

LIST OF APPENDICES

List of Appendices

Board Resolutions.....	1
Presentation to the Board of Directors .....	2
Diagram of Transaction and Contractual Relationships .....	3
Summary of Membership Interest Purchase Agreement.....	4
Project Schedule and Construction Management.....	5
Wind Resource Assessment.....	6
Real Estate .....	7
Permitting, Environmental and Cultural Resources.....	8
Interconnection and Transmission .....	9
Operations Organization .....	10
Risks and Mitigations.....	11
Stand-alone Financial Pro Forma .....	12
Financial analysis: Ownership vs. PPA .....	13
Financial analysis: PTC vs. ITC with Normalization .....	14
Alternatives Analysis .....	15
Environmental and Public Health Impacts and Evaluation Tools .....	16
Funding Strategy .....	17
Rates and Accounting .....	18
Acronyms and Shortened Terms .....	19

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 1. EXECUTIVE SUMMARY

## 1. Executive Summary

The purpose of this Report to the Board of Directors (Report) on the Beaver Creek Wind Project (Beaver Creek or Project) is to recommend that the board authorize Puget Sound Energy, Inc. (PSE) to execute a Membership Interest Purchase Agreement (MIPA) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (Project Company). Approval to purchase the Project Company at the MIPA Purchase Price (defined below) would not commit PSE to construct the Project. PSE would instead seek separate board approvals to construct the Project, including construction funding, which is the largest part of the all-in capital budget.

Beaver Creek is a utility-scale wind project located in Stillwater, Montana, with an expected nameplate capacity of 232 megawatts (MW). Beaver Creek was identified as a time-sensitive opportunity of unique value for three main reasons:

1. Beaver Creek is the only new-build resource that PSE has identified that can reach commercial operation in 2025.
2. Generation from Beaver Creek will help PSE meet its Clean Energy Transformation Act (CETA) compliance targets for 2025 and 2030 at the lowest reasonable cost compared to other reviewed alternatives.
3. The [REDACTED] purchase price (MIPA Purchase Price<sup>1</sup> includes additional rights, such as additional real estate rights for additional renewable resource development, attractive transmission queue position, and permitting for an optional battery energy storage system).

The Project is in a near-construction-ready state and is slated to achieve a commercial operation date (COD) of August 2025. The estimated all-in Project cost, including construction, is approximately \$515 million, which includes the [REDACTED] MIPA Purchase Price and allowance for funds used during construction. In addition to the Stillwater County development assets, the purchase price under the MIPA also includes the following:

- Real estate rights in neighboring Sweet Grass County anticipated to support 100-150 MW of future development and expansion.
- A 100 MW transmission service request high in the Bonneville Power Administration (BPA) queue and within the scope of its Montana to Washington (M2W) project for service from Montana at Garrison to Portland, Oregon, which can be redirected to Mid-Columbia River (Mid-C) and paired with PSE's existing ~1,500 MW of Mid-C rights to PSE's system.
- Permitting to support the addition of an optional lithium-ion battery energy storage system (BESS) in Stillwater County. See Section 2 for further discussion.

<sup>1</sup> Final purchase price will be adjusted up or down at substantial completion by [REDACTED] per MW to reflect final nameplate capacity.



**PSE Report to the Board of Directors: Beaver Creek Wind Project****SECTION 1. EXECUTIVE SUMMARY**

With an August 2025 COD, the Project will be able to contribute approximately 24% of the forecast additional clean energy required to meet PSE's 63% CETA compliance target in 2025. When operational, the Project is expected to provide approximately 10% of PSE's forecast clean energy need for its 2030 80% CETA compliance target by generating approximately 756 gigawatt hours (GWh) of energy per year at a net capacity factor (NCF) of approximately [REDACTED] See Section 4 for further discussion.

In contrast to comparable alternative wind projects that PSE reviewed, Beaver Creek has existing interconnection and transmission advantages. The Project will deliver its output to PSE's load using a wheel of transmission through NorthWestern Energy's (NorthWestern) system, along with PSE's existing 713 MW transmission rights across the Colstrip Transmission System (CTS), Montana Intertie, and BPA's main grid; or alternatively, deliver directly to BPA's main grid at Garrison. See Section 6 for further discussion.

This Report details the commercial aspects of the Project and describes the analysis of its costs and benefits conducted by PSE's long-term resource planning and acquisition teams. This Report also presents the development status of the Project, the preliminary plans for constructing and operating the Project, its expected financial performance, and the associated risks and risk mitigation plans. A comparison of the Project to currently available market alternatives supports the execution of the Project as proposed. The report concludes with the recommendation to approve execution of the MIPA.

**SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160**

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 2. KEY CONTRACT TERMS AND COUNTERPARTY

## 2. Key Contract Terms and Counterparty

## Counterparty

The MIPA will be executed with Caithness Beaver Creek, LLC, a wholly owned subsidiary of Caithness Energy, LLC. This will be PSE's first transaction with Caithness.

Caithness Energy is a privately-held independent power producer specializing in the development, acquisition, operation, and management of power generation assets in North America. Caithness has a portfolio consisting of 3,595 MW of renewable and fossil-fueled energy projects in the United States. The company was formerly known as Caithness Corporation. Caithness Equities Corporation was founded in 1975, and is based in New York City, New York.

## Project overview

Resource Type	Wind (with battery option)
Developer/Seller	Caithness Energy
Location	Stillwater and Sweet Grass Counties, Montana
Phase I nameplate capacity	232 MW approximate
Expansion nameplate capacity	100-150 <sup>2</sup> MW approximate
Optional BESS	200 MWh BESS permitted (final BESS permitting 100 MW-200 MW)
Interconnection	Executed 315 MW Large Generator Interconnection Agreement (LGIA) for Network Resource Interconnection Service (NRIS)
Phase I COD	August 2025
Phase II COD and BESS addition	TBD
Net Capacity Factor ("NCF")	Phase I configuration (third party resource assessment provided by ArcVera)
Expected output	756,860 MWh/year for Phase I (based on 233.8 MW array nameplate) nameplate will be based on final mix selected of 88 total GE 2.5 MW & 2.8 MW turbine models

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

<sup>2</sup> Expansion capacity will depend upon final equipment selection and permitting.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 2. KEY CONTRACT TERMS AND COUNTERPARTY

## Summary of key contracts and terms

## Purchase Agreement – RECOMMENDED FOR APPROVAL NOW:

PSE is currently seeking Board approval to secure the Beaver Creek Wind Project under the following purchase agreement structure and key terms:

- **MIPA:** Acquisition of 100% of the membership interests in the Project Company.
- **MIPA Purchase Price:** Approximately [REDACTED] with 50% at closing and 50% at substantial completion, plus reimbursement of certain costs incurred between signing and closing.
- **Primary Transaction Type (“Primary Transaction”):** Purchase of a near construction-ready 232 MW nameplate wind project in Stillwater County with Turbine Supply Agreement (TSA) ready for execution, and three balance of plant (BOP) contractor proposals ready for final selection and agreement execution.
- **Secondary Transaction Type:** Purchase of real estate rights in adjacent Sweet Grass County anticipated to support 100-150 MW of future development and expansion of the Beaver Creek Project, depending upon final equipment selection and permitting.
- **Tertiary Transaction Type:** Purchase of a transmission service request (TSR) queue position that puts PSE in line for 100 MW of BPA transmission service from Garrison (BPAT.NWMT scheduling point) to Portland (BPAT.PGE scheduling point). This TSR’s high queue position puts it within the ~500 MW of incremental transmission from Montana to the Pacific Northwest under the scope of BPA’s M2W project, with a projected in-service date of 2028-29. PSE has assessed redirecting the point of delivery (POD) to Mid-C to connect with PSE’s existing ~1,500 MW transmission rights to PSE’s system as a viable option. In addition, a swap or exchange with another entity interested in transmission from Montana to PGE is a possible alternative.

## Select MIPA Conditions Precedent for Closing

- The Primary Project shall have achieved its “Ready for Notice to Proceed (NTP) State” when each of the following conditions has been achieved (or waived by PSE), to the reasonable satisfaction of PSE.
  - The BOP Agreement, Turbine Supply Agreement, and Full-Service Agreement (FSA) shall each be in agreed form with each of their respective counterparties, and otherwise in form and substance satisfactory to PSE in its reasonable discretion, not to be unreasonably withheld, conditioned, or delayed;
  - Delivery of current estoppels in connection with all leasehold and easement interests in Real Property; delivery of an estoppel to confirm the release of the reversionary interest under the Master Lease Assignment Agreement (Phase 1) benefiting Beaver Creek Wind (BC); curing of any and all backdated assignments of Real Property

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

- 4 -

REDACTED VERSION

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 2. KEY CONTRACT TERMS AND COUNTERPARTY

interests; amendment of the rental provisions of all documents creating interest in Real Property to the satisfaction of PSE; and agreeing to a form of lease amendment in substantially the form set in Exhibit H to the MIPA (see Appendix 4 for detailed actions and timing for real estate);

- Delivery of a Phase I Environmental Assessment for the Site and the Sweet Grass County Real Property to the reasonable satisfaction of PSE;
- The Project Company shall have obtained the Closing Required Permits, except as may be waived by PSE at its sole discretion; all such permits and authorizations are final and not subject to further challenge or appeal.
- PSE shall have secured the NorthWestern Transmission Rights.
- Delivery of a title policy in the face amount of [REDACTED] from a nationally recognized title insurance company acceptable to PSE.
- A BPA Transmission Letter Agreement shall have been executed by PSE and Caithness.
- Waters of the U.S. Delineation, Additional Avian Study, and Microwave Beam Study shall be completed.

For a discussion of the material contract terms, see Appendix 4.

#### **Construction and Operations Agreements – ANTICIPATED FUTURE RECOMMENDATIONS FOR APPROVAL:**

In addition to the MIPA, there are three primary agreements (described below) that PSE will need to execute to enable construction of the Project. PSE will seek board approval in the future to execute these agreements. PSE estimates the cost to construct the facility (subject to final Engineering, Procurement and Construction [EPC] selection and negotiation) to be approximately [REDACTED] plus the [REDACTED] development fee (the MIPA Purchase Price), for a total cost of \$515 million.

- **Balance of Plant Agreement** to erect the turbines, design and build the electrical collector system, design and build the Project gen-tie transmission line, design and build a Project substation, design and build turbine foundations, and design and build the Project operations and maintenance (O&M) building. Caithness has administered a BOP Request for Proposals, is reviewing proposals with PSE, and is working with the BOP bidders for clarifications and modifications to the satisfaction of PSE. It is expected that PSE will make final BOP selection and execute the BOP agreement shortly after closing.
- **General Electric (GE) Turbine Supply Agreement** to purchase an anticipated 48 x 2.5 MW-127M and 40 x 2.8 MW-127M turbines, for a total turbine count of 88 and a total nameplate of 232 MW<sub>ac</sub>. The final mix of 2.5 MW and 2.8 MW turbine models is subject to negotiation. The TSA is in draft form, and PSE has provided input on negotiable items. PSE will engage directly with GE to negotiate the terms. The TSA will be executable by PSE shortly after closing.
- **Full-Service Agreement** for certain operation and maintenance services for the turbines supplied under the TSA.



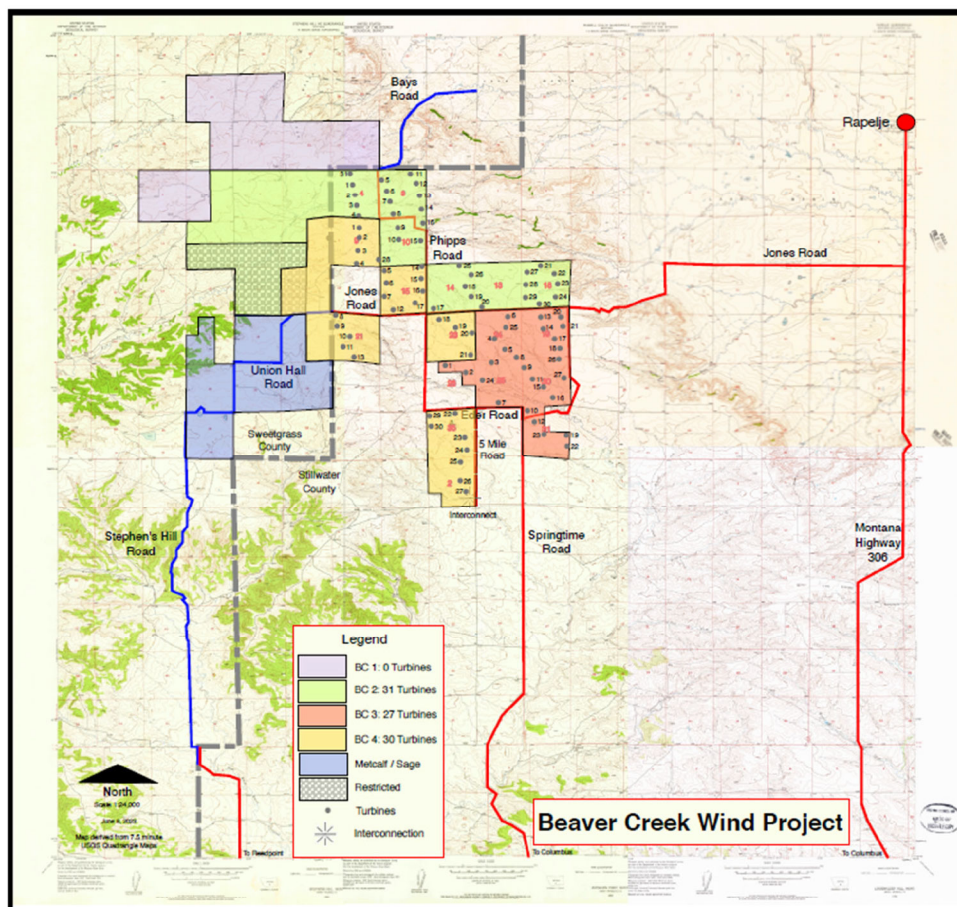
## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 3. PROJECT DESCRIPTION

## 3. Project Description

## General description of facility and footprint

The Project is a 232 MW commercial wind generation facility comprised of 48 GE 2.5 MW and 40 GE 2.8 MW wind turbine generators (WTGs) with a 127-meter rotor diameter and an 89-meter hub height. The Project is located on approximately 11,000 acres of leased property on the high plains in Stillwater County, Montana. The primary use of the land is for cattle grazing and hay production. Project elements include wind turbine generators erected on tubular steel towers with foundations and individual turbine step-up transformers. Supporting infrastructure will include access roads, underground electric collection system lines, a step-up substation, a four to five mile 230 kV transmission line to tie the site to a NorthWestern Energy switching station, microwave communications, permanent meteorological towers, an operations and maintenance building, and temporary construction access and staging areas (as needed).

Figure 1. *Beaver Creek Wind Project*

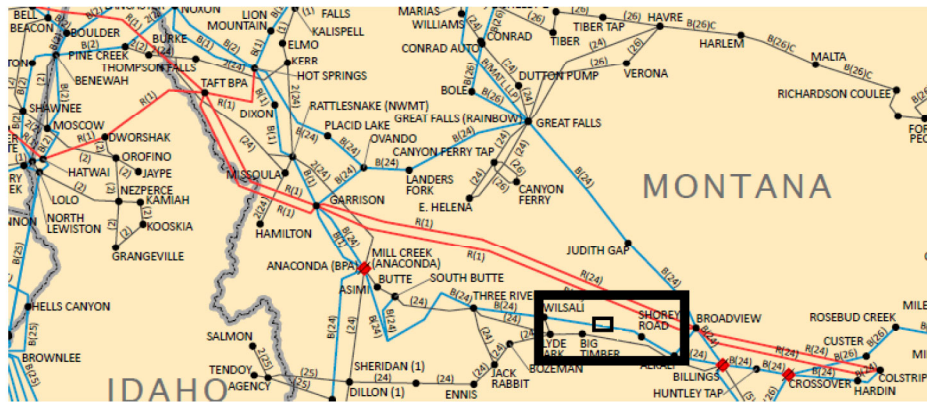
The Project will be interconnected to a new 230 kilovolt (kV) substation on NorthWestern's system between the Wilsall and Columbus Rapelje 230 kV substations. The existing 230 kV line will be rerouted

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 3. PROJECT DESCRIPTION

into the new switching station. NorthWestern Energy will maintain ownership of the 230 kV lines that enter and exit the new substation. Ownership between NorthWestern Energy's transmission system and the customer's interconnection facilities will change at the point where the customer's facilities tie into NorthWestern's meter.

Figure 2. *Location of the New Switching Station*





PSE Report to the Board of Directors: Beaver Creek Wind Project

SECTION 4. DETERMINATION OF NEED

## 4. Determination of Need

PSE's electric resource acquisition process is guided by our integrated resource planning analysis, which evaluates and establishes the Company's capacity (physical reliability) and renewable resource (policy-driven) needs in consistence with Chapter 480-100-620 Washington Administrative Code (WAC). PSE filed an Integrated Resource Plan (IRP) Electric Progress Report (EPR) with the Washington Utilities and Transportation Commission (WUTC) on March 30, 2023, which demonstrated a need for additional resources to help meet PSE's peak capacity and CETA compliance needs.

### PSE's 2023 EPR identified a need for new capacity resources

The 2023 EPR determined a peak hour capacity need by using a resource adequacy analysis that compared existing PSE resources to the projected peak need over the planning horizon. PSE is moving toward alignment with Western Resource Adequacy Program (WRAP) methodology, which does not count transmission capacity to a market hub — such as Mid-C — as capacity. For the year 2029, there is no peak capacity credit applied to Mid-C transmission capacity.

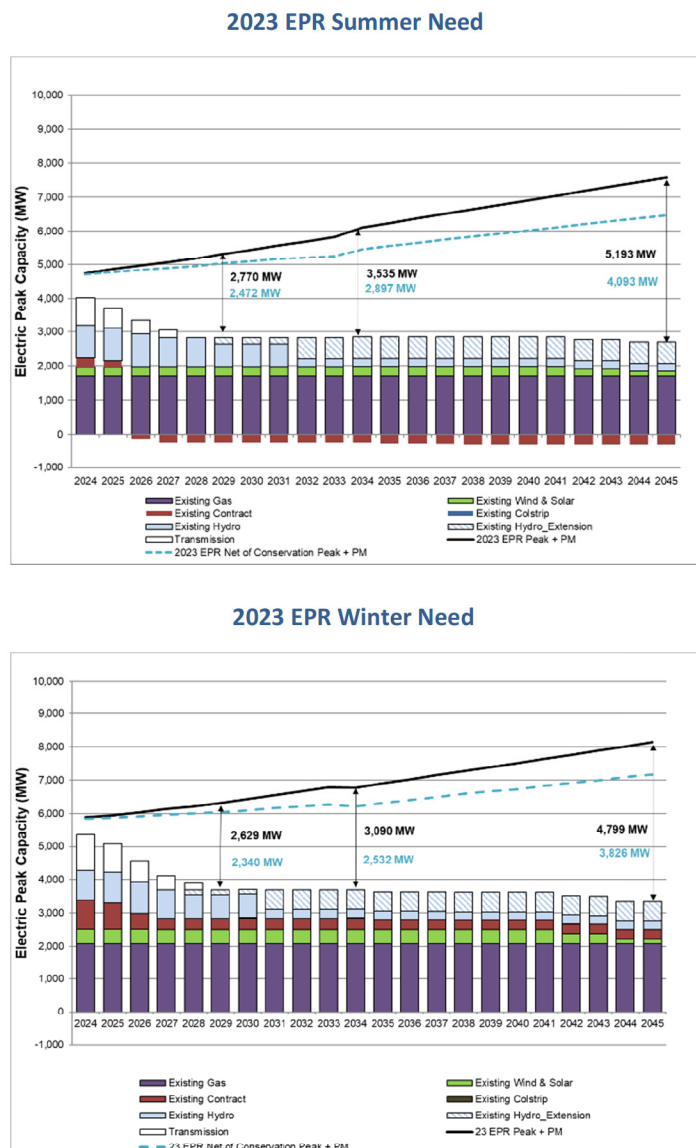
The capacity shown is the amount of effective capacity needed to maintain the resource adequacy target — that is, the need after applying the effective load carrying capacity (ELCC) of different resources. Due to the market reliance assumptions used in the 2023 EPR, the modeling indicates that PSE could begin to experience a peak capacity shortfall starting in 2024. Before any conservation, the peak capacity need plus the planning margin required to maintain reliability is 2,629 MW by 2029. Net of conservation — the peak capacity need plus the planning margin for winter and summer — are 2,340 MW and 2,472 MW. These figures represent the difference between the load forecast plus the required planning margin, and the total peak capacity credit of existing resources. The Project's estimated contribution, based on Beaver Creek's probable initial phase nameplate of 232 MW and generic ELCC values for Montana Central wind resources calculated by the consulting firm Energy and Environmental Economics, Inc. (E3), would be [REDACTED] MW of peak capacity credit in the winter and [REDACTED] MW of peak capacity credit in the summer. Beaver Creek is expected to address [REDACTED] of the forecast 2029 winter peak capacity need net of conservation, and [REDACTED] of the forecast 2029 summer peak capacity need net of conservation.

Figure 3 shows the winter and summer peak capacity needs through 2045.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 4. DETERMINATION OF NEED

Figure 3. *Peak capacity need – winter and summer*



### PSE's 2023 EPR identified a need for new clean energy resources

In addition to reliably meeting the physical needs of our customers, Washington state's CETA requires that utilities meet at least 80 percent of electric sales (delivered load) in Washington using non-emitting or renewable resources by 2030, and 100 percent of sales by 2045. Figure 4 illustrates PSE's renewable and non-emitting energy need. The analysis assumes a linear ramp to achieve the CETA standards in 2030 and 2045, as described in Revised Code of Washington (RCW) 19.405.040; however, actual resource acquisitions through implementation of the Clean Energy Implementation Plan (CEIP) will likely produce

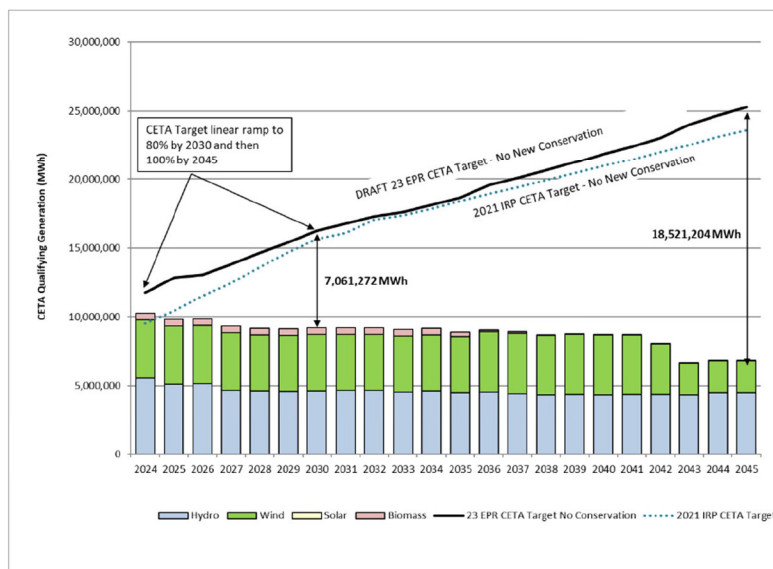
## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 4. DETERMINATION OF NEED

a less linear pathway. Before new conservation, the non-emitting/renewable energy needed to meet the 80% clean energy standard in 2030 is forecast in the 2023 IRP Electric Progress Report to be over 7 million megawatt hours (MWh). With an expected contribution of approximately 756,000 MWh annually, Beaver Creek would address over 10% of the 2030 forecast need for additional clean energy resources.

PSE's inaugural CEIP establishes a 2025 target of 63% of electric sales (delivered load) to be met using non-emitting or renewable resources. This equates to an estimated 1.6 million MWh of additional clean energy. Based on an August 2025 COD and the associated partial year operations, Beaver Creek is expected to contribute 383,480 MWh, which addresses approximately 24% of the 2025 forecast need for additional clean energy resources. A combination of Beaver Creek and the recently executed Vantage wind power purchase agreement (PPA) would bring the total percentage of the 2025 forecast delivered load served by non-emitting and renewable resources to an estimated 57%. The shortfall between an anticipated 57% and the 63% CEIP target is expected to be covered through short- to intermediate-term off-take agreements from operational resources. No other new-build resources have been identified that could contribute to the CEIP's 2025 target.

Figure 4. *CETA clean energy need*



For more information about PSE's resource needs, see [Chapter 8 of the 2023 EPR](#).

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 5. ALTERNATIVES ANALYSIS

## 5. Alternatives Analysis

## Evaluation of comparable wind alternatives in Washington and Montana

Beaver Creek was identified as a time-sensitive opportunity of unique value after the PSE Resource Acquisition team learned that Beaver Creek can be online in 2025. Beaver Creek was not submitted through the 2021 All-Source Request for Proposals (RFP); however, because the All-Source RFP proposal data is still current, along with additional bilateral wind opportunities, the Beaver Creek project can be evaluated against current alternatives. The combination of avoided market purchases from Beaver Creek and the contribution to CETA and peak capacity needs makes Beaver Creek a particularly attractive resource. The option to expand the Project, add battery storage, and increase transmission capacity from Montana provides incremental value to PSE's customers.

## Comparable Pacific Northwest wind

██████████ is a development project in ██████████ County, Washington, submitted through the 2021 All-Source RFP. ██████████ is an operational project in ██████████ County, Oregon, and ██████████ County, Washington, that was identified through bilateral discussions. ██████████ has a busbar/delivered price of ██████████ per MWh, and ██████████ has a busbar/delivered price of ██████████ per MWh, compared with a Beaver Creek busbar/delivered cost of ██████████ per MWh. *Vantage wind*, which was recently contracted by PSE, has the lowest busbar price for Washington wind at ██████████ per MWh, and a delivered cost of ██████████ per MWh.

## Comparable Montana wind

██████████ is an early-stage development project in Montana that PSE has evaluated for a PPA. Busbar pricing provided for ██████████ is between ██████████ MWh, based on a production tax credit (PTC) of ██████████ (with domestic content bonus) or ██████████ (with both domestic content and energy community bonus). The most recently offered COD for ██████████ is June 2026, but the counterparty ██████████. As of early 2023, ██████████ had not yet secured full site control for the project or the gen-tie line, which presents some additional project risk.

██████████ is a development project in Montana. ██████████ PSE is currently in negotiations to contract for the generation output of ██████████ through a PPA. With a busbar price of ██████████ MWh and a delivered levelized cost of energy (LCOE) of ██████████ MWh including transmission and balancing, ██████████ represents the lowest cost of all CETA resources available through the 2021 All-Source RFP and identified through bilateral channels. PSE's IRP team is finalizing an analysis that will guide the amount of additional Montana (MT) generation to acquire when Colstrip 3&4 are no longer using PSE's Montana to Washington transmission capacity. Based on ELCC analysis conducted by the IRP team and E3 Consulting, the optimal resource combination to maximize ELCC includes additional Montana wind. Acquisition of the Caithness 100 MW BPA queue position will give PSE the opportunity to add additional generation and storage resources in Montana later in the decade. Because ██████████ and Beaver Creek are not mutually exclusive, both can be contracted and integrated using existing PSE transmission. However, it is worth noting that the tradeoff with ██████████ is a lower cost resource for higher schedule risk relative to other

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 5. ALTERNATIVES ANALYSIS

resources. [REDACTED] interconnects to the Colstrip transmission system through a new point of interconnection [REDACTED]. The interconnection requires a new 500 kV substation, which will be the first time NorthWestern has performed similar work since the 1970s. While still a term under negotiation, the developer has included delay relief in the PPA that could shift the COD to 2028. [REDACTED] II, which is being offered to PSE in combination with Phase I, also interconnects at the same point of interconnection (POI) and faces the same schedule risk. [REDACTED] like Beaver Creek, [REDACTED] will interconnect to NorthWestern's transmission system. However, in contrast to Beaver Creek, [REDACTED] has a Large Generator Interconnection Agreement with Energy Resource Interconnection Service. This is impactful because the system where [REDACTED] is located requires local [REDACTED] that are estimated to cost approximately [REDACTED]. This once again creates more schedule risk for PSE and our customers relative to other projects. The combination of [REDACTED] and Beaver Creek creates a favorable balance between cost and schedule to progress towards reaching the CETA clean energy targets and the peak capacity needs.

**Portfolio optimization analysis of alternatives**

PSE conducted Aurora portfolio optimization modeling of all active resources (RFP and bilateral) in its deal pipeline. The modeling incorporates the increased need updates arising out of the 2023 IRP EPR as well as pricing, COD, and other updates received from projects in the deal pipeline. Two study cases have been conducted with Montana nameplate capacity limits of 950 MW and 1,550 MW for resources behind PSE's 713 MW of Montana transmission capacity rights. The low limit of 950 MW is consistent with PSE's published 2023 EPR preferred portfolio assumption. The high limit of 1,550 MW is a result of screening analysis done by E3 Consultants and the PSE IRP team, which covers the top resource combinations that show a balance between the transmission utilization during system peak and renewable curtailment. **The two study cases confirm that Beaver Creek was selected as part of the lowest cost resource portfolio solution.**

PSE ran additional sensitivities testing different CODs. PSE observed that Beaver Creek was in all of the portfolios runs except for one, in which Beaver Creek was specifically excluded as an option to test the value to the portfolio. This run shows that Beaver Creek reduces the overall portfolio cost by about \$1 billion.

With limited resources available in the near future, Beaver Creek stands out as a resource option with a comparatively advanced timeline. Therefore, PSE also tested delay risk in the start date of Beaver Creek, where the commercial online date was moved out one year from 2025 to 2026. In this run, Beaver Creek was still selected as part of the least cost solution. For a more detailed discussion of the analytical assumptions, approach and results, see Appendix 15.

In addition to portfolio analysis above, PSE also performed mark-to-market analysis for the Beaver Creek Project to assess its stand-alone value given the latest market conditions. The following table shows the estimated net positive mark-to-market energy value of the project over both the next five years and ten years, and the net value with the addition of the Project's capacity contribution and renewable energy credits (RECs) based on current market indicative prices. The Project also brings measurable social economic value in terms of avoided social cost of carbon, which is shown separately.

REDACTED VERSION

- 12 -

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160



## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 5. ALTERNATIVES ANALYSIS

Table 1. *Mark-to-Market Energy Value and Capacity & Environmental Attributes Value*<sup>3</sup>

Energy Only MTM NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Cost (Bus Bar + Trans.)		
Net Value		
Energy, Capacity, Environmental Attribute NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Value of Capacity/RA		
Value of CETA/REC		
Cost (Bus Bar + Trans.)		
Net Value		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Social Cost of Carbon		

Beaver Creek meets the lowest reasonable cost criteria because of the construction-ready deal structure that presents lower risk of delays than other new build projects received through the 2021 All-Source RFP or through bilateral channels, collectively referred to as PSE's deal pipeline. A required closing condition for MIPA is for the Primary Transaction to be in a ready-for-NTP state at closing. PSE anticipates that it will be able to declare NTP shortly after closing because of the work Caithness has done with the BOP and TSA agreements. Beaver Creek features a lower schedule risk than other comparable available Montana wind projects, as shown in the table below.

**Table 1 assumptions**

1. Estimated value of energy from Mid-C forward energy price curve from Platts as of 6/1/2023
2. Estimated value of CETA/REC price: [REDACTED]/MWh in 2023, escalated at 2.5%/year thereafter
3. RA capacity price: [REDACTED] kW-month based on WRAP Net Cost of New Entry for a gas peaking unit
4. WRAP Qualified Capacity Contribution utilized: [REDACTED]
4. Discount rate: 6.62%
5. Calculations assuming 220 MW nameplate configuration
6. Cost is the LCOE and incremental transmission costs to deliver energy to PSE customers

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 5. ALTERNATIVES ANALYSIS

Table 2. *Montana Wind Estimated Commercial Operation Date Range*

Project	Estimated COD Range	Schedule Risk
	2027 to 2028	
	2026 to 2027	
	Unable to estimate	
Beaver Creek	2025 to 2026	Major equipment procurement

## Financial analysis

## Ownership versus PPA analysis

Beaver Creek presented both ownership and PPA offers for the Project. Ownership provides a more favorable economic profile, even with less-favorable assumptions. For the 232 MW configuration, the LCOE for the PPA offer at busbar price was [REDACTED] while the ownership offer was [REDACTED] or \$2.70/MWh cheaper than the PPA cost.

The Ownership vs PPA analysis is based on the PPA Ownership Evaluation Model that was developed by consultant Thorndike Landing. The model determines the following relative costs and benefits to PSE customers over a defined timeframe under the different commercial structures.

Figure 5. *Costs and benefits calculated by the PPA Ownership Evaluation Model*

For owned assets	For PPAs
<ul style="list-style-type: none"> <li>Expected capital costs</li> <li>Operating costs including property tax and insurance</li> <li>Tax incentives</li> <li>Financing costs</li> <li>Integration and Transmission upgrade costs</li> <li>Expected residual value</li> </ul>	<ul style="list-style-type: none"> <li>Expected cost of power purchased under proposed PPAs</li> <li>Impact of debt imputed under long-term contracts</li> <li>Replacement resource costs of post PPA period (if applicable)</li> </ul>

<sup>4</sup> This LCOE of the PPA offer price included the following assumptions: 1) 25-year term; 2) flat busbar energy price of \$52.74/MWh + turbine service cost sharing from year 11-25 (evaluated at \$2.19/MWh); 3) eligibility for both energy community and domestic content PTC bonus credits; 4) 39.1% NCF; and 5) imputed debt (evaluated at \$1.72/MWh).

<sup>5</sup> This LCOE of the ownership offer price included the following assumptions: 1) 25-year useful life; 2) eligibility for only domestic content PTC bonus credits; 3) transfer PTC to monetize at 95% of the face value; 4) 36.96% NCF; 5) an allocated 73.65% or \$30.2 million development fee of \$41 million to Phase 1 of the Project.



PSE Report to the Board of Directors: Beaver Creek Wind Project

SECTION 5. ALTERNATIVES ANALYSIS

Power cost impact

The Project is expected to reduce power costs by [REDACTED] for the partial year it will be in service in 2025, and [REDACTED] between 2026 and 2028. See analysis below in Table 3.

Table 3. *Impact of Beaver Creek Wind ownership on power costs<sup>6</sup>*

	2025	2026	2027	2028
Total annual energy output (MWh)	343,912	756,860	756,860	756,860
Energy benefit (reduction to power costs)	[REDACTED]			
Northwestern purchased transmission (increase to power costs)				
BPA balancing charge (increase to power costs)				
Net (increase) / reduction to power costs				

<sup>6</sup> The analysis is based on forward price curve for the 2024 multiyear rate plan filing as of June 2023. The power cost impact doesn't include costs such as return on rate base, depreciation and O&M, which do not flow through power cost.

## SECTION 6. PROJECT DEVELOPMENT

## Summary project schedule

Figure 6. *Preliminary Beaver Creek Wind Project development and construction schedule*



The detailed project schedule prepared by Caithness can be found in Appendix 5.

## Real estate

- 16 -

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

PSE is awaiting title reports to validate the legal descriptions and ownership of each of the six referenced leases. PSE is also awaiting receipt of a survey of the proposed Beaver Creek wind farmlands to verify property lines, easement encumbrances, reservations, location of utilities, etc., to further the due diligence and verification of specifics necessary for a possible purchase of the property. More information will be provided at a later date.

**Wind resource assessment**

Caithness hired ArcVera to provide an updated wind assessment based on the 233.8 MW layout in Stillwater County, which was provided to PSE on July 1, 2023. PSE hired DNV Energy Insights (DNV) to review the ArcVera wind assessment and provide a high-level estimate of project energy inclusive of internal and external wake loss to check consistency with the ArcVera forecast. DNV provided a report summarizing their findings on July 24. The DNV high-level forecast estimates an NCF of > 40%, which indicates the ArcVera estimate is likely conservative.<sup>7</sup>

**Permitting, environmental and cultural resources**

This section contains an analysis of the environmental and use permits provided by the Project Company for the proposed 232 MW wind facility development in Stillwater County, as well as an analysis of additional permits that we anticipate PSE will need to construct and operate the Project. This section also contains an assessment of the cultural resource surveys completed to date and identifies a need for additional literature reviews, surveying, and tribal engagement. This section does not address the Sweet Grass County properties, which are not currently proposed for development and do not yet have development permits.

We are unable to complete a full permitting analysis for the Project at this time, as the Project Company was unable to provide a complete layout (including identification of necessary road improvements, culvert replacement, and/or road construction) due in part to siting decisions left to the BOP contractor (e.g., identification of the substation and intertie locations). Overall, we have concluded that proceeding with the Project based on available information presents acceptable-moderate risk, as we understand that there is cushion in the construction schedule to account for additional permitting, if necessary.

Caithness provided to PSE two Conditional Use Permits (CUPs) that provide for the following development in Stillwater County.

- 160 MW (78-81 turbines) of wind energy facility development
- A 200 MWh battery storage facility (Final BESS permitting 100 MW-200 MW)
- An operations and maintenance building (including associated septic and sewer)
- A warehouse
- Two battery storage buildings

<sup>7</sup> A higher NCF will result in higher PTC and a greater base to spread fixed costs, therefore, a lower LCOE. Based on the [REDACTED] NCF estimate from DNV, the estimated LCOE would be [REDACTED] MWh.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

Caithness provided a permitting and agreements checklist (see summary of current permits and agreements in Appendix 8). Additional local, state, and federal permits, and environmental baseline studies not identified on the Project Company's permitting and agreements list will be required to construct and/or operate the Project. These include the following:

- **Stillwater County CUP amendment** to increase use authorization for all Project-related facilities (e.g., substation, intertie, construction access roads). PSE has determined that an additional CUP will be required to reflect all facilities needed to construct and operate the Project (e.g., a substation, intertie, wind turbine access roads). The Project Company anticipates that review by the Stillwater County Commissioners will take approximately 4 to 6 weeks after the application is submitted, ideally by the end of September 2023.
- **Stillwater County Water and Wastewater Permit** for an operations and maintenance facility.
- **Stormwater General Permit for Discharges Associated with Construction Activity.**
- **Decommissioning plan and bond.**
- **Federal Aviation Administration (FAA) Determination of No Hazard Extension** and/or evaluation for potential need to revise.
- **State Building Permit** (needed for the operations and maintenance building).
- **Delineation of waters of the United States** for full Project site.
- **Cultural resource review and tribal engagement.** Completion of a cultural resource literature review and, as appropriate, survey.
- **Avian use, bat and wildlife studies and Eagle Incidental Take Permit.** Completion of all avian use and wildlife surveys to support an Eagle Incidental Take Permit application and evaluate potential impacts to bats.
- **Microwave beam path verification.** Verification that the seven microwave beam paths that cross the Project area are not intersected by the new 230 MW layout and that layout complies with all setback requirements.

Consistent with these findings, the MIPA requires that the Project Company (1) obtain any CUP required for all Project construction and operation, (2) update avian use surveys (note the Project Company will not complete all use surveys required to support an application for an Eagle Incidental Take Permit), and (3) complete a full site delineation for waters of the U.S.

The additional baseline environmental studies recommended above (including avian<sup>8</sup> and waters of the United States) are needed to confirm whether any permitting— beyond what is being completed by the Project Company or listed above— will be required. At this time, we have not identified a federal nexus and, based on the available information, none is anticipated. That said, if subsequent studies identify a

---

<sup>8</sup> The developer has not completed, nor are they providing, the two years of avian use studies required for PSE to obtain an Eagle Incidental Take Permit, which will be needed for the operation of the wind facility.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 6. PROJECT DEVELOPMENT

federal nexus, permitting may prevent certain types of construction from proceeding as currently planned. The evaluations or permits that may also be needed include the following:

- If waters of the United States are identified where construction activities cannot be avoided, a Clean Water Act Section 404 permit may be required. Depending on the permitting pathway, this could also require additional review under the National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA), Section 106, including consultation with interested Tribes. If a Clean Water Act Section 404 permit is required, a Montana Section 401 Water Quality Certification may also be required.
- A Montana 310 Permit may be required if any road construction or repair requires a culvert replacement where the culvert crosses a perennial stream.
- If the Project's construction or operation requires a state agency approval, lease, or license that is not otherwise exempt, review under the Montana Environmental Policy Act may also be required.

With respect to cultural resources, the Project has not been surveyed for cultural resources, including archaeological sites, burials, or traditional use areas. The data room contained a report by Bionomics, which contains a very minimal records search. The summary report contained no background information on the traditional uses or historical context of the area. These findings showed that the majority of the Project areas remain unsurveyed for cultural resources, and therefore, it is not known whether more resources are present. There is a risk that PSE might discover resources during design, micro-siting, or construction, which could result in construction delays. In addition, no outreach to Native American tribes was required by the developer. If the Project proceeds, PSE will pursue the necessary cultural resource surveys and develop an outreach plan.

To minimize these risks, following closing, PSE will contact state and federal wildlife agencies and local tribes to discuss the Project and to identify potential concerns that should be addressed during the planning stage. A further recommendation is that cultural resource surveys be conducted within the Project boundaries prior to construction so that if significant cultural sites are identified, they can be avoided or mitigated. These responsible measures will reduce future construction and operational risks and benefit PSE's positive public perception as an environmentally responsible utility.

Finally, the Beaver Creek Project will require impact fees and a decommissioning bond. The Stillwater County Impact Fee Agreement requires a fee that is 1.5% of the total construction costs for the Project (including turbines, batteries, roads, buildings etc.). Also, the State of Montana requires wind farms to submit a decommissioning plan and a bond to cover decommissioning costs. While the bond is due within the first 15 years after the commercial operation date, it should be considered when evaluating Project costs.

#### Community and communications

If the Project proceeds, PSE intends to develop a public affairs and community relations plan to mitigate local concerns and reputational risk, and to promote project benefits. A robust public affairs plan would include activating support from stakeholders (local and state elected officials, chambers or economic development associations, etc.), a media strategy to promote and generate coverage of the Project, updates to leverage PSE's existing PSE in Montana website to share information about the Project



## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 6. PROJECT DEVELOPMENT

and its local benefits, and completing tribal outreach, among other strategies and tactics. Project benefits to be touted include job creation and economic diversification, and property taxes and impact fees, among other benefits. To further mitigate risk, PSE would consider using local and union labor when available and cost-effective, given learnings from previous projects and opportunities to better partner with labor.

#### ***Advantages***

- Four public meetings held on the project – no significant opposition identified
- Population in immediate area is low, which helps to mitigate risks
- Compliance with CUP and Road Use Agreement expected to address certain concerns associated with road use
- Viewshed analysis determined proposed turbines will not be visible from the community of Big Timber (19 miles away)

#### ***Challenges***

- Limited documentation of stakeholder support and community outreach
- Local community and county commissioners have expressed concerns in the CUP process about increased traffic during development and safety for residents and vehicles, which has been picked up in the local news
- Additional concerns may include dust control, road standards, road maintenance, battery storage safety, site decommissioning and hiring local workforce
- No record of consultation or outreach with area tribes - Crow Reservation is approximately 2 hours away

Challenges are addressed in Appendix 11, Risks and Mitigations. Overall, community risks were determined to be acceptable.

#### **Engineering and construction`**

Construction will be performed by an engineering, procurement and construction contractor to be selected by PSE through a procurement process that was started by the developer in April 2023. At this time, there are three responsive bidders for the BOP contract. All three bidders have extensive experience building wind generation facilities across the United States.

#### **Selection of major project components and contracts**

The Project is in the initial stages of development, with many design elements yet to be finalized. The final site layout and detailed design documents have not yet been completed. PSE will work closely with the developer to communicate PSE's technical requirements and preferences throughout the remainder of the design process.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

***Wind turbines***

The developer has selected 2.5 MW, 60 Hertz (Hz), 690 Volt (V) GE wind turbines with a 127-meter rotor diameter and an 89-meter hub height. The planned 232 MW site output will be generated by 88 turbines. GE has completed a mechanical load review that indicates that the turbines are suitable for the site, and a Turbine Supply Agreement with GE is in progress. The turbines are equipped with options such as an extreme cold weather package, zero-voltage ride-through, and a standard condition monitoring system. In addition, there are many optional features, such as controls enhancements, reactive power capability, and leading-edge protection that will affect pricing and operations. PSE should have the opportunity to review these optional features before the supply contract is finalized. PSE technical and operations personnel are aware of reports of certain reliability issues with this GE turbine platform, which suggest that there would be significant benefit to a five-year warranty period, if available, rather than the standard two-year warranty.

A 10-year Full-Service Agreement is planned for inclusion in the GE contract, which will reduce risk somewhat. The FSA obligates GE to provide all operations and maintenance services for the turbines for 10 years following turbine commissioning. Key terms of the FSA are:

- The agreement covers all labor, parts, equipment and consumables for the turbines.
- GE will provide and maintain all spare parts during the warranty period.
- GE warrants [REDACTED] availability in the [REDACTED] of operation, and [REDACTED] availability in [REDACTED] (calculated annually on a per turbine basis).

***EPC contractor***

A request for proposal for an engineering, procurement, and construction (EPC) contractor was released by the developer in early June 2023, and bids were received at the end of June. After bid evaluation by the developer, the successful bidder will be selected subsequent to signing the MIPA. The EPC contractor will be responsible for the detailed design, procurement, and construction of all project BOP components, including turbine foundations, access roads, underground and overhead electric collection system lines, step-up substation, transmission lines, fiber and microwave communications, permanent meteorological towers, an operations and maintenance building, and temporary construction access and staging areas. Supply of the wind turbines is not included in the EPC contractor scope of supply. The main transformer and certain substation equipment are being procured separately, but will be assigned to the EPC contractor once selected.

***Electrical components***

The developer is soliciting bids for supply of the main transformer and 230 kV circuit breakers. The remainder of the electrical components will be procured by the EPC contractor.

Transformers: The primary transformers for this project include 88 pad-mount step-up transformers sized for the full power output of the 2.5 MW wind turbines, two generator step-up (GSU) transformers with two Zig Zag transformers providing high impedance grounding for the low side of the GSU, and two 100 kilovolt-amperes (kVA) station service transformers. The two GSUs are 185 megavolt amperes (MVA), 230 kV/34.5 kV units that have been sized to accommodate optional



## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

battery energy storage systems. The two Zig Zag transformers are 3.7 MVA, 34.5 kV distribution-type units with single windings. The developer has requested bids from several vendors for the GSUs and Zig Zag transformers. Sargent & Lundy or SNC-Lavalin will provide engineering services related to the GSUs and Zig Zag transformers.

Main Circuit Breaker: A single 230 kV sulfur hexafluoride (SF<sub>6</sub>) gas-insulated circuit breaker rated for 2000 Amperes (A) continuous will be included in the Project. The developer has requested bids from several vendors for this circuit breaker.

Plant Controls: GE's WindCONTROL controls system will be supplied by GE as part of the turbine package. The system will provide the capability of controlling the site's output, including start-up, shut-down, emergency stops, and facility curtailment. The plant controller will interface with the GE wind supervisory control and data acquisition (SCADA) system and condition monitoring system (CMS) for control, monitoring, metering, and diagnostic functions. Meteorological sensors and other sensors will be required as inputs into the plant controller.

Protection, Metering, and Grounding: Circuit breakers will provide overcurrent and other protection functions on the high-voltage and medium-voltage components. Protection relays will be supplied by the EPC contractor. The low-voltage DC components will be protected with fuses. The two 34.5 kV buses will be high-impedance grounded via Zig Zag transformers connected to the two GSUs. The EPC contractor will develop grounding and safety solutions in accordance with Montana state regulations.

Optional BESS System: Proposals for a 20 MW, 3.5-hour (70 MWh) and a 100 MW, 4-hour (400 MWh) BESS system designed and supplied by GE have been included as Project options in addition to the wind turbine generators. Pricing for the two options is scalable; i.e., the 100 MW option is five times the cost of the 20 MW option.

**Interconnection**

The project will interconnect to NorthWestern Energy's ("NorthWestern") existing 230 kV transmission system at a new substation between the Wilsall and the Columbus Rapelje 230 kV substations and has an executed large generator interconnection agreement (LGIA) for 315 MW of interconnection service. The Project has network resource interconnection service (NRIS). The total upgrade cost (for the transmission provider interconnection facility plus identified network upgrade) identified as part of the system impact and facility study is approximately [REDACTED]. Note that this amount does not include any cost incurred for the interconnection customer's interconnection facility (for example, a generation tie line). In lieu of the security deposit, the Project has provided a guaranty through GE. The identified network upgrade costs are going to be directly assigned to the interconnection customer, that is, they are not reimbursable through transmission network credits. The executed LGIA established certain technical and financial milestones for both NorthWestern and the customer to meet in order to support the requested commercial operation date. Caithness filed and executed an amendment to the original LGIA on June 20, 2023, that revised the originally established milestone dates. The amendment also removed the LGIA section on transmission credits. The amended commercial operation date is August 15, 2025. Details of the other milestone dates are included in Attachment 9.

Figure 2 in Section 3 shows the Beaver Creek interconnection point.

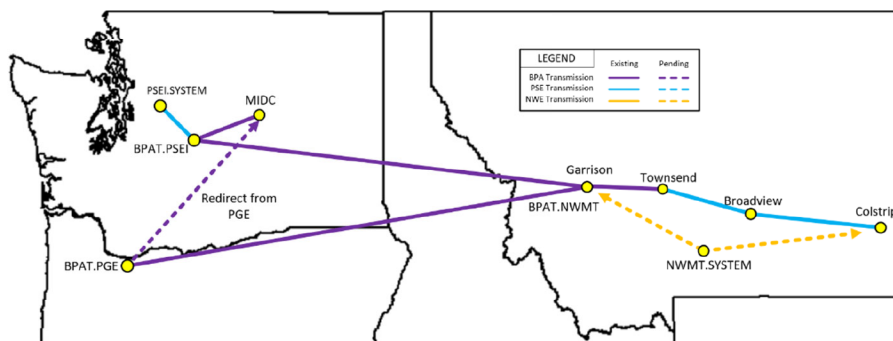
## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

## Transmission

PSE is responsible for the delivery path from the new NorthWestern substation to customer load. PSE has submitted a request for 220 MW of new NorthWestern transmission service from the project location to the Colstrip 500 kV substation. PSE has also submitted another 220 MW of new NorthWestern transmission service from the project location to the Garrison substation to create and evaluate delivery options. PSE will repurpose the transmission used for Colstrip Units 3 and 4 for the project. PSE currently has 713 MW of contracted transmission available to deliver the resource along with other Montana resources. The transmission path consists of four transmission wheels (see figure below): (1) the NorthWestern Energy transmission system, (2) the Colstrip Transmission System, (3) Eastern Intertie, and (4) the BPA main grid. In Figure 7, the CTS is depicted as a bright blue line, and both the Eastern Intertie and the BPA main grid are represented by a purple line.

Figure 7. *Transmission path and wheels from the NWE Substation*



PSE submitted two transmission service requests for 220 MW each on the NorthWestern system in July 2023 for delivery to Colstrip and Garrison, which are subject to NorthWestern's transmission studies described below. In addition, PSE has submitted a change of source TSR to the CTS owners to allow for the scheduling of the Beaver Creek Wind Project instead of power from the Colstrip units after 2025. PSE also holds sufficient firm point-to-point capacity rights on BPA's main grid from Garrison to PSE's load. On the Eastern Intertie, PSE holds 720 MW of total capacity, including 680 MW under the Montana Intertie Agreement ("MIA") through 2027, and an additional 40 MW under standard BPA tariff service. The 720 MW of transmission service may be renewed. (Note: PSE submitted a TSR to BPA to secure 680 MW of Eastern Intertie transmission after the MIA expires in 2027.)

The Beaver Creek Project requires a series of transmission studies to assess the impact of delivering the wind energy on the NorthWestern system and westward on the CTS, and to identify any required upgrades. These studies provide visibility into the costs associated with system upgrades, timelines to complete upgrades, and the resulting transmission system capabilities. The status and a brief description of the transmission studies associated with Beaver Creek are described in Appendix 9.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 6. PROJECT DEVELOPMENT

**Integration plan**

PSE has evaluated options to balance and integrate the Beaver Creek Wind Project, a variable energy resource located in Montana, into the PSE balancing authority area (BAA). PSE researched acquiring service from BPA, and determined that BPA would be unable to provide integration services. NorthWestern has confirmed that they do not have capacity to balance the Project. PSE will need to perform an integration study to determine the costs for PSE to include the Beaver Creek Wind Project as a resource in PSE's BAA, and include the balancing cost in its evaluation of Beaver Creek. For modeling purposes, PSE used BPA's wind integration tariff as a proxy for the balancing cost of the Project.

**Budget**

An estimate of the Project budget is provided below. Balance of plant, turbine supply, and turbine service agreements have not yet been negotiated.

An updated budget will be determined once PSE has selected an EPC contractor. The estimate shown below is based on a budget provided by Caithness in June 2023. Step-up transformer and BOP contract estimates were revised [REDACTED] respectively, subsequent to PSE's due diligence review. Contingency includes an additional [REDACTED] which is consistent with the generic contingency assumption of 2.5% used by PSE. PSE calculated the AFUDC based on the projected cash payouts.

Table 4. *Estimated preliminary budget for the Beaver Creek Wind Project*

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Development Rights			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
Wind Turbines			
GE Contract Price			
Balance Of Plant			
Step-up Transformers			
EPC Contract Price			
PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead			
Sales Tax			
Contingency			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	515,272	2,342	100.0%

<sup>9</sup> Caithness's budget included approximately [REDACTED] contingency on BOP.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 6. PROJECT DEVELOPMENT

Table 5. *Preliminary quarterly budget (excluding AFUDC)<sup>10</sup>*

Draft Beaver Creek Budget (\$000)																					
Detailed Quarterly Budget	Q3 - 2023	Q4 - 2023	Q1 -2024	Q2 -2024	Q3 -2024	Q4 -2024	Q1 -2025	Q2 -2025	Q3 -2025	Q4 -2025	Total										
Development Fee																					
<b>Plant Costs</b>																					
Wind Turbines																					
Balance of Plant																					
Transformer/Breakers																					
<b>PSE Project Management,</b>																					
<b>Contingency</b>																					
<b>Total</b>																					
<b>Cumulative Total</b>																					
<b>Qtrly %</b>																					
<b>Other notes:</b>																					
1. PSE owner contingency includes Phase 1 only to match PPA vs Ownership Evaluation Model																					
2. PSE Phase 1 allocation is based on MWs of planned build out, i.e. 232MW for phase 1 and 83MW for phase 2 for a total of 315MW.																					

#### Pro forma financial statement

The pro forma for the Project models the 25-year project-specific revenue requirement to recover all capital investment made during development and construction of Phase I and the subsequent 25 years of O&M expense required to operate the facility and transmit the energy to PSE's territory. The 25-year levelized cost of the Project is [REDACTED] per MWh, which includes the development and construction budget (evaluated at a LCOE of [REDACTED] MWh), and incremental transmission and balancing cost (evaluated at a LCOE of [REDACTED] MWh). Development costs for the Project include both the pro rata allocation of the costs to develop the entire project and the Phase I specific costs to negotiate the TSA and FSA, as well as the BOP Contract agreement (all of which are described in Appendix 4). The construction budget includes the remaining costs necessary to construct the plant and place it into commercial operation, including WTGs, the balance of plant, PSE construction management and AFUDC. These development and construction capital costs are described in more detail in Appendix 12.

The levelized cost metric also includes the 25-year O&M expenses for Phase I, which include the GE FSA, land lease payments, PSE staff, property tax, insurance, environmental compliance, MT production and transmission tax and transmission expense.

The pro forma assumes perfect rate-making treatment, meaning the Project is placed in rates upon commercial operation. In practice however, there may be a lag between the time Phase I achieves commercial operation and the time it is included in rates. Appendix 18 describes the timing and regulatory recovery strategy to place Phase I into rates. The pro forma also assumes the receipt of production tax credit and passing the credit back to customers.

<sup>10</sup> Cash flows assume a closing/notice to proceed at the end of August, which is likely to shift to the right into late Q3 or early Q4.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 7. DECISION AND EXECUTION

## 7. Decision and Execution

## Construction of the Project

Subject to Board approval on August 3, 2023, PSE will execute the following contract:

- MIPA with Caithness Beaver Creek, LLC to purchase 100% of the membership interests in the Project Company, which includes real estate rights to support 100-150 MW of future development, priority transmission service request queue position, and permitting to support optional battery energy storage system for [REDACTED]

Subject to future Board approval(s) anticipated to be sought in late Q3 or Q4, PSE would execute the following contracts:

- BOP agreement to erect the turbines; and to design and build the electrical collector system, project gen-tie transmission line, project substation, turbine foundations, and project operations and maintenance building (final BOP selection and agreement execution to occur shortly after closing).
- GE TSA contract to purchase 48 x 2.5 MW-127 meter (M) and 40 x 2.8 MW-127M WTGs (to be executed shortly after closing).
- GE FSA for certain operation and maintenance services for the turbines supplied under the TSA.

The following table presents a preliminary milestone schedule based on a schedule prepared by Caithness to develop and construct the plant. Actual milestones will be subject to BOP selection and the terms of the TSA.

Table 6. *Preliminary milestone construction schedule*

Date	Milestone
Aug 2023	Board approves MIPA execution
Sept/Oct 2023	MIPA closes; Board approves execution of BOP, TSA and FSA contracts
Apr 2024	EPC contractor mobilizes and begins constructing roads and WTG foundations
Sep 2024	PSE procures Project substation transformers
Sep 2024	Roads, foundations, and collection system for WTGs complete
June 2024	First WTGs arrive on site
Dec 2024	Begin commissioning WTGs
Nov 2024	Substation complete – ready for energization
August 2025	Phase I achieves commercial operation



## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 7. DECISION AND EXECUTION

#### Financing

The Project will be financed consistent with current and past utility financing practices, employing a combination of funds from operations, short-term debt, and/or long-term debt at PSE and, as needed, equity provided from PSE's parent Puget Energy. The sources and timing of the funding needed will be refined during the course of project development and construction and will be optimized to ensure PSE is able to maintain (1) the regulated minimum equity ratio of 49.0% (or the then-approved regulated equity ratio) and (2) investment grade credit ratings at both PSE and Puget Energy.

A summary of PSE's funding strategy for the Project is provided in Appendix 17.

#### Federal tax incentive accounting and treatment

The Inflation Reduction Act (IRA) significantly increased the federal income tax incentives for renewable energy projects. Under the IRA, the project qualifies for the federal Production Tax Credit or the Investment Tax Credit; however, Appendix 14 demonstrates that the PTC is more beneficial to customers.

The Project is expected to qualify for the PTC at a rate of \$27.50 per MWh, plus an annual Internal Revenue Service (IRS) inflation adjustment. In addition, the Project is expected to qualify for the domestic content bonus credit, which would increase the PTC rate by +10% to \$30.25 per MWh. At this time, it appears that the Project will not qualify for the "energy communities" benefit. Management will continue to monitor the evolution of the tax credit in order to maximize the value of these incentives for the benefit of customers.

PTCs claimed under the IRA are transferable. Transferability will allow PSE to convert the PTC to cash regardless of PSE's taxable income by selling the PTCs to an unrelated third party. This may be a source of significant value to customers by vastly accelerating the timing of the pass-back of the credits on customers' bills. The modeling for the Project assumes that PTCs will be sold when earned at 95% of face value.

PTCs are passed along to customers under a separate tariff, Schedule 95A. The Schedule resets each October with all PTCs (or other tax incentives) that have been realized in a cash benefit, either through usage on a tax return or by sale to a third party, being passed to customers over the next 12 months.

State taxes in Montana are composed of three types of taxes: energy production and transmission tax, income tax, and property tax. There is no sales tax in Montana.

Production and transmission tax is based on megawatt hours produced and transmitted, the rates are \$0.15/MWh and 0.2/MWh, respectively. PSE expects the project to minimally impact Montana income tax (likely less than [REDACTED] a year). In regard to property tax, PSE expects the project to qualify for a discounted rate of 1.5%, which represents a significant savings relative to our current property situation in Montana.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 7. DECISION AND EXECUTION

## Accounting treatment

PSE will capitalize its investment in the Project as an electric utility plant fixed asset and depreciate the capitalized amount over its useful life, which is assumed to be 25 years, consistent with the Lower Snake River, Hopkins Ridge and Wild Horse facilities. These facilities will be a part of a future depreciation study in which consultants will assess their useful lives, but it is not anticipated that the Project's useful life will be different from that of our other facilities if the nature of the turbines is not significantly different. PSE plans to unitize the capital asset within a year of placing the facility in service, segregating its original cost into appropriate retirement units of property categories. PSE's original cost will include AFUDC.

The development fee will be allocated to different contract components, not all of which will be assigned to the current project. For modeling purposes, the [REDACTED] fee has been allocated as [REDACTED] and [REDACTED] respectively to the current project and a future expansion, based on a 232 MW and 83 MW<sup>11</sup> nameplate capacity split. Additional rights to support future expansion include (1) additional real estate rights in Sweet Grass County to support a future PSE expansion of Beaver Creek wind generation, (2) a TSR queue position for 100 MW of transmission capacity from Montana at Garrison (BPAT.NWMT) to Portland (BPAT.PGE), and (3) full permitting for a BESS through a Conditional Use Permit.

A discussion of rates and accounting issues is contained in Appendix 18.

## Regulatory recovery plan

The most likely scenario is that PSE will seek a determination of prudence for the Project and cost recovery in an upcoming General Rate Case (GRC) filing with the WUTC. Commercial operation of the Project is expected to be achieved in 2025, the first year of the multiyear rate plan to be included in that filing, which is planned for January 2024. Regulatory approval of new rates would occur eleven months after filing.

A discussion of rates and accounting issues is contained in Appendix 18.

## Independent evaluator

Beaver Creek was not among the proposals submitted into the 2021 All Source RFP; however, PSE has kept its RFP independent evaluator (IE) informed of the status of the evaluation and contract negotiation for the Project in order to maintain transparency in its resource acquisitions activities in line with the Purchases of Resources Rules (WAC 480-107). PSE shared its qualitative and quantitative findings and draft board materials with the IE, describing the nature of the time sensitive opportunity of unique value of the Project compared to other RFP and non-RFP resources in PSE's deal pipeline.

<sup>11</sup> Based on a total LGIA interconnection limit of 315MW, subtracting 232MW for Phase I.



## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 7. DECISION AND EXECUTION

**Management and operation of the project**

PSE's Generation Group is currently evaluating a number of options and business models to perform operations and maintenance scope of service activities required to operate, service and maintain the Beaver Creek Wind Project. Options include employing GE Renewables, self-performing with PSE staff or employing one or more independent third-party service providers.

The scope of services will include diagnostics, maintenance and repair services, the supply of consumables, and parts replacement for the wind turbines and ancillary equipment. Under any specific option, PSE will retain responsibility for site management, monitoring and control; scheduling of generation; and maintenance of the infrastructure systems including the collection and communication systems, access roads, substation, interconnecting transmission line and associated vegetation management. PSE may provide some of its O&M services via third-party subcontractors. The Project will utilize existing PSE Generation wind group personnel for overall wind plant management and oversight.

Given the remote location outside Washington state, the expanse and topography of the Project, wind industry standards, and PSE subject matter expert (SME) opinion, additional PSE operations employees will be required to ensure safe, reliable and proper management of the Project. When the Project layout, size and generating capacity is finalized, a pro-forma O&M budget will be fully developed for 20 years of operation. It is assumed that wind turbine and plant infrastructure system maintenance requirements will increase over time, so that O&M costs are projected to grow over the lifetime of the Project.

**Insurance program****Construction period insurance program**

During the construction period, Builder's All-Risk coverage (physical damage to the plant during construction) will be provided in one of two ways: (1) PSE will require the EPC to purchase Builder's All-Risk coverage, including Delay in Start-up coverage, in an amount to be determined based on projected generation value; or (2) PSE will purchase a project-specific policy. If option 2 is selected and PSE carries this coverage, PSE anticipates purchasing the Builders All-Risk coverage with a [REDACTED] deductible, with requirements for the EPC to cover such deductible in the event of a loss, for most perils.

During the construction period, the EPC will be required to carry the following insurance coverages:

- Workers' Compensation and Employers Liability Insurance,
- Commercial General Liability Insurance with policy limits of [REDACTED] per occurrence,
- Excess/Umbrella Liability Insurance with policy limits of [REDACTED] per occurrence,
- Commercial Automobile Liability Insurance with policy limits of [REDACTED] per occurrence, and
- Transit Insurance from shipper's point of shipment to the delivery point.

**PSE Report to the Board of Directors: Beaver Creek Wind Project****SECTION 7. DECISION AND EXECUTION****Operating period insurance program**

Once construction is complete and the Project commences operation, it will be added to PSE's existing property insurance program for the full replacement value, subject to a [REDACTED] per occurrence deductible (unless financing requires a lower deductible) and subject to policy limits and sublimits. If service and maintenance are supplied under an FSA with GE, such agreement will require, at minimum, that GE maintain the following insurance coverage:

- Workers' Compensation and Employers Liability Insurance,
- Commercial General Liability Insurance with policy limits of [REDACTED] per occurrence,
- Excess/Umbrella Liability Insurance with policy limits of [REDACTED] per occurrence, and
- Commercial Automobile Liability Insurance with policy limits of [REDACTED]

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## SECTION 8. PROJECT RISKS AND BENEFITS

## 8. Project Risks and Benefits

The Company maintains an Enterprise Risk Management Policy (ERM) as part of its Corporate Policy Manual. Pursuant to that policy, and consistent with past resource acquisition activity, PSE staff identified key project risks associated with the Beaver Creek Wind Project and identified certain low probability, high risk scenarios for consideration and associated mitigations and/or response actions for each scenario. This section concludes with a summary of key project benefits.

### Project risks

PSE's cross-functional subject matter expert team conducted a due diligence review of the Project that included a review of project documentation provided by the developer, a reasonableness check of the wind resource, discussions with the developer's subject matter experts and a site visit. PSE captured known Project risks in a risk register, identified mitigations for each risk, and assessed a risk level for each area of review. The risk register has been provided as Appendix 11.

Risk areas of focus at the current pre-construction stage of project development include permitting and studies (including cultural resources), real estate and transmission. In each of these areas of focus, overall risk levels were determined to be low to acceptable.

PSE retained Baker Botts to perform due diligence and identify "red flags" and "yellow flags" in five areas: 1) corporate matters, 2) real estate matters, 3) equipment supply matters, 4) engineering, procurement and construction matters, and 5) federal tax matters, in each case that may impact the Project. The red flags were related to real estate matters and tax. All yellow flags were real estate related. PSE has identified a mitigation or action plan for each of these flagged items. PSE anticipates that all red and yellow flagged items will be addressed between now and closing.

In the interest of thorough contingency planning, three worst-case scenarios are outlined below along with potential actions that PSE may consider in the unlikely event that one of these scenarios materializes.

#### Scenario 1 -- PSE is unable to build the Beaver Creek project (post-closing, TSA and BOP execution)

##### *Response if risk materializes*

- PSE would retain the second payment to Caithness, and would attempt to recover the initial [REDACTED]
- PSE would negotiate with GE to deliver the purchased turbines to another site, sell the purchased turbines to a developer for another project, or arrange credit toward the purchase of another GE turbine model if PSE has a need for a different turbine model on another site location.
- PSE would work with BOP to minimize losses and maximize value if the BOP needs to demobilize.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 8. PROJECT RISKS AND BENEFITS

**Scenario 2 -- NorthWestern transmission rates increase significantly, resulting in higher power costs for PSE customers (project operational)**

***Response if risk materializes***

- PSE may evaluate opportunities to build an estimated 30-mile generation-tie line and interconnect directly to the Colstrip Transmission System.

***Risk Mitigation***

- PSE will analyze and reduce contracted transmission to less than full nameplate if it is economic to do so with or without battery energy storage.

**Scenario 3-- PSE loses ability to wheel energy out of Montana (project operational)**

***Response if risk materializes***



The scenario analysis above helps demonstrate the overall low risk profile of the Project compared to the direct and indirect benefits of the Project. Risk mitigation strategies are available for all identified risks, including these low probability, high impact scenarios. In addition, the high impact scenario discussion points to open pathways for alternative net positive resolutions even under the risk scenarios with the greatest potential impact. Therefore, the scenario analysis and risk discussion should be viewed with an eye toward the overall material benefits of the proposed Project.

### Project benefits

Acquisition of the Project provides several areas of value, including the following:

- Near construction-ready wind generation project – the only opportunity identified which can reach commercial operations before the end of 2025
- Helps meet PSE's CETA compliance targets
- Provides additional real estate rights for the potential for ownership of additional attractive renewable resources
  - Additional real estate rights in Sweet Grass County to support a future PSE expansion of Beaver Creek, representing 100-150 MW depending upon final equipment selection and permitting. This assumes either all 2.5 MW-127M turbines, or the same ratio of 2.5 MW and 2.8 MW turbines as the initial buildout. This phase would not be construction ready

**PSE Report to the Board of Directors: Beaver Creek Wind Project****SECTION 8. PROJECT RISKS AND BENEFITS**

at closing. PSE would be responsible for perfecting real estate rights and securing permits.

- Attractive transmission queue position
  - Transmission Service Request queue position for 100 MW of transmission capacity from Montana at Garrison (“BPAT.NWMT”) to Portland (“BPAT.PGE”)
    - Third position in BPA’s Montana transmission queue, which will guarantee transmission service of 100 MW anticipated to be available starting in 2030, if PSE stays in the queue and agrees to fund for its pro-rata share of upgrades
    - PSE has been advised that BPA does not expect to move forward with any additional transmission expansion projects in Montana for any additional new transmission capacity in the foreseeable future
- Provides permitting for battery storage option

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 9. EQUITY AND CUSTOMER BENEFITS OF THE PROJECT

## 9. Equity and Customer Benefits of the Project

CETA requires that electric utilities “ensure that all customers are benefiting from the transition to clean energy: Through the equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency (RCW 19.405.040(8)).”

Beaver Creek’s Customer Benefit Plan will seek to address three of the CETA categories of Customer Benefit Indicators namely: energy security and resiliency, energy and non-energy benefits, environment and public health benefits.

### Energy security and resiliency

Beaver Creek will be constructed in the wide-open spaces between Rapelje and Reed Point (Montana). The plant size is 232 MW.

Beaver Creek will improve the energy security and resiliency of active service areas by unlocking up to 756 GWh (annual GWh estimate). The deployment of new wind farms and the option to incorporate batteries for storing wind energy will complement the operational limitations of hydro power and solar. Beaver Creek will also significantly increase the geographic diversity of PSE's renewable energy resources. Increasing the diversity of renewable energy resources by adding clean, reliable utility-scale wind energy to the electric portfolio will bring significant security and resiliency benefits. Montana wind projects are most productive during the winter months when compared to Washington wind projects, which are more productive in the spring.

Beaver Creek provides the potential to complement PSE’s existing wind power by smoothing out the highs and lows of the wind so that the output will be more consistent. The future incorporation of batteries would also offer a way to offset the vagaries of wind by storing excess energy when demand is low and tapping that energy when demand peaks. The operational flexibility of the Beaver Creek Wind Project will increase the reliability of wind-power. It is estimated that the two phases could power more than 75,000 homes.<sup>12</sup>

### Energy and non-energy benefits

Beaver Creek will create employment opportunities for an estimated 150-200 skilled craftsmen during the year-long construction phase and an ongoing need for permanent, on-site workers after COD. PSE is committed to using local and diverse suppliers when available. When negotiating the BOP contract for the Project, PSE intends to include provisions that encourage the EPC contractor to utilize a Project Labor

---

<sup>12</sup> Based on an average per household consumption of 10,000 kWh/year.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### SECTION 9. EQUITY AND CUSTOMER BENEFITS OF THE PROJECT

Agreement, Community Workforce Agreement, or Collective Bargaining Agreement for major construction activities.

#### Additional economic benefits

Beaver Creek is projected to produce \$170 million<sup>13</sup> in property taxes over 25 years and qualify for tax rebates through the first 10 years. It is anticipated that Beaver Creek will deliver approximately \$7 million<sup>14</sup> in local economic impact in rural Montana on an annual basis. In addition, the workers, contractors and landowners who work with Beaver Creek will contribute to the local economy as taxpayers and consumers, leading to a positive economic ripple effect throughout the local communities.<sup>15</sup>

#### Environment and public health

The Project offers a substantial renewable energy resource, which helps to meet PSE's energy needs in both summer and winter, and supports better air quality, fewer emissions and fewer greenhouse gases than fossil fuels. As the impacts of poor air quality tend to disproportionately fall on highly impacted communities and vulnerable populations, the Beaver Creek Wind Project will enhance the health and well-being of customers and communities by providing a clean source of energy, reducing air pollution, and improving health outcomes.

It is projected that Beaver Creek will displace approximately 535, 764 metric tons of carbon dioxide (CO<sub>2</sub>)<sup>16</sup> in its first full year of operation if the same electricity had been generated with natural gas. This represents a significant reduction in greenhouse gas emissions, reducing the public health impacts associated with the effects of climate change.

The proposed energy resource will have positive implications for long- and short-term public health by offsetting existing fossil fuel generation, thereby reducing associated emissions such as particulate matter (PM<sub>2.5</sub>) by 20.46 tons, nitrogen oxides (NO<sub>x</sub>) by 187.78 tons, sulfur dioxide (SO<sub>2</sub>) by 100.1 tons. These pollutants have been linked to the occurrence of a host of respiratory illnesses (e.g., asthma), cardiovascular diseases, and increased hospital admission rates. Based on an initial screening using the Co-Benefits Risk Assessment (COBRA) tool, this project estimates a total of \$1.6 to \$3.6 million in costs avoided related to health effects.<sup>17</sup> A description of estimated environmental and public health impacts and evaluation tools is provided as Appendix 16.

---

<sup>13</sup> Calculated based on an assumed 1.5% property tax. See Appendix 12.

<sup>14</sup> Calculated using Jobs and Economic Development Impacts (JEDI) Land Based Wind Model rel W6.28.19

<sup>15</sup> BeaverCreek-Windfarm-Application.pdf (stillwatercountymt.gov)

<sup>16</sup> The estimated amount of carbon dioxide (CO<sub>2</sub>) emissions is calculated using the Greenhouse Gas Equivalencies Calculator based on 756,000 MWh

<sup>17</sup> To estimate avoided costs related to health effects, PSE used the Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA).



PSE Report to the Board of Directors: Beaver Creek Wind Project

SECTION 10. RATE IMPACT AND RECOMMENDATION

## 10. Rate Impact and Recommendation

### Rate impact

The levelized cost of the Project over the 25-year of project life is approximately [REDACTED] MWh including an [REDACTED] MWh incremental transmission and balancing cost. The resource acquisition team estimates the net effect<sup>18</sup> on electric rates to be an increase of less than one percent. This is based on the 2022 baseline rate.<sup>19</sup>

For the multi-year rate plan period from 2025 to 2028, the projected yearly revenue requirements (before any expected avoided power purchases) are [REDACTED] respectively. For detailed pro forma analysis, please see Appendix 12.

### Recommendation

Based on the determination of need, the analysis of alternatives, and the project benefits presented in this Report, PSE management recommends that the Board of Directors adopt the Resolutions set forth in Appendix 1 authorizing the purchase of 100% membership interest in the Project Company for approximately [REDACTED] plus reimbursement of certain costs. This recommended purchase would not commit PSE to construct the Project. Such authorizations for the construction of the Project, including construction funding — which comprises the bulk of the all-in capital budget — will be sought through a separate board approval.

<sup>18</sup> Levelized delivered cost of energy net of energy benefit of avoided market purchases.

<sup>19</sup> Electric Revenue Requirement is \$2,984,894,706 per 2022 GRC Compliance Filing.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 1. Board Resolutions

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 1. BOARD RESOLUTIONS

**Board Resolutions****APPROVAL OF PURCHASE OF BEAVER CREEK WIND PROJECT**

After full discussion, on motion duly made and seconded, the following was unanimously approved:

**WHEREAS**, this Board of Directors (“Board”) of Puget Sound Energy, Inc. (the “Company”) has determined that it is in the best interests of the Company, its customers, shareholders and other stakeholders to add energy resources into the Company’s energy resource portfolio consistent with the Company’s least cost planning and analysis and Clean Energy Transformation Act (“CETA”) compliance efforts;

**WHEREAS**, the Company’s review and analysis of a potential self-developed generation project has determined it to be a least cost and CETA-compliant resource for additional energy resource generation;

**WHEREAS**, the facility to be developed and constructed consists of approximately 232 MW wind powered electric generation capacity plus certain other ancillary projects (together, the “Beaver Creek Project”) in Stillwater and Sweetwater counties, Montana, of which the development rights are owned by Caithness Montana Wind, LLC, a Delaware limited liability company (“Project Company”), an affiliate of Caithness Beaver Creek, LLC, a Delaware limited liability company (“Seller”) and Caithness Energy, LLC, a Delaware limited liability company (“Seller Parent”);

**WHEREAS**, the Company’s management has negotiated with Seller the terms and conditions of a Membership Interest Purchase Agreement (“Purchase Agreement”), pursuant to which the Company would purchase from Seller 100% of Seller’s ownership interest in the Project Company (“Ownership Interests”). The Project Company owns all of the equity interests in each of (i) Beaver Creek Wind I, LLC, a Delaware limited liability company, (ii) Beaver Creek Wind II, LLC, a Delaware limited liability company, (iii) Beaver Creek Wind III, LLC, a Delaware limited liability company, and (iv) Beaver Creek Wind IV, LLC, a Delaware limited liability company, which in turn collectively own all of the equity interests in Chafin Wind Energy, LLC, a Delaware liability company (collectively, the “Project Subsidiaries”);

**WHEREAS**, at or immediately following the closing, the Company will dissolve the Project Company and some or all of the Project Subsidiaries, with the result that all of the assets and liabilities of the Project Company and Project Subsidiaries will become those of the Company;

**WHEREAS**, the Company desires to acquire from Seller and Seller desires to sell to the Company (i) the Ownership Interests and (ii) all of the assets of the Project Company and Project Subsidiaries, including without limitation: (1) meteorological towers, associated with the potential development of a project with 88 wind turbine locations sized at approximately 232 MW<sub>AC</sub> of wind generation capacity, (2) certain additional real property rights located in Sweet Grass County, Montana anticipated to support 100-150 MW of future development and expansion, (3) an additional amount battery energy storage capacity of 100MW located in Stillwater County, Montana, and (4) 315MW<sub>AC</sub> of interconnection capacity under the

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 1. BOARD RESOLUTIONS

Standard Large Generator Interconnection Agreement, dated as of June 12, 2018, between NorthWestern Energy and Chafin Wind Energy, LLC and (iii) Seller Parent's 100 MW point to point transmission service request high in Bonneville Power Administration's ("BPA") queue (items (ii) and (iii) together, the "Project Development Rights");

**WHEREAS**, the purchase price for the Ownership Interests, Project Development Rights and all other rights and obligations under the Purchase Agreement is approximately [REDACTED] plus certain payments to be made by the Company to Seller relating to certain documented third-party costs incurred by Seller for the continued development of certain Project Development Rights (the "Purchase Price") (i) 50% of which is payable to the Seller upon closing and (ii) 50% payable to Seller upon Project Substantial Completion (as defined in the Purchase Agreement) or seventeen months from closing, whichever occurs first;

**WHEREAS**, the Company's review and analysis of the purchase of the Project Company Ownership Interests and Project Development Rights in accordance with the Purchase Agreement has determined that such development assets are a component of a least cost resource for additional energy resource generation;

**WHEREAS**, the Purchase Agreement and a summary of the Beaver Creek Project, including its anticipated budget and the primary risks relevant to its development, construction and operation are described more fully in a report provided to the Board in advance of this meeting and filed with the minutes (the "Beaver Creek Proposal"); and

**WHEREAS**, the officers now seek Board approval of and authority to enter into the Purchase Agreement and all other contracts and actions necessary for the execution of the Purchase Agreement, and any such additional contracts and actions described in the Beaver Creek Proposal relating to the acquisition, perfection or further development of the Project Development Rights;

**IT IS, THEREFORE**

**RESOLVED**, that the Board, after full consideration and due deliberation, deems it advisable and in the best interests of the Company, its customers, shareholders and other stakeholders to approve the (i) acquisition of the Ownership Interests and Project Development Rights pursuant to the Purchase Agreement, (ii) the payment of the Purchase Price, and (iii) any related agreements and other transactions described in the Beaver Creek Proposal and in accordance with the budget and other materials set forth therein; and be it further

**RESOLVED**, that the Board hereby authorizes the Company's Chief Executive Officer, its Chief Financial Officer, its Chief Operating Officer, its General Counsel, its Vice President of Energy Supply, its Corporate Secretary, and any such other officers they deem appropriate (the "Authorized Officers") to execute (i) the Purchase Agreement and all other agreements or contracts or actions necessary for the execution of the Purchase Agreement, including any further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers and (ii) upon execution of the Purchase Agreement, any additional contracts and actions described in the Beaver Creek Proposal related to the acquisition of the Project Development Rights, which may also include any such further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers; and be it further

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

- 2 -

REDACTED VERSION

**PSE Report to the Board of Directors: Beaver Creek Wind Project****APPENDIX 1. BOARD RESOLUTIONS**

**RESOLVED**, that the Authorized Officers are further authorized to waive any conditions precedent to the closing of any of the Purchase Agreement in order to facilitate the closing of such agreement, provided that each of the Authorized Officers agree to such waiver and deem it to be in the best interest of the Company.

**GENERAL AUTHORITY**

**RESOLVED, FURTHER**, that any and all actions taken by the officers of the Company, or any of them, as deemed by such officers to be necessary or advisable to effectuate the transactions contemplated by the foregoing resolutions, including the filing of appropriate documentation with the Washington Utilities and Transportation Commission, whether prior to or subsequent to this action by this Board, are hereby authorized, approved and ratified, and the taking of any and all such actions and the performance of any and all such things in connection with the foregoing shall conclusively establish such officers' authority therefore from the Company and the approval and ratification thereof by this Board.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 2. Presentation to the Board of Directors



# Beaver Creek Wind Project

## Recommendation for Board Approval

**Colin Crowley**

Director, Energy Resource Development

August 3, 2023



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Highly Confidential

## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors to authorize PSE to execute the following contract:

Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with:

- 1) construction-ready approximately 232 MW nameplate wind project located in Stillwater, Montana with anticipated COD in August 2025;
- 2) permitting to support a lithium-ion battery energy storage system (“BESS”)
- 3) real estate rights in adjacent Sweet Grass County anticipated to support 100-150 MW of future development and expansion; and
- 4) a transmission service request (“TSR”) queue position for 100 MW of BPA transmission service from Garrison at BPAT.NWMT to Portland at BPAT.PGE

## Beaver Creek is a time-sensitive opportunity of unique value

- Only identified new build resource that can reach commercial operations in 2025.
- Will help PSE meet its Clean Energy Transformation Act ("CETA") compliance targets for 2025 and 2030 at the lowest reasonable cost compared to other reviewed alternatives
- The [REDACTED] purchase includes additional rights to support future expansion:
  - **Additional real estate rights** in Sweet Grass County to support a future PSE expansion of Beaver Creek.
    - Caithness layout indicates additional turbine locations have been identified on the Sweet Grass footprint of the additional real estate rights, representing 100-150 MW\*
    - Future phase would not be construction ready at closing; PSE responsible for perfecting real estate rights and finalizing permits
  - **Attractive Transmission Service Request ("TSR") queue position** for 100 MW of transmission capacity from Montana at Garrison (BPAT.NWMT) to Portland (BPAT.PGE)
    - High position in BPA's Montana transmission queue would guarantee transmission service of 100 MW available starting in 2030, if PSE stays in queue and agrees to fund its pro-rata share of upgrades.

- **Fully permitted for Battery Energy Storage System ("BESS")** through Conditional Use Permit, assumed at 100 MW for planning purposes

\* Depending upon final equipment selection and permitting



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Project overview / Commercial terms

### PROJECT PROFILE

**Resource Type:** Wind (w/battery option)  
**Developer/Seller:** Caithness Energy LLC  
**Location:** Stillwater County, MT  
**Nameplate Capacity:** ~232 MW  
+ optional BESS  
**COD:** August 2025

### PRICE AND PRODUCT

**Product:** Purchase of construction NTP-ready development rights  
**Price:** [REDACTED] (50% at closing, 50% at substantial completion)<sup>1</sup>  
**NCF:** [REDACTED]  
**Expected Output:** 756,860 MWh/yr  
**Transaction Type:** Membership Interest Purchase Agreement

### DEVELOPMENT STATUS

- Site control secured
- CUP secured and in process of being modified to represent changes in project configuration.
- Project to be acquired at construction NTP-ready state



### ENERGY DELIVERY

**POI:** New substation on Northwestern  
**Transmission Plan:** NWMT wheel to Colstrip or Garrison, then share PSE's 713 MW CTS and BPA transmission rights to PSE's system. Assumption of 100 MW TSR queue position from Garrison to PGE provides incremental transmission that can be re-directed to MIDC.



4 |

<sup>1</sup> Final purchase price will be adjusted up or down at substantial completion by [REDACTED] per MW to reflect final nameplate capacity (e.g., 220 MW = [REDACTED] 240 MW = [REDACTED])  
<sup>2</sup> DNV high-level resource assessment check shows a [REDACTED] NCF, indicating potential for higher annual production. PSE used the more conservative ArcVera NCF forecast for modeling purposes.

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Anticipated future recommendations for approval

---

Approval to execute the MIPA would not commit PSE to construct the Project. PSE would seek separate board approvals for the following contracts and construction funding prior to constructing the Project:

- **Balance of Plant Agreement (“BOP”)** to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
- Caithness has administered a BOP RFP and PSE is reviewing proposals with Caithness. If purchase is approved, PSE would negotiate, make final BOP selection and execute the BOP agreement shortly after closing.
- **GE Turbine Supply Agreement (“TSA”)** to purchase 48 x 2.5 MW-127M and 40 x 2.8 MW-127M turbines for a total turbine count of 88 and a total nameplate of 232 MW<sub>AC</sub> (Note: final mix of 2.5 & 2.8 may change through negotiation)
  - TSA is in draft form and PSE has provided input on negotiable items. If purchase is approved, PSE would negotiate terms directly with GE and anticipates contract execution shortly after closing.
- **Full Service Agreement (“FSA”)** for certain operation and maintenance services for the turbines supplied under the TSA.



## Beaver Creek Analysis – Draft Results

- PSE Integrated Resource Planning (“IRP”) team has conducted Aurora portfolio optimization modelling for all active resources (RFP and bilateral) in the deal pipeline, incorporating:
  - Need updates published in the 2023 IRP Electric Progress Report
  - Pricing, COD and other updates received for projects in the deal pipeline
- Beaver Creek was demonstrated to be cost effective across several scenarios<sup>1</sup>
  - Portfolio results show that Beaver Creek reduces the overall portfolio cost by ~\$1 billion
    - Does not include the social cost of greenhouses gases, which would add another ~\$180 million to Beaver Creeks' value.
  - One-year COD delay risk was tested, and Beaver Creek was still selected

Portfolio	Beaver Creek Selected as Least Cost solution?	Portfolio Cost (\$Billions) 2024 – 2045
1. Reference – 950 MW nameplate limit on resources from Montana including Clearwater and all RFP with commercial online as stated from bid	Yes	\$19.1
2. Reference without Beaver Creek	No (forced out)	\$20.1
3. Reference + Montana nameplate limit increased to 1550 MW including Clearwater	Yes	\$19.1

<sup>1</sup> Updated cost estimates for Beaver Creek (adjusted property tax assumptions and new guidance from Treasury on qualification for energy community bonus in the IRA) show an NPV increase of the Project of approximately [REDACTED] which will not have a material effect on the portfolio optimization results.

6 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## Preliminary construction budget estimate

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Development Rights			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
Wind Turbines			
GE Contract Price			
Balance Of Plant			
Step-up Transformers			
EPC Contract Price			
PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead			
Sales Tax			
Contingency			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	<b>515,272</b>	<b>2,342</b>	<b>100.0%</b>

- The basis of the budget is Caithness's June 27 budget
- Step-up Transformer and EPC contract estimates have been revised upwards by [REDACTED] and [REDACTED] respectively following PSE SME review
- Contingency includes additional [REDACTED] per PSE's generic 2.5% contingency assumption
- AFUDC is calculated by PSE based on the projected cash payouts.

7 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Financial analysis shows Beaver Creek ownership is a cheaper option for PSE's customers compared to Caithness's PPA offer

- Ownership provides a more favorable economic profile even with less favorable assumptions

- Beaver Creek ownership's levelized cost is [REDACTED] MWh vs. PPA of [REDACTED] MWh

- The PPA offer dated 04-17-23 was based on a higher estimated NCF ([REDACTED]) and the assumption that the Project will qualify for both the domestic content and energy community PTC bonuses; however, the ownership levelized cost analysis only assumed the domestic content bonus and is based on a lower [REDACTED] NCF.
- The Own vs PPA analysis is based on the PPA Ownership Evaluation Model that was developed by consultant Thorndike Landing. The model determines the relative cost / benefit to PSE customers over a defined timeframe under the different commercial structures including:

### For owned assets

- Expected capital costs
- Operating costs including property tax and insurance
- Tax incentives
- Financing costs
- Integration and Transmission upgrade costs
- Expected residual value

### For PPAs

- Expected cost of power purchased under proposed PPAs
- Impact of debt imputed under long-term contracts
- Replacement resource costs of post PPA period (if applicable)

# Mark-to-market estimate shows cost saving for customers over next 5-10 years

Energy Only MTM NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy Cost (Bus Bar + Trans.)		
Net Value		
Energy, Capacity, Environmental Attribute NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Value of Capacity/RA		
Value of CETA/REC		
Cost (Bus Bar + Trans.)		
Net Value		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Social Cost of Carbon		

- Assumptions**
- 1. REC price: [REDACTED] in 2023, escalated at 2.5%/year thereafter
  - 2. RA capacity price: [REDACTED] month
  - 3. QCC: [REDACTED] (winter), [REDACTED] (summer)
  - 4. MIDC forward curve from Platts as of 6/1/2023
  - 5. Discount rate: 6.62%
  - 6. All calculations assuming [REDACTED] output configuration

- Based on the latest forward MIDC curves, on an energy-only basis, for the five-year period from 2025-2029, the net value to customers is [REDACTED] million in savings, and [REDACTED] million over a 10-year period.
- Accounting for the additional estimated value of capacity and RECs, for the five-year period from 2025-2029, the net value to customers is [REDACTED] million in savings, and [REDACTED] million over a 10-year period.
- The project also brings measurable social economical values in terms of avoided social cost of carbon, as shown at the bottom of table on the left.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Equity and Customer Benefit: Beaver Creek will address three of the CETA Customer Benefit Indicators categories

---

### CETA requires that electric utilities:

*“ensure that all customers are benefiting from the transition to clean energy; Through the equitable distribution of energy and nonenergy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency (RCW 19.405.040(8)).*

### 1. Energy security and resiliency:

- Unlocks approximately 756 GWh of new clean energy with an option for batteries to complement the operational limitations of hydro power and solar.
- Increases the diversity of renewable energy resources. Montana wind projects are most productive during the winter months when compared to Washington wind projects, which are more productive in the spring.

### 2. Energy and non-energy benefits:

- Creates employment opportunities during the year-long construction phase and an ongoing need for permanent, on-site workers after COD.
- PSE plans to use a project labor agreement or community workforce agreement and has committed to using local and diverse suppliers when available. PSE commits to labor standards in RCW 82.08.962 and 82.12.962 to qualify for 100 percent remittance of its state and local taxes.

### 3. Environment and public health benefits:

- Beaver Creek is projected to displace approximately 535,764 metric tons of carbon dioxide (CO<sub>2</sub>) in its first full year of operations if the same electricity had been generated with natural gas.
- Initial screening using the Co-Benefits Risk Assessment (COBRA) tool indicates that the Project result in an estimated \$1.6M to \$3.6M in avoided costs related to health effects

## Regulatory recovery plan

---

- PSE will likely seek a determination of prudence for the Project and cost recovery in an upcoming General Rate Case (“GRC”) with the Washington Utilities and Transportation Commission (“WUTC”)
  - A GRC is expected to be filed in January 2024 and will include a multiyear rate plan
  - Regulatory approval of new rates would occur eleven months after filing
- Commercial operation of the Project is expected to be achieved in 2025, the first year of the upcoming GRC multiyear rate plan
- Concurrent with the rate filing, PSE may also file an accounting petition with the WUTC to request regulatory treatment of any development rights or transmission deposits if needed

## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors to authorize PSE to execute the following contract:

Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with:

- 1) construction-ready 232 MW nameplate wind project located in Stillwater, Montana with anticipated COD in August 2025;
- 2) permitting to support a lithium-ion battery energy storage system (“BESS”)
- 3) real estate rights in adjacent Sweet Grass County anticipated to support 100-150 MW of future development and expansion; and
- 4) a transmission service request (“TSR”) queue position for 100 MW of BPA transmission service from Garrison at BPAT.NWMT to Portland at BPAT.PGE



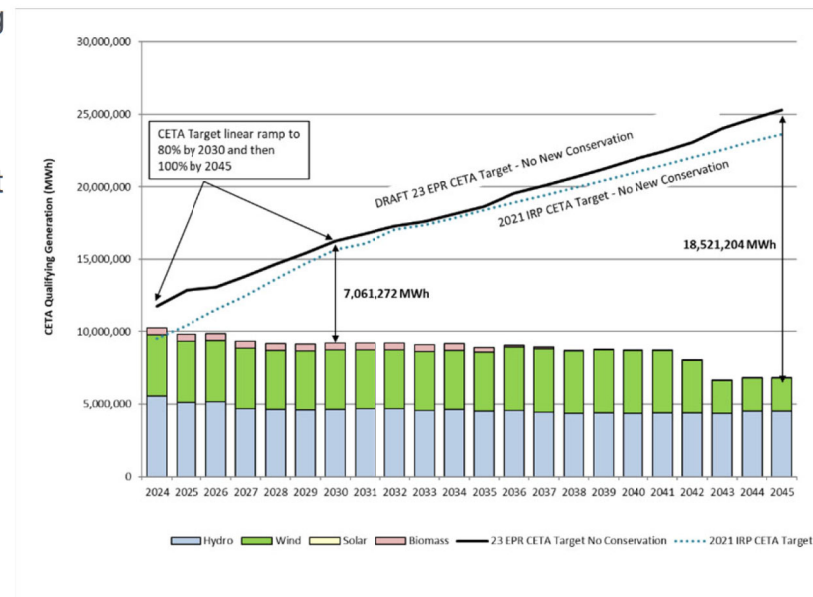
# Appendices

- Risk detail slides
- Community outreach
- Inflation reduction act and associated incentives
- Regulatory recovery plan

## Beaver Creek expected to contribute 24% of the 2025 forecast need and ~10.7% of the 2030 forecast need for additional clean energy resources

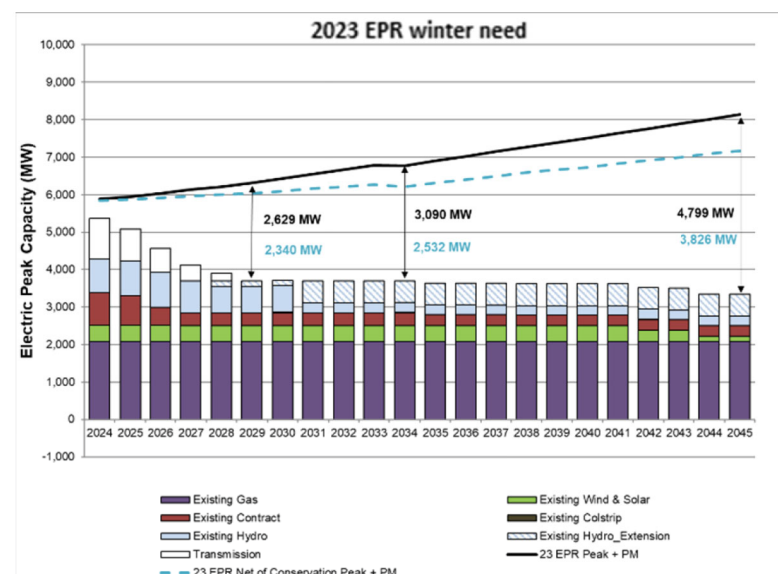
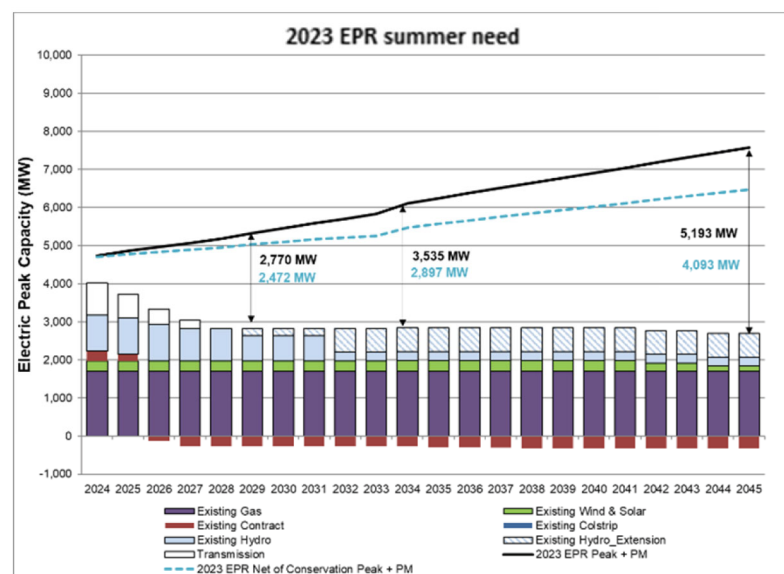
Beaver Creek is the only identified new build resource that could contribute to the CEIP 2025 target

- CETA requires utilities to meet 80% of electric sales using non-emitting or renewable resources by 2030
  - Before new conservation, 2023 IRP Electric Progress Report projects PSE will need >7M MWh clean energy to meet the CETA 2030 target
  - Beaver Creek ("BC") expected to produce 756,860 MWh annually (~10.7% of CETA need for 2030)
- PSE's CEIP set target to meet 63% of electric sales (~1.6M MWh) in 2025 using non-emitting or renewable sources
  - Beaver Creek is expected to contribute 383,480 MWh (~24% of CEIP 2025 target) in 2025
  - Beaver Creek combined with Vantage wind PPA would contribute ~57% of CEIP 2025 target
  - Shortfall to meet 63% CEIP target would be met with short to medium-term off-take contracts



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Beaver Creek expected to contribute [REDACTED] of winter and [REDACTED] of summer peak need forecast for 2029 net of conservation\*



- PSE's 2023 IRP Electric Progress Report projects a potential peak capacity shortfall starting in 2024 due to market reliance reductions
- PSE moving toward alignment with Western Resource Adequacy Program ("WRAP"), which does not count transmission capacity to a market hub—such as MIDC—as capacity. In 2029 there is no peak capacity credit applied to MIDC transmission capacity.
- **Project expected to contribute [REDACTED] MW peak capacity credit in winter and [REDACTED] MW peak capacity credit in summer\***

15 |

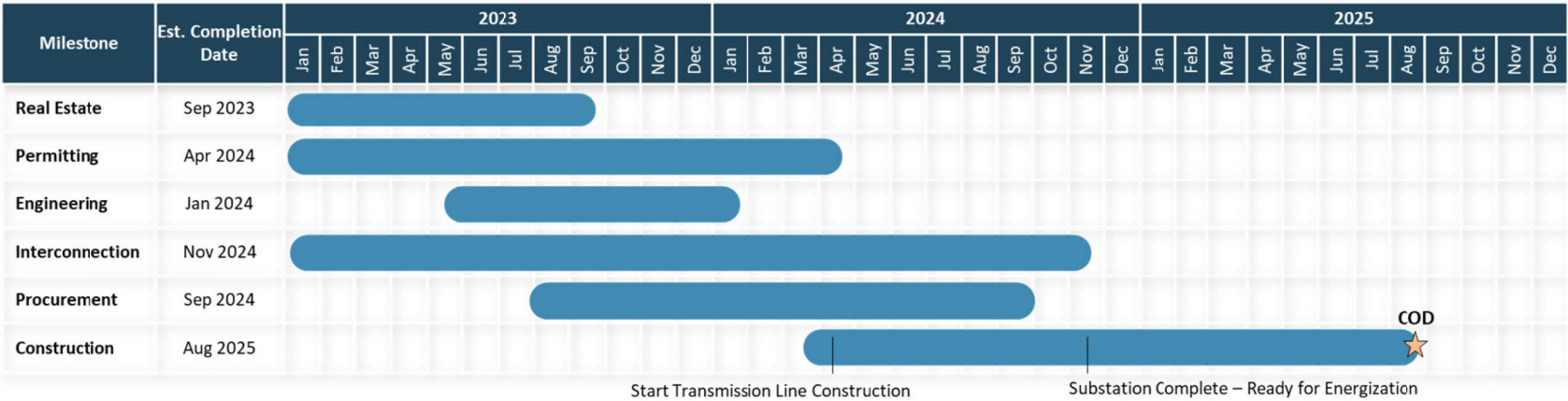
\*Based on Beaver Creek's probable initial phase nameplate of 233 MW and using generic ELCC values for Montana Central wind resources calculated by consulting firm, Energy and Environmental Economics, Inc. ("E3").



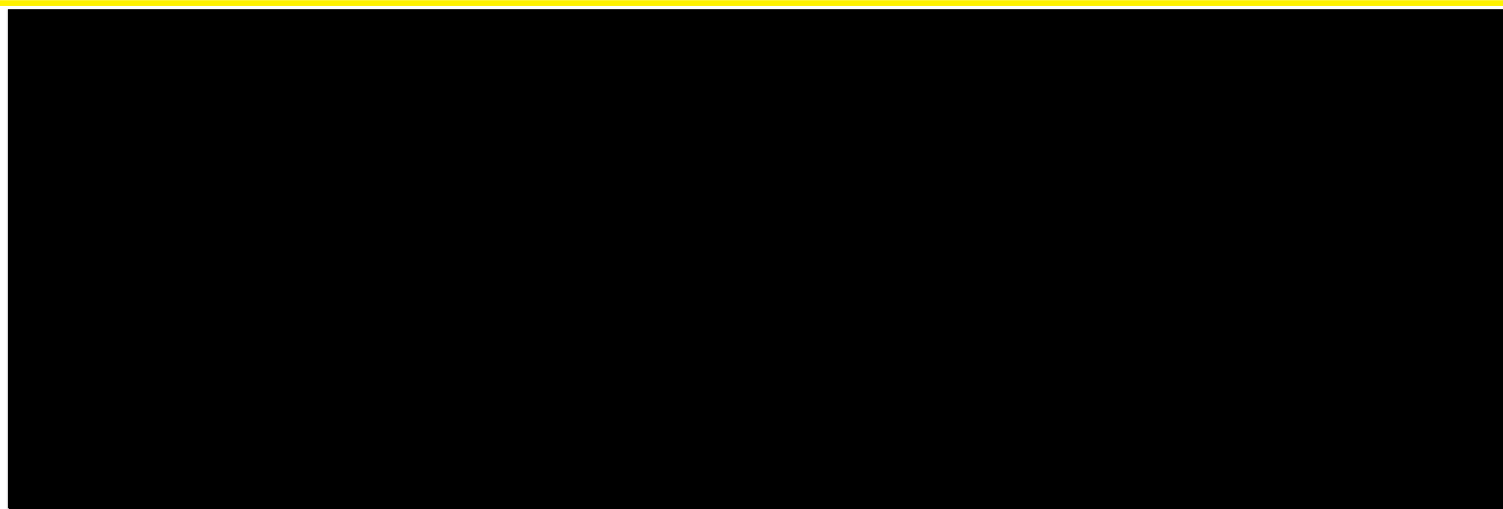
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

Estimated project schedule appears to be reasonable to meet an August 2025 COD



Beaver Creek and [REDACTED] investment ([REDACTED] in total) will be financed with [REDACTED]



\* PGA impact was adjusted out of 2023 and 2024 ratios; Moody's considers PGA cash flow similar to working capital

- Source of financing determination is prioritized with utilizing PSE/PE debt first and then PIH SH Loan distribution and equity contribution from owners
- Financing strategy for the two projects is consistent with our recommended strategy in Scenario 1a
- Assumes the repayment of the two [REDACTED] will be paid in Q4 2023. Depending on cash flows and other potential upcoming resource acquisition activities, management may need to delay partial or full repayments for PSE equity ratio support. Final recommendation will be made at the November board meeting
- 17 | More [REDACTED] SH Loan interest PIK and equity contribution will be needed for incremental resource acquisition project investments



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

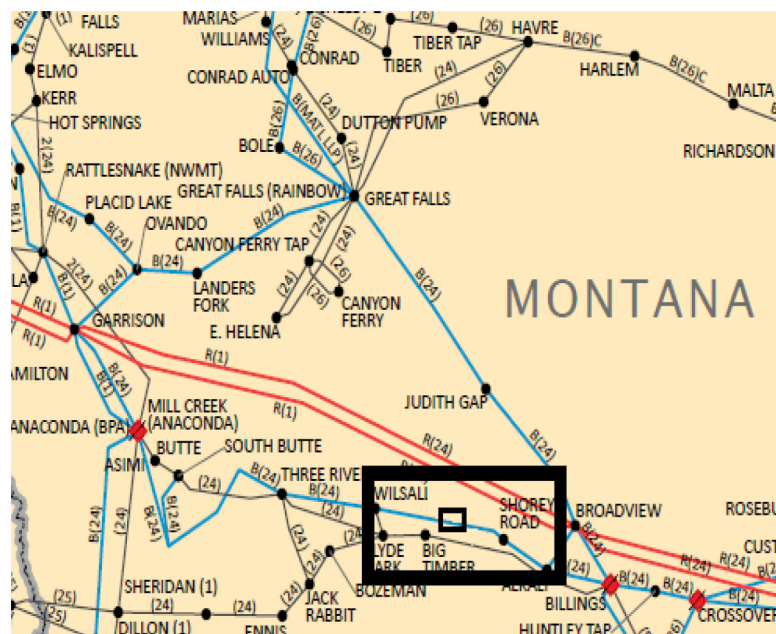
SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Interconnection: On track to meet August 2025 COD

**Point of Interconnection (POI):** New 230kV substation on Northwestern between Wilsall and Columbus Rapelje Substation

- Executed (LGIA) for 315MW of network resource interconnection service (NRIS).
- Total upgrades cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of system impact and facility study approximately [REDACTED]
- Transmission Provider's Network Upgrades In-Service: November 15, 2024
- Interconnection Facilities In-Service: November 15, 2024
- Initial Synchronization Date: March 15, 2025
- Commercial Operation Date: August 15, 2025



### Key milestones

- ✓ Feasibility Study – completed 9/23/16
- ✓ Revised Feasibility Study – completed 9/29/16
- ✓ System Impact Study – completed 4/13/17
- ✓ Revised System Impact Study – completed 5/9/2017
- ✓ Facility Study – completed 11/17/17
- ✓ Optional Load Study – completed 5/12/21
- ✓ Optional Interconnection Study – completed 4/21/22
- ✓ LGIA Executed



18 |

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## Transmission: Leveraging PSE's existing 713 MW of capacity from Montana to PSE's system

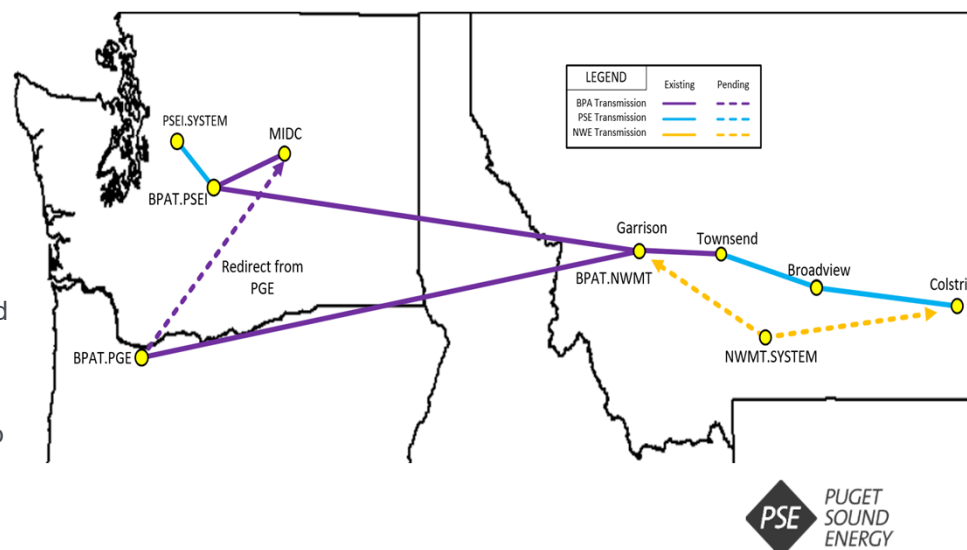
**PSE will leverage its existing 713 MW of transmission rights on the Colstrip Transmission System ("CTS"), BPA Eastern Intertie, and BPA Main Grid to deliver project output to PSE's load.**

- PSE has requested 220 MW of new NWMT transmission service from the POI to the Colstrip 500 kV substation
- PSE has also requested 220 MW of NWMT transmission service from the POI to Garrison (BPAT.NWMT) as alternative path, avoiding the CTS and Eastern Intertie.
- Previous studies for NRIS interconnection service and Network Integration Transmission Service have not identified any significant network upgrades to NWMT's system to support such services.

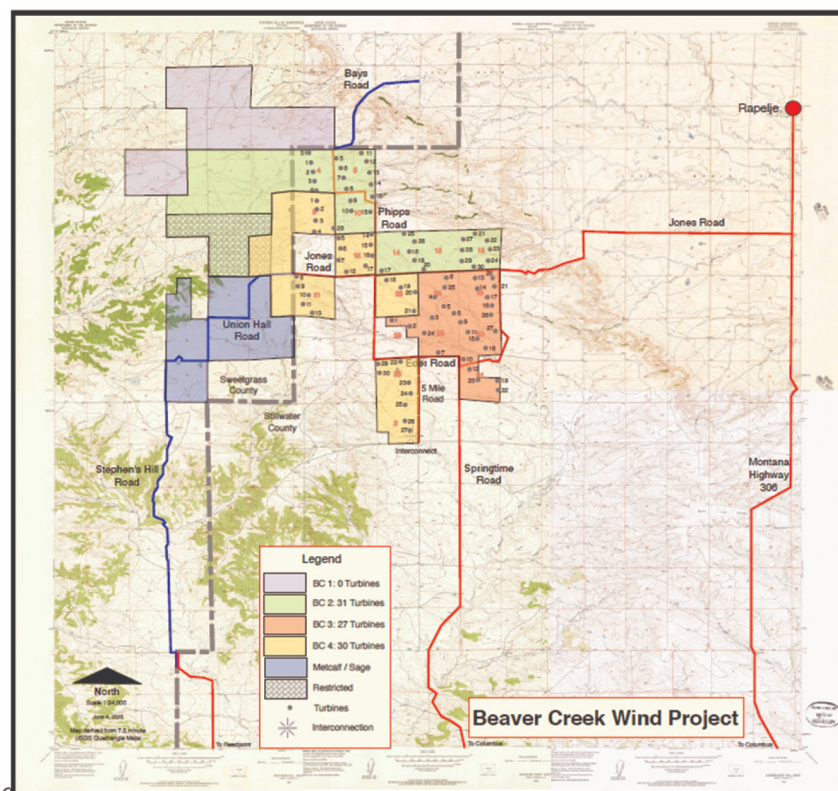
**Assumption of Caithness's 100 MW transmission service request ("TSR") position in the BPA queue from Garrison to PGE provides potential incremental transmission capacity to deliver Project output to MIDC**

- The 100MW TSR is third in BPA's Montana transmission queue and within ~500 MW of incremental transmission from Montana to the PNW under the scope of BPA's M2W project, with a projected in-service date of 2028-29.
- PSE has assessed redirecting this 100MW transmission to MIDC to connect with PSE's existing ~1500 MW transmission rights to PSE's system as a viable option

**Transmission path options to deliver Beaver Creek from Colstrip or Garrison to PSE's system and MIDC**



## Siting and wind resource



### Siting

Approximately 15,000 acres of leased property on the high plains in Stillwater County, Montana. Primary use of the land is for cattle grazing and hay production.

- **Site control:** 100% (per ongoing review/verification)
- **Status:** With limited exception, real estate rights have been secured with recorded wind facility ground leases.
- **Title report** for all leased lands has been received and under review.
- **ALTA survey** of the leased lands has been received and being analyzed in conjunction with both the lease documents and exceptions to title as shown on the title report.

### Wind resource

- Third-party wind resource assessment study performed for Caithness by ArcVera.
- PSE engaged DNV to conduct a review and "reasonableness" check of ArcVera's study. DNV's conclusion is that the NCF is reasonable and in fact estimated an NCF above [REDACTED]



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Permitting and cultural resource review

- Stillwater County CUPs are in hand for 160MW of wind (79-81 turbines) and 200 MWh of batteries. Additional CUP amendment required for full buildout.
- Additional baseline environmental information required to complete permit review and to obtain Eagle Take Permit (needed for long-term operations).
- All FAA DNHs Received; Will require review to confirm still valid if turbines move and they expire in March 2024.
- **As a condition to closing, Caithness is required to have all permits updated reflect PSE planned site layout and project size.**

	Stillwater County			Sweet Grass County
	BCW II	BCW III	BCW IV	BCW I
<sup>1</sup> May be required, discussing with County <sup>2</sup> Expected in August 2023				
Road Use Agreement	Complete	Complete	In Process <sup>2</sup>	Complete
Impact Fee Agreement	Complete	Complete	Submitted	Submitted
New Industry Classification – Tax Abatement	Complete	Complete	Submitted	Submitted
Weed Abatement Agreement	Complete	Complete	In Process <sup>2</sup>	Reviewing <sup>1</sup>
Conditional Use Permit	Complete	Complete	Complete; Amendment required; no application in for required amendment.	Wind Energy Conversion System Ordinance Permit likely required; No application in but would require significant addition studies.

### Environmental Studies Completed; Additional Studies Needed

- ✓ RRC Prelim Geotech Report – 2016 Nov
- ✓ Pilz & Co Desktop Environmental Review – 2019 Sep\*
- ✓ Bionomics Cultural Resources Report – 2017 Dec\*
- ✓ Power Engineers Ph 1 Environmental Assessment – 2016 Jul
- ✓ Power Engineers Ph 1 Screening Report and PII Score – 2007 Oct
- ✓ Bionomics Fall 2017 Avian Survey–2018 Aug\*
- ✓ Bionomics Spring/Summer 2018 Avian Survey – 2018 Jul\*
- ✓ Viewshed Analysis – 2019 Jan\*

\*Incomplete or updates required.

### Wind Resource Studies Completed

- ✓ Nierenberg BCW I Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW II Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW III Wind Resource Assessment Report – 2017 May
- ✓ Nierenberg BCW IV Wind Resource Assessment Report – 2017 May
- ✓ UL Energy Production Summary–2021 Nov
- ✓ ArcVera Preliminary Wind Energy Resource Assessment – 2021 Jul

### Battery Studies Completed

- ✓ GE Capacity Contribution Report for BCW I and II – 2019 Apr
- ✓ GE Capacity Contribution Report for BCW I and II – 2019 Jun
- ✓ GE Capacity Contribution Report – Beaver Creek Analysis – 2020 Mar

## Construction: Project is ready to be built with relatively low risk to meet a 2025 COD

### EPC Contractor Selection and Scope

- Construction will be performed by an engineering, procurement, and construction (“EPC”) contractor to be selected by PSE through a procurement process initiated by Caithness.
  - An EPC RFP was released in early June 2023, with bids received at the end of June from Wanzek, [REDACTED] and [REDACTED]. All have extensive experience building wind generation facilities across the United States.
  - EPC contractor will be responsible for the detailed design, procurement, and construction of all project balance of plant (“BOP”) components.
- Supply of the wind turbines are not included in EPC contractor scope of supply. The main transformer and certain substation equipment are being procured separately and will be assigned to the EPC contractor once selected.

### Site Visit Assessment

- A team of PSE employees including Director of Major Projects, toured the site on July 12, 2023.
- Roads found to be generally suitable to deliver materials and equipment to the project site after planned improvements are made.
- No terrain features identified that presented particular challenges to build.
- Boring activity observed at wind turbine locations to inform the foundation design, as well as grading and construction activity organized by NorthWestern for the switchyard to meet the LGIA milestone schedule.
- Pattern’s nearby operational 80 MW Stillwater Wind project is an example of a wind project built in the area.
- Project site location about 40 miles northwest of Billings, Montana should allow for good opportunities to source local labor.



## Major equipment: GE turbines selected and TSA in progress

- Caithness selected GE 2.5 and 2.8 MW, 60 Hz, 690 wind turbines with a 127-meter rotor diameter and an 89-meter hub height
  - 232 MW site output will be generated by 88 turbines
  - GE has determined that the turbines are suitable for the site and a Turbine Supply Agreement (“TSA”) with GE is in progress
  - PSE is seeking a [REDACTED] warranty period, if available, to help minimize the risk of reliability issues with the turbine platform
- A Full Service Agreement (“FSA”) is planned for inclusion in the GE contract, which obligates GE to provide all O&M services for the turbines for 10 years following turbine commissioning
  - Agreement covers labor, parts, equipment and consumables for the turbines
  - GE will provide and maintain spare parts during the warranty period
  - GE warrants [REDACTED] availability in [REDACTED] of operation and [REDACTED] availability in years [REDACTED]
- Caithness is soliciting bids to supply main transformer and 230 kV circuit breakers; remaining electrical components will be procured by the EPC contractor
- Optional BESS System: Proposals for a 20 MW, 3.5-hour (70 MWh) and a 100 MW, 4-hour (400 MWh) BESS system designed and supplied by GE have been included as Project options in addition to the wind turbine generators. Pricing for the two options is scalable; i.e., the 100 MW option is five times the cost of the 20 MW option



23 |

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## PSE will prepare a robust plan for community outreach

### Advantages

- Four public meetings held on the project – no significant opposition identified
- Population in immediate area is low, which helps to mitigate risks
- Compliance with CUP and Road Use Agreement expected to address certain concerns associated with road use
- Viewshed analysis determined proposed turbines will not be visible from the community of Big Timber (19 miles away)

### Challenges

- Limited documentation of stakeholder support and community outreach
- Local community and county commissioners have expressed concerns in the CUP process about increased traffic during development and safety for residents and vehicles, which has been picked up in the local news
- Additional concerns include dust control, road standards, road maintenance, battery storage safety, site decommissioning and hiring local workforce
- No record of consultation or outreach with area tribes - Crow Reservation is ~2 hours away and Project is likely located on Crow ancestral land

### PSE public affairs strategy

- PSE will develop a robust public affairs plan to mitigate local concerns and reputational risk, and to promote project benefits, including:
  - activating support from stakeholders (local and state elected officials, chambers or economic development associations, etc.),
  - a media strategy to promote and generate coverage of the project, updates to leverage PSE's existing *PSE in Montana website* to share information about the project and its local benefits, and
  - completing tribal outreach, among other strategies and tactics.
- Plan will tout project benefits such as job creation and economic diversification, property taxes and impact fees, among other benefits.



## Inflation Reduction Act (“IRA”) significantly increased federal income tax incentives for renewable energy projects

- The Project qualifies for the Production Tax Credit (“PTC”) or the Investment Tax Credit (“ITC”)
  - PSE’s modelling indicates that the PTC is more beneficial to customers
  - The NPV of project cost with PTC election is [REDACTED] vs. ITC election with normalization of [REDACTED]
- Beaver Creek is expected to qualify for the following:
  - PTC at a rate of \$27.50 per MWh, plus an annual IRS inflation adjustment
  - Domestic content bonus credit which would increase the PTC rate by +10% to \$30.25 per MWh
- Project does not currently appear to qualify for the 10% “energy communities” bonus benefit
  - PSE Management will monitor evolution of the tax credit to maximize the value for the benefit of customers
- PTCs claimed under IRA are transferable, which will allow PSE to convert PTCs to cash regardless of taxable income by selling to an unrelated 3<sup>rd</sup> party
  - May be a source of significant value to customers by vastly accelerating timing of pass-back through bill credits
  - PSE’s modeling assumes PTCs will be sold when earned at 95% of face value, and 92% for ITC
- PTCs are passed to customers under a separate tariff, Schedule 95A. The Schedule resets each October with all PTCs that have been realized in a cash benefit, either through usage on a tax return or sold to a third party, being passed to customers over the following 12 months

25 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Projected power cost impact

- In partial year 2025, the project is expected to reduce power cost by [REDACTED]
- In 2026-2028, the annual power cost reduction ranges [REDACTED] per year
- The analysis is based on forward price curve for the 2024 multiyear rate plan filing as of June 2023
- The power cost impact doesn't include costs such as return on rate base, depreciation and O&M, which do not flow through power cost.

### Power cost impact of proposed Beaver Creek Wind project

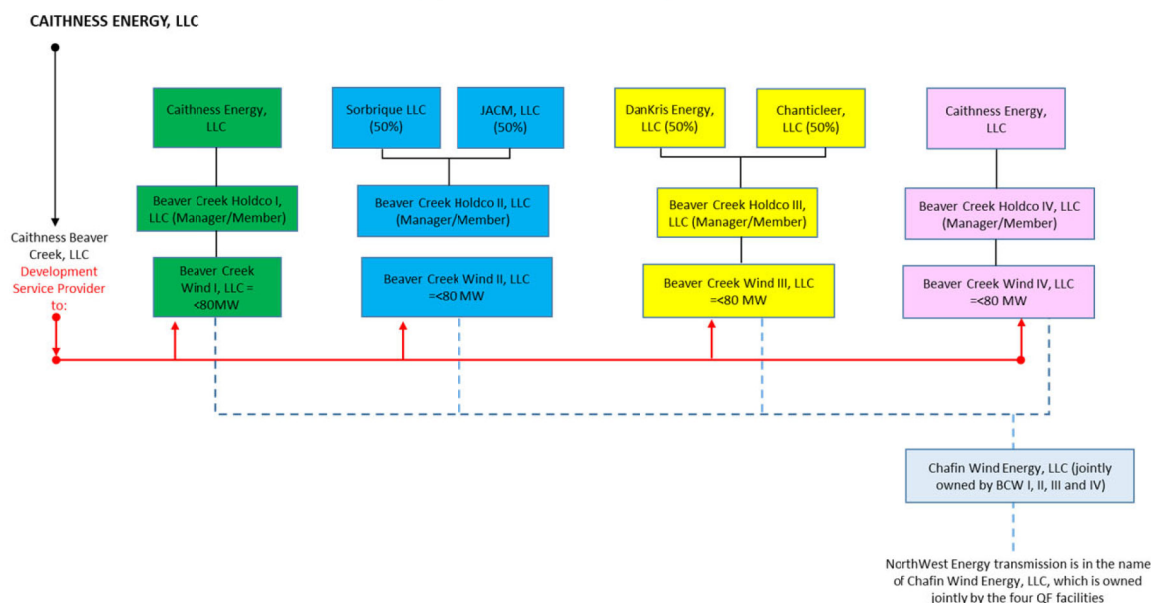
	2025	2026	2027	2028
Total annual energy output (MWh)	343,912	756,860	756,860	756,860
Energy benefit (reduction to power costs)	[REDACTED]			
Northwestern purchased transmission (increase to power costs)				
BPA balancing charge (increase to power costs)				
Net <i>benefit/reduction</i> to power costs				

## Counterparty profile

### CAITHNESS ENERGY, L.L.C.

- Caithness Energy, L.L.C. (“Caithness”) is a privately-held Independent Power Producer specializing in the development, acquisition, operation, and management of power generation assets in North America.
- Portfolio consists of 3,595 MW of renewable and fossil-fueled energy projects in the United States.
- The company was formerly known as Caithness Corporation. Caithness Equities Corporation was founded in 1975 and is based in New York, New York.

### BEAVER CREEK WIND FARMS CURRENT STRUCTURE





Key risks and mitigation plans: Real estate (Low to Acceptable Risk)

Risk	Mitigation Plan
Wind lease and easement documents are currently under review for sufficiency and completeness. Additionally, PSE recently received a title report for all leased lands that is currently under review. An ALTA survey of the leased lands, which depict property lines, exceptions to title, non-title items (fence lines etc.) was received on July 17, 2023 and is being analyzed in conjunction with both the lease documents and exceptions to title as shown on the title report.	<p>All documents are under review for content and sufficiency. Lease amendments will be needed to incorporate royalty terms that coincide with a utility model (presently the leases contemplate a PPA model). PSE will address and resolve any items of concern prior to closing. Insofar as there are six landowners, it is anticipated that items requiring resolution can be handled in a timely manner and in conjunction with the ultimate transaction schedule.</p> <p>Caithness is pursuing estoppel certificates and subordination agreements with the landowners as a condition to closing the MIPA.</p> <p>Caithness is required, as a condition to closing, to deliver a title policy insuring the real property in the amount of [REDACTED] and inclusive of the endorsements outlined in the MIPA. PSE will increase the title policy to the full value of the project.</p>



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Key risks and mitigation plans: Permitting, environmental, cultural resources, and community relations (Acceptable Risk)



Risk	Mitigation Plan
No consultation with State and Federal Wildlife Agencies or use of Federal Wind Siting Guidelines. Limited wildlife studies do not follow the U.S. Wildlife Wind Power Guidelines. As a result, eagle and sensitive species fatality risks are unknown.	<p>PSE intends to consult with the Montana Fish and Game and U.S. Fish and Wildlife Service to determine whether there are issues of concern prior to final layout and construction, so sensitive areas can be avoided.</p> <p>PSE intends to conduct avian point count and nest surveys per federal Wind Siting Guidelines prior to final layout and construction, so sensitive areas can be avoided.</p>
Aviation, radar and microwave studies will need to be completed for the consolidated layout Stillwater County.	<p>The following studies will need to be completed before finalizing the layout to avoid interfering with radar, microwave and military flight paths:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Department of Defense radar study</li> <li><input type="checkbox"/> Federal Aviation Administration aeronautical study</li> <li><input type="checkbox"/> Military fly zone analysis</li> <li><input type="checkbox"/> Microwave beam path study</li> </ul>
Road, underground, or overhead line crossings that require disturbance or fill over waters of the state or United States (drainages or wetlands) are unknown. The risk is that permits may be required that could cause construction delays.	PSE will hire an environmental consultant to complete a delineation of any waters of the United States. To the extent that waters of the United States are identified, Caithness will demonstrate to PSE's reasonable satisfaction that the Project may be constructed without obtaining any required permits, or they will obtain any necessary permits.

## Key risks and mitigation plans: Permitting, environmental, cultural resources, and community relations, cont. (Acceptable Risk)



Risk	Mitigation Plan
<p>Native American tribes were never contacted to determine whether wind development activities would impact areas—which have mostly been under private ownership for decades—of significance to them. The Crow Reservation appears to be about two hours away, and the Project is likely on Crow ancestral land.</p>	<p>PSE intends to consult on cultural resources with affected tribes.</p>
<p>Caithness provided a basic literature review summary report as a cultural resources review. This report contained limited information about the area and the possibility of encountering cultural resource materials. The report covers 22 thousand acres, cited only six surveys and identified one archaeological site. The studies are inadequate to make determinations of risk to cultural resources for such a large area.</p>	<p>PSE will conduct a cultural resource study that allows the appropriate level of decision about effects to cultural resources prior to construction so that PSE can avoid impacts to these resources or provide mitigation should avoidance not be possible. The Project site is largely disturbed agricultural land, which generally reduces the overall cultural resource risk.</p>
<p>While some local community members and county commissioners have expressed concern through the Conditional Use Permit (“CUP”) process about increased traffic during development, and safety for residents and their vehicles, the CUP was approved and outlined requirements to help mitigate these concerns.</p> <p>Siting renewable energy projects in rural areas can be difficult or controversial, raising concerns about infrastructure blight, use of agricultural land, support for conventional resources like coal, and misinformation about renewable energy sources.</p>	<p>PSE intends to develop a public affairs and community relations plan to mitigate potential local concerns and reputational risk. A robust public affairs plan would include activating support from stakeholders, a media strategy to promote and generate coverage of the Project, updates to leverage PSE’s existing PSE in Montana website to share information about the Project and its local benefits, and possibly completing tribal outreach, among other strategies and tactics.</p>



## Key risks and mitigation plans: Transmission and integration (Acceptable Risk)



Risk	Mitigation Plan
<p>Network upgrades on NorthWestern Energy's ("NorthWestern") transmission system for delivery to Colstrip or Garrison point of delivery are unknown.</p>	<p>PSE is submitting and requesting transmission service to both Colstrip and Garrison for the total project output through NorthWestern to evaluate better delivery path. Previous studies for NRIS interconnection service and Network Integration Transmission Service ("NITS") have not identified any significant network upgrades. Further, PSE is requesting options for bridge conditional firm service which could, if offered, allow earlier delivery options.</p> <div style="background-color: black; height: 80px; width: 100%;"></div>
<p>Dynamic Transfer Capability ("DTC") is needed for dynamic transfers on the Eastern Intertie and will be necessary to place the project PSE's balancing area. Due to limited DTC, Bonneville Power Administration ("BPA") will require studies and contracting for dynamic transfer. The study may trigger a need for new voltage controls on existing reactive devices or new reactive devices to support the dynamic transfer. The current term for a DTC award is two years without any rollover rights and will present a continued risk on PSE's ability to pseudo-tie the resource.</p>	<p>PSE is submitting DTC request to BPA to initiate the study process to daylight DTC availability, and identify any upgrades to support PSE's DTC needs over BPA's intertie. Once awarded, PSE will continue to request DTC through BPA before the term end date. PSE could also work with BPA to fund upgrades to enable additional DTC at Garrison.</p> <div style="background-color: black; height: 60px; width: 100%;"></div>



## Key risks and mitigation plans: Transmission and integration, cont. (Acceptable Risk)



Risk	Mitigation Plan
<p>The Beaver Creek wind project will need to be pseudo-tied to PSE's balancing authority area ("BAA"), as would any other Montana resources. This is a complex effort across multiple PSE departments that requires extensive coordination, design, and implementation. It affects the metering, communications, operations, transmission, and energy trading groups.</p>	<p>PSE can initiate these efforts after closing to help reduce COD risks. PSE has gained recent experience pseudo-tying a Montana wind resource (Clearwater) that can be leveraged for the Beaver Creek integration.</p> <div style="background-color: black; height: 70px; width: 100%;"></div>
<p>PSE has point-to-point transmission rights on the Colstrip Transmission System CTS that will need to be studied by the CTS owners to allow PSE to pair the rights with a new generating resource.</p>	<p>PSE Merchant has submitted a change of source request to PSE's Transmission Provider function to initiate the study and identify any potential impacts.</p>



## Key risks and mitigation plans: Major equipment (Acceptable Risk)

Risk	Mitigation Plan
Development phase equipment selection is incomplete; permitting/technical requirements could cause additional cost or lead time.	Work with project team and equipment vendors to ensure equipment is reasonably priced and available.
Actual annual energy production may be less than expected.	<p>PSE to review site suitability and design documentation when the counterparty delivers it. Require contractual performance guarantees from vendors/contractors.</p> <p>PSE hired DNV to review forecast annual energy assessment. DNV results indicate a higher forecast production than Caithness provided energy assessment report from ArcVera.</p>
TSA and FSA terms may not meet PSE's standards and requirements.	Engage and re-negotiate TSA and FSA agreement with GE.



# Key risks and mitigation plans: Construction (Low Risk)

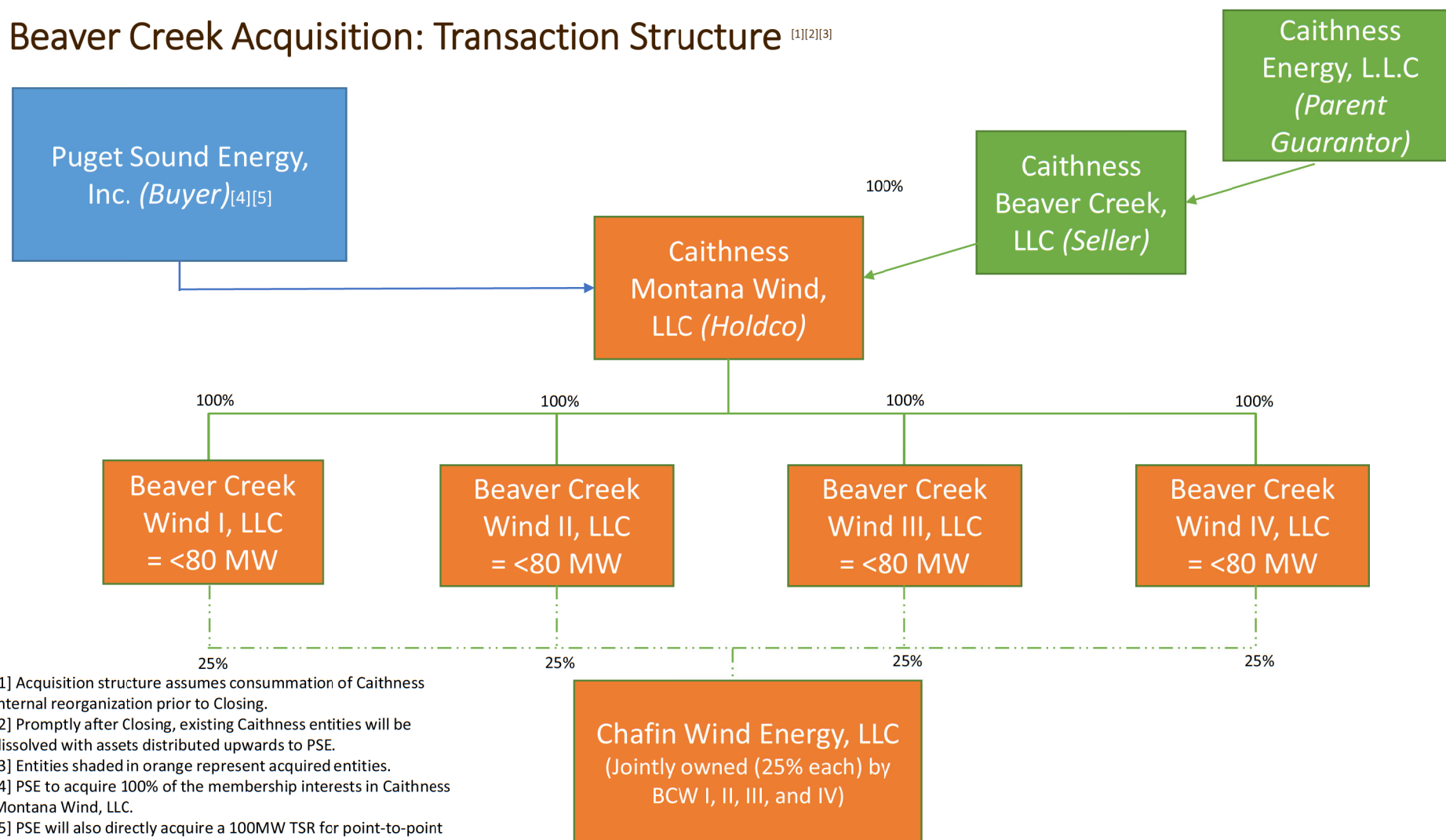
Risk	Mitigation Plan
Permitting or contracting issues may prevent construction from starting in Q4 2023.	If permitting or equipment issues delay construction start to spring 2024 and/or extend construction duration, there is still adequate time to meet late 2025 COD, as current engineering, procurement, and construction schedules contemplate 18 months start to finish (including one winter).



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment 3. Diagram of Transaction and Contractual Relationships

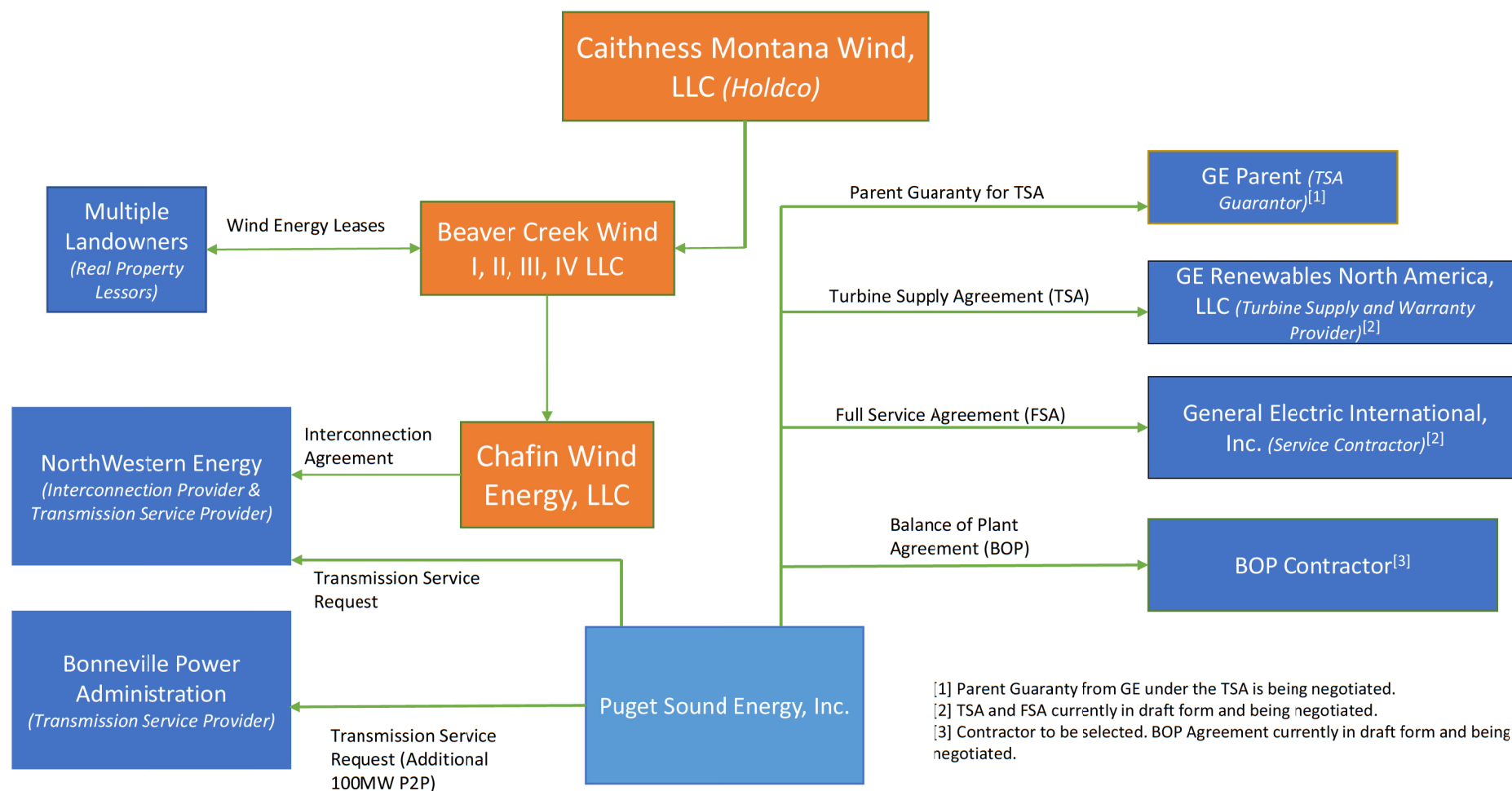
## Beaver Creek Acquisition: Transaction Structure <sup>[1][2][3]</sup>



- [1] Acquisition structure assumes consummation of Caithness internal reorganization prior to Closing.  
 [2] Promptly after Closing, existing Caithness entities will be dissolved with assets distributed upwards to PSE.  
 [3] Entities shaded in orange represent acquired entities.  
 [4] PSE to acquire 100% of the membership interests in Caithness Montana Wind, LLC.  
 [5] PSE will also directly acquire a 100MW TSR for point-to-point transmission from Garrison to Pearl from Caithness Energy, L.L.C. once confirmed by BPA. However, the expectation is that this will not be confirmed until roughly 2030.



## Beaver Creek Project: Material Contracts





*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 4. Summary of Membership Interest Purchase Agreement

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT

Confidential

## Summary of Membership Interest Purchase Agreement

## A. Overview

PSE will acquire all of the membership interests ("**Ownership Interests**") in Caithness Montana Wind, LLC, a Delaware limited liability company ("**Project Company**") from Caithness Beaver Creek, LLC, a Delaware limited liability company ("**Seller**"), pursuant to a Membership Interest Purchase Agreement (the "**MIPA**"), thereby acquiring all rights and liabilities, permits, licenses and leases held by Project Company (including those of its subsidiaries described below) relating to the development of the Beaver Creek wind project.

The MIPA sets out the structure by which the proposed transaction will take place and the terms and conditions with respect to its consummation. Certain material terms of the MIPA are summarized below in this Appendix.

## B. Transaction Structure - Membership Interest Purchase Agreement

The Seller an affiliate of Caithness Energy, LLC, a Delaware limited liability company ("**Seller Parent**"). The Project Company owns all of the equity interests in each of (i) Beaver Creek Wind I, LLC, a Delaware limited liability company, (ii) Beaver Creek Wind II, LLC, a Delaware limited liability company, (iii) Beaver Creek Wind III, LLC, a Delaware limited liability company, and (iv) Beaver Creek Wind IV, LLC, a Delaware limited liability company, which in turn collectively own all of the equity interests in Chafin Wind Energy, LLC, a Delaware liability company (collectively, the "**Project Subsidiaries**").

Immediately following Closing, the Project Company and some or all of the Project Subsidiaries will be dissolved and all of the assets and obligations of the Project Company and Project Subsidiaries will become those of PSE.

The aggregate cash purchase price to be paid by PSE to Seller is [REDACTED] (the "**Purchase Price**"), with 50% of the Purchase Price payable at closing (estimated to be approximately August 2023) ("**Closing**") and 50% at substantial completion or seventeen months from Closing, whichever occurs first. The Closing and Purchase Price mechanics are discussed in Section B below. PSE is not obligated to close until after approvals and satisfaction or waiver of conditions precedent specified in the MIPA, as discussed further in Section D below.

## C. Purchase Price

The Purchase Price is for (i) the Ownership Interests of the Project Company and (ii) all of the assets of the Project Company and Project Subsidiaries, including (1) meteorological towers, associated with the potential development of a project with 88 wind turbine locations sized at approximately 232 MW<sub>AC</sub> of wind generation capacity ("**Primary Project**"), (2) certain additional real property rights located in Sweet Grass County, Montana anticipated to support 100-150 MW of future development and expansion, (3) an additional amount battery energy storage capacity of 100MW located in Stillwater County, Montana ("**Additional Battery Capacity**"), and (4) 315MWAC of interconnection capacity under the Standard Large Generator Interconnection Agreement, dated as of June 12, 2018, between NorthWestern Energy and

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

Chafin Wind Energy, LLC and (iii) Seller Parent's 100 MW point to point transmission service request high in Bonneville Power Administration's ("BPA") queue (items (ii) and (iii) together, the "Project Development Rights").

The Purchase Price will be ordered in the following manner:

- (1) 50% of Purchase Price at Closing. Payment of [REDACTED] to equal the sum of (a) and (b) below:
  - a. Per MW Payment: [REDACTED] per MW. Assuming 232 nameplate MW wind generation is capacity authorized for construction under the Balance of Plant ("BOP") Agreement, this amount totals [REDACTED]
  - b. Fixed payment for embedded costs: [REDACTED]
- (2) At Closing, PSE will also reimburse the Seller for [REDACTED] after May 6, 2023 approved in advance by writing by PSE pertaining to the continued development of certain Project Development Rights (including any cost incurred that would otherwise have been included under the BOP Agreement or the Turbine Supply Agreement had they been executed and in effect as of such date). This will be a capped dollar amount.
- (3) 50% of Purchase Price at Project Substantial Completion (or 17 months from Closing, whichever occurs first). This amount is the difference between (a) [REDACTED] per nameplate MW wind generation is capacity on an as built basis, as of Project Substantial Completion and (b) the per MW Payment made at Closing. Assuming 232 MW, this amount totals [REDACTED] minus [REDACTED] or [REDACTED]

The variable per MW Payment structure described in Items 1 and 3 is formulated so that that the sum of the Closing payment (Item 1) and Project Substantial Completion payment (Item 3) totals the [REDACTED] Purchase Price, if the as-built name plate capacity is 232 MW. This means that PSE's payment obligation if the name plate capacity is lower than 232 MW will decrease accordingly. In addition, in the event of a capacity shortfall, meaning that a determination is made under the BOP Agreement that the site will not support 88 wind turbines and nameplate capacity of 232 MW, then the Seller, at its sole expense and prior to the achievement of Project Substantial Completion, shall have the right to cure this shortfall by developing adjacent tracts located in neighboring Sweet Grass County to cure the shortfall in capacity.

**D. Conditions to Closing**

The Closing of the transaction under the MIPA is subject to certain conditions to closing. If any of the closing condition discussed below that are in favor of PSE are not met and PSE does not waive the condition, then PSE no longer has an obligation to close the transaction.

The most important PSE favorable closing condition in the MIPA is that the Seller will be required to convey the Project in a "Ready for NTP State", such that critical items identified in the diligence processes are addressed and notice to proceed can be issued to the selected EPC contractor substantially simultaneously with Closing. The Ready for NTP State criteria, which are listed on Exhibit B of the MIPA, contemplate satisfaction of the following conditions:

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

- (1) The BOP Agreement, Turbine Supply Agreement and Full Service Agreement shall each be in agreed form with each of their respective counterparties and otherwise in form and substance satisfactory to PSE in its reasonable discretion.
- (2) Delivery of the updated Survey and the Title Commitment, the irrevocable commitment of the Title Company to deliver the Title Policy in the form approved by PSE, and resolution of any outstanding title and survey matters to the reasonable satisfaction of PSE, including:
  - a. delivery of current estoppels in connection with all leasehold and easement interests in Real Property;
  - b. delivery of an estoppel to confirm the release of the reversionary interest under the Master Lease Assignment Agreement (Phase 1) benefiting Beaver Creek Wind LLC;
  - c. curing all backdated assignments of Real Property interests;
  - d. amendment of the rental provisions of all documents creating interest in Real Property to the satisfaction of PSE; and
  - e. agreeing to a form of lease amendment.
- (3) Delivery of a Phase I Environmental Assessment for the Site and the Sweet Grass County Real Property reasonably satisfactory to PSE.
- (4) Other than as contemplated by certain closing deliverables discussed in Section E below, the Project Company has not amended or modified the leases covering the Real Property in existence as of the date of signing.
- (5) The Project Company has obtained the Closing Required Permits<sup>1</sup> and all non-ministerial; governmental permits and authorizations required or prudent to acquire in order to construct and operate the Primary Project and the Additional Battery Capacity.
- (6) The BC Interconnection Subsidiary and NorthWestern Energy have entered into an Interconnection Agreement Amendment in form and substance reasonably satisfactory to PSE modifying the milestone schedule.

In addition to the Project-specific Ready for NTP State conditions, there are also certain additional transaction-specific conditions to Closing that are favorable to PSE, including the following:

- (1) Seller shall have delivered all of the closing deliverables required under the MIPA, which are discussed in Section E below.
- (2) PSE shall have secured point-to-point transmission service to the Colstrip substation from Northwestern.
- (3) Seller shall have granted Project Company a non-exclusive license to the wind data it possesses in respect of the Project and PSE shall have granted to Seller a non-

---

<sup>1</sup> The list of these closing required permits will be provided as part of the schedules to the MIPA.

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

exclusive license to the wind data from the conveyed meteorological towers so long as they remain in place ("**Wind Data Licenses**").

- (4) PSE and Seller Parent shall have executed the BPA transmission letter agreement ("**Transmission Letter Agreement**") which provides for the assignment to PSE of the 100MW point-to-point Transmission Service Request Seller Parent has filed with BPA once it is converted to a Transmission Service Agreement. This is discussed further in Section E below.
- (5) Seller shall have engaged a consultant to complete a waters of the United States delineation. To the extent waters of the United States are identified, Seller must either (i) demonstrate to the reasonable satisfaction of PSE that the Primary Project may be constructed without obtaining any additional Required Permits or (ii) obtain a Clean Water Act Section 404 permit, a Rivers and Harbors Act Section 10 permit and/or any other permit required. If any permit is required under clause (ii), then Seller shall complete a cultural and historical artifacts study of the Site.
- (6) Seller shall have provided a current Title Commitment and pro forma title policy covering the Real Property (if not already provided prior to signing).
- (7) Seller shall have updated its avian study, in a manner specified in Exhibit J of the MIPA.
- (8) The Seller shall have updated the microwave beam study to show that no relocation of the turbines shall be required to avoid interfering with the legal rights of any microwave equipment owners.

The MIPA also includes closing conditions that are customary to transactions of this type, including:

- All representations and warranties of Seller and the Project Company shall be true and correct in all material respects.
- Seller shall have complied in all material respects with all covenants in the MIPA and delivered all deliverables, in each case as required by Closing.
- There shall be no order of a Governmental Authority that would make the transaction illegal.
- All Required Consents have been obtained (we expect that there will not be any for this transaction).
- There shall be no litigation that would adversely affect either party's ability to perform its obligations under the MIPA in any material respect.
- No Material Adverse Effect shall have occurred and is continuing.

The Seller also has its own conditions to Closing. However, there are no consents required in this transaction that would be burdensome to PSE, so all the Seller's conditions are customary for transactions of this type and are considered low risk. These conditions include:

- All representations and warranties of PSE are true and correct in all material respects.



PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

- PSE shall have complied in all material respects with all covenants in the MIPA as required by Closing.
- PSE shall have delivered all of the Closing deliverables that it is required to deliver under Section 2.4(b) of the MIPA (payment, the assignment agreement, officer certificates and delivery of notice to proceed under the BOP Agreement).
- There shall be no order of a Governmental Authority that would make the transaction illegal.
- All Required Consents have been obtained (again we expect there to be no consents required).
- There shall be no litigation that would adversely affect either party's ability to perform its obligations under the MIPA in any material respect.
- Note that the closing is not conditioned on the prior approval of the acquisition by the WUTC.

**E. Closing Deliverables and Exhibited Contracts**

Closing deliverables include:

- Assignment Agreement executed by the Seller assigning the membership interests to PSE
- An ALTA Survey for the Project Real Property;
- A current and valid Phase I Environmental Site Assessment for the Project site and the Sweet Grass County Real Property;
- Evidence reasonably satisfactory that all intercompany debt has been terminated;

- A Title Policy insuring the Real Property; and
- Other customary deliverables such as officer's and secretary's certificate, copies of books and records, and a W-9.

In addition to these closing deliverables, the following required at the time of signing:

- (1) Seller Parent will execute and deliver a guaranty of the Seller's obligations under the Agreement, which is customary to this type of transaction and it is in substantially form attached as Exhibit D to the MIPA.

The following executed agreements are required at closing, as discussed above under required closing conditions in Section D:

- (2) Seller Parent and PSE will enter into the BPA Transmission Letter Agreement, which is in substantially form attached as Exhibit E to the MIPA, with respect to cooperation of both parties as it pertains to Seller Parent's continued obligations under the BPA Environmental Study

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

Agreement executed May 8, 2023, and the assignment by Seller Parent to Buyer of the transmission service agreement or other similar agreements provided by BPA to Seller Parent for the 100 MW Montana to Portland transmission service request.

- (3) The Wind Data Licenses, which are substantially in the form attached as Exhibit F and Exhibit G to the MIPA.
- (4) PSE shall deliver and issue to the BOP Contractor under that agreement an executed Notice to Proceed, effective upon Closing (once closing conditions are met or waived) and with the consummation of the Transaction.
- (5) A customary membership assignment agreement, in substantially form attached as Exhibit A to the MIPA.

**F. Representations and Warranties**

The MIPA contains representations and warranties typical for transactions of this type. Among other things, the Seller represents and warrants to PSE with respect to:

- Seller's organization, existence and authority, and enforceability of the MIPA;
- The fact that the MIPA does not violate or breach any agreement by that the Seller is bound and that each Seller is in material compliance with all applicable laws;
- The fact that Seller is not required to obtain any consents to consummate the transaction; and
- The fact that no litigation threatened or pending against the Seller that would reasonably be expected to materially impair the ability of Seller to perform its obligations under the MIPA or consummate the transaction or materially impair the ability of the Project Company or any Project Subsidiaries to perform its obligations under any material project contract or would otherwise adversely impact the Project Development Rights.
- Compliance with regulatory rules and regulations, including those promulgated by the Federal Energy Regulatory Commission.

Further, the Project Company and Project Subsidiaries represent and warrant to PSE with respect to:

- Organization and authority to enter into the MIPA;
- Capitalization and its financial statements;
- Material contracts;
- The material permits obtained for the Primary Project and the Additional Battery Capacity;
- The permits that have been applied for and not yet obtained;
- No pending or threatened litigation;
- Environmental matters, tax and tax benefit matters and employee matters;

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

- The real property and personal property owned and intellectual property owned or held;
- Compliance with regulatory rules and regulations, including those promulgated by the Federal Energy Regulatory Commission.

Among other things, PSE represents and warrants to the Seller with respect to:

- Organization of PSE and enforceability of the MIPA;
- The fact that the MIPA does not violate or breach any agreement by which PSE is bound;
- The fact that PSE will have funds sufficient to consummate the transaction at closing;
- The adequacy of PSE's analysis, due diligence and review of the assets and liabilities to be acquired in the transaction;
- The consents required by PSE to consummate the transaction (which are none other than a notice filing to the Washington State PUC); and
- The fact that no authorization is required by the Washington Utilities and Transportation Commission for PSE to enter into and carry out its obligations under the agreement.

**G. Covenants**

The MIPA includes certain customary limitations on interim period operations (e.g. restrictions on the creation of liens, sale of assets, entering into material contracts or amending Project Company or Project Subsidiary governance documents). The MIPA also includes customary covenants regarding cooperation in the preparation and filing of regulatory consents (including in tax proceedings).

In addition, the MIPA includes a right of first offer for a period of five years following Closing, which gives PSE the right to receive notice from Seller of any intent to sell any subsequent wind, solar, or battery storage project or offtake in Montana. PSE then shall have thirty business days to submit a written proposal for such subsequent project, and an exclusivity period of seventy five days to execute a purchase agreement for such a project.

The Seller also covenants to not developing, constructing or operating any subsequent wind projects within a two mile radius of the Primary Project or any subsequent project located on Sweet Grass Real Property, or any other action reasonably likely to result in a substantial project wake liability, which are losses in output to the project as a result of wake effects attributable to turbines placed in service by Seller or its affiliates in a subsequent wind, solar or battery storage project in Montana ("**Subsequent Project Wake Liabilities**").

There is also a covenant where PSE and Seller agree to cooperate in good faith and use commercially reasonable efforts to cause the construction and equipment agreements (the BOP Agreement, Turbine Supply Agreement, and Full Service Agreement) to satisfy the Ready for NTP State closing condition, including prompt sharing of information received from counterparties, making representative available for negotiation discussions for these agreements, and providing lists of contact persons as potential counterparties, and responding in a timely fashion to requests and inquiries

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT

Confidential

H. Termination

The MIPA may be terminated as follows:

- by mutual written consent of PSE and Seller.
- by PSE or Seller if the closing has not occurred on or before October 1, 2023 (the “**Outside Date**”), except (i) if the closing has not occurred on or before the Outside Date due to a Party’s failure to comply with the MIPA, such party does not have the right to terminate the MIPA for a failure to reach the Outside Date and (ii) PSE shall be permitted in its sole discretion to extend the Outside Date by up to ninety days upon notice to Seller.
- by PSE or Seller if any court of competent jurisdiction in the United States or other governmental authority issues a final, non-appealable order or has taken any other final action prohibiting the consummation of the transactions contemplated by the MIPA.
- by PSE if Seller breaches or fails to perform in any material respect any of its representations, warranties covenants or other agreements under the MIPA which (i) would cause a closing condition not to be met, (ii) PSE gives notice of such breach and (ii) such breach has not been cured within thirty days (PSE will not have the right to terminate the MIPA if PSE is in breach of the MIPA).
- by Seller if PSE breaches or fails to perform in any material respect any of its representations, warranties covenants or other agreements under the MIPA which (i) would cause a closing condition not to be met, (ii) Seller gives notice of such breach and (ii) such breach has not been cured within thirty days (Seller will not have the right to terminate the MIPA if Seller is in breach of the MIPA).

I. Indemnification

Seller will indemnify PSE for any losses arising out of (i) any breach or inaccuracy of any of the representations or warranties made by Seller, (ii) any breach or violation of any covenant or agreement of Seller, (iii) any fraud by Seller in connection with the MIPA, (iv) third party claims brought before or after closing against any PSE indemnified party to the extent arising out of acts or omissions of Seller or Project Company prior to Closing; (v) Seller taxes and (vi) Subsequent Project Wake Liabilities. PSE will indemnify Seller for any losses arising out of (i) any breach or inaccuracy of any of the representations or warranties made by PSE, (ii) any breach or violation of any covenant or agreement of PSE, (iii) any fraud by PSE in connection with the MIPA or (iv) third party claims brought against Seller indemnified parties to the extent arising out of PSE or Project Company’s acts or omissions after Closing.

Seller’s maximum aggregate liability for indemnification of losses for (i) any breach of any of the representations or warranties made by Seller (other than for breaches of Seller’s fundamental representations or the tax representations and warranties), will be capped at [REDACTED] of the Purchase Price or (ii) any of Seller’s other indemnification obligations (except indemnification due to Seller’s fraud) will be capped at [REDACTED] of the Purchase Price.

PSE’s maximum aggregate liability for indemnification of losses for (i) any breach of any of the representations or warranties made by PSE (other than for breaches of PSE’s fundamental representations), will be capped at [REDACTED] of the Purchase Price or (ii) any of PSE’s other indemnification

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 4. SUMMARY OF MEMBERSHIP INTEREST PURCHASE AGREEMENT**

**Confidential**

obligations (except indemnification due to PSE's fraud) will be capped at [REDACTED] of the Purchase Price. Finally, an indemnified party may not make an indemnification claim (except for claims of fraud, gross negligence, or willful misconduct) unless the aggregate amount of all losses would exceed [REDACTED] on a cumulative basis.

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

- 9 -

REDACTED VERSION



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 5. Project Schedule and Construction Management



**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 5. PROJECT SCHEDULE AND CONSTRUCTION MANAGEMENT**

## **Project Schedule and Construction Management**

### **Project schedule**

PSE's project schedule (Attachment 1) shows that development, construction, and substantial completion (in-service) of the Beaver Creek Wind Project (Project) can be achieved by August 2025. The Project schedule (Attachment 1) is indicative of the entire Project including wind turbine procurement, other owner-furnished equipment procurement, and construction activities of the engineering, procurement and construction (EPC) contractor.

Note that the developer currently has responsive bids from three EPC contractors with slightly different sequencing of construction activities, thus a project schedule will be finalized after PSE acquires the Project and makes an EPC contractor selection.

It should also be noted that lead times for equipment (turbines, station transformers, and switchgear) are based upon current supplier quotes and will be finalized once equipment purchase orders are in place.

### **Construction management**

PSE's Project Management and Operations teams have previous experience developing, constructing, and operating large scale facilities in Washington state. Each of the bidding EPC contractors has extensive experience building wind facilities across the United States.

The PSE Major Projects department will oversee construction and commissioning of the Project, along with readying the Project for operations.

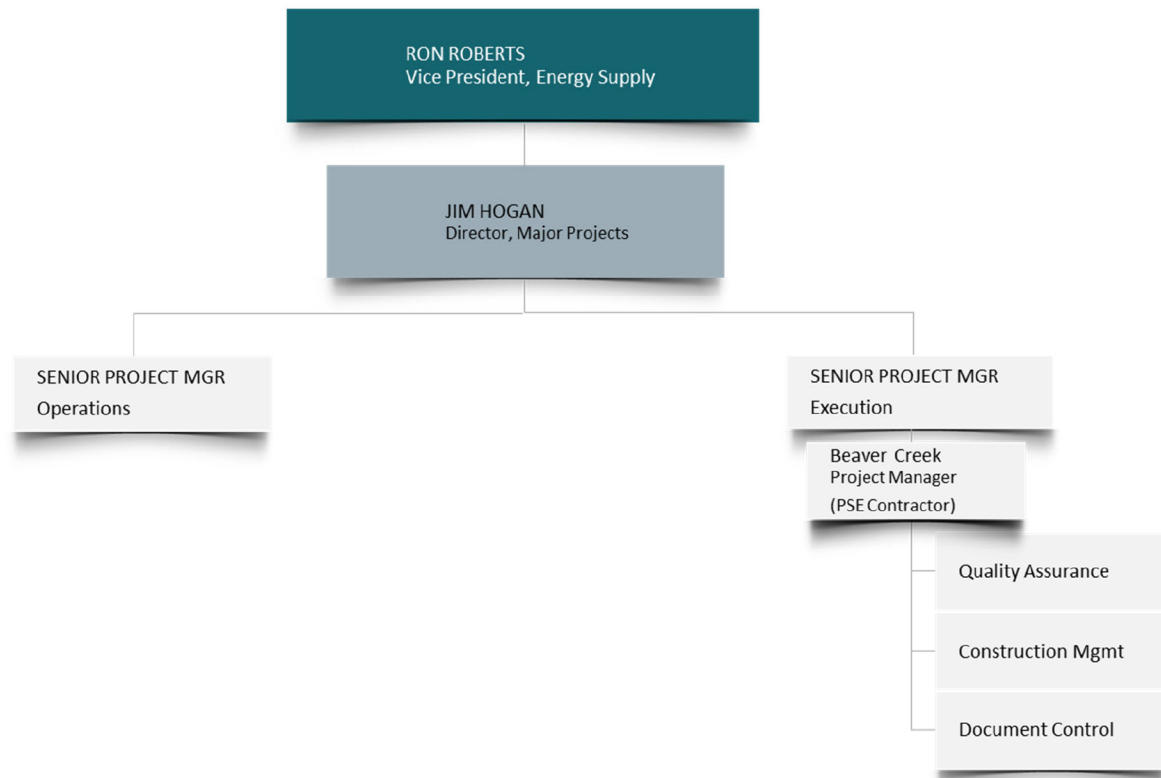
The on-site management of the Beaver Creek Wind Project will be performed by a third-party firm hired by the PSE Major Projects department. This firm will provide project and construction management, quality assurance, document control, and other services as required. They will report to a PSE Senior Project Manager. PSE will also retain an outside firm to provide owner's engineering services, with coordination as required, by PSE staff engineers.

In parallel with the construction of the Project, a PSE senior project manager will develop the operational aspects of the Project to include a staffing plan (and hiring a third-party operator, if required), determine spares requirements, develop operating and maintenance procedures, and ascertain any other tasks necessary to integrate the Project into PSE's generation fleet.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 5. PROJECT SCHEDULE AND CONSTRUCTION MANAGEMENT

Figure 1. *PSE Project Management Organization*



**PSE Report to the Board of Directors: Beaver Creek Wind Project**

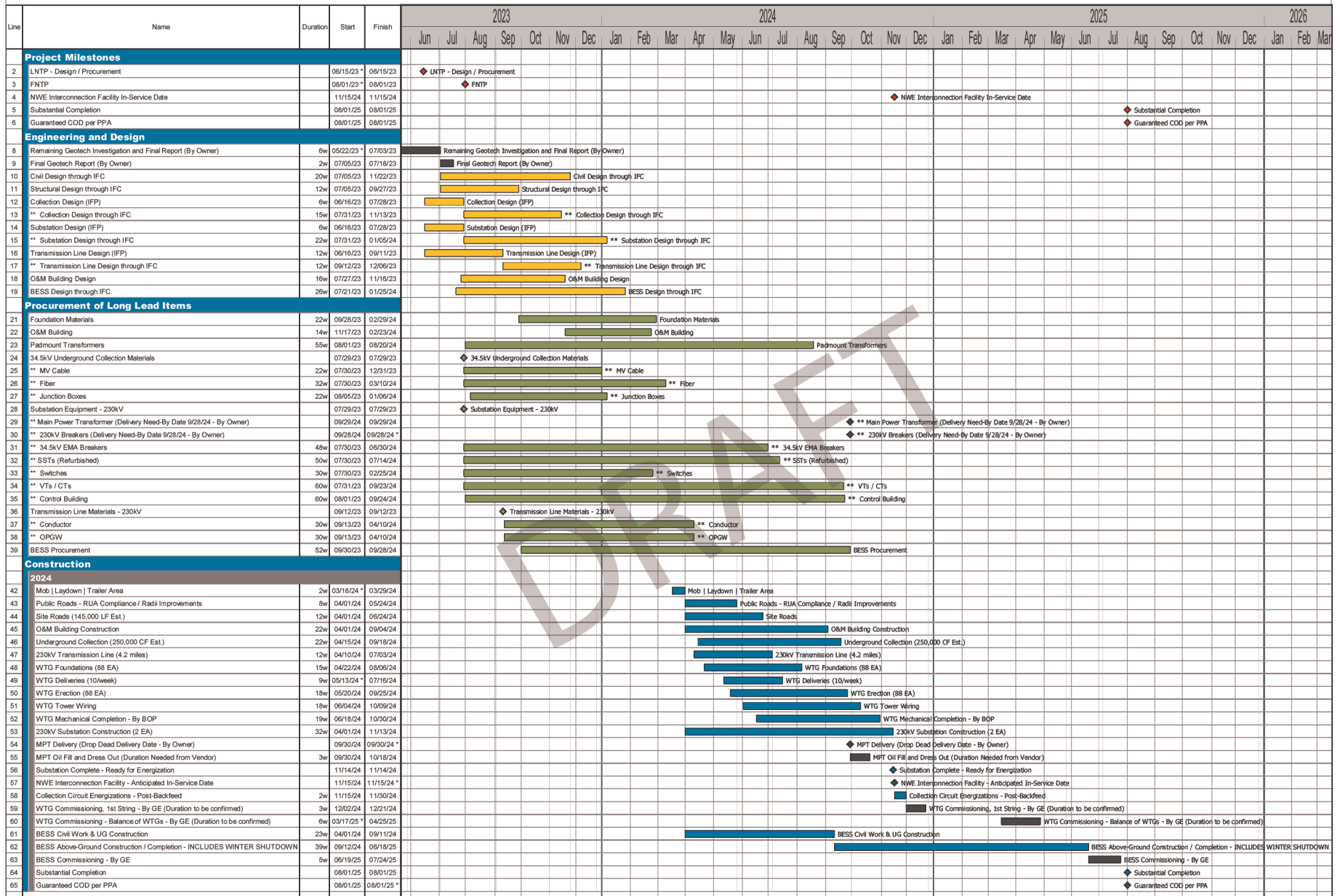
**APPENDIX 5. ATTACHMENT A**

# Attachment A

## Project Schedule (PREPARED BY CAITHNESS)

## Caithness

## Beaver Creek Wind and BESS Project



Stage

Milestones Engineering and Design Procurement Work by Others Construction

**Milestone Appearances**

◆ Diamond

Group/Sort: None 88 GE 2.5MW WTGs (220MW) 4 BESS Yards (100MW) Start Date: 5/22/2023 Page 1 of 1

View: Schedule  
Filter: None  
85 GE 2.0MW WTGS (225MW), + 2500 Pads (100MW)  
Finish Date: 8/1/2025

**88 GE 2.5MW WTGs (220MW), 4 BESS Yards (100MW)**

## Reed Point, Montana

Start Date: 5/22/2023

Finish Date: 8/1/2025

Progress Date:

Page 1 of 1



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 6. Wind Resource Assessment

(DNV Energy Insights, ArcVera)



Beaver Creek

# Third-Party Energy Assessment Review

48 x GE 2.52-127; 40 x GE 2.82-127

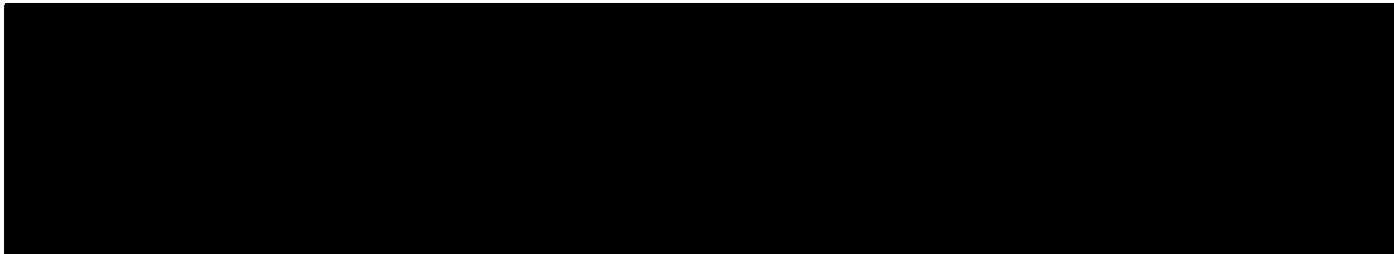
Puget Sound Energy, Inc.





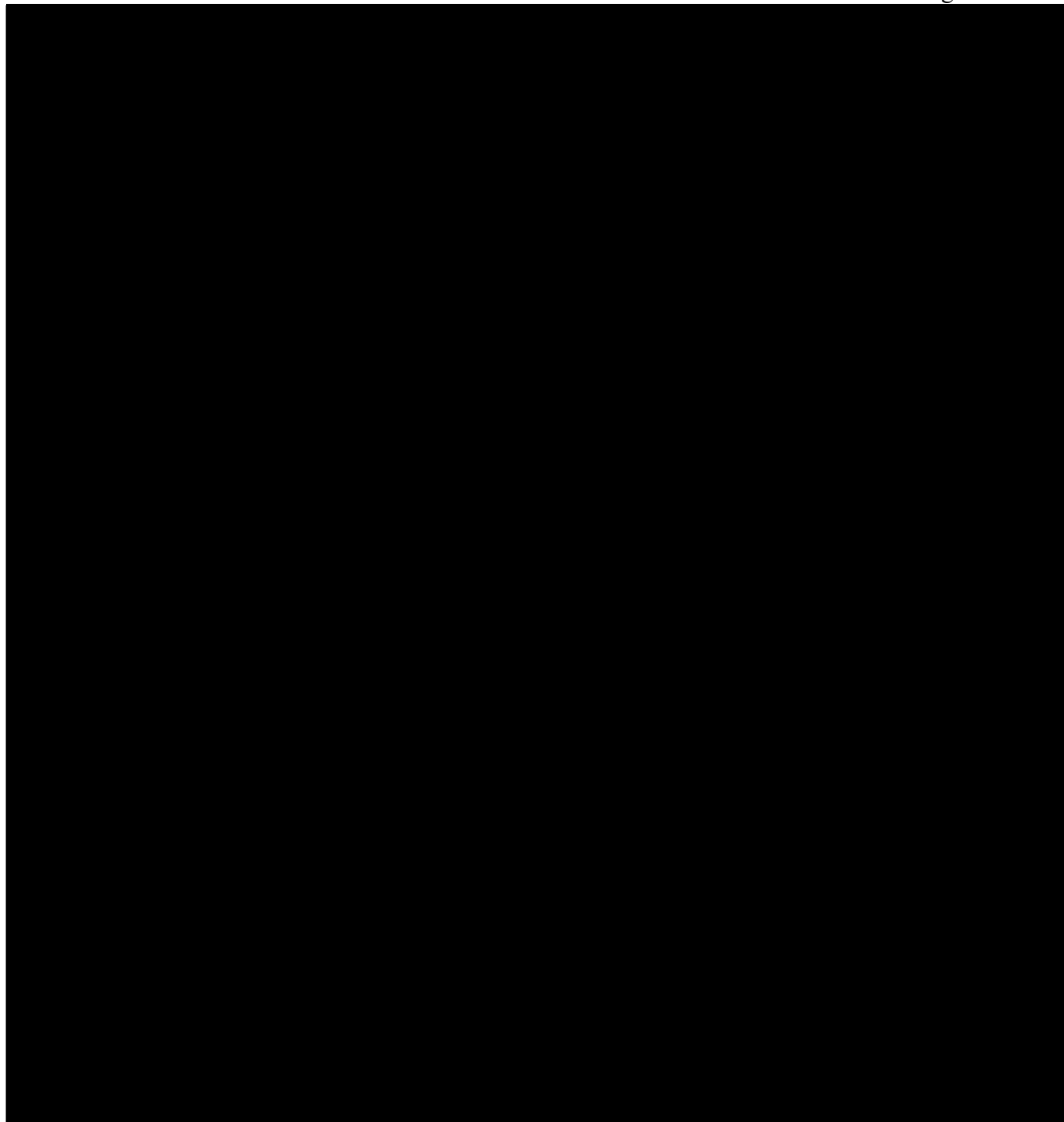


Title	Third-Party Energy Assessment Review
Customer	Puget Sound Energy, Inc.
Document No.	1045XXXX-HOU-XL-02
Issue	A
Status	Draft
Date	24-Jul-23
Classification	Customer Discretion
Author	Nathan Lehman
Checked	Daniel Burtch
Approved	Adnan Shah
DNV Legal Entity	DNV Energy USA Inc.



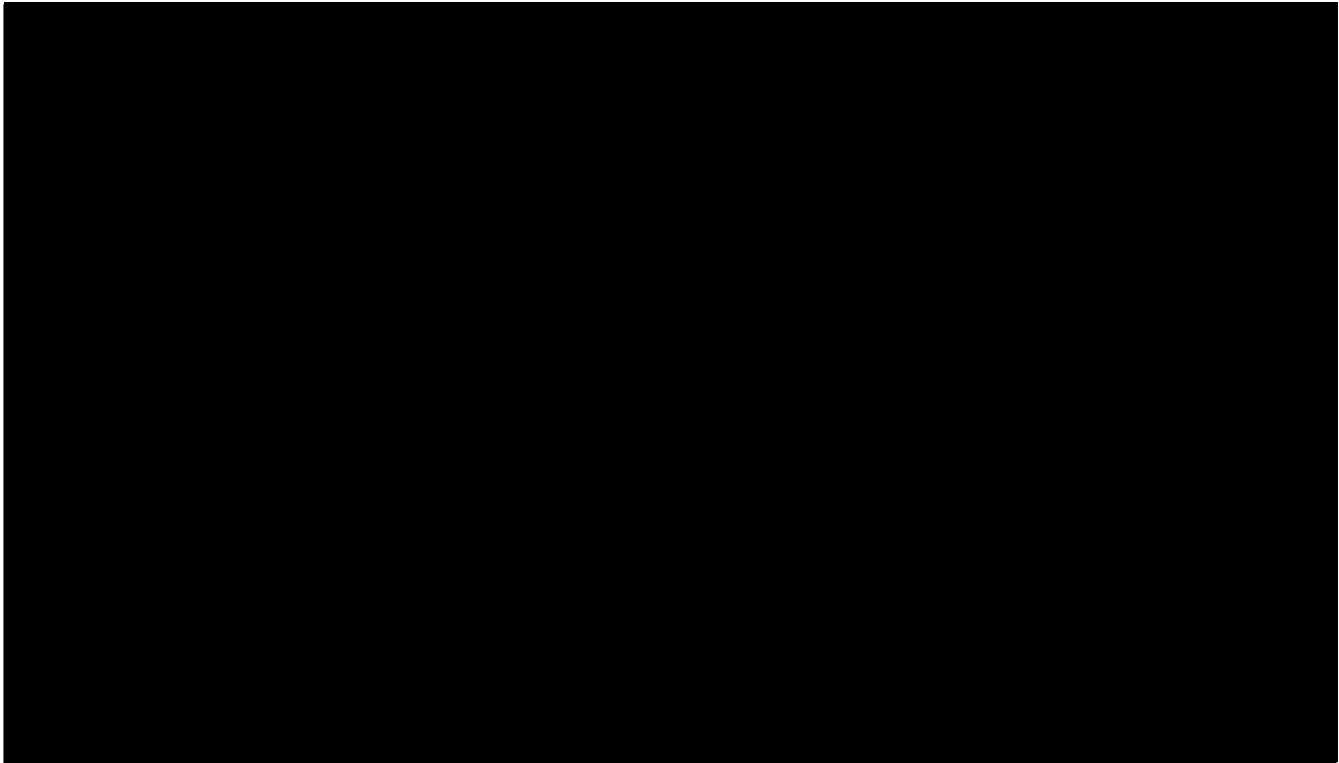
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



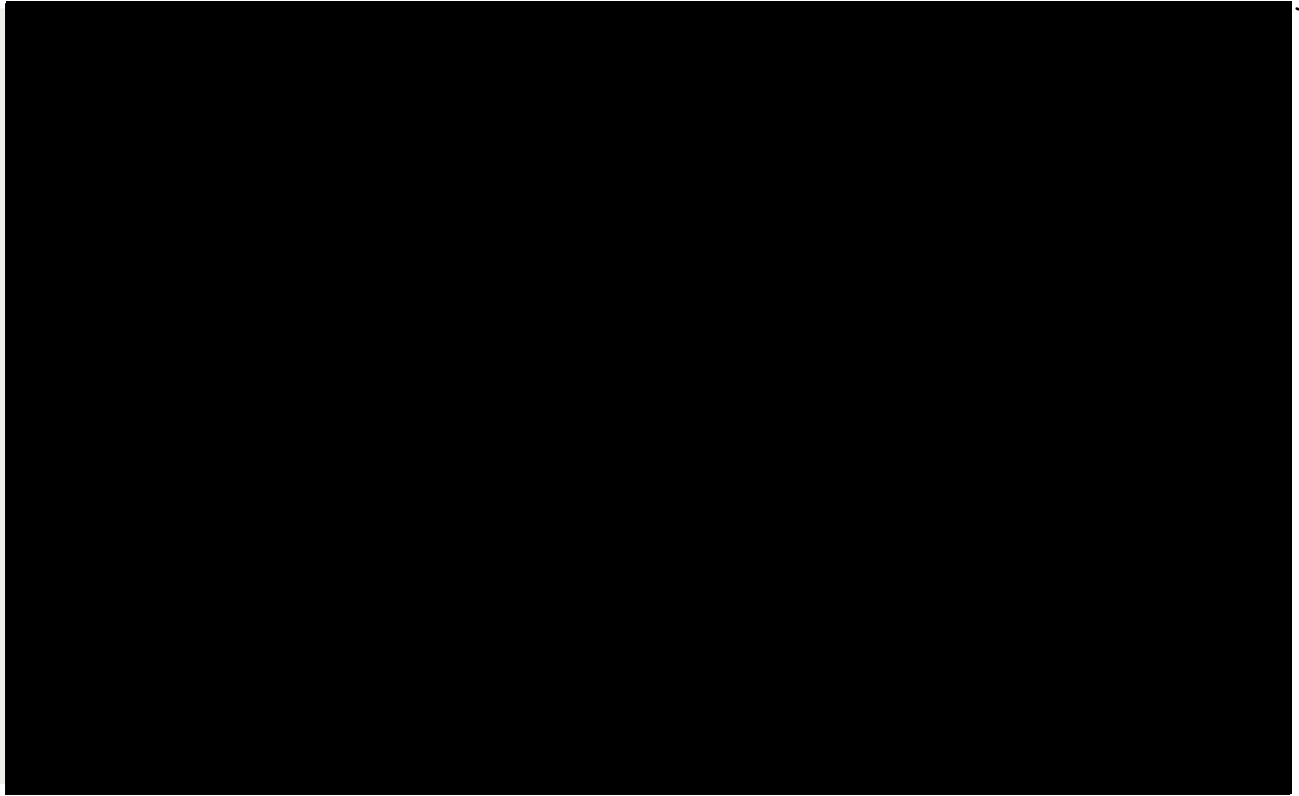
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



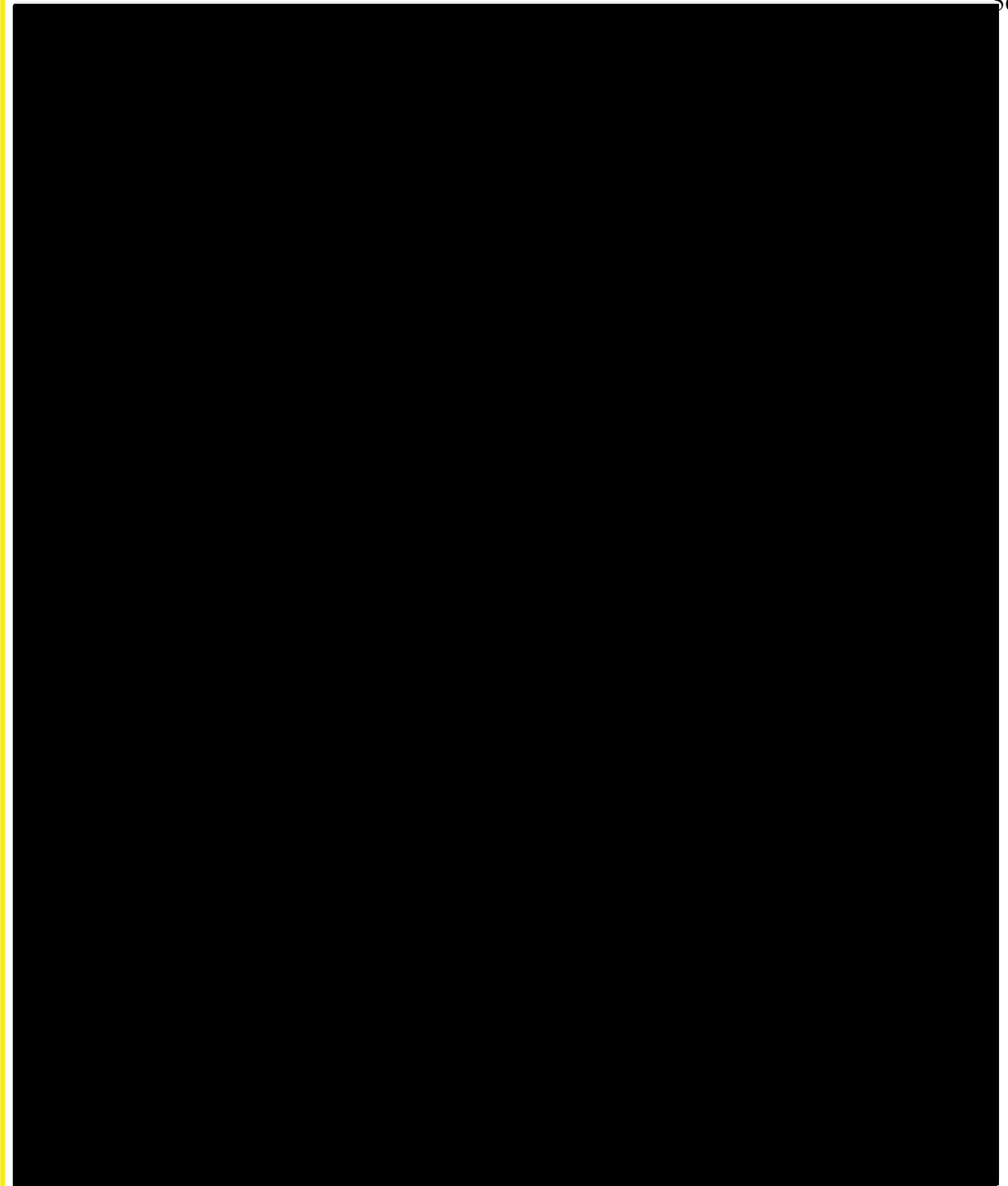
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

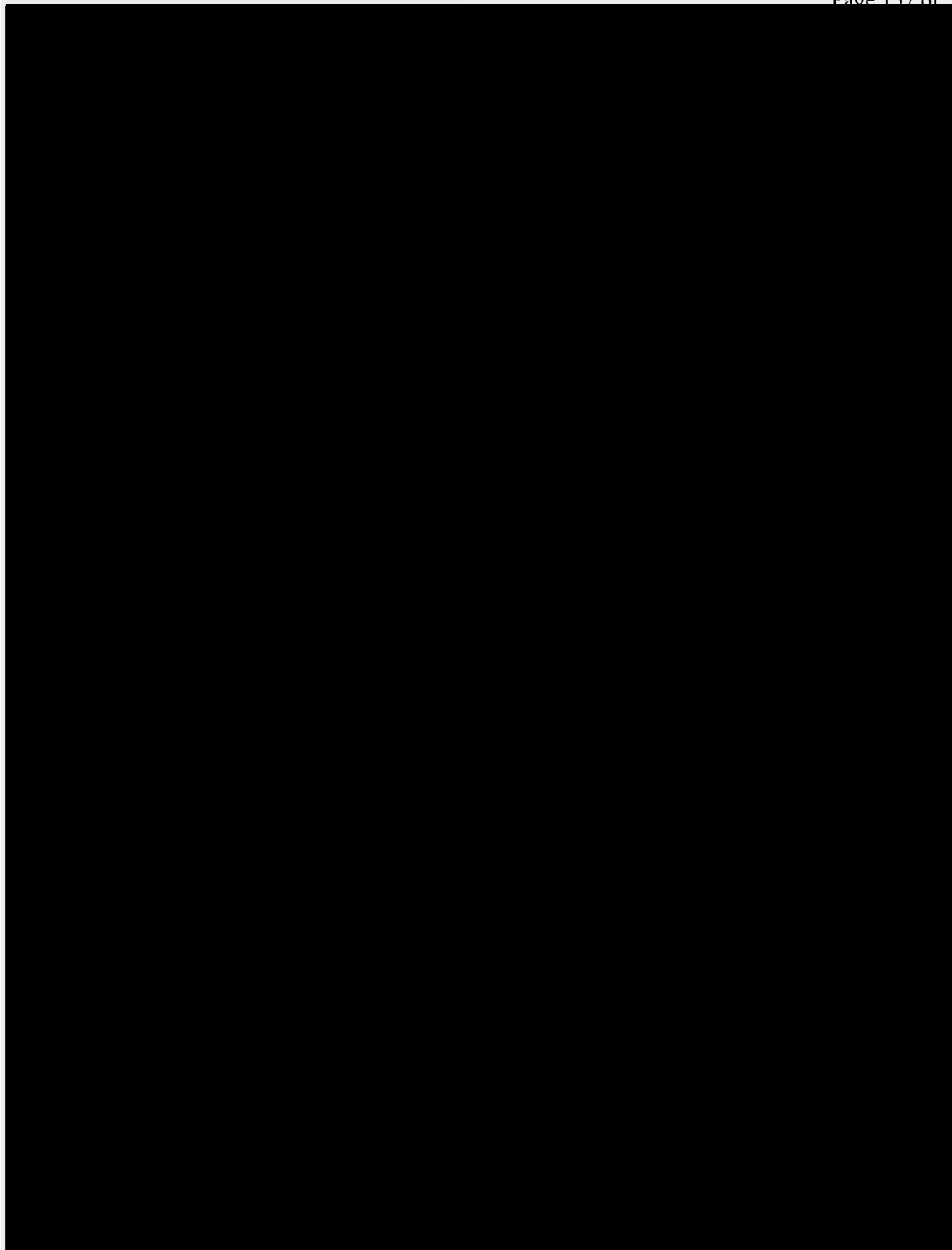
REDACTED VERSION

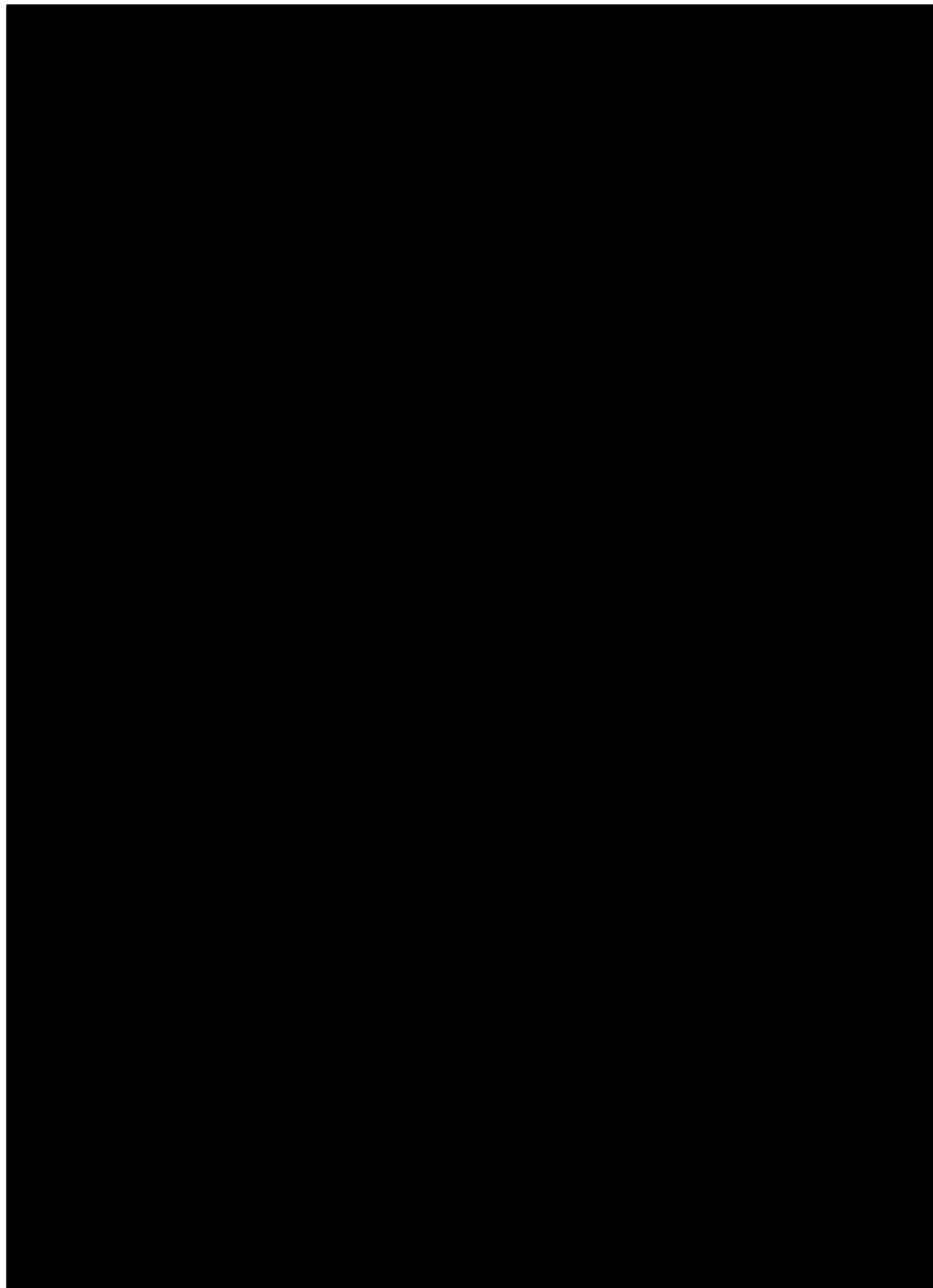


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

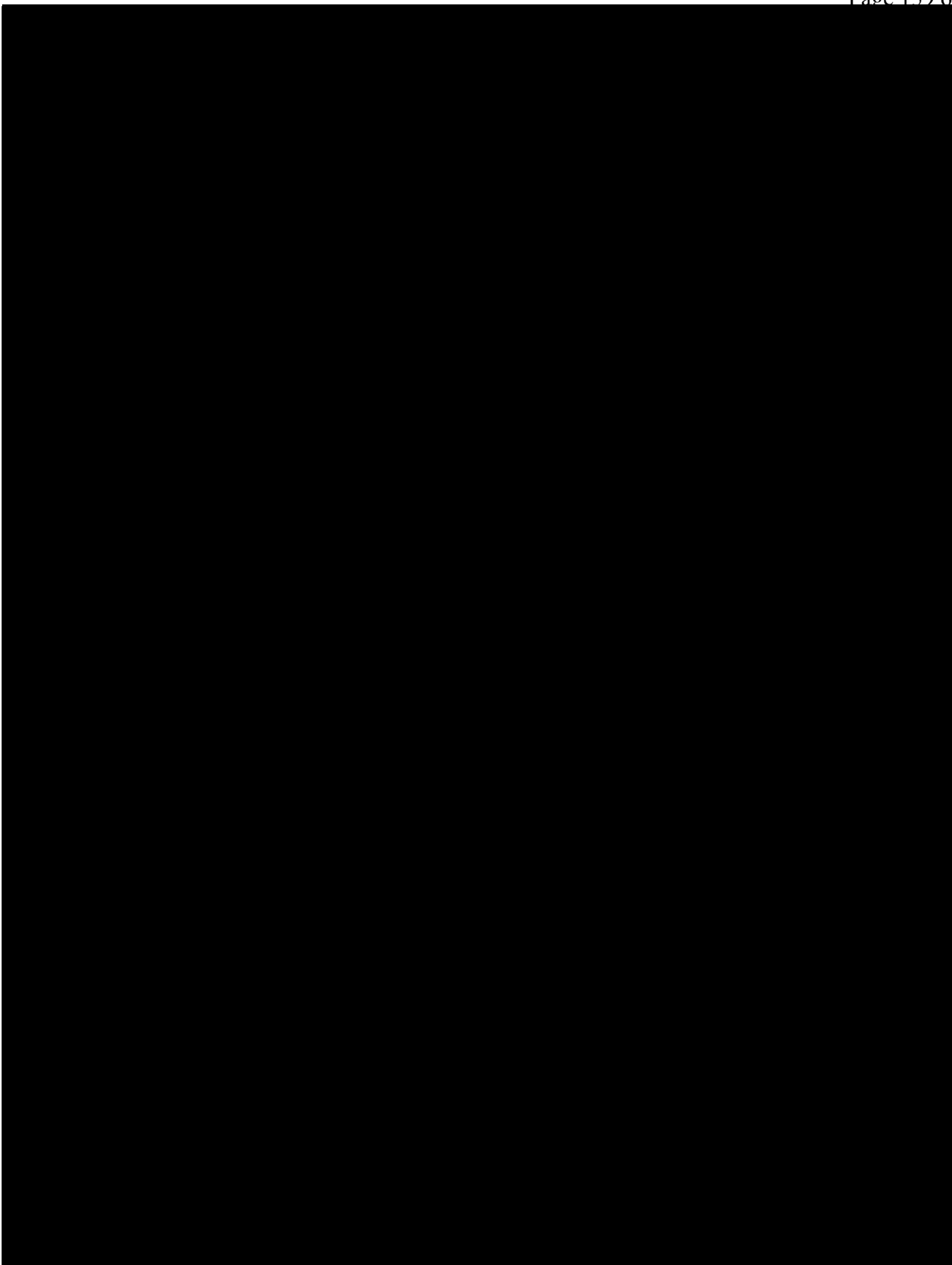






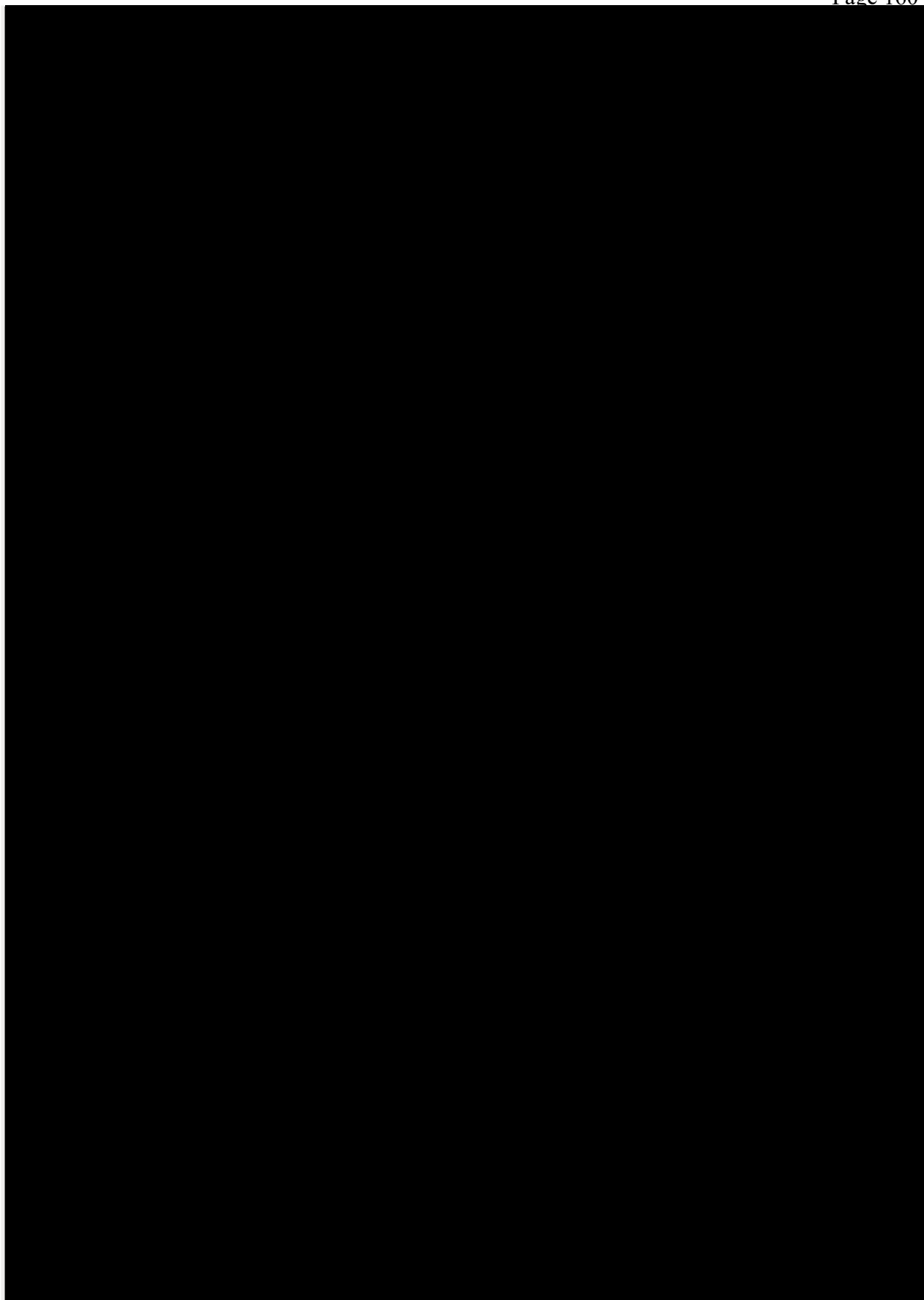
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

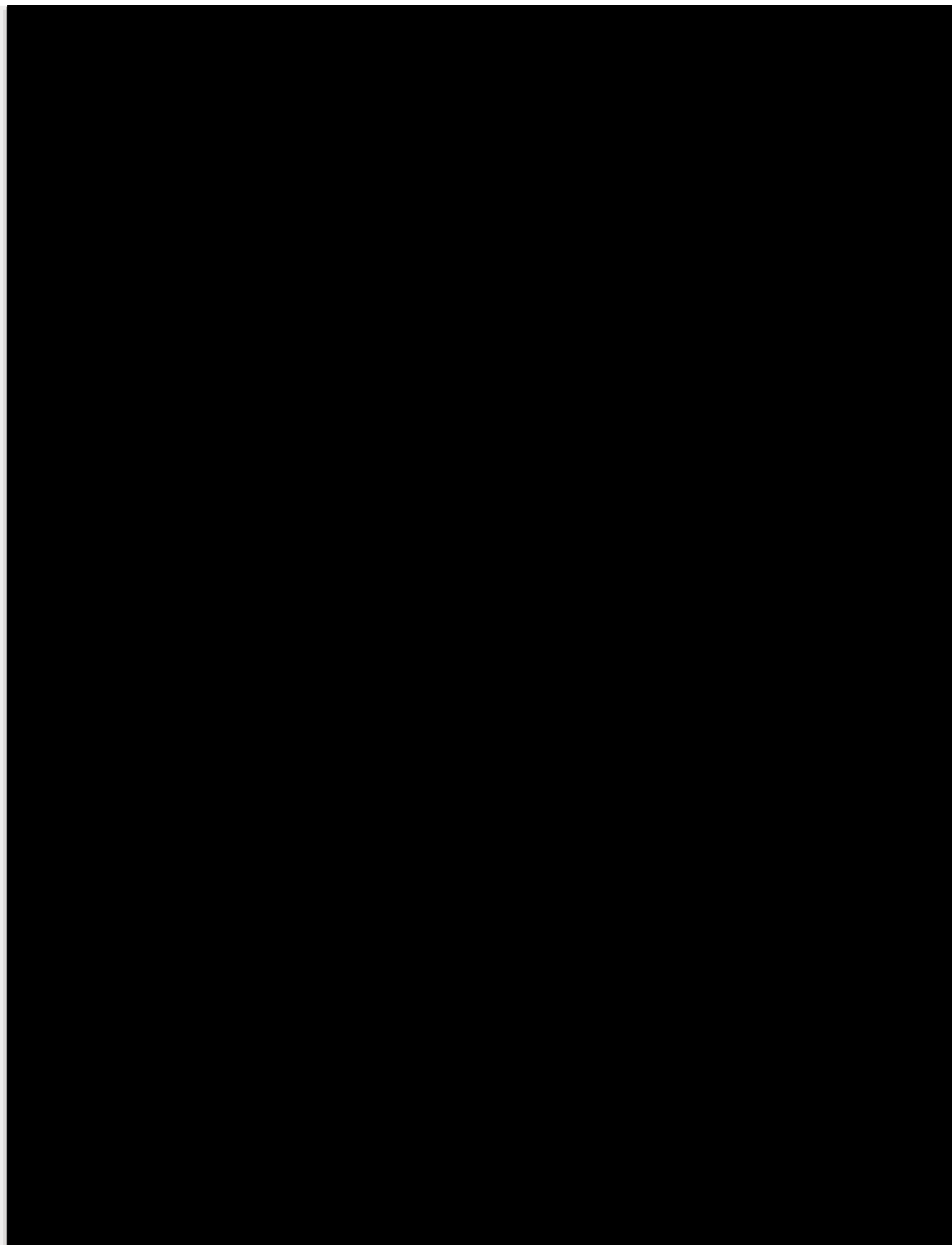
REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

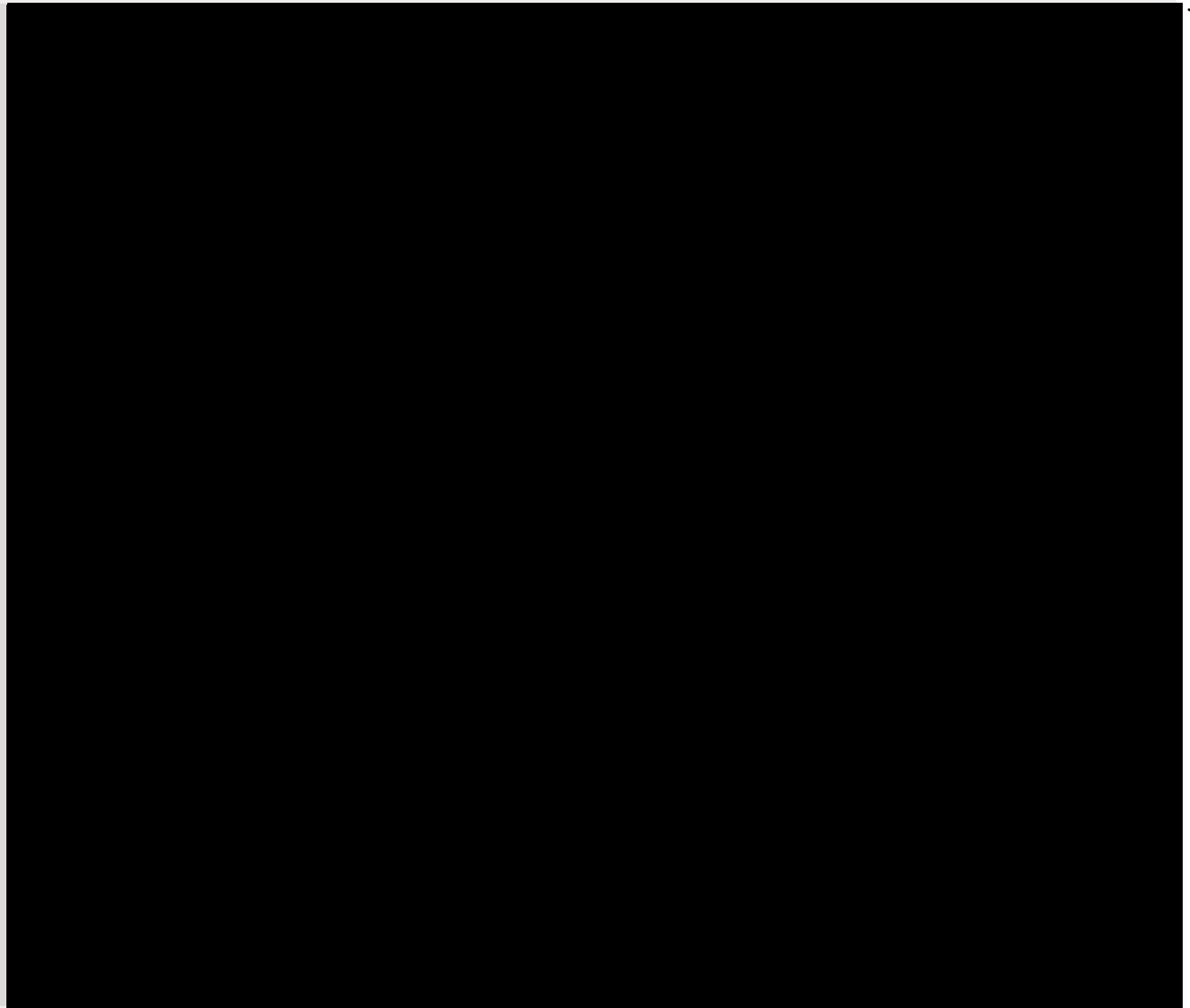
REDACTED VERSION





SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 7. Real Estate



PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 7. REAL ESTATE

## Real Estate

The Beaver Creek Wind Project consists of six wind facilities lease and easement agreements; the privately owned leased lands are currently used for agriculture.

The leases allow for an initial lease term of 33 years and include options to extend for an additional term of 5 years and up to 30 years. The leases require that project construction begin within a defined initial term, and thereafter the lease, upon commercial operations and compliance with lease terms, will extend for an initial term of 33 years. There is an option to extend the lease for no less than 5 additional years or more than an additional 30 years upon compliance with lease terms.

The lease rent structure is as follows:

1. [REDACTED] of gross revenue (this rent structure will not work for PSE, and a new rent structure to allow for a utility model will need to be created),
2. Minimum rent of [REDACTED] per year for each wind tower located on each leased property,
3. Pre-development annual rent of [REDACTED] per acre, beginning on the finalization of each lease and payable up to the commencement of wind turbine operations royalty, and
4. One-time Installation fee payment of [REDACTED] for each wind tower installed on each leased property.

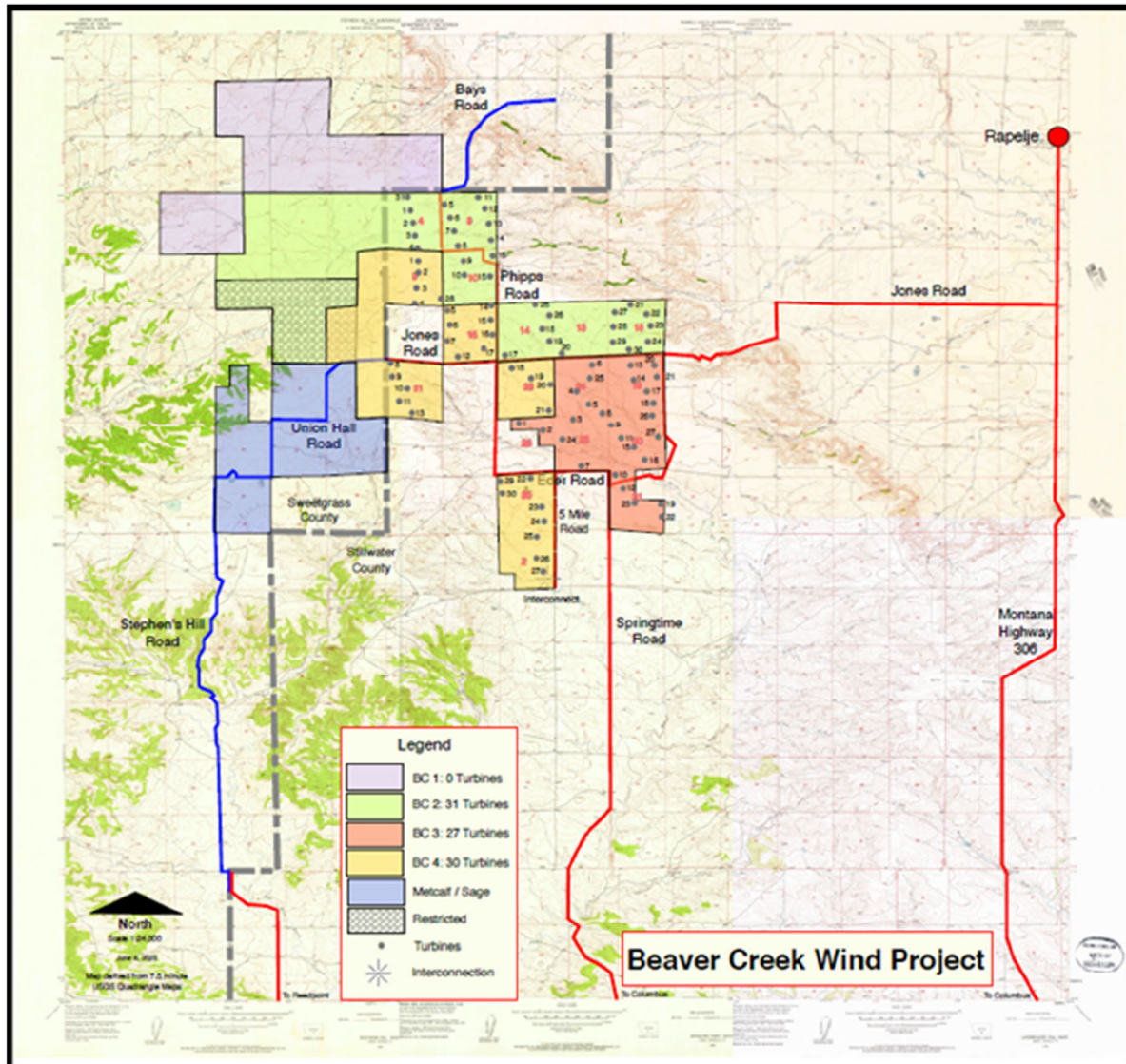
At the end of the lease term, the lease tenant will be required to remove all facilities to a depth of 4 feet below grade.

PSE is actively working to review all leases, related title reports, and the recently received title property survey in order to validate the legal descriptions, ownership, and title exceptions pertaining to each of the six referenced leases. Caithness is required, as a condition to closing in the membership interest purchase agreement (MIPA), to deliver a title policy insuring the real property in the amount of [REDACTED] and inclusive of the endorsements outlined in the MIPA. PSE will increase the title policy to the full value of the project. Ongoing review efforts, coordination with the developer, and engagement with the property owners will continue as items needing resolution or amendment are identified and a path of resolution is agreed to between the parties.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 7. REAL ESTATE

Figure 1. Map of Beaver Creek project area





*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 8. Permitting, Environmental and Cultural Resources

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 8. PERMITTING, ENVIRONMENTAL AND CULTURAL RESOURCES

## Permitting, Environmental and Cultural Resources

To support environmental and use permitting and to evaluate potential impacts to cultural resources, Caithness Beaver Creek, LLC (the “Project Company”) has undertaken limited, high level environmental baseline studies, some required conditional use permitting, and acquisition of local agreements. Following a detailed review of the Project Company’s environmental and cultural resource review and permitting, we have identified a number of steps that are recommended for completion prior to closing or, at minimum, prior to commencing construction. The additional permits that will be required for the construction and operation of the proposed Project are identified in this Appendix. Also identified in this section are additional permits that may be required, but about which PSE has not received sufficient information to determine whether they will be necessary.

### Existing Permits and Environmental and Cultural Resource Surveys

The following section provides details of each of the permits and agreements provided to PSE by the Project Company.

#### Stillwater County

- **2022 Conditional Use Permit (CUP), Beaver Creek II and III.** In May 2022, the Project Company obtained a Stillwater County CUP, which authorizes the construction and operation of up to 80 MW of wind power (48 turbines) and 200 MWh of associated battery storage. The CUP also authorizes the construction of an operations and maintenance (O&M) building, a warehouse, and two battery storage buildings. The conditions of the permit include:
  - Review of a final site plan prior to construction.
  - Water and sewer permitting for O&M building.
  - Rural addressing for emergency services.
  - Site design and grading to minimize Project-area runoff.
  - Setback limits from property lines or rights-of-way for turbines, battery storage, and buildings.
  - Acquisition of a road maintenance agreement and bonding.
  - Minimization of interference with agricultural traffic and cattle movement.
  - Acquisition of a Noxious Weed Management Plan.
  - Installation of a parking and loading area.
  - Downward lighting at buildings.
  - Acquisition of a Federal Aviation Administration (FAA) permit for turbines and meteorological towers.
  - Installation of vegetative screens and/or fencing to screen around buildings if homes are nearby (this condition can be waived).

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### APPENDIX 8. PERMITTING, ENVIRONMENTAL AND CULTURAL RESOURCES

- Acquisition of an additional CUP authorization for any use associated with the development, but which is not part of the CUP.
- **2023 Stillwater County CUP.** In July 2023, the Project Company obtained a Stillwater County CUP, which authorizes the construction and operation of up to 80 MW of wind power (30-33 turbines). The conditions of the permit include:
  - Review of a final site plan prior to construction.
  - Rural addressing for emergency services.
  - Confirmation of appropriate setbacks with the County.
  - Acquisition of a road maintenance agreement and bonding.
  - Acquisition of a Noxious Weed Management Plan.
  - Acquisition of an additional CUP authorization for any use associated with the development, but which is not part of the CUP.

The Project Company has provided copies of the following Stillwater County agreements that are in place for Beaver Creek II, III, and IV.<sup>1</sup>

- **Impact fee agreements** - The fee is 1.5% of the total Project construction cost including wind turbines, battery storage, substations, buildings, roads, etc. The Stillwater County Impact Fee Agreements are a strong incentive for the County to support the proposed Project.
- **Road maintenance and repair contracts** – The Stillwater County Road Maintenance and Repair Contract requires preconstruction documentation of the conditions of the County roads, and the Project Company is responsible for maintaining and repairing County roads to the same condition, including potentially culverts, as found or better from Project construction through decommissioning. If County road widths are insufficient for project purposes, the Project owner is solely responsible for acquiring easements from private parties, which shall not be considered County accepted roads unless the statutory processes for acquiring county roads are followed.
- **Weed abatement agreements** – The Stillwater County Noxious Weed Management Plan is designed to prevent and/or control the spread of noxious weeds during project construction and operation. It requires monitoring and weed control in disturbed construction and facility areas and 25 feet from road rights-of-way. It also requires revegetation with a prescribed seed mix.

#### Federal permits

- **Federal Aviation Administration Aeronautical Studies/Determination of No Hazard (2021/2022):** A permit for each proposed turbine location was issued on 5/10/2021 for a total turbine height of 499 feet. These permit determinations expired on 11/10/2022 and were renewed. The extension expiration date is 3/22/2024. One hundred sixty-two (162) turbine locations were permitted encompassing four wind project areas, two of which are for Beaver Creek II and III.

---

<sup>1</sup> Agreements related to Beaver Creek II and III were issued in March 2022. Beaver IV agreements were issued in July 2023.



**PSE Report to the Board of Directors: Beaver Creek Wind Project****APPENDIX 8. PERMITTING, ENVIRONMENTAL AND CULTURAL RESOURCES**

The Project Company also provided a list of the studies completed between 2007 and 2019 to evaluate environmental risks in the Project area. While environmental studies and a cultural resource review have been completed, they are dated, inconsistent with accepted guidelines or practices for the information needed in a due diligence process, and the information they contain is very limited. For example, the Project Company has not coordinated with state or federal wildlife agencies about species of concern in the area, stating that coordination was not known to be required or recommended by their consultant. The cultural resource literature review is more than 10 years old, and the Montana State Historic Preservation Office does not like to accept assessments based on surveys that are older than 10 years (per conversations with a colleague in Montana). Also, the cultural data is only a literature review for a property that is approximately 11,000 acres for the 232 MW wind project, and over 20,000 acres including the additional land rights and 100-150 MW of expansion potential that is being acquired in this transaction. In a literature review, the Montana State Historic Preservation Office conducts a records search of the area of potential effect (APE) and sends their findings to the contractor, who then compiles the information into a report for the client. No cultural resources field work was conducted, nor were ethnographic, cultural, or historical contexts, or geological information about landforms included in the cultural resource literature review provided by the Project Company. Most importantly, there appears to be no outreach to any Native American groups in the area about this current project.

**Permitting agencies and interested party engagement**

The U.S. Fish and Wildlife Service, Montana State Fish, Wildlife and Parks, and Native American groups have not expressed any concerns about the Project, which could be attributable to the Project Company's lack of outreach and engagement. Even if the Project is considered low-risk by the Project Company and their consultant, it is still valuable to have open communication with state and federal wildlife agencies and tribes.

No coordination with state or federal wildlife agencies has occurred related to bird and Endangered Species Act-protected animals. The U.S. Fish and Wildlife Service has voluntary Land-based Wind Energy Guidelines designed to minimize impacts of wind energy development on eagles, other raptors, sensitive wildlife, and their habitats. These guidelines do not appear to have been followed by the Project Company. The Project Company also has not undertaken the avian use studies that would be needed to support an application for an Eagle Incidental Take permit. It is prudent to coordinate early with state and federal wildlife agencies to build relationships, gain their support for the Project, discuss any potential concerns known for the area, and develop conservation measures if needed. For example, the U.S. Fish and Wildlife Service may have concerns about avian survey methods, particularly the size of the area surveyed for raptor nests, the proximity of golden eagle nests to the project, and sharp-tailed grouse presence in the project area.

Additional engagement with interested parties and tribes is also recommended to complete review of any potential to impact cultural resources. No outreach to any sovereign Native American groups in the area about this project appears to have been conducted; the lack of involvement can cause public relations issues, and the limited data currently available makes it difficult to assess cultural resource risks. Although the cultural resource literature review provided by the Project Company identified six previous cultural surveys that had occurred within the APE, this is a multi-use area with both historic period and pre-contact period materials and so additional cultural resource review and tribal engagement is highly recommended.

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 8. PERMITTING, ENVIRONMENTAL AND CULTURAL RESOURCES**

**BOP permitting responsibilities**

The following is a list of permits that the Balance of Plant (BOP) contractor will be responsible for obtaining before and during construction.

1. Storm-water permit
2. Road use permits (state and county)
3. Approach permits (state and county)
4. Road maintenance permit (for performing maintenance on state or county roads)
5. Snow removal permit (county only)
6. Utility crossing permit or agreements (with assistance from owner)
7. Building permit (state or county)
8. Electrical permit (state or county)
9. Sewer permit
10. Well drilling permit
11. Water use permit
12. Air quality permit
13. Blasting permit





*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 9. Interconnection and Transmission

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 9. INTERCONNECTION AND TRANSMISSION

## Interconnection and Transmission

### Interconnection Service

The Project will interconnect to NorthWestern Energy's (NorthWestern) existing 230 kV transmission system at a new substation between the Wilsall and Columbus Rapelje 230kV substations, and has an active and executed large generator interconnection agreement (LGIA) for 315\_MW of interconnection service. The Project queue number is 300 in NorthWestern's interconnection queue. The Project has completed both the System Impact Study (SIS) and Facility Study (FaS) through NorthWestern. The Project was studied for network resource interconnection service (NRIS), and has NRIS service established through its LGIA.

The total upgrade cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of the system impact and facility study is approximately [REDACTED]. Per the June 20, 2023 LGIA amendment referred to below, the network upgrades do not qualify for reimbursement as network credit and, therefore, will be directly assigned to the Project and borne by the interconnection customer. These cost estimates were initially established through the facilities study in 2017, and have not been updated since then. Note that this amount does not include any cost incurred for the interconnection customer's interconnection facility (for example, a generation-tie line). In lieu of the security deposit, [REDACTED] post-closing PSE would place a replacement guaranty with NorthWestern. Below is the breakdown of the total transmission provider interconnection facilities and network upgrades cost estimates from the Facility Study. Details of the interconnection facilities, network upgrades and distribution upgrades are included in Appendix A of the LGIA.

Table 1. *Transmission provider interconnection facilities*

Substation and relay	[REDACTED]
Transmission	[REDACTED]
Metering	[REDACTED]
EMS	[REDACTED]
Lands and permitting	[REDACTED]
<b>SUBTOTAL</b>	[REDACTED]

Table 2. *Network upgrades*

Substation and relay	[REDACTED]
Transmission	[REDACTED]
Metering	[REDACTED]
EMS	[REDACTED]
Lands and permitting	[REDACTED]
<b>SUBTOTAL</b>	[REDACTED]

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 9. INTERCONNECTION AND TRANSMISSION

Table 3. *Total cost*

Transmission provider interconnection	
Network upgrades	
<b>TOTAL</b>	

The executed LGIA established certain technical and financial milestones for both NorthWestern and the customer to meet to support the requested commercial operation date (COD). Caithness filed and executed an amendment to the original LGIA on June 20, 2023, that revised the originally established milestone dates. Below are the revised LGIA milestones.

- Transmission Provider's Interconnection Facilities In-service Date: November 15, 2024
- Interconnection Customer's Interconnection Facilities In-Service Date: November 15, 2024
- Transmission Provider's Interconnection Facilities In-service Date: November 15, 2024
- Initial Synchronization Date: March 15, 2025 (1<sup>st</sup> set of turbine strings)
- Commercial Operations Date: August 15, 2025 (all turbines)

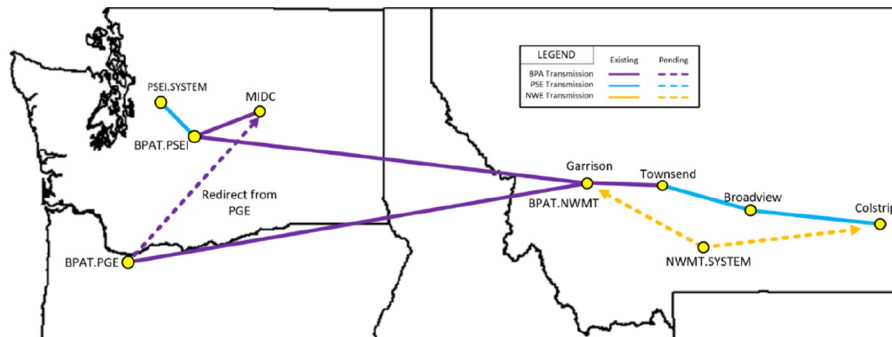
**Transmission Service**

PSE is responsible for the delivery path from the new NorthWestern substation to customer load. PSE has submitted a request for 220 MW of new NorthWestern transmission service from the project location to the Colstrip 500 kV substation. PSE has also submitted another 220 MW of new NorthWestern transmissions service from the project location to the Garrison substation to create and evaluate delivery options. PSE will repurpose the transmission used for Colstrip Units 3 and 4 for the project. PSE currently has 713MW of contracted transmission available to deliver the resource, along with other Montana resources. If the Colstrip route is selected, the transmission path consists of four transmission wheels (see figure below): (1) the NorthWestern Energy transmission system, (2) the Colstrip Transmission System (CTS), (3) Eastern Intertie, and (4) Bonneville Power Administration (BPA) main grid. In Figure 4, the CTS is depicted as a bright blue line, and both the Eastern Intertie and the BPA main grid are represented by a purple line.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 9. INTERCONNECTION AND TRANSMISSION

Table 4. *Transmission path and wheels from the new NorthWestern substation*



In July 2023, PSE submitted two transmission service requests (TSRs) for 220 MW each on the NorthWestern system for delivery to Colstrip and Garrison, which are subject to NorthWestern’s transmission studies described below. In addition, PSE has submitted a change of source TSR to the CTS owners to allow for the scheduling of the Beaver Creek Wind Project instead of power from the Colstrip units after 2025. PSE also holds sufficient firm point-to-point capacity rights on BPA’s main grid from Garrison to PSE’s load. On the Eastern Intertie, PSE holds 720 MW of total capacity including 680 MW under the Montana Intertie Agreement (MIA) through 2027, and an additional 40 MW under standard BPA tariff service. The 720 MW of transmission service may be renewed.

The Beaver Creek Wind Project requires a series of transmission studies to assess the impact of delivering the wind energy on the NorthWestern system and westward on the CTS, and to identify any required upgrades. These studies provide visibility into the costs associated with system upgrades, timelines to complete upgrades, and the resulting transmission system capabilities. The status and a brief description of the transmission studies associated with the Beaver Creek Wind Project are described below.

- **NorthWestern System Impact Studies and Facilities Study – In Process**

The System Impact Study (SIS) analyzes the technical aspects of PSE’s transmission request on the NWE system and determines the electrical impacts to the system (thermal overload, voltage issues and stability, transient stability, reactive power, etc.). The SIS provides a high-level overview of needed upgrades, timelines, and costs of construction required to deliver energy from the new Beaver Creek Wind Project through 220 MW of firm transmission capacity. A facilities study will be completed following the SIS, which will further evaluate and refine the cost, schedule, and scope of any identified system upgrades. If NorthWestern finds that there is available transmission capacity (ATC) and no upgrades are necessary, a Transmission Service Agreement will be tendered (which may be deferred to align with COD). Otherwise, the timing to complete both the SIS and FaS is expected to be between 4-6 months. If system upgrades are required, PSE will be required to provide security (LC or cash deposit) for 100% of the identified upgrades. The deposit will be reduced once service starts per NorthWestern Energy Transmission’s (NWMT’s) Open Access Transmission Tariff (OATT). There could also be directly assigned facility costs that would not be reimbursed to the OATT.

**PSE Report to the Board of Directors: Beaver Creek Wind Project****APPENDIX 9. INTERCONNECTION AND TRANSMISSION**

- **Change in Source Request - CTS – Pending**

PSE's existing transmission agreement for 363 MW of CTS point-to-point (PTP) rights specifies the source as Colstrip Units 3 & 4. Transmission studies are required through the CTS owners to use this PTP transmission with a new resource. PSE Merchant has submitted a request to PSE transmission to change the source. NorthWestern completes the SIS and FaS for the Change of Source study on behalf of the CTS owners. The studies will identify upgrade costs and timing, and could take up to 18 months, based on the Clearwater transmission studies.

- **BPA Affected System Study – Future Study**

BPA could be identified as an affected system through NorthWestern's SIS as part of the change of source study. BPA will review impact to its transmission system to assess whether PSE Merchant's requests impact their system in any way. This study will be performed as needed by BPA following the completion of the Change of Source study.

- **Dynamic Transfer Capability (DTC) Study - Pending**

BPA requires DTC for dynamic transfers on the Eastern Intertie at Garrison, limiting the amount of variable energy resources that can be delivered on a real-time basis to PSE's balancing authority area (BAA). DTC refers to the amount of powerflow (MW) movement over a transmission system that can be accommodated intra-hour (within an hour) without violating the system's voltage limits. BPA will perform a study of dynamic transfer capacity to ensure that sufficient transfer capacity exists so that resources can be delivered on a real-time basis to PSE's balancing authority area. PSE is in the process of submitting the DTC request to BPA.

- **PSE Pseudo-tie Request - Pending**

To integrate the Beaver Creek Wind Project into PSE's balancing authority area BAA, the project's output will be connected to PSE's system by way of a pseudo-tie (a "virtual" tie-line) between the NorthWestern and PSE BAAs. PSE has begun the process of submitting a pseudo-tie request to PSE Transmission (PSEI), in accordance with PSEI's pseudo-tie business practice. The pseudo-tie must be in place prior to the COD. This is a complex effort across multiple departments that requires extensive coordination, design, and implementation. It affects the metering, communications, operations, transmission, and energy trading groups.

**BPA 100MW of Transmission Service Request**

Caithness currently has an attractive queue position in BPA's Montana transmission queue for 100 MW of transmission from Garrison (BPAT.NWMT scheduling point) to Portland (BPAT.PGE scheduling point). The purchase includes reserving the queue position for PSE, which will put PSE in line for 100 MW of new incremental BPA transmission service from Montana. BPA has identified network upgrades to enable new transmission out of Montana. This project is referred to as the Montana to Washington (M2W) Project and is expected to enable around 500 MW of new transmission capacity across the different flow gates necessary to wheel power from Montana. BPA has estimated the cost of \$360 million for this project, with a projected in-service date of 2028/2029. Caithness's transmission request is third in the BPA's queue and puts it within the 500 MW of incremental transmission from Montana. BPA has indicated it is unlikely any incremental transmission capacity from Montana to the Pacific Northwest will be added after the M2W

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 9. INTERCONNECTION AND TRANSMISSION**

project. Because the Beaver Creek 232 MW project will utilize existing transmission repurposed from Colstrip 3&4, the 100 MW BPA transmission may be utilized for a Phase II of Beaver Creek in Sweet Grass.

PSE has assessed redirecting transmission to Mid-Columbia River (Mid-C) to connect with PSE's existing ~1,500 MW transmission rights to PSE's system as a viable option. In addition, a swap or exchange with another entity interested in transmission from Montana to PGE is a possible alternative. Caithness's transmission request is currently at environmental review stage. At this point, BPA is expecting to take five years to complete the work under the environmental review. Following the completion of the environmental review, BPA will tender the Transmission Service Agreement (TSA) to Caithness before the construction of the M2W project. The M2W project upgrade are anticipated to be completed by 2030. PSE can initiate the transfer of the queue position at this point. PSE will be required to post financial security to BPA before the construction of the M2W project. Based on the current cost estimates, PSE will have to provide approximately [REDACTED] in financial security for the 100 MW, based on pro rata rates for the total upgrade cost. Financial security can be posted to BPA in the form of an irrevocable standby letter of credit or a cash deposit. This letter of credit or deposit would need to be posted before the construction of the M2W project, and will be reduced by [REDACTED] each year over a 5-year period after the completion of the upgrade. BPA is currently projecting an incremental rate of [REDACTED] of BPA's current embedded rate for a 30-year period for the 100 MW service. At closing PSE will reimburse Caithness for [REDACTED] paid to BPA for the environmental review. PSE's assumption of this 100 MW transmission queue position would not bind PSE to post any letter of credit or pay any additional deposit until the environmental review is completed.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 10. Operations Organization



PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 10. OPERATIONS ORGANIZATION

## Operations Organization

The following describes the functional structure and scope of work delineation used at PSE's existing wind plants. Please note that the current General Electric (GE) Full-Service Agreement (FSA) for the Beaver Creek Wind Project is not acceptable in its current draft form and will need to be further negotiated and structured with terms and conditions acceptable to PSE. The conditions to closing the Membership Interest Purchase Agreement (MIPA) require that the FSA, as well as the Balance of Plant (BOP) Agreement and Turbine Supply Agreement (TSA), shall each be in agreed form with each of their respective counterparties, and otherwise in form and substance satisfactory to PSE in its reasonable discretion (not to be unreasonably withheld or conditioned).

Overall management of the Beaver Creek Wind Project (Project) will be integrated into the existing PSE Generation Wind Stream Management Group with a small locally based team (new) as well as remote resources (existing) to perform the operations, maintenance, plant monitoring and control activities required to operate the Project. The PSE Load Office and energy traders will control and dispatch generation.

PSE will be responsible for overall site management, plant-level monitoring and control, scheduling of generation, and the service and maintenance of the infrastructure systems, including the operations and maintenance (O&M) building and ancillary equipment, medium voltage (MV) collection and communication systems, access roads, substation, supervisory control and data acquisition (SCADA), high voltage (HV) inter-tie line, and associated vegetation management. PSE will use local independent third-party contractors to perform on-site balance of plant infrastructure work with support from existing PSE departments.

GE Renewables, under the FSA, will perform wind turbine service, maintenance, and repair during the initial warranty period and the first [REDACTED] years of operation. The scope will include 24/7 turbine monitoring and diagnostics, service and maintenance, repairs and component replacements, and the supply of parts, components, and consumable materials necessary to meet scheduled and unscheduled turbine service and performance requirements.

When the project layout, size, and generating capacity are finalized, a pro-forma O&M budget will be fully developed for 20 years of operation. Given the operating history of wind projects, it is assumed that wind turbine and plant infrastructure system maintenance requirements will increase over time, resulting in O&M costs that are projected to grow over the lifetime of the Project.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 11. Risks and Mitigations

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 11. RISKS AND MITIGATIONS**

## Risks and Mitigations

This appendix describes the risks and mitigations identified by PSE's subject matter experts for Phase I of the Beaver Creek Wind Project. PSE also retained legal firm Baker Botts to perform due diligence and identify key risks. Attachment A to the appendix presents this report. PSE anticipates that all red and yellow flagged items will be addressed between now and closing.

Project risks vary in nature and extent based on the stage of the Project. There are three principal stages of the Project with unique risk profiles, as follows:

- a. Pre-construction stage
- b. Construction stage
- c. Operations stage

The present board package seeks authorization from the Board of Directors to execute the Membership Interest Purchase Agreement (MIPA) with Caithness Beaver Creek, LLC. The MIPA would not commit PSE to construct the project. PSE will seek separate board approvals for the contracts and construction funding prior to constructing the project, including the Engineering, Procurement and Construction (EPC) Balance of Plant (BOP) Agreement, GE Turbine Supply Agreement (TSA) and Full-Service Agreement (FSA) for Operations and Maintenance (O&M) services. Therefore, this appendix focuses on the specifics of the pre-construction stage risks. Construction and operations risks and mitigations will be expanded upon in a future board request.

### Pre-Construction Stage

After executing the MIPA, Caithness must satisfy certain conditions precedent to close the transaction and receive the first 50% of the [REDACTED] MIPA purchase price. These conditions precedent are summarized in Section 2 of the Report. The Pre-construction phase will begin upon MIPA contract execution and will extend until the BOP has issued notice to proceed (NTP) for construction as instructed by PSE. Risk areas of focus for this stage include permitting and studies, real estate, and transmission.

#### Permitting and studies

The developer provided a permitting and agreements checklist (see summary of current permits and agreements in Appendix 8). Additional local, state, and federal permits and environmental baseline studies not identified on the Project Company's permitting and agreements list will be required to construct and/or operate the Project. PSE intends to perform environmental and cultural studies between August 2023 and April 2024. A list of permits to be obtained by the BOP contractor is also included in Appendix 8.

Overall, PSE has concluded that proceeding with the Project based on available information presents an acceptable to moderate risk, as there is cushion in the construction schedule to account for additional permitting, if necessary. The MIPA requires that prior to closing, the Project Company (1) obtain any

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 11. RISKS AND MITIGATIONS**

conditional use permits (CUPs) required for all Project construction and operation, (2) update avian use surveys (note the Project Company will not complete all use surveys required to support an application for an Eagle Incidental Take Permit), and (3) complete a full site delineation for waters of the United States.

**Energy delivery**

PSE's plan for delivering the Project's output to PSE's load involves the following primary undertakings:

- Secure one leg of transmission on NorthWestern's system to either Colstrip or Garrison that will tie to PSE's existing transmission rights from Montana to Washington.
- Pseudo-tie the resource into PSE's balancing authority area (BAA).
- Secure sufficient Dynamic Transfer Capability (DTC) on Eastern Intertie.
- Complete a study to identify any potential impacts due to the change of generating resource type flowing on the Colstrip Transmission System (CTS).

PSE has assessed the transmission risk as acceptable overall. PSE initiated transmission service requests (TSRs) and is submitting study requests that will further daylight any potential impacts on the Project's schedule and cost.

**Real estate**

The Project lands are secured via six separate wind facility lease and easement agreements within Stillwater County, Montana, which provide the necessary real estate rights required for the development, construction, and operation of the Project. PSE considers the overall real estate risk between low and acceptable and is currently reviewing all real estate documents to validate the legal descriptions and ownership of each of the six leases.

The following table describes the risks associated with this stage of the Project:

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Table 1. *Pre-construction stage risks and mitigations*

Risk area (risk level)	Risk	Mitigation
<b>Real estate</b>  (Low ● to Acceptable ●)	Wind lease and easement documents are currently under review for sufficiency and completeness. Additionally, PSE recently received a title report for all leased lands that is currently under review. An ALTA survey of the leased lands, which depict property lines, exceptions to title, non-title items (fence lines etc.) was received on July 17, 2023 and is being analyzed in conjunction with both the lease documents and exceptions to title as shown on the title report.	<p>All documents are under review for content and sufficiency. Lease amendments will be needed to incorporate royalty terms that coincide with a utility model (presently the leases contemplate a PPA model). PSE will address and resolve any items of concern prior to closing. Insofar as there are six landowners, it is anticipated that items requiring resolution can be handled in a timely manner and in conjunction with the ultimate transaction schedule.</p> <p>Caithness is pursuing estoppel certificates and subordination agreements with the landowners as a condition to closing the MIPA.</p> <p>Caithness is required, as a condition to close, to deliver a title policy insuring the real property of [REDACTED] and including the endorsements outlined in the MIPA. PSE will increase the title policy to the full value of the project.</p>

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation
<b>Permitting and studies</b>  <b>(Acceptable ●)</b>	No consultation with State and Federal Wildlife Agencies or use of Federal Wind Siting Guidelines. Limited wildlife studies do not follow the U.S. Wildlife Wind Power Guidelines. As a result, eagle and sensitive species fatality risks are unknown.	<p>PSE intends to consult with the Montana Fish and Game and U.S. Fish and Wildlife Service to determine whether there are issues of concern prior to final layout and construction, so sensitive areas can be avoided.</p> <p>PSE intends to conduct avian point count and nest surveys per federal Wind Siting Guidelines prior to final layout and construction, so sensitive areas can be avoided.</p>
	Aviation, radar, and microwave studies must be completed for the consolidated layout of Stillwater County.	<p>The following studies will need to be completed before finalizing the layout to avoid interfering with radar, microwave, and military flight paths:</p> <ul style="list-style-type: none"> <li>• Department of Defense radar study</li> <li>• Federal Aviation Administration aeronautical study</li> <li>• Military fly zone analysis</li> <li>• Microwave beam path study</li> </ul>
	Road, underground, or overhead line crossings that require disturbance or fill over waters of the state or United States (drainages or wetlands) are unknown. The risk is that permits may be required that could cause construction delays.	PSE will hire an environmental consultant to complete a delineation of any waters of the United States. To the extent that waters of the United States are identified, Caithness will demonstrate to PSE's reasonable satisfaction that the Project may be constructed without obtaining any required permits, or they must obtain any necessary permits needed.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation
<b>Cultural resources</b> (Acceptable ●)	Native American tribes were never contacted to determine whether wind development activities would impact areas—which have mostly been under private ownership for decades—of significance to them. The Crow Reservation appears to be about two hours away, and the Project is likely on Crow ancestral land.	PSE intends to consult with affected tribes about cultural resources.
	Caithness provided a basic literature review summary report as a cultural resources review. This report contained limited information about the area and the possibility of encountering cultural resources. The report covers 22 thousand acres, cited only six surveys, and identified one archaeological site. The studies are inadequate to determine cultural resource risk for such a large area.	PSE will conduct a cultural resource study that allows the appropriate level of decision about effects to cultural resources prior to construction, so that PSE can avoid impacts to these resources or provide mitigation should avoidance not be possible. The Project site is on disturbed agricultural land, which generally reduces the overall cultural resource risk.
<b>Community</b> (Acceptable ●)	<p>While some local community members and county commissioners have expressed concern through the CUP process about increased traffic during development, and safety for residents and their vehicles, the CUP was approved, outlining requirements to help mitigate these concerns.</p> <p>Siting renewable energy projects in rural areas can be difficult or controversial, raising concerns about infrastructure blight, use of agricultural land, support for conventional resources (e.g. coal), and misinformation about renewable energy sources.</p>	PSE intends to develop a public affairs and community relations plan to mitigate potential local concerns and reputational risk. A robust public affairs plan would include activating support from stakeholders; a media strategy to promote and generate coverage of the Project; leveraging and updating PSE's existing PSE in Montana website to share information about the Project and its local benefits; and completing tribal outreach, among other strategies and tactics.



PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation
<b>Transmission and integration</b>  <b>(Acceptable ●)</b>	Network upgrades on NorthWestern Energy's ("NorthWestern") transmission system for delivery to Colstrip or Garrison, are unknown.	PSE is submitting and requesting transmission service to both Colstrip and Garrison for total project output through NorthWestern to evaluate the better delivery path. Previous studies for Network Resource Interconnection Service (NRIS) and Network Integration Transmission Service (NITS) have not identified any significant network upgrades. Further, PSE is requesting options for bridge conditional firm service which could, if offered, allow earlier delivery options.  <div style="background-color: black; height: 80px; width: 100%;"></div>
	DTC is needed for dynamic transfers on the Eastern Intertie and will be necessary to place the project PSE's balancing area. Due to limited DTC, Bonneville Power Administration (BPA) will require studies and contracting for dynamic transfer. The study may trigger a need for new voltage controls on existing reactive devices or new reactive devices to support the dynamic transfer. The current term for a DTC award is two years without any rollover rights and will present a continued risk on PSE's ability to pseudo-tie the resource.	PSE is submitting DTC request to BPA to initiate the study process to daylight DTC availability, and identify any upgrades to support PSE's DTC needs over BPA's intertie. Once awarded, PSE will continue to request DTC through BPA before the term end date. PSE could also work with BPA to fund upgrades to enable additional DTC at Garrison.  <div style="background-color: black; height: 80px; width: 100%;"></div>

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation
	The Beaver Creek wind project will need to be pseudo-tied to PSE's BAA, as would any other Montana resources. This is a complex effort across multiple PSE departments that requires extensive coordination, design, and implementation. It affects the metering, communications, operations, transmission, and energy trading groups.	<p>PSE can initiate these efforts after closing to help reduce COD risks. PSE has gained recent experience pseudo-tying a Montana wind resource (Clearwater) that can be leveraged for the Beaver Creek integration.</p> <div></div>
	PSE has point-to-point transmission rights on the CTS that will need to be studied by the CTS owners to allow PSE to pair the rights with a new generating resource.	<p>PSE Merchant has submitted a change of source request to PSE's Transmission Provider function to initiate the study and identify any potential impacts.</p> <div></div>

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 11. RISKS AND MITIGATIONS**

**Construction and Operation Stages**

The Construction Stage of the Project commences when NTP is issued to the wind turbine generator supplier (GE) under the TSA and to the BOP contractor (to be determined) under the BOP Agreement. The Project enters the Operations Stage once substantial completion is achieved.

PSE's Project Management and Operations teams have previous experience developing, constructing, and operating large scale facilities in Washington. Each of the EPC contractors under consideration have extensive experience building wind facilities across the United States. The PSE Major Projects department will oversee construction and commissioning of the Project, along with readying the Project for operations. On-site management of the Beaver Creek project will be performed by a third-party firm hired by the PSE Major Projects department. See also Appendix 10 for more information.

As described above, PSE will seek separate approval from the Board of Directors to construct the facility. The table below captures certain high-level risks associated with the construction stage of the Project. PSE will provide more information about construction and operation risks in a future report.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 11. RISKS AND MITIGATIONS

Table 2. *Preliminary construction stage risks and mitigations (identified during pre-construction stage review)*

Risk area (risk level)	Risk	Mitigation
<b>Construction</b> (Low ●)	Permitting or contracting issues may prevent construction from starting in Q4 2023.	If permitting or equipment issues delay construction start to spring 2024 and/or extend construction duration, there is still adequate time to meet a late 2025 COD, as current engineering, procurement, and construction schedules contemplate an 18 month start to finish (including one winter).
<b>Major Equipment</b> (Acceptable ●)	Development phase equipment selection is incomplete; permitting/technical requirements could cause additional cost or lead time.	Work with project team and equipment vendors to ensure equipment is reasonably priced and available.
	Actual annual energy production may be less than expected.	PSE to review site suitability and design documentation when the counterparty delivers it. Require contractual performance guarantees from vendors/contractors.  PSE hired DNV to review the forecasted annual energy assessment. DNV results indicate a higher forecast annual generation than the Caithness provided energy assessment report from ArcVera.
	TSA and FSA terms may not meet PSE's standards and requirements.	Engage and re-negotiate TSA and FSA agreement with GE.

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 11. ATTACHMENT A**

# Attachment A

## Risk Report (PREPARED BY BAKER BOTTS)



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment 12. Stand-Alone Financial Pro Forma

<b>THE PROJECTION</b>	<b>1</b>
<i>Development Budget:</i>	1
<b>TABLE 2: DETAILED QUARTERLY DEVELOPMENT AND CONSTRUCTION BUDGET</b>	1
<i>Development Rights:</i>	2
<b>TABLE 3: ALLOCATION OF BEAVER CREEK DEVELOPMENT FEE</b>	2
<i>Wind Turbine Generators:</i>	2
<i>Balance of Plant:</i>	2
<i>PSE Project Management, Engineering, Construction Permitting, Third-Party Services,</i>	
<i>Community Relations, and Overhead:</i>	2
<i>Sales Tax:</i>	2
<i>Contingency:</i>	3
<i>AFUDC:</i>	3
<b>INCOME STATEMENT – ASSUMPTIONS</b>	<b>3</b>
REVENUES:	4
<i>Revenue Requirement:</i>	4
<i>Fixed Transmission and Balancing:</i>	4
<i>Operations Expense:</i>	4
<i>Production Payments:</i>	4
<i>Maintenance Expense:</i>	4
<i>Property Tax:</i>	5
<i>Insurance:</i>	5
<i>MT generation and transmission tax:</i>	5
<i>EBITDA:</i>	5
<i>Book Depreciation:</i>	5
<i>Interest Expense:</i>	5
<i>Earning Before Taxes</i>	5
<i>Current Income Taxes:</i>	5
<i>Deferred Income Taxes:</i>	5
<i>Production Tax Credit (PTC)</i>	6
<i>Total Income Taxes:</i>	6
<i>Net Income Taxes:</i>	6
<i>Return on Equity (ROE):</i>	6
<b>BALANCE SHEET – ASSUMPTIONS</b>	<b>7</b>
ASSETS:	9
<i>Property Plant and Equipment (“PPE”)</i>	9
<i>Accumulated Depreciation:</i>	9
<i>Liabilities &amp; Equity:</i>	9
LIABILITIES:	9
<i>Long Term Debt:</i>	9
<i>Debt Principle Paid:</i>	9
<i>Accumulated Deferred Taxes:</i>	9
EQUITY:	9
<i>Common Shares:</i>	9
<i>Retained Earnings:</i>	9
<b>CASH FLOW – ASSUMPTIONS</b>	<b>10</b>
<i>Operating Cash Flow:</i>	11
<i>Investment Cash Flow:</i>	11
<i>Financing Cash Flow:</i>	11



## The Projection

The following write-up and associated pro forma (the “Projection”) describe the incremental financial impact the Project will have over a 25-year period through 2050 from a stand-alone project perspective.

The projection includes the total development and construction budget and the pro forma financial statements including income statement, balance sheet and cash flow statement.

### Development Budget:

The Development Budget shown in Table 1 is the Project cost to complete development activities in preparation for the construction of the project. The following line items explain, at a high level, what costs are included in this category.

Table 2 shows the development and construction budget's quarterly forecast from Q3 2023 to Q3 2025 when the Project is expected to be online.

**Table 1: Total Development and Construction Budget**

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Development Rights			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
Wind Turbines			
GE Contract Price			
Balance Of Plant			
Step-up Transformers			
EPC Contract Price			
PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead			
Sales Tax			
Contingency			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	515,272	2,342	100.0%

**Table 2: Detailed Quarterly Development and Construction Budget**

Draft Beaver Creek Budget (\$000)	
Detailed Quarterly Budget	
Development Fee	
<b>Plant Costs</b>	
Wind Turbines	
Balance of Plant	
Transformer/Breakers	
<b>PSE Project Management,</b>	
<b>Contingency</b>	
Total	
Cumulative Total	
Qtrly %	
Other notes:	
1. PSE owner contingency includes Phase 1 only to match PPA vs Ownership Evaluation Model	
2. PSE Phase 1 allocation is based on MWs of planned build out, i.e. 232MW for phase 1 and 83MW for phase 2 for a total of 315MW.	

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Note: Start of construction may be delayed to 2024 which would shift spending profile.

**Development Rights:**

PSE will purchase the Project assets from Caithness Beaver Creek, LLC for approximately [REDACTED]. The development fee will be allocated to the different phases. For modeling purposes, the [REDACTED] fee has been allocated to [REDACTED] and [REDACTED] between the current project and future expansion, respectively, based on the LGIA of 315 MW and allocating 232MW and 83 MW generation capacity split as shown in Table 3.<sup>1</sup>

**Table 3: Allocation of Beaver Creek Development Fee**

Nameplate Capacity		Allocation %
Beaver Creek Phases		based on Capacity Allocation of Development Fee
Phase 1	232.00 MWs	[REDACTED]
Phase 2	83.00 MWs	
Total	315.00 MWs	

**Wind Turbine Generators:**

A turbine supply agreement with GE estimated the cost of supply, delivery, and commissioning of 40 GE 2.8-127 turbines and 48 GE 2.5-127 turbines for the Project at [REDACTED]. PSE will pay GE for the wind turbines according to a series of milestones, including a down payment, initiation and completion of production, shipment and delivery, commissioning, substantial completion and final completion. Timing of specific milestones and associated payments will be negotiated in the Turbine Supply Agreement.

**Balance of Plant:**

The current cost estimate for BOP work is [REDACTED] based on three bids received by Caithness. Substation step-up transformers and breakers cost are estimated to be [REDACTED]. The total cost for all work under the BOP category is estimated to be [REDACTED].

**PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead:**

The PSE Project Management, Engineering, Construction Permitting, Third-Party Services, Community Relations, and Overhead budget includes costs associated with PSE's managerial oversight of the construction phase, ongoing real estate work, required environmental assessments, wind resource monitoring, power performance testing, engineering work for roads, collector systems and substations, PSE's internal overhead rate, and construction insurance. The draft total of such expenses amounts to [REDACTED] or [REDACTED]. This is estimated based on the budget proposed by Caithness on June 26, 2023 and is consistent with PSE's past projects such as LSR at [REDACTED] of total project budget.

**Sales Tax:**

There is no sales tax in Montana.

<sup>1</sup> 315 MW is the LGIA interconnection limit.

**Contingency:** A [REDACTED] contingency is added to the total project budget to account for cost risk and unknown change orders as certain expenditures remain unknown.

**AFUDC:** Allowance for Funds Used During Construction (AFUDC) represents the cost of both the debt and equity funds used to finance utility plant additions during the construction period.

For gas construction work in progress (CWIP), AFUDC is calculated based on the Washington Utilities and Transportation Commission (WUTC) rate, which is the current approved weighted average cost of capital (WACC), and capitalized to gas plant upon completion of construction. For electric and common CWIP, only AFUDC calculated under the FERC formula is capitalized to plant.

The AFUDC rate allowed by the WUTC can differ from the FERC formula. When such differences exist, PSE capitalizes the difference as a regulatory asset, crediting miscellaneous income.

Based on the 2022 General Rate Case settlement, the weighted average cost of capital for 2023 and 2024 is 7.16%.

## Income Statement – Assumptions

Income Statement	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>Revenues</b>														
<b>Operating Expenses:</b>														
Transmission & Balancing Costs														
Fixed Operating Expense														
<b>Total Operating Expenses</b>														
<b>EBITDA</b>														
Depreciation (book)														
Interest														
<b>Earnings before taxes</b>														
<b>Income taxes:</b>														
Current														
Deferred														
PTC														
ITC														
<b>Total income taxes</b>														
<b>Net Income</b>														
<b>ROE</b>														

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

### Revenues:

**Revenue Requirement:**

The Projection calculates revenues required to recover the Project operating expenses, the capital investment, plus the cost of capital to finance the Company's investment in ratebase.

The revenue requirement calculation is an indicator of the cost to customers under assumptions of perfect regulation. While the pro forma assumes perfect regulation, there is frequently a lag between the time a project is placed in service and when the project is included in customers' rates. RCW 80.80 allows utilities to defer all costs associated with renewable energy investments and generation until prudence is determined by the WUTC. Once the project is placed into rates, recovery of deferred costs occurs over a specific time period as specified by the WUTC. Appendix 18 explains the accounting and regulatory plan associated with placing the Project in rates.

**Fixed Transmission and Balancing:**

Transmission from the Project to PSE's service territory flows across the NorthWestern and BPA transmission systems, as well as the CTS if the project output is delivered over Northwestern to Colstrip rather than Garrison (PSE is pursuing both options). In both cases, the incremental transmission and balancing cost to PSE customers will be NorthWestern's point-to-point (PTP) transmission service, and BPA's scheduling and wind integration tariff. NorthWestern's tariff is ██████/W-year. BPA's scheduling and wind integration tariff is ██████/W-yr. BPA holds bi-annual rate cases every other September to modify the aforementioned tariffs. Tariff increases for PTP and scheduling over the past several rate cases have been about 6%. PSE holds NorthWestern's tariff constant and escalates BPA's balancing expenses by 6% every two years.

These charges are only applied after the project's COD in August 2025.

**Operations Expense:**

The current modeled O&M is based on PSE's actual O&M from 2017 to 2022 of its existing Wild Horse, Hopkins Ridge and Lower Snake River wind farms. The estimated O&M include transmission line maintenance, collection system maintenance, environmental and compliance, plant operations, road fence and ground services, site fiber services, substation maintenance, etc, and amounts to ██████/kw-yr plus escalation or ██████ for a full year of operation.

**Production Payments:**

The current least payment to the landowners is estimated at ██████ of the Northwestern Avoided Energy cost of ██████/MWh plus escalation, or ██████ per year plus escalation.

**Maintenance Expense:**

The current estimate of the GE service contract is ██████ per turbine for the 88 turbines. The annual total is ██████

<b>Property Tax:</b>	The project may qualify to be taxed at [REDACTED] or [REDACTED] of value for the first 5 years, increasing to 100% over the next 5 years, and continuing at full value in years 10 and thereafter. This requires county approval prior to the start of construction, which may or may not have already been requested and will be verified. For now, it is estimated at 1.5% as the property tax rate. This amounts to [REDACTED] per year.
<b>Insurance:</b>	Insurance cost is estimated based on a [REDACTED] insurance rate plus escalation. This amounts to [REDACTED] per year. <sup>2</sup>
<b>MT generation and transmission tax:</b>	The total O&M forecast for the Project includes a) \$0.15/MWh Wholesale Energy Transaction Tax per Montana Code Annotated 2021 15-72-104 and b) a \$0.2/MWh Electrical Energy Producers Tax per Montana Code Annotated 2021 15-51-101.
<b>EBITDA:</b>	Earnings before interest, taxes, depreciation and amortization (EBITDA) are calculated as revenues less all operating expenses.
<b>Book Depreciation:</b>	The Projection models depreciable lives for book and tax purposes. For book depreciation, all assets except land are depreciated using the straight line method. All assets are depreciated over 25 years.
<b>Interest Expense:</b>	Interest Expense is calculated based on PSE's mid-year pro forma rate base multiplied by the assumed debt percentage in the capital structure. This method is consistent with conventions used by regulated utilities. The Projection assumes a rate of return of 7.16% and a debt percentage of 51.00% at a weighted pretax cost of 5%. These rates are based on the rate schedule published December 2022 by the Washington Utilities and Transportation Commission.
<b>Earning Before Taxes</b>	Earning before taxes equals to EBITDA less book depreciation and interest expense.
<b>Current Income Taxes:</b>	Current Income Taxes are calculated as EBITDA net of interest and tax depreciation multiplied by the Federal corporate income tax rate of 21%.
<b>Deferred Income Taxes:</b>	Deferred Income Taxes are calculated as the difference between book and tax depreciation expenses multiplied by the Federal corporate income tax rate of 21%.

<sup>2</sup> The actual insurance rate will be re-calculated based on final construction cost estimates.

**Production Tax  
Credit (PTC)**

The Project qualifies for the Production Tax Credit (PTC) or the Investment Tax Credit (ITC). Our modelling indicates that the PTC is more beneficial to customers.

The Inflation Reduction Act (IRA) significantly increased the federal income tax incentives for renewable energy projects. The Project is expected to qualify for the PTC at a rate of \$27.50 per MWh, plus an annual IRS inflation adjustment. In addition, the Project is expected to qualify for the domestic content bonus credit which would increase the PTC rate by +10% to \$30.25 per MWh. At this time, it appears that the Project will not qualify for the “energy communities” benefit. Management will continue to monitor the evolution of the tax credit in order to maximize the value of these incentives for the benefit of customers.

PTCs claimed under the IRA are transferable. Transferability will allow PSE to convert the PTC to cash regardless of PSE’s taxable income by selling the PTCs to an unrelated 3rd party. This may be a source of significant value to customers by vastly accelerating the timing of the pass-back of the credits on customers’ bills. The modeling for the project assumes that PTCs will be sold when earned at 95% of face value.

PTCs are passed along to customers under a separate tariff, Schedule 95A. The Schedule resets each October with all PTCs that have been realized in a cash benefit, either through usage on a tax return or sold to a third party, being passed to customers over the following 12 months.

PTCs can be generated for 10 years. Since the Project’s expected COD is 8/31/2025, the PTC will generate for the four months in 2025, full year from 2026-2034, and for the eight months in 2035.

**Total Income  
Taxes:**

Total income taxes are the sum of current, deferred income taxes, PTC and ITC.

**Net Income  
Taxes:**

Net income is earnings before taxes net of total income taxes.

**Return on Equity  
(ROE):**

ROE is calculated as net Income divided by the equity portion of the average ratebase in each year and equates the authorized ROE of 9.40%.

## Balance Sheet – Assumptions

Balance Sheet	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>ASSETS:</b>														
<b>Current Assets:</b>														
Total Current Assets														
<b>Non-Current Assets:</b>														
Property, plant & Equipment:														
Construction Work in Progress														
PP&E - Gross														
Accumulated Depreciation														
PP&E - Net														
<b>TOTAL ASSETS</b>														
<b>LIABILITIES &amp; OWNER'S EQUITY:</b>														
<b>Current Liabilities:</b>														
Total Current Liabilities														
<b>Non-Current Liabilities:</b>														
Accumulated deferred income tax liability														
Debt														
Total Non-Current Liabilities														
<b>Total Liabilities</b>														
<b>Owner's Equity - total</b>														
<b>TOTAL LIABILITIES &amp; OWNER'S EQUITY</b>														
<b>Balance sheet followforwards:</b>														
<b>Property, plant &amp; equipment - gross:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated depreciation:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated deferred income tax liability - PP&amp;E:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Long-term debt:</b>														
Beginning balance														
Issuances														
Repayments														
Ending balance														
<b>Average balance</b>														
<b>Interest expense</b>														
<b>Owner's Equity</b>														
Beginning balance														
Issuances														
Current period earnings														
Dividends														
Ending balance														
<b>Equity Ratio</b>														

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



Balance Sheet	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>ASSETS:</b>														
<b>Current Assets:</b>														
Total Current Assets														
<b>Non-Current Assets:</b>														
Property, plant & Equipment:														
Construction Work in Progress														
PP&E - Gross														
Accumulated Depreciation														
PP&E - Net														
<b>TOTAL ASSETS</b>														
<b>LIABILITIES &amp; OWNER'S EQUITY:</b>														
<b>Current Liabilities:</b>														
Total Current Liabilities														
<b>Non-Current Liabilities:</b>														
Accumulated deferred income tax liability														
Debt														
Total Non-Current Liabilities														
<b>Total Liabilities</b>														
<b>Owner's Equity - total</b>														
<b>TOTAL LIABILITIES &amp; OWNER'S EQUITY</b>														
<b>Balance sheet rollforwards:</b>														
<b>Property, plant &amp; equipment - gross:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated depreciation:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated deferred income tax liability - PP&amp;E:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Long-term debt:</b>														
Beginning balance														
Issuances														
Repayments														
Ending balance														
<b>Average balance</b>														
<b>Interest expense</b>														
<b>Owner's Equity</b>														
Beginning balance														
Issuances														
Current period earnings														
Dividends														
Ending balance														
Equity Ratio														

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Assets:

Property Plant  
and Equipment  
("PPE")

For book purposes, the value of the plant reflects capitalization of all the Project capital costs.

Accumulated  
Depreciation:

Accumulated Depreciation is the sum of the annual depreciation identified in the Income Statement and offsets the total PPE in the line above.

Liabilities &  
Equity:

The Projection models financing activities for the Project based on the assumption that PSE will issue new debt and equity to fund the Project. The Projection assumes perfect financing activities to accurately reflect the incremental regulated debt and equity cost to revenue requirements. However, PSE may in practice use a combination of current short and long-term debt and equity to fund the Project.

Liabilities:

Long Term  
Debt:

Long term debt is based on a capital structure of 51.00% debt. Based on a total capital cost of \$515 million, long term debt totals approximately [REDACTED]

Consistent with regulated utility modeling methods, debt is repaid in a fashion that allows the Projection to maintain PSE's equity/debt split on the Balance Sheet throughout the life of the Project. This is accomplished by equating debt payment to the sum of depreciation, and deferred tax multiplied by the PSE debt percentage.

Debt Principle  
Paid:

Debt Principle Paid is the cumulative principle paid on the Long-Term debt issued to finance the Project.

Accumulated  
Deferred Taxes:

Accumulated Deferred Taxes are calculated as the deferred tax balance from previous year plus/less the deferred tax balance from current year.

Equity:

Common  
Shares:

Common Shares is the cumulative capital contributions from equity holders.

Retained  
Earnings:

Retained Earnings is the repayment of the initial equity invested in the Project. Calculations are described at the beginning of the Balance Sheet section.

## Cash Flow – Assumptions

Statement of Cash Flows	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>Operating Cash Flows:</b>														
Net income														
Adjustments to reconcile net income to net cash from operating activities:														
Depreciation														
Changes in working capital (ADIC)														
Net cash provided by operating activities:														
<b>Investing Cash Flows:</b>														
Purchase of property, plant & equipment														
Net cash provided by investing activities														
<b>Financing Cash Flows:</b>														
Proceeds from issuance of debt														
Proceeds from raise of equity														
Proceeds from monetization of ITC														
Repayments of debt														
Dividends paid														
Net cash provided by financing activities														
<b>Statement of Cash Flows</b>														
<b>Operating Cash Flows:</b>														
Net income														
Adjustments to reconcile net income to net cash from operating activities:														
Depreciation														
Changes in working capital (ADIC)														
Net cash provided by operating activities:														
<b>Investing Cash Flows:</b>														
Purchase of property, plant & equipment														
Net cash provided by investing activities														
<b>Financing Cash Flows:</b>														
Proceeds from issuance of debt														
Proceeds from raise of equity														
Proceeds from monetization of ITC														
Repayments of debt														
Dividends paid														
Net cash provided by financing activities														

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Operating Cash Flow:	Operating Cash Flow is calculated as the sum of After Tax Net Income and depreciation from the Income Statement plus the change from the previous year in deferred taxes and working capital balances from the Balance Sheet.
Investment Cash Flow:	Investment Cash Flow is calculated as the capital expenditures net of any gain/loss on investments. This section only reflects the initial investment made to construct the Project.
Financing Cash Flow:	Cash from Financing is cash received from/paid to debt holders, and cash received from/paid to equity holders. Debt and equity is repaid in a fashion that allows the Projection to maintain PSE's capital structure ratio on the balance sheet throughout the life of the Project. This is accomplished by multiplying the weight of debt by the value equal to the total operating cash minus net income. All available Cash from Operations is distributed to equity holders net of the debt repayment. This cash distribution methodology results in the Projection showing negative cumulative retained earnings.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 13. Financial Analysis: Ownership vs. PPA

## PSE Report to the Board of Directors: Beaver Creek Wind Project

## APPENDIX 13. FINANCIAL ANALYSIS: OWNERSHIP VS. PPA

## Financial Analysis: Ownership vs. PPA

### PPA vs Ownership Evaluation Model (“POEM”)

During post- Phase 2 of the 2021 All-Source Request for Proposals (RFP) evaluation, PSE worked with consultants Thorndike Landing and developed a power purchase agreement (PPA) vs. Ownership Evaluation Model (POEM). The POEM model is an Excel-based model that assesses the relative attractiveness of PPA versus asset ownership offer structures for selected generation types, including solar, wind, battery and pumped hydro storage. The model evaluates the costs and benefits to PSE customers over the terms of proposed PPAs and the useful lives of owning generation facilities.

The model determines the relative costs and benefits to PSE customers over a defined timeframe, including but not necessarily limited to:<sup>1</sup>

- For owned assets:
  - Expected capital costs
  - Operating costs
  - Property tax
  - Insurance
  - Tax incentives
  - Financing costs
  - Integration and transmission upgrade costs
  - Expected residual value
- For PPAs:
  - Expected cost of power purchased under proposed PPAs
  - Impact of debt imputed under long-term contracts
  - Replacement resource costs of post PPA period (if applicable)

The model uses an input control tab for project and global inputs, such as resource type, nameplate, net capacity factor (NCF), degradation. For ownership, this includes the resource’s capex, operations & maintenance (O&M), eligible tax incentives such as production tax credit (PTC) or investment tax credit

---

<sup>1</sup> The model focuses on the relative costs/benefits between ownership and PPA structure of an asset, therefore, mutual cost factors such as social cost of greenhouse gases, transmission wheeling costs, balancing costs, charging costs that don’t vary due to commercial structure are reviewed and considered, but not explicitly modeled for the PPA vs. Ownership cost/benefit analysis.

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 13. FINANCIAL ANALYSIS: OWNERSHIP VS. PPA**

(ITC). For PPA, this includes the resource's PPA price and term length. For global inputs, the model uses PSE's weighted average cost of capital (WACC) and income tax rate.

The main output of the model is the levelized cost of energy (LCOE) for the ownership and PPA options of a given resource. The model calculates the revenue requirements of the modeled resource, either PPA or ownership, assuming perfect regulatory recovery. This means that the economic analysis is not tied to a particular regulatory proceeding. It calculates the revenue requirements assuming cost recovery at the start of the PPA term or commercial operation date (COD) of an ownership. It calculates the value of tax incentives (PTC, ITC, accelerated tax vs. book depreciation) to customers. It also calculates allowance for funds used during construction (AFUDC) based on projected cash payments during the construction period.

The model evaluates risks associated with the post-PPA period when a PPA's term length is shorter than the useful life of owning the asset. The model compares the levelized annual cost of the PPA costs and that of the ownership asset. To quantify re-contracting risk and replacement power risk after a shorter PPA term, the model also compares the levelized annual cost and total costs of the PPA with costs of a replacement resource, to the cost of the ownership asset.<sup>2</sup>

The model also establishes a framework to evaluate the terminal value of owned generation that exists at the expiration of proposed PPAs. The terminal value can be calculated as a % of the project's capital cost.<sup>3</sup>

The model is also used to calculate a PPA equivalent price to compare all projects of the same technology on an LCOE or leveled cost of capacity (LCOC) basis.

**Key Findings and Results**

For Beaver Creek, the busbar cost of the levelized PPA cost is ████████ MWh compared to that of ownership at ████████ MWh.

<sup>2</sup> For example, assume both a 25 year PPA and an ownership are proposed by a bidder for a solar project. The model will compare the levelized annual cost of the 25-year PPA + replacement cost for 10 years and the 35-year ownership. The replacement cost is based on a new generic solar cost or forecast market prices for years 21 to 35.

<sup>3</sup> The 8% of capital cost is typically associated with permitting, inspection and interconnection based on an NREL study. Thorndike Landing's research shows that either 8% of a project's cost or an 8-10x EBITDA is a reasonable basis for determining the terminal value.





*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 14. Financial Analysis: PTC vs. ITC with Normalization

## PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 14. FINANCIAL ANALYSIS: PTC VS. ITC WITH NORMALIZATION****Financial Analysis: PTC vs. ITC with Normalization**

Under the Inflation Reduction Act (IRA), production tax credits (PTC) and investment tax credits (ITC) are both available for wind and solar projects. During post-Phase 2 of the 2021 All-Source Request for Proposals (RFP) evaluation, PSE evaluated each wind or solar project ownership offer assuming that use of the tax credit would provide the most value to customers.

**PTC**

Under the IRA, the PTC's starting rate is \$27.50/MWh. The PTC rate increases over time with the Internal Revenue Service (IRS) published escalation rate based on inflation. The PTC can be generated for 10 years. Eligible facilities can also receive bonus PTCs for being an energy community or a facility constructed with domestic content. Each applicable bonus receives an additional 10% credit. Whenever PSE has more PTC than available tax liability, the difference can be carried forward for up to 20 tax years. Each year's PTC has its own 20-year tax life. The PTC is not a refundable credit.

As an example, if a qualifying facility has an annual generation of 100,000 MWh and is eligible for both bonuses, then its annual PTC (before escalation) can be calculated as  $100,000 * (27.5 * 120\%) = \$3,300,000$ .

**ITC**

The ITC is calculated as a percentage of the tax basis of the facility. The ITC is a one-time benefit which accrues to the taxpayer when the project is placed in service. In general, it can only be used to reduce the taxpayer's tax payment, as it is not refundable. PSE would reflect the expected ITC in the Company's projections of cash taxes. ITC has the same provision for the bonus credits as PTC. The base ITC rate is 30% of eligible expenditure. Each eligible bonus provides an additional 10% credit.

Once the amount of the ITC is determined, the taxpayer must reduce its tax basis of the investment by 50% of the ITC. This leaves 85% of the original tax basis available for MACRS depreciation. The allowance for funds used during construction (AFUDC) is also treated on a tax basis than it is on a book basis. On a tax basis, AFUDC is replaced with the IRS calculation for construction period interest (CPI). As a rough rule of thumb, CPI often comes in at about 75% of AFUDC.

**ITC Normalization**

For a wind or solar facility, ITCs received by a utility will be subject to the normalization provisions of the Internal Revenue Code (IRC). Those provisions specifically address how the ITC can be used to reduce customer rates. There are two components to the normalization provision:

- a) For PSE, the benefit of the ITC has to be amortized to customers over the book life of the asset, as a reduction to tax expense, and

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 14. FINANCIAL ANALYSIS: PTC VS. ITC WITH NORMALIZATION**

- b) The unamortized balance of the ITC can NOT be used to reduce rate base. The practical effect of ITC normalization is to reduce the net present value (NPV) of the ITC.

Non-utilities are not subject to the ITC normalization rules. Under the IRA, storage facilities such as batteries and pumped hydro storage are not subject to the ITC normalization rules.

As an example, if a qualifying facility has ITC-eligible spending of \$100,000,000, and is eligible for both levels of bonuses, then its ITC can be calculated as [REDACTED]. Its tax basis for tax depreciation is [REDACTED].

Under the normalization rules stated above, and assuming that the life of the facility is 25 years, customers will receive [REDACTED] year of the credit. The net present value (NPV) of the ITC with normalization is [REDACTED] at PSE's authorized rate of return of [REDACTED].

**Transfer discount**

PTCs and ITCs can be used to reduce PSE's tax payment, but the usage is limited to [REDACTED] of PSE's tax liability in any one year; so for evaluation purposes, the model assumed a 5% transfer discount for PTCs and [REDACTED] discount for ITCs based on the latest market guidance.

**Key findings and results**

For Beaver Creek, the NPV busbar project cost with PTC election [REDACTED]. This compares to ITC election ([REDACTED] ITC with normalization) at [REDACTED].



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment 15. Alternatives Analysis



# 2021 ALL-SOURCE REQUEST FOR PROPOSAL

MODELING UPDATES AND DRAFT RESULTS  
INCLUDING BEAVER CREEK ANALYSIS

July 26, 2023

# Contents

<b>1. Introduction and Key Assumptions.....</b>	<b>1</b>
<b>2. Updates to the 2023 EPR Preferred Portfolio Aurora Model .....</b>	<b>1</b>
2.1. Aurora Version.....	1
2.2. Project Setup .....	2
2.3. Input Tables .....	2
2.4. Other Updates .....	4
<b>3. QA / QC Process.....</b>	<b>5</b>
<b>4. Reference and Portfolio Sensitivity Results .....</b>	<b>5</b>
4.1. Summary Tables and Figures .....	6
4.2. A closer look at Beaver Creek Wind .....	9
<b>5. Additional Portfolio Analysis (to-be completed) .....</b>	<b>Error! Bookmark not defined.</b>

# 1. Introduction and Key Assumptions

The objective of this document is to describe the modeling assumptions, methods and results used to support modeling for the 2021 All-Source Request for Proposal (2021 RFP) including Beaver Creek. The modeling framework builds upon previous analytical work completed for the 2021 RFP and 2023 Electric Progress Report (2023 EPR).

PSE filed the 2023 Electric Progress Report with the Washington Utilities and Transportation Commission on March 31, 2023. The 2023 EPR provides a two-year progress report on the 2021 IRP as required by Clean Energy Transformation Act (CETA). The assumptions and documentation of the model are in Chapter Five: Key Analytical Assumptions and Appendix H: Electric Analysis and Portfolio Model. The preferred portfolio is discussed in Chapter Three: Resource Plan. The 2023 EPR Preferred Portfolio serves as a starting point for the 2021 RFP Analysis including Beaver Creek.

For the purposes of this study including Beaver Creek, we created a reference portfolio and then tested sensitivities from the reference. The portfolios tested in the analysis are

1. Reference – [REDACTED] MW nameplate limit on resources from Montana including Clearwater and all RFP with commercial online as stated from bid
2. Reference without Beaver Creek
3. Reference + change in start date for [REDACTED]
4. Reference + Montana nameplate limit increased to [REDACTED] MW including Clearwater
5. Reference + change start date for [REDACTED] + Montana nameplate limit increased to [REDACTED] MW including Clearwater
6. Reference + delay start date for Beaver Creek to 2026

## 2. Updates to the 2023 EPR Preferred Portfolio Aurora Model

As part of this analysis, we made several updates to the 2023 EPR Preferred Portfolio Aurora Model in order to evaluate new resource offers received through the 2021 RFP and bi-lateral channels. This section describes the changes to the Aurora Model.

### 2.1. Aurora Version

The 2023 EPR utilized Energy Exemplar's Aurora Model version 14.1.1036 in developing the Preferred Portfolio. Since then, Energy Exemplar released Aurora version 14.2.1059 which we adopted for this analysis. Some of the benefits of Aurora version 14.2.1059 include improvements to energy storage modeling and reduction to the runtime of the study. Benchmarking tests on the 2023 EPR Reference Portfolio between the two Aurora versions reflect a decrease in portfolio costs and minor changes in overall builds including a slight shift to slightly more solar + battery hybrid, while significantly improving model run time.

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



Table 1.1 Benchmarking 2023 EPR Reference Portfolio Costs, 2024–2045 NPV (\$ Billions)

2023 EPR Reference Portfolio	Portfolio Cost (\$)	SCGHG Costs (\$)	Total (\$)	Change from v14.1 (\$)	Change from v14.1 (%)
Aurora version 14.1.1036	17.61	3.24	20.85	0.00	-
Aurora version 14.2.1059	17.66	3.18	20.84	-0.01	0.00

## 2.2. Project Setup

Several updates were made to the Aurora project settings in order to be consistent with the setup from earlier analyses including:

- Move the study period End Date to finish in 2045 instead of 2047
- Adjust the dispatch week sampling schedule of the LTCE simulation to sample the 1<sup>st</sup> and 3<sup>rd</sup> weeks of the month instead of the 2<sup>nd</sup> week of the month
- Uncheck the Remove Penalty Adders from Pricing to limit the influence of penalties on the simulation solution
- Check the Use Capacity Price Table as an input with zero as the capacity value for resources to limit the influence of AURORA's capacity price calculation on simulation solution
- Change the parallel processing setup to use maximum parallel solves of 5 and parallelized across 4 years to improve run time and maintain simulation consistency

## 2.3. Input Tables

This section briefly summarizes the changes made to the Aurora Input tables for this analysis.

**Constraint:** The constraint table reflects the long-term capacity maximum values for generic new resources used to limit the nameplate additions by resource categories. This table works in conjunction with the generic resource records in the New Resources table. We updated the capacity limits (megawatts; MW) for generic new resources in this analysis to account for the selection of RFP offers prior to the selection of generic new resources. More information on the generic new resources Effective Load Carrying Capability (ELCC) tranche adjustments is available section 2.4.1 ELCC Tranches.

**Custom Constraint and Constraint Matrix:** We added the Custom Constraint and the Constraint Matrix, which allow us to build customized constraints related to Lower Snake River (LSR) transmission, Mid-Columbia (Mid-C) transmission, and generation limits for resources delivering at Mid-C.

**Fuels:** The fuels table provides information for fuel types and default resource assumptions. We added new fuels types in this table for fuels with an RFP suffix to distinguish RFP fuels from generic new resource fuels. We also added a TriHybrid Fuel ID to use as fuel source for the renewable portion of a generic Solar + Wind + Battery generic resource option.

**New Resources:** This table contains the input assumptions and operating parameters for new resource options that are evaluated during a Long-Term Capacity Expansion study. [Appendix D: Generic Resource Alternatives](#) of the 2023 Electric Progress Report describes new resource alternatives in detail.

For this analysis, we made a number of updates to the New Resources table including:

#### **New generic resources**

- Move the First Eligible Year from 2024 to 2029 so RFP offers do not compete with generic resource options when meeting the energy, clean energy targets established by the Clean Energy Transformation Act (CETA), and peak capacity need in the timeframe RFP offers are available
- Update the Annual Max based on the maximum per year added for the 23 EPR Preferred/Reference portfolios. Setting the value to a lower limit impacts the run time when performing a Long-Term Capacity Expansion Study
- Update the Overall Max based on the adjusted tranches for generic new resources after taking into account the nameplate capacity of RFP offers selected in a prior Aurora run.
- Disabled *Pump Hydro Energy Storage, Demand Response, and Balanced Resources* options; equivalent options are available through the RFP offers
- Triple Hybrid Resources: combine the renewable portion (solar and wind) of the triple hybrid option since Aurora does not allow for multiple new resource id prefaced by “nr\_id\_” as a charging resource in the Long-Term Capacity Expansion study

#### **Power Bridging Agreements**

- Add two types of Power Bridging Agreement options; one type is able to contribute to the peak, the other type is eligible to meet CETA targets. These are short-term contracts available to fill the peak and CETA need in years 2024 and 2025 when few RFP offers are available.

#### **RFP Offers**

- The RFP team pre-screened offers obtained via the 2021 RFP and bi-lateral channels. Those offers are included in the New Resources table as options for the model to evaluate and select to meet the energy, clean energy and peak capacity requirements.

**Portfolio Resources:** The portfolio analysis uses this table to determine what resources are included in the PSE portfolio. We added the generic new triple hybrid resource, power bridging agreement options and the RFP offers to this table.

**Resource Groups:** The resource group table provides the ability to define or designate a number of resources into one group. We added new resource groups associated with the RFP offers in order to implement constraints related to the mutual exclusivity of certain RFP offers.

## MODELING UPDATES FOR ANALYSIS INCLUDING BEAVER CREEK

**Time Series Annual, Monthly, Hourly, and Generic:** These tables contain the time series references or variable values that change annually, monthly or an hourly basis. We added the data related to the RFP offers to these tables including capacity, costs, reliable capacity, and shapes.

**Time Series Pattern:** We added the Time Series Pattern table to define custom time slices required to model the commercial delivery date of RFP offers that do not start at the beginning of the year.

The updated 2021 RFP Input File contains the new data inputs used in the analysis incremental to [Appendix H: Electric Analysis and Portfolio Model](#) of the 2023 EPR and will be available at the completion of the analysis.

## 2.4. Other Updates

### 2.4.1. ELCC Tranches

By design, the model only evaluates and selects RFP resources between 2024 and 2028 with Power Bridging agreements available in 2024 and 2025. Starting in 2029, new generic resource options are available to meet the energy, peak, and clean energy requirements in the Long Term Capacity Expansion study. There are 3 ELCC tranches modeled for the generic new resource options in the 2023 Electric Progress Report. For discussion on the saturation effects on resource ELCCs, see [Chapter Seven: Resource Adequacy Analysis](#) of the 2023 Electric Progress Report.

To take into account the ELCC saturation effects for the selection of the RFP offers, we adjusted the availability of generic resource options within the resource category tranche limit. We used an iterative approach to estimate the capacity of selected RFP offers to displace generic resources in the ELCC tranches. As an example, preliminary results show that approximately 1,500 MW of storage RFP offers are selected before any generic new storage options become available. The cumulative nameplate limit for tranche 1 and 2 for storage resources is 1,500 MW. This means that the RFP offers selected already saturated tranche 1 and 2, and any additional generic new storage options will come in at tranche 3, which has a lower ELCC. We updated the constraints table in Aurora to reflect the adjusted available capacity for the tranches and the resource categories. Table 1.3 below illustrates the updated MW limit used in Aurora for this analysis.

**Table 1.3 Modeling ELCC Tranches Limits for Generic New Resources**

Summary (MW)	23 EPR ELCC Tranches			Estimated RFP Offer Selection (as of 5/31/23)			Updated Constraints for Modeling Tranche Limits		
Category	1	2	3	1	2	3	1	2	3
Solar	100	400	2,500	100	300	-	-	100	2,500
Northwest Wind	100	900	2,000	100	700	-	-	200	2,000
Rockies Wind	100	900	1,000	100	900	100	-	-	900
Hybrid	1,000	500	3,500	200	-	-	800	500	3,500
Storage	1,000	500	3,500	1,000	500	200	-	-	3,300

### 3. QA / QC Process

As with most software, the quality of data inputs provided to Aurora is a major contributor to the quality of results obtained from the Aurora simulations. With the inclusion of RFP resources for long-term resource selection in addition to the available generic resources in the EPR database and the change in the version of Aurora used for the simulations, we adopted several steps to check for data quality and obtain a robust output solution.

We ran simulations to benchmark the 2023 EPR database outputs between Aurora 14.1.1036, which used for the Preferred Portfolio model, and Aurora 14.2.1059, which is used for this analysis. As listed in Table 1.1, the portfolio cost difference between the two models was about 0.2% and there were some differences in the resources selected by the long term capacity expansion runs in the two versions. With mathematical tools such as Aurora, a certain amount of deviation between runs is possible since the optimization is run with a tolerance threshold for solution convergence and is also dependent on other factors such as the machine used and tasks running on that machine.

The RFP team provided multiple iterations of data updates. We ran several test simulations after each iterative round of updates to check the quality of outputs obtained and determine whether any warnings were reported for the simulations. These checks include:

- Validating the capacity, fixed and variable costs, resource output shapes, reliable capacity contributions of the RFP resources on the output side to ensure input updates flow through correctly
- Operational constraints such as transmission limits or generation limits modeled for the resources were checked in the simulation output for violations. Some other examples are resource mutual exclusivities and dependencies
- The Aurora study log obtained as part of the output of a simulation run lists errors and warnings encountered by the solver during the run. These errors and warnings in the test simulations were examined for data and user errors based on which additional updates were incorporated into the model

A significant amount of post simulation analysis is performed in this analysis. We incorporated constraint checks for the planning reserve margin requirement and CETA need in the output post-processing step, to help ascertain whether there is a deficit in a given year or whether the constraint violations are indicative of modeling issues.

### 4. Reference and Portfolio Sensitivity Results

The Run1 reference portfolio is the most similar in terms of modeling assumptions as 2023 EPR preferred portfolio. With the replacement of new generic resource options for resource selection in the near-term with RFP offers and power bridging agreement options, the Run1 reference portfolio still meets CETA, energy, and reliability requirements in the analysis. The Run1 reference portfolio cost is \$19.2 billion (NPV 2024 – 2025), and the social cost of greenhouse gases (SCGHG) is \$3.0 billion, totaling \$22.2 billion in total portfolio costs. The Run1 reference portfolio sets the stage as the starting point for sensitivity risk analysis that helps us understand how specific assumptions change the mix of resources in the portfolio and affect portfolio costs. Examples of a sensitivity include delaying the start date of an RFP resource, increasing the nameplate limit for Montana RFP resources, or excluding a specific RFP resource in the new resource selection. Some major themes that we observed in the analysis include the following:

## MODELING UPDATES FOR ANALYSIS INCLUDING BEAVER CREEK

- Resources are added to meet capacity need.
- The renewable resources exceed the CETA target because there are limited options to meet the capacity need.
- Over 1,300 MW nameplate of energy storage added by 2028, greater than the energy storage added in the 2023 Electric Progress Report Preferred Portfolio.

### 4.1. Summary Tables and Figures

This section provides summarized results of portfolio costs, resource selection, effective winter capacity and CETA eligible energy for each portfolio.

Table 1.4 Portfolio Costs, 2024–2045 NPV (Billions)

Sensitivity Costs in Billions \$ NPV 2024 - 2045	Portfolio Cost (\$Billions)	SCGHG Costs (\$Billions)	Total (\$Billions)	Change from Reference (\$Billions)	Change from Reference (%)
Run1 - Reference	19.18	3.00	22.18	0.00	-
Run2	20.18	3.18	23.36	1.19	5%
Run3	20.81	3.22	24.03	1.86	8%
Run4	19.11	2.78	21.89	-0.28	-1%
Run5	19.29	2.81	22.09	-0.08	0%
Run6	20.15	3.15	23.30	1.13	5%



Figure 1.1 Resources selected by Portfolio

Type	Name	Run1	Run2	Run3	Run4	Run5	Run6
BESS		Y	Y	Y	Y	Y	Y
BESS		Y	Y	Y	Y	Y	Y
BESS		Y	Y	Y	Y	Y	Y
BESS		Y	Y	Y	Y	Y	Y
BESS		Y		Y	Y		Y
BESS		Y			Y		Y
BESS		Y	Y	Y	Y	Y	Y
BESS		Y	Y	Y	Y	Y	Y
BESS			Y	Y		Y	
BESS		Y	Y	Y	Y	Y	Y
Solar		Y				Y	
Solar		Y	Y				Y
Solar			Y	Y		Y	
Solar		Y	Y	Y	Y	Y	Y
Solar		Y	Y	Y	Y	Y	Y
Solar					Y	Y	
Solar		Y	Y	Y		Y	Y
Wind		Y	Y		Y	Y	Y
Wind	Vantage Wind	Y	Y	Y	Y	Y	Y
Wind							
Wind	Beaver Creek Wind	Y		Y	Y	Y	Y
Wind		Y	Y	Y	Y	Y	Y
Wind		Y	Y	Y	Y	Y	Y
Wind		Y	Y	Y	Y	Y	Y
Wind					Y	Y	
Biodiesel		Y	Y	Y	Y	Y	Y
Hybrid/Solar		Y	Y	Y	Y		
Hybrid/Solar		Y	Y	Y	Y		
Hybrid/Solar			Y	Y			Y
Hybrid/Solar			Y	Y			Y
Hybrid/Solar		Y					
Hybrid/Solar		Y					
Hydro		Y	Y	Y	Y	Y	Y
PSH						Y	

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

Figure 1.2 Effective Winter Peak Capacity by Resource Type by 2028

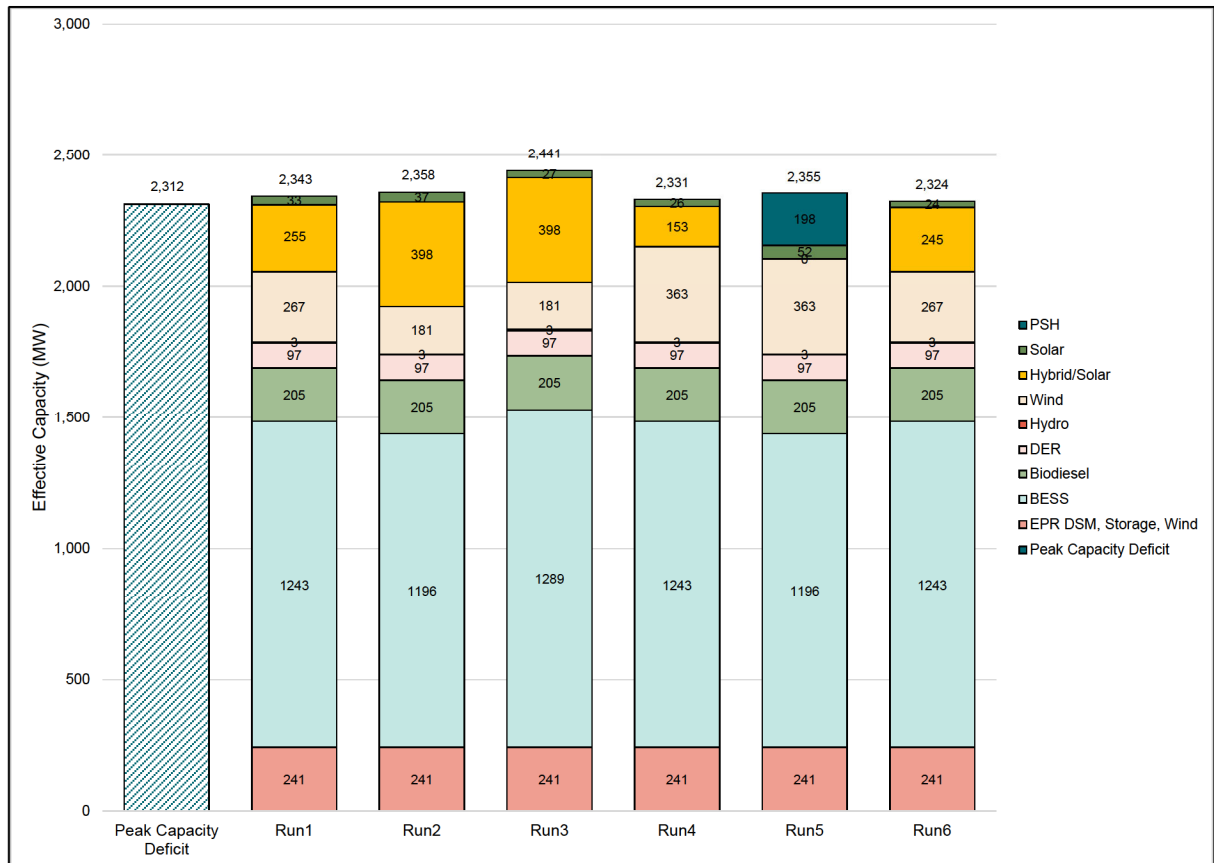
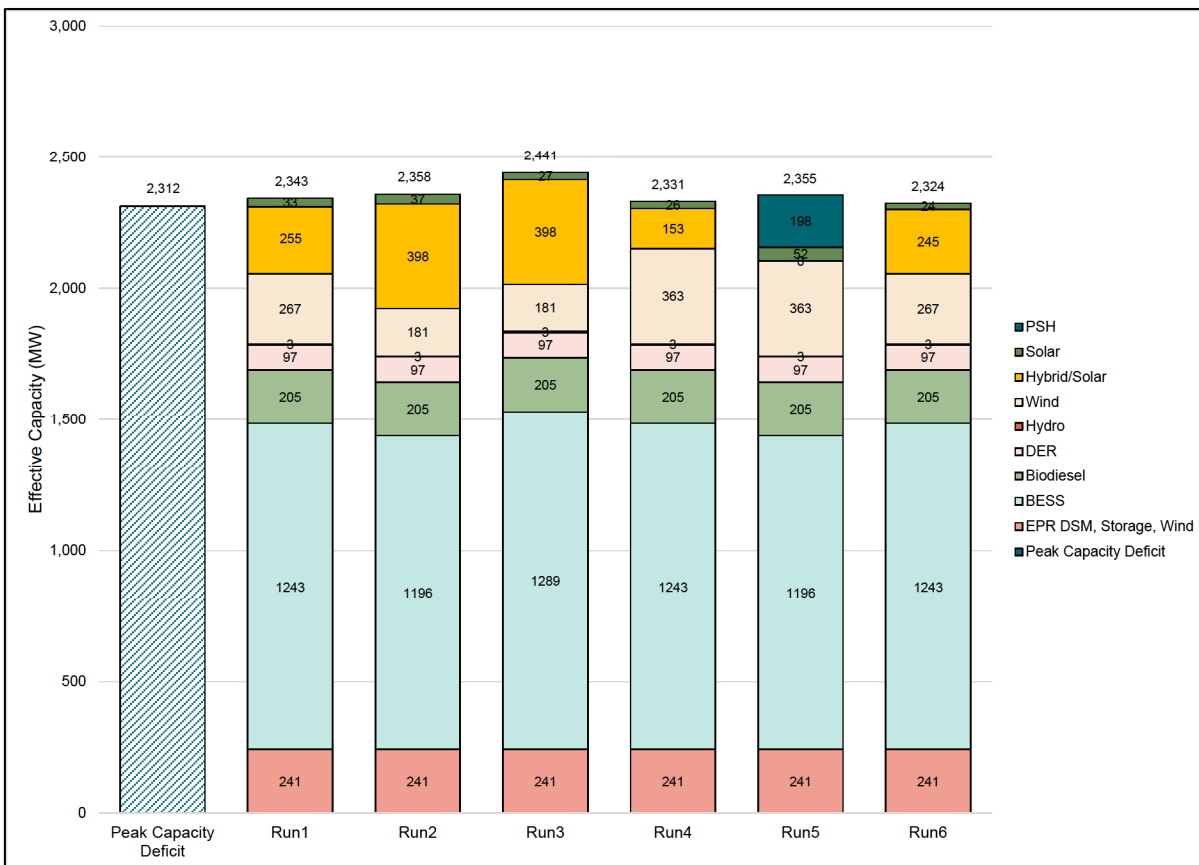




Figure 1.3 CETA Qualifying Energy Resource Type for 2028



## 4.2. A closer look at Beaver Creek Wind

In addition to the Quantitative analysis for the RFP decision making process, several other factors are also considered for resource selection. With limited resources being available in the near future, Beaver Creek stands out as a resource option with a comparatively advanced timeline. Although the resource seems favorable in terms of availability, we performed due diligence to check whether the optimization model selects Beaver Creek based on the information we have at the time of running the simulations. We examined the portfolios modeled for this analysis and observed that the Beaver Creek was selected in the new resource selection for 5 of the portfolios except for Run2, where we excluded Beaver Creek as an option to test the value to the portfolio. In Run2 the total portfolio costs increased by \$1 billion over the reference portfolio. We also tested delay risk in the start date of Beaver Creek, Run6, where the commercial online date was moved to 2026 instead of 2025. In this run, Beaver Creek was still selected as part of the least cost solution.

Table 1.5 Beaver Creek selection by Portfolio

Sensitivity	Beaver Selected As Least Cost Solution?
Run1 - Reference	Yes
Run2	No (Forced Out)



Sensitivity	Beaver Selected As Least Cost Solution?
Run3	Yes
Run4	Yes
Run5	Yes
Run6	Yes

After the Analysis was complete, we received an update on pricing. This added [REDACTED] MWh levelized to the cost of Beaver Creek which comes to an additional [REDACTED] NPV 2024 – 2045 and has minimal impact to the total portfolio cost of [REDACTED]

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 16. Environmental and Public Health Impacts and Evaluation Tools

PSE Report to the Board of Directors: Beaver Creek Wind Project

**APPENDIX 16. ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS AND EVALUATION TOOLS**

## **Description of Estimated Environmental and Public Health Impacts and Evaluation Tools**

In the first year of operation, Beaver Creek is projected to displace approximately 535,764 metric tons of carbon dioxide (CO<sub>2</sub>) that would have been released compared to a natural gas facility generating the same electricity. This represents a significant reduction in greenhouse gas emissions, reducing the public health impacts associated with the effects of climate change.

To calculate the estimated amount of CO<sub>2</sub> emissions from the annual megawatt hour (MWh) estimate – 756,860 MWh, PSE used the United States Environmental Protection Agency’s (U.S. EPA’s) [Greenhouse Gas Equivalencies Calculator](#).

Beaver Creek will improve air quality because electricity generated from zero-emissions wind power displaces electricity generated from coal, oil and natural gas plants, which in turn, reduces conventional air pollutants such as sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), particulate matter (PM<sub>2.5</sub>), volatile organic compounds (VOCs) and ammonia (NH<sub>3</sub>). These pollutants have been linked to the occurrence of a host of respiratory illnesses (e.g., asthma), cardiovascular diseases, and increased hospital admission rates.

To calculate avoided emissions we used [Avoided Emissions and Generation Tool AVERT](#). Below is the list of total GHG emissions that would be avoided from fossil fuels.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 16. ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS AND EVALUATION TOOLS

Regional, State, and County-Level Emissions Changes

Energy Impacts Inputs:

Onshore wind total capacity: 220 MW

Annual Emissions Changes • Power Sector Only  
Northwest Region

	Original	Post Change	Change
Generation (MWh)	117,886,750	117,360,940	-525,810
Total Emissions from Fossil Generation Fleet			
SO <sub>2</sub> (lb)	72,180,720	71,980,520	-200,200
NO <sub>x</sub> (lb)	109,484,910	109,113,360	-371,550
Ozone season NO <sub>x</sub> (lb) ⓘ	45,473,740	45,324,120	-149,620
CO <sub>2</sub> (tons)	89,446,980	89,092,430	-354,550
PM <sub>2.5</sub> (lb)	10,667,880	10,626,970	-40,910
VOCs (lb)	2,970,160	2,957,690	-12,470
NH <sub>3</sub> (lb)	2,585,230	2,572,470	-12,760
AVERT-derived Emission Rates:	Average Fossil		Marginal Fossil
SO <sub>2</sub> (lb/MWh)	0.612		0.381
NO <sub>x</sub> (lb/MWh)	0.929		0.707
Ozone season NO <sub>x</sub> (lb/MWh) ⓘ	0.931		0.788
CO <sub>2</sub> (tons/MWh)	0.759		0.674
PM <sub>2.5</sub> (lb/MWh)	0.090		0.078
VOCs (lb/MWh)	0.025		0.024
NH <sub>3</sub> (lb/MWh)	0.022		0.024

Location(s)	Sector	Emissions Modification(s)
Washington - All Counties	Fuel Combustion: Electric Utility	PM <sub>2.5</sub> reduce by 20.46 tons NO <sub>x</sub> reduce by 187.78 tons

X

To estimate the air quality and health effects of these pollutants/GHG emissions, PSE used CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA). The image below illustrates some of the health impacts associated with the pollutants/GHG emissions.

## PSE Report to the Board of Directors: Beaver Creek Wind Project

### APPENDIX 16. ENVIRONMENTAL AND PUBLIC HEALTH IMPACTS AND EVALUATION TOOLS

Use the filters below to see health effects for a specific state or county.


1. Filter by state:





Washington

2. Filter by county: (optional)

All counties

#### Results for: Washington

 Export: [All results](#) | [Current filter](#)

Health Endpoint 	Change in Incidence  (cases, annual)		Monetary Value  (dollars, annual)	
	Low	High	Low	High
Mortality *	0.145	0.328	\$1,585,907	\$3,593,092
Nonfatal Heart Attacks *	0.013	0.123	\$2,067	\$19,211
Infant Mortality	0.001	0.001	\$8,043	\$8,043
Hospital Admits, All Respiratory	0.023	0.023	\$881	\$881
Hospital Admits, Cardiovascular **	0.024	0.024	\$1,239	\$1,239
Acute Bronchitis	0.212	0.212	\$131	\$131
Upper Respiratory Symptoms	3.826	3.826	\$163	\$163
Lower Respiratory Symptoms	2.692	2.692	\$73	\$73
Emergency Room Visits, Asthma	0.070	0.070	\$39	\$39
Asthma Exacerbation	3.935	3.935	\$292	\$292
Minor Restricted Activity Days	111.346	111.346	\$9,761	\$9,761
Work Loss Days	18.918	18.918	\$3,787	\$3,787
 <b>Total Health Effects</b>			<b>\$1,612,383</b>	<b>\$3,636,713</b>

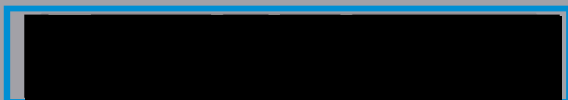


*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 17. Funding Strategy



# Beaver Creek &



# Financing Strategy

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

Beaver Creek and [REDACTED] investment ([REDACTED] in total) will be financed with [REDACTED]



- Source of financing determination is prioritized with utilizing PSE/PE debt first and then PIH SH Loan distribution and equity contribution from owners
- Financing strategy for the two projects is consistent with our recommended strategy in Scenario 1a
- Assumes the repayment of the two [REDACTED] will be paid in Q4 2023. Depending on cash flows and other potential upcoming resource acquisition activities, management may need to delay partial or full repayments for PSE equity ratio support. Final recommendation will be made at the November board meeting
- More [REDACTED] SH Loan interest PIK and equity contribution will be needed for incremental resource acquisition project investments

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 18. Rates and Accounting

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 18. RATES AND ACCOUNTING

## Rates and Accounting

This exhibit addresses the following topics:

- Rate Recovery
- Rate Impact for the multi-year rate plan period from 2025-2028
- Production Tax Credit Accounting
- Other Miscellaneous Accounting

### Rate Recovery

The most likely scenario is that PSE will seek a determination of prudence for the Project and cost recovery in an upcoming General Rate Case (GRC) filing with the Washington Utilities and Transportation Commission (WUTC). Commercial operation of the Project is expected to be achieved in 2025, which is the first year of the multiyear rate plan to be included in that filing, planned for January 2024. Regulatory approval of new rates would occur eleven months after filing.

### Rate Impact for the multi-year rate plan period from 2025-2028

PSE estimates that regulatory cost recovery of the Beaver Creek Wind Project will result in a levelized cost of the Project over the 25-year project life of approximately [REDACTED] MWh, including an [REDACTED] MWh incremental transmission and balancing cost. The resource acquisition team estimates the net effect on electric rates to be an increase of less than one percent. This is based on the 2022 baseline rate.

For the multi-year rate plan period from 2025 to 2028, the projected yearly revenue requirements (before any expected avoided power purchases<sup>1</sup> are [REDACTED] respectively. For detailed pro forma analysis, please see Appendix 13.

### Production Tax Credit (PTC) Accounting

PTCs claimed under the Inflation Reduction Act (IRA) are transferable. Transferability will allow PSE to convert a PTC to cash regardless of PSE's taxable income by selling the PTC to an unrelated third party. This may be a source of significant value to customers by vastly accelerating the timing of the pass-back of the credits on customers' bills. The modeling for the project assumes that PTCs will be sold when earned at 95% of face value.

---

<sup>1</sup> Net power cost impact is estimated to be [REDACTED] for partial year 2025, and [REDACTED] for 2026-2028 from avoided market purchases net of incremental transmission and balancing costs.

PSE Report to the Board of Directors: Beaver Creek Wind Project

APPENDIX 18. RATES AND ACCOUNTING

PTCs are passed along to customers under a separate tariff, Schedule 95A. The **schedule** resets each October with all PTCs (or other tax incentives) that have been realized in a cash benefit, either through usage on a tax return or sold to a third party, being passed to customers over the next 12 months.

Other Miscellaneous Accounting

**Property Accounting.** PSE will capitalize its investment in the Project as an electric utility plant fixed asset and depreciate the capitalized amount over its useful life, which is assumed to be 25 years consistent with the Lower Snake River, Hopkins Ridge and Wild Horse facilities. These facilities will be a part of a future depreciation study in which consultants will assess their useful lives, but it is not anticipated that it will be different from our other facilities if the nature of the turbines is not significantly different. PSE plans to unitize the capital asset within a year of placing the facility in service, segregating its original cost into appropriate retirement units of property categories. PSE's original cost will include Allowance for Funds Used During Construction (AFUDC).

PSE will purchase the Project assets from Caithness Beaver Creek, LLC for approximately [REDACTED]. The development fee will be allocated to the different phases of the wind project buildout. For modeling purposes, the [REDACTED] fee has been allocated [REDACTED] and [REDACTED] between the current project and future expansion, respectively, based on the LGIA of 315 MW and allocating 232 MW and 83 MW generation capacity split.

**Test Power.** The benefit from the value of this power will be passed through to customers by reducing the plant investment in the GE wind turbine generators and thus reducing ratebase in accordance with Federal Energy Regulatory Commission (FERC) requirements.

**Renewable Energy Credits.** PSE intends to retire all Renewable Energy Credits (RECs) for compliance with RCW 19.405, the Clean Energy Transformation Act.



*PSE Report to the Board of Directors:  
Beaver Creek Wind Project*

## Appendix 19. Acronyms and Shortened Terms

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 19. ACRONYMS AND SHORTENED TERMS**

**Acronyms and Shortened Terms**

A:	Amperes
AC:	Alternating Current
AFUDC:	Allowance for Funds Used During Construction
ALTA:	American Land Title Association
APE:	Area of Potential Effect
ATC:	Available Transmission Capacity
BAA:	Balancing Authority Area
BC:	Beaver Creek
BESS:	Battery Energy Storage System
BOP:	Balance of Plant
BPA:	Bonneville Power Administration
BPAT:	Bonneville Power Administration Transmission
CETA:	Clean Energy Transformation Act
CEIP:	Clean Energy Implementation Plan
CMS:	Condition Monitoring System
COBRA:	Co-Benefits Risk Assessment
COD:	Commercial Operation Date
CO <sub>2</sub> :	Carbon Dioxide
CPI:	Construction Period Interest
CTS:	Colstrip Transmission System
CUP:	Conditional Use Permit
DTC:	Dynamic Transfer Capability
ELCC:	Effective Load Carrying Capacity
EPA:	Environmental Protection Agency
EPC:	Engineering, Procurement and Construction
EPR:	Electric Progress Report
ERM:	Enterprise Risk Management



**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 19. ACRONYMS AND SHORTENED TERMS**

ETP:	Eagle Take Permit
E3:	Energy and Environmental Economics, Inc.
FAA:	Federal Aviation Administration
FaS:	Facility Study
FSA:	Full Service Agreement
GE:	General Electric
GRC:	General Rate Case
GSU:	Generator Step-Up
GWh	Gigawatt hours
Hz:	Hertz
IE:	Independent Evaluator
IRA:	Inflation Reduction Act
IRC:	Internal Revenue Code
IRP:	Integrated Resource Plan
IRS:	Internal Revenue Service
ITC:	Investment Tax Credit
JEDI:	Jobs and Economic Development Impacts
kV:	Kilovolt
kVA:	Kilovolt-Ampere
kWh:	Kilowatt hour
LCOC:	Levelized Cost of Capacity
LCOE:	Levelized Cost of Energy
LGIA:	Large Generator Interconnection Agreement
M:	Meter
\$M:	Million
MIA:	Montana Intertie Agreement
Mid-C:	Mid-Columbia River
MIPA:	Membership Interest Purchase Agreement
MT:	Montana

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 19. ACRONYMS AND SHORTENED TERMS**

MVA:	Megavolt Ampere
MW:	Megawatt
MWh:	Megawatt Hour
M2W:	Montana to Washington
NCF:	Net Capacity Factor
NEPA:	National Environmental Policy Act
NHPA:	National Historic Preservation Act
NITS:	Network Integration Transmission Service
NOx:	Nitrogen Oxide
NPV:	Net Present Value
NRIS:	Network Resource Interconnection Service
NTP:	Notice to Proceed
NWE:	NorthWestern Energy
NWMT:	NorthWestern Energy Transmission
OATT:	Open Access Transmission Tariff
O&M:	Operations and Maintenance
PGE:	Portland General Electric
PM2.5:	Particulate Matter
POD:	Point of Delivery
POEM:	PPA vs. Ownership Evaluation Model
POI:	Point of Interconnection
POR:	Point of Receipt
PPA:	Power Purchase Agreement
PSE:	Puget Sound Energy
PSEI:	Puget Sound Energy Transmission
PTC:	Production Tax Credit
PTP:	Point-to-Point
REC:	Renewable Energy Credit
RCW:	Revised Code of Washington

**PSE Report to the Board of Directors: Beaver Creek Wind Project**

**APPENDIX 19. ACRONYMS AND SHORTENED TERMS**

RFP:	Request for Proposal
SCADA:	Supervisory Control and Data Acquisition
SF <sub>6</sub> :	Sulfur Hexafluoride
SIS:	System Impact Study
SME:	Subject Matter Expert
SO <sub>2</sub> :	Sulfur Dioxide
TSR:	Transmission Service Request
TSA:	Turbine Supply Agreement
US EPA:	United States Environmental Protection Agency
V:	Volt
WAC:	Washington Administrative Code
WACC:	Weighted Average Cost of Capital
WRAP:	Western Resource Adequacy Program
WTG:	Wind Turbine Generator
WUTC:	Washington Utilities and Transportation Commission

# Beaver Creek Wind Project

## Informational Update to the Board

**Ron Roberts, Vice President Energy Supply**

**Colin Crowley, Director Energy Resource Development**

**Jim Hogan, Director Major Projects**

November 2, 2023



**PUGET  
SOUND  
ENERGY**

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Highly Confidential

## Background

- On Aug. 3, 2023 the Board of Directors authorized PSE to execute the following contract:
  - Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with the Beaver Creek wind project:
- PSE and Caithness executed the MIPA on September 14
- Conditions precedent to closing are largely on track for a MIPA closing on or before December 4. Select condition precedent highlights include:
  - Lease amendments and estoppel certificates under review by six landowners
  - Conditional Use Permit approved and set to be non-appealable on November 9
  - BOP and TSA contracts are on track to be in form and substance satisfactory to PSE
  - Northwestern transmission study for requested PTP transmission delayed beyond closing.
    - PSE mitigating by having Power Engineers perform power flow study to understand what a Northwestern study may conclude (preliminary results available week of 10/23)
  - Caithness provided microwave study for FCC registered paths. Voluntary filing through NTIA covers non-FCC registered federal paths. PSE requesting Caithness to submit.





## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the EMC authorize PSE to seek board approval, at a date to be determined, to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

3 |

<sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by up to 6 units provided Seller receives written notification from Buyer by January 10, 2024.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Balance of Plant Agreement

- PSE selected Wanzek (a Mas-Tec company) as the BOP contractor from a field of [REDACTED] RFP finalists
  - Wanzek has extensive experience building wind generation facilities ([REDACTED] across the United States
- BOP is a [REDACTED] agreement between PSE and Wanzek with an indicative price [REDACTED] for the detailed engineering, procurement, and construction of all project BOP components including site civil work, wind turbine erection, O&M building, electrical collection system, plant substation, and generation interconnect transmission line
  - Supply of the wind turbines not included in BOP contractor scope of supply
  - Main transformer and certain substation equipment to be procured by PSE due to equipment lead times
  - All other plant components to be procured by Wanzek
  - Pricing will be finalized by year end after design is advanced and materials and equipment are sourced
- Includes liquidated damages (LDs) for milestone delays up to an Aggregate LD cap of [REDACTED] % of the contract price
- Includes customary termination rights subject to the termination payment<sup>1</sup>
  - Notably, PSE may terminate for failure to meet key milestones and if Wanzek's liability for LDs [REDACTED]
- Includes standard EPC warranty for [REDACTED] years after substantial completion of project, including all equipment (other than wind turbine generators), and includes serial defect warranty for equipment ([REDACTED])
- In October, EMC authorized PSE to proceed with engineering under limited notice to proceed until BOP is executed in December.

<sup>1</sup>Termination Payment shall equal the sum of the following: (a) portion of the Contract Price for completed but unpaid work; (b) Wanzek's reasonable demobilization expenses plus [REDACTED]; and (c) expenses reasonably incurred by Wanzek in terminating contracts with Subcontractors plus [REDACTED] of such expenses, except to the extent PSE has instructed Contractor not to terminate such contracts. Termination payment terms remain subject to negotiation.

<sup>2</sup>Includes [REDACTED] adjustments to increase size for O&M building, double handling turbines and yard, and foundation blasting.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



# Letter of Intent

- Letter of Intent executed between GE and PSE with limited notice to proceed on September 22, 2023
- TSA to be signed at Closing on or before December 4, 2023
  - Model: GE 2.8-127 (89 meter hub height)
  - Total price: [REDACTED]
  - Turbine deliveries scheduled to begin May 2024
  - GE milestone payment schedule:



Milestone	Est. date	%	Cumulative (\$/%)
Down Payment on signing of LOI	Sep. 22, 2023	[REDACTED]	[REDACTED]
<b>Calendar Payment due <sup>2</sup></b>	<b>[Dec. 4, 2023]</b>		
Calendar payment due	Dec. 15, 2023		
Delivery to Carrier	Est Q2 2024		
Turbine Completion	Est Q1 2025		
Final Project Completion	Est Q1 2025		

- Pricing will decrease by [REDACTED] unit if buyer executes both a separate [REDACTED] FSA Agreement and separate BESS purchase and services agreements with GE affiliates<sup>3</sup>
  - No discount will apply if FSA Agreement is not executed by [REDACTED] and BESS purchase and services agreement is not executed by [REDACTED]



5 | <sup>1</sup>All pricing is predicated on receipt of payment in accordance with the payment schedule above and TSA execution with full NTP by Dec 4, 2023

<sup>2</sup>Subject to execution of an amendment to the GE LOI currently being drafted

<sup>3</sup>BESS agreements may be for Beaver Creek or an alternate project of comparable size in the coterminous U.S.

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Turbine Supply Agreement

- Turbine supply will consist of 88 newly manufactured GE 2.82 MW-127M turbines
- Pricing for new machines is [REDACTED] kW<sup>1</sup> compared with [REDACTED] kW forecast in August for combination of new and previously titled turbines
- PSE technical team is finalizing turbine option selections (examples of selected options include [REDACTED])
- Accounting for turbine options and spare parts at [REDACTED] results in an expected total turbine cost of [REDACTED] or [REDACTED] kW for [REDACTED]
- PSE can terminate the TSA in whole or as to any Unit(s) for convenience prior to the delivery of such Unit subject to a Termination Amount

### Termination Schedule [REDACTED]

[REDACTED]

- In the event PSE terminates the TSA with respect to any Unit(s) and the FSA has been executed, the FSA would automatically terminate with respect to such Unit(s) and a termination charge would also apply under the FSA (see slide 7 for FSA termination amount)

<sup>1</sup>The purchase price shown [REDACTED] is for a base model without available options.

<sup>2</sup>The LOI allows PSE to purchase 88 turbines with the flexibility to reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.

<sup>3</sup>Subject to execution of an amendment to the GE LOI currently being drafted



## Full-Service Agreement

- Full Service Agreement (FSA) with GE for service, maintenance and monitoring of the wind turbines acquired under the TSA including all labor, parts and components, materials, consumable items, tools, equipment and field, fleet and performance engineering resources
  - Additional coverage for specific balance of plant (BOP) scope of work is offered and being evaluated
  - GE will utilize internal management and specialized technicians, and third-party independent service contractors to perform planned and unplanned maintenance
  - Remote 24/7 performance and reliability monitoring is included
- Currently evaluating [REDACTED] and 10-year [REDACTED] options to minimize risk, maintain reliability and enable service provider flexibility with GE turbines
- Liquidated damages are due to PSE if turbine availability is less than [REDACTED] and [REDACTED] of the FSA
- Either Party may terminate the FSA for the other Party's material breach where (i) such breach cannot be cured; (ii) the defaulting party fails to cure such breach within [REDACTED] of notice of the breach; or (iii) if a reasonable cure plan is in place, within [REDACTED] of notice of the breach. This would include PSE's failure to make the Facility available to GE to perform its obligations.
  - Termination Amount: [REDACTED] % of the total expected price to be paid between the termination date and the end of the agreed contract term
- PSE does not have an express right to terminate the FSA for convenience, but it does have a right to terminate the TSA for convenience and upon such termination, the FSA would also terminate with respect to the terminated Units

## Construction budget estimate for 248MWac

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement			
GE Contract Option & Spare Parts			
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price			
Step-up Transformer			
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>			
<b>Contingency</b>			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	<b>534,260</b>	<b>2,153</b>	<b>100.0%</b>

### Key budget updates since Aug BOD

Increase in project size decreases forecast per unit cost by [REDACTED] and increases overall project costs by [REDACTED]

- Development budget reflects reimbursables to Caithness [REDACTED]
- GE contract reflects the higher nameplate, updated pricing and contract options [REDACTED]
- BOP contract reflects selected EPC and transformer pricing [REDACTED]
- PSE project management plus contingency reflects updated forecast and inclusion of remaining interconnection upgrade [REDACTED]
- AFUDC reflects decreases due to earlier COD [REDACTED]



# Detailed cash out forecast and funding commitment



At the end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to TSA commitment



## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the EMC authorize PSE to seek board approval, at a date to be determined, to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

10 |

<sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

# Appendices

- Project overview slide
- Project schedule
- Permitting update
- Interconnection and transmission update
- Detailed cash out forecast and funding commitment
- Mark-to-market analysis



## Project overview / Commercial terms

### PROJECT PROFILE

**Resource Type:** Wind (w/battery option)  
**Developer/Seller:** Caithness Energy LLC  
**Location:** Stillwater County, MT  
**Nameplate Capacity:** 248 MW<sup>1</sup>  
+ optional BESS  
**COD:** March 31, 2025

### PRICE AND PRODUCT

**Product:** Purchase of construction NTP-ready development rights  
**Price:** [REDACTED] (50% at closing, 50% at substantial completion)<sup>2</sup>  
**NCF:** [REDACTED]  
**Expected Output:** 803,000 MWh/yr  
**Transaction Type:** Membership Interest Purchase Agreement

### DEVELOPMENT STATUS

- Site control secured
- Conditional Use Permit approved by County Board of Commissioners on October 10, 2023
- Project to be acquired at construction NTP-ready state



### ENERGY DELIVERY

**POI:** New substation on Northwestern  
**Transmission Plan:** NWMT wheel to Colstrip or Garrison, then share PSE's 713 MW CTS and BPA transmission rights to PSE's system. Assumption of 100 MW TSR queue position from Garrison to PGE provides incremental transmission that can be re-directed to MIDC.

12 | <sup>1</sup>PSE may elect to reduce the number of turbines by up to 6 units provided GE receives written notification from PSE by January 10, 2024  
<sup>2</sup>Final purchase price will be adjusted up or down at substantial completion by [REDACTED] per MW to reflect final nameplate capacity (e.g., 220 MW = [REDACTED] 240 MW = [REDACTED])  
<sup>3</sup>DNV completed a full wind resource assessment in late October 2023 and estimated the NCF to be [REDACTED]

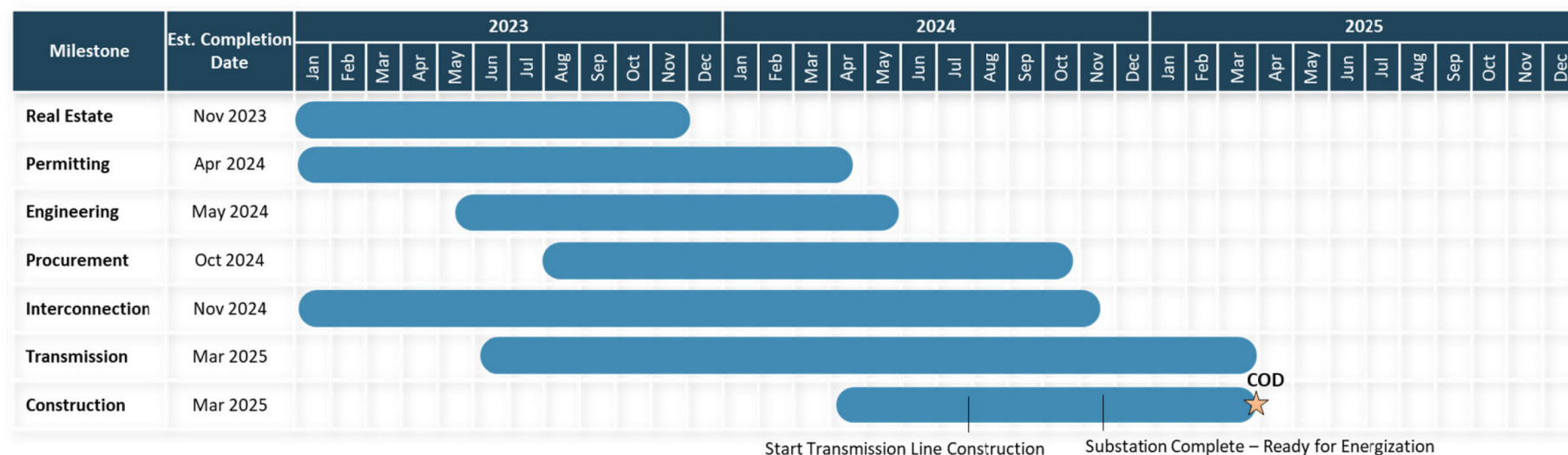


SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## Estimated project schedule appears to be reasonable to meet a March 31, 2025 COD



\*Eagle Incidental Take Permitting (EITP) is not included in the permitting timeline and would be expected to issue after the facility becomes operational.

## Closing permitting is generally on track for completion

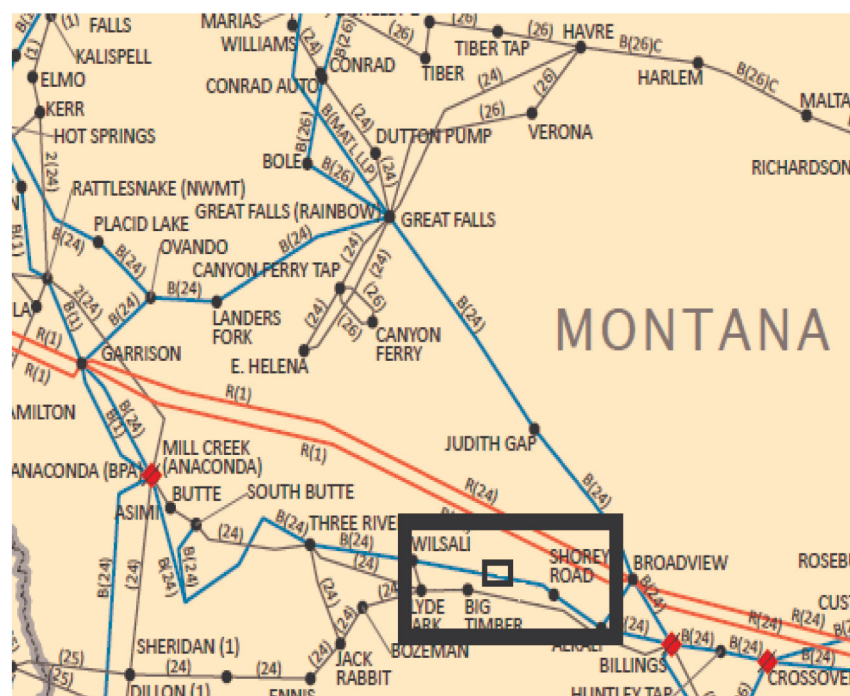
---

- Conditional Use Permit (CUP) from Stillwater County for the full 248 MW project with 100 MW battery energy storage system (BESS) approved on October 10, 2023.
  - Permit is non-appealable after 30 days.
- Additional baseline environmental information will be required to complete permit review and obtain an Eagle Incidental Take Permit (needed for long-term operations)
- All FAA Determinations of No Hazard are complete and have been received for 82 turbines
- PSE consultants are working with BOP contractor to ensure that waters of the U.S. can be avoided to preclude the need for a Clean Water Act Section 404 permit
- Caithness has delivered a Phase 1 Environmental Site Assessment

## Interconnection: On track to meet March 2025 COD

**Point of Interconnection (POI):** New 230kV substation on NorthWestern between Wilsall and Columbus Rapelje Substation

- Executed (LGIA) for 315 MW of network resource interconnection service (NRIS).
- Total upgrade cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of system impact and facility study approximately [REDACTED]
- Transmission Provider's Network Upgrades In-Service: November 15, 2024
- Interconnection Facilities In-Service: November 15, 2024
- Initial Synchronization Date: March 15, 2025
- COD (in LGIA): August 2025<sup>1</sup>



### Key milestones

- ✓ Feasibility Study – completed 9/23/16
- ✓ Revised Feasibility Study – completed 9/29/16
- ✓ System Impact Study – completed 4/13/17
- ✓ Revised System Impact Study – completed 5/9/2017
- ✓ Facility Study – completed 11/17/17
- ✓ Optional Load Study – completed 5/12/21
- ✓ Optional Interconnection Study – completed 4/21/22
- ✓ LGIA Executed

15 | <sup>1</sup>The expected project COD in the current Beaver Creek schedule is March 31, 2025.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Transmission: Leveraging PSE's existing 713 MW of capacity from Montana to PSE's system

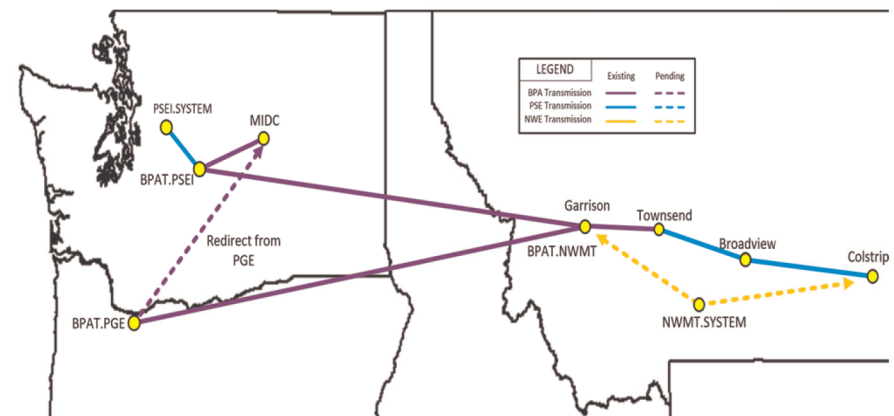
**PSE will leverage its existing 713 MW of transmission rights on the Colstrip Transmission System (CTS), BPA Eastern Intertie, and BPA Main Grid to deliver project output to PSE's load.**

- PSE has requested 220 MW of new NWMT transmission service from the POI to the Colstrip 500 kV substation
- PSE has also requested 220 MW of NWMT transmission service from the POI to Garrison (BPAT.NWMT) as alternative path, avoiding the CTS and Eastern Intertie.
- Previous studies for NRIS interconnection service and Network Integration Transmission Service have not identified any significant network upgrades to NWMT's system to support such services.
- NorthWestern Energy is encountering study delays and will not be able to complete the study by closing date. PSE is engaging an engineering consultant to run an independent study to assess risk to secure transmission. Consultant study results expected by closing.

**Assumption of Caithness's 100 MW transmission service request (TSR) position in the BPA queue from Garrison to PGE provides potential incremental transmission capacity to deliver Project output to MID-C**

- The 100 MW TSR is third in BPA's Montana transmission queue and within ~500 MW of incremental transmission from Montana to the PNW under the scope of BPA's M2W project, with a projected in-service date of 2028-29.
- PSE has assessed redirecting this 100 MW transmission to MID-C to connect with PSE's existing ~1500 MW transmission rights to PSE's system as a viable option

**Transmission path options to deliver Beaver Creek from Colstrip or Garrison to PSE's system and MID-C**





## Detailed cash out forecast and funding commitment

(\$ in millions)

	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Q1-24	Q2-24	Q3-24	Q4-24	Q1-25	Q2-25	Q3-25	Q4-25	Total
<b>Cash Out Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Quarterly Cash Total														
Cumulative Cash														
<b>Commitment Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Commitment Total														

- At the end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to TSA commitment.
- Cash out and funding commitment for BOP and PM, IT, Ops, Equip, Contingency and other is assumed to occur at the same time.

## Mark-to-market analysis

Energy Only MTM NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Cost (Bus Bar + Trans.)		
Net Value		
Energy, Capacity, Environmental Attribute NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Value of Capacity/RA		
Value of CETA/REC		
Cost (Bus Bar + Trans.)		
Net Value		
Social Cost of Carbon Attribute NPV (\$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Social Cost of Carbon		
Assumptions		
1. REC price: [REDACTED] in 2023, escalated at 2.5%/Year thereafter		
2. RA capacity price: [REDACTED]		
3. QCC: [REDACTED] (Winter), [REDACTED] Summer)		
4. MidC forward curve from Platts as of 9/1/2023		
5. Discount rate: 6.62%		
6. Generator nameplate: [REDACTED] MW. [REDACTED] losses are assumed for this analysis.		



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



Beaver Creek Wind Project

Re: Informational Update

**Memorandum**  
**HIGHLY CONFIDENTIAL**

November 2, 2023

**To:** PSE Board of Directors

**cc:**

**From:** Colin Crowley, Director Resource Acquisition  
Ron Roberts, VP Energy Supply

**Subject:** Beaver Creek Wind Project – Informational Update

The purpose of this Report to the Board of Directors (Report) on the Beaver Creek Wind Project (Beaver Creek or Project) is to provide an informational update to the board. Puget Sound Energy (PSE) intends to recommend that the board authorize PSE to execute the following agreements, at a date to be determined, consistent with the resolutions in Attachment A and the summary of key agreement terms in Attachment B:

- Balance of Plant Agreement with Wanzek at an indicative price of [REDACTED] to erect the turbines, design and build the electrical collector system, design and build the Project gen-tie transmission line, design and build a Project substation, design and build turbine foundations, and design and build the Project operations and maintenance (O&M) building. The BOP Agreement is in draft form. PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur at or shortly after closing.
- Turbine Supply Agreement with General Electric (GE) at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines. PSE has the option to reduce the number of turbines by up to six units from 88 to 82 before January 10, 2024, which would reduce the total nameplate from 248.16 MW<sub>AC</sub> to 231.24MW<sub>AC</sub> and reduce the cost by [REDACTED] per turbine. The TSA is in draft form. PSE is negotiating terms directly with GE and anticipates contract execution to occur shortly after closing.

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

**November 2, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Informational Update**

- Full-Service Agreement with GE at either [REDACTED] or [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

PSE estimates the cost to construct the facility, with Allowance for Funds Used During Construction (AFUDC) to be approximately [REDACTED] including the [REDACTED] development fee (the [REDACTED] MIPA Purchase Price approved in August plus an additional [REDACTED] in reimbursables to Caithness), for a total cost of [REDACTED]

This memo also provides an informational update on several key areas of the Beaver Creek Wind Project: progress report on conditions precedent (Appendix C); permitting matters (Attachment D); project schedule and construction management, including the recommended BOP contractor (Attachment E); an update on the equity and customer benefits of the project (Attachment F); an updated project risk register (Attachment G); an updated stand-alone financial pro forma (Attachment H); and an updated wind resource assessment (Attachment I).

## **Background**

On August 3, 2023, the Board of Directors authorized PSE Management to execute a Membership Interest Purchase Agreement (MIPA) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (Project Company). PSE and Caithness executed the MIPA on September 15, 2023. Closing is expected to occur in late November.

Beaver Creek is a utility-scale wind project located in Stillwater, Montana, with an expected nameplate capacity of 248 megawatts (MW). The proposed Project is in a near-construction-ready state and is expected to achieve a commercial operation date (COD) of March 31, 2025.

With a March 31, 2025 COD, the Project will be able to contribute approximately 27% of the forecast additional clean energy required to meet PSE's 63% CETA compliance target in 2025. When operational, the Project is expected to provide approximately 11% of PSE's forecast clean energy need for its 2030 80% CETA compliance target by generating approximately 830 gigawatt hours (GWh) of energy per year at a net capacity factor (NCF) of approximately [REDACTED]. The winter Effective Load Carrying Capability (ELCC) is [REDACTED] and the summer ELCC is [REDACTED].

## **Resource need**

According to the 2023 EPR, PSE could begin to experience a peak capacity shortfall starting in 2024. Before any conservation, the peak capacity need plus the planning margin required to maintain reliability is [REDACTED] MW by 2029. Net of conservation — the peak capacity need plus the planning margin for winter and summer — are [REDACTED] MW and [REDACTED] MW. These figures represent the difference

**November 2, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Informational Update**

between the load forecast plus the required planning margin, and the total peak capacity credit of existing resources. The Project's estimated contribution, based on Beaver Creek's probable initial phase nameplate of 248 MW and generic ELCC values for Montana Central wind resources calculated by the consulting firm Energy and Environmental Economics, Inc. (E3), would be [REDACTED] MW of peak capacity credit in the winter and [REDACTED] MW of peak capacity credit in the summer. Beaver Creek is expected to address [REDACTED] of the forecast 2029 winter peak capacity need net of conservation, and [REDACTED] of the forecast 2029 summer peak capacity need net of conservation.

In addition to reliably meeting the physical needs of our customers, Washington state's CETA requires that utilities meet at least 80 percent of electric sales (delivered load) in Washington using non-emitting or renewable resources by 2030, and 100 percent of sales by 2045. The 2023 EPR analysis assumes a linear ramp to achieve the CETA standards in 2030 and 2045, as described in Revised Code of Washington (RCW) 19.405.040; however, actual resource acquisitions through implementation of the Clean Energy Implementation Plan (CEIP) will likely produce a less linear pathway. Before new conservation, the non-emitting/renewable energy needed to meet the 80% clean energy standard in 2030 is forecast in the 2023 IRP Electric Progress Report to be over 7 million megawatt hours (MWh). With an expected contribution of approximately [REDACTED] MWh annually, Beaver Creek would address more than 11% of the 2030 forecast need for additional clean energy resources.

## **Project updates**

**Conditions precedent.** The Closing of the Beaver Creek transaction under the MIPA is subject to certain conditions. If any of the closing conditions that are in favor of PSE are not met and PSE does not waive the condition, then PSE no longer has an obligation to close the transaction. Currently, all identified closing conditions are on track to be met or mitigated by the MIPA closing anticipated in late November.

Specific updates related to each closing condition are provided in Attachment C.

**Permitting.** Since the last Board update, PSE has worked with Caithness to obtain a Stillwater County Conditional Use Permit (CUP) for all required wind energy facilities and to complete additional baseline environmental studies to better assess project and permitting risks related to bald and golden eagles, waters of the United States (WOTUS), and tribal and cultural resources. With respect to the CUP, Caithness obtained a final approval on October 10, 2023. No opposition to the permit has been identified and, as Caithness has recently obtained a similar approval, the risk of opposition emerging is low. The appeal window for this CUP closes on November 9, 2023.

In August and September, PSE completed avian studies to evaluate potential issues under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act and to initiate a two-year avian use survey as Caithness did not undertake this review. PSE's consultants identified a cluster of unoccupied (due to the timing of the survey; nesting occurs in the spring) stick nests within the two-mile buffer evaluated by U.S. Fish and Wildlife Service in eagle incidental take permitting. Because the project layout cannot be materially changed and built by the March 31, 2025 COD, PSE is engaging with Identi-Flight and DETECT

**November 2, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Informational Update**

(both advance avian impact avoidance technologies) to evaluate inclusion in the project to mitigate any risk of being unable to obtain an eagle incidental take permit due to the proximity of nests to turbines.

In September, PSE consultants completed a WOTUS delineation to identify any waters that, if disturbed during construction, would trigger a Clean Water Act Section 404 permit. PSE's consultants identified a number of WOTUS in the project area, primarily in a network of small streams that run between turbine sites (i.e., not in large wetlands or where turbines are proposed). This data set will be used in conversations with the BOP contractor to develop and implement a complete avoidance approach to construction and facility installation. Although we believe that it is more likely than not that PSE will be able to avoid all WOTUS, if total avoidance is not achieved, and due to recent changes in applicable regulations which have materially slowed U.S. Army Corps permitting in Montana, acquisition of a Section 404 permit could take 3 to 18 months.

PSE consultant—Historical Research Associates (HRA)—completed an updated literature review of potential cultural resources and a wind shield survey (from vehicle and road) of the project area. Based on this review, HRA concluded that historic-period resources (e.g., foundations and ranching-related debris scatters) will be common throughout much of the low-lying project area and, as confirmed by the Crow Agency THPO, that it is likely that Tribes would have hunted and gathered across the landscape. HRA also identified or confirmed three resources containing precontact components within the project area and expects that the area was heavily used during precontact and prehistoric periods. In light of these findings, PSE will undertake additional investigation and research prior to ground disturbing activities, including a pedestrian survey and limited shovel testing. A more extensive evaluation, including inviting the Crow Tribe to participate in future survey efforts, is currently being considered for spring 2024 (after the snow season). Overall, given currently available information, PSE considers the risks associated with cultural resources to be low to moderate.

Caithness's consultant, Capital Airspace Group, has performed a shift analysis to analyze alignment of turbine locations with previously issued Federal Aviation Administration (FAA) Determination of No Hazard (DNH) locations. The results indicate that 82 of the 88 turbine pads align with existing DNH locations, five will require a new filing, and one location will need to be refiled. In addition, there is one turbine that is too close to a county road, bringing the total locations planned for submittal to the FAA to seven. Under the terms of the TSA, PSE has until January 2024 to confirm with GE the exact number of turbines that it plans to procure.

**Wind Assessment.** PSE engaged DNV Energy Insights (DNV) to perform a full wind resource assessment for the 232 and 248 MW layouts of the Beaver Creek Wind Project. DNV completed the assessment in October 2023 and determined that the project's NCF and expected annual generation are slightly higher than previously estimated by ArcVera. The expected NCF increased from approximately [REDACTED] to [REDACTED]. Expected annual generation increased from 803,467 GWh to 829,905 GWh.

Previously, Caithness hired ArcVera to provide an updated wind assessment based on the 233.8 MW layout in Stillwater County, which was provided to PSE on July 1, 2023. PSE then hired DNV Energy

**November 2, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Informational Update**

Insights (DNV) to review the ArcVera wind assessment and provide a high-level estimate of project energy inclusive of internal and external wake loss to check consistency with the ArcVera forecast. DNV provided a report summarizing their findings on July 24.

DNV's estimates indicate that the ArcVera estimate is reasonable. See Attachment I for the updated DNV wind resource assessment.

To confirm the competitiveness of the GE turbine pricing, PSE compared the pricing to an active quote from [REDACTED] for 2x MW turbines provided recently to PSE for repowering opportunities. PSE's GE turbine offer is priced at [REDACTED] before turbine options and [REDACTED] after accounting for spare parts and additional turbine options, such as leading-edge blade protection and VAR support. [REDACTED] offered a package of turbine components including the nacelle, hub, blade set and tower adapter for [REDACTED]. Accounting for the estimated tower cost, the comparable Vestas price is estimated to be [REDACTED] which is nearly identical to the GE offered price.

**BOP contractor.** PSE has selected Wanzek to be the BOP contractor for the project. Wanzek is a full-service EPC and BOP contractor in the MasTec Clean Energy and Infrastructure Group headquartered in Fargo, ND. Wanzek was founded in 1971 and completed its first major wind farm in Edgely, ND in 2003. Since then, Wanzec has constructed 17 GW of wind power in the United States, including facilities utilizing the same wind turbine model selected for Beaver Creek.

MasTec, Inc. purchased Wanzec in 2008. MasTec, as well as its subsidiaries, is certified as a minority-controlled company by the National Minority Suppliers Development Council (NMSDC) and is the first Cuban-American minority-controlled public company to join the Fortune 500 list, according to Wanzec's bid response to Caithness's BOP RFP. The Company's CEO, Jose R. Mas, served on the U.S. Department of Commerce National Advisory Council on Minority Business Enterprise for two years (2010-2012), advising the Secretary of Commerce on policy issues associated with the country's minority business community.<sup>1</sup>

Wanzek will be responsible for the detailed design, procurement and construction of all project BOP components including site civil work, wind turbine erection, O&M building, electrical collection system, plant substation, and the generation interconnect transmission line. Wind turbines are not included in

<sup>1</sup> "News Item," [www.mastec.com](https://www.mastec.com), MasTec, Inc., Nov. 29, 2010, <https://www.mastec.com/press-release/1716/mastec-ceo-jose-mas-appointed-to-u-s-department-of-commerce-national-advisory-co>.



the scope of supply. PSE is also procuring the main power transformer and certain substation equipment separately. All other plant components will be procured by Wanzek.

PSE has issued a limited notice to proceed to allow Wanzek to advance engineering and long-lead equipment selection prior to closing and BOP contract execution.

See Attachment D for a detailed project schedule, more information about the selection of the BOP contractor, and PSE's plans for construction management.

**Labor in the BOP Agreement and TSA.** The BOP Agreement with Wanzek and TSA with GE are currently in draft form, and are expected to be executed at or shortly after closing. Each agreement contains language requiring certain labor provisions.

***TSA contract***

The draft TSA between PSE and GE would require GE to comply with any applicable prevailing wage and apprenticeship requirements for any work performed under the LOI at the Beaver Creek Wind Farm site. GE must request in writing the required number of apprentices from qualified apprenticeship programs in Montana, make a good faith effort to offer apprenticeships and require all subcontractors to likewise make a good faith effort to offer such apprenticeships.

***BOP contract***

PSE is developing proposed language for the BOP Agreement that would encourage Wanzek to use union labor, if commercially feasible. PSE anticipates that the project will create approximately 250 jobs at the peak of construction, and that construction will take 9 to 10 months to complete. PSE also anticipates that the project will require three full-time PSE employees permanently on site and approximately 15 to 18 GE staff to support the 5-year Full-Service Agreement. It is unknown whether there will be enough union contractors to satisfy the needs of this project. PSE will work with Montana labor unions on this issue.

To meet the IRA labor provisions, the project will pay prevailing wages and any contractor with four or more employees will be required to have an apprenticeship program in place. This will be part of PSE's BOP contract with Wanzek, and will benefit the local economy.

***Wanzek's Apprenticeship Labor Program***

Wanzek launched its Construction Craft Laborer Apprenticeship Program in 2021. The program is registered with both the Department of Labor and accredited by the National Center for Construction Education & Research (NCCER). The program includes 360 hours of classroom training accredited with NCCER and 4,000 hours of on-the-job training with a journey-level employee, at the end of which participants may earn the industry equivalent of an Associate's degree. Wanzek's program includes tracking systems and processes to support clients' efforts to receive Inflation Reduction Act apprenticeship labor credits. The company's current target rates

for the employment of apprentices, 15% in 2023 and 18% in 2024, exceeds requirement guidance established by the IRS.<sup>2</sup>

**Interconnection service.** The original Large Generator Interconnection Agreement (LGIA) was amended in June 2023 to reflect the updated milestones date to support a March 31, 2025 commercial operations date. PSE also engaged Van Ness Feldman to review the NorthWestern tariff and LGIA and determine if the LGIA would need amendment to reflect a project size smaller than the 315 MW interconnection limit. Van Ness Feldman concluded that constructing less than the full 315 MW by the commercial operations date would likely not be considered a material modification and an amendment to the LGIA would not be needed if the intent is to construct the full 315 MW in phases. PSE also requested that Van Ness Feldman review the impact of changing the turbine type from what is listed in the LGIA. They concluded that it is necessary to notify NorthWestern of the change to the turbine type and update Appendix C of the LGIA. While NorthWestern will perform a material modification analysis of the new turbine type, the definition of Permissible Technological Advancement in NorthWestern's current Large Generator Interconnection Procedures (LGIP) defines the circumstances where the new turbines will not be considered a material modification.

**Updated project budget and financial projections.** PSE has updated its estimated project budget shown since receiving approval from the board of directors to execute the Beaver Creek Wind Project MIPA on August 3, 2023. The updated budget reflects a [REDACTED] decrease and an overall total [REDACTED] increase compared to the preliminary estimate shown in August based on changes in cost and project size. The updated budget incorporates the following changes:

- Development budget reflects reimbursables to Caithness [REDACTED]
- GE contracts reflect the bigger nameplate, updated pricing and contract options [REDACTED]
- BOP contract reflects selected EPC and transformer pricing [REDACTED]
- PSE project management plus contingency reflects updated forecast and inclusion of remaining interconnection upgrade [REDACTED]

<sup>2</sup> "Our History - 2022: Building the Workforce," [www.wanzek.com](https://wanzek.com/about/history), Wanzek Construction, Inc., Sep. 29, 2023, <https://wanzek.com/about/history>.



**November 2, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Informational Update**

- AFUDC decreases due to earlier COD [REDACTED]

Table 1 presents the updated estimated budget for the Beaver Creek Wind Project.

**Table 1. Estimated budget for the Beaver Creek Wind Project**

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement			
GE Contract Option & Spare Parts			
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price			
Step-up Transformer			
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>			
<b>Contingency</b>			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	<b>534,260</b>	<b>2,153</b>	<b>100.0%</b>

Table 2 presents a detailed cash out and funding commitment projection based on a COD of March 31, 2025 and the updated budget presented as Table 1. In November 2023 and end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to the TSA commitment. PSE's contract with Mitsubishi Electric to purchase the transformer includes a cancellation schedule that allows for partial refunds of payments made prior to the end 2023.

**Table 2. Detailed cash out and funding commitment**

(\$/in millions)	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Q1-24	Q2-24	Q3-24	Q4-24	Q1-25	Q2-25	Q3-25	Q4-25	Total
<b>Cash Out Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
<b>Quarterly Cash Total</b>														
<b>Cumulative Cash</b>														
<b>Commitment Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
<b>Commitment Total</b>														

An updated stand-alone financial pro forma is attached as Attachment H.

**Schedule.** The following milestone schedule (Table 3) and project schedule (Figure 1) are based on Wanzek’s BOP project schedule, and updates related to real estate and transmission.

Table 3. *Milestone schedule*

Date	Milestone
Aug 2023	Board approved MIPA execution
Nov 2023	MIPA closes; Board approves execution of BOP, TSA and FSA contracts
Apr 2024	EPC contractor mobilizes and begins Civil Work and O&M Building construction
May 2024	Install of underground collection system begins
May 2024	First WTGs arrive on site
Oct 2024	Substation transformers delivered
Nov 2024	Substation complete – ready for energization
Mar 2025	Transmission service commences
Mar 2025	Target COD

Milestone	Est. Completion Date	2023												2024												2025											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Real Estate	Nov 2023	[Progress Bar]																																			
Permitting	Apr 2024	[Progress Bar]																																			
Engineering	May 2024	[Progress Bar]																																			
Procurement	Oct 2024	[Progress Bar]																																			
Interconnection	Nov 2024	[Progress Bar]																																			
Transmission	Mar 2025	[Progress Bar]																																			
Construction	Mar 2025	[Progress Bar]																																			
														Start Transmission Line Construction												Substation Complete – Ready for Energization											

<sup>3</sup> Eagle Incidental Take Permitting (EITP) is not included in the permitting timeline and would be expected to issue after the facility becomes operational.

### Future recommendation

Subject to the satisfaction of closing conditions by Caithness and acceptable mitigation of outstanding risks, PSE Management intends to recommend, at a date to be determined, that the Board of Directors authorize PSE to execute the Balance of Plant, Turbine Supply and Full-Service agreements as described in this report and in the attached Board Resolutions (Attachment A).



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment A. Board Resolutions

## ATTACHMENT A. BOARD RESOLUTIONS

## Board Resolutions

### APPROVAL OF CONSTRUCTION OF BEAVER CREEK WIND PROJECT

After full discussion, on motion duly made and seconded, the following was unanimously approved:

**WHEREAS**, this Board of Directors (“Board”) of Puget Sound Energy, Inc. (the “Company”) has determined that it is in the best interests of the Company, its customers, shareholders and other stakeholders to add energy resources into the Company’s energy resource portfolio consistent with the Company’s least cost planning and analysis and Clean Energy Transformation Act (“CETA”) compliance efforts;

**WHEREAS**, the Company’s review and analysis of a potential self-developed generation project has determined it to be a least cost and CETA-compliant resource for additional energy resource generation;

**WHEREAS**, the Board previously approved the execution of and the Company’s management has executed a Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC, a Delaware limited liability company;

**WHEREAS**, the facility to be developed and constructed consists of up to 248 MW wind powered electric generation facility to be situated in Stillwater County, Montana and comprising up to 88 2.82 MW wind turbine generators (each, a “WTG”) and associated electrical collection systems and other interconnection facilities (collectively, the “Beaver Creek Wind Project”);

**WHEREAS**, the Company’s management has negotiated with GE Renewables North America, LLC (“GE”), the WTG supplier, the terms and conditions of the purchase of the WTGs and the ongoing operation and maintenance of the wind farm, and has negotiated with Wanzek Construction, Inc. (“Wanzek”) the terms and conditions of the construction of the wind farm facility, pursuant to the MIPA and the principal definitive transaction documents (together, the “Principal Transaction Documents”) as described below:

1. PSE will contract with GE for the purchase of up to 88 WTGs (with an option to reduce the order by up to 6 WTGs by January 10, 2024), and for the delivery, erection, testing and commissioning of the WTGs pursuant to a Contract for the Sale of Power Generation Equipment and Related Services (the “TSA”). A letter of intent has been executed with GE on September 22, 2023 and a deposit of approximately [REDACTED] has been paid to GE. The full contract price under the TSA for 88 WTGs is approximately \$ [REDACTED] payable by PSE pursuant to a payment schedule tied to the manufacturing, shipment, erection, commissioning and final completion of the Beaver Creek Wind Project.
2. Once the WTGs are placed into service, GE will provide an availability guaranty and a five-year mechanical warranty pursuant to the TSA and will provide five years of maintenance, operation, spare parts and service of the WTGs under a separate Full Service Agreement (“FSA”) between PSE and GE.

## ATTACHMENT A. BOARD RESOLUTIONS

3. PSE will contract with Wanzek to perform, or cause to be performed, all engineering, procurement and construction relating to the balance of plant for the Beaver Creek Wind Project pursuant to a Balance of Plant Agreement ("BOP Agreement"). PSE currently estimates that it will pay Wanzek approximately [REDACTED] for performing its scope of work (which will consist of certain of the civil and electrical engineering and construction of the Beaver Creek Wind Project such as the roads, WTG foundations, the electrical collection system, and the project's interconnection with substation transmission facilities), which amount will be payable by PSE as Wanzek reaches certain scheduled milestones on the construction schedule.

**WHEREAS**, the Principal Transaction Documents, the current development status and development plan of the Beaver Creek Wind Project, its anticipated budget and the primary risks relevant to its development, construction and operation are described more fully in a report provided to the Board in advance of this meeting and filed with the minutes (the "Beaver Creek Construction Proposal"); and

**WHEREAS**, the officers now seek Board approval of and authority to enter into the Principal Transaction Documents and all other contracts and actions necessary for the execution of the Principal Transaction Documents, and any such additional contracts and actions described in the Beaver Creek Construction Proposal relating to the development, construction and operation of the Beaver Creek Wind Project;

**IT IS, THEREFORE**

**RESOLVED**, that the Board, after full consideration and due deliberation, deems it advisable and in the best interests of the Company, its customers, shareholders and other stakeholders to approve the construction and operation of the Beaver Creek Wind Project pursuant to the Principal Transaction Documents, and any related agreements and other transactions described in the Beaver Creek Construction Proposal and in accordance with the budget and other materials set forth therein;

**RESOLVED**, that the Board hereby authorizes the Company's Chief Executive Officer, its Chief Financial Officer, its Chief Operating Officer, its General Counsel, its Vice President of Energy Supply, its Vice President, Business Development and Mergers & Acquisitions, its Corporate Secretary, and any such other officers they deem appropriate (the "Authorized Officers") to execute (i) the Principal Transaction Documents and all other agreements or contracts or actions necessary for the execution of the Principal Transaction Documents, including any further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers and (ii) all other agreements or actions described in the Beaver Creek Construction Proposal, which may also include any such further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers; and be it further

**RESOLVED**, that the Authorized Officers are further authorized to waive any conditions precedent to the closing of any of the Principal Transaction Documents in order to facilitate the closing of such agreement, provided that each of the Authorized Officers agree to such waiver and deem it to be in the best interest of the Company.

**ATTACHMENT A. BOARD RESOLUTIONS****GENERAL AUTHORITY**

**RESOLVED, FURTHER**, that any and all actions taken by the officers of the Company, or any of them, as deemed by such officers to be necessary or advisable to effectuate the transactions contemplated by the foregoing resolutions, including the filing of appropriate documentation with the Washington Utilities and Transportation Commission, whether prior to or subsequent to this action by this Board, are hereby authorized, approved and ratified, and the taking of any and all such actions and the performance of any and all such things in connection with the foregoing shall conclusively establish such officers' authority therefore from the Company and the approval and ratification thereof by this Board.





*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B. Summary of Key Agreements

## ATTACHMENT B. SUMMARY OF KEY AGREEMENTS

## Summary of Key Agreements

PSE intends to recommend, at a date to be determined, that the board authorize PSE to execute three agreements. This attachment summarizes key terms associated with the following agreements:

- **Balance of Plant Agreement (“BOP Agreement”) with Wanzek** with an indicative price [REDACTED] to erect the turbines, design and build the electrical collector system, design and build the Project gen-tie transmission line, design and build a Project substation, design and build turbine foundations, and design and build the Project operations and maintenance (O&M) building.
- **Turbine Supply Agreement (“TSA”) with GE** to purchase 88 x 2.82 MW-127M turbines. PSE has the option to reduce the number of turbines by up to six units from 88 to 82 before January 10, 2024, which would reduce the total nameplate from 248.16 MWAC to 231.24MWAC and reduce the cost by [REDACTED] per turbine. The TSA is in draft form. PSE is negotiating terms directly with GE and anticipates contract execution to occur shortly after closing.
- **Full-Service Agreement (“FSA”) with GE** at either [REDACTED] per turbine/per year (for a 5-year term) or [REDACTED] per turbine/per year (for a 10-year term) for certain operation and maintenance services for the turbines supplied under the TSA.

The attachment includes the following contents:

- B-1. BOP Agreement Executive Summary
- B-2. TSA Letter of Intent (LOI) Agreement Executive Summary
- B-3. TSA Executive Summary
- B-4. FSA Executive Summary
- B-5. Baker Botts Memo: TSA and FSA Worst Case Scenario



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B-1. BOP Agreement Executive Summary

(PREPARED BY BAKER BOTTS)

**Summary of Key Terms**  
**Beaver Creek – Balance of Plant Agreement**

*The below chart sets forth the key terms identified in the contemplated balance of plant agreement to be entered into between Wanzek and Puget Sound Energy, Inc. The below list is not an exhaustive list of provisions, but rather is intended to address only the major or key provisions touching upon fundamental aspects of the contemplated balance of plant agreement. Terms used and not otherwise defined herein have the respective meanings ascribed to them in the balance of plant agreement. Note that the balance of plant agreement remains subject to negotiation and the below summary reflects the state of such negotiations as of September 26, 2023.*

PROVISION	SUMMARY
<b>Parties</b>	<ul style="list-style-type: none"><li>— Contractor – Wanzek (“<b>Wanzek</b>”)</li><li>— Owner – Puget Sound Energy, Inc. (“<b>PSE</b>”)</li></ul>
<b>Project</b>	<ul style="list-style-type: none"><li>— 248MW Beaver Creek wind project located in Stillwater County, Montana.</li></ul>
<b>Contract Type</b>	<ul style="list-style-type: none"><li>— Fixed-price, turnkey EPC agreement.</li><li>— Payment terms include: net 30 payment terms, [ ]% down payment, and Wanzek will be cash neutral throughout project duration.</li></ul>
<b>Contract Price</b>	<ul style="list-style-type: none"><li>— \$[ ]<sup>1</sup> (subject to adjustments related to delay events or changes in scope).</li></ul>
<b>Termination</b>	<ul style="list-style-type: none"><li>— [The agreement includes customary termination rights with respect to each party. PSE may terminate [REDACTED]</li><li>— PSE may terminate [REDACTED]</li><li>— Wanzek may terminate for [REDACTED]</li><li>— [REDACTED]</li><li>— [REDACTED]</li></ul>
<b>Warranties</b>	<ul style="list-style-type: none"><li>— Standard EPC warranty for 2 years after Substantial Completion of the Project, including all Equipment (other than the Wind Turbine Generators).</li><li>— Agreement includes serial defect warranty for Equipment [REDACTED].</li></ul>

<sup>1</sup> Contract Price to be confirmed.

<sup>2</sup> Contractor Events of Default remain subject to negotiation.

<sup>3</sup> Termination Payment terms remains subject to negotiation

<b>Limitation on Liability</b>	<p>— Wanzek's overall cumulative liability for damages [REDACTED]</p>
<b>Liquidated Damages</b>	<p>— Delay LDs [REDACTED]</p> <p>— Aggregate LD cap: [REDACTED] of the Contract Price.</p>
<b>Credit Support</b>	— [PSE to provide a parent company guaranty if necessary.]
<b>Change Order</b>	— [Customary change order terms providing for adjustments to the Project's scope, price and completion dates.] <sup>5</sup>
<b>Indemnities</b>	— The agreement includes customary indemnities from each of PSE and Wanzek in favor of the other party, including general indemnities for claims for property damage, personal injury, failure to pay taxes, and hazardous materials, with respect to PSE only, for the use and modification of uncompleted work in the event of a termination of the agreement. In addition, with respect to Wanzek only, indemnities for claims related to liens, intellectual property right infringement, failure to maintain insurance, violation of law failure to pay subcontractors.
<b>Force Majeure</b>	— [Customary Force Majeure relief for both parties. Wanzek will be entitled to a change order in the event one or more force majeure event causes more than 30 days of delay in the aggregate.] <sup>6</sup>
<b>Insurance</b>	<p>— [Wanzek shall maintain (i) commercial general liability insurance, (ii) worker's compensation insurance, (iii) automobile liability insurance, (iv) excess liability insurance, (v) professional liability insurance, (vi) aircraft liability insurance, and, at its option, all risk equipment insurance.</p> <p>— PSE shall maintain All Risk Installation and Builder's Risk Insurance.]<sup>7</sup></p>
<b>Assignment</b>	<p>— PSE may assign the BOP Agreement without consent to an entity that has credit rating no lower than the credit rating of PSE's parent as of the date of execution, and provided the assignee has adequate experience and expertise to perform PSE's obligations under the agreement.</p> <p>— Wanzek may not assign the BOP Agreement without the prior written consent of PSE.</p>

<sup>4</sup> Delay liquidated damages provisions remain subject to negotiation.

<sup>5</sup> Change order provisions remain subject to negotiation.

<sup>6</sup> Force Majeure provisions remain subject to negotiation.

<sup>7</sup> Insurance provisions remain subject to negotiation.

<b>Governing Law</b>	<ul style="list-style-type: none"><li>— The governing laws are the laws of the State of Montana.</li><li>— Senior representatives will discuss to attempt to resolve any disputes prior to [litigation/arbitration].<sup>8</sup></li><li>— Any legal action with respect to the BOP Agreement shall be brought in the United States District Court of Montana or, if such court lacks jurisdiction, in the district court of the State of Montana located in Yellowstone County.</li></ul>
<b>Other Material Provisions</b>	<ul style="list-style-type: none"><li>— Labor and materials shall be in accordance with IRA requirements.</li><li>— PSE strongly encourages Wanzek to use union labor wherever possible.</li><li>— Wanzek will be required to meet the GE TSA production schedule (“6-8” turbines per week).</li><li>— [REDACTED]</li></ul>

<sup>8</sup> Dispute resolution provision remains subject to negotiation.



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B-2. TSA Letter of Intent (LOI) Agreement Executive Summary

(PREPARED BY BAKER BOTTS)



**Summary of Key Terms**  
**Beaver Creek – Letter of Intent in relation to the Turbine Supply Agreement**

*The below chart sets forth the key terms identified in the letter of intent dated September 25, 2023 (the “LOI”) between GE Renewables North America, LLC and Puget Sound Energy, Inc. The below list is not an exhaustive list of provisions, but rather is intended to address only the major or key provisions touching upon fundamental aspects of the LOI. Terms used and not otherwise defined herein have the respective meanings ascribed to them in the LOI.*

PROVISION	SUMMARY
<b>Parties</b>	<ul style="list-style-type: none"><li>— Seller – GE Renewables North America, LLC (“GE”)</li><li>— Buyer – Puget Sound Energy, Inc. (“PSE”)</li></ul>
<b>Project</b>	<ul style="list-style-type: none"><li>— 248MW Beaver Creek wind project located in Stillwater County, Montana.</li></ul>
<b>Contract Type</b>	<ul style="list-style-type: none"><li>— Letter of intent for the purchase of wind turbine generators and related services.</li><li>— Other than the terms expressly set out in the LOI, the terms and conditions are governed in accordance with GE’s latest draft of the turbine supply agreement (the “TSA”). Open items shall be mutually agreed between the parties.</li></ul>
<b>Date</b>	<ul style="list-style-type: none"><li>— September 25, 2023.</li></ul>
<b>Equipment</b>	<ul style="list-style-type: none"><li>— 88 model GE 2.8-127-89 (with a nameplate rating of 2.82 MW), together with all internal parts and components as required for a fully functioning wind turbine.</li><li>— Deliveries commence on 6 May 2024.</li></ul>
<b>Contract Price</b>	<ul style="list-style-type: none"><li>— [REDACTED] (subject to adjustments for Excusable Delays, change orders, changes in tariffs/duties and PSE’s option to [REDACTED])</li><li>— Pricing is predicated on the TSA being signed, and full notice to proceed issued thereunder, by November 3, 2023 (note that after the execution of the LOI, this date has since been updated).</li><li>— PSE is entitled to an [REDACTED] reduction per unit if PSE executes [REDACTED] and a BESS purchase and services agreement (for the Beaver Creek project or another conterminous project of comparable size) by December 31, 2023.</li></ul>
<b>Payment</b>	<ul style="list-style-type: none"><li>— [REDACTED]</li><li>— [REDACTED]</li><li>— [REDACTED]</li></ul>
<b>Termination</b>	<ul style="list-style-type: none"><li>— [REDACTED]</li><li>— [REDACTED]</li></ul>

	<p>— [REDACTED]</p> <p>— [REDACTED]</p>
<b>Warranties</b>	<p>— Standard equipment and services warranty for the earlier of (i) [REDACTED] after Turbine Completion of the relevant Unit; and (ii) [REDACTED] from delivery of the last Major Component of the relevant Unit.</p>
<b>Limitation on Liability</b>	<p>— GE's overall liability for damages [REDACTED]</p> <p>— GE's liability for liquidated damages [REDACTED]</p>
<b>Liquidated Damages</b>	<p>— GE shall pay delay liquidated damages for [REDACTED]</p> <p>— GE shall pay liquidated damages for [REDACTED]</p>
<b>Credit Support</b>	<p>— None under the LOI.</p> <p>— Under the TSA, PSE shall provide an officer's certificate signed by Puget Energy, Inc. confirming that PSE has received approval from its board of directors (and any other necessary internal approvals) to proceed with the construction of the project and that the facility has secured dedicated financing (whether self-financed or otherwise).</p>
<b>Change Order</b>	<p>— Customary change order terms for adjustments to the scope of the start-up and commissioning services [REDACTED]</p> <p>— [REDACTED]</p>
<b>Guarantee</b>	<p>— GE guarantees that the Facility will achieve 100% of the Nominal Calculated Energy as set forth in the Technical Specification.</p>
<b>Indemnities</b>	<p>— Customary indemnities from both parties, including for (i) third-party claims for property damage, personal or bodily injury or death, fines and penalties imposed by governmental authorities, employers' liability or workers' compensation claims, anti-money laundering and anti-bribery law violations; (ii) (only being given by GE), failure to pay Seller Taxes, intellectual property infringement, undischarged liens and Hazardous Substances that are unlawfully/improperly handled; and (iii) (only being given by PSE) connection of the Units to an unapproved distribution system.</p>
<b>Force Majeure and Excusable Delays</b>	<p>— GE is entitled to customary Excusable Delay events, including causes beyond GE's reasonable control, force majeure events (including new and unforeseeable adverse impacts of COVID-19), delays in the prerequisite work of PSE or PSE's subcontractors and suppliers, specified PSE-caused delays and shipment of the Equipment to storage. Such events would provide customary schedule and cost relief.</p> <p>— PSE is excused from the performance of its obligations (other than with respect to payment) for causes beyond PSE's reasonable control, force majeure events or other acts or omissions of GE.</p>
<b>Insurance</b>	<p>— Each Party shall maintain (i) commercial general liability or public liability insurance; and (ii) automobile liability insurance.</p>

	— PSE shall procure (ii) Contractor's All Risk insurance or All Risk Builder's Risk insurance; (ii) "All Risks" property insurance.
<b>Assignment</b>	— Neither Party may assign the LOI without the consent of the other Party.
<b>Governing Law</b>	<ul style="list-style-type: none"><li>— The LOI and the TSA shall be governed by the laws of the State of New York.</li><li>— The United States District Court for the Southern District of New York has jurisdiction over legal action arising under the LOI and/or TSA.</li><li>— A detailed Technical Dispute resolution mechanism is prescribed in the TSA in relation to Technical Disputes concerning completion issues.</li></ul>
<b>Other Material Provisions</b>	<ul style="list-style-type: none"><li>— PSE is required to achieve Mechanical Completion within 30 days (or a later date notified by PSE to GE) after the actual Delivery Date for the last Major Component of the first Unit and maintain a weekly rate of 6-8 Units of Mechanical Completion. If PSE fails to meet such objectives (for reasons not attributable to GE), GE would be entitled to a Change Order of [REDACTED]</li><li>— GE is required to refund [REDACTED]</li><li>— [REDACTED]</li><li>— PSE has the right to elect for pre-commissioning services at [REDACTED]</li><li>— Upon entry into the TSA and GE's receipt of [REDACTED], and subject to the occurrence of the Closing Date, GE shall release each of Beaver Creek Wind II, LLC and Beaver Creek Wind III, LLC from the Caithness MSA dated September 15, 2017.</li><li>— [REDACTED]</li></ul>



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B-3. TSA Executive Summary

(PREPARED BY BAKER BOTTS)

**Summary of Key Terms**  
**Beaver Creek – Turbine Supply Agreement**

*The below chart sets forth the key terms identified in the contemplated turbine supply agreement to be entered into between GE Renewables North America, LLC and Puget Sound Energy, Inc. The below list is not an exhaustive list of provisions, but rather is intended to address only the major or key provisions touching upon fundamental aspects of the contemplated turbine supply agreement. Terms used and not otherwise defined herein have the respective meanings ascribed to them in the turbine supply agreement.*

PROVISION	SUMMARY
<b>Parties</b>	<ul style="list-style-type: none"><li>— Seller – GE Renewables North America, LLC (“GE”)</li><li>— Buyer – Puget Sound Energy, Inc. (“PSE”)</li></ul>
<b>Project</b>	<ul style="list-style-type: none"><li>— 248MW Beaver Creek wind project located in Stillwater County, Montana.</li></ul>
<b>Contract Type</b>	<ul style="list-style-type: none"><li>— Contract for the sale of power generation equipment and related services (the “TSA”).</li><li>— A letter of intent (“LOI”) in relation to the TSA was signed on September 25, 2023.</li></ul>
<b>Equipment</b>	<ul style="list-style-type: none"><li>— 88 model GE 2.8-127-89 (with a nameplate rating of 2.82 MW), together with all internal parts and components as required for a fully functioning wind turbine.</li><li>— Deliveries commence on 6 May 2024.</li></ul>
<b>Contract Price</b>	<ul style="list-style-type: none"><li>— [REDACTED] (subject to adjustments for Excusable Delays, change orders, changes in tariffs/duties and PSE’s option to [REDACTED])</li><li>— Pricing is predicated on the TSA being signed, and full notice to proceed issued thereunder, by December 4, 2023.</li><li>— PSE is entitled to an [REDACTED] reduction per unit if PSE executes [REDACTED] and a BESS purchase and services agreement (for the Beaver Creek project or another continuous project of comparable size) by December 31, 2023.</li></ul>
<b>Payment</b>	<ul style="list-style-type: none"><li>— [REDACTED]</li><li>— [REDACTED]</li></ul>
<b>Termination</b>	<ul style="list-style-type: none"><li>— [REDACTED]</li><li>— [REDACTED]</li></ul>
<b>Warranties</b>	<ul style="list-style-type: none"><li>— Standard equipment and services warranty for the earlier of (i) [REDACTED] after Turbine Completion of the relevant Unit; and (ii) [REDACTED] from delivery of the last Major Component of the relevant Unit.</li></ul>

REDACTED VERSION

<b>Limitation on Liability</b>	<ul style="list-style-type: none"> <li>— GE's overall liability for damages [REDACTED]</li> <li>— GE's liability for liquidated damages [REDACTED]</li> </ul>
<b>Liquidated Damages</b>	<ul style="list-style-type: none"> <li>— GE shall pay delay liquidated damages for [REDACTED]</li> <li>— GE shall pay liquidated damages for [REDACTED]</li> </ul>
<b>Credit Support</b>	<ul style="list-style-type: none"> <li>— PSE shall provide an officer's certificate signed by Puget Energy, Inc. confirming that PSE has received approval from its board of directors (and any other necessary internal approvals) to proceed with the construction of the project and that the facility has secured dedicated financing (whether self-financed or otherwise).</li> </ul>
<b>Change Order</b>	<ul style="list-style-type: none"> <li>— Customary change order terms for adjustments to the scope of the start-up and commissioning services [REDACTED]</li> <li>— [REDACTED]</li> </ul>
<b>Guarantee</b>	<ul style="list-style-type: none"> <li>— GE guarantees that the Facility will achieve 100% of the Nominal Calculated Energy as set forth in the Technical Specification.</li> </ul>
<b>Indemnities</b>	<ul style="list-style-type: none"> <li>— Customary indemnities from both parties, including for (i) third-party claims for property damage, personal or bodily injury or death, fines and penalties imposed by governmental authorities, employers' liability or workers' compensation claims, anti-money laundering and anti-bribery law violations; (ii) (only being given by GE), failure to pay Seller Taxes, intellectual property infringement, undischarged liens and Hazardous Substances that are unlawfully/improperly handled; and (iii) (only being given by PSE) connection of the Units to an unapproved distribution system.</li> </ul>
<b>Force Majeure and Excusable Delays</b>	<ul style="list-style-type: none"> <li>— GE is entitled to customary Excusable Delay events, including causes beyond GE's reasonable control, force majeure events (including new and unforeseeable adverse impacts of COVID-19), delays in the prerequisite work of PSE or PSE's subcontractors and suppliers, specified PSE-caused delays and shipment of the Equipment to storage. Such events would provide customary schedule and cost relief.</li> <li>— PSE is excused from the performance of its obligations (other than with respect to payment) for causes beyond PSE's reasonable control, force majeure events or other acts or omissions of GE.</li> </ul>
<b>Insurance</b>	<ul style="list-style-type: none"> <li>— Each Party shall maintain (i) commercial general liability or public liability insurance; and (ii) automobile liability insurance.</li> <li>— PSE shall procure (ii) Contractor's All Risk insurance or All Risk Builder's Risk insurance; (ii) "All Risks" property insurance.</li> </ul>
<b>Assignment</b>	<ul style="list-style-type: none"> <li>— PSE may assign the TSA to an "Eligible Assignee" without consent, which includes an affiliate of PSE or an entity which has a tangible net worth of at least [REDACTED] or a creditor rating with Standard &amp; Poor's of at least BBB- and is not a competitor of GE in the wind manufacturing or service business.</li> <li>— GE may assign the TSA to its affiliates without consent, provided that it guarantees the performance of such assignee.</li> </ul>
<b>Governing Law</b>	<ul style="list-style-type: none"> <li>— The governing laws are the laws of the State of New York.</li> <li>— Any legal action with respect to the TSA shall be brought in the United States District Court for the Southern District of New York.</li> </ul>

<b>Other Material Provisions</b>	<ul style="list-style-type: none"><li>— A detailed Technical Dispute resolution mechanism is prescribed in relation to Technical Disputes concerning completion issues.</li><li>— PSE is required to achieve Mechanical Completion within 30 days (or a later date notified by PSE to GE) after the actual Delivery Date for the last Major Component of the first Unit and maintain a weekly rate of 6-8 Units of Mechanical Completion. If PSE fails to meet such objectives (for reasons not attributable to GE), GE would be entitled to a Change Order of [REDACTED]</li><li>— GE is required to refund [REDACTED]</li><li>— [REDACTED]</li><li>— PSE has the right to elect for pre-commissioning services at [REDACTED]</li><li>— Upon entry into the TSA and GE's receipt of [REDACTED] and subject to the occurrence of the Closing Date, GE shall release each of Beaver Creek Wind II, LLC and Beaver Creek Wind III, LLC from the Caithness MSA dated September 15, 2017.</li><li>— [REDACTED]</li></ul>
--	--





*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B-4. FSA Executive Summary

(PREPARED BY BAKER BOTTS)

**Summary of Key Terms**  
**Beaver Creek – Full Service Agreement**

*The below chart sets forth the key terms identified in the contemplated full service agreement to be entered into between [GE Electric International, Inc.]<sup>1</sup> and [Puget Sound Energy, Inc.]. The below list is not an exhaustive list of provisions, but rather is intended to address only the major or key provisions touching upon fundamental aspects of the contemplated full service agreement. Terms used and not otherwise defined herein have the respective meanings ascribed to them in the full service agreement.*

PROVISION	SUMMARY
<b>Parties</b>	— Operator – [GE Electric International, Inc.] (“GE”) — Owner – [Puget Sound Energy, Inc.] (“PSE”)
<b>Project</b>	— 248MW Beaver Creek wind project located in Stillwater County, Montana.
<b>Contract Type</b>	— Full service agreement in relation to services for the operation of the Facility (the “FSA”).
<b>Term</b>	— [REDACTED]
<b>Services</b>	— Included in the Agreement Price: [REDACTED] — Excluded from the Agreement Price: [REDACTED]
<b>Contract Price</b>	— Pricing varies depending on the term: [REDACTED] — Payment terms are net 30 days. — [REDACTED]
<b>Termination</b>	— [REDACTED]

<sup>1</sup> **BB Note:** PSE and GE entities to be confirmed. It has been communicated to GE that the Operator needs to be an entity of sufficient financial standing.

<sup>2</sup> **BB Note:** The term is currently under consideration by PSE. Under the turbine supply agreement, PSE shall be entitled to a \$87,000 per Unit discount if PSE executes both a separate 5 or 10-year FSA and separate BESS purchase & services agreement with GE affiliates by December 1, 2023 and December 31, 2023 respectively.

	<p>—</p> <p>—</p>
<b>Warranties</b>	<p>— Customary warranties that the (i) Parts shall meet the Technical Specification under the turbine supply agreement, shall be free from defects in design, material, workmanship, manufacturing and title and shall be free of liens/encumbrances; and (ii) Services shall be performed in a competent, diligent manner in accordance with the FSA and Prudent Industry Practices and shall be free of defects in workmanship, manufacturing, title and free and clear of any and all liens, security interests or other encumbrances.</p> <p>— The warranty shall expire (i) in the case of Parts, [REDACTED] or if not installed, [REDACTED] [REDACTED] or (ii) in the case of Services, [REDACTED] after the performance of the Service. [REDACTED]</p>
<b>Limitation on Liability</b>	<p>— GE's overall liability for damages [REDACTED]</p> <p>— GE's liability for availability liquidated damages [REDACTED]</p>
<b>Liquidated Damages</b>	<p>— GE shall be liable to pay availability liquidated damages [REDACTED]</p>
<b>Change Order</b>	<p>— Customary change order terms for which GE would be entitled to cost and/or schedule relief.</p>
<b>Guarantee</b>	<p>— GE is required to provide a Guaranteed Performance Commitment – [REDACTED] The guaranteed production based availability shall be calculated in accordance with the FSA.</p>
<b>Indemnities</b>	<p>— Customary indemnities from both parties, including for (i) third party claims for property damage, personal injury or bodily injury or death; (ii) fines or penalties imposed by any governmental authority in connection with the breach of applicable Laws; (iii) employers' liability or workers' compensation claims; (iv) breaches of anti-money laundering or anti-bribery laws; (v) failure to pay taxes; and (vi) (where GE is the indemnifying party) claims for unfiled liens and intellectual property infringements.</p>
<b>Force Majeure and Excusable Delay</b>	<p>— The parties are entitled to customary Excusable Delay events, including causes beyond their reasonable control, Force Majeure Events, (to PSE's benefit) failure of GE to timely perform its obligations under the FSA and (to GE's benefit) an Owner-Caused Delay (being PSE's failure to comply with limited, specified obligations). Such events would provide customary schedule relief and in the case of GE, cost relief.</p>

<sup>3</sup> **BB Note:** Terminable events currently under negotiation.

<sup>4</sup> **BB Note:** Indemnity provision is under negotiation.

	<p>— PSE<sup>5</sup> has the right to terminate the Agreement [REDACTED]</p>
<b>Insurance</b>	<p>— GE is required to maintain (i) workers' compensation insurance; (ii) commercial general liability or public insurance; (iii) business automobile liability insurance; and (iv) excess liability insurance.</p> <p>— PSE is required to maintain (i) workers' compensation insurance; (ii) commercial general liability or public insurance; (iii) excess liability insurance; and (iv) all risk property insurance.</p>
<b>Assignment</b>	<p>— PSE may assign the TSA to an "Eligible Assignee" without consent, which includes an affiliate of PSE or an entity which has a tangible net worth of at least [REDACTED] or a creditor rating with Standard &amp; Poor's of at least BBB- and is not a competitor of GE in the wind service business.</p> <p>— GE may assign the TSA to its affiliates without consent, provided that it guarantees the performance of such assignee.</p>
<b>Governing Law</b>	<p>— The governing laws are the laws of the State of New York.</p> <p>— Any legal action with respect to the FSA shall be brought in the United States District Court for the Southern District of New York.</p>
<b>Other Material Provisions</b>	<p>— [REDACTED]</p>

<sup>5</sup> **BB Note:** As per the TSA negotiations, we expect GE will request this is a mutual right.



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment B-5. TSA and FSA Worst Case Scenario Memo

(PREPARED BY BAKER BOTTS)



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment C. Progress Report on Conditions Precedent

## ATTACHMENT C. Progress Report on Conditions Precedent

## Progress Report on Conditions Precedent

The Closing of the transaction under the MIPA is subject to certain conditions. This appendix includes a list of the conditions, their status and summarizes any relevant updates since the August 2023 Board of Directors meeting at which the MIPA was approved.

The most important PSE favorable closing condition in the MIPA is that the Seller will be required to convey the project in a “Ready for NTP State”, such that critical items identified in the diligence processes are addressed and notice to proceed can be issued to the selected EPC contractor substantially simultaneously with Closing. The Ready for NTP State criteria, which are listed in Exhibit B of the MIPA, contemplate satisfaction of the conditions in Table 1:

Table 1. *Ready for NTP State conditions to closing (MIPA Exhibit B)*

Condition	Status	Update(s)
1. The BOP Agreement, Turbine Supply Agreement and Full Service Agreement shall each be in agreed form with each of their respective counterparties and otherwise in form and substance satisfactory to Buyer in its reasonable discretion, not to be unreasonably, withheld, conditioned or delayed	<b>On track</b>	<p><b>BOP:</b> Notified winning bidder, on track to have agreement in form acceptable to PSE and ready to execute by or shortly after MIPA closing.</p> <p><b>TSA:</b> LOI was executed the week of Sep. 25, 2023. PSE is working to amend the LOI to reflect a new payment schedule with GE. Close to having TSA in form acceptable to PSE; on track to have contract ready to execute by or shortly after MIPA closing.</p> <p><b>FSA:</b> On track to have contract ready to execute by or shortly after MIPA closing.</p>



**ATTACHMENT C. Progress Report on Conditions Precedent**

Condition	Status	Update(s)
<p>2. Real Estate</p> <p>a. delivery of current estoppels in connection with all leasehold and easement interests in Real Property;</p> <p>b. delivery of an estoppel to confirm the release of the reversionary interest under the Master Lease Assignment Agreement (Phase 1) benefiting Beaver Creek Wind;</p> <p>c. curing of any and all backdated assignments of Real Property interests; and</p> <p>d. amendment of the rental and other provisions, as applicable, of all documents creating interest in Real Property to the satisfaction of Buyer and substantially in the form of lease amendment attached [to MIPA] as Exhibit H</p>	<b>On track</b>	<p>Items 2(a) and 2(d): Caithness is pursuing estoppel certificates and lease amendments with the landowners as a condition to closing the MIPA.</p> <p>Landowner package was delivered to lessors week of Sep. 25, covering amendments to wind energy lease agreements, abstract and estoppel agreements.</p> <p>Items 2(b) and 2(c) in the column to the left have been satisfied.</p>
<p>3. Delivery of a Phase I Environmental Assessment for the Site and the Sweet Grass County Real Property, in each case, in accordance with Section 2.4(a)(viii) [of MIPA] and reasonably satisfactory to Buyer</p>	<b>Completed</b>	<p>PSE has received a copy of the Phase I Environmental Assessment and a review is currently underway.</p>
<p>4. Other than as contemplated by clause (d) of Item 2 of this Exhibit B [of the MIPA]<sup>1</sup>, the Project Company shall have not amended or modified the leases covering the Real Property in existence as of the Execution Date</p>	<b>On track</b>	

---

<sup>1</sup> See also Item 2 in Table 1 herein.

## ATTACHMENT C. Progress Report on Conditions Precedent

Condition	Status	Update(s)
5. The Project Company shall have obtained the Closing Required Permits, except as may be waived by Buyer in its sole discretion, all such permits and authorizations are final and not subject to further challenge or appeal	In Progress	<p>Stillwater County approved a final CUP on October 10. No opposition to the permit has been identified and, as Caithness has recently obtained a similar approval, the risk of opposition emerging is low. The appeal window for this permit closes on November 9, 2023. County commissioners approved amendment to tax abatements on October 17, 2023 adding successors and assigns clarifying language.</p> <p>The delineation of jurisdictional waters (potentially requiring a Clean Water Act, Section 404 permit for any in-water construction) identified waters that must be avoided to avoid triggering additional permitting. Early engagement with the BOP contractor indicates that project design and construction can be modified to avoid all jurisdictional waters at a cost less than [REDACTED] cost threshold in the MIPA). Additional engagement will take place between PSE's environmental consultants and the BOP contractor once a limited notice to proceed is executed.</p> <p>The Project Company has confirmed that 81 turbines can be sited within the existing and permitted FAA Determinations of No Hazard areas. Additional discussion are underway to determine whether additional turbines can be refilled within limits of the other commercial agreements. The non-ministerial permits that PSE (or the BOP contractor) has agreed to obtain include an Eagle Incidental Take Permit, road encroachment permits and any air quality permit that may be required during construction.</p>

REDACTED VERSION

- C-3 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

**ATTACHMENT C. Progress Report on Conditions Precedent**

In addition to the Ready for NTP State conditions, there are also buyer's conditions to closing that are favorable to PSE, including the following:

**Table 1. Buyer's Conditions to Closing (MIPA Article 7)**

Condition	Status	Update(s)
a. <u>Ready for NTP.</u> The Primary Project shall have achieved the Ready for NTP State.	Confirmed at closing	See Table 1 above
b. <u>Representations and Warranties.</u> The representations and warranties of Seller and Project Company Article 3 and Article 4 [of the MIPA] set forth in shall be true and correct in all material respects (other than the Seller Fundamental Representations, which shall be true and correct in all respects) as of the Closing Date (or if such representations and warranties expressly relate to a specific date, as of such specific date).	Due at closing	
c. <u>Compliance with Provisions.</u> Seller shall have performed or complied in all material respects with all covenants and agreements contained in this Agreement on its part required to be performed or complied with at or prior to the Closing.	Confirmed at closing	
d. <u>Seller Closing Deliveries.</u> Seller shall have delivered, or caused to be delivered, to Buyer each of the agreements, documents and other instruments required to be made or delivered by it to Buyer at the Closing pursuant to Section 2.4(a) [of MIPA].	Due at closing	
e. <u>No Restraint.</u> There shall be no injunction, restraining order or order of any nature issued by any Governmental Authority of competent jurisdiction over Seller or Law which materially restrains, enjoins or otherwise prohibits or makes illegal the Transaction.	Confirmed at closing	

## ATTACHMENT C. Progress Report on Conditions Precedent

Condition	Status	Update(s)
f. <u>Required Consents</u> . Project Company Required Consents shall have been obtained, shall be final, non-appealable and in full force and effect, and shall be in form and substance reasonably satisfactory to Buyer.	Due at closing	
g. <u>Northwestern Transmission Rights</u> . Buyer shall have secured the NorthWestern Transmission Rights.	Mitigation on track	
h. <u>No Litigation</u> . There is no Action that (i) questions or challenges the validity of the Transaction or (ii) individually, or in the aggregate with any other Action, would adversely affect either Party's ability to perform its obligations hereunder in any material respect.	Confirmed at closing	
i. <u>No Material Adverse Effect</u> . No Material Adverse Effect shall have occurred and be continuing.	Confirmed at closing	
j. <u>Wind Data</u> . Seller shall have granted to the Project Company a non-exclusive license to the Wind Data, substantially in the form of Exhibit F attached [to the MIPA] and Buyer shall grant Seller a non-exclusive license applicable from and after the Closing Date to the Wind Data from the Meteorological Towers so long as such towers remain in place, substantially in the form of Exhibit G attached [to the MIPA].	On track	

REDACTED VERSION

- C-5 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## ATTACHMENT C. Progress Report on Conditions Precedent

Condition	Status	Update(s)
k. <u>Qualifying Facility Certification Withdrawal</u> . Each of the [Beaver Creek] Project Subsidiaries shall have withdrawn its qualifying facility self-certification under PURPA and FERC's regulations thereunder.	On track	
l. <u>BPA Transmission Letter Agreement</u> . Buyer and Seller Parent shall have executed the BPA Transmission Letter Agreement.	On Track	The form of this Letter Agreement has been agreed upon between the parties and it is a deliverable at Closing. The parties will sign the agreement concurrently with the other closing documents.
n. <u>Waters of the United States Delineation</u> . No Clean Water Act Section 404 permit, no Rivers and Harbors Act Section 10 permit nor any other permit related to waters of the United States shall be required for the construction and operation of the Primary Project, or if any such permit is required based on the wetlands delineation conducted pursuant to Section 6.11, (i) Seller shall demonstrate, to the reasonable satisfaction of Buyer, that the Project may be constructed without obtaining any such permit, which may include utilizing directional drilling under streambeds or relocating proposed roads, provided such drilling or relocation of roads or other changes proposed by Seller will not result in an aggregate cost under the BOP Agreement of greater than [REDACTED] (including, for sake of clarity, the cost of the main power transformer), or (ii) Buyer may, in its discretion, waive this condition and seek the requisite permit(s).	On track	The delineation of jurisdictional waters (those potentially requiring a Clean Water Act, Section 404 permit for any in-water construction) identified waters that must be avoided to avoid triggering additional permitting. Early engagement with the BOP contractor indicates that project design and construction can be modified to avoid all jurisdictional waters at a cost less than [REDACTED] (cost threshold in the MIPA). Additional engagement between PSE's environmental consultants and the BOP contractor once a limited notice to proceed is executed.

REDACTED VERSION

- C-6 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## ATTACHMENT C. Progress Report on Conditions Precedent

Condition	Status	Update(s)
o. <u>Avian Study</u> . Buyer shall have updated Seller's avian surveys in the manner specified in Exhibit I [to the MIPA], as to the Primary Project and Seller shall cooperate with Buyer's survey updates by coordinating landowner permissions for access.	Completed	The avian survey was completed consistent with the terms of Exhibit I. The information obtained in this survey is now being used in additional incidental take avoidance planning which may require the installation of technologies such as Identi-Flight or DETECT.
p. <u>Microwave Beam Study</u> . Seller shall have updated the microwave beam study in a manner showing that no relocation of the turbines shall be required to avoid interfering with the (i) legal rights of any microwave equipment owners and (ii) existing use of any microwave equipment owners with physical towers on the Site.	Completed	<p>The Sellers completed updated microwave beam studies in August and Sept. 2023 for FCC registered paths. The August study identified one turbine that needed to be removed from the development. The Sept. 2023 study confirmed that the location of the remaining turbines did not interfere with the legal rights of any microwave equipment owners.</p> <p>PSE requested and Caithness is undertaking an NTIA review, covering federal government paths that are not registered with the FCC. This review is expected to be completed by mid-December 2023.</p>



## ATTACHMENT C. Progress Report on Conditions Precedent

Condition	Status	Update(s)
<p>q. <u>Owner's Pro Forma Title Policy Based on Site Plan Overlay on Survey.</u> Buyer shall have received (i) a copy of the Stillwater County Survey from Seller with the proposed project layout overlaid on such Stillwater County Survey; and (ii) an owner's pro forma title policy for the Real Property from the Title Company based on such overlaid project layout (with respect to the Real Property in Stillwater County) for the amount of the improved project value and containing, in addition to the endorsements listed in Section 6.7(b) [of the MIPA], the following endorsements: ALTA 28 (Easements); ALTA 31 (Severable Improvements); ALTA 36.4 (Energy Project – Covenants, Conditions, Restrictions); and ALTA 36.6 (Energy Project – Encroachments); provided that such owner's pro forma policy will be provided by the Title Company without cost and will merely set forth the then current position of the Title Company should Buyer request, at its expense, an owner's title policy at NTP or thereafter; but provided further, however, that Buyer may require the foregoing endorsements to be included in the Title Policy at Closing, if such endorsements are available from the Title Company for (x) the Title Policy for the insured amount of [REDACTED] or (y) a title policy with a higher insured amount for the Real Property, so long as Buyer agrees to pay the difference between the cost of the base premium for such title policy and the cost of the base premium for the Title Policy under Section 2.4(a)(vii) [of the MIPA] (for which Seller is responsible), in which event the "Title Policy" shall thereafter be deemed to reflect such higher insured amount for the Real Property.</p>	On track	The title commitment was provided before the MIPA was executed. Caithness is expected to provide an updated title commitment prior to closing and then a pro forma policy based on the surveys after the overlay is added to the Stillwater County survey.

REDACTED VERSION

- C-8 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160





*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment D. Permitting Matters

**ATTACHMENT D. PERMITTING MATTERS**

## Permitting Matters

Since the last Board update, PSE has worked with Caithness to apply for a Stillwater County Conditional Use Permit (CUP) for all required wind energy facilities and to complete additional baseline environmental studies to better assess project and permitting risks related to avian species (particularly eagles), waters of the United States (WOTUS), and tribal and cultural resources. This attachment provides a more complete summary of each of these permits.

### Stillwater County CUP

Stillwater County approved a final CUP (including all energy facilities required for the Project) on October 10. This CUP is required to clarify that the use authorization includes a substation, transmission line, up to 88 turbines and the appropriate sizing of battery. Caithness has also requested a larger O&M building to give PSE and the BOP contractor more flexibility. No opposition to the permit has been identified and, as Caithness has recently obtained a similar approval, the risk of opposition emerging is low. The appeal window for this permit closes on November 9, 2023.

### Avian Surveys and Eagle Incidental Take Permitting (EITP)

When developing the Beaver Creek project, the Project Company did not coordinate with state or federal wildlife agencies on potential impacts to avian species or any species protected under the Endangered Species Act. The U.S. Fish and Wildlife Service has voluntary Land-based Wind Energy Guidelines designed to minimize impacts of wind energy development on eagles, other raptors, sensitive wildlife, and their habitats. The Project Company did not follow these guidelines. The Project Company also has not undertaken the full scope of avian use studies needed to support an application for an Eagle Incidental Take Permit (EITP).

To address the risk associated with this project development approach (which is inconsistent with PSE's development practices) and because the Project Company did not conduct two years of required avian surveys, and did not include a two-mile buffer around the project in their studies, PSE's consultant, Western EcoSystem Technology, Inc. (WEST), completed raptor nest studies in August and September 2023 to evaluate potential issues under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. Although PSE was unable to collect two years of data (due to time constraints), our consultants also undertook an avian and prey survey to better assess the likelihood of eagle use in the project area. In addition, WEST is beginning the formal two years of avian surveys that will be used to support an EITP. During the initial surveys, PSE's consultants identified several unoccupied (due to survey timing; nesting occurs in the spring) stick nests within the study area, some of which are within the 2-miles of proposed turbine locations, which is the buffer evaluated by U.S. Fish and Wildlife Service and would increase the level of eagle take risk evaluated in eagle incidental take permitting. Because the project layout cannot be materially changed and built by the March 31, 2025 COD, PSE is engaging with Identi-Flight and DETECT (both advance bird avoidance technologies) to evaluate inclusion in the project to reduce the risk of eagle take and increase the likelihood of obtaining an eagle incidental take permit. WEST did not observe the primary prey species, gophers, in any notable abundance. The overall risk

**ATTACHMENT D. PERMITTING MATTERS**

associated with PSE ability (or inability) to obtain an EITP is acceptable to moderate assuming that PSE include recommended or required avian avoidance technology.

**Clean Water Act Section 404 Permitting**

The Project Company's environmental baseline studies did not include a complete, or methodologically adequate, delineation of "waters of the United States," or WOTUS. Such a delineation is critical because any "dredge or fill" of WOTUS (which occurs during any in-water construction) requires a Clean Water Act Section 404 permit, which in turn can trigger review under the National Environmental Policy Act and the National Historic Preservation Act, Section 106. If a Clean Water Act Section 404 permit is required, a Montana Section 401 Water Quality Certification may also be required.

To mitigate this risk, in September, PSE consultants (WSP and West-Tech) completed an initial WOTUS delineation to identify any stream or wetland that, if disturbed during construction, would trigger a Clean Water Act Section 404 permit. PSE's consultants identified a number of WOTUS in the project area, primarily in a network of small streams that run between turbine sites (i.e., not in large wetlands or where turbines are proposed). A comparison of the known or suspected WOTUS with the final FAA-compliant turbine layout did not identify any potential impacts to WOTUS. In late October/early November, the updated WOTUS data set will be used in conversations with the BOP contractor to develop and implement a complete avoidance approach to construction and facility installation. Although we believe that it is more likely than not that PSE will be able to avoid all WOTUS, if total avoidance is not achieved, and due to recent changes in applicable regulations which have materially slowed U.S. Army Corps permitting in Montana, acquisition of a Section 404 permit could take 3 to 18 months.

**Cultural and Tribal Resource Literature Review**

The Project Company did not complete full cultural resource literature reviews, surveys, or any tribal engagement. To mitigate this risk, PSE consultants, Historical Research Associates (HRA) completed an updated literature review of potential cultural resources and a wind shield survey (from vehicle and road) of the project area. This study revealed seven previous surveys, at least seven locations with probable historic structures that have not yet been recorded, and two previously recorded resources in the project area.

HRA concluded that that historic-period resources will be common throughout much of the low-lying project area. Historic-period resources most likely within the project area include standing structures, foundations, domestic and ranching-related debris scatters, and irrigation features. These would need further investigation and research to determine significance.

HRA identified one resource containing precontact components within the project area. Though only two precontact artifacts have been previously identified within the project area, HRA expects that the area was heavily used during precontact and protohistoric periods. Based upon the diversity of resources available across the landscape and the known history of the area, it is likely that Tribes would have hunted and gathered across the landscape. HRA confirmed this expectation with Crow Agency THPO, Aaron Brien (personal communication, 2023).

**ATTACHMENT D. PERMITTING MATTERS**

HRA concluded that pedestrian survey within the current project area has been extremely limited and is not sufficient to determine the presence or absence of precontact materials within the project area. Given this information, PSE expects that pedestrian survey and limited shovel testing are likely to reveal precontact sites and isolates and should be conducted in areas of proposed ground disturbing activities. A more extensive evaluation, including inviting the Crow Tribe to participate in future survey efforts, is currently being considered for spring 2024 (after the snow season).

**Federal Aviation Administration Determinations of No Hazard (DNHs)**

Caithness's consultant, Capital Airspace Group, has performed a shift analysis to analyze the alignment of turbine locations with previously issued Federal Aviation Administration (FAA) Determination of No Hazard (DNH) locations. The results indicate that 82 of the 88 turbine pads align with existing DNH locations. Of the remaining six turbines, five will require a new filing, and one location will need to be refiled. In addition, there is one turbine that is too close to a county road, bringing the total locations planned for submittal to the FAA to seven. Under the terms of the TSA, PSE has until January 2024 to confirm with GE the exact number of turbines that it plans to procure. The FAA granted an extension of the DNH that will expire in March 2024. After one extension is issued, if the structure has not been built, the FAA must receive a new filing and restudy the proposal. There is no guarantee that any project will receive a determination of no hazard when studied again. At PSE's direction, Caithness will file the 7460-2 Part 1 by early November.

An extension is not needed if the construction has started and a 7460-2 Part 1 form has been accepted by the FAA. A 7460-2 Part 1 form can be filed when project can guarantee that the turbines will be constructed and substantial construction has started. Construction has started on the project switchyard. PSE has confirmed with Capital Airspace Group that this would qualify as "start of construction" for the purposes of avoiding the need to refile for the DNH.



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment E. Project Schedule and Construction Management

**ATTACHMENT E. PROJECT SCHEDULE AND CONSTRUCTION MANAGEMENT**

## Project Schedule and Construction Management

### Project schedule

PSE's project schedule (Attachment 1) shows that development, construction, and substantial completion (in-service) of the Beaver Creek Wind Project can be achieved by early 2025. The project schedule (Attachment 1) is indicative of the entire project including wind turbine procurement, other owner-furnished equipment procurement, and construction activities of the balance of plant (BOP) contractor.

It should also be noted that lead times for equipment not yet procured are based upon current supplier quotes and will be finalized once equipment purchase orders are in place. Even with an unanticipated delay of some long-lead equipment, the facility is expected to be constructed and ready for commercial operation by December 2024 or January 2025. PSE anticipates that the actual project COD will be March 31, 2025 when transmission service is expected to be available.

### Balance of plant contractor

The Beaver Creek Wind Plant will be constructed by a BOP contractor. The BOP contractor will be responsible for the detailed design, procurement and construction of all project BOP components including site civil work (roads, foundations, etc.), wind turbine erection, O&M building, electrical collection system, plant substation, and the generation interconnect transmission line. Wind turbines are not included in the scope of supply. PSE is procuring the turbines separately through a Turbine Supply Agreement with General Electric (GE). PSE will also procure the main transformer and certain substation equipment separately due to equipment lead times. All other plant components will be procured by the BOP contractor.

Caithness issued an engineering, procurement and construction (EPC) RFP in early June 2023, which attracted bids from three established BOP contractors: Wanzek, [REDACTED]. All [REDACTED] firms have extensive experience building wind generation facilities in the United States. Bids were closely aligned in price and schedule, with final bids ranging from \$[REDACTED] and nine months of active construction. PSE's Director of Major Projects reviewed each of the responsive bids. Based on those bids, PSE selected Wanzek as the contractor that could best meet the project needs.

Wanzek is a platform company in the MasTec Clean Energy and Infrastructure Group, to be the balance of plant (BOP) contractor for the project. Founded in Fargo, ND, in 1971, the company is a full-service EPC and BOP contractor that completed its first major wind farm in Edgely, ND in 2003. Since then, Wanzek has constructed 17 GW of wind power, including facilities utilizing the same wind turbine model selected for Beaver Creek.

PSE and Wanzek are negotiating the BOP contract. In the meantime, PSE has issued a limited notice to proceed to Wanzek to advance engineering and long-lead equipment selection prior to closing and BOP contract execution.

**REDACTED VERSION**

- E-1 -

**SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160**



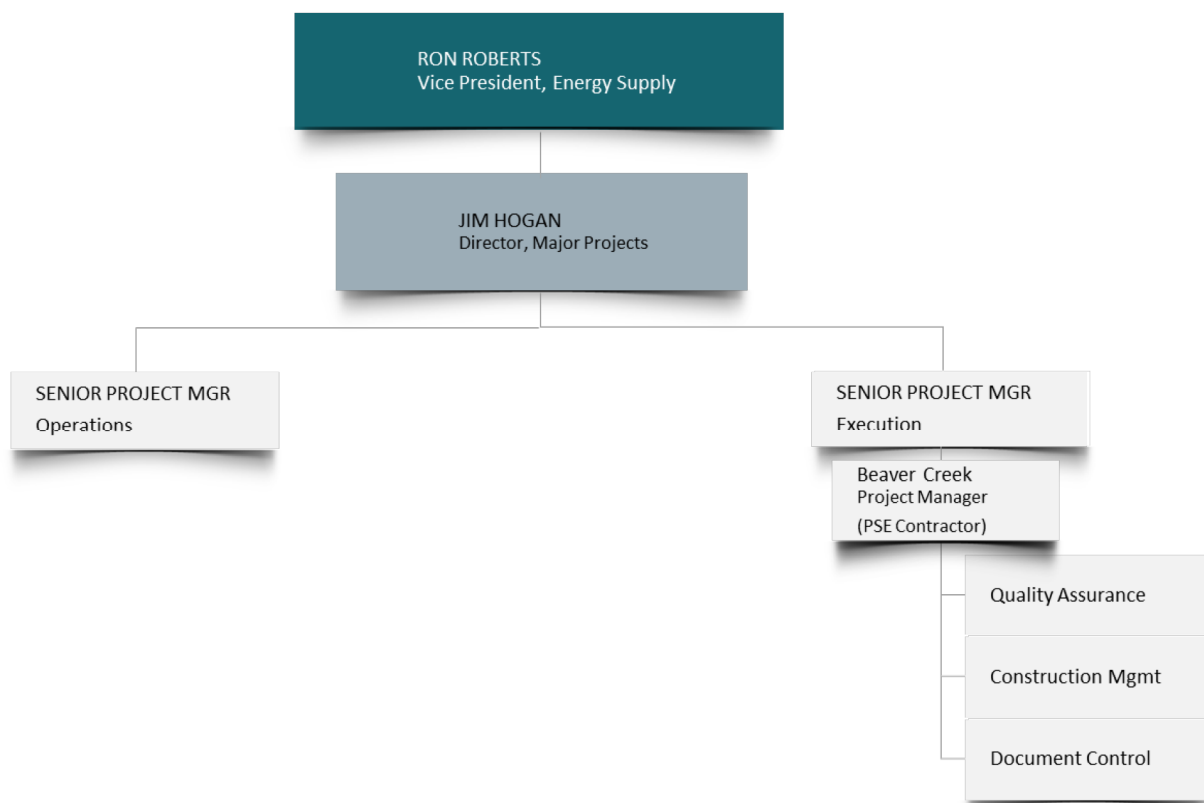
**ATTACHMENT E. PROJECT SCHEDULE AND CONSTRUCTION MANAGEMENT****Construction management**

PSE's Project Management and Operations teams have previous experience developing, constructing, and operating large-scale facilities in Washington state. The PSE Major Projects department will oversee construction and commissioning of the Project, along with readying the project for operations.

The on-site management of the Beaver Creek Wind Project will be performed by a third-party firm hired by the PSE Major Projects department. This firm will provide project and construction management, quality assurance, document control, and other services as required. They will report to a PSE senior project manager. PSE will also retain an outside firm to provide owner's engineering services, with coordination as required by PSE staff engineers.

In parallel with the construction of the Project, a PSE senior project manager will develop the operational aspects of the project to include a staffing plan (and hiring a third-party operator, if required), determine spares requirements, develop operating and maintenance procedures, and ascertain any other tasks necessary to integrate the project into PSE's generation fleet.

Figure 1. *PSE Project Management Organization*










# Project Schedule

(PREPARED BY WANZEK)

EST 23-28c-2 Beaver Creek Wind - Caithness Energy - 88 GE 2.82MW - 248.2MW				WBS Proposal Layout												Page 1 of 3 29-Aug-23													
Activity ID		Activity Name		Remaining Duration	Start	Finish	Qtr 3, 2023				Qtr 4, 2023				Qtr 1, 2024			Qtr 2, 2024			Qtr 3, 2024				Qtr 4, 2024			Qtr 1, 2025	
							Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb		
<b>Beaver Creek Wind - Caithness Energy - 88 GE 2.82MW - 248.2</b>				353	11-Sep-23	24-Jan-25																					24-Jan-2		
<b>Project Administration</b>				353	11-Sep-23	24-Jan-25																					24-Jan-2		
<b>Required Owner Deliverables</b>				227	11-Sep-23	01-Aug-24																							
WZ - 1000	Project Award		0	11-Sep-23*																									
WZ - 1001	Limited Notice to Proceed #1 (HV Breaker PO / Geotech Investigation / 3		0	20-Sep-23																									
WZ - 1002	Limited Notice to Proceed #2 (Remaining Engineering / Long Lead Procur		0	06-Oct-23																									
WZ - 1003	Execute BOP Agreement / Full Notice to Proceed		0	09-Nov-23																									
WZ - 1005	Project Backfeed Available to Substation		0	09-Nov-23																									
WZ - 1006	Begin WTG Deliveries		0	01-May-24*																									
WZ - 1004	Owner Supplied MPT Onsite		0		01-Aug-24																								
<b>Exhibit Milestones</b>				239	08-Apr-24	24-Jan-25																					24-Jan-2		
WZ - 1100	Contractor Mobilization		0	08-Apr-24*																									
WZ - 1204	OH Transmission Line Completion		0		28-Oct-24																								
WZ - 1200	UG Collection System Completion		0		02-Nov-24																								
WZ - 1202	Substation Completion		0		23-Nov-24																								
WZ - 1206	Target Substantial Completion - Project		0		07-Dec-24																								
WZ - 1209	Target Mechanical Completion - Project		0		07-Dec-24																								
WZ - 1207	Target COD - Project		0		21-Dec-24																								
WZ - 1208	Target Final Completion Date		0		24-Jan-25																								
<b>Engineering</b>				157	20-Sep-23	02-May-24																							
<b>Civil / Foundation Engineering</b>				100	20-Sep-23	13-Feb-24																							
<b>Geotech / Hydrology</b>				65	04-Oct-23	09-Jan-24																							
<b>Civil Engineering</b>				100	20-Sep-23	13-Feb-24																							
<b>Foundation Engineering</b>				90	20-Sep-23	30-Jan-24																							
<b>Electrical Engineering</b>				157	20-Sep-23	02-May-24																							
<b>Collection System</b>				120	20-Sep-23	12-Mar-24																							
<b>UG Collection System</b>				120	20-Sep-23	12-Mar-24																							
<b>Substation</b>				157	20-Sep-23	02-May-24																							
<b>Substation #1</b>				157	20-Sep-23	02-May-24																							
<b>Substation Engineering - Physical</b>				157	20-Sep-23	02-May-24																							
<b>Substation Engineering - Protection &amp; Controls</b>				157	20-Sep-23	02-May-24																							
<b>Overhead Transmission Line</b>				140	20-Sep-23	09-Apr-24																							
<b>OH Transmission Line #1</b>				140	20-Sep-23	09-Apr-24																							
<b>O&amp;M Building</b>				105	01-Nov-23	02-Apr-24																							
<b>Procurement</b>				263	06-Oct-23	21-Oct-24																							
<b>Foundation Procurement</b>				80	06-Dec-23	29-Mar-24																							
<b>GE Turbine</b>				80	06-Dec-23	29-Mar-24																							
WZ - 3001	WTG Foundation Anchor Bolt Procurement (IFP Design)		55	06-Dec-23	23-Feb-24																								
WZ - 3002	WTG Foundation Rebar Procurement (IFP Design)		55	06-Dec-23	23-Feb-24																								
WZ - 3003	WTG Foundation Template Ring Procurement (IFP Design)		55	06-Dec-23	23-Feb-24																								
WZ - 3000	WTG Foundation Conduit / Grounding Procurement (IFP Design / 60% C		65	29-Dec-23	29-Mar-24																								
<b>Collection System Procurement</b>				215	06-Nov-23	12-Sep-24																							
<b>UG Collection</b>				215	06-Nov-23	12-Sep-24																							
WZ - 3100	Padmount Xfmer Procurement (30% / Spec. Approval)		215	06-Nov-23	12-Sep-24																								
WZ - 3101	Collection Cable Procurement (60% Design / Ampacity Information)		75	29-Dec-23	12-Apr-24																								
WZ - 3102	Fiber Optic Cable Procurement (60% Design)		90	29-Dec-23	03-May-24																								
WZ - 3103	UG Bore Pipe Procurement (60% Design / Bore Locations)		60	29-Dec-23	22-Mar-24																								
<b>Substation Procurement</b>				240	06-Oct-23	18-Sep-24																							
<b>Substation #1</b>				240	06-Oct-23	18-Sep-24																							
WZ - 3201	HV Breakers (30% Design / Spec. Approval)		200	06-Oct-23	23-Jul-24																								
WZ - 3204	CCVT Procurement (30% Design / Spec. Approval)		200	01-Nov-23	16-Aug-24																								
WZ - 3208	Main Power Transformer (MPT) Procurement (By Owner)(30% Design /		181	13-Nov-23	01-Aug-24																								
WZ - 3200	LV / MV Breaker Procurement (30% Design / Spec. Approval)		150	17-Nov-23	21-Jun-24																								
WZ - 3202	CT Procurement (30% Design / Spec. Approval)		200	17-Nov-23	04-Sep-24																								
WZ - 3205	Control Building / Enclosure (30% Design / Spec. Approval)		150	17-Nov-23	21-Jun-24																								
WZ - 3209	Pole Mounted Station Service Transformer (30% Design / Spec. Approva		210	17-Nov-23	18-Sep-24																								
WZ - 3210	HV Switch Procurement (30% Owner Comments / Spec. Approval)		190	05-Dec-23	04-Sep-24																								
WZ - 3211	MV Switch Procurement (30% Owner Comments / Spec. Approval)		190	05-Dec-23	04-Sep-24																								
<div><div></div> Actual Work</div> <div><div></div> Remaining Work</div> <div><div></div> Critical Remaining Work</div> <div><div></div> Summary</div>				Data Date: 14-Aug-23 Run Date: 29-Aug-23		<b>Beaver Creek Wind - Caithness Energy - 88 GE 2.82MW - 248.2MW</b> <b>Preliminary Construction Schedule</b>										<div><div></div><div></div><div></div><div></div></div>		Date	Revision	Checked	Approved								

EST 23-28c-2 Beaver Creek Wind - Caithness Energy - 88 GE 2.82MW - 248.2MW					WBS Proposal Layout												Page 2 of 3 29-Aug-23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Activity ID	Activity Name	Remaining Duration	Start	Finish		Qtr 3, 2023				Qtr 4, 2023			Qtr 1, 2024			Qtr 2, 2024			Qtr 3, 2024				Qtr 4, 2024			Qtr 1, 2025																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
WZ - 3203	PT / VT Procurement (60% Design / Spec. Approval)	140	26-Jan-24	13-Aug-24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

[illegible]

 Actual Work       Milestone  
 Remaining Work  
 Critical Remaining Work  
 Summary

Data Date: 14-Aug-23  
Run Date: 29-Aug-23

**Beaver Creek Wind - Caithness Energy - 88 GE 2.82MW - 248.2MW**  
**Preliminary Construction Schedule**



Date	Revision	Checked	Approved



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment F. Equity and Customer Benefits of the Project

**ATTACHMENT F. EQUITY AND CUSTOMER BENEFITS OF THE PROJECT**

## Equity and Customer Benefits of the Project

CETA requires that electric utilities “ensure that all customers are benefiting from the transition to clean energy: Through the equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency (RCW 19.405.040(8)).”

Beaver Creek’s Customer Benefit Plan will seek to address three of the CETA categories of Customer Benefit Indicators, namely: energy security and resiliency, energy and non-energy benefits, environment and public health benefits. Under the CETA customer benefits and Cascade equity analyses, the proposed agreement appears to be equity neutral since the benefits acquired will serve all customers with no additional energy equity impacts to the community.

### Energy security and resilience

Beaver Creek will be constructed in the wide-open spaces between Rapelje and Reed Point (Montana). The plant size is 248 MW. The project is located in Stillwater County, Montana, which is not designated as a Disadvantaged Community in the Department of Energy’s Justice 40 mapping tool.

Beaver Creek will improve the energy security and resiliency of active service areas by unlocking up to 829 GWh (annual GWh estimate). The deployment of new wind farms and the option to incorporate batteries for storing wind energy will complement the operational limitations of hydro power and solar. Beaver Creek will also significantly increase the geographic diversity of PSE’s renewable energy resources. Increasing the diversity of renewable energy resources by adding clean, reliable utility-scale wind energy to the electric portfolio will bring significant security and resiliency benefits. Montana wind projects are most productive during the winter months when compared to Washington wind projects, which are more productive in the spring.

Beaver Creek provides the potential to complement PSE’s existing wind power by smoothing out the highs and lows of the wind so that the output will be more consistent. The future incorporation of batteries would also offer a way to offset the vagaries of wind by storing excess energy when demand is low and tapping that energy when demand peaks. The operational flexibility of the Beaver Creek Wind Project will increase the reliability of wind-power. It is estimated that the two phases could power more than 80,000 homes.<sup>1</sup>

### Energy and non-energy benefits

Beaver Creek will create employment opportunities for approximately 250 jobs at the peak of construction and that construction will take nine to ten months to complete. PSE is committed to using local and diverse

---

<sup>1</sup> Based on an average per household consumption of 10,000 kWh/year.



**ATTACHMENT F. EQUITY AND CUSTOMER BENEFITS OF THE PROJECT**

suppliers when available. PSE anticipates that the project will require three full-time PSE employees permanently on site and approximately 15 to 18 GE staff to support the 5-year Full-Service Agreement. The project will include a Construction Craft Laborer Apprenticeship Program, with 360 hours of classroom training accredited with National Center for Construction Education & Research, and 4,000 hours of on-the-job training with a journey-level employee. PSE intends to include provisions that encourage the EPC contractor to utilize a Project Labor Agreement, Community Workforce Agreement, or Collective Bargaining Agreement for major construction activities and will work with Montana labor unions to meet requirements.

### **Additional economic benefits**

PSE conducted an economic benefits analysis for the Aug. 3 Beaver Creek Board Package. Based on that analysis, Beaver Creek is projected to produce \$170 million<sup>2</sup> in property taxes over 25 years and qualify for tax rebates through the first 10 years. It is anticipated that Beaver Creek will deliver approximately \$7 million<sup>3</sup> in local economic impact in rural Montana on an annual basis. In addition, the workers, contractors and landowners who work with Beaver Creek will contribute to the local economy as taxpayers and consumers, leading to a positive economic ripple effect throughout the local communities.<sup>4</sup>

### **Environment and public health**

The Project offers a substantial renewable energy resource, which helps to meet PSE's energy needs in both summer and winter, and supports better air quality, fewer emissions and fewer greenhouse gases than fossil fuels. This resource is consistent with clean energy planning which, cumulatively, are designed to limit the effects of global climate change and reduce air emissions associated with a host of respiratory illnesses (e.g., asthma), cardiovascular diseases, and increased hospital admission rates.

### **Energy Equity/Justice Analysis**

We will be transitioning to a new equity analysis that is consistent with the Washington Utilities and Transportation Commission's definition of energy justice in the 2021 Cascade Natural Gas GRC Final Order<sup>5</sup>. The analysis will include examining projects through four (4) core tenets: distributional justice, procedural justice, recognition justice, and restorative justice.

Recognition justice involves recognizing the cumulative environmental hazards and disproportionate burdens named communities faced over time, acknowledging, and addressing historical, cultural, and institutional dynamics and structures that created past and current injustices in the energy system.

Procedural justice involves creating inclusive and accessible decision-making processes for participants.

---

<sup>2</sup> Calculated based on an assumed 1.5% property tax. See Appendix 12 to the August 3 Beaver Creek Wind Project Board Report.

<sup>3</sup> Calculated using Jobs and Economic Development Impacts (JEDI) Land Based Wind Model rel W6.28.19

<sup>4</sup> BeaverCreek-Windfarm-Application.pdf (stillwatercountymt.gov)

<sup>5</sup> 2021 Cascade Natural Gas GRC Order UG-210755 ¶ 56.



**ATTACHMENT F. EQUITY AND CUSTOMER BENEFITS OF THE PROJECT**

Distributional justice ensures that distribution of benefits and burdens are spread across all segments of the community, aim to ensure that marginalized and vulnerable communities do not receive an inordinate share of burdens or are denied access to benefits.

Restorative justice will consider holistically whether each of these three dimensions of equity has been sufficiently addressed. Our analysis efforts will ensure that named communities and historically disadvantaged populations will be identified and included in the consideration process, establishing an on-going effort to engage and embrace community participation.



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment G. Updated Risks and Mitigations

**ATTACHMENT G. UPDATED RISKS AND MITIGATIONS**

## Updated Risks and Mitigations

This appendix updates the risks and mitigations identified by PSE's subject matter experts in the August 3, 2023 Beaver Creek Wind Project Report to the Board of Directors.

### Pre-Construction Stage

The Pre-construction Stage of the project began upon MIPA contract execution and will extend until the BOP has issued notice to proceed (NTP) for construction as instructed by PSE. Risk areas of focus for this stage include permitting and studies, real estate, and transmission. Table 1 describes the risks associated with the pre-construction stage of the Project.

### Construction and Operation Stages

The Construction Stage of the Project commences when NTP is issued to the wind turbine generator supplier (GE) under the TSA and to the BOP contractor (to be determined) under the BOP Agreement. The Project enters the Operations Stage once substantial completion is achieved. Table 2 describes the risks associated with the construction and operation stages of the Project.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Table 1. *Pre-construction stage risks and mitigations*

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Real estate</b>  <b>(Low ● to Acceptable ●)</b>	<p>Wind lease and easement documents are currently under review for sufficiency and completeness. Additionally, PSE recently received an updated title report for all leased lands and the title report is currently under review. An ALTA survey of the leased lands, which depict property lines, exceptions to title, non-title items (fence lines etc.) was received on July 17, 2023 and has been further updated as of October, 2023. The ALTA survey and updated title, when combined with the finalization of turbine locations and related infrastructure will allow for a final review and resolution of any remaining title or survey issues.</p>	<p>All documents are under review for content and sufficiency. Lease amendments, as of October 24, 2023, are progressing towards finalization. All six leases are being amended to incorporate royalty terms that coincide with a utility model (presently the leases contemplate a PPA model). Further, the leases are being amended to have consistent start and end dates for all 6 leases. The final review of the lease amendments, title issues and ALTA survey should all run concurrently and in short order should be in a state that would accommodate closing.</p> <p>Caithness is pursuing estoppel certificates with the landowners as a condition to closing the MIPA. The estoppel language has been incorporated into the proposed lease amendments and will be reviewed by all parties once the lease amendments are returned from the landowners for review.</p>	<p>Estoppel process kicked off the week of Sept. 25.</p> <p>Week of Sept. 25, landowner package was distributed to lessors covering amendments to wind energy lease agreements, abstract and estoppel agreements.</p> <p>Caithness is required, as a condition to close, to deliver a title policy insuring the real property of [REDACTED] and including the endorsements outlined in the MIPA. PSE plans to acquire an Extended coverage owner's policy at closing of the MIPA for the MIPA purchase price [REDACTED]. The title premium (a one-time payment) will be paid by Caithness. PSE plans to acquire an additional title policy for the increased value of the site (post turbine erection) at PSE's expense. In short, Caithness will pay for the title policy for the sale of the development rights at closing of the MIPA; PSE will coordinate and pay for any additional title insurance following the construction of the project.</p>

REDACTED VERSION

- G-2 -

 SHADED INFORMATION IS DESIGNATED AS  
 CONFIDENTIAL PER WAC 480-07-160

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	Caithness provided no documentation regarding third-party mineral rights on project lands. No searches, reports or opinions identifying any mineral interests with respect to the project have been provided. Under Montana law, the owner of mineral rights has a right to use the surface for the exploitation of those rights. Mineral interest owners are only impaired in their use of the surface estate to the extent they disturb <i>existing</i> improvements and uses; there is no protection in Montana law for planned but unconstructed surface improvement.	If such third-party mineral interests are discovered, Baker Botts recommends that PSE obtain surface waivers and/or non-production affidavits with respect to any third-party mineral rights, to the extent necessitated by the project design. <sup>1</sup>	As of October 18, PSE engaged a local Billings Montana law firm (Crowley Fleck) to help guide PSE's decisions regarding minerals on the Beaver Creek site. Following Crowley Fleck's review of a current title report, as well as three recently authored and independent geology and mineral reports and further based on the law firms historic knowledge of mineral issues in Stillwater County, it was broadly noted that the likelihood of economic mining of minerals is low and efforts to fully assure against third parties pursuit of minerals is limited.

---

<sup>1</sup> In the absence of such waivers and/or non-production affidavits, any mineral interest holder may have the right to extract minerals in a manner that will interfere with PSE's use of the project, subject to applicable law. Because turbines and substations require only a small surface area, it is Baker Botts's view that it is unlikely that a mineral interest owner, acting with the due care of a reasonable person, will materially interfere with the interests of the surface estate in such a way that would materially impact project design.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Permitting and studies</b> <b>(Acceptable ●)</b>	No consultation with State and Federal Wildlife Agencies or use of Federal Wind Siting Guidelines. Limited wildlife studies do not follow the U.S. Wildlife Wind Power Guidelines. As a result, eagle and sensitive species fatality risks are unknown.	<p>PSE intends to consult with the Montana Fish and Game and U.S. Fish and Wildlife Service to determine whether there are issues of concern prior to final layout and construction, so sensitive areas can be avoided.</p> <p>PSE intends to conduct avian point count and nest surveys per federal Wind Siting Guidelines prior to final layout and construction, so sensitive areas can be avoided.</p>	Due to timing constraints, final project layout proceeded without avian point counts or wildlife agency engagement. PSE is currently undertaking outreach/engagement strategy planning. Information obtained via the recent avian surveys, waters of the U.S. delineation and cultural resource review are being integrated into project planning to avoid impacts to sensitive areas.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	Aviation, radar, and microwave studies must be completed for the consolidated layout of Stillwater County.	<p>The following studies will need to be completed before finalizing the layout to avoid interfering with radar, microwave, and military flight paths:</p> <ul style="list-style-type: none"> <li>• Department of Defense radar study</li> <li>• Federal Aviation Administration aeronautical study</li> <li>• Military fly zone analysis</li> <li>• Microwave beam path study</li> </ul>	<p>The review of the adequacy of the FAA Determinations of No Hazard (DNHs) concluded that 82 of the 88 turbines originally contemplated for acquisition are properly sited. One additional turbine was sited too close to a county road, bringing the total of properly sited turbines to 81. Adjustments to the number of GE turbines that PSE will acquire can be made until January of 2024.</p> <p>After PSE files FAA start of construction form 7460-2, Caithness will file for DNH for 7 additional turbine locations to bring the total to 88.</p> <p>Two microwave beam path studies were completed in Aug. and Sept. 2023. The 82 turbines that have existing FAA DNHs have been confirmed not to interfere with any existing legal rights.</p> <p>PSE requested and Caithness is undertaking an NTIA review as well. This review is expected to be completed by mid-December 2023.</p>



## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	Road, underground, or overhead line crossings that require disturbance or fill over waters of the state or United States (drainages or wetlands) are unknown. The risk is that permits may be required that could cause construction delays.	PSE will hire an environmental consultant to complete a delineation of any waters of the United States. To the extent that the study identifies any waters of the United States, Caithness will demonstrate to PSE's reasonable satisfaction that the Project may be constructed without obtaining any required permits, or they must obtain any necessary permits needed.	<p>PSE consultants completed an initial WOTUS delineation to identify any stream or wetland that, if disturbed during construction, would trigger a Clean Water Act Section 404 permit. PSE's consultants identified WOTUS in the project area, primarily in a network of small streams that run between turbine sites (i.e., not in large wetlands where turbines are proposed). A comparison of known or suspected WOTUS with the final FAA-compliant turbine layout did not identify any potential impacts to WOTUS.</p> <p>In November, the updated WOTUS data set will be used to develop and implement a complete avoidance approach to construction and facility installation. Although we believe that it is more likely than not that PSE will be able to avoid all WOTUS, if total avoidance is not achieved, acquisition of a Section 404 permit could take 3 to 18 months.</p>

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Cultural resources</b>  <b>(Acceptable ●)</b>	<p>Native American tribes were never contacted to determine whether wind development activities would impact areas—which have mostly been under private ownership for decades—of significance to them. The Crow Reservation appears to be about two hours away, and the Project is likely on Crow ancestral land.</p>	<p>PSE intends to consult with affected tribes about cultural resources.</p>	<p>PSE’s consultants spoke with the Crow Agency Tribal Historic Preservation Officer (THPO) generically about the general project area, who noted that the area is significant for Crow Tribal members. The Crow THPO is searching the Apsáalooke placename database for reference to the broader project area, but we have not yet received a full response. A more extensive evaluation, including inviting the Crow Tribe to participate in future survey efforts, is currently being considered for spring 2024 (after the snow season). Additional pedestrian surveys and shovel probes are also being recommended.</p>
	<p>Caithness provided a basic literature review summary report as a cultural resources review. This report contained limited information about the area and the possibility of encountering cultural resources. The report covers 22 thousand acres, cited only six surveys, and identified one archaeological site. The studies are inadequate to determine cultural resource risk for such a large area.</p>	<p>PSE will conduct a cultural resource study that allows the appropriate level of decision about effects to cultural resources prior to construction, so that PSE can avoid impacts to these resources or provide mitigation should avoidance not be possible. The Project site is on disturbed agricultural land, which generally reduces the overall cultural resource risk.</p>	<p>PSE consultants, Historical Research Associates (HRA) completed an updated literature review of potential cultural resources in the project area. They concluded that, based on the history of the region, this site is likely to contain a number of non-tribal resources that are likely to be ineligible for listing under the National Historic Preservation Act.</p>

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Community</b>  (Acceptable ●)	While some local community members and county commissioners have expressed concern through the CUP process about increased traffic during development, and safety for residents and their vehicles, the CUP was approved, outlining requirements to help mitigate these concerns.	PSE intends to develop a public affairs and community relations plan to mitigate potential local concerns and reputational risk. A robust public affairs plan would include activating support from stakeholders; a media strategy to promote and generate coverage of the Project; leveraging and updating PSE's existing PSE in Montana website to share information about the Project and its local benefits; and completing tribal outreach, among other strategies and tactics.	No opposition to the permit has been identified and, as Caithness has recently obtained a similar approval, the risk of opposition emerging is low.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Interconnection</b>  (Acceptable ●)	The LGIA lists a combination of 2.5 and 2.8 MW GE turbines as the technology type. Under the terms of the GE TSA, PSE will receive only 2.8 MW turbines. This turbine model change could be viewed as a material modification by NorthWestern.	[Not applicable]	<p>Caithness has submitted a notice of technology change for the turbines. Van Ness views this as a permissible technological advancement under NorthWestern's tariff and not a material modification.</p> <p>It is necessary to notify NorthWestern of the turbine changes and update Appendix C of the LGIA. While NorthWestern will perform a material modification analysis of the new turbines, the definition of Permissible Technological Advancement in their current LGIP defines the circumstances where new turbines will not be considered a material modification.</p>

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	<p>Caithness has exhausted all suspension rights under the LGIA.</p> <p>Caithness has executed with NorthWestern a revised milestone schedule that lists an Aug. 2025 COD.<sup>2</sup> If there are material delays to this COD or changes to the project size (&lt;315 MW), there is a risk that it could be considered a material breach of the contract, giving NorthWestern a unilateral right to terminate the agreement.</p>	[Not applicable]	<p>PSE consulted with Van Ness on the LGIA. Van Ness's assessment is that if all network upgrades are paid and built on schedule, then later queued projects would not be impacted by PSE building a smaller project or failing to meet the scheduled COD.</p> <p>PSE will engage with NorthWestern on project details, including any additional project phases to utilize the full 315 MW of interconnection capacity, after the MIPA closes.</p>

---

<sup>2</sup> PSE's current project schedule anticipates a March 2025 COD, which would meet this LGIA milestone.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS


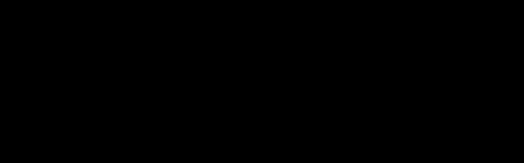
Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
<b>Transmission and integration</b>  <b>(Acceptable ●)</b>	Network upgrades on NorthWestern Energy's ("NorthWestern") transmission system for delivery to Colstrip or Garrison, are unknown.	<p>PSE is submitting and requesting transmission service to both Colstrip and Garrison for total project output through NorthWestern to evaluate the better delivery path. Previous studies for Network Resource Interconnection Service (NRIS) and Network Integration Transmission Service (NITS) have not identified any significant network upgrades. Further, PSE is requesting options for bridge conditional firm service which could, if offered, allow earlier delivery options.</p>	<p>PSE submitted a long-term firm point-to-point transmission request to NorthWestern Energy in July 2023.</p> <p>Preliminary feedback from Northwestern Energy indicates upgrades are likely on path from Beaver Creek to Garrison. Therefore, avoiding the CTS is unlikely.</p> <p>PSE has engaged Power Engineers to run an independent study to assess any network upgrades risks that might impact its ability to secure the transmission. The study report is on track to be completed by end of October.</p>

REDACTED VERSION

- G-11 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	DTC is needed for dynamic transfers on the Eastern Intertie and will be necessary to place the project PSE's balancing area. Due to limited DTC, Bonneville Power Administration (BPA) will require studies and contracting for dynamic transfer. The study may trigger a need for new voltage controls on existing reactive devices or new reactive devices to support the dynamic transfer. The current term for a DTC award is two years without any rollover rights and will present a continued risk on PSE's ability to pseudo-tie the resource.	PSE is submitting DTC request to BPA to initiate the study process to daylight DTC availability, and identify any upgrades to support PSE's DTC needs over BPA's intertie. Once awarded, PSE will continue to request DTC through BPA before the term end date. PSE could also work with BPA to fund upgrades to enable additional DTC at Garrison. 	BPA has scheduled a kick-off meeting during the first week of November 2023 to go over PSE's DTC request.
	The Beaver Creek wind project will need to be pseudo-tied to PSE's BAA, as would any other Montana resources. This is a complex effort across multiple PSE departments that requires extensive coordination, design, and implementation. It affects the metering, communications, operations, transmission, and energy trading groups.	PSE can initiate these efforts after closing to help reduce COD risks. PSE has gained recent experience pseudo-tying a Montana wind resource (Clearwater) that can be leveraged for the Beaver Creek integration. 	PSE's internal teams (Transmission Provider and Contracts, Load Office and Energy Delivery) are engaged in identifying and assigning roles and responsibility to help integrate the resource as a pseudo-tie in PSE's balancing authority area.

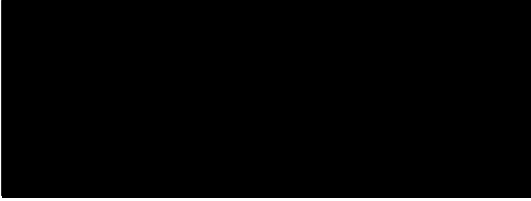
REDACTED VERSION

- G-12 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023 posting)
	PSE has point-to-point transmission rights on the CTS that will need to be studied by the CTS owners to allow PSE to pair the rights with a new generating resource.	PSE Merchant has submitted a change of source request to PSE's Transmission Provider function to initiate the study and identify any potential impacts. 	PSE Merchant has re-submitted the study request following feedback from PSE Transmission.

REDACTED VERSION

- G-13 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Table 2. *Preliminary construction stage risks and mitigations (identified during pre-construction stage review)*

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023)
<b>Construction</b> (Low●)	Permitting or contracting issues may prevent construction from starting in Q4 2023.	If permitting or equipment issues delay construction start to spring 2024 and/or extend construction duration, there is still adequate time to meet a late 2025 COD, as current engineering, procurement, and construction schedules contemplate an 18 month start to finish (including one winter).	The construction schedule has now been re-baselined for a Spring 2024 construction start. This schedule still allows for a late 2024 mechanical completion and COD by March 31, 2025.
<b>Major Equipment</b> (Acceptable●)	Development phase equipment selection is incomplete; permitting/technical requirements could cause additional cost or lead time.	Work with project team and equipment vendors to ensure equipment is reasonably priced and available.	In addition to the 230 kV circuit breakers that were ordered by the developer, PSE subsequently ordered the two main power transformers in August 2023 in order to preserve the desired delivery schedule.

## ATTACHMENT G. UPDATED RISKS AND MITIGATIONS

Risk area (risk level)	Risk	Mitigation (as presented in Aug. 3 Board Report)	Update (as of Oct. 26, 2023)
	Actual annual energy production may be less than expected.	<p>PSE to review site suitability and design documentation when the counterparty delivers it. Require contractual performance guarantees from vendors/contractors.</p> <p>PSE hired DNV to review the forecasted annual energy assessment. DNV initial results indicated a higher forecast annual generation than the Caithness-provided energy assessment report from ArcVera.</p>	<p>PSE engaged DNV to perform a full wind resource assessment for both the 232 and 248 MW layouts of the Beaver Creek Wind Project. Results were received on October 24, 2023, indicating a net capacity factor (NCF) of [REDACTED]</p>
	TSA and FSA terms may not meet PSE's standards and requirements.	Engage and re-negotiate TSA and FSA agreement with GE.	On track. Will have draft agreements acceptable to PSE ready to execute at MIPA closing.

REDACTED VERSION

- F-15 -

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment H. Stand-Alone Financial Pro Forma

<b>THE PROJECTION</b>	<b>1</b>
<i>Development Budget:</i>	1
<b>TABLE 2: DETAILED QUARTERLY DEVELOPMENT AND CONSTRUCTION BUDGET (\$000s)</b>	1
<i>Development Rights and Reimbursable:</i>	2
<i>Wind Turbine Generators:</i>	2
<i>Balance of Plant:</i>	2
<i>PSE Project Management, IT, Remaining NorthWestern Upgrade, PSE Operations and Equipment, County impact Fee and other:</i>	2
<i>Contingency:</i>	2
<i>AFUDC:</i>	2
<b>INCOME STATEMENT – ASSUMPTIONS</b>	<b>3</b>
REVENUES:	4
<i>Revenue Requirement:</i>	4
<i>Fixed Transmission and Balancing:</i>	4
<i>Operations Expense:</i>	4
<i>Production Payments:</i>	4
<i>Maintenance Expense:</i>	4
<i>Property Tax:</i>	4
<i>Insurance:</i>	4
<i>MT generation and transmission tax:</i>	5
<i>EBITDA:</i>	5
<i>Book Depreciation:</i>	5
<i>Interest Expense:</i>	5
<i>Earning Before Taxes</i>	5
<i>Current Income Taxes:</i>	5
<i>Deferred Income Taxes:</i>	5
<i>Production Tax Credit (PTC)</i>	5
<i>Total Income Taxes:</i>	6
<i>Net Income Taxes:</i>	6
<i>Return on Equity (ROE):</i>	6
<b>BALANCE SHEET – ASSUMPTIONS</b>	<b>7</b>
ASSETS:	9
<i>Property Plant and Equipment (“PPE”)</i>	9
<i>Accumulated Depreciation:</i>	9
<i>Liabilities &amp; Equity:</i>	9
LIABILITIES:	9
<i>Long Term Debt:</i>	9
<i>Debt Principle Paid:</i>	9
<i>Accumulated Deferred Taxes:</i>	9
EQUITY:	9
<i>Common Shares:</i>	9
<i>Retained Earnings:</i>	9
<b>CASH FLOW – ASSUMPTIONS</b>	<b>10</b>
<i>Operating Cash Flow:</i>	11
<i>Investment Cash Flow:</i>	11
<i>Financing Cash Flow:</i>	11

## The Projection

The following write up and associated pro forma (the “Projection”) describe the incremental financial impact the Project will have over a 25-year period through 2050 from a stand-alone project perspective.

The projection includes the total development and construction budget and the pro forma financial statements including income statement, balance sheet and cash flow statement.

### Development Budget:

The Development Budget shown in Table 1 is the Project cost to complete development activities in preparation for the construction of the project. The following line items explain, at a high level, what costs are included in this category.

Table 2 shows the development and construction budget’s quarterly forecast from Q3 2023 to Q1 2025 when the Project is expected to be online.

**Table 1: Total Development and Construction Budget**

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement			
GE Contract Option & Spare Parts			
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price			
Step-up Transformer			
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>			
<b>Contingency</b>			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	<b>534,260</b>	<b>2,153</b>	<b>100.0%</b>

**Table 2: Detailed Quarterly Development and Construction Budget (\$000s)**

Cash Out Categories	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Total
Dev Right & Reimbursable								
Wind Turbines								
Balance Of Plant								
PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops & Equipment, County Impact Fee and other								
Contingency								
<b>TOTAL ALL-IN CAPITAL COSTS</b>	<b>4,415</b>	<b>253,928</b>	<b>11,331</b>	<b>60,000</b>	<b>85,356</b>	<b>42,328</b>	<b>37,687</b>	<b>\$495,045</b>

Notes: 1. Start of construction may be delayed to 2024 which would shift spending profile.  
2. December 2025 County impact fee of [REDACTED] and AFUDC are not included in the table.

Development  
Rights and  
Reimbursable:

PSE will purchase the Project assets from Caithness Beaver Creek LLC for approximately \$ [REDACTED]. The reimbursable accounts for approximately [REDACTED] of expenditures Caithness has incurred to date.

Wind Turbine  
Generators:

Turbine Supply Agreement with General Electric (GE) at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines. PSE has the option to reduce the number of turbines by up to six units from 88 to 82 before January 10, 2024, which would reduce the total nameplate from 248.16 MWAC to 231.24MWAC and reduce the cost by [REDACTED] per turbine. The TSA is in draft form. PSE is negotiating terms directly with GE and anticipates contract execution to occur shortly after closing. The total TSA price includes approximately [REDACTED] for turbine operational options and [REDACTED] for spare parts.

Balance of  
Plant:

The current cost estimate for BOP work is approximately [REDACTED] based on Wanzek's proposal, including adjustment for extended warranty, double handling turbine and yard, and bigger sized O&M building. Substation step-up transformers and breakers costs are approximately [REDACTED] based on Mitsubishi contract. The total cost for all work under the BOP category is estimated to be [REDACTED].

PSE Project  
Management, IT,  
Remaining  
NorthWestern  
Upgrade, PSE  
Operations and  
Equipment,  
County impact  
Fee and other:

Items in this budget category include costs estimates associated with PSE or third party contractor's managerial oversight of the construction phase [REDACTED], IT and Identi-Flight [REDACTED] remaining NorthWestern Upgrade [REDACTED], PSE operations capitalized labor and equipment for start-up wind farm [REDACTED], County impact fee [REDACTED] and other expenses [REDACTED].

Contingency:

A 10% contingency is added to the BOP budget and PSE Project Management, IT, Remaining NorthWestern Upgrade, PSE Operations and Equipment, County impact Fee and other and other to account for cost risk and unknown change orders as certain expenditures remain unknown.

AFUDC:

Allowance for Funds Used During Construction (AFUDC) represents the cost of both the debt and equity funds used to finance utility plant additions during the construction period.

For gas construction work in progress (CWIP), AFUDC is calculated based on the Washington Utilities and Transportation Commission (WUTC) rate, which is the current approved weighted average cost of capital (WACC), and capitalized to gas plant upon completion of construction. For electric and common CWIP, only AFUDC calculated under the FERC formula is capitalized to plant.

The AFUDC rate allowed by the WUTC can differ from the FERC formula. When such differences exist, PSE capitalizes the difference as a regulatory asset, crediting miscellaneous income.



Based on the 2022 General Rate Case settlement, the weighted average cost of capital for the analysis is 7.16%.

## Income Statement – Assumptions

Date	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029	12/31/2030	12/31/2031	12/31/2032	12/31/2033	12/31/2034	12/31/2035	12/31/2036
Income Statement	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenues														
Operating Expenses:														
Transmission & Balancing Costs														
Fixed Operating Expense														
Total Operating Expenses														
EBITDA														
Depreciation (book)														
Interest														
Earnings before taxes														
Income taxes:														
Current														
Deferred														
PTC														
ITC														
Total income taxes														
Net Income														
ROE														
Date														
Income Statement														
Revenues														
Operating Expenses:														
Transmission & Balancing Costs														
Fixed Operating Expense														
Total Operating Expenses														
EBITDA														
Depreciation (book)														
Interest														
Earnings before taxes														
Income taxes:														
Current														
Deferred														
PTC														
ITC														
Total income taxes														
Net Income														
ROE														

REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

### Revenues:

#### Revenue Requirement:

The Projection calculates revenues required to recover the Project operating expenses, the capital investment, plus the cost of capital to finance the Company's investment in ratebase.

The revenue requirement calculation is an indicator of the cost to customers under assumptions of perfect regulation. While the pro forma assumes perfect regulation, there is frequently a lag between the time a project is placed in service and when the project is included in customers' rates. RCW 80.80 allows utilities to defer all costs associated with renewable energy investments and generation until prudence is determined by the WUTC. Once the project is placed into rates, recovery of deferred costs occurs over a specific time period as specified by the WUTC. Appendix 18 explains the accounting and regulatory plan associated with placing the Project in rates.

#### Fixed Transmission and Balancing:

Transmission from the Project to PSE's service territory flows across the NorthWestern and BPA transmission system, as well as the CTS if the project output is delivered over Northwestern to Colstrip rather than Garrison (PSE is pursuing both options). In both cases, the incremental transmission and balancing cost to PSE customers will be NorthWestern's point-to-point (PTP) transmission service, and BPA's scheduling and wind integration tariff. NorthWestern's tariff is [REDACTED] kW-year. BPA's scheduling and wind integration tariff is [REDACTED] W-yr. BPA holds bi-annual rate cases every other September to modify the aforementioned tariffs. Tariff increases for PTP and scheduling over the past several rate cases have been about 6%. PSE holds NorthWestern's tariff constant and escalates BPA's balancing expenses by 6% every two years.

These charges are only applied after the project's COD in March 2025.

#### Operations Expense:

The current modeled O&M is based on PSE's actual O&M from 2017 to 2022 of its existing Wild Horse, Hopkins Ridge and Lower Snake River wind farms. The estimated O&M include transmission line maintenance, collection system maintenance, environmental and compliance, plant operations, road fence and ground services, site fiber services, substation maintenance, etc, and amounts to [REDACTED] for a full year of operation plus inflation.

#### Production Payments:

The current lease payment to the landowners is estimated at 4% of the Northwestern Avoided Energy cost of [REDACTED] MWh plus escalation, or [REDACTED] per year plus escalation.

#### Maintenance Expense:

The current estimate of the GE service contract is [REDACTED] per turbine for the 88 turbines. The annual total is [REDACTED]

#### Property Tax:

The project has been approved for tax abatement. The project will be taxed at 25% for the first 5 years, increasing to 100% over the next 5 years, and continuing at full value in years 10 and thereafter. The property tax rate has been estimated at 1.5%. This amounts to [REDACTED] per year.

#### Insurance:

Insurance cost is estimated based on a [REDACTED] insurance rate plus escalation. This amounts to [REDACTED] per year.

**MT generation  
and transmission  
tax:**

The total O&M forecast for the Project includes a) [REDACTED] MWh Wholesale Energy Transaction Tax per Montana Code Annotated 2021 15-72-104 and b) a [REDACTED] MWh Electrical Energy Producers Tax per Montana Code Annotated 2021 15-51-101.

**EBITDA:**

Earnings before interest, taxes, depreciation and amortization (EBITDA) are calculated as revenues less all operating expenses.

**Book  
Depreciation:**

The Projection models depreciable lives for book and tax purposes. For book depreciation, all assets except land are depreciated using the straight line method. All assets are depreciated over 25 years.

**Interest  
Expense:**

Interest Expense is calculated based on PSE's mid-year pro forma rate base multiplied by the assumed debt percentage in the capital structure. This method is consistent with conventions used by regulated utilities. The Projection assumes a rate of return of 7.16% and a debt percentage of 51.00% at a weighted pretax cost of 5%. These rates are based on the rate schedule published December 2022 by the Washington Utilities and Transportation Commission.

**Earning Before  
Taxes**

Earning before taxes equals to EBITDA less book depreciation and interest expense.

**Current Income  
Taxes:**

Current Income Taxes are calculated as EBITDA net of interest and tax depreciation multiplied by the Federal corporate income tax rate of 21%.

**Deferred Income  
Taxes:**

Deferred Income Taxes are calculated as the difference between book and tax depreciation expenses multiplied by the Federal corporate income tax rate of 21%.

**Production Tax  
Credit (PTC)**

The project qualifies for the Production Tax Credit (PTC) or the Investment Tax Credit (ITC). Our modelling indicates that the PTC is more beneficial to customers.

The Inflation Reduction Act (IRA) significantly increased the federal income tax incentives for renewable energy projects. The project is expected to qualify for PTC at a rate of \$27.50 per MWh, plus an annual IRS inflation adjustment. In addition, the project is expected to qualify for the domestic content bonus credit which would increase the PTC rate by +10% to \$30.25 per MWh. At this time, it appears that the project will not qualify for the "energy communities" benefit. Management will continue to monitor the evolution of the tax credit in order to maximize the value of these incentives for the benefit of customers.

PTCs claimed under the IRA are transferable. Transferability will allow PSE to convert the PTC to cash regardless of PSE's taxable income by selling the PTCs to an unrelated 3rd party. This may be a source of significant value to customers by vastly accelerating the timing of the pass-back of the credits on customers' bills. The modeling for the project assumes that PTCs will be sold when earned at 95% of face value.

PTCs are passed along to customers under a separate tariff, Schedule 95A. The Schedule resets each October with all PTC that have been realized in a cash

benefit, either through usage on a tax return or sold to a third party, being passed to customers over the following 12 months.

PTCs can be generated for 10 years. Since the Project's expected COD is 3/31/2025, the PTC will generate for the nine months in 2025, full year from 2026-2034, and for the three months in 2035.

**Total Income  
Taxes:**

Total income taxes are the sum of current, deferred income taxes, PTC and ITC.

**Net Income  
Taxes:**

Net income is earnings before taxes net of total income taxes.

**Return on Equity  
(ROE):**

ROE is calculated as net Income divided by the equity portion of the average ratebase in each year and equates the authorized ROE of 9.40%.

## Balance Sheet – Assumptions

Balance Sheet	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>ASSETS:</b>														
<i>Current Assets:</i>														
Total Current Assets														
<i>Non-Current Assets:</i>														
Property, plant & Equipment:														
Construction Work in Progress														
PP&E - Gross														
Accumulated Depreciation														
PP&E - Net														
<b>TOTAL ASSETS</b>														
<b>LIABILITIES &amp; OWNER'S EQUITY:</b>														
<i>Current Liabilities:</i>														
Total Current Liabilities														
<i>Non-Current Liabilities:</i>														
Accumulated deferred income tax liability														
Debt														
Total Non-Current Liabilities														
<b>Total Liabilities</b>														
<b>Owner's Equity - total</b>														
<b>TOTAL LIABILITIES &amp; OWNER'S EQUITY</b>														
<b>Balance sheet rollforwards:</b>														
<i>Property, plant &amp; equipment - gross:</i>														
Beginning balance														
Current period additions														
Ending balance														
<i>Accumulated depreciation:</i>														
Beginning balance														
Current period additions														
Ending balance														
<i>Accumulated deferred income tax liability</i>														
Beginning balance														
Current period additions														
Ending balance														
<i>Long-term debt:</i>														
Beginning balance														
Issuances														
Repayments														
Ending balance														
<i>Average balance</i>														
<i>Interest expense</i>														
<i>Owner's Equity</i>														
Beginning balance														
Issuances														
Current period earnings														
Dividends														
Ending balance														
Equity Ratio														

REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Balance Sheet	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>ASSETS:</b>														
<b>Current Assets:</b>														
Total Current Assets														
<b>Non-Current Assets:</b>														
Property, plant & Equipment:														
Construction Work in Progress														
PP&E - Gross														
Accumulated Depreciation														
PP&E - Net														
<b>TOTAL ASSETS</b>														
<b>LIABILITIES &amp; OWNER'S EQUITY:</b>														
<b>Current Liabilities:</b>														
Total Current Liabilities														
<b>Non-Current Liabilities:</b>														
Accumulated deferred income tax liability														
Debt														
Total Non-Current Liabilities														
<b>Total Liabilities</b>														
<b>Owner's Equity - total</b>														
<b>TOTAL LIABILITIES &amp; OWNER'S EQUITY</b>														
<b>Balance sheet rollforwards:</b>														
<b>Property, plant &amp; equipment - gross:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated depreciation:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Accumulated deferred income tax liability - PSE:</b>														
Beginning balance														
Current period additions														
Ending balance														
<b>Long-term debt:</b>														
Beginning balance														
Issuances														
Repayments														
Ending balance														
<b>Average balance</b>														
<b>Interest expense</b>														
<b>Owner's Equity</b>														
Beginning balance														
Issuances														
Current period earnings														
Dividends														
Ending balance														
Equity Ratio														

Assets:

Property Plant  
and Equipment  
("PPE")

For book purposes, the value of the plant reflects capitalization of all the Project capital costs.

Accumulated  
Depreciation:

Accumulated Depreciation is the sum of the annual depreciation identified in the Income Statement and offsets the total PPE in the line above.

Liabilities &  
Equity:

The Projection models financing activities for the Project based on the assumption that PSE will issue new debt and equity to fund the Project. The Projection assumes perfect financing activities to accurately reflect the incremental regulated debt and equity cost to revenue requirements. However, PSE may in practice use a combination of current short and long-term debt and equity to fund the Project.

Liabilities:

Long Term  
Debt:

Long term debt is based on a capital structure of 51.00% debt.

Consistent with regulated utility modeling methods, debt is repaid in a fashion that allows the Projection to maintain PSE's equity/debt split on the Balance Sheet throughout the life of the Project. This is accomplished by equating debt payment to the sum of depreciation, and deferred tax multiplied by the PSE debt percentage.

Debt Principle  
Paid:

Debt Principle Paid is the cumulative principle paid on the Long-Term debt issued to finance the Project.

Accumulated  
Deferred Taxes:

Accumulated Deferred Taxes are calculated as the deferred tax balance from previous year plus/less the deferred tax balance from current year.

Equity:

Common  
Shares:

Common Shares is the cumulative capital contributions from equity holders.

Retained  
Earnings:

Retained Earnings is the repayment of the initial equity invested in the Project. Calculations are described at the beginning of the Balance Sheet section.



## Cash Flow – Assumptions

Statement of Cash Flows	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>Operating Cash Flows:</b>														
Net income														
Adjustments to reconcile net income to net cash from operating activities:														
Depreciation														
Changes in working capital (ADIC)														
Net cash provided by operating activities:														
<b>Investing Cash Flows:</b>														
Purchase of property, plant & equipment														
Net cash provided by investing activities:														
<b>Financing Cash Flows:</b>														
Proceeds from issuance of debt														
Proceeds from raise of equity														
Proceeds from monetization of ITC														
Repayments of debt														
Dividends paid														
Net cash provided by financing activities:														
Net change in cash														

Statement of Cash Flows	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
<b>Operating Cash Flows:</b>														
Net income														
Adjustments to reconcile net income to net cash from operating activities:														
Depreciation														
Changes in working capital (ADIC)														
Net cash provided by operating activities:														
<b>Investing Cash Flows:</b>														
Purchase of property, plant & equipment														
Net cash provided by investing activities:														
<b>Financing Cash Flows:</b>														
Proceeds from issuance of debt														
Proceeds from raise of equity														
Proceeds from monetization of ITC														
Repayments of debt														
Dividends paid														
Net cash provided by financing activities:														
Net change in cash														

REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

Operating Cash Flow:	Operating Cash Flow is calculated as the sum of After Tax Net Income and depreciation from the Income Statement plus the change from the previous year in deferred taxes and working capital balances from the Balance Sheet.
Investment Cash Flow:	Investment Cash Flow is calculated as the capital expenditures net of any gain/loss on investments. This section only reflects the initial investment made to construct the Project.
Financing Cash Flow:	Cash from Financing is cash received from/paid to debt holders, and cash received from/paid to equity holders. Debt and equity is repaid in a fashion that allows the Projection to maintain PSE's capital structure ratio on the balance sheet throughout the life of the Project. This is accomplished by multiplying the weight of debt by the value equal to the total operating cash minus net income. All available Cash from Operations is distributed to equity holders net of the debt repayment. This cash distribution methodology results in the Projection showing negative cumulative retained earnings.



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

# Attachment I. Wind Resource Assessment

(PREPARED BY DNV ENERGY INSIGHTS)



**Beaver Creek Wind Farm**

# **Energy Assessment**

2023.09.08 (88 turbines) x GE 2.82-127 at 89 m HH

2023.09.08 (82 turbines) x GE 2.82-127 at 89 m HH

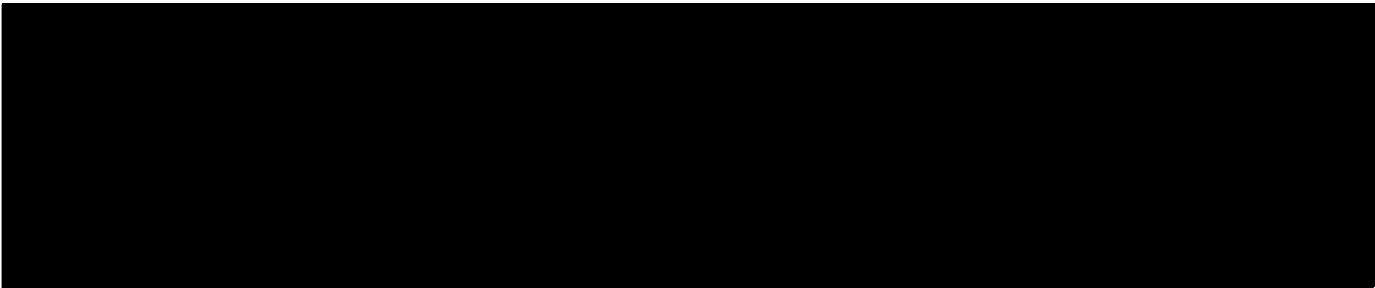
**Puget Sound Energy, Inc.**





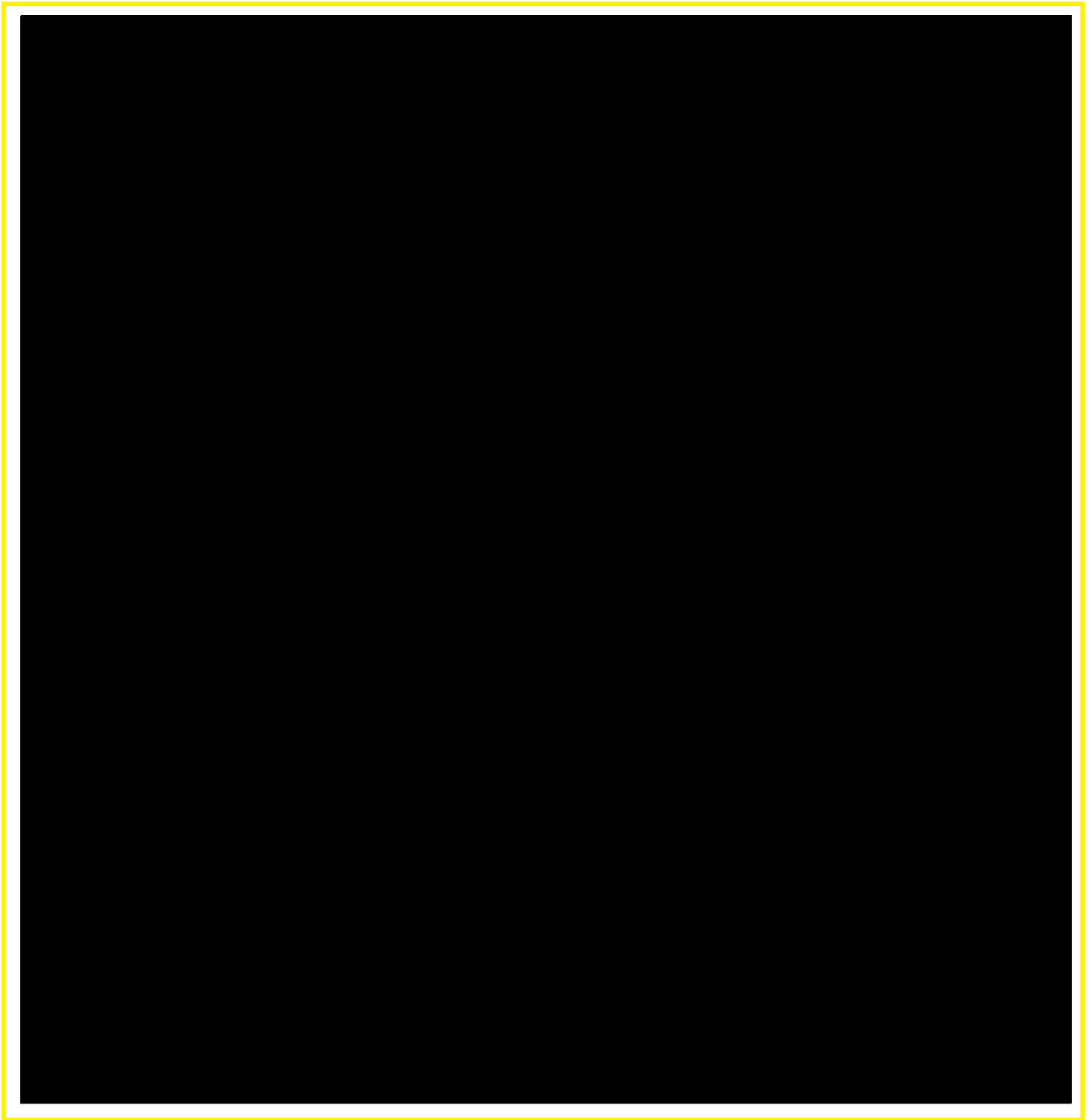
Title	Energy Assessment
Customer	Puget Sound Energy, Inc.
Document No.	10454276-HOU-XL-02
Issue	B
Status	Draft
Date	24-Oct-23
Classification	Customer Discretion
Author	A. Smith
Checked	K. Walden
Approved	J. Beaudry
DNV Legal Entity	DNV Energy USA Inc.

The results are considered preliminary because DNV has not completed the associated energy report and associated full quality control process.



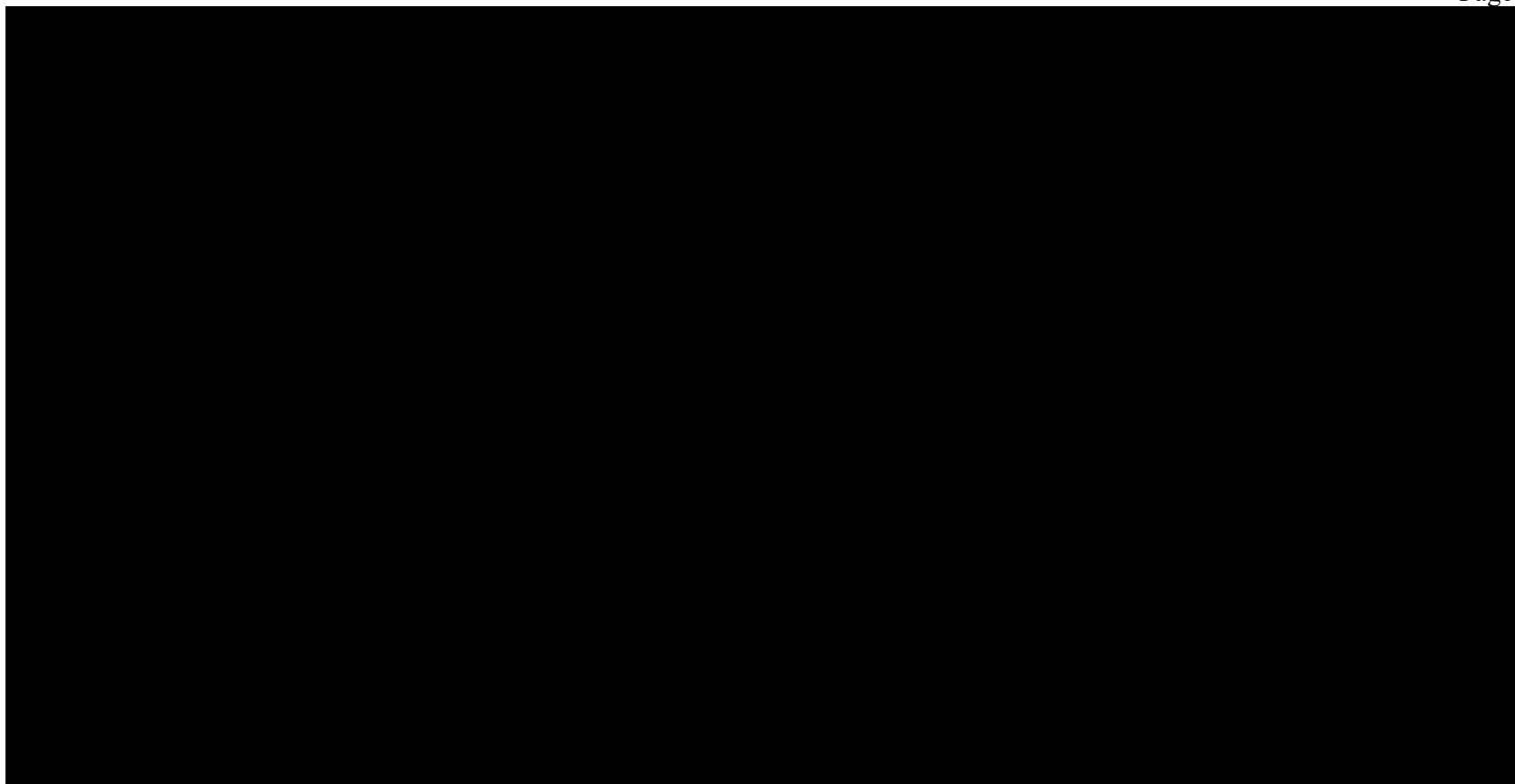
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

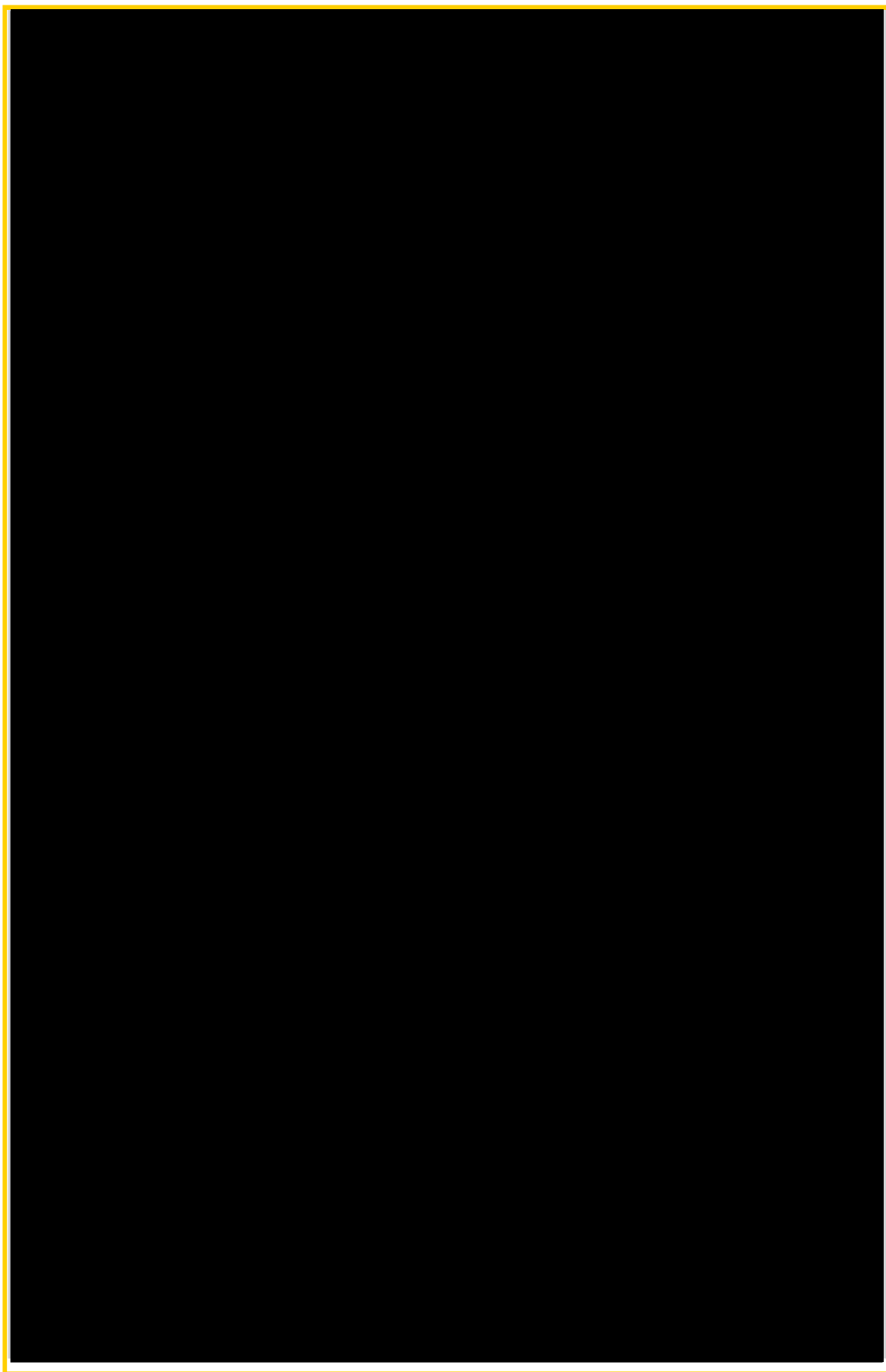
REDACTED VERSION





SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



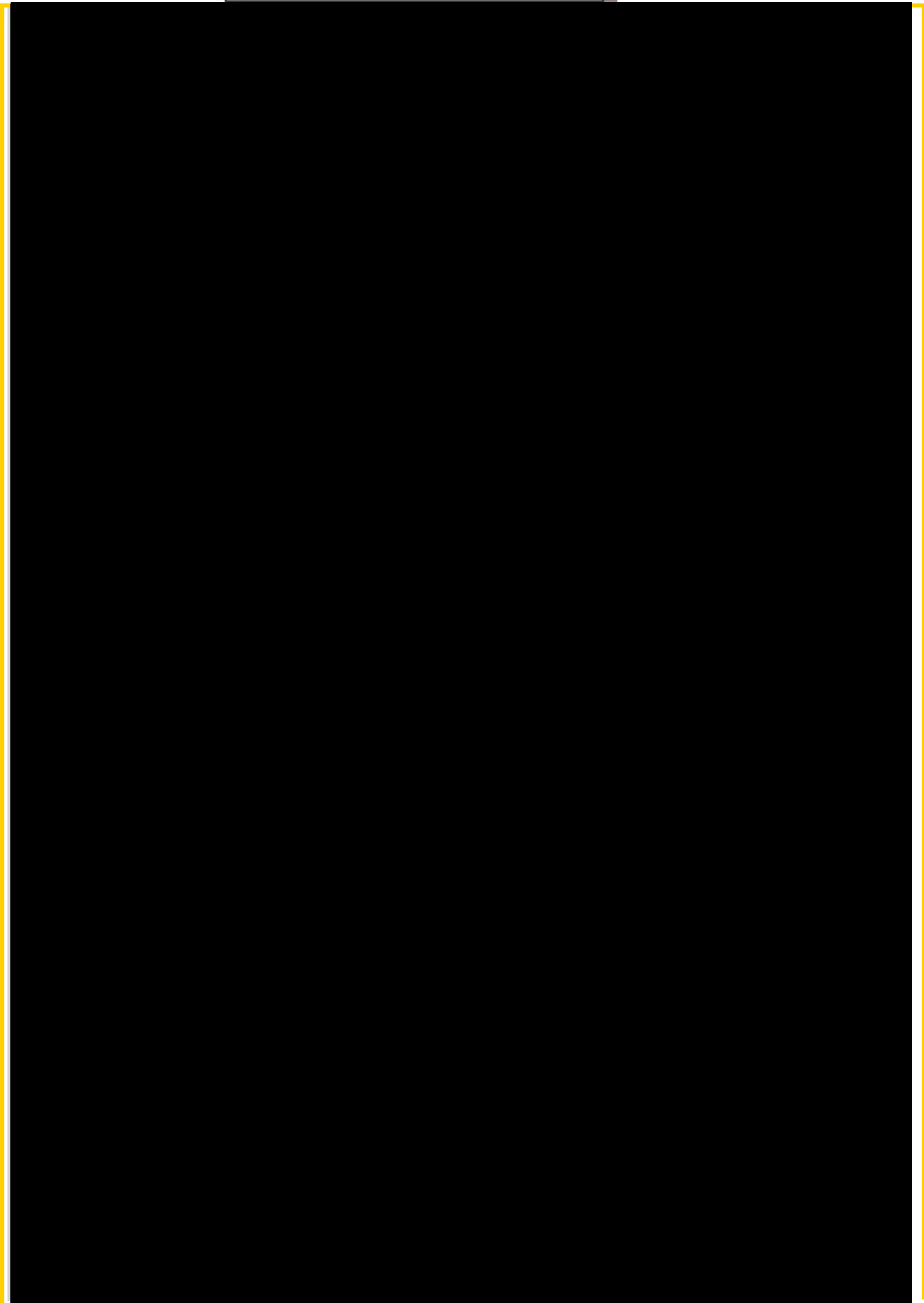
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



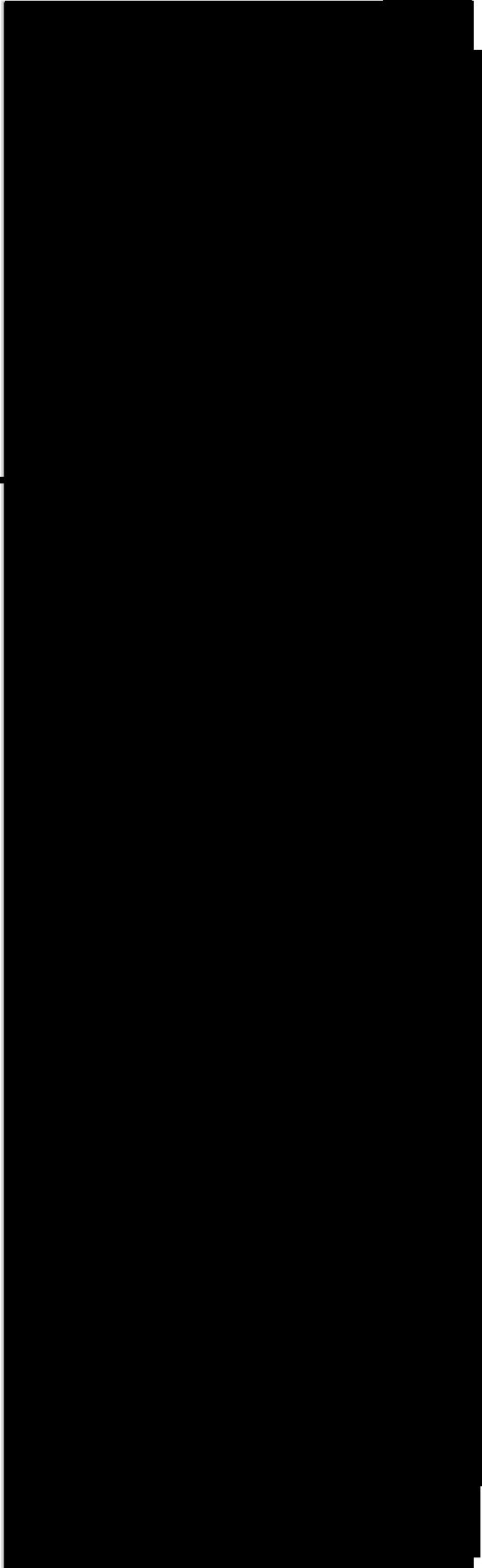


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

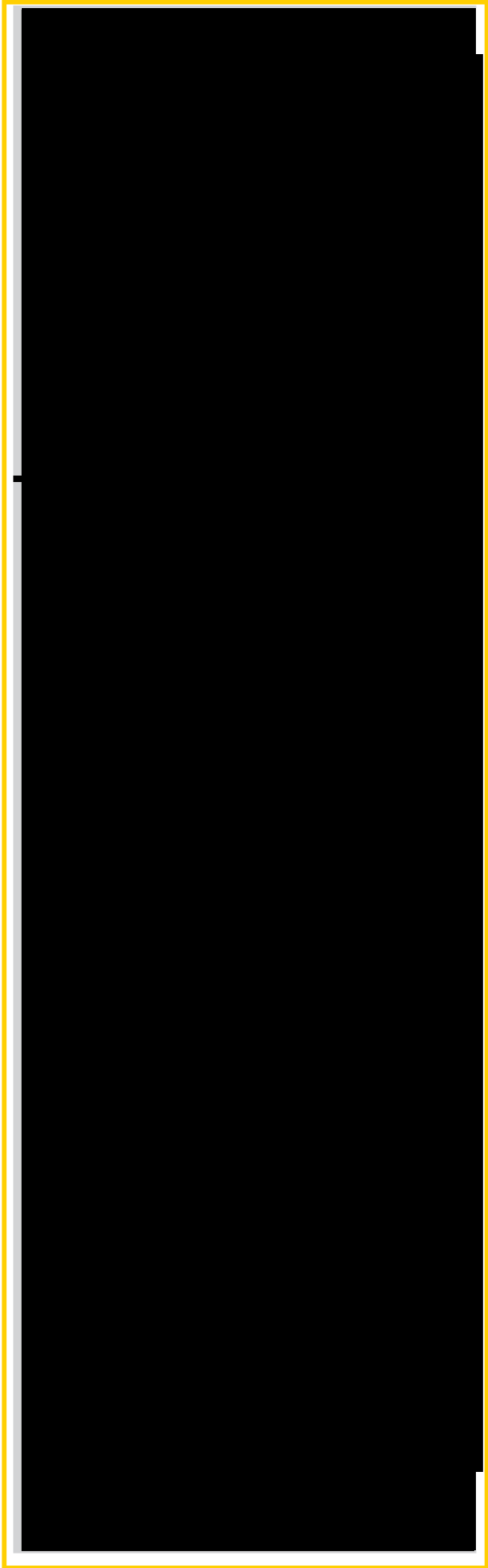


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



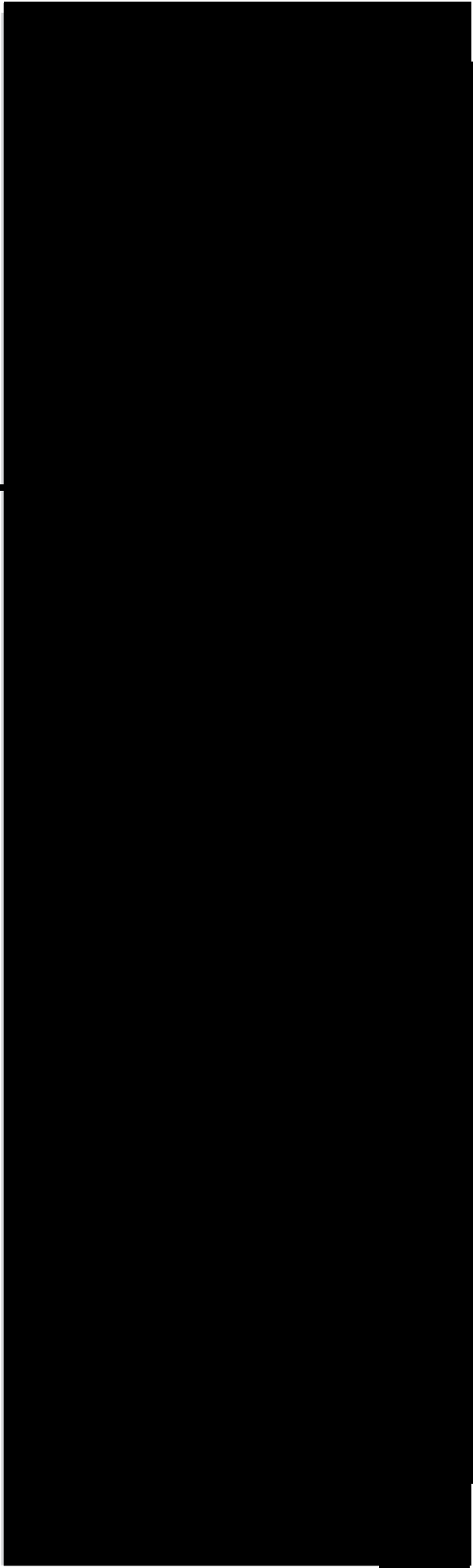
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

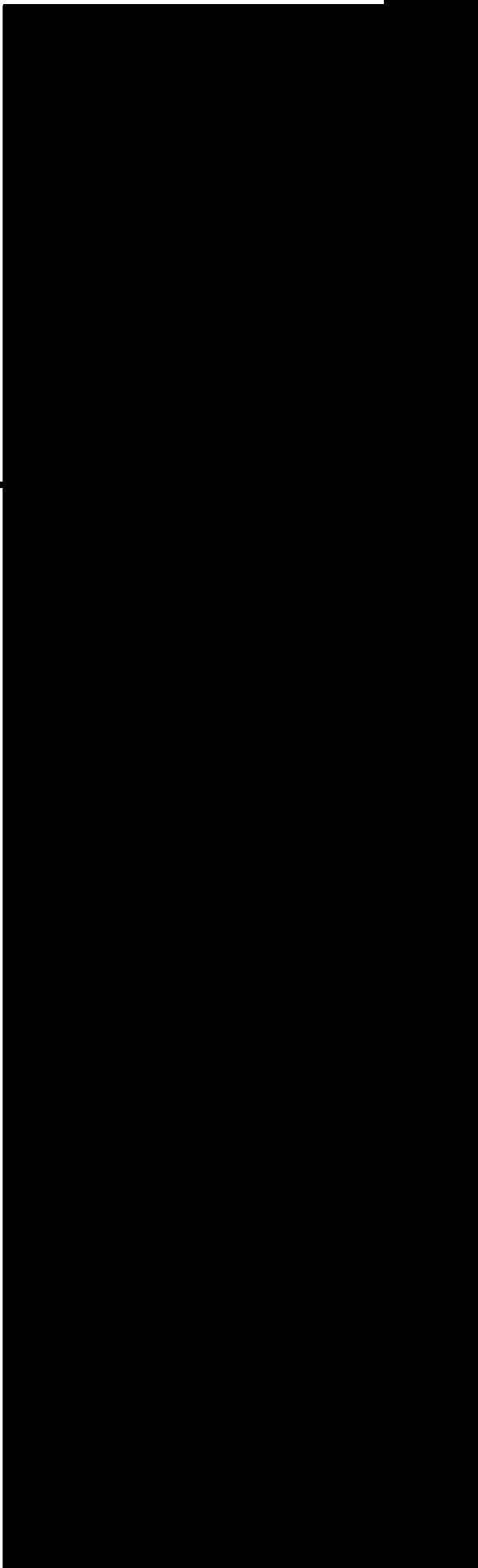


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

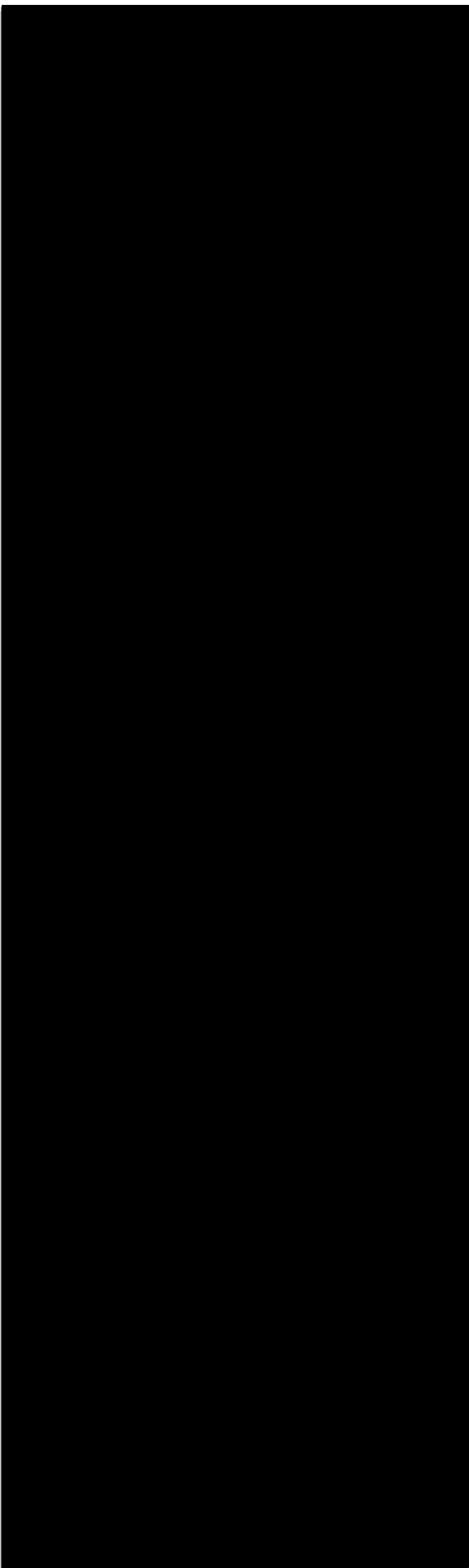


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

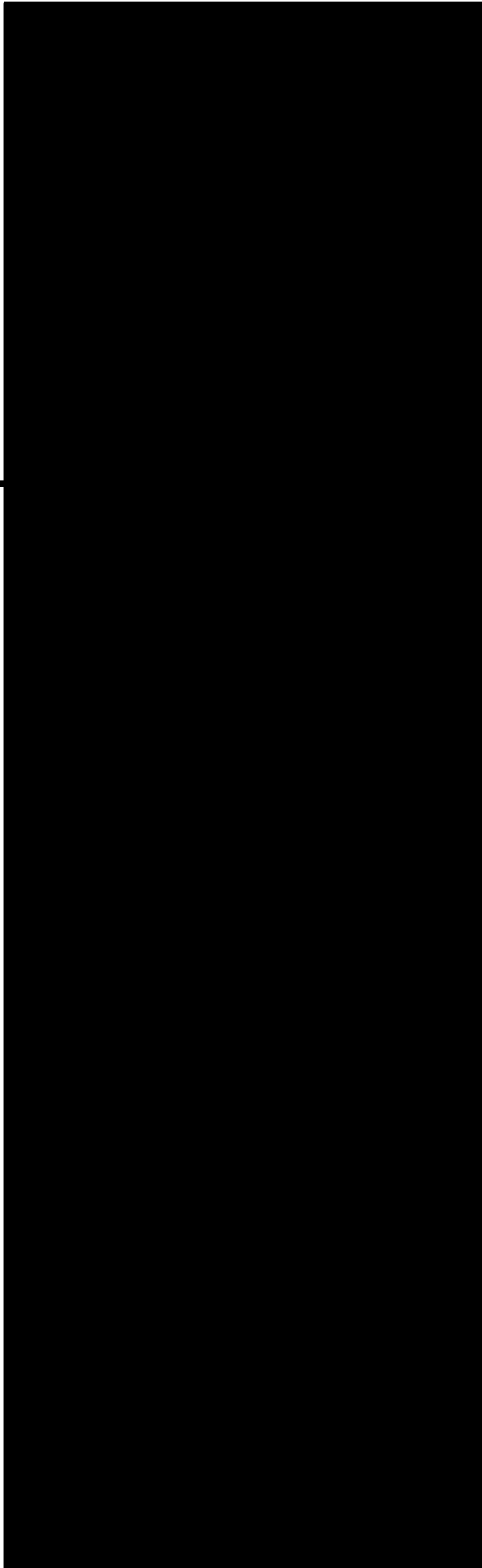
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

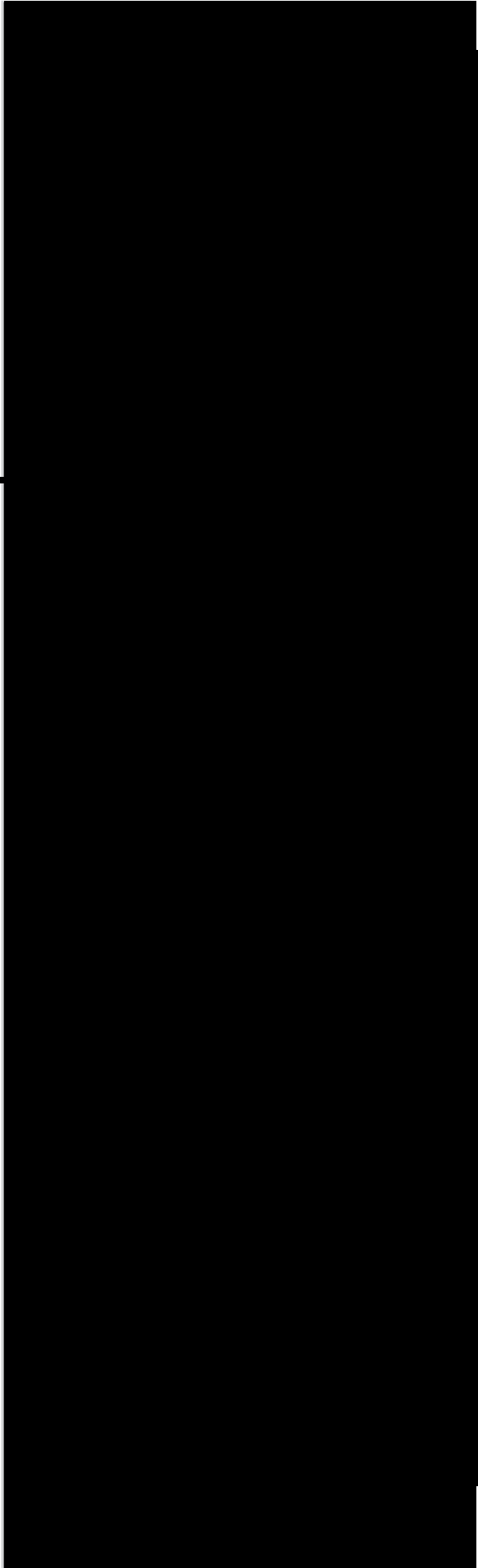


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



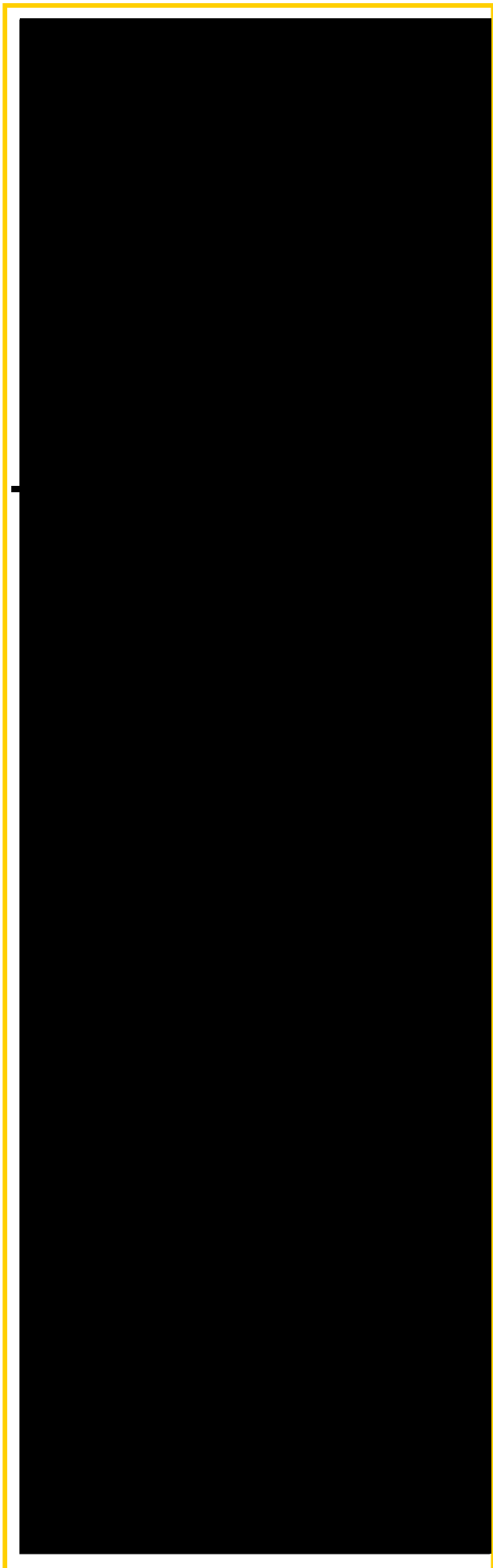
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

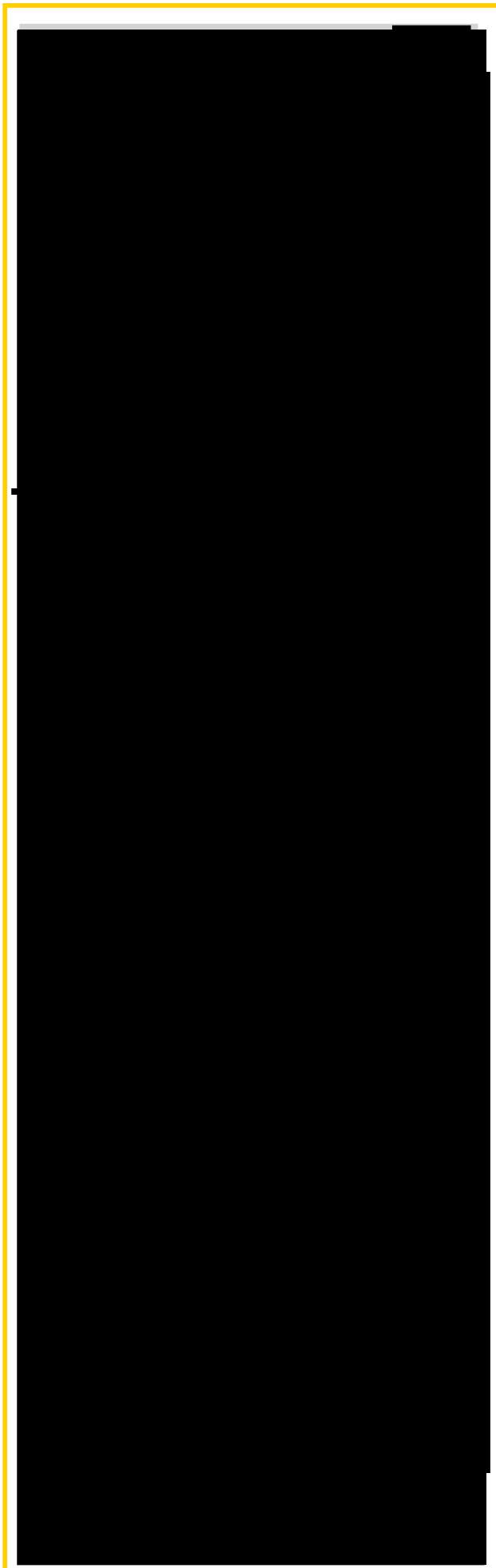


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

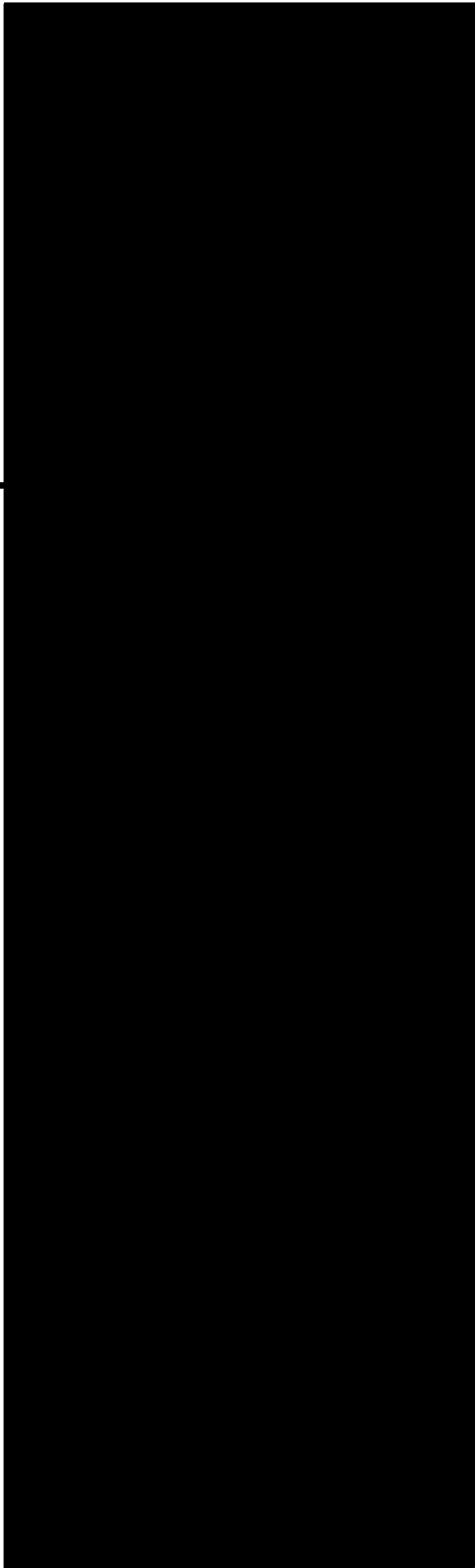


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

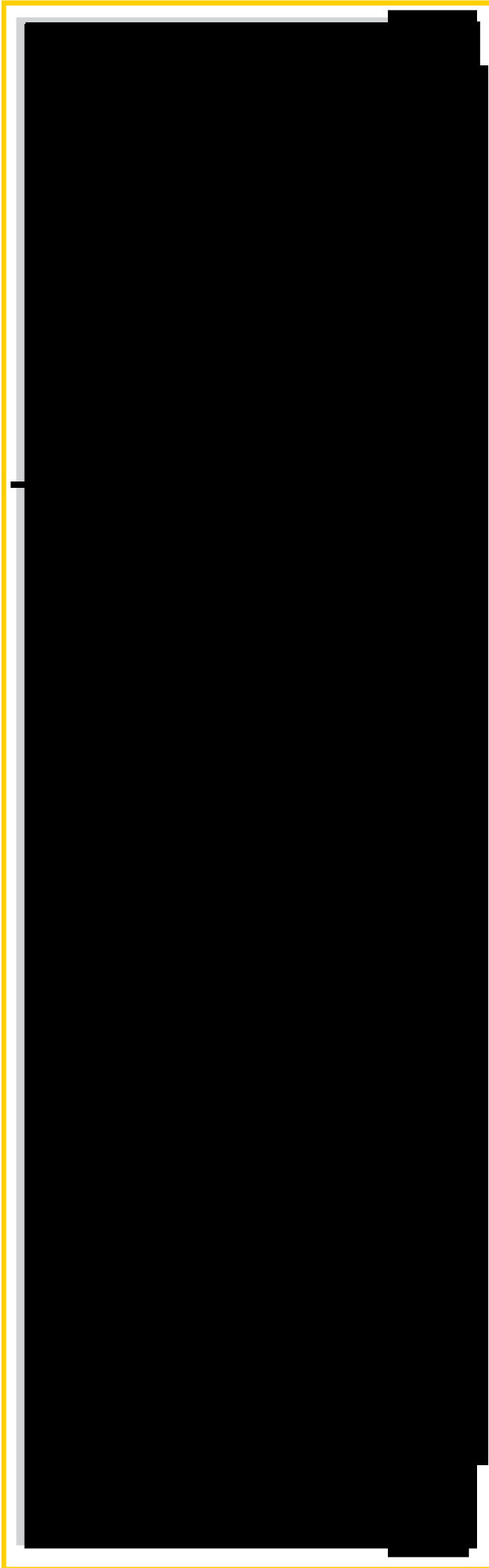


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

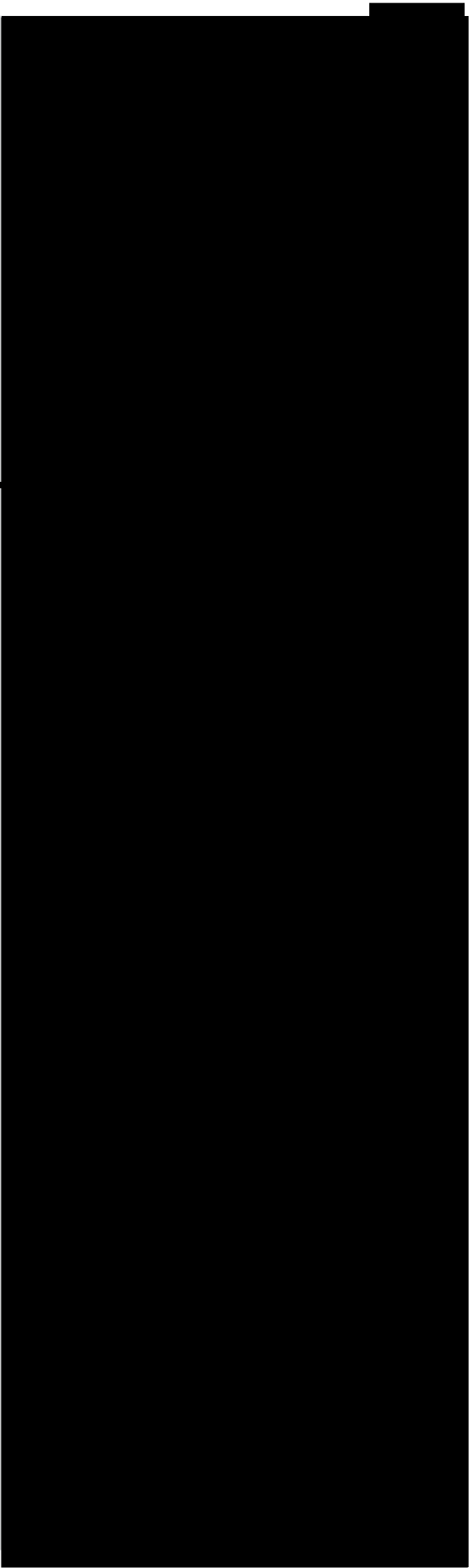


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

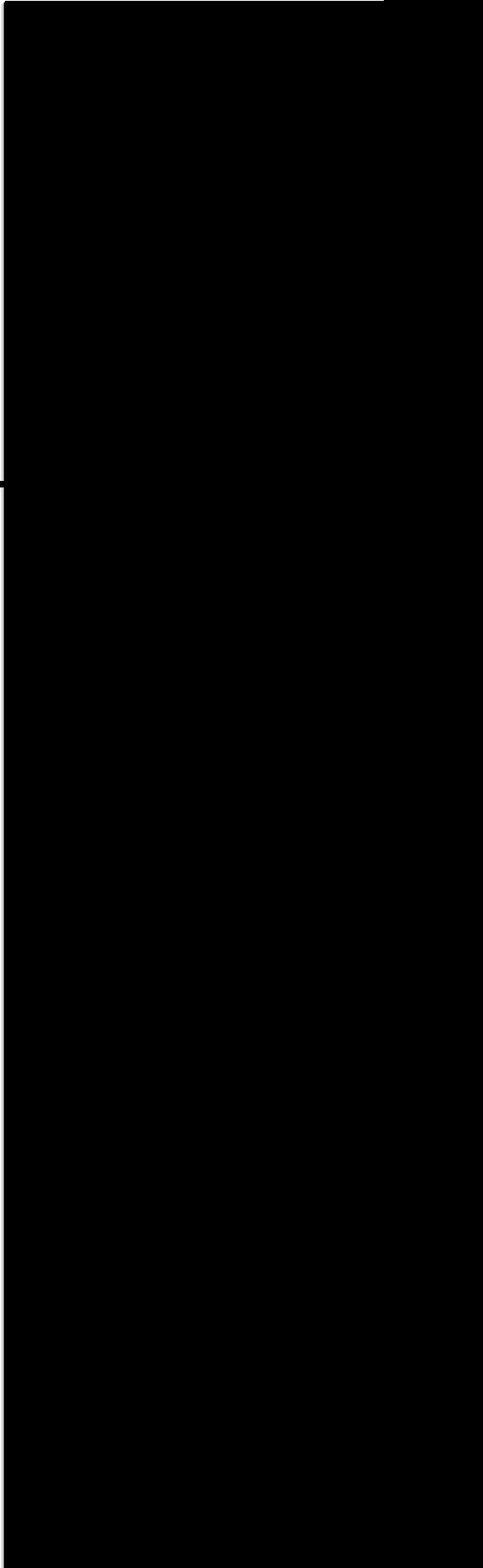


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

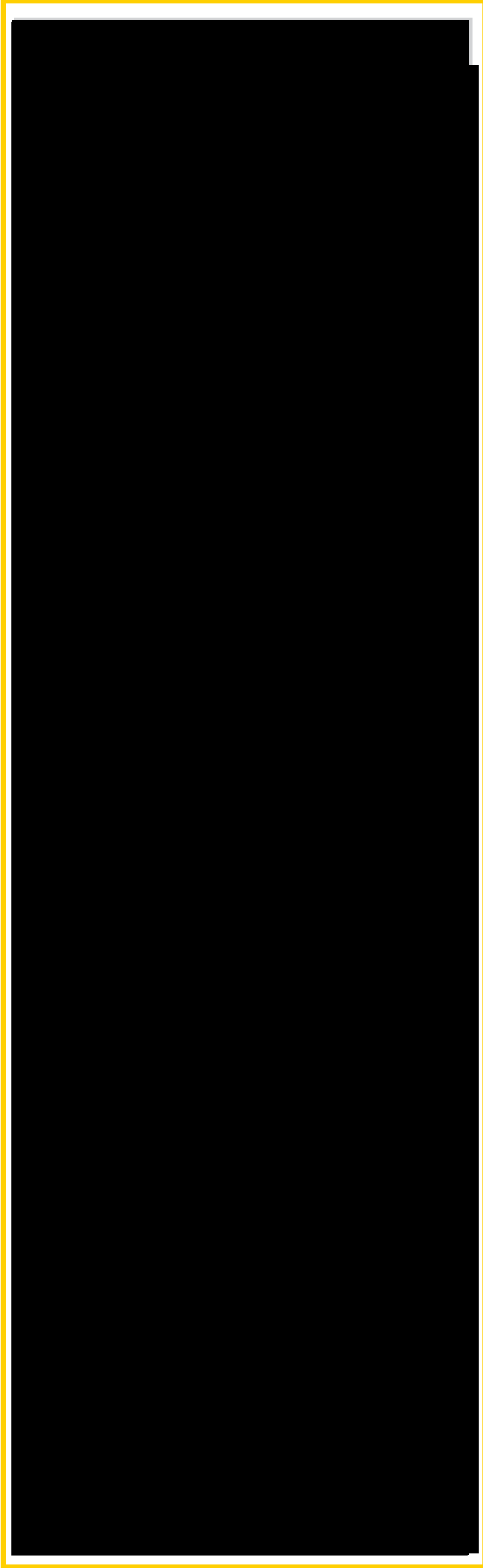


REDACTED VERSION

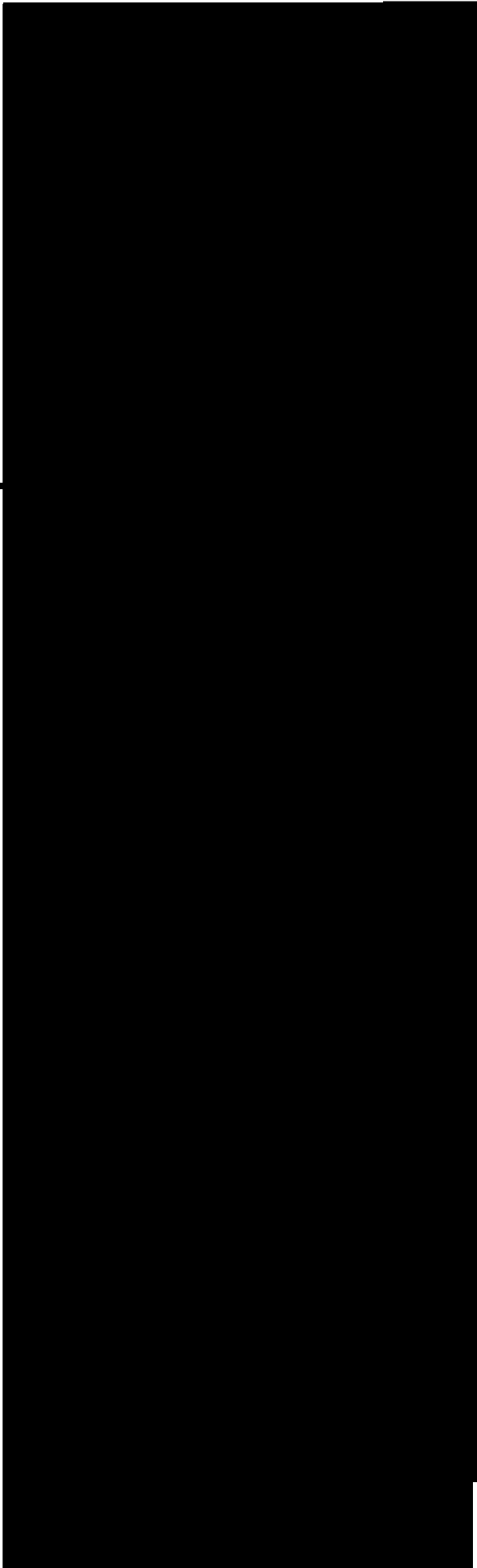
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

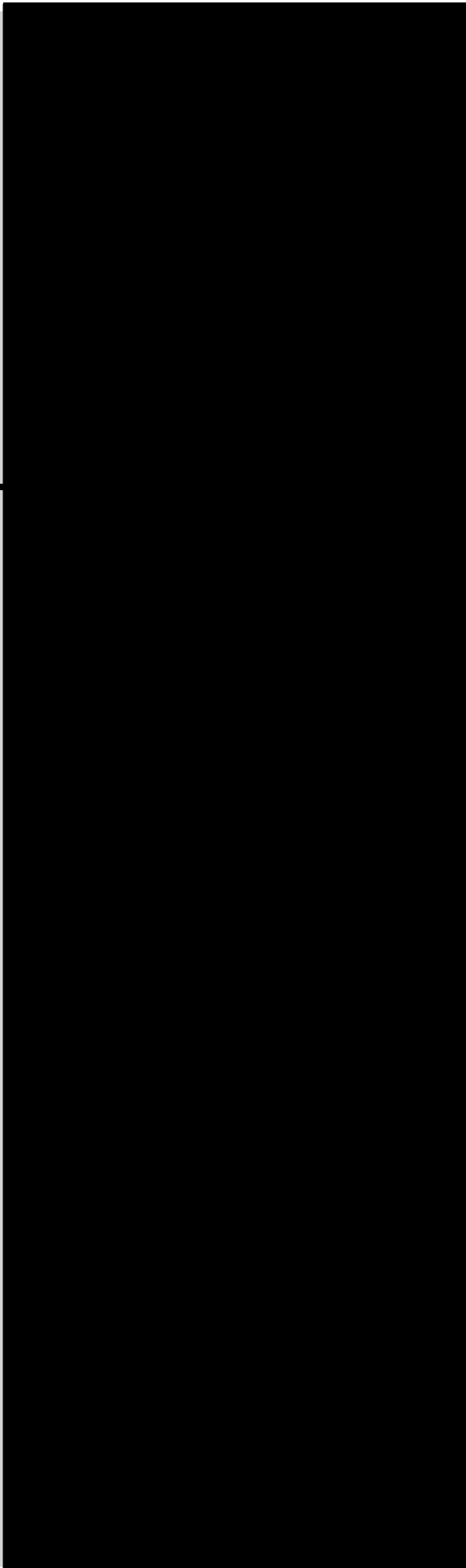


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



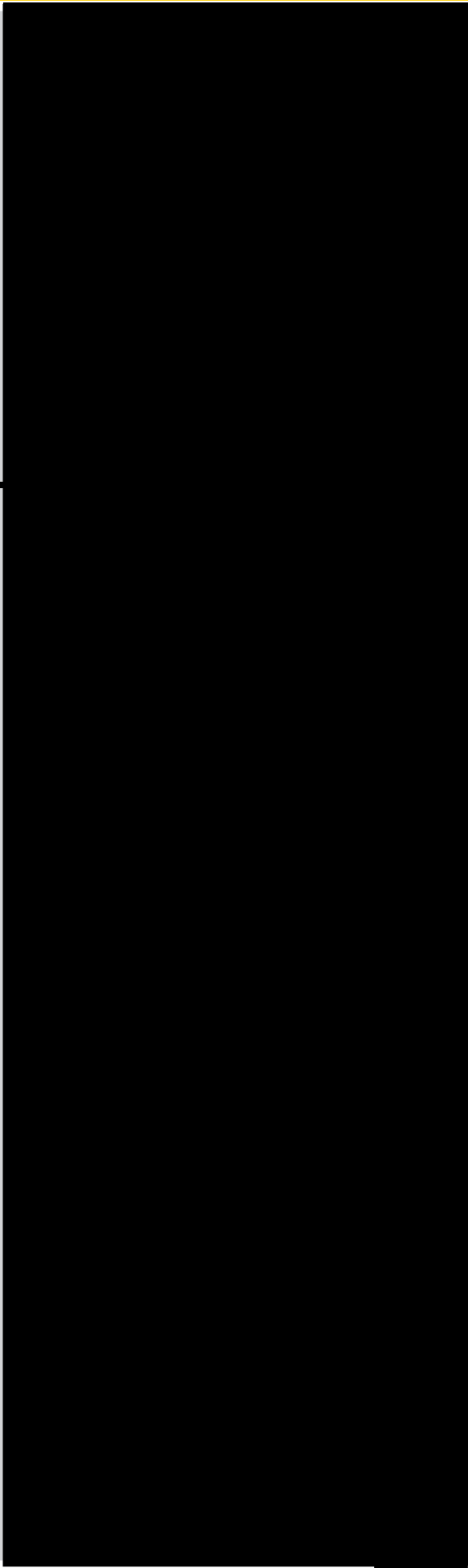
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

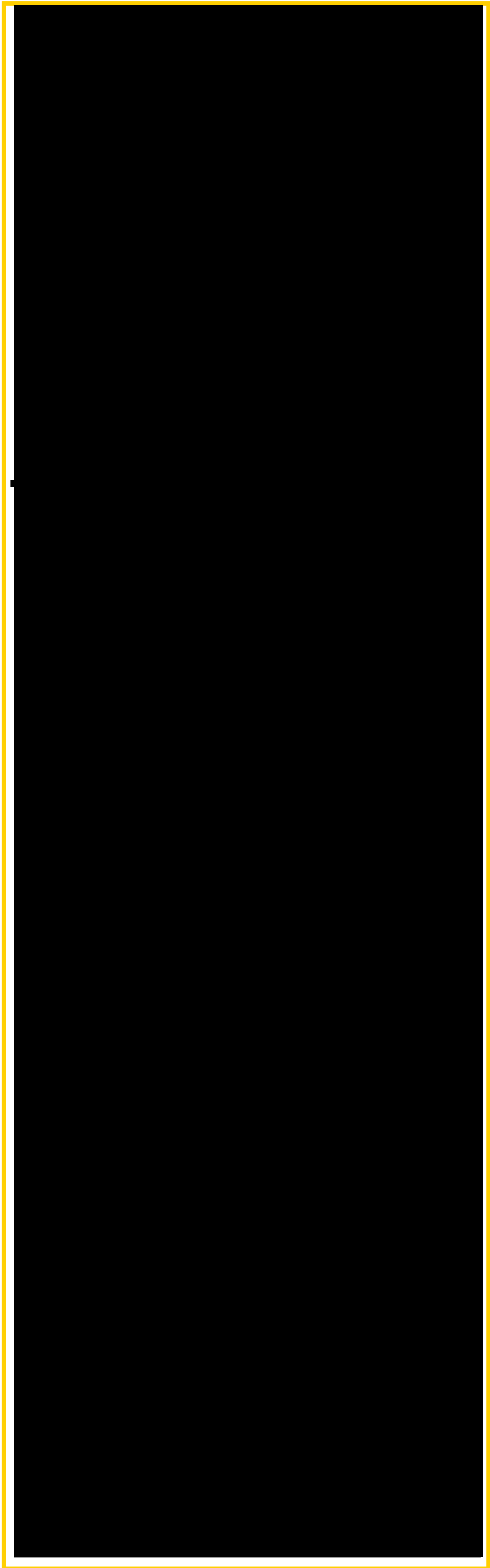
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

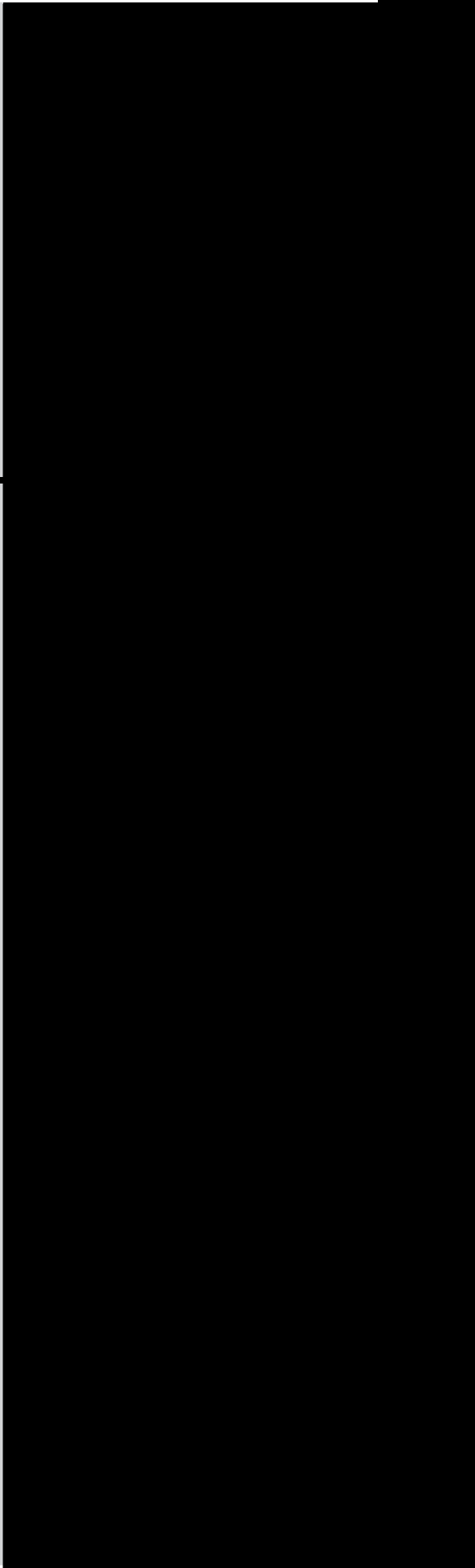


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

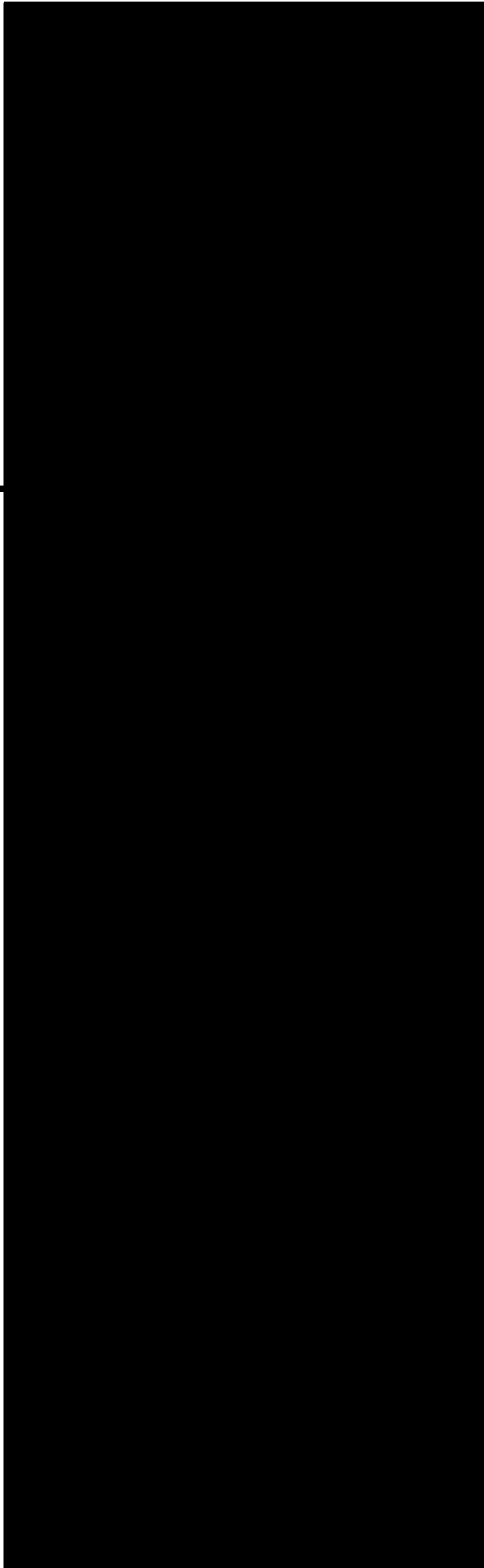


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

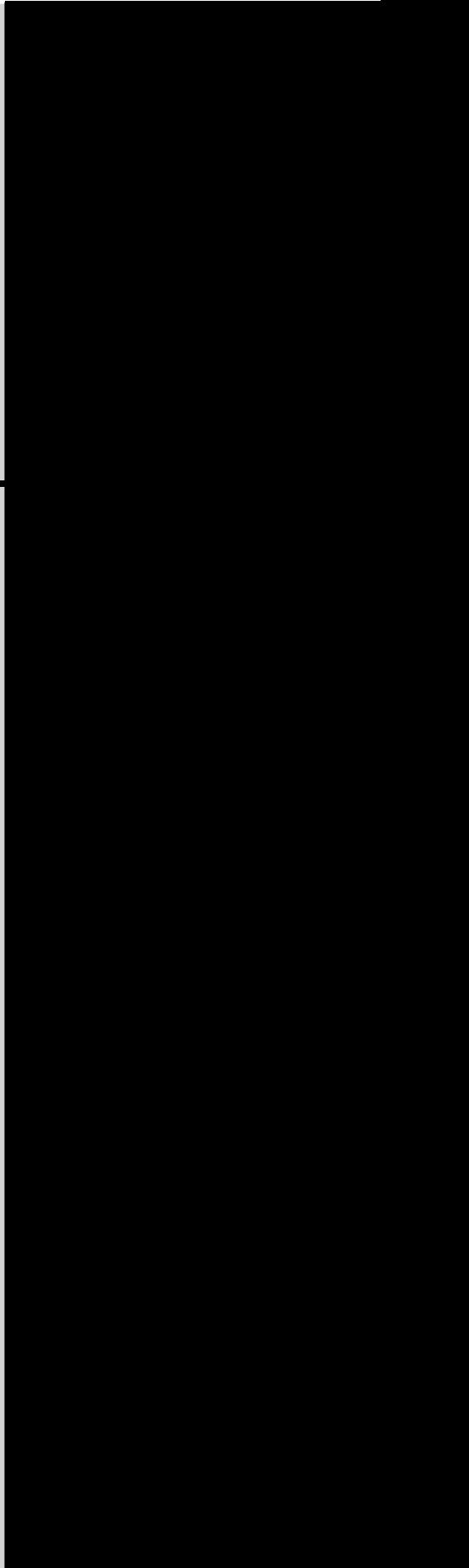
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

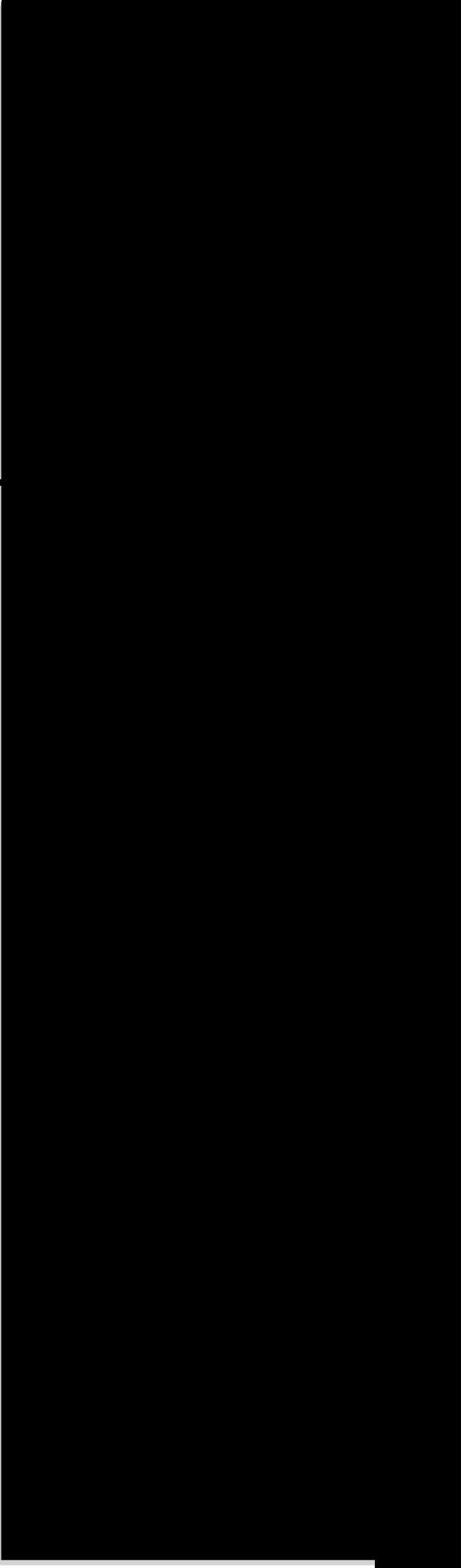
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

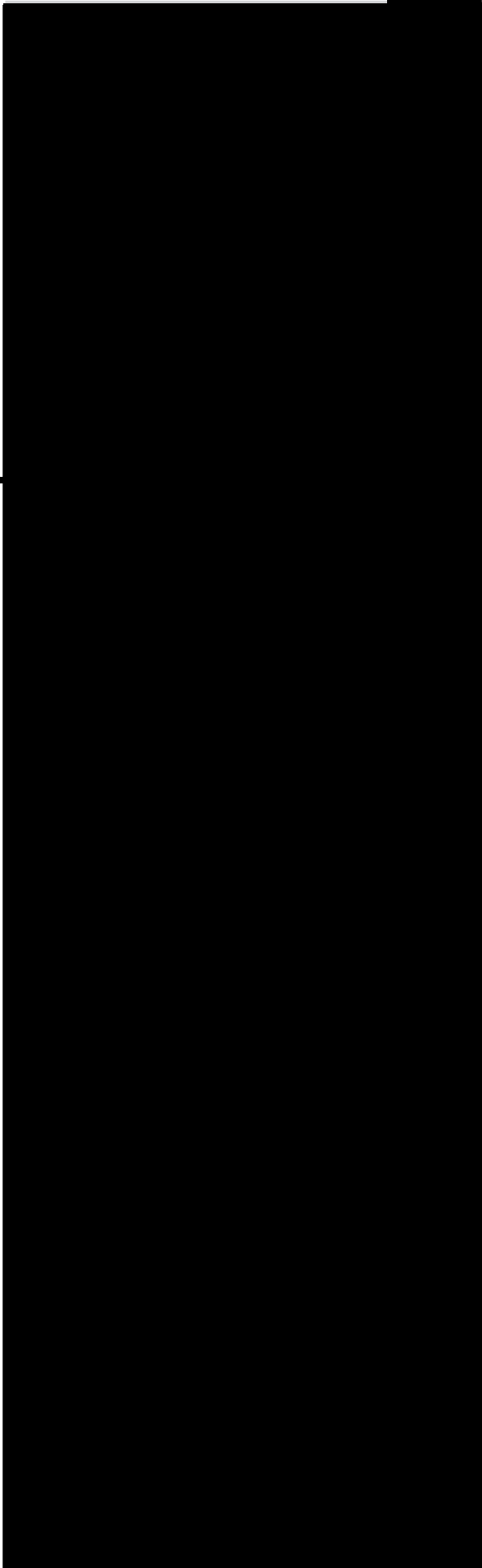
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



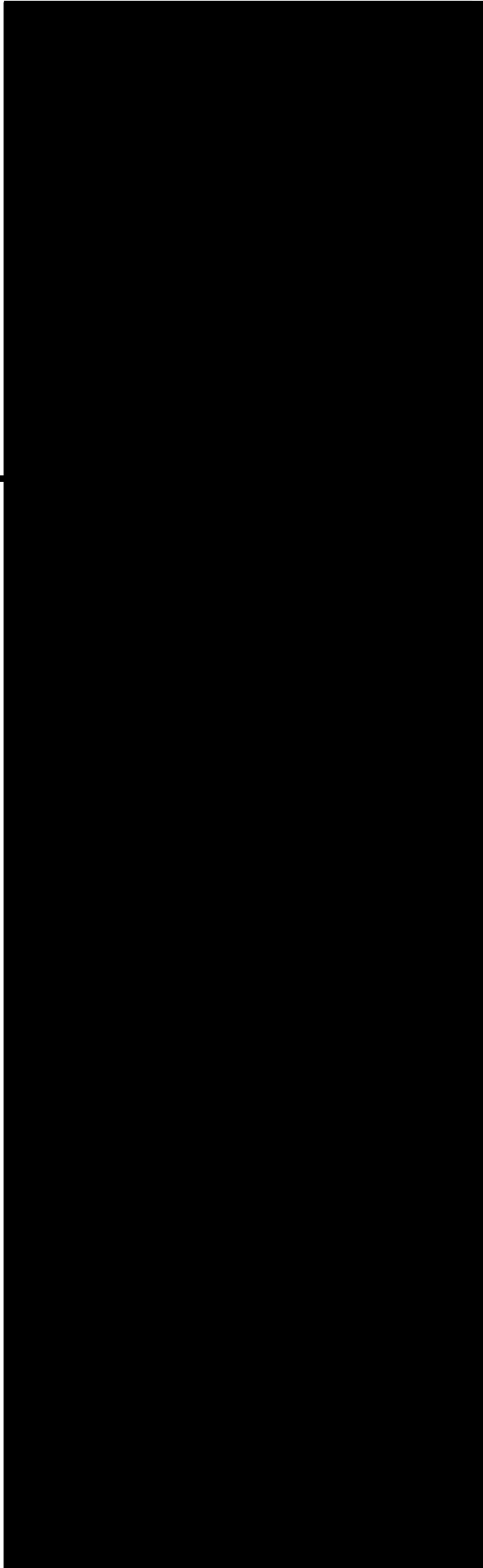
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



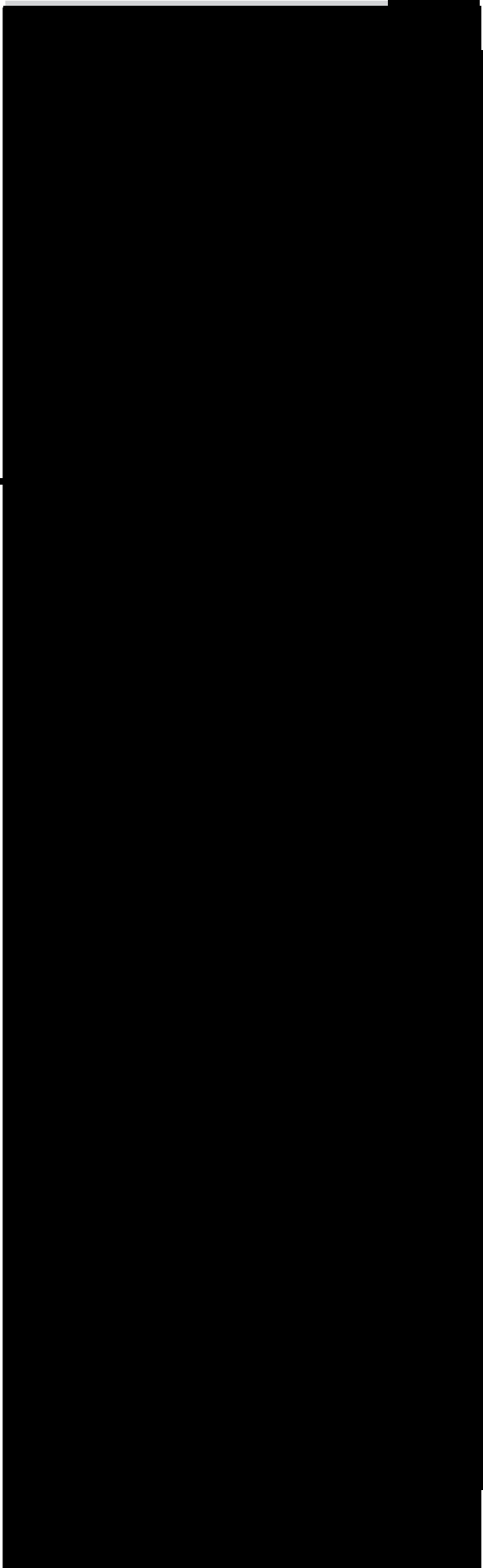
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

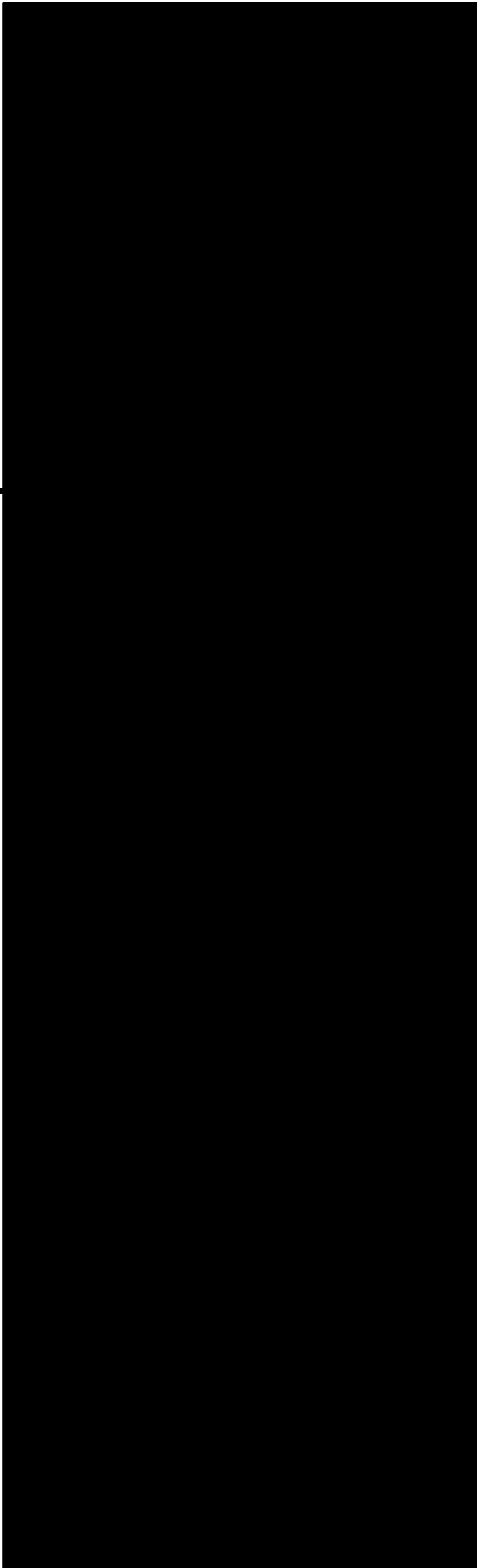
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

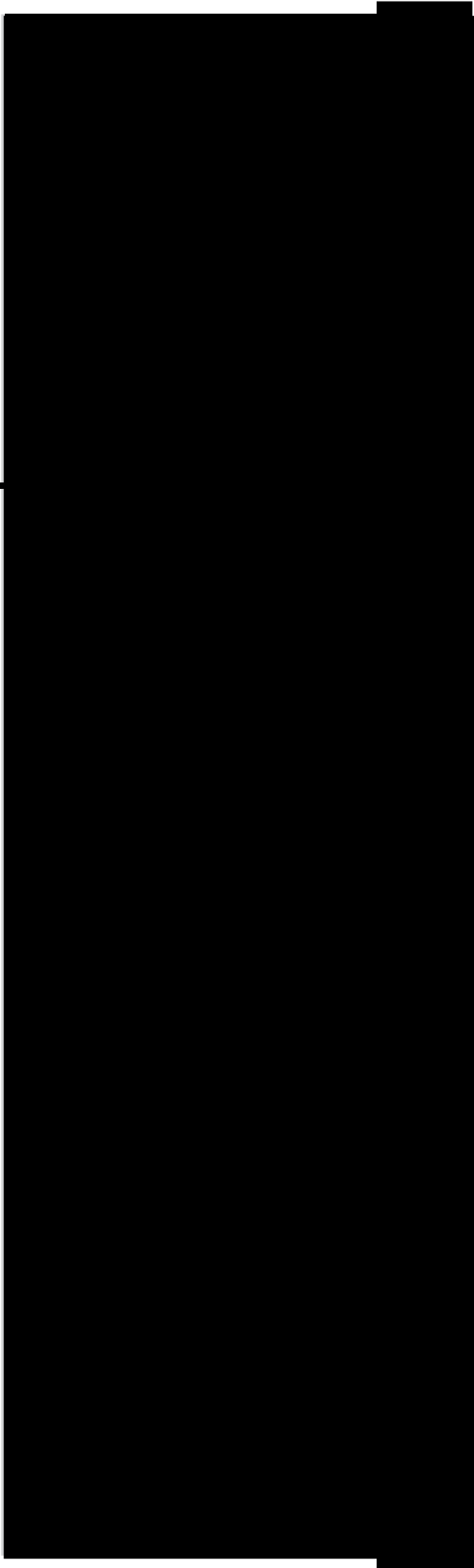


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



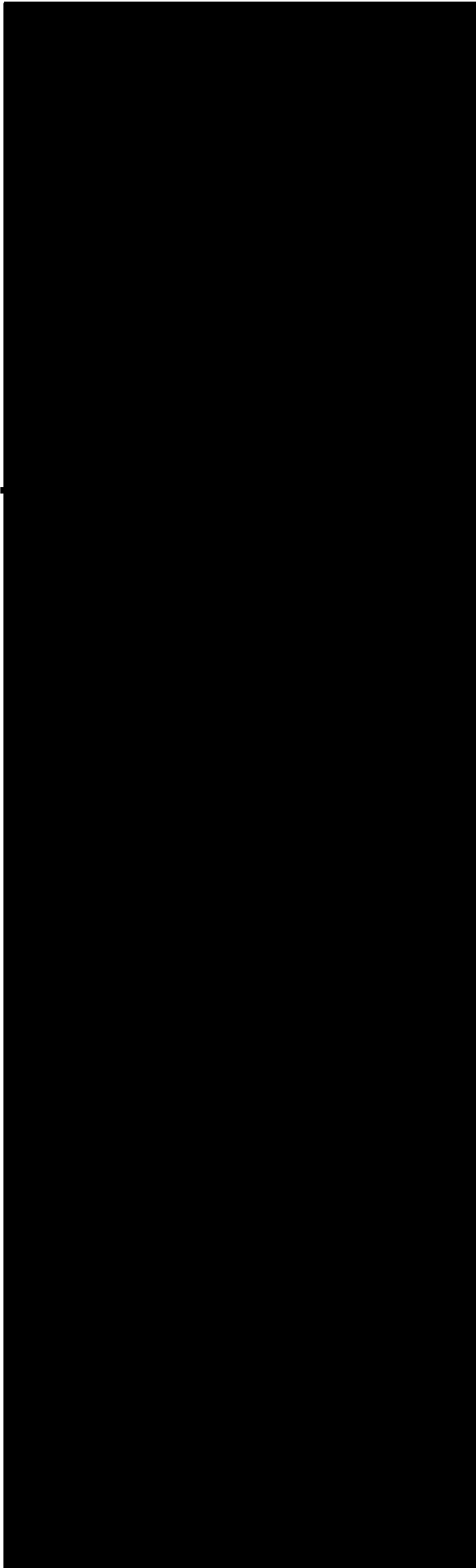
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

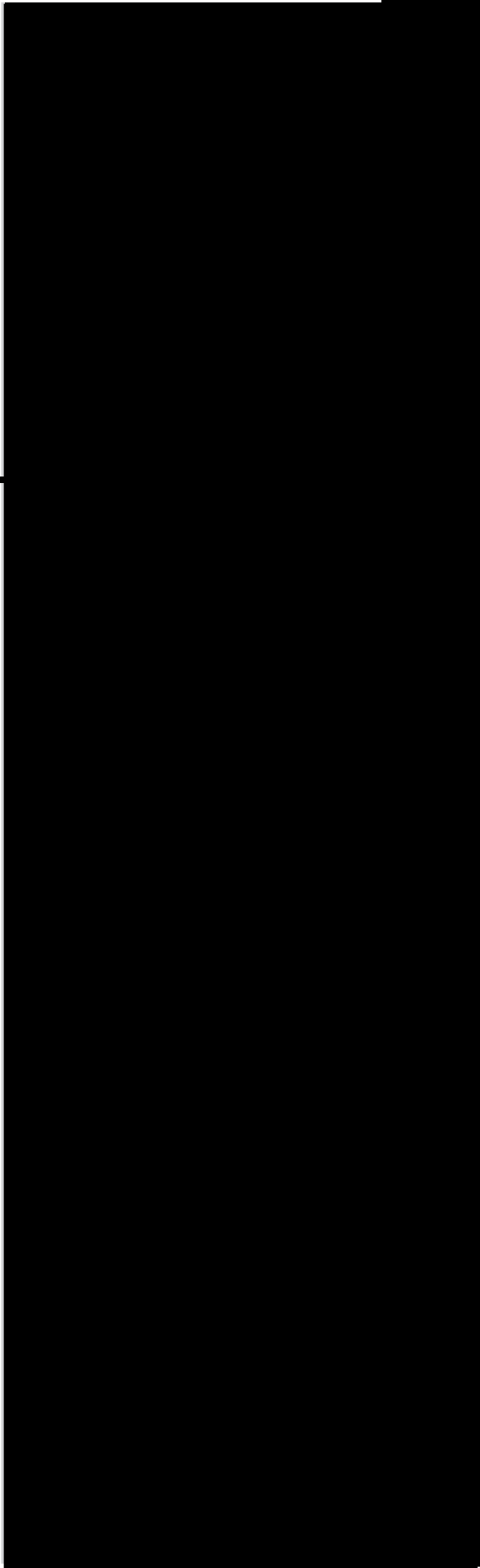


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



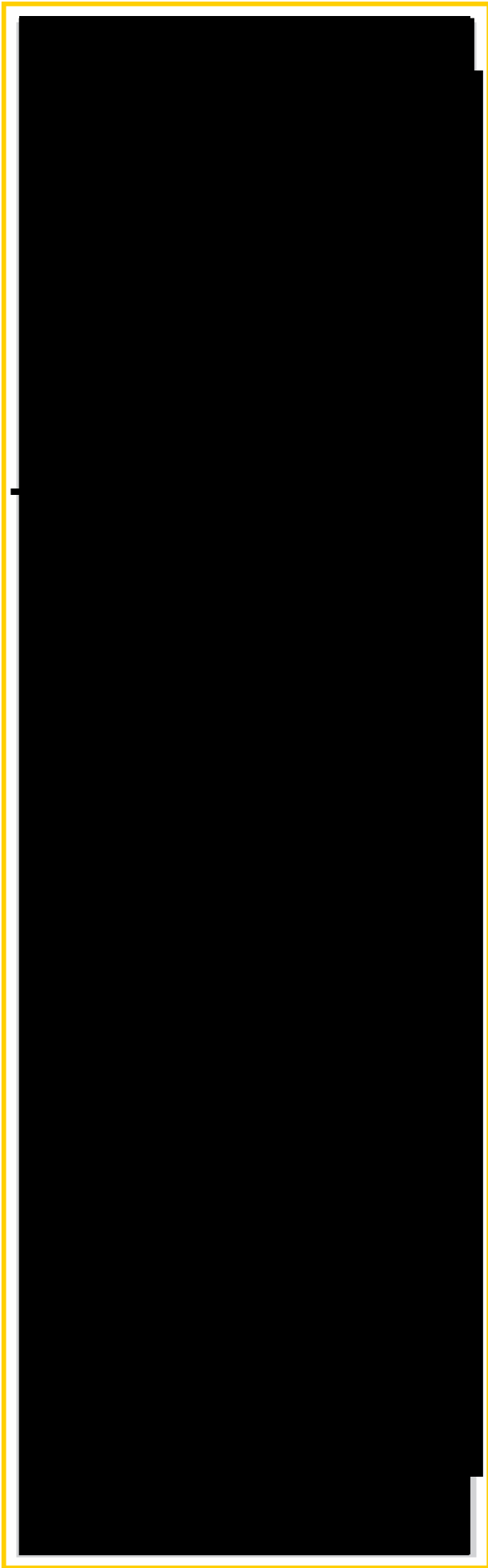
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



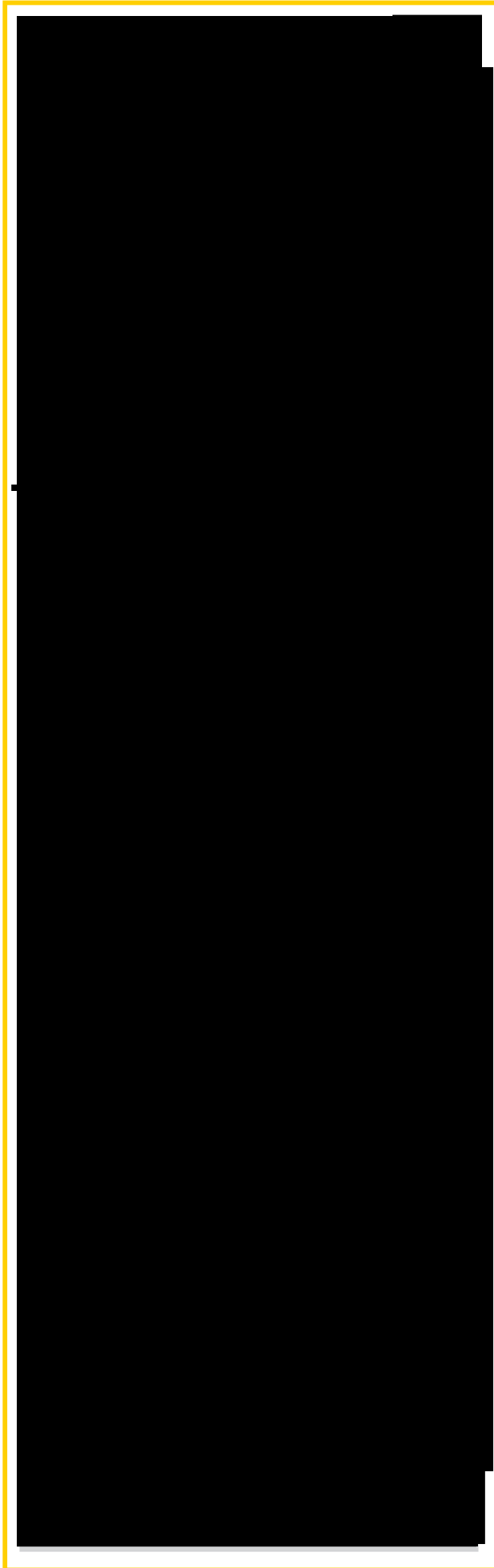
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



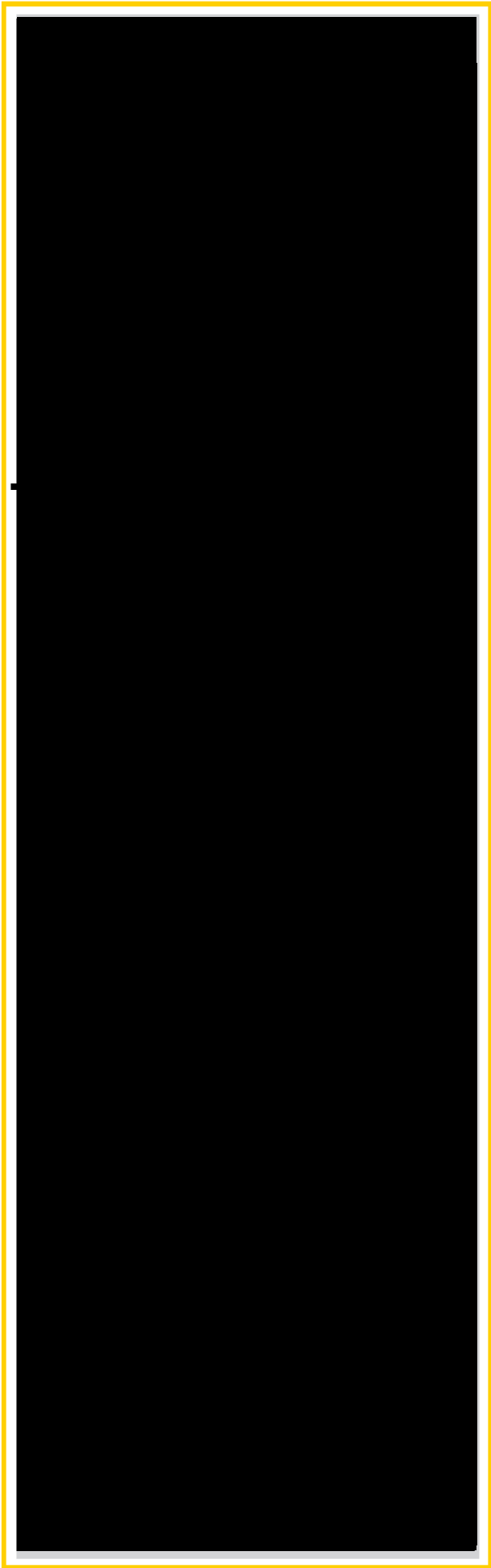
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

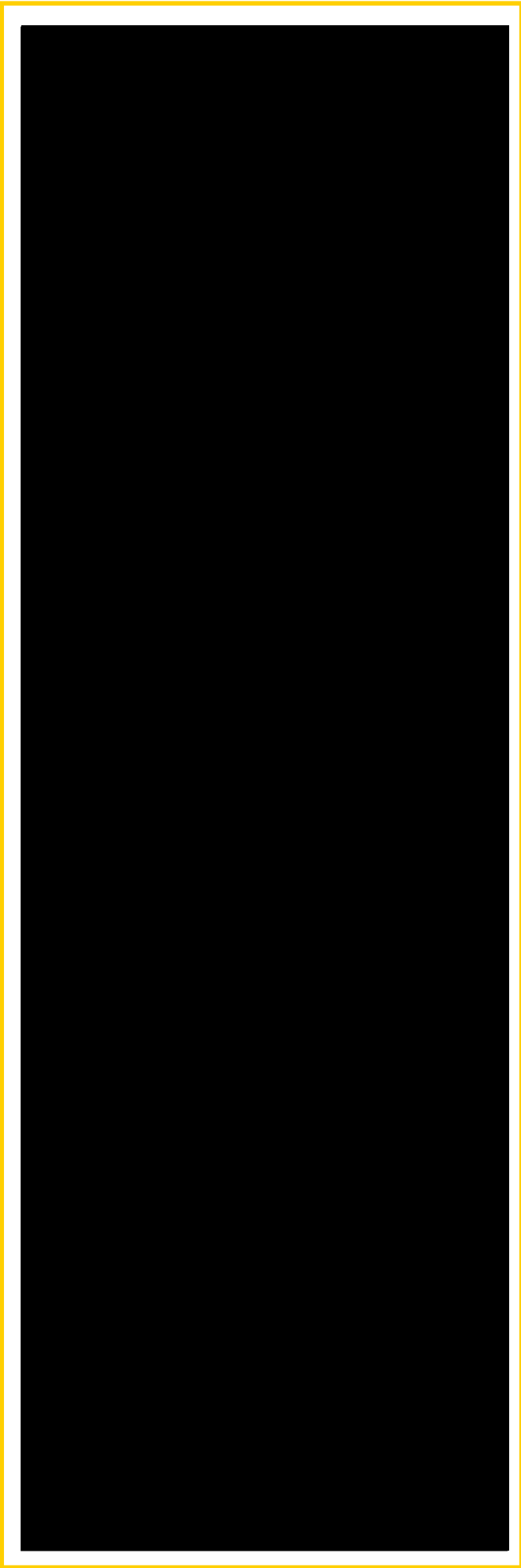


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

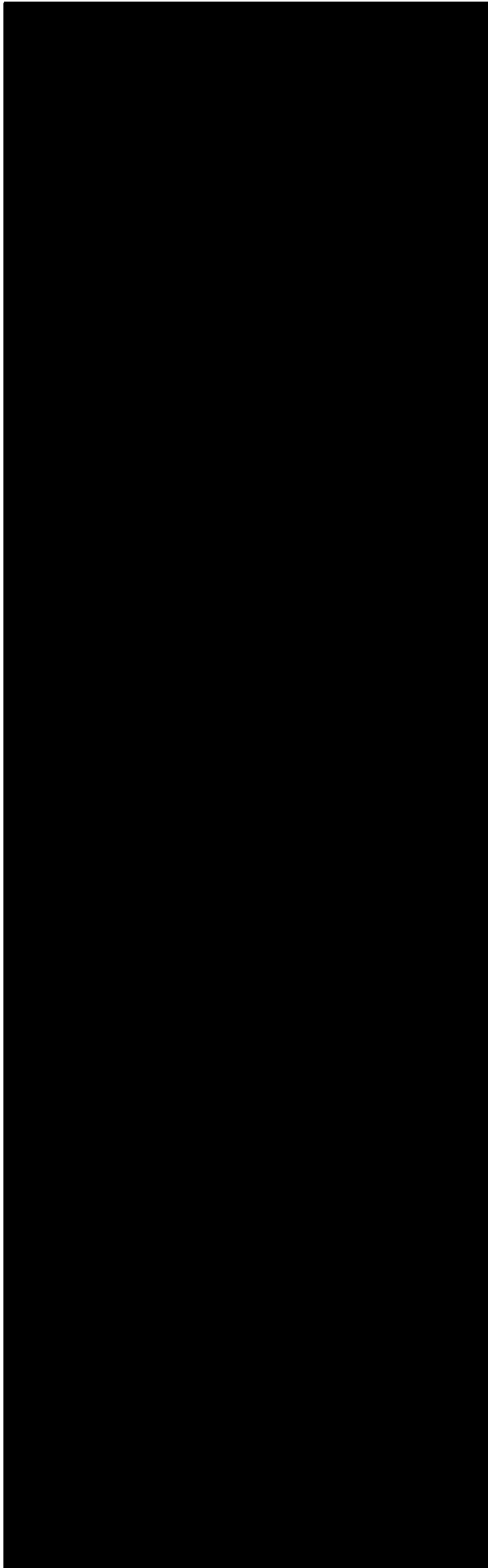


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

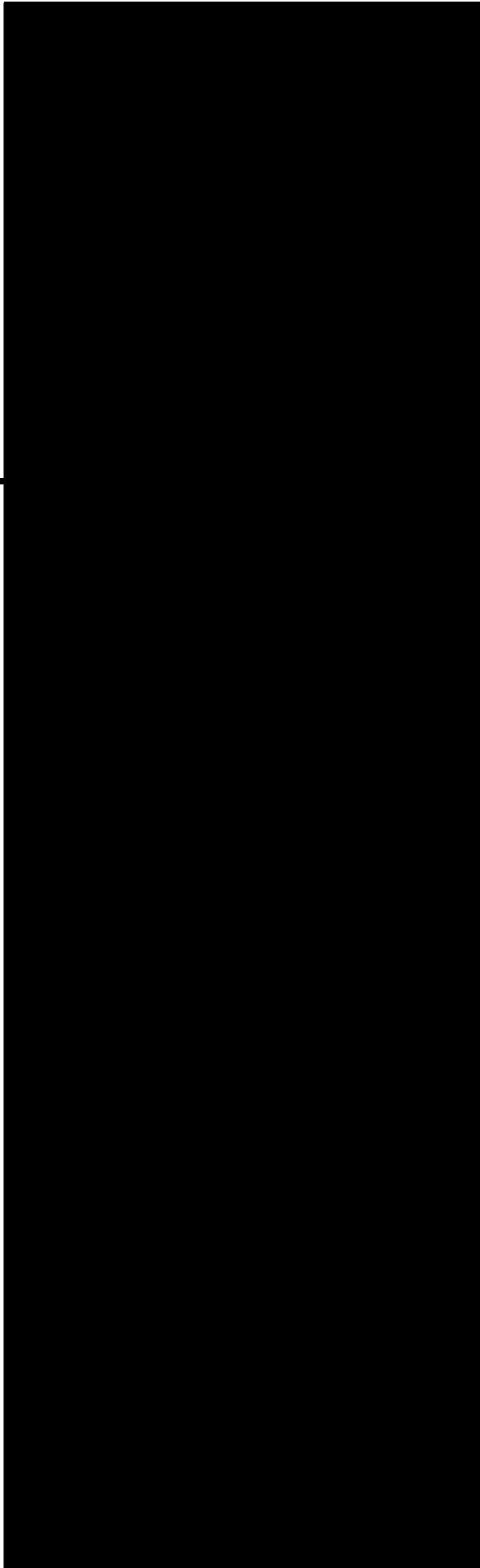


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

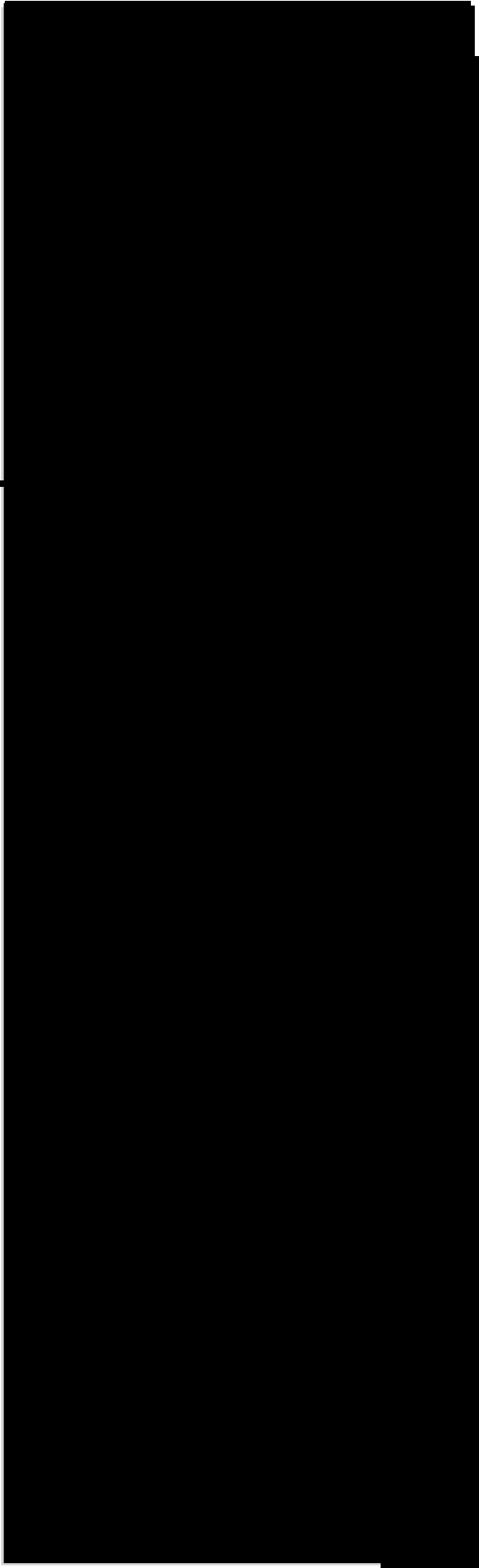


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

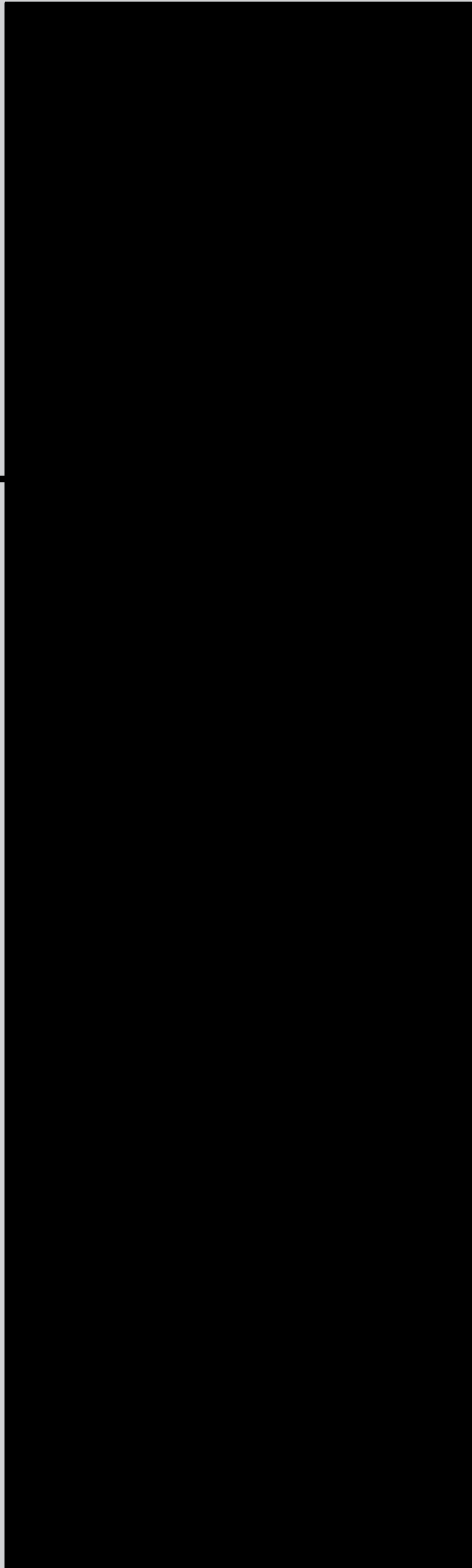
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



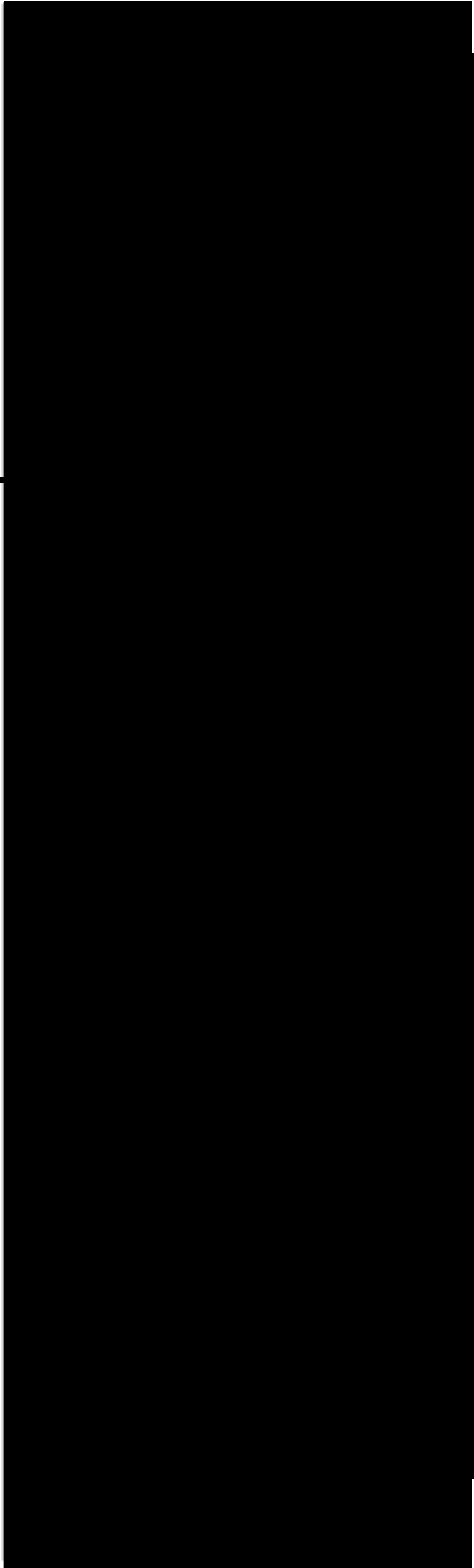
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



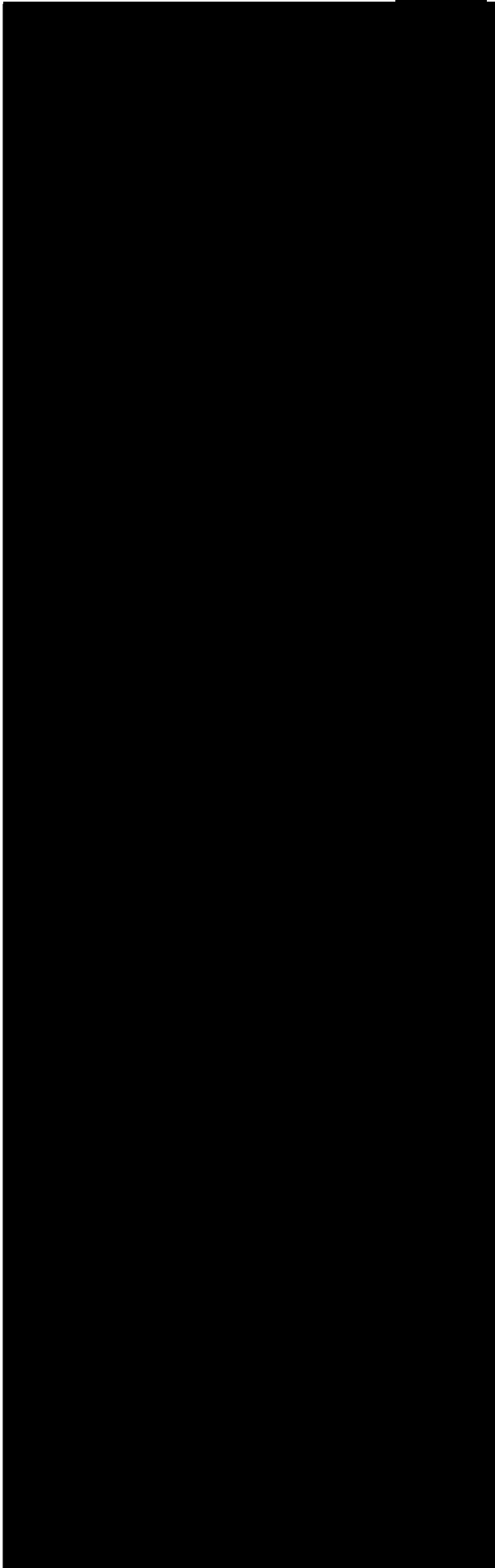
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



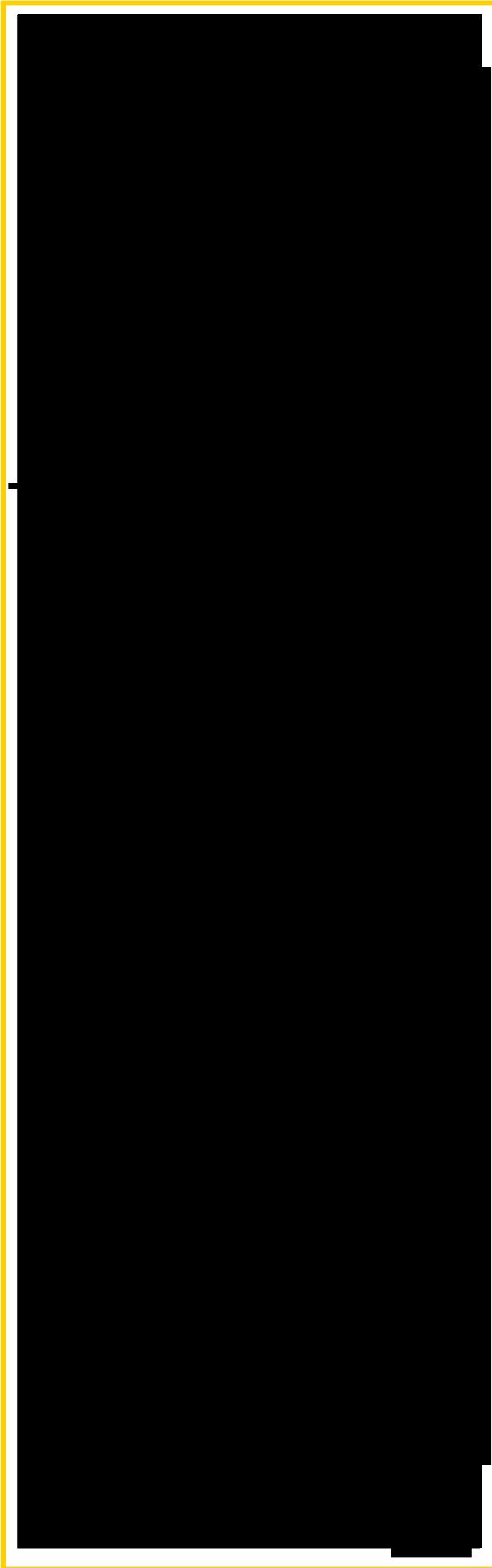
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

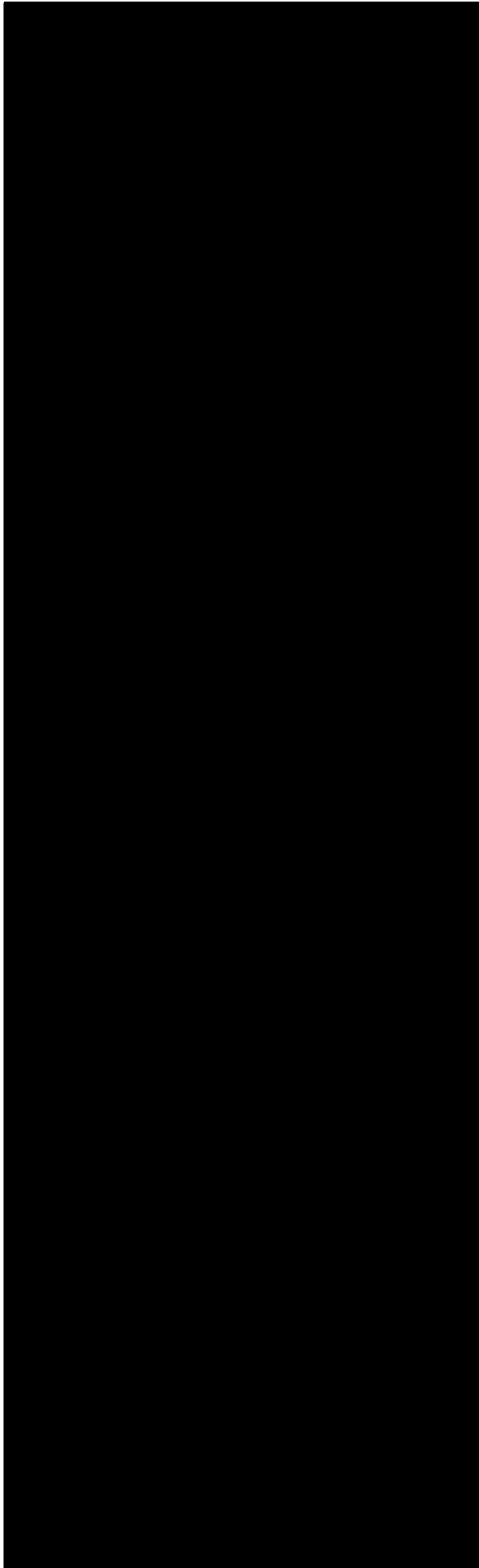


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

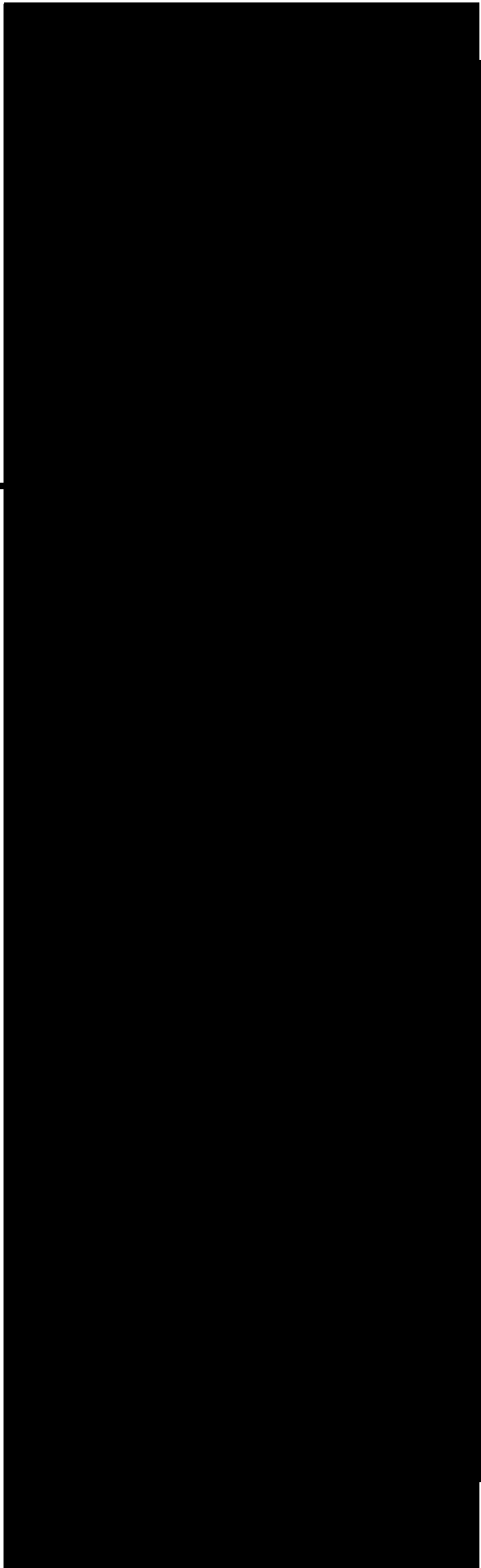


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

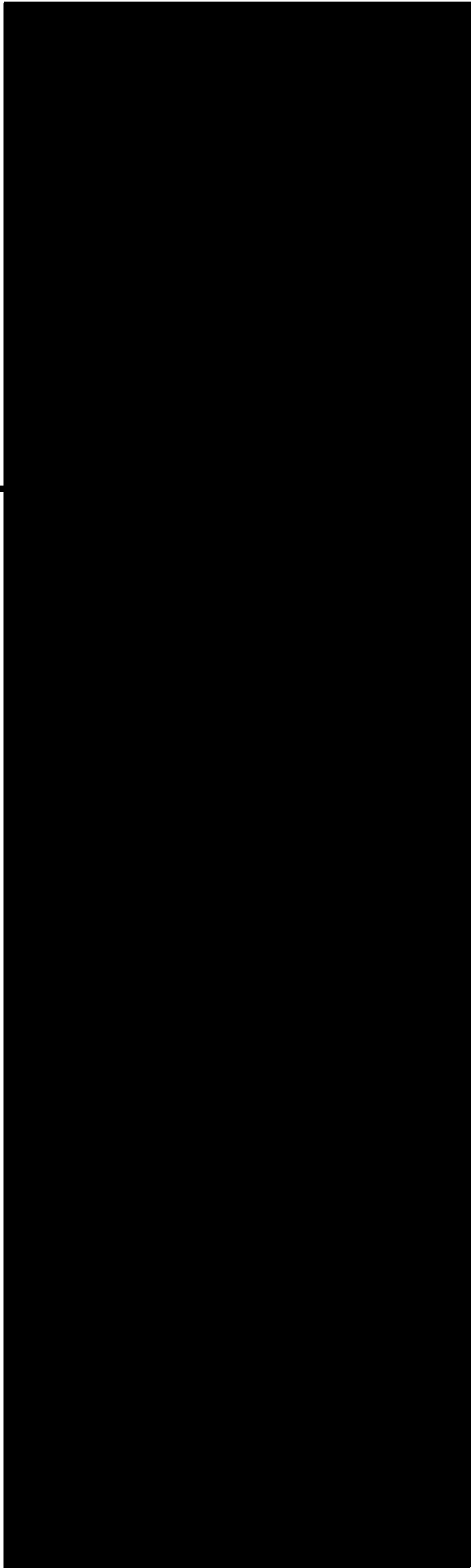


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

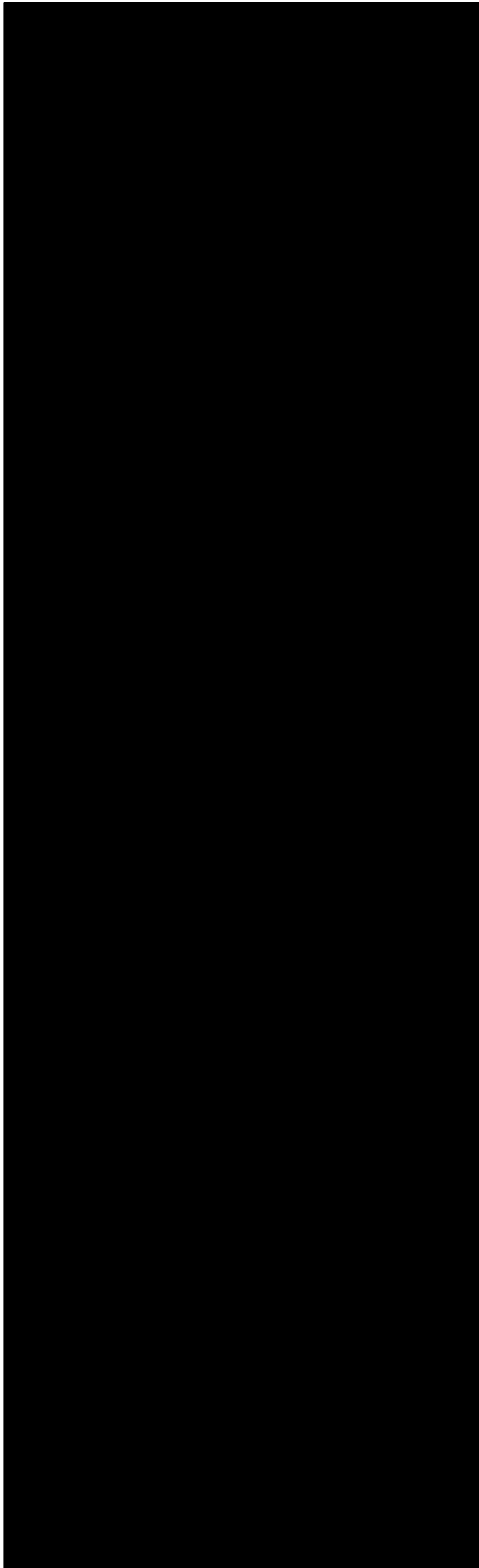




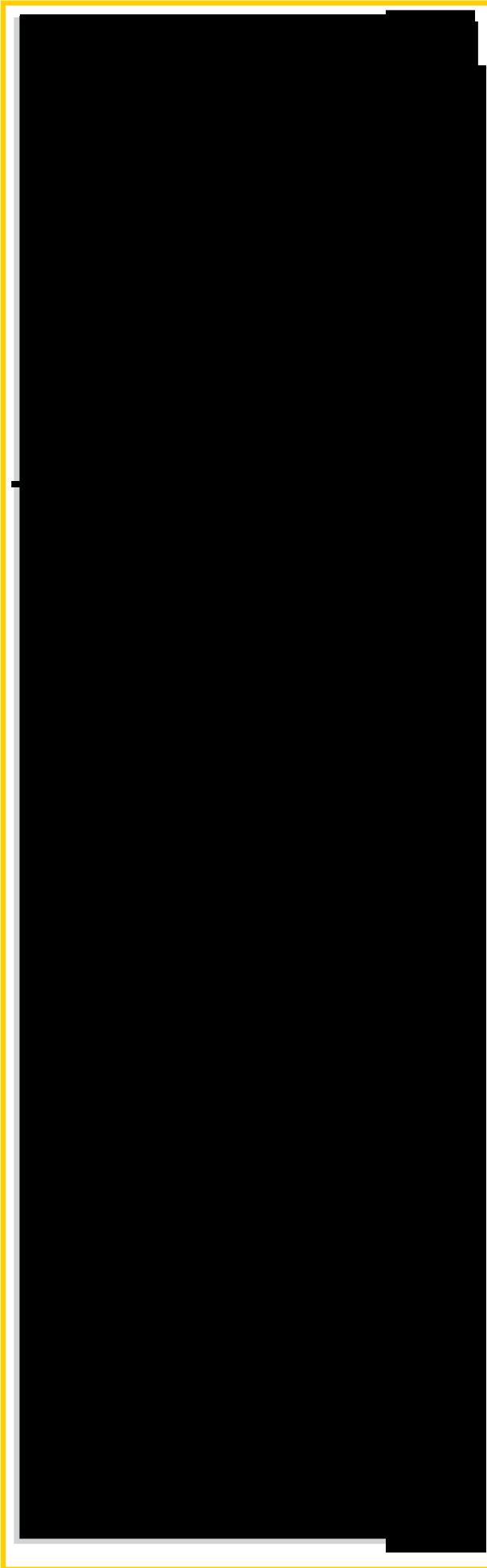
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

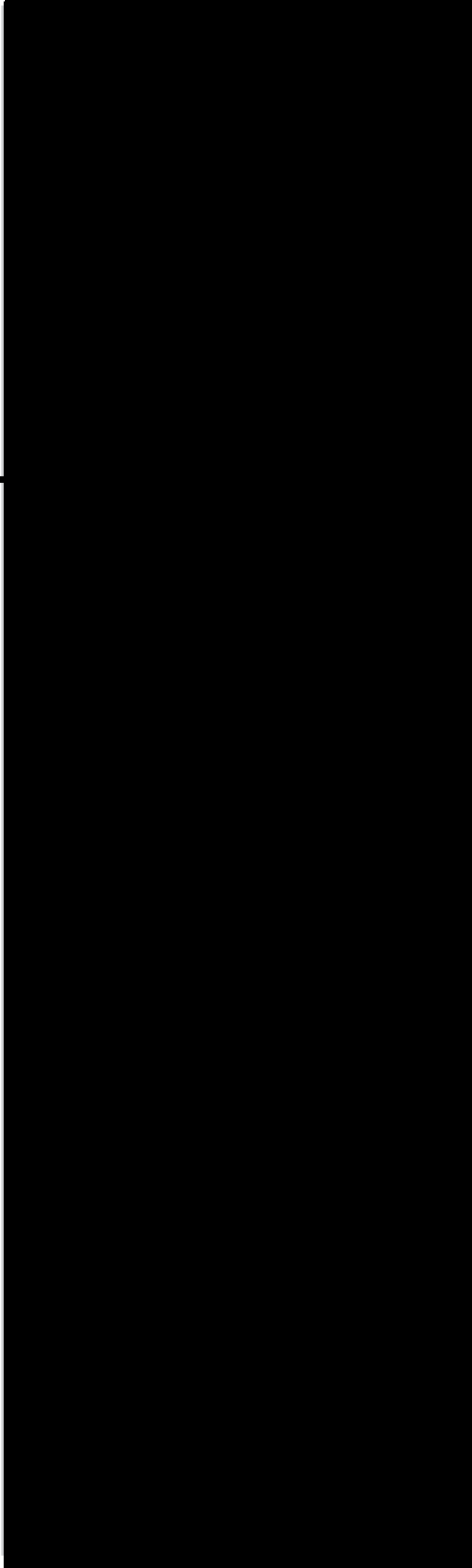


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



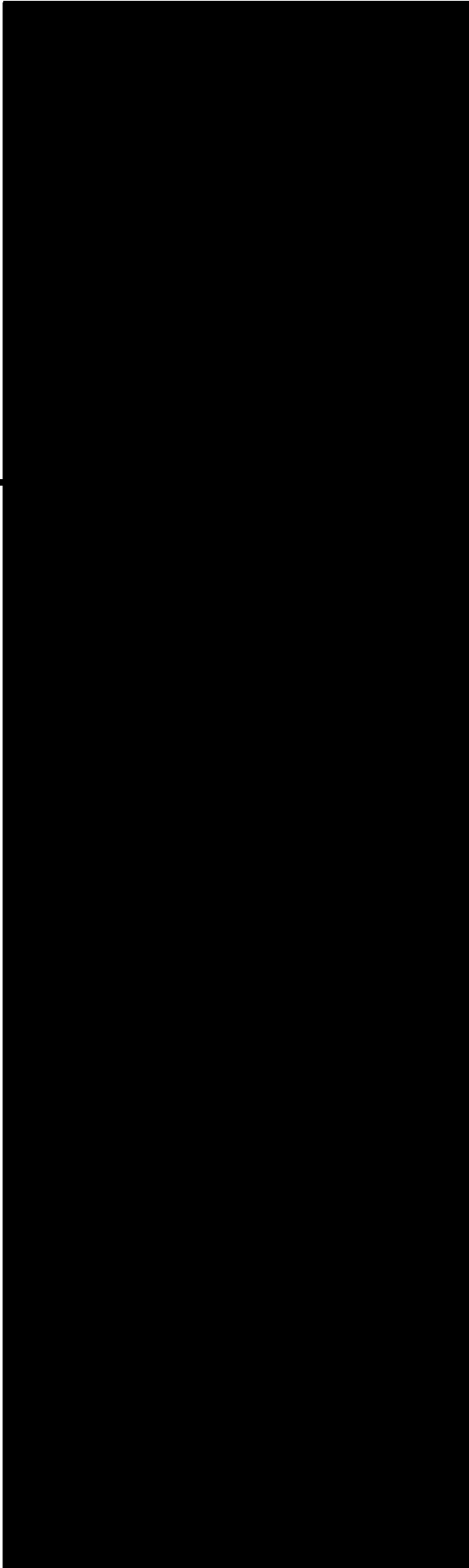
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



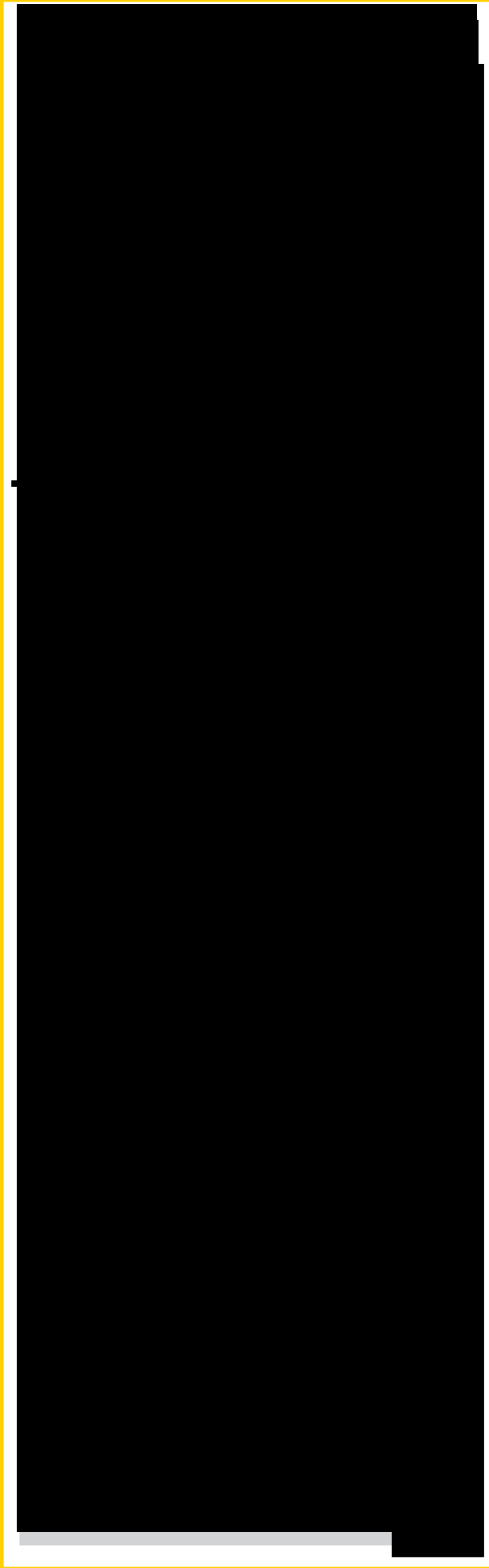
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

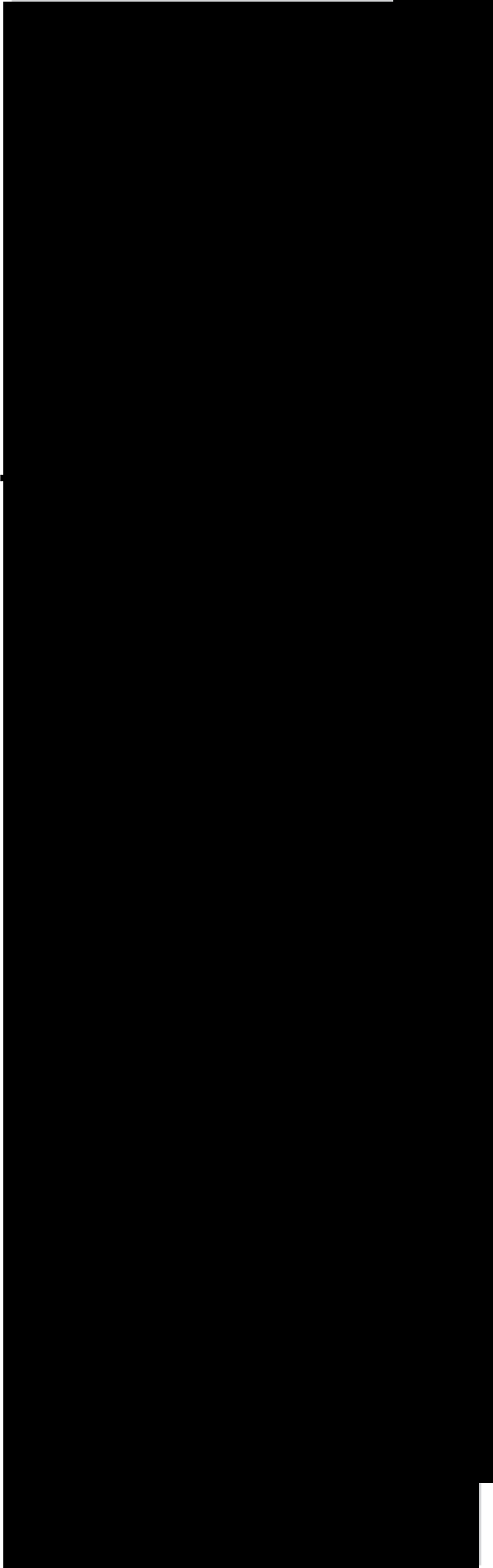


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

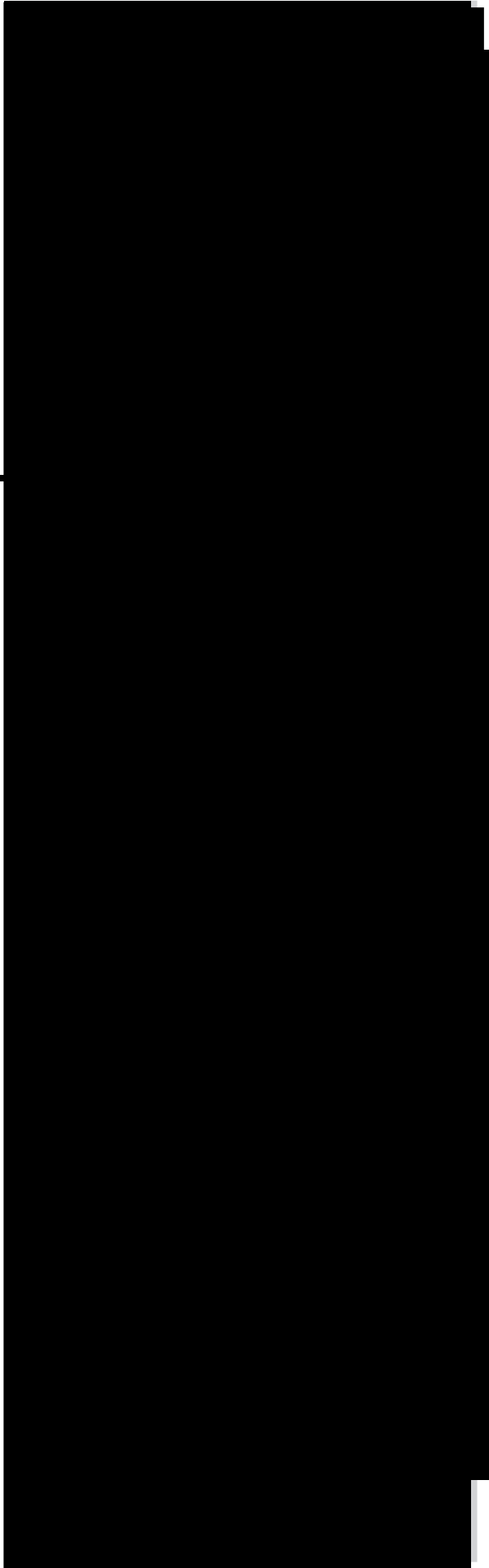


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



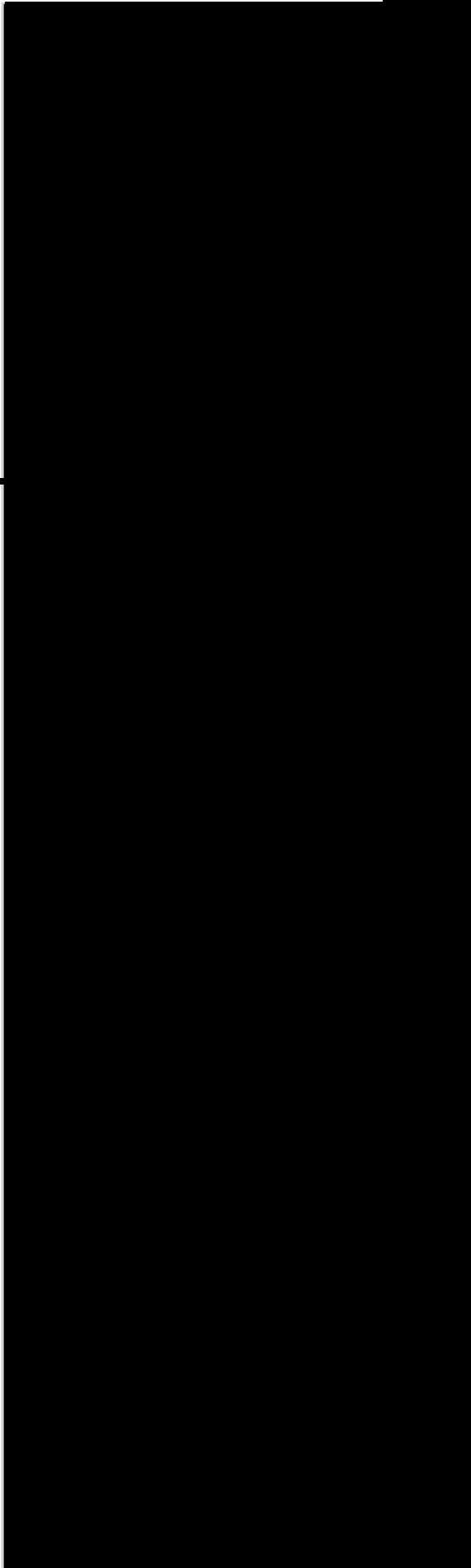
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

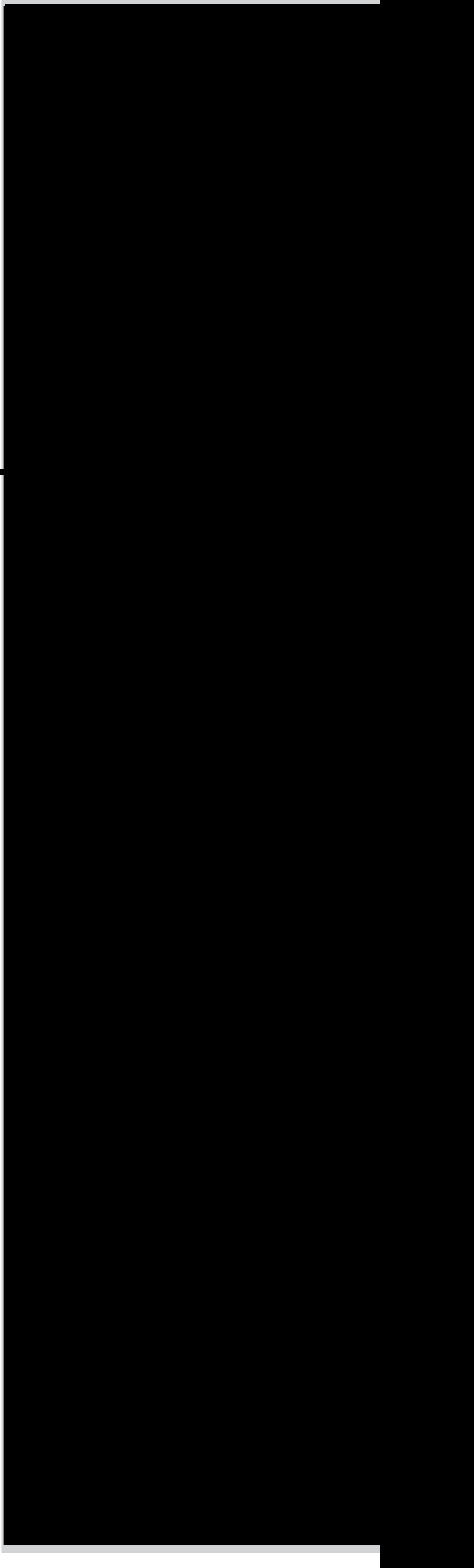


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

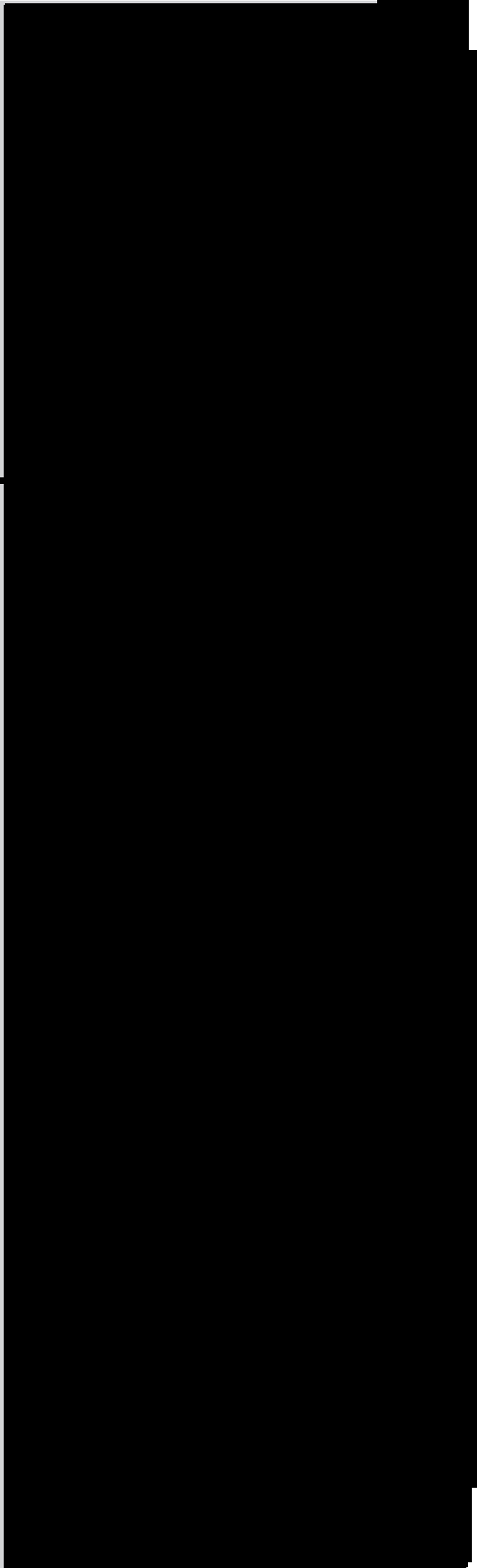


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

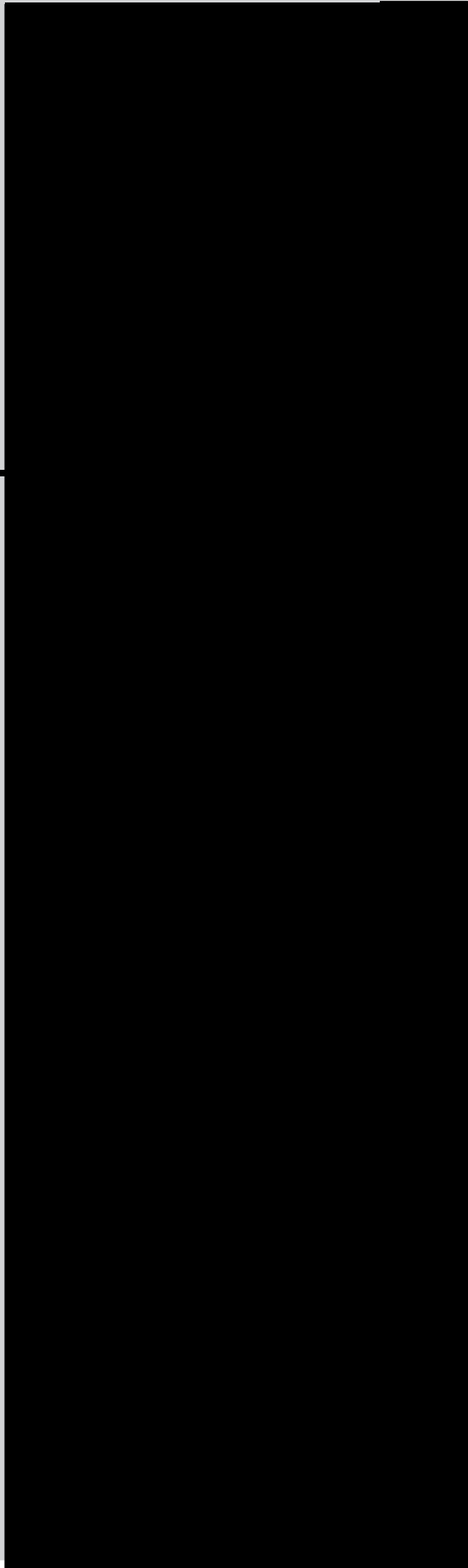


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

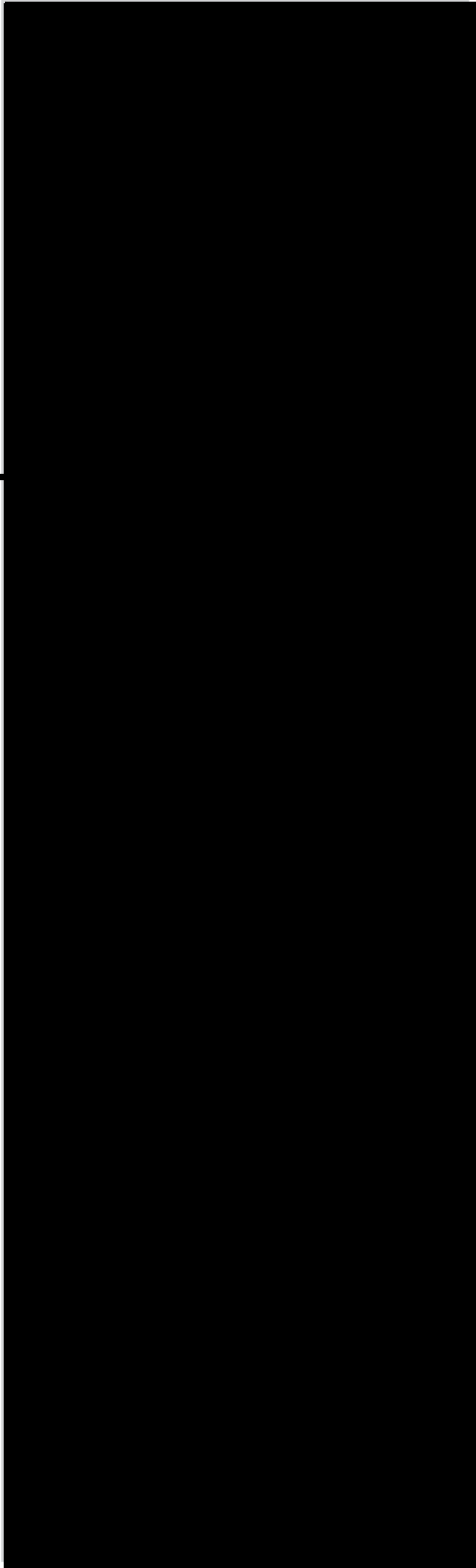


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



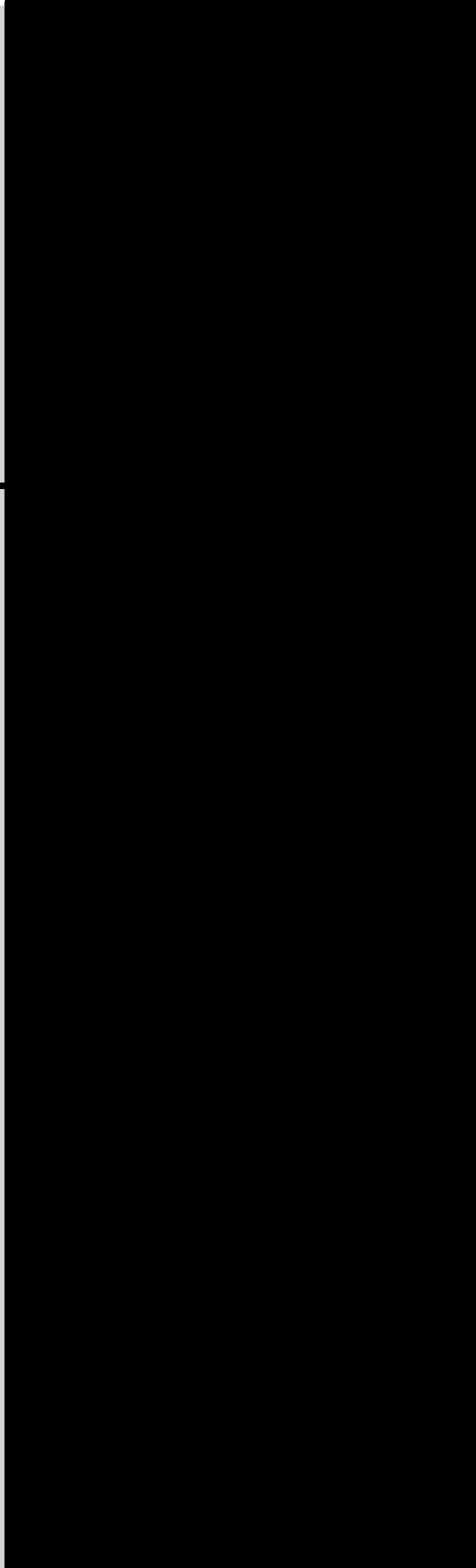
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



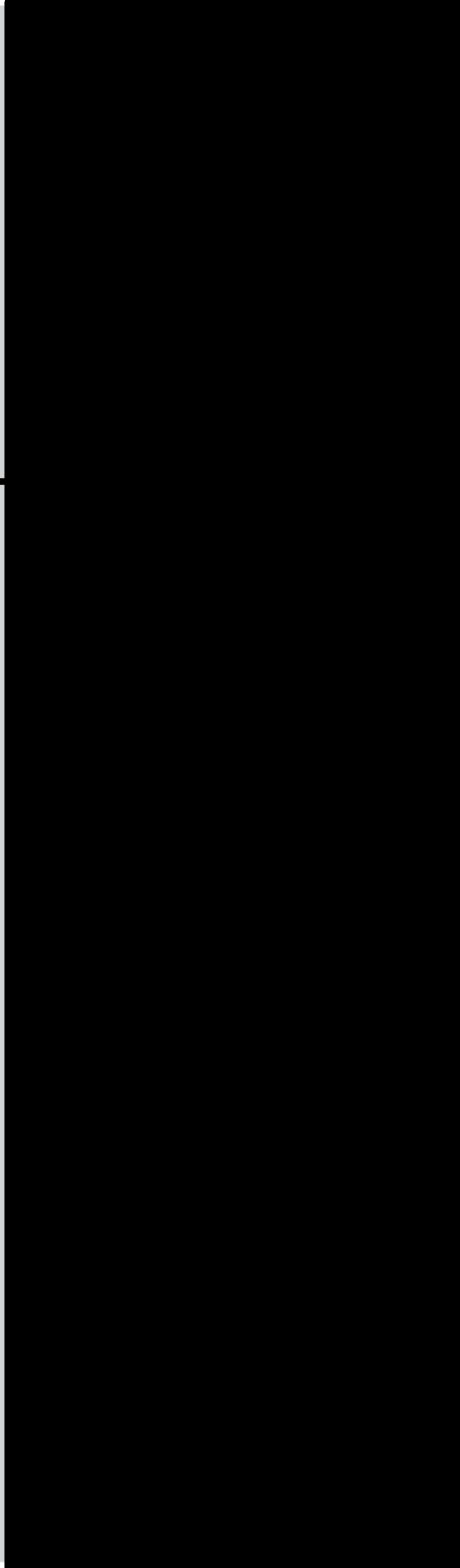
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



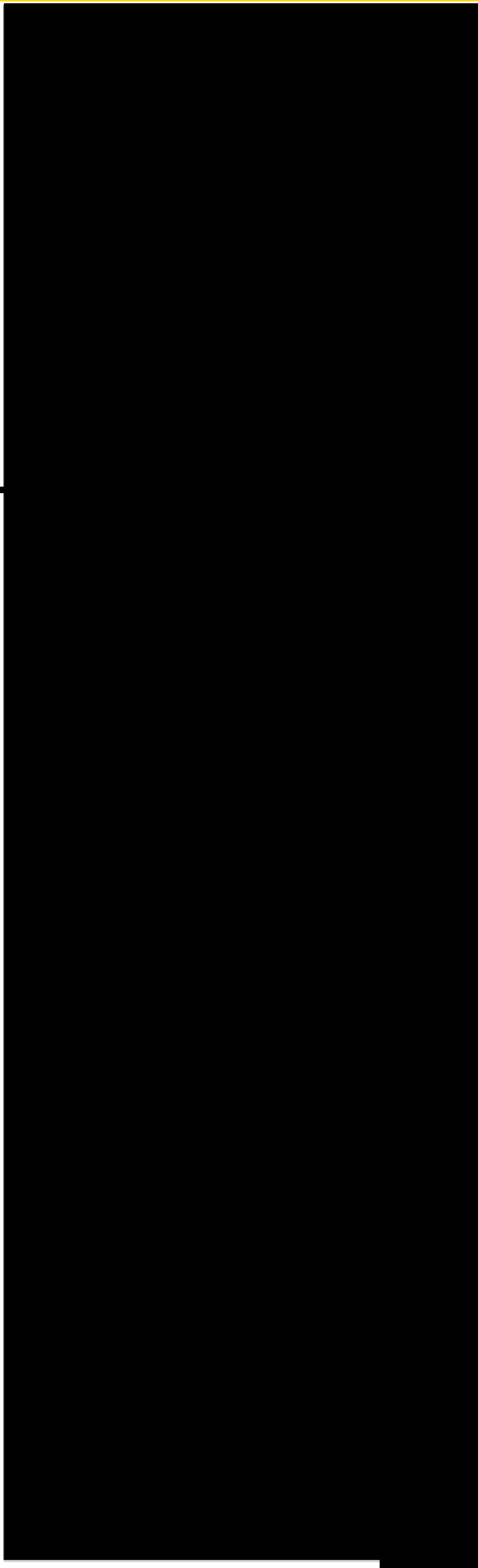
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



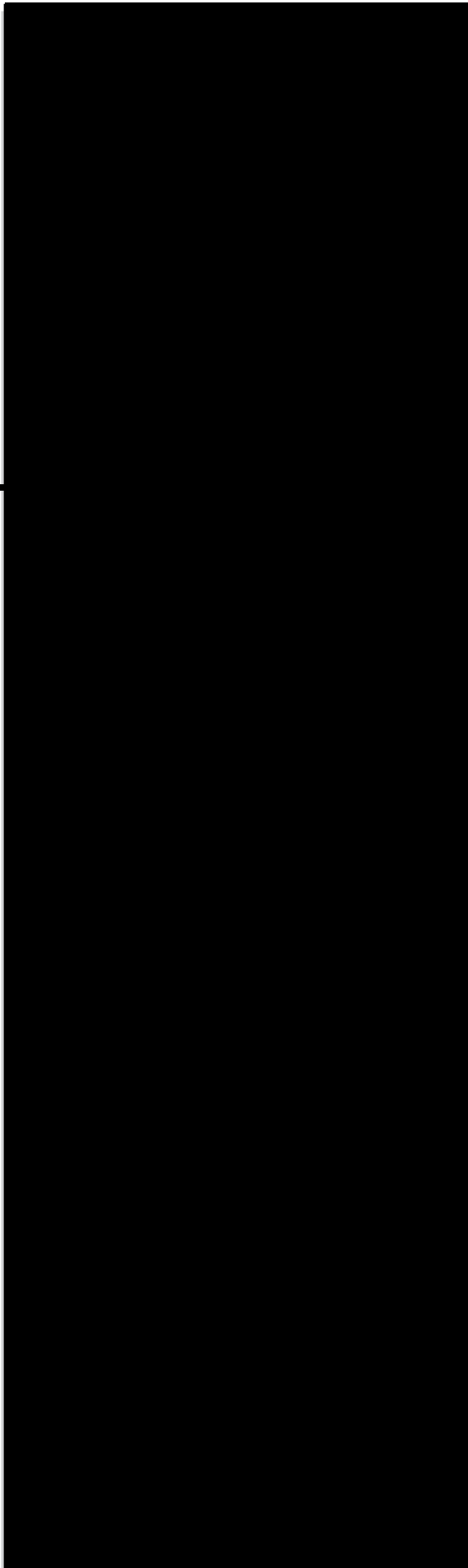
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

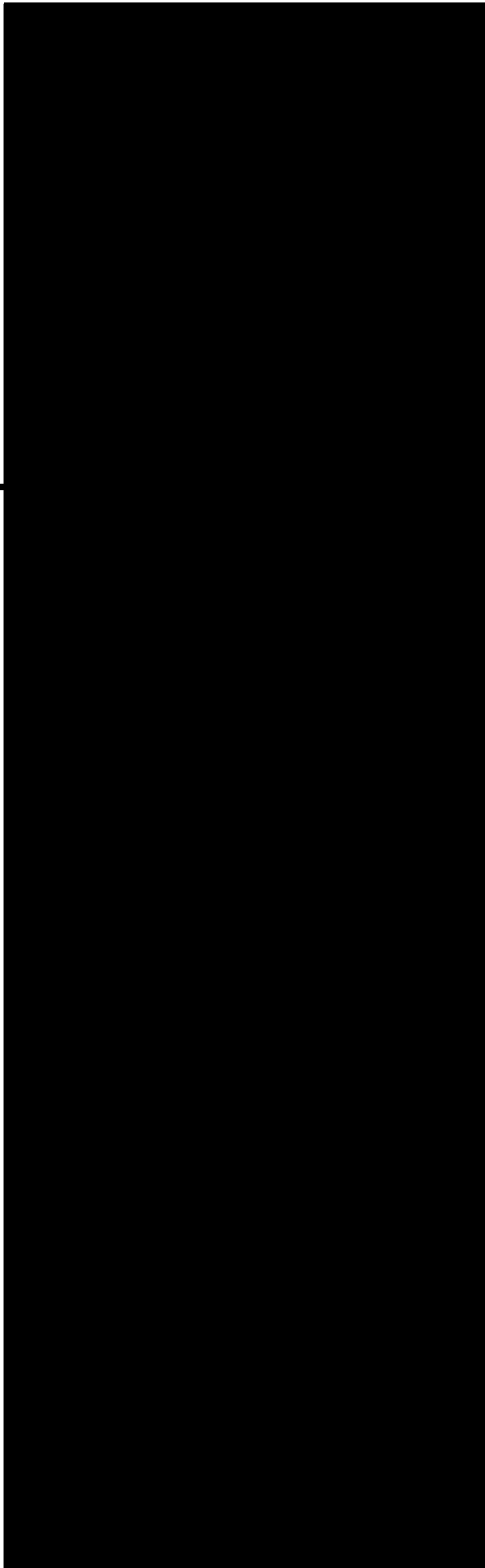


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

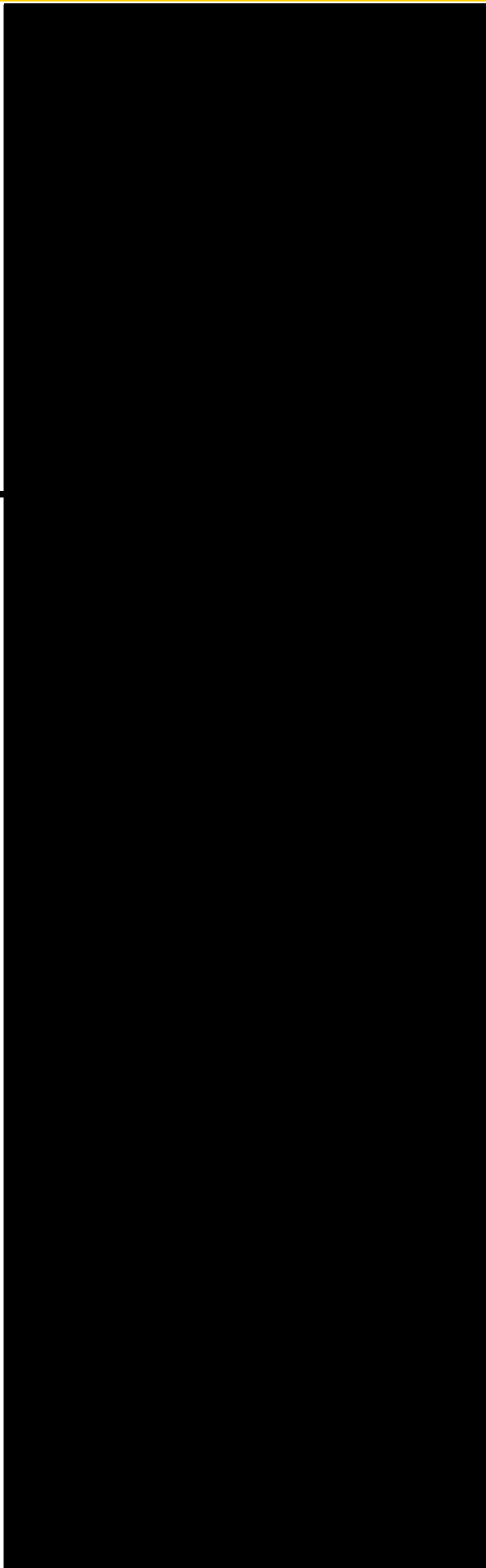


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

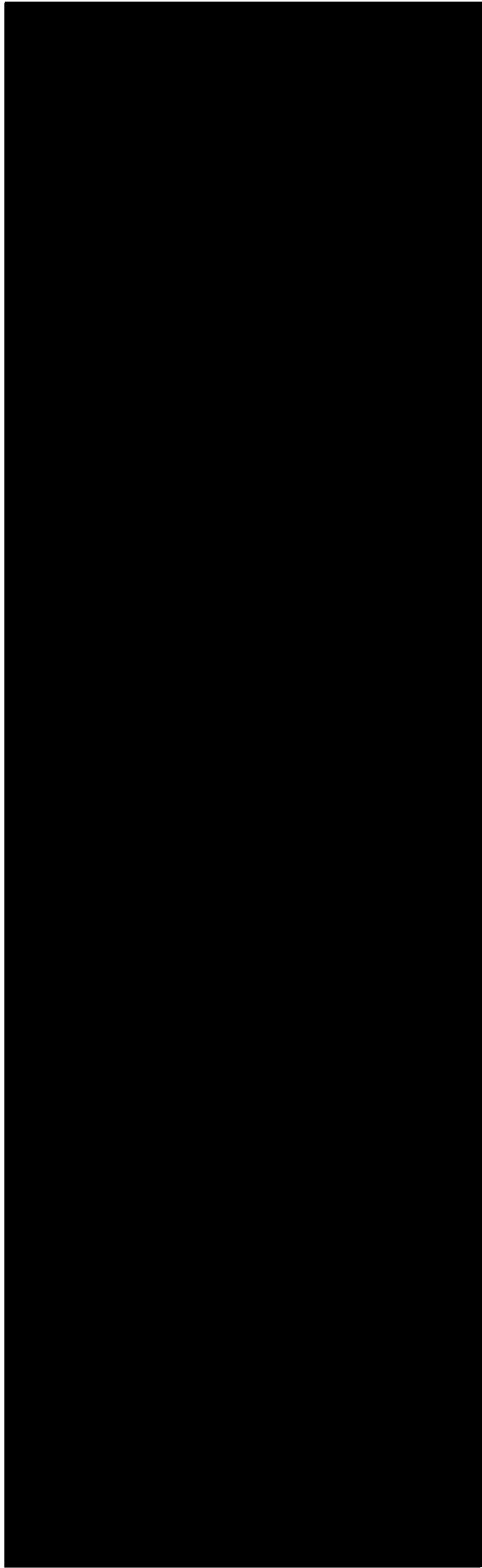
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

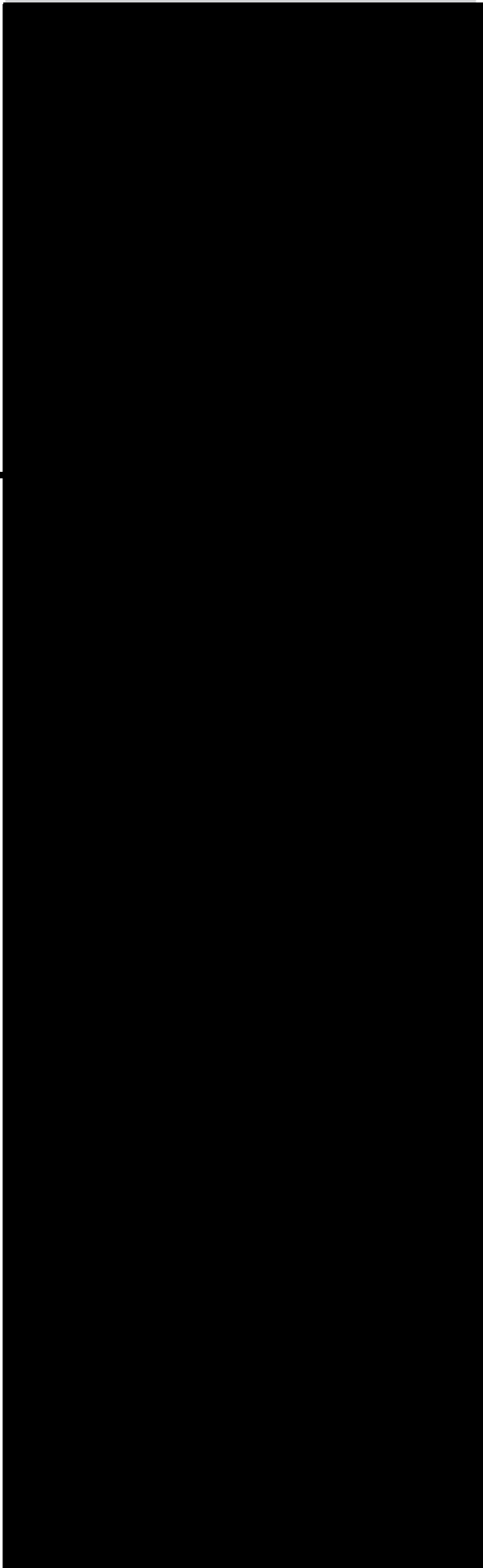


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



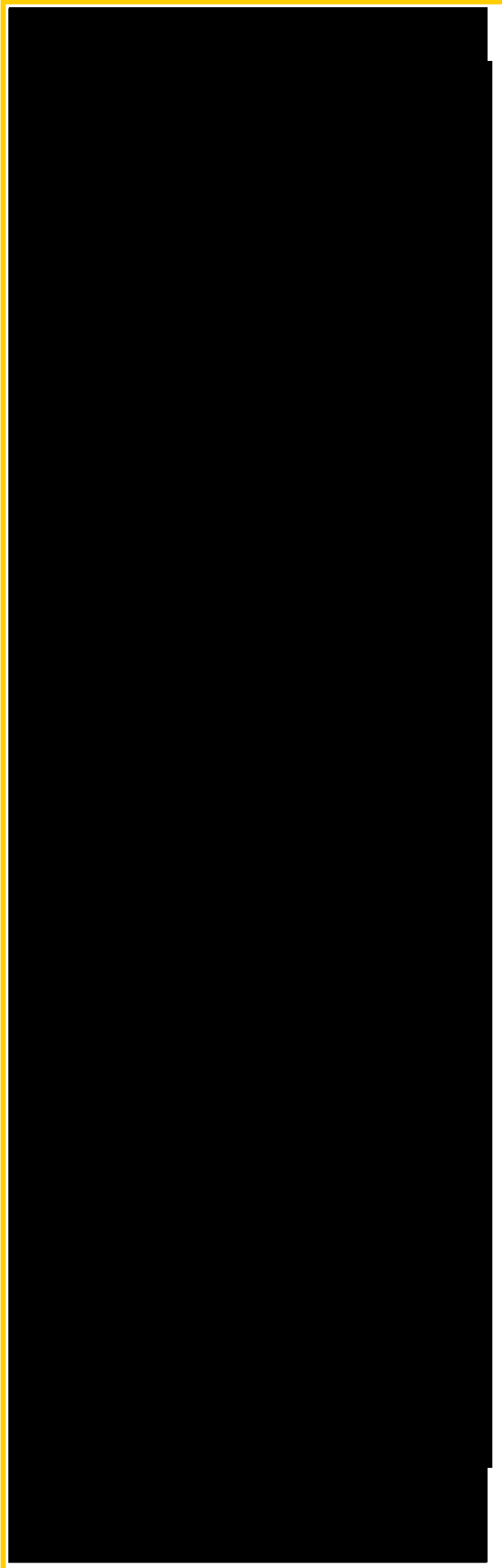
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

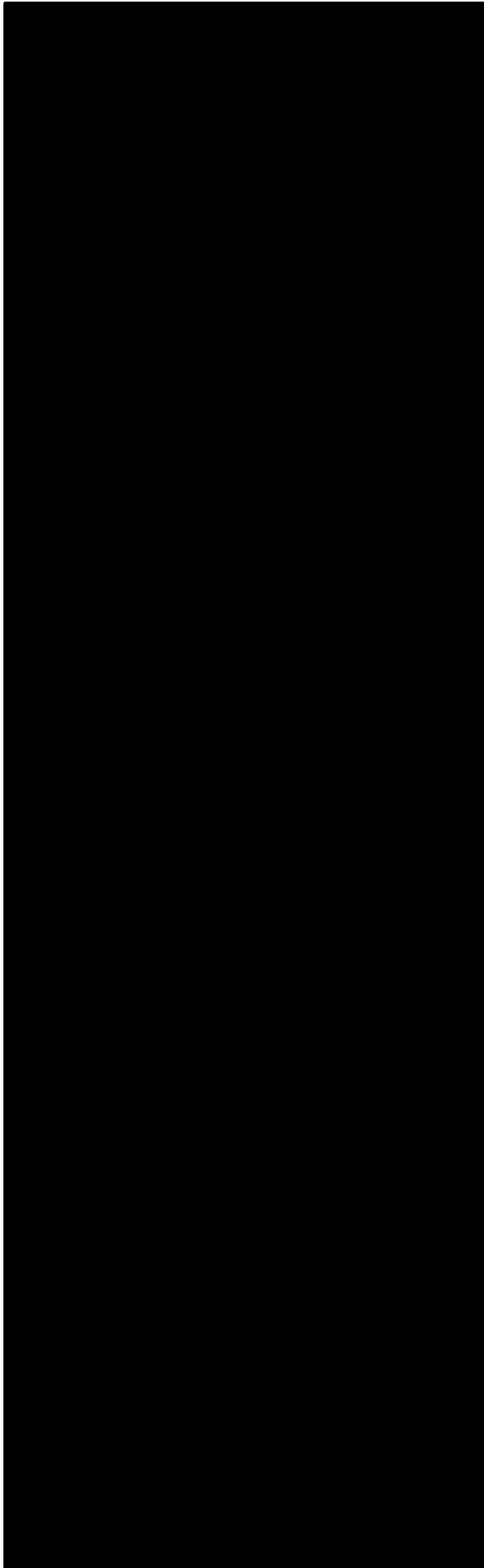


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160





SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

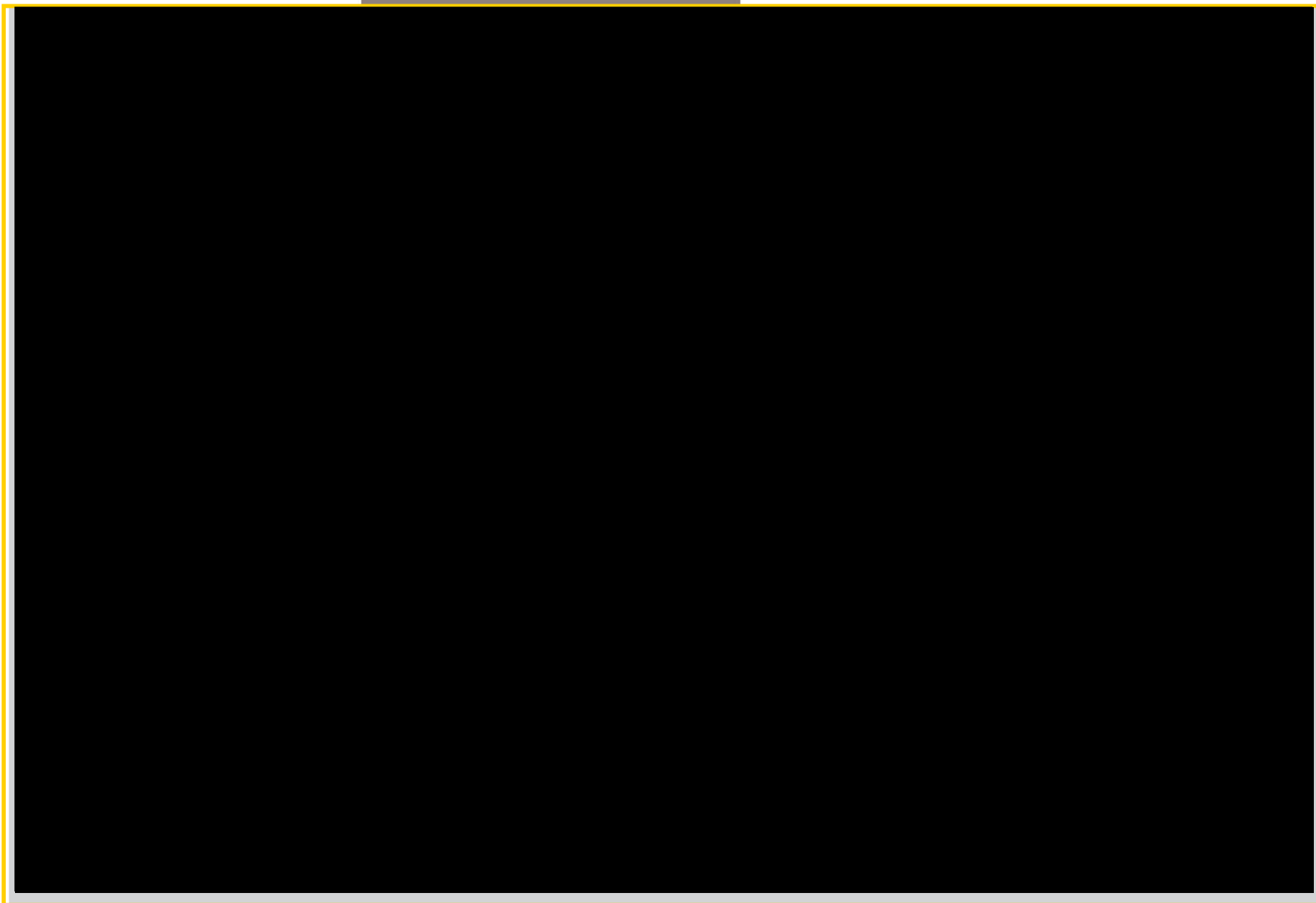
REDACTED VERSION



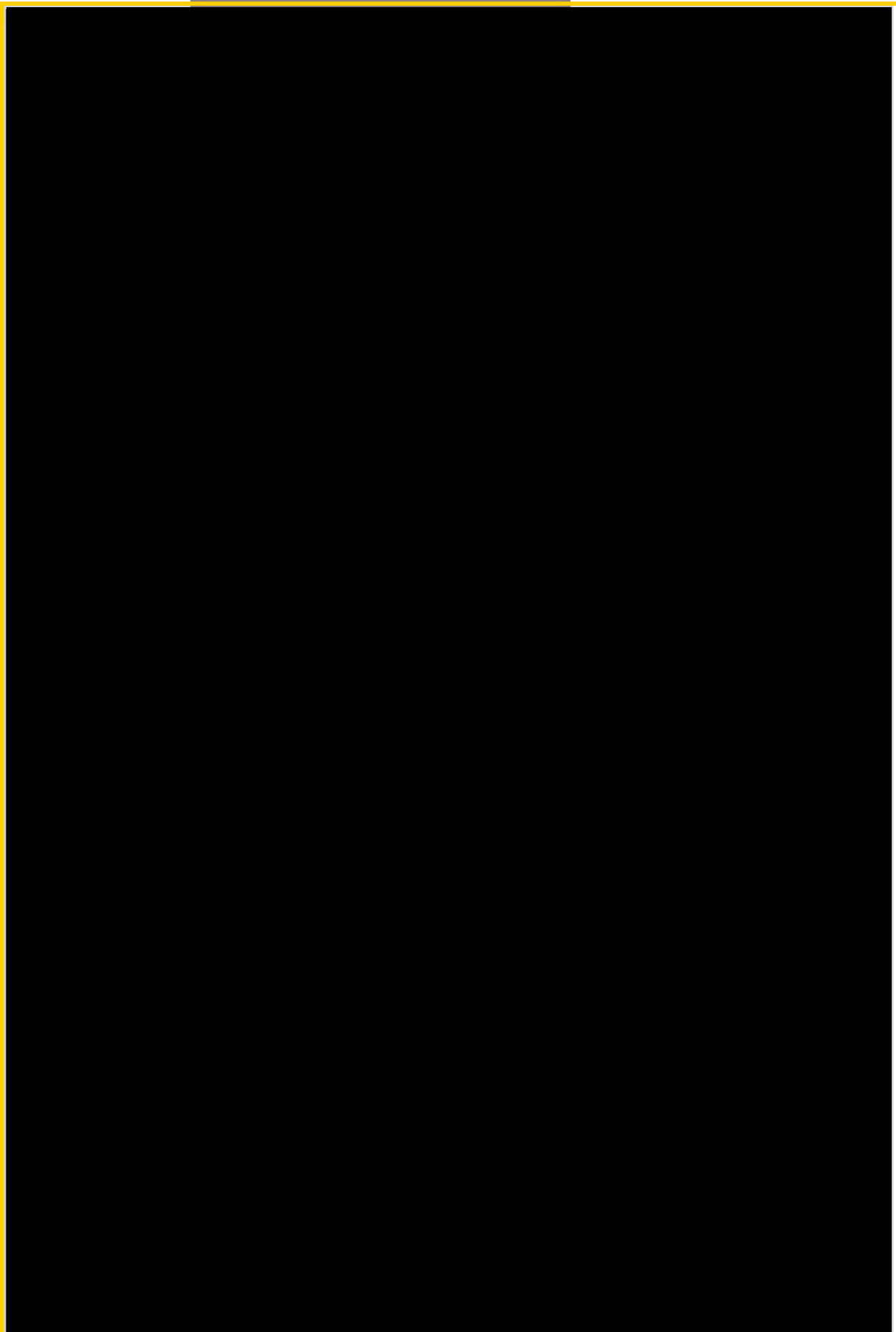
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

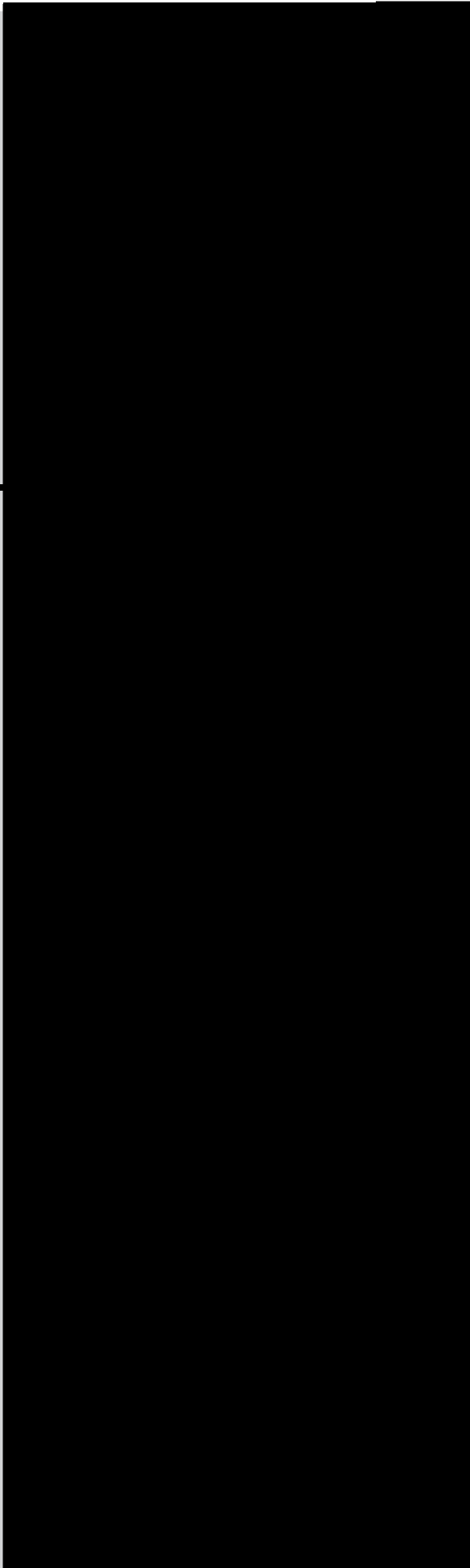








SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



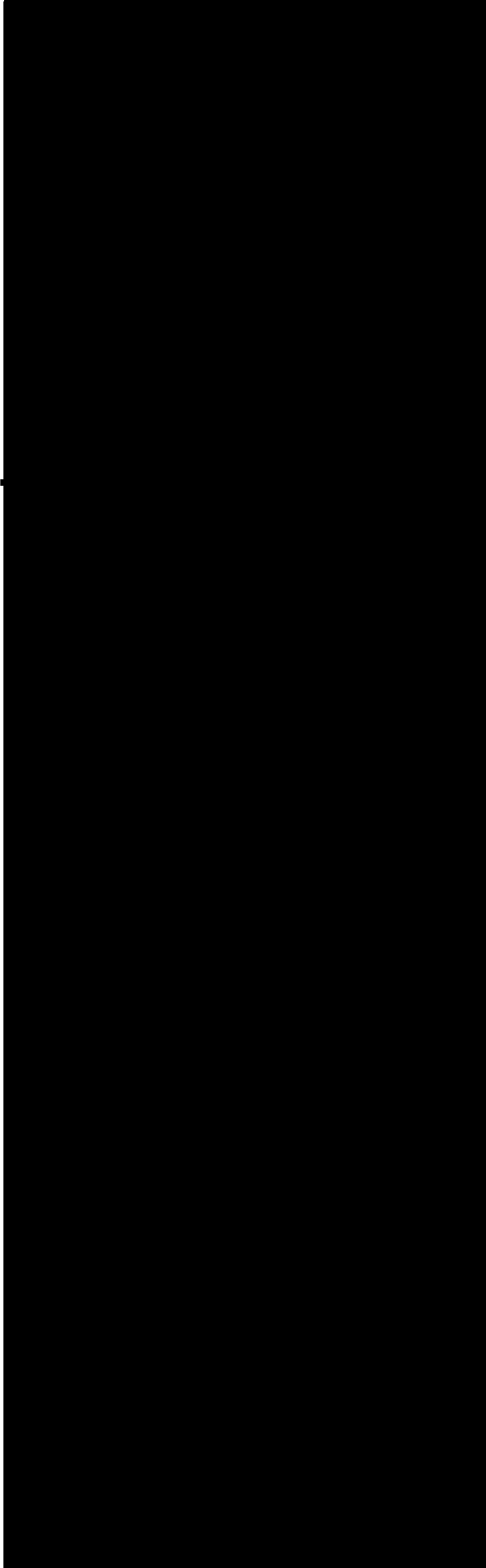
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

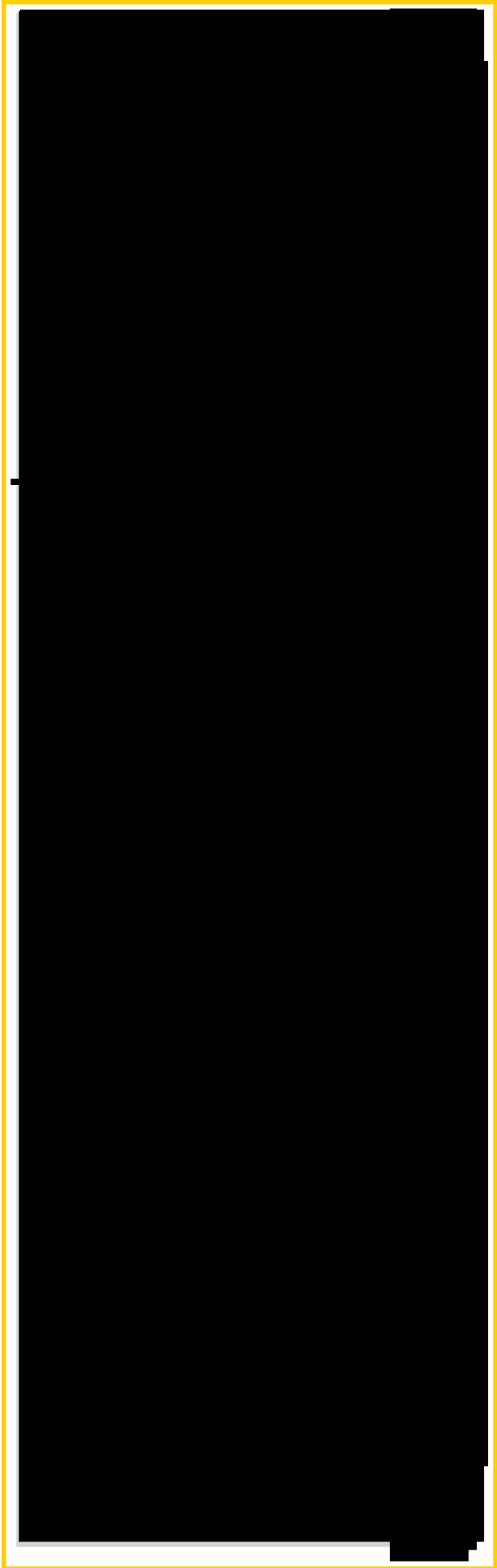


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



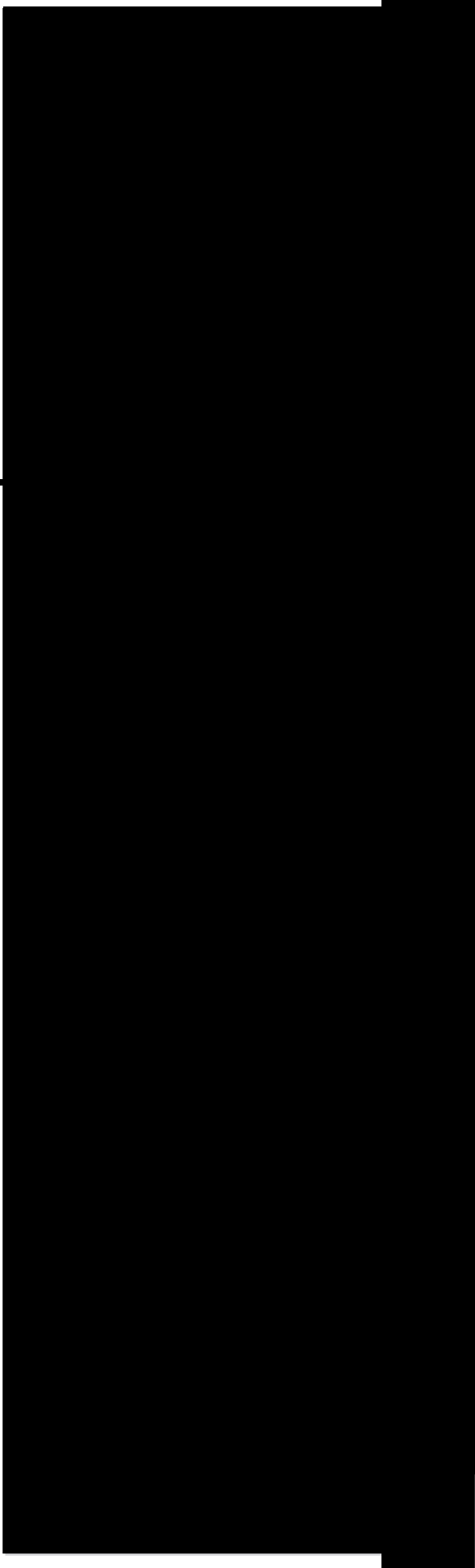
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

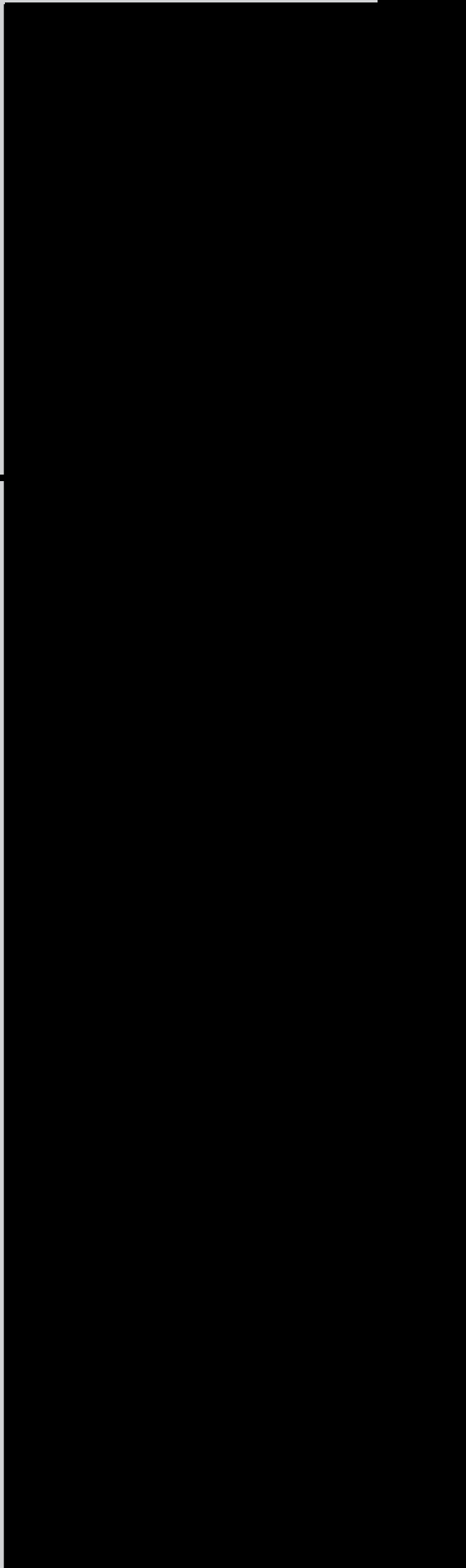
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

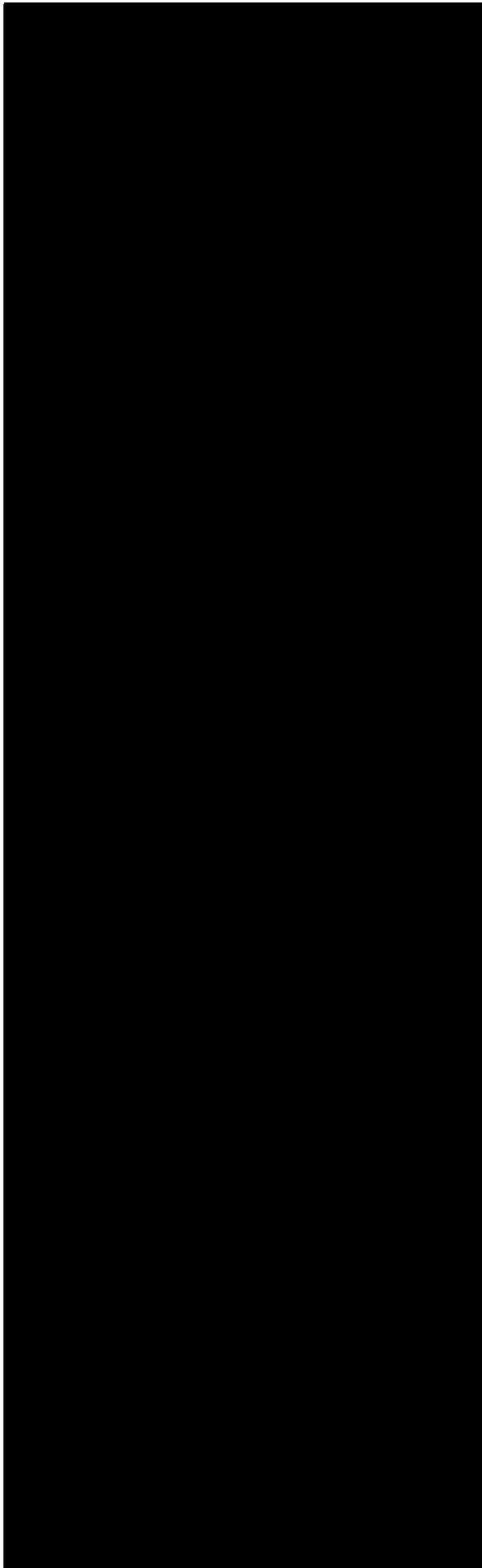


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

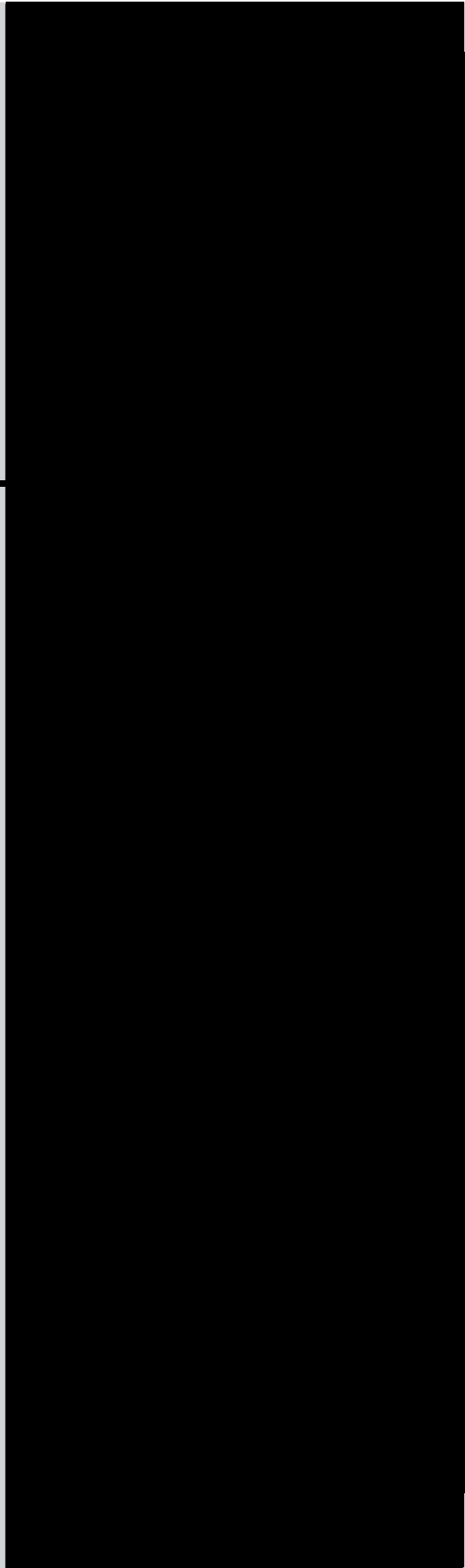
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



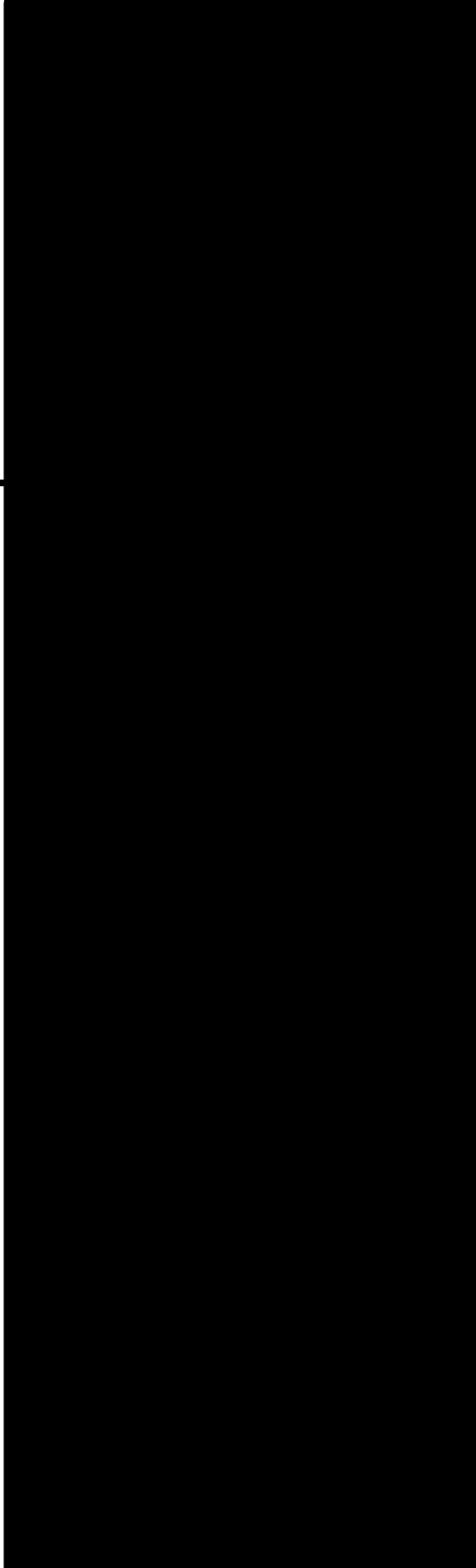
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



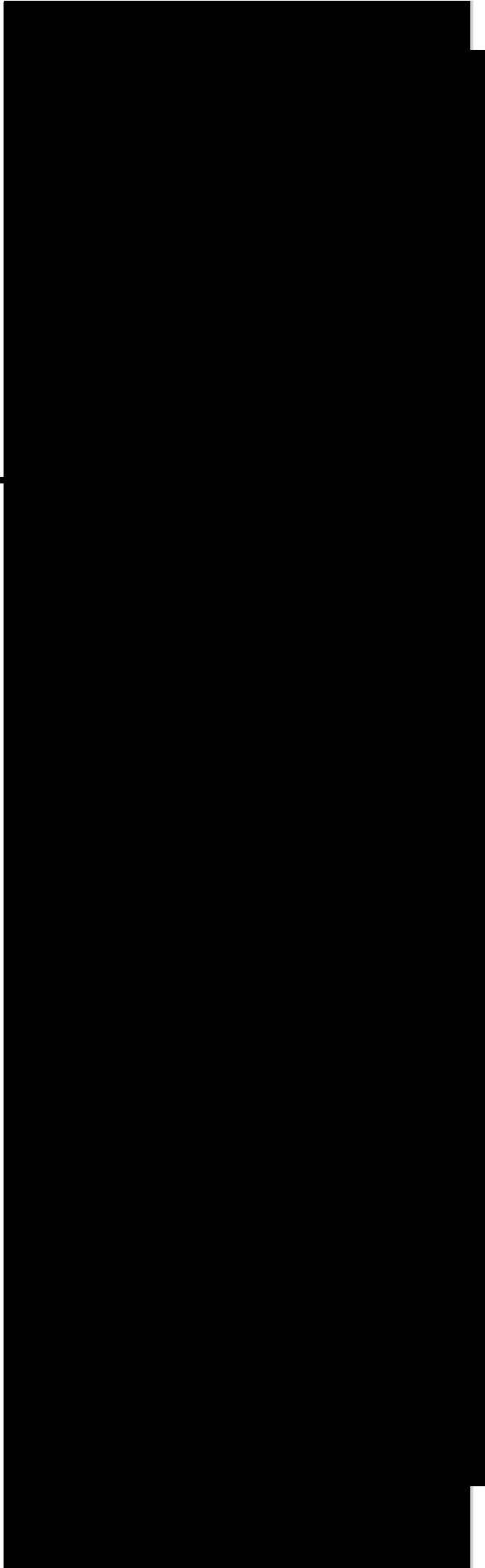
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

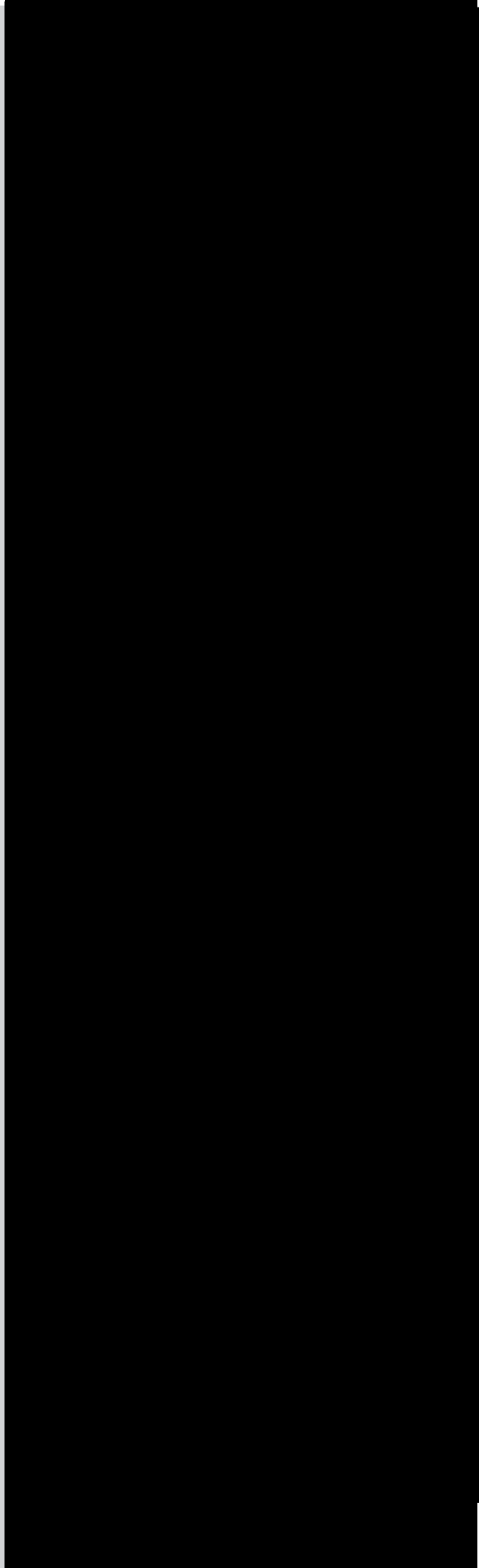
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



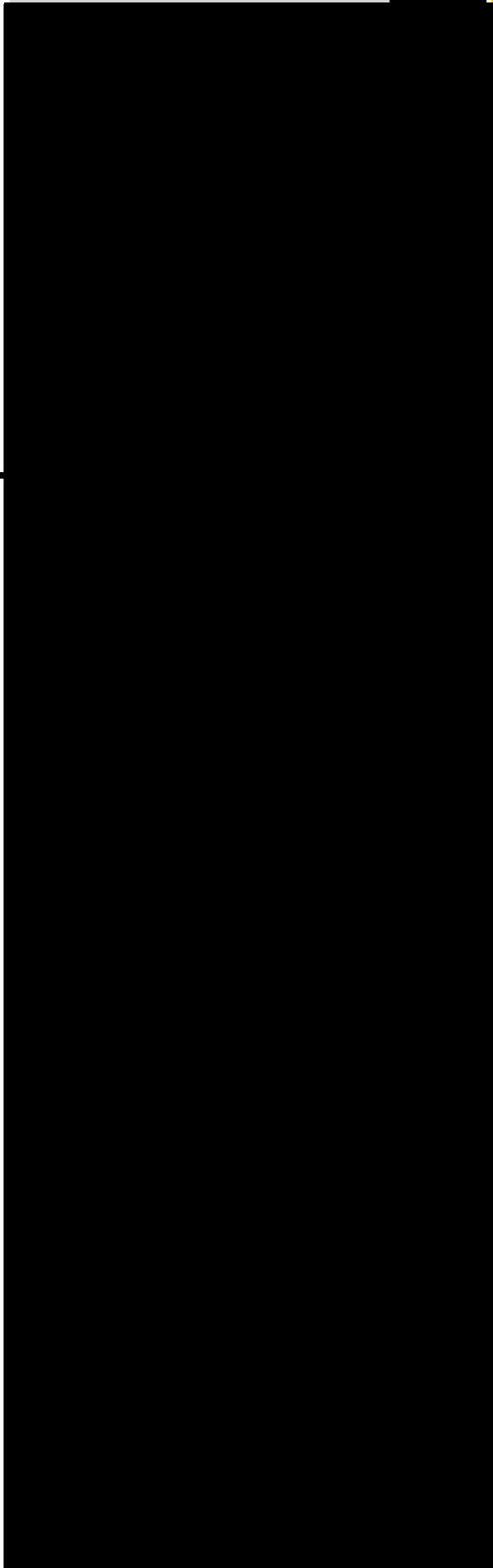
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



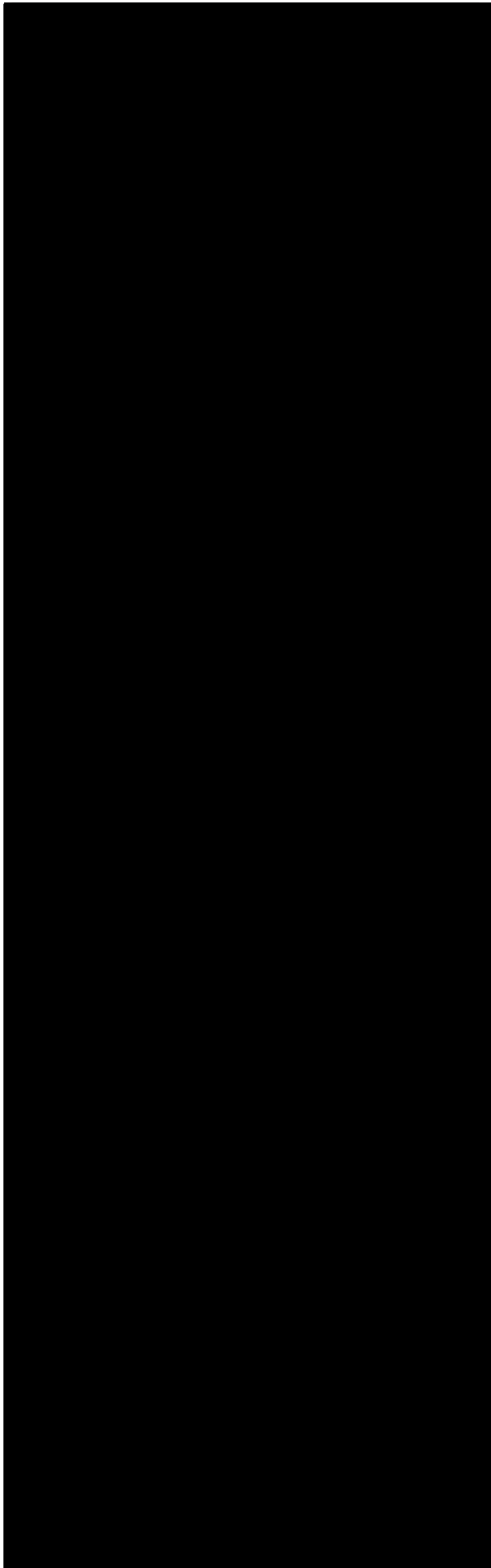
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



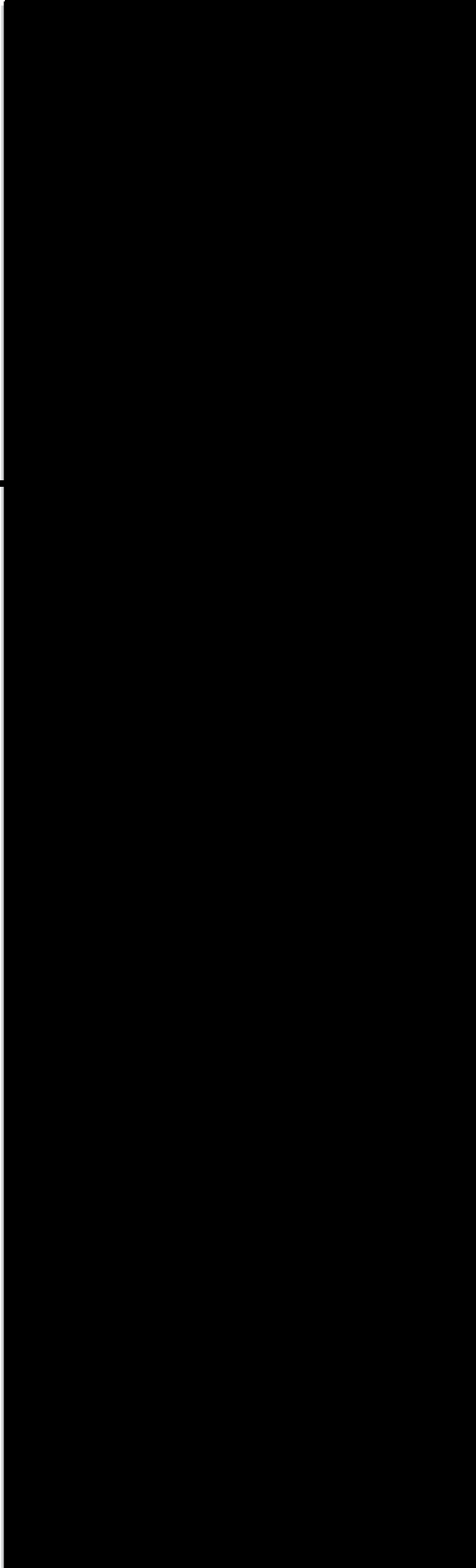
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

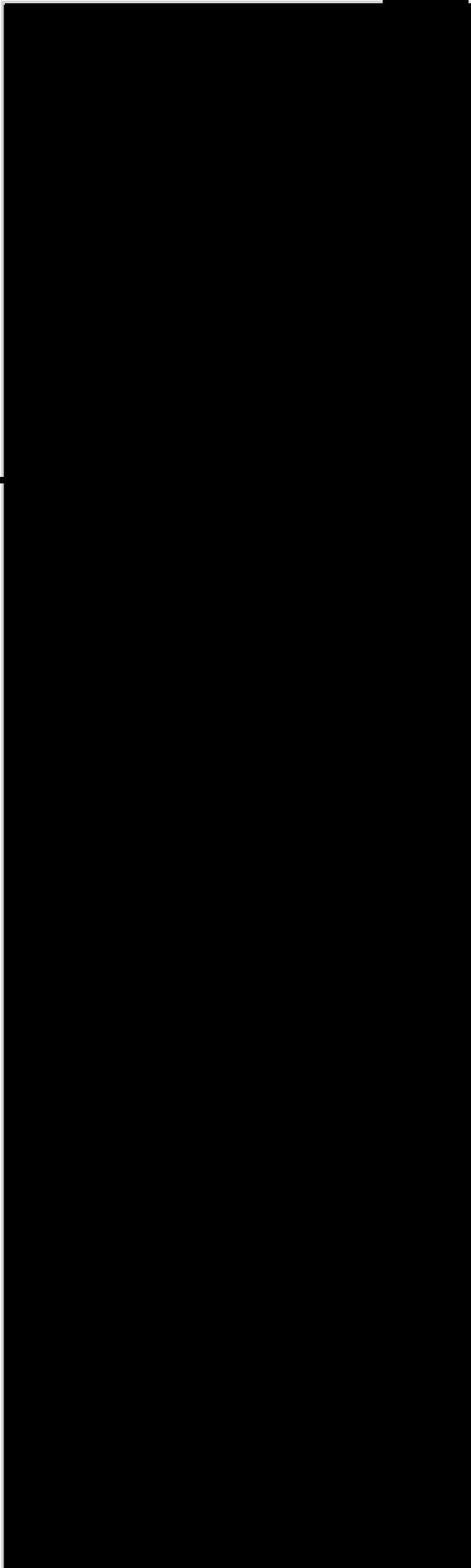


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

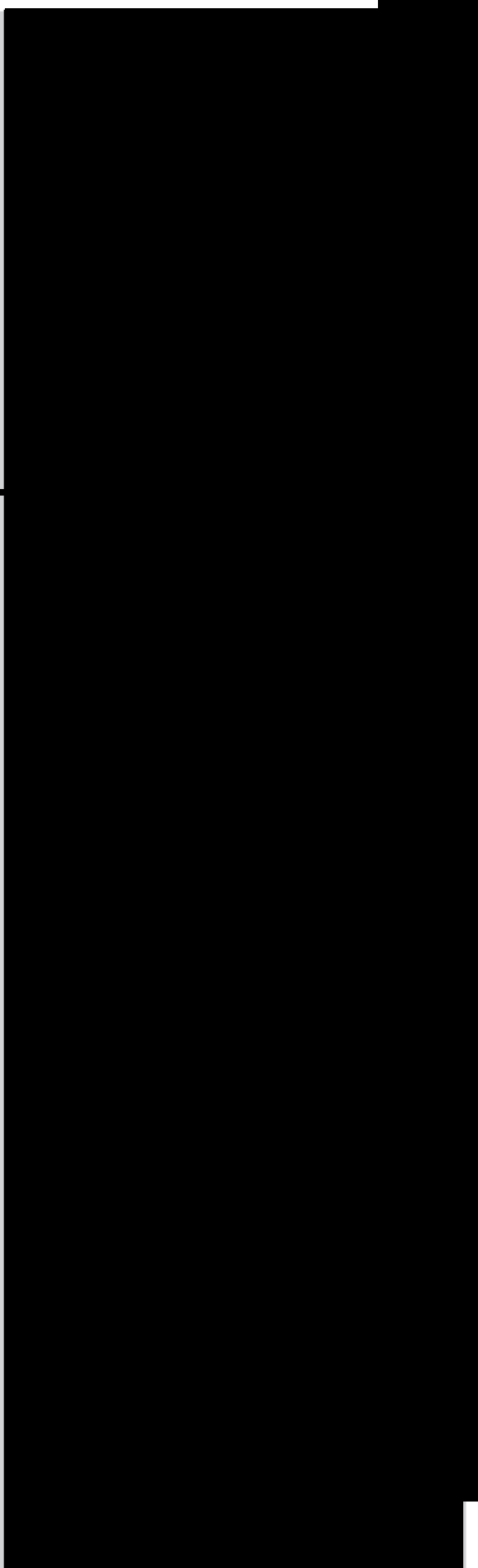


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

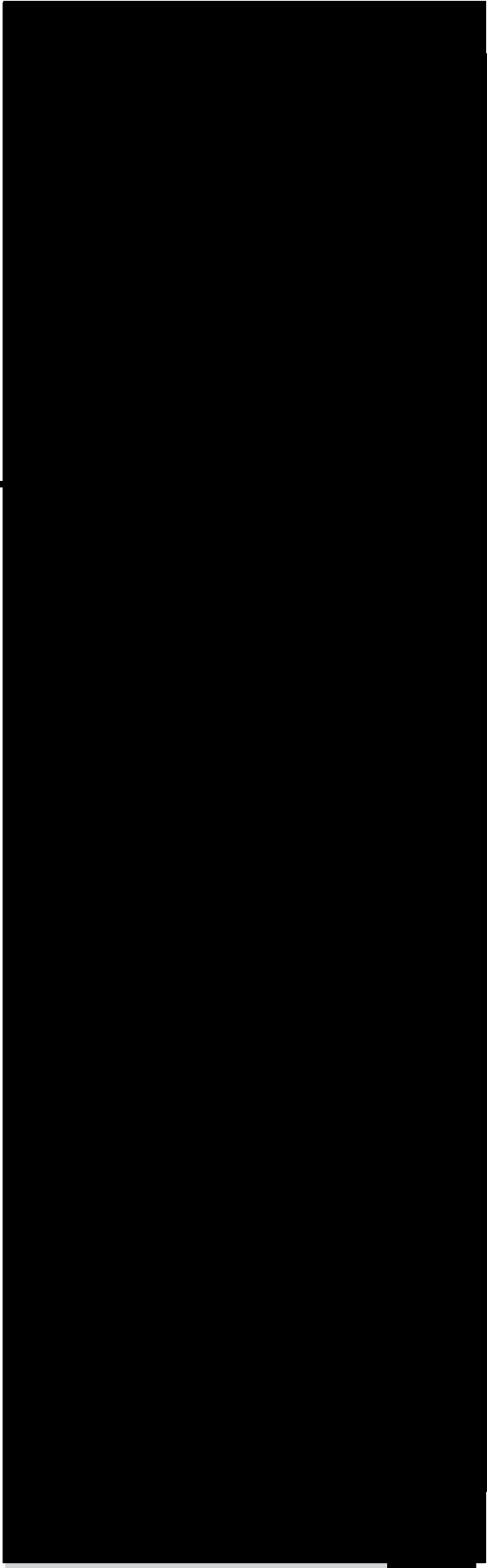
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

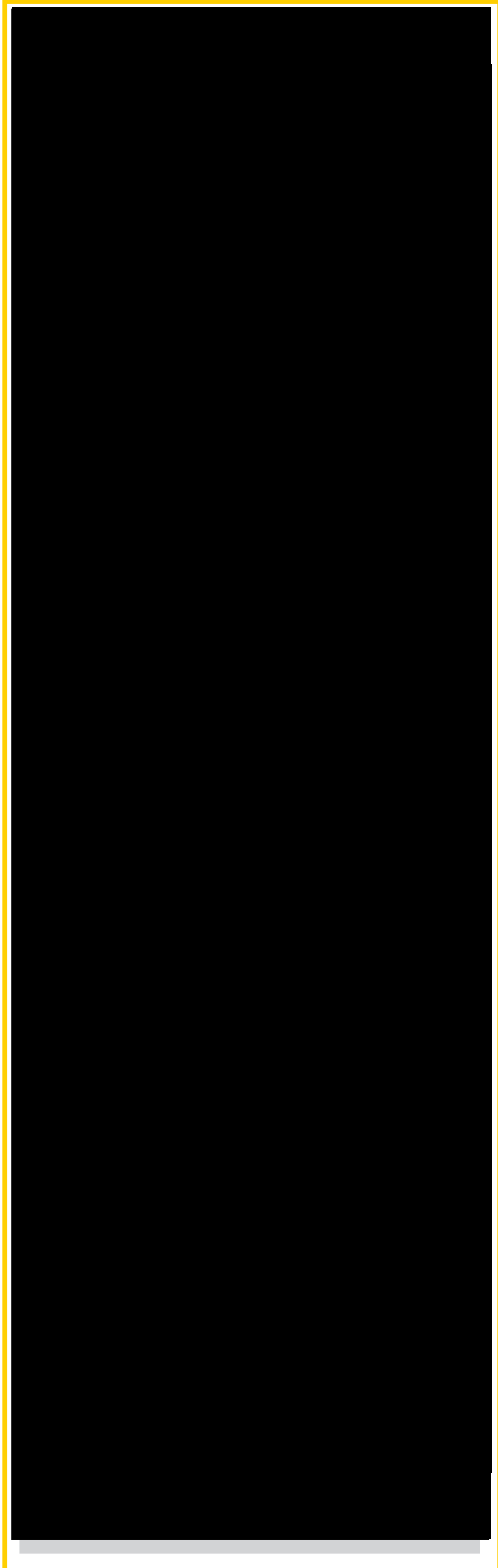
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



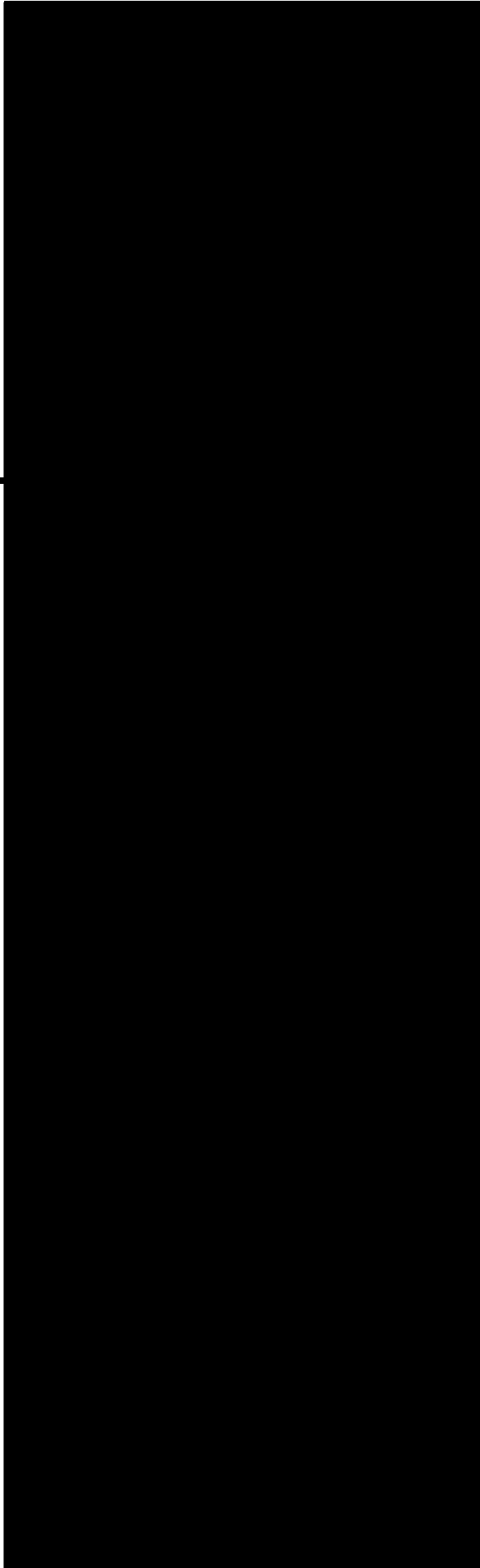
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

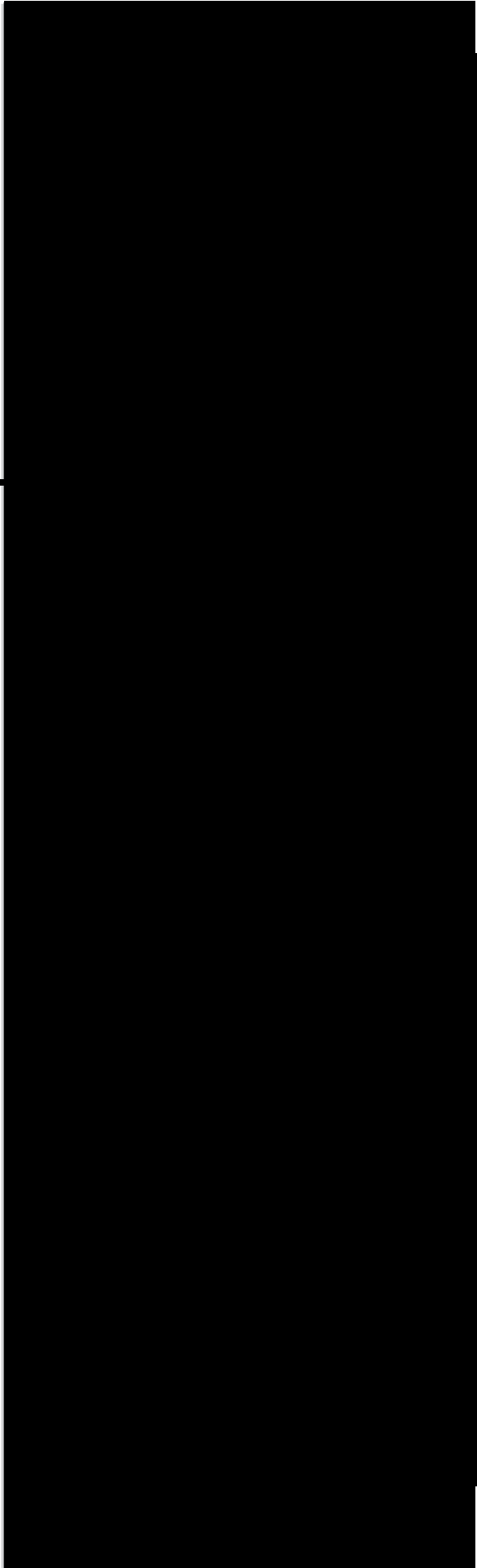


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



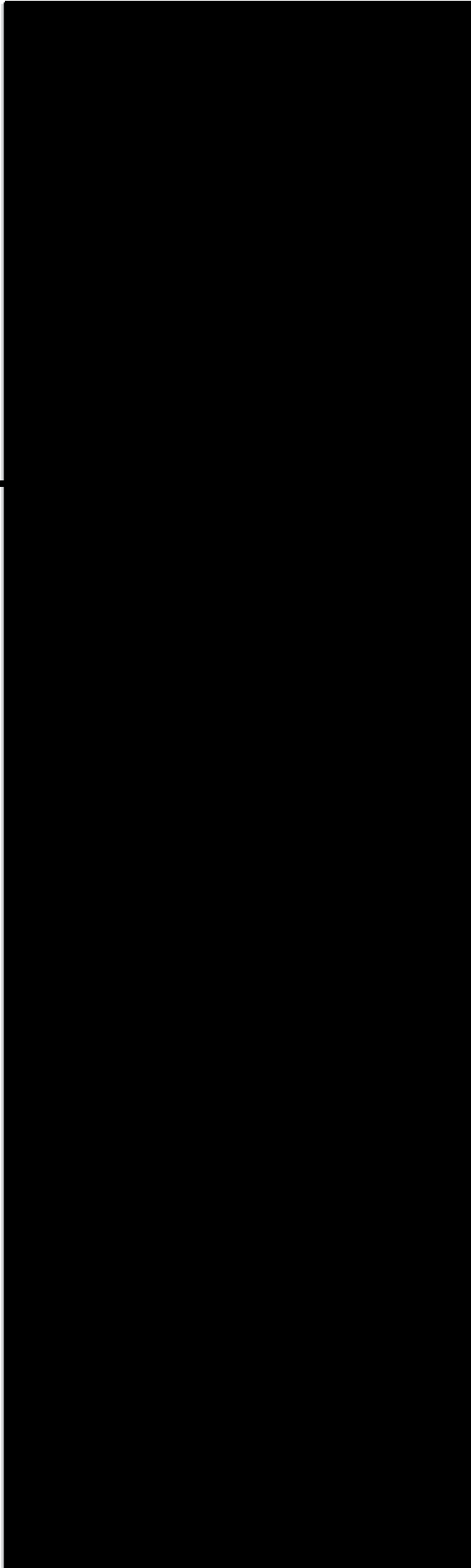
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



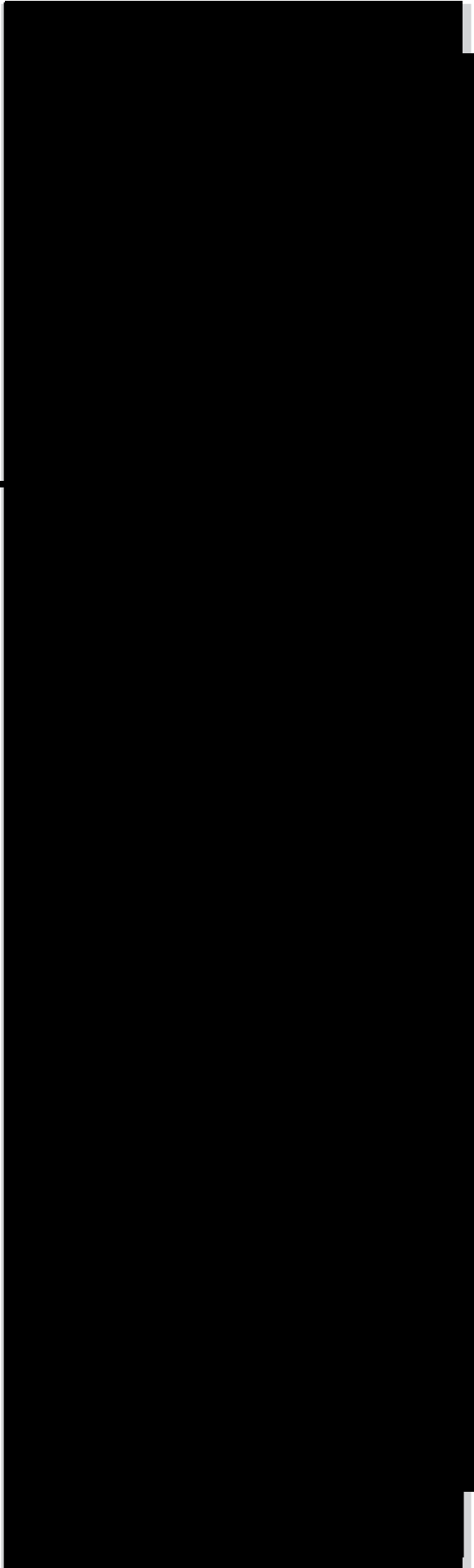
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

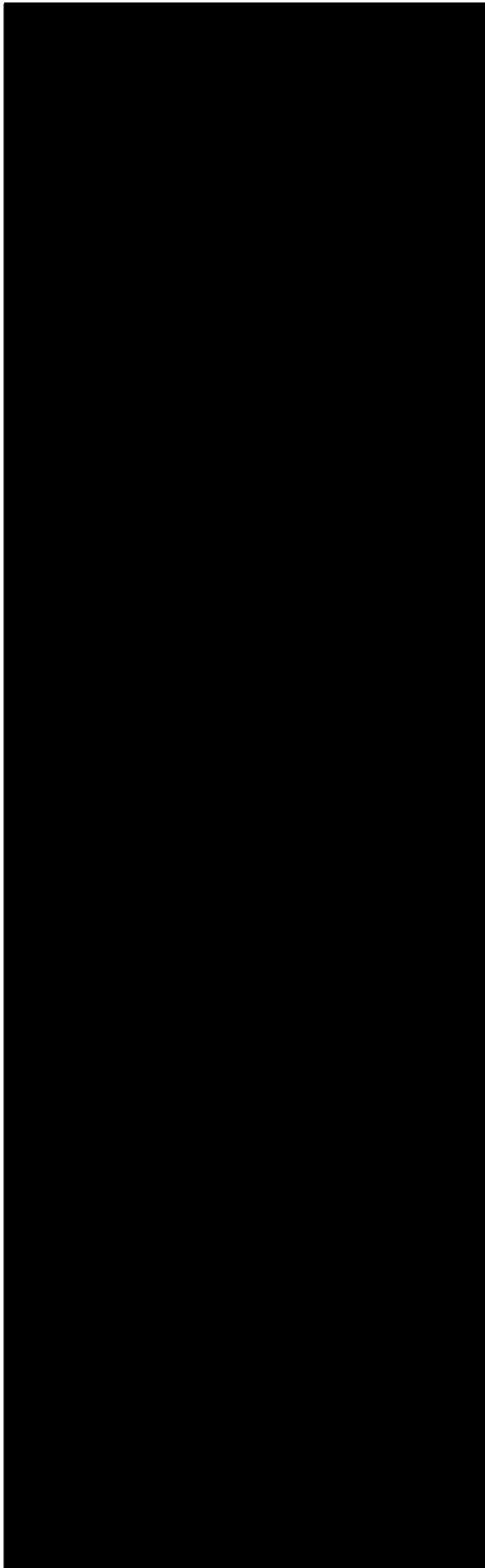
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



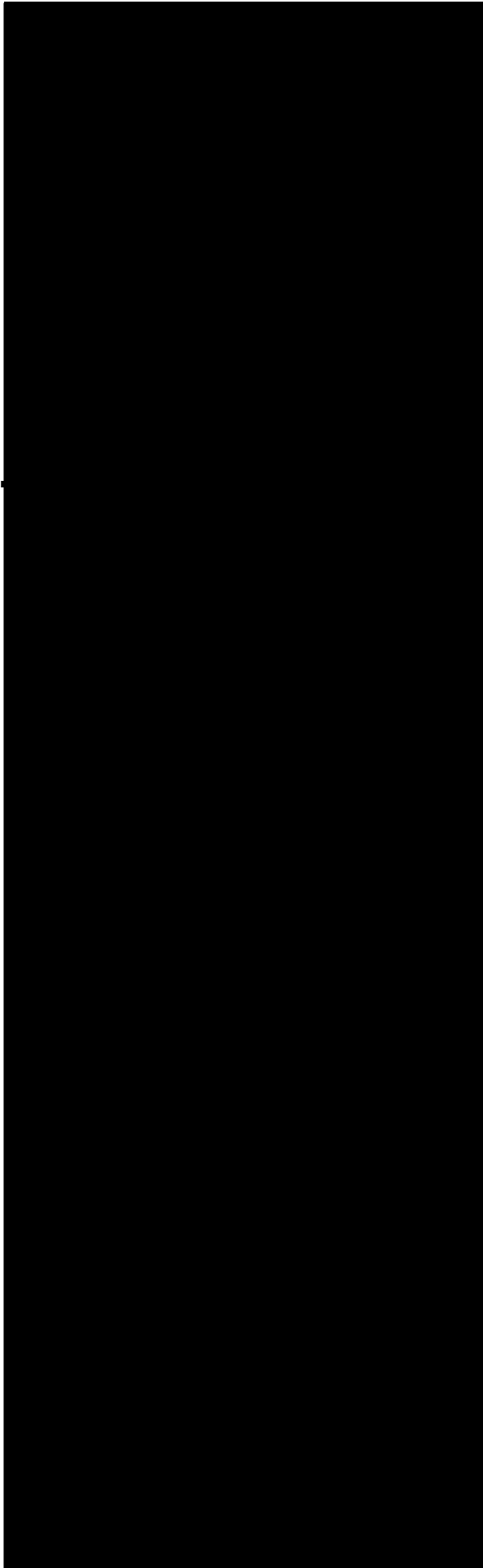
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



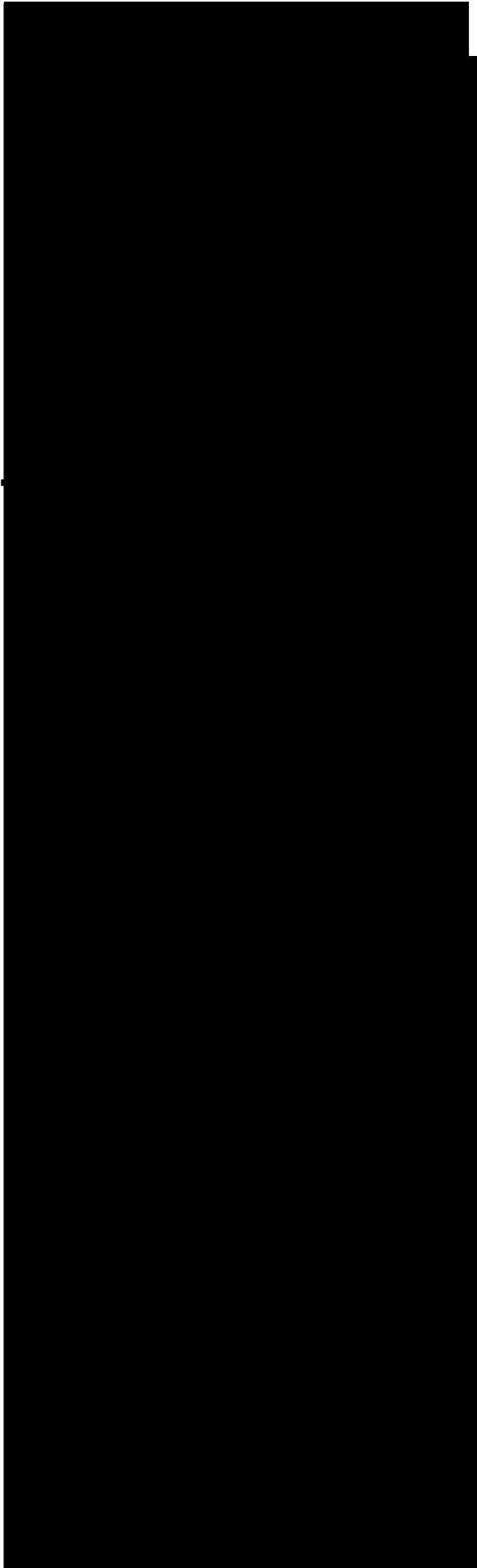
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

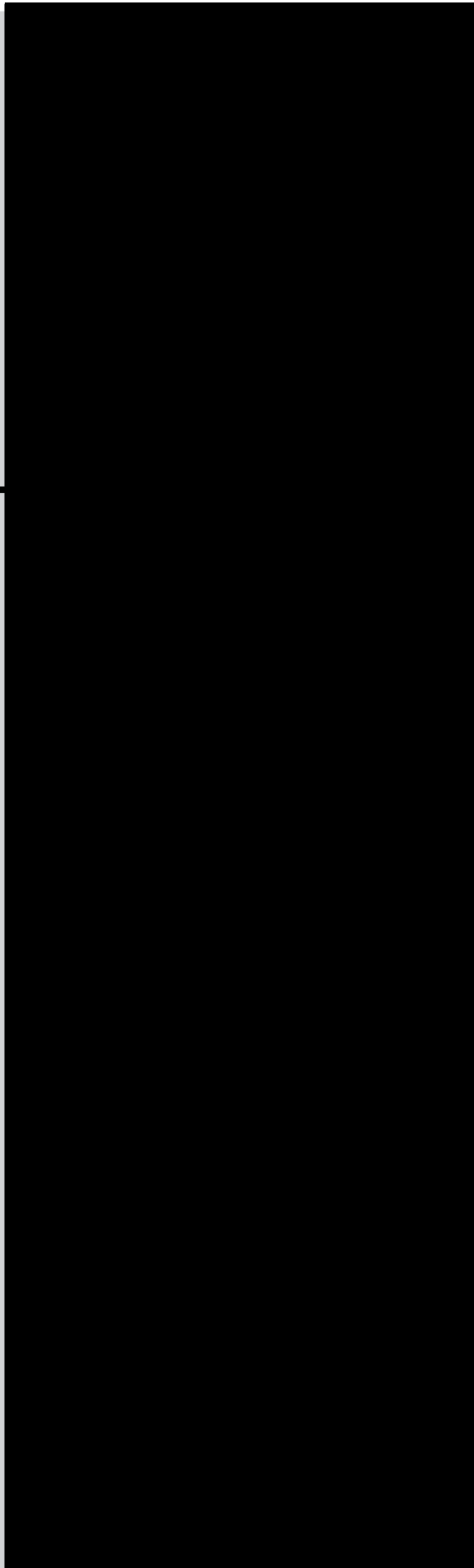


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

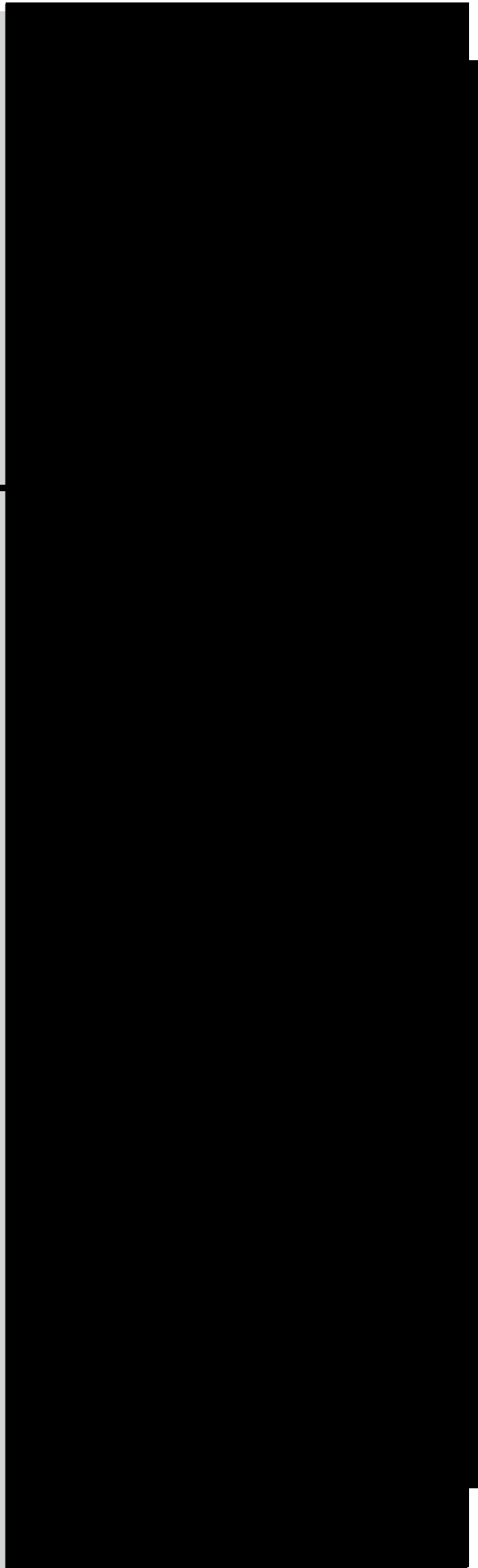


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



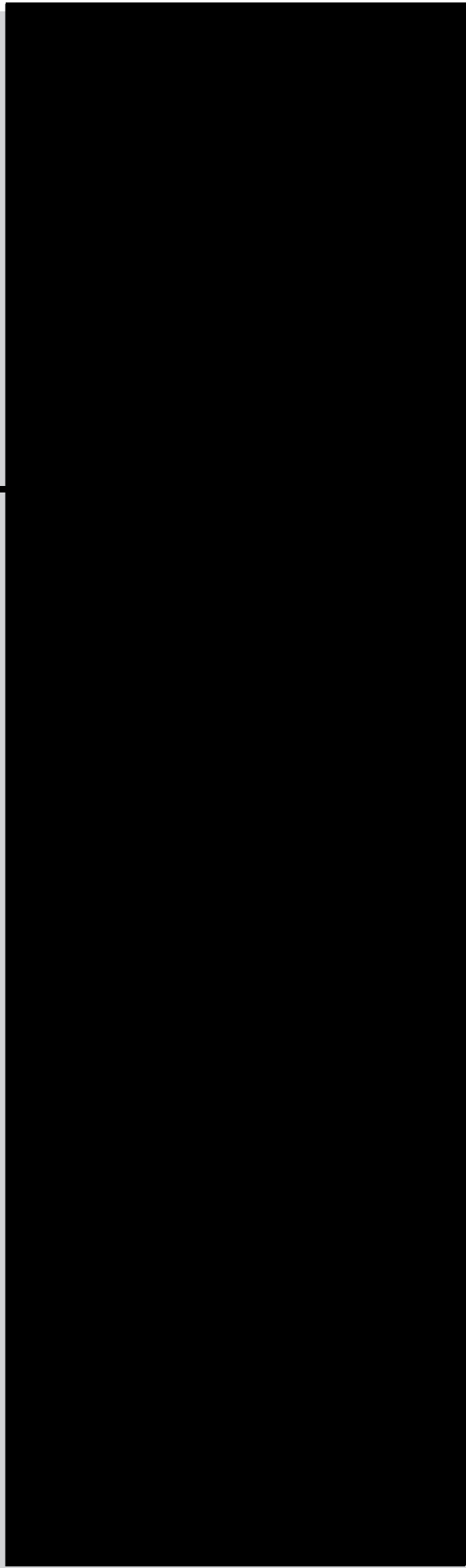
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

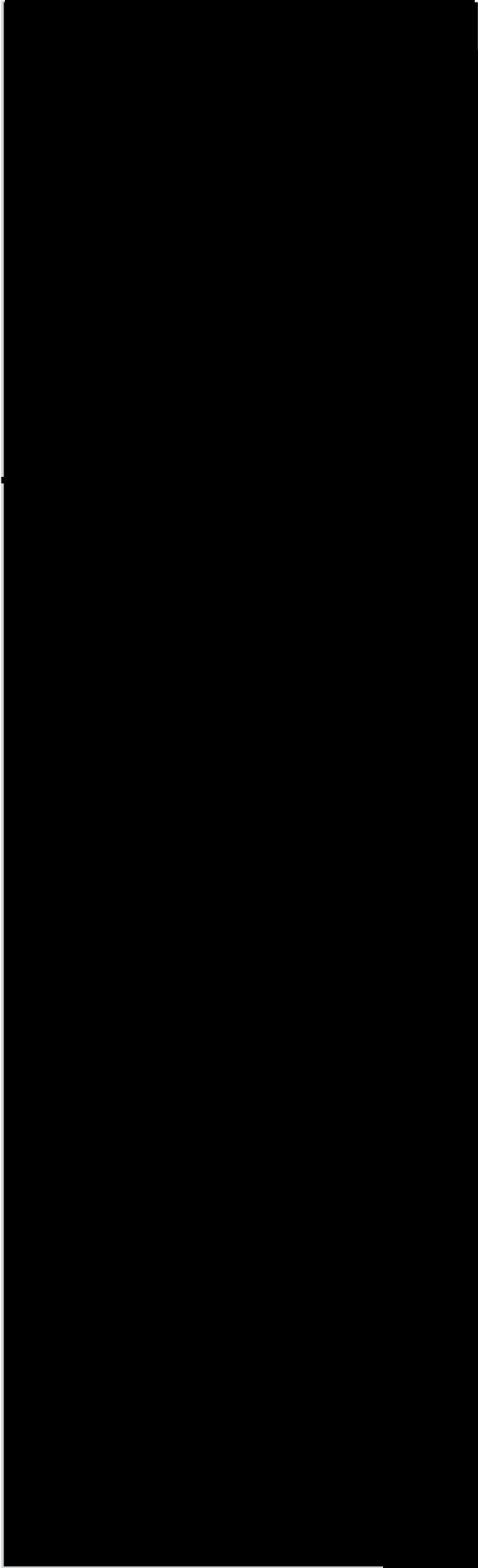
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

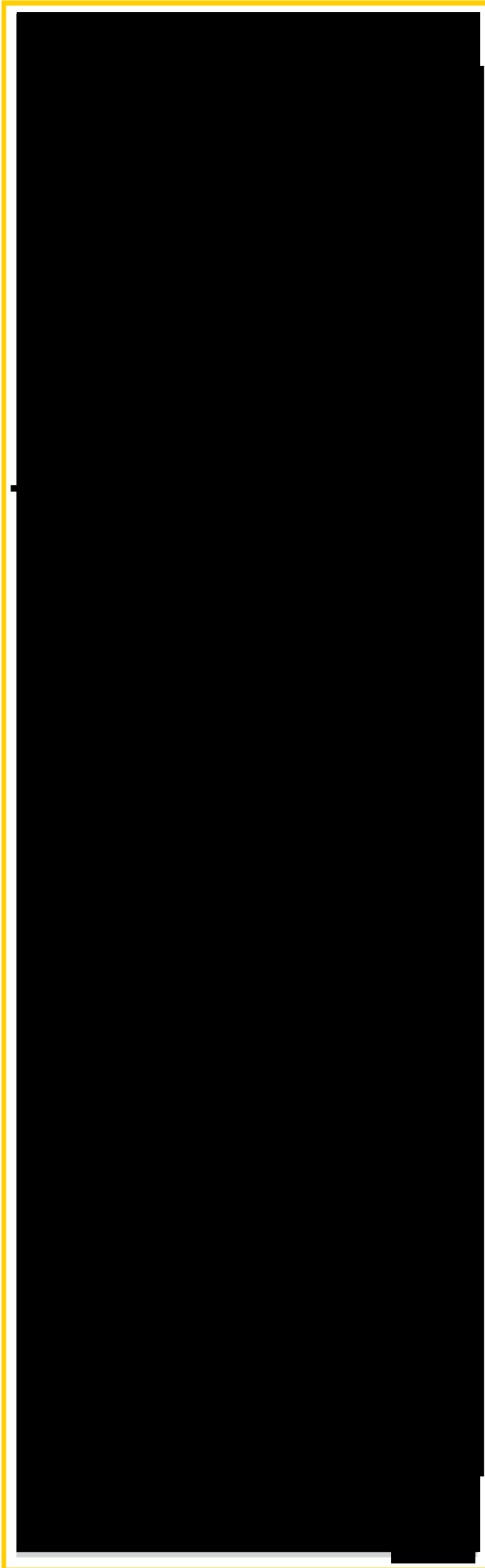


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



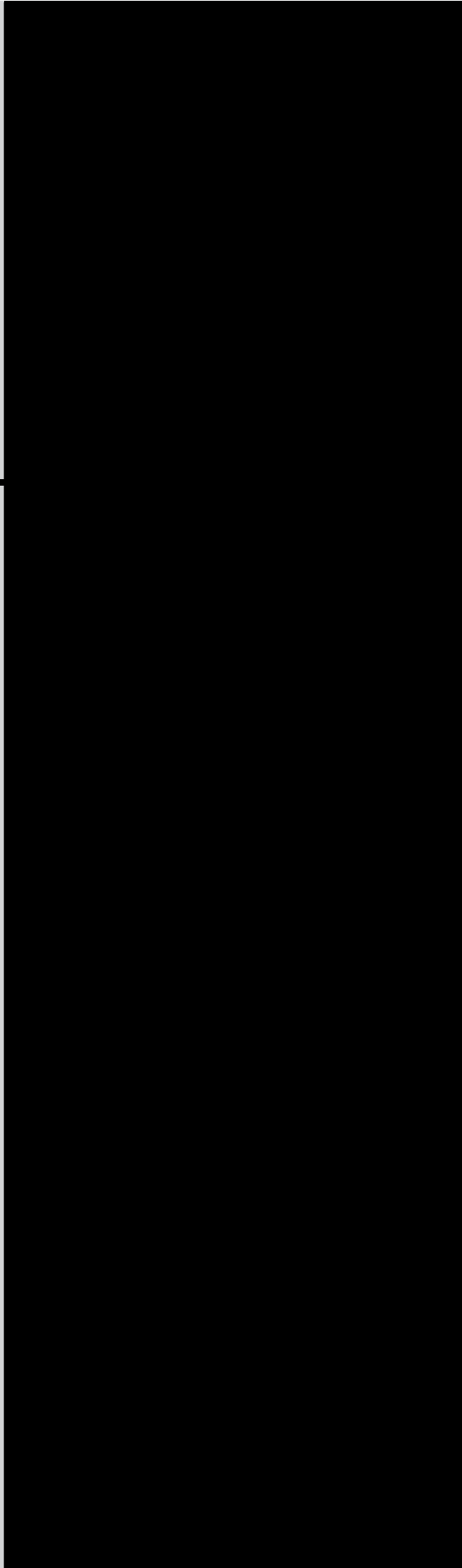
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



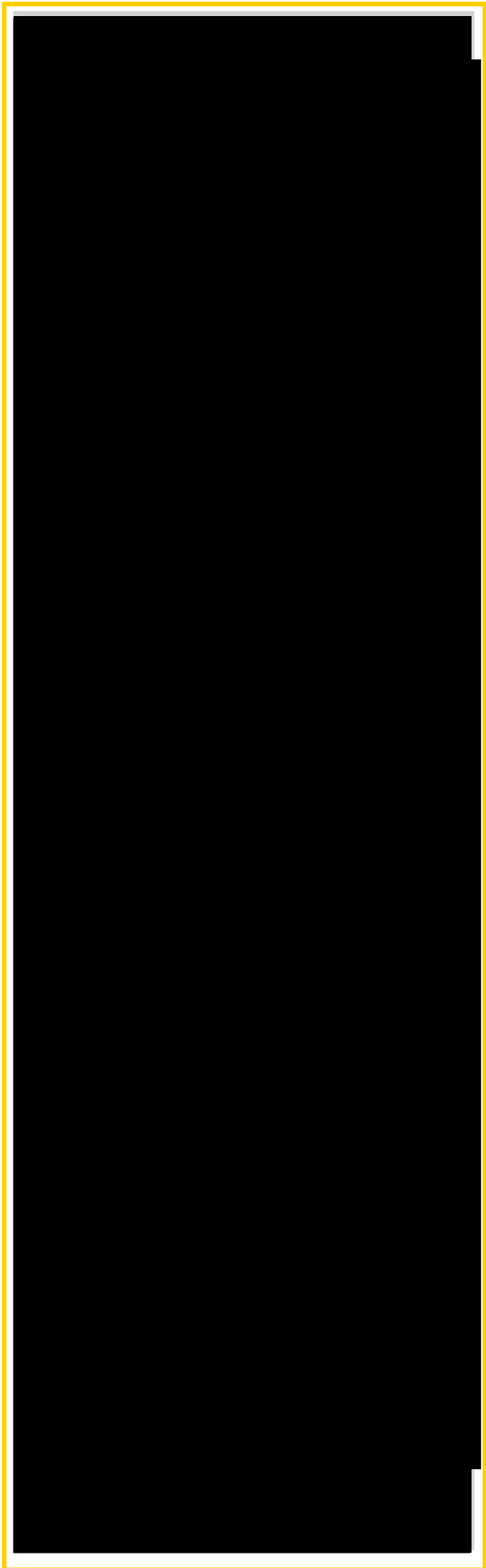
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



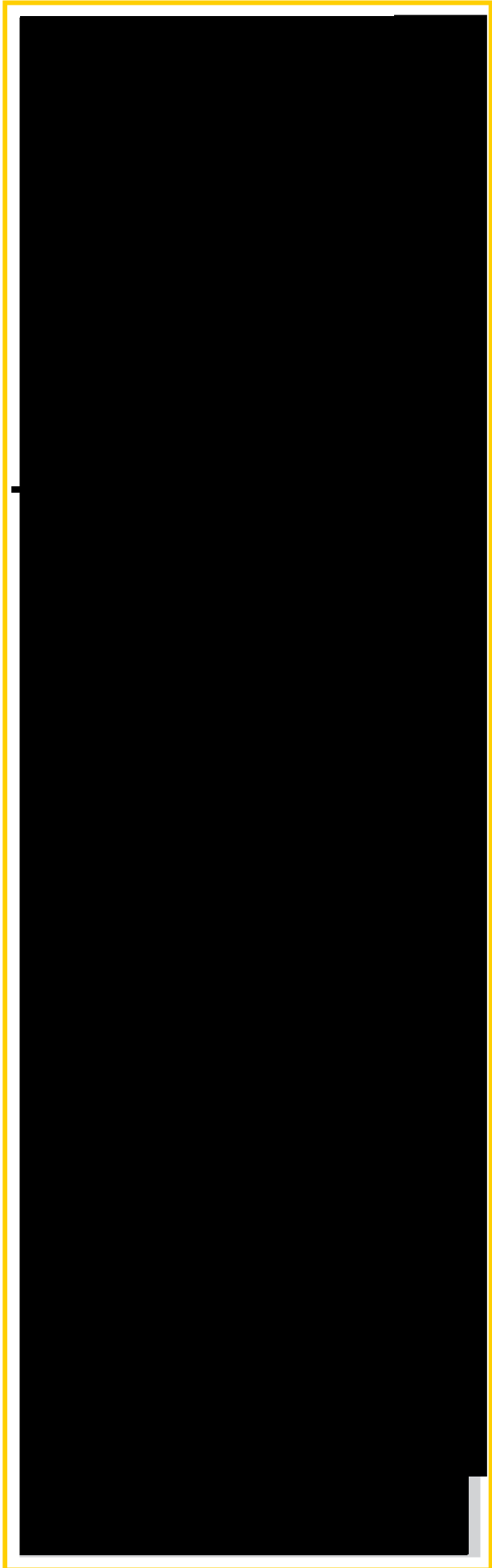
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



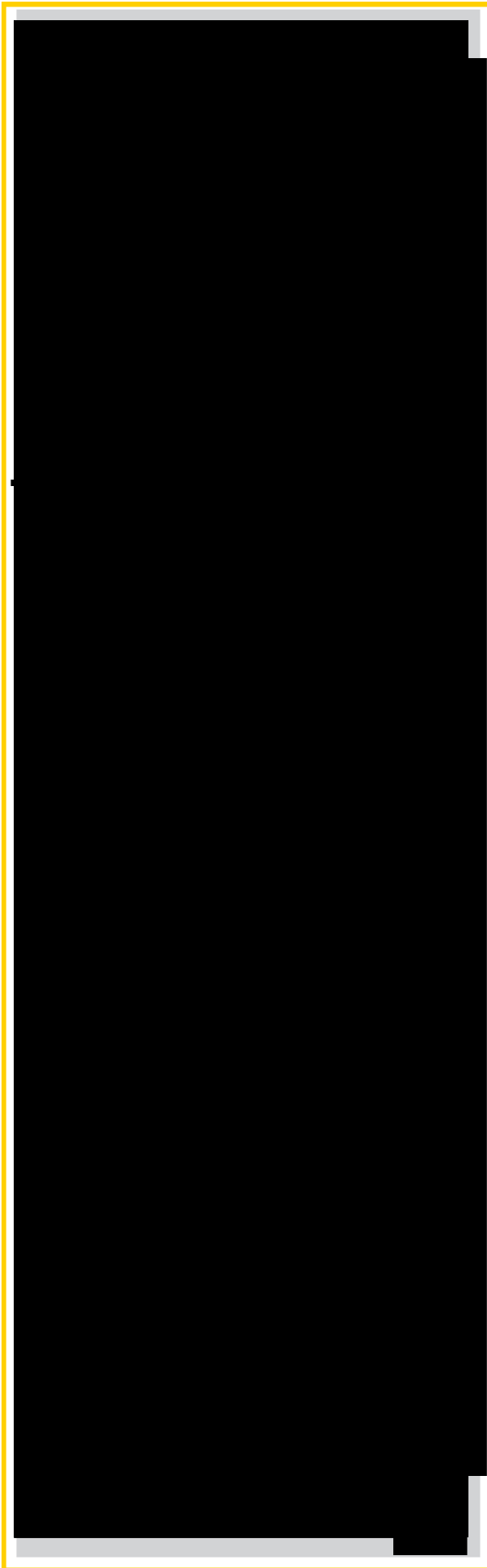
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



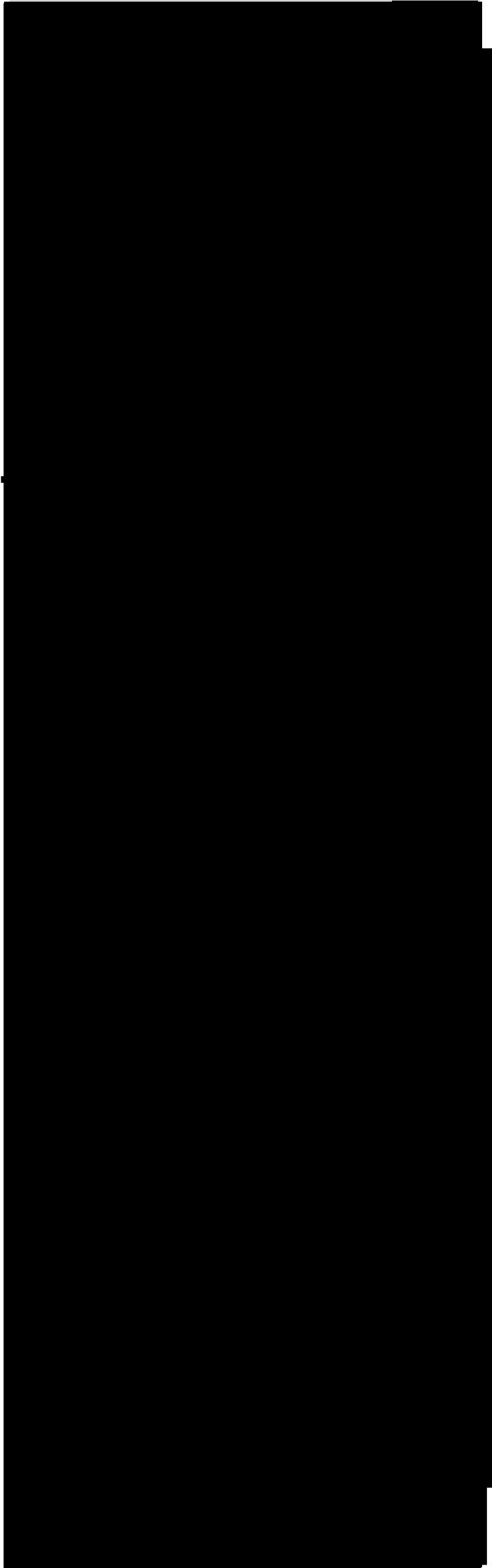
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

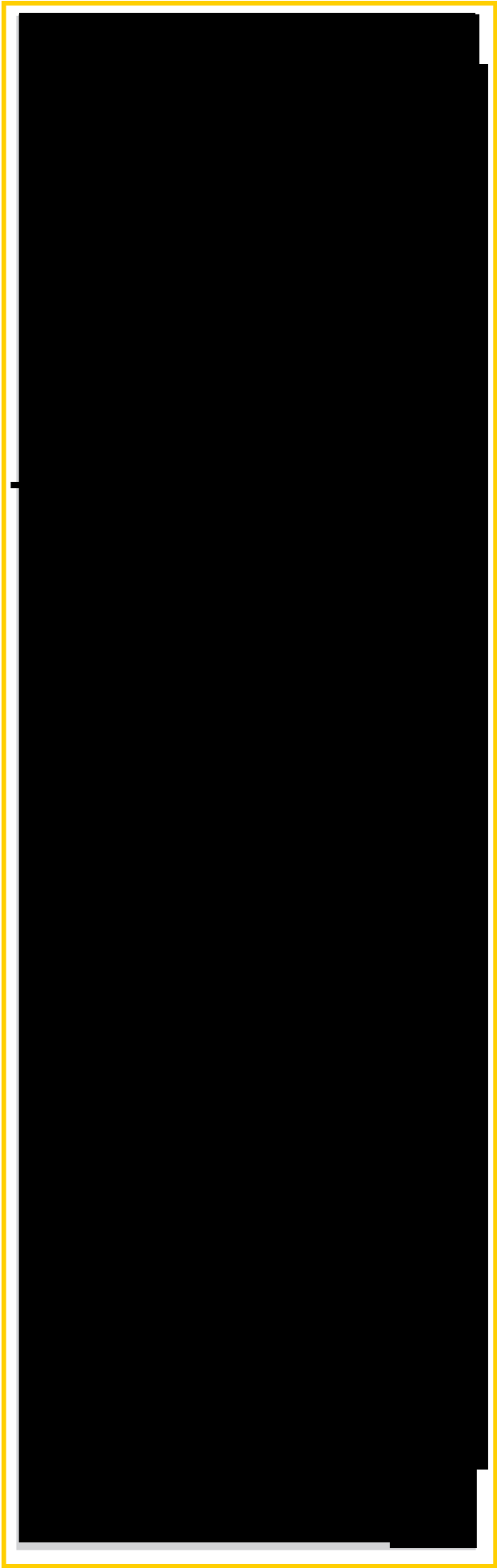
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



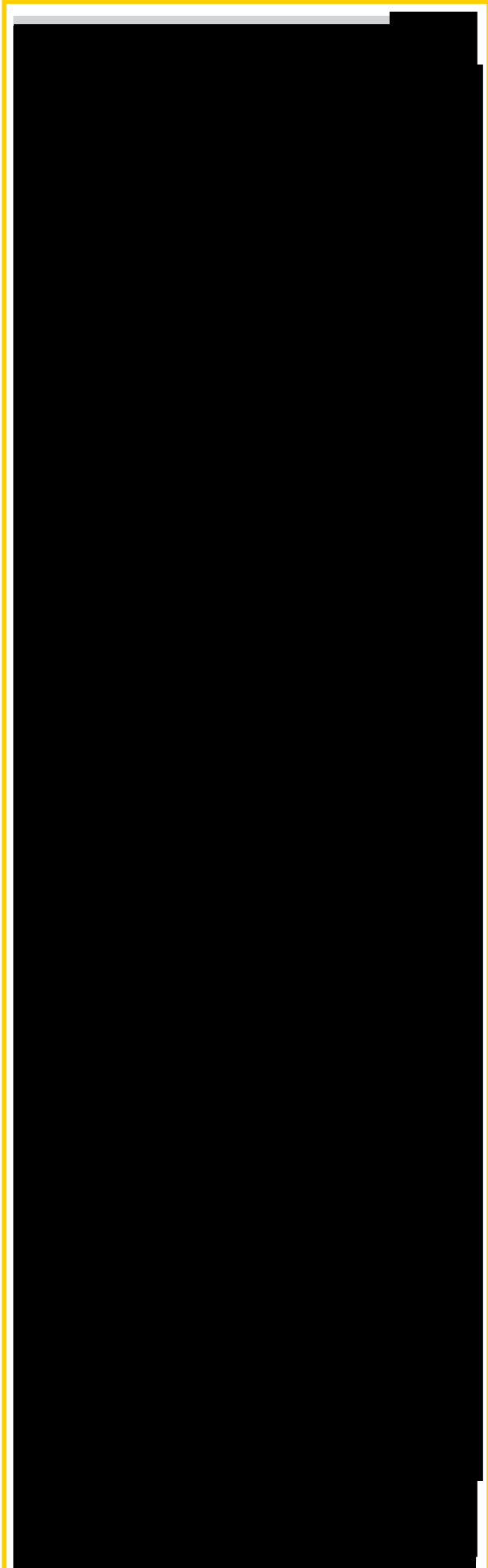
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



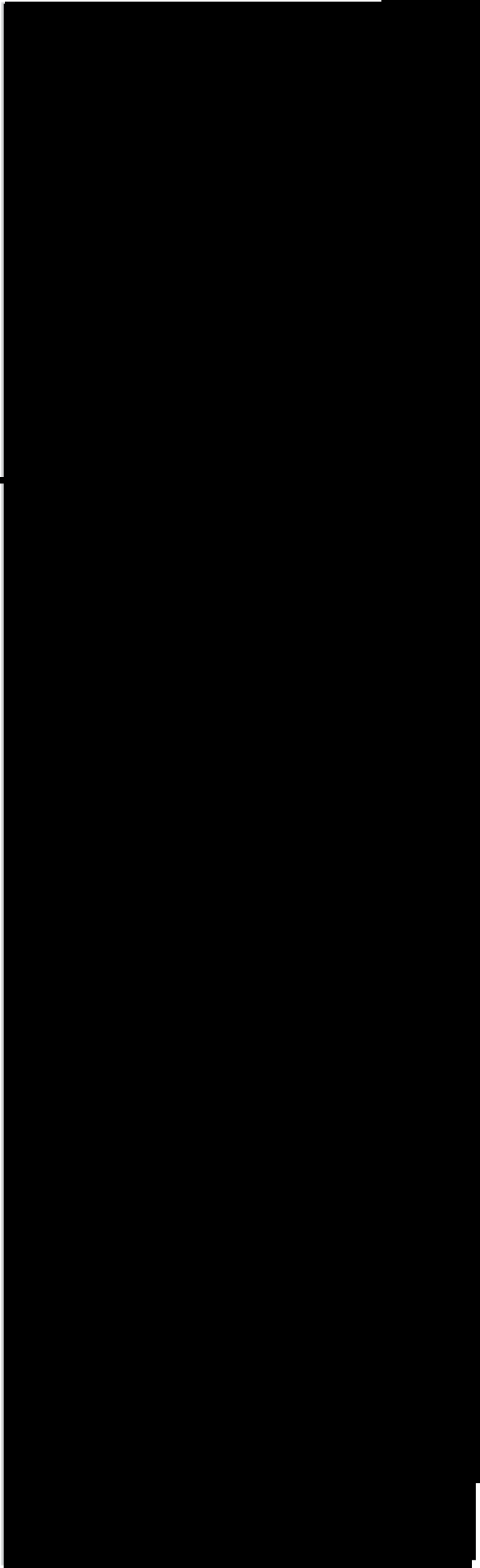
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



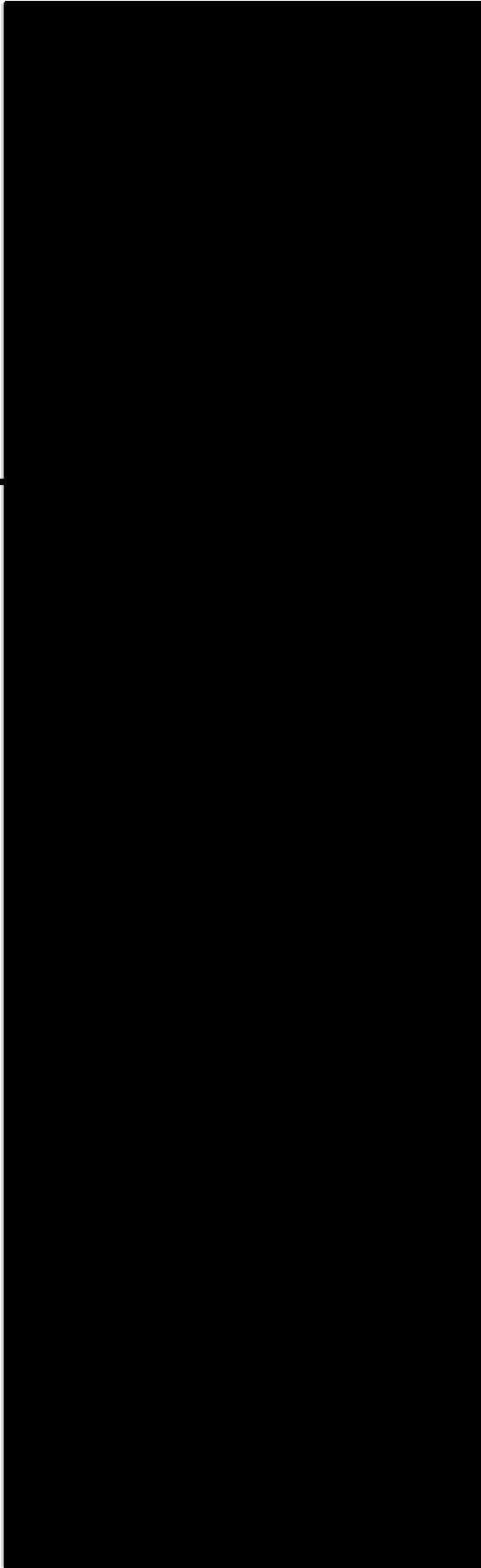
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



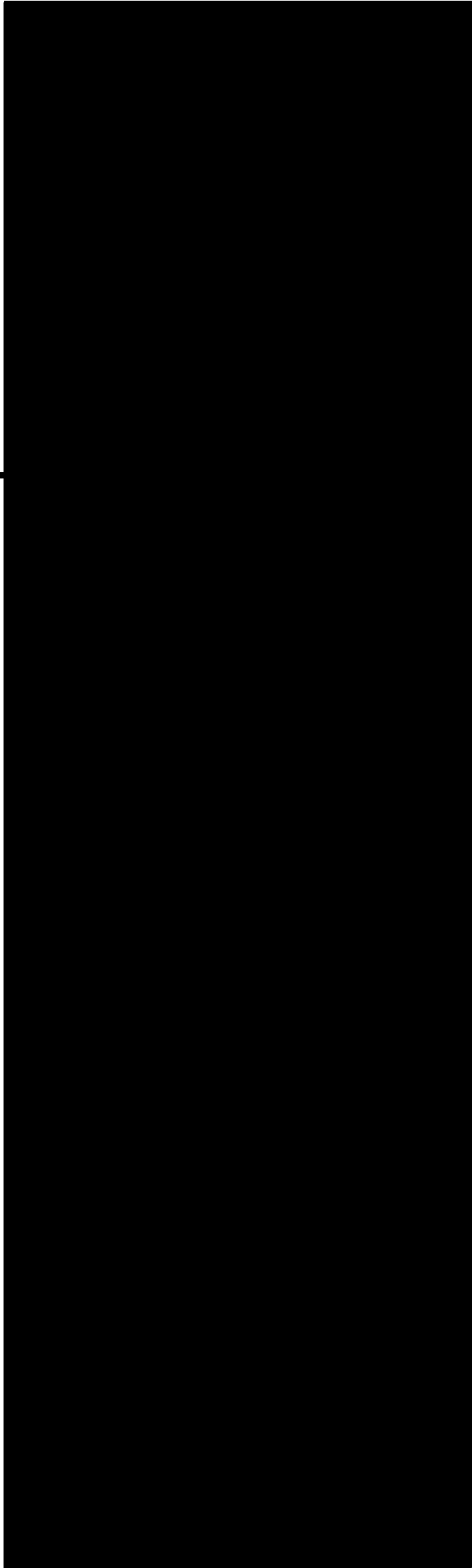
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

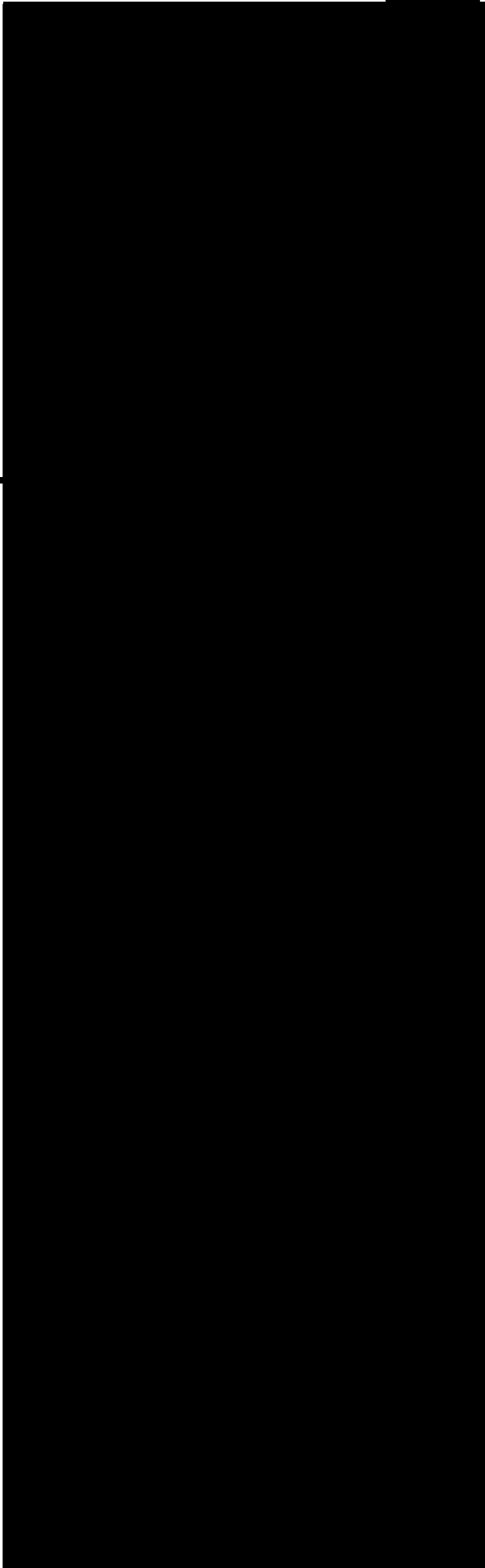
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



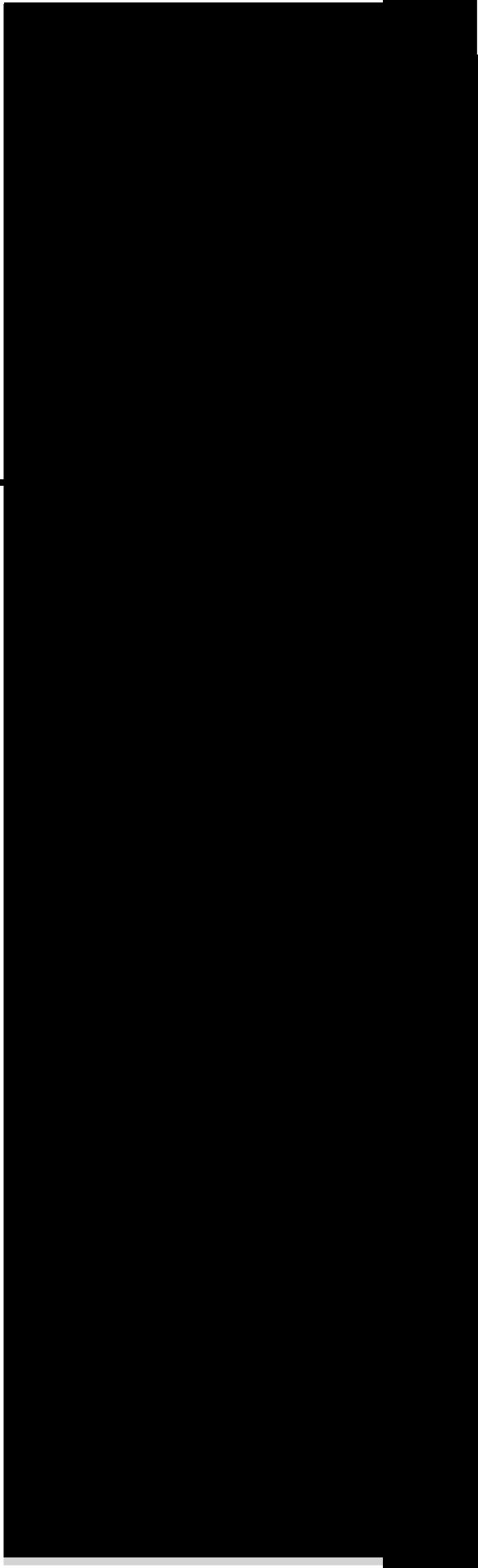
REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

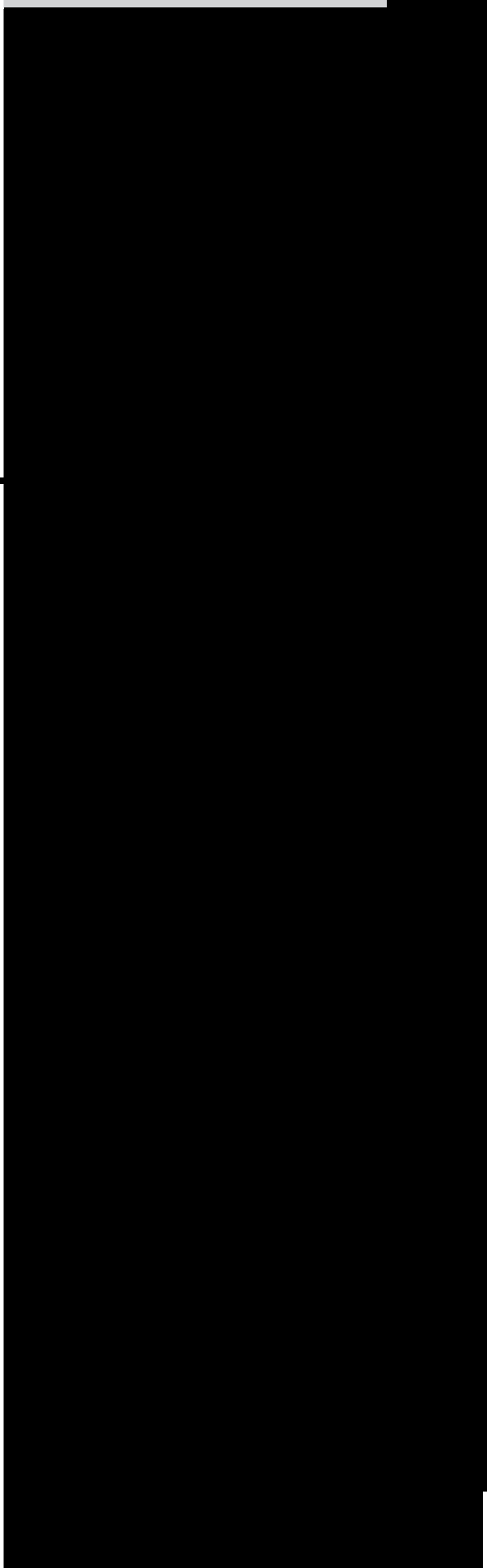


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

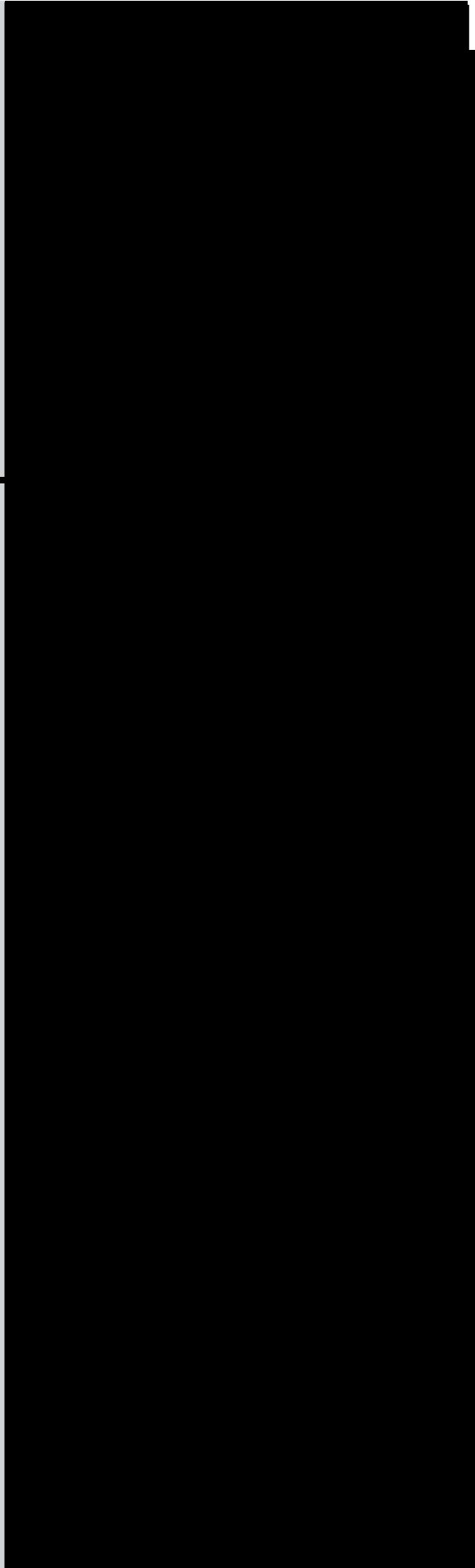


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



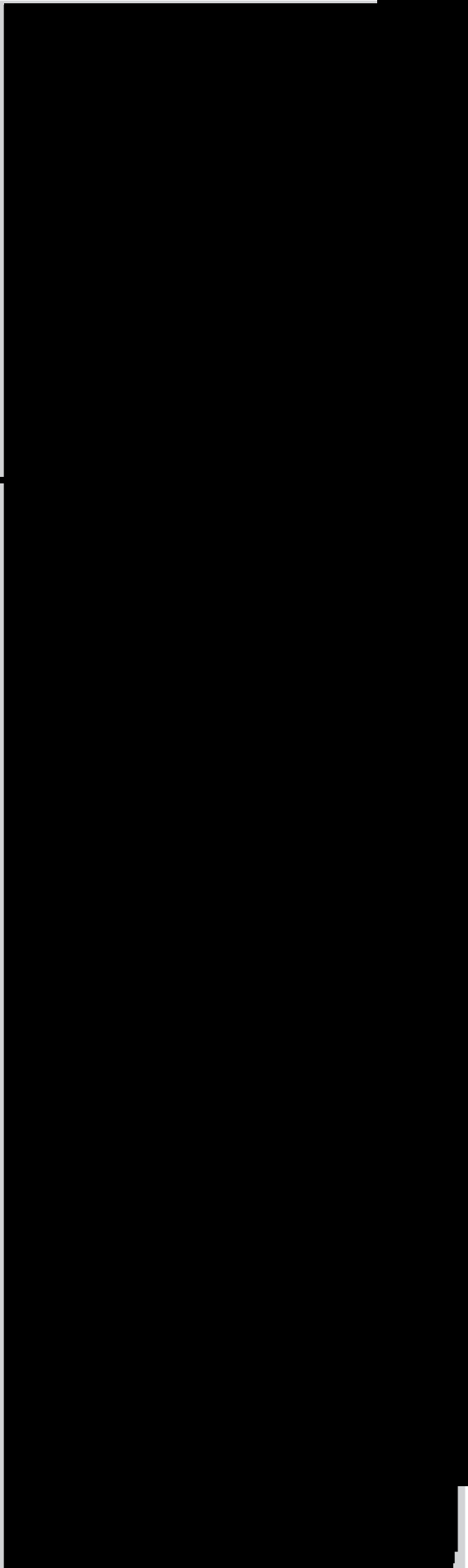
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



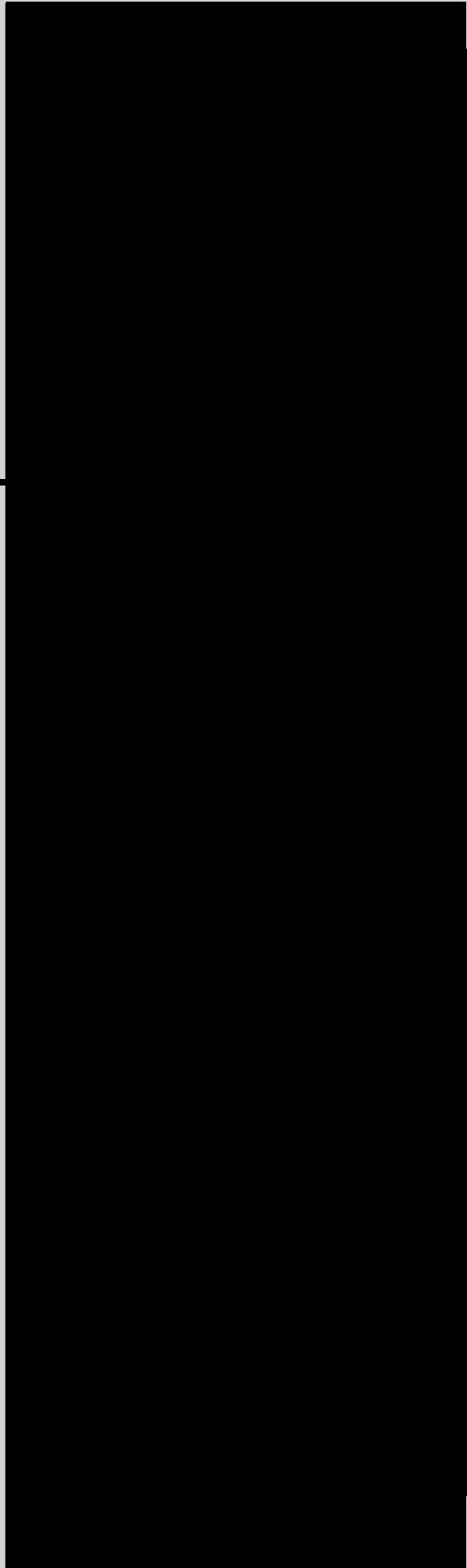
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



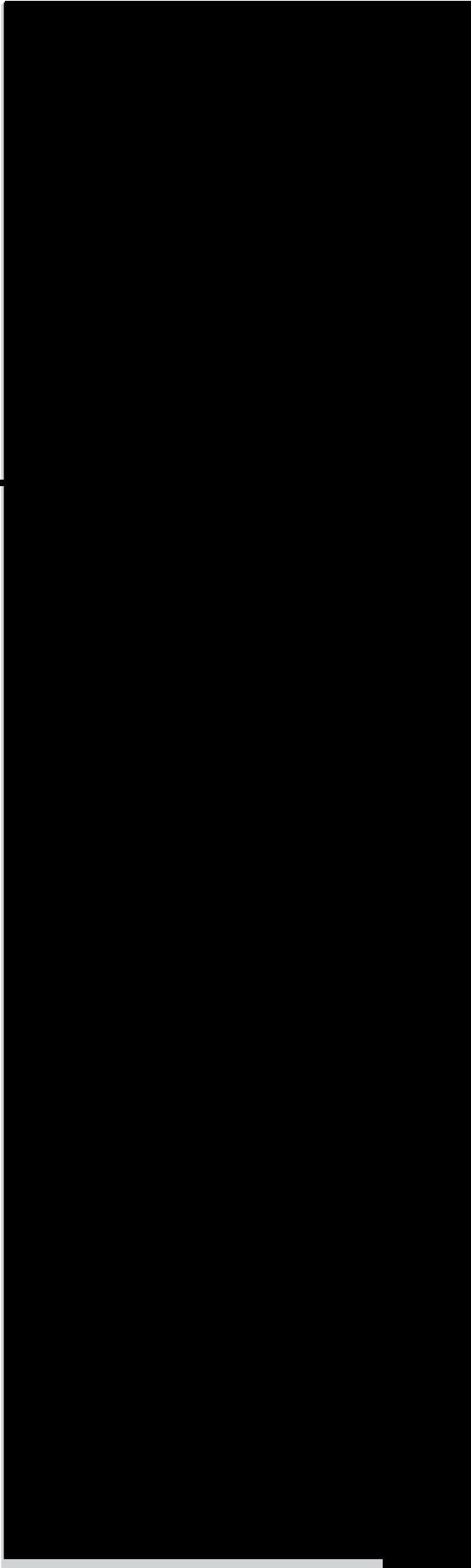
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

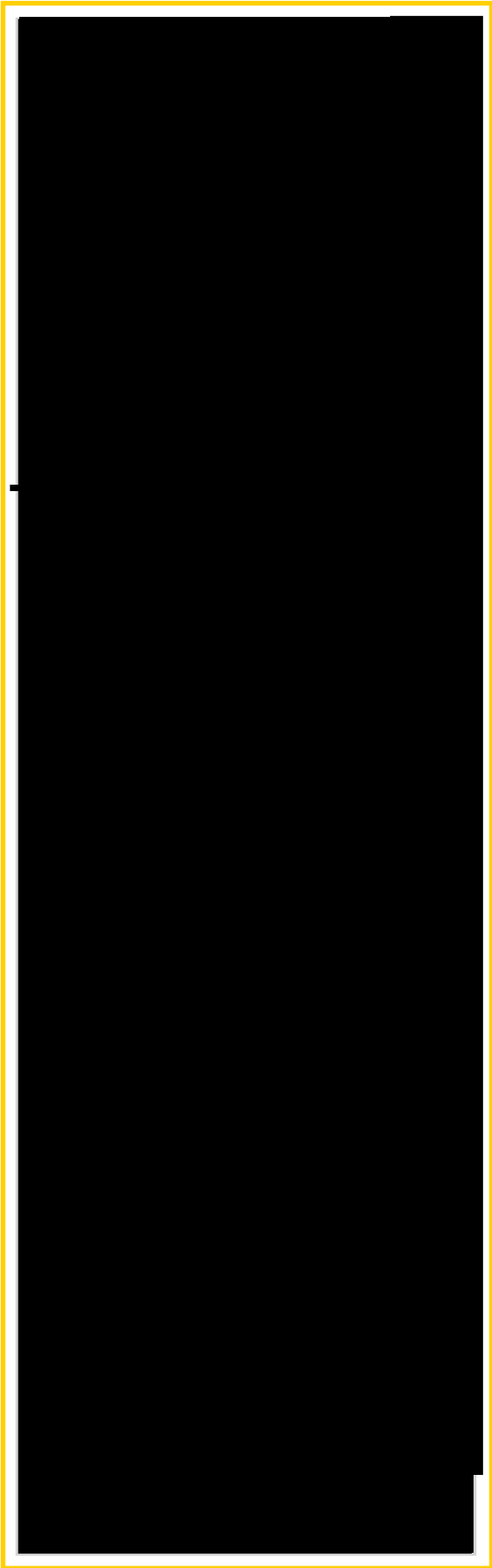
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

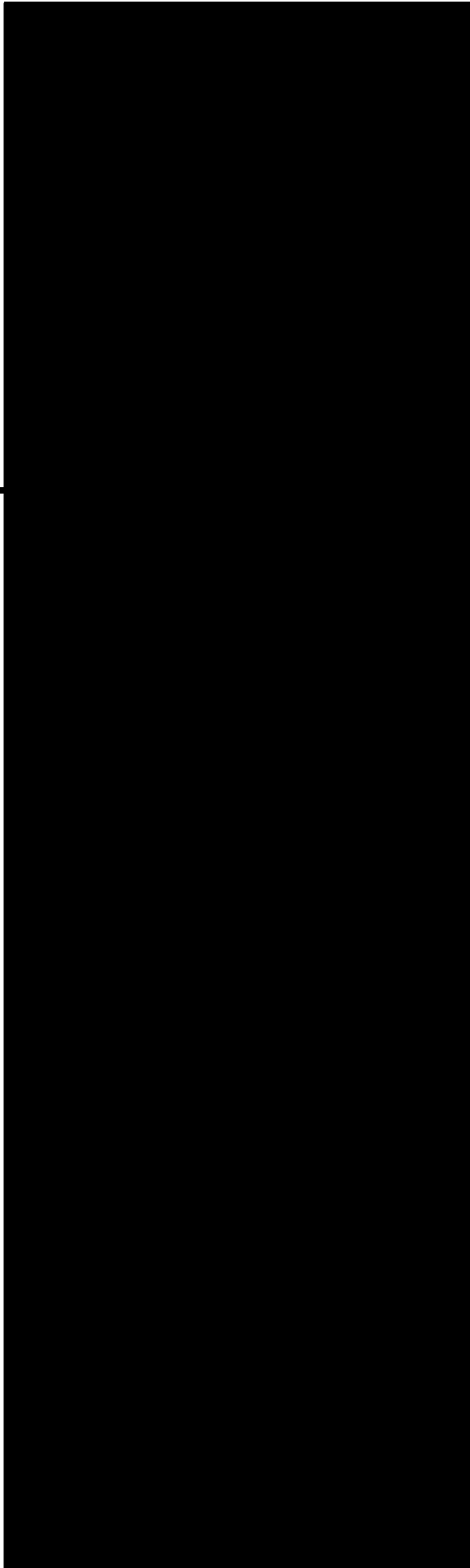


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



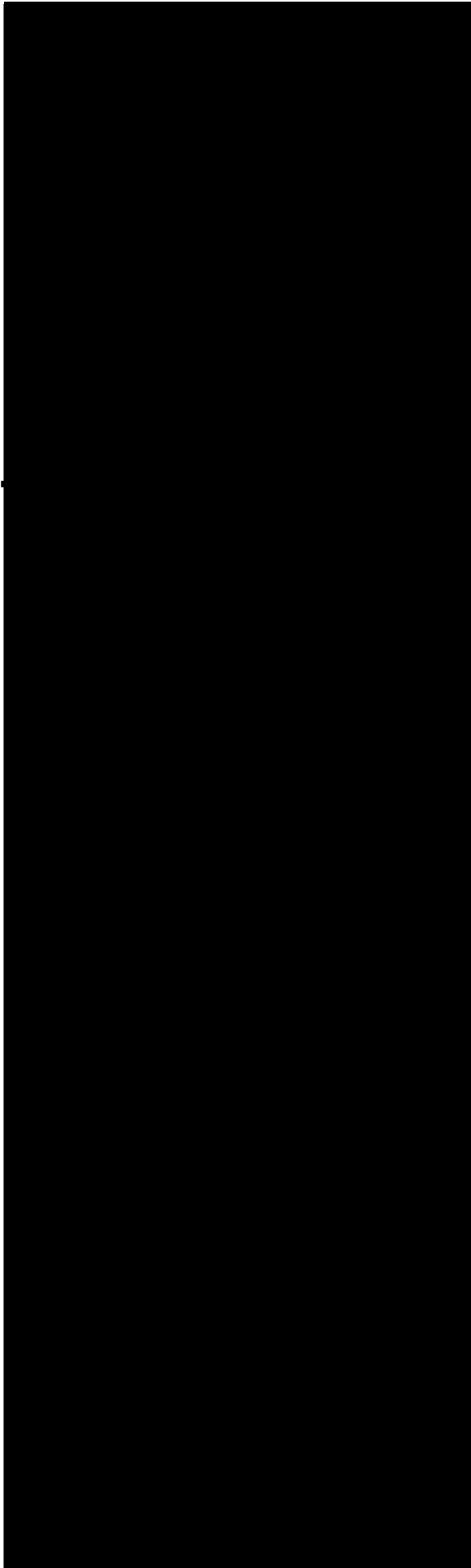
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



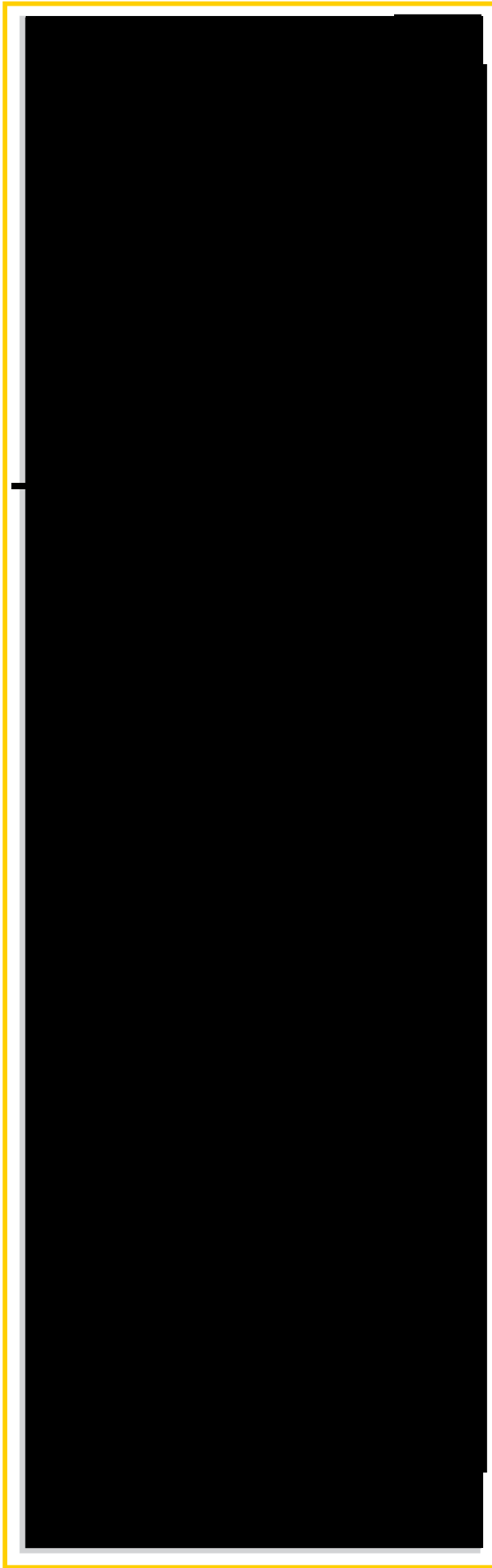
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



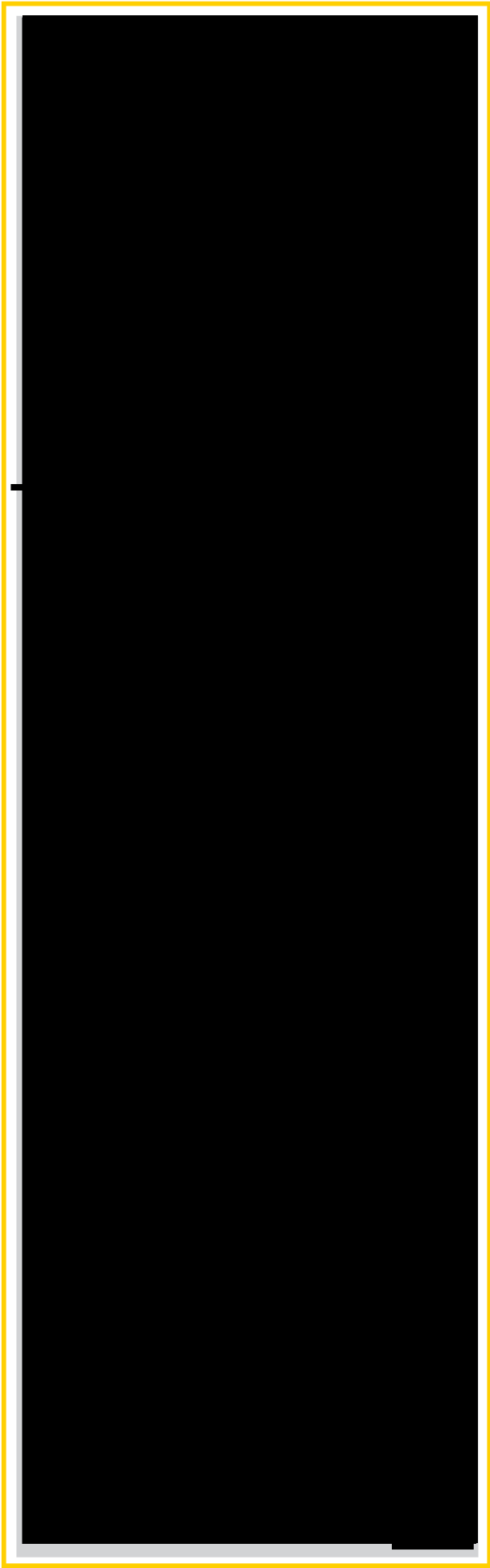
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



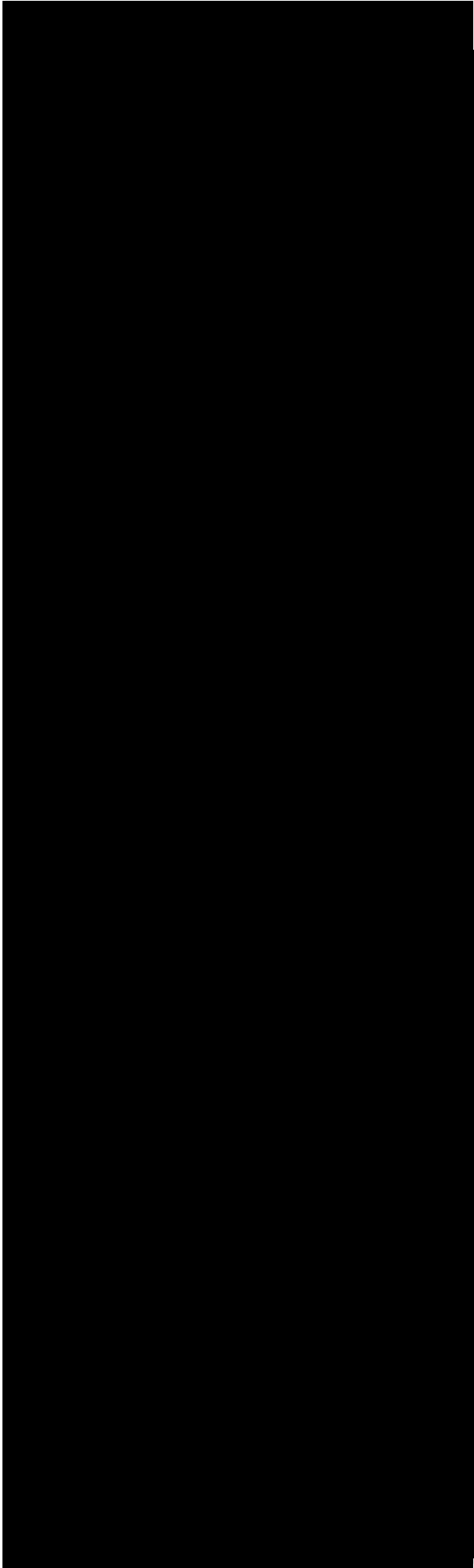
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



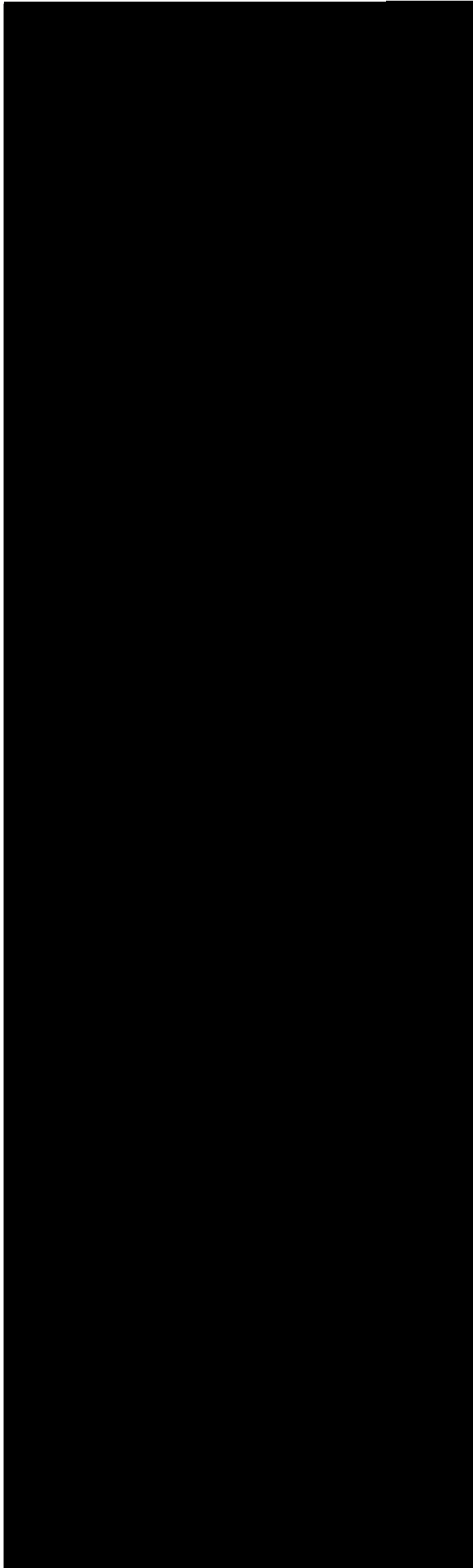
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

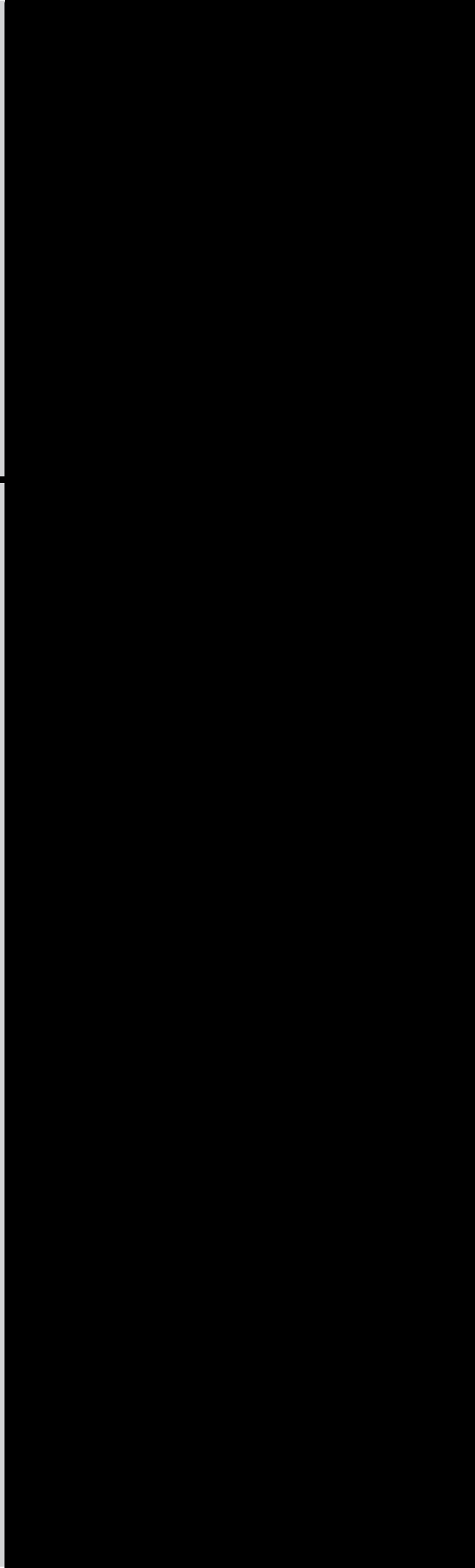
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

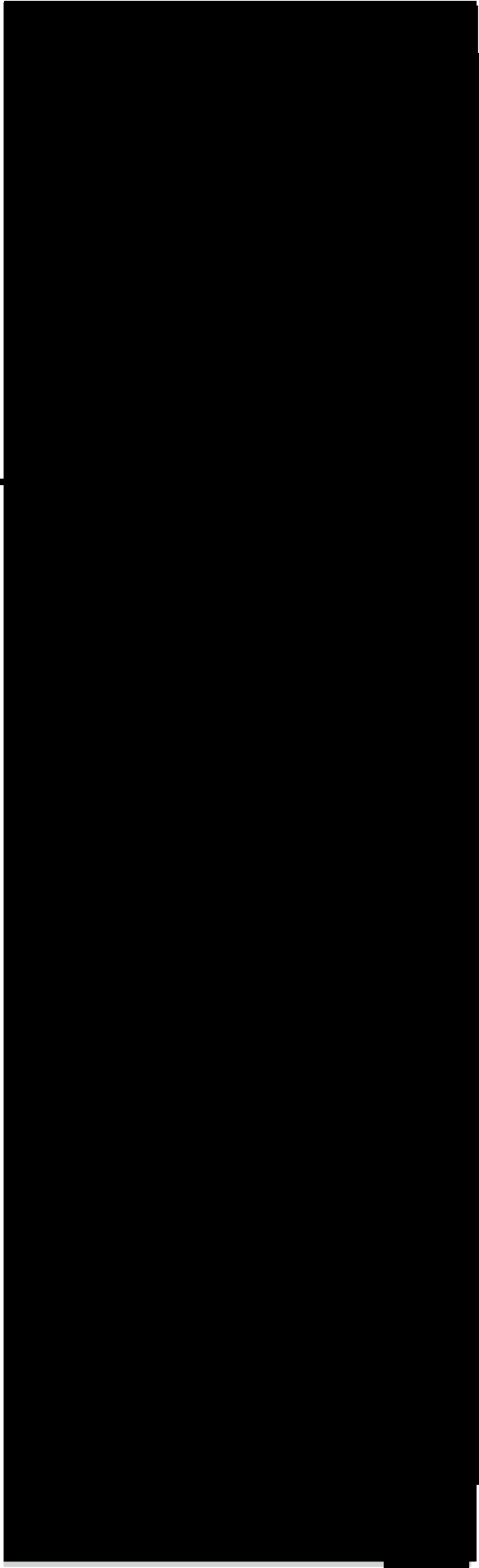


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

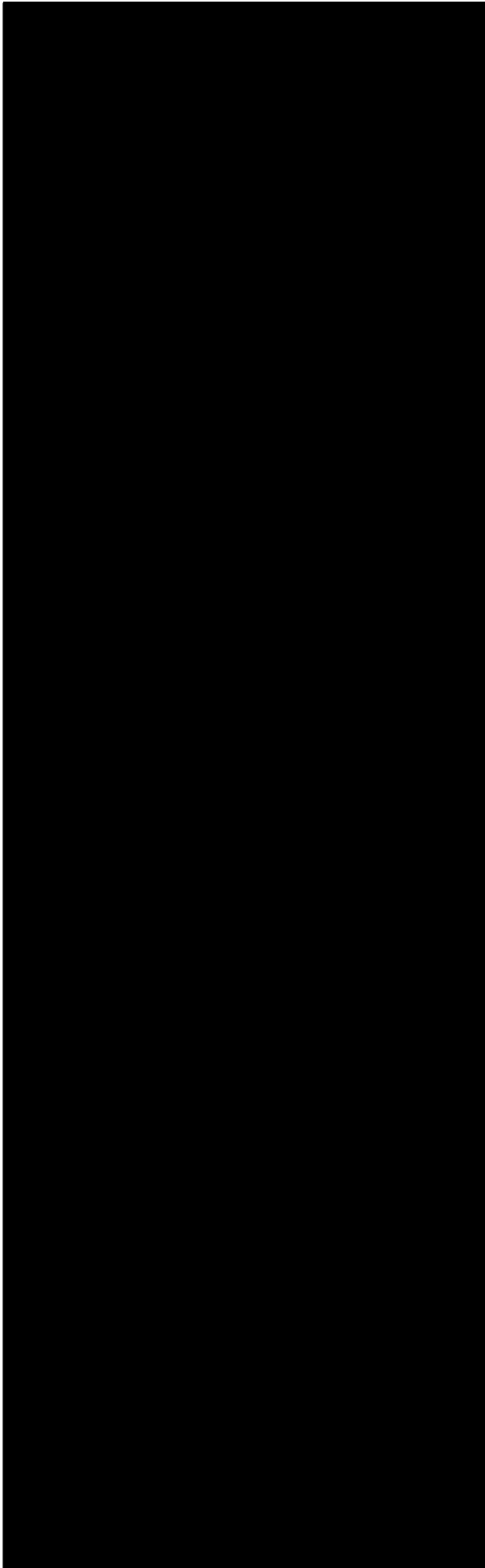


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

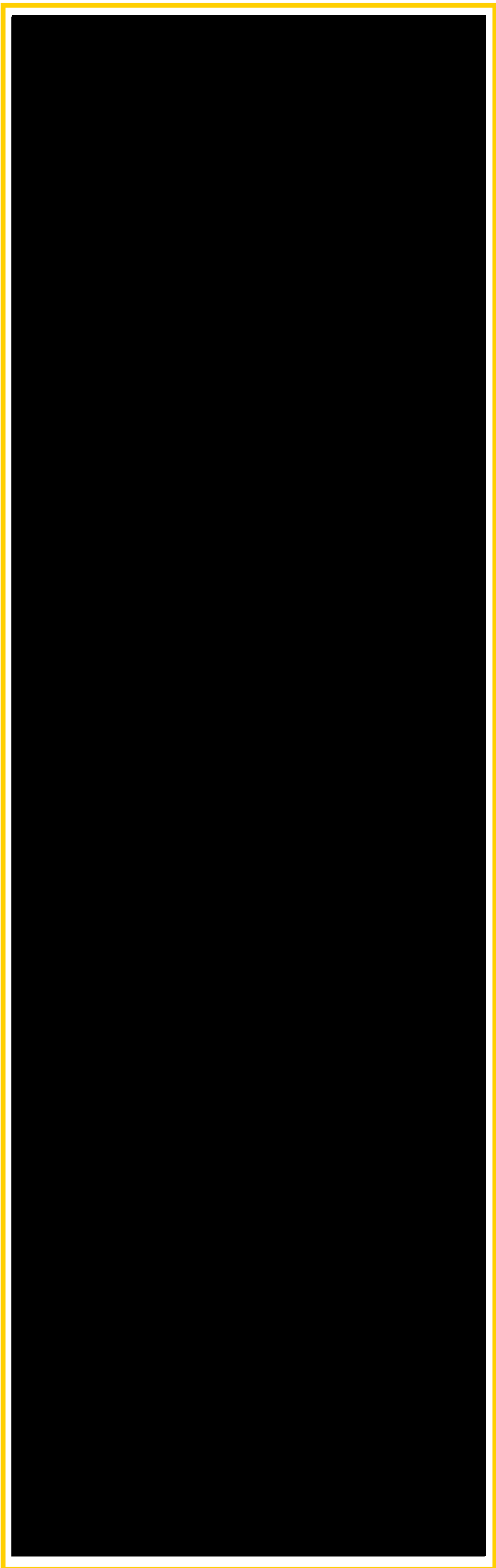


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



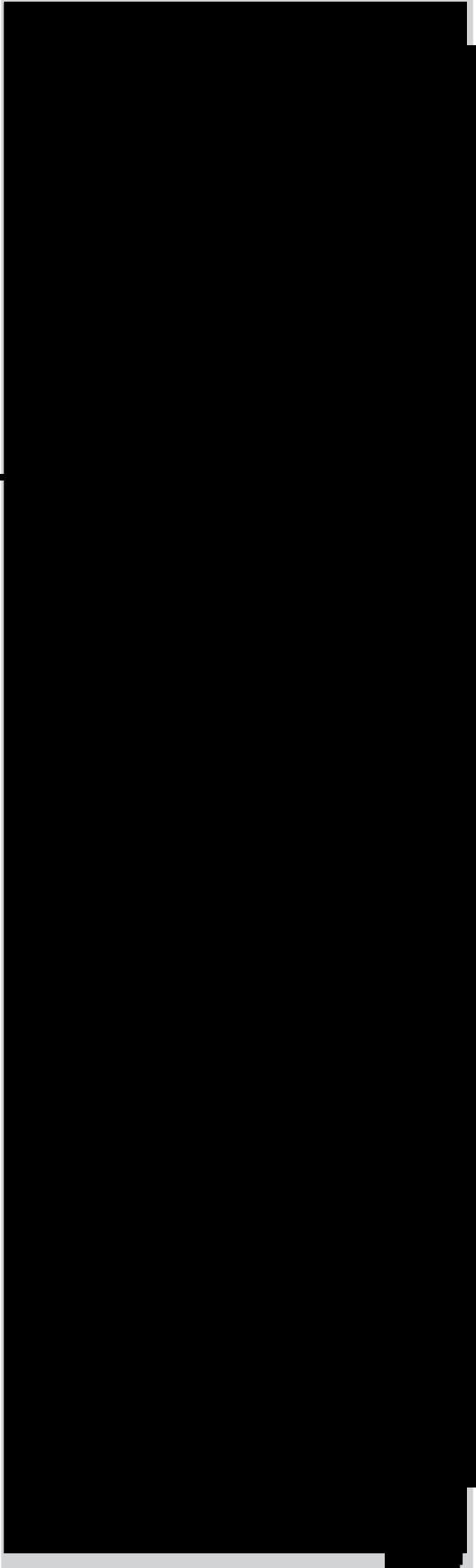
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



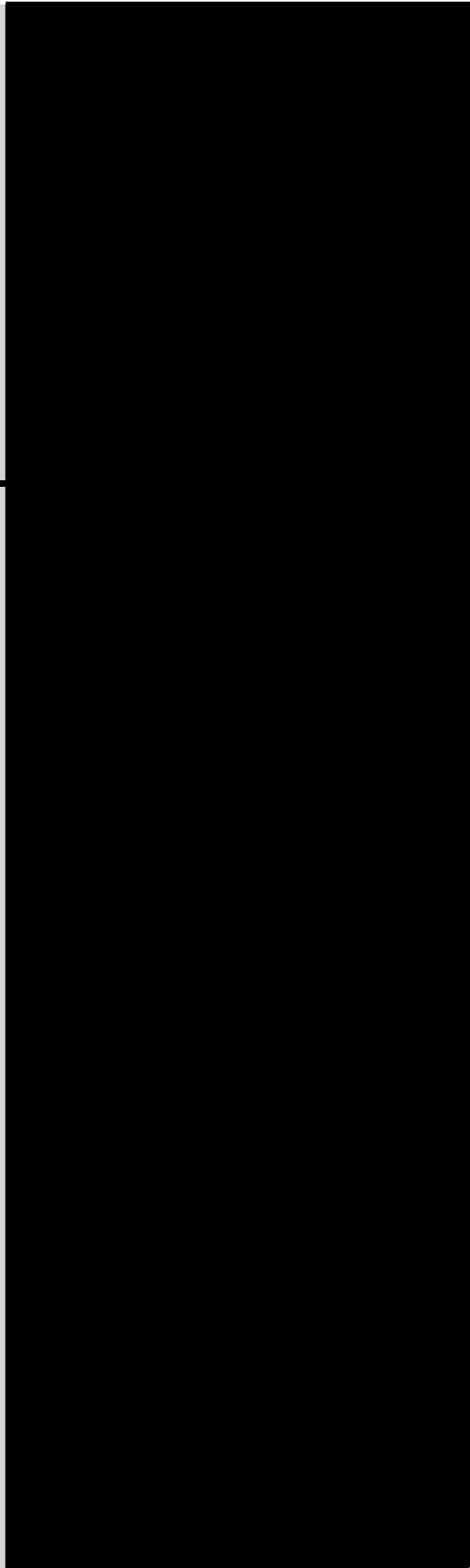
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

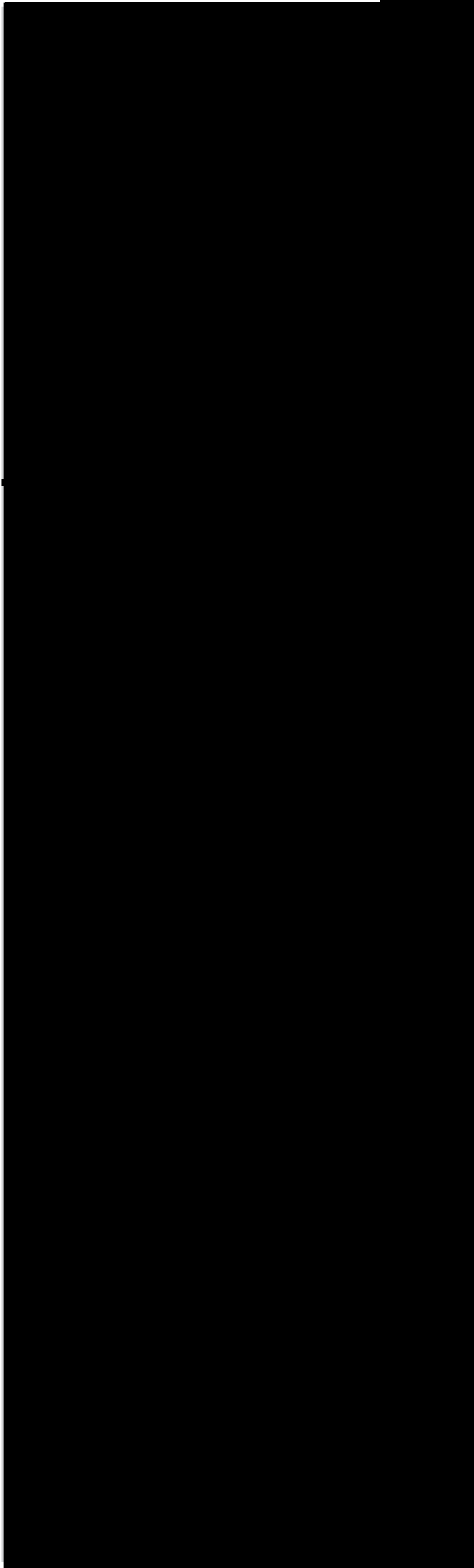


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



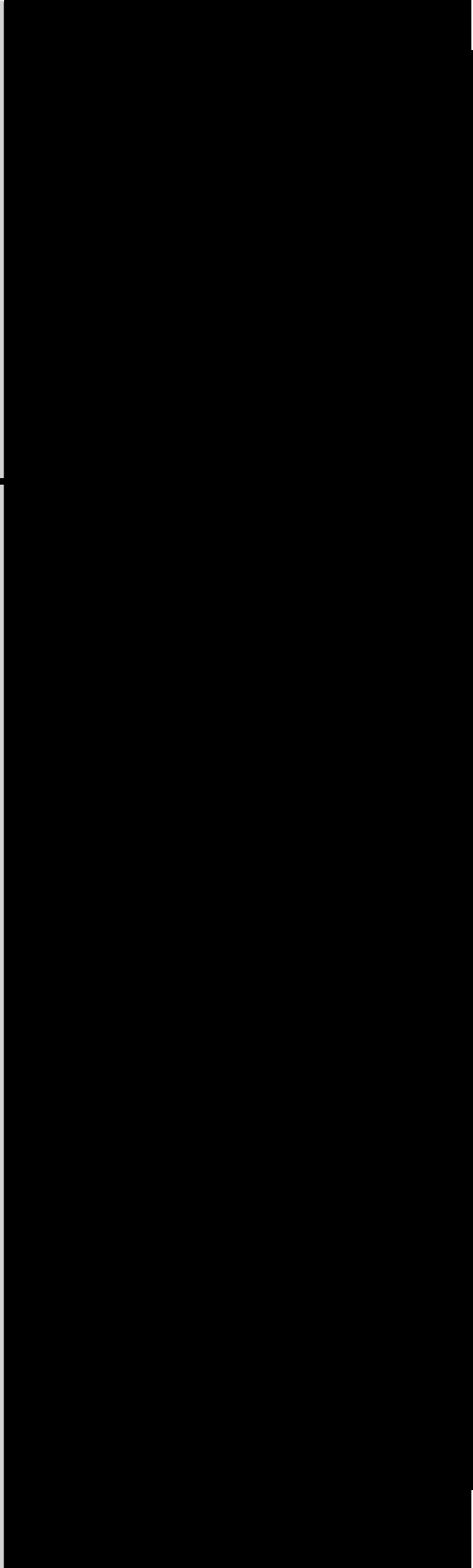
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



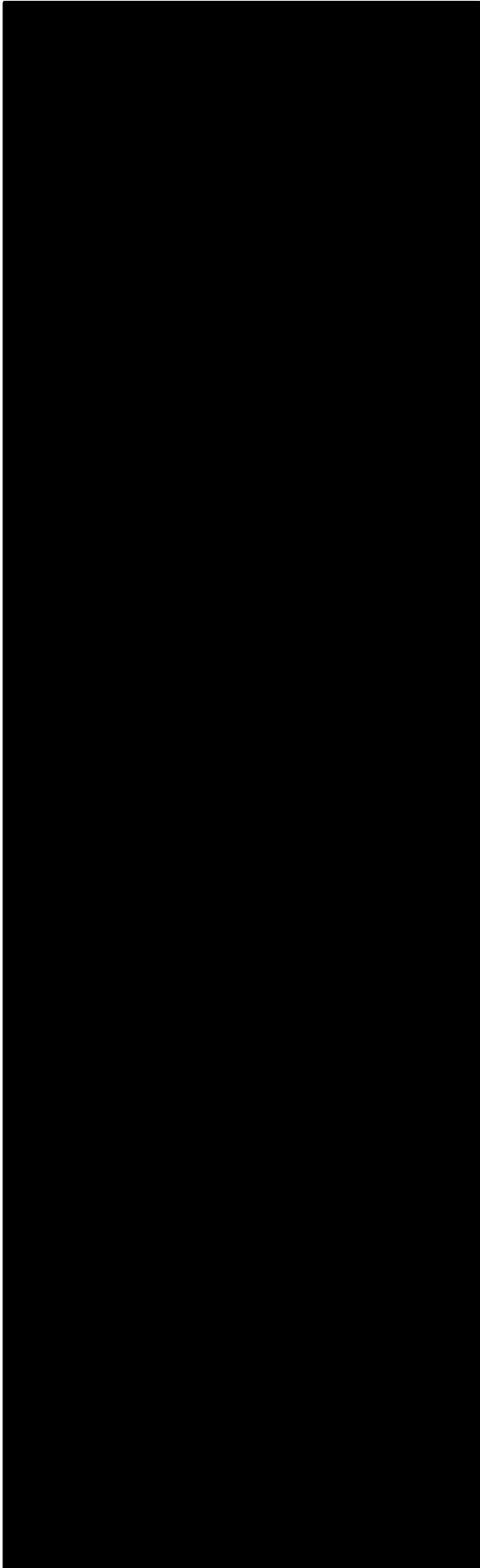
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



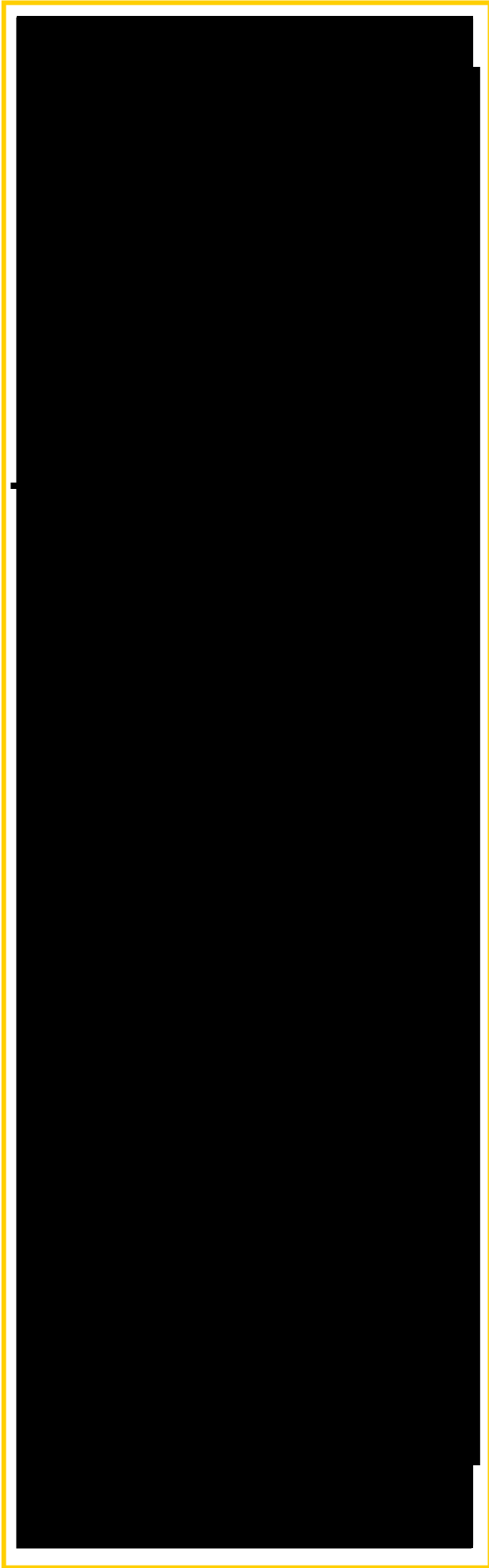
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



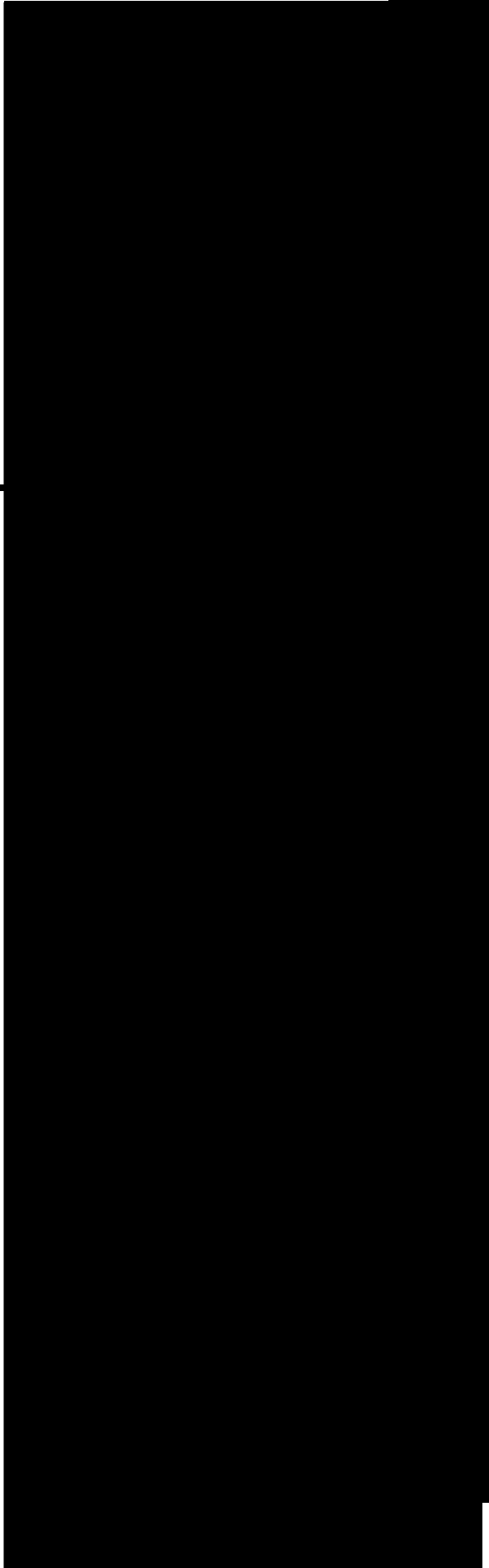
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



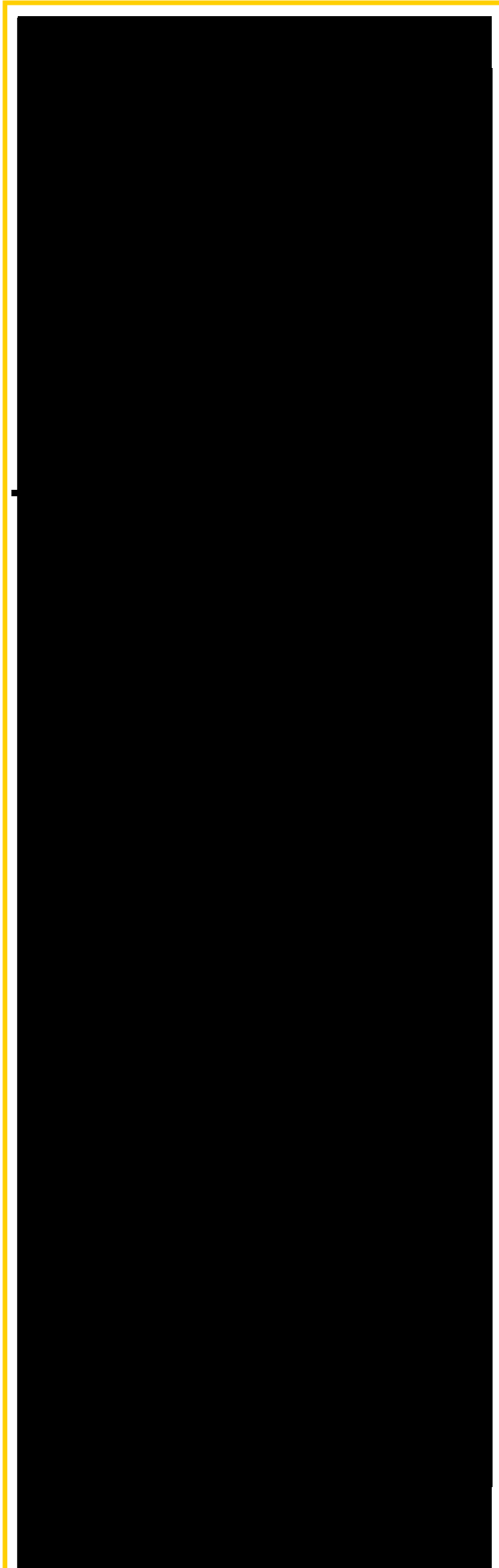
REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

12	2	18	2.7
12	2	19	0.6
12	2	20	0.2
12	2	21	5.4
12	2	22	6.9
12	2	23	7.2
12	3	0	9.7
12	3	1	17.6
12	3	2	19.0
12	3	3	16.6
12	3	4	26.7
12	3	5	29.6
12	3	6	37.2
12	3	7	46.3
12	3	8	60.6
12	3	9	78.9
12	3	10	84.3
12	3	11	77.5
12	3	12	74.3
12	3	13	64.1
12	3	14	46.6
12	3	15	36.5
12	3	16	44.0
12	3	17	70.1
12	3	18	102.9
12	3	19	103.9
12	3	20	122.1
12	3	21	132.3
12	3	22	149.1
12	3	23	160.9
12	4	0	170.1
12	4	1	191.1
12	4	2	177.0
12	4	3	172.2
12	4	4	58.2
12	4	5	63.5
12	4	6	72.7
12	4	7	213.4
12	4	8	211.9
12	4	9	222.9
12	4	10	211.9
12	4	11	214.6
12	4	12	211.9
12	4	13	214.6
12	4	14	214.6
12	4	15	220.1
12	4	16	214.6
12	4	17	220.1
12	4	18	217.4
12	4	19	209.1
12	4	20	211.8
12	4	21	211.5
12	4	22	209.0
12	4	23	211.9
12	5	0	211.9
12	5	1	195.6
12	5	2	208.6
12	5	3	199.1
12	5	4	112.2
12	5	5	66.5
12	5	6	58.4
12	5	7	140.9
12	5	8	173.7
12	5	9	119.4
12	5	10	107.8
12	5	11	67.3
12	5	12	38.9
12	5	13	28.9
12	5	14	54.7
12	5	15	104.1
12	5	16	111.8
12	5	17	102.8
12	5	18	77.4
12	5	19	18.6
12	5	20	0.5
12	5	21	0.0
12	5	22	0.0
12	5	23	0.0
12	6	0	11.1
12	6	1	17.1
12	6	2	37.8
12	6	3	50.1
12	6	4	60.2
12	6	5	30.8
12	6	6	23.5
12	6	7	32.2
12	6	8	66.6
12	6	9	131.5
12	6	10	149.8
12	6	11	149.6
12	6	12	49.3
12	6	13	19.4
12	6	14	18.5
12	6	15	5.8

REDACTED VERSION

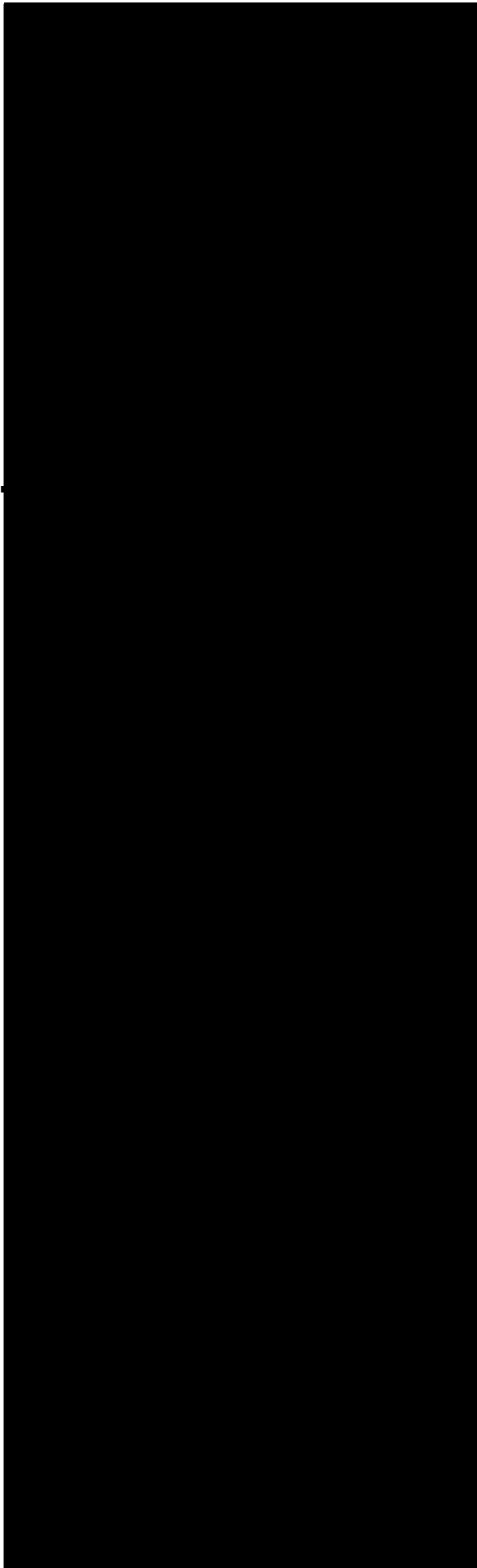
SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

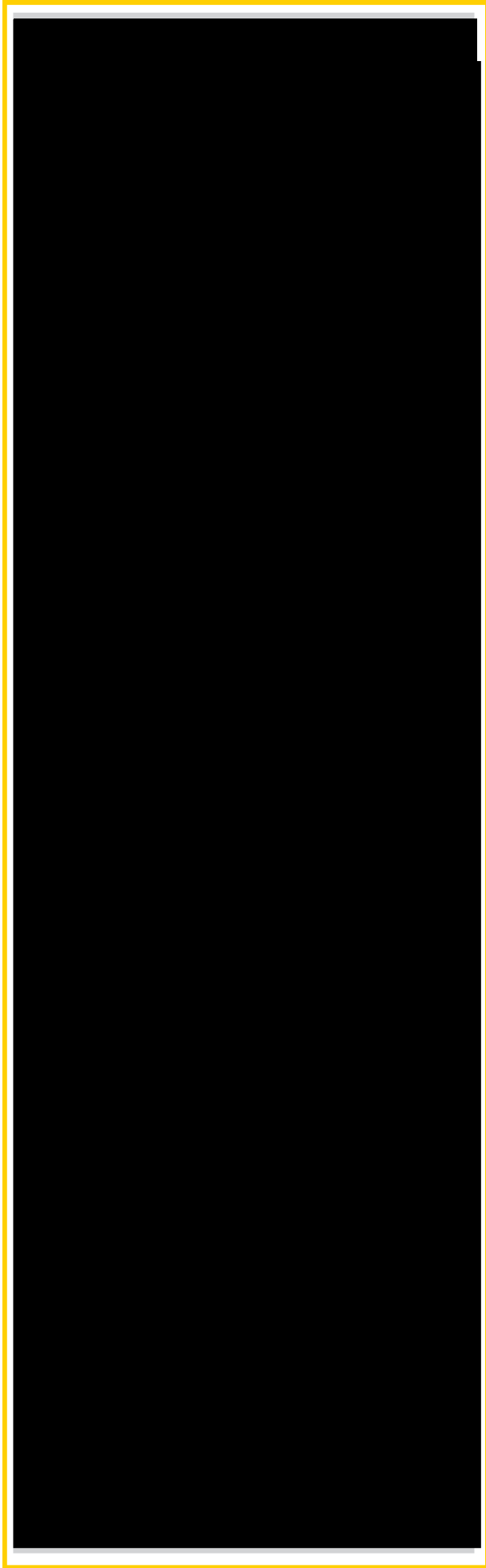


SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

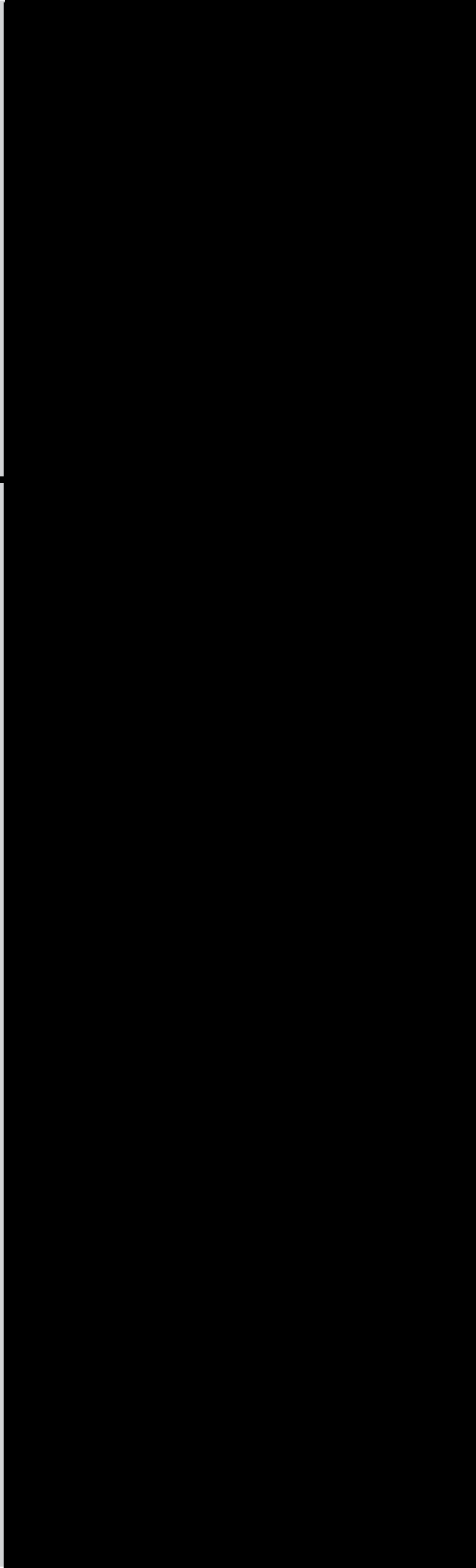


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

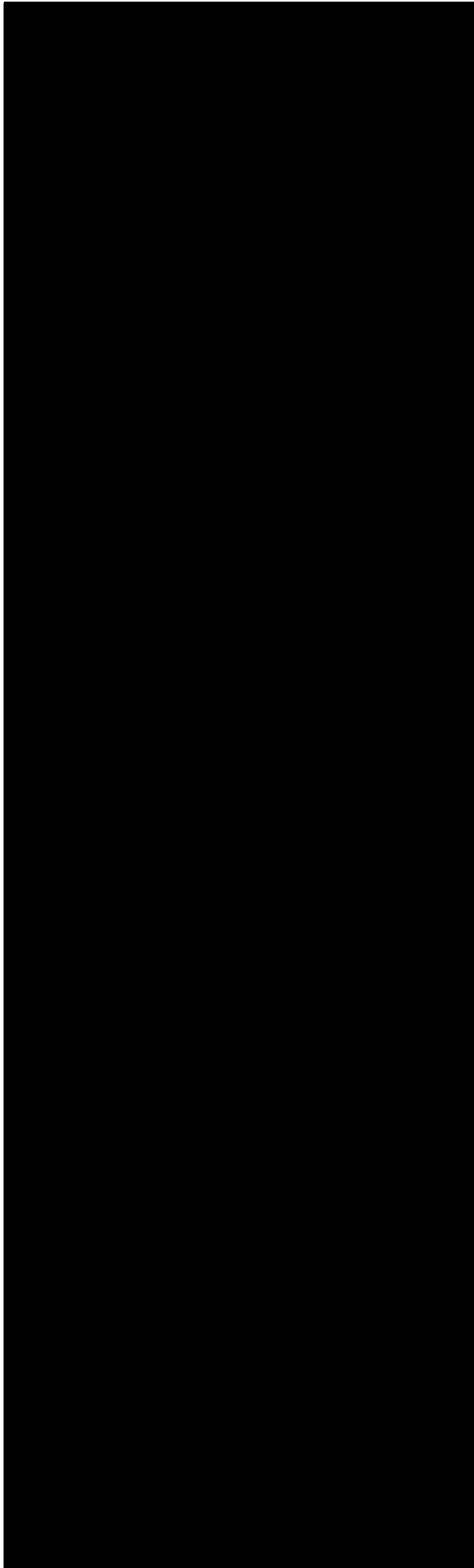


REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160



REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160





SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

# Beaver Creek Wind Project

## Decisional Recommendation to the Board

**Rob Roberts, VP Energy Supply**

**Colin Crowley, Director Energy Resource Development**

November 29, 2023



**PUGET  
SOUND  
ENERGY**

Highly Confidential



## Background

- On Aug. 3, 2023 the Board of Directors authorized PSE to execute the following contract:
  - Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (“Project Company”), which owns all the assets associated with the Beaver Creek wind project:
- PSE and Caithness executed the MIPA on September 14
- On Nov. 2, 2023 PSE presented to the Board of Directors certain key project updates:
  - Summary of project agreements: BOP, TSA and FSA
  - Update on permitting, transmission and interconnection matters
  - Progress report on conditions precedent
  - Updated project risk register
  - New wind resource assessment
  - Updated project financial analysis
  - Contribution to equity and customer benefits
- Conditions precedent to Closing have either been met or are on track to be met or mitigated for a MIPA closing on or before December 1.

2 |



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors to authorize PSE to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

3 |

<sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by up to 6 units provided Seller receives written notification from Buyer by January 10, 2024.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Balance of Plant Agreement

- PSE selected Wanzek (a Mas-Tec company) as the BOP contractor from a field of [REDACTED] RFP finalists
  - Wanzek has extensive experience building wind generation facilities [REDACTED] across the United States
- BOP is a [REDACTED] agreement between PSE and Wanzek with an indicative price [REDACTED] for the detailed engineering, procurement, and construction of all project BOP components including site civil work, wind turbine erection, O&M building, electrical collection system, plant substation, and generation interconnect transmission line
  - Supply of the wind turbines not included in BOP contractor scope of supply
  - Main transformer and certain substation equipment to be procured by PSE due to equipment lead times
  - All other plant components to be procured by Wanzek
  - Pricing will be finalized by year end after design is advanced and materials and equipment are sourced
- Includes liquidated damages (LDs) for milestone delays up to an Aggregate LD cap of [REDACTED] % of the contract price
- Includes customary termination rights subject to the termination payment<sup>1</sup>
  - Notably, PSE may terminate for failure to meet key milestones and if Wanzek's liability for [REDACTED]
- Includes standard EPC warranty for [REDACTED] years after substantial completion of project, including all equipment (other than wind turbine generators), and includes serial defect warranty for equipment [REDACTED]
- In October, EMC authorized PSE to proceed with engineering under limited notice to proceed until BOP is executed by the end of 2023

4 | <sup>1</sup>Termination Payment shall equal the sum of the following: (a) portion of the Contract Price for completed but unpaid work; (b) Wanzek's reasonable demobilization expenses plus [REDACTED] and (c) expenses reasonably incurred by Wanzek in terminating contracts with Subcontractors plus [REDACTED] of such expenses, except to the extent PSE has instructed Contractor not to terminate such contracts. Termination payment terms remain subject to negotiation.

<sup>2</sup>Includes [REDACTED] adjustments to increase size for O&M building, double handling turbines and yard, and foundation blasting.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

# Letter of Intent

- Letter of Intent executed between GE and PSE with limited notice to proceed on September 22, 2023 and amended on November 2, 2023
- TSA to be signed at Closing on or before December 4, 2023
  - Model: GE 2.8-127 (89 meter hub height)
  - Total price [REDACTED]
  - Turbine deliveries scheduled to begin May 2024
  - GE milestone payment schedule:

Milestone	Est. date	%	Cumulative (\$/%)
Down Payment on signing of LOI	Sep. 22, 2023	[REDACTED]	[REDACTED]
Calendar Payment due	Dec. 4, 2023		
Calendar payment due	Dec. 15, 2023		
Delivery to Carrier	Est Q2 2024		
Turbine Completion	Est Q1 2025		
Final Project Completion	Est Q1 2025		



<sup>1</sup>All pricing is predicated on receipt of payment in accordance with the payment schedule above and TSA execution with full NTP by Dec 4, 2023

# Turbine Supply Agreement

- Turbine supply will consist of 88 newly manufactured GE 2.82 MW-127M turbines
- Pricing for new machines is [REDACTED] compared with [REDACTED] forecast in August for combination of new and previously titled turbines
- PSE technical team is finalizing turbine option selections (examples of selected options include [REDACTED])
- Accounting for turbine options and spare parts at [REDACTED] results in an expected total turbine cost of [REDACTED]
- PSE can terminate the TSA in whole or as to any Unit(s) for convenience prior to the delivery of such Unit subject to a Termination Amount

## Termination Schedule

- In the event PSE terminates the TSA with respect to any Unit(s) and the FSA has been executed, the FSA would automatically terminate with respect to such Unit(s) and a termination charge would also apply under the FSA (see slide 7 for FSA termination amount)

<sup>1</sup>The purchase price shown [REDACTED] is for a base model without available options.

6 | <sup>2</sup>The LOI allows PSE to purchase 88 turbines with the flexibility to reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Full-Service Agreement

- PSE is considering the five-year GE Full Service Agreement (FSA) option (vs 10-year option) to provide optimum economic, performance, and equipment risk protection for Beaver Creek Operations pending final analysis.
- Full Service Agreement (FSA) with GE for service, maintenance and monitoring of the wind turbines acquired under the TSA including all labor, parts and components, materials, consumable items, tools, equipment and field, fleet and performance engineering resources
  - Additional coverage for specific balance of plant (BOP) scope of work is offered and being evaluated
  - GE will utilize internal management and specialized technicians, and third-party independent service contractors to perform planned and unplanned maintenance
  - Remote 24/7 performance and reliability monitoring is included
- Cost Options: [REDACTED] and [REDACTED]
- Liquidated damages are due to PSE if turbine availability is less than [REDACTED] and [REDACTED] of the FSA
- Either Party may terminate the FSA for the other Party's material breach where (i) such breach cannot be cured; (ii) the defaulting party fails to cure such breach within [REDACTED] of notice of the breach; or (iii) if a reasonable cure plan is in place, within [REDACTED] of notice of the breach. This would include PSE's failure to make the Facility available to GE to perform its obligations.
  - Termination Amount: [REDACTED] of the total expected price to be paid between the termination date and the end of the agreed contract term
- PSE does not have an express right to terminate the FSA for convenience, but it does have a right to terminate the TSA for convenience and upon such termination, the FSA would also terminate with respect to the terminated Units



## Construction budget estimate for 248MWac

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable			
<b>TOTAL DEVELOPMENT BUDGET</b>			
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement			
GE Contract Option & Spare Parts			
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price			
Step-up Transformer			
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>			
<b>Contingency</b>			
<b>TOTAL CONSTRUCTION BUDGET</b>			
<b>AFUDC</b>			
<b>TOTAL ALL-IN CAPITAL COSTS</b>	535,914	2,160	100.0%

### Key budget updates since Aug BOD

Increase in project size decreases forecast per unit cost by [REDACTED] and increases overall project costs by [REDACTED]

- Development budget reflects reimbursables to Caithness [REDACTED]
- GE contract reflects the higher nameplate, updated pricing and contract options [REDACTED]
- BOP contract reflects selected EPC and transformer pricing [REDACTED]
- PSE project management plus contingency reflects updated forecast and inclusion of remaining interconnection upgrade [REDACTED]
- AFUDC reflects decreases due to earlier COD [REDACTED]



# Detailed cash out forecast and funding commitment



9 | At the end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to TSA commitment



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION



## Recommendation

Based on due diligence performed to date, Resource Acquisition recommends the Board of Directors authorize PSE to execute the following contracts:

- **Balance of Plant Agreement (“BOP”) with Wanzek** at an indicative price of [REDACTED] to erect turbines, design and build electrical collector system, design and build project gen-tie transmission line, design and build project substation, design and build turbine foundations, design and build project Operations and Maintenance building.
  - Request authorization to execute an immediate Limited Notice To Proceed with Wanzek.
  - BOP is in draft form - PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur before year end, after design is advanced and equipment and material is sourced and priced.
- **Turbine Supply Agreement (“TSA”) with GE** at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines and a total nameplate of 248.16 MW<sub>AC</sub><sup>1</sup>
  - TSA is in draft form - PSE is negotiating terms directly with GE and anticipates contract execution would occur shortly after closing.
- **Full Service Agreement (“FSA”) with GE** at either [REDACTED] or [REDACTED] [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

10 | <sup>1</sup> Under the LOI and the draft TSA, PSE may reduce the number of turbines by [REDACTED] provided Seller receives written notification from Buyer by January 10, 2024.



SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

# Appendices

- Project overview slide
- Project schedule
- Permitting update
- Interconnection and transmission update
- Detailed cash out forecast and funding commitment
- Mark-to-market analysis

## Project overview / Commercial terms

### PROJECT PROFILE

**Resource Type:** Wind (w/battery option)  
**Developer/Seller:** Caithness Energy LLC  
**Location:** Stillwater County, MT  
**Nameplate Capacity:** 248 MW<sup>1</sup>  
+ optional BESS  
**COD:** March 31, 2025

### PRICE AND PRODUCT

**Product:** Purchase of construction NTP-ready development rights

**Price:** [REDACTED] (50% at closing, 50% at substantial completion)<sup>2</sup>

**NCF:** [REDACTED]

**Expected Output:** 829,905 MWh/yr

**Transaction Type:** Membership Interest Purchase Agreement

### DEVELOPMENT STATUS

- Site control secured
- Conditional Use Permit approved by County Board of Commissioners on October 10, 2023 became non-appealable on November 9



### ENERGY DELIVERY

**POI:** New substation on NorthWestern

**Transmission Plan:** NWMT wheel to Colstrip or Garrison, then share PSE's 713 MW CTS and BPA transmission rights to PSE's system. Assumption of 100 MW TSR queue position from Garrison to PGE provides incremental transmission that can be re-directed to MIDC.

12 |

<sup>1</sup>PSE may elect to reduce the number of turbines by [REDACTED] provided GE receives written notification from PSE by January 10, 2024

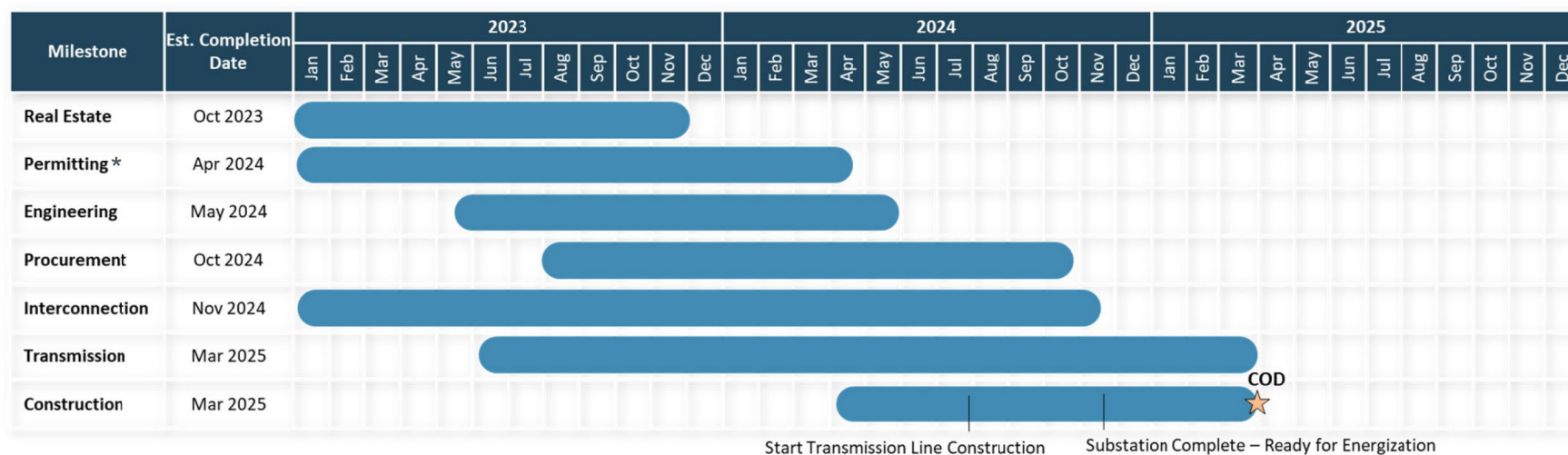
<sup>2</sup>Final purchase price will be adjusted up or down at substantial completion by [REDACTED] per MW to reflect final nameplate capacity [REDACTED]



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Estimated project schedule appears to be reasonable to meet a March 31, 2025 COD



\*Eagle Incidental Take Permitting (EITP) is not included in the permitting timeline and would be expected to issue after the facility becomes operational.

## Closing permitting is on track for completion

---

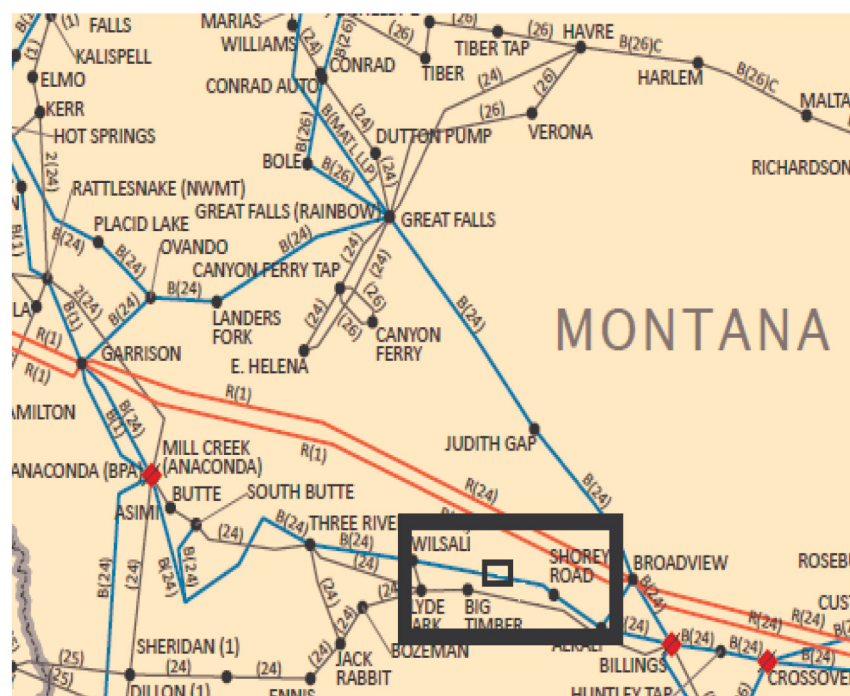
- Conditional Use Permit (CUP) from Stillwater County for the full 248 MW project with 100 MW battery energy storage system (BESS) was approved on October 10, 2023 and the appeal window ended November 9, 2023. No appeals were filed.
- National Telecommunications and Information Administration (NTIA) review for federal microwave beam pathway interference is anticipated by December 15, 2023.
- All FAA Determinations of No Hazard are complete and have been received for 81 turbines.
- PSE consultants reviewed a refined BOP contractor layout (including turbines, underground connectors, access roads, crane paths, etc.) and are engaging on additional conversations to ensure total avoidance of impacts to waters of the U.S./Clean Water Act Section 404 permit.
- Additional avian surveys were completed and PSE is working on an Eagle Incidental Take Permit strategy, including the use of Identiflight to avoid potential take.
- Caithness has delivered a Phase 1 Environmental Site Assessment.



## Interconnection: On track to meet March 2025 COD

**Point of Interconnection (POI):** New 230kV substation on NorthWestern between Wilsall and Columbus Rapelje Substation

- Executed (LGIA) for 315 MW of network resource interconnection service (NRIS).
- Total upgrade cost (for transmission provider interconnection facility plus identified network upgrade) identified as part of system impact and facility study approximately [REDACTED]
- Transmission Provider's Network Upgrades In-Service: November 15, 2024
- Interconnection Facilities In-Service: November 15, 2024
- Initial Synchronization Date: March 15, 2025
- COD (in LGIA): August 2025<sup>1</sup>



### Key milestones

- ✓ Feasibility Study – completed 9/23/16
- ✓ Revised Feasibility Study – completed 9/29/16
- ✓ System Impact Study – completed 4/13/17
- ✓ Revised System Impact Study – completed 5/9/2017
- ✓ Facility Study – completed 11/17/17
- ✓ Optional Load Study – completed 5/12/21
- ✓ Optional Interconnection Study – completed 4/21/22
- ✓ LGIA Executed

15 | <sup>1</sup>The expected project COD in the current Beaver Creek schedule is March 31, 2025.



SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

## Transmission: Leveraging PSE's existing 713 MW of capacity from Montana to PSE's system

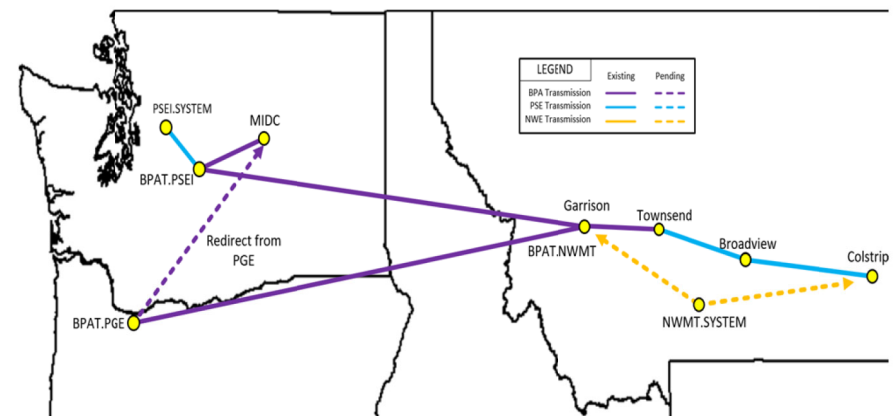
**PSE will leverage its existing 713 MW of transmission rights on the Colstrip Transmission System (CTS), BPA Eastern Intertie, and BPA Main Grid to deliver project output to PSE's load.**

- PSE has requested 220 MW of new NWMT transmission service from the POI to the Colstrip 500 kV substation
- PSE has also requested 220 MW of NWMT transmission service from the POI to Garrison (BPAT.NWMT) as alternative path, avoiding the CTS and Eastern Intertie.
- Preliminary feedback from NorthWestern Energy indicates upgrades are likely on the path from Beaver Creek to Garrison. Therefore avoiding the CTS is unlikely.
- NorthWestern has agreed to study PSE's transmission requests with other higher queued requests. Expecting results by mid-December.
- PSE engaged Power Engineers to run independent (limited scope) study. The study did not indicate any violations for a single outage condition.

**Assumption of Caithness's 100 MW transmission service request (TSR) position in the BPA queue from Garrison to PGE provides potential incremental transmission capacity to deliver Project output to MID-C**

- The 100 MW TSR is third in BPA's Montana transmission queue and within ~500 MW of incremental transmission from Montana to the PNW under the scope of BPA's M2W project, with a projected in-service date of 2028-29.
- PSE has assessed redirecting this 100 MW transmission to MID-C to connect with PSE's existing ~1500 MW transmission rights to PSE's system as a viable option

**Transmission path options to deliver Beaver Creek from Colstrip or Garrison to PSE's system and MID-C**



## Detailed cash out forecast and funding commitment

	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Q1-24	Q2-24	Q3-24	Q4-24	Q1-25	Q2-25	Q3-25	Q4-25	Total
<b>Cash Out Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Quarterly Cash Total														
Cumulative Cash														
<b>Commitment Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Commitment Total														

- At the end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to TSA commitment.
- Cash out and funding commitment for BOP and PM, IT, Ops, Equip, Contingency and other is assumed to occur at the same time.



## Mark-to-market analysis

Energy Only MTM NPV (2025 \$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Cost (Bus Bar + Trans.)		
Net Value		
Energy, Capacity, Environmental Attribute NPV (2025 \$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Forward Energy		
Value of Capacity/RA		
Value of CETA/REC		
Cost (Bus Bar + Trans.)		
Net Value		
Social Cost of Carbon Attribute NPV (2025 \$M)		
	Five-Year (2025-2029)	Ten-Year (2025-2034)
Value of Social Cost of Carbon		
<b>Assumptions</b>		
1. REC price: [REDACTED] in 2023, escalated at 2.5%/Year thereafter		
2. RA capacity price: [REDACTED] Month		
3. QCC: 65.34 MW (Winter), [REDACTED] (Summer)		
4. MidC forward curve from Platts as of 10/2023		
5. Discount rate: 6.62%		
6. Generator nameplate: 248.16 MW. 2.5% losses are assumed for this analysis.		



---

**Memorandum**  
**HIGHLY CONFIDENTIAL**

---

November 29, 2023

**To:** PSE Board of Directors

**cc:**

**From:** Colin Crowley, Director Energy Resource Development  
Ron Roberts, VP Energy Supply

**Subject:** Beaver Creek Wind Project – Recommendation to Authorize Execution of the BOP, TSA and FSA

---

The purpose of this Report to the Board of Directors (Report) on the Beaver Creek Wind Project (Beaver Creek or Project) is to provide an informational update and to recommend that the Board authorize PSE to execute the following agreements, consistent with the resolutions in Attachment A herein:

- Balance of Plant Agreement with Wanzek at an indicative price of [REDACTED] to erect the turbines, design and build the electrical collector system, design and build the Project gen-tie transmission line, design and build a Project substation, design and build turbine foundations, and design and build the Project operations and maintenance (O&M) building. The BOP Agreement is in draft form. PSE is negotiating terms directly with Wanzek and anticipates contract execution would occur at or shortly after closing.
- Turbine Supply Agreement with General Electric (GE) at a total price of [REDACTED] to purchase 88 x 2.82 MW-127M turbines. PSE has the option to reduce the number of turbines by up to six units from 88 to 82 before January 10, 2024, which would reduce the total nameplate from 248.16 MW<sub>AC</sub> to 231.24 MW<sub>AC</sub> and reduce the cost by [REDACTED] per turbine. The TSA is anticipated to be in finalized form on or before December 1, 2023. PSE is negotiating terms directly with GE and anticipates contract execution to occur concurrently with MIPA Closing or shortly thereafter.

REDACTED VERSION

**November 29, 2023 Memo to the Board of Directors:**  
**Beaver Creek Wind Project**

**Re: Recommendation to Authorize Execution**  
**of the BOP, TSA and FSA**

- Full-Service Agreement with GE at either [REDACTED] or [REDACTED] for certain operation and maintenance services for the turbines supplied under the TSA.

PSE provided a summary of these agreements as Attachment B to the updated Report to the Board of Directors presented on November 2, 2023 (November 2 Board Update).

PSE estimates the cost to construct the facility with Allowance for Funds Used During Construction (AFUDC) to be approximately [REDACTED] including the [REDACTED] development fee (the [REDACTED] MIPA Purchase Price approved in August plus an additional [REDACTED] to Caithness), for a total cost of [REDACTED]

## Background

On August 3, 2023, the Board of Directors authorized PSE Management to execute a Membership Interest Purchase Agreement (MIPA) with Caithness Beaver Creek, LLC at a purchase price of approximately [REDACTED] for a 100% ownership interest in Caithness Montana Wind, LLC (Project Company). PSE and Caithness executed the MIPA on September 15, 2023.<sup>1</sup> Closing is expected to occur on or before December 1, 2023.

Beaver Creek is a utility-scale wind project located in Stillwater, Montana, with an expected nameplate capacity of 248 megawatts (MW). The proposed Project is in a near-construction-ready state and is expected to achieve a commercial operation date (COD) of March 31, 2025.

With a March 31, 2025 COD, the Project will be able to contribute approximately 27% of the forecast additional clean energy required to meet PSE's 63% CETA compliance target in 2025. When operational, the Project is expected to provide approximately 11% of PSE's forecast clean energy need for its 2030 80% CETA compliance target by generating approximately 830 gigawatt hours (GWh) of energy per year at a net capacity factor (NCF) of approximately [REDACTED]. The winter effective load carrying capability (ELCC) is [REDACTED] and the summer ELCC is [REDACTED].

## Closing and contract updates

**Conditions precedent.** The Closing of the Beaver Creek transaction under the MIPA is subject to certain conditions, as presented to the Board of Directors in the August 3, 2023 report and updated in Attachment C to the November 2 Board Update. All of the identified closing conditions have either been

<sup>1</sup> In addition to the original business case presented to the Board of Directors on August 3, 2023, PSE presented an informational update on November 2, 2023 to update the board on several key areas of the project, including: conditions precedent; permitting matters; project schedule and construction management, including the recommended BOP contractor; interconnection and transmission matters; equity and customer benefits of the project; project risk register; stand-alone financial pro forma; and wind resource assessment.

**November 29, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Recommendation to Authorize Execution  
of the BOP, TSA and FSA**

met or are on track to be met or mitigated by the MIPA closing anticipated on or before December 1, 2023.

**Full-Service Agreement (FSA) updates.** PSE is considering a 5-year GE FSA option (versus a 10-year option) to provide optimum economic, performance and equipment risk protection for Beaver Creek operations.

GE's core business is equipment manufacturing. [REDACTED]

[REDACTED] As the turbines age it will be more costly to obtain a new service and maintenance agreement with a service provider. PSE anticipates that sourcing a service provider will be more cost competitive at the fifth year of the turbine life cycle than it would be at the tenth year.

To finalize the decision, PSE and its legal counsel are performing the following due diligence:

- Detailed review of the latest GE Full Service Agreement (FSA)
- Confirmation of what is/is not covered in the FSA scope of work, including  
FSA Exhibit A - Unplanned maintenance caps including total and per event basis
- Negotiating to include best practices that are currently established within PSE's Siemens Gamesa and Vestas FSA contracts
- Finalize comparison between 5- and 10-year FSA durations

Prior to the FSA expiration date, PSE would evaluate other full-service agreement offerings from wind turbine contractors, such as: [REDACTED]

## Project updates

**Real estate.** As of the drafting of this memo, PSE's outside counsel, Baker Botts, is reviewing revised drafts of the Owner's Pro Forma Title Policy and survey. Baker Botts is scheduled to speak with the title company and surveyor today (November 27) to work through certain open issues in the pro forma and survey.

All but two of the leases are now complete. One of the lease amendments will be corrected (i.e., by replacing an exhibit) and one lease amendment abstract will be re-executed and re-recorded. The corrections are currently in process.

The estoppels have all been received and are sufficient to close on or before December 1, 2023.

SHADED INFORMATION IS DESIGNATED AS  
CONFIDENTIAL PER WAC 480-07-160

- 3 -

SHADED INFORMATION IS DESIGNATED AS  
HIGHLY CONFIDENTIAL PER WAC 480-07-160

REDACTED VERSION

**Permitting.** There are limited permitting updates since the November 2 Board Update. The appeal window for the Project's final Stillwater County Conditional Use Permit (CUP) has closed and no appeals were filed.

PSE's consultants completed a WOTUS delineation to identify any waters that, if disturbed during construction, would trigger a Clean Water Act Section 404 permit. PSE's consultants identified a number of WOTUS in the project area and analyzed these WOTUS against an updated site layout from Wanzek. During this review they identified certain site features that have potential nexuses with WOTUS. Discussions are underway on how to achieve total avoidance. We believe that it is more likely than not that PSE will be able to avoid all WOTUS. If total avoidance is not achieved, and due to recent changes in applicable regulations which have materially slowed U.S. Army Corps permitting in Montana, acquisition of a Section 404 permit could take 3 to 18 months. Again, we see this outcome as unlikely at this time.

Caithness's consultant, Capital Airspace Group, has performed a shift analysis to analyze alignment of turbine locations with previously issued Federal Aviation Administration (FAA) Determination of No Hazard (DNH) locations. The results indicate that 82 of the 88 turbine pads align with existing DNH locations, five will require a new filing, and one location will need to be refiled. In addition, there is one turbine that is too close to a county road, bringing the total locations planned for submittal to the FAA to seven. As of November 14, 2023 all FAA filings and the refileing have occurred. Under the terms of the TSA, PSE has until January 2024 to confirm with GE the exact number of turbines that it plans to procure.

Caithness provided a microwave study for FCC registered paths. The microwave study did not show any issues with the 88 turbine locations in Stillwater County. Non-FCC registered federal paths are covered through a voluntary filing to the National Telecommunications and Information Administration (NTIA). Upon PSE's request, Caithness filed with NTIA and a response is expected back from NTIA by December 15, 2023. Based on feedback from Capital Airspace Group, no issues are anticipated from NTIA results.

**Interconnection.** Caithness submitted a notice of technology change for the turbines to NorthWestern Energy to change the turbine type from 2.5 MW to 2.8 MW. The LGIA identifies a combination of 2.5 MW and 2.8 MW GE turbines as the technology type. NorthWestern Energy reviewed the request and determined that the change does not affect the cost or timing of another junior queued project and is therefore not a material modification.

**Transmission service and Integration.** PSE engaged Power Engineers to run an independent study to assess any network upgrade risks that might impact PSE's ability to secure transmission in a timely manner. While the Power Engineers study could not fully model anticipated NorthWestern study results, it did provide some helpful study results showing that no thermal or voltage violations for single contingency (outage) conditions would occur as a result of the new transmission service. Power Engineers completed their study and provided a final report to PSE on November 21, 2023. Subsequently, NorthWestern Energy advised PSE that PSE's transmission service requests would be studied with other higher queued requests. PSE is expecting initial feedback from NorthWestern prior to Closing the Beaver Creek transaction under the MIPA and study results by mid-December.



**November 29, 2023 Memo to the Board of Directors:  
Beaver Creek Wind Project**

**Re: Recommendation to Authorize Execution  
of the BOP, TSA and FSA**

Additionally, PSE met with BPA on November 6, 2023 to go over PSE's request for Dynamic Transfer Capability (DTC) on the Eastern Intertie. BPA informed PSE that they are no longer limiting DTC on the Eastern Intertie and PSE will receive the DTC once they have completed the DTC study.

**Updated project budget and financial projections.** PSE has updated its estimated project budget since receiving approval from the board of directors to execute the Beaver Creek Wind Project MIPA on August 3, 2023. The updated budget reflects a [REDACTED] decrease and an overall total [REDACTED] increase compared to the preliminary estimate shown in August based on changes in cost and project size. The updated budget incorporates the following changes:

- Development budget reflects reimbursables to Caithness [REDACTED]
- GE contracts reflect the bigger nameplate, updated pricing and contract options [REDACTED]
- BOP contract reflects selected EPC and transformer pricing [REDACTED]
- PSE project management plus contingency reflects updated forecast and inclusion of remaining interconnection upgrade [REDACTED]
- AFUDC decreases due to earlier COD [REDACTED]
- The budget has increased by [REDACTED] since November 2 to reflect the cost of a Title Policy to cover the as-completed project value and fine tuning of AFUDC to reflect timing of December payments at the beginning of the month.

Table 1 presents the updated estimated budget for the Beaver Creek Wind Project.

**Table 1. Estimated budget for the Beaver Creek Wind Project**

	\$000's	\$/kW	% of Total
<b>DEVELOPMENT BUDGET</b>			
Dev Right & Reimbursable	[REDACTED]	[REDACTED]	[REDACTED]
<b>TOTAL DEVELOPMENT BUDGET</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>CONSTRUCTION BUDGET</b>			
<b>Wind Turbines</b>			
GE Turbine Supply Agreement	[REDACTED]	[REDACTED]	[REDACTED]
GE Contract Option & Spare Parts	[REDACTED]	[REDACTED]	[REDACTED]
<b>Balance Of Plant</b>			
Wanzek EPC Contract Price	[REDACTED]	[REDACTED]	[REDACTED]
Step-up Transformer	[REDACTED]	[REDACTED]	[REDACTED]
<b>PSE Project Management, IT, Remaining NWTn Upgrade, PSE Ops &amp; Equipment, County Impact Fee and other</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>Contingency</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>TOTAL CONSTRUCTION BUDGET</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>AFUDC</b>	[REDACTED]	[REDACTED]	[REDACTED]
<b>TOTAL ALL-IN CAPITAL COSTS</b>	535,914	2,160	100.0%

**November 29, 2023 Memo to the Board of Directors:**  
**Beaver Creek Wind Project**

**Re: Recommendation to Authorize Execution**  
**of the BOP, TSA and FSA**

Table 2 presents a detailed cash out and funding commitment projection based on a COD of March 31, 2025 and the updated budget presented as Table 1. In November 2023 and end of Q1 2024, PSE's funding commitment outpaces cash out primarily due to the TSA commitment. PSE's contract with Mitsubishi Electric to purchase the transformer includes a cancellation schedule that allows for partial refunds of payments made prior to the end 2023.

**Table 2. Detailed cash out and funding commitment**

(\$ in millions)	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Q1-24	Q2-24	Q3-24	Q4-24	Q1-25	Q2-25	Q3-25	Q4-25	Total
<b>Cash Out Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Quarterly Cash Total														
Cumulative Cash														
<b>Commitment Categories</b>														
Turbine supply														
BOP														
Step-up Transformer														
County Impact Fee														
Northwestern Upgrade														
Developer fees & Reimbursable														
PM, IT, Ops, Equip, Contingency and other														
Commitment Total														

## Recommendation

Subject to the satisfaction of closing conditions by Caithness; and based on the business case presented on August 3, updated on November 2 and further updated herein; PSE Management recommends that the Board of Directors authorize PSE to execute the Balance of Plant, Turbine Supply and Full-Service agreements as described in this report and in the attached Board Resolutions (Attachment A).

REDACTED VERSION

- 6 -

SHADED INFORMATION IS DESIGNATED AS  
 CONFIDENTIAL PER WAC 480-07-160



*PSE Memo to the Board of Directors:  
Beaver Creek Wind Project*

## Attachment A. Board Resolutions



## ATTACHMENT A. BOARD RESOLUTIONS

## Board Resolutions

### APPROVAL OF CONSTRUCTION OF BEAVER CREEK WIND PROJECT

After full discussion, on motion duly made and seconded, the following was unanimously approved:

**WHEREAS**, this Board of Directors (“Board”) of Puget Sound Energy, Inc. (the “Company”) has determined that it is in the best interests of the Company, its customers, shareholders and other stakeholders to add energy resources into the Company’s energy resource portfolio consistent with the Company’s least cost planning and analysis and Clean Energy Transformation Act (“CETA”) compliance efforts;

**WHEREAS**, the Company’s review and analysis of a potential self-developed generation project has determined it to be a least cost and CETA-compliant resource for additional energy resource generation;

**WHEREAS**, the Board previously approved the execution of and the Company’s management has executed a Membership Interest Purchase Agreement (“MIPA”) with Caithness Beaver Creek, LLC, a Delaware limited liability company;

**WHEREAS**, the facility to be developed and constructed consists of up to 248 MW wind powered electric generation facility to be situated in Stillwater County, Montana and comprising up to 88 2.82 MW wind turbine generators (each, a “WTG”) and associated electrical collection systems and other interconnection facilities (collectively, the “Beaver Creek Wind Project”);

**WHEREAS**, the Company’s management has negotiated with GE Renewables North America, LLC (“GE”), the WTG supplier, the terms and conditions of the purchase of the WTGs and the ongoing operation and maintenance of the wind farm, and has negotiated with Wanzek Construction, Inc. (“Wanzek”) the terms and conditions of the construction of the wind farm facility, pursuant to the MIPA and the principal definitive transaction documents (together, the “Principal Transaction Documents”) as described below:

1. PSE will contract with GE for the purchase of up to 88 WTGs (with an option to reduce the order by up to 6 WTGs by January 10, 2024), and for the delivery, erection, testing and commissioning of the WTGs pursuant to a Contract for the Sale of Power Generation Equipment and Related Services (the “TSA”). A letter of intent has been executed with GE on September 22, 2023 and a deposit of approximately [REDACTED] has been paid to GE. The full contract price under the TSA for 88 WTGs is approximately [REDACTED] payable by PSE pursuant to a payment schedule tied to the manufacturing, shipment, erection, commissioning and final completion of the Beaver Creek Wind Project.
2. Once the WTGs are placed into service, GE will provide an availability guaranty and a five or ten-year mechanical warranty pursuant to the TSA and will provide five or ten years of maintenance, operation, spare parts and service of the WTGs under a separate Full Service Agreement (“FSA”) between PSE and GE.

## ATTACHMENT A. BOARD RESOLUTIONS

3. PSE will contract with Wanzek to perform, or cause to be performed, all engineering, procurement and construction relating to the balance of plant for the Beaver Creek Wind Project pursuant to a Balance of Plant Agreement ("BOP Agreement"). PSE currently estimates that it will pay Wanzek approximately [REDACTED] for performing its scope of work (which will consist of certain of the civil and electrical engineering and construction of the Beaver Creek Wind Project such as the roads, WTG foundations, the electrical collection system, and the project's interconnection with substation transmission facilities), which amount will be payable by PSE as Wanzek reaches certain scheduled milestones on the construction schedule.

**WHEREAS**, the Principal Transaction Documents, the current development status and development plan of the Beaver Creek Wind Project, its anticipated budget and the primary risks relevant to its development, construction and operation are described more fully in a report provided to the Board in advance of this meeting and filed with the minutes (the "Beaver Creek Construction Proposal"); and

**WHEREAS**, the officers now seek Board approval of and authority to enter into the Principal Transaction Documents and all other contracts and actions necessary for the execution of the Principal Transaction Documents, and any such additional contracts and actions described in the Beaver Creek Construction Proposal relating to the development, construction and operation of the Beaver Creek Wind Project;

**IT IS, THEREFORE**

**RESOLVED**, that the Board, after full consideration and due deliberation, deems it advisable and in the best interests of the Company, its customers, shareholders and other stakeholders to approve the construction and operation of the Beaver Creek Wind Project pursuant to the Principal Transaction Documents, and any related agreements and other transactions described in the Beaver Creek Construction Proposal and in accordance with the budget and other materials set forth therein;

**RESOLVED**, that the Board hereby authorizes the Company's Chief Executive Officer, its Chief Financial Officer, its Chief Operating Officer, its General Counsel, its Vice President of Energy Supply, its Vice President, Business Development and Mergers & Acquisitions, its Corporate Secretary, and any such other officers they deem appropriate (the "Authorized Officers") to execute (i) the Principal Transaction Documents and all other agreements or contracts or actions necessary for the execution of the Principal Transaction Documents, including any further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers and (ii) all other agreements or actions described in the Beaver Creek Construction Proposal, which may also include any such further additions, amendments or changes to the terms thereof as are deemed necessary and appropriate by the Authorized Officers; and be it further

**RESOLVED**, that the Authorized Officers are further authorized to waive any conditions precedent to the closing of any of the Principal Transaction Documents in order to facilitate the closing of such agreement, provided that each of the Authorized Officers agree to such waiver and deem it to be in the best interest of the Company.

**GENERAL AUTHORITY**[REDACTED]  
REDACTED VERSION

**ATTACHMENT A. BOARD RESOLUTIONS**

**RESOLVED, FURTHER**, that any and all actions taken by the officers of the Company, or any of them, as deemed by such officers to be necessary or advisable to effectuate the transactions contemplated by the foregoing resolutions, including the filing of appropriate documentation with the Washington Utilities and Transportation Commission, whether prior to or subsequent to this action by this Board, are hereby authorized, approved and ratified, and the taking of any and all such actions and the performance of any and all such things in connection with the foregoing shall conclusively establish such officers' authority therefore from the Company and the approval and ratification thereof by this Board.