

**PRELIMINARY GRADING ANALYSIS**

**FOR**

**THE IONE BAND OF MIWOK INDIAN CASINO  
PROJECT**

**September 2004**

**PREPARED BY:**

**Claybar Engineering, Inc.  
9354 Elk Grove-Florin Road  
Elk Grove, CA 95624**

**PREPARED FOR:**

**Analytical Environmental Services  
2021 N Street, Suite 200  
Sacramento, CA 95814**

# **PRELIMINARY GRADING ANALYSIS**

**FOR**

## **THE IONE BAND OF MIWOK INDIAN CASINO PROJECT**

### **Purpose**

The purpose of this analysis is to determine the estimated earthwork quantity required to rough grade the site for the above referenced project. The analysis includes four (4) alternatives (A thru D) which include three (3) project sizes for the casino project (A thru C) and a retail alternative (alternative D). The projects include grading of pads for buildings, water tanks, a water/waste water treatment facility, a proposed fire station, parking lots, driveways, a detention basin and a dam for storage of treated reclaimed water. Site plans for each alternative are enclosed for review.

### **Assumption**

A soils report was not available at the time of this preliminary analysis and the following assumptions were used to estimate earthwork volumes:

1. A shrinkage coefficient of ten (10%) percent was assumed for all fill volumes.
2. A driveway/parking lot section of 3" of asphalt concrete over 8" of Class 2 aggregate base.

### **Calculations**

Alternatives A, B and C were analyzed by Earthcalc Incorporated utilizing the Agtech program. Alternative D and the Dam sites were analyzed by Claybar Engineering Inc. using Land Development Desktop software.

The pond earthwork analysis was performed by calculating the storage volume required by Gene Thorn & Associates, Incorporated along with all excess material generated from the earthwork operation will be spread and compacted onsite. This on-site balancing will be a function of "fine tuning" the grading plan during final engineering and identifying and utilizing an onsite location for developing a stockpile/waste site for excess soil or a borrow site for needed soil.

**Please note that alternatives A thru C were calculated by Earthcalc Incorporated without the inclusion of the water/wastewater treatment area. This earthwork volume was calculated by Claybar Engineering, Inc. and added to the Earthcalc Incorporated's final numbers.**

### **Results**

**The results of the analysis are as follows:**

**See attached Spreadsheets "A" thru "D"**

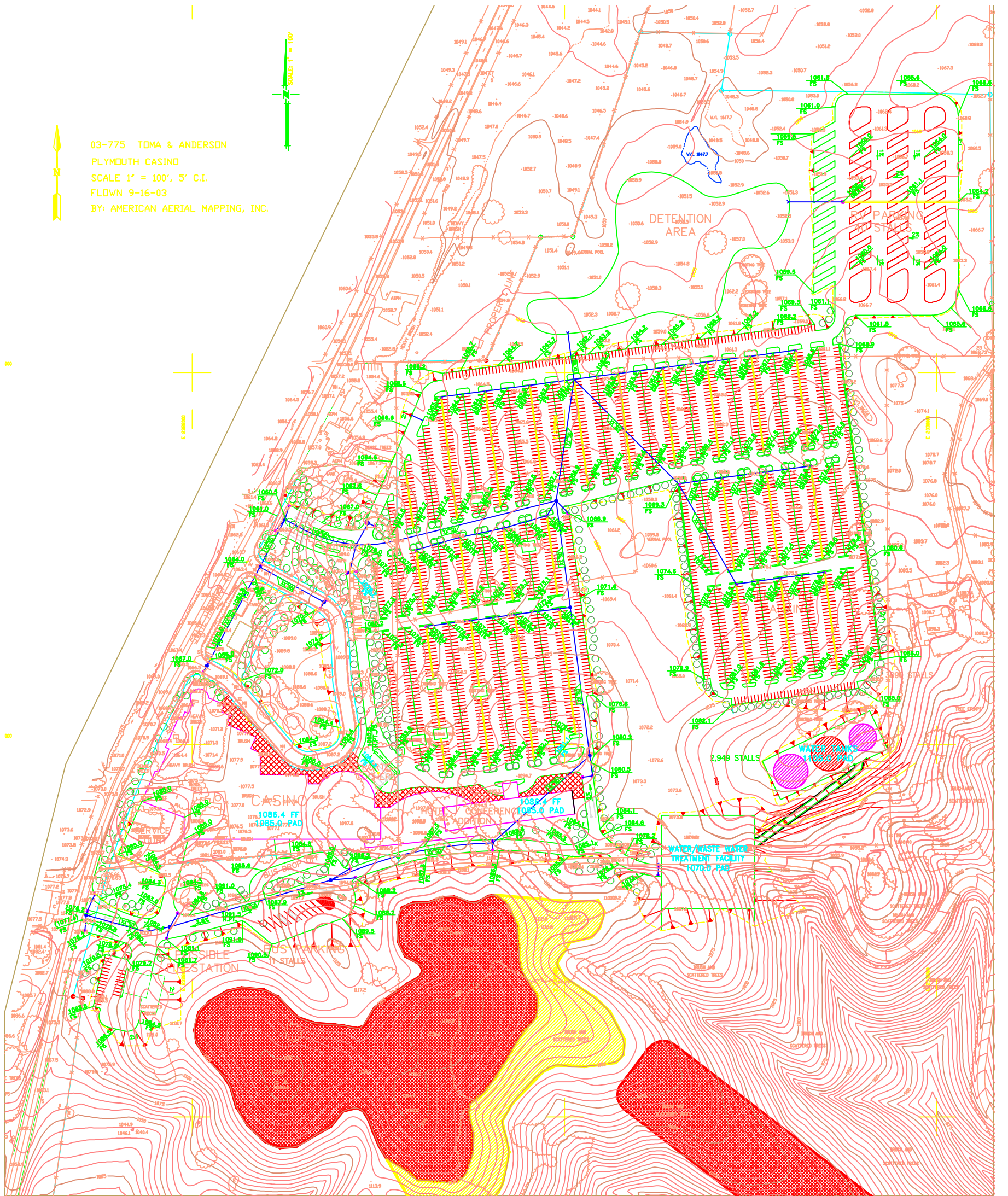
### **Summary & Conclusions**

**The grading volumes provided is a preliminary analysis based on the site plans of four (4) alternatives for the Ione Band of Miwok Indians Casino site. The analysis indicates various amounts of export or import which will be mitigated onsite by development of an onsite stockpile/waste area or borrow site which will be identified during final engineering. Additionally, the grades will also be evaluated and adjusted during final engineering to help balance the earthwork quantities onsite.**

**Grading Plans (11 x 17) and a full sized copy (24 x 36) are provided with this report for review.**

**Please contact Dennis Barksdale, P.E., Claybar Engineering, Inc. at 916-684-7301, if any further information is required**

03-775 TDMA & ANDERSON  
 PLYMOUTH CASINO  
 SCALE 1" = 100', 5' C.I.  
 FLOWN 9-16-03  
 BY: AMERICAN AERIAL MAPPING, INC.

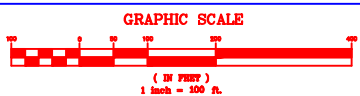


**PARKING SPACE COUNT**  
 3,690 PARKING SPACES  
 11 BUS SPACES  
 41 R.V. SPACES

CLAYBAR ENGINEERING



DATE:



PROJECT NO.  
200340

SHEET 1 OF 1

AMADOR COUNTY

IMPROVEMENT PLANS FOR  
**IONE BAND OF MIWOK INDIANS**  
 PRELIMINARY GRADING PLAN  
 ALTERNATE A

CALIFORNIA

CLAYBAR ENGINEERING  
 9354 ELK GROVE-FLOREN ROAD  
 ELK GROVE, CA 95624  
 PH: 916-684-7301  
 FAX: 916-684-2627

DATE: 11/15/04

SCALE: H:1=100 V:

DRAWN BY: DAVE

DESIGNED BY:

CHECKED BY:

No.	Description	Engr	by	Date

# EARTHCALC

INCORPORATED

**IONE BAND MIWOK INDIANS, ALTERNATE A**

CLAYBAR ENGINEERING Project number: 2003340

Thursday, November 18, 2004

MO40774

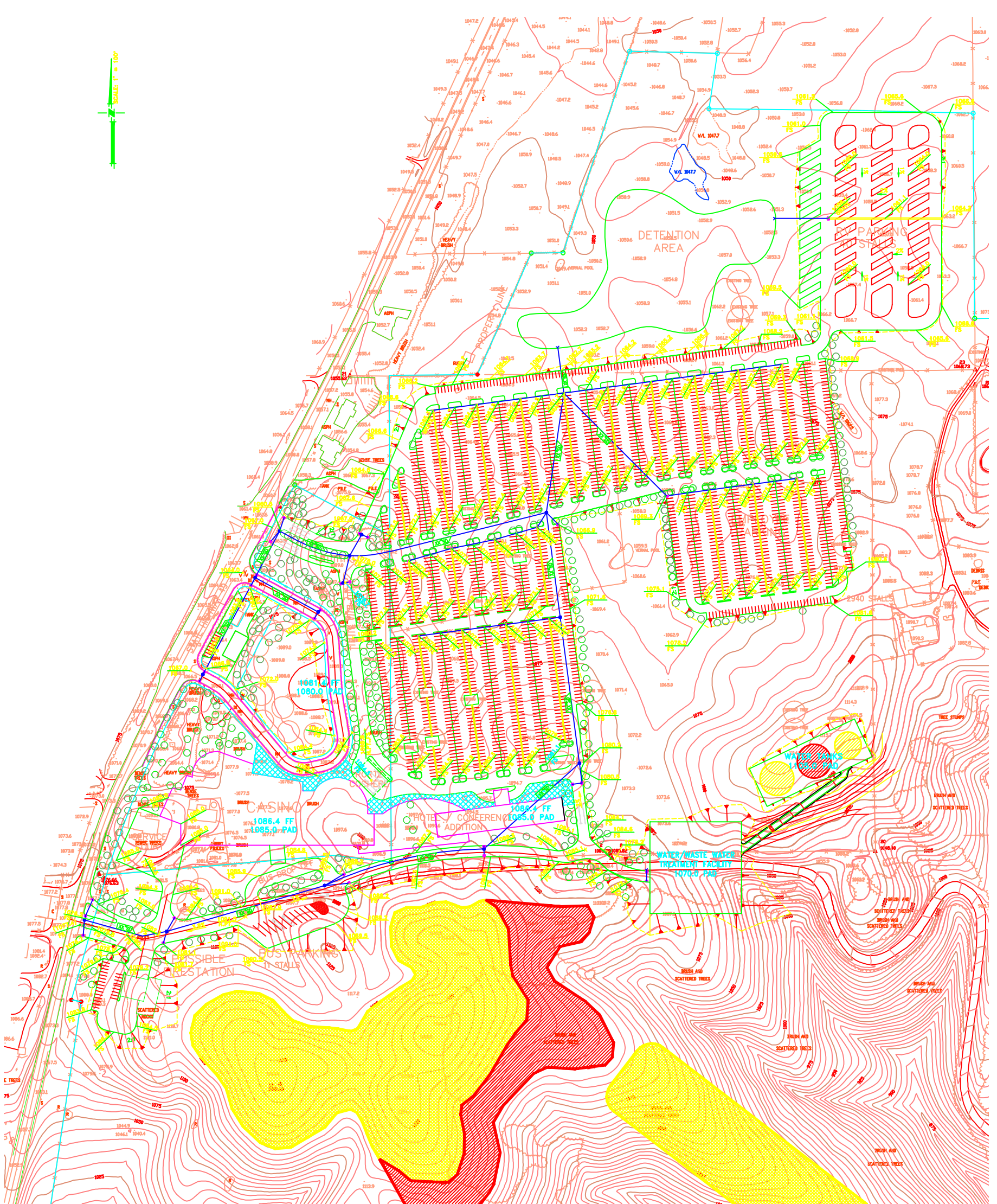
Please note that we used the following assumptions for this project:

- Subsidence: .1'
- Shrinkage 10% Fill
- Swell: 10% Cut
- Paving Section: 3"/8"
- Building Section: Per Plan

## VOLUMES SUMMARY

Region	Total SF	Cut SF	Fill SF	Raw		Cut		Fill		Net		Net Difference	Bal Chg/.'1'
				Cut CY	Fill CY	Factor	Factor	Cut CY	Fill CY				
Subsidence .1'				0	8,920	1,000	1,000	0	8,920			-8,920	Import
Total	2,408,429	1,190,661	1,217,768	296,030	216,895	1,100	1,100	325,633	238,585			87,049	Export
<b>Job Total</b>	<b>2,408,429</b>	<b>1,190,661</b>	<b>1,217,768</b>	<b>296,030</b>	<b>225,815</b>	<b>1,100</b>	<b>1,096</b>	<b>325,633</b>	<b>247,505</b>			<b>78,129</b>	<b>Export</b>
													<b>8,920</b>

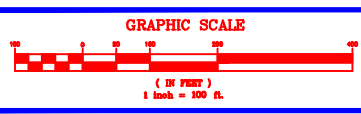
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**PARKING SPACE COUNT**  
 2,840 PARKING SPACES  
 11 BUS SPACES  
 41 R.V. SPACES



DATE: \_\_\_\_\_



PROJECT NO.  
 200340  
 SHEET 1 OF 1

IMPROVEMENT PLANS FOR  
**IONE BAND OF MIWOK INDIANS**  
 PRELIMINARY GRADING PLAN  
 ALTERNATE B

AMADOR COUNTY

CALIFORNIA

**CLAYBAR ENGINEERING**  
 9354 ELK GROVE-FLOREN ROAD  
 ELK GROVE, CA 95624  
 Ph: 916-684-7301  
 Fax: 916-684-2627

DATE: \_\_\_\_\_  
 SCALE: Ht. Vt.  
 DRAWN BY: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

No.	Description	Engr.	Date

# EARTH-CALC

INCORPORATED

**IONE BAND MIWOK INDIANS, ALTERNATE B**

CLAYBAR ENGINEERING Project number: 200340

Thursday, November 18, 2004

M040775

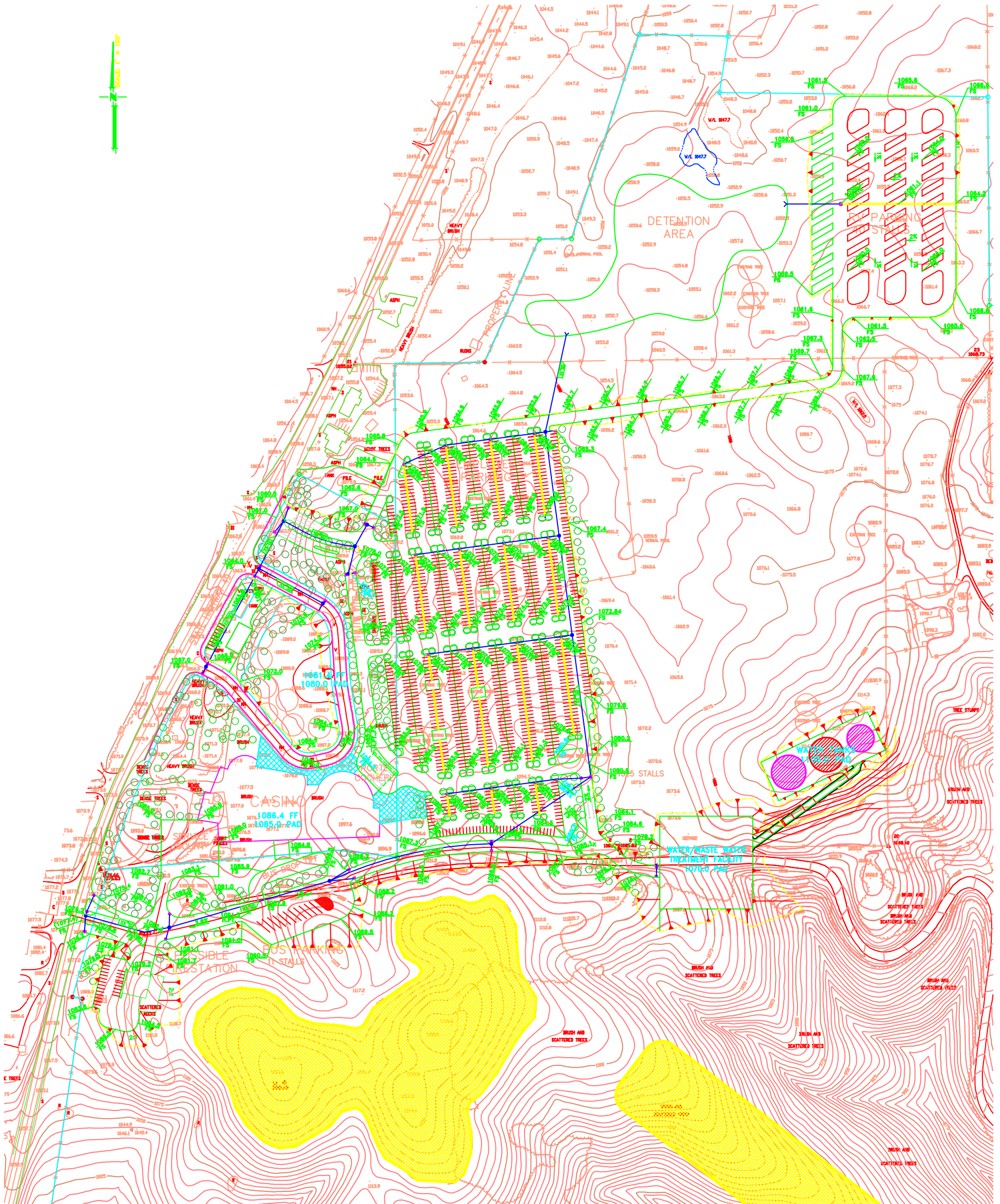
Please note that we used the following assumptions for this project:

- Subsidence: .1'
- Shrinkage 10% Fill
- Swell: 10% Cut
- Paving Section: 3"/8"
- Building Section: Per Plan

## VOLUMES SUMMARY

Region	Total SF	Cut SF	Fill SF	Raw		Cut Factor	Fill Factor	Net		Net		Bal Chg/.'1'
				Cut CY	Fill CY			Cut CY	Fill CY	Difference	Export	
Subsidence .1'				0	8,369	1.000	1.000	0	8,369	-8,369	Import	
Earthwork	2,259,698	1,093,762	1,165,936	268,945	197,703	1.100	1.100	295,840	217,473	78,366	Export	8,369
<b>Job Total</b>	<b>2,259,698</b>	<b>1,093,762</b>	<b>1,165,936</b>	<b>268,945</b>	<b>206,072</b>	<b>1.100</b>	<b>1.096</b>	<b>295,840</b>	<b>225,842</b>	<b>69,997</b>	<b>Export</b>	<b>8,369</b>

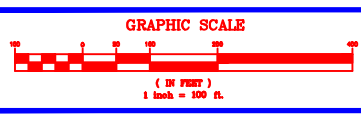
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**PARKING SPACE COUNT**  
1,527 PARKING SPACES  
11 BUS SPACES  
40 R.V. SPACES



DATE: \_\_\_\_\_



PROJECT NO.  
200340  
SHEET 1 OF 1

IMPROVEMENT PLANS FOR  
**IONE BAND OF MIWOK INDIANS**  
PRELIMINARY GRADING PLAN  
ALTERNATE C  
AMADOR COUNTY  
CALIFORNIA

**CLAYBAR ENGINEERING**  
9354 ELK GROVE-FLOREN ROAD  
ELK GROVE, CA 95624  
Ph: 916-684-7301  
Fax: 916-684-2627

DATE: \_\_\_\_\_  
SCALE: Ht \_\_\_\_\_ Vt \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

No.	Description	Engr.	Date



# EARTHCALC

INCORPORATED

**IONE BAND MIWOK INDIANS, ALTERNATE C**

CLAYBAR ENGINEERING Project number: 200340

Thursday, November 18, 2004

MO40776

Please note that we used the following assumptions for this project:

- Subsidence: .1'
- Shrinkage 10% Fill
- Swell: 10% Cut
- Paving Section: 3'8"
- Building Section: Per Plan

## VOLUMES SUMMARY

Region	Total SF	Cut SF	Fill SF	Raw		Cut Factor	Fill Factor	Net		Net Difference	Bal Chg./1'
				Cut CY	Fill CY			Cut CY	Fill CY		
Subsidence .1'				0	6,472	1,000	1,000	0	6,472	-6,472 Import	
Earthwork	1,747,580	1,038,705	708,875	270,173	116,006	1,100	1,100	297,190	127,607	169,584 Export	6,473
<b>Job Total</b>	<b>1,747,580</b>	<b>1,038,705</b>	<b>708,875</b>	<b>270,173</b>	<b>122,478</b>	<b>1,100</b>	<b>1,095</b>	<b>297,190</b>	<b>134,079</b>	<b>163,112 Export</b>	<b>6,473</b>

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# EARTHCALC

INCORPORATED

**IONE BAND MIWOK INDIANS, ALTERNATE D**

CLAYBAR ENGINEERING Project number: 200340

Monday, November 22, 2004  
M040777

Please note that we used the following assumptions for this project:

- Subsidence: .1'
- Shrinkage 10% Fill
- Swell: 10% Cut
- Paving Section: 3"/8"
- Building Section: Per Plan

## VOLUMES SUMMARY

Region	Total SF	Cut SF	Fill SF	Raw		Net		Difference	Bal
				Cut CY	Fill CY	Cut CY	Fill CY		
Subsidence .1'				0	4,062	0	4,062	-4,062	Import
Earthwork	1,096,741	482,679	614,062	113,308	178,498	124,639	196,348	-71,709	Import
<b>Job Total</b>	<b>1,096,741</b>	<b>482,679</b>	<b>614,062</b>	<b>113,308</b>	<b>182,560</b>	<b>124,639</b>	<b>200,410</b>	<b>-75,771</b>	<b>Import</b>

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