

### Laboratory CBR Tests

Laboratory CBR tests were performed on samples obtained from borings B-2, B-6, B-8 and B-9. The tests were performed in accordance with ASTM D 1883. Laboratory test results are presented in Appendix B. A summary of the laboratory CBR test results is presented in Table 3.

TABLE 3 LABORATORY CBR TEST RESULTS				
Boring No.	Depth (feet)	CBR at 0.1" Penetration		
		90%	95%	100%
B-2	1-5	9	15	21
B-6	1-5	9	24	39
B-8	1-5	7	18	28*
B-9	1-5	12	26	43

\*Extrapolated

### Maximum Dry Density- Optimum Moisture Content Tests

Maximum dry density/optimum moisture content tests were performed on four samples obtained from borings B-2, B-6, B-8 and B-9. Tests were performed in accordance with ASTM D 698. Test results are included in Appendix B. A summary of test results is presented in Table 4.

TABLE 4 MAXIMUM DRY DENSITY/OPTIMUM MOISTURE CONTENT TEST RESULTS			
Boring No.	Depth (feet)	Maximum Dry Density (pcf)	Opt. Moisture Content (%)
B-2	1-5	114.5	6.3
B-6	1-5	117.0	10.0
B-8	1-5	117.7	8.7
B-9	1-5	117.2	10.0

### In-situ Moisture/Density

In-situ moisture /density (ASTM D 2216 and D 2937) tests were performed on selected samples of undisturbed soil. In-situ moisture/density test results are presented on the boring logs.

## EARTHWORK RECOMMENDATIONS

### Site Preparation

For areas that will require removal and replacement of the existing pavement, if applicable, the site should be cleared of existing pavement and deleterious materials. Organic and other deleterious materials not suitable for use as structural backfill should be disposed of offsite at a legal disposal site.

### Preparation of Areas to Receive Fill

The site soils should be excavated with conventional heavy-duty excavation equipment in good working order. Exposed excavation bottoms and subgrade surfaces to receive fill should be scarified to a minimum depth of eight inches, brought to within  $\pm 2$  percent of optimum moisture content and compacted to 100 percent of the maximum dry density as determined by ASTM D 698. Due to the relatively low moisture contents of the in-situ soils, significant additional water will need to be added to obtain the specified moisture content for compaction.

### Fill Placement and Compaction

Structural fill should be compacted to at least 100 percent of the maximum dry density (as determined by ASTM D 698) at moisture content within  $\pm 2$  percent of optimum. The optimum lift thickness for fill soils will be dependent on the type of compaction equipment being utilized. Generally, fill should be placed in uniform horizontal lifts not exceeding 8 inches in loose thickness. Placement and compaction of fill should be performed in general conformance with geotechnical recommendations and FAA requirements.

Soils generated from on-site excavations are anticipated to be suitable for use as structural fill, provided they are free from debris and deleterious material. Rocks or other soil fragments greater than four inches in size should not be used in the fills or in the upper six inches of subgrade soil. Proposed import materials, if needed, should be evaluated by the project geotechnical engineer prior to being placed at the site. Import materials should consist of non-corrosive, non-expansive granular material.

Subbase and base should be compacted to 100 percent of maximum dry density (as determined by ASTM D 698) at moisture content of  $\pm 1\frac{1}{2}$  percent of optimum moisture content. Moisture may need to be wet of optimum to achieve 100 percent compaction. Actual moisture needed should be evaluated at the start of construction using test sections as necessary.

Major compaction problems are not anticipated in granular soils provided moisture content is carefully controlled. Subbase, base, granular soils and asphalt pavement may be compacted using smooth drum (vibratory), vibratory sheepsfoot, smooth-wheeled and rubber-tired compactors. It is the responsibility of the contractor to utilize proper equipment to compact site soils and pavement.

### Corrosive Soils

Sulfate-containing solutions or soil can have a deleterious effect on the in-service performance of concrete. In order to evaluate the soil corrosivity, a representative sample of the site soil was laboratory tested for pH, resistivity, soluble sulfate and chloride. The results of the tests are summarized in Table 5.

TABLE 5 SUMMARY OF CHEMICAL ANALYSES				
Sample Location	pH	Resistivity (ohm-cm)	Sulfate (ppm)	Chloride (ppm)
B-5 @ 1-5'	7.1	8,500	60	54

Based on ACI 18 Building Code and Commentary Table 4.3.1, sulfate exposure of 60 ppm is considered *negligible*. We recommend that Type II modified or Type V cement be used. Concrete should have a maximum water-cement ratio of 0.50 and a minimum compressive strength of 4000 psi.

Based on the results of the resistivity tests, site soil appears to be *moderately corrosive* to ferrous metals. CTE does not practice in the field of corrosion engineering. Therefore, a corrosion engineer could be consulted to determine the appropriate protection for metallic improvements in contact with site soils.

We appreciate this opportunity to be of service on this project. If you have questions regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,  
CTE, South, Inc.

Clifford A. Craft, GE #243  
Senior Geotechnical Engineer



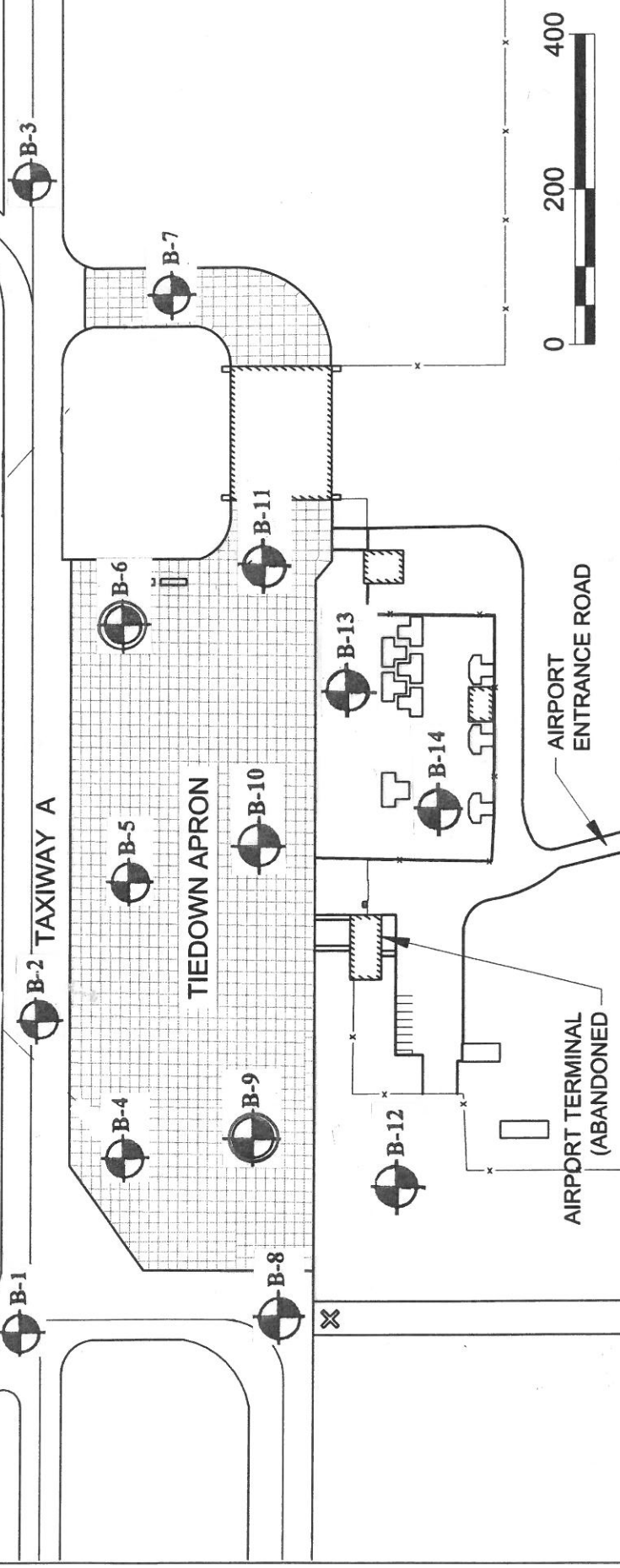
Vincent J. Patula, CEG #2057  
Senior Engineering Geologist



Robert L. Ellerbusch  
Staff Geologist

**LEGEND**

-  B-1 APPROXIMATE BORING LOCATION
-  B-6 APPROXIMATE BORING/IN-PLACE CBR TEST LOCATION



COUNTY OF RIVERSIDE  
 BLYTHE MUNICIPAL AIRPORT  
 APRON PAVEMENT  
 REHABILITATION

3184400-121878.01  
 JUNE 15, 2015

**Mead & Hunt**  
 EXHIBIT 1

GEOTECHNICAL BORING LOCATIONS



EXPLORATION LOCATION MAP  
 BLYTHE MUNICIPAL AIRPORT  
 BLYTHE, CALIFORNIA

Job No.	Date	Figure
40-3264	DEC 2015	1

## APPENDIX A

### FIELD EXPLORATION METHODS AND EXPLORATION LOGS

## APPENDIX A

### FIELD EXPLORATION METHODS AND EXPLORATION LOGS

#### Soil Boring Methods

##### Relatively “Undisturbed” Soil Samples

Relatively “undisturbed” soil samples were collected using a modified California-drive sampler (2.4-inch inside diameter, 3-inch outside diameter) lined with sample rings. Drive sampling was conducted in general accordance with ASTM D-3550. The steel sampler was driven into the bottom of the borehole with successive drops of a 140-pound weight falling 30-inches. Blow counts (N) required for sampler penetration are shown on the boring logs in the column “Blows/Foot.” The soil was retained in brass rings (2.4 inches in diameter, 1.0 inch in height) and sealed in waterproof plastic containers for shipment to the CTE, South, Inc. geotechnical laboratory.

##### Disturbed Soil Sampling

Bulk soil samples were collected for laboratory analysis using two methods. Standard Penetration Tests (SPT) were performed according to ASTM D-1586 at selected depths in the borings using a standard (1.4-inches inside diameter, 2-inches outside diameter) split-barrel sampler. The steel sampler was driven into the bottom of the borehole with successive drops of a 140-pound weight falling 30-inches. Blow counts (N) required for sampler penetration are shown on the boring logs in the column “Blows/Foot.” Samples collected in this manner were placed in sealed plastic bags. Bulk soil samples of the drill cuttings were also collected in large plastic bags. The disturbed soil samples were returned to the CTE, South, Inc. geotechnical laboratory for analysis.



## DEFINITION OF TERMS

PRIMARY DIVISIONS			SYMBOLS	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS < 5% FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS OR GRAVEL SAND MIXTURES, LITTLE OF NO FINES
		GRAVELS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, NON-PLASTIC FINES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, PLASTIC FINES
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS < 5% FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SM	SILTY SANDS, SAND-SILT MIXTURES, NON-PLASTIC FINES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES, PLASTIC FINES
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50		ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, SLIGHTLY PLASTIC CLAYEY SILTS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY, SANDY, SILTS OR LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTY CLAYS
	HIGHLY ORGANIC SOILS			PT

## GRAIN SIZES

BOULDERS	COBBLES	GRAVEL		SAND			SILTS AND CLAYS
		COARSE	FINE	COARSE	MEDIUM	FINE	
	12"	3"	3/4"	4	10	40	200
	CLEAR SQUARE SIEVE OPENING			U.S. STANDARD SIEVE SIZE			

## ADDITIONAL TESTS

(OTHER THAN TEST PIT AND BORING LOG COLUMN HEADINGS)

MAX- Maximum Dry Density  
 GS- Grain Size Distribution  
 SE- Sand Equivalent  
 EI- Expansion Index  
 CHM- Sulfate and Chloride  
       Content, pH, Resistivity  
 COR - Corrosivity  
 SD- Sample Disturbed

PM- Permeability  
 SG- Specific Gravity  
 HA- Hydrometer Analysis  
 AL- Atterberg Limits  
 RV- R-Value  
 CN- Consolidation  
 CP- Collapse Potential  
 HC- Hydrocollapse  
 RDS- Remolded Direct Shear

PP- Pocket Penetrometer  
 WA- Wash Analysis  
 DS- Direct Shear  
 UC- Unconfined Compression  
 MD- Moisture/Density  
 M- Moisture  
 SC- Swell Compression  
 OI- Organic Impurities



PROJECT:  
CTE JOB NO:  
LOGGED BY:

DRILLER:  
DRILL METHOD:  
SAMPLE METHOD:

SHEET:            of  
DRILLING DATE:  
ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/Foot	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING LEGEND	Laboratory Tests
							DESCRIPTION	
0							Block or Chunk Sample	
							Bulk Sample	
5								
							Standard Penetration Test	
10							Modified Split-Barrel Drive Sampler (Cal Sampler)	
15							Groundwater Table	
20							Soil Type or Classification Change	
							? — ? — ? — ? — ? — ? — ? —	
							Formation Change [(Approximate boundaries queried (?))]	
25					"SM"		Quotes are placed around classifications where the soils exist in situ as bedrock	





PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/11/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-1	Laboratory Tests
							DESCRIPTION	
0							10.5" AC over 12" Base	
8 9 9				6.4	SM		Silty SAND, medium dense, moist, light brown.	M
5 4 5				5.6	SP-SM		Poorly-graded SAND with Silt, loose, moist, light brown.	M
10 6 10				3.4	SP		Poorly-graded SAND, medium dense, damp, light brown.	M
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 10" of concrete.	
20								
25								

B-1

Boring B-1



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/11/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-2	Laboratory Tests
								DESCRIPTION	
0								11" AC over 5" Base	
						SP-SM			CBR, MAX
			14 19 20	112.1	4.2			Poorly-graded SAND with Silt, dense, damp, light brown, trace gravel.	MD
5			7 10 17	104.5	2.5	SP		Poorly-graded SAND, medium dense, damp, light brown, trace gravel.	MD
10			15 26 34	105.2	2.8			Poorly-graded SAND, dense, damp, light brown.	MD
15								Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 10" of concrete.	
20									
25									

B-2

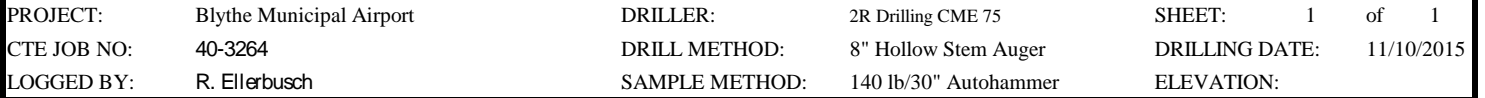
Boring B-2



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/11/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-3	Laboratory Tests
							DESCRIPTION	
0							10" AC over 5" Base	M
8 12 10				2.9	SP-SM		Poorly-graded SAND with Silt, medium dense, damp, light brown, trace gravel.	
5 3 2 3					SP		Poorly-graded SAND with Silt, loose, damp, light brown.	
10 4 8 12							Poorly-graded SAND, medium dense, damp, light brown.	
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 10" of concrete.	
20								
25								

B-3



### Boring B-4



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-5	Laboratory Tests
							DESCRIPTION	
0							5.5" Concrete	
5		5 5 7	110.9	5.8	SP-SM		Poorly-graded SAND with Silt, loose, moist, light brown, trace gravel.	CHM WA (11% pass #200) MD
5		4 6 8					Poorly-graded SAND with Silt, medium dense, damp, light brown.	
10		5 9 12		2.8	SP		Poorly-graded SAND, medium dense, damp, light brown.	M
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	
20								
25								

B-5

Boring B-5



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-6	Laboratory Tests
								DESCRIPTION	
0								<b>6.25" Concrete</b>	
						SP		Poorly-graded SAND, damp, light brown.	CBR, MAX
9 11 14				104.7	3.1			Poorly-graded SAND, medium dense, damp, light brown, trace gravel.	MD
5 10 15 22				103.1	2.0			Poorly-graded SAND, dense, dry, light brown, trace gravel.	MD
10 20 25				102.3	2.6			Poorly-graded SAND, dense, damp, light brown, trace gravel.	MD
								Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	

B-6

Boring B-6



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-7	Laboratory Tests
							DESCRIPTION	
0							8.5" Concrete	
7 5 3				6.5	SP		Poorly-graded SAND, loose, moist, light brown, trace gravel.	M
5 8 10				2.7			Poorly-graded SAND, medium dense, damp, light brown.	M
10 11 13				2.6			Poorly-graded SAND, medium dense, damp, light brown.	M
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 10" of concrete.	
20								
25								

B-7



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-8	Laboratory Tests
								DESCRIPTION	
0								4" AC over 12" Base	
10 14 13					5.9	SM		Silty SAND, medium dense, moist, light brown.	CBR, MAX WA (14% pass #200) M
5 6 10			4		2.6	SP		Poorly-graded SAND, medium dense, damp, light brown.	WA (3% pass #200) M
10 14 19			8		3.2			Poorly-graded SAND, dense, damp, light brown.	M
15								Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	
20									
25									

B-8

Boring B-8





PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample	Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-9	Laboratory Tests
								DESCRIPTION	
0								<b>6" Concrete</b>	
						SP-SM		Poorly-graded SAND with Silt, damp, light brown.	CBR, MAX
			6						
			10					Poorly-graded SAND with Silt, medium dense, damp, light brown.	
			13	103.4	3.3				MD
5			14			SP			
			21					Poorly-graded SAND, dense, damp, light brown.	
			29	103.1	3.7				MD
10			14						
			28					Poorly-graded SAND, very dense, damp, light brown, trace gravel.	
			40	102.9	2.1				MD
								Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	
15									
20									
25									

B-9



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-10	Laboratory Tests
							DESCRIPTION	
0							<b>5.75" Concrete</b>	
		2 2 3		7.5	SM		Silty SAND, loose, moist, light brown.	WA (14% pass #200) M
5		5 7 8		3.7	SP		Poorly-graded SAND, medium dense, damp, light brown.	M
10		5 11 16		3.1			Poorly-graded SAND, medium dense, damp, light brown.	M
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	
20								
25								

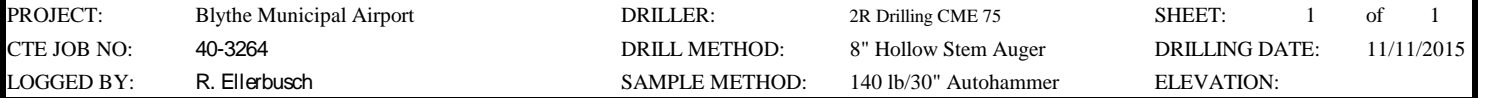
B-10



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/10/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-11	Laboratory Tests
							DESCRIPTION	
0							7" Concrete	
3		3			SP-SM		Poorly-graded SAND with Silt, loose, damp, light brown, trace gravel.	M
4		4		5.1				
5		5						
5		5			SP		Poorly-graded SAND, medium dense, damp, light brown.	M
8		8		2.0				
11		11						
10		6					Poorly-graded SAND, medium dense, damp, light brown.	M
10		10		2.0				
15		15					Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with 8" of concrete.	
20								
25								

B-11



## Boring B-12



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/11/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-13	Laboratory Tests
							DESCRIPTION	
0							2.5" AC over 10" Base	
7		7		6.0	SM		Silty SAND, medium dense, moist, light brown.	M
5		3		2.5	SP		Poorly-graded SAND, medium dense, damp, light brown.	M
10		3					Poorly-graded SAND, medium dense, dry, light brown.	
15							Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with asphalt patch.	
20								
25								

B-13



PROJECT: Blythe Municipal Airport	DRILLER: 2R Drilling CME 75	SHEET: 1 of 1
CTE JOB NO: 40-3264	DRILL METHOD: 8" Hollow Stem Auger	DRILLING DATE: 11/11/2015
LOGGED BY: R. Ellerbusch	SAMPLE METHOD: 140 lb/30" Autohammer	ELEVATION:

Depth (Feet)	Bulk Sample Driven Type	Blows/6 inches	Dry Density (pcf)	Moisture (%)	U.S.C.S. Symbol	Graphic Log	BORING: B-14	Laboratory Tests
							DESCRIPTION	
0							2.5" AC over 8" Base	
3		3			SM		Silty SAND, loose, moist, light brown, trace gravel.	M
4		4		6.1				
5		4			SP		Poorly-graded SAND, medium dense, damp, light brown, trace gravel.	
8		8						
11		11						
10		7					Poorly-graded SAND, medium dense, damp, light brown,.	M
13		13		2.5				
15		15					Total Depth = 11.5 ft. below pavement surface. No Groundwater encountered. Bore hole backfilled with soil cuttings and capped with asphalt patch.	
20								
25								

B-14

## APPENDIX B

### LABORATORY METHODS AND RESULTS

## APPENDIX B

### LABORATORY METHODS AND RESULTS

Laboratory tests were performed on selected soil samples to evaluate their engineering properties. Tests were performed following test methods of the American Society for Testing and Materials (ASTM), or other accepted standards. The following presents a brief description of the various test methods used. Laboratory results are presented in the following section of this Appendix.

#### California Bearing Ratio

Laboratory CBR tests were performed on selected soil samples in accordance with ASTM D 1883. The test specimens were saturated during testing.

#### California Bearing Ratio of In-Place Soils

Field CBR tests were performed at selected boring locations. The tests were conducted in accordance with ASTM D 4429.

#### Chemical Analysis

Soil materials were collected and tested for Sulfate and Chloride content, pH, by EPA methods and Resistivity by Caltrans test methods.

#### Classification

Soils were classified visually according to the Unified Soil Classification System. Visual classifications were supplemented by laboratory testing of selected samples according to ASTM D 2487.

#### In-Place Moisture/Density

The in-place moisture content and dry unit weight of selected relatively undisturbed samples in accordance with ASTM D 2216 and D 2937, respectively.

#### Material Finer than #200 Sieve by Washing.

200 washes were performed on selected samples in accordance with ASTM D 1140.

#### Moisture and Density Relations (Standard Effort)

Laboratory maximum dry density and optimum moisture content were evaluated on selected soil samples in accordance with ASTM D 698.





# Construction Testing & Engineering, Inc.

Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

## California Bearing Ratio Report -ASTM D1883

<b>Job Name:</b>	Blythe Municipal Airport Pavement Rehab
<b>Job Number:</b>	40-3264
<b>Lab Number:</b>	25788
<b>Date Sampled:</b>	11/10/2015
<b>Date Tested:</b>	11/19/2015
<b>Location:</b>	B-2 @ 1' - 5'
<b>Sample Description:</b>	Light Brown/Tan Sand

<b>Compaction Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
<b># of Blows:</b>	<b>56</b>	<b>25</b>	<b>10</b>
<b>Wt. Mold &amp; Soil:</b>	8330.6	8115.3	7915.8
<b>Wt. Mold:</b>	4216.9	4210.0	4211.3
<b>Wt. Wet Soil:</b>	4113.7	3905.3	3704.5
<b>Wet Density (PCF):</b>	120.8	114.6	108.7
<b>Dry Density (PCF):</b>	113.6	107.8	102.3
<b>% Compaction:</b>	99.2	94.2	89.3
<b>CBR, Percent @ 0.1"</b>	20.9	15.2	9.7
<b>CBR, Percent @ 0.2"</b>	18.7	14.3	8.2

<b>Soak &amp; Swell Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
<b>Initial Height (in.):</b>	4.58	4.58	4.58
<b>Initial Reading (in):</b>	0.0000	0.0000	0.0000
<b>96hr:</b>	0.0000	0.0000	0.0000
<b>Swell (in.):</b>	0.0000	0.0000	0.0000
<b>Percent Swell:</b>	0.0	0.0	0.0

<b>Load In Pounds</b>			
<b>Penetration Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
0.025	80	62	44
0.050	218	172	144
0.075	418	298	210
<b>0.100</b>	556	406	264
0.125	680	500	306
0.150	772	568	340
0.175	834	624	366
<b>0.200</b>	854	652	386
0.300	772	594	426
0.400	704	546	454
0.500	638	544	484

<b>Maximum Density Results</b>		
<b>Optimum Moist (%)</b>		6.3
<b>Max Density (pcf)</b>		114.5
<b>% Remolded:</b>		NA
<b>Density of Remold:</b>		NA
<b>Initial Moisture:</b>		6.3
<b>CBR Mold Volume:</b>		0.0751
<b>Moisture Top 1"</b>		
<b>Mold 1</b>	<b>Wet. w/Tare:</b>	1208.6
	<b>Dry w/Tare:</b>	1099.8
	<b>Tare:</b>	172.4
	<b>Moist %:</b>	11.7
<b>Mold 2</b>	<b>Wet. w/Tare:</b>	1142.9
	<b>Dry w/Tare:</b>	1025.5
	<b>Tare:</b>	176.9
	<b>Moist %:</b>	13.8
<b>Mold 3</b>	<b>Wet. w/Tare:</b>	1110.6
	<b>Dry w/Tare:</b>	981.5
	<b>Tare:</b>	156.5
	<b>Moist %:</b>	15.6

<b>Diameter of Piston:</b>	1.96
<b>Area of Piston:</b>	3.02
<b>Weight of Surcharge</b>	10lbs

<b>Load In PSI</b>			
<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>	
26	21	15	
72	57	48	
138	99	70	
<b>184</b>	<b>134</b>	<b>87</b>	
225	166	101	
256	188	113	
276	207	121	
<b>283</b>	<b>216</b>	<b>128</b>	
256	197	141	
233	181	150	
211	180	160	

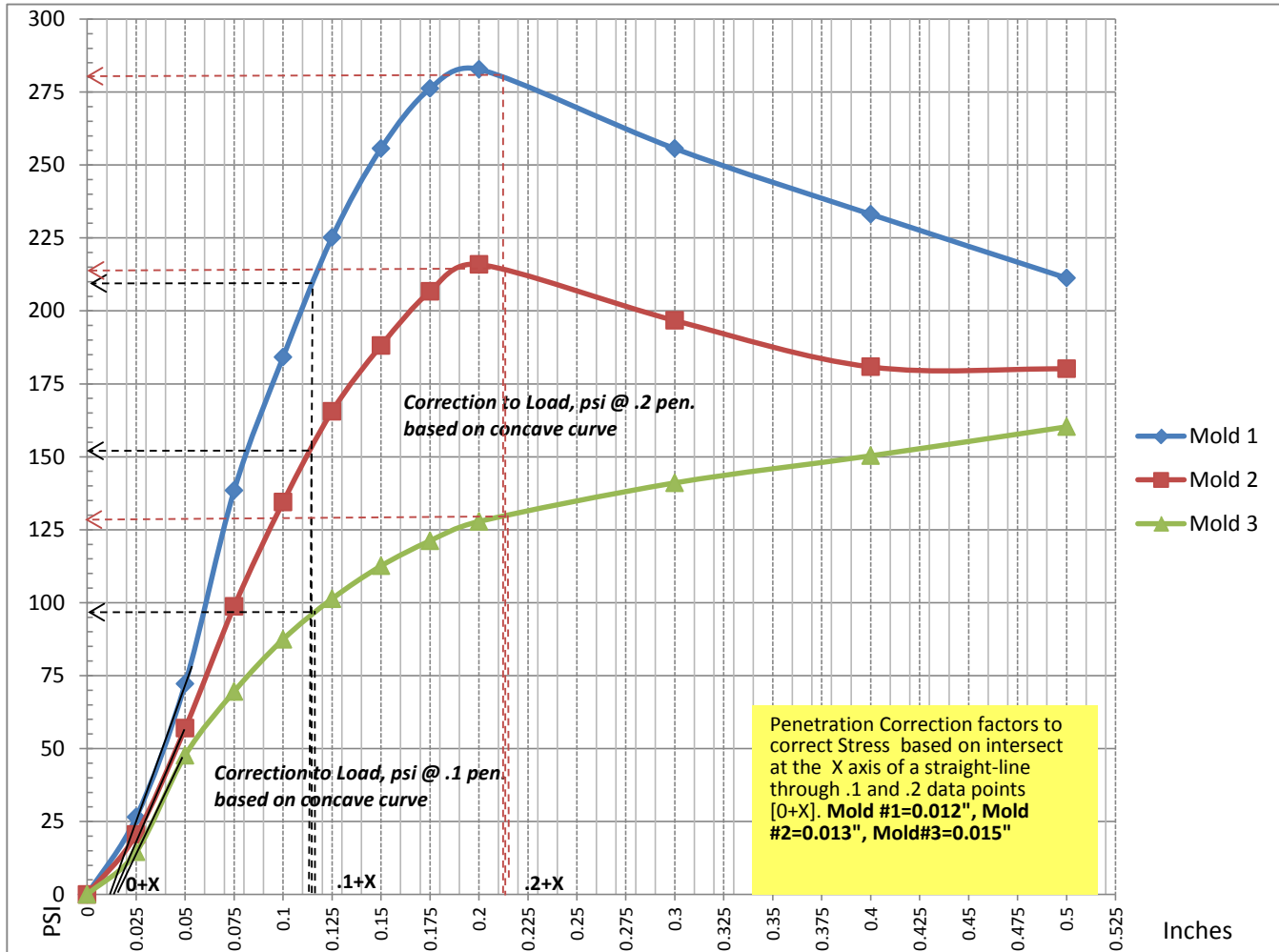
**Tested By:** RJP  
**Date Completed:** 11/24/2015

**Reviewed By:** Erik Campbell  
**Date:** 11/24/2015



## California Bearing Ratio Report -ASTM D1883

### Stress Penetration Curve



CBR values calculated from stress in psi (displayed along vertical axis). See **Page 1** of report for raw data results.

NOTE: The load penetration curve is necessary to determine if adjustments must be made to 0.1" and 0.2" penetration readings due to surface irregularities or concave upward curves. Any corrected values obtained from this graph will be listed below.

Corrected Load Penetration Values (psi)				
Mold ID	0.1"		0.2"	
	Plotted	Corrected	Plotted	Corrected
Mold 1	184	209	283	280
Mold 2	134	152	216	214
Mold 3	87	97	128	123

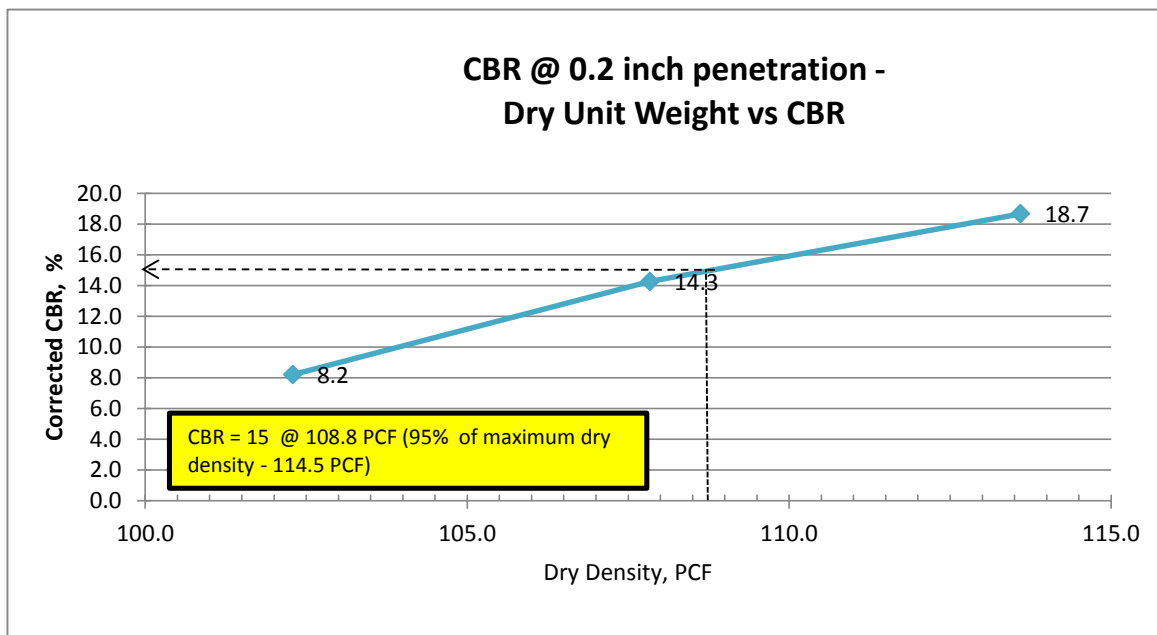
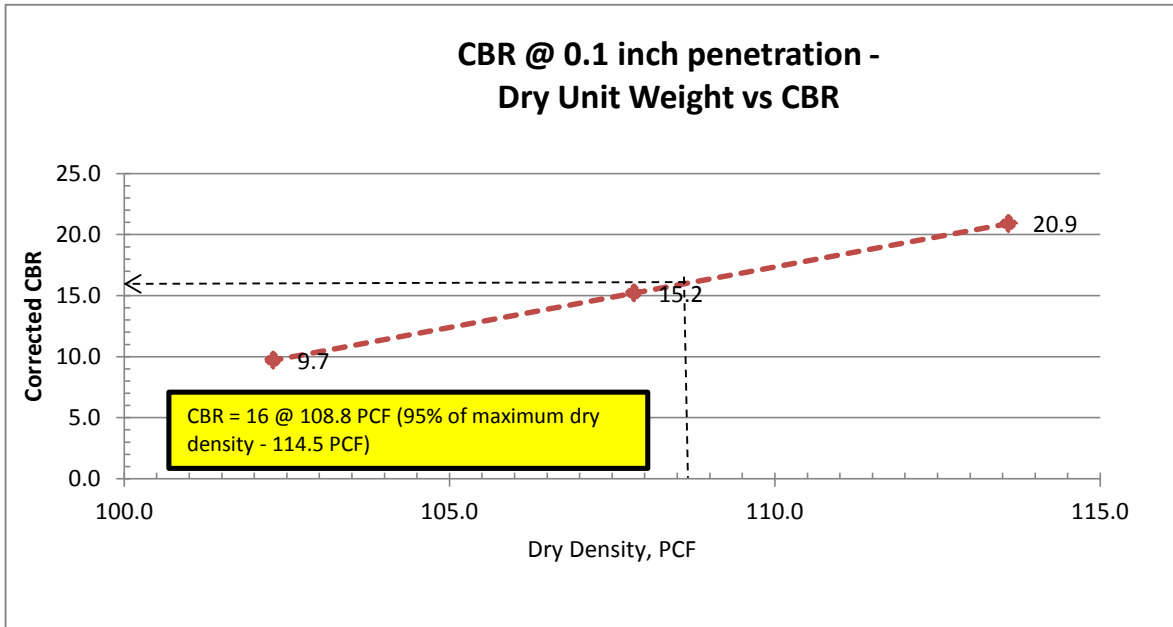
CBR @ Various Compaction Percentages			
	0.1"	0.2"	
90% (Mold #3)	9%	10%	*
95% (Mold #2)	16%	15%	*
100% (Mold #3)	21%	19%	*

\* Data obtained through interpolation/extrapolation



## California Bearing Ratio Report - ASTM D1883 Graph of Dry Unit Weight vs. CBR\*

\*CBR corrected, as needed, where Load Penetration Curves are concave due to surface irregularities





## Construction Testing & Engineering, Inc.

Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

### California Bearing Ratio Report -ASTM D1883

Job Name:	Blythe Municipal Airport Pavement Rehab
Job Number:	40-3264
Lab Number:	25802
Date Sampled:	11/10/2015
Date Tested:	11/27/2015
Location:	B-6 @ 1-5'
Sample Description:	Light Brown/Tan Sand

Compaction Data:	Mold 1	Mold 2	Mold 3
# of Blows:	60	29	13
Wt. Mold & Soil:	8612.6	8381.8	8175.6
Wt. Mold:	4216.7	4209.6	4211.4
Wt. Wet Soil:	4395.9	4172.2	3964.2
Wet Density (PCF):	129.0	122.5	116.4
Dry Density (PCF):	117.3	111.3	105.7
% Compaction:	100.2	95.1	90.4
CBR, Percent @ 0.1"	39.4	24.2	9.1
CBR, Percent @ 0.2"	40.9	25.7	10.9

Soak & Swell Data:	Mold 1	Mold 2	Mold 3
Initial Height (in.):	4.58	4.58	4.58
Initial Reading (in):	0.0000	0.0000	0.0000
96hr:	0.0000	0.0000	0.0000
Swell (in.):	0.0000	0.0000	0.0000
Percent Swell:	0.0	0.0	0.0

Load In Pounds			
Penetration Data:	Mold 1	Mold 2	Mold 3
0.025	100	52	64
0.050	320	188	138
0.075	638	364	210
0.100	976	552	274
0.125	1294	726	338
0.150	1548	880	398
0.175	1752	1052	442
0.200	1870	1165	492
0.300	1722	1104	634
0.400	1644	1098	714
0.500	1622	1084	766

Maximum Density Results		
Optimum Moist (%)		10.0
Max Density (pcf)		117.0
% Remolded:		NA
Density of Remold:		NA
Initial Moisture:		10.0
CBR Mold Volume:		0.0751
Moisture Top 1"		
Mold 1	Wet. w/Tare:	1129.9
	Dry w/Tare:	1023.7
	Tare:	168
	Moist %:	12.4
Mold 2	Wet. w/Tare:	1108.2
	Dry w/Tare:	995.8
	Tare:	162.5
	Moist %:	13.5
Mold 3	Wet. w/Tare:	1110.3
	Dry w/Tare:	979.9
	Tare:	162
	Moist %:	15.9

Diameter of Piston:	1.96
Area of Piston:	3.02
Weight of Surcharge	15 lbs

Load In PSI			
Mold 1	Mold 2	Mold 3	
33	17	21	
106	62	46	
211	121	70	
323	183	91	
428	240	112	
513	291	132	
580	348	146	
619	386	163	
570	366	210	
544	364	236	
537	359	254	

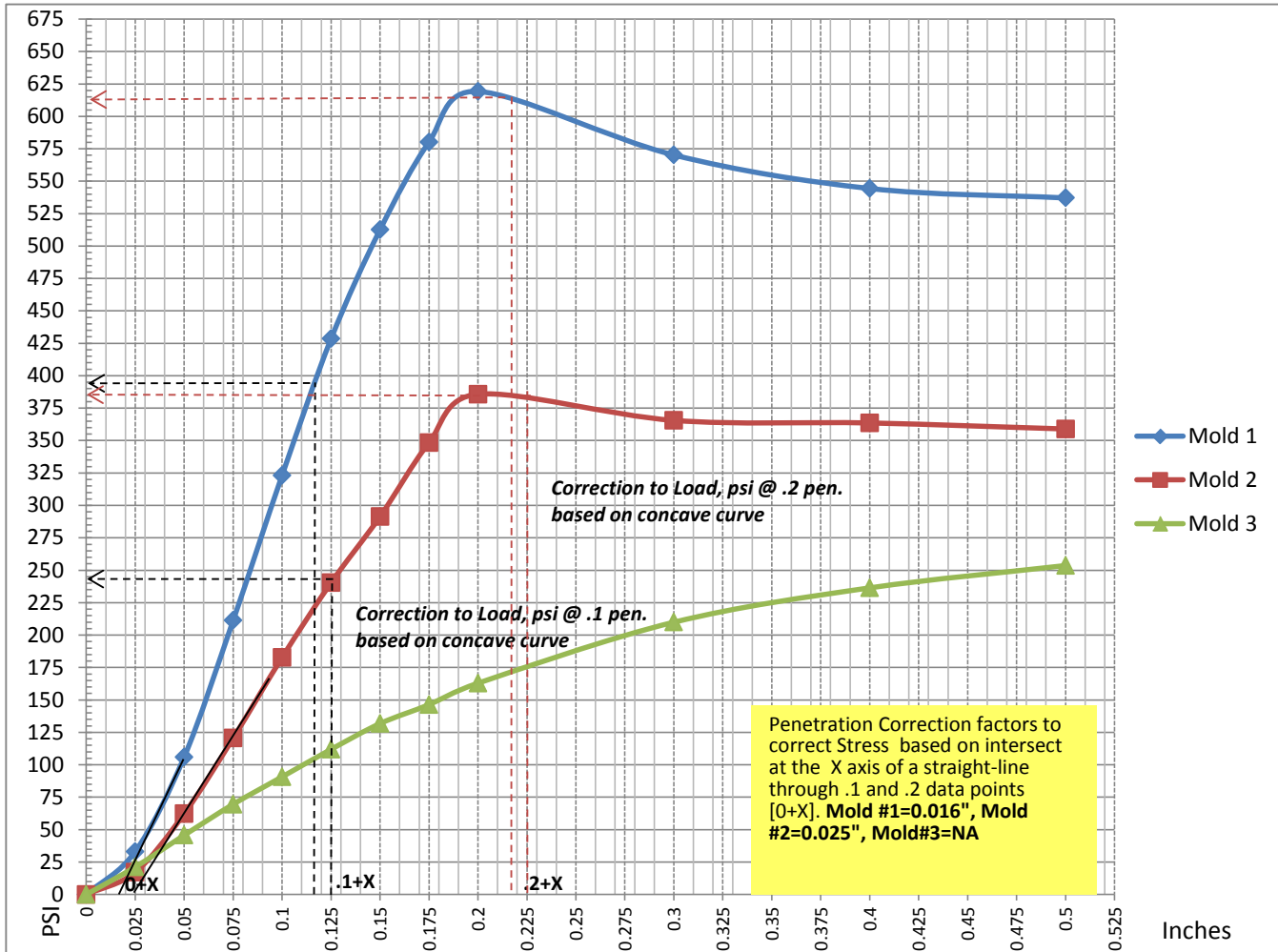
Tested By: Ryan Powney  
Date Completed: 12/2/2015

Reviewed By: Erik Campbell  
Date: 12/2/2015



## California Bearing Ratio Report -ASTM D1883

### Stress Penetration Curve



CBR values calculated from stress in psi (displayed along vertical axis). See **Page 1** of report for raw data results.

NOTE: The load penetration curve is necessary to determine if adjustments must be made to 0.1" and 0.2" penetration readings due to surface irregularities or concave upward curves. Any corrected values obtained from this graph will be listed below.

Corrected Load Penetration Values (psi)				
Mold ID	0.1"		0.2"	
	Plotted	Corrected	Plotted	Corrected
Mold 1	323	394	619	613
Mold 2	183	242	386	385
Mold 3	91	91	163	163

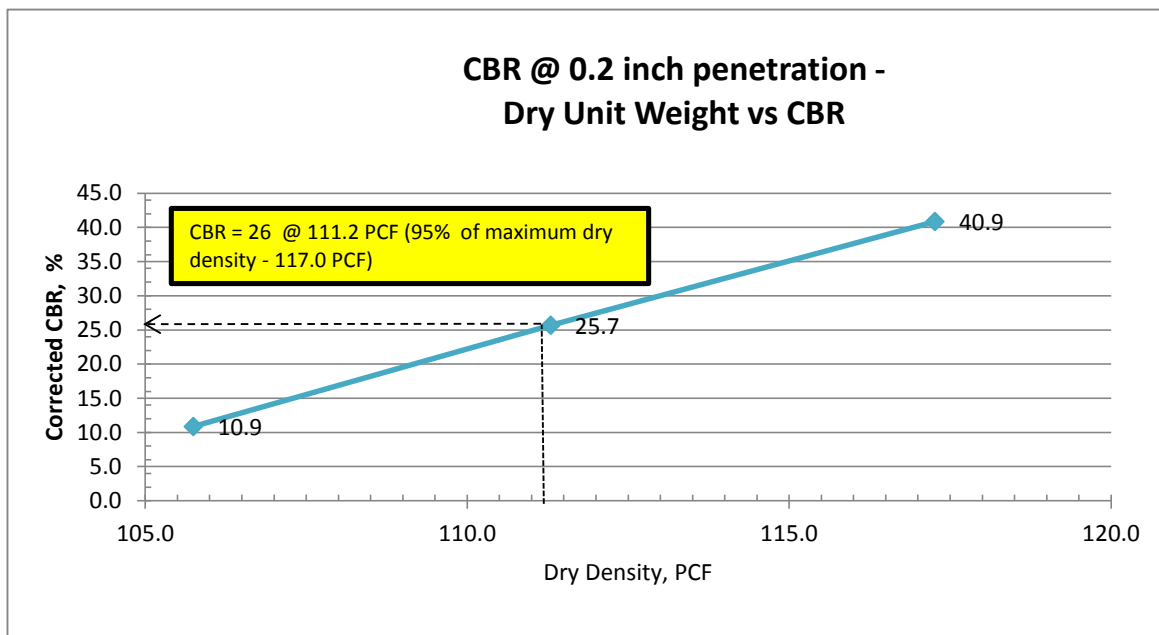
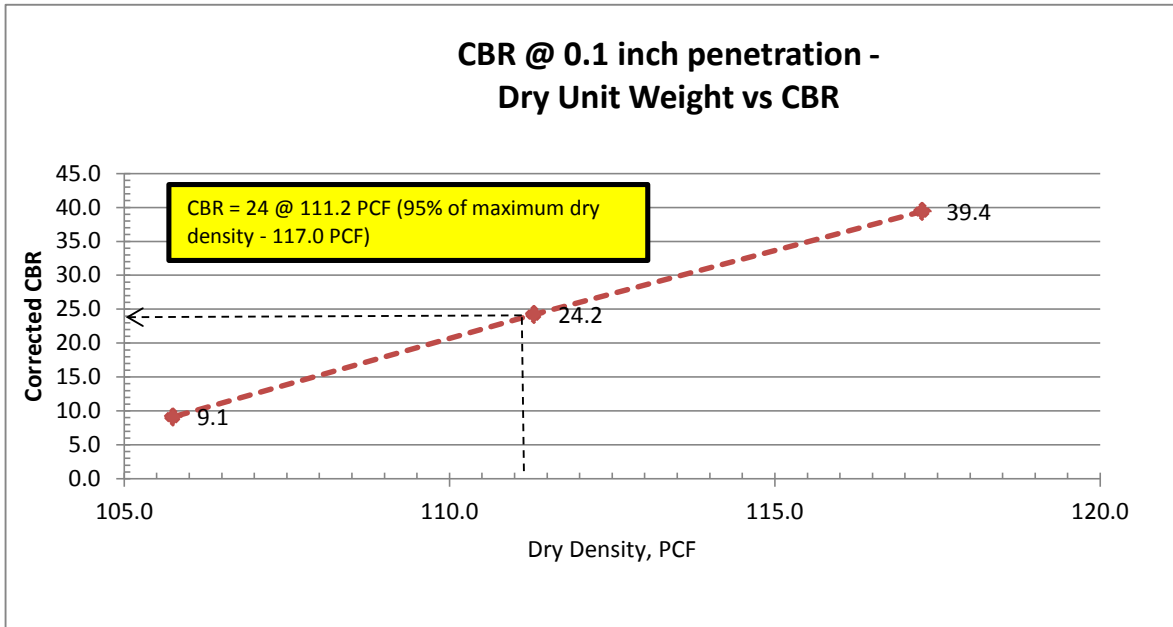
CBR @ Various Compaction Percentages			
	0.1"	0.2"	
90% (Mold #3)	9%	11%	
95% (Mold #2)	24%	26%	
100% (Mold #1)	39%	41%	

\* Data obtained through interpolation/extrapolation



## California Bearing Ratio Report - ASTM D1883 Graph of Dry Unit Weight vs. CBR\*

\*CBR corrected, as needed, where Load Penetration Curves are concave due to surface irregularities





## Construction Testing & Engineering, Inc.

Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

### California Bearing Ratio Report -ASTM D1883

Job Name:	Blythe Municipal Airport Pavement Rehab
Job Number:	40-3264
Lab Number:	25788
Date Sampled:	11/10/2015
Date Tested:	11/19/2015
Location:	B-8 @ 1' - 5'
Sample Description:	Light Brown/Tan Silty Sand

Compaction Data:	Mold 1	Mold 2	Mold 3
# of Blows:	56	25	10
Wt. Mold & Soil:	8629.9	8435.9	8202.9
Wt. Mold:	4320.0	4323.9	4327.9
Wt. Wet Soil:	4309.9	4112.0	3875.0
Wet Density (PCF):	126.5	120.7	113.8
Dry Density (PCF):	116.4	111.0	104.6
% Compaction:	98.9	94.3	88.9
CBR, Percent @ 0.1"	50.1	18.4	7.1
CBR, Percent @ 0.2"	36.3	16.1	6.5

Soak & Swell Data:	Mold 1	Mold 2	Mold 3
Initial Height (in.):	4.58	4.58	4.58
Initial Reading (in):	0.0000	0.0000	0.0000
96hr:	0.0000	0.0000	0.0000
Swell (in.):	0.0000	0.0000	0.0000
Percent Swell:	0.0	0.0	0.0

Load In Pounds			
Penetration Data:	Mold 1	Mold 2	Mold 3
0.025	360	148	84
0.050	822	318	138
0.075	1198	448	178
0.100	1466	536	214
0.125	1646	610	246
0.150	1730	662	264
0.175	1726	704	282
0.200	1656	735	296
0.300	1566	812	368
0.400	1552	866	420
0.500	1588	840	466

Maximum Density Results		
Optimum Moist (%)		8.7
Max Density (pcf)		117.7
% Remolded:		NA
Density of Remold:		NA
Initial Moisture:		8.7
CBR Mold Volume:		0.0751
Moisture Top 1"		
Mold 1	Wet. w/Tare:	1168.2
	Dry w/Tare:	1043.3
	Tare:	168
	Moist %:	14.3
Mold 2	Wet. w/Tare:	1048.3
	Dry w/Tare:	930.3
	Tare:	162.6
	Moist %:	15.4
Mold 3	Wet. w/Tare:	1065.2
	Dry w/Tare:	944.5
	Tare:	162
	Moist %:	15.4

Diameter of Piston:	1.96
Area of Piston:	3.02
Weight of Surcharge	10lbs

Load In PSI			
Mold 1	Mold 2	Mold 3	
119	49	28	
272	105	46	
397	148	59	
485	177	71	
545	202	81	
573	219	87	
572	233	93	
548	243	98	
519	269	122	
514	287	139	
526	278	154	

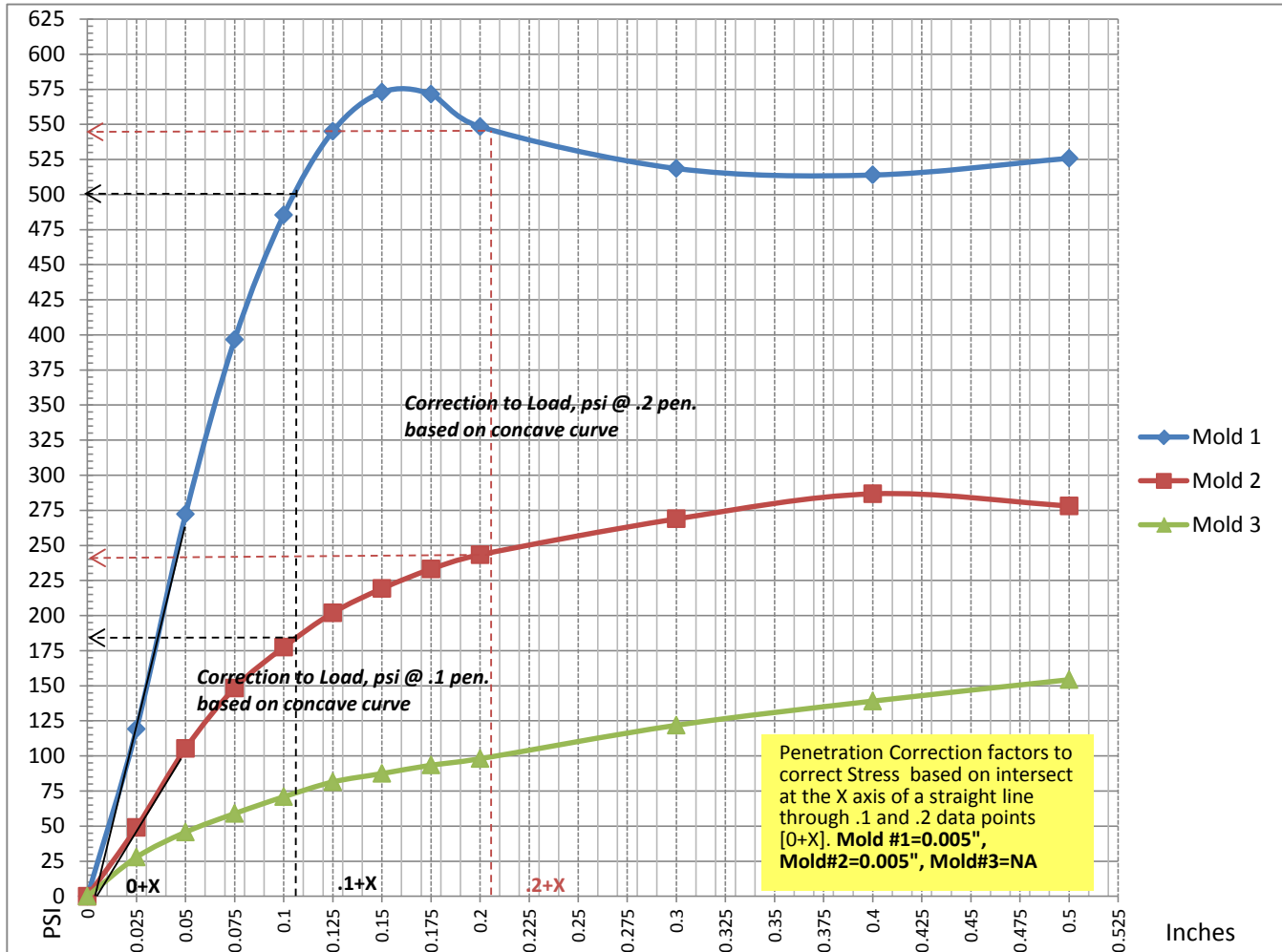
Tested By: RJP  
Date Completed: 11/24/2015

Reviewed By: Erik Campbell  
Date: 11/24/2015



## California Bearing Ratio Report -ASTM D1883

### Stress Penetration Curve



CBR values calculated from stress in psi (displayed along vertical axis). See **Page 1** of report for raw data results.

NOTE: The load penetration curve is necessary to determine if adjustments must be made to 0.1" and 0.2" penetration readings due to surface irregularities or concave upward curves. Any corrected values obtained from this graph will be listed below.

Corrected Load Penetration Values (psi)				
Mold ID	0.1"		0.2"	
	Plotted	Corrected	Plotted	Corrected
Mold 1	485	501	548	545
Mold 2	177	184	243	241
Mold 3	71	71	98	98

CBR @ Various Compaction Percentages			
	0.1"	0.2"	
90% (Mold # 3)	9%	8%	*
95% (Mold #2)	22%	19%	*
100% (Mold #1)	58%	42%	*

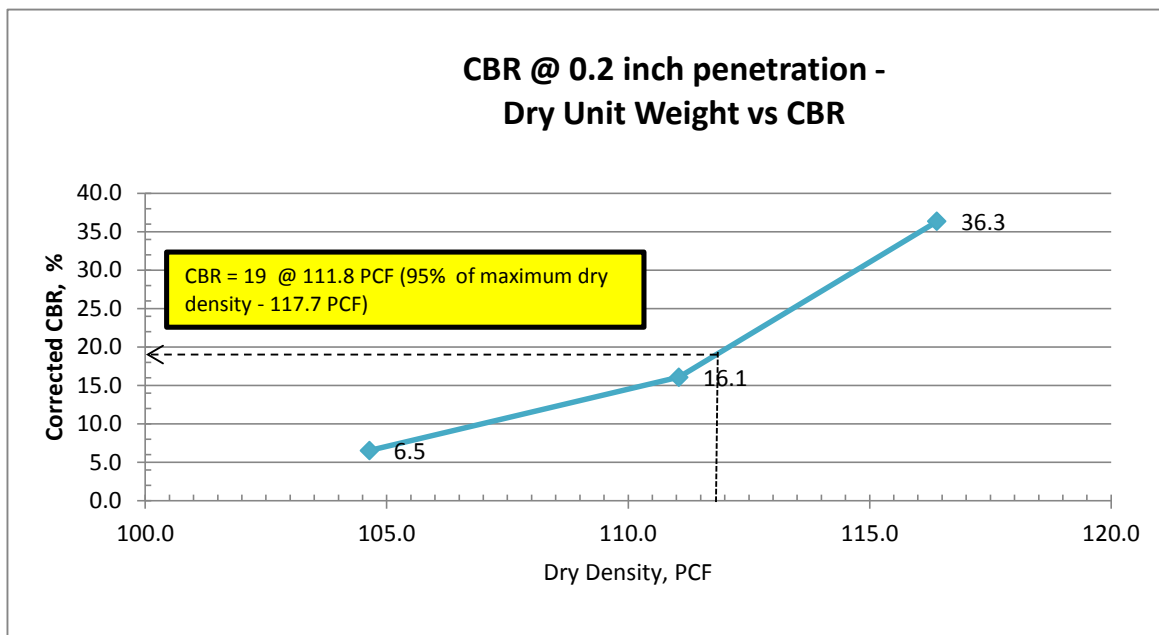
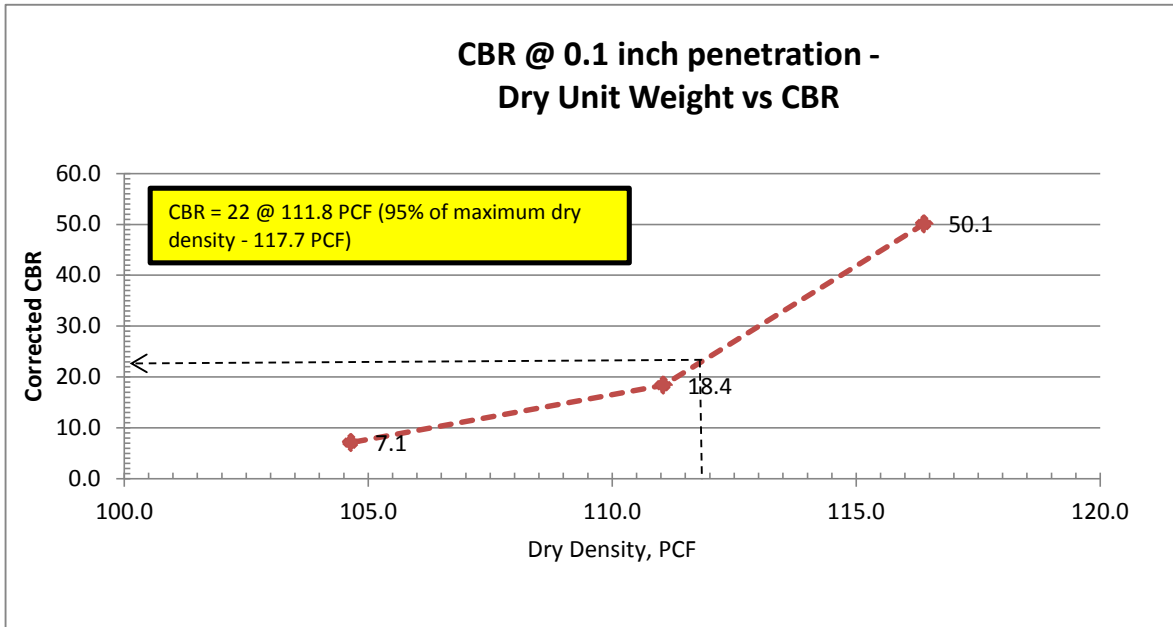
\* Data obtained through interpolation/extrapolation





## California Bearing Ratio Report - ASTM D1883 Graph of Dry Unit Weight vs. CBR\*

\*CBR corrected, as needed, where Load Penetration Curves are concave due to surface irregularities





# Construction Testing & Engineering, Inc.

Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

## California Bearing Ratio Report -ASTM D1883

<b>Job Name:</b>	Blythe Municipal Airport Pavement Rehab
<b>Job Number:</b>	40-3264
<b>Lab Number:</b>	25802
<b>Date Sampled:</b>	11/10/2015
<b>Date Tested:</b>	11/25/2015
<b>Location:</b>	B-9 @ 1-5'
<b>Sample Description:</b>	Light Brown/Tan Sand

<b>Compaction Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
<b># of Blows:</b>	<b>60</b>	<b>29</b>	<b>13</b>
<b>Wt. Mold &amp; Soil:</b>	8717.3	8501.0	8279.6
<b>Wt. Mold:</b>	4320.0	4323.9	4327.9
<b>Wt. Wet Soil:</b>	4397.3	4177.1	3951.7
<b>Wet Density (PCF):</b>	129.1	122.6	116.0
<b>Dry Density (PCF):</b>	117.3	111.4	105.4
<b>% Compaction:</b>	100.1	95.1	90.0
<b>CBR, Percent @ 0.1"</b>	43.0	26.0	11.9
<b>CBR, Percent @ 0.2"</b>	39.7	25.7	13.4

<b>Soak &amp; Swell Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
<b>Initial Height (in.):</b>	4.58	4.58	4.58
<b>Initial Reading (in):</b>	0.0000	0.0000	0.0000
<b>96hr:</b>	0.0000	0.0000	0.0000
<b>Swell (in.):</b>	0.0000	0.0000	0.0000
<b>Percent Swell:</b>	0.0	0.0	0.0

<b>Load In Pounds</b>			
<b>Penetration Data:</b>	<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>
0.025	130	78	62
0.050	420	198	150
0.075	778	320	248
<b>0.100</b>	1098	532	330
0.125	1422	722	400
0.150	1632	886	468
0.175	1768	1022	532
<b>0.200</b>	1816	1114	590
0.300	1700	1240	736
0.400	1622	1264	795
0.500	1598	1250	818

<b>Maximum Density Results</b>		
<b>Optimum Moist (%)</b>		10.0
<b>Max Density (pcf)</b>		117.2
<b>% Remolded:</b>		NA
<b>Density of Remold:</b>		NA
<b>Initial Moisture:</b>		10.0
<b>CBR Mold Volume:</b>		0.0751
<b>Moisture Top 1"</b>		
<b>Mold 1</b>	<b>Wet. w/Tare:</b>	1000.5
	<b>Dry w/Tare:</b>	907.9
	<b>Tare:</b>	172.4
	<b>Moist %:</b>	12.6
<b>Mold 2</b>	<b>Wet. w/Tare:</b>	1031.0
	<b>Dry w/Tare:</b>	929.7
	<b>Tare:</b>	177.0
	<b>Moist %:</b>	13.5
<b>Mold 3</b>	<b>Wet. w/Tare:</b>	1022.1
	<b>Dry w/Tare:</b>	905.1
	<b>Tare:</b>	156.6
	<b>Moist %:</b>	15.6

<b>Diameter of Piston:</b>	1.96
<b>Area of Piston:</b>	3.02
<b>Weight of Surcharge</b>	<b>15 lbs.</b>

<b>Load In PSI</b>			
<b>Mold 1</b>	<b>Mold 2</b>	<b>Mold 3</b>	
43	26	21	
139	66	50	
258	106	82	
<b>364</b>	<b>176</b>	<b>109</b>	
471	239	132	
540	293	155	
585	338	176	
<b>601</b>	<b>369</b>	<b>195</b>	
563	411	244	
537	419	263	
529	414	271	

0+X

**Tested By:** Ryan Powney  
**Date Completed:** 12/2/2015

**Reviewed By:** Erik Campbell  
**Date:** 12/2/2015

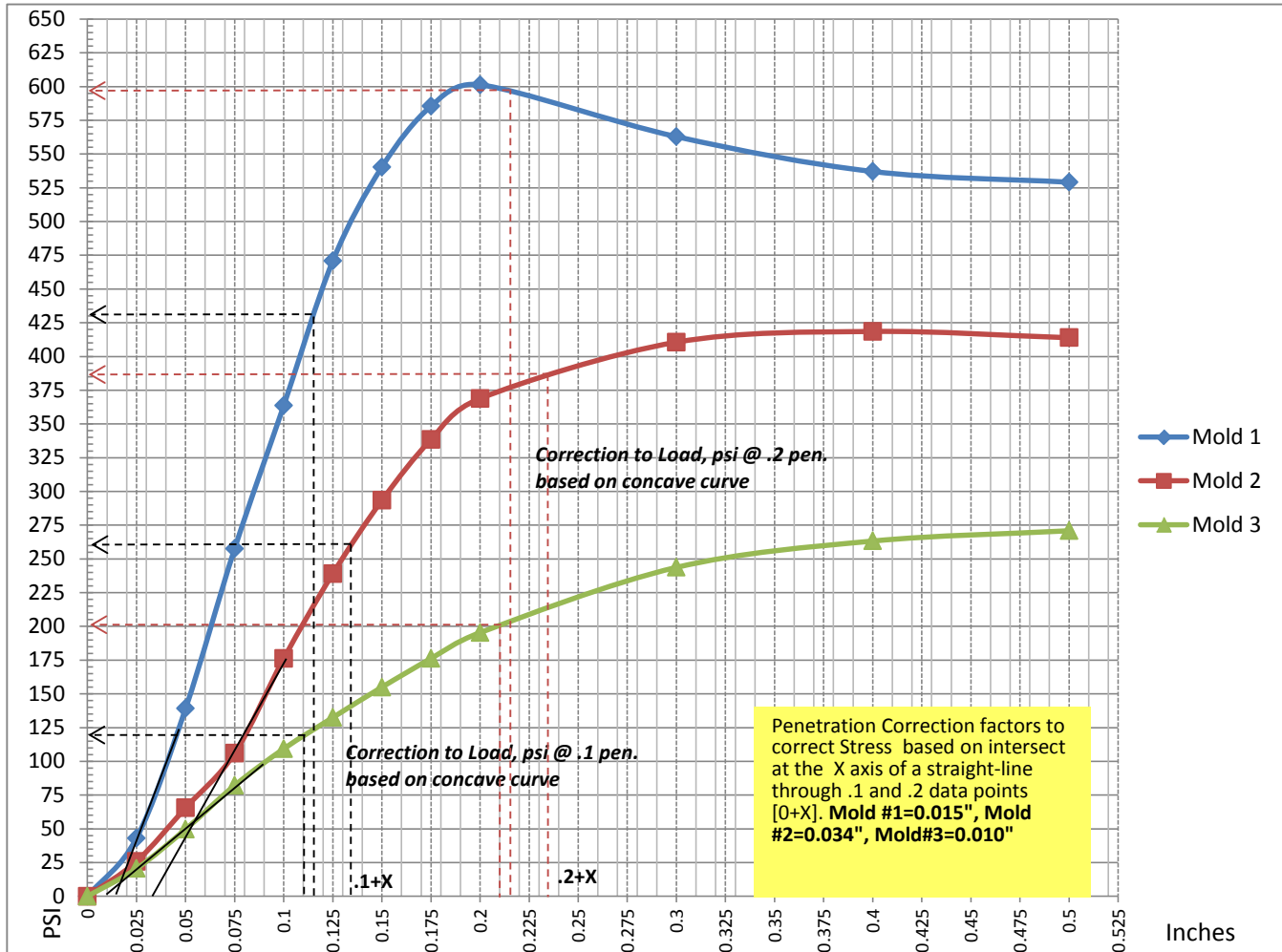


Construction Testing & Engineering, Inc.

Inspection | Testing | Geotechnical | Environmental & Construction Engineering | Civil Engineering | Surveying

## California Bearing Ratio Report -ASTM D1883

### Stress Penetration Curve



CBR values calculated from stress in psi (displayed along vertical axis). See **Page 1** of report for raw data results.

NOTE: The load penetration curve is necessary to determine if adjustments must be made to 0.1" and 0.2" penetration readings due to surface irregularities or concave upward curves. Any corrected values obtained from this graph will be listed below.

Corrected Load Penetration Values (psi)				
Mold ID	0.1"		0.2"	
	Plotted	Corrected	Plotted	Corrected
Mold 1	364	430	601	596
Mold 2	176	260	369	386
Mold 3	109	119	195	201

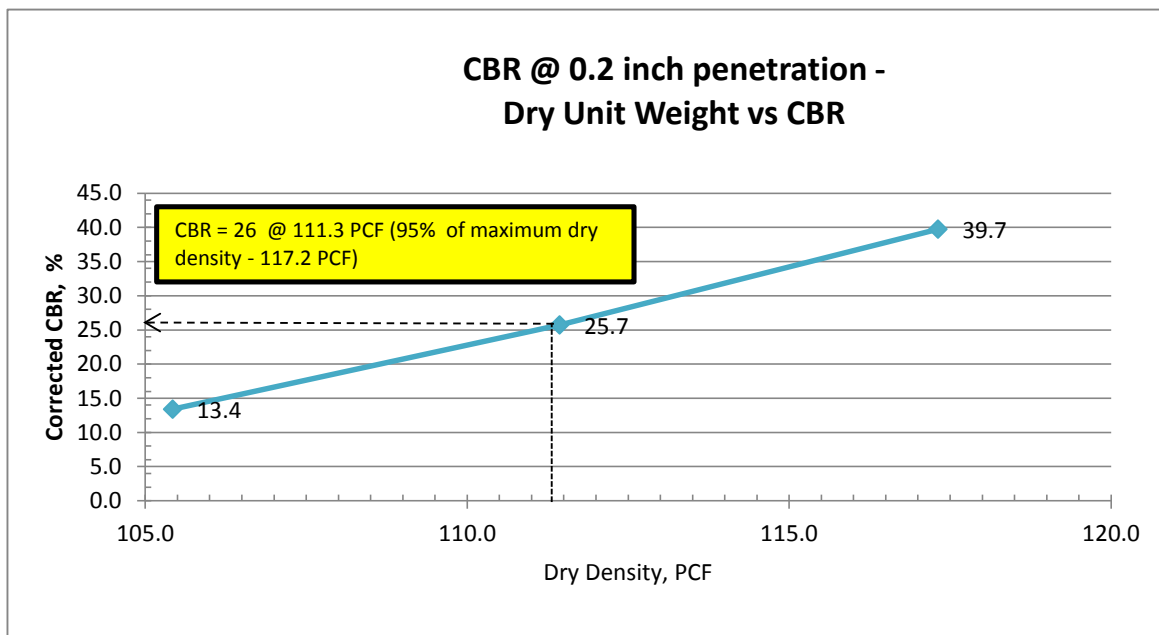
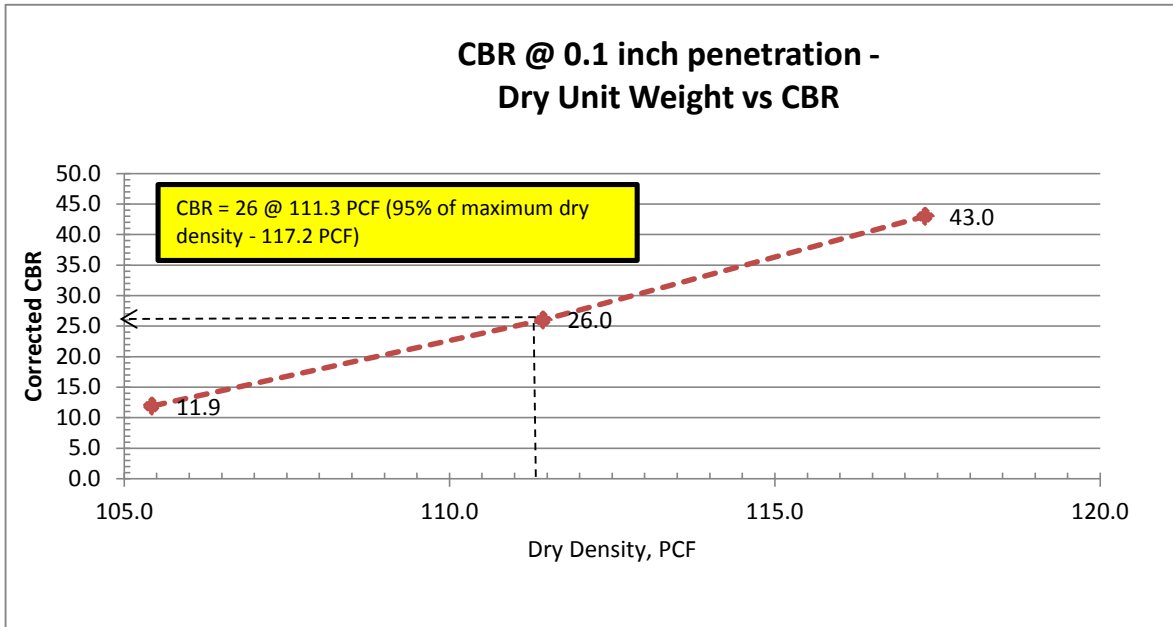
CBR @ Various Compaction Percentages			
	0.1"	0.2"	
90% (Mold #3)	12%	13%	
95% (Mold #2)	26%	26%	
100% (Mold #1)	43%	40%	

\* Data obtained through interpolation/extrapolation



## California Bearing Ratio Report - ASTM D1883 Graph of Dry Unit Weight vs. CBR\*

\*CBR corrected, as needed, where Load Penetration Curves are concave due to surface irregularities





# LABORATORY COMPACTION OF SOIL (MOD.)

ASTM D 698

Project Name: Blythe Municipal Airport  
 Project No.: 40-3264  
 Lab No.: 25788  
 Sample No.: B-2  
 Sample Description: Light Brown/Tan Beach Sand

Tested By: RJP  
 Calculated By: RJP  
 Sampled By: RE  
 Depth (ft.): 1' - 5'

Date: 11/18/2015  
 Date: 11/18/2015  
 Date: 11/10/2015

Moisture Added (ml)	100	150	200	50	
TEST NO.	1	2	3	4	
Wt. Comp. Soil + Mold (g)	3850	3882	3907	3797	
Wt. of Mold (g)	2037	2037	2037	2037	
Net Wt. of Soil (g)	1812	1845	1869	1760	
	B-18	B-6	B-5		
Wet Wt. of Soil + Cont. (g)	838.4	905.0	890.7	871.3	
Dry Wt. of Soil + Cont. (g)	805.9	857.5	831.0	850.0	
Wt. of Container (g)	197.9	195.8	181.8	190.1	
Moisture Content (%)	5.3	7.2	9.2	3.2	
Wet Density (pcf)	120.3	122.5	124.1	116.8	
Dry Density (pcf)	114.2	114.3	113.7	113.2	

Preparation Method: Dry ☒ X  
 Moist ☐

Mechanical Rammer ☐  
 Manual Rammer ☒ X

Hammer Weight: **5.0 lb.**

Drop: **12.00 in.**

Mold Volume (ft.<sup>3</sup>): **0.03320**

## PROCEDURE USED

### Procedure A

Soil Passing No. 4 (4.75 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 May be used if No.4 retained < 20%

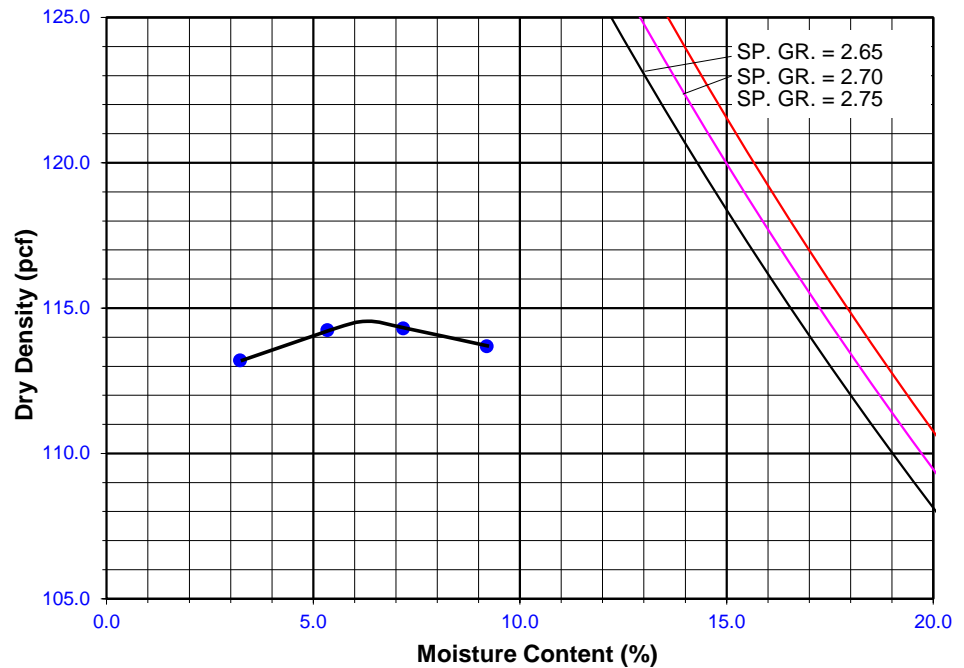
### Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 Use if + #4 > 20% and + 3/8 " < 20%

**X**

### Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve  
 Mold: 6 in. (152.4 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 56 (fifty-six)  
 Use if + 3/8 in > 20% and + 3/4 in < 30%



## OVERSIZE FRACTION

Total Sample Weight (g): **N/A**

Weight Retained (g)      Percent Retained

Plus 3/4" **N/A**

Plus 3/8" **N/A**

Plus #4 **N/A**

Maximum Dry Density (pcf) **114.5**

Optimum Moisture Content (%) **6.3**

Rock Correction Applied per ASTM D 4718

Maximum Dry Density (pcf) **N/A**

Optimum Moisture Content (%) **N/A**



# LABORATORY COMPACTION OF SOIL (MOD.)

ASTM D 698

Project Name: Blythe Municipal Airport  
 Project No.: 40-3264  
 Lab No.: 25802  
 Sample No.: B-6  
 Sample Description: Light Brown/Tan Sand

Tested By: RJP  
 Calculated By: RJP  
 Sampled By: RE  
 Depth (ft.): 1' - 5'

Date: 11/24/2015  
 Date: 11/24/2015  
 Date: 11/10/2015

Moisture Added (ml)	150	200	250	300	0
TEST NO.	1	2	3	4	
Wt. Comp. Soil + Mold (g)	3868	3938	3977	3990	
Wt. of Mold (g)	2031	2031	2031	2031	
Net Wt. of Soil (g)	1837	1907	1946	1959	
	c-5	c-6	c-4	c-1	c-2
Wet Wt. of Soil + Cont. (g)	907.9	1026.4	1016.0	1009.8	1093.6
Dry Wt. of Soil + Cont. (g)	860.5	955.1	932.9	914.5	1085.1
Wt. of Container (g)	177.0	156.7	172.6	173.9	162.2
Moisture Content (%)	6.9	8.9	10.9	12.9	0.9
Wet Density (pcf)	122.0	126.6	129.2	130.1	
Dry Density (pcf)	114.1	116.3	116.5	115.3	

Preparation Method: Dry ☒  
 Moist ☐

Mechanical Rammer ☐  
 Manual Rammer ☒

Hammer Weight: **5.0 lb.**

Drop: **12.00 in.**

Mold Volume (ft.<sup>3</sup>): **0.03320**

## PROCEDURE USED

### Procedure A

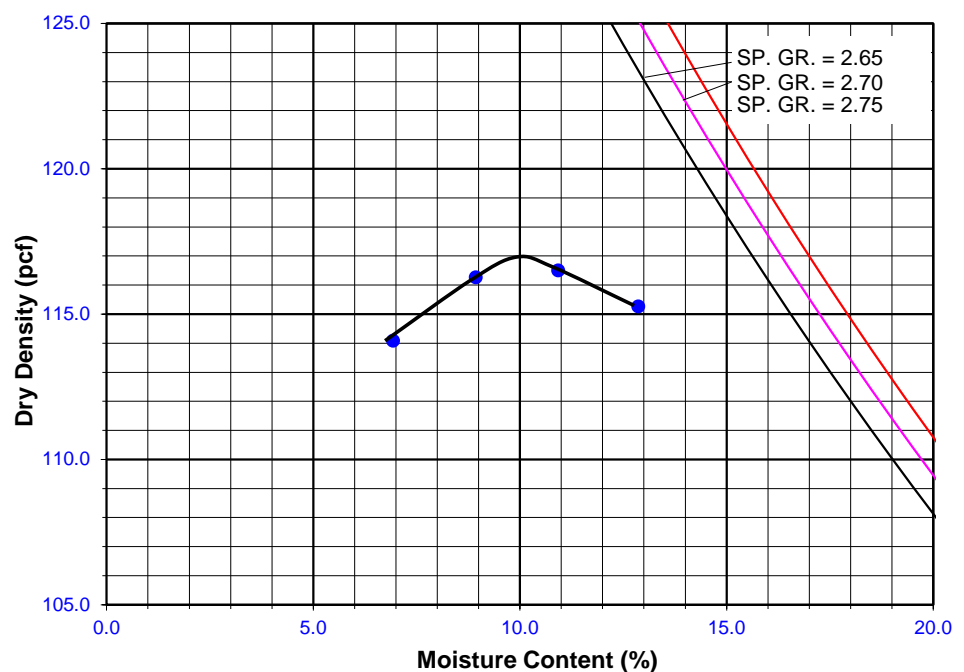
Soil Passing No. 4 (4.75 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 May be used if No.4 retained < 20%

### Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 Use if + #4 > 20% and + 3/8" < 20%

### ☒ Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve  
 Mold: 6 in. (152.4 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 56 (fifty-six)  
 Use if + 3/8 in > 20% and + 3/4 in < 30%



## OVERSIZE FRACTION

Total Sample Weight (g): **N/A**

Weight Retained (g)      Percent Retained

Plus 3/4" **N/A**

Plus 3/8" **N/A**

Plus #4 **N/A**

Maximum Dry Density (pcf) **117.0**

Optimum Moisture Content (%) **10.0**

Rock Correction Applied per ASTM D 4718

Maximum Dry Density (pcf) **N/A**

Optimum Moisture Content (%) **N/A**



# LABORATORY COMPACTION OF SOIL (MOD.)

ASTM D 698

Project Name: Blythe Municipal Airport  
 Project No.: 40-3264  
 Lab No.: 25788  
 Sample No.: B-8  
 Sample Description: Light Brown/Tan Beach Sand

Tested By: RJP  
 Calculated By: RJP  
 Sampled By: RE  
 Depth (ft.): 2' - 5'

Date: 11/18/2015  
 Date: 11/18/2015  
 Date: 11/10/2015

Moisture Added (ml)	100	150	200	250	
TEST NO.	1	2	3	4	
Wt. Comp. Soil + Mold (g)	3835	3922	3969	3960	
Wt. of Mold (g)	2037	2037	2037	2037	
Net Wt. of Soil (g)	1798	1885	1932	1923	
Wet Wt. of Soil + Cont. (g)	854.9	849.2	861.3	841.3	
Dry Wt. of Soil + Cont. (g)	820.3	802.9	803.3	774.3	
Wt. of Container (g)	193.4	188.5	191.5	189.8	
Moisture Content (%)	5.5	7.5	9.5	11.5	
Wet Density (pcf)	119.4	125.2	128.3	127.7	
Dry Density (pcf)	113.1	116.4	117.2	114.5	

Preparation Method: Dry ☒  
Moist ☐

Mechanical Rammer ☐  
 Manual Rammer ☒

Hammer Weight: 5.0 lb.

Drop: 12.00 in.

Mold Volume (ft.<sup>3</sup>): 0.03320

## PROCEDURE USED

☒

### Procedure A

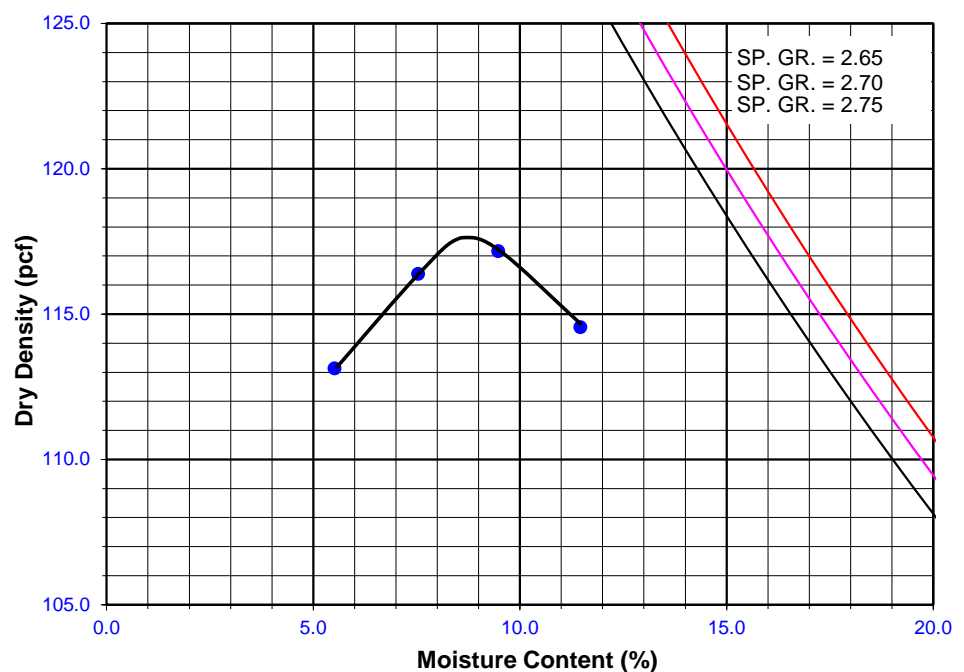
Soil Passing No. 4 (4.75 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 May be used if No.4 retained < 20%

### Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 Use if + #4 > 20% and + 3/8" < 20%

### Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve  
 Mold: 6 in. (152.4 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 56 (fifty-six)  
 Use if + 3/8 in > 20% and + 3/4 in < 30%



## OVERSIZE FRACTION

Total Sample Weight (g): N/A

Weight Retained (g) Percent Retained

Plus 3/4" N/A

Plus 3/8"

Plus #4

Maximum Dry Density (pcf) 117.7

Optimum Moisture Content (%) 8.7

Rock Correction Applied per ASTM D 4718

Maximum Dry Density (pcf) N/A

Optimum Moisture Content (%) N/A



# LABORATORY COMPACTION OF SOIL (MOD.)

ASTM D 698

Project Name: Blythe Municipal Airport  
 Project No.: 40-3264  
 Lab No.: 25802  
 Sample No.: B-9  
 Sample Description: Light Brown/Tan Sand

Tested By: RJP  
 Calculated By: RJP  
 Sampled By: RE  
 Depth (ft.): 1' - 5'

Date: 11/24/2015  
 Date: 11/24/2015  
 Date: 11/10/2015

Moisture Added (ml)	150	200	250	300	0
TEST NO.	1	2	3	4	
Wt. Comp. Soil + Mold (g)	3884	3942	3988	3999	
Wt. of Mold (g)	2037	2037	2037	2037	
Net Wt. of Soil (g)	1846	1905	1951	1962	
Wet Wt. of Soil + Cont. (g)	835.7	959.6	1027.1	995.0	1020.9
Dry Wt. of Soil + Cont. (g)	793.3	897.0	944.7	902.5	1014.8
Wt. of Container (g)	162.1	168.2	174.1	171.8	158.9
Moisture Content (%)	6.7	8.6	10.7	12.7	0.7
Wet Density (pcf)	122.6	126.5	129.5	130.3	
Dry Density (pcf)	114.9	116.5	117.0	115.6	

Preparation Method: Dry ☒ Moist ☐

Mechanical Rammer ☐  
 Manual Rammer ☒

Hammer Weight: **5.0 lb.**

Drop: **12.00 in.**

Mold Volume (ft.<sup>3</sup>): **0.03320**

## PROCEDURE USED

### Procedure A

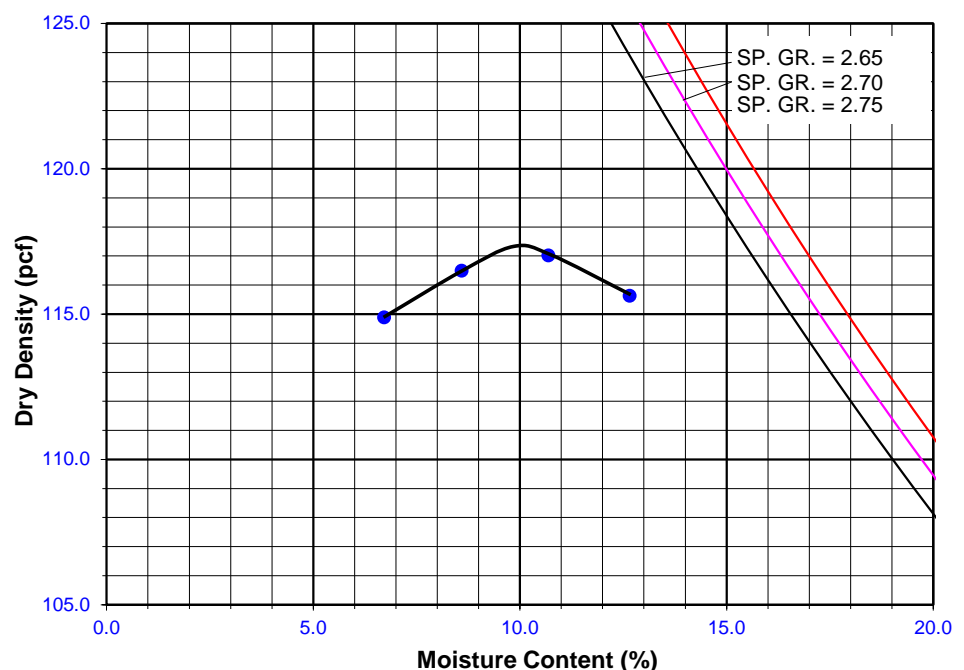
Soil Passing No. 4 (4.75 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 May be used if No.4 retained < 20%

### Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve  
 Mold: 4 in. (101.6 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 25 (twenty-five)  
 Use if + #4 > 20% and + 3/8" < 20%

### ☒ Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve  
 Mold: 6 in. (152.4 mm) diameter  
 Layers: 3 (Three)  
 Blows per layer: 56 (fifty-six)  
 Use if + 3/8 in > 20% and + #4 in < 30%



## OVERSIZE FRACTION

Total Sample Weight (g): **N/A**

Weight Retained (g) Percent Retained

Plus 3/4" **N/A**

Plus 3/8" **N/A**

Plus #4 **N/A**

Maximum Dry Density (pcf) **117.2**

Optimum Moisture Content (%) **10.0**

Rock Correction Applied per ASTM D 4718

Maximum Dry Density (pcf) **N/A**

Optimum Moisture Content (%) **N/A**





**BABCOCK Laboratories, Inc.**  
*The Standard of Excellence for Over 100 Years*

Client Name: Construction Testing & Eng., Inc.  
Contact: Robert Ellerbusch  
Address: 14538 Meridian Parkway, Suite A  
Riverside, CA 92518

Analytical Report: Page 1 of 3  
Project Name: Const. Test.-Soils  
Project Number: [none]

**Work Order Number: B5K1232**

Report Date: 22-Nov-2015

Received on Ice (Y/N): Yes Temp: 22 °C

Attached is the analytical report for the sample(s) received for your project. Below is a list of the individual sample descriptions with the corresponding laboratory number(s). Also, enclosed is a copy of the Chain of Custody document (if received with your sample(s)). Please note any unused portion of the sample(s) may be responsibly discarded after 30 days from the above report date, unless you have requested otherwise.

Thank you for the opportunity to serve your analytical needs. If you have any questions or concerns regarding this report please contact our client service department.

**Sample Identification**

<u>Lab Sample #</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>By</u>	<u>Date Submitted</u>	<u>By</u>
B5K1232-01	40-3264: B-5 @ 1-5'	Soil	11/10/15 12:00	Rob Ellerbusch	11/12/15 15:53	Robert Ellerbusch

*mailing*

P.O. Box 432  
Riverside, CA 92502-0432

*location*

6100 Quail Valley Court  
Riverside, CA 92507-0704

P 951 653 3351  
F 951 653 1662  
[www.babcocklabs.com](http://www.babcocklabs.com)

NELAP no. 02101CA  
CA Elap no. 2698  
EPA no. CA00102

**BABCOCK Laboratories, Inc.***The Standard of Excellence for Over 100 Years*

Client Name: Construction Testing & Eng., Inc.  
Contact: Robert Ellerbusch  
Address: 14538 Meridian Parkway, Suite A  
Riverside, CA 92518

Analytical Report: Page 2 of 3  
Project Name: Const. Test.-Soils  
Project Number: [none]

**Work Order Number: B5K1232**

Report Date: 22-Nov-2015

Received on Ice (Y/N): Yes Temp: 22 °C

Laboratory Reference Number**B5K1232-01**Sample Description

40-3264: B-5 @ 1-5'

Matrix

Soil

Sampled Date/Time

11/10/15 12:00

Received Date/Time

11/12/15 15:53

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Saturated Paste							
pH	7.1	0.1	pH Units	S-1.10 W.S.	11/20/15 14:55	cdcs	
Minimum Resistivity	8500	10	ohm-cm	Cal Trans 643	11/20/15 14:55	cdcs	
Water Extract							
Chloride	54	10	ppm	Ion Chromat.	11/19/15 17:19	dcb	N-SAG, N_WEX
Sulfate	60	10	ppm	Ion Chromat.	11/19/15 17:19	dcb	N-SAG, N_WEX

*mailing*

P.O. Box 432  
Riverside, CA 92502-0432

*location*

6100 Quail Valley Court  
Riverside, CA 92507-0704

P 951 653 3351  
F 951 653 1662  
www.babcocklabs.com

NELAP no. 02101CA  
CA Elap no. 2698  
EPA no. CA00102



**BABCOCK Laboratories, Inc.**  
*The Standard of Excellence for Over 100 Years*

Client Name: Construction Testing & Eng., Inc.  
Contact: Robert Ellerbusch  
Address: 14538 Meridian Parkway, Suite A  
Riverside, CA 92518

Analytical Report: Page 3 of 3  
Project Name: Const. Test.-Soils  
Project Number: [none]

**Work Order Number: B5K1232**

Report Date: 22-Nov-2015

Received on Ice (Y/N): Yes Temp: 22 °C

## Notes and Definitions

N\_WEX Analyte determined on a 1:10 water extract from the sample.  
N-SAG Results reported in ppm are expressed on an air dried soil basis.  
ND: Analyte NOT DETECTED at or above the Method Detection Limit (**if MDL is reported**), otherwise at or above the Reportable Detection Limit (RDL)  
NR: Not Reported  
RDL: Reportable Detection Limit  
MDL: Method Detection Limit  
\*/": NELAP does not offer accreditation for this analyte/method/matrix combination

---

## Approval

Enclosed are the analytical results for the submitted sample(s). Babcock Laboratories certify the data presented as part of this report meet the minimum quality standards in the referenced analytical methods. Any exceptions have been noted. Babcock Laboratories and its officers and employees assume no responsibility and make no warranty, express or implied, for uses or interpretations made by any recipients, intended or unintended, of this report.

---

cc:

*mailing*

P.O. Box 432  
Riverside, CA 92502-0432

*location*

6100 Quail Valley Court  
Riverside, CA 92507-0704

P 951 653 3351

F 951 653 1662  
www.babcocklabs.com

e-Short\_No Alias

NELAP no. 02101CA  
CA Elap no. 2698  
EPA no. CA00102

## APPENDIX C

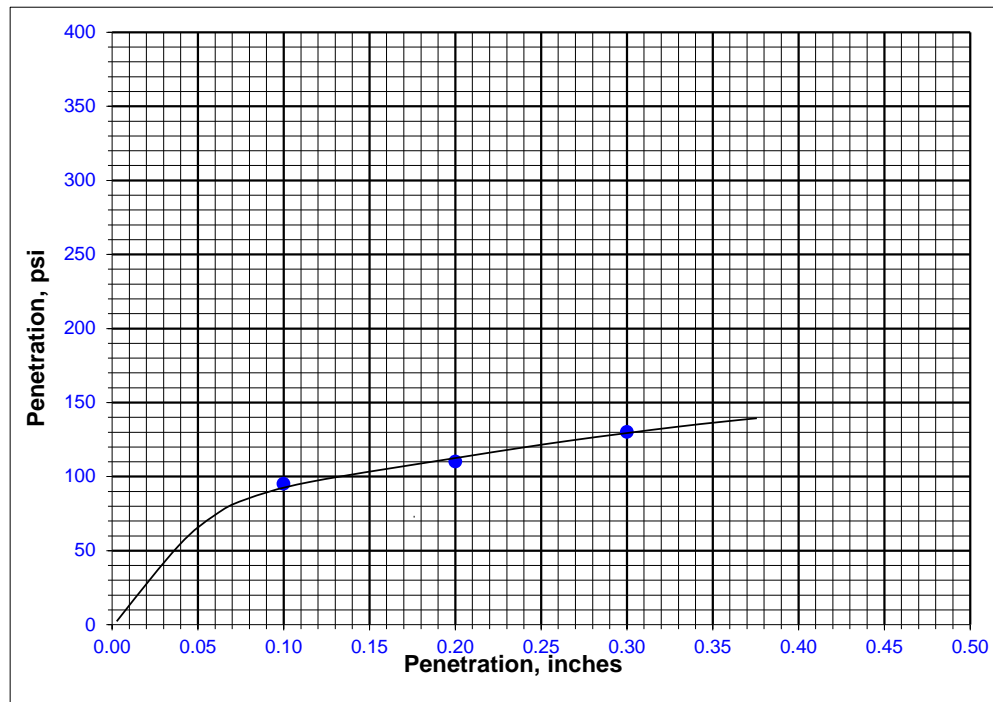
### FIELD CBR RESULTS



## Field CBR Test (ASTM D4429)

Project Name: Blythe Municipal Airport Pavement Rehabilitation  
 CTE Project No.: 40-3264  
 Test Date: 11/10/15  
 Test ID: B-6  
 CBR Value: 10

	1	2	3
inches	0.10	0.2	0.30
psi	95.0	110.0	130.0



14538 Meridian Parkway, Suite A | Riverside, CA 92518 | Ph (951) 571-4081 | Fax (951) 571-4188

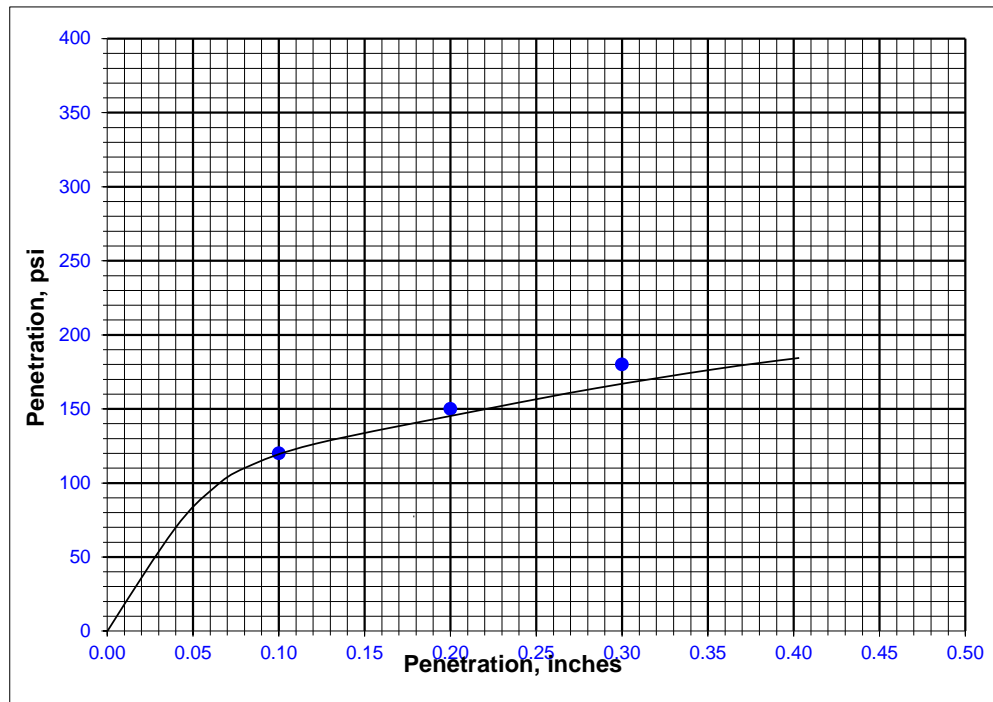
Inspection | Testing | Geotechnical | Environmental | Construction Engineering | Civil Engineering | Surveying



## Field CBR Test (ASTM D4429)

Project Name: Blythe Municipal Airport Pavement Rehabilitation  
 CTE Project No.: 40-3264  
 Test Date: 11/10/15  
 Test ID: B-9  
 CBR Value: 12

	1	2	3
inches	0.10	0.2	0.30
psi	120.0	150.0	180.0

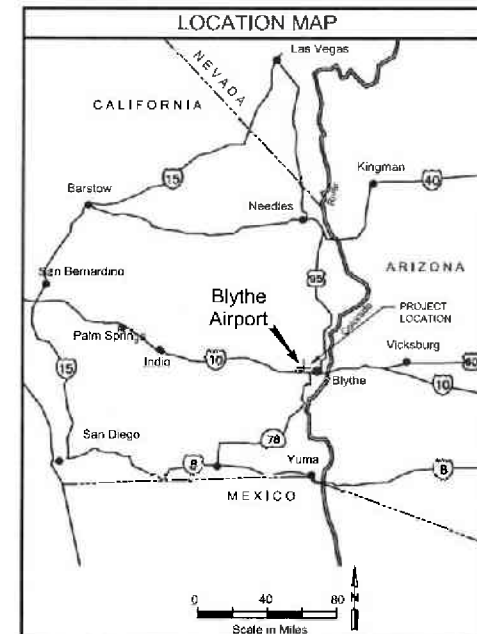
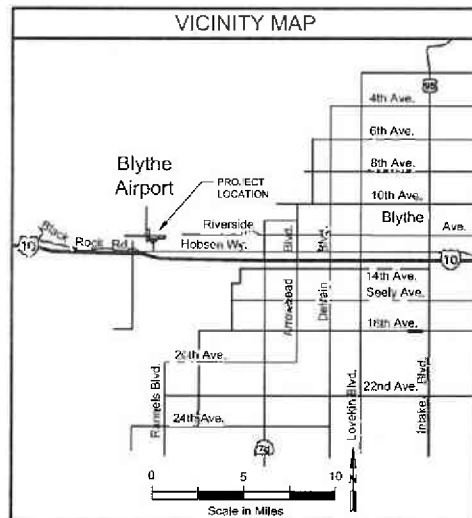


14538 Meridian Parkway, Suite A | Riverside, CA 92518 | Ph (951) 571-4081 | Fax (951) 571-4188

Inspection | Testing | Geotechnical | Environmental | Construction Engineering | Civil Engineering | Surveying

# BLYTHER MUNICIPAL AIRPORT

COUNTY OF RIVERSIDE  
PCC APRON REHABILITATION  
AIP NO.: 3-06-0025-010-2016  
JUNE 2016



**Mead & Hunt**

Mead & Hunt, Inc.  
133 Aviation Boulevard  
Suite 100  
Santa Rosa, CA 95403  
Phone: 707-528-5010  
mead@mead-hunt.com



Professional Engineer  
No. 7176  
Exp. 2/1/17  
Civil



COUNTY OF RIVERSIDE  
BLYTHE MUNICIPAL AIRPORT  
PCC APRON REHABILITATION  
17240 W. HOUSSEMAN BLVD., BLYTHE, CA 92226

PROJECT NO. 3-06-0025-010-2016  
DATE: 2164-003-21875  
DATE: JUNE 20 16  
DRAWN BY: MSA  
CHECKED BY: TDS  
APPROVED BY: RAC  
REVISION: 1.1 (ISSUED)

COVER SHEET

G-001



## SHEET INDEX

DRAWING NUMBER	SHEET NUMBER	SHEET TITLE
1	G-001	COVER SHEET
2	G-002	SHEET INDEX, LEGEND AND ABBREVIATIONS
3	G-003	PROJECT LAYOUT PLAN
4	G-004	CONSTRUCTION SAFETY AND PHASING PLAN
5	G-005	DEMOLITION PLAN
6	G-006	PCC SLAB REPLACEMENT PLAN
7	G-007	DETAILS - 1
8	G-008	DETAILS - 2

## DRAWING LEGEND

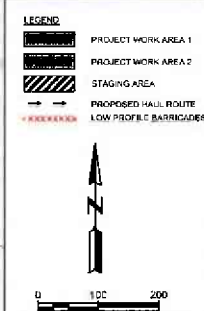
	EXISTING	PROPOSED		EXISTING	PROPOSED
PCC PAVEMENT	N/A		PAPI		N/A
SEAL COAT	N/A	N/A	WATER		N/A
ELEVATION			WATER VALVE		N/A
BORING	N/A	N/A	IRIGATION LINE		N/A
2" CONCRETE		N/A	RYS HYDRAUNT		N/A
2" CONCRETE DRAIN		N/A	SANITARY SEWER		N/A
APPROXIMATE DAYLIGHT	N/A	N/A	STORM DRAIN		N/A
PROPERTY		N/A	CATCH BASIN		N/A
FENCE		N/A	MANHOLE		N/A
GATE		N/A	FLOW LINE		N/A
BUILDING		N/A	2" DRAIN W/ VALVE	N/A	N/A
ELECTRIC		N/A	TELEPHONE		N/A
PULL BOX		N/A	RUNWAY SAFETY AREA	N/A	N/A
SKIN		N/A	ASPHALT BEACON		N/A
ELECTRICAL POWER POLE		N/A	RUNWAY OBJECT FREE AREA	N/A	N/A
THRESHOLD LIGHT		N/A	TAXIWAY OBJECT FREE AREA	N/A	N/A
WINDCONE		N/A	LOW PROFILE BARRICADES	N/A	N/A
ELECTRICAL DUST MARKER		N/A	COMPACTED SOIL		N/A
STAGING AREA	N/A				
AGGREGATE BASE	N/A				
SEALANT	N/A				

## ABBREVIATIONS

AG	AGGREGATE BASE	GV	GALVANIZED	HQ	REQUIRED
AC	ASPHALT CONCRETE	OB	GRADE BREAK	RWA	RUNWAY WORK RESTRICTED AREA
AGB	AGGREGATE SUB-BASE	OPCI	GROUND FAULT CIRCUIT INTERRUPTER	RWY	RUNWAY
AVG	AMERICAN WYS GUAGE	OS	GROUND SLOPE	SD	8" CORM DRAIN
BC	BEGINNING OF CURVE	HDPE	HIGH DENSITY POLYETHYLENE	SDM	8" CORM DRAIN MANHOLE
BLOG	BUILDING	HORZ	HORIZONTAL	SD	8" FLIGHT CHAIN
BN	BENCH MARK	HP	HIGH POINT	SH	SHOULDER
BVC	BEFORE VERTICAL CURVE	IE	INVERT ELEVATION	SS	SANITARY SEWER
CL	CENTERLINE	L	LENGTH	SSM	SANITARY SEWER MANHOLE
CLP	CHAIN LINK FENCE	LF	LINEAL FEET	STA	STATION
CB	CATCH BASIN	MAX	MAXIMUM	STD	STANDARD
COMP	COMPACTED METAL PIPE	MID	MID POINT	T	TELEPHONE LINE
UB	UNBUILT AREA	MIN	MINIMUM	TC	TOP OF CURB
UNB	UNBUILT	MIL	MEDIUM INTENSITY RUNWAY LIGHTING	TG	TOP OF GRATE
EC	END OF CURVE	MTL	MEDIUM INTENSITY TAXIWAY LIGHTING	TR	TREASURE
EG	EXISTING GRADE (ON GROUND)	NEW	NEW	TB	TOP OF BANK
EL	ELEVATION	OC	ON CENTER	TOP	TOP OF BANK
EP	EDGE OF PAVEMENT	PR	PULL BOX	TWY	TAXIWAY
EVC	END VERTICAL CURVE	PC	POINT OF CURVATURE	TYP	TYPICAL
FAB	FLEX VALVE ADMINISTRATION	PCC	PORTLAND CEMENT CONCRETE	UNL	UNLESS OTHERWISE NOTED
FBO	FIELD BOUNDARY	PI	POINT OF INTERSECTION	USA	UNDERGROUND SERVICE ALERT
FF	FRESH FLOOR	POI	POINT OF INTERSECTION	VEN	VERTICAL
FG	FRESH GRADE	POI	POINT OF INTERSECTION	VG	VALVE BUTTER
PH	FIRE HYDRANT	PVC	POLYVINYL CHLORIDE	W	WATER LINE
FL	FLOW LINE	PVI	POINT OF VERTICAL INTERSECTION	W	WATER
G	GAS LINE	R	RADIUS	W	WATER
		R&R	REMOVE & REPLACE	W	WATER
		RC	RELATIVE COMPACTION	W	WATER
		RCP	REINFORCED CONCRETE PIPE	WV	WATER VALVE
				WWM	WELDED WIRE MESH







**RESTRICTED AREAS/SAFETY AREAS**

- \* CONSTRUCTION/INACTIVITY AGENCES 1 TO ACTIVE RUNWAYS, TAXIWAYS, AND APRONS SHALL BE COORDINATED WITH THE COUNTY. CONSTRUCTION ACTIVITY IN THESE AREAS WILL BE AUTHORIZED AFTER
- 1. NOTICES TO AIRPORT NOTAMS HAVE BEEN ISSUED BY THE COUNTY.
- 2. BARRIERS AND LIGHTING PROVIDED AND MAINTAINED BY THE CONTRACTOR AND
- 3. IT HAS BEEN DETERMINED THAT THE HEIGHT OF EQUIPMENT AND MATERIALS IS BEYOND THE REACH OR SAFELY BELOW, AIRCRAFT USING ADJACENT OPERATIONAL AREAS.

- [illegible]

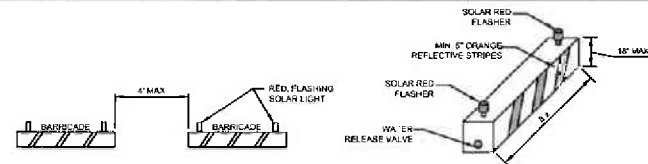
## PROJECT WORK AREA

- CRACK REPAIR
- FULL RETAIR
- SLAB REPLACEMENT
- INSTALL JOINT AND CRACK SEALANT
- FULL PAVEMENT MARKINGS

#### RUNWAY CLOSURES

- THE EAST SIDE OF THE MAIN APRON WILL BE CLOSED THROUGHOUT THE DURATION OF THE PROJECT. THE AVIATION FUEL TANKS ARE WITHIN THE CLOSED MAIN APRON AREA. IF TAXIWAY A REQUIRES A CLOSURE FOR WORK WITHIN THE TGA, AIRCRAFT OPERATIONS WILL HAVE TO UTILIZE TAXIWAYS TO THE WEST OF

1. ALL MAIL ROUTES NOT ACTIVE PAVEMENT SHALL BE CIRCUMNAVIGATED BY CABLE-STITCHED BARBAREDS.
2. ALL PAVEMENT USED FOR MAILING SHALL BE SWEEPED, VACUATED, FROD, & OPENING TO AIRCRAFT TRAFFIC.
3. WORK WITHIN THE TAXIWAY OBJECT AREA REQUIRES THE TAXIWAY TO BE TEMPORARILY CLOSED UNLESS PROVISIONS DESCRIBED IN THE RCTC AREA-AS-GATEWAY AREA SECTION ARE PERFORMED.
4. EXACT LOCATIONS OF THE PLACEMENT OF BARBAREDS SHALL BE AS APPROVED BY THE AIRPORT.
5. PARKING FOR CONSTRUCTION PERSONNEL SHALL BE OUTSIDE THE FENCE, AT THE TERMINAL BUILDING.
6. PRIOR TO REQUIREMENT OF THE AIRPORT, THE TAXIWAYS SHALL BE FILLED/CURED ACCORDING TO PROJECT SPECIFICATIONS AND APPROVED BY THE COUNTY.
7. SEE SPEC NARRATIVE IN E SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



2. CONTRACTOR TO INSPECT BARRICADES FOR WEAR AND TEAR WEEKLY AND REPLACE BARRICADES AS REQUIRED.
3. CONTRACTOR SHALL PROVIDE 1200 LOW PROFILE BARRICADES OR THE AMOUNT NEEDED AS REQUIRED TO COMPLETE THE PROJECT BASED ON THE PHASING REQUIREMENTS.
4. LOW PROFILE BARRICADES SHALL BE PLACED WITH A MAXIMUM OF 4 FEET BETWEEN ENDS.
5. BARRICADES TO BE FILLED WITH WATER & CONSTANTLY MONITORED, IF REQUIRED.

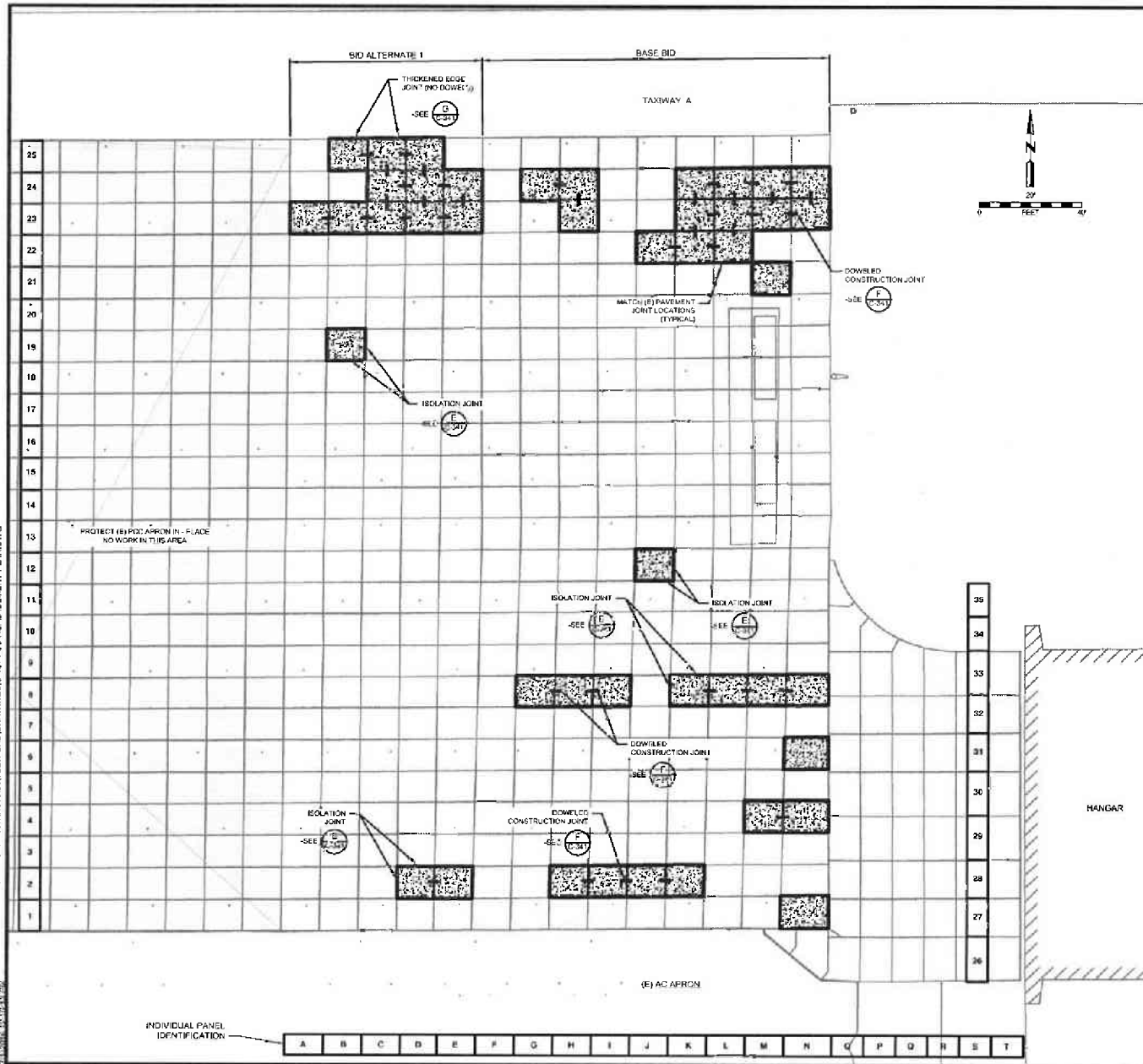
- BARRICADES SHALL BE WEIGHED IN BY SANDBAGS OR OTHER MEANS TO KEEP BARRICADE STATIONARY. LOW PROFILE BARRIER AC 150-5370-2F EQUAL TO OR LESS THAN 18" HEIGHT.  
UV RESISTANT POLYETHYLENE WATER FILLED, EQUAL TO OR LESS THAN 18" LENGTH.  
BURN AND WIND RESISTANT FLASHING SOLAR AND BATTERY POWERED LIGHTS.
7. COORDINATE WITH THE COUNTY FOR ALL LOCATION LAYOUT, SPACING AND POSSIBLE GAPS IN BARRICADES AT EACH LOCATION
8. LIGHTS TO BE 6 CANDLES PER BAR WITH CAPABILITY TO FLASH FROM 20-80 FLASHES PER MINUTE.

## NO SCALE





\\COMP\MEADHUNT\COMP\SHAREDCOLORS\ENR\318400121878\ENR\DRAWINGS\C-321 PCC REPLACEMENT PLAN.DWG



LEGEND

DOWEL BETWEEN NEW PCC SLABS

ISOLATION JOINT

**Mead & Hunt**

Mead & Hunt, Inc.  
133 Aviation Boulevard,  
Suite 100  
Santa Rosa, CA 95403  
phone 707-528-5010  
meadhunt.com

These drawings are the property of Mead & Hunt, Inc. and are not to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Mead & Hunt, Inc. This drawing is not to be used for any other project without the prior written permission of Mead & Hunt, Inc.

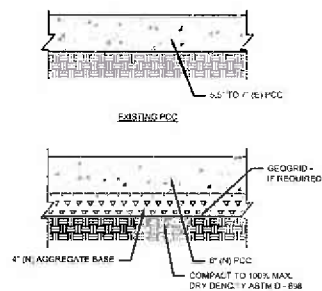
COUNTY OF RIVERSIDE  
BLYTHE MUNICIPAL AIRPORT  
PCC APRON REHABILITATION  
17240 W. HOBSONWAY BLYTHE, CA 92225

DATE: 3-16-2016 10:10:10  
DRAWN BY: TEG  
CHECKED BY: RAC  
DATE: 3-16-2016 10:10:10

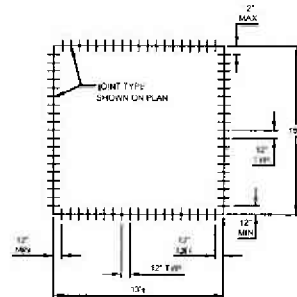
PROJECT: PCC SLAB REPLACEMENT PLAN

SHEET: 8 of 8

C-321

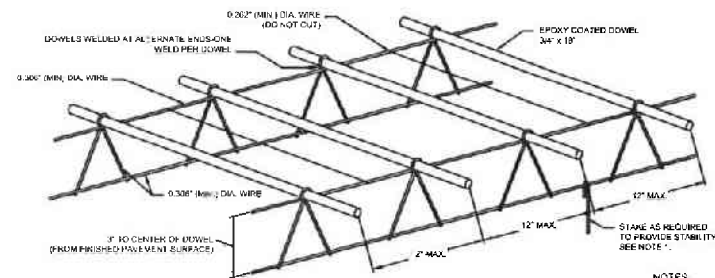


**A TYPICAL SECTION**  
NO SCALE



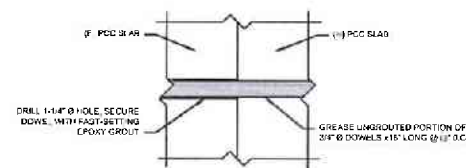
**NOTES**  
DOWEL BARS SHALL BE SPACED 12" ON CENTER, AND AT LEAST 12" FROM ANY SLAB CORNER.

**B TYPICAL DOWEL SPACING**  
NO SCALE

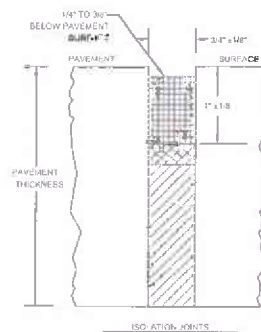


1. THE DOWEL BASKET ASSEMBLY SHOWN IS THE MINIMUM REQUIRED. THE REQUIREMENTS FOR THE DOWEL BASKETS ARE A PERFORMANCE SPECIFICATION AND IT WILL BE REQUIRED THAT THE CONTRACTOR PROVIDE SUFFICIENT SUPPORT, BRACING AND ANCHORAGE SO THAT THE CONSTRUCTED DOWELS WILL MEET THE TOLERANCE SPECIFICATIONS.
2. DOWELS TO MEET ASTM A615-60 ALL MATERIALS TO BE PROVIDED SHALL BE SMELTED AND MANUFACTURED IN THE UNITED STATES.
3. DOWELS TO BE EPOXY COATED TO MEET ASTM A-153-67 MIN.
4. ENDS OF DOWELS TO BE EPOXY COATED.
5. DOWELS TO BE LUBRICATED IN THE FIELD.

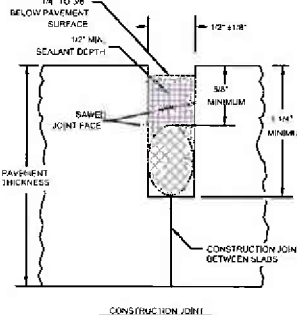
**NOTES**



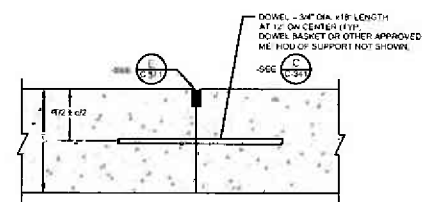
**D DOWEL PLACEMENT**  
NO SCALE



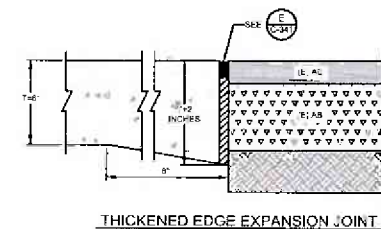
- SYMBOLS**
- SEALANT
  - BACKER ROD
  - WORK-FILLED PREMOULDED COMPRESSIBLE MATERIAL ASTM C-175
  - CLOSED-CELL RESILIENT FOAM OR SPACE RUBBER



**E PCC JOINT SEAL**  
NO SCALE



**F DOWELED JOINT DETAIL**  
NO SCALE



**G JOINT DETAIL**  
NO SCALE

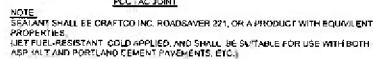
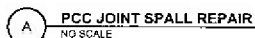
**Mead & Hunt**  
Mead & Hunt, Inc.  
133 Aviation Boulevard,  
Suite 100  
Santa Rosa, CA 95403  
phone: 707-526-3610  
mead&hunt.com

**COUNTY OF RIVERSIDE**  
**BLYTE MUNICIPAL AIRPORT**  
**PCC APRON REHABILITATION**  
12340 W. HOBSONWAY BLVD. CA 92225

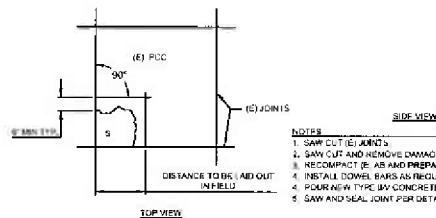
DATE: 3/26/2015  
BY: J151406-1216/15  
CHECKED: JUNE 2015  
DESIGNED: MSA  
DRAWN BY: TCS  
SCALE: RAC

7 of 8

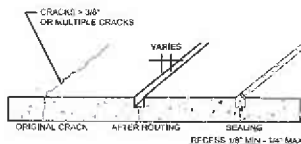
C-341



**D COLD MILL AND PCC/AC JOINT SEAL**  
NO SCALE



**B** PCC FULL DEPTH REPAIR -  
CORNER BREAK  
NO SCALE



**E** MID-PANEL CRACK  
ROUTING AND SEALING  
NO SCALE



C-342



OFFICE OF  
CLERK OF THE BOARD OF SUPERVISORS  
1st FLOOR, COUNTY ADMINISTRATIVE CENTER  
P.O. BOX 1147, 4080 LEMON STREET  
RIVERSIDE, CA 92502-1147  
PHONE: (951) 955-1060  
FAX: (951) 955-1071

KECIA HARPER-IHEM  
Clerk of the Board of Supervisors

KIMBERLY A. RECTOR  
Assistant Clerk of the Board

July 25, 2016

THE DESERT SUN  
ATTN: LEGALS  
PO BOX 2734  
PALM SPRINGS, CA 92263

TEL: (760) 778-4502  
E-MAIL: [legals@thedesertsun.com](mailto:legals@thedesertsun.com)

**RE: NOTICE INVITING BIDS: BLYTHE MUNICIPAL AIRPORT – PORTLAND CEMENT  
CONCRETE APRON PAVEMENT REHABILITATION PROJECT**

To Whom It May Concern:

Attached is a copy for publication in your newspaper for **TWO (2) TIMES:**

**WEDNESDAY – JULY 27, 2016**  
**WEDNESDAY – AUGUST 3, 2016**

We require your affidavit of publication immediately upon completion of the last publication.

Your invoice must be submitted to this office, WITH TWO CLIPPINGS OF THE PUBLICATION.

**NOTE: PLEASE COMPOSE THIS PUBLICATION INTO A SINGLE COLUMN  
FORMAT.**

Thank you in advance for your assistance and expertise.

Sincerely,

*Cecilia Gil*

Board Assistant to:  
KECIA HARPER-IHEM, CLERK OF THE BOARD

## Gil, Cecilia

---

**From:** Email, TDS-Legals <legals@thedesertsun.com>  
**Sent:** Monday, July 25, 2016 9:10 AM  
**To:** Gil, Cecilia  
**Subject:** RE: FOR PUBLICATION: Blythe Municipal Airport

Good Morning Cecilia ☺

Ad received and will publish on date(s) requested.

**Charlene Moeller** | Customer Care Representative / for Lynne Stephenson

The Desert Sun Media Group  
750 N. Gene Autry Trail, Palm Springs, CA 92262  
t 760.778.4578 | f 760.778.4528 e: [legals@thedesertsun.com](mailto:legals@thedesertsun.com)

The Coachella Valley's #1 Source in News & Advertising!  
[www.DesertSun.com](http://www.DesertSun.com) | twitter @MyDesert | facebook thedesertsun

This email and any files transmitted with it are confidential and intended for the individual to whom they are addressed. If you have received this email in error, please notify the sender and delete the message from your system

---

**From:** Gil, Cecilia [mailto:CCGIL@rcbos.org]  
**Sent:** Monday, July 25, 2016 8:27 AM  
**To:** Email, TDS-Legals <legals@thedesertsun.com>  
**Subject:** FOR PUBLICATION: Blythe Municipal Airport

Good morning! Attached is a Notice Inviting Bids, for publication on 2 Wednesdays: July 27 and Aug. 3, 2016. Please confirm. THANK YOU!

*Cecilia Gil*

Board Assistant  
Clerk of the Board of Supervisors  
(951) 955-8464  
MS# 1010



## ADVERTISEMENT FOR BIDS

### Blythe Municipal Airport PCC Apron Rehabilitation

**PUBLIC NOTICE:** Sealed proposals for the PCC Apron Rehabilitation Project at Blythe Municipal Airport will be received at the offices of the Clerk of the Board of Supervisors for the County of Riverside, 4080 Lemon Street, First Floor, Riverside, California 92501 until 10:00 a.m. August 9, 2016, and then will be publicly opened and read.

#### DESCRIPTION OF WORK:

**1. This project consists of the following work:**

**Base Bid – PCC Apron – Rehabilitation of Eastern Area**

- Removal of existing PCC slabs, requiring replacement and associated tie-down anchors.
- PCC slab replacement.
- Spall repair of the PCC slabs in the associated Project area.
- Crack repair in various PCC slabs in the Project area.
- Profile grinding of PCC slab edges (cold milling).
- Sawcutting and cleaning of all joints in the Project area, then sealing with new joint sealant.

**Bid Alternate 1 – PCC Apron – Additional Rehabilitation of Area Adjacent to Eastern Area**

- Removal of existing PCC slabs requiring replacement and associated tie-down anchors.
- PCC Slab replacement.
- Spall repair of the PCC slabs in the associated Project area.
- Crack repair in various PCC slabs in the Project area.
- Profile grinding of PCC slab edges.
- Sawcutting and cleaning of all joints in the Project area, then sealing with new joint sealant.

**2. The Engineer's Cost Estimate is:**

- Base Bid: \$467,429.00
- Bid Alternate: \$197,400.00
- TOTAL: \$664,829.00

**BID DOCUMENTS:** Complete digital Project Bidding Documents (Plans, Specifications, and Bid Documents) are available online from Quest Construction Data Network (Quest CDN) at [www.questcdn.com](http://www.questcdn.com). Interested parties may download the digital documents for twenty dollars (\$20.00) by inputting **Quest Project #4578475** on the Project Search page. Those downloading the bidding documents electronically do so at their own risk for completeness of documents.

Please contact Quest CDN at (952)233-1632 or [info@questcdn.com](mailto:info@questcdn.com) for assistance in free membership registration, downloading, and working with this digital project information.

**Note:** Make sure to provide your correct email address when setting up account with Quest, as all information (i.e. addenda, correspondence, etc.) will be issued by Quest to email address provided. Also make sure QuestCDN.com is not blocked in your system; important information may end up in "junk" folder.

## **BIDDER / CONTRACTOR REQUIREMENTS:**

1. **Contractor's License:** Each Bidder must have a Class "A" California Contractor's License as required under provisions of the California Business and Professions Code or the appropriate combination of Class "C" – Specialty Contractor licenses to match the proposed work at time of bid.
2. **Registered.** Per Public Works Contractor Registration Law [SB 854], Contractors and Subcontractors who intend to bid or perform work on this Project must be registered with the Department of Industrial Relations. (Information is available at <http://www.dir.ca.gov/Public-Works/Contractors.html>).
  - No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].
  - No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.
  - This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.
3. **Federal Aviation Administration.** This project is funded under the Federal Aviation Administration (FAA) Airport Improvement Program (AIP). Contractor(s) will be required to comply with specific federal contract provisions as listed herein and contained in the Bid Documents. The following provisions are incorporated herein by reference with the same force and effect as if given in full text:
  - Buy American Preference (Reference: 49 USC § 50101)
  - Foreign Trade Restriction (Reference: 49 CFR part 30)
  - Davis Bacon Act (Reference: 29 CFR Part 5)
  - Affirmative Action (Reference: 41 CFR part 60-4)
  - Government Wide Debar and Suspension
  - Government-wide Requirements for Drug-free Workplace

Additional provisions that will apply to this project / contract are:

  - Equal Employment Opportunity (41 CFR Part 60)
  - Goals for Minority and Female Participation (41 CFR Part 60-4.2)
  - Certification of Nonsegregated Facilities (41 CFR Part 60-1.8)
  - Debarment and Suspension (49 CFR Part 29)
  - Veteran's Preference (49 USC Section 47112(c))
  - Distracted Driving (Texting when Driving) (Executive Order 13513/ DOT Order 3902.10)

Successful Bidder/Contractor will be required to insert applicable federal contract provisions in all subcontracts, and shall be responsible for compliance by subcontractor.
4. **Prevailing Wages and Payroll Records.** Contractor will be required to pay employees and keep records in accordance with the Davis Bacon Act (29 CFR Part 5) and/or the Federal Fair Labor Standards Act (29 CFR part 201).
5. **List of Subcontractors** The prime contractor must provide a list of subcontractors with his bid on the form provided in the Proposal forms.

**6. Disadvantaged Business Enterprise (DBE):** A Race/Gender Neutral DBE Goal of 12.5% has been established for this contract.

A condition of award of the contract is Bidder/Offeror satisfying the good faith effort requirements of 49 CFR Part 26.53. As a condition of bid responsiveness, the Bidder or Offeror must submit the information as stated in the Project Specifications (Federal Provisions section) with their proposal on the forms provided.

**BID SUBMISSION.** Each bid shall be in accordance with the Plans and Specifications and other Contract Documents now on file with County of Riverside at the address below, for review only.

Each bidder must complete, sign, and furnish with his bid all forms and certifications contained in the Proposal Forms section of the Bid Documents. All proposals sent by mail must be posted so as to be in the hands of the County of Riverside by the hour and date set forth above for the bid opening. All proposals shall be addressed to:

**Clerk of the Board of Supervisors for the County of Riverside,  
4080 Lemon Street, First Floor, Riverside, California 92501**

**and marked: Blythe Municipal Airport PCC Apron Rehabilitation  
AIP No. 3-06-0025-010-2016**

Each bid/proposal must be accompanied by a certified check, cashier's check, or bid bond in an amount not less than ten percent (10%) of the amount bid. The successful bidder shall be required to submit at the time of execution of the Contract a Performance Bond and a Payment Bond (Labor and Material), each for 100% of the Contract price.

The County shall have the right to reject any bids presented in accordance with Section 20150.9 of the California Public Contracts Code.

**Pre-Bid Meeting:** A Pre-Bid Meeting has been scheduled for August 1, 2016, at 11:00 a.m. The meeting will be held at the Airport. All Bidders are encouraged to attend this meeting.

**CIVIL RIGHTS - GENERAL.** The County of Riverside, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Alternative formats available upon request to individuals with disabilities.

Dated: July 25, 2016

Kecia Harper-Ihem, Clerk of the Board  
By: Cecilia Gil, Board Assistant

## Gil, Cecilia

---

**From:** Moore, Michelle <MLMOORE@rivcoeda.org>  
**Sent:** Wednesday, July 6, 2016 11:21 AM  
**To:** Gil, Cecilia  
**Cc:** Shippy, Daryl  
**Subject:** RE: Bid Opening Dates for two projects  
**Attachments:** Bid Ad Blythe\_Revised\_FINAL 07-06-16.pdf; Bid Ad FVA\_Revised\_FINAL\_070616.pdf

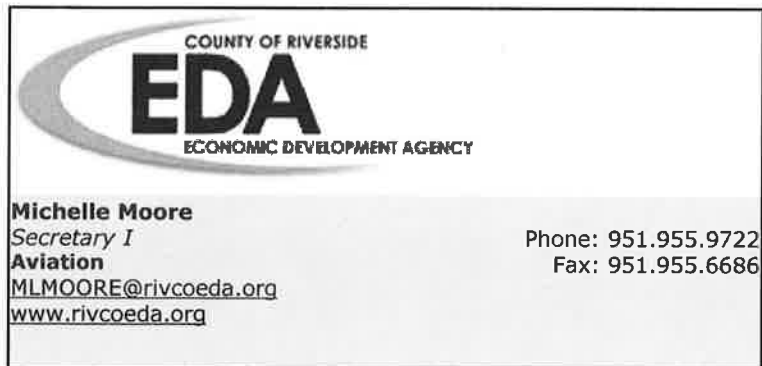
Hi Cecilia,

Mead & Hunt were able to submit the NIB today since I will be out of the office.

Attached are the NIB's for Blythe PCC Apron Rehabilitation, and the French Valley Airport South Apron Pavement Reconstruction projects.

Yes, please advertise both projects in the Desert Sun on July 27<sup>th</sup>, and August 3<sup>rd</sup>.

Thank you,  
Michelle



**From:** Gil, Cecilia  
**Sent:** Wednesday, July 06, 2016 11:08 AM  
**To:** Moore, Michelle  
**Subject:** RE: Bid Opening Dates for two projects

Good morning Michelle,

Ok.. and still publish in Desert Sun for July 27 and Aug. 3 correct?

*Cecilia Gil*

Board Assistant  
Clerk of the Board of Supervisors  
(951) 955-8464  
MS# 1010

---

**From:** Moore, Michelle [mailto:MLMOORE@rivcoeda.org]  
**Sent:** Wednesday, July 6, 2016 10:16 AM