

# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

## EARTHEN PIT REPORT/PERMIT

This form is to be used for both reporting and permitting pits. Rule 903 describes when a Permit with prior approval, or a Report within 30 days, is required for pits. Submit required attachments and forms.

### Complete the Attachment Checklist

Oper OGCC

|                              |   |  |
|------------------------------|---|--|
| Detailed Site Plan           | ✓ |  |
| Topo Map w/ Pit Location     | ✓ |  |
| Water Analysis (Form 25)     |   |  |
| Source Wells (Form 26)       |   |  |
| Pit Design/Plan & Cross Sect | ✓ |  |
| Design Calculations          |   |  |
| Sensitive Area Determ.       |   |  |
| Mud Program                  |   |  |
| Form 2A                      | ✓ |  |

### FORM SUBMITTED FOR:

☐ Pit Report☒ Pit Permit

OGCC Operator Number: 10150

Name of Operator: Black Hills Plateau Production

Address: 1515 Wynkoop St., Suite 500

City: Denver State: CO Zip: 80202

Contact Name and Telephone:

Jessica Donahue

No: 720-210-1333

Fax: 303-566-3344

API Number (of associated well): 05-077-09439

OGCC Facility ID (of other associated facility): Location # 312739

Pit Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE Sect. 21, T9S R97W 6th PM

eForm Doc #400103397

Latitude: 39.35027

Longitude: -108.32446

County: Mesa (077)

Pit Use: ☐ Production ☒ Drilling (Attach mud program) ☒ Special Purpose (Describe Use): Hold freshwater for frac and flowback waterPit Type: ☒ Lined ☐ Unlined Surface Discharge Permit: ☐ Yes ☒ NoOffsite disposal of pit contents: ☐ Injection ☐ Commercial Pit/Facility Name: Pit/Facility No:

Attach Form 26 to Identify Source Wells and Form 25 to provide Produced Water Analysis results.

### Existing Site Conditions

Is the location in a "Sensitive Area?" ☐ Yes ☒ No Attach data used for determination.

Distance (in feet) to nearest surface water: 1210 ground water: 235 water wells: 9240

LAND USE (or attach copy of Form 2A if previously submitted for associated well) Select one which best describes land use:

Crop Land: ☐ Irrigated ☐ Dry Land ☐ Improved Pasture ☐ Hay Meadow ☐ CRPNon-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe):Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

SOILS (or attach copy of Form 2A if previously submitted for associated well)

Soil map units from USNRCS survey: Sheet No: Soil Complex/Series No: 4

Soils Series Name: Barx Clapper Horizon thickness (in inches): A: ; B: ; C:

Soils Series Name: Horizon thickness (in inches): A: ; B: ; C:

Attach detailed site plan and topo map with pit location.

### Pit Design and Construction

Size of pit (feet): Length: 235' Width: 100' Depth: 15'

Calculated pit volume (bbls): 34,940 Daily inflow rate (bbls/day): 50 bbls for drilling; 1,800 bbls during flowback

Daily disposal rates (attach calculations): Evaporation: 25 bbls/day Percolation: bbls/day

Type of liner material: PVC Thickness: 24 mm

Attach description of proposed design and construction (include sketches and calculations).

Method of treatment of produced water prior to discharge into pit (separator, heater treater, other): Produced water will be stored in a tank

Is pit fenced? ☒ Yes ☐ No Is pit netted? ☒ Yes ☐ No

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Jessica Donahue

Signed: Jessica Donahue

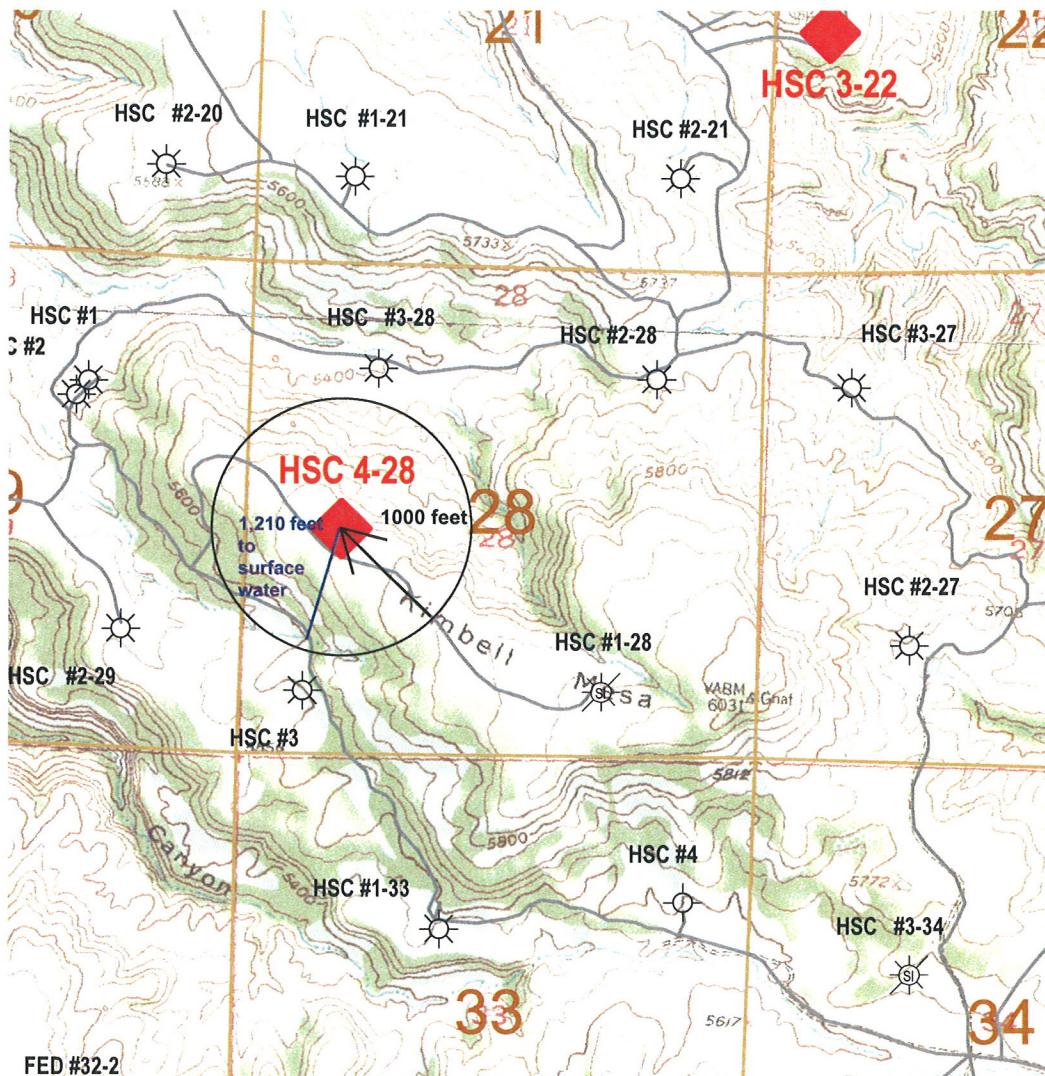
Title: Regulatory Technician

Date: 10/26/10

OGCC Approved: Title: Date:

CONDITIONS OF APPROVAL, IF ANY:

FACILITY NUMBER:



1 inch = 2000 feet



**Black Hills Exploration & Production**  
Black Hills Plateau Properties

350 Indiana Street, Suite 400  
Golden, CO 80401  
Ph: 720.210.1300  
Fax: 720.210.1301

## Hydrology Map

1000 foot Radius

Engineer(s): Chikars  
Geologist(s): RWhite  
Land Dept: Thorquist  
Permitting: Vrooman/Shearer/Donahue  
Eng & GeoTech(s): Whitten

Date(s): 2010 January 14

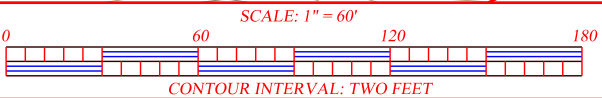
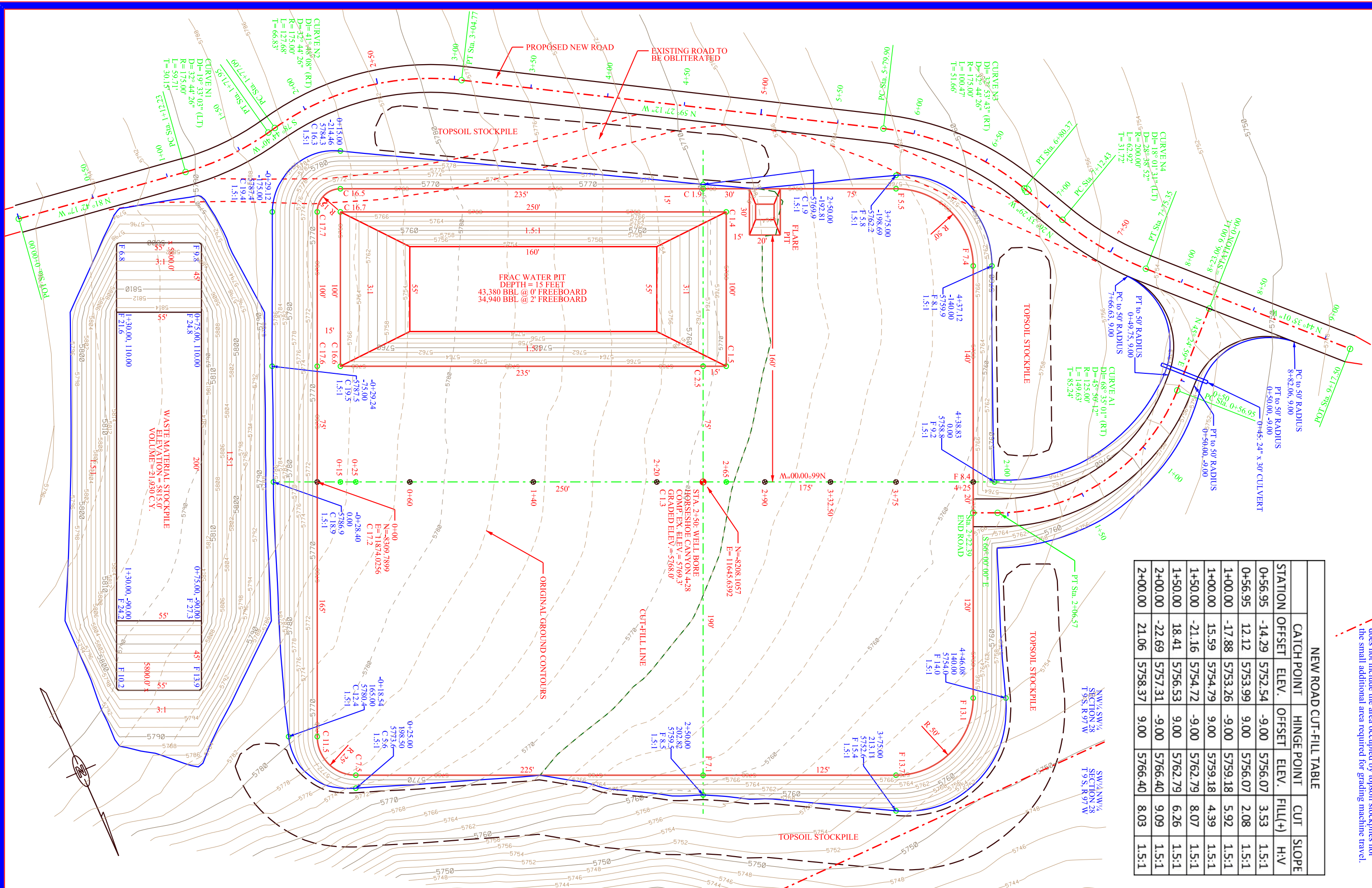


| ESTIMATED EARTHWORK QUANTITIES       |             |
|--------------------------------------|-------------|
| PAD TOPSOIL (6" DEPTH)               | 3,450 C.Y.  |
| ROAD TOPSOIL (6" DEPTH)              | 160 C.Y.    |
| PAD EXCAVATION                       | 40,260 C.Y. |
| ROAD EXCAVATION                      | 0 C.Y.      |
| PAD EMBANKMENT (10% SHRINK ASSUMED)  | 16,900 C.Y. |
| ROAD EMBANKMENT (10% SHRINK ASSUMED) | 1,430 C.Y.  |
| WASTE MATERIAL                       | 21,930 C.Y. |
| TOTAL EARTHWORK VOLUME               | 43,870 C.Y. |

**WELL SITE DESIGN AND CONSTRUCTION NOTES:**

1. The well pad elevation was selected to place the rig sub-structure on cut earth at the maximum elevation possible.
2. The approximate volume of the frac water pit is 9,010 C.Y. Material for reserve pit reclamation will be obtained from the waste material stockpile. The pad size will be reduced during the site reclamation for production. See Exhibit IX: Site Reclamation Grading Plan.
3. The area of the proposed pad, waste material stockpile and road is 5.38 acres within the compiled catch lines. This area does not include the area occupied by topsoil stockpiles nor the small additional area required for grading machine travel.

| NEW ROAD CUT-FILL TABLE |                    |         |                    |         |                       |
|-------------------------|--------------------|---------|--------------------|---------|-----------------------|
| STATION                 | CATCH POINT OFFSET | ELEV.   | HINGE POINT OFFSET | ELEV.   | CUT FILL(+) SLOPE H:V |
| 0+56.95                 | -14.29             | 5752.54 | -9.00              | 5756.07 | 3.53 1.5:1            |
| 0+56.95                 | 12.12              | 5753.99 | 9.00               | 5756.07 | 2.08 1.5:1            |
| 1+00.00                 | -17.88             | 5753.26 | -9.00              | 5759.18 | 5.92 1.5:1            |
| 1+00.00                 | 15.59              | 5754.79 | 9.00               | 5759.18 | 4.39 1.5:1            |
| 1+50.00                 | -21.16             | 5754.72 | -9.00              | 5762.79 | 8.07 1.5:1            |
| 1+50.00                 | 18.41              | 5756.53 | 9.00               | 5762.79 | 6.26 1.5:1            |
| 2+00.00                 | -22.69             | 5757.31 | -9.00              | 5766.40 | 9.09 1.5:1            |
| 2+00.00                 | 21.06              | 5758.37 | 9.00               | 5766.40 | 8.03 1.5:1            |



BLACK HILLS PLATEAU  
PRODUCTION COMPANY, LLC  
DENVER, COLORADO

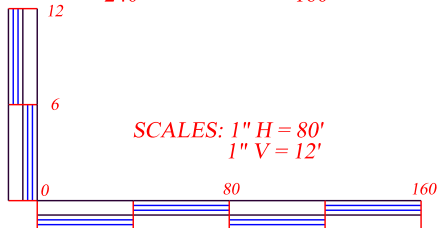
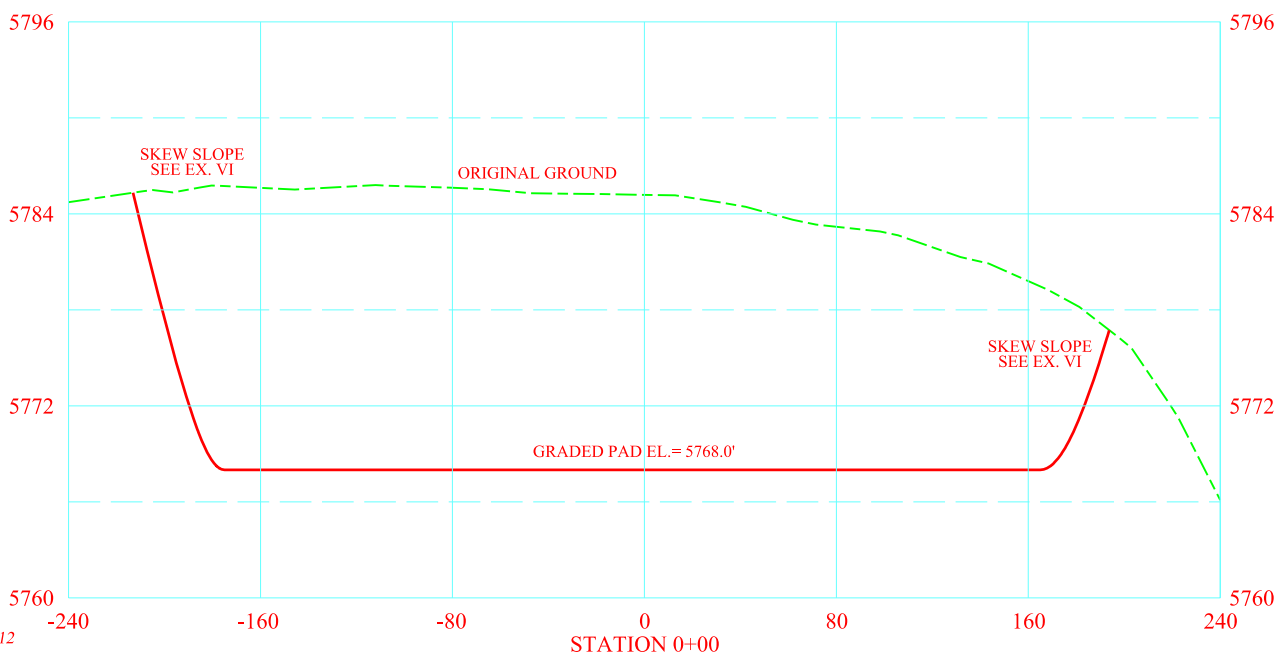
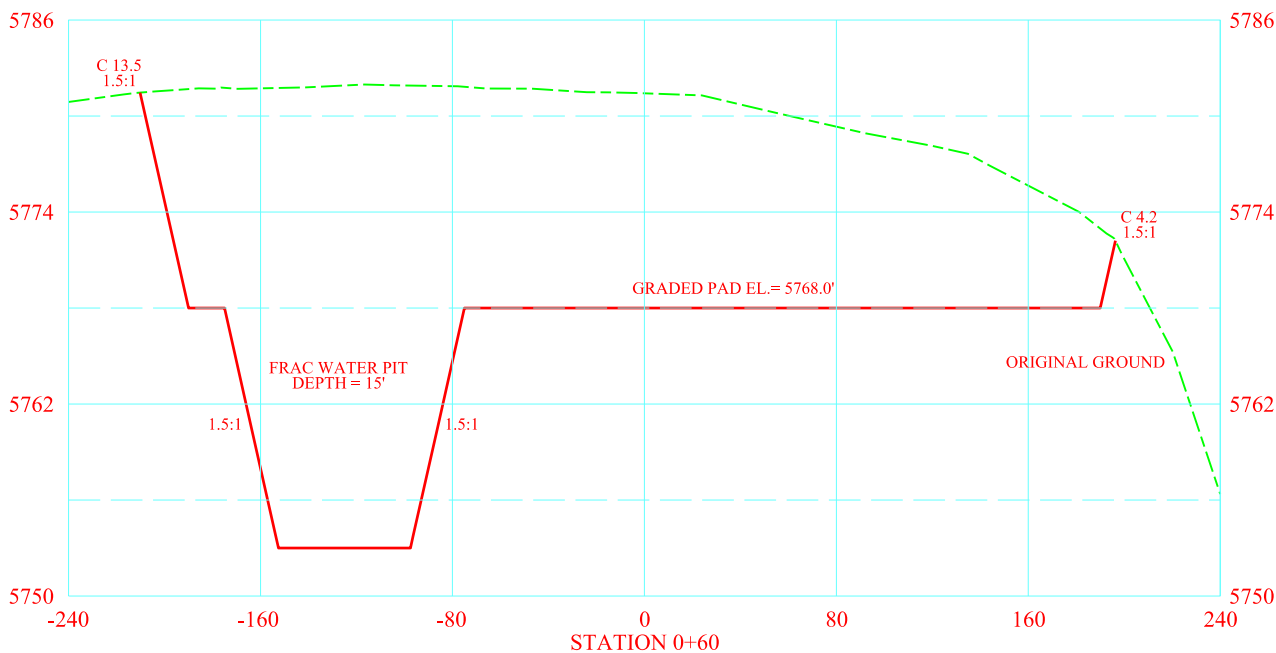
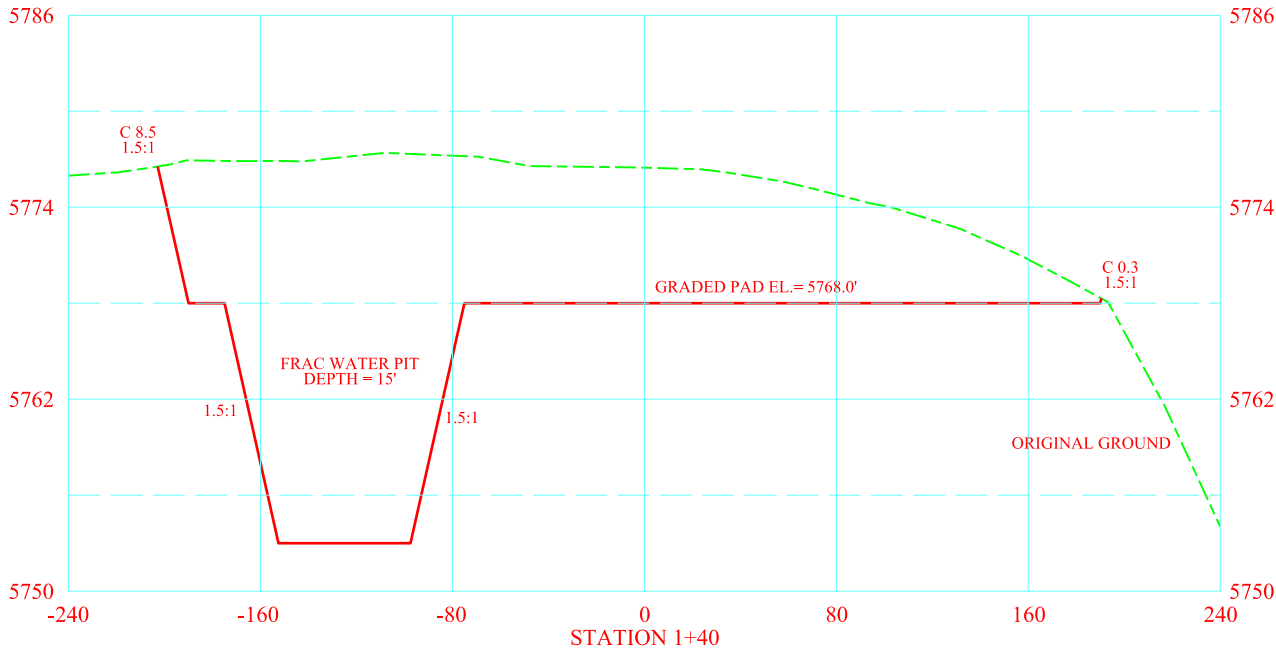
HORSESHOE CANYON 4-28  
NW¼ SW¼, SECTION 28, T. 9 S., R. 97 W.  
MESA COUNTY, COLORADO

EXHIBIT VI  
DRAWING DESCRIPTION  
WELL SITE GRADING PLAN

PREPARED BY:  
**P.E. GROSCH CONSTRUCTION, INC.**  
SURVEYORS - ENGINEERS - CONSTRUCTORS  
P. O. BOX 36 WORLAND, WY 82401 (307)347-3332

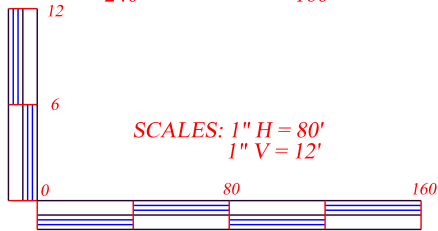
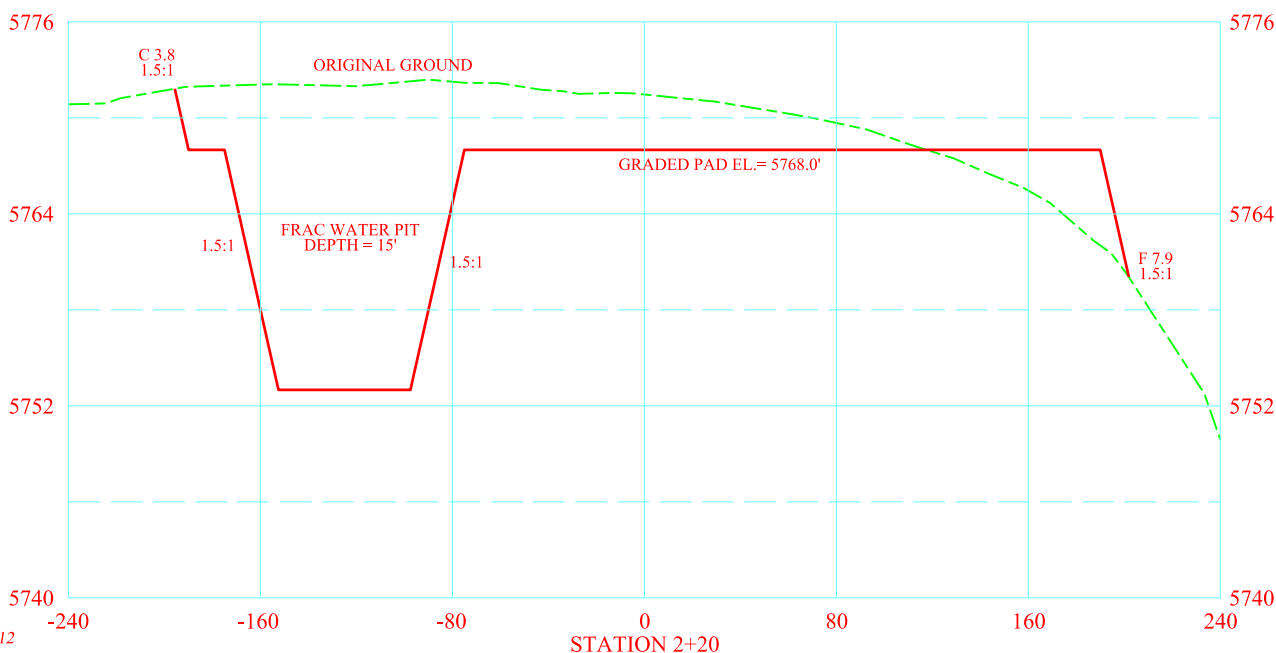
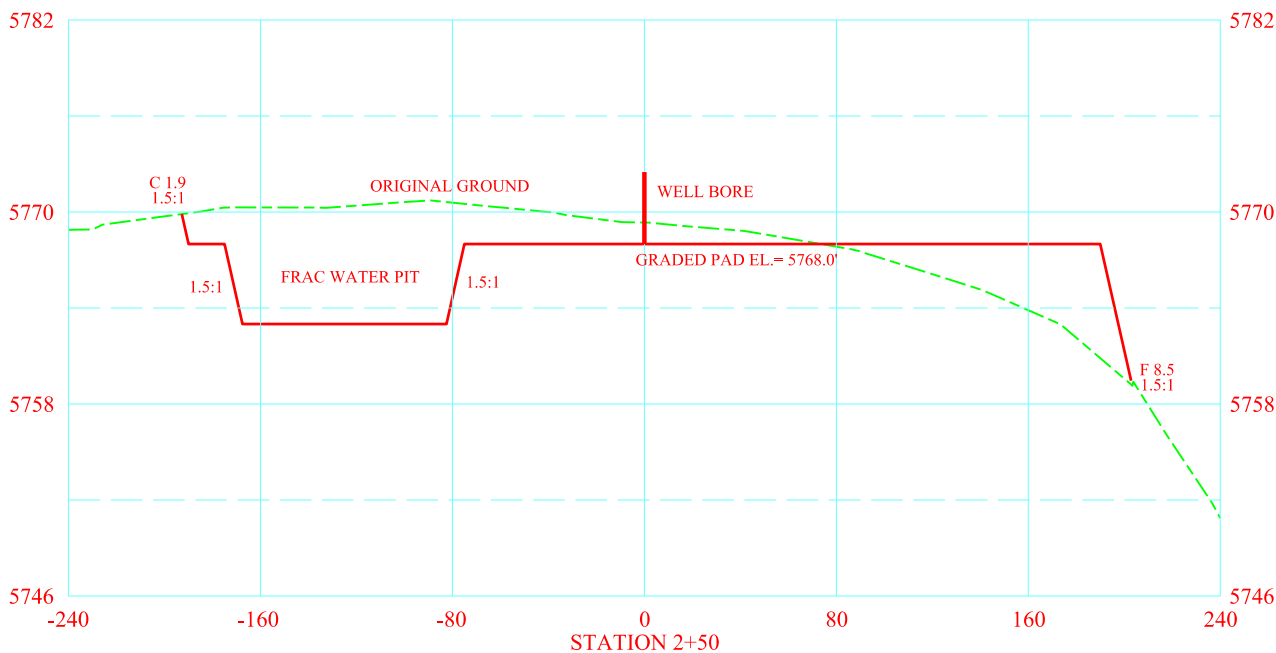
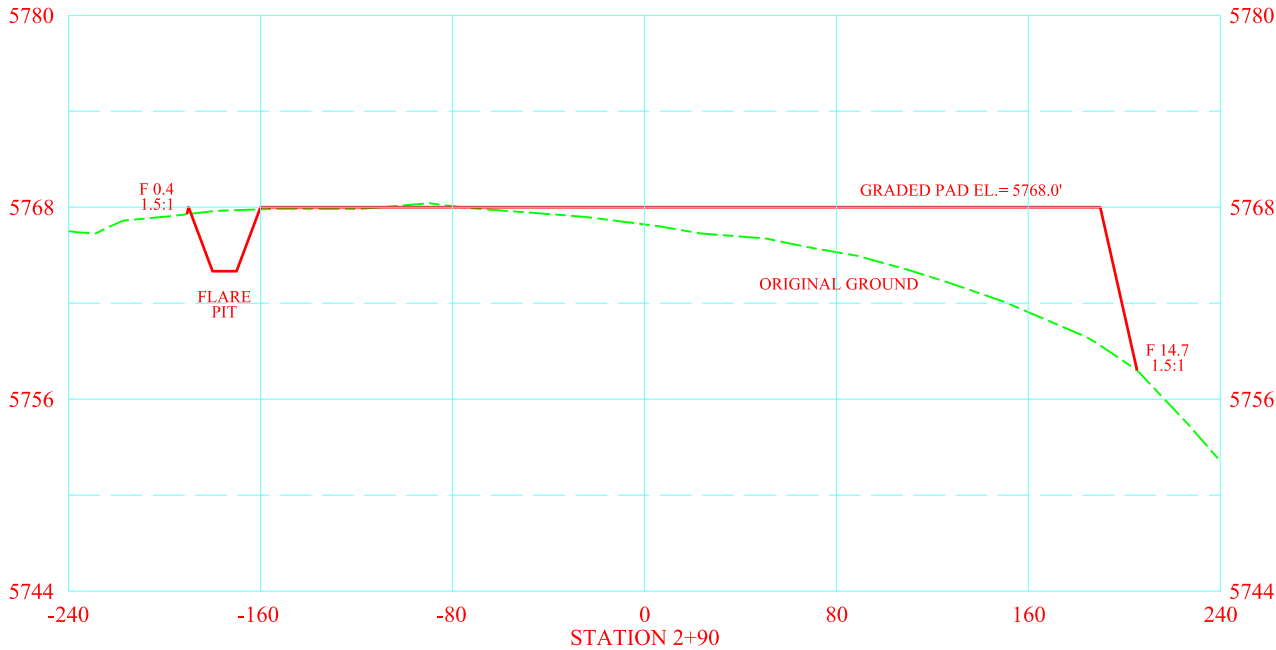
|      |     |          |         |   |
|------|-----|----------|---------|---|
| SUR: | AMG | 10/20/10 | PRJ. #: | 97110   |
| DES: | SAG | 10/21/10 | REC:    | 82-56   |
| DWN: | SAG | 10/22/10 | FILE:   | T7400/GpkData-v8/Client/Black Hills E&P/Colo/Mesa |
| REV: |     |          | DWG:    | 97110-HC 4-28/Dgn/971_ex6-site                    |

EXHIBIT VII-A: WELL SITE CROSS SECTIONS (1 of 3)  
BLACK HILLS PLATEAU PRODUCTION COMPANY, LLC.  
HORSESHOE CANYON 4-28



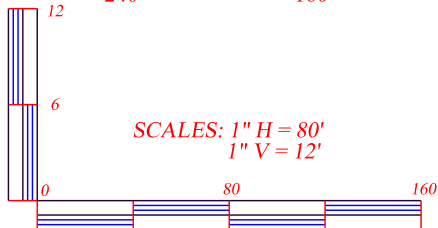
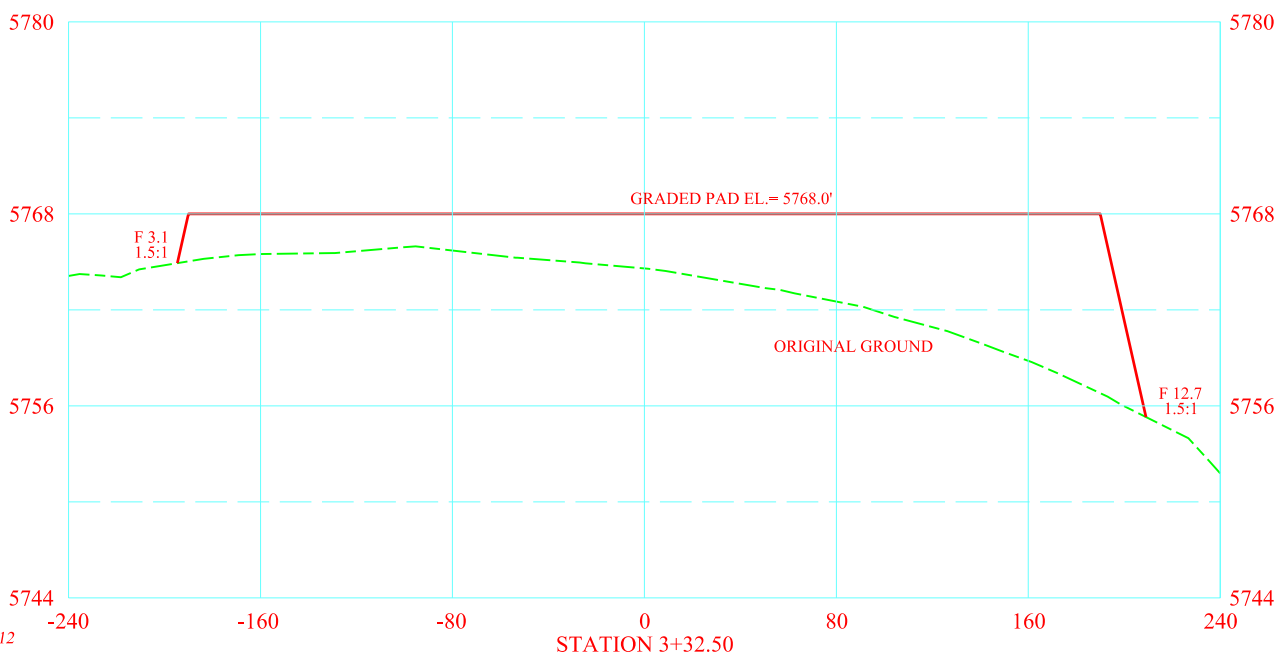
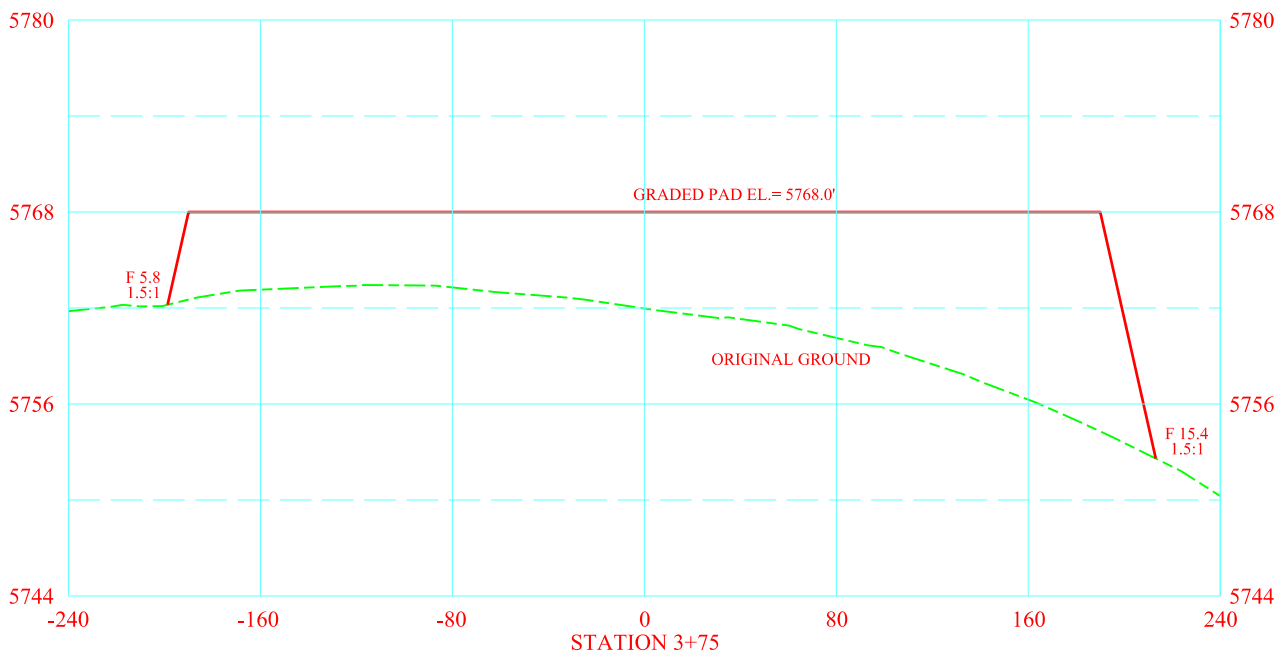
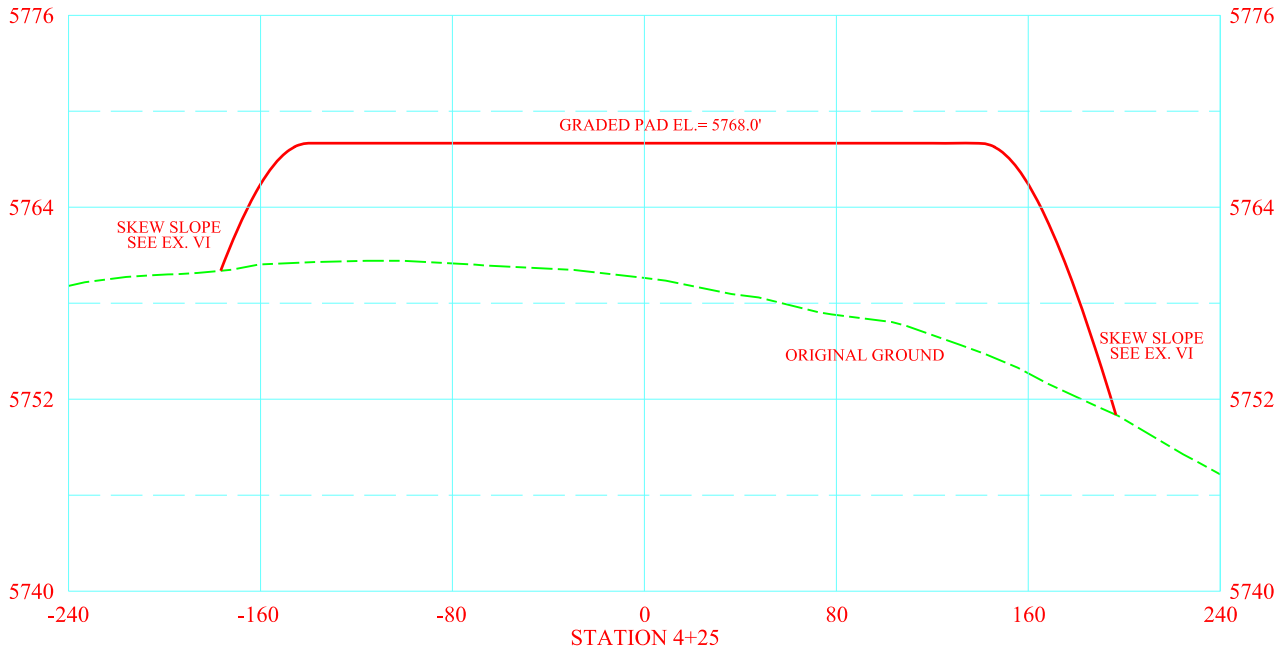
|          |   |  |  |      |     |          |
|----------|---|--|--|------|-----|----------|
| PROJECT: | EXHIBIT VII-A<br>WELL SITE CROSS SECTIONS (1 of 3)<br>HORSESHOE CANYON 4-28<br>NW¼ SW¼, SECTION 28, T 9 S, R 97 W, 6' P.M.<br>MESA COUNTY, COLORADO | PRJ. #: 97110  |  | SUR: | AMG | 10/20/10 |
|          |   | REC. #: 82-56  |  | DES: | SAG | 10/21/10 |
|          |   | DWG #: Black Hills E&P/Colo/Mesa   |  | DWN: | SAG | 10/22/10 |
|          |   | 97110 HC 4-28/97i_ex7-xsec   |  | REV: |     |          |
| OWNER:   | BLACK HILLS PLATEAU<br>PRODUCTION COMPANY, LLC<br>DENVER, COLORADO  | PREPARED BY:<br>P.E. GROSCH CONSTRUCTION, INC.<br>SURVEYORS - ENGINEERS - CONSTRUCTORS<br>P. O. BOX 36 WORLAND, WY 82401 (307)347-3332 |  |      |     |          |

EXHIBIT VII-B: WELL SITE CROSS SECTIONS (2 of 3)  
BLACK HILLS PLATEAU PRODUCTION COMPANY, LLC.  
HORSESHOE CANYON 4-28



|          |   |  |                           |      |     |          |
|----------|---|--|---------------------------|------|-----|----------|
| PROJECT: | EXHIBIT VII-B<br>WELL SITE CROSS SECTIONS (2 of 3)<br>HORSESHOE CANYON 4-28<br>NW¼ SW¼, SECTION 28, T 9 S, R 97 W, 6' P.M.<br>MESA COUNTY, COLORADO | PRJ. #:  | 97I10                     | SUR: | AMG | 10/20/10 |
|          |   | REC. #:  | 82-56                     | DES: | SAG | 10/21/10 |
|          |   | DWG #:   | Black Hills E&P/Colo/Mesa | DWN: | SAG | 10/22/10 |
|          |   | 97I10 HC 4-28/97I_ex7-xsec   | REV:                      |      |     |          |
| OWNER:   | BLACK HILLS PLATEAU<br>PRODUCTION COMPANY, LLC<br>DENVER, COLORADO  | PREPARED BY:<br>P.E. GROSCH CONSTRUCTION, INC.<br>SURVEYORS - ENGINEERS - CONSTRUCTORS<br>P. O. BOX 36 WORLAND, WY 82401 (307)347-3332 |                           |      |     |          |

EXHIBIT VII-C: WELL SITE CROSS SECTIONS (3 of 3)  
BLACK HILLS PLATEAU PRODUCTION COMPANY, LLC.  
HORSESHOE CANYON 4-28



|          |   |  |  |      |     |          |
|----------|---|--|--|------|-----|----------|
| PROJECT: | EXHIBIT VII-C<br>WELL SITE CROSS SECTIONS (3 of 3)<br>HORSESHOE CANYON 4-28<br>NW¼ SW¼, SECTION 28, T 9 S, R 97 W, 6' P.M.<br>MESA COUNTY, COLORADO | PRJ. #: 97110  |  | SUR: | AMG | 10/20/10 |
|          |   | REC. #: 82-56  |  | DES: | SAG | 10/21/10 |
|          |   | DWG #: Black Hills E&P/Colo/Mesa   |  | DWN: | SAG | 10/22/10 |
|          |   | 97110 HC 4-28/97i_ex7-xsec   |  | REV: |     |          |
| OWNER:   | BLACK HILLS PLATEAU<br>PRODUCTION COMPANY, LLC<br>DENVER, COLORADO  | PREPARED BY:<br>P.E. GROSCH CONSTRUCTION, INC.<br>SURVEYORS - ENGINEERS - CONSTRUCTORS<br>P. O. BOX 36 WORLAND, WY 82401 (307)347-3332 |  |      |     |          |