

SW326

**Jones & DeMille Engineering, Inc.** CIVIL ENGINEERS

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OCT 11 2010

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE

2010.03297

Date: October 11, 2010  
To: Scott T. Anderson, Division of Solid and Hazardous Waste,  
Director  
From: Michael Hawley, EIT  
Subject: Additional information West Side Class IV Landfill Permit  
Application

Culinary Water

Irrigation

Wastewater

Drainage

Dams

Hydropower

Bridges

Structures

Highways

Airports

Golf

Energy

**SURVEYING**

Boundaries

Construction

GIS

GPS

General Mapping

Minerals

Public Lands

Subdivision

Topographic

Water Rights

**MATERIALS TESTING**

This memo is in response to the letter addressed to Karl Lund from Scott T. Anderson dated October 6, 2010. In that letter changes to the original landfill application were requested. Revised construction drawings and landfill cap earthwork quantity estimate are attached. A summary of the changes made follows.

1. The landfill cap was revised to reflect a minimum of 24 inches of compacted fill over the debris instead of 18 inches. Slight changes were made to the flow line profile in the construction plans to generate the additional fill required to provide the 24 inch cap.
2. Notes were added to the construction drawings to require dust control and watering to control fugitive dust and ensure adequate compaction of the fill.
3. A fugitive dust control plan for this site is also included in the attachments to this memo.

If additional information is required please notify me. Thank you.



# Class IV Landfill Permit Application West Side Landfill

Prepared For:

Barton Excavating  
250 West Center Street  
Ephraim, UT 84627

August 2010



Jones & DeMille Engineering, Inc.

1535 South 100 West • Richfield, UT 84701 • Ph. 435-896-8266 • Fax 435-896-8268

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- A. Facility General Information
- B. Location Standards
- C. Technical Information
- D. Post Closure Costs
- E. Financial Assurance for Post Closure Care
- F. Class IV and VI Landfill Permit Application Form and Checklist

# **Utah Class IV Landfill Application**

## **Introduction**

With this Checklist for Class IV Landfill, Barton Excavating is submitting the enclosed application for the landfill permit for the proposed landfill to be sited West of Ephraim located on property owned by Karl Lund.

## **Facility General Information**

### **Description of Facility**

The facility in question is a wash where debris from building demolition has been dumped. The landfill is located in Township 17 South, Range 2 East in Sanpete County, Utah west of Ephraim. Starting at Ephraim Main Street and 100 North (Street Light), go west approximately 3.9 miles (just as the paved road turns south). The dirt road heading north just a few feet from the turn enters Karl Lund property. The landfill is located at the Southeast corner of his property where there is a wash. The landfill will not be a commercial facility. No new debris will be added to the landfill. It will only contain the debris that is already in place which consists of waste from building demolition. The wash will be realigned to the west of the landfill and the debris will be capped with at least 24" of material excavated from the wash realignment.

Land use in the surrounding area consists of predominantly agriculture. The land immediately around the facility is in its undisturbed natural state.

### **Legal Description of Property**

The legal description of the property is: SW ¼ NE ¼, Lot 2, Sec 2-17-2E cont 80.33 ac

### **Proof of Ownership**

A Sanpete County tax roll is contained in the Appendices with the parcel number showing the ownership of the property in question. The owner of the property is Karl Lund.

### **Schedule of Construction**

The wash where the material was dumped will be realigned and the excavated material from the realignment will be used to cap the debris piled in the existing wash. The cap will be compacted so as to prevent erosion. Erosion control measures such as geo grid and/or rip rap will be implemented where necessary. Construction is expected to begin within a few weeks of the permit approval.

### **Adjacent Property Owners within 1000 Feet**

A letter was sent to all the adjacent property owners informing them of the opening and closing of the landfill in order to comply with federal law. included in the Appendices is the letter sent from Karl Lund to the adjacent property owners. Also included in the Appendices are certified mail receipts showing that the letters were sent via certified mail.

## **Location Standards**

### ***Land Use***

#### ***Existing Land use Maps***

Due to the proposed landfill's location on the far west end of the valley, there are only a few residences to the east, but none directly adjacent to the landfill. There are no national parks, monuments, or wilderness areas in the immediate vicinity. There are no parks or other recreation areas nearby. Please see the design drawings in the Appendices for topography and other information.

### ***Surface Water***

#### ***24 Hour Storm Events***

The total precipitation from a 100 year, 24 hour storm event at the landfill is estimated to be about 2.65 inches. The maximum runoff through the realigned channel around the landfill from a 100 year storm is estimated to be 285 cubic feet per second. Included in the Appendices are the 24 hour storm event intensities. The normal precipitation, temperature, snowfall, and freeze data are also included in the Appendices.

### ***Ground Water***

#### ***Well Logs***

Attached is the well log for the closest well to the landfill site. It is approximately 750 feet from the landfill. The water well log shows the depth to water in the area to be 21 feet.

## **Technical Information**

### ***Maps***

#### ***Topographic map with contours, landfill boundary, monitoring well locations***

Attached in the Appendices are the technical plans for the channel realignment and the capping of the debris pile.

### ***Geohydrological Assessment***

#### ***Local and regional hydrology***

As mentioned above the 100 year storm discharge through the wash where the debris is piled is estimated at 285 cubic feet per second. Included in the Appendices are the calculations of storm water discharge using the regional regression equations from the USGS. Also included are the characteristics of the watershed contributing to the channel where the debris is located.

#### ***Depth to ground Water***

According to the survey done by Jones and DeMille Engineering, Inc. the existing wash is about 6 to 8 feet deep upstream of the debris pile. The attached well log for the closest well to the landfill shows that the depth to water is around 21 feet. Therefore, it is reasonable to assume that the bottom of the

debris will be about 13 to 15 feet above the ground water level. See the Appendices for more information.

***Private Wells within 2,000 feet of Facility***

There is one well with 2,000 feet of the facility. It has been mentioned above already. The owner of the well is Glen S. Larson. See the Appendices for well and owner information.

***Ground and Surface Water Rights within 2,000 feet of Facility***

There are four water rights within 2,000 feet of the facility. The table below contains the information for those water rights. More information on these water rights can be found in the Appendices.

Water Right	Owner	Type of Right
65-1517	Manti Irrigation & Reservoir Company	Underground Water Claim
91-87	Sanpete County Water Conservancy District	Application to Appropriate
93-1006	USA Bureau of Reclamation – Provo Area Office	Application to Appropriate
93-1007	USA Bureau of Reclamation – Provo Area Office	Application to Appropriate

***Engineering Report, Plans, Specifications, and Calculations***

***Cover Design and Plans***

The cover over the landfill will be a minimum of 24” of compacted fill excavated from the wash realignment. Calculations show that the channel realignment will generate approximately 9,400 cubic yards. The landfill area is about 98,425 square feet. Therefore, the required volume of fill to cap the landfill area with at least 24” of compacted fill is 8,750 cubic yards. A shrinkage factor of 1.20 was used for that calculation. See the Appendices for more information

***Design and location of run-on and run-off control systems***

Calculations show that the channel, as designed, is sufficient for a 100 year storm event. The 100 year storm event is equal to 285 cubic feet per second. In order to carry 285 cubic feet per second the channel, as designed, would need to be about 4.8 feet deep. However, the minimum depth of the channel is 6 feet. The maximum flow the channel is able to carry without overtopping is about 477 cubic feet per second which is about 190 cubic feet per second more than the predicted flow rate. See the Appendices for more information.

***Identification of Borrow Sources***

The borrow site for the landfill is the material generated from the re-alignment of the existing channel where the debris is piled. As mentioned above the fill generated from the channel realignment is estimated at 9,400 cubic yards, and it is anticipated that 8,750 cubic yards will be required to cap the landfill. That figure includes a shrinkage factor of 1.20 as mentioned above and shown in the Appendices.

## **Closure Requirements**

### ***Design of Final Cover***

The final cover of the landfill will be a minimum of 24 inches of compacted fill material generated from the channel realignment.

### ***Capacity of the Site***

It is anticipated that the debris pile is about 6 to 8 feet deep throughout the wash. If you assume the depth is constant at 8 feet throughout the entire area of the landfill site, about 98,425 square feet, then you end up with an approximate volume of 29,163 cubic yards. However, the actual volume of the debris is probably less because it is not likely that the debris has a constant depth of 8 feet throughout the entire area. Also, the 98,425 square feet is based on an encompassing area around the debris pile. The actual debris pile area is less than the area used in the calculation. Therefore, the volume estimate of 29,163 cubic yards is likely much greater than the actual debris volume.

## **Post Closure Requirements**

### ***Maintenance***

Maintenance of the closed landfill will consist of maintaining the 24 inch cap over the debris, maintaining the relocated channel depth to a minimum of 6 feet, and reseeding the areas of the cap that needed maintenance. It is anticipated that excavation from the channel will be used to maintain areas of the cap as required.

### ***Contact Information***

Contact Barton Excavating with maintenance concerns about the facility during the post closure period. Their contact information is:

Barton Excavating  
250 West Center Street  
Ephraim, UT 84627  
Phone: (435) 283-4762  
Fax: (435) 283-5860

## **Financial Assurance**

### ***Closure and Post Closure Costs***

Costs for post closure care were determined to not be applicable with this project because the project will be closed when the permit is approved. Therefore, it was determined that financial assurance would be required for post -closure care only.

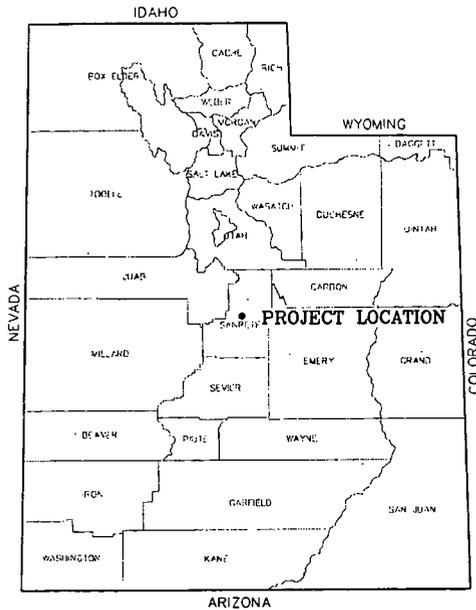
The probable costs for closure and post-closure care were computed as part of this application. The probable cost for post-closure care is about \$24,000 dollars. Opinions of probable cost for closure and post closure care can be found in the Appendices.

***Financial Assurance Mechanism***

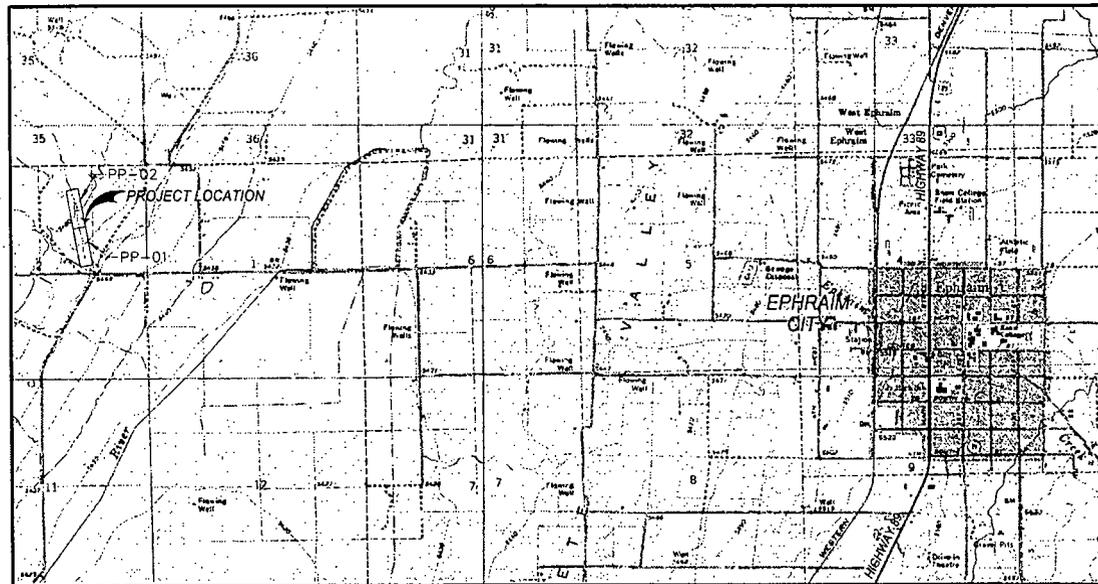
The financial assurance mechanism for the landfill will be provided by Zion's Bank. Zion's Bank will issue a letter of credit for the total amount of post-closure care.

# SANPETE COUNTY BARTON EXCAVATION LANDFILL IMPROVEMENTS 2010

PROJECT NO.	SHEET NO.
0812-015	1

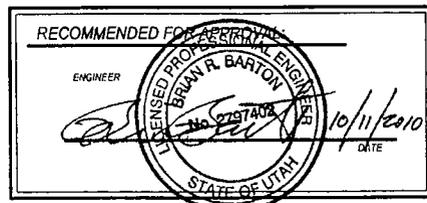


LOCATION MAP



VICINITY MAP

APPROVAL



SHEET INDEX

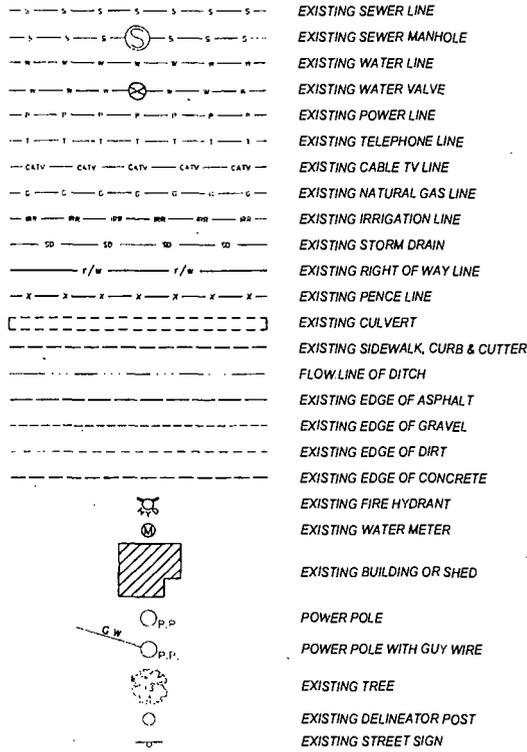
SHEET NO.	DESCRIPTION
1	TITLE SHEET/INDEX SHEET
1A	LEGEND SHEET
DT-01	DETAIL SHEET
PP-01 TO PP-02	PLAN AND PROFILE SHEETS



**Jones & DeMille Engineering, Inc.**

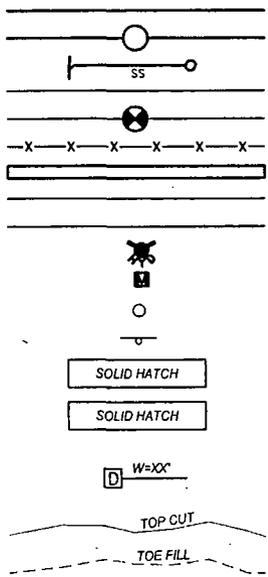
1535 South 100 West - Richfield, Utah 84701  
 Phone (435) 896-8266  
 Fax (435) 896-8268  
[www.jonesanddemille.com](http://www.jonesanddemille.com)

# LEGEND

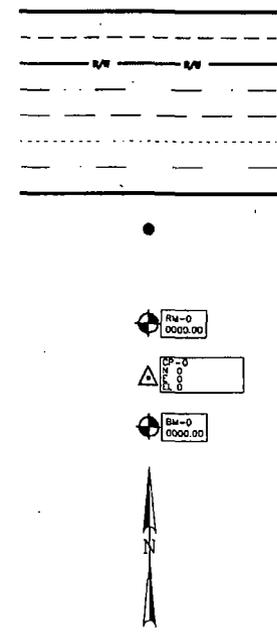


EXISTING SEWER LINE  
 EXISTING SEWER MANHOLE  
 EXISTING WATER LINE  
 EXISTING WATER VALVE  
 EXISTING POWER LINE  
 EXISTING TELEPHONE LINE  
 EXISTING CABLE TV LINE  
 EXISTING NATURAL GAS LINE  
 EXISTING IRRIGATION LINE  
 EXISTING STORM DRAIN  
 EXISTING RIGHT OF WAY LINE  
 EXISTING FENCE LINE  
 EXISTING CULVERT  
 EXISTING SIDEWALK, CURB & CUTTER  
 FLOW LINE OF DITCH  
 EXISTING EDGE OF ASPHALT  
 EXISTING EDGE OF GRAVEL  
 EXISTING EDGE OF DIRT  
 EXISTING EDGE OF CONCRETE  
 EXISTING FIRE HYDRANT  
 EXISTING WATER METER  
 EXISTING BUILDING OR SHED  
 POWER POLE  
 POWER POLE WITH GUY WIRE  
 EXISTING TREE  
 EXISTING DELINEATOR POST  
 EXISTING STREET SIGN

TBC = TOP BACK OF CURB  
 PLC = FLOW LINE OF GUTTER  
 LOC = LIP OF CURB  
 TSW = TOP OF SIDEWALK  
 TOC = TOP OF CONCRETE  
 EOA = EDGE OF ASPHALT  
 TOA = TOP OF ASPHALT  
 TOG = TOP OF GRATE  
 FLC = FLOW LINE OF CULVERT  
 SW = SIDEWALK  
 FG = FINISHED GROUND

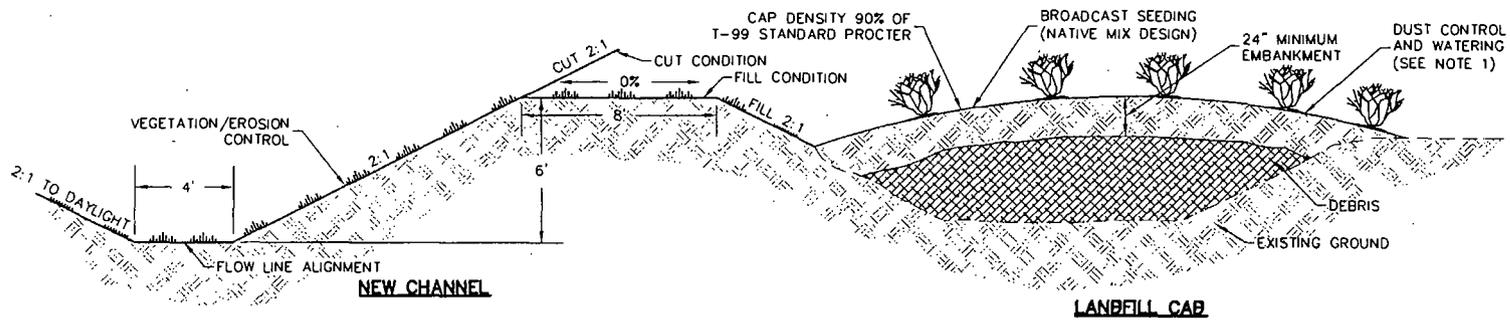


PROPOSED SEWER LINE  
 PROPOSED SEWER MANHOLE  
 PROPOSED SEWER SERVICE  
 PROPOSED WATER LINE  
 PROPOSED WATER VALVE  
 PROPOSED FENCE LINE  
 PROPOSED CULVERT  
 PROPOSED EDGE OF ASPHALT  
 PROPOSED EDGE OF CONCRETE  
 PROPOSED FIRE HYDRANT  
 PROPOSED WATER METER  
 PROPOSED DELINEATOR POST  
 PROPOSED STREET SIGN  
 PROPOSED CONCRETE  
 PROPOSED ASPHALT  
 DEPRESSED DRIVE REQ'D  
 W = WIDTH  
 TOP OF CUT  
 TOE OF FILL



SUBDIVISION BOUNDARY LINE  
 LOT LINES  
 STREET RIGHT-OF-WAY LINES  
 SECTION LINE  
 QUARTER SECTION LINE  
 (P.U.E.) PUBLIC UTILITY EASEMENT  
 DEED LINE  
 PROPERTY LINE  
 SET YELLOW PLASTIC CAP  
 STAMPED LS XXXXXX  
 BRASS CAP  
 PERMANENT SURVEY MARKER  
 RIGHT OF WAY MARKER  
 CONTROL POINT  
 BENCH MARK  
 NORTH ARROW

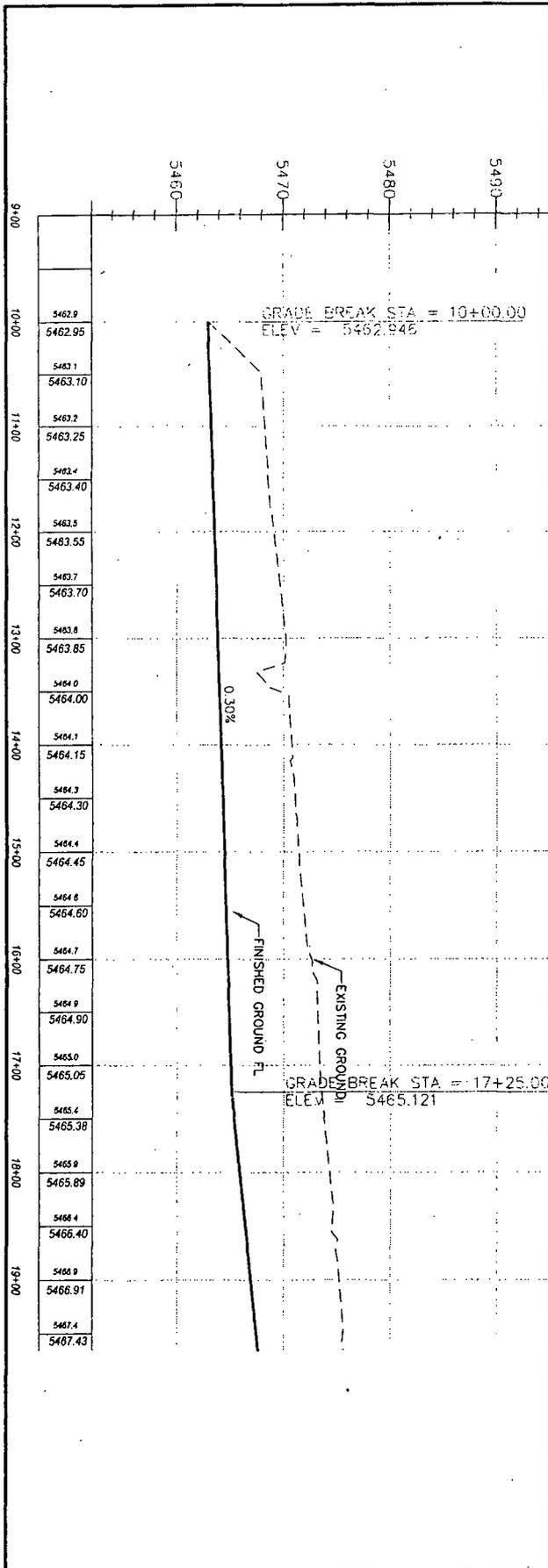
Jones & DeMille Engineering 1325 South 100 West - Provo, Utah 84601 Phone: 801-733-8888 Fax: 801-733-8889 www.jonesanddelle.com		REVISIONS NO. DATE DESCRIPTION 1 08/12/05 ORIGINAL SUBMISSION FOR AUTHORIZATION 2 08/12/05 ORIGINAL SUBMISSION FOR AUTHORIZATION	DWS CREATED: 08/11/2005 DWS NAME: 118 DWS SET: 0812018 SCALE: NONE PLOT TITLE: 0812018.dwg
APPROVAL PROJECT ENGINEER DATE	CHECK RLB DATE	REVIEW DATE	DATE
BARTON EXCAVATION LANDFILL IMPROVEMENTS LEGEND PROJECT NUMBER: 0812-015		SANPETE COUNTY SHEET NO 1A	



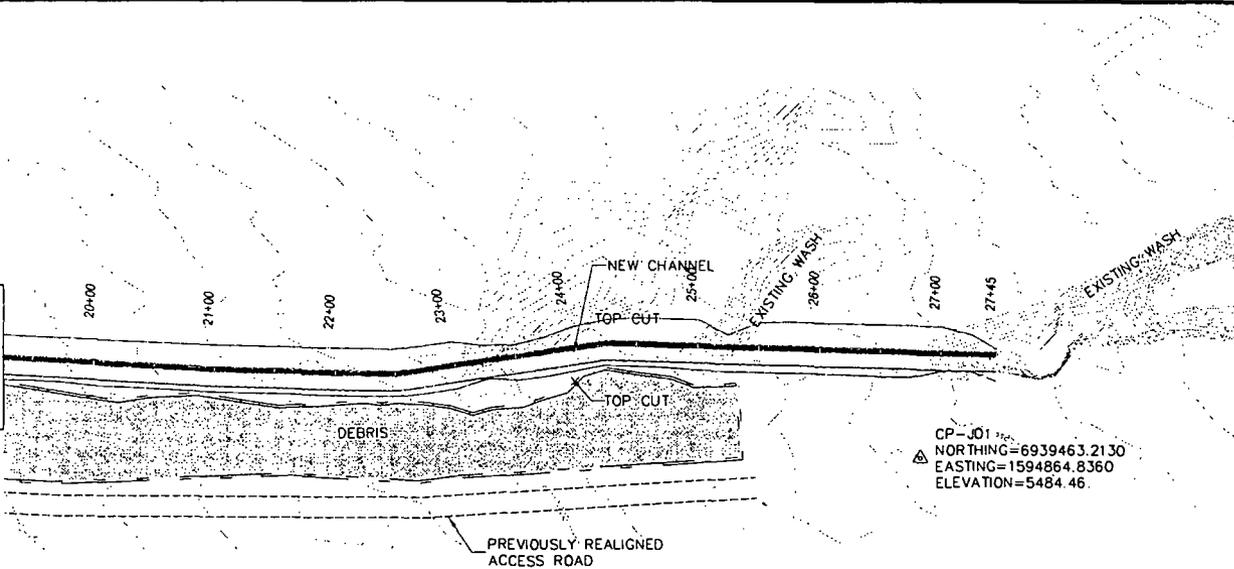
**NOTES**

1. PROVIDE WATER IN ADEQUATE QUANTITIES FOR PRE-WETTING, MIXING, OR COMPACTING MATERIALS. PROVIDE ADEQUATE WATER SUPPLY FOR DUST CONTROL AT ANY TIME. DO NOT WASTE OR OVER SATURATE CONSTRUCTION AREAS.

<b>Jones &amp; DeMille Engineering, Inc.</b> 1225 South 100 West, Room 1000, Provo, UT 84604 Phone: 801-733-8800 Fax: 801-733-8801 www.jonesanddemille.com		REVISIONS NO. DATE DESCRIPTION 1 08/12/10 ORIGINAL SUBMISSION FOR AUTHORIZATION 2 08/12/10 DMS CREATED: 08/12/2010 3 08/12/10 PEA TEL: 1000027800
APPROVAL RECORD APPROVED: DATE PROJECT ENGINEER: PROJECT NO.: APPROVED: DATE:	CHECKED: DATE DRAWN: RLB 03/09 QUANT.: CHECKED: DATE CHECKED: DATE	REVISIONS NO. DATE DESCRIPTION 1 08/12/10 ORIGINAL SUBMISSION FOR AUTHORIZATION 2 08/12/10 DMS CREATED: 08/12/2010 3 08/12/10 PEA TEL: 1000027800
BARTON EXCAVATION LANDFILL IMPROVEMENTS DETAIL SHEET PROJECT NUMBER: 0812-015		SCALE: NONE DATE: 08/12/10 DRAWN BY: PEA TEL: 1000027800
SANPETE COUNTY		SHEET NO. DT-01

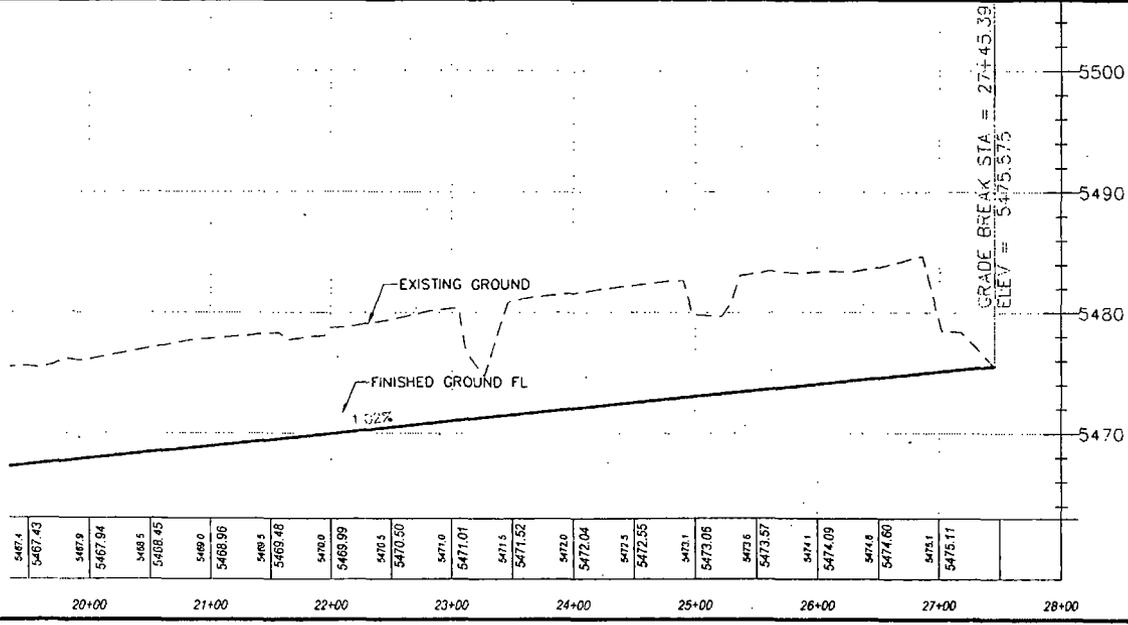


SEE SHEET PP-07



CP-J01  
 NORTHING=6939463.2130  
 EASTING=1594864.8360  
 ELEVATION=5484.46

CHANNEL QUANTITIES  
 7698.90 CUBIC YARDS OF CUT  
 229.07 CUBIC YARD OF FILL  
 7469.83 CUBIC YARD NET CUT



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 1325 S.W. 10th St. - Pompano Beach, FL 33062  
 Phone: 954-781-0000 Fax: 954-781-0001

**BARTON EXCAVATION**  
 LANDFILL IMPROVEMENTS  
 PLAN AND PROFILE SHEET  
 PROJECT NUMBER: 0812-015

**SANPETE COUNTY**  
 SHEET NO. PP-02

NO.	DATE	BY	REVISIONS
1	08/12/08	WJ	ORIGINAL SUBMISSION FOR AUTORIZATION
2	08/12/08	WJ	REVISIONS

SCALE: 1"=100'  
 DATE: 08/12/08  
 DRAWN BY: WJ  
 CHECKED BY: WJ  
 APPROVED BY: WJ

DMG CREATED: 08/12/08  
 PER: TBL: 08/12/08  
 LAST UPDATE: 10/27/08

# Landfill Cap

Area of Landfill:	98425	sq ft
Depth of Cap:	2	ft
Fill Factor:	1.20	
Fill Required for Cap:	8749	cu yd
Earthwork from Channel:	9372	cu yd
Total Remaining Fill:	623	cu yd

# West Side Landfill Fugitive Dust Control Plan

Prepared For:

Barton Excavating  
250 West Center Street  
Ephraim, UT 84627

October 2010



Jones & DeMille Engineering, Inc.

1535 South 100 West • Richfield, UT 84701 • Ph. 435-896-8266 • Fax 435-896-8268

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## Introduction

The West Side Landfill west of Ephraim in Sanpete County consists of building demolition materials. The debris covers approximately 2.4 acres. The landfill will not be a functioning landfill. It is being opened and closed with the same application and will be covered with 24" of compacted fill upon approval of the permit application from the Division of Environmental Quality.

## Applicability

The West Side Landfill will not be a working facility. The only work to take place at this site is earthwork to place a 24 inch cap of compacted fill over the existing debris. Therefore, the earthwork process is the only potential source of fugitive dust addressed in this plan.

## Fugitive Dust Emission Activities

The debris is located in an existing drainage channel. The closure plan includes realigning the channel to the west of the debris and using the excavated material to construct a cap over the debris area. Approximately 9,400 cubic yards of material will be excavated from the realigned channel and placed and compacted over the debris area. A 24 inch cap will be constructed over the landfill.

## Fugitive Dust Controls

As mentioned above the only potential source of fugitive dust to be addressed in this report is the earthwork process to realign the channel and construct a 24 inch cap of compacted fill over the landfill. The table below outlines the process that will be followed to control fugitive dust from the earthwork activities.

ACTIVITY	CONTROL STRATEGY	
Earth Moving & Excavation	Stage 1:	Inherent moisture with water sprays only on an as needed basis.
	Stage 2:	Increase use of water sprays until fugitive dust is controlled.
	Stage 3:	Minimize or reduce operations.

## Responsible Parties for Fugitive Dust Control

The parties listed in the following table will be the responsible parties for fugitive dust control on this project.

Operator:	Barton Excavating
Phone Number:	(435) 283-4762
Other:	Zion's Bank Corporation
Contact Name:	Brent Waite
Phone Number:	(801) 844-7678