

**Attachment 1**  
**Designs**

## **1.0 – ENGINEERING REPORT**

### **1.1 CELL DESIGN**

The Dixie Waste Service Reuse Facility (Landfill) has been broken into two phases, Phase A, and B. The Permit Drawings show the two Phases in relation to the topography of the site. Phase A consists of three Cells (1, 2, & 3) beginning at the north-central area of the site and progressing uphill. The lowest elevation of Phase A is approximately 2,722 feet above mean sea level. Phase A will be completed at an approximate elevation of 2,836 feet. The updated Drawings reflect the site grading and drainage improvements performed since the initial permit submittal and lateral expansion to the southeast of Phases A & B.

Phase B will consist of an additional three Cells (4, 5, & 6). Phase B will be constructed immediately southeast of Phase A and extend uphill in a similar manner. The lowest elevation of Phase B is approximately 2,700 and will extend vertically to an elevation of approximately 2,834. The landfill is designed to fill in the undulating site topography and maintain adequate site access and landfill support structures. The layout of the site is as indicated on Drawing 2 (Appendix A).

#### **1.1.1 Fill Method**

As described in Section 3.2.3 of Part II – General Report, Waste will be end dumped at the toe of the work face when possible and spread up the slope in one to two-foot lifts, keeping the slope at a typical five to one (horizontal to vertical) configuration. The C&D wastes will then be compacted by making three to five passes up and down the slope.

#### **1.1.2 Interim and Final Cover**

Interim and final cover will be placed in compliance with the DSHW Class VI requirements. Section R315-305-5 stipulates that timbers, wood, and other combustible waste be covered as needed to avoid a fire. Wastes within the Landfill will be covered with a minimum 6-inch soil cover no less frequently than every 30 days.

### **1.1.2.1 Final Cover**

As specified in Rule R315-305-5 the final cover will consist of a minimum of two feet of soil, the upper six inches of which will be topsoil material capable of sustaining vegetation. The topsoil layer will then be seeded with indigenous grasses and other shallow rooted vegetation.

### **1.1.3 Final Cover Elevations**

As discussed previously, the maximum elevation for the final cover is planned to be approximately 2,830 feet above mean sea level at the highest point. The upper area of the cover will slope at approximately 5% downward to the southeast. All side slopes of the final cover are planned to be a maximum of 4:1 (horizontal to vertical). These slopes will allow for some settlement without compromising the run-off characteristics of the cover soil. Drawing 4 (Appendix A) details the topography of the final cover.

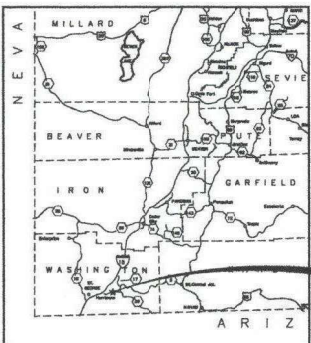
## **1.2 DESIGN AND LOCATION OF RUN-ON/RUN-OFF CONTROL SYSTEMS**

Run-on control ditches (berms) will be installed to intercept potential run-on above all areas of the site. All run-on will be diverted around the site by two run-on ditches (berms). The topography of the site will necessitate the construction of two run-off ditches downhill of the Landfill to direct all potential run-off to a storm water detention pond. The run-off control ditches will be constructed as indicated on Drawing 6 (Appendix A). The existence, location, and cross sectional area of the field located run-on ditches will be verified prior to the acceptance of waste. Modifications to the site topography have been made with perimeter drainage structures being constructed.

The design of all storm water ditches was based on a 25-year 24-hour storm event of 2.52 inches of precipitation, which was obtained from the Utah Climate Center. Using a curve number of 80, time of concentration of 1-hour and type II rainfall with the TR55 computer software, a peak discharge of 12 cubic feet per second (cfs) was obtained. The cover and surrounding drainage areas was divided into two areas of approximately 26 acres each. Based on our analysis the flow depth in a "V" ditch with 2:1 side slopes would be approximately 1 foot during peak discharge. The location and section view of the run-off control ditches are shown on Drawings 4 & 5 (Appendix A).

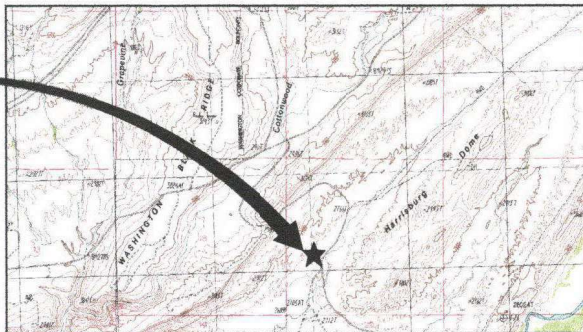


# PURGATORY LANDFILL 2021 PERMIT RENEWAL



**LOCATION MAP**

NOT TO SCALE



**VICINITY MAP**

0 1000 2000 4000  
SCALE IN FEET

**INDEX**

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- 2 GENERAL ARRANGEMENT
- 3 LANDFILL DEVELOPMENT
- 4 FINAL COVER
- 5 ELEVATION VIEW
- 6 DETAILS



BACKGROUND IMAGERY FROM UTAH AGRC: 2018 NAIP SERIES

0 250 500 1000  
SCALE IN FEET

**SITE MAP**



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CONSULTANTS



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MARK	DATE	DESCRIPTION
	5/27/21	2021 DRAFT PERMIT

SHEET TITLE

**TITLE SHEET**

**1**





**ONP**  
L.L.C.

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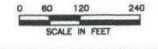
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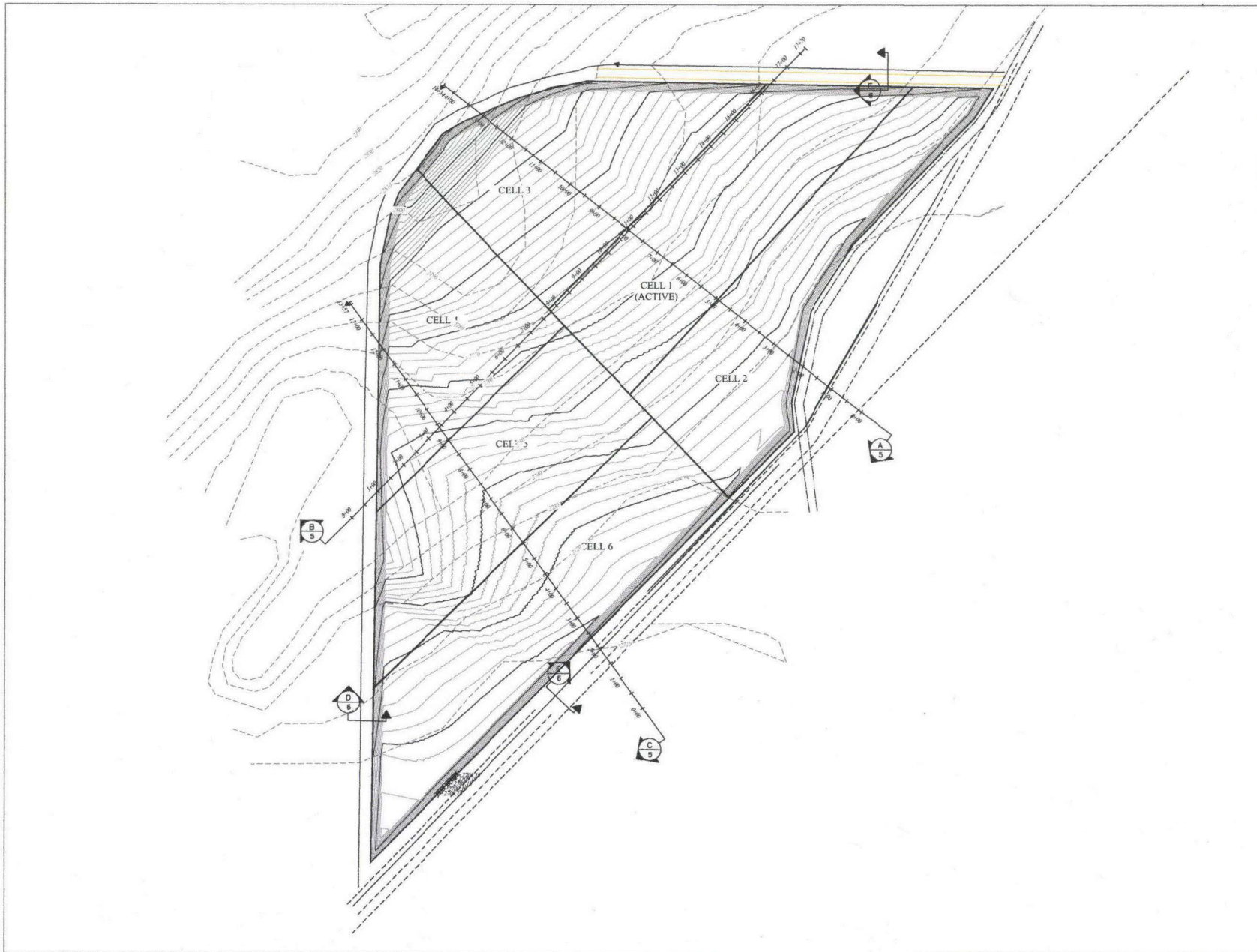
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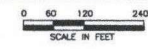
**GENERAL ARANGEMENT**







LANDFILL EXCAVATION (SEE NOTE 1)



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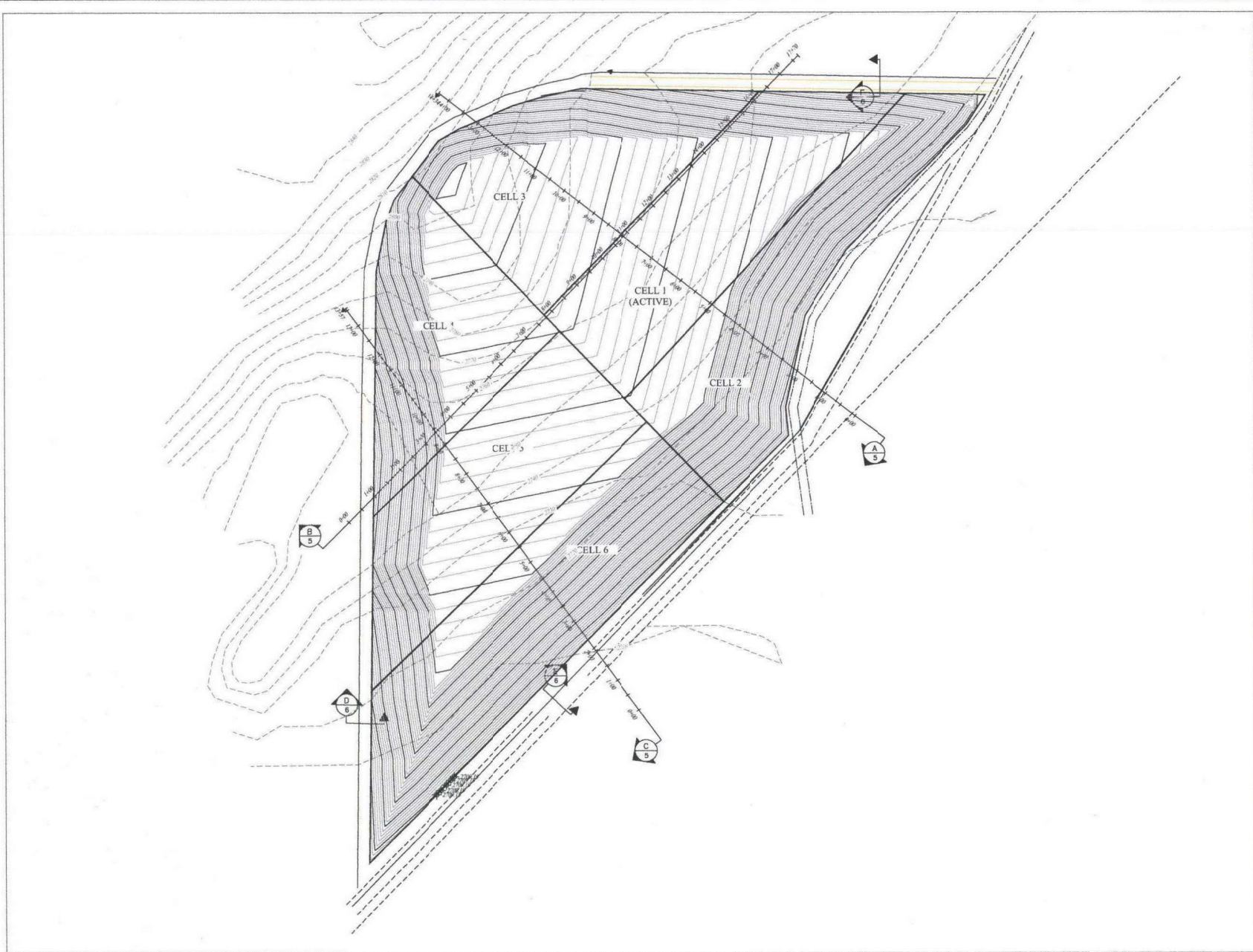
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**NOTES:**  
COMPLETE EXCAVATION AS SHOWN TO DEPTH OF 10-15 FT. EXCAVATION OF CELLS TO BE PERFORMED SEQUENTIALLY AND IN ORDER AS NUMBERED.  
SOIL VOLUMES GENERATED PER CELL EXCAVATION\*  
CELL 1: 149,94 CYD  
CELL 2: 158,366 CYD  
CELL 3: 129,161 CYD  
CELL 4: 111,370 CYD  
CELL 5: 126,900 CYD  
CELL 6: 177,110 CYD  
TOTAL: 847,560 CYD  
AIRSPACE AVAILABLE PER CELL\*  
CELL 1: 59,041 CYD  
CELL 2: 92,314 CYD  
CELL 3: 58,878 CYD  
CELL 4: 53,504 CYD  
CELL 5: 66,493 CYD  
CELL 6: 84,570 CYD  
TOTAL: 1,256,090 CYD  
\* ACTUAL VOLUMES WILL DEPEND ON DEPTH OF EXCAVATION AND HEIGHT OF CELL WITHIN PERMITTED FOOTPRINT.


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**LANDFILL DEVELOPMENT**



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**NOTES**

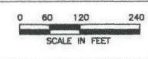
COVER AREA

CELL 1	311,981 SQ-FT
CELL 2	307,400 SQ-FT
CELL 3	306,255 SQ-FT
CELL 4	251,931 SQ-FT
CELL 5	308,812 SQ-FT
CELL 6	394,017 SQ-FT
<b>TOTAL:</b>	<b>1,883,476 SQ-FT</b>

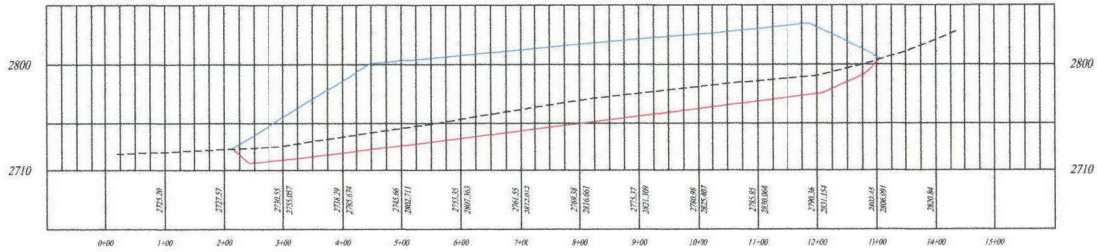
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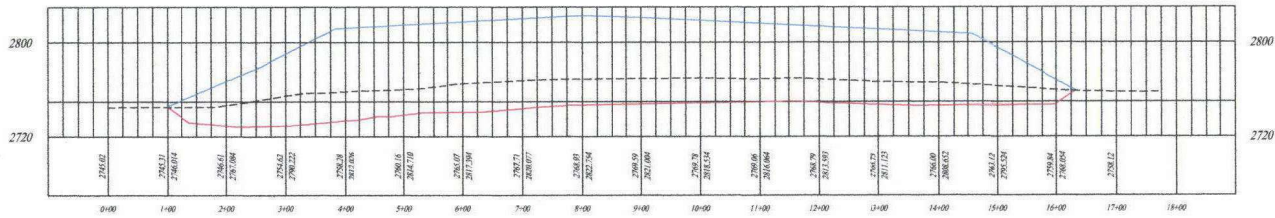
**FINAL COVER**



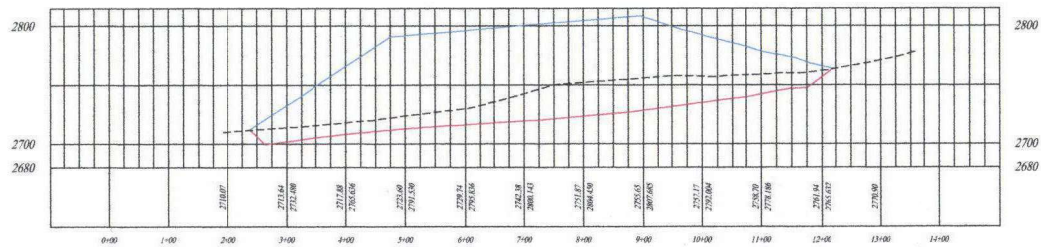




**SECTION A-ELEVATION VIEW**  
2X VERTICAL EXAGGERATION



**SECTION B-ELEVATION VIEW**  
2X VERTICAL EXAGGERATION



**SECTION C-ELEVATION VIEW**  
2X VERTICAL EXAGGERATION

0 30 100 200  
SCALE IN FEET  
2X VERTICAL EXAGGERATION



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SHEET TITLE

ELEVATION  
VIEW

5



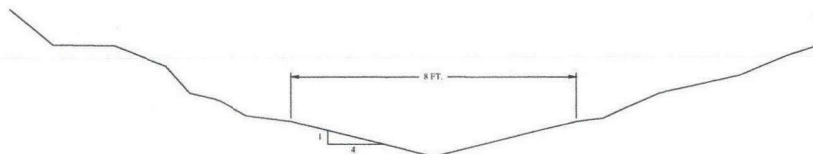


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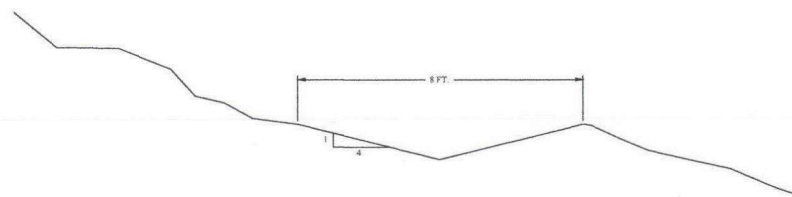
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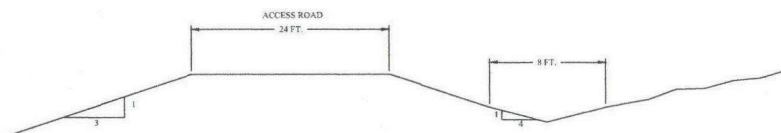
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 **DETAIL D (NTS)**  
STORM WATER RUN-ON DITCH



 **DETAIL F (NTS)**  
STORM WATER RUN-OFF DITCH



 **DETAIL G (NTS)**  
ACCESS ROAD WITH RUN-ON DITCH

NOTES

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ISSUE:

SHEET TITLE

**DETAILS**

**6**