

WASTEWATER FEASIBILITY STUDY



R.E.B. Engineering, Inc

Civil & Structural Engineering - Land Surveying & Planning

7/10/2007

Mr. Sheldon Sapoznik, REHS
Napa County Department of Environmental Management
1195 Third Street, Rm. 101
Napa, CA 94559

Subject: Wallis Winery Use Permit (A.P.N. 020-450-014)

Dear Sheldon:

Attached is the wastewater feasibility report for the Wallis Winery located at 1670 Diamond Mountain Road in Calistoga, with a proposed production of 30,000 gallons per year. The winery will use a conventional leach field disposal system for both winery process and domestic wastewater with 36 inches under the trench bottom.

I am hopeful that this feasibility report addresses all of your questions with regard to the wastewater system and the feasibility of the Wallis Winery which will meet Napa County Regulations for wastewater systems. Please call if you have any further questions.

Sincerely,

Kenneth C Deibert Jr, PE,
Civil Engineer
REB Engineering, Inc.



R.E.B. Engineering, Inc

Civil & Structural Engineering - Land Surveying & Planning

7/10/2007
JOB # 2007-555

**WALLIS WINERY
APN 020-450-014 (7.4 ac.)
SEPTIC FEASIBILITY REPORT**

Introduction

Wallis Winery is applying to the County of Napa for a Use Permit for the establishment of a 30,000 gallon per year winery on a 7.4 acre parcel (A.P.N. 020-450-014).

The permitted production capacity of the winery will be 30,000 gallons per year. It is anticipated that the winery will staff a maximum of 4 employees during the harvest season. The daily maximum number of visitors is 20 visitors per day and one annual wine auction event with up to 100 people.

This report has been prepared to evaluate the feasibility of constructing a new alternative wastewater treatment and disposal system to accommodate the winery process and domestic wastewater flows per the Napa County Department of Environmental Management (NCEM) design guidelines.

SCS Soil Types and Site Evaluation

The soil conservation service indicates that the soil is Boomer Forward Felta Complex. A site evaluation in the disposal area was performed by Ken Deibert of REB Engineering and a representative from NCEM on June 28, 2007.

Wastewater Flow Determination

Winery Process Waste

The proposed annual wine production shall be approximately 30,000 gallons. The harvest winery process wastewater flow is calculated as follows:

Harvest waste flow calculation:

$$\frac{(30,000 \text{ gallons of wine}) \times (1.5 \text{ gallons of wastewater/gallons of wine})}{45 \text{ days of crush}} = 1000 \text{ gallons/day}$$

Winery Domestic Wastewater flow:

The domestic wastewater flow calculated for the winery facility is based on anticipated employee and wine tasting visitors at the winery. Peak winery uses are found to be 4 full-time employees, and 20 visitors. The peak domestic wastewater flow for the winery will therefore be 125 gallons per day, as calculated below. Plumbing fixtures for the new winery shall be low-flow fixtures per the uniform building code.

Phone: 707.963.8638 Fax: 707.963.2346
345 La Fata St., Suite B, P.O. Box 113, St. Helena, California, 94574



Civil & Structural Engineering - Land Surveying & Planning

Peak Domestic Wastewater Flow Calculation:

	<u>Number</u>	<u>Flow (gpd)</u>	<u>Total (gpd)</u>
Full-time employees:	5	15	65
Wine tasting visitors:	20	3	60

Total Domestic wastewater: 125 gallons per day
Total Process wastewater: 1,000 gallons per day
Total combined wastewater: 1,125 gallons per day

Combined Wastewater System Design:

Due to the available soil depth of 72 inches in pits 1 and 2, it is proposed to use a conventional leach field sewage disposal system. Domestic wastewater shall flow into a 1,500 gallon septic tank at the winery and then flow to the disposal field. Process wastewater shall flow into a 3,000 gallon septic tank at the winery and then flow into the disposal field.

Combined Process and Domestic Conventional System Disposal Field Sizing

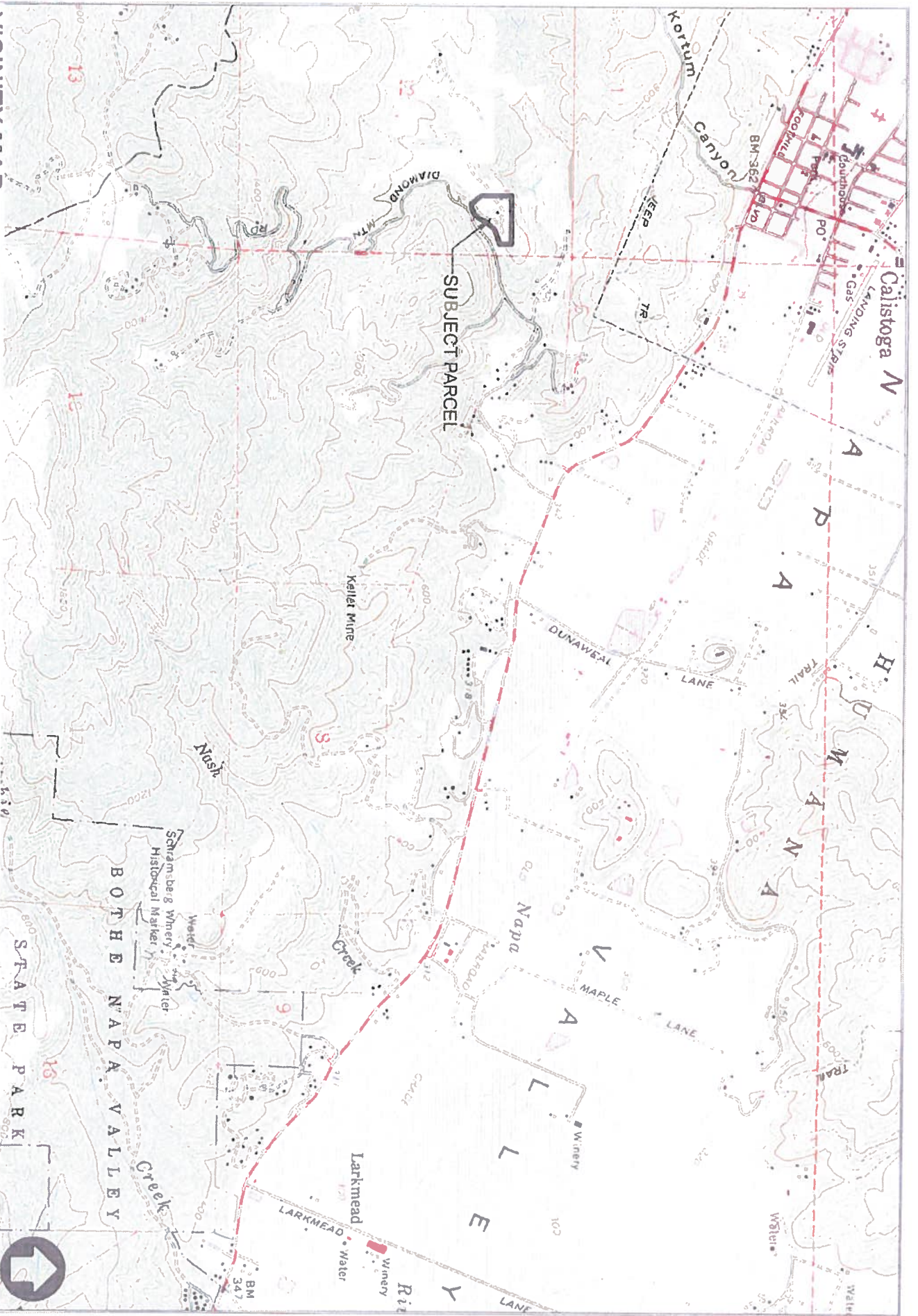
NCEM guidelines for conventional sewage disposal systems indicate an application rate of 0.33 gallons per square foot for the sandy clay loam soil with moderate and blocky structure at the site. Based on this application rate, and a design flow of 1,125 gallons per day, the minimum required sidewall area is 3,409 square feet. Given a sidewall area of 4 square feet per linear foot, the total amount of trench required is $3,409/4 = 852$ feet. It is proposed to provide 9 lines at 100 feet for a total of 900 feet of trench.

Combined Process and Domestic Reserve System:

The reserve system shall be located in the area of test pit 1 as shown.

Conclusion:

The discussions and calculations presented in this report demonstrate the wastewater flows and system requirements for the Wallis Winery. The attached site plan shows the proposed layouts of the domestic and process wastewater disposal system. The reserve area for the process and domestic wastewater systems have also been identified on the site plan. The proposed project as described above can be served with an onsite wastewater disposal system.



VICINITY MAP SCALE 1"=2000'

R.E.B.

PROJECT NO.	1110
DATE	11/11/11
BY	R.E.B.
CHECKED BY	R.E.B.
SCALE	1"=2000'
PROJECT	1110
DATE	11/11/11
BY	R.E.B.
CHECKED BY	R.E.B.

R.E.B. ENGINEERING, INC.
 CIVIL & STRUCTURAL
 ENGINEERING, PLANNING & SURVEYING
 2011 CALIFORNIA LICENSE NO. 50864-001
 1670 DIAMOND MOUNTAIN ROAD
 APN. 020-450-014

WALLIS WINERY
 1670 DIAMOND MOUNTAIN ROAD
 APN. 020-450-014

VICINITY MAP

DATE	11/11/11
BY	R.E.B.
CHECKED BY	R.E.B.
SCALE	1"=2000'
PROJECT	1110
DATE	11/11/11
BY	R.E.B.
CHECKED BY	R.E.B.



REB ENGINEERING, INC.

FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Jack Boureston	Ken Deibert
COMPANY:	DATE:
MK2	7-12-07
FAX NUMBER:	TOTAL NO. OF PAGES INCLUDING COVER:
707-307-1550	6
PHONE NUMBER:	SENDER'S REFERENCE NUMBER:
707-307-1520	Job # 555
RE:	YOUR REFERENCE NUMBER:
Wallis sewage feasibility report 1670 Diamond Mtn Rd	

URGENT FOR YOUR USE PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

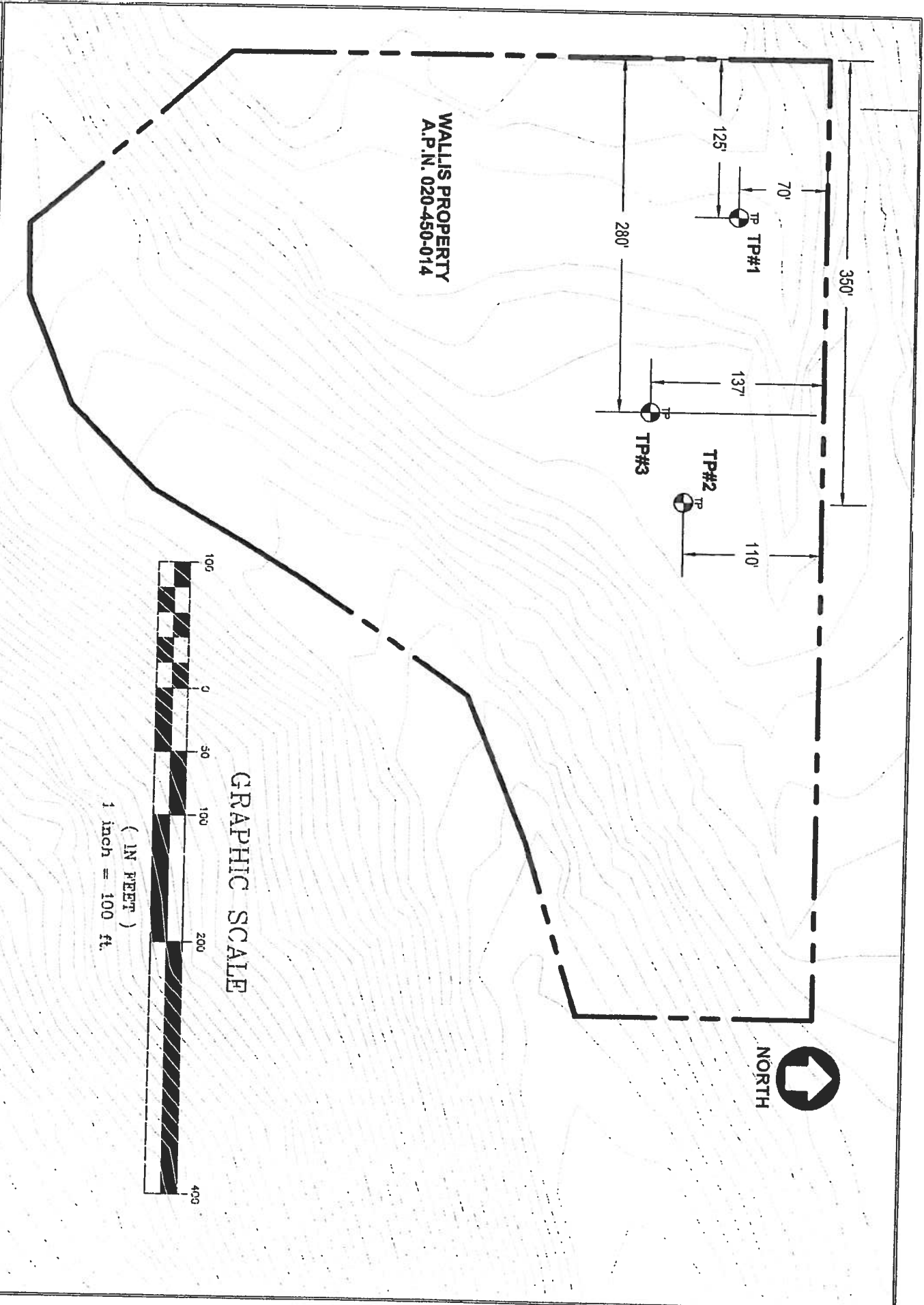
Jack,

Please find attached a draft of the sewage feasibility report for the above referenced project. Please review the report and call me either to discuss changes or to confirm that it accurately reflects the proposed winery project and I will submit the report to Environmental Management once the draft is approved.

Sincerely,

Ken Deibert
REB Engineering, Inc.

P.O. BOX 113
ST. HELENA, CA 94573
TEL: (707) 963-8638
FAX: (707) 963-2346



GRAPHIC SCALE

WALLIS PROPERTY
A.P.N. 020-450-014



R.E.B. ENGINEERING, INC. 20141 Main St., Suite 200, Davis, CA 95618 Tel: (916) 835-1111 Fax: (916) 835-1112		R.E.B. ENGINEERING, INC. CIVIL & STRUCTURAL ENGINEERING, PLANNING, & SURVEYING 20141 Main St., Suite 200, Davis, CA 95618 Tel: (916) 835-1111 Fax: (916) 835-1112		WALLIS PROPERTY A.P.N. 020-450-014		TEST PIT MAP FOR SITE EVALUATION DATED JUNE 28, 2007	
Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver	Drawing No. 018 Drawing Date 07/13/07 Project No. 2007-018 Date 07/13/07 Drawing Title Drawing Scale Drawing Date Drawing Author Drawing Checker Drawing Approver