

## **Attachment C**

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## Attachment C

### NIGHTTIME LIGHTING

#### INTRODUCTION

E&B Natural Resources Management Corporation, the Applicant, is proposing the development of the E&B Oil Development Project (proposed project) on a 1.3-acre project site located at 555 6<sup>th</sup> Street in the City of Hermosa Beach (City). The project site is bounded on the east by Valley Drive and on the south by 6<sup>th</sup> Street, approximately seven blocks east of the beach and the Pacific Ocean. The project site is owned by the City and is currently used as their City Maintenance Yard. The Project Applicant will lease the project site from the City for the implementation of the proposed project.

The proposed project provides for the development of an onshore drilling and production site that would utilize directional drilling of 30 wells to access the oil and gas reserves in the tidelands (granted by the State of California to the City) and in an onshore area known as the uplands. Both of these areas are located within the Torrance Oil Field. In addition, the proposed project would result in the drilling of four water injection wells, the relocation of the City Maintenance Yard to another site, and the installation of off-site underground pipelines for the transport of the processed crude oil and gas from the project site to purchasers.

#### NIGHTTIME LIGHTING BY PHASE

The proposed project would occur in four phases consisting of the following:

- Phase 1: Site Preparation
- Phase 2: Drilling and Testing
- Phase 3: Final Design and Construction
- Phase 4: Development and Operations

The following describes the nighttime lighting that would be provided for each phase of the proposed project.

##### **Phase 1: Site Preparation**

The purpose of Phase 1 would be to prepare the project site for drilling and testing as well as the subsequent phases of the proposed project. It is anticipated that Phase 1 would occur for a period of approximately six months.

During the completion of Phase 1, a 32-foot sound attenuation wall would be installed behind a 6-foot perimeter fence that would encompass the project site. In addition, landscaping would be provided within a 10-foot landscape area along the eastern and southern perimeter of the project site to provide a visual buffer effect for the sound attenuation wall. Along Valley Drive, three of the four existing mature trees would remain in place and along 6<sup>th</sup> Street three new trees would

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be provided within the landscape area. Figures 12, 13, and 14 in the Planning Application provides information about the perimeter fencing, 32-foot sound attenuation wall, and landscaping as well as elevations of the project site from 6<sup>th</sup> Street and Valley Drive at the completion of Phase 1.

Since construction activities on the project site during Phase 1 would occur between the hours of 8:00 A.M. and 6:00 P.M. consistent with the requirements of the City's Municipal Code, no nighttime lighting would be provided. The perimeters of the project site would be illuminated by the existing streetlights on Valley Drive and 6<sup>th</sup> Street.

## **Phase 2: Drilling and Testing**

The purpose of Phase 2 would be to conduct the drilling and testing of wells in order to determine the potential productivity and economic viability of the proposed project. During this phase, up to three test wells and one water disposal/injection well would be drilled. These wells would be drilled utilizing directional drilling technology, which enables the wells to be drilled laterally for long distances, so that the bottom-hole locations may be located several thousand feet from the surface location of each well head on the project site. During the drill process, the drill rig would operate continuously for 24 hours per day, seven days per week, until the appropriate depth and bottom hole location for each well has been reached. It is estimated it would take approximately 30 days per well for each of the four wells. It is anticipated that the completion of Phase 2 would take approximately 12 months.

For the entire duration of Phase 2, the 32-foot sound attenuation wall and the proposed landscaping installed in Phase 1, along with the three existing mature trees, would be in place along the perimeter of the project site. Refer to the discussion in Phase 1 provided above.

During Phase 2, the nighttime lighting as a result of the proposed project would occur from the sources discussed below. Figure 1 attached identifies these sources of nighttime lighting on the project site.

To address site security, temporary lighting would be provided by light fixtures at the project site entrance and exit. The lighting would consist of a light fixture that would be pole-mounted at a height of 10 feet. The fixture would have low energy lights that would be shielded/hooded and downcast so that it would not create light spill or glare beyond the property line.

To address site security, lighting would be provided for the temporary construction trailer. The light would consist of two 150-watt light fixtures at each end of the trailer. The fixtures would be shielded/hooded and downcast so that it would not create light spill or glare. In addition, the lights on the temporary construction trailer would be located behind the 32-foot sound attenuation wall, which would block any light spill or glare from leaving the project site.

To address worker safety, lighting would be provided for the drill rig. Figure 16 in the Planning Application provides the location of the drill rig. The drill rig would have pole-mounted lights on the rig platform (15 feet above the ground surface) and on the drill rig mast (starting at a height of 19 feet above the ground surface and up to the top of the mast at a height of 87 feet). The drill rig mast would be enclosed within an acoustical cover on three sides. Within the

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acoustical cover, there would be LED lights that run along one side of the mast structure at intervals of 4 feet and on the other side there would be two lights, one located on the top of the mast and the other where the drill rig “function” would be occurring. These LED lights, that face towards the inside of the acoustical cover, are for the purposes of creating an ambient glow within the acoustical cover to provide visibility for the safety of the workers. Since the lights would be facing inward within the acoustical cover, the light bulbs would not be visible and no light spill or glare would be created. In addition, the lights on the rig platform at the base of the drill rig mast would be shielded/hooded and downcast. The lights on the rig platform and the lower portion of the drill rig mast would be located behind the 32-foot sound attenuation wall, which would block any light spills or glare from leaving the project site.

To address worker safety, lighting would be provided for the drill rig equipment, the temporary production equipment, and the shipping tanks. Figure 16 in the Planning Application provides the location of the drill rig equipment, the temporary production equipment, and the shipping tanks. The drill rig equipment would have pole-mounted lights along a walk platform 19 feet above the ground surface. These lights would be facing downward towards the drill rig equipment. The lighting for the temporary production equipment and shipping tanks would consist of 150-watt hooded and downward cast flood lights hung where needed to provide visibility for the safety of workers. The lights for the drill rig equipment, the temporary production equipment, and the shipping tanks would be located behind the 32-foot sound attenuation wall, which would block any light spills or glare from leaving the project site.

### **Phase 3: Final Design and Construction**

The purpose of Phase 3 would be to utilize the production information from Phase 2 to prepare the final design of the facility, prepare the final drilling program, procure the equipment, conduct site remediation and final grading of the project site, and construct the permanent oil and gas production facilities, and other supporting onsite and offsite improvements for the proposed project. It is anticipated that Phase 3 would occur for a period of approximately 14 months.

In order to conduct the construction activities on the project site, the 32-foot sound attenuation wall would be removed and a 16-foot sound attenuation wall would be used during soil remediation, grading, and construction activities. During construction, a 16-foot split-faced block wall would be installed around the perimeter of project site. After the removal of three existing trees, new landscaping, including nine large trees, would be provided within the 10-foot landscape area along the eastern and southern perimeter of the project site. During the completion of Phase 3, a 32-foot sound attenuation wall would be install behind the 16-foot split-faced block wall to encompass the project site. Figures 20, 21, and 22 in the Planning Application provide information about the perimeter block wall, landscaping, and 32-foot sound attenuation wall.

Since construction activities on the project site during Phase 3 would occur between the hours of 8:00 A.M. and 6:00 P.M., consistent with the requirements of the City’s Municipal Code, no nighttime lighting would be provided. The perimeters of the project site would be illuminated by the existing streetlights on Valley Drive and 6<sup>th</sup> Street.

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#### **Phase 4: Development and Operations**

The purpose of Phase 4 would be to maximize oil and gas recovery from the reservoirs by drilling additional wells and activating the permanent facility. To accomplish this, Phase 4 would result in: the drilling of the remaining wells (for a total of 30 oil and gas wells and four water disposal/injection wells); the start up and operation of the permanent oil production equipment; the transport of the oil and gas by pipeline to their respective destinations; and the ongoing maintenance of the proposed project. During the drill process, the drill rig would operate continuously for 24 hours per day, seven days per week, until the appropriate depth and bottom hole location for each well has been reached. It is estimated it would take approximately 30 days per well for each of the 30 wells. After all of the wells are drilled, it is anticipated that Phase 4 would occur for a period of approximately 30 to 35 years.

During the drilling activities in Phase 4, the 32-foot sound attenuation wall installed in Phase 3 would be along the perimeter of the project site. In addition, during all of Phase 4, the 16-foot block wall and landscaping installed in Phase 3 would remain in place. Refer to the discussion in Phase 3 provided above.

During Phase 4, the nighttime lighting as a result of the proposed project would occur from the sources discussed below. Figure 2 attached identifies these sources of nighttime lighting on the project site with the drill rig. Figure 3 attached identifies these sources of nighttime lighting on the project site without the drill rig.

To address site security, light fixtures would be provided at the project site entrance and exit. The lights would consist of a 150-watt light fixture adjacent to the gate that would be mounted on the perimeter wall at a height of 15 feet. The light fixtures would be shielded/hooded and downcast so that it would not create light spill or glare beyond the property line.

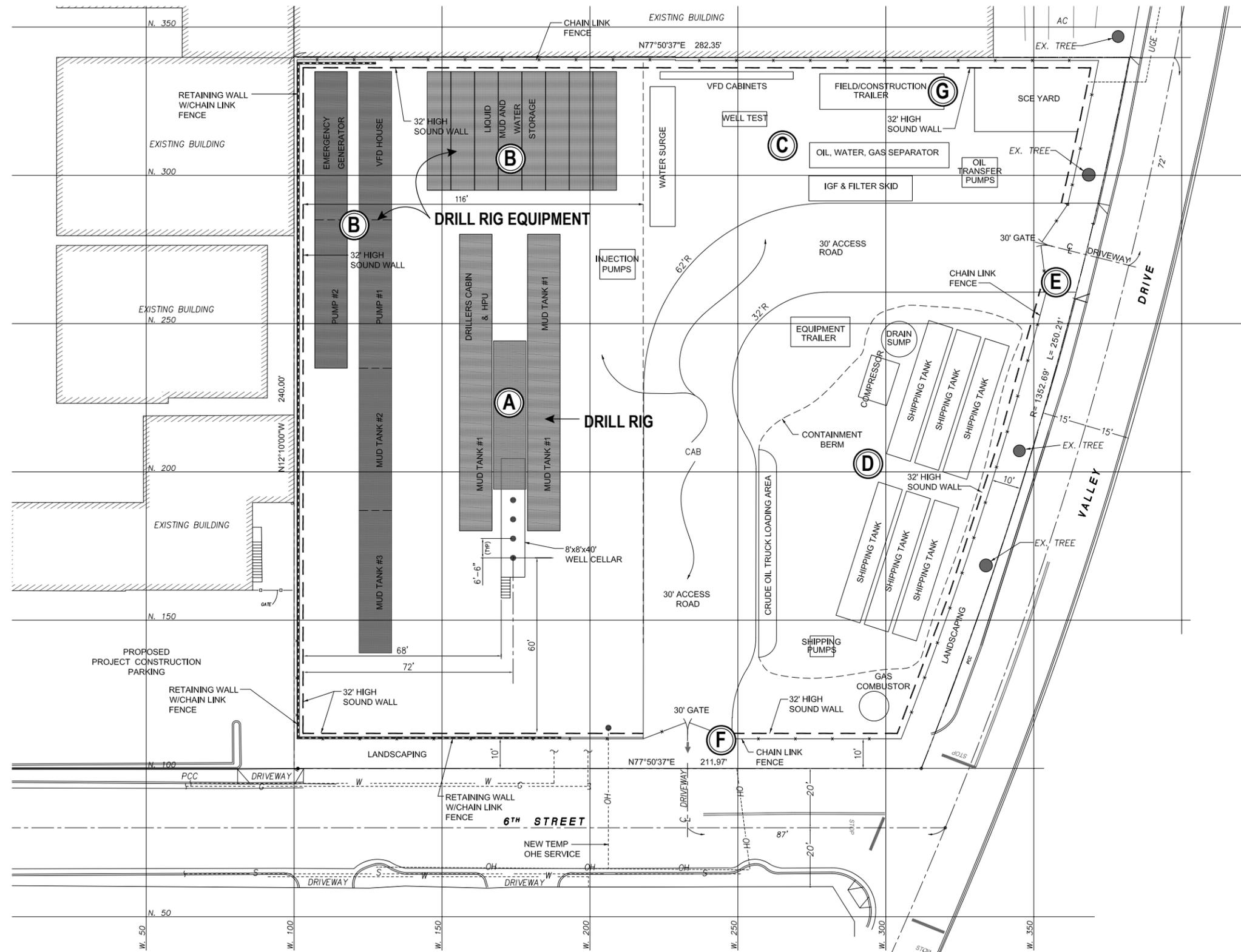
To address site security, lighting would be provided for the small office building. The light would consist of a 150-watt light fixture would be wall-mounted at a height of 10 feet at the building entrance. The fixture would be shielded/hooded and downcast so that it would not create light spill or glare. In addition, the light on the office building would be located behind the 16-foot split-faced block wall, which would block any light spill or glare from leaving the project site.

To address worker safety, lighting would be provided for the drill rig. Figure 23 in the Planning Application provides the location of the drill rig during Phase 4. Refer to the lighting discussion about the drill rig lighting provided in Phase 2 above. In addition, the lights on the rig platform and the lower portion of the drill rig mast would be located behind the 16-foot split-faced block wall, which would block any light spills or glare from leaving the project site.

To address worker safety, lighting would be provided for along the interior of the 16-foot perimeter split-faced block wall and incorporated into the pipe rack and equipment design. The lighting would be shielded/hooded and downcast so that it would not create light spill or glare. In addition, this lighting would be located behind the 16-foot split-faced block wall, which would block any light spill or glare from leaving the project site.

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The maintenance activities on the project site that would require the use of a workover rig would occur between the hours of 8:00 A.M. and 6:00 P.M. Therefore, no nighttime lighting would be required.



# E&B Oil Development Project

## LEGEND

### LIGHTING SOURCES

- (A) Drill Rig:**  
Platform: Shielded/hooded, pole-mounted lights 15 feet above ground surface  
Mast: Covered by acoustical on 3 sides; inward-facing LED lights within acoustical cover
- (B) Drill Rig Equipment:** Shielded/hooded, pole-mounted lights 19 feet above ground surface
- (C) Temporary Production Equipment:** Hooded/downcast flood lights hung on equipment
- (D) Shipping Tanks:** Hooded/downcast flood lights hung on tanks
- (E) Entrance:** Pole-mounted, low energy light fixture
- (F) Exit:** Pole-mounted, low energy light fixture
- (G) Construction Trailer:** 150-watt hooded light fixtures at each end of trailer

- 32' Sound Wall
- New Retaining Wall
- Property Line
- Chain Link Fence
- Well Site

Source: Processes Unlimited International, Inc., September 12, 2012.

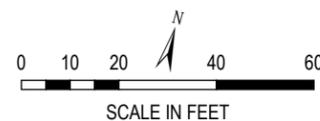
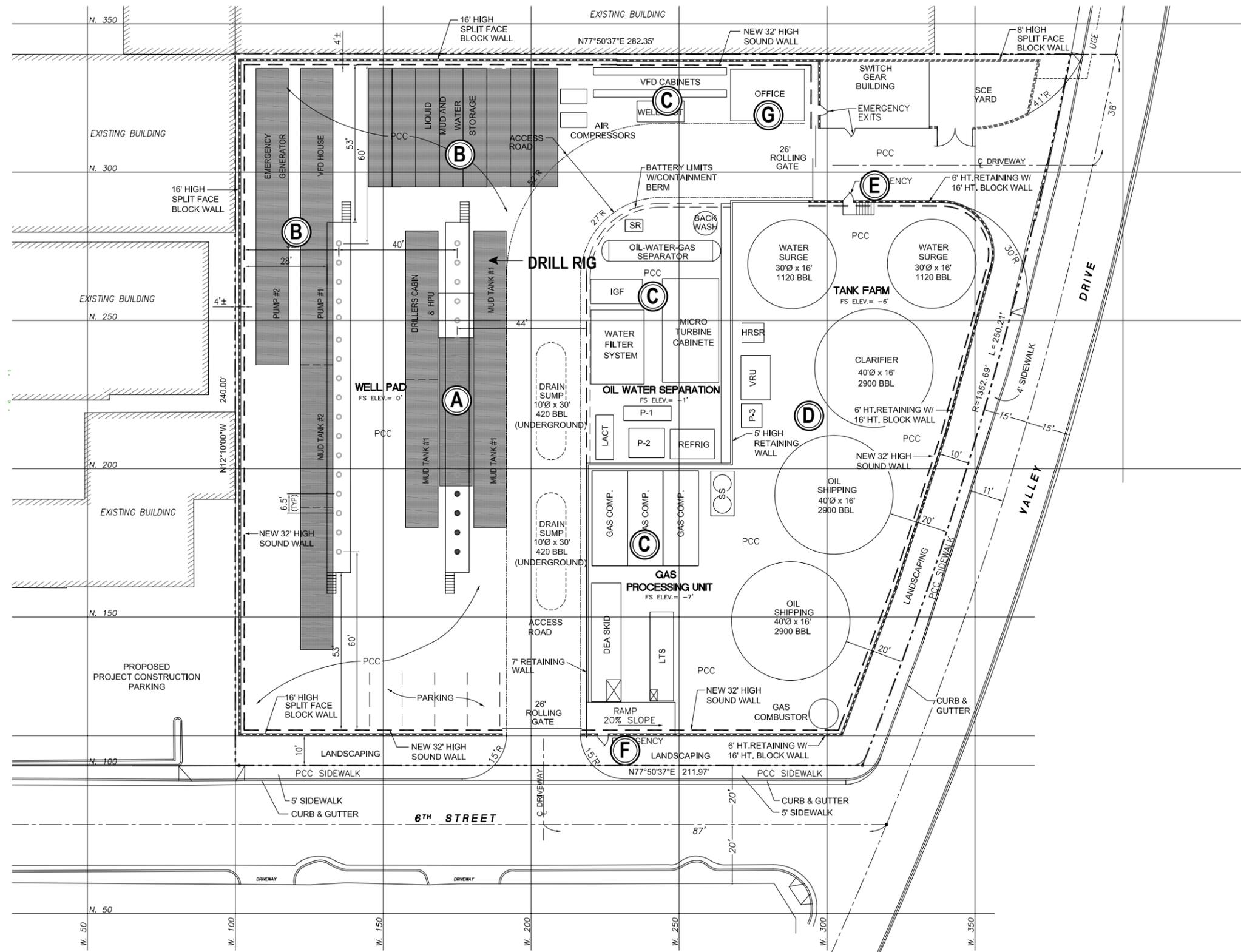


Figure 1  
**Phase 2: Drilling and Testing**  
**Nighttime Lighting Sources**  
**(with Drill Rig)**



# E&B Oil Development Project

## LEGEND

### LIGHTING SOURCES

- (A) Drill Rig:**  
Platform: Shielded/hooded, pole-mounted lights 15 feet above ground surface  
Mast: Covered by acoustical on 3 sides; inward-facing LED lights within acoustical cover
- (B) Drill Rig Equipment:** Shielded/hooded, pole-mounted lights 19 feet above ground surface
- (C) Production Equipment:** Shielded/hooded light fixtures incorporated into the pipe racks and equipment design
- (D) Tank Farm:** Shielded/hooded light fixtures incorporated into the pipe racks and equipment design
- (E) Entrance:** Shielded, wall-mounted 150-watt light fixture
- (F) Exit:** Shielded, wall-mounted 150-watt light fixture
- (G) Small Office Building:** 150-watt hooded light fixtures at building entrance

- Access Road
- 16' High Split-Face Block w/wo Retaining Wall
- 8' High Split-Face Block Wall
- 32' High Sound Wall
- Property Line

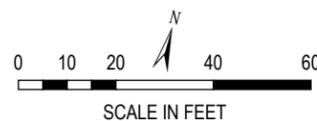


Figure 2  
Phase 4: Development and Operations  
Nighttime Lighting Sources  
(with Drill Rig)

