GeoMat Testing Laboratories, Inc.

Soil Engineering, Environmental Engineering, Materials Testing, Geology

April 1, 2020

Project No. 20105-01

TO: Sri Jayaram Foundation, Inc.
6549 Pimlico Place
Eastvale, California 92880

SUBJECT: Soil Infiltration Report Update, APN 1016-331-05-0000, 4.83 Acres, 12594 Roswell Avenue, City of Chino, County of San Bernardino, California

REFERENCE: City and County Engineering and Testing, Inc. "Basic Infiltration Testing Report, Proposed Sri Sai Mandir Center, Approximately 4.83 Acres, 12594 Roswell Avenue, City of Chino, County of San Bernardino, California." Project No. J&P2018044.DRI.RPT, Report Dated August 22, 2018.

As requested, we have updated the above referenced soil infiltration report. The purpose of the update is to transfer, to the new provided plan, the previously reported information by City and County Engineering. City and County Engineering is no longer in business.

For easy reference, the previously prepared report by City and County Engineering is attached. There are no changes in the findings, conclusion and recommendation of the previous report except for the following:

1. New site plan which supersede the previous site plan. The new plan depicts the exploratory boreholes and soil infiltration tests previously conducted by City and County Engineering.

2. New Project Description and usage provided by project representative.

<u>New Project Description</u>

The proposed development is located on a 4.83 acre site at 12594 Roswell Avenue, Chino, CA in the unincorporated area of San Bernardino County. The site is bordered by Roswell Avenue at the East and Walnut Ave at the North. The proposed project is to construct about 32,400 square foot multipurpose building to serve as both a place of worship as well as a facility for various community events & activities. The proposed development also includes about 4,500 square feet of caretaker quarter.

<u>Usage of Proposed Building:</u>

The first level is designed to serve as the main 270- seat congregation area for the purpose of worship and prayer. There will also be a kitchen facility for cooking and a dining hall located adjacent to the main congregation hall at the first floor, as well as. classrooms for the youth,

9980 Indiana Avenue ● Suite 14 ● Riverside ● California ● 92503 ● Phone (951) 688-5400 ● Fax (951) 688-5200
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multipurpose meeting rooms, administrative offices and prayer/meditation rooms. A detailed site plan is attached with this document.

The second level will house a prayer hall where devotees can view the idols and perform rituals. There will also be three classrooms for youth to learn about music, dance, yoga, education, etc.

The facility will also be designed to offer spaces for community events and activities. Both the larger hall or the smaller multipurpose rooms and classrooms will function individually for community services such as health fairs, counseling sessions, job search assistance, environmental awareness campaigns, community pantry, food drive, etc.

If you should have any questions regarding this report, please do not hesitate to call our office. We appreciate this opportunity to be of service.

Submitted for GeoMat Testing Laboratories, Inc.

Haytham Nabilsi, GE 2375
Project Engineer, Exp. 12/31/2020

Art Martinez
Staff Engineer

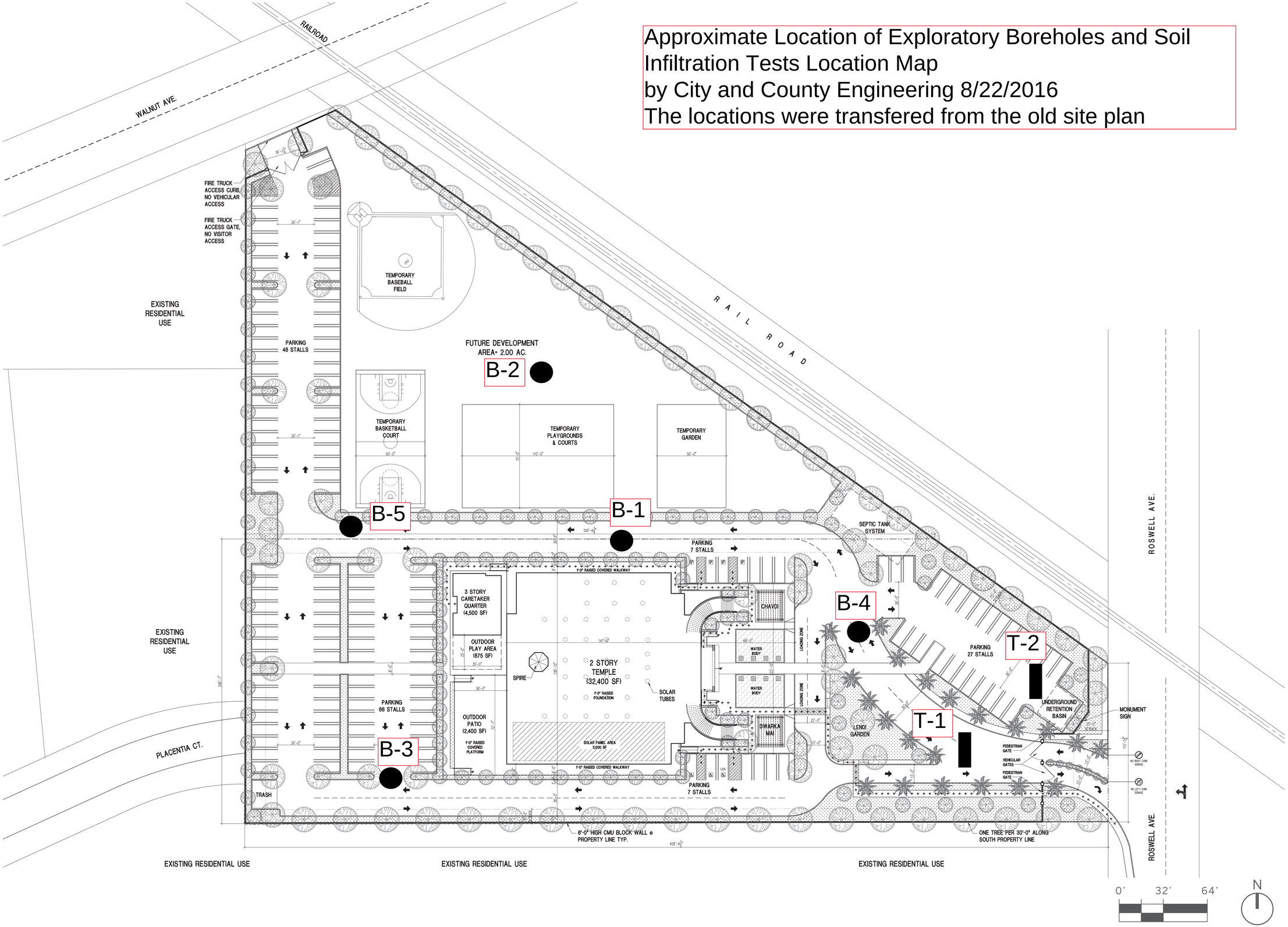
LICENSED PROFESSIONAL ENGINEER
HAYTHAM NABILSI
GE 2375
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

Attachments:

Plate 1 Site Plan
Appendix A Soil Infiltration Report by City and County Engineering and Testing

Approximate Location of Exploratory Boreholes and Soil Infiltration Tests Location Map
by City and County Engineering 8/22/2016
The locations were transfered from the old site plan



sda
CREATIVE STUDIO

6169 Athena Street
Chino, CA 91710

Contact: Keyur Maru
714.390.0525
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Client:

Sri Jayaram Foundation, Inc.

6549 Pimlico Place
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Contact: Arunasri Reddy
951.544.5832

Project:

Sri Sairam Mandir

12594 Roswell Ave.
Chino, CA 91710-3036

Revisions:

01	Conceptual Drawings	11.20.2019
02	Conceptual Drawings v2	11.26.2019
03	Conceptual Drawings v3	12.03.2019
04	Conceptual Drawings v4	12.05.2019
05	Conceptual Drawings v5	12.15.2019
06	Conceptual Drawings v6	12.24.2019
07	Conceptual Drawings v7	01.20.2020
08	Conceptual Drawings v8	03.16.2020

Stamp:

LICENSED ARCHITECT
KEYUR MARU
C-38310
02 - 28 - 2021
RENEWAL DATE
STATE OF CALIFORNIA

Drawing Data:

Project No	19026
Issue Date	03.16.2020
Scale	1/32" = 1'-0"
Drawn By	KM
Sheet	22" x 34"

If sheet is less than size indicated above, this is a reduced print. Reduce scale accordingly.

Sheet:

Site Plan

A1.3

Appendix A

CITY & COUNTY ENGINEERING AND TESTING, INC.
2324 S. Vineyard Ave., Suite B, Ontario, CA 91761-7764, (909)-930-5868

BASIC INFILTRATION TESTING REPORT, PROPOSED SRI SAI MANDIR CENTER, APPROXIMATELY 4.83 ACRES, 12594 ROSWELL AVENUE, CITY OF CHINO, COUNTY OF SAN BERNARDINO, CALIFORNIA,

APN: 1016- 331- 05-0000

August 22, 2018
Job #J&P2018044 DRI.RPT

Prepared For:
SRI SAI RAM MANDIR
12594 Roswell Avenue
CHINO, CA 91710

Prepared By:
CITY & COUNTY ENGINEERING AND TESTING INC.
2324 S. Vineyard Ave. Suite B
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(909)-930-5868

CITY & COUNTY ENGINEERING AND TESTING, INC.
2324 s. Vineyard Ave., Suite B, Ontario, CA 91761-7764

August 22, 2018
Job #J&P2018044 DRI.RPT

SRI SAI RAM MANDIR
12594 Roswell Avenue
CHINO, CA 91710

Attention: Mrs. Arunasri Reddy. Project Manager
Subject: BASIC INFILTRATION TESTING REPORT, IN GENERAL ACCORDANCE WITH ASTM 3385-03 TEST METHOD PROPOSEDSRI SAI RAM MANDIR, APPROXIMATELY 4.83 ACRES, 12594 ROSWELL AVENUE, CITY OF CHINO, COUNTY OF SAN BERNARDINO, CALIFORNIA,

APN: 1016-331-050-0000

Reference: Your Work Authorization and Contract dated August 03, 2018

Introduction

This report provides a summary of the geotechnical engineering services conducted to support evaluation of the feasibility of infiltration at the subject site. The purpose of our services was to complete two (2) in-situ infiltration tests utilizing the double-ring infiltro-meter to evaluate the feasibility of infiltration for disposal of stormwater runoff following the falling head method.

Project Description

We understand that an infiltration trench/swale will be utilized to capture storm runoff for on-site disposal for the proposed Sri Sai Ram Mandir Center

Scope of Services

City and County Engineering and Testing was retained to provide geotechnical engineering services to support the project. Our scope of work consisted of the following specific tasks:

1) Complete two (2) infiltration tests at the site utilizing the double ring infiltro-meter. The tests were completed in general accordance with the falling head method.

2) Complete data analysis.

3) Preparation of this report summarizing our findings, conclusions, and recommendations. The report includes:

- Site plan showing the location of infiltration tests and exploratory trench.
- Summary of log of conditions observed at the testing locations.
- Discussion of the results of insitu infiltration testing.

- A discussion of the surficial soil and anticipated groundwater conditions at the site.
- Evaluation of the feasibility of infiltration.
- Recommendations for in-situ infiltration rate.

Existing Site Conditions

The site is located in the southwesterly San Bernardino County. The property consists of the irregular-shaped parcel of 4.83 acre is located at 12594 Roswell Avenue within the City of Chino, California. Based on our site reconnaissance, the site is vacant, now. Southeast of the site was previously developed with a single family home and detached garage, which was later used for Armstrong nursery. Most of the site was used for nursery use. The, structure along with garage, plants and goods were since have been removed from the site leaving a stockpile of crushed rock in the southeast corner.The site is bounded to its north and northeast, south, east and west by chain link fence, partly block wall and wood fence. Rail road tract bordered to its north and northeast. There are few residential and industrial structures located around the subject site. No drainage course is located within the site or close by. The site has general slope towards south and southeast.

Groundwater

Groundwater study is not within the scope of this work. However, no groundwater was encountered in the exploratorytrenches to 15 feet depth.

Based on the California Department of Water Resources and local water company's website; the depth of groundwater at the site is more than 50 feet.

Please note that the potential for rain or irrigation water locally seeping through from adjacent elevated areas and showing up near grades cannot be precluded. Our experience indicates that surface or near-surface groundwater conditions can develop in areas where groundwater conditions did not exist prior to site development, especially in areas where a substantial increase in surface water infiltration results from landscape irrigation. Fluctuations in perched and static water elevations are likely to occur in the future due to variations in precipitation, temperature, consumptive uses, and other factors including urbanization and development. However; it is not likely to be less than 100 feet.

Subsurface Soils

The subsoil encountered in our exploratory borings and Infiltration trench during the exploration consists of ***young alluvium***, brown to olive gray, fine silty sand (SM), silt lenses, poorly graded with grass-vegetation, house hold trash and debris to about 5-feet below the existing ground, slightly moist to moist, and very loose. The underlying soils below 5-feet to about 10-feet were found to be olive gray, fine silty sand (SM) and sandy silt (ML), slightly moist to moist and loose to firm. The sub soils between 10-feet to the end of our borings to a maximum depth of 40-feet were olive gray, fine sandy silt (ML) and fine silty sand (SM), poorly graded, moist and medium dense. Generally, the sub soils are very loose in the upper 5-feet and medium dense below 5-8 feet.

Based on the laboratory test results, the subsurface soils in foundation zone consist of mostly fine poorly graded silty fine sand (SM), possess relatively low cohesive properties, are highly susceptible to hydro consolidation and low in expansion potential.

Groundwater or hard bedrock strata were not encountered in any of our exploratory borings/trenches to a maximum depth of 40.0 feet below the existing ground. Information, based on the local water district, the depth of groundwater in the vicinity of the site should be 50-feet or more.

Test Method and Findings

Two infiltration tests were conducted at 5.0 and 8 feet below ground surface, in native soil. Based on the results of this study, infiltration of stormwater at the site is feasible. The following summarizes the result of the infiltration feasibility study and the recommended field infiltration rate for use in design.

Trench excavation for infiltration testing was conducted utilizing a track mounted DEEREJBE- 310 extended hoe backhoe on August 11, 2018. The bottom of the test trenches werecut level to the desired infiltration depth of 5.0 and 8 feet below the ground surface. The soil profile is described in the form of Exploratory Trench Logs, see Appendix B.

Infiltrometer Device

The double-ring infiltrometer test method consists of driving two open cylinders, one inside the other, into the ground and then partially filling the rings with water to a fixed point. The water is added at the constant mark at every time interval. The volume of water added each time interval is equal to the measure of the volume of liquid that infiltrates into the soil. The volume of water infiltrated during the time intervals can be converted into an infiltration velocity (in^3/hr). The incremental infiltration velocity within the inner test cylinder is equivalent to the infiltration rate (in/hr).

Infiltration Test Result

Based on the (minimum) test result, water infiltration rate stabilized at 1.5 ***inch per hour or 3.81 cm/hr.*** for the tests that were conducted 5.0 and 8 feet below ground surface, see Appendix C. This result is raw test result.

Factors of Safety

Based on ***Worksheet "H" in the Technical Guidance Document*** for Water Quality Management Plans prepared for The County of San Bernardino Area wide Storm water Program dated June 07, 2016, the minimum safety factor for this suitability assessment is 1. The design engineer should complete Worksheet "H" to determine the Total Safety Factor for the BMP. Minimum safety factor should not be less than 2, but may be higher at the discretion of the design engineer and acceptance of the plan reviewer.

Conclusions/Recommendations

- In our opinion, water infiltration at the site is feasible. Filter fabric should be used whenever aggregates are placed against native soils.
- Infiltration water should not be allowed to saturate pavement and concrete structures sub grade soils.
- The planned infiltration system should extend vertically into native soil. The designer should review the attached geotechnical log for soil classification.
- Please note that soils in infiltration areas should not be subject to compaction during construction.
- The proposed system by the civil engineer should be constructed and maintained in accordance with manufacturer guidelines.

An important consideration for infiltration facilities is that, during construction, great care must be taken not to reduce the infiltrative capacity of the soil in the facility through compaction by heavy equipment or by using the infiltration area as a sediment trap.

Infiltration facilities should be constructed late in the site development after soils (that might erode and clog the units) have been stabilized, or should be protected (by flagging) until site work is completed.

Infiltration facilities should be sited with the following guidelines:

INFILTRATION FACILITY SETBACKS	
Setback From	Distance
Property Lines and Public Right of Way	5 feet
Foundations	15 feet or within a 1:1 plane drawn up from

	the bottom of foundation
Slopes	H/2, 5 feet minimum (H: is slope height)
Private drinking water wells	100 feet

Ferrous metal pipes should be protected from potential corrosion by bituminous coating, etc. We recommend that all utility pipes be nonmetallic and/or corrosion resistant. Recommendations should be verified by soluble sulfate and corrosion testing of soil samples obtained from specific locations during construction.

If applicable, four to six inch diameter with locking caps observation well(s) extending vertically into the system's bottom is suggested as an observation point. Observation well(s) should be checked regularly and after large storm events. Once performance stabilizes, frequency of monitoring may be reduced.

City & County Soil Engineering should observe the basin excavation. Additional laboratory testing including but not limited to grain size analysis, sand equivalent, sulfate content, etc should be conducted during construction.

Use of this Report

This report was prepared for the exclusive use of the owner and their consultants for specific applications to the proposed site. The use by others, or for the purposes other than intended, is at the user's sole risk.

The findings, conclusions, and recommendations presented herein are based on our understanding of the project and on subsurface conditions observed during our site work. Within the limitations of scope, schedule, and budget, the conclusions and recommendations presented in this report were prepared in accordance with generally accepted geotechnical engineering principals and practices in the area at the time the report was prepared. We make no other warranty either expressed or implied.

We appreciate this opportunity to provide geotechnical services on this project and look forward to assisting the Project Team as the design progresses. Please call our office if you have any questions or comments regarding the information contained in this report, or if we may be of further services

Submitted for
City and County Engineering and Testing Inc.

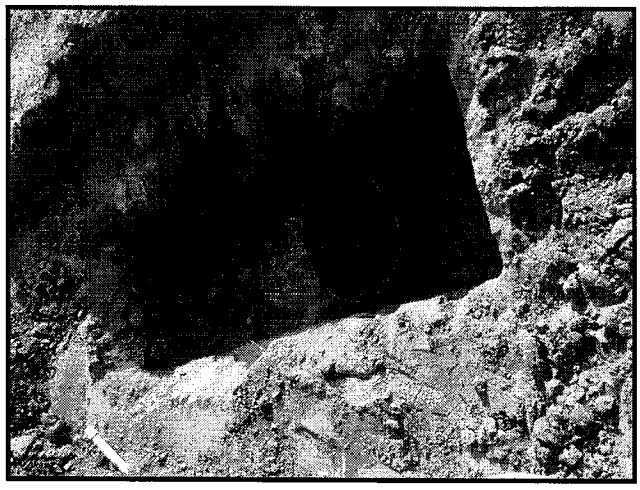
Zen Bhatia, RCE #36150, License Expired on 6/30/2020

Distribution: [3] Addressee

Attachments:	Plate 1	Site Photos
	Plate 2	Index Map
	Plate 3	Topographic Map
	Plate 4	Aerial Map
	Plate 5	InfiltrationTest Location Map
	Appendix A	Percolation Data/Graphs

SITE PHOTOGRAPHS

VIEW– EAST TO WEST



VIEW– DOUBLE RING INFILT. TEST

VIEW– NW TO SE

VIEW –SE TO NW

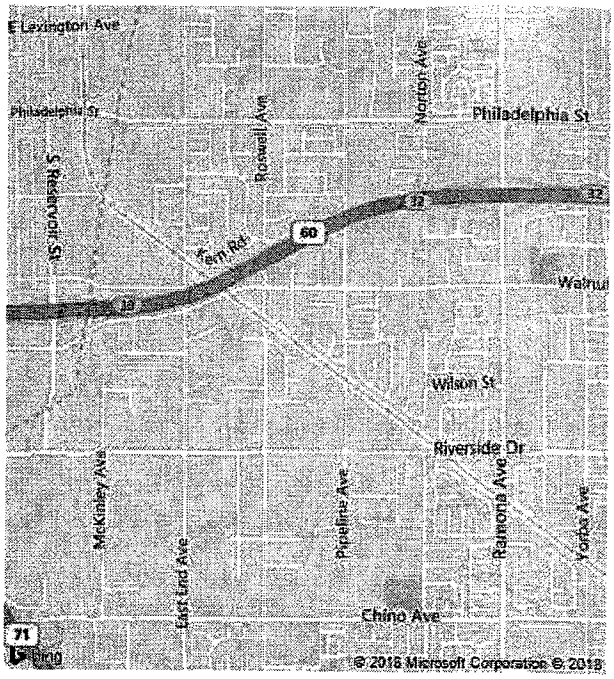
VIEW– SOUTH TO NORTH

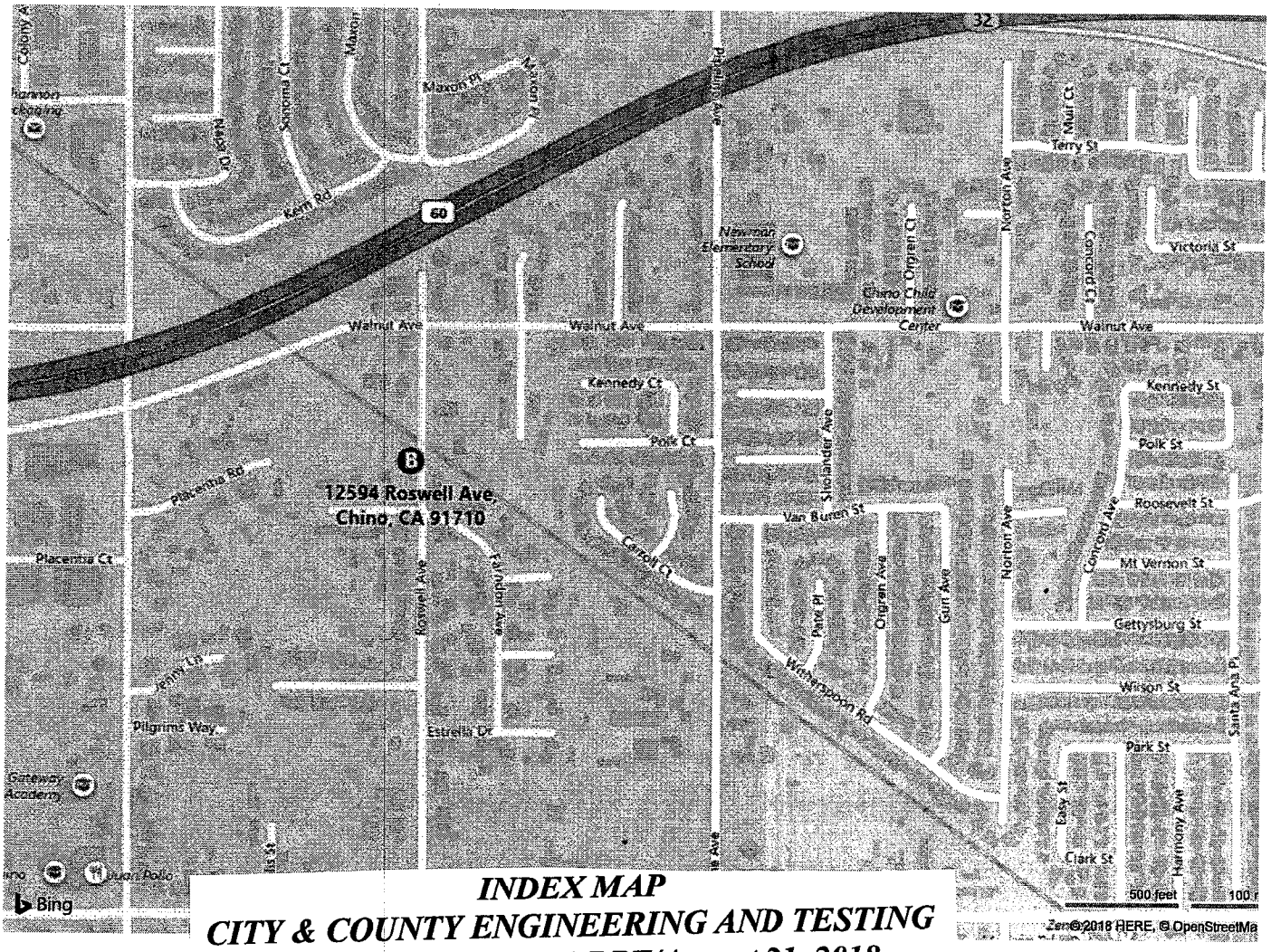
VIEW– WEST TO EAST

bing maps

Notes

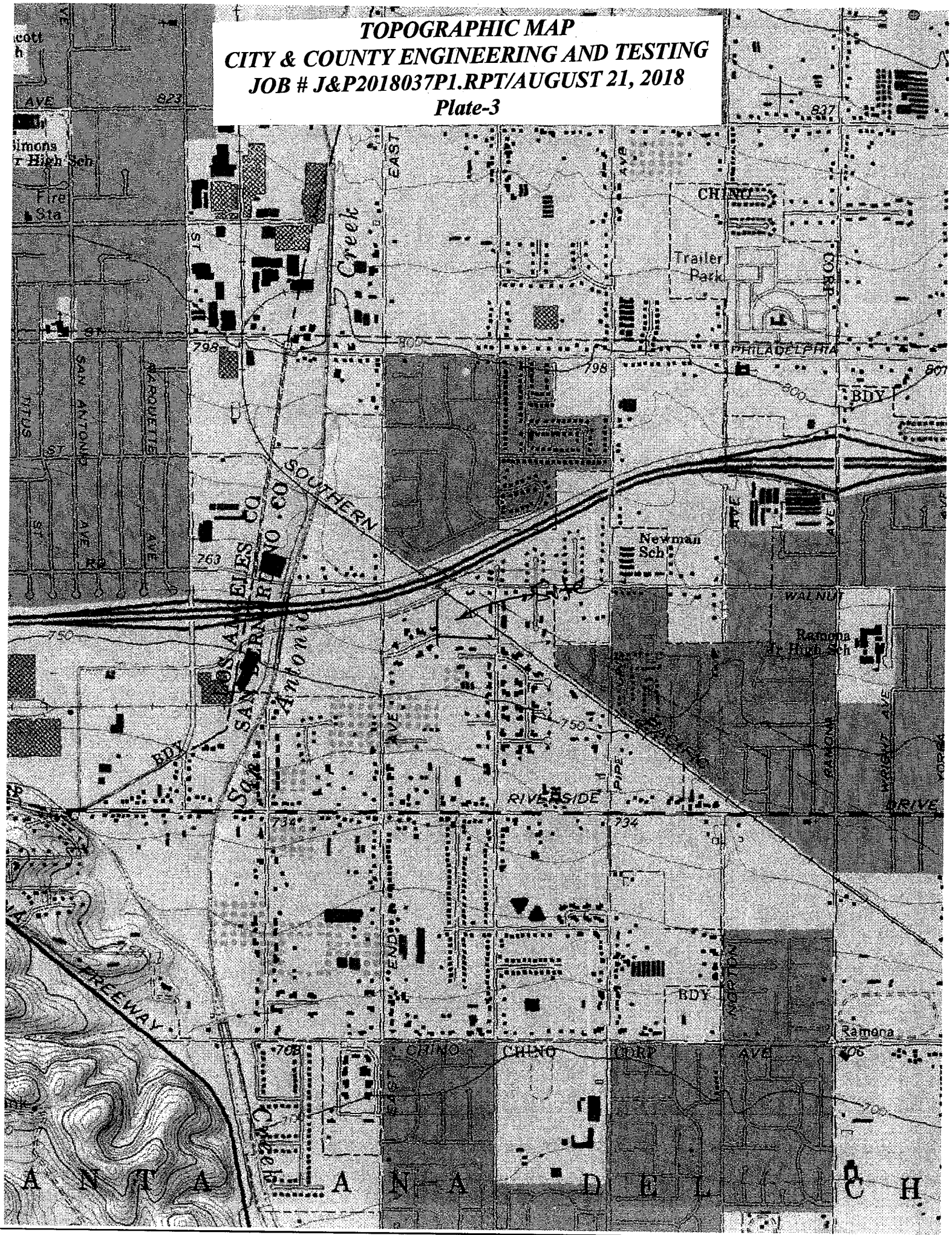
SRI SAI RAM TEMPLE
JOB #J&P2018037P1
August 7, 2018
INDEX MAP
Plate 2





INDEX MAP
CITY & COUNTY ENGINEERING AND TESTING
JOB # J&P2018037P1.RPT/August 21, 2018
Plate-2

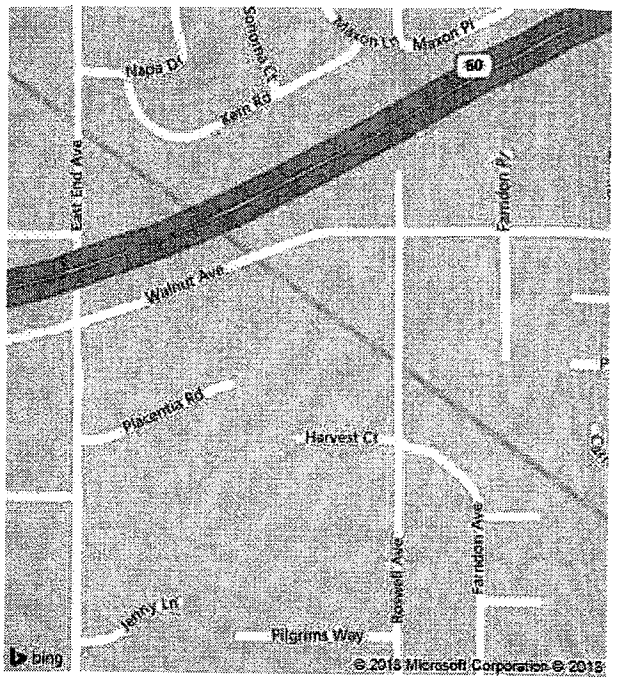
TOPOGRAPHIC MAP
CITY & COUNTY ENGINEERING AND TESTING
JOB # J&P2018037P1.RPT/AUGUST 21, 2018
Plate-3

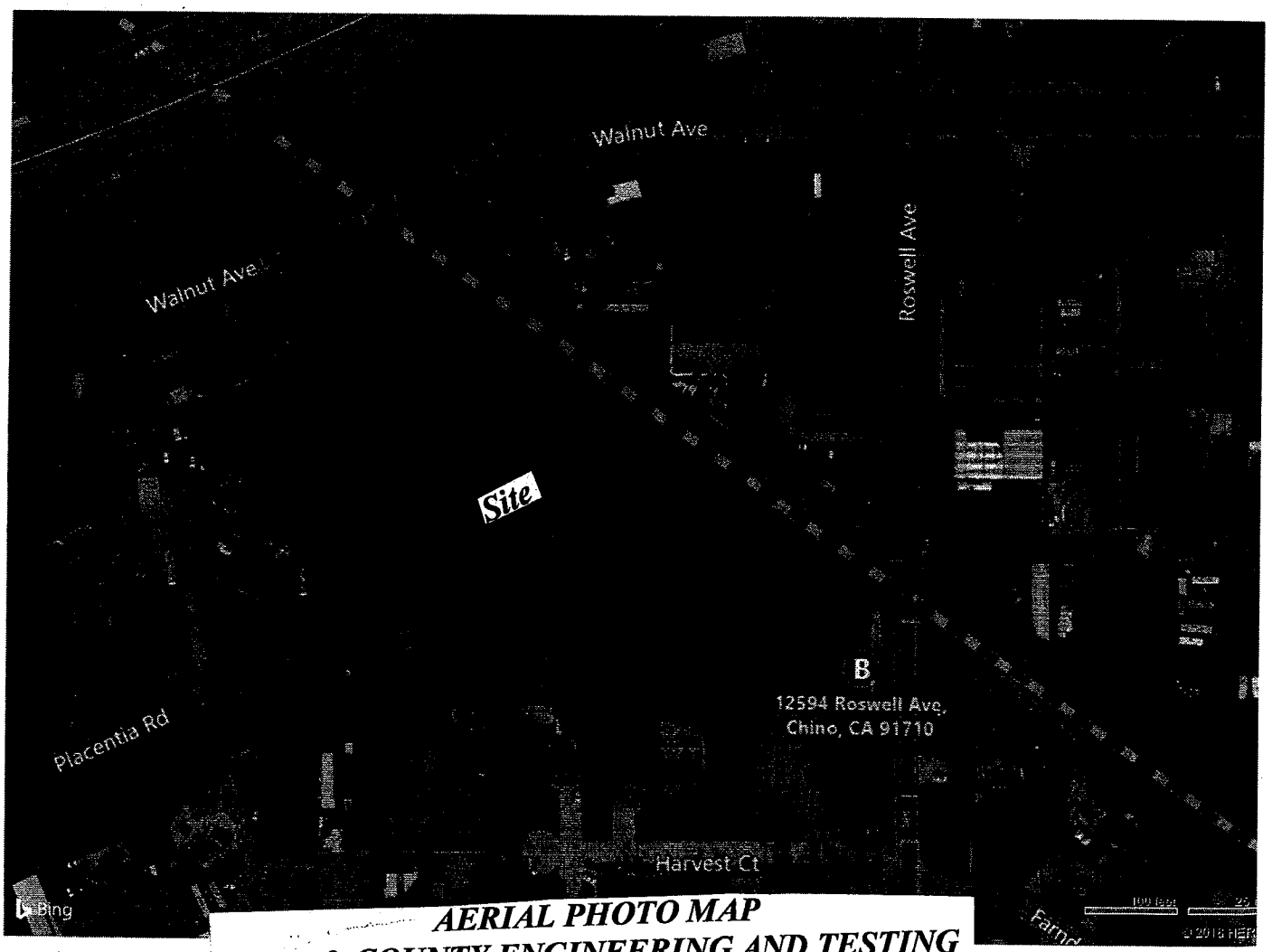


bing maps

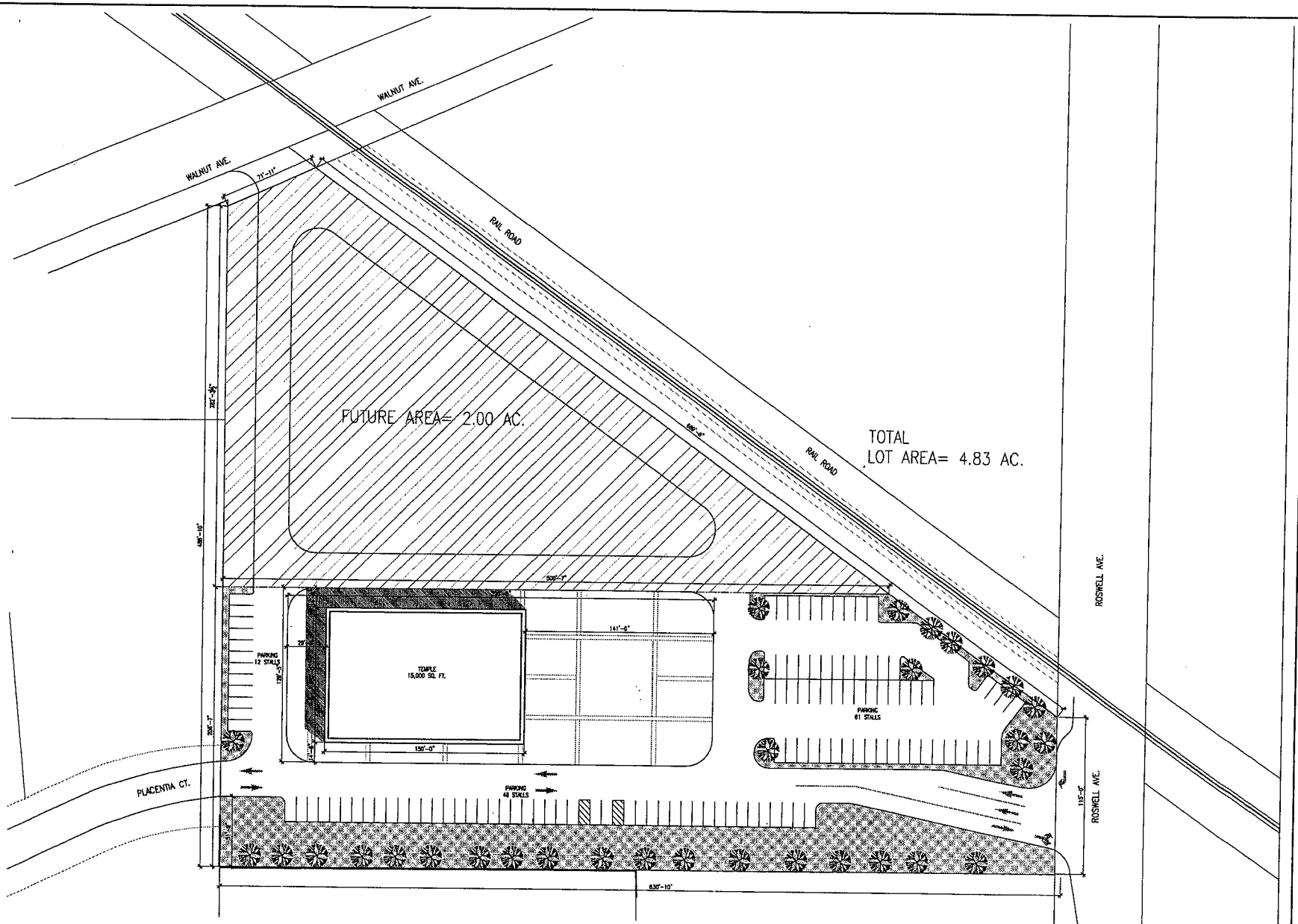
Notes

SRI SAI RAM TEMPLE
JOB #J&P2018037P1
August 7, 2018
AERIAL MAP
Plate 3





AERIAL PHOTO MAP
CITY & COUNTY ENGINEERING AND TESTING
JOB # J&P2018037P1.RPT/AUGUST 21, 2018
Plate-4



CONCEPTUAL SITE PLAN

SCALE: 1/32" = 1'- 0"

1
A-1.0

APPROVAL STAMP:

BRAHMBHATT
ARCHITECTS

PROJECT:
SHRI SAI RAM MANDIR
CONCEPTUAL DESIGN

CLIENT:

DATE: 8/16/2018

DRAWN: AM

CHECKED: SB

SCALE: AS NOTED

PROJECT No.:

TITLE:
CONCEPTUAL
SITE PLAN

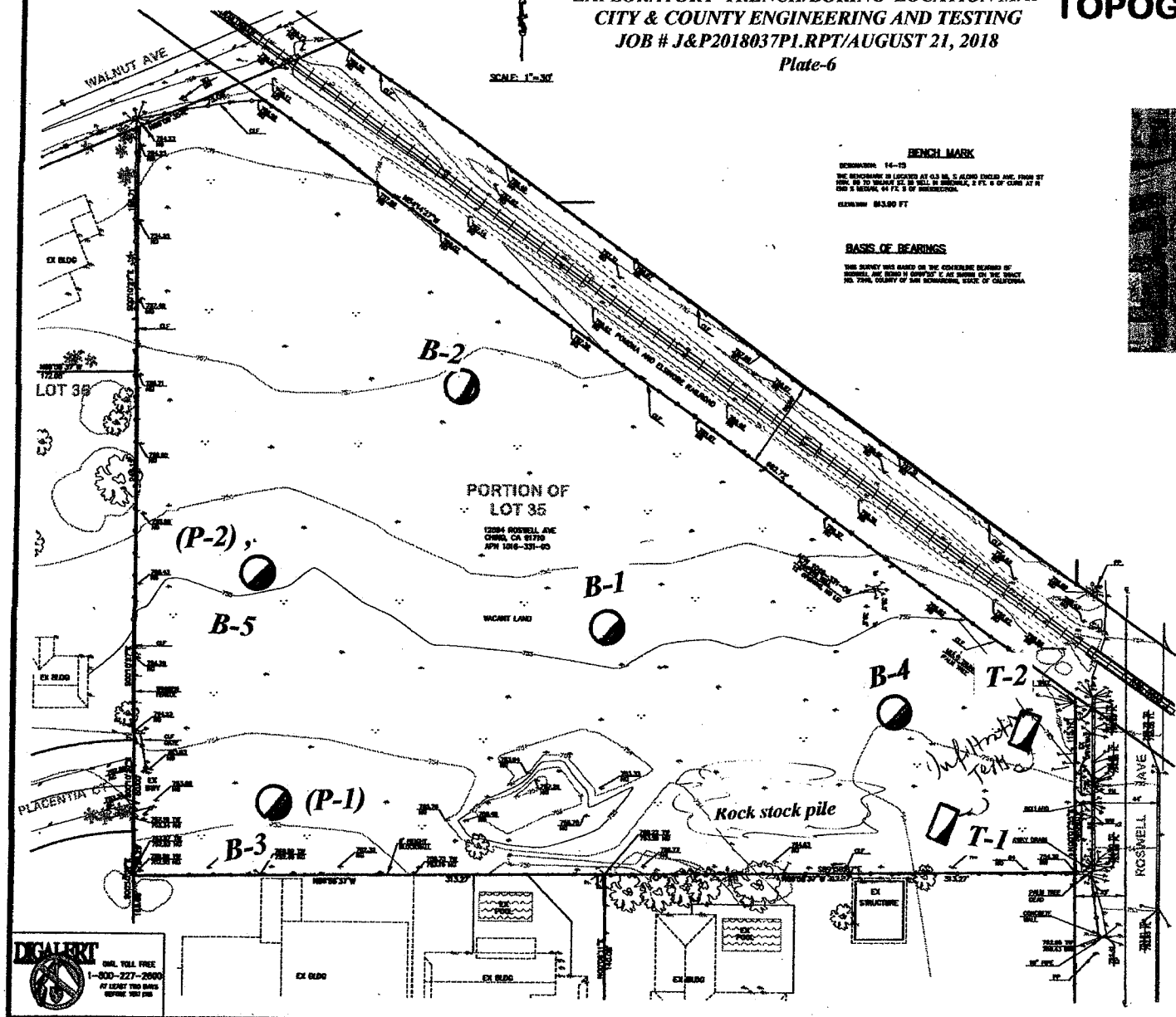
SHEET:
A-1.0

EXPLORATORY TRENCH/BORING LOCATION MAP
CITY & COUNTY ENGINEERING AND TESTING
JOB # J&P2018037P1.RPT/AUGUST 21, 2018
Plate-6

TOPOGRAPHIC SURVEY

12594 ROSWELL AVE
CHINO, CA 91710

SCALE: 1"=30'



BENCH MARK

DESIGNATION: 14-13

THE BENCHMARK IS LOCATED AT 0.3 MI. S ALONG ENCLS AVE. FROM ST HWY. 60 TO WALNUT ST. IN WELL IN SIDEWALK, 2 FT. E OF CURB AT N END X BETWEEN 64 & 72 S OF INTERSECTION.

ELEVATION 863.00 FT

BASIS OF BEARINGS

THIS SURVEY WAS BASED ON THE CENTERLINE BEARING OF ROSWELL AVE. BEING N 00°00'00" E AS SHOWN ON THE TRACT NO. 7298, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA

VICINITY MAP

LEGAL DESCRIPTION

THAT PORTION OF LOT 35, SECTION 4, TOWNSHIP 2 SOUTH, RANGE 8 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE MAP OF RESURVEY OF PART OF RANCHO SANTA ANA DEL CHINO, IN THE COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 4, PAGE 13 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, LYING SOUTHWESTERLY OF THE CENTERLINE OF THE RIGHT OF WAY OF THE PUGSLEY AND ELSINORE RAILROAD,

EXCEPTING THEREFROM THAT PORTION DEEDED TO THE STATE OF CALIFORNIA DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE EAST LINE OF EAST CHINO AVENUE, 66 FEET WIDE, ALLOWANCE LOT 36 OF SAID SECTION 4 ON THE NORTH, DISTANCE ALONG SAID EAST LINE SOUTH 0°01'10" EAST 2991.24 FEET FROM THE NORTH LINE OF WALNUT AVENUE, 60 WIDE, ALLOWANCE SAID LOTS 35 AND 36 ON THE NORTH, DISTANCE SOUTH 0°01'10" EAST 0.04 FEET TO CENTER TERMINUS HORIZONTALLY AND HAVING A RADIUS OF 5,000 FEET, THENCE EXTENDED ALONG SAID CURVE FROM A TANGENT BEARING NORTH 72°08'00" EAST, THROUGH AN ANGLE OF 03°13'0" AN ARC DISTANCE OF 0.04 FEET TO THE TRUE POINT OF BEGINNING, THENCE, TANGENT TO SAID CURVE, NORTH 69°21'00" EAST 192.5 FEET, MORE OR LESS, TO SAID CENTERLINE OF RAILROAD RIGHT OF WAY.

ALSO EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF INTEREST IN AND TO THE OIL AND MINERAL RIGHTS LYING ON THE WEST 6 FEET OF THE EAST 170.48 FEET OF THE SOUTH 308 FEET OF THE NORTH 698.83 FEET THEREOF.

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALTIC CONCRETE
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
BFP	BACKFLOW PREVENTER
BW	BACK OF WALK
CATV	CABLE TELEVISION
CB	CATCH BASIN
CO	CLEAN OUT
CLF	CHAIN LINK FENCE
CO	CLEANOUT
DG	DECOMPOSED GRANITE
DI	DRAIN
DWY	DRIVEWAY
EX	EXISTING
FG	FINISHED GROUND / GRADE
FS	FIRE SERVICE
GB	GRADE BREAK
HB	HOSE BIB
HC	HANDICAP
HYD	HYDRANT
IRR	IRRIGATION CONTROL VALVE
MH	MANHOLE
MV	METER ELEVATION
NG	NAT GAS
NLT	NATURAL LANDSCAPE
PB	PULL BOX
PC	PRESTRESSED CONCRETE
PCC	PORTLAND CEMENT CONCRETE
PP	POWER POLE
PVC	POLYVINYL CHLORIDE
RT	RADIUS
RW	RAIL
RR	RAIL ROAD
SCD	SANITARY SEWER CLEANOUT
SD	SANITARY SEWER
TC	TOP OF CURB
TW	TOP OF WALK
TS	TOP OF STEPS
TF	TOP OF FOOTING
TR	TRUNK SEWER FENCE
TW	TOP OF WALL
UBL	UTILITY
WM	WATER METER
WV	WATER VALVE

LEGEND

- PROPERTY LINE(E)
- STREET CENTERLINE(E)
- CURB AND GUTTER
- EX BUILDING/ STRUCTURE
- 100 EXISTING CONTOUR LINE
- AC PAVING
- BLOCK WALL
- OVERHAND
- TREE (TRUNK OVER 4")
- BUSHES
- RAIL ROAD
- WP
- CLF
- FH
- WM
- PP
- TEL MH
- BOLLARD
- DWY/ WD
- CONC WALL

G & G ENGINEERING, INC.
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CIVIL ENGINEERING
LAND PLANNING
LAND SURVEYING

PROFESSIONAL ENGINEER
No. C62383
Exp. 12-31-18
CIVIL
STATE OF CALIFORNIA

ARCHITECT:

REVISIONS

NO.	DATE	BY	DESCRIPTION

PROPERTY OWNER
VACANT LAND
12594 ROSWELL AVENUE
CHINO, CA 91710

PREPARED UNDER SUPERVISION OF:
ANDREW GRYSHCHUK 08-01-18
PROJECT ENGINEER DATE
R.C.E. NO. C62383 EXP. DATE: 12-31-18

DRAWN BY: F.G.
DESIGNED BY: A.G.
CHECKED BY: A.G.

TOPOGRAPHIC SURVEY

DATE: 08-01-18
SCALE: AS SHOWN
JOB NO. 638
SHEET NO. 1

REFERENCES

The County of San Bernardino Area Wide Storm Water Program, Technical Guidance Document for Water Quality Management Plans, June 7, 2013.

San Bernardino County Stormwater Program, Model Water Quality Management Plan Guidance, Jun. 9, 2005.

San Bernardino County Regional Geologic Hazard Maps.

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California Stormwater Quality Association (QASCA), California Stormwater BMP Handbook, Infiltration Trench, TC-10 Design Considerations

BMP Handbook, Part B, Planning Activities, Stormwater Mitigation Measures, Watershed Protection Division, City of Los Angeles.

APPENDIX A
PERCOLATION TEST DATA/GRAPH

DOUBLE RING INFILTROMETER TEST DATA- TEST # T-1 (P-1)

SRI SAI RAM TEMPLE				**Constants-**	Ring Data		Liquid Container—		
Location: 12594 ROSWELL AVE, CHINO, County of San Bernardino, California				*Job #J&P 2018044 DRI*	Area, A_r (in^2)	Depth of Liquid (in)	Vol..V_r. ($in^{3/}$ in) #		
				Inner Ring: 12" D	*113*	*18"*	*1-78.54*		
Test By:	*HM/GL*	USCS class	*SP/GP*	Annular Space: 24" D	*339*	*18"*	*2-176.7*		
Water Table Dept		Penetration of Rings into Soil (in.):			Inner:		Outer:89 F		
Date Test:	Tape water used:	*80F*	pH:	Ground Temp (F): 83 f			at Depth: 12" /78 F		
Liquid Level Maintained by using:	(Flow valve () Float Valve () Marriotte Tube (X) Other : Manually_								
Additional Comments::	***Soil Description/Pit Location/Project Detail/Weather***								
Date Tested: 08/11/18	*Gray, fine silty sand, silt (SM-ML)*								

Time	Time	Dt	Inner Ring		Annular RING		Liquid	Infiltration Rats. 1**		Remarks
			Elev.: H(in)	*AH* (in)/Qf	Elev:, H(in)	.AH (in)/Q	Temp "F"	Inner in/hr	Outer in/hr	
I - Start	*8:40*	*15.00*	*2.0*	*2.5*	*2.0*	*2,7*	*78 f*	*3.47*	*2.81*	
End	*8:55*		*4.5*	*196.35*	*4.7*	*477.0*	*78 f*			
2 - Start	*9.05*	*30.00*	*2.0*	*2.1*	*2.0*	*2.0*	*78 f*	*2.91*	*2.08*	
End	*9.35*		*4.1*	*164.93*	*4.0*	*353.4*	*78 f*			
3 - Start	*9:37*	*30.00*	*2.0*	*1.75*	*2.0*	*2.01*	*78 f*	*2.43*	*2.09*	
End	*10:07*		*3.75.*	*137.44*	*4.0*	*355.2*	*78 f*			
4- Start	*10:09*	*30.00*	*2.0*	*1.5*	*2.0*	*1.75*	*78 f*	*2.08*	*1.82*	
End	*10: 39*		*3.5*	*117.81*	*3.75.*	*309.2*	*78 f*			
5 - Stare	*10:40*	*30.00*	*2.0*	*1.25*	*2.0*	*1.75*	*78 f*	*1.73*	*1.82*	
End	*11:10*		*3.25*	*98.17*	*3.75.*	*309.2*	*78 f*			
6 -Start	*11:11*	*30.00*	*2.0*	*1.1*	*2.0*	*1.50*	*78 f*	*1.53*	*1.56*	
End	*11:41*		*3.1*	*86.40*	*3.5*	*265.0*	*78 f*			
7 -Start	*11:44*	*30.00*	*2.0*	*1.1*	*2.0*	*1.5*	*78 f*	*1.53*	*1.56*	
End	*12: 14*		*3.14.*	*86.40*	*3.5*	*265.0*	*78 f*			
8 -Start	*12: 18*	*30.00*	*2.0*	*1.1*	*2.0*	*1.5*	*78 f*	***1.53***	***1.56***	
End	*12.48*		*3.1*	*86.40*	*3.5*	*265.0*	*78 f*			

"Flow. Qf = AH x*Vr*-**'Infiltration I =(Qf'/Ar)/At

Table 1 - Test Data Form for Double Ring Infiltrometer Test; *RiversideCounty - Law Impact Development BMP Design Handbook*

DOUBLE RING INFILTROMETER TEST DATA- TEST # T-2 (P-2)

SRI SAI RAM TEMPLE				**Constants-**	Ring Data		Liquid Container—
Location: 12594 ROSWELL AVE, CHINO, County of San Bernardino, California				*Job #J&P 2018044 DRI*	Area, A_r (in^2)	Depth of Liquid (in)	Vol..V_r. (in^3/ in) #
				Inner Ring: 12" D	*113*	*18"*	*1-78.54*
Test By:	*HM/GL*	USCS class	*SP/GP*	Annular Space: 24" D	*339*	*18"*	*2-176.7*
Water Table Dept		Penetration of Rings into Soil (in.):			Inner:		Outer: 89 F
Date Test:	Tape water used:	*80F*	pH:	Ground Temp (°F): 83 f			at Depth: 12" /78 F
Liquid Level Maintained by using:		(Flow valve () Float Valve () Marriotte Tube (X) Other : Manually_					
Additional Comments:: *Date Tested: 08/11/18*		***Soil Description/Pit Location/Project Detail/Weather*** *Gray, fine silty sand, silt (SM-ML)*					

Time	Time	Dt	Inner Ring		Annular RING		Liquid	Infiltration Rats. I***		Remarks
			Elev.: H(in)	*AH* (in)/Qf	Elev:, H(in)	.AH (in)/Q	Temp "F"	Inner in/hr	Outer in/hr	
1 - Start	*8:42*	*15.00*	*2.0*	*2.75*	*2.0*	*2,75*	*78 f*	*3.82*	*2.87*	
End	*8:57*		*4.75*	*215.9*	*4.75*	*485.9*	*78 f*			
2 - Start	*9.05*	*30.00*	*2.0*	*2.25*	*2.0*	*2.25*	*78 f*	*3.12*	*2.34*	
End	*9.35*		*4.25.*	*176.7*	*4.25*	*397.6*	*78 f*			
3 - Start	*9:40*	*30.00*	*2.0*	*2.00*	*2.0*	*2.1*	*78 f*	*2.78*	*2.19*	
End	*10:10*		*4.00.*	*157.1*	*4.1*	*371.1*	*78 f*			
4- Start	*10:12*	*30.00*	*2.0*	*1.75*	*2.0*	*2.00.*	*78 f*	*2.43*	*2.08*	
End	*10: 42*		*3.75*	*137.4*	*4.00.*	*353.4*	*78 f*			
5 - Stare	*10:45*	*30.00*	*2.0*	*1.5*	*2.0*	*1.75*	*78 f*	*2.08*	*1.81*	
End	*11:15*		*3.5*	*117.8*	*3.75.*	*309.2*	*78 f*			
6 -Start	*11:18*	*30.00*	*2.0*	*1.25*	*2.0*	*1.50*	*78 f*	*1.74*	*1.56*	
End	*11:48*		*3.25*	*98.2*	*3.5*	*265.1*	*78 f*			
7 -Start	*11:50*	*30.00*	*2.0*	*1.1*	*2.0*	*1.50*	*78 f*	*1.52*	*1.56*	
End	*12: 20*		*3.14.*	*86.4*	*3.25*	*265.1*	*78 f*			
8 -Start	*12: 25*	*30.00*	*2.0*	*1.1*	*2.0*	*1.50*	*78 f*	***1.52***	***1.56***	
End	*12.55*		*3.1*	*86.4*	*3.25*	*265.1*	*78 f*			

"Flow. Qf = AH x *Vr*-**'Infiltration I =(Qf'/Ar)/At

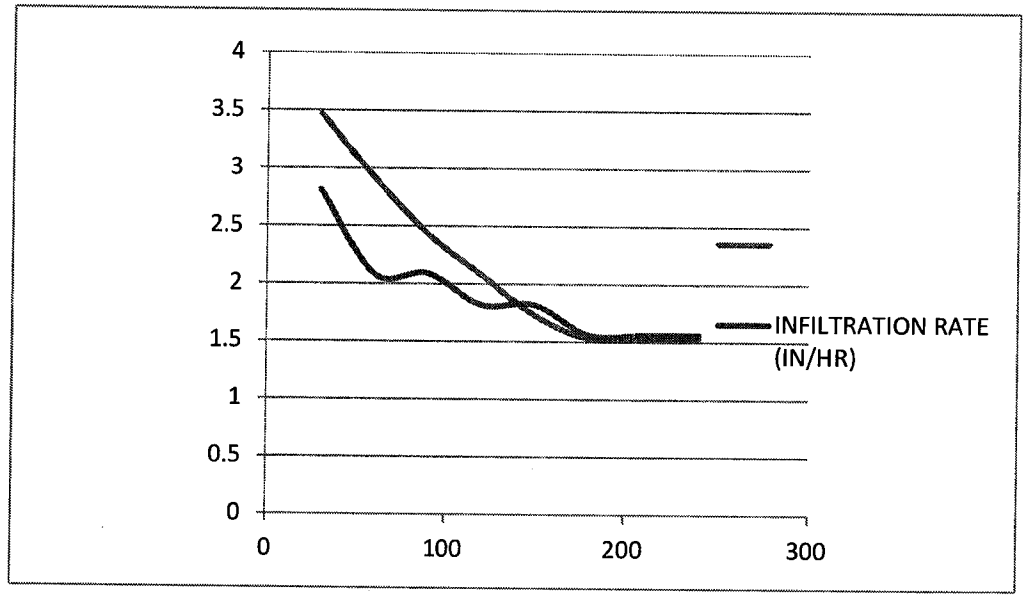
Table 1 - Test Data Form for Double Ring Infiltrometer Test; *RiversideCounty - Law Impact Development BMP Design Handbook*

CITY COUNTY SOIL ENGINEERING AND TESTING
Job #J12018044P1-DRI

INFILTRATION CURVE (P-1)

Site: 12594 ROSWELL AVE., CHINO, CA 91710

ELAPSED TIME (MIN)		INFILTRATION RATE (IN/HR)
30	3.47	2.81
60	2.91	2.08
90	2.43	2.09
120	2.08	1.82
150	1.73	1.82
180	1.53	1.56
210	1.53	1.56
240	1.53	1.56

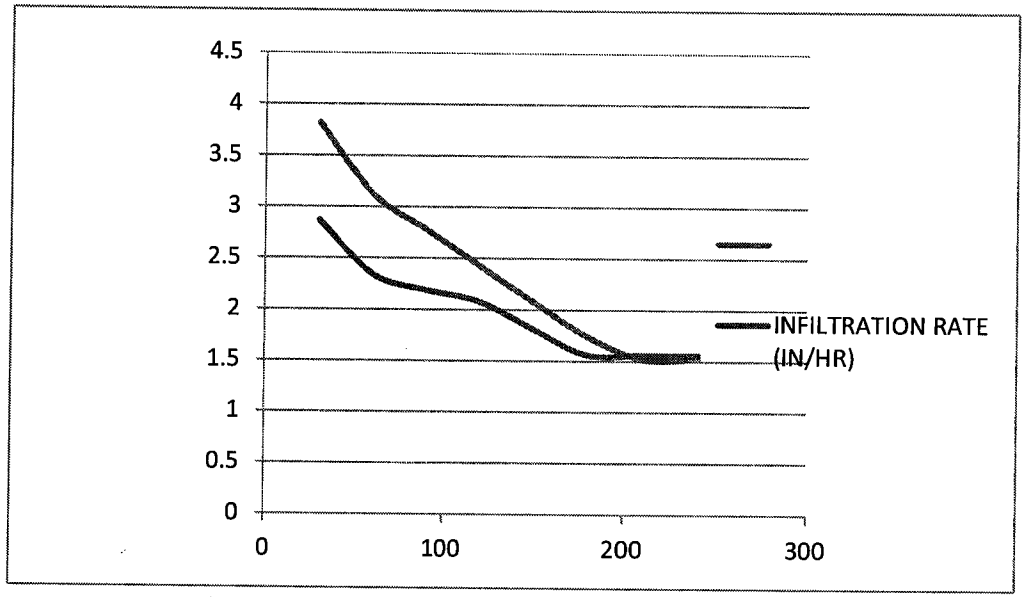


CITY COUNTY SOIL ENGINEERING AND TESTING
Job #J12018044P1-DRI

INFILTRATION CURVE (P-2)

Site: 12594 ROSWELL AVE., CHINO, CA 91710

ELAPSED TIME (MIN)		INFILTRATION RATE (IN/HR)
30	3.82	2.87
60	3.12	2.34
90	2.78	2.19
120	2.43	2.08
150	2.08	1.81
180	1.74	1.56
210	1.52	1.56
240	1.52	1.56



Major division			Group symbols	Typical names		Classification criteria
Coarse-grained soils more than 50% retained on No. 200 sieve	Gravels 50% or more of coarse fraction retained on No. 4 sieve	Clean gravels	GW	Well graded gravels and gravel sand mixtures, little or no fines	Classification on basis of percentage of fines	$C_u = D_{60}/D_{10}$ greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			GP	Poorly graded gravels and gravel sand mixtures, little or no fines		Not meeting both criteria for GW
		Gravel with fines	GM	Silty gravels, gravel sand silt mixtures		Atterberg limits plot below A-line or plasticity index less than 4
			GC	Clayey gravels, gravel sand-clay mixtures		Atterberg limits plot above A. line and plasticity index greater than 7
	Sands more than 50% of coarse fraction passes No. 4 sieve	Clean sands	SW	Well-graded sands and gravelly sands, little or no fines		$C_u = D_{60}/D_{10}$ greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3
			SP	Poorly graded sands and gravelly sands, little or no fines		Not meeting both criteria for SW
		Sands with fines	SM	Silty sands, sand silt mixtures		Atterberg limits plot below A-line of plasticity index less than 4
			SC	Clayey sands, sand-clay mixtures		Atterberg limits plot above A-line and plasticity index greater than 7

Less than 5% pass No. 200 sieve: GW, GP, SW, SP
More than 12% pass No. 200 sieve: GM, GC, SM, SC
5% to 12% pass No. 200 sieve: Borderline classification requiring use of dual symbol

For soils with more than 50% passing No. 200 sieve, classify on Casagrande chart and highly organic soil is PT (peat) →

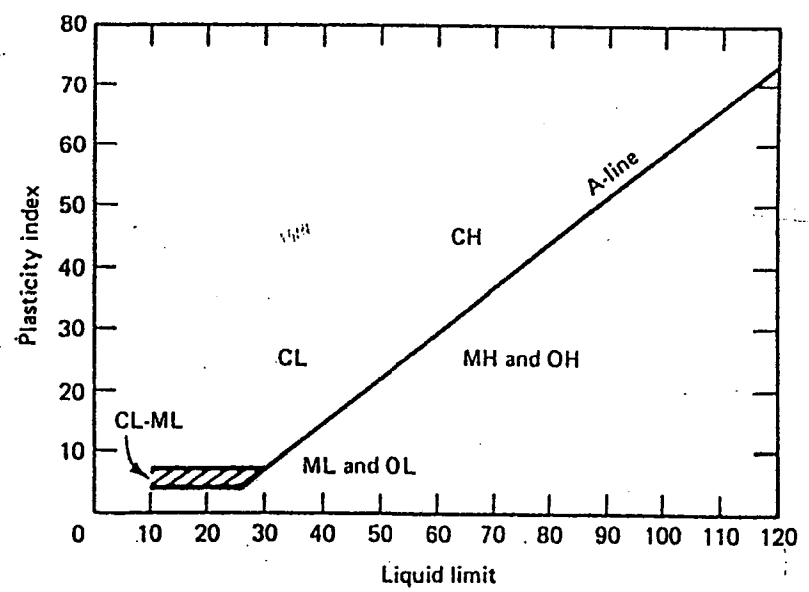


Figure 3-9 Unified classification tabular chart. (Courtesy A. Casagrande, *Classification and Identification of Soils*, Trans. ASCE 113, 1948.)

BORING LOG NO. B-1 (P-1)

Job # J&P2018037P1			08/12/18	Client: SRI SAI RAM MANDIR		
Hole Diameter: 8"			Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA		
Sampling Method		Drive Wt. 140#		CME-45		Logged By: ZB
Drop: 30"				Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA		
Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
					SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
99.1		38	12.0	■ ●	SM	Brown, fine silty sand, poorly graded, v. moist, med. loose
						dense, ***27% passing #200 sieve***
	5					
116.4		37	1.7	■ ●	SM	Olive gray, fine silty sand, poorly graded, s. moist, med.
						dense,
	10					
		8		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	15					
		22		◆	SM	Olive gray, fine silty sand, poorly graded, moist, medium
						dense
	20					
		19		◆	ML	Olive gray, fine sandy clayey silt, moist, very tiff
	25					
		15	8.0	◆	SM	Olive gray, fine silty sand, poorly graded, moist, medium
						dense , 38*% passing #200 sieve*
	30					

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-2

Job # J&P2018037P1			08/12/18	Client: SRI SAI RAM MANDIR		
Hole Diameter: 8"			Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA		
Sampling Method		Drive Wt. 140#		CME-45		Logged By: ZB
Drop: 30"				Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA		
Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
					SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
		46		■ ●	SM	Light brown, fine to coarse silty sand, few gravel, s. moist,
	5					medium dense, *27% passing #200 sieve*
104.0		17	7.7	■ ●	SM	Light brown, fine silty sand, moist, med. dense
	10					*27% passing #200 sieve*
		9		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	15					
		13		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	20					
		20		◆	ML	Olive gray, fine sandy clayey silt, moist, very stiff
	25					
						End of Boring @ 25 feet Depth
						No Groundwater Encountered
						Boring Backfilled

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-3

Job # J&P2018037P1			08/12/18	Client: SRI SAI RAM MANDIR		
Hole Diameter: 8"			Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA		
Sampling Method		Drive Wt. 140#		CME-45		Logged By: ZB
Drop: 30"				Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA		
Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
					SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
	5	31		■ ●	SM	Brown, fine silty sand, poorly graded, v. moist, med.
						dense, *27% passing #200 sieve*
	10	14		■ ●	ML	Olive gray, fine sandy clayey silt, moist, stiff
	15	9		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	20	13		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						dense
	25	14		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	30	17		◆	ML	Olive gray, fine sandy clayey silt, moist, very stiff

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-3 (Continuous from 30')

Job # J&P2018037P1	08/12/18	Client: SRI SAI RAM MANDIR	
Hole Diameter: 8"	Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA	
Sampling Method	Drive Wt. 140#	CME-45	Logged By: ZB
Drop: 30"		Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA	

Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
	30	17		◆	ML	Olive gray, fine sandy clayey silt, moist, very stiff
	35	13		■◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						dense, *27% passing #200 sieve*
	40	11		■◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						End of Boring @ 40 feet Depth
						No Groundwater Encountered
						Boring Backfilled
				◆		

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-4

Job # J&P2018037P1	08/12/18	Client: SRI SAI RAM MANDIR	
Hole Diameter: 8"	Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA	
Sampling Method	Drive Wt. 140#	CME-45	Logged By: ZB
Drop: 30"		Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA	

Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
					SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
		28		■ ●	SM	Lt. brown, fine silty sand, poorly graded, s. moist, med.
	5					dense,
98.4		33	4.4	■ ●	SM	Olive gray, fine silty sand, poorly graded, s. moist, med.
	10					***dense, 23% passing #200 sieve***
		13	17.8	◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	15					*57% passing #200 sieve*
		21		◆	SM	Olive gray, fine silty sand, poorly graded, moist, medium
	20					dense
		24	7.3	◆	SM	Olive gray, fine silty sand, poorly graded, moist, medium
	25					Dense, ***33% passing #200 sieve***
						End of Boring @ 25 feet Depth
						No Groundwater Encountered
						Boring Backfilled

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-5 (P-2)

Job # J&P2018037P1			08/12/18	Client: SRI SAI RAM MANDIR		
Hole Diameter: 8"			Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA		
Sampling Method		Drive Wt. 140#		CME-45		Logged By: ZB
Drop: 30"				Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA		
Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
					SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
	5	21		■ ●	SM	Brown, fine silty sand, poorly graded, v. moist,
						medium dense, *27% passing #200 sieve*
91.6	10	14	16.8	■ ●	ML	Olive gray, fine sandy clayey silt, moist, stiff
101.0	15	21	16.0	■ ●	SM	Olive gray, fine silty sand, poorly graded, moist, medium
						dense
	20	9		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
	25	21		◆	SM	Olive gray, fine silty sand, poorly graded, moist, medium
						dense
	30	29		◆	SM	Olive gray, fine silty sand, poorly graded, moist, dense

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

City & County Soil Engineering And Testing

BORING LOG NO. B-1 (continuous from 30')

Job # J&P2018037P1	08/12/18	Client: SRI SAI RAM MANDIR	
Hole Diameter: 8"	Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA	
Sampling Method	Drive Wt. 140#	CME-45	Logged By: ZB
Drop: 30"		Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA	

Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
	30				SM	Dark gray, fine silty sand, grass, vegetation, roots s. moist
						very loose
		16	15.7	◆	ML	Olive gray, fine sandy clayey silt, moist, very stiff
						53% passing #200 sieve
	35					
		12	20.0	◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						58% passing #200 sieve
	40					
						End of Boring @ 40 feet Depth
						No Groundwater Encountered
						Boring Backfilled after Percolation Testing

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

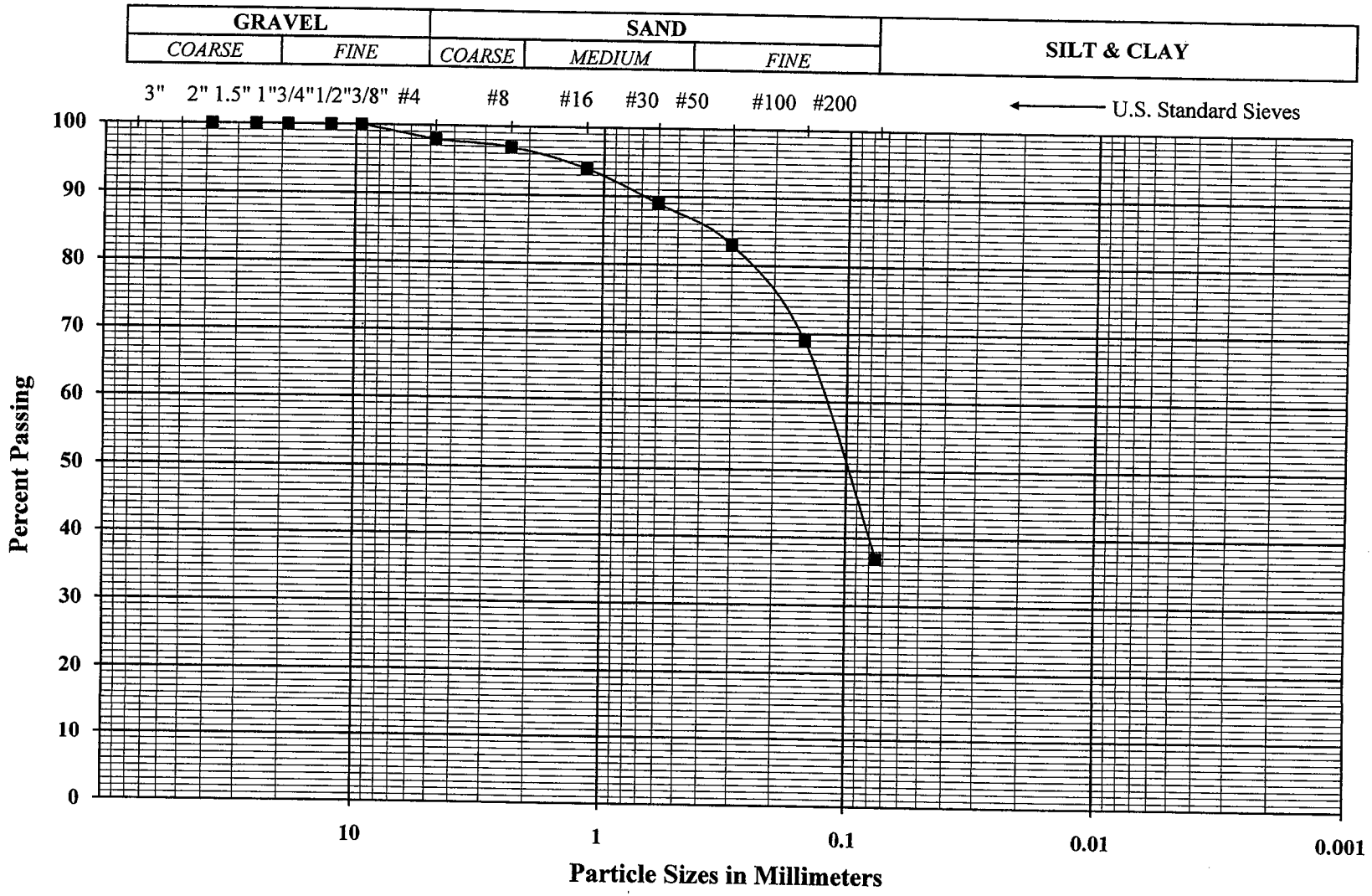
City & County Soil Engineering And Testing

BORING LOG NO. B-5 (continuous from 30')

Job # J&P2018037P1			08/12/18	Client: SRI SAI RAM MANDIR		
Hole Diameter: 8"			Elev. G.L.	Location:12594 ROSWELL AVE., CHINO, CA		
Sampling Method		Drive Wt. 140#		CME-45		Logged By: ZB
Drop: 30"				Drilling Co: GEOMAT DRILLING, RIVERSIDE, CA		
Dry Density (pcf)	Depth (ft)	# of Blows (ft)	Moist. (%)	Sample Type	Soil Class	Earth Materials Description Top Soil: Dense grass-vegetation-12"
	30	29		◆	SM	Olive gray, fine silty sand, poorly graded, moist, dense
	35	9		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						53% passing #200 sieve
	40	21		◆	ML	Olive gray, fine sandy clayey silt, moist, stiff
						58% passing #200 sieve
						End of Boring @ 40 feet Depth
						No Groundwater Encountered
						Boring Backfilled after Percolation Testing

● Undisturbed Ring Sample
■ Bulk Sample
◆ Standard Penetration Test

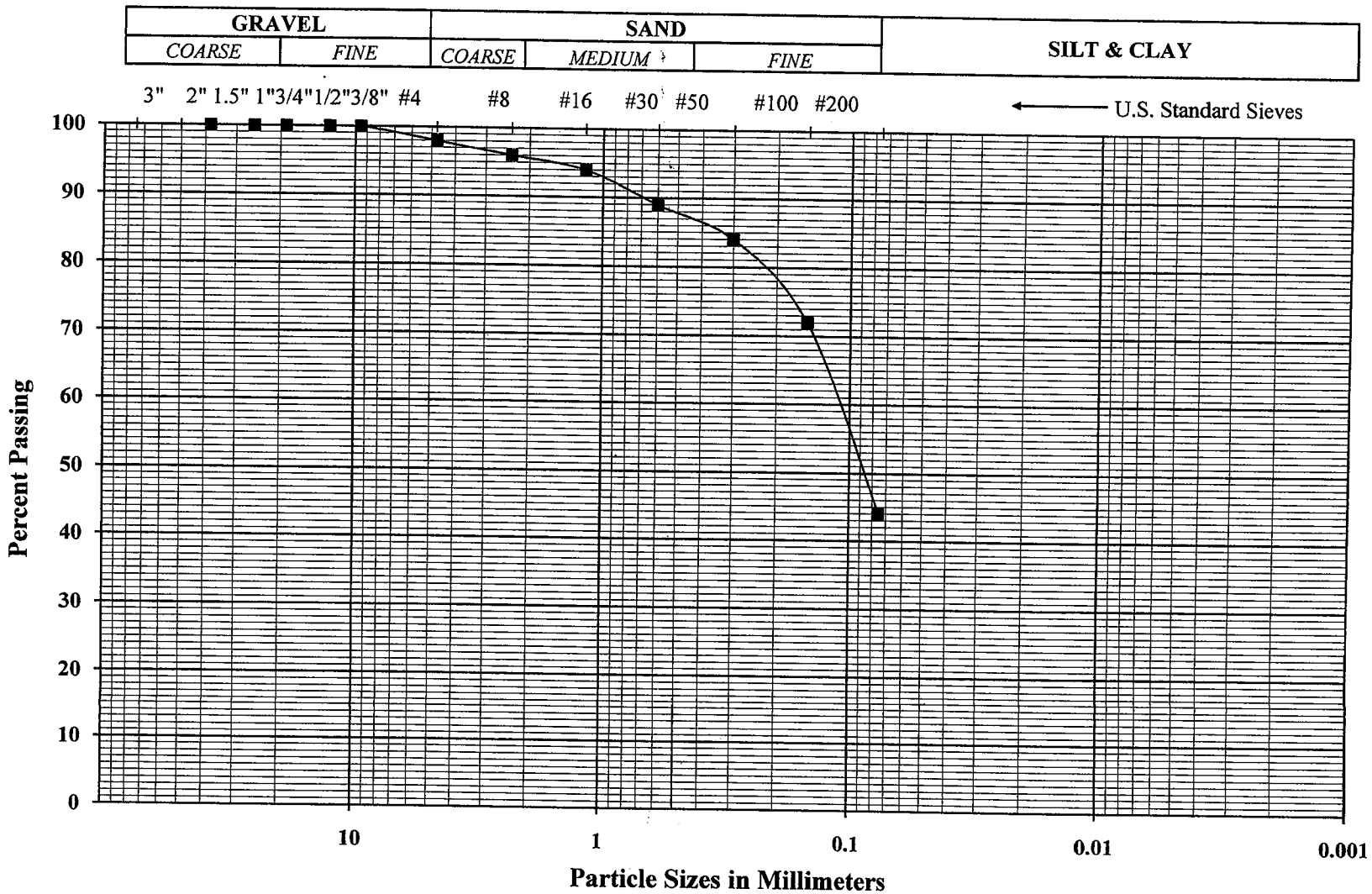
City & County Soil Engineering And Testing



Sample Identification: T-1 @ -5'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine silty sand SM)
4.90%

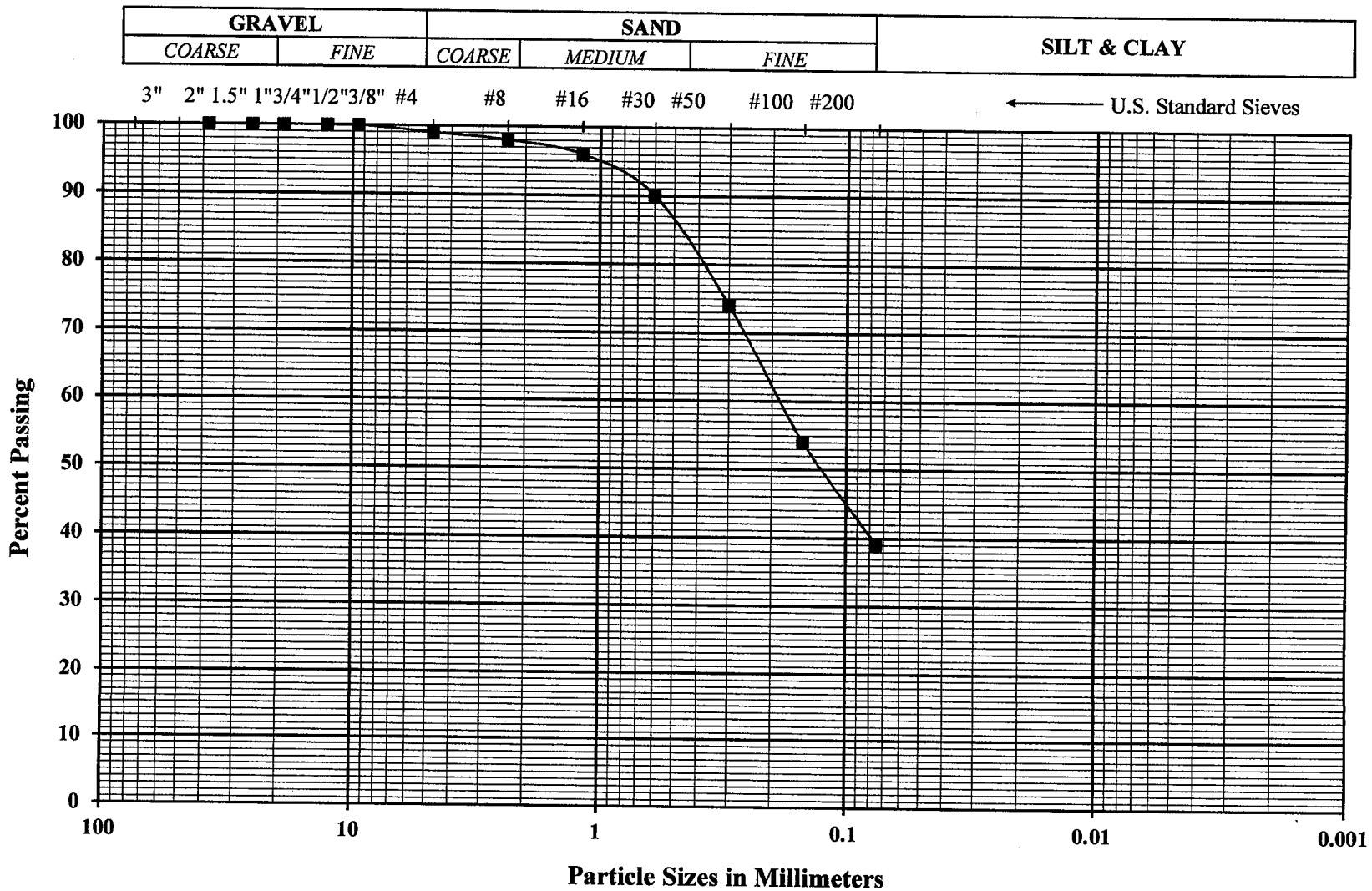
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: T-2 @ -8'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine silty sand SM)
5.20%

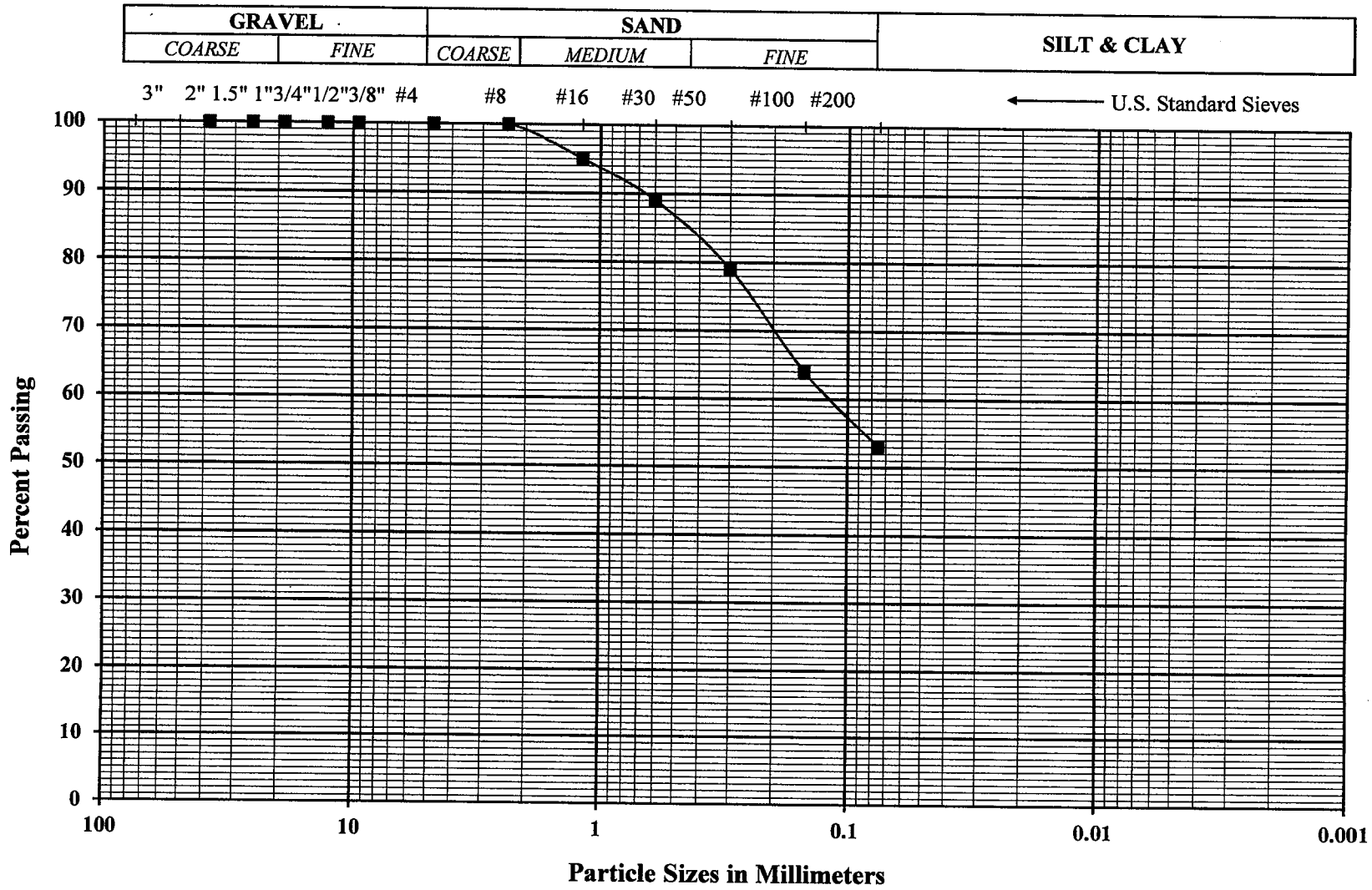
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-1 (P-1) @ -28'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine silty sand (SM)
8.00%

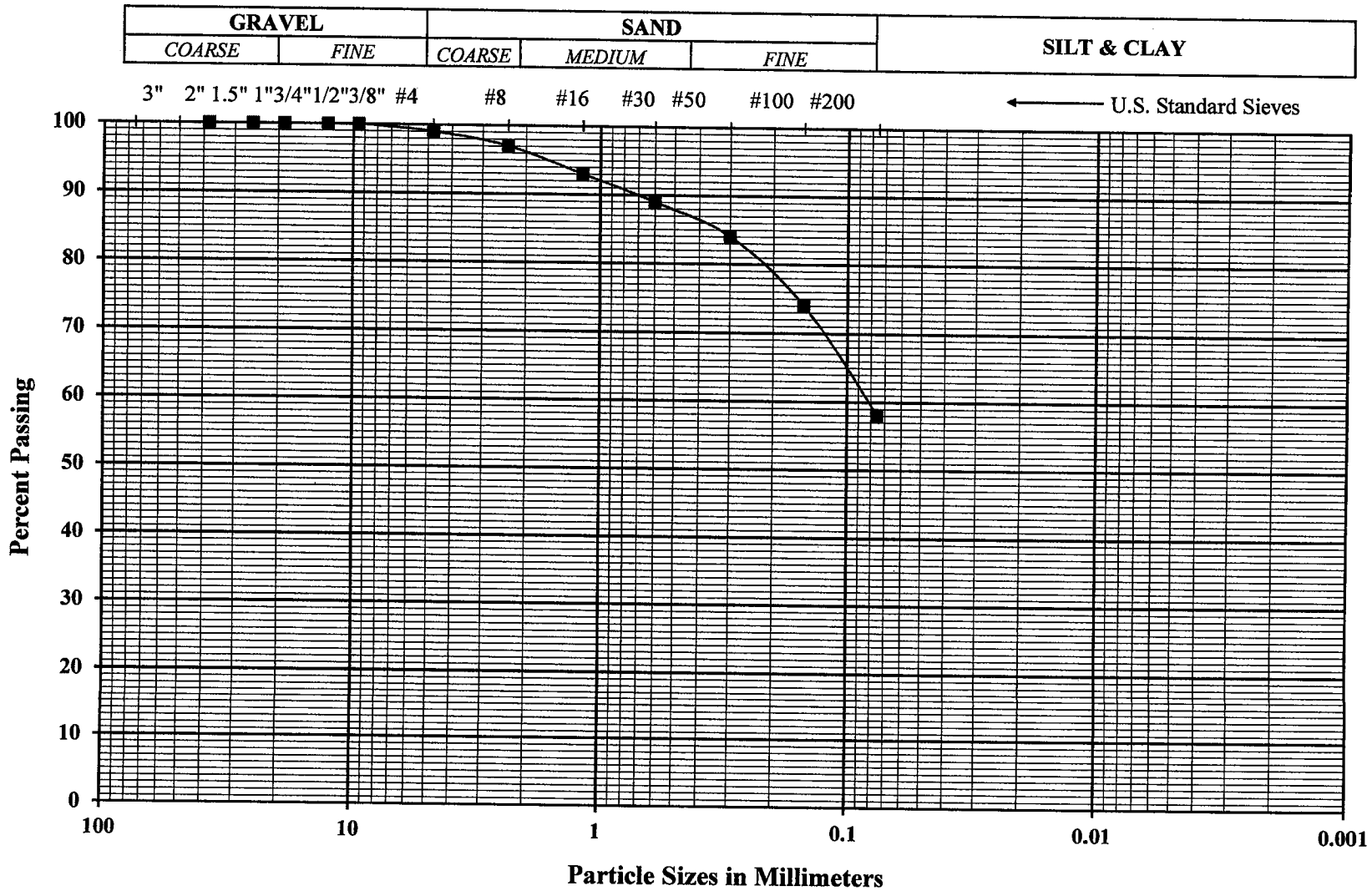
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-1 (P-1) @ -33'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type: Brown, fine sandy clayey silt (ML)
15.70%

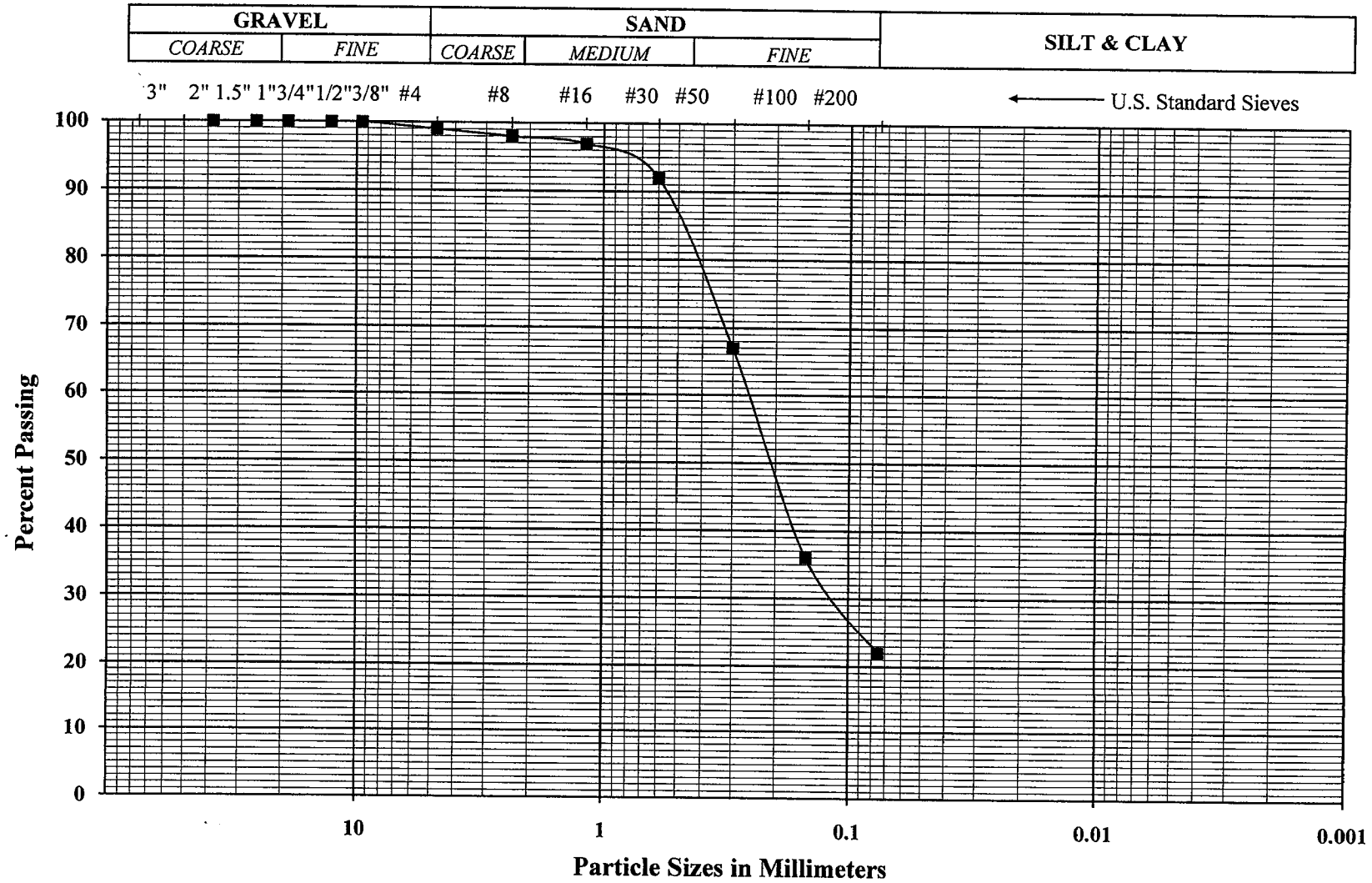
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-1 (P-1) @ -38'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type: Brown, fine sandy clayey silt (ML)
20.00%

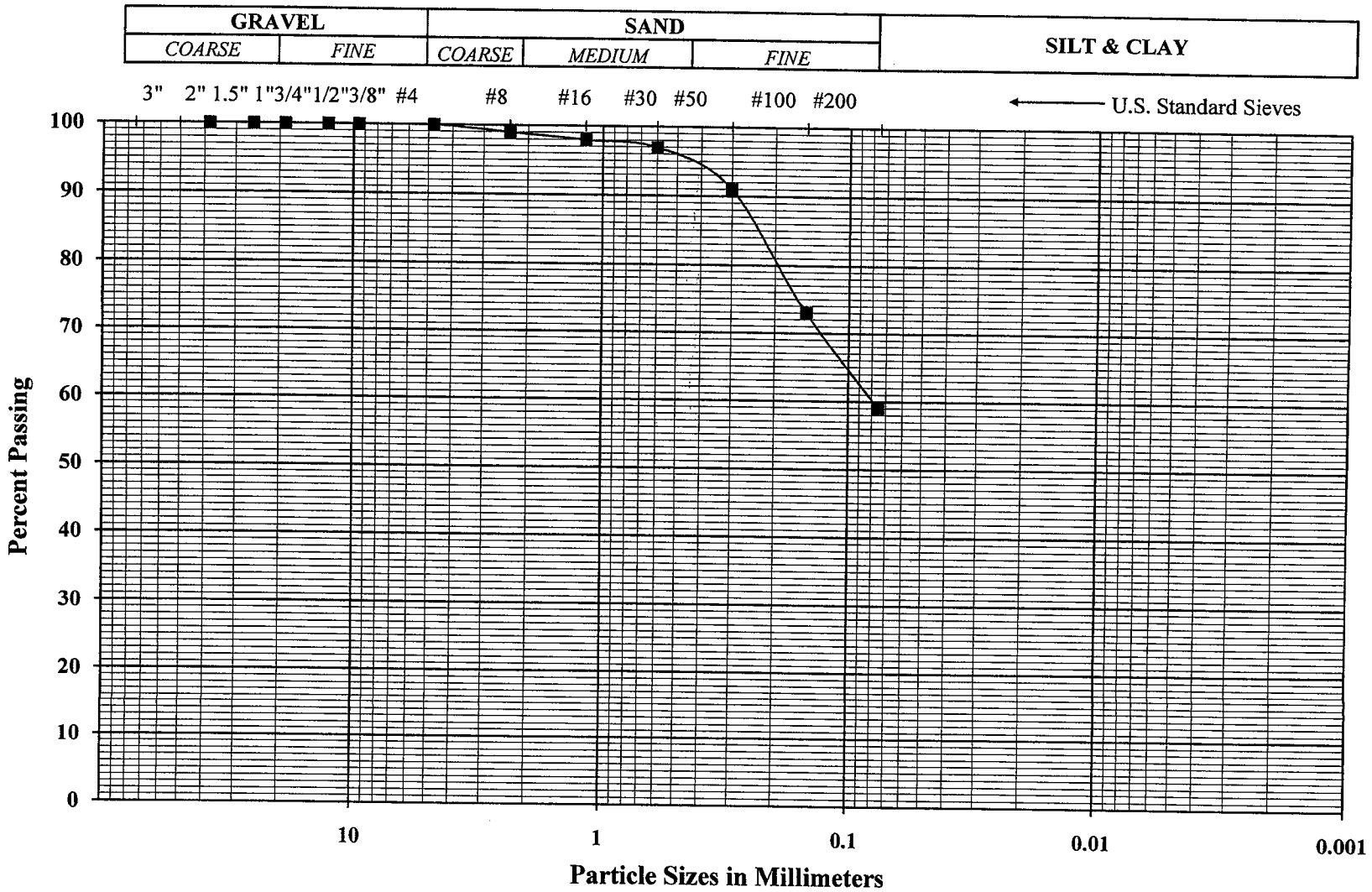
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-4 @ -9'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine silty sand (SM)
4.40%

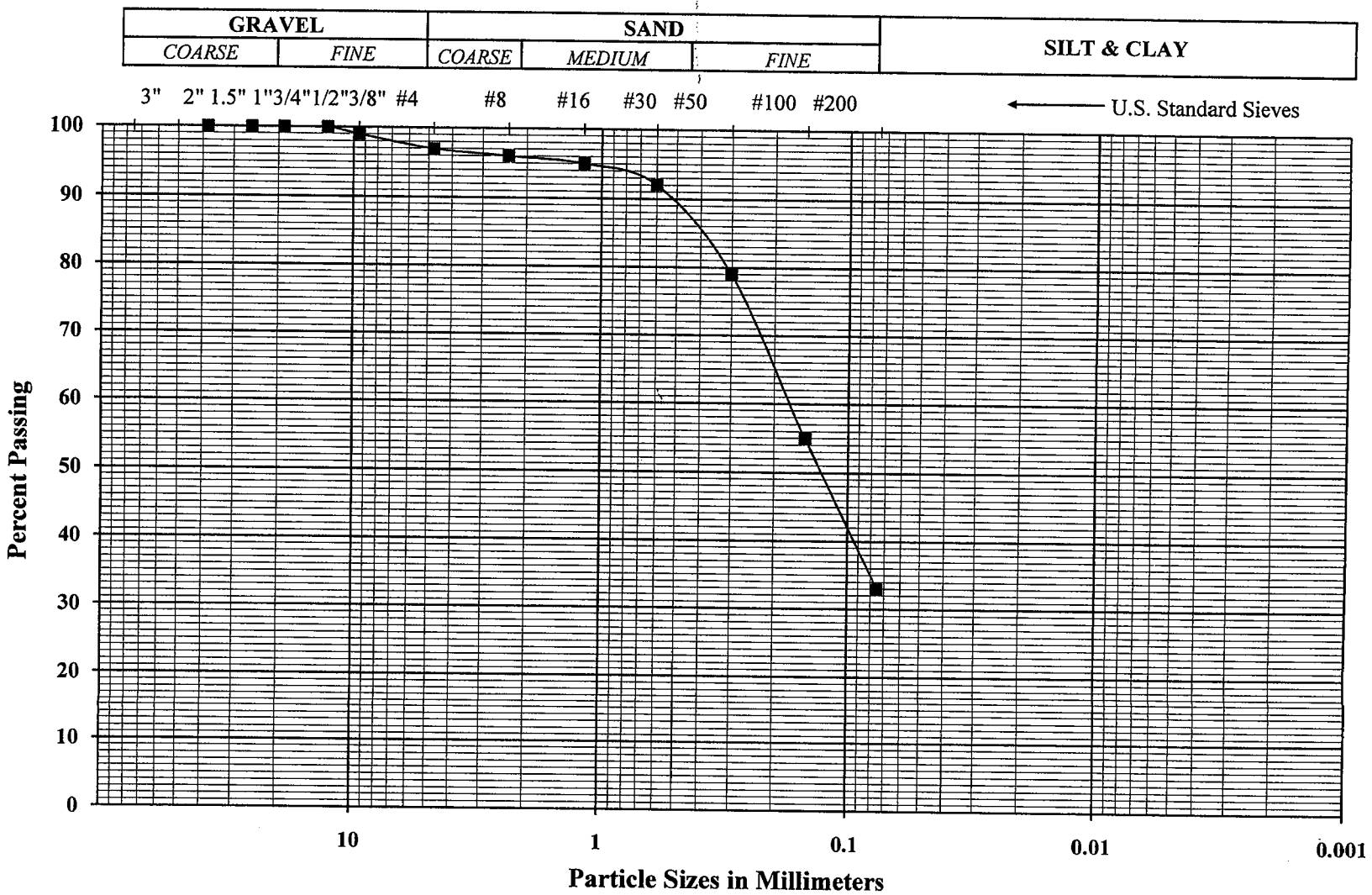
City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-4 @ -14'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine sandy silt (ML)
17.80%

City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1



Sample Identification: B-4 @ -24'
Location: 12954 ROISWELL AVE., CHINO, CA

Soil Type:Olive gray, fine silty sand (SM)
7.30%

City & County Soil Engineering And Testing	GRAIN SIZE DISTRIBUTION CURVE SRI SAI RAM MANDIR	PROJECT No. J&P2018037P1

Soil Resistivity, Soluble Sulfate, Soluble Chloride, pH

Project Name:
Project No.:
Sample ID:
Soil Classification:

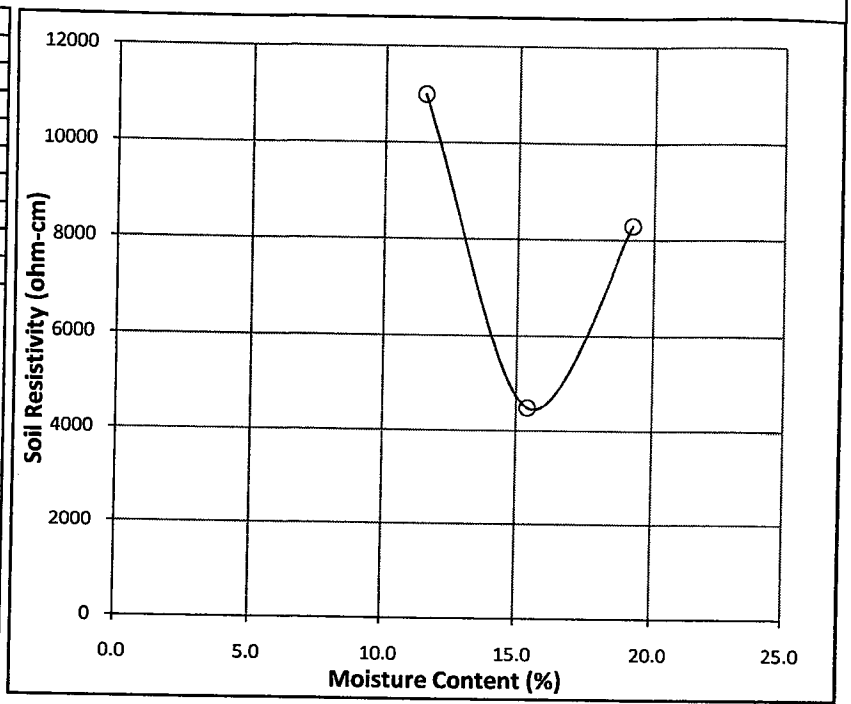
Sample Collected:
Collected By:
Sample Tested:
Tested by:

Specimen No.	1	2	3	4
Soil Box Constant (cm)	1.00	1.00	1.00	
Water Added (ml)	15.0	5.0	5.0	
Moisture (%)	11.5	15.4	19.2	
Meter Dial Reading	11.0	4.5	8.3	
Multilier Setting (ohm)	1K	1K	1K	
Resistance (ohm)	11000	4500	8300	
Minimum Resistivity (ohm-cm)	**4500**			
Temperature (°C)	18.2			
$R_{min\ 15.5} = [R_{min\text{-}T}*(24.5+T)]/40$	4803.75			

Water increment: 100-150 ml for large box and 5-15 ml for small box
Resistivity = Resistance X Soil Box Constant
Large Soil Box Constant = 6.67 cm
Small Soil Box Constant = 1.00 cm
Rmin 15.5 Corrected Minimum Resistivity to Standard Ground Temperature of 15.5°C

Soil Corrosivness	Resistivity (ohm-cm)
Very Severely Corrosive	0 - 900
Severely Corrosive	900 - 2,300
Moderately Corrosive	2,300 - 5,000
Mildly Corrosive	5,000 - 10,000
Very Mildly Corrosive	10,000 - 100,000

Reference: ASTM STP 1013 Titled "Effects of Soil Characteristics on Corrosion" (February, 1989).



Mixing Ratio	Dilution Factor	Sulfate Reading (ppm)	Sulfate Content ppm	Sulfate Content %	Chloride Reading (ppm)	Chloride Content ppm	Chloride Content %	pH
3	1	125	**375**	0.0375	1	**5**	0.0005	**6.75**
		Average			Average			

ACI 318-05 Table 4.3.1 Requirements for Concrete Exposed to Sulfate-Containing Solutions

Sulfate Exposure	Water-Soluble Sulfate (SO4) in Soil, % by Mass	Sulfate (SO4) in Water, ppm	Cement Type	Maximum w/cm by Mass	Minimum Design Compressive Strength fc, Mpa (psi)
Negligible	< 0.10	< 150	No Special Type	--	--
Moderate (See Water)	0.10 to 0.20	150 to 1500	II IP(MS), IS(MS), P(MS), I(PM)(MS), I(SM)(MS)	0.5	28 (4000)
Severe	0.20 to 2.00	1,500 to 10,000	V	0.45	31 (4500)
Very Severe	> 2.00	> 10,000	V + pozz	0.45	31 (4500)

Caltrans classifies a site as corrosive to structural concrete as an area where soil and/or water contains > 500 ppm chloride, > 2000 ppm sulfate, or has a pH < 5.5. A minimum resistivity of less than 1000 ohm-cm indicates the potential for corrosive environment requiring testing for the above criteria.

The 2007 CBC Section 1904A references ACI 318 for material selection and mix design for reinforced concrete dependant on the onsite corrosion potential, soluble sulfate content, and soluble chloride content in soil.

Comments: Sec. 4.3 of ACI 318 (2005) Soil environment is detrimental to concrete if it has soluble sulfate > 1000 ppm and/or pH < 5.5. Soil environment is corrosive to reinforcement and steel pipes if chloride ion > 500 ppm or pH < 4.0.

The information in this form is not intended for corrosion engineering design. If corrosion is critical, a corrosion specialist should be contacted to provide further recommendations.