

Cascade Creek 0697-15-08 Well Site

Lighting Mitigation Plan

Rule 424. Lighting



Drilling activities at Laramie's Nichols 24-7 and completions activities at the Nichols 24-6A Pad



Laramie Energy, LLC
760 Horizon Drive, Suite 101
Grand Junction, CO 81506

**Cascade Creek 0697-15-08 Well Site
Lighting Mitigation Plan
COGCC Rule 424. Lighting**



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1. Introduction Lighting - Rule 424.

The following plan addresses the requirements for 424 Lighting under 400 Series of the Colorado Oil and Gas Conservation Commission's (COGCC) Rules as required by Rule 304.c.(3).

2. Form 2A Requirement - Rule 424.a.

Rule 424.a. *Operators will submit a light mitigation plan as an attachment to their Form 2As, pursuant to Rule 304.c.(3). An Operator may submit substantially equivalent information or plans developed through a Local Government land use process or federal process in lieu of the information required by this Rule 424.a unless the Director or Commission determines that the information or plan developed through the Local Government land use process or federal process is not equivalent.*

Laramie Energy, LLC (Laramie) (Operator # 10433) is pursuing a Form 2A for an Oil and Gas Location Assessment permit for the development of the Cascade Creek (CC) 0697-15-08 well site in Garfield County, Colorado. The proposed site will be located on private property, owned by Laramie Energy, LLC. Laramie is proposing 18 wells for the subject well site. The well site will be a new location. The site's location is centralized to Laramie's Cascade Creek operations area.

The Cascade Creek (CC) 0697-15-08 Lighting Mitigation Plan is being submitted with the Location Assessment Form 2A application. Garfield County has amended the Land Use and Development Code (LUDC) to incorporate COGCC's Rule 424 Lighting standards in the adopted Oil and Gas Code. A well site is a use-by-right in the Resource Lands zone district of Garfield County.

The CC 0697-15-08 well site is part of the *Laramie Energy 2021 Cascade Creek Oil and Gas Development Plan*, which includes three proposed well sites (CC 610-21-41, CC 0697-15-08, and CC 603-23-32) and the Annex Cuttings Facility, an Exploration and Production Waste Management Facility.

Location

The site is located on Parcel #216921400026 within Garfield County, Colorado (**Vicinity Map – Appendix A**). The parcel is owned by Laramie, the Operator. The parcel is located 12.2 miles north of De Beque, Colorado. The site is located approximately 14 miles northeast of De Beque, Colorado and 21.8 miles northeast by access route. The site is located approximately 9.6 miles from the nearest public road, County Road 213.

The legal description of the site is: SENE of Section 15, Township 6 South, Range 97 West, 6th P.M. Latitude: 39.526319°; Longitude: -108.198886°

3. Statement of Expertise - Rule 424.a.(1)

Rule 424.a.(1) *All light mitigation plans will be signed by a person with relevant expertise in light mitigation techniques and design.*

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The Drilling Phase Lighting Site Plan and Diagram (**Appendix B**) was developed and calculated by Wanda Graham, an electrical designer with Bighorn Consulting Engineer, Inc. Wanda has thirty-one in the design of electrical and lighting systems with an emphasis on lighting layout and design.

The CC 0697-15-08 Lighting Mitigation Plan was developed in coordination with Laramie's Drilling Manager and the Regulatory and Environmental Manager. During the COGCC Training on April 6th, 2020, COGCC stated that the lighting specialist needed to have lighting experience in the industry but not a specific certification.

4. Light Mitigation Plan Components - Rule 424.a.(2)

Rule 424.a.(2) *All light mitigation plans will address:*

Laramie anticipated lighting will only be utilized during drilling, completions, and flowback activities. The stated activities will result in a total of 176 days of lighting.

Activities Utilizing Lighting	Time Interval (Days)
Drilling	110
Completions/Flowback	66
Total Days of Lighting	176

During these operational phases, personnel will be continuously present onsite. Laramie will minimize continuous on-site lighting if personnel are not onsite.

4.1 Pre-Production Facility Lighting Plan - Rule 424.a.(2).A.

Rule 424.a.(2).A. *A pre-production facility lighting plan demonstrating one or more proposed methods of ensuring compliance with Rule 424.c:*

Pre-production activities will consist of initial grading, drill rig mobilization, drilling, completions, and flowback. Initial grading and drill rig mobilization will be completed during daylight hours. Pre-production lighting facility is detailed in Section 6 of the subject mitigation plan.

4.1.1. Adequate Lighting - Rule 424.a.(2).A.i.

Rule 424.a.(2).A.i. *That provides adequate lighting to ensure safety during active operations involving personnel*

Sufficient lighting will be utilized during pre-production activities to ensure the safety of all personnel within the Cascade Creek operating field on any active operations locations. Safety procedures, including lighting, are detailed in Laramie Health and Safety Manual.

4.1.2. Pre-Production Lighting Specifics - Rule 424.a.(2).A.ii.

Rule 424.a.(2).A.ii. *The proposed anticipated location, mounting, height, and orientation of all outdoor lighting fixtures on the site during pre-production activities.*

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Drilling activities will last for approximately 110 days. Helmerich and Payne, Inc. (H&P) provided lighting details for the drill rig that will operate at the CC 0697-15-08 well site. Lighting utilized during drilling activities is stationed on the drill rig; therefore, the lighting is centered within the site perimeter and lighting is casted outward. For safety reasons, lighting may extend slightly beyond the site perimeter. Where possible, lighting will be directed downward and inward to avoid excess lighting beyond perimeter. The Drill Phase Lighting Site Plan and Diagram (**Appendix B**) was developed using photometric calculations to represent site-specific illumination levels for the subject site.

Specifications on drill rig lighting fixtures detailing anticipated location on the drill rig, height, light angle, and type of light fixtures are also provided in the Drill Phase Lighting Site Plan and Diagram.

During completions and flowback activities (approximately 66 days), the site will be lit to provide adequate lighting for personnel. While most completions activities occur during daylight, personnel may access the site throughout a 24-hour day period during flowback activities. All lighting for completions and flowback operations will be casted downward and inward towards the center of the site. Lighting will not extend past the perimeter of the site. Portable lighting equipment will be utilized during this phase. The Completions and Flowback Phase Lighting Figure, depicting the location of lighting equipment within the site perimeter, and lighting equipment specifications are provided in **Appendix C**.

4.1.3. Temporary Lighting For Safety - Rule 424.a.(2).A.iii.

Rule 424.a.(2).A.iii. *Nothing in this Rule 424.a.(2).A prevents an Operator from using ad hoc temporary portable lighting when necessary for safety reasons during pre-production activities, provided that the Operator otherwise complies with the standards in Rules 424.b-f.*

In the event that temporary lighting is required, lighting will comply with standards stated in this Lighting Plan and COGCC Rules 424.b. – 424.f when allowable. In the event of an emergency, Laramie will place a priority on personal safety and will adhere to Rule 424.a.(2).A.i. to ensure safety of those accessing and present at the site. Lighting safety standards are stated in Laramie Health and Safety Manual.

4.2 Production Facility Lighting Plan - Rule 424.a.(2).B.

Rule 424.a.(2).B. *A Production Facility lighting plan demonstrating one or more proposed methods of ensuring compliance with Rules 424.d & e*

Rule 424.a.(2).B. is not applicable to the proposed well site. The CC 0697-15-08 will not have fixed lighting installed or utilized during the production phase. Production activities are conducted during daylight hours and do not require lighting.

COGCC Rule 424.a.(2).B.iv. is not applicable to the 0697-15-08 well site. A Building Unit, Residential Building Unit, and High Occupancy Building unit do not exist within 2,000 feet of the proposed well site.

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5. Lighting Standards – Rule 424.b.

Drilling, completions, and flowback activities will require lighting. Lighting is not required during the production phase. Lighting standards will apply to all lighting usage, including temporary lighting.

5.1. Direction of Lighting – Rule 424.b2(1).

Rule 424.b.(1). *Operators will direct site lighting downward and inward, such that no light shines above a horizontal plane passing through the center point light source.*

During completions and flowback, lighting will be directed downward and inward. Lighting during the drilling will be casted outwards only on necessary points for safety considerations. Where possible, lighting will be directed downward and inward to avoid excess lighting beyond perimeter. The subject well site is not located within 2,000 feet of a residential building. Drill rig lighting will illuminate the entire drill rig, which is required for a safe working environment and adhering to COGCC Rule 424.a.(2).A.i.

5.2. Lighting Buffers - Rule 424.b.(2)

Rule 424.b.(2) *Operators will use appropriate technology within fixtures that obscures, blocks, or diffuses the light to reduce light intensity outside the boundaries of the Oil and Gas Facility.*

Laramie will utilize appropriate equipment to reduce light intensity outside the perimeter of the 0697-15-08 well site. For drilling activities, the lighting may cast slightly along and outside the perimeter of the proposed well site for safety. Since the site will be graded along the perimeter it is vital for personnel accessing the site during drilling operations to see the edge of the pad. The extent of lighting outside the perimeter of the well site is displayed in **Appendix B**. Light intensity outside the site is minimal and reduces within a short distance from the well site perimeter.

5.3. Lighting BMPs - Rule 424.b.(3)

Rule 424.b.(3) *Operators will use Best Management Practices to minimize light pollution and obtrusive lighting.*

Laramie will implement lighting BMP **Rule 424.b.(3).D. Using low-glare or no-glare lighting** and will conduct lighting inspections to confirm lighting fixtures are orientated correctly. Lighting will be required for drilling, completions, and flowback activities. Production activities are conducted during daylight hours and will not require lighting.

**6. Pre-Production Facility Lighting – Rule 424.c.
Rule 424.c. Pre-Production Facility Lighting**

Laramie will require lighting for pre-production activities, including drilling, completions, and flowback phases.

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6.1. Safety – Rule 424.c.(1).

Rule 424.c.(1). *At all Oil and Gas Facilities with active operations involving personnel, Operators will provide sufficient on-site lighting to ensure the safety of all persons on or near the site.*

Sufficient lighting will be utilized to ensure the safety of all personnel within the Cascade Creek operations area. Safety procedures, including lighting, are detailed in Laramie Health and Safety Manual.

6.2. Noise Barrier – Rule 424.c.(2).

Rule 424.c.(2) *If the facility has a noise barrier, Operators will locate the facility lighting beneath the noise barrier, except for drilling rig lights, which will be shielded and pursuant to Federal Aviation Administration permit requirements if applicable.*

A noise barrier is not proposed for the well site. Neither a Residential Building Unit nor a High Occupancy Building Unit exist within 2,000 feet of the proposed well site.

6.3. Lighting Impacts - Rule 424.c.(3)

Rule 424.c.(3) *Prior to the Commencement of Production Operations, Operators will take all necessary and reasonable precautions to ensure that lighting from Oil and Gas Facilities does not unnecessarily impact the health, safety, and welfare of any of the following:*

- **Impacts on Residential Occupancy - Rule 424.c.(3).A** *Persons occupying Building Units within 2,000 feet of the Oil and Gas Facility;*

Rule 424.c.(3)A is not applicable. A Building Unit, Residential Building Unit, and High Occupancy Building Unit does not exist within 2,000 feet of the proposed well site. No Residential Building Units or High Occupancy Building Units are located within a 1-mile radius of the site perimeter.

- **Impacts on Motorists - Rule 424.c.(3).B.** *Motorists on roads within 2,000 feet of the Oil and Gas Facility*

The proposed well site is located more than 5,280 feet from a public road. The site is located approximately 9.6 miles from the nearest public road, County Road 213. The entrance to Laramie's parcel and the location of the 0697-15-08 is displayed in the Laramie Access Road Map (**Appendix D**).

- **Impacts on Wildlife - Rule 424.c.(3).C** *Wildlife occupying any High Priority Habitat within 2,000 feet of the Oil and Gas Facility.*

The CC 0697-15-08 is not located within a High Priority Habitat (HPH); however, a High Priority Habitat is identified within 2,000 feet of the site. Greater sage-grouse general habitat management area does exist 438 feet from the site perimeter to the southwest.

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There is the potential for lighting used during drilling activities to impact wildlife species present in the area surrounding the well pad causing wildlife avoidance of forage and cover. Lighting would be used on-site during drilling, completions, and flowback activities. These activities would result in 176 days of lighting use. Due to the short duration of lighting use with pre-production activities and with the implementation of the lighting mitigation measures it is unlikely that light associated with drilling activities would impact wildlife species at a population level. Based on the Drilling Phase Lighting Diagram, light will not extend outside the perimeter of the well site towards the direction of the HPH. Surface area in the HPH will not be lit during any operational phase of the well site. The 0697-15-08 HPH Figure is provided in **Appendix E**.

7. Production Phase Lighting – Rule 424.d.

Rule 424.d. Production Phase Facility Lighting When Personnel Are On-Site.

Laramie does not anticipate using lighting during the Production Phase at the 0697-15-08. Historically, Laramie does not utilize lighting during production activities. In the event of an emergency or foreseen event, Laramie will adhere to lighting standards stated in 424.d.

7.1. Safety During Production - Rule 424.d.(1)

Rule 424.d.(1) *After the Commencement of Production Operations, at all Oil and Gas Facilities with active operations involving personnel, Operators will provide sufficient on-site lighting to ensure the safety of all persons on or near the site.*

Sufficient lighting will be utilized to ensure the safety of all personnel within the Cascade Creek operations area. Production activities are conducted during daylight hours and will not require lighting. In the event of an emergency or foreseen event that may require lighting, Laramie will adhere to lighting standards stated in the CC 0697-15-08 Lighting Mitigation Plan and Health and Safety Manual.

7.2. Production Lighting Zone - Rule 424.d.(2)

Rule 424.d.(2) *After the Commencement of Production Operations, when active operations involving personnel are occurring, Oil and Gas Facilities will not exceed the following maximum permissible light levels.*

Production activities are conducted during daylight hours and will not require lighting. In the event of an emergency or foreseen event, Laramie will adhere to lighting standards stated in the CC 0697-15-08 Lighting Mitigation Plan. Laramie will not exceed the Light Industrial standard of 5 Lumens per square foot of Working Pad Surface during the production operations if lighting is utilized.

7.3. Local Zoning - Rule 424.d.(3)

Rule 424.d.(3) *The basis for determining land use designation pursuant to be Rule 424.d.(2) will be the Relevant Local Government's land use or zoning designation. The Director may consult with a Relevant or Proximate Local Government to identify the type of land use of the*

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Oil and Gas Location and its surrounding area, taking into consideration any applicable zoning or other local land use designation.

The 0697-15-08 is located in Garfield County, Colorado. Garfield County defines the subject parcel as Resource Lands zone district. Adjacent parcels to the subject parcel are zoned Resource Lands or Public Lands. The Couey Family LLLP parcel, that is located east of the site, is zoned Resource Lands. Existing uses of the surrounding area are natural resources extraction, public lands, and agricultural. The Garfield County Zoning Figure (**Appendix F**), which depicts adjacent parcel zoning and property boundaries.

7.4. Director Decision - Rule 424.d.(3).A; Rule 424.d.(3).B.; and Rule 424.d.(3).C.

Laramie, the Operator (#10433), is the landowner/surface owner for the 0697-15-08 location. The nearest adjacent landowner, Couey Family LLLP (Couey), has signed a statement accepting lighting levels at for Industrial Light Zone (**Appendix G**).

7.5. Lighting During Non-Staffed Hours - Rule 424.e.

Rule 424.e. Production Phase Facility Lighting When Personnel Are Not On-Site. *After the Commencement of Production Operations, Operators will minimize continuous on-site lighting when personnel are not present.*

Lights will only be utilized during drilling, completions, and flowback activities. The stated activities will result in a total of 176 days of lighting. During these operational phases, personnel will be present onsite. Laramie will minimize continuous on-site lighting if personnel are not onsite. The production phase will not require lighting on a regular basis. Only in the event of an emergency temporary lighting may be utilized during the production phase.

8. Cumulative Impact - Rule 424.f.

Rule 424.f. Cumulative Light Impacts. *Operators will develop site lighting to reduce cumulative nighttime light intensity from all Oil and Gas Facilities to 4 lux at any Residential Building Unit or High Occupancy Building Unit within 1 mile of any Oil and Gas Facility, measured at 5.5 feet above grade in a direct line of sight to the brightest light fixture onsite.*

Impacts from cumulative lighting are not anticipated from sites proposed in the *Laramie Energy 2021 Cascade Creek Oil and Gas Development Plan* (OGDP). The OGDP includes three proposed well sites (CC 610-21-41, CC 0697-15-08, and CC 603-23-32) and the Annex Cuttings Facility, an Exploration and Production Waste Management Facility. The Annex Cuttings Facility will not require lighting and personnel will only access the site during daylight hours. Lighting at the proposed well sites will only occur during drilling, completions, and flowback operational phases. These activities will not occur simultaneously at multiple locations. Most of Laramie's operations within the Cascade Creek operations area occur during daylight hours. Neither Residential Building Units nor High Occupancy Building Units exist within 1-mile of the well site.

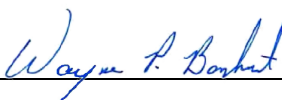
**Cascade Creek 0697-15-08 Well Site
Lighting Mitigation Plan
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Signature: 

Date: 08/11/2021

Aaron Duncan
Laramie Energy, LLC - Drilling Manager

Signature: 

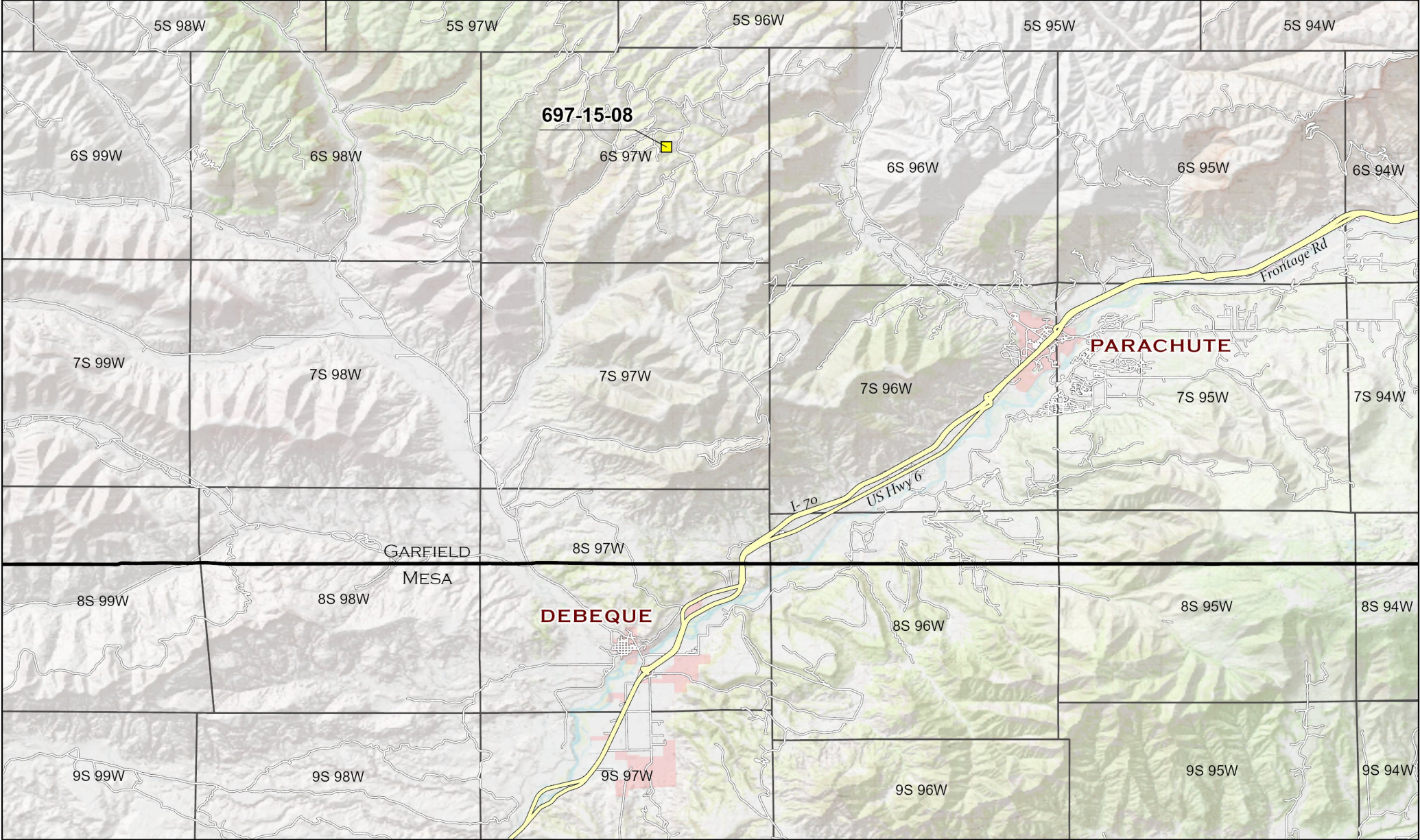
Date: 8/11/2021

Wayne Bankert
Laramie Energy, LLC - Regulatory and Environmental Manager



Appendix A

CC 0697-15-08 Well Site Vicinity Map




LEGEND
■ Site Location

03.57

mi

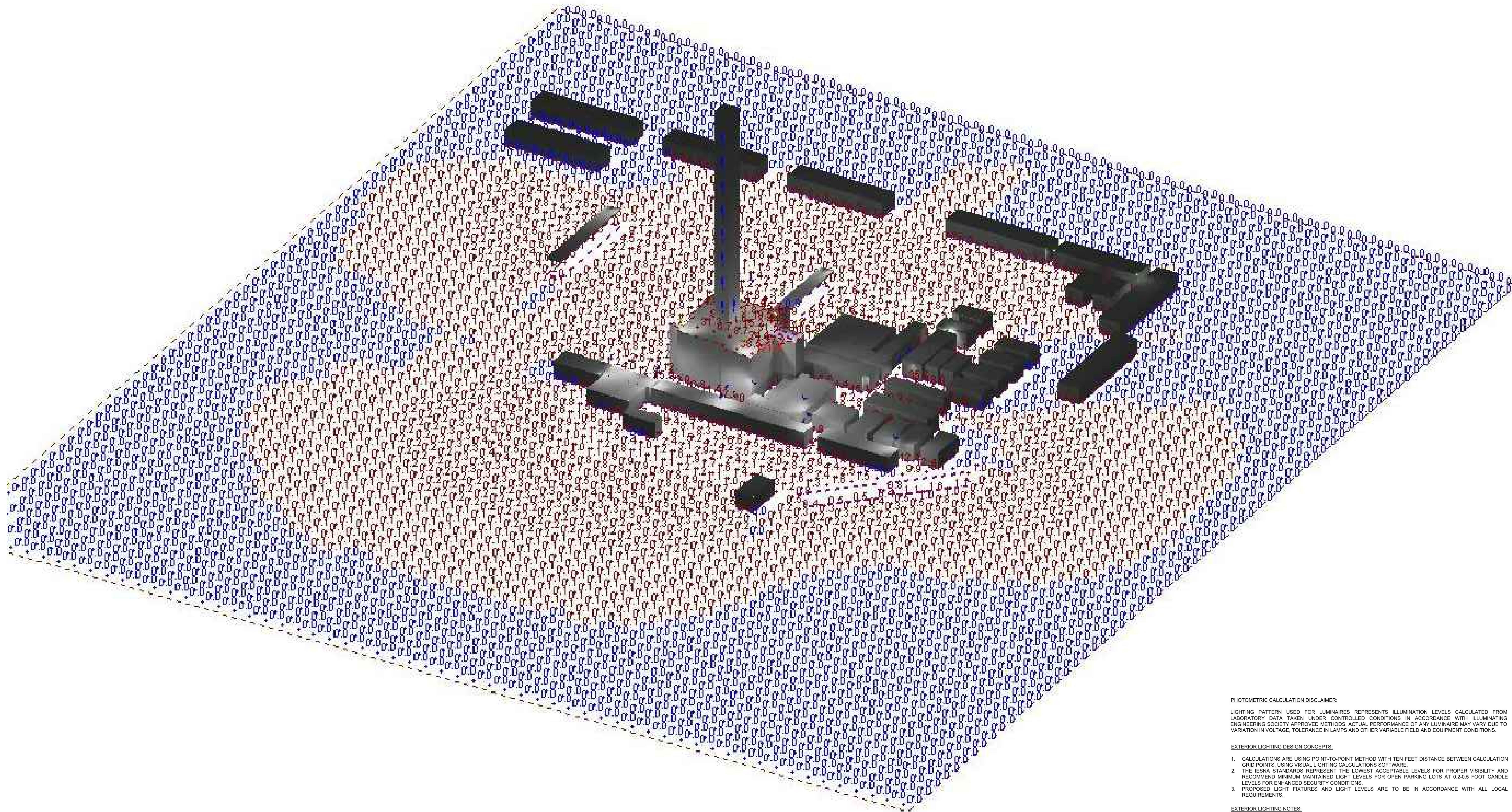
1 inch = 3.5 mi

Project No: 021-036	Vicinity Map Cascade Creek 697-15-08 Pad Laramie Energy SENE, Section 15, T6S R97W, 6th P.M. Garfield County, Colorado	 <div>330 Grand Avenue, Unit C Grand Junction, CO 81501 970-549-1015</div>	Figure
Map By: NDB			1
Date: 4/13/2021			



Appendix B

Drilling Phase Lighting Site Plan and Diagram



LIGHTING - ISO SITE PLAN

SCALE: NOT TO SCALE

PHOTOMETRIC CALCULATION DISCLAIMER:

LIGHTING PATTERN USED FOR LUMINAIRES REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY LUMINAIRE MAY VARY DUE TO VARIATION IN VOLTAGE, TOLERANCE IN LAMPS AND OTHER VARIABLE FIELD AND EQUIPMENT CONDITIONS.

EXTERIOR LIGHTING DESIGN CONCEPTS:

- CALCULATIONS ARE USING POINT-TO-POINT METHOD WITH TEN FEET DISTANCE BETWEEN CALCULATION GRID POINTS, USING VISUAL LIGHTING CALCULATIONS SOFTWARE.
- THE IESNA STANDARDS REPRESENT THE LOWEST ACCEPTABLE LEVELS FOR PROPER VISIBILITY AND RECOMMEND MINIMUM MAINTAINED LIGHT LEVELS FOR OPEN PARKING LOTS AT 0.2-0.5 FOOT CANDLE LEVELS FOR ENHANCED SECURITY CONDITIONS.
- PROPOSED LIGHT FIXTURES AND LIGHT LEVELS ARE TO BE IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS.

EXTERIOR LIGHTING NOTES:

- LIGHT FIXTURES SHALL BE INSTALLED AND MAINTAINED IN A MANNER CONSISTENT WITH THE LIGHTING PLAN APPROVED BY THE CITY PLANNING DEPARTMENT. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER MAINTENANCE OF THE LIGHTING FIXTURES ON THEIR PROPERTY.
- ALL EXTERIOR LIGHT FIXTURES SHALL BE OPERATED BY ASTRONOMICAL TIME CLOCK, PHOTOCELL OR LIGHTING CONTROL SYSTEM.
- FACILITIES & SITE DEVELOPMENT OF THIS SITE ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CITY CONSTRUCTION SPECIFICATIONS, STANDARDS AND DETAILS.
- ALL OUTSIDE LIGHT SOURCES SHALL CONFORM TO ALL LOCAL ZONING & DEVELOPMENT CODES.

ACCEPTANCE BLOCK

THE CITY REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD. CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER

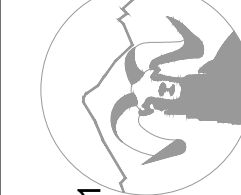
DATE

CITY PLANNER

DATE

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT, THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITION TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.

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Phone: (970) 422-7676



386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709

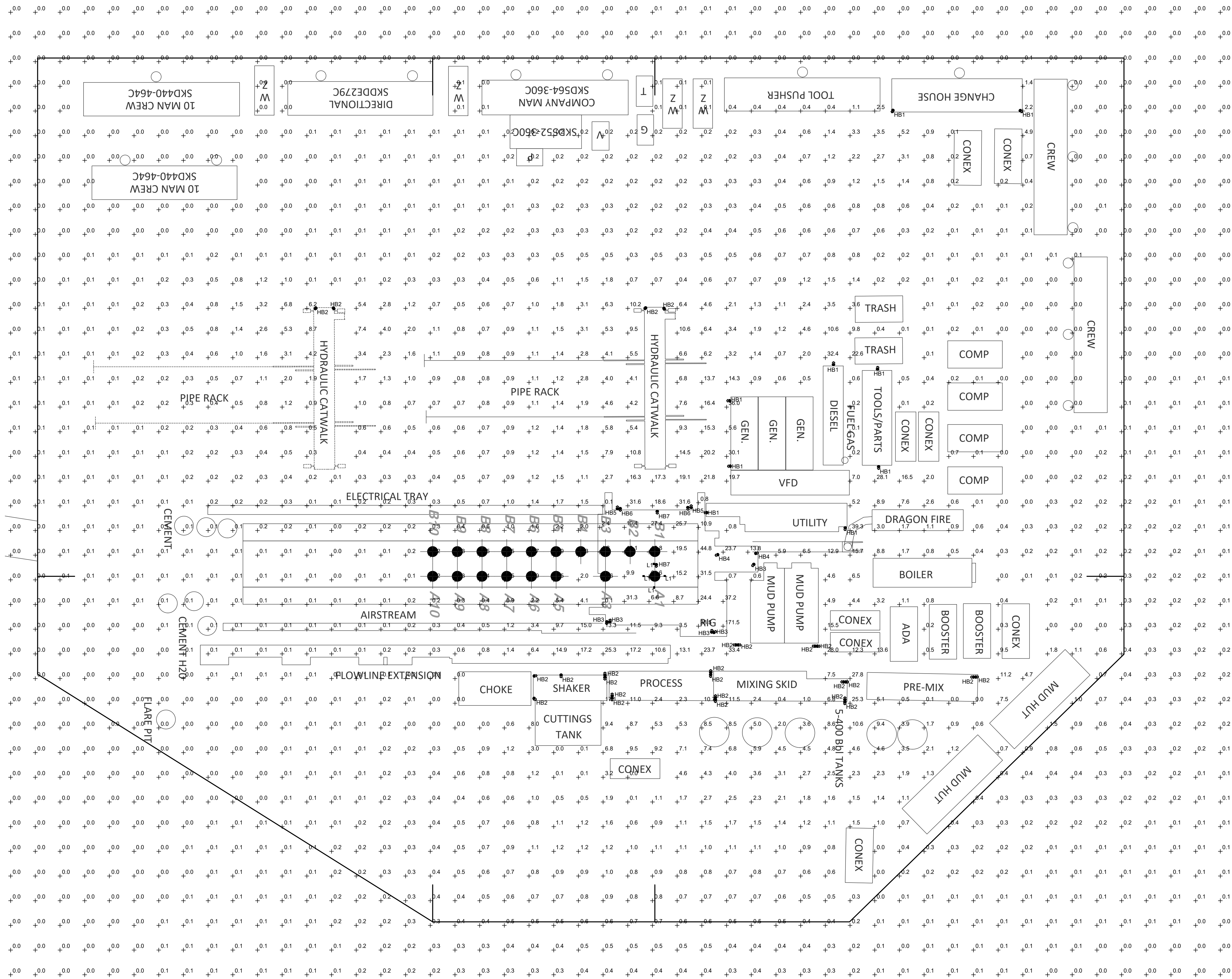
Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers

LARAMIE ENERGY
WELL PAD LIGHTING
CC-697-15-08
GARFIELD COUNTY, COLORADO

DATE:	ISSUED FOR:
07/28/2021	---



DATE:	07/28/2021
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CHECKED BY:	BCE
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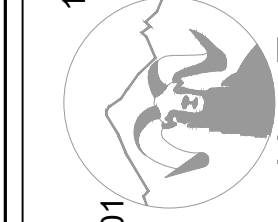


LIGHTING - ISOMETRIC FOOT-CANDLE SITE PLAN

SCALE: 1"=20'-0"

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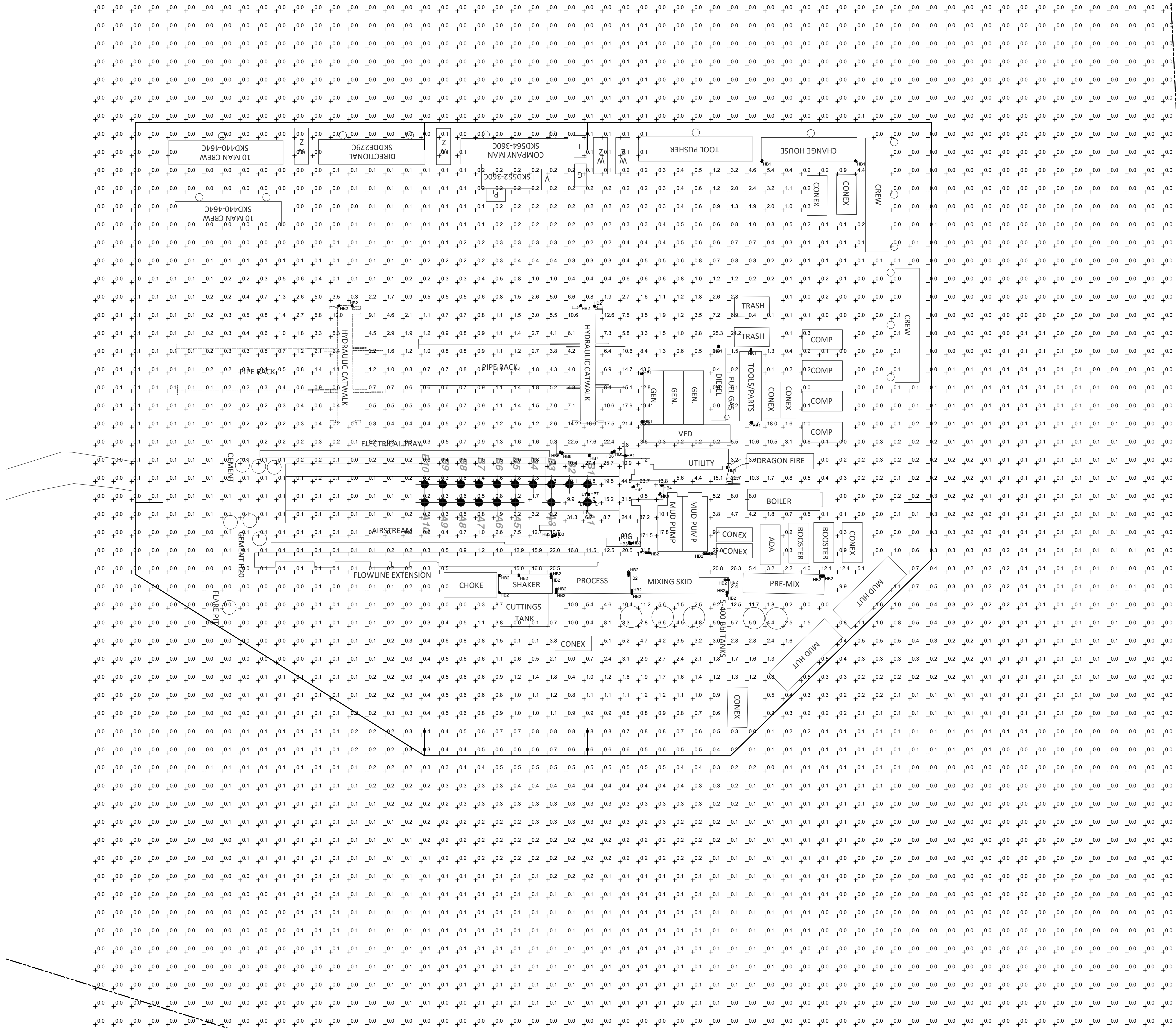
Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers

LARAMIE ENERGY
WELL PAD LIGHTING
CC-697-15-08
GARFIELD COUNTY, COLORADO

DATE:	ISSUED FOR:
07/28/2021	---



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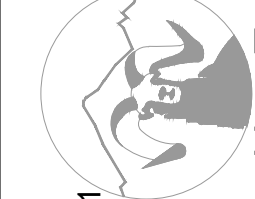


LIGHTING - ISOMETRIC FOOT-CANDLE SITE PLAN

SCALE: NOT TO SCALE

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Phone: (970) 241-8709

LARAMIE ENERGY
WELL PAD LIGHTING
CC-697-15-08
GARFIELD COUNTY, COLORADO

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07/28/2021	---



DATE:	07/28/2021
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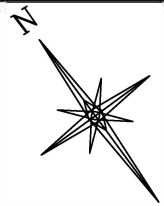


Appendix C

Completions and Flowback Lighting Figure and Lighting Equipment Specifications

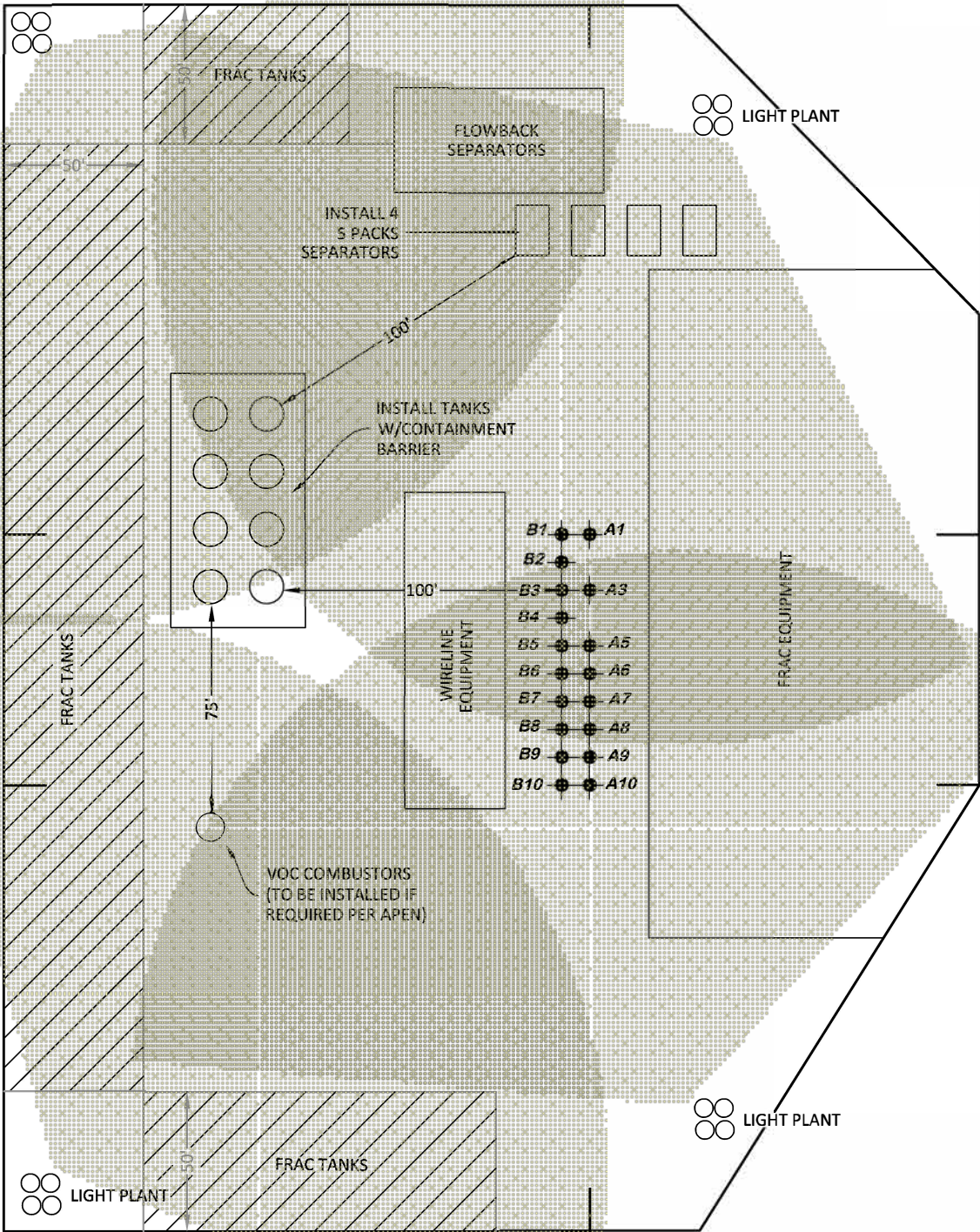
Estimated Illuminated Area

COMPLETIONS PHASE EQUIPMENT AND LIGHTING



LIGHT PLANT HEIGHT: MAX HEIGHT 23 FEET
LIGHT PLANT WILL BE DIRECTED INWARDS AND
DOWNCAST TO ILLUMINATE WORKING AREA OF
WELL PAD.

LIGHT PLANT



**BEFORE DIGGING
CALL FOR
UTILITY LINE LOCATION**

CC 697-15-08



RIFFIN & ASSOCIATES, INC.

(307) 362-5028

1414 ELK ST., ROCK SPRINGS, WY 82901

DRAWN: 7/28/2021 - DEH

SCALE: 1" = 60'

REVISED: N/A

DRG JOB No. 22026

LIGHTING

**COMPLETIONS PHASE
EQUIPMENT AND LIGHTING
LARAMIE ENERGY, LLC.**

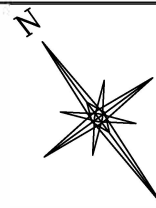
CC 697-15-08

**SENE, SECTION 15, T. 6 S., R. 97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO**

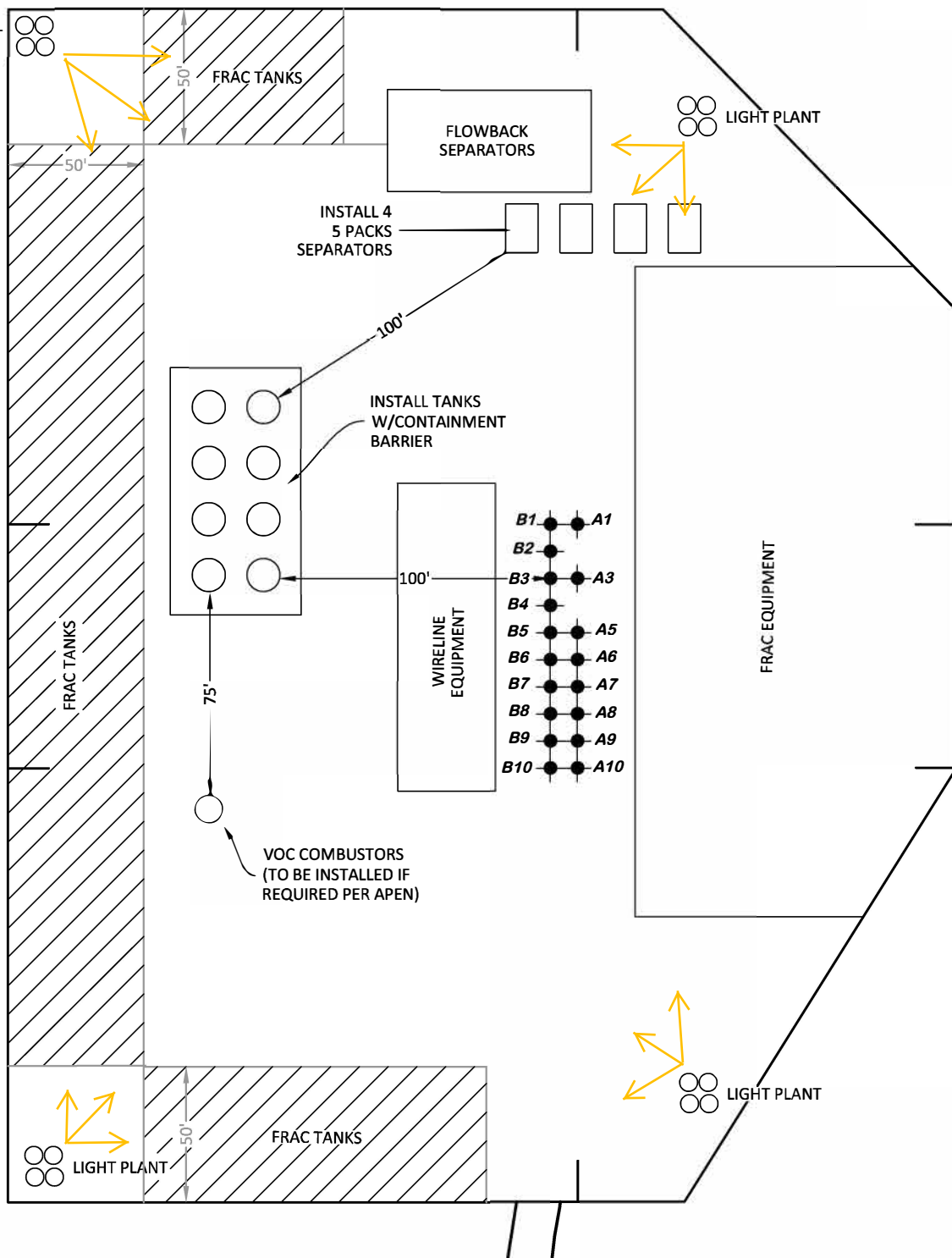
Estimated Direction of Lighting



COMPLETIONS PHASE EQUIPMENT AND LIGHTING



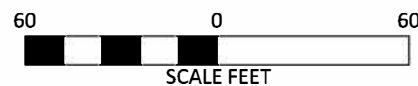
LIGHT PLANT



LIGHT PLANT HEIGHT: MAX HEIGHT 23 FEET
LIGHT PLANT WILL BE DIRECTED INWARDS AND
DOWNCAST TO ILLUMINATE WORKING AREA OF
WELL PAD.

**BEFORE DIGGING
CALL FOR
UTILITY LINE LOCATION**

CC 697-15-08



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LARAMIE ENERGY, LLC.**

CC 697-15-08

**SENE, SECTION 15, T. 6 S., R. 97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO**

Cat Class Code 320-4001

Small Towable Light Tower with 6kW Generator, 4,200W, Vertical Mast, Diesel

United Rentals' towable lighting towers provide bright light and power to your jobsite. Our diesel-fueled light tower's generator has rugged enclosures and off-road capability. You can set up and operate the tower easily. This lighting tower's four powerful halide fixtures provide maximum illumination. Power up tools and electronics easily and work smarter.

- Four 1,050W halide fixtures on extendable vertical mast up to 23'
- Fuel-efficient diesel generator
- 359-degree rotational mast for total illumination on-site
- 120V and 140V convenient outlets for small equipment, hand tools and electronics
- Add this towable light tower to your cart now

Small Towable Light Tower with 6kW Generator, 4,200W, Vertical Mast, Diesel Data & Specs

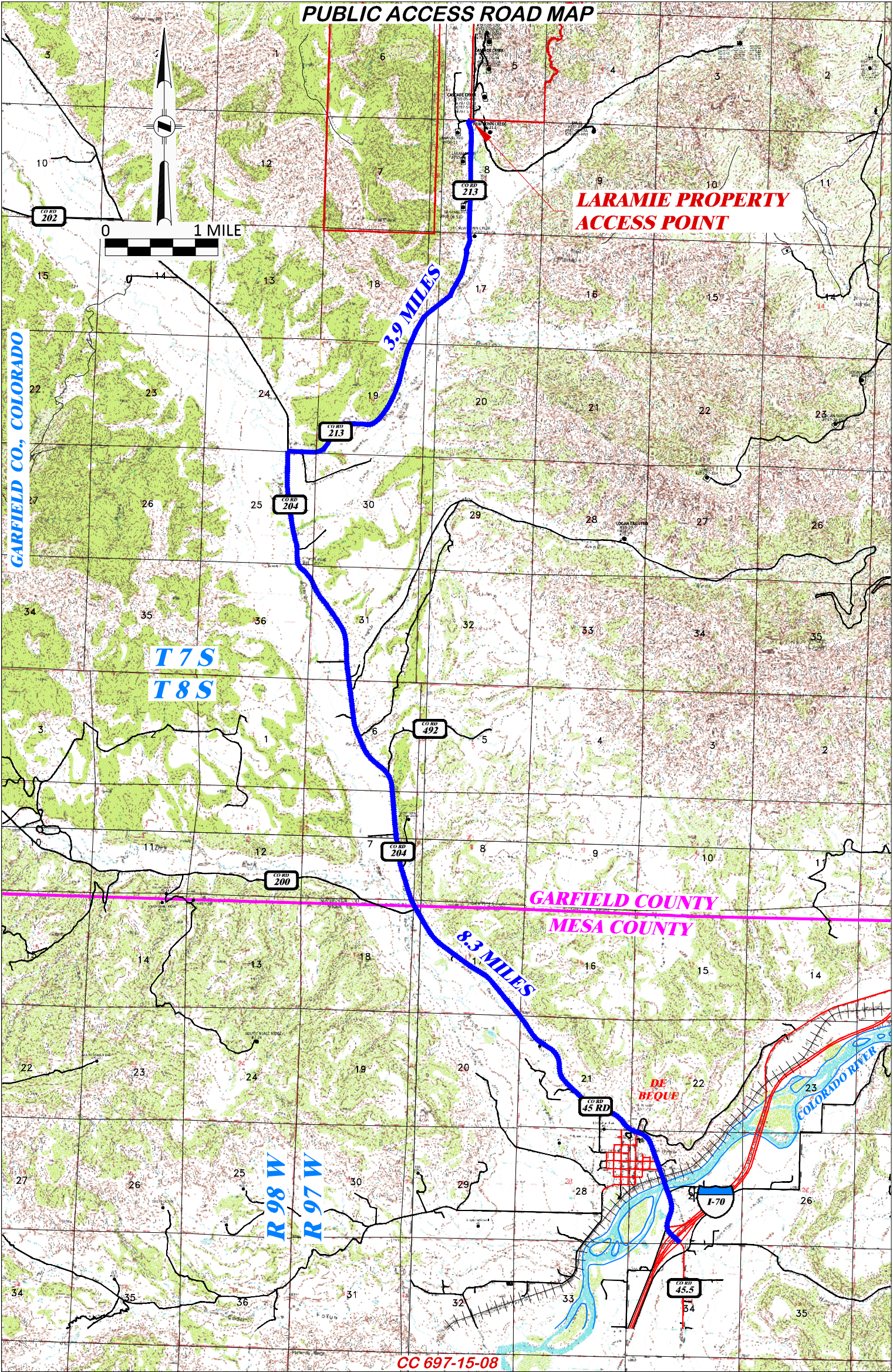
Model Number	MLT6SM
Manufacturer	Generac Mobile Products
Engine/Tier	Diesel/T4
Prime Horsepower	10.5 hp @ 1,800 rpm
Power	6 kW
Max. Run Hours (lights only)	93
Fuel Tank Capacity	39.9 gal.
Mast Height Deployed Horizontal / Vertical	23'
Light Fixtures (4)	1,050W MH
Total Lumens	462,000
Dimensions Stowed Horizontal / Vertical	118" x 57" x 101"



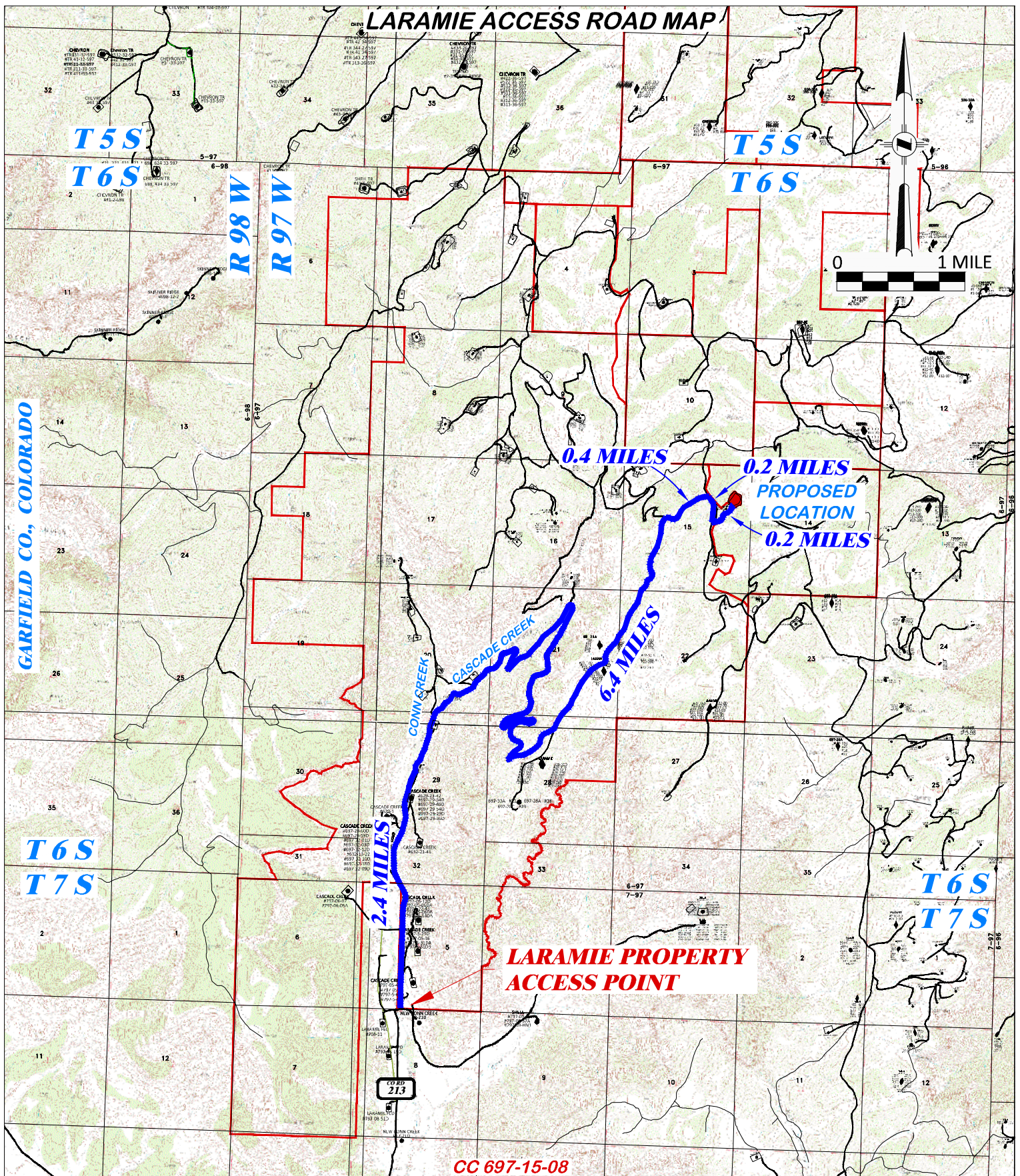


Appendix D

Laramie Access Road Map



<div><div><div>DRG</div><div>RIFFIN & ASSOCIATES, INC.</div></div><div><div>(307) 362-5028</div><div>1414 ELK ST., ROCK SPRINGS, WY 82901</div></div></div> <div><div>DRAWN: 12/8/2020 - DEH</div><div>REVISD: 3/23/2021 - DEH</div></div> <div><div>SCALE: 1" = MILE</div><div>DRG JOB No. 22026</div><div>08 PUB ACCESS</div></div>	<div><div>PUBLIC ACCESS ROAD MAP</div><div>LARAMIE ENERGY, LLC.</div><div>CC 697-15-08</div><div>SENE, SECTION 15, T. 6 S., R. 97 W., 6th P.M.,</div><div>GARFIELD COUNTY, COLORADO</div></div> <div><div>PROPOSED ROUTE</div><div>EXISTING ROAD</div></div>
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DRG RIFFIN & ASSOCIATES, INC.

(307) 362-5028

1414 ELK ST., ROCK SPRINGS, WY 82901

DRAWN: 12/8/2020 - DEH

REVISED: 3/23/2021 - DEH

SCALE: 1" = MILE

DRG JOB No. 22026

08 LARAMIE ACCESS

LARAMIE ACCESS ROAD MAP

LARAMIE ENERGY, LLC.

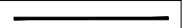
CC 697-15-08

**SENE, SECTION 15, T. 6 S., R. 97 W., 6th P.M.,
GARFIELD COUNTY, COLORADO**

PROPOSED ROUTE



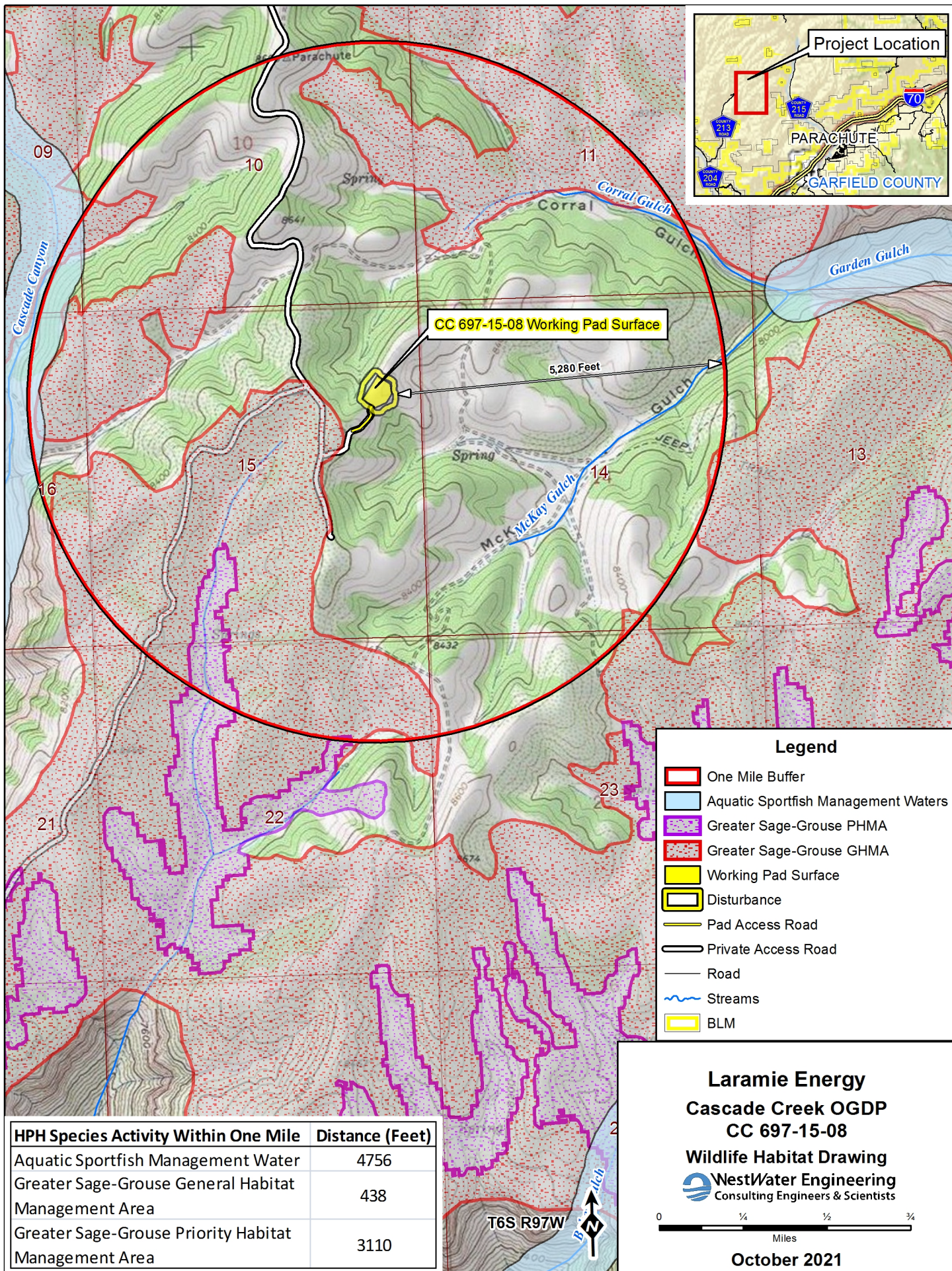
EXISTING ROAD

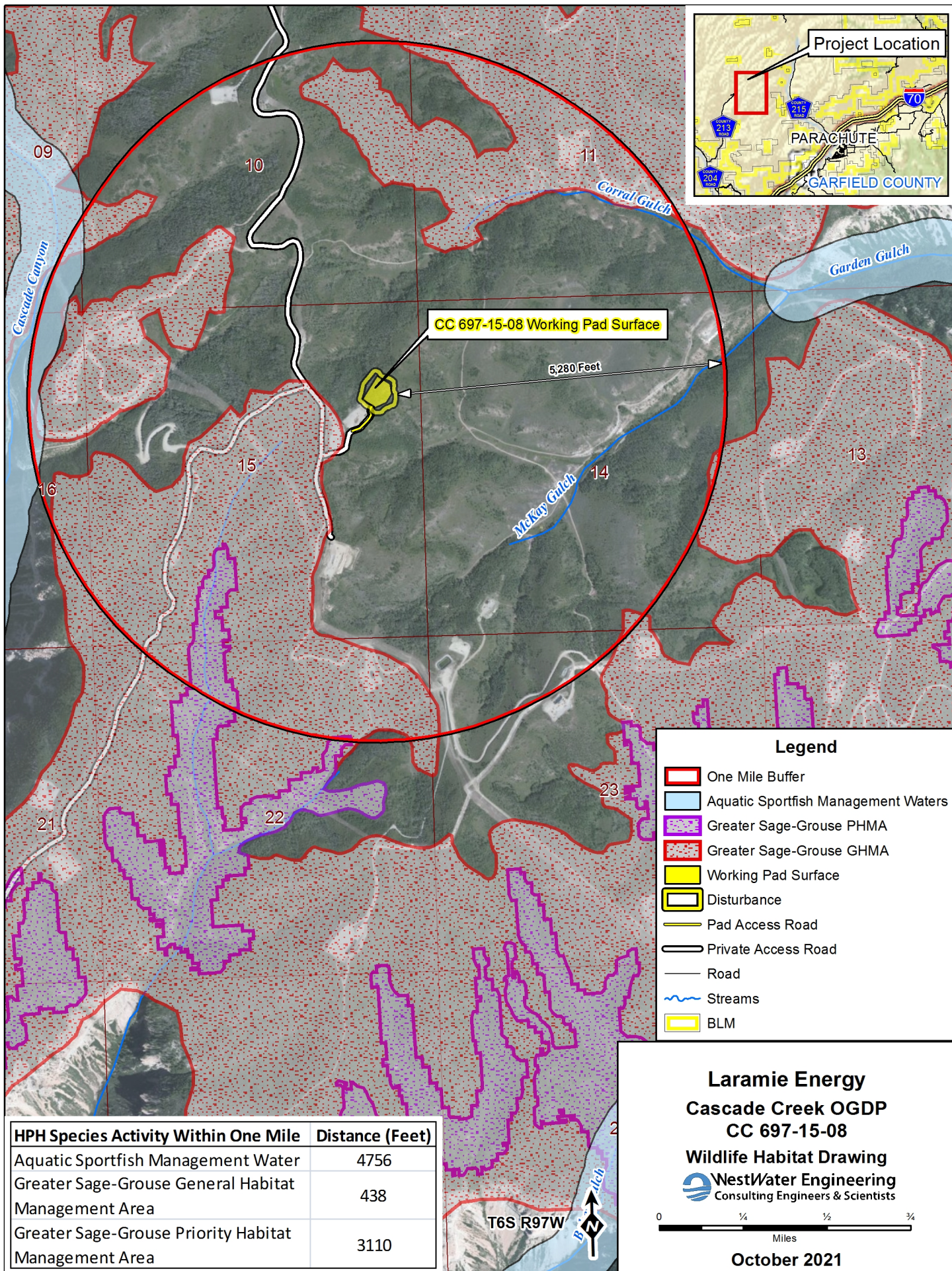




Appendix E

CC 0697-15-08 Well Site High Priority Habitat Map

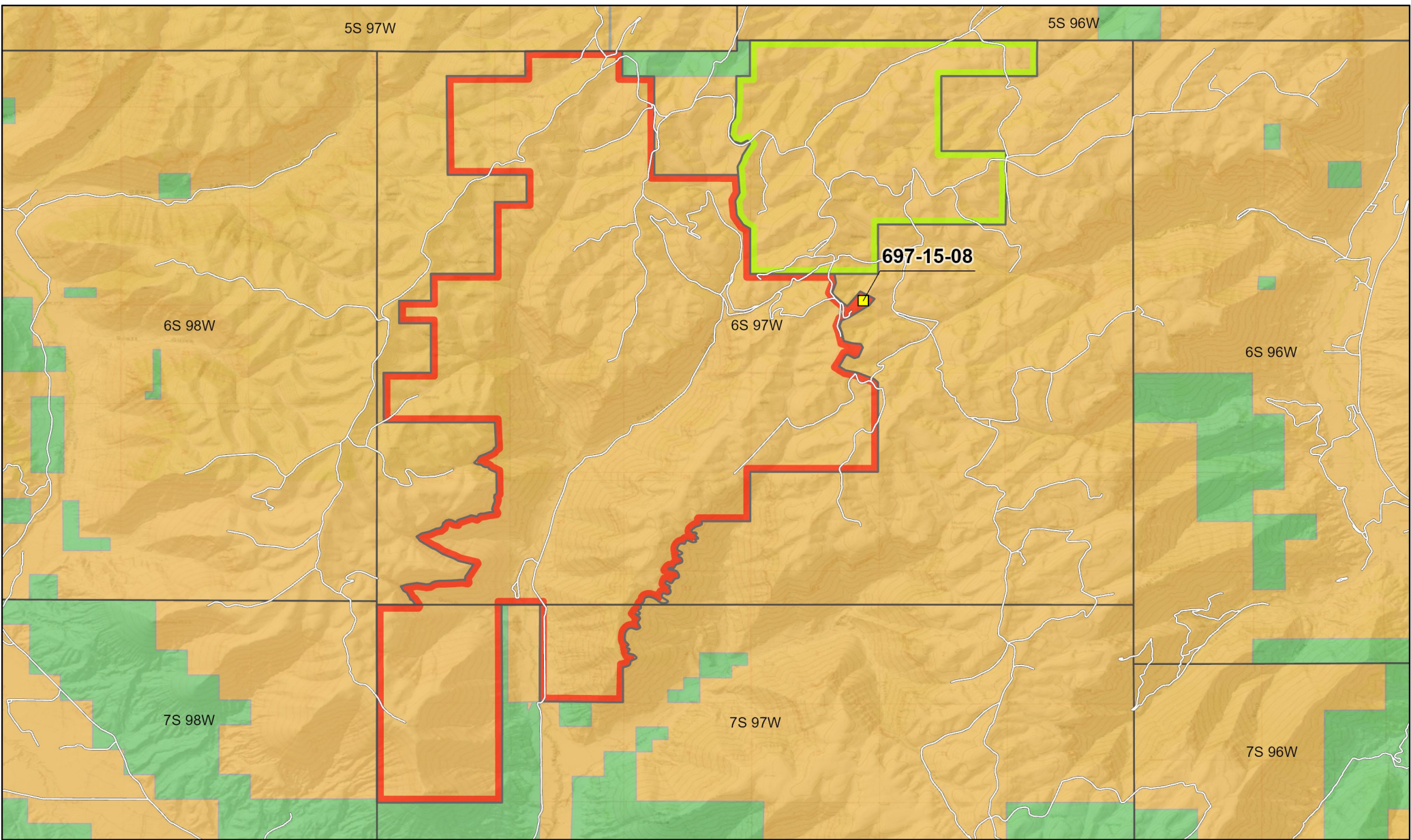






Appendix F

Garfield County Zoning Map



LEGEND

Laramie Parcel (216921400026)

Public Lands

Couey Parcels (216910100020, 216902200030)

Resource Lands

07,00014,000

Ft

1 inch = 7,000 ft

Project No: 021-036	Garfield County Zoning Map Cascade Creek 697-15-08 Pad Laramie Energy SENE, Section 15, T6S R97W, 6th P.M. Garfield County, Colorado		330 Grand Avenue, Unit C Grand Junction, CO 81501 970-549-1015	Figure
Map By: NDB				2
Date: 4/13/2021				



Appendix G

Couey Agreement



LARAMIE ENERGY, LLC
1001 SEVENTEENTH ST., SUITE 1900
DENVER, COLORADO 80202

TEL: (303) 339-4400

SENT VIA EMAIL

June 15, 2021

Couey Family, LLLP
6275 County Road 315
Silt, CO 81652
Attn: Kelly Couey

RE: Noise and Lighting Letter Exceedances
Cascade Creek Production Field
Township 6 South, Range 97 West 6th P.M.
Sections 3, 10 & 15
Garfield County, Colorado

Dear Mr. and Mrs. Couey:

Laramie Energy, LLC, ("Laramie"), is proposing the development and operation of three well sites and one cuttings management facility in the Cascade Creek production field located in Garfield County. Laramie is requesting Couey Family LLLP, ("Couey"), as Surface Owner and Adjacent Landowner, to accept increased permissible noise and lighting levels. As of the date of this letter, the Garfield County Community Development Department has determined the Light Industrial zone for noise and lighting will be applied to the proposed sites based on current parcel zoning and surrounding land uses.

Couey is the surface owner for the proposed Cascade Creek 0603-23-32 well site (Section 3, Township 6 South, Range 97 West, 6th P.M.) and the 0610-21-41 well site (Section 10, Township 6 South, Range 97 West, 6th P.M.).

Couey is an adjacent owner to the east of the proposed Cascade Creek 0697-15-08 well site and the Annex Cuttings Facility (ACF) (Section 15, Township 6 South, Range 97 West, 6th P.M.).

The Colorado Oil and Gas Conservation Commission ("COGCC") states in Rule 423.b.(5) *"Operators may exceed the noise levels in Table 423-1 as measured at the nearest noise point of compliance if all affected Surface Owners and tenants agree in writing to the higher noise limit requested by the Operator."*

Laramie requests that Couey accept the noise and light exceedances for the Light Industrial zone and that Industrial zone noise levels are permissible.

Couey Family, LLLP

Noise and Lighting Letter Exceedances

June 15, 2021

Page 2 of 4

Noise Standards

ZONE	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Light industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

Sound compliance points may be located within Couey's parcel boundary. Sound measurement readings will be collected at compliance points during preliminary, pre-production, and production phases.

Lighting Standards

LAND USE	Lumens per square foot of Working Pad Surface
Light Industrial	5.0
Industrial	7.5

Lighting will be utilized during drill rig mobilization, drilling, completions, and flowback activities.

Annex Cuttings Facility

SE ¼ of Section 15, Township 6 South, Range 97 West, 6th P.M.

Parcel # 216921400026

Surface Owner: Laramie Energy, LLC; Operator # 10433
1001 Seventeenth Street, Suite 1900
Denver, CO 80202

Cascade Creek 0697-15-08 Well Site

SENE of Section 15, Township 6 South, Range 97 West, 6th P.M.

Parcel # 216921400026

Surface Owner: Laramie Energy, LLC; Operator # 10433
1001 Seventeenth Street, Suite 1900
Denver, CO 80202

The Couey owned parcel adjacent to the Annex Cutting Facility and the CC 0697-15-08 well site is Parcel #216914100029.

Couey Family, LLLP
Noise and Lighting Letter Exceedances
June 15, 2021
Page 3 of 4

Cascade Creek 0603-23-32 Well Site

NESW of Section 3, Township 6 South, Range 97 West, 6th P.M.
Parcel #216902200030
Surface Owner: Couey Family, LLLP
6275 County Road 315
Silt, CO 81652

Cascade Creek 0610-21-41 Well Site

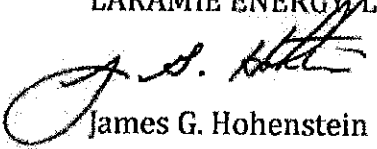
NENW of Section 10, Township 6 South, Range 97 West, 6th P.M.
Parcel # 216910100020
Surface Owner: Couey Family, LLLP
6275 County Road 315
Silt, CO 81652

If you have no objections to the Noise and Lighting Exceedances as set forth, please signify by executing this letter in the space provided below and return an executed copy to jhohenstein@laramie-energy.com. Please retain a fully executed copy of this letter for your records.

Thank you for your consideration in regard to this matter. If you should have any questions, comments or should you wish to discuss this subject further, please do not hesitate to call me at (303) 339-4408.

Very truly yours,

LARAMIE ENERGY, LLC



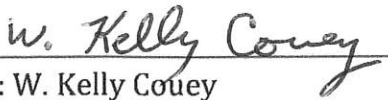
James G. Hohenstein
Vice President - Land

APPROVAL PAGE FOLLOWS:

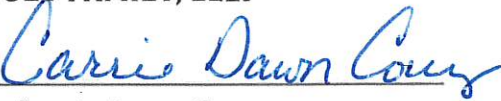
Couey Family, LLLP
Noise and Lighting Letter Exceedances
June 15, 2021
Page 4 of 4

WE HAVE NO OBJECTIONS TO THE NOISE AND LIGHTING EXCEEDANCES AS SET FORTH IN THIS LETTER.

COUEY FAMILY, LLLP


By: W. Kelly Couey
Title: General Partner
Date: June 27, 2021

COUEY FAMILY, LLLP


By: Carrie Dawn Couey
Title: General Partner
Date: June 27, 2021