

**AB32-01 PAD**

**STORMWATER MANAGEMENT PLAN  
[COGCC Rule 304.c.(15)]**

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## PLAN ADMINISTRATION

### 1.1 Introduction

This SWMP covers construction activities within a permitted area of the Denver-Julesburg Basin Wells Ranch CDP DP 137/AB32-01 Pad construction, which will occur within this permitted area.

The Colorado Oil and Gas Conservation Commission (COGCC) requires permittees to develop and implement a Stormwater Management Plan (SWMP) detailing practices to manage and inhibit contaminated stormwater generation and runoff. In addition to CDPHE requirements, Noble has prepared this document to satisfy the requirements of COGCC to develop a site-specific stormwater management plan (SWMP), consistent with the requirements of COGCC Rule 1002.f., to accompany the Form 2A in order to demonstrate the Commission's Rules for the operation of the proposed oil and gas location in a manner that is protective of and minimizes adverse impacts to public health, safety, welfare, the environment, and wildlife resources.

Control measures (CMs), formerly known as best management practices (BMPs), will be employed in accordance with good engineering, hydrologic, and pollution control practices in order to prevent pollution in stormwater discharges associated with the construction of the subject facility. All information and conditions represented herein are estimated and intended as a preliminary plan. Actual placement of CMs, etc. may deviate from the preliminary plan based on actual conditions discovered in the field and updates will be made accordingly.

### 1.2 Plan Availability

The Permit requires this plan be provided upon request to any agency (CDPHE, COGCC, local authority, etc.) with the authority to oversee erosion control, stormwater practices, or related construction activities. A signed certification statement must accompany agency submittals. Additionally, SWMPs must be available to the public in accordance with CDPS regulations. In the event of public requests, Noble retains the right to claim any portion of the SWMP confidential.

### 1.3 Qualified Stormwater Manager

This SWMP will be implemented and executed by Qualified Stormwater Managers (QSMs). The Permit defines a QSM as:

*“An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this Permit.”*

Noble will utilize QSMs as appropriate to conduct stormwater inspections, reporting, and maintenance. Overall SWMP implementation, however, is the responsibility of the Administrative QSM. The Administrative QSM is responsible to ensure the SWMP is fully implemented, and coordinates/delegates SMWP related activities. The following individual has been designated Administrative QSM:

Name: Erica Zuniga, PG

Title: Environmental Specialist

Phone: 970-304-5425

QSMs will work under the direction of the Administrative QSM and may include both Noble employees and consultants/contractors. Routine tasks undertaken by QSMs will include:

- Conducting inspections;
- Coordinating the construction of control measures (CMs);
- Coordinating CM repairs, corrective actions, and/or maintenance;
- Agency reporting and coordination; and
- Recordkeeping.

#### **1.4 Spill Prevention and Response Plans**

Prompt and effective spill response practices will be used at Noble locations. Some locations qualify for Spill Prevention Control and Countermeasure (SPCC) Plans under 40 CFR Part 112, and applicable SPCC plan requirements and obligations are incorporated by reference. Spill response guidance, including agency and chain of command reporting, is included as Appendix A.

#### **1.5 Plan Review and Revision**

This SWMP is intended to be a “living” document, updated as site conditions evolve and/or CMs are found inadequate. SWMP changes/revisions must be documented, including the date and a modification description. The types of changes that should be captured, include:

- A change in design, construction, operation, or maintenance of the site requiring implementation of new or revised CMs;
- The SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;
- Control measures identified in the SWMP are no longer necessary and are removed; and
- Corrective actions are taken onsite that result in a change to the SWMP.

Changes to practices described in this SWMP will be recorded on the *Plan Modification Record* page at the front of this document. Due to the large number of locations monitored at any given time, site conditions at individual disturbance locations are documented using an electronic database (SWMPcompliance.com). The database is used to document site-specific CMs, ineffective CMs or corrective actions, and inspections are recorded in the database. The database is updated routinely in coordination with the SWMP inspection program (Section 5).

#### **1.6 Plan Retention**

The master SWMP document will be stored electronically in the Noble network. Individual copies of the SWMP will be distributed to QSMs, as well as other groups (e.g., Production, Operations,

etc.) as warranted. Records associated with SWMP activities – including inspections, maps, maintenance records, etc. – must be kept a minimum of 3 years following Permit termination or expiration.

## **2.0 SITE DESCRIPTION**

### **2.1 Nature of Construction Activities**

Noble is proposing to construct the AB32-01 Pad, which consists of the development of infrastructure to support the drilling and production of five oil and gas wells (with fee mineral ownership) located in the NENE Section 32, Township 7 North, Range 64 West, 6th Principal Meridian. The proposed Pad location is on private land in an area with other existing oil and gas operations as well as agricultural and rangeland activities.

Total initial surface disturbance from construction of the well pad would be approximately 9.8 acres; 5.6 acres for the working pad surface area; 0.3 acres for the access road disturbance area; and 5.1 acres for the flowline corridor area. Following interim reclamation, well pad surface disturbance would be reduced to approximately 2.4 acres.

Generally, oil and natural gas operations encompasses three distinct work phases: building infrastructure/drilling and completions (construction phase), operating facilities (production phase), and plugging/abandoning/reclaiming (abandonment phase). Ground-disturbing work is typically limited to the construction and abandonment phases.

Typical activities where ground disturbance may occur include:

- Well pad or facility construction;
- Flowline installation;
- Access road development; and
- Reclamation.

#### **2.1.1 Long-Term Stormwater Management and Final Stabilization**

Long-term stormwater management and final stabilization are achieved through reclamation practices. Reclamation activities include site grading, preparation, and revegetation that inhibits stormwater runoff and promotes surface stabilization. Together, these practices stabilize disturbed soils until the location meets CDPHE and COGCC Final Stabilization criteria. CDPHE's *Fact Sheet for Modification, 1 Permit Number COR400000, GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY* defines Final Stabilization as:

*"The condition reached when construction activities at the site have been completed, permanent stabilization methods are complete, and temporary control measures are removed. Areas being stabilized with a vegetative cover must have evenly distributed perennial vegetation. The vegetation coverage must be, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site."*

Additionally, CDPHE determines that Final stabilization is reached when (1), (2), and (3) below are complete:

- (1) All construction activities are complete.
- (2) Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces, vegetative cover, or equivalent permanent alternative stabilization methods. The division may approve alternative final stabilization criteria for specific operations. Vegetative cover must meet the following criteria:
  - a. Evenly distributed perennial vegetation, and
  - b. Coverage, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.
- (3) The permittee must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e. biodegradable control measures).

In order to satisfy these requirements, locations must be contoured to minimize erosions, seeded, and CMs installed. However, locations must be monitored and maintained until Final Stabilization is achieved. Locations will be routinely inspected and repaired as needed as the location progresses to satisfactory revegetation. Inspection and maintenance practices are described in Section 5.0.

Once a location has achieved Final Stabilization, CDPHE coverage is no longer required. The site may, however, still require stormwater management under COGCCs 1000 Series rules. In these instances, Noble has prepared and implemented a Post-Construction SWMP for the DJ Basin Production Operations. The Post-Construction SWMP outlines procedures for maintaining stormwater compliance per COGCC regulations and is independent of the CDPHE Permit.

## **2.2 Sequence of Major Construction Activities**

As noted in the previous section, oil and natural gas operations occur across three general work phases: construction, production, and abandonment. The general construction sequence is as follows:

1. Site clearing/grubbing;
2. Site excavation and pad construction;
3. Well drilling and completion (well pads);
4. Installation of equipment, utilities, and appurtenances (well pads and facility pads);
5. Stabilization, reclamation, and long-term stormwater management

Table 1 provides a summary of CMs used through construction activities, and Table 2 details structural controls specific to the phases described in the following subsections. CM implementation is discussed in Section 4.

For stormwater management and compliance purposes, construction sites have been divided into four stormwater stages: Construction, Completed, Interim Stabilization, and Final Stabilization. This classification allows for alignment of CDPHE and COGCC stormwater and reclamation regulations specific to oil and gas development. The following sections define individual

stormwater stages and their respective activities. Details regarding inspection frequency at these locations is presented in Section 5.0.

### **2.2.1 Construction Stage**

The Construction Stage includes activities associated with infrastructure development from initial pad clearing through interim reclamation. The typical construction sequence includes site clearing/grubbing; site excavation, material import, construction, and compaction; well drilling and completion; installation of equipment, utilities, and appurtenances; and pad minimization through material export, recontouring, and decompaction. Well pads, production facilities, flowlines, and roads are built during this phase. CMs are installed prior to beginning construction activities. Temporary structural controls are installed prior to disturbance work, while permanent structural CMs are installed as applicable during construction.

### **2.2.2 Completed Stage**

Once the site has been built and construction activities have ceased, either temporarily or permanently, and the permanent CMs have been installed and determined adequate, the location progresses to the Completed Stage. Locations in the Completed Stage have not been revegetated. Activities normal to the Completed Stage include routine production work (liquids hauling, routine location maintenance, etc.). Ground-disturbing activities are uncommon during this stage.

### **2.2.3 Interim Stabilization Stage**

Site activities during the Interim Stabilization Stage are similar to the Completed Stage. However, to progress to the Interim Stabilization Stage, the location must meet the site preparation requirements for interim reclamation in accordance with COGCC 1000 series rules. This includes that the site has no further disturbance activities ongoing or planned, disturbed surfaces have been built on, compacted, covered/paved or otherwise stabilized, and the location has been seeded. Temporary and permanent CMs may be employed. Locations remain in the Interim Stabilization phase, including requirements for inspections and maintenance, until Final Stabilization criteria are met.

### **2.2.4 Final Stabilization Stage**

As defined in Section 2.1.1, CDPHE considers a location to have achieved Final Stabilization when that site has met the interim reclamation preparation requirements and has achieved vegetative cover equal to or exceeding 70% of pre-disturbance coverage. Croplands, however, are exempt from the 70% coverage requirement. Sites built in cropland may progress to Final Stabilization as long as construction activities have been completed, have been prepared in accordance with COGCC Rule 1003.e, and have been returned to agricultural use.

Although they will undergo abandonment and reclamation following its productive lifespan, producing oil and gas sites are considered finally stabilized under CDPHE requirements once site conditions meet the criteria above. Accordingly, CDPHE Permit coverage may be terminated at locations meeting CDPHE's final stabilization requirements. However, as long as the site is in production, annual inspections will be performed per COGCC requirements.

Once the wells are no longer economical to operate, they will be plugged & abandoned (P&A'd) and the location recontoured and reclaimed to pre-disturbance conditions and/or in accordance with the surface owner's wishes. When a well is P&A'd, the well head assembly is removed and the well permanently plugged downhole.

All equipment associated with the well is removed from the location unless the equipment is also used by other wells on the pad or in the area. Flowlines may be re-routed or abandoned as necessary. Once all equipment has been removed from the location and the well or wells are P&A'd, the location and associated access roads will be recontoured and reclaimed to pre-disturbance conditions and/or in accordance with the surface owner's wishes. Rock surfacing on the pad and access roads will be removed for beneficial re-use or offsite disposal. Topsoil will be respread following recontouring and decompaction to pre-disturbance conditions. All culverts, cattle guards, or other extractable structural CMs will be removed and either reused at new construction sites, recycled as scrap, or disposed of as solid waste. Once the location is recontoured, topsoil is reapplied across the location in preparation for seeding. The reclamation is monitored until COGCC requirements are met and the location is cleared for final reclamation

### **2.3 Total Disturbance Area**

The total area permitted for the AB32-01 Pad is 9.8 acres. Once all drilling and completion activities are complete, the pad size will be reduced to 2.1 acres to minimize the long-term disturbance during the production phase. The fieldwide Wells Ranch Drilling and Production Program permitted area boundaries are shown on Figure 1, and the site-specific grading plan for the AB32-01 Pad permitted area boundaries is shown on Figure 2. The disturbed area is recorded in the SWMP Comp database as a component of routine inspections (see Section 5).

### **2.4 Soil Description**

To determine anticipated site characteristics for the project site, Geographic Information System (GIS) data from the Natural Resource Conservation Service (NRCS, <http://websoilsurvey.nrcs.usda.gov/app/>) along with aerial photography was overlain on the site proposed disturbance boundary to derive potential ecological site descriptions (ESDs) and NRCS soil map units. A desktop review of the proposed project area indicates the presence of two soils map units – 98% consisting of Renohill clay loam (0% to 3% slopes) and 2% consisting of Aquolls and Aquepts (flooded).

The soils reports can be found in Appendix B.

### **2.5 Vegetation Description**

Permitted area vegetation is zoned as agricultural and is currently used for farming.

### **2.6 Receiving Waters and Stream Crossings**

The nearest waterbody is an unnamed pond, which is located 571 feet northwest of the location. Of note, a seasonal intermittent streambed wetland was identified on the northeastern corner of the location.

Nearest water body information also can be viewed at following website: [https://cogccmap.state.co.us/cogcc\\_gis\\_online/](https://cogccmap.state.co.us/cogcc_gis_online/).

## **2.7 Non-Stormwater Discharges and Construction Dewatering**

Excepting specific circumstances, the Permit does not cover non-stormwater discharges from permitted locations. A non-stormwater discharge is considered any discharge from the facility that is not entirely composed of rainfall/snowmelt. Non-stormwater discharges that are permissible under the permit include:

- Discharges from uncontaminated springs that do not originate from an area of land disturbance;
- Discharges to the ground of concrete washout water associated the washing of concrete tools and concrete mixer chutes. Discharges of concrete washout water must not leave the site as surface runoff, or otherwise reach receiving waters; and
- Discharges of landscape irrigation return flow.

Incidental construction dewatering, which is classified as a non-stormwater discharge, may occur at Noble Energy construction locations. CDPHE has implemented a separate low-risk dewatering guidance which enables groundwater dewatering discharge under specific circumstances. Prior to conducting dewatering activities, locations will be assessed to determine if they meet the low-risk criteria. Appropriate controls and procedures must be implemented prior to discharge. When dewatering activity that does not meet low-risk discharge criteria, Noble Energy will apply for a separate construction dewatering permit from the state, as required. Should dewatering take place, appropriate CMs will be implemented to prevent erosion or other contamination.

## **3.0 IDENTIFICATION OF POTENTIAL POLLUTANT SOURCES**

### **3.1 Potential Pollution Source Assessment**

Stormwater pollutants may include any potentially detrimental material capable of offsite transport when mobilized by precipitation or wind. Generally, potential stormwater pollutant sources in oil and gas operations include soil disturbance, bulk storage, and operation and maintenance activities. Typical pollutants associated with these activities are sediment (resulting from site erosion) and so-called significant materials. The Permit defines *significant materials* broadly as materials that have the potential to be released with stormwater discharges and includes raw materials, fuels, solvents, fertilizers, pesticides, hazardous substances, and waste products.

The Permit requires a detailed assessment of potential site pollutant sources. Specifically, the following sources must be evaluated:

- Disturbed and stored soil;
- Vehicle tracking controls;
- Management of contaminated soil;
- Loading and unloading operations;
- Outdoor storage activities;

- Vehicle and equipment maintenance and fueling;
- Dust- or particulate-generating processes;
- Routine maintenance activities;
- On-site waste management practices;
- Concrete truck washing/equipment washing;
- Dedicated asphalt/concrete batch plants and masonry mixing stations; and
- Non-industrial waste sources.

The following subsections detail potential pollutant exposure resulting from these individual sources. Additionally, a summary of pollutant source applicability and corresponding mitigating CMs is presented in Table 3.

### **3.1.1 Disturbed and Stored Soils**

During initial location construction and during reclamation, activities will include significant soil-disturbing activities, which may introduce erosion as a potential pollutant source. Soil disturbance will again be present during site reclamation activities. Additionally, topsoil and/or overburden may be stored on site, intended for post-abonnement reclamation.

### **3.1.2 Vehicle Tracking Controls**

Locations are anticipated to experience offsite traffic during both construction and routine production operations. Accordingly, offsite tracking of sediment may pose stormwater pollution potential.

### **3.1.3 Management of Contaminated Soils**

During both construction and routine production activities, significant materials may be present. Incidental spills of these materials would conceivably generate contaminated soils. Contaminated soils may subsequently be stored in stockpiles onsite to await characterization and either treatment or disposal.

### **3.1.4 Loading and Unloading Operations**

Outdoor loading and unloading activities occur during construction, well drilling, well completion, and production activities. This includes loading/unloading of significant materials. Well drilling and completion materials are unloaded from trucks into site tanks or directly into the well. During construction, on-site fuel tanks may be refilled as needed.

Additionally, loading of crude oil or produced water from production tanks to tanker trucks is part of routine production operations. Spills during either process may present potential stormwater pollutants. Similarly, outdoor non-petroleum chemical storage may occur at locations as part of routine operations and maintenance. These items may be restocked from bulk transport.

### **3.1.5 Outdoor Storage Activities**

Short-term and/or long-term outdoor significant material storage may occur at Noble locations, particularly at well pads or production facilities. Materials stored temporarily are generally

associated with drilling and completion activities, while materials stored long term are associated with routine production activities (e.g., maintenance, operation, etc.). Materials stored outside are subject to good housekeeping and material handling CMs (Section 4.0), but may still be exposed to precipitation.

### **3.1.6 Vehicle and Equipment Maintenance and Fueling**

Noble may periodically conduct re-fueling operations on location. Equipment subject to onsite refueling includes dirt moving equipment, vehicles, and generators. Routine vehicle maintenance is typically not conducted onsite. However, in some instances such as breakdown, vehicle maintenance may need to occur onsite. Additionally, maintenance of well heads, separators, or other production equipment will be a routine occurrence during production. During these activities, lubricants, oils, fuels, and solvents may be spilled or otherwise exposed to stormwater.

### **3.1.7 Dust or Particulate Generating Processes**

Routine site traffic and/or site construction and excavations may produce dusty conditions, depending on soil and weather conditions. Dust and particulate generation tend to occur in areas with fine soils, dry conditions, and high winds – conditions which exist in some portions of the Permit area.

### **3.1.8 Routine Maintenance Activities**

Once locations have been constructed and are fully operational, routine maintenance will be part of standard operations. Well heads, separators/treaters, etc. might all require routine maintenance. Equipment maintenance may include the use of solvents, lubricants, or other chemicals. Additionally, herbicides will be applied, as warranted, to control noxious weeds; however, they will not be stored in bulk onsite.

### **3.1.9 On-site Waste Management Practices**

Waste generated at oil and gas facilities is generally classified as Exploration and Production (E&P) waste. E&P wastes generated at Noble sites may include drilling byproducts, completion waste products, tank bottoms, workover wastes, pigging wastes, and other common E&P waste. Wastes are managed according to applicable State and Federal regulations. Contaminated materials may be stored or stockpiled onsite during accumulation, treatment, or characterization activities. Although proper segregation practices will be used, potential for stormwater impacts exist.

### **3.1.10 Concrete Truck/Equipment Washing**

Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment, is not anticipated at the AB32-01 Pad. Concrete is typically mixed in the drill hole and concrete truck/equipment washing is conducted offsite.

### **3.1.11 Dedicated Concrete and Asphalt Batch Plants and Masonry Mixing Stations**

Noble does not own or operate dedicated concrete/asphalt batch plants or masonry mixing stations are located within the Permit area.

### **3.1.12 Non-Industrial Waste Sources**

During site construction when large numbers of workers may be present on a site, general rubbish (litter, packaging, etc.) may be generated as part of routine work. Similarly, during these activities, portable toilets may be present onsite to service field staff. Cleanup of trash and discarded materials will be conducted as needed. Although Noble requires both to be monitored, improper management may allow wastes to impact stormwater.

## **4.0 STORMWATER MANAGEMENT CONTROLS**

### **4.1 Control Measure Implementation**

The incidence of pollutants reaching State Waters may be reduced or eliminated through CM implementation at the AB32-01 Pad. Noble utilizes two types of CMs to manage stormwater pollutants: structural CMs and nonstructural CMs. Structural CMs include physical barriers that prevent or minimize stormwater impacts. Nonstructural CMs are not physical devices and are implemented at the administrative or planning level. A summary of structural and non-structural CMs used by Noble are shown in Table 1. Typically, a combination of structural and non-structural CM will be implemented at Noble construction sites. CMs will be selected according to potential pollutant sources and site-specific conditions. Table 3 summarizes potential pollutant sources and corresponding CMs. Site stormwater controls will be implemented based on best management practices, including structural and nonstructural controls, and will ultimately be stabilized for long-term operations. Structural and nonstructural CM practices are discussed in the following subsections.

Physical CMs are intended to be used as part of a treatment train (consecutive CMs, working in tandem) that is both compliant with current rules and acceptable to the landowner. Operations specifically conducted within the boundaries of the Wells Ranch permit will utilize CMs specified in the CM manual. These CMs have been selected for operations on Wells Ranch with consensus from the landowner.

#### **4.1.1 Structural Practices for Erosion and Sediment Control**

Structural practices are physical devices or barriers employed to reduce erosion, manage stormwater, or inhibit sediment transport. Site construction normally requires the removal of vegetative cover and topsoil, subsequently increasing peak flood flows, runoff velocity, and the total stormwater runoff volume. These factors contribute to increased runoff, erosion, and offsite sediment transport. Accordingly, the primary objective of structural controls is to inhibit erosion and sediment transport.

Structural CMs (formerly BMPs) broadly fit into two categories: erosion controls and sediment controls. Erosion control measures typically inhibit erosion through surface stabilization and reduced runoff velocities. Sediment control measures are hydraulic controls that promote

deposition of suspended particles. Erosion control and sediment control measures are used in conjunction with one another. Common structural CMs implemented during various construction stages (Section 2.2) are shown in Table 2.

The Wells Ranch estate has instituted specific CM practices within ranch boundaries. Accordingly, structural CM implementation within Wells Ranch itself may differ from other locations within the permitted area. As with other locations, structural CMs will be implemented based on good hydraulic and engineering practices. Structural CM practices specific to the AB32-01 Pad located within the Wells Ranch proper area will include the following:

- Compost filter socks (Filtrexx or similar) sediment control logs (CFS);
- Culverts (C);
- Ditch/channel (D);
- Erosion control blankets/mats (ECB);
- Hydro-mulch (HM);
- Riprap (R);
- Sediment basins/detention ponds (SB);
- Seeding (S);
- Soil roughening (SR); and
- Trash racks (TR).

Preferred structural CMs on the Wells Ranch estate are those that limit vegetative disturbance, including hydro-mulch, crimping, vegetative stabilization, slope drains, and berms. In order to be effective, structural CMs must be properly installed/constructed and routinely maintained. Noble's CM Manual provides detailed specifications regarding CM construction and maintenance. Additionally, details regarding Noble's inspection and maintenance program are presented in Section 5.

#### **4.1.1.1 Detailed Structural Practices**

The following guidelines should be implemented, to the extent practicable, as minimum structural CMs:

- To prevent tracking of sediment off site, vehicle tracking controls should be installed at the start of work.
- Stormwater leaving the site will encounter at least one treatment (sedimentation) CM prior to discharge.
- Erosion and sediment control CMs will be installed in conjunction. CDPHE considers site erosion a violation of effluent limits, even if sediment is not transported off site. Sediment controls alone are not considered sufficient.
- Structural CMs should be installed in accordance with the CM manual specification.
- Where conditions warrant, run-on will be diverted prior to reaching the pad.
- During construction near perennial streams, lakes, wetlands, or other State Waters minimum vegetation requirements will be observed, as practicable.
- Pads will be fenced to limit access to cattle and unauthorized travel. Fencing should include cattle guards (which may also serve as tracking controls).

## **4.2 Non-Structural Practices for Erosion and Sediment Control**

Nonstructural CMs are not physical CMs but may promote similar hydrologic effects as structural CMs (i.e., inhibiting runoff and erosion). They include a broad set of administrative practices that reduce potential stormwater impacts. Good waste management practices, good housekeeping, routine inspections/maintenance, good material handling practices, and construction phasing are all examples of nonstructural CMs. Non-structural practices are summarized in Table 1. The following subsections generally describe Noble's nonstructural CMs.

### **4.2.1 Phased Construction and Vegetation Preservation**

Phased construction scheduling can limit the disturbed area exposed to stormwater at a given time. Using this practice, permittees perform construction/disturbance activities in a phased manner and only clear areas as when they intend to perform work in the near term (as opposed to clearing an entire development area at once). This approach reduces erosion from areas that may not be immediately scheduled for construction by allowing existing vegetative cover to reduce stormwater runoff.

Similarly, preserving existing vegetative cover when possible will reduce the area susceptible to erosion and reduce sediment transport. Construction practices should be implemented that preserve existing vegetation and limit unnecessary disturbances.

### **4.2.2 Material Handling and Spill Prevention**

Significant materials that may be stored onsite include fuel and lubricants for construction equipment and vehicles, small quantities of paints and solvents, water- or gel-based drilling fluids used during well completion, concrete, produced water, and crude oil/condensate. Safety Data Sheets (SDS) for materials to be used or that are produced are maintained in Noble's online database or maintained on site. Significant materials should be limited to as-needed quantities for the immediate operations underway.

Materials management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. This includes the use of drip pans, properly covering containers, and proper material storage (e.g., on pallets). Additionally, materials stored in bulk (i.e., exceeding 55 gallons) will have secondary containment or equivalent protection. Excess material that accumulates within secondary containment that comesling with stormwater will be removed when one-half ( $\frac{1}{2}$ ) of containment capacity is reached. All material removed from containment will be disposed of at an approved and permitted disposal facility.

Any unintentional release will be promptly reported according to Noble's Incident Reporting Procedure. Spills will be contained and cleaned up using approved spill procedures. If spill impacts warrant further attention, sites may also undergo remediation.

Stockpiled materials, such as topsoil or overburden, will have appropriate structural CMs installed. Most commonly, this will include surface roughening/vehicle tracking and/or tackifier application. Additionally, good segregation practices will be employed to prevent material comingling (e.g., topsoil segregated from overburden or contaminated materials segregated from clean materials).

### **4.2.3 Vehicle Tracking Control**

As described in Section 4.1.1, Noble will introduce structural CMs to mitigate vehicle sediment tracking. If these are found to be inadequate, Noble may introduce nonstructural CMs, such as street sweeping or surface stabilization, into the construction planning process.

### **4.2.4 Waste Management Practices**

Typical wastes generated at Noble project area construction sites include trash, portable toilet liquids, maintenance lubricants/liquids, drill cuttings, and flowback wastes. These wastes may be temporarily stored on location. Wastes will be properly stored onsite and prevented from comingling with stormwater or being blown offsite. Segregation techniques may include proper containerizing, berm/containment construction, or absorbent boom deployment. All collected waste will be properly characterized and, when practicable, it will be reused or recycled. All waste that is not reused or recycled will be disposed of at an approved and permitted disposal facility. Wastes generated at Noble facilities include multiple categories. Specific waste management practices for individual categories that may be stored on site are described in the following subsections.

#### **4.2.4.1 Non-Industrial Waste**

Non-industrial wastes include litter, package materials, shipping materials, food wastes, portable toilets, and all other general wastes. At Noble locations, trash is stored in covered dumpsters to limit stormwater contact and wind transport. Dumpsters are routinely emptied by a dedicated contractor and disposed of at an approved and permitted facility.

Portable facilities are anchored to prevent them from tipping over. These facilities are also emptied and maintained by a dedicated contractor on an as-needed basis. During stormwater inspections, portable facilities are checked for the presence of anchoring devices.

#### **4.2.4.2 Preventative Maintenance Waste**

Routine equipment maintenance during production activities may produce wastes. All routine maintenance lubricants/liquids (used or unused) 55 gallons or greater are kept in secondary containment. Used lubricants/liquids are removed from the site and disposed of at an approved and permitted facility.

#### **4.2.4.3 Exploration and Production Waste**

E&P wastes are wastes generated during exploration, development, or production at oil and gas sites. All E&P waste will be disposed of or recycled in accordance with COGCC 900 series rules and regulations.

#### **4.2.4.4 Non-Routine Waste Generation**

Periodically, non-routine wastes (such as tank bottoms) may be generated at a location. Non-routine wastes will be characterized and disposed of in accordance with applicable regulations.

#### **4.2.5 Good Housekeeping**

Noble has implemented good housekeeping practices as part of routine operations. Housekeeping CMs include procedures to promote regular cleaning, organization, and maintenance of temporary and permanent equipment, and routine maintenance of structural CMs. Conducting routine site inspections is a critical component of good housekeeping. Noble's inspection and maintenance program is described in Section 5.

The following good housekeeping practices are part of routine operations:

- Bulk storage containers 55 gallons or greater housed onsite for production operations are stored in secondary containment;
- Use of drip pans and or sorbent materials during vehicle maintenance or material handling;
- Properly cover/seal material containers;
- Conduct routine site inspections;
- Promptly address corrective actions identified during inspections;
- Maintain stormwater management structures and components;
- Routine trash collection and disposal;
- Properly labeling significant material containers;
- Promote quick spill response/clean up by familiarizing employees and contractors with spill cleanup procedures; and
- Familiarize employees and contractors with good housekeeping procedures and pollution prevention procedures.

### **5.0 INSPECTION AND MAINTENANCE PROCEDURES**

#### **5.1 Inspection Scope**

Routine inspections are conducted to evaluate the implementation, effectiveness, and condition of structural and nonstructural control measures. Inspections will be conducted by individuals trained to evaluate stormwater management practices and meeting the definition of a QSM (Section 1.3).

Inspections have four objectives:

- Visually verify structural CMs are installed and operating according to specifications;
- Identification of new or changing onsite pollutant sources;
- Assess the adequacy of structural and nonstructural CMs and identify areas requiring new or modified control measures to minimize pollutant discharges; and
- Identification of any areas of maintenance, non-compliance, and/or corrective actions.

Inspectors will document non-compliance conditions or maintenance items identified during inspections. Corrective actions and/or routine maintenance items identified during inspections will be addressed in a timely manner. Corrective actions and routine maintenance are discussed

in Section 5.2. As a site evolves during the construction cycle, inspectors will document changes on reports and site figures, as warranted. Inspection report contents are detailed in Section 5.5.

During an inspection, inspectors should evaluate locations for pollutants leaving the site, or discharging to state waters. The Permit requires the following areas be inspected at each site:

- Construction site perimeter;
- All disturbed areas;
- Designated haul routes;
- Material and waste storage areas exposed to precipitation;
- Locations where stormwater has the potential to discharge offsite; and
- Locations where vehicles exit the site.

For stormwater compliance purposes, construction sites have been divided into stormwater inspection stages (Section 2.2): Construction, Completed, Interim Stabilization, and Final Stabilization. Under this SWMP, only Construction, Completed, and Interim Stabilization phase sites will be inspected. Once a site achieves Final Stabilization, Permit coverage for that site is terminated. The inspection schedule across the various construction phases is discussed in Section 5.3.

## **5.2 Preventative Maintenance and Corrective Actions**

During an inspection, inspectors may identify CMs that require maintenance. Generally, these CM repairs will fall into two categories: preventative maintenance and corrective actions.

Preventative maintenance repairs are those where the CMs are still performing adequately, but the CM requires proactive maintenance. An example of preventative maintenance would be clearing small amounts of sediment from a sediment trap. Individual CM maintenance requirements are detailed in the CM Manual. There is no mandatory Permit timeline for repair; however, preventative maintenance should be conducted as soon as practicable – otherwise the finding may move to a corrective action.

A corrective action, in contrast, is when a CM is found to have failed or would fail during the next rain event or is inadequate. Examples of corrective actions include a sediment log which has been overwhelmed (leading to sediment discharge) or sediment accumulating above acceptable levels identified in manufacturer specifications. Maintenance specifications are provided in the CM Manual. The Permit requires corrective actions to be repaired upon discovery and the permittee is noncompliant with the Permit until the corrective action(s) are resolved. Additionally, materials (e.g., sediment) leaving the site may need to be recovered. If immediate action on a corrective action is infeasible, Noble will document why it is infeasible and include a repair schedule.

Noble will manage repairs through its database system. Repair items identified during inspections will be captured in the database. Repair items will be summarized and sent to construction foreman or contractors for assignment. Contractors performing repairs subsequently document repairs as completed in the database, and repairs identified as completed are automatically rescheduled to undergo follow-up inspections.

### **5.3 Inspection Schedule**

Noble conducts routine site inspection from the start of construction through Final Stabilization. The Permit allows for varying inspection frequencies based on what construction stage the locations is currently in. For stormwater tracking and compliance, Noble has designated four stormwater stages: Construction, Completed, Interim Stabilization, and Final Stabilization. Project stages are described in Section 2.2. Each stage has set criteria and an associated inspection frequency, which are detailed in the following subsections.

Effective August 12, 2020, CDPHE granted the approval of an alternate inspection schedule only for locations that have been plugged and abandoned (P&A). The approval is limited to the construction activities identified in the applications on file for permit certifications COR403291, COR403294, COR403293.

When evaluating locations for “elevated risk,” two primary factors will be considered: slope and proximity to State Waters.

- Locations with slopes greater than or equal to 3:1 slope will be categorized as increased risk locations.
- Locations within 500 feet of a spring, stream, wetland, municipal system, other State Waters will be considered increased risk. This distance is based on COGCC Tier 1 stormwater criteria and was selected to maintain alignment with COGCC rules.

Under the alternative inspection schedule, inspection frequency would be based on risk categorization. Locations will be assigned to one of two categories for initial inspections: “standard sites” or “elevated risk.” Additionally, inspection frequencies would be increased on an individual basis at locations where corrective actions have been observed (corrective actions will be addressed as required in the LCGP). Under this approach, inspections would be completed at the following frequencies:

- Bi-annual inspection site visits for standard risk locations.
- Quarterly visits for locations with elevated risk, until 50% revegetation is achieved; bi-annual inspections thereafter.
- Regardless of initial risk categorization, locations with corrective actions will be inspected within 14 days of the corrective measure implementation to ensure satisfactory performance and then returned to their original category.

#### **5.3.1 Construction Stage Inspections**

When the AB32-01 Pad is being actively constructed, it is considered to be in the Construction Stage. During active construction, CDPHE allows permittees to select one of the follow two inspection frequencies:

1. At least one inspection every 7 calendar days; OR
2. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours following precipitation which causes surface erosion.

Under scenario 2, an additional reduced inspection frequency provision exists. If no construction activities will occur following a storm event at a temporarily idle site, post-storm event inspections will be conducted prior to re-commencing construction activities, but no later than 72 hours following the storm event. Routine inspections will still be conducted at least every 14 calendar days. The selected inspection frequency will be noted on inspection forms.

### **5.3.2 Completed Stage Inspections**

The AB32-01 Pad will enter the Completed Stage once disturbance activities have ceased and all of the interim reclamation work has been completed, except that the site has not yet been revegetated. For example, this may occur if a site cannot be re-seeded due to weather or seasonal conditions, but all other construction and reclamation is complete. Once the Pad enters the Completed Stage, it will be inspected a minimum of once every 30 days. Post-precipitation inspections are not required once the Pad is in the Completed Stage. However, more frequent inspections may be directed by Noble to confirm adequate maintenance or repairs.

### **5.3.3 Interim Stabilization Stage Inspections**

Interim Stabilization is generally similar to the Completed stage, except the site has also undergone re-seeding. As with the Completed Stage, inspections will be conducted at least once every 30 days (but are not needed after precipitation events) until Final Stabilization is reached.

### **5.3.4 Final Stabilization Stage**

Once the site achieves sufficient revegetation and meets the CDPHE requirements, its Permit coverage is terminated. Inspections are not required under this permit; however, they will be conducted annually under aforementioned COGCC rules.

## **5.4 Winter Conditions Exclusion**

Inspections will not be required at facilities meeting all of the following conditions: construction activities have been temporarily halted; snow cover exists over the entire site for an extended period; and melting conditions do not exist. This exception applies to all Construction stages. When this exclusion is implemented, Noble will document the following:

- Dates when snow cover existed;
- Date when construction ceased; and
- Date melting conditions began.

## **Precipitation Event Inspections**

When necessary, site inspections will be conducted within 24 hours after a precipitation or snowmelt event that causes surface erosion on sites where construction is occurring. Surface erosion generally occurs when precipitation or snowmelt results in surface water flow. If the precipitation infiltrates, then no inspection is required. In order to determine if surface erosion or surface water flow resulted from a precipitation or snowmelt event, locations with active construction within the area of rainfall will be evaluated for surface erosion, offsite sediment transportation, and/or offsite release of muddy water. If the selected locations and associated areas

do not show any onsite surface erosion, offsite sediment release, or offsite muddy water releases, none of the remaining construction sites will be inspected.

Inspection results of the locations will determine or trigger the inspection of all locations in the construction phase. Selection of sites to be evaluated may be based on one or more of the following criteria:

- A site that has a cut or fill slope that has a steeper grade than 4:1;
- A site that has erosion and/or sediment control structures installed and is near surface water; and
- Total precipitation in an area based on available weather data.

### **5.5 Inspection Reporting**

The Permit requires Noble to conduct inspections at individual disturbance sites. Additionally, permittees are required to document inspections, including recording noncompliance incidents. Inspection observations are recorded on an electronic inspection report form, which is integrated into Noble's stormwater database. Inspections reports should contain the following elements:

1. Inspection date
2. Names(s) and title(s) of personnel making the inspection
3. Weather conditions at the time of inspection
4. Construction phase observed during inspection
5. Estimated acreage of disturbance at inspection
6. Location(s) of discharges of sediment or other pollutants from the site
7. Location(s) of CMs that need to be maintained
8. Location(s) and identification of inadequate CMs
9. Locations and identification of additional CMs are needed that were not in place at time of inspection
10. Description of current site inspection schedule assignment
11. Deviations from the minimum inspection schedule
12. When a site is free from corrective actions, or following resolution of corrective actions, a designated QSM will sign/certify the following statement: *"I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the Permit."*

Maintenance items identified on inspections reports are summarized and distributed to individuals responsible for repairs. When repairs cannot be promptly completed, Noble will document the reason for the delay and include a completion timeline.

As part of routine inspections, QSMs will update individual site maps to reflect conditions during field inspections. Individual site maps will be created for each disturbance location and updated continuously until Final Stabilization. Required site map elements are discussed in the following subsection.

### 5.5.1 Site Maps

Permittees are required to develop and maintain site maps, detailing current site conditions. Under Noble's Permit, individual maps will be created for disturbed areas (pad, facility, etc.). QSMs will update maps following site visits as part of routine inspection reporting. Site maps will contain the following information:

- Construction site boundaries
- Flow arrows depicting stormwater overland flow and runoff directions
- All areas of ground disturbance, including borrow and fill
- Soil stockpile areas
- Location of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt
- Locations of dedicated asphalt, concrete batch plants and masonry mixing stations
- Locations of all structural control measures
- Locations of all non-structural control measures
- Locations of springs, streams, wetlands and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, as feasible
- Locations of all stream crossings within the construction site boundary

Individual site maps will be stored in the stormwater database.

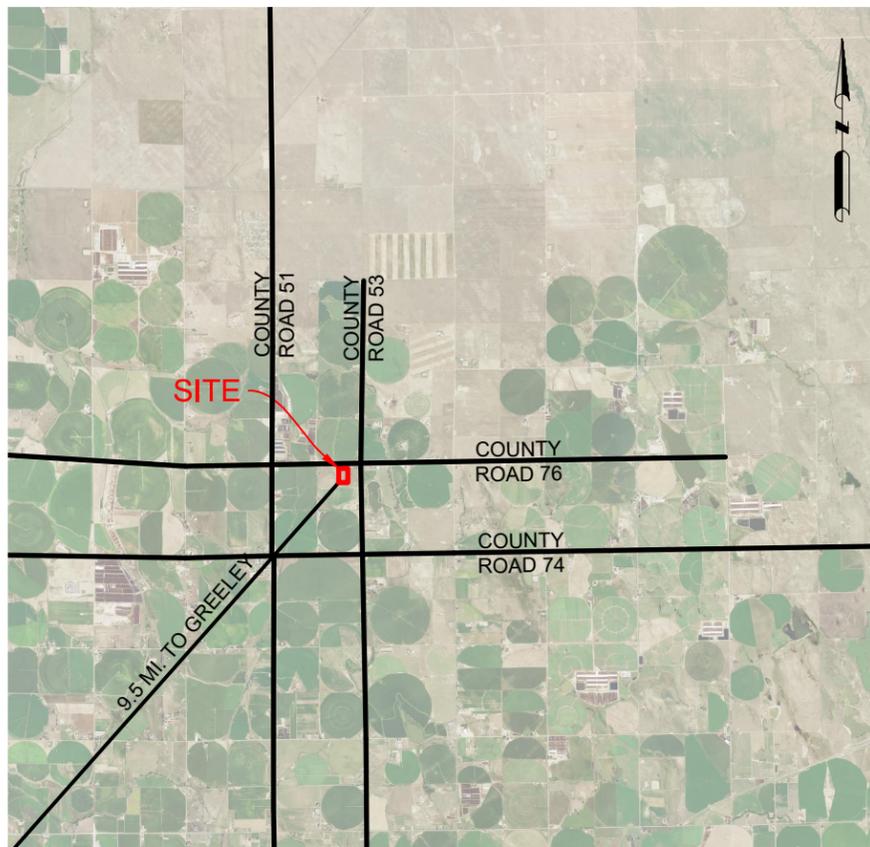
**FIGURE 1**

**WELLS RANCH DRILLING AND PRODUCTION PROGRAM AREA**

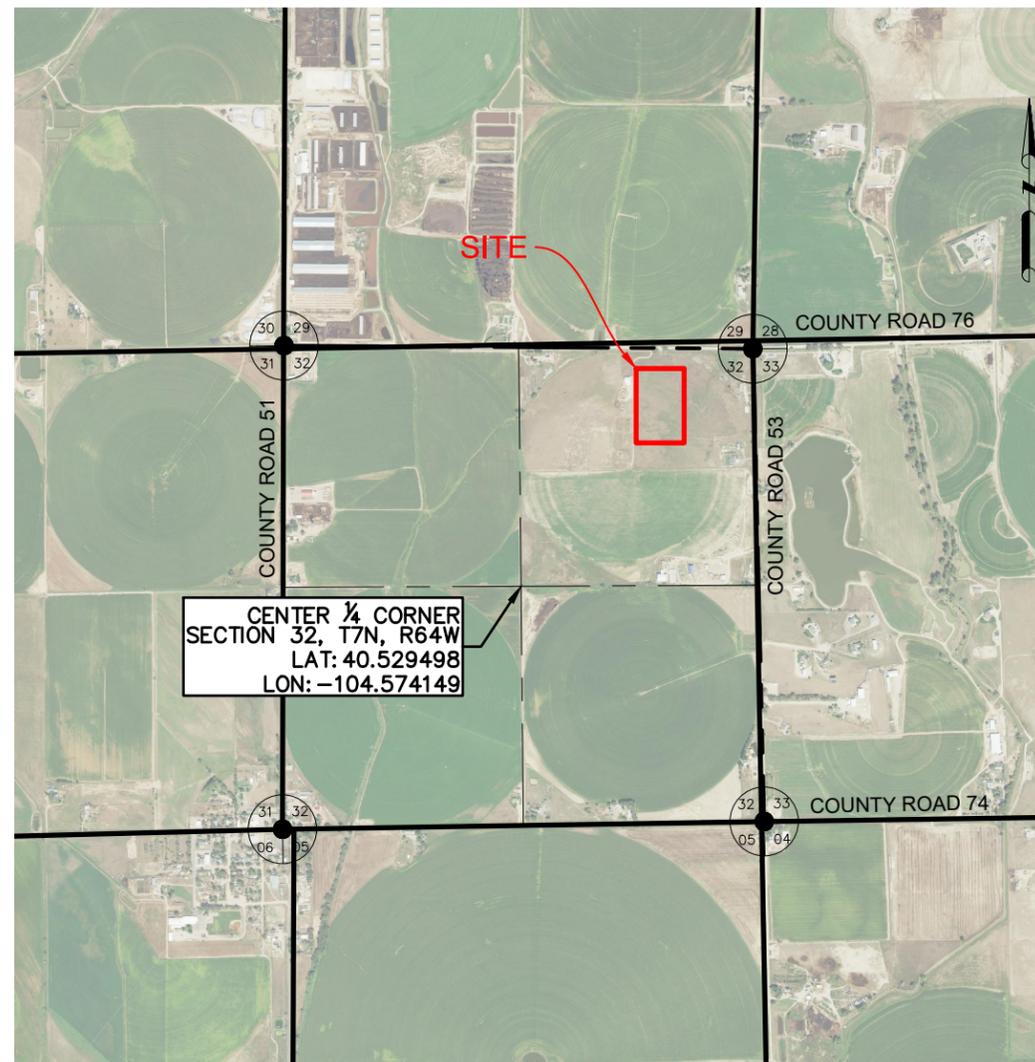


**FIGURE 2**  
**SITE-SPECIFIC GRADING PLAN**

AB32-01 PAD  
GRADING PLAN



**REGIONAL MAP**  
N.T.S.



**VICINITY MAP**  
N.T.S.

DRAWING INDEX		
SHEET NO.	TITLE	REV.
1	COVER SHEET	B
2	GENERAL NOTES	B
3	PAD LAYOUT	A
4	CROSS SECTIONS	A
5	RIG LAYOUT	A
6	COMPLETIONS LAYOUT	A
7	PRODUCTION LAYOUT	B
8	INTERIM-RECLAMATION LAYOUT	B
9	EROSION & SEDIMENT CONTROL PLAN - INITIAL	A
10	EROSION & SEDIMENT CONTROL PLAN - INTERIM	A
11	EROSION & SEDIMENT CONTROL PLAN - FINAL	B
12	EROSION & SEDIMENT CONTROL - NOTES	A
13	EROSION & SEDIMENT CONTROL - TYPICAL DETAILS	A
14	EROSION & SEDIMENT CONTROL - TYPICAL DETAILS	A
15	EROSION & SEDIMENT CONTROL - TYPICAL DETAILS	A

ITEM	SPECIFICATION	SIZE	UNIT	QUANTITY
RECLAIMED ROAD BASE			CY	4,506
AGGREGATE BASE COURSE	1-1/2" CRUSHED ANGULAR ROCK		CY	4,506
RIPRAP	TYPE 'L' (D50 = 9")		CY	7
RIPRAP	TYPE 'M' (D50=12")		CY	48
CULVERT	14 GAGE, 2-2/3"x1/2" CSP	24"	LF	144
FLARED END SECTION		24"	EA	4
TRASH RACK	A36 STEEL	24"	EA	4
SEDIMENT CONTROL LOG			LF	2,619
SEED MIXTURE			SF	455,186
STAND PIPE	SCHEDULE 40 PVC	8"	LF	8
OUTLET PIPE	SCHEDULE 40 PVC	12"	LF	45
90° ELBOW	SCHEDULE 40 PVC	8"	EA	1
REDUCER	SCHEDULE 40 PVC	8"x12"	EA	1
SHEET PILE	0.375" ASTM A 572 GRADE 60 GALVANIZED STEEL	96"x480"	EA	1
ANTI-SEEP COLLAR	HDPE	4"x4"x1/4"	EA	2

DATA SOURCE:  
AERIAL IMAGERY: NAIP 2019

PUBLICLY AVAILABLE DATA SOURCES HAVE NOT BEEN INDEPENDENTLY VERIFIED BY ASCENT.

DISCLAIMER:

THIS PLOT DOES NOT REPRESENT A MONUMENTED LAND SURVEY AND SHOULD NOT BE RELIED UPON TO DETERMINE BOUNDARY LINES, PROPERTY OWNERSHIP OR OTHER PROPERTY INTERESTS. PARCEL LINES, IF DEPICTED HAVE NOT BEEN FIELD VERIFIED AND MAY BE BASED UPON PUBLICLY AVAILABLE DATA THAT ALSO HAS NOT BEEN INDEPENDENTLY VERIFIED.



ASCENT GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
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PREPARED FOR:



NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
COVER SHEET

SURFACE LOCATION

AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

REV.	DATE	DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG
B	07/29/21	ISSUED FOR REVIEW	KTL
			I
			I
			I

FIELD DATE:  
05-02-2019

DRAWING DATE:  
06-28-2021

DRAFTED BY:  
CSG

SHEET NO.  
01 OF 15

**PRELIMINARY**

**GENERAL NOTES**

- SHOULD ARTIFACTS OF POTENTIAL HISTORICAL SIGNIFICANCE BE ENCOUNTERED DURING EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY CLIENT AND DISCONTINUE EXCAVATION IN THE AFFECTED AREA UNTIL OTHERWISE NOTIFIED BY THE CLIENT OR ENGINEER. ANY DAMAGE TO A DESIGNATED ARCHEOLOGICAL SITE AS A RESULT OF CONTRACTOR NEGLIGENCE SHALL BE THE SOLE RESPONSIBILITY OF CONTRACTOR.
- DO NOT PERFORM ANY GRADING OR GRUBBING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS, OR INTO NATURAL WATERCOURSES.
- THE CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE OWNER AND ENGINEER.
- CONTRACTOR SHALL MAINTAIN A SET OF AS-BUILT DRAWINGS WITH ALL CHANGES IDENTIFIED. THE AS-BUILT FIELD DRAWINGS SHALL BE SUBMITTED TO CLIENT AT PROJECT COMPLETION.

**SAFETY**

- THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY OF HIS OWN PERSONNEL, ALL VISITORS TO THE SITE, AND THE GENERAL PUBLIC. CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF ALL APPLICABLE HEALTH AND SAFETY STANDARDS INCLUDING, BUT NOT LIMITED TO, OSHA 29 CFR PARTS 1910 AND 1926 FOR GENERAL CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF DUST CONTROL. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING ALL PHASES OF SITE PREP, EARTHWORKS AND GRADING.
- UNLESS A SAFE EXCAVATION/TRENCH DEPTH IS SPECIFICALLY IDENTIFIED DURING THE PRECONSTRUCTION SAFETY ASSESSMENT BY QUALIFIED PERSONNEL, WHERE PERSONNEL ENTER EXCAVATIONS 4 FEET OR MORE IN DEPTH, PROTECT THE EXCAVATION WITH A SUPPORT SYSTEM OF SLOPING, SHORING, BRACING OR BY USE OF A TRENCH BOX MEETING OSHA SAFETY STANDARD; INSPECT SHORING AND/OR BRACING SYSTEMS DAILY AND AFTER RAINSTORMS OR OTHER HAZARD-INCREASING OCCURRENCE. ALSO PROVIDE SUCH PROTECTION IN EXCAVATIONS LESS THAN 4 FEET DEEP WHERE HAZARDOUS EARTH MOVEMENT MAY BE EXPECTED.
- ALL CONTRACTORS PERFORMING SUBSURFACE EARTHWORKS MUST CONTACT 811 AT LEAST 3 BUSINESS DAYS PRIOR TO EXCAVATION AND AS REQUIRED BY LAW.

**TOPSOIL, CLEARING AND GRUBBING**

- CONTRACTOR SHALL CLEAR AND GRUB PROJECT AREA PRIOR TO PERFORMING ANY EARTHWORKS. HOLES RESULTING FROM REMOVAL OF VEGETATION SHALL BE BACKFILLED, COMPACTED AND GRADED IN ACCORDANCE WITH THIS DRAWING PACKAGE, GENERAL NOTES AND SPECIFICATIONS WHERE APPLICABLE.
- CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIAL INCLUDING, BUT NOT LIMITED TO VEGETATION, ROCK, DEBRIS, EXCESS SOILS, DEMOLITION MATERIALS, AND CONSTRUCTION MATERIALS. ACQUISITION OF OFF-SITE DISPOSAL AREA IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE INDICATED BY CLIENT.
- PERFORM ALL CLEARING, GRUBBING AND EARTHWORKS IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS, INCLUDING REQUIREMENTS FOR HANDLING, REMOVING AND DISPOSING OF CONTAMINATED SOIL, IF APPLICABLE.
- NO VEGETATION OVERHANGING THE CONSTRUCTION AREA, BUT ROOTED OUTSIDE SAID AREA, SHALL BE REMOVED WITHOUT APPROVAL FROM THE CLIENT OR CONSTRUCTION MANAGER.
- SHOULD THE CONTRACTOR DISCOVER THAT THE DEPTH OF TOPSOIL EXCEEDS THE DEPTH INDICATED ON THE PLANS, CONTRACTOR SHALL NOTIFY THE CLIENT AND ENGINEER IN WRITING TO DETERMINE IF ANY REVISIONS TO THE EARTHWORKS QUANTITIES AND DESIGN ARE REQUIRED. UNDER SUCH CIRCUMSTANCES THE CONTRACTOR SHALL NOT PROCEED WITH TOPSOIL REMOVAL UNTIL DIRECTED TO DO SO BY THE CLIENT OR CONSTRUCTION MANAGER.

**GRADING AND COMPACTION**

- WHERE A GEOTECHNICAL REPORT EXISTS FOR THIS PROJECT, CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND ADHERING TO THE REQUIREMENTS OF THE REPORT. SHOULD A DISCREPANCY BETWEEN THE PROJECT SITE GEOTECHNICAL REPORT AND THESE PLANS EXIST, CONTRACTOR TO INFORM THE ENGINEER IN WRITING BEFORE PROCEEDING WITH EARTHWORKS ACTIVITIES. CONTRACTOR SHALL NOT PROCEED WITH EARTHWORKS ACTIVITIES UNTIL DIRECTED TO DO SO BY THE ENGINEER AND CLIENT.
- CONTRACTOR SHALL PROPERLY DISPOSE OF EXCESS EXCAVATED MATERIAL OFF SITE UNLESS DIRECTED OTHERWISE BY THE CLIENT OR ENGINEER.
- ONSITE EXCAVATED MATERIAL STORAGE SHALL BE IN THE LOCATION INDICATED BY THE CLIENT OR AS INDICATED ON THESE PLANS. CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES FOR THE SOIL STOCKPILES AS APPROPRIATE.
- ANY ROCK UNEARTHED DURING EXCAVATION WITH A LONG AXIS LENGTH THAT EXCEEDS 5 INCHES AND IS NOT REQUIRED FOR SITE DEVELOPMENT, SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS INDICATED OTHERWISE BY THE CLIENT OR ENGINEER.
- CONTRACTOR TO PROVIDE AND VERIFY THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED PRIOR TO INDEPENDENT CONFIRMATION OF COMPACTION BY A QUALIFIED INSPECTOR. OPTIMUM MOISTURE CONTENT AND MAXIMUM COMPACTION DENSITY TO BE INDICATED IN THESE DRAWINGS OR IN THE ASSOCIATED GEOTECHNICAL REPORT. ON SPEC MATERIAL TO BE PLACED AND COMPACTIONED IN 6-INCH HORIZONTAL LIFTS.

19. COMPACTION TO BE VERIFIED BY NUCLEAR METHOD PER ASTM D-6938 OR BY AN EQUIVALENT METHOD APPROVED BY THE ENGINEER.

**AB32-01 PAD  
GRADING PLAN**

- COMPACTION TESTING FREQUENCY FOR ROADS AND PARKING AREAS SHALL BE 1 TEST (ASTM D-6938) PER 12 FT. OF WIDTH PER 500 FT. OF LENGTH, OR FRACTION THEREOF PER 6" LIFT UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.
- COMPACTION TEST FREQUENCY FOR AREAS UNDER STRUCTURAL FOUNDATIONS SHALL BE 1 TEST (ASTM D-6938) FOR EACH 1,000 FT<sup>2</sup> OR FRACTION THEREOF PER 6" LIFT, UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.
- COMPACTION TEST FREQUENCY FOR DETENTION OR RETENTION POND FILL EMBANKMENTS OR ANY EMBANKMENT IMPOUNDING WATER SHALL BE A MINIMUM OF 1 TEST (ASTM D-6938) PER 2,500 FT<sup>2</sup> OR FRACTION THEREOF PER 6" LIFT UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.
- COMPACTION TEST FREQUENCY FOR REMAINING AREAS (NOT INCLUDING STRUCTURAL FOUNDATIONS, ROADS AND DETENTION POND EMBANKMENTS) IN NON-HEAVY LOADING AREAS SHALL BE 1 SPOT CHECKS PER 40,000 FT<sup>2</sup> PER 6" LIFT IN FILL AREAS UNLESS INDICATED OTHERWISE IN THESE PLANS OR IN THE ASSOCIATED GEOTECHNICAL REPORT.
- CONSTRUCTION MANAGER, INSPECTOR AND/OR ENGINEER MAY REQUIRE THAT MORE COMPACTION TESTS ARE NEEDED BASED ON FIELD OBSERVATIONS. THE RECOMMENDED NUMBER OF COMPACTION TESTS INDICATED IN THESE GENERAL NOTES CONSTITUTES THE MINIMUM NUMBER OF TESTS; MORE TESTS MAY BE WARRANTED BASED ON FINDINGS IN THE FIELD.
- THE CONTRACTOR SHALL SCARIFY SUBGRADE 6" (MIN.) WITH A MOISTURE CONDITION AND COMPACT TO 95% MAXIMUM ACHIEVABLE DENSITY IN ACCORDANCE WITH ASTM D-698 UNLESS INDICATED OTHERWISE IN THESE PLANS.
- HORIZONTAL LIFTS OF NON-GRAVEL MATERIAL TO BE COMPACTIONED IN 6" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698 UNLESS INDICATED OTHERWISE IN THESE PLANS. HORIZONTAL LIFTS OF GRAVEL MATERIAL TO BE COMPACTIONED IN 6" (MAX) LIFTS TO 90% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557 UNLESS INDICATED OTHERWISE IN THESE PLANS. SHOULD A DISCREPANCY BETWEEN THE PROJECT SITE GEOTECHNICAL REPORT AND THESE PLANS EXIST, CONTRACTOR TO INFORM THE ENGINEER IN WRITING BEFORE PROCEEDING WITH SOIL LIFT PLACEMENT AND COMPACTION.
- WHERE SUFFICIENT EXCAVATION MATERIAL IS NOT AVAILABLE FOR FILL AND "BORROW MATERIAL" IS REQUIRED; BORROW MATERIAL SHALL BE OBTAINED FROM SOURCES SHOWN IN THIS DRAWING PACKAGE OR OTHER SOURCES APPROVED BY THE ENGINEER. OVERBURDEN TO BE REMOVED FROM BORROW SITE PRIOR TO OBTAINING BORROW MATERIAL. ENGINEER APPROVED BMP AND EROSION CONTROL MEASURES TO BE PROVIDED BY CONTRACTOR FOR ANY BORROW LOCATIONS.
- BLASTING IS NOT PERMITTED, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER AND CLIENT.
- ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATION PURPOSES ONLY. 6" OF TOPSOIL HAS BEEN REMOVED FROM THE EXISTING CAD SURFACE PRIOR TO PERFORMING EARTHWORKS CALCULATIONS UNLESS NOTED OTHERWISE IN THESE PLANS. CONTRACTOR AND SUBCONTRACTOR ARE RESPONSIBLE FOR DETERMINING ALL QUANTITIES.
- THE CUT AND FILL VOLUMES PROVIDED IN THIS DRAWING PACKAGE ARE LISTED AS BANK (I.E. IN-SITU) VOLUMES UNLESS INDICATED OTHERWISE. UNLESS STATED ELSEWHERE IN THIS DRAWING PACKAGE OR IN THE APPLICABLE GEOTECHNICAL REPORT, CONTRACTOR TO ASSUME A 25% VOLUMETRIC CHANGE OF EXCAVATED SOILS (BULKING/SHRINKAGE FACTOR) FOR THE PURPOSES OF EARTHWORKS TRANSPORT, STORAGE AND STOCKPILING. SOIL MATERIAL PLACED AND COMPACTED PER THE REQUIREMENTS OF THESE PLANS IS ASSUMED TO BE HAVE A 1:1 RATIO FOR EXCAVATED (BANK) TO PLACED EARTHWORKS VOLUMES; ANY OBSERVED VOLUMETRIC CHANGE IN THE SOILS (EXPANSION AND/OR SHRINKAGE) OF THE PLACED AND COMPACTED MATERIALS THAT IS NOT AT A 1:1 RATIO SHALL BE REPORTED TO THE CLIENT AND ENGINEER BY THE CONTRACTOR.
- ALL STOCKPILES SHOWN IN THESE PLANS ARE ASSUMED TO HAVE 2H:1V SIDE SLOPES. MAXIMUM STOCKPILE HEIGHT IS ASSUMED TO BE 10 FT. CONTRACTOR SHALL NOT CREATE STOCKPILES WITH SIDE SLOPES GREATER THAN 2:1 OR HEIGHTS GREATER THAN 10 FT. WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OR UNLESS INDICATED OTHERWISE IN THESE PLANS. THE STOCKPILE FOOTPRINTS SHOWN IN THESE PLANS ARE ASSUMED TO HAVE AN EXPANSION FACTOR OF 1.25.
- CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES IDENTIFIED SHALL BE BROUGHT TO THE INSPECTOR'S OR CONSTRUCTION MANAGER'S ATTENTION AND RECONCILED WITH THE ENGINEER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ALL EXISTING DISTURBED AREAS, FENCES, WALLS, SHEDS OR ANY OTHER STRUCTURES DAMAGED DURING CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER CONDITION. ANY DAMAGE TO ADJACENT PROPERTY OFF OF THE CLIENT'S PROPERTY SHALL BE REPORTED TO THE CLIENT'S REPRESENTATIVE FOR AUTHORIZATION PRIOR TO SAID REPAIRS.
- ALL EARTHWORKS SHALL CONFORM TO ELEVATIONS AND GRADES DESIGNATED IN THIS DRAWING PACKAGE. ALLOWABLE TOLERANCES ARE ± 0.10 FEET OF FINISHED FINAL GRADE (FG) FOR ALL EARTHWORKS UNLESS INDICATED OTHERWISE IN THIS DRAWING PACKAGE OR BY THE ENGINEER.
- CONTRACTOR TO PROVIDE BEST MANAGEMENT PRACTICES (BMP) FOR STORMWATER RUNOFF AND SEDIMENT CONTROL IN ACCORDANCE WITH STATE AND FEDERAL GOVERNMENT REQUIREMENTS. IN PARTICULAR, BMP SHALL CONFORM WITH THE FEDERAL CLEAN WATER ACT'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER REGULATIONS REQUIREMENTS. DO NOT PERFORM ANY GRADING OR GRUBBING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS, OR INTO NATURAL WATERCOURSES.

- ALL PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO ANY OTHER EARTH DISTURBING ACTIVITY. ALL OTHER STRUCTURAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS SOON AS THE CONSTRUCTION ACTIVITIES, AROUND WHICH THEY ARE BASED, COMMENCE.
- IMPORTED FILL TO MEET ASTM D-1241 SPECIFICATION FOR TYPE I, GRADE B MATERIAL AS FOLLOWS UNLESS INDICATED OTHERWISE IN THIS DRAWING PACKAGE:
  - A. 100% SOIL MATERIAL FINER THAN 2-INCH SIEVE.
  - B. 75% - 95% SOIL MATERIALS FINER THAN 1-INCH SIEVE.
  - C. 40% - 75% SOIL MATERIALS FINER THAN NO. 3/8 SIEVE.
  - D. 30% - 60% SOIL MATERIALS FINER THAN NO. 4 SIEVE.
  - E. 20% - 45% SOIL MATERIALS FINER THAN NO. 10 SIEVE.
  - F. 15% - 30% SOIL MATERIALS FINER THAN NO. 40 SIEVE.
  - G. 5% - 15% SOIL MATERIALS FINER THAN NO. 200 SIEVE.
  - H. MAXIMUM LIQUID LIMIT OF 25.
  - I. PLASTICITY INDEX (PI) 6 (MAX).
  - J. MAXIMUM EXPANSIVE POTENTIAL 0.5%.
- THE SPOT CUT/FILL VALUES SHOWN ON THESE DRAWINGS (WHEN APPLICABLE) ARE FOR PROPOSED GROUND VS. SCRAPED (I.E. TOPSOIL REMOVED) GROUND (E.G. +0.7 MEANS THAT THE PROPOSED GROUND IS 0.7 FT ABOVE THE SCRAPED GROUND).
- THE PREFERRED LOCATION(S) FOR PLACEMENT OF HEAVY LOADS ARE IN AREAS OF CUT. IF ANY HEAVY LOADS (E.G. MLVTS, MINION TANKS, ETC.) ARE INTENDED TO BE PLACED ON THE PAD IN FILL AREAS, THE LOAD(S) MUST BE PLACED A MINIMUM OF 30 LINEAR FEET FROM THE EDGE OF THE PAD. THIS REQUIREMENT IS TO PROVIDE ADEQUATE SPACING TO PROTECT AGAINST SLOPE STABILITY ISSUES AND TO PROVIDE SAFE WORKING CONDITIONS IN ACCORDANCE WITH ENGINEERING BEST PRACTICES. CONTRACTOR SHALL CONTACT ASCENT GEOMATICS SOLUTIONS ENGINEERING DEPARTMENT SHOULD A DISCREPANCY BETWEEN THIS REQUIREMENT AND THESE PLANS BE IDENTIFIED AND/OR IF THE CONTRACTOR SEEKS CLARIFICATION ON WHAT CONSTITUTES "HEAVY LOADS".
- HORIZONTAL LIFTS OF FILL SOIL MATERIAL (NON-GRAVELS) DIRECTLY BENEATH AND WITHIN 5.0 FT OF THE WATER TANK TO BE COMPACTIONED IN 6" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557; A MINIMUM OF THREE (3) COMPACTION TESTS PER 6" LIFT (COMPACTED THICKNESS) SHALL BE PERFORMED FOR THE FILL AREAS DIRECTLY BENEATH AND WITHIN 5.0 FT OF THE WATER TANK TO CONFIRM THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.

**FINAL GRADE AND ACCEPTANCE**

- FINAL GRADE TO MAINTAIN POSITIVE (I.E. OFFSITE) DRAINAGE ACROSS THE ENTIRE PROJECT SITE UNLESS SPECIFICALLY INDICATED OTHERWISE IN THIS DRAWING PACKAGE.
- SETTLEMENT OR WASH BOARDING THAT OCCURS IN GRADED OR BACKFILLED AREAS PRIOR TO ACCEPTANCE OF THE WORK SHALL BE REPAIRED AND GRADES REESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES AT NO ADDITIONAL CHARGE TO CLIENT.
- FINAL SUBGRADE (AS APPLICABLE) TO BE PROOF ROLLED BY A TRUCK WITH A REAR AXLE LOAD OF APPROXIMATE 16,000 LBS/AXLE AND ACCEPTED BY THE INSPECTOR OR CONSTRUCTION MANAGER PRIOR TO FINAL ACCEPTANCE OF SUBGRADE AND PLACEMENT OF GRAVEL TOP LAYER. REMOVE AND REPLACE ANY SOFT MATERIAL WHICH EXHIBITS PERMANENT SUBGRADE DEFORMATION EXCEEDING 0.5".

**SITE COORDINATES NOTES**

- SITE COORDINATES AND DESIGN ARE GRID VALUES BASED ON THE COLORADO STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983, NORTH ZONE, U.S. SURVEY FOOT.
- AZIMUTHS SHOWN ARE GRID AZIMUTHS, DISTANCES SHOWN ARE GRID DISTANCES.
- CONTRACTOR TO FIELD VERIFY LOCAL BENCHMARKS /MONUMENTS BEFORE STARTING CONSTRUCTION. CONTRACTOR MAY BE REQUIRED TO RECTIFY TRUE COORDINATES TO MATCH THE NORTHINGS AND EASTINGS SHOWN IN THIS PLAN SET. ANY CONFLICTS WITH LOCAL COORDINATES SHALL BE DISCUSSED WITH FIELD ENGINEER.

**GEOTECHNICAL REPORT**

- ASCENT GEOMATICS WAS NOT PROVIDED WITH A GEOTECHNICAL REPORT TO AID IN THE PREPARATION OF THIS GRADING PLAN.

**TITLE REPORT**

- ASCENT GEOMATICS SOLUTIONS WAS NOT PROVIDED A TITLE REPORT FOR THIS SITE. ALL RECORDED DOCUMENTS REFERENCED ON THESE PLANS WERE DOWNLOADED FROM RESEARCH VIA THE WELD COUNTY CLERK AND RECORDER. ASCENT GEOMATICS SOLUTIONS MAKES NO GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED, TO THE COMPLETENESS OF ENCUMBRANCES TO THE SUBJECT PROPERTY.

**PROJECT SPECIFIC NOTES**

- PAD TO BE CAPPED WITH 6" OF 1/1/2" CRUSED, ANGULAR STONE AGGREGATE TO BE COMPACTIONED IN 6" (MAX) LIFTS TO 95% MAXIMUM DENSITY (MINIMUM) AT OPTIMUM MOISTURE CONTENT (-2% TO +2%) TO ACHIEVE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698 UNLESS INDICATED OTHERWISE IN THESE PLANS.



ASCENT GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
WESTMINSTER, CO 80031  
(303) 928-7128

PREPARED FOR:  
**noble energy**

NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
**GENERAL NOTES**  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

REV.	DATE	DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG
B	7/29/21	ISSUED FOR REVIEW	KTL
			I
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			I

FIELD DATE:  
05-02-2019

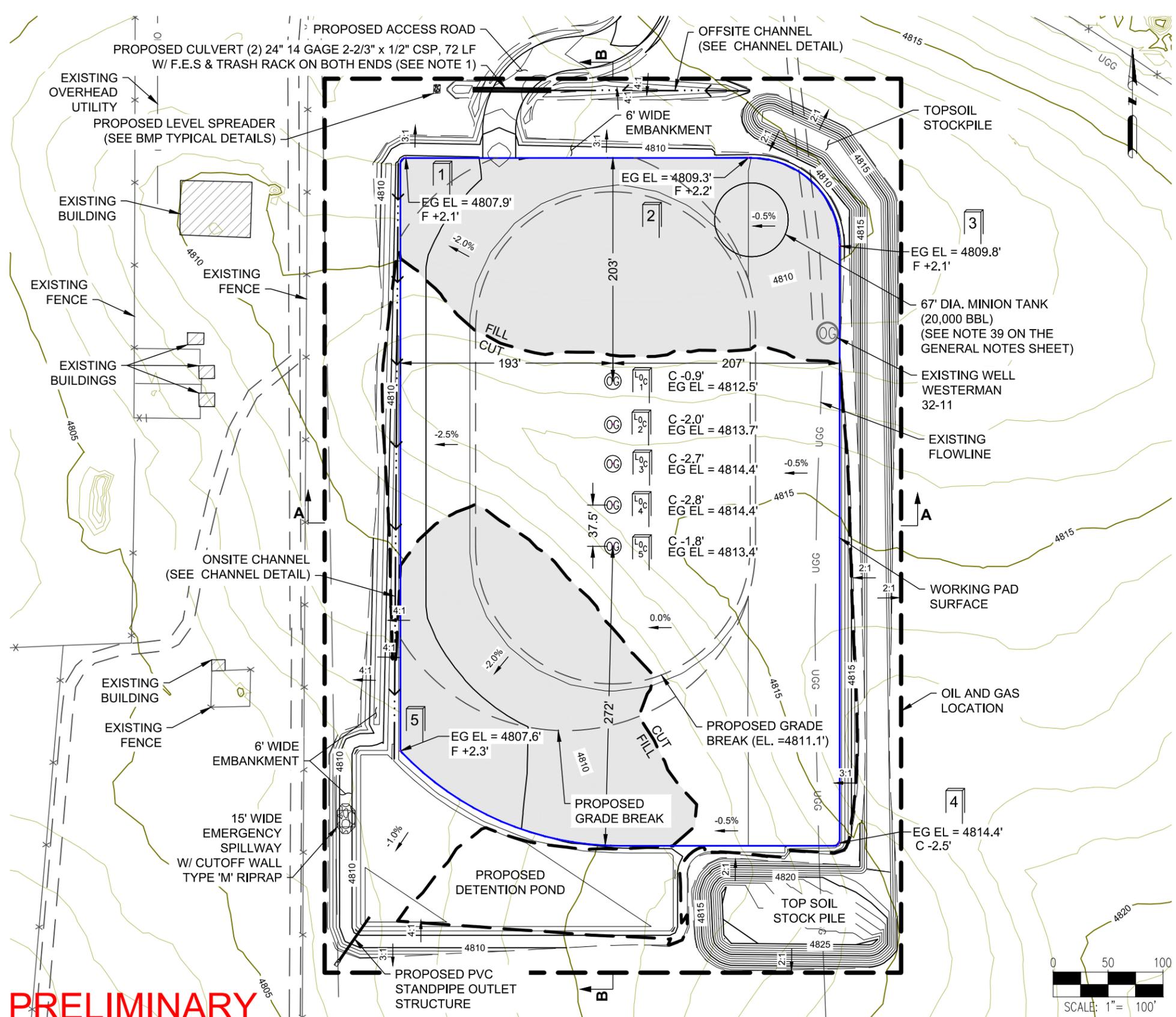
DRAWING DATE:  
06-28-2021

DRAFTED BY:  
CSG

SHEET NO.  
02 OF 15

**PRELIMINARY**

# AB32-01 PAD GRADING PLAN

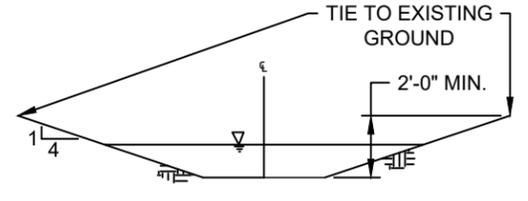
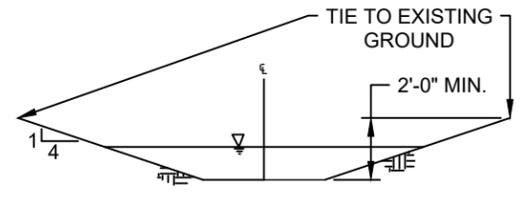


### SITE QUANTITIES

FINISHED GRADE ELEVATION	4810.4' - 4812.4'
ROUGH GRADE ELEVATION	4809.4' - 4811.4'
TOTAL CUT FOR SITE (BANK)	10,672 CY
TOTAL FILL FOR SITE	9,733 CY
NET EXCESS MATERIAL (BANK)	938 CY
TOPSOIL	6,195 CY
OIL & GAS LOCATION AREA	9.8 ACRES
WORKING PAD SURFACE AREA	5.6 ACRES
ACCESS ROAD DISTURBANCE AREA	0.3 ACRES
FLOWLINE CORRIDOR AREA	5.1 ACRES

- 1' WESTERMAN A4-786
- 2' WESTERMAN A5-716
- 3' WESTERMAN A5-726
- 4' WESTERMAN A5-736
- 5' WESTERMAN A5-745

NOTES:  
1. CULVERTS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.



DISCLAIMER:  
THIS PLOT DOES NOT REPRESENT A MONUMENTED LAND SURVEY AND SHOULD NOT BE RELIED UPON TO DETERMINE BOUNDARY LINES, PROPERTY OWNERSHIP OR OTHER PROPERTY INTERESTS. PARCEL LINES, IF DEPICTED HAVE NOT BEEN FIELD VERIFIED AND MAY BE BASED UPON PUBLICLY AVAILABLE DATA THAT ALSO HAS NOT BEEN INDEPENDENTLY VERIFIED.

**PRELIMINARY**

**ASCENT**  
GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
WESTMINSTER, CO 80031  
(303) 928-7128

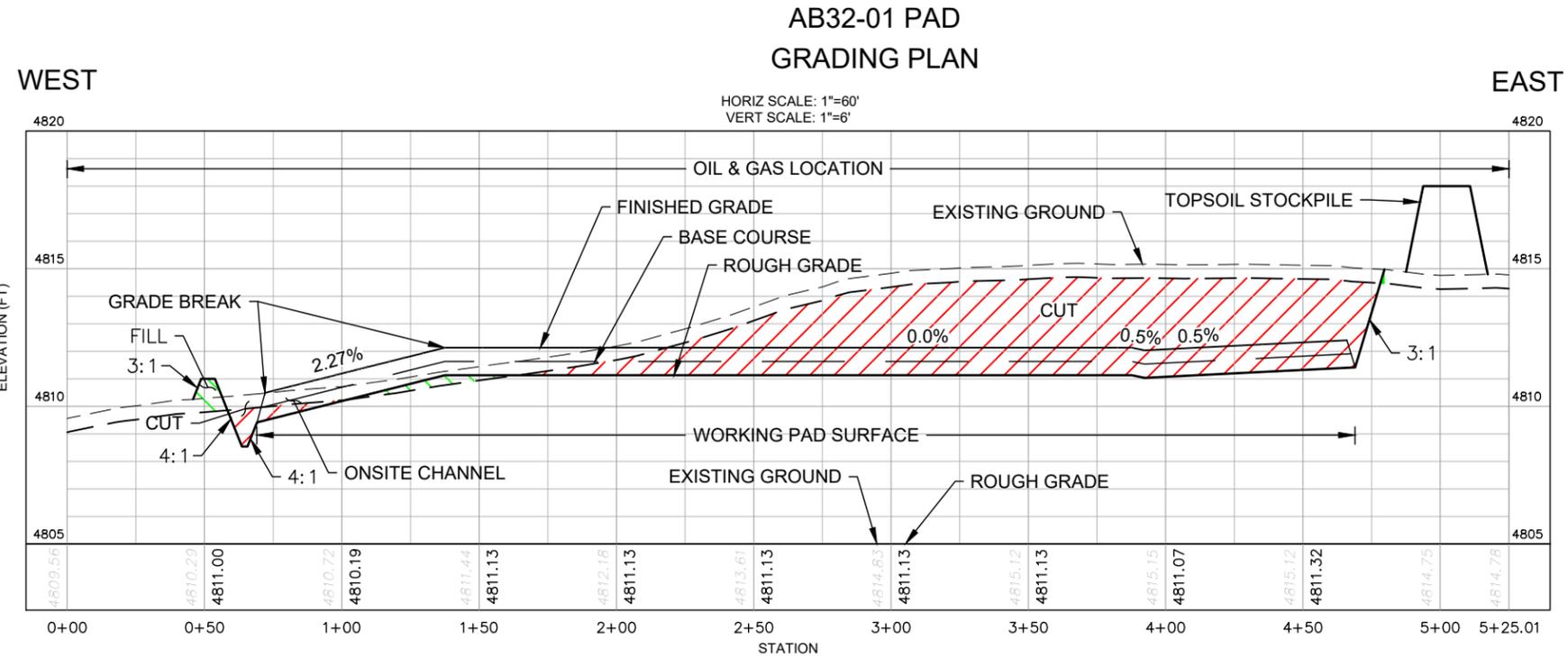
PREPARED FOR:  
**noble energy**  
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
**PAD LAYOUT**  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

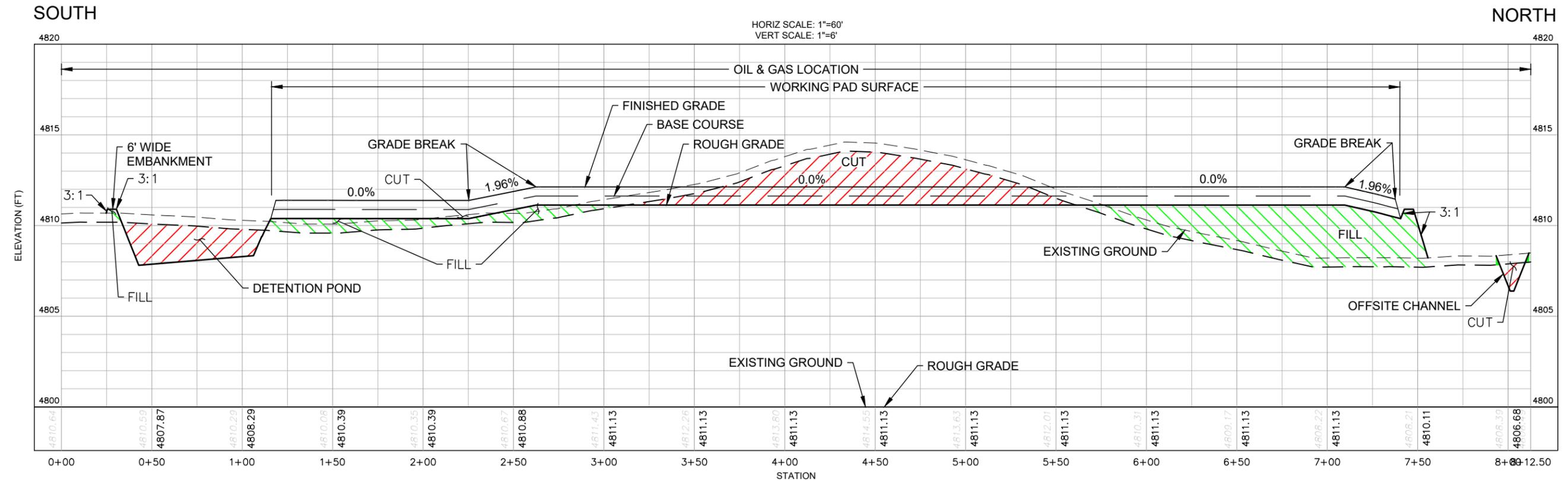
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A	06/28/21	ISSUED FOR REVIEW	CSG

FIELD DATE:  
05-02-2019  
DRAWING DATE:  
06-28-2021  
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CSG  
SHEET NO.  
03 OF 15

DISCLAIMER:  
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MONUMENTED LAND SURVEY AND  
SHOULD NOT BE RELIED UPON TO  
DETERMINE BOUNDARY LINES,  
PROPERTY OWNERSHIP OR OTHER  
PROPERTY INTERESTS. PARCEL LINES,  
IF DEPICTED HAVE NOT BEEN FIELD  
VERIFIED AND MAY BE BASED UPON  
PUBLICLY AVAILABLE DATA THAT ALSO  
HAS NOT BEEN INDEPENDENTLY  
VERIFIED.



SECTION A - WELL PAD LOOKING NORTH



SECTION B - WELL PAD LOOKING WEST

**PRELIMINARY**



ASCENT GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
WESTMINSTER, CO 80031  
(303) 928-7128

PREPARED FOR:  
**noble energy**

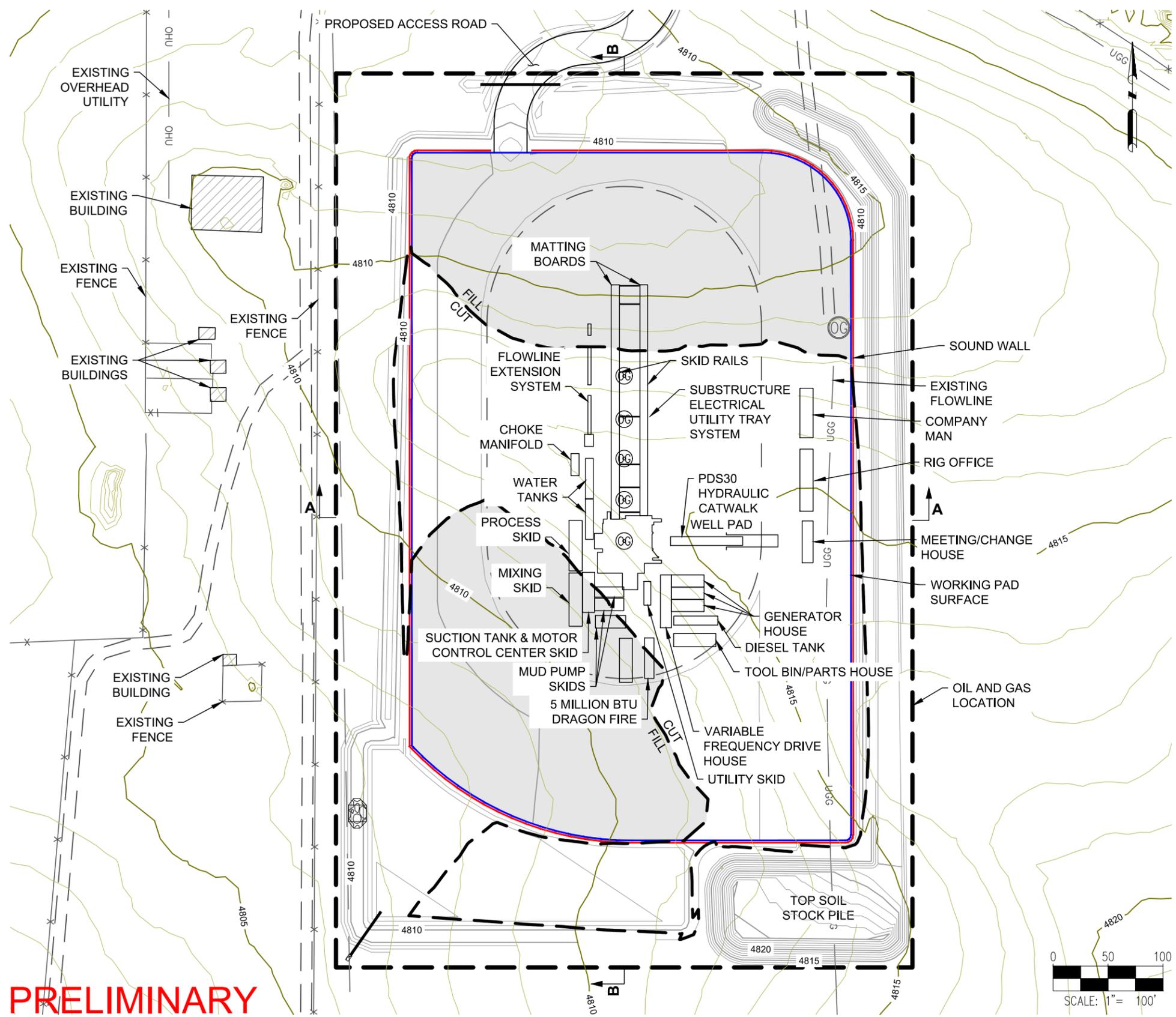
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
**CROSS SECTIONS**  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

REV.	DATE	REVISION DESCRIPTION	INT.
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CSG  
SHEET NO.  
04 OF 15

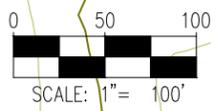
AB32-01 PAD  
GRADING PLAN



NOTES:  
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DISCLAIMER:  
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GEOMATICS SOLUTIONS  
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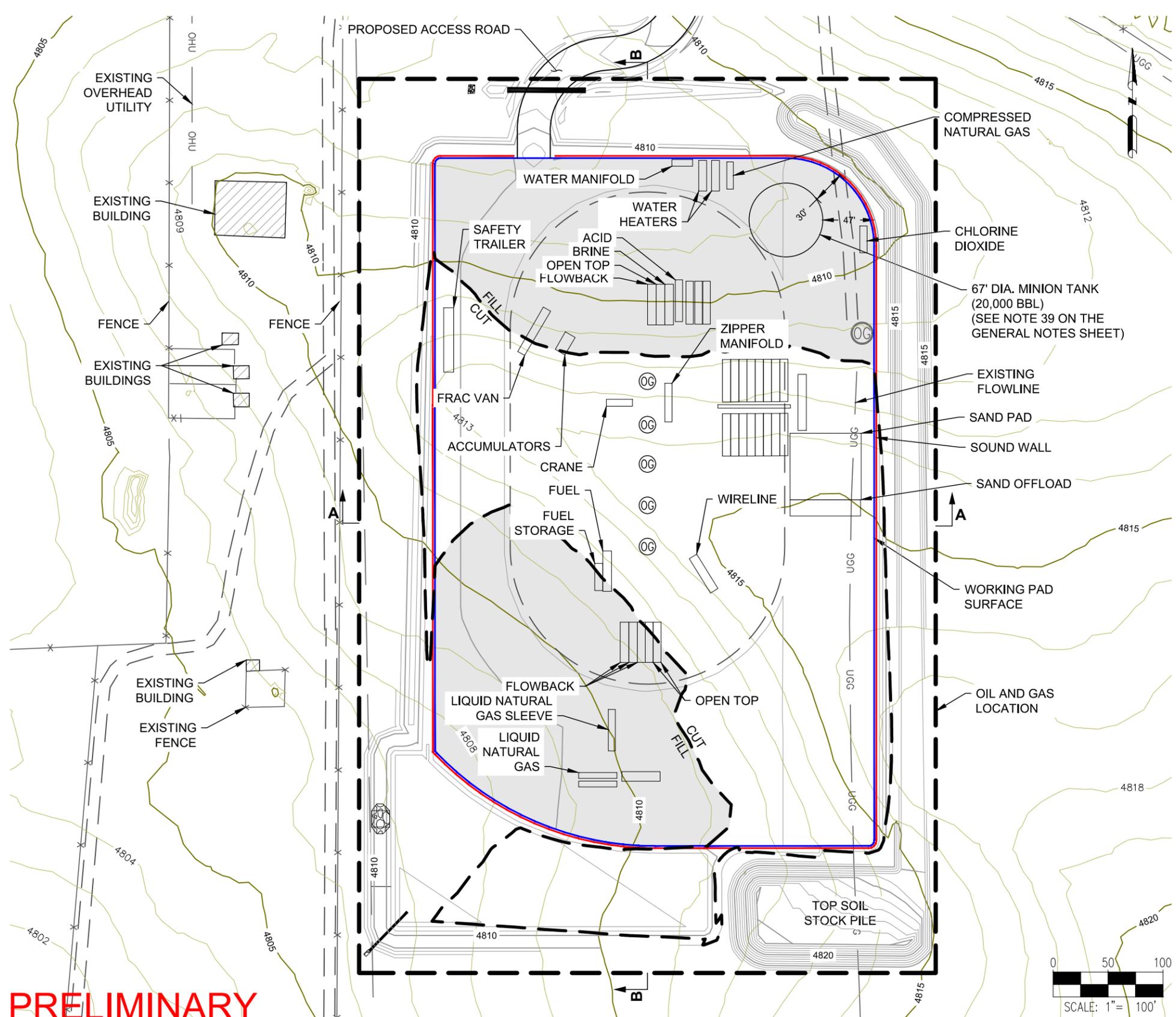
PREPARED FOR:  
**noble energy**  
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
**RIG LAYOUT**  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

REV.	DATE	REVISION DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG

FIELD DATE:  
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05 OF 15

# AB32-01 PAD GRADING PLAN



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**ASCENT**  
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 8620 WOLFF COURT  
 WESTMINSTER, CO 80031  
 (303) 928-7128

PREPARED FOR:  
  
 NOBLE ENERGY, INC.  
 1625 BROADWAY, SUITE 2200  
 DENVER, CO 80202  
 (303) 228-4000

SHEET NAME:  
**COMPLETIONS & STIMULATION LAYOUT**  
 SURFACE LOCATION  
 AB32-01 PAD  
 NE 1/4 NE 1/4 SECTION 32,  
 T7N, R64W, 6TH P.M.,  
 WELD COUNTY, COLORADO

REV.	DATE	REVISION DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG

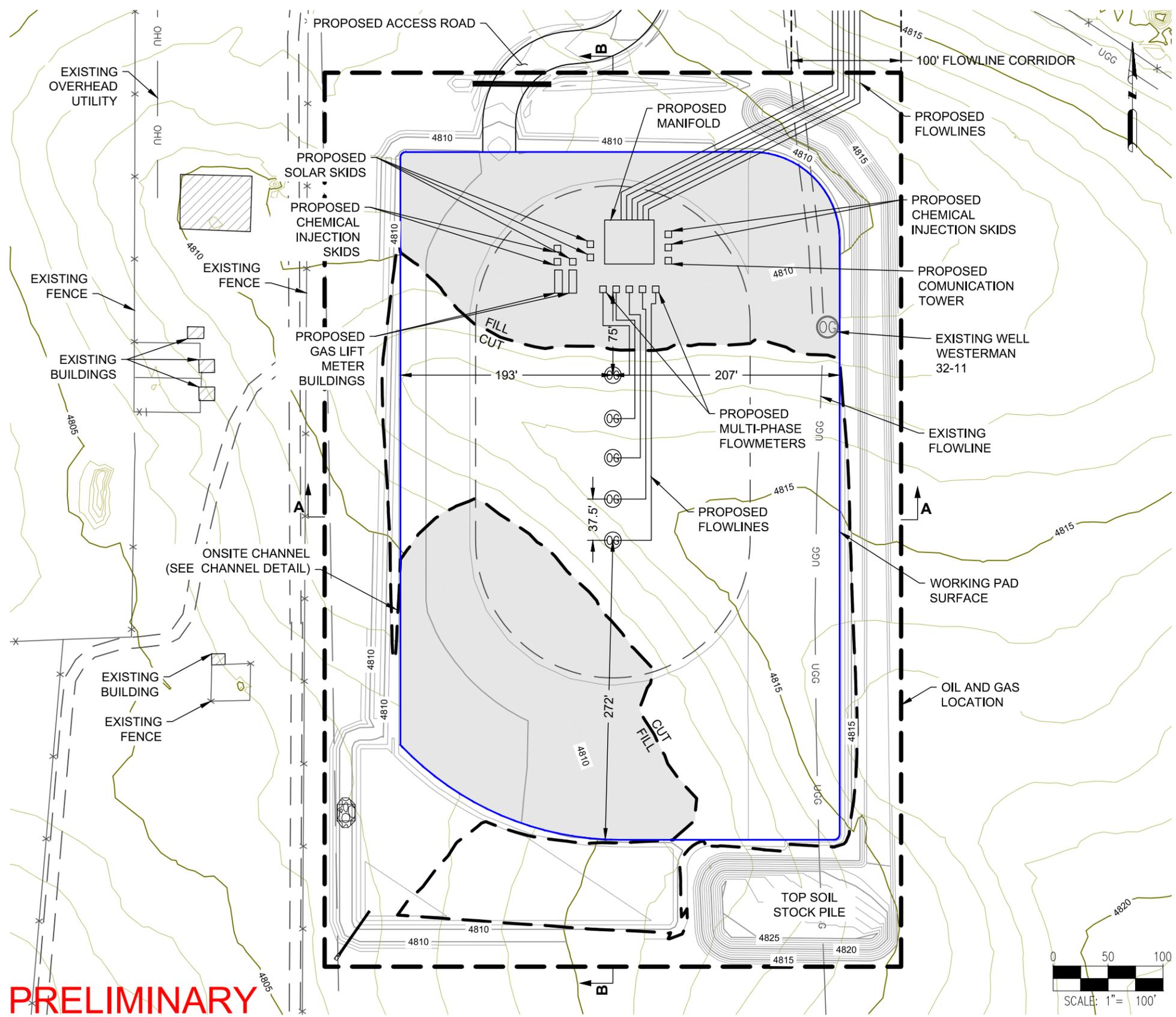
FIELD DATE:  
05-02-2019

DRAWING DATE:  
06-28-2021

DRAFTED BY:  
CSG

SHEET NO.  
06 OF 15

# AB32-01 PAD GRADING PLAN



**NOTES:**  
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**ASCENT**  
 GEOMATICS SOLUTIONS  
 8620 WOLFF COURT  
 WESTMINSTER, CO 80031  
 (303) 928-7128

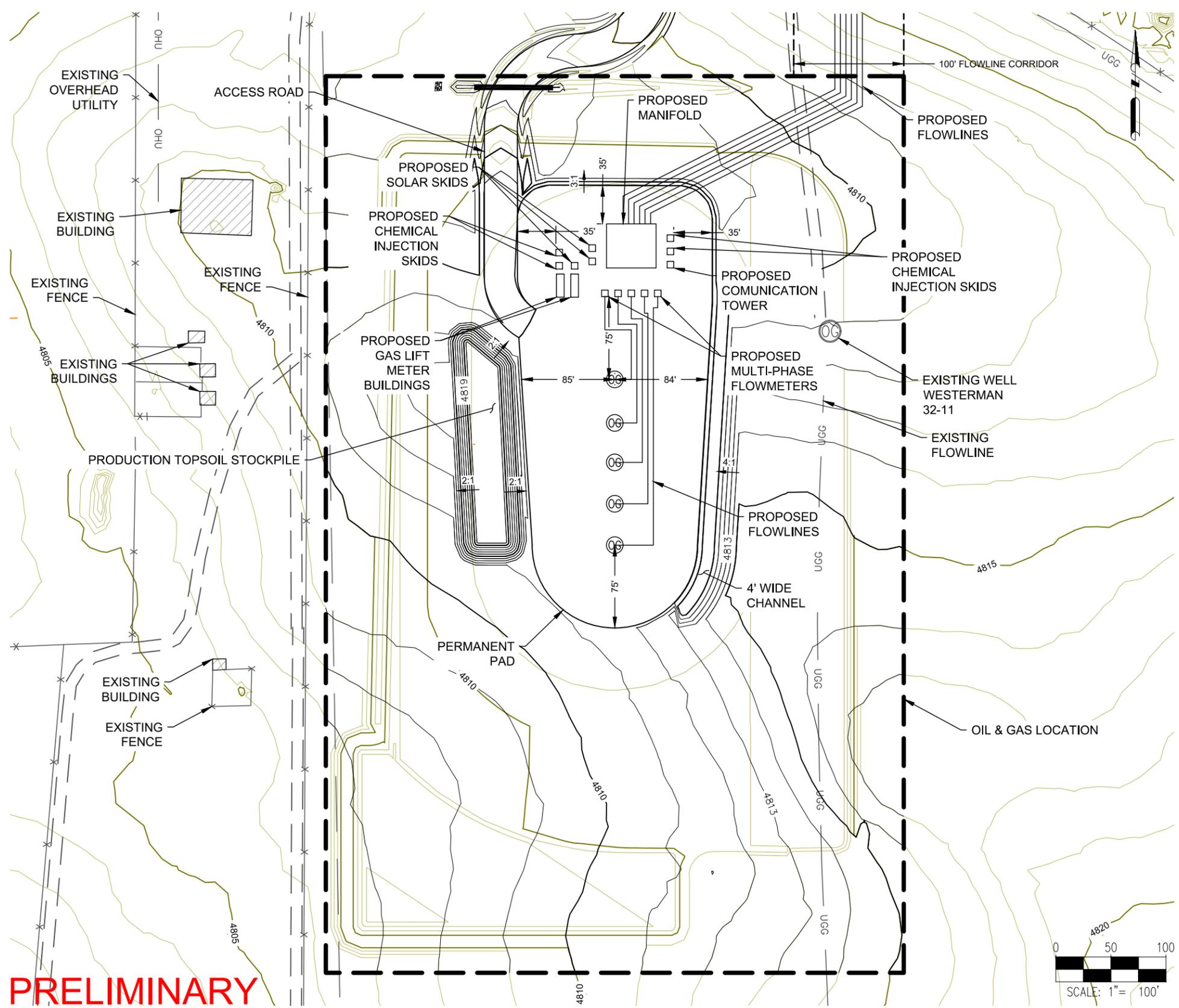
PREPARED FOR:  
**noble energy**  
 NOBLE ENERGY, INC.  
 1625 BROADWAY, SUITE 2200  
 DENVER, CO 80202  
 (303) 228-4000

SHEET NAME:  
**PRODUCTION LAYOUT**  
 SURFACE LOCATION  
 AB32-01 PAD  
 NE 1/4 NE 1/4 SECTION 32,  
 T7N, R64W, 6TH P.M.,  
 WELD COUNTY, COLORADO

REV.	DATE	REVISION DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG
B	7/29/21	ISSUED FOR REVIEW	KTL
			-
			-
			-

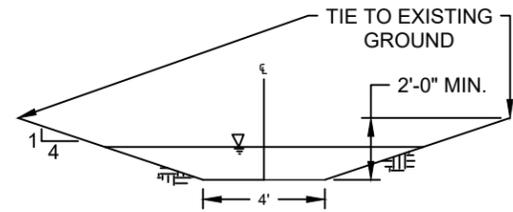
FIELD DATE: 05-02-2019  
 DRAWING DATE: 06-28-2021  
 DRAFTED BY: CSG  
 SHEET NO. 07 OF 15

AB32-01 PAD  
GRADING PLAN



SITE QUANTITIES

TOTAL CUT FOR SITE (BANK)	7,483 CY
TOTAL FILL FOR SITE	7,483 CY
NET EXCESS MATERIAL (BANK)	0 CY
RECLAIMED AREA	7.4 ACRES
LONG-TERM DISTURBANCE AREA	2.4 ACRES
OIL & GAS LOCATION	9.8 ACRES

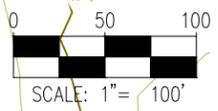


OFFSITE CHANNEL DETAIL  
N.T.S.

- NOTES:
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  - CULVERTS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

DISCLAIMER:  
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**PRELIMINARY**



**ASCENT**  
GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
WESTMINSTER, CO 80031  
(303) 928-7128

PREPARED FOR:  
**noble energy**

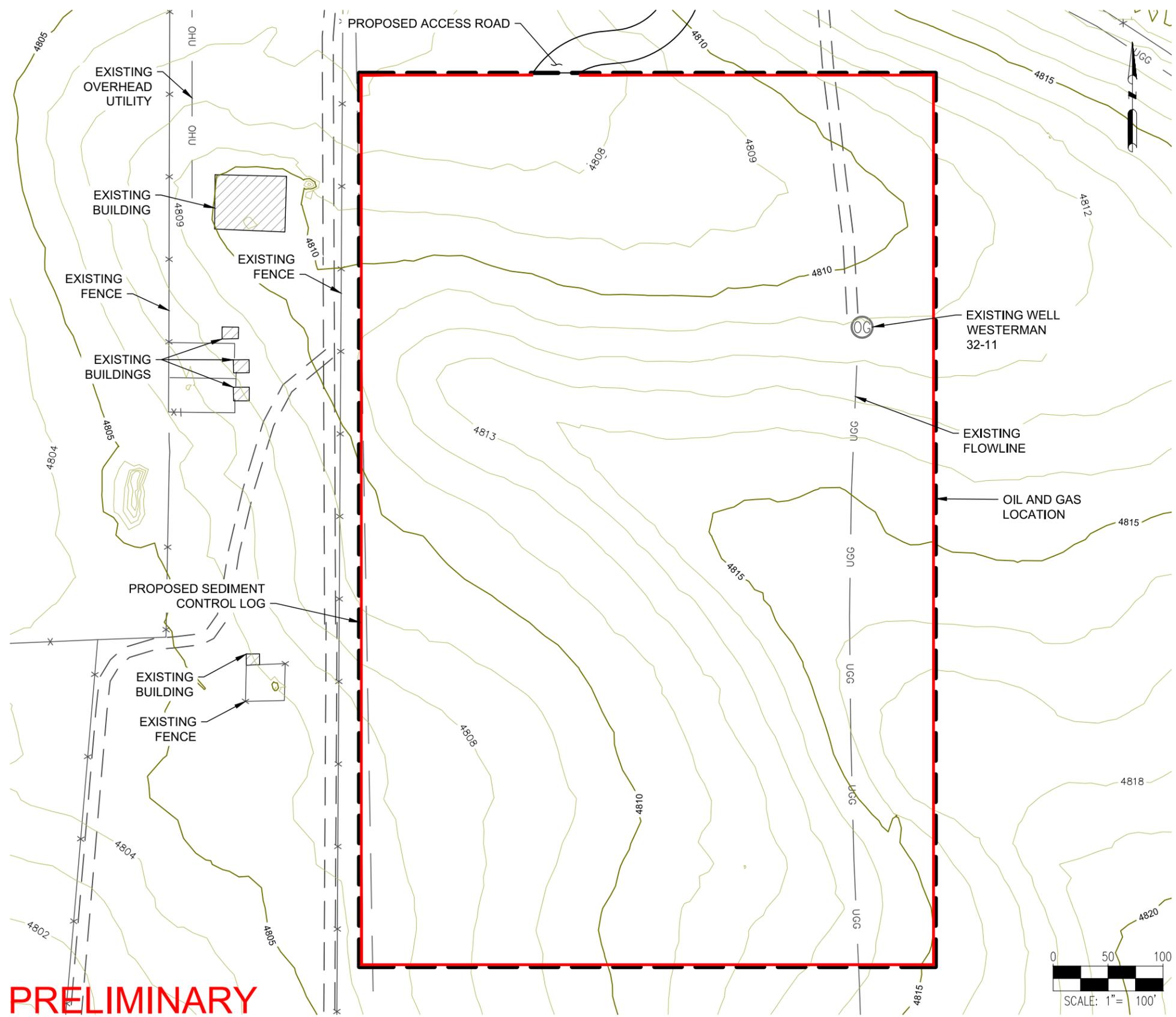
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
**INTERIM-RECLAMATION LAYOUT**  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

REV.	DATE	DESCRIPTION	INT.
A	06/28/21	ISSUED FOR REVIEW	CSG
B	7/29/21	ISSUED FOR REVIEW	KTL

FIELD DATE:  
05-02-2019  
DRAWING DATE:  
06-28-2021  
DRAFTED BY:  
CSG  
SHEET NO.  
08 OF 15

AB32-01 PAD  
GRADING PLAN



**PRELIMINARY**

NOTES:  
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GEOMATICS SOLUTIONS  
8620 WOLFF COURT  
WESTMINSTER, CO 80031  
(303) 928-7128

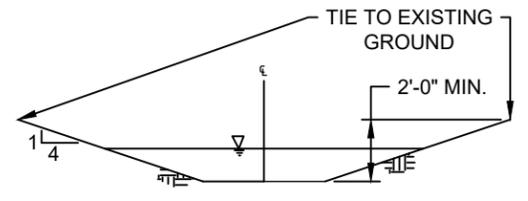
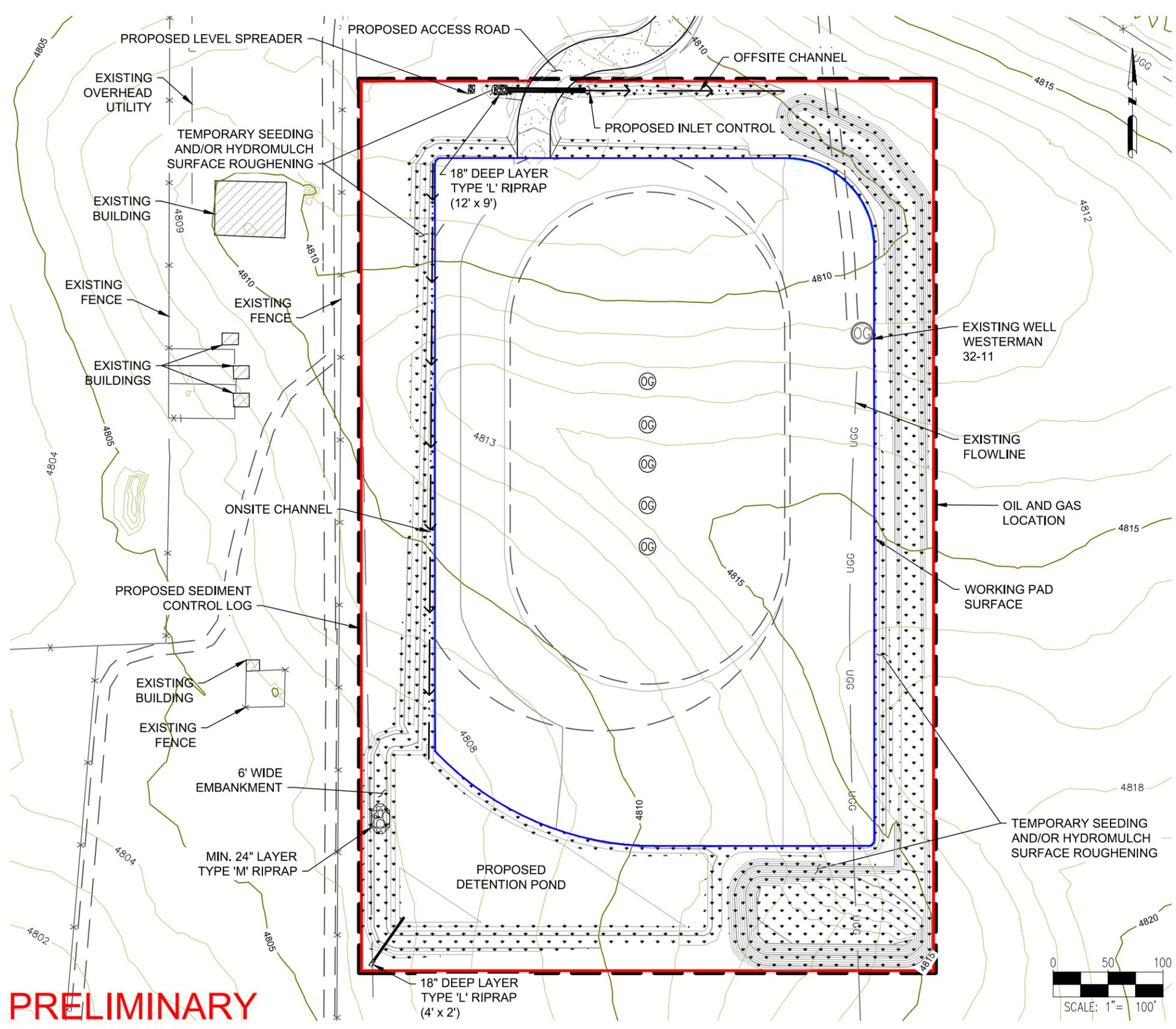
PREPARED FOR:  
**noble energy**  
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
EROSION & SEDIMENT CONTROL PLAN - INITIAL  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

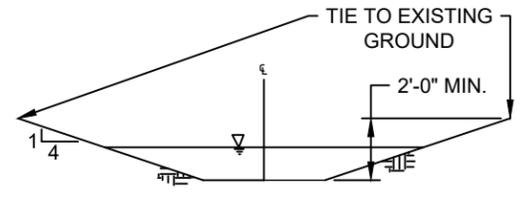
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FIELD DATE:  
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06-28-2021  
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09 OF 15

AB32-01 PAD  
GRADING PLAN



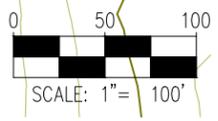
OFFSITE CHANNEL DETAIL  
N.T.S.



ONSITE CHANNEL DETAIL  
N.T.S.

NOTES:  
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8620 WOLFF COURT  
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(303) 928-7128

PREPARED FOR:  
**noble energy**

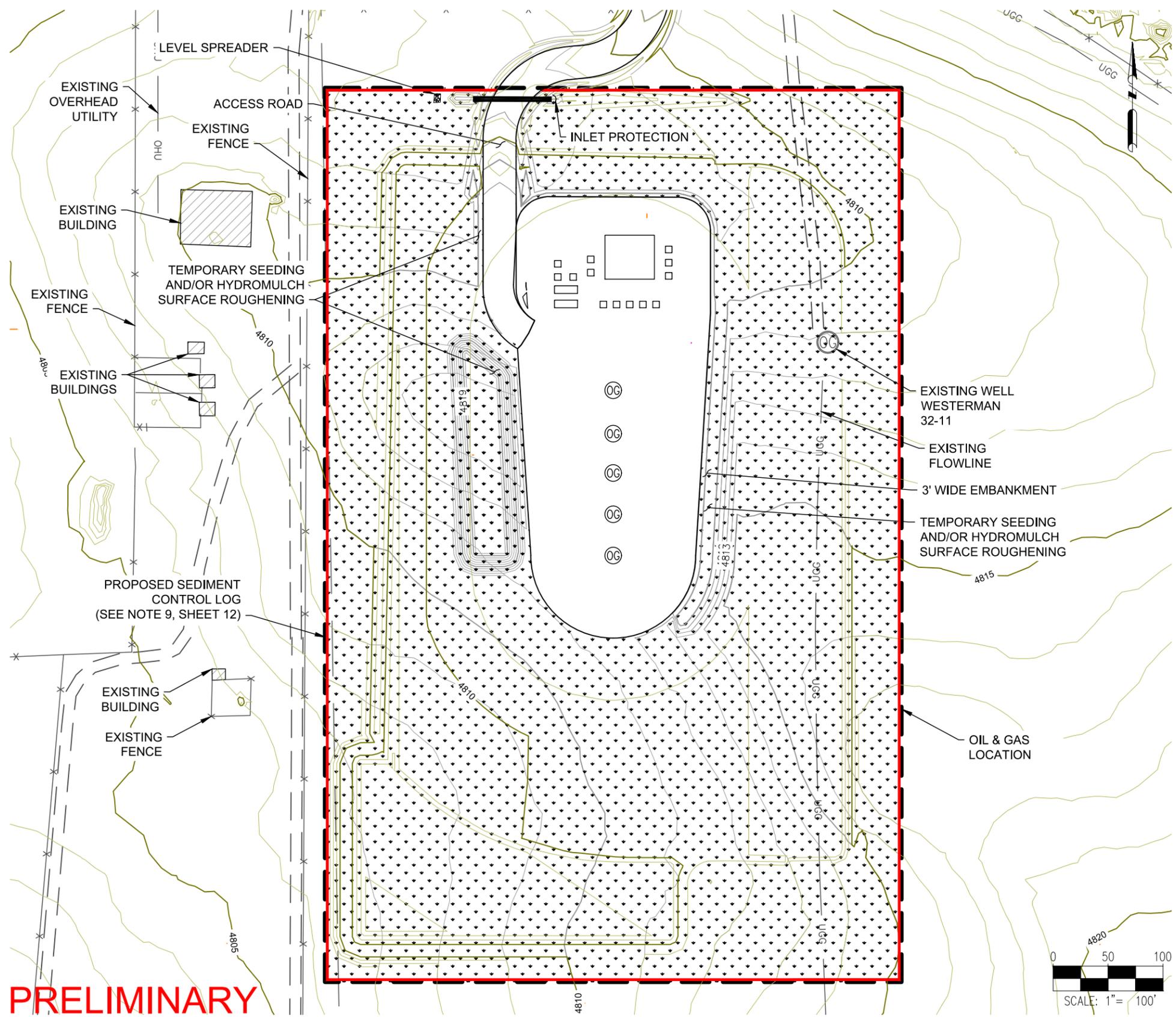
NOBLE ENERGY, INC.  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202  
(303) 228-4000

SHEET NAME:  
EROSION & SEDIMENT CONTROL PLAN - INTERIM  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

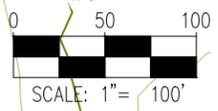
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2. CULVERTS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

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SHEET NAME:  
EROSION & SEDIMENT CONTROL PLAN - FINAL  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

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AB32-01 PAD  
GRADING PLAN

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE OPERATOR HOLDS A CURRENT STORMWATER CONSTRUCTION PERMIT AND STORMWATER MANAGEMENT PLAN (SWMP) IN ACCORDANCE WITH COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT REQUIREMENTS. CONSTRUCTION, MATERIALS MANAGEMENT, AND BMP INSTALLING/MAINTENANCE WILL BE CONDUCTED ACCORDING THE SWMP. BMPS WILL BE ROUTINELY INSPECTED AS ESTABLISHED IN THE SWMP INSPECTION SCHEDULE. INSPECTION REPORTS, REPAIR LOGS, ETC. ARE MAINTAINED IN AN ONLINE DATABASE, AND AVAILABLE TO THE DEPARTMENT OR OTHER AGENCIES UPON REQUEST.
2. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM WELD COUNTY PUBLIC WORKS.
3. CLEARING, GRUBBING, AND TOPSOIL STRIPPED SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN.
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
5. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, CONTRACTOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION.
6. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
7. ALL SEDIMENT REMOVED FROM BMPS SHALL BE PLACED WITHIN THE RIGHT-OF-WAY EXCEPT IN WETLAND AREAS OR AS OTHERWISE DESCRIBED IN THE PLAN DRAWINGS.
8. AREAS WHICH ARE TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
9. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
10. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.

11. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
12. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
13. AT STREAM CROSSINGS, 50' BUFFER AREAS SHOULD BE MAINTAINED. ON BUFFERS, CLEARING, SOD DISTURBANCES, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF BUFFERS.
14. MULCH WITH NETTING OR EROSION CONTROL MATS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER AND WITHIN 100' OF SPECIAL PROTECTION WATERS OR 50' OF SURFACE WATERS.
15. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.



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SHEET NAME:  
EROSION & SEDIMENT CONTROL NOTES  
SURFACE LOCATION  
AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32,  
T7N, R64W, 6TH P.M.,  
WELD COUNTY, COLORADO

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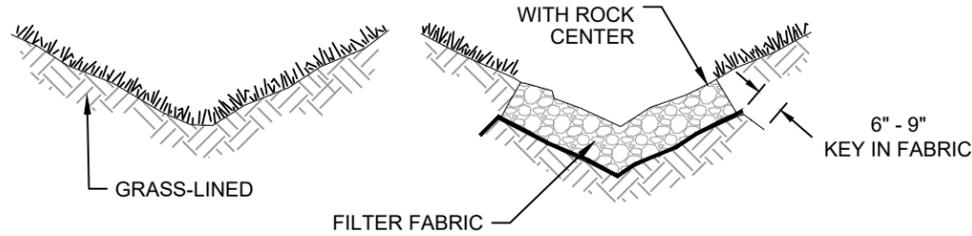
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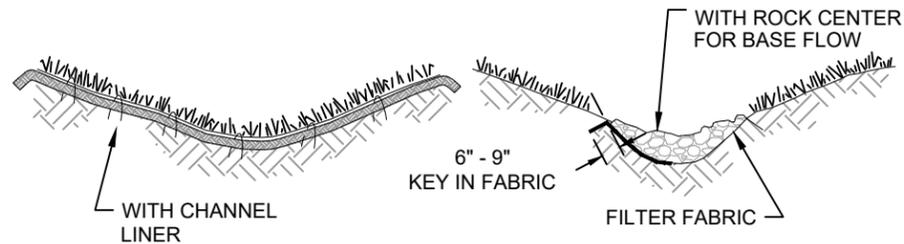
SHEET NO.  
12 OF 15

**PRELIMINARY**

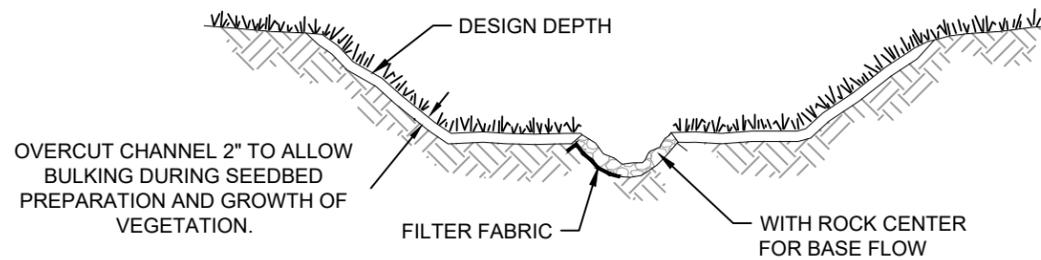
**TYPICAL V-SHAPED CHANNEL CROSS-SECTION**



**TYPICAL PARABOLIC CHANNEL CROSS-SECTION**

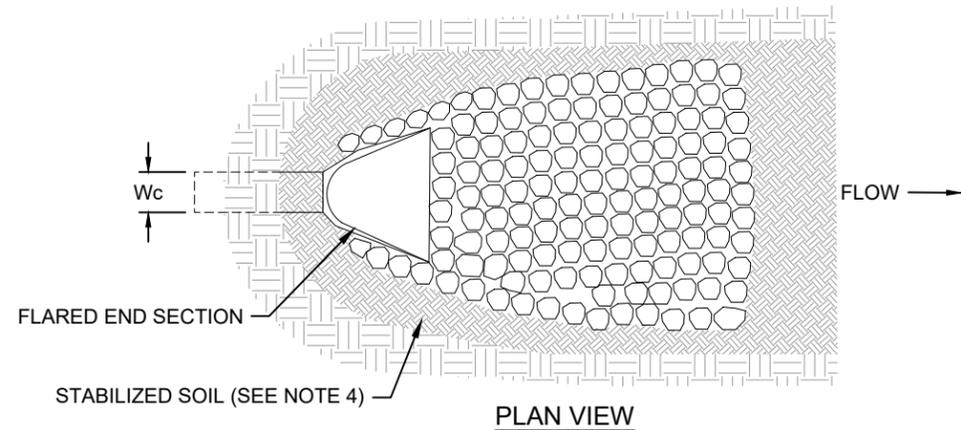


**TYPICAL TRAPEZOIDAL CHANNEL CROSS-SECTION**

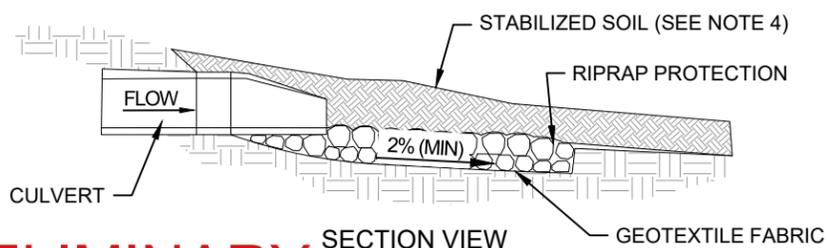


**TYPICAL GRASS-LINED CHANNELS**

SCALE: NOT TO SCALE



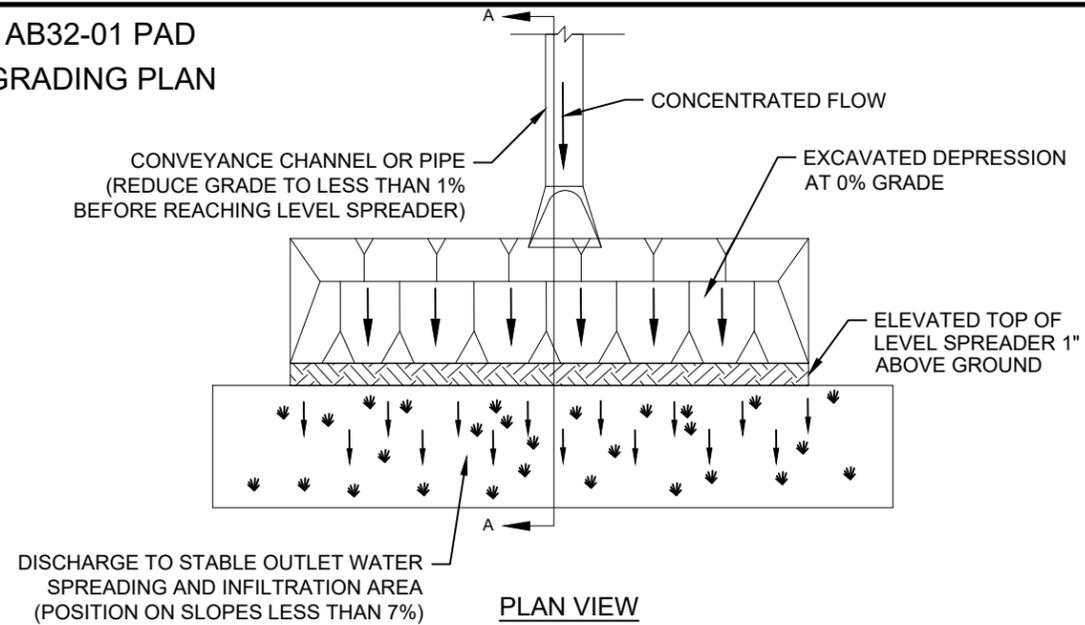
- OUTLET PROTECTION NOTES:**
1. THE MINIMUM THICKNESS OF RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 4".
  2. INSTALL FABRIC TO PREVENT SOIL EROSION BENEATH RIPRAP.
  3. RIPRAP MAY BE INSTALLED USING MECHANICAL EQUIPMENT, AVOID DAMAGING FABRIC.
  4. STABILIZED ALL DISTRIBUTED AREAS IMMEDIATELY AFTER CONSTRUCTION.
  5. INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS AND SPRING SNOWMELT. REPAIR AS REQUIRED.



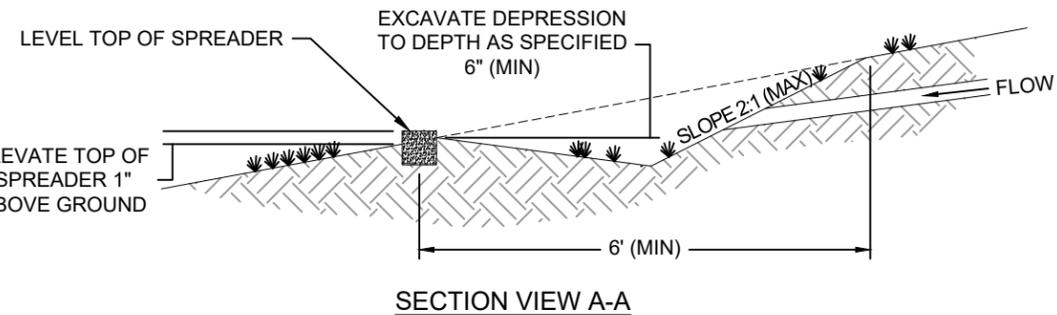
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SCALE: NOT TO SCALE

**AB32-01 PAD GRADING PLAN**



DISCHARGE TO STABLE OUTLET WATER SPREADING AND INFILTRATION AREA (POSITION ON SLOPES LESS THAN 7%)

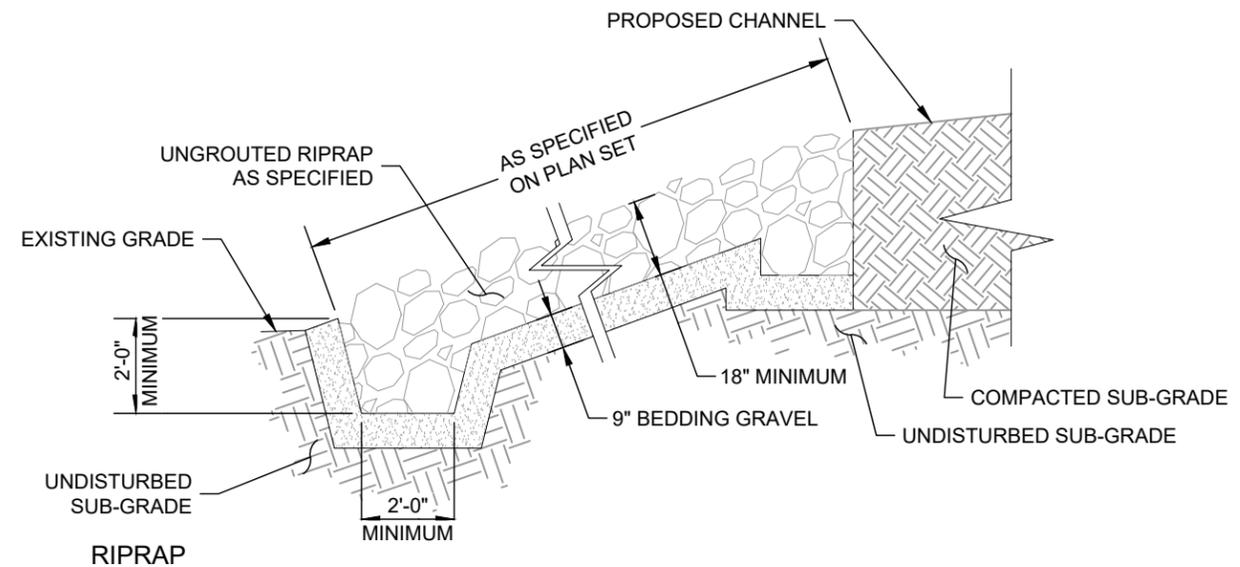


**LEVEL SPREADER**

SCALE: NOT TO SCALE

**LEVEL SPREADER NOTES:**

1. VEGETATION SHALL BE STABILIZED AND THE SITE SHOULD BE VOID OF BARE SOIL
2. WATER SPREADING AREA SHALL BE LEVEL WITH SLOPE NO GREATER THAN 7% FROM EXCAVATED DEPRESSION.
3. LEVEL SPREADER SHALL BE 4"x4" CONCRETE CURB OR EQUIVALENT STABLE MATERIAL.
4. CONVEYANCE CHANNEL SHALL REDUCE GRADE TO LESS THAN 1% BEFORE DISCHARGING LEVEL SPREADER.



**RIPRAP**

SCALE: NOT TO SCALE



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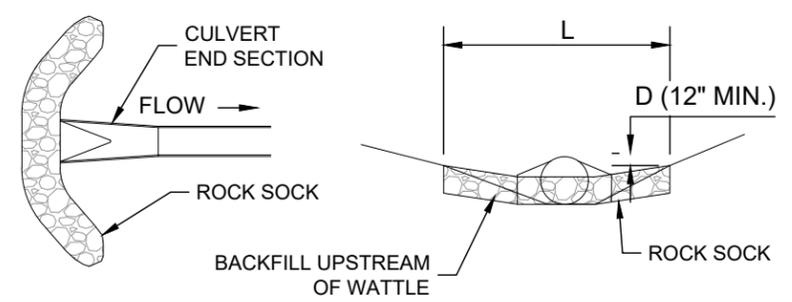
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DENVER, CO 80202  
(303) 228-4000

SHEET NAME: EROSION & SEDIMENT CONTROL DETAILS  
SURFACE LOCATION: AB32-01 PAD  
NE 1/4 NE 1/4 SECTION 32, T7N, R64W, 6TH P.M., WELD COUNTY, COLORADO

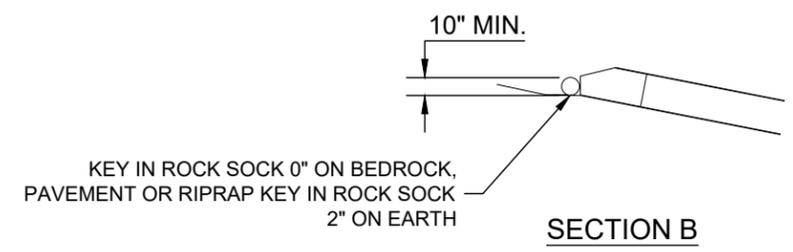
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AB32-01 PAD  
GRADING PLAN



CULVERT INLET PROTECTION PLAN SECTION A



SECTION B

CULVERT INLET PROTECTION

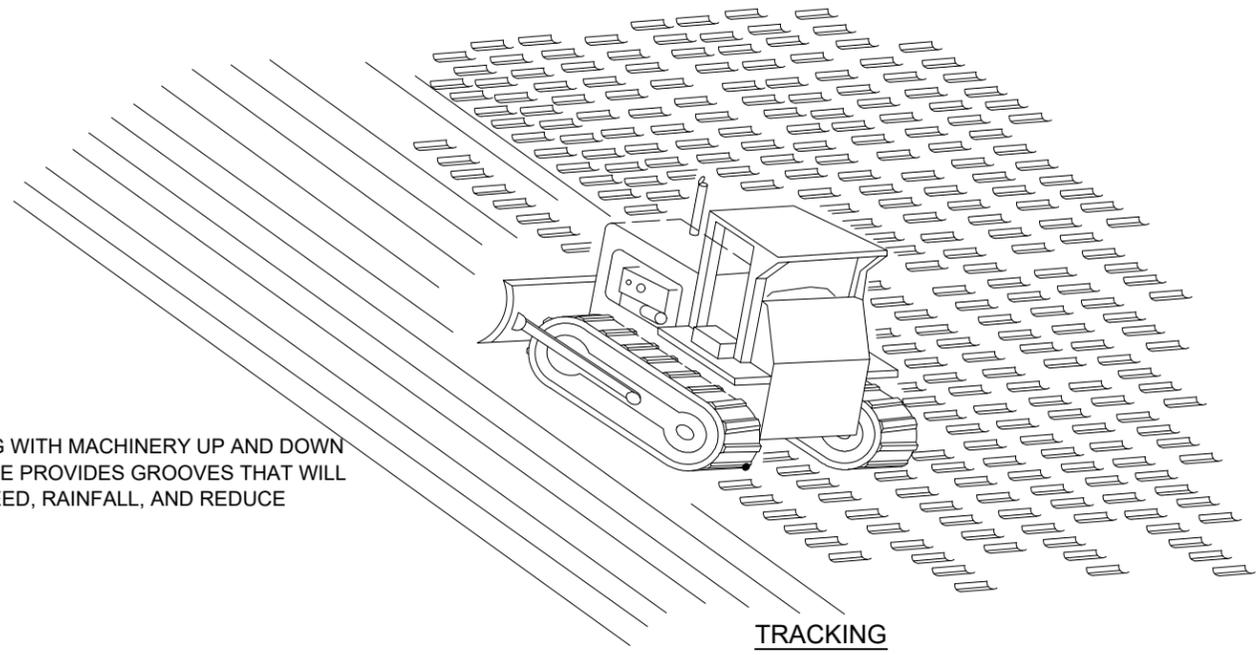
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GENERAL INLET PROTECTION INSTALLATION NOTES:

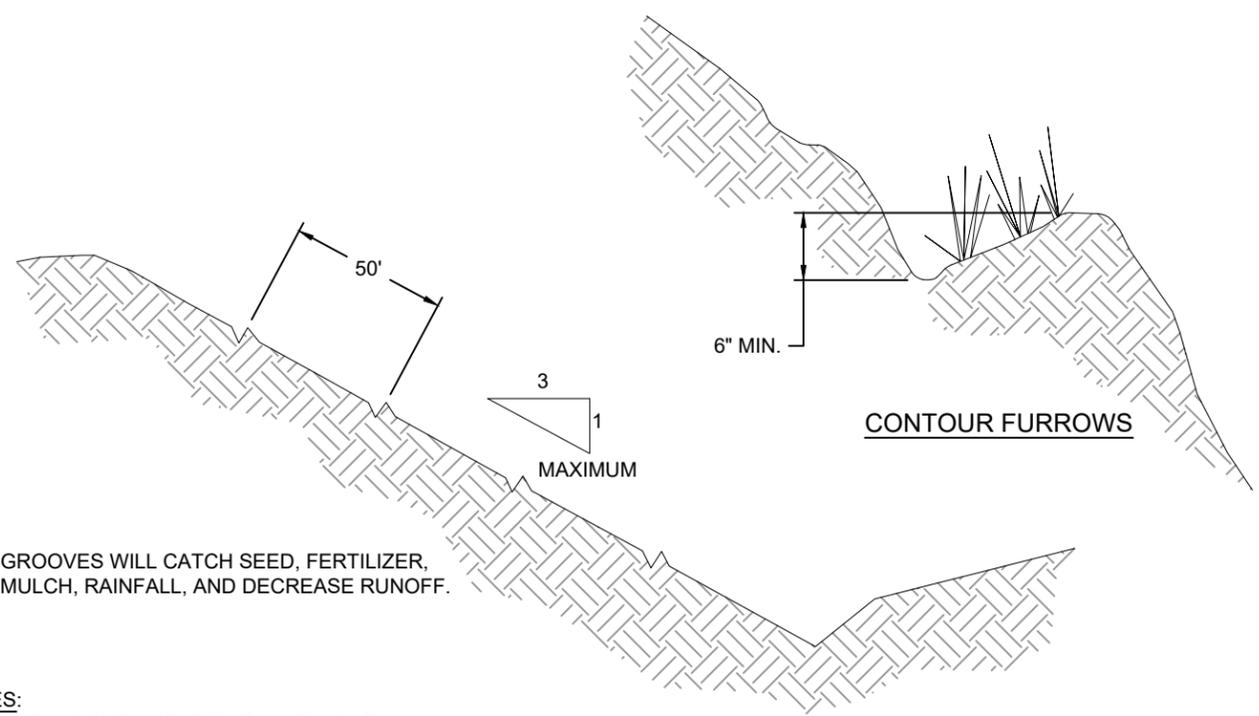
- SEE PLAN VIEW FOR:
  - LOCATION OF INLET PROTECTION.
  - TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6).
- INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

INLET PROTECTION MAINTENANCE NOTES:

- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
- INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
- WHEN INLET PROTECTION AT AREA INLET IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.



TRACKING WITH MACHINERY UP AND DOWN THE SLOPE PROVIDES GROOVES THAT WILL CATCH SEED, RAINFALL, AND REDUCE RUNOFF.



GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL, AND DECREASE RUNOFF.

NOTES:

- VERTICAL TRACKING IS SHOWN ON THIS DETAIL. ACTUAL TRACKING TO BE HORIZONTAL.

SURFACE ROUGHENING BY TRACKING AND CONTOUR FURROWS

SCALE: NOT TO SCALE

PRELIMINARY

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PREPARED FOR:  
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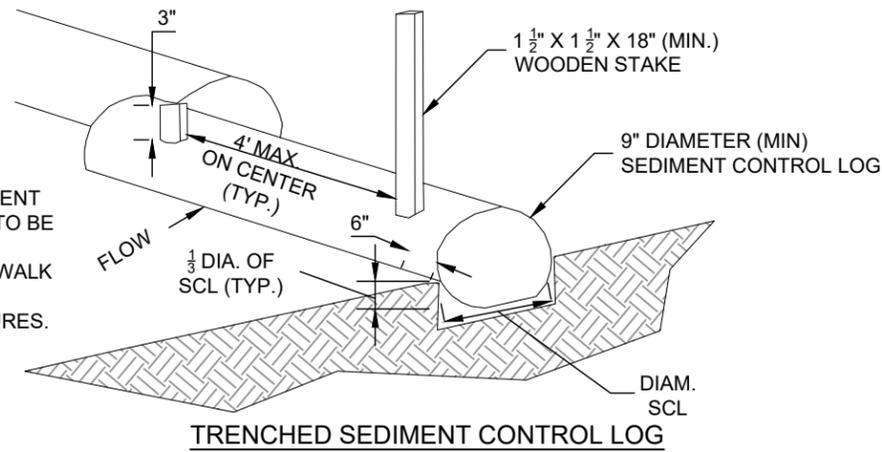
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### AB32-01 PAD GRADING PLAN

**NOTES:**

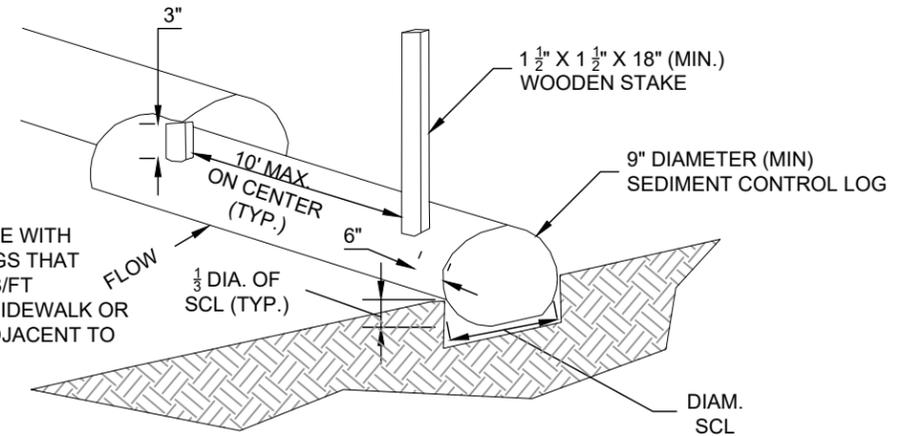
1. LARGER DIAMETER SEDIMENT CONTROL LOGS MAY NEED TO BE EMBEDDED DEEPER.
2. PLACE LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.



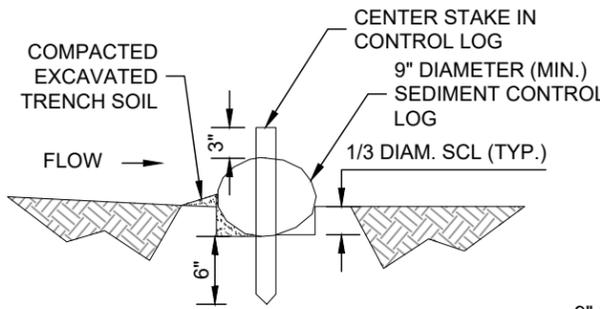
**TRENCHED SEDIMENT CONTROL LOG**

**NOTES:**

1. THIS DETAIL IS FOR USE WITH SEDIMENT CONTROL LOGS THAT ARE A MINIMUM OF 8 LB/FT
2. PLACE LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.

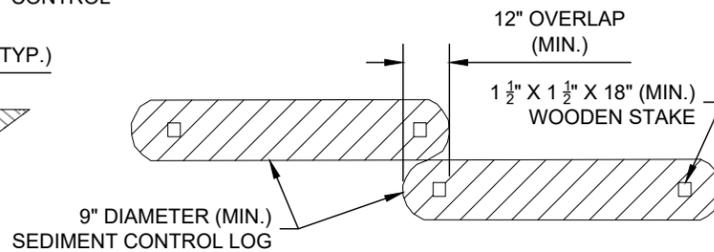


**COMPOST SEDIMENT CONTROL LOG (WEIGHTED)**



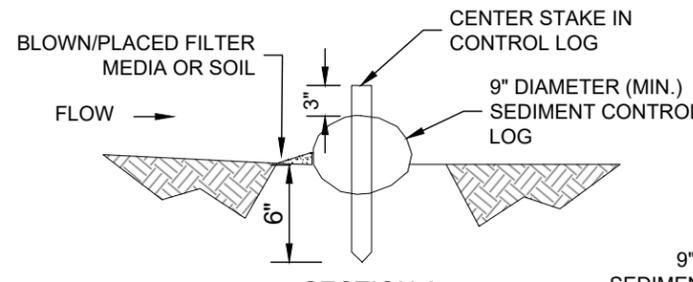
**SECTION A  
TRENCHED SEDIMENT CONTROL LOG**

**TRENCHED SEDIMENT CONTROL LOG**



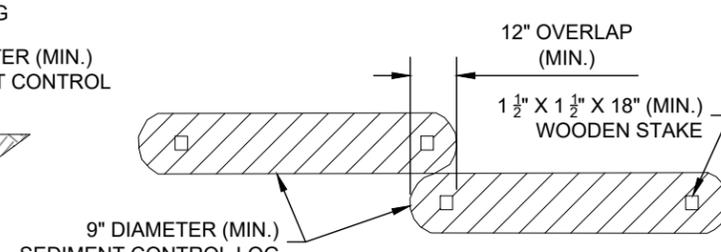
**LOG JOINTS**

SCALE: NOT TO SCALE



**SECTION A  
COMPOST SEDIMENT CONTROL LOG**

**COMPOST SEDIMENT CONTROL LOG (WEIGHTED)**



**LOG JOINTS**

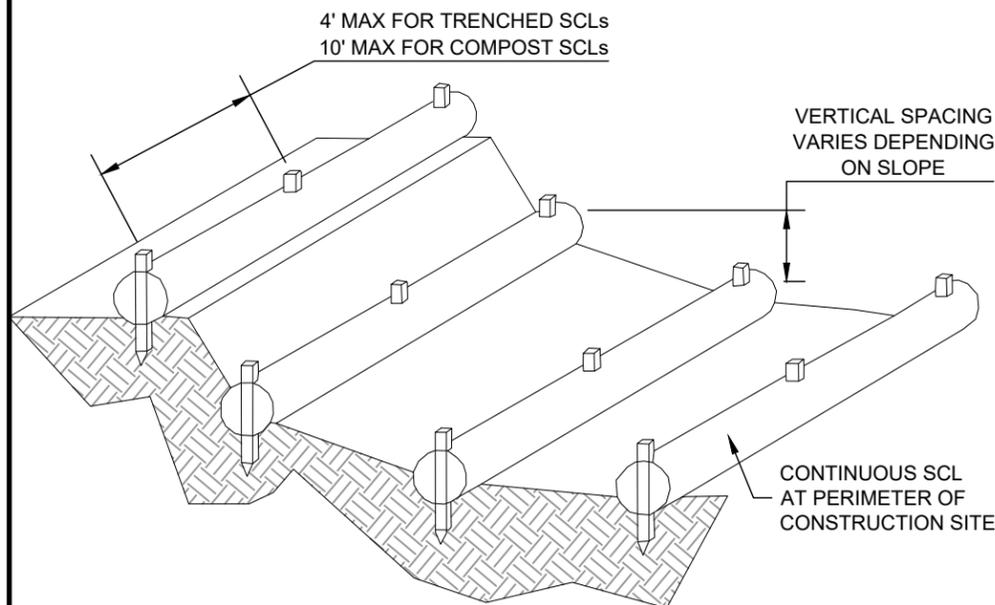
SCALE: NOT TO SCALE

**SEDIMENT CONTROL LOG INSTALLATION NOTES:**

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES, AND OBVIOUS WEAR.
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR BLOWN IN PLACE.
7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.

**SEDIMENT CONTROL LOG MAINTENANCE NOTES:**

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACES AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.



**SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH**

SCALE: NOT TO SCALE

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15 OF 15

## **TABLES**

**TABLE 1**  
**CM SELECTION GUIDELINES**  
**AB32-01 PAD**

ACTIVE	COMPLETED	INTERIM STABILIZATION	FINAL STABILIZATION
<b>Pads, Flowlines, and Access Roads</b>			
Compost Filter Socks	Compost Filter Socks	Compost Filter Socks	Culvert
Culvert	Culvert	Culvert	Ditch / Channel
Ditch / Channel	Ditch / Channel	Ditch / Channel	Erosion Control Blanket
Erosion Control Blanket	Erosion Control Blanket	Erosion Control Blanket	Hydro-mulch
Hydro-mulch	Hydro-mulch	Hydro-mulch	Riprap
Riprap	Riprap	Riprap	Sediment Basin/Detention Pond
Sediment Basin/Detention Pond	Sediment Basin/Detention Pond	Sediment Basin/Detention Pond	Seeding
Seeding	Seeding	Seeding	Surface Roughening / Ripping
Surface Roughening / Ripping	Surface Roughening / Ripping	Surface Roughening / Ripping	
Trash Rack			

Notes:

CM = Control Measure (Formerly Best Management Practice)

**TABLE 2**

**STRUCTURAL AND NON-STRUCTURAL CM CLASSIFICATION  
AB32-01 PAD**

<b>NON-STRUCTURAL CMs</b>		
<b>Program Oversight</b>	<b>Construction Site Planning and Management</b>	<b>Good Housekeeping/Materials Management</b>
Construction Phase Plan Review Contractor Training and Certification Database Development and Maintenance	Timing of projects Construction Sequencing Site Operator CM Inspection and Maintenance Training Preserving Natural Vegetation/Buffer Minimize Initial Pad Site Acreage Slope Pad to the Reserve Pit	General Construction Site Waste Management Spill Prevention, Control, and Countermeasure Plan

<b>STRUCTURAL CMs</b>		
<b>Erosion Control</b>	<b>Sediment Control</b>	<b>Runoff Control</b>
Dust Control Erosion Control Blanket Hydro-mulching Riprap Seeding Surface Roughening / Ripping	Compost Filter Socks Sediment Basin / Detention Pond	Culvert Ditch / Channel Trash Rack

TABLE 3 - POLLUTANT ASSESSMENT AND ASSOCIATED CONTROL MEASURES  
 AB28-13 PAD SWMP  
 NOBLE ENERGY, INC. - COLORADO

POLLUTANT SOURCE	WELLS RANCH SWMP APPLICABLE	ASSOCIATED PHASE <sup>1</sup>	TYPICAL MITIGATING CONTROL MEASURES <sup>2</sup>
Disturbed and Stored Soils	YES	Construction Completed Interim	- Administrative CMs - Planning CMs - Housekeeping/Materials Management CMs - Erosion Control CMs - Sediment Control CMs - Runoff Control CMs
Vehicle Tracking Controls	YES	Construction	- Administrative CMs - Sediment Control CMs
Management of Contaminated Soils	YES	Construction Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs
Loading/Unloading Operations	YES	Construction Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs
Outdoor Storage Activities	YES	Construction Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs
Vehicle/Equipment Maintenance and Fueling	YES	Construction	- Administrative CMs - Housekeeping/Materials Management CMs
Dust/Particle Generation	YES	Construction	- Administrative CMs - Erosion Control CMs
Routine Maintenance	YES	Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs
On-Site Waste Management	YES	Construction Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs
Concrete Truck Washing/Equipment Washing	NO	NA	NA
Dedicated Asphalt/Concrete Batch Plants and Masonry Mixing Stations	NO	NA	NA
Non-Industrial Waste	YES	Construction Completed Interim	- Administrative CMs - Housekeeping/Materials Management CMs

Notes:

<sup>1</sup> Construction stages detailed in Section 2. of the SWMP

<sup>2</sup> Examples of specific CMs provided in Table 1. CMs to be implemented on a site specific basis.

## **APPENDICES**

**APPENDIX A**  
**SPILL RESPONSE INFORMATION**

# NEI DJBU FACILITY UNINTENTIONAL RELEASE NOTIFICATION PROCEDURE

## FIRST RESPONDER RESPONSIBILITY

### UNINTENTIONAL RELEASE OCCURS OR IS DISCOVERED:

Unintentional Release includes unplanned spills of liquids, solids, gas or vapors (Incident Reporting Procedure Tier 2).

#### Report all releases as soon as practical

Releases resulting in a reportable quantity or reportable event often require immediate notification to State and Federal agencies.

Report any amount of a released material via the Noble Energy Incident Notification Number: **1-888-634-7928**



Incident Notification Number:  
**1-888-634-7928**  
or 1-832-698-5850

International Reports: (Country Code) +832-698-5850  
Inter Office Phone System extension: 119-5850

When calling, please be prepared to provide the following information:

- Name & Phone Number\*
- Incident Type
- Business Unit / District
- Location
- Department
- Date & Time of Incident
- Brief Description of Incident

\*Please provide a phone number where you can be easily reached. You will be contacted by your area's EHSR Representative to gather more details on the incident.

- Full details on Incident Reporting can be found on the NeoPortal\_EHSR Page -

Report release to Foreman and Environmental Representative  
**WITHIN 1 HOUR**  
(Jacob Evans 303-328-5605)

**ONLY PERFORM  
IF SAFE**

-Stop the release if ongoing;  
 -Contain any released liquids to prevent further migration;  
 -Identify the type of material released and estimate the quantity.

## ENVIRONMENTAL REPRESENTATIVE RESPONSIBILITY

**RECEIVE NOTIFICATION  
FROM FIELD AND/OR  
GSOC**

Does the quantity meet reportable threshold limits?

NO

YES

### REPORTABLE THRESHOLDS INCLUDE:

- 1) Any amount that impacts or threatens to impact waters of the State of Colorado (which includes surface water, ground water, dry gullies, and storm sewers leading to surface water).
- 2) For SPCC facilities, more than 1,000 gallons of oil in a single discharge to navigable waters or adjoining shorelines; OR  
  
More than 42 gallons of oil in each of two discharges to navigable waters or adjoining shorelines occurring within any twelve-month period.
- 3) For SQG or LQG facilities release that threatens human health or the environment outside the facility.
- 4) One (1) barrel or more of E&P waste released outside of berms or other secondary containment.
- 5) Five (5) barrels or more of E&P oil or waste, regardless of whether the spill/release is completely contained within berms or other secondary containment.
- 6) Any release of E&P oil or waste that impacts or threatens to impact a residence or occupied structure, livestock, or public byway.
- 7) Hydrostatic test failure resulting in a release outside of an impervious surface.
- 8) Any release occurring on Bureau of Land Management property.

Update & review entry in EHSR Global Event Management System (GEMS) database. Continue incident review & updates until GEMS closure.

**IMMEDIATELY REPORT THE RELEASE**  
 Get EHSR/field leadership buy-in prior to making agency notifications.  
 Follow Unintentional Release Notification Procedures on next page.

# NEI DJBU FACILITY

## UNINTENTIONAL RELEASE NOTIFICATION PROCEDURE

**- CONTACT YOUR NOBLE ENVIRONMENTAL REPRESENTATIVE IMMEDIATELY –  
- NOTIFY ENVIRONMENTAL MANAGER OF ANY NOTIFICATIONS -**

THRESHOLD EVENT	REGULATORY CITATION	AGENCY	PHONE	REQUIRED TIME FRAME	ADDITIONAL ACTIONS
1) Oil or petroleum product which Impacts or threatens to impact waters of the State	40 CFR 110.3	National Response Center	800-424-8802	Within 1 hour of discovery	Within 6-hours provide SDS to Federal On-Scene Coordinator.  Within 48-hours provide update to revise or confirm initial notice with the amount released, number of fatalities and injuries, and all other significant facts that are known and relevant to the initial report, operator must confirm the estimates in its initial report.
	40 CFR 112.4	US EPA Region 8	303-293-1788	Immediately	
Oil or other substance which may cause pollution of the waters of the state (which includes surface water, ground water and dry gullies or storm sewers leading to surface water), no matter how small.	CRS 25-8-601 (2)	CDPHE (also represents Colorado Emergency Planning Commission)	877-518-5608	Immediately	Written notification must follow within 5 days
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>
2) For SPCC facilities, more than 1,000 gallons of oil in a single discharge to navigable waters or adjoining shorelines; OR  More than 42 gallons of oil in each of two discharges to navigable waters or adjoining shorelines occurring within any twelve-month period.	40 CFR 112.4	US EPA Region 8	303-293-1788	Immediately	
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>

THRESHOLD EVENT	REGULATORY CITATION	AGENCY	PHONE	REQUIRED TIME FRAME	ADDITIONAL ACTIONS
3) SQG or LQG facility release that threatens human health or the environment outside the facility	6 CCR 1007-3	CDPHE	877-518-5608	Verbally as soon as practicable, but not more than 24 hours	
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>
4) $\geq$ 1 barrel of E&P oil or waste outside of berms or containment	COGCC Rule 906. Applies only to E&P waste and E&P produced fluids.	COGCC Also notify Surface Land Owner	877-518-5608	As soon as practicable, but not more than 24-hours	If initial report was not made via COGCC Spill/Release Report Form 19, a Form 19 must be submitted within 72 hours after discovery of the release.  A supplemental report on Form 19 shall be submitted within 10 calendar days after discovery of the release. Include topographical map of spill location.  Form 19 to be filled out electronically only: <a href="https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf">https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf</a>
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>
5) $\geq$ 5 barrels of E&P oil or waste, regardless if completely contained or not	COGCC Rule 906. Applies only to E&P waste and E&P produced fluids.	COGCC Also notify Surface Land Owner	877-518-5608	As soon as practicable, but not more than 24-hours	If initial report was not made via COGCC Spill/Release Report Form 19, a Form 19 must be submitted within 72 hours after discovery of the release.  A supplemental report on Form 19 shall be submitted within 10 calendar days after discovery of the release. Include topographical map of spill location.  Form 19 to be filled out electronically only: <a href="https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf">https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf</a>
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>

THRESHOLD EVENT	REGULATORY CITATION	AGENCY	PHONE	REQUIRED TIME FRAME	ADDITIONAL ACTIONS
6) Any release of E&P oil or waste that impacts or threatens to impact a residence or occupied structure, livestock, or public byway. <i>Distance in which a threat is present is not defined.</i>	COGCC Rule 906. Applies only to E&P waste and E&P produced fluids.	COGCC  Also notify Surface Land Owner	877-518-5608	As soon as practicable, but not more than 24-hours	If initial report was not made via COGCC Spill/Release Report Form 19, a Form 19 must be submitted within 72 hours after discovery of the release.  A supplemental report on Form 19 shall be submitted within 10 calendar days after discovery of the release. Include topographical map of spill location.  Form 19 to be filled out electronically only: <a href="https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf">https://cogcc.state.co.us/forms/PDF_Forms/form19.pdf</a>
	40 CFR 355.32-33	Weld County Office of Emergency Management LEPC		Within 24-48 hours of discovery	Online spill report form: <a href="https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm">https://www.co.weld.co.us/apps1/oem/spillreport/index.cfm</a>
7) Hydrostatic test failure resulting in a release outside of an impervious surface.	CWQCD Policy WQE-10; CRS 25-8-601 (2)	CDPHE	877-518-5608	Immediately	Refer to Colorado Discharge Permit System (CDPS) Discharge Permit for spill reporting requirements.  All non-permitted hydrotest activities require reporting of any release.  Non-Reportable spills include: <ul style="list-style-type: none"> <li>• Releases of potable water from a public water system that do not reach surface waters.</li> <li>• Release to generally impervious surface or structure.</li> <li>• Release that is managed consistent with BMPs established in accordance with a CDPS discharge permit.</li> </ul>

THRESHOLD EVENT	REGULATORY CITATION	AGENCY	PHONE	REQUIRED TIME FRAME	ADDITIONAL ACTIONS
<p>8) Release on Bureau of Land Management property:</p> <p>Major Undesirable Events:</p> <ul style="list-style-type: none"> <li>A. Oil, saltwater and toxic liquid spills which result in the release of <math>\geq 100</math> bbls;</li> <li>B. Equipment failures or other accidents which result in the venting of <math>\geq 500</math> MCF gas;</li> <li>C. Any fire which consumes the volumes of A and B above;</li> <li>D. Any spill, venting or fire, regardless of the volume involved, which occurs in a sensitive area, e.g., areas such as parks, recreation sites, wildlife refuges, lakes, reservoirs, streams, and urban or suburban areas;</li> <li>E. Each accident which involves a fatal injury.</li> </ul>	NTL-3A	Bureau of Land Management		As soon as practicable, but not more than 24 hours	<p>Written Report submitted to the District Engineer no later than 15 days following all major undesirable events.</p> <p>All volumes of oil spilled, gas vented, and all hydrocarbons consumed by fire or otherwise lost must be reported monthly on the Monthly Report of Operations (Form 9-329). The volume and value of such losses must also be reported in the Monthly Report of Sales and Royalty (Form 9-361).</p>
<p>Other Than Major Undesirable Events:</p> <ul style="list-style-type: none"> <li>A. Oil, saltwater and toxic liquid spills which result in the release of 10 bbls but <math>&lt; 100</math> bbls of liquid in nonsensitive areas, and all discharges of <math>\geq 100</math> bbls when the spill is entirely contained by the facility firewall;</li> <li>B. Equipment failures or other accidents which result in the venting of 50 buy <math>&lt; 500</math> MCF gas in nonsensitive areas;</li> <li>C. Any fire which consumes the volumes of A and B above;</li> </ul>				No oral report required	Same written reporting requirements as for Major Undesirable Events detailed above.

D. Each accident which involves a major or life-threatening injury.					
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**NOTE: See the Facility Response Plan for additional contact information**

**E&P Waste is defined in CRS 34-60-103 (4.5)** "Exploration and production waste" means those wastes that are generated during the drilling of and production from oil and gas wells or during primary field operations.

**COGCC Rule 906** requires E&P spills of any size to be cleaned up as soon as practicable.

**APPENDIX B**  
**SOILS REPORT**

## Weld County, Colorado, Southern Part

### 56—Renohill clay loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 3635

*Elevation:* 4,850 to 5,200 feet

*Mean annual precipitation:* 11 to 16 inches

*Mean annual air temperature:* 46 to 48 degrees F

*Frost-free period:* 100 to 160 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Renohill and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Renohill

##### Setting

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Residuum weathered from shale

##### Typical profile

*H1 - 0 to 9 inches:* clay loam

*H2 - 9 to 32 inches:* clay loam

*H3 - 32 to 36 inches:* unweathered bedrock

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 5 percent

*Available water capacity:* Low (about 5.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* D

*Ecological site:* R067BY042CO - Clayey Plains

*Hydric soil rating:* No

### **Minor Components**

#### **Ulm**

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### **Shingle**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Weld County, Colorado, Southern Part

Survey Area Data: Version 19, Jun 5, 2020

## Weld County, Colorado, Southern Part

### 4—Aquolls and Aquepts, flooded

#### Map Unit Setting

*National map unit symbol:* 3621

*Elevation:* 3,600 to 4,700 feet

*Mean annual precipitation:* 12 to 16 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 100 to 165 days

*Farmland classification:* Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

#### Map Unit Composition

*Aquolls and similar soils:* 55 percent

*Aquepts, flooded, and similar soils:* 25 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Aquolls

##### Setting

*Landform:* Drainageways, plains, depressions

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Recent alluvium

##### Typical profile

*H1 - 0 to 8 inches:* variable

*H2 - 8 to 60 inches:* stratified sandy loam to clay

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water*

*(Ksat):* Moderately low to high (0.06 to 6.00 in/hr)

*Depth to water table:* About 6 to 36 inches

*Frequency of flooding:* FrequentNone

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 10 percent

*Maximum salinity:* Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 5.0

*Available water capacity:* Low (about 4.7 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6w

*Land capability classification (nonirrigated):* 6w

*Hydrologic Soil Group:* D  
*Ecological site:* R067BY035CO - Salt Meadow  
*Hydric soil rating:* Yes

### **Description of Aquepts, Flooded**

#### **Setting**

*Landform:* Stream terraces  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Recent alluvium

#### **Typical profile**

*H1 - 0 to 8 inches:* variable  
*H2 - 8 to 60 inches:* stratified sandy loam to clay

#### **Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 6.00 in/hr)  
*Depth to water table:* About 6 to 36 inches  
*Frequency of flooding:* FrequentNone  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Maximum salinity:* Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 5.0  
*Available water capacity:* Low (about 4.7 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 6w  
*Land capability classification (nonirrigated):* 6w  
*Hydrologic Soil Group:* D  
*Ecological site:* R067BY038CO - Wet Meadow  
*Hydric soil rating:* Yes

### **Minor Components**

#### **Haverson**

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

#### **Thedalund**

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Weld County, Colorado, Southern Part  
Survey Area Data: Version 19, Jun 5, 2020

## OGDP 4 SWMP BMP List

### **AB28-13 Multi**

- Noble will limit total initial surface disturbance from construction of the well pad to approximately 15.4 acres; 9.3 acres for the working pad surface area; 0.8 acres for the access road disturbance area; and 2.9 acres for the pipeline corridor area. Following interim reclamation, well pad surface disturbance will be reduced to approximately 8.1 acres.
- Noble will design the site with flatter slopes and utilize surface ripping/roughening, and structural surface stabilization control measures including revegetation to increase infiltrations rates and minimize erosion potential.
- The location is within cropland. Vegetation coverage is at the dependent on the farming practices of the surface owner.
- There are no known weed infestations at this location.
- One proposed onsite channel which drains towards a detention pond in the center of the pad will be constructed during pad construction and maintained throughout the life of the location.
- No non-stormwater discharges are anticipated.
- A detention pond in the center of the pad will be constructed during pad construction and maintained throughout the life of the location.
- Location drains to the south towards an unnamed roadside ditch.
- At stream crossings, 50' buffer areas should be maintained. On buffers, clearing, sod disturbances, excavation, and equipment traffic should be minimized.
- Activities such as stacking logs, burning cleared brush, discharging rainwater from trenches, welding pipe sections, refueling and maintaining equipment should be accomplished outside of buffers.
- Mulch with netting or erosion control mats must be installed on all slopes 3:1 and steeper and within 100' of special protection waters or 50' of surface waters.
- A sediment control log will be installed around the perimeter of the pad during initial pad construction.
- Temporary seeding, hydro mulching, and/or surface roughening will be placed around the pad during initial pad construction and maintained until interim reclamation, where additional seeding, hydro mulching, and/or surface roughening will also occur at the areas being reclaimed.
- Structural CM practices specific to the AB28-13 Multi will include the following:
  - Compost filter socks (Filtrexx or similar) sediment control logs (CFS);
  - Ditch/channel (D);
  - Hydro-mulch (HM);
  - Riprap (R);
  - Sediment basins/detention ponds (SB);
  - Seeding (S);
  - Soil roughening (SR); and
  - Vehicle tracking control (VTC).
- Timing of inspections and general maintenance will include:
  - Construction Stage:

- At least one inspection every 7 calendar days; OR
- At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours following precipitation which causes surface erosion.
- Completed Stage:
  - At least one inspection every 30 calendar days once disturbance activities have ceased and all of the interim reclamation work has been completed, except that the site has not yet been revegetated.
- Interim Stabilization Stage:
  - At least one inspection every 30 calendar days once the site has undergone seeding.
- Final Stabilization Stage:
  - At least once annually until the site is plugged and abandoned (P&A).
- Bond Release:
  - Once equipment has been removed from a location, the site is inspected under an alternate inspection frequency:
    - Bi-annual inspection site visits; or
    - Quarterly visits for locations with “elevated risk,” until location achieves 50% revegetation, with bi-annual inspections thereafter.
    - Regardless of initial risk categorization, locations with corrective actions will be inspected within 14 days of the corrective measure implementation to ensure satisfactory performance and then returned to their original category.

### **A32-01 Pad**

- Noble will limit total initial surface disturbance from construction of the well pad to approximately 9.8 acres; 5.6 acres for the working pad surface area; 0.3 acres for the access road disturbance area; and 5.1 acres for the flowline corridor area. Following interim reclamation, well pad surface disturbance will be reduced to approximately 2.4 acres.
- Noble will design the site with flatter slopes and utilize surface ripping/roughening, and structural surface stabilization control measures including revegetation to increase infiltrations rates and minimize erosion potential.
- The location is within cropland. Vegetation coverage is at the dependent on the farming practices of the surface owner.
- There are no known weed infestations at this location.
- One proposed onsite channel which drains into a detention pond in the southwest corner of the pad will be constructed during pad construction and maintained throughout the life of the location.
- No non-stormwater discharges are anticipated.
- A detention pond on the southwestern corner of the pad will be constructed during pad construction and maintained throughout the life of the location.
- Location drains to the northwest towards an unnamed pond.

- At stream crossings, 50' buffer areas should be maintained. On buffers, clearing, sod disturbances, excavation, and equipment traffic should be minimized.
- Activities such as stacking logs, burning cleared brush, discharging rainwater from trenches, welding pipe sections, refueling and maintaining equipment should be accomplished outside of buffers.
- Mulch with netting or erosion control mats must be installed on all slopes 3:1 and steeper and within 100' of special protection waters or 50' of surface waters.
- A sediment control log will be installed around the perimeter of the pad during initial pad construction.
- Temporary seeding, hydro mulching, and/or surface roughening will be placed around the pad during initial pad construction and maintained until interim reclamation, where additional seeding, hydro mulching, and/or surface roughening will also occur at the areas being reclaimed.
- Structural CM practices specific to the A07-08 Facility will include the following:
  - Compost filter socks (Filtrexx or similar) sediment control logs (CFS);
  - Culvert (C);
  - Ditch/channel (D);
  - Erosion control blankets/mats (ECB);
  - Hydro-mulch (HM);
  - Riprap (R);
  - Sediment basins/detention ponds (SB);
  - Seeding (S);
  - Soil roughening (SR); and
  - Trash rack (TR).
- Timing of inspections and general maintenance will include:
  - Construction Stage:
    - At least one inspection every 7 calendar days; OR
    - At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours following precipitation which causes surface erosion.
  - Completed Stage:
    - At least one inspection every 30 calendar days once disturbance activities have ceased and all of the interim reclamation work has been completed, except that the site has not yet been revegetated.
  - Interim Stabilization Stage:
    - At least one inspection every 30 calendar days once the site has undergone seeding.
  - Final Stabilization Stage:
    - At least once annually until the site is plugged and abandoned (P&A).
  - Bond Release:
    - Once equipment has been removed from a location, the site is inspected under an alternate inspection frequency:
      - Bi-annual inspection site visits; or
      - Quarterly visits for locations with “elevated risk,” until location achieves 50% revegetation, with bi-annual inspections thereafter.

- Regardless of initial risk categorization, locations with corrective actions will be inspected within 14 days of the corrective measure implementation to ensure satisfactory performance and then returned to their original category.