

Geo-Advantec Inc.

G *Geotechnical Engineering*

A *Earthquake Engineering*

I *Inspection and Testing*

I *Engineering Geology*

GEOTECHNICAL/PAVEMENT ENGINEERING REPORT

PROJECT:

**PAVEMENT REHABILITATION ALONG GARFIELD AVENUE
BETWEEN TELEGRAPH ROAD AND THE NORTH CITY LIMIT
COMMERCE, CALIFORNIA**

FOR:

THE CITY OF COMMERCE



PREPARED BY:

**GEO-ADVANTEC INC.
457 W. ALLEN AVENUE, SUITE 113
SAN DIMAS, CALIFORNIA 91773
PROJECT NO. 17-1041-A
JUNE 28, 2017**

Table of Contents

<u>Subject</u>	<u>Page</u>
1. INTRODUCTION	1
2. SCOPE OF SERVICES	2
3. FIELD EXPLORATORY WORKS AND EXISTING PAVEMENT.....	3
4. SUBSURFACE CONDITIONS	4
5. LABORATORY TESTING.....	4
6. PAVEMENT DESIGN AND CONSTRUCTION.....	5
6.1. General	5
6.2. Recommended Pavement Alternatives.....	6
6.2.1 Full Depth Removal and Replacement (FDR&R).....	6
6.2.2 Full Depth Reclamation (FDR).....	8
6.3. Fill Materials and Import.....	10
7. SOIL EXPANSIVITY	10
8. OBSERVATION AND TESTING	11
9. CLOSURE	11

Ms. Maryam Babaki, PE
City of Commerce
Public Works & Development Services Department
2535 Commerce Way,
Commerce, CA 90040

June 28, 2017
Project No.: 17-1041-A

Subject: Geotechnical/Pavement Engineering Report,
Pavement Rehabilitation along Garfield Avenue
Between Telegraph Road and the North City Limit
Commerce, California

1. INTRODUCTION

This report presents the results of a Limited Geotechnical Investigation performed by Geo-Advantec, Inc. (GAI) along Garfield Avenue, located within City of Commerce, California. This pavement evaluation is performed to provide information about the thickness of existing pavement, as well as our recommendations for construction and/or rehabilitation of the pavement for the subject project. The limit of the project along Garfield Avenue is between Telegraph Road and the north city limit. This report includes our findings from the exploratory work and provides recommendations for the design and construction of the proposed future pavement rehabilitation from a geotechnical/pavement engineering standpoint.

The recommendations provided within this submittal are based on the results of our field exploration, laboratory testing, engineering analyses, and our experiences with similar projects. Our services were performed in general accordance with our Proposal No. 17-1041, dated June 21, 2017.

A vicinity map is presented as Figure A-1 within Appendix A. The vicinity map depicts the segment of Garfield Avenue this study pertains to. Aerial photos for the street have been used as the base maps to depict the locations of the sampling performed for this investigation, and are presented as Figures A-2's within Appendix A.

Our professional services have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for The City of Commerce ("the City"), and their consultants for the subject project. The report has not been prepared for use by other parties, and may not contain sufficient information for the purposes of other parties or other

uses. The Geotechnical Engineer of Record should be allowed to review the plans for the proposed developments and perform such additional geotechnical analyses as may be required to confirm the applicability of the recommendations contained in this report to the final design.

2. SCOPE OF SERVICES

As we understand, the City intends to reconstruct and/or rehabilitate Garfield Avenue between Telegraph Road and north city limit. The length of the project is about 7,900 feet. Garfield Avenue is a commercial/main route carrying considerable volume of passengers and heavy vehicles. Garfield Avenue has a north-south alignment and comprises of two lanes at each direction. As observed, majority of the pavement in both direction is in a failed situation. All types of distresses such as alligator cracking, rutting, shoving, potholing, and subsidence/settlement exist along the entire length of the project, indicating completely failed pavement sections. Due to severity of distress and high traffic volume along this route, mill and overlay option was ruled out. To perform a thorough investigation and provide the most appropriate options, we conducted the following scope for our services:

- Performing a site reconnaissance, evaluating the general condition of the existing pavement and marking the proposed coring and pothole locations for the purpose of underground utilities clearance and drilling;
- Conducting a total of 8 small diameter cores and 4 potholes using asphalt concrete coring machine and asphalt concrete saw-cutting machine;
- Measuring the existing asphalt concrete and base sections thicknesses, and determining presence of pavement fabric at each location;
- Collecting disturbed/bulk samples of the encountered base and subgrade materials;
- Performing laboratory testing on the selected soils samples obtained from the field exploration;
- Performing Falling Weight Deflectometer Test (FWD) in compliance with Method A of Caltrans CT356
- Reviewing the field data, FWD measurements, the laboratory test results, and preparing a final pavement engineering report which includes our findings and recommendation for pavement reconstruction and/or rehabilitation from a geotechnical point of view.

3. FIELD EXPLORATORY WORKS AND EXISTING PAVEMENT

Our engineers visited the project length and visually assessed pavement condition along the length of the project. From north city limit to Washington Boulevard, the road has three lanes at each direction, with a flat asphalt paved median. From Washington Boulevard toward south, a raised median separates north and south travelling bounds. Along the entire length of the project and in all lanes, severe distress exists. Severe alligator cracking, as well as rutting, shoving, potholes and cracks indicate failed pavement. The Project Management Plan (Reference 1), dated 2015, concludes that the Pavement Condition Index (PCI) for asphalt paved sections within the project length varies between 2 and 22, indicating a complete failed pavement. Portland Cement Concrete (PCC) pavement exists within the major intersections, i.e. Washington Boulevard and Telegraph Road, and the pavement condition is relatively good. The field exploration program consisted of performing 8 small diameter cores and 4 potholes, and was performed on May 29, and 30, 2017. The asphalt concrete was cored/saw-cut and the base materials were cored/dug through at each location; and the asphalt concrete thickness and underlying base layer thickness were measured. Bulk samples of base materials and subgrade soils were collected for each location. The following table presents the results of our measurements on the existing pavement sections along with classification of subgrade material.

Table 1– Asphalt Concrete and Base Layer Thicknesses

SAMPLE LOCATION ⁽¹⁾	LANE ⁽¹⁾	DEPTH TO FABRIC ⁽²⁾ (IN)	LAYER THICKNESSES (IN)		MATERIAL CLASSIFICATION		REMARKS
			ASPHALT CONCRETE	BASE	BASE ⁽³⁾	SUBGRADE ⁽⁴⁾	
PH-1	FL - North	1.5	5.5	16.0	CMB	ML	Sandy Silt
PH-2	FL - South	2.0	5.0	9.0	CMB	CL-ML	Sandy Silt/Sandy Clay
PH-3	Median - North	2.0	5.0	13.0	CMB	CL	Geotextile at 16"
PH-4	SL - North	1.5	5.0	13.0	CMB	SM	
C-1	FL - North	2.0	5.0	19.0	CMB	SC	
C-2	SL - South	1.5	5.5	14.5	CMB	CL-ML	
C-3	SL - North	2.5	5.5	16.5	CMB	CL	
C-4	SL - South	1.5	4.5	13.0	CMB	CL	
C-5	SL - North	2.0	5.5	12.5	CMB	CL	

SAMPLE LOCATION (1)	LANE ⁽¹⁾	DEPTH TO FABRIC ⁽²⁾ (IN)	LAYER THICKNESSES (IN)		MATERIAL CLASSIFICATION		REMARKS
			ASPHALT CONCRETE	BASE	BASE ⁽³⁾	SUBGRADE ⁽⁴⁾	
C-6	SL - South	1.5	5.0	8.0	CMB	SM	
C-7	SL - North	2.0	6.5	10.5	CMB	CL	
C-8	SL - South	2.5	5.5	7.5	CMB	CL	
Notes: (1) C- prefix indicates cored location. PH- prefix indicates potholed location. SL and FL indicate slow lane and traffic lane, respectively. (2) -- indicates no observed presence of pavement fabric. (3) Base classification was based on visual observation with the aids of laboratory lab tests, and was not tested for its conformity to specification defined the Standard Specifications for Public Works Construction ("Greenbook"). (4) Subgrade classification was based on visual classification method with the aids of laboratory lab tests.							

Also, FWD test in compliance with Method A of CT 357 was performed on June 16, 2017. For all lanes, deflection was measured at about 250 feet intervals. Average deflection from three consecutive 9,000 pounds drop was considered the pavement deflection for analysis. All numbers were correlated to California Deflectometer (CD). The FWD test was performed by Foundation Mechanics, Inc. and their summary report is provided in Appendix D.

4. SUBSURFACE CONDITIONS

Based on the sampling conducted along the project, the subgrade material consists of predominantly of clayey sand, clay, and sandy clay. Subgrade materials in sample locations PH-4 and C-6 consisted of silty sand soils. The soil conditions described in this report are based on the soils observed in the sampling conducted for this investigation and the laboratory test results. It is possible that soil conditions could vary in areas other than the explored locations.

5. LABORATORY TESTING

The following laboratory testing schedule was performed to fulfill the project's needs:

1. Gradation tests, plasticity index (Atterberg limits) tests, and expansion index tests were performed on selected base and subgrade samples obtained from the cores and potholes

to aid in the classification of the encountered material and to evaluate their general properties.

2. Three R-value tests were conducted on subgrade samples, per ASTM D2844. The test results are provided in Appendix C, and the locations the R-value tests performed are depicted on Figure A-2, within Appendix A.
3. The asphalt pieces obtained from field exploration were pulverized and mixed with the base samples from the field. The mixing ratio was chosen to be 70 percent of CMB/Base and 30 percent of pulverized asphalt.
4. Moisture-Density relation of Cement Stabilized Pulverized Base (CSPB) was determined per ASTM D558-11 guidelines.
5. Samples of CSPB with different cement ratios were casted, cured and tested for compression per ASTM D1633-07. Per requirements of ASTM D1633 Method A, specimens were molded in accordance with ASTM-D559, then moist cured as required per ASTM-D1632. Moist curing was performed using a moist cabinet maintained between 71° and 76° F at 98 percent humidity for a period of 7 days. At the end of the moist-cure period, specimens were immersed in water for 4 hours, then capped with sulfur mortar prior to compression testing.

The results of performed laboratory tests are provided in Appendix C.

6. PAVEMENT DESIGN AND CONSTRUCTION

6.1. General

Choosing the best construction or rehabilitation alternative for each project depends on several technical factors; and one of the most decisive factor contributing the final decision is the economy of the project and available financial resources. Selecting the most cost-effective strategy for pavement rehabilitation continues to be a significant challenge to the transportation professionals.

A systematic approach should be employed as the most effective way to evaluate and select pavement rehabilitation techniques and must account for all applicable parameters and their impacts on the choice between alternatives. These parameters may be both pavement and non-pavement related. Initial cost of construction/rehabilitation, expected pavement life span, anticipated maintenance, and future rehabilitation requirements also influence strategy selection.

6.2. Recommended Pavement Alternatives

Based on our observation, it is our opinion that the pavement within the project length is failed and has no structural value. The Project Management Plan (Reference 1) verifies our opinion with its report that the PCI for asphalt paved sections within the project length varies between 2 to 22, indicating a complete failed pavement. Therefore, we recommend two alternatives for construction of pavement section; Full depth removal and replacement (FDR&R), and full depth reclamation (FDR).

The recommended alternatives are believed to be the most appropriate solution for the project. It should be noted that different alternatives addressed in the forthcoming sections of this report will result in different end products with different life-spans.

Samples of the subgrade soils were obtained within the project limits and two selected samples were tested for their R-Values. The pavement section recommendations provided in the following Sections are based on the on-site subgrade soils having a design R-Value of 15. The pavement section recommendations are also for assumed Traffic Index (TI) values 9, 10 and 11. We would be pleased to provide additional pavement section recommendations for different TI values upon request.

6.2.1 Full Depth Removal and Replacement (FDR&R)

Full depth removal and replacement (FDR&R) alternative includes removal of the entire asphalt concrete (AC) and base layer, reworking and compacting of the subgrade soils, and placing back well-compacted layers of base and asphalt concrete. This alternative is considerably costly with a longer life span, i.e. design life span of 20 years.

The tests performed on the on-site subgrade materials have resulted in relatively low R-values (indicating presence of weak subgrade) for most of the project length, with medium expansion potential (based on ASTM D4829). Due to the presence of clayey and/or silty clayey subgrade soils with some area of high moisture content, pumping may occur while performing compaction on the subgrade soils.

The recommendations provided hereafter include pavement sections for different traffic conditions to occur within the project area, and schematics depicting pavement sections are presented as Figure A-3 within Appendix A of this report.

For FDR&R sections, the depth of excavation/removal of the on-site shallow soils shall be determined based on the thicknesses provided in Table 2 below, plus the recommended thickness

for over-excavation and backfilling with reworked/compacted soils. Two different options for FDR&R and reconstruction of the entire pavement are recommended:

Option I is to construct the pavement section by placing layer(s) of Asphalt Rubber Hot Mix (ARHM) and hot Asphalt Concrete Mix (ACM) over the compacted base materials. The base layer should be underlain by reworked/compacted fill. It is recommended that the upper 12 inches of the subgrade soils below the base layer be over-excavated, reworked, and compacted in maximum 6 inches thick layers. The backfilled areas shall be moisture-conditioned to moisture content between 1 and 3 percent above the optimum moisture content, and compacted to at least 90 percent of the maximum dry density obtained per ASTM D1557. The backfill materials shall comply with the specifications outlined in Section 6.3 of this report. It should be noticed that pumping is expected for silty clayey subgrades when the moisture content is higher than the optimum moisture content.

Asphalt thickness for different traffic indices are provided in Table 2, ranging between 7.0 to 8.50 inches. It is recommended that the upper 2-inch cap/finish layer be comprised of ARHM, and the remaining required thickness be constructed of hot ACM. The first layer of ACM over the base should be a dense leveling course of 1.5-inch thickness.

Option II involves enhancement of the subgrade by using a layer of Subgrade Enhancement Geotextile (SEG). We recommend the asphalt concrete section be underlain by the specified layer of base materials, underlain by a layer of geotextile which will be placed over scarified/reworked subgrade. It is recommended that the upper 6 inches of the subgrade soils below the base layer be scarified, moisture-conditioned to a moisture content between 1 and 3 percent above the optimum moisture content, and compacted to at least 90 percent of the maximum dry density obtained per ASTM D1557.

The geotextile layer should be Mirafi HP570 or equivalent, and shall be placed over the entire reworked/compacted subgrade area prior to placing base material. Following placing and spreading the geotextile layer, base material shall be placed and compacted in layers of maximum 6 inches thickness. The base shall be placed and compacted to at least 95 percent of the maximum dry density obtained per ASTM D1557. Lastly, asphalt concrete section of specified thickness, as indicated in Table 2 below, shall be placed on top of the base layer and compacted. It is recommended that the first layer of ACM over the compacted base layer be a 1.5-inch dense leveling layer, followed by final layers ACM and ARHM, as specified for Alternative I.

The following table provides the recommendation for hot mixed asphalt (HMA) pavement sections.

Table 2 – Recommended Full Depth Removal and Replacement

OPTIONS	TRAFFIC INDEX	MINIMUM COURSE THICKNESS (IN)		
		HOT MIXED ASPHALT, t_{AC}	AGGREGATE BASE, t_B	REWORKED/COMPACTED BACKFILL/SCARIFIED SUBGRADE
I – HMA over Base over Reworked/Compacted Subgrade	9	7.0	14.0	12
	10	8.0	16.0	12
	11	8.5	18.5	12
II – HMA over Base over SEG over Reworked/Compacted Subgrade	9	6.5	12.5	6
	10	7.5	13.0	6
	11	8.0	15.0	6

Base course material should consist of Crushed Aggregate Base (CAB) as defined by Section 200-2.2 of the Standard Specifications for Public Works Construction (“Greenbook”). In lieu of CAB materials, Crushed Miscellaneous Base (CMB) materials as defined by Section 200-2.4 of the Standard Specifications for Public Works Construction (“Greenbook”) may be used. Base course should be compacted to at least 95 percent of the maximum dry density of that material. The assumed R-value in design of the above provided preliminary sections for CAB material is 78.

Base course material should be purchased from a supplier who will certify the base course will meet or exceed the specifications in the Greenbook as indicated. We could, at your request, perform sieve analysis and sand equivalency tests on material delivered to the site which appears suspect. Additional tests could be performed, upon request, to determine if the material is in compliance with the specifications.

In order to increase pavement performance and extend the pavement life, concrete curbs should be deepened to extend at least 6 inches into the base course material. The intent of deepening the curbs and gutters is to form a “cut-off” wall to reduce the amount of water flow through the base from adjacent landscaped areas. Subgrade soils which become saturated as a result of water flowing through base material can reduce the life of the pavement. Also after completion of the work, all the joints between curb/gutter segments and between curbs and adjoining flatwork shall be sealed and waterproofed. Any abandoned footing and/or underground concrete structure within the work limit shall be removed entirely and backfilled to the grade.

6.2.2 Full Depth Reclamation (FDR)

Full depth reclamation (FDR) alternative commonly includes grinding and mixing the full or partial depth of the existing asphalt concrete (AC) and predetermined portion (full or partial) of base

material together with cement to create Cement Stabilized Pulverized Base (CSPB). The pulverized CSPB mix will be placed back, moisture-conditioned, compacted, and will be overlaid by compacted layers of new asphalt layers. Compared to full reconstruction of the pavement (FDR&R Section 6.2.1), this alternative will result in a more economic construction. However, no improvement is made on the subgrade condition in this alternative. Therefore, it is expected that the life span for this alternative is less than the FDR&R alternative, as addressed in Section 6.2.1.

Taking into account the variation in the thicknesses of existing AC and base layers, availability of AC and base to be reclaimed, type of base materials, and variations in subgrade conditions, we have provided our recommendations for Traffic Index of 9, 10 and 11 in Table 3. The intent of our analysis is to determine optimum thickness for the CSPB layer and eliminate/decrease any need for supplemental base materials. It is our recommendation to grind the existing AC layer and mix with full thickness of existing base layer, and add 4.5 percent of cement to create the specified thickness of cement stabilized pulverized base (CSPB), as specified in Table 3, and for different traffic indices. After placement and compacting the CSPB layer, a 1.5-inch dense graded leveling asphalt course shall be placed, followed by placing the upper course(s) of AC, as recommended in the following Table 3. The hot ACM layers to be placed are comprised of 2 inches of ARHM, 1.5 inches of dense hot ACM leveling course and layer(s) of ACM. The following table provides the recommended FDR pavement sections.

Table 3 – Recommended Full Depth Reclamation

TRAFFIC INDEX	HOT MIXED ASPHALT COURSES (IN)	CSPB (IN)
9	7.0	11.0
10	8.0	12.5
11	8.5	15.0

Specifications for CSPB: Portland cement Type II shall be 4.5 percent, based on in-place dry unit weight of the mixed pulverized AC and base materials. In-place dry unit weight of 130 pcf should be used for estimating purposes. The cement content shall vary no more than 0.5 percent under and not more than 1.0 percent over the specified cement content. Cement shall not be spread upon the prepared material more than 2 hours prior to the mixing operation. The CSPB shall be comprised of pulverized existing AC and base materials. The subgrade may be disturbed during the construction activities to get down to the desired over-excavation level. However, subgrade soils shall not be mixed with and/or included in CSPB. The ground asphalt concrete surfacing and underlying base/soil materials shall be pulverized such that 100

sieve and a minimum of 90 percent will pass a 3/4-inch sieve. The pulverized materials shall be free of roots, sod, weeds, wood, and construction debris.

The CSPB layer shall be compacted to a minimum of 97 percent relative compaction in accordance with the ASTM D558. Then, prior to placement of asphalt layers, fine grading to the required grades should be done, and micro-cracking the completed cement stabilized surface within 24 to 48 hours after completion of placement and compaction of CSPB shall be performed.

The newly constructed CSPB should be kept moist, by lightly watering or misting, for a 7-day period, or a moisture retaining curing compound may be placed over the surface of the completed CSPB soon after completion to retain the moisture and allow the cement to hydrate.

The mixed cement stabilized pulverized base shall not have compressive strength less than 500 psi at 7 days, when sampled by using the molds specified in ASTM D698 and cured per ASTM D559-15. Prior to commencement of construction, the contractor should collect samples of AC and Base from the site, and prepare trial samples to assure the required strength is obtainable, otherwise, the contractor should provide their own submittal/mix design for our review and approval.

6.3. Fill Materials and Import

In general, the on-site clayey sandy soils have been determined to have a low to medium expansion potential. On-site materials or imported materials can be used for backfilling purpose, considering that some of the on-site materials are prone to pumping. Import materials, if needed, should have an expansion index (EI) of less than 35 and should contain sufficient fines (binder material) so as to be relatively impermeable and result in a stable subgrade when compacted. The imported materials being used for backfilling purpose should be free of organic materials, debris, and cobbles larger than 3 inches, with no more than 25 percent of the materials being larger than 2 inches in size and no more than 40 percent passing #200 sieve. A bulk sample of potential backfill/import material, weighing at least 30 pounds, should be submitted to the Geotechnical Consultant at least 72 hours before fill operations. Upon approval of the potential backfill earth materials, contractor will be allowed to start importing/hauling process. All backfill materials should be approved by the Geotechnical Consultant prior to being placed at the site.

7. SOIL EXPANSIVITY

We have performed expansivity tests on selected soil samples obtained from one potholed location to determine the expansion characteristics of the on-site shallow soils. The sample was

obtained from on-site soils in the upper 5 feet bgs, which is susceptible to expansion when facing seasonal cycles of saturation/desiccation. The test result is presented in the following table.

Table 4 – Expansion Test Results

SAMPLE LOCATION	SAMPLE DEPTH	SOIL CLASSIFICATION	EXPANSION INDEX (EI)	EXPANSION POTENTIAL (ASTM D4829 – 11)
PH-3	Subgrade	Sandy Lean Clay	57	Medium

The above tabulated test results on the on-site shallow soils within the pavement areas indicate a medium expansion potential (based on ASTM D4829-11).

8. OBSERVATION AND TESTING

This final report has been prepared assuming that GEO-ADVANTEC, INC. will perform all geotechnical-related field observations and testing. If the recommendations presented in this report are utilized, and observation of the geotechnical work is performed by others, the party performing the observations must review this report and assume responsibility for recommendations contained herein. That party would then assume the title “Geotechnical Consultant of Record”.

A representative of the Geotechnical Consultant should be present to observe all grading operations as well as all footing excavations. Upon the client’s request, a report or final verification letter presenting the results of these observations and related testing should be issued upon completion of the grading operations.

9. CLOSURE

The findings and recommendations presented in this final report were based on the results of our field and laboratory investigations, combined with professional engineering experience and judgment. The report was prepared in accordance with generally accepted engineering principles and practice. We make no other warranty, either expressed or implied.

The soils encountered in the sampled locations are believed to be representative of the total under consideration area for the subject proposed development; however, soil characteristics can vary throughout the site. GAI should be notified if subsurface conditions are encountered which differ from those described in this report.

Samples secured for this investigation will be retained in our laboratory for a period of 45 days from the date of this report and will be disposed after this period unless other arrangements are made.

Should you have any questions concerning this submittal, or the recommendations contained herewith, please do not hesitate to call our office.

**Respectfully submitted,
GEO-ADVANTEC, INC.**



Jack Lee
Senior Project Engineer



Shawn Ariannia, Ph.D., P.E., G.E.
Principal Geotechnical Engineer

Distribution:

1. Addressee (2 wet stamped copy + pdf copy via e-mail)
2. File

APPENDICES

Appendix A: Maps and Plans and Figures

Figure A-1: Vicinity Map

Figure A-2: Coring and Pothole Locations Plan

Figure A-3: Asphalt Concrete Pavement Sections

Appendix C: Laboratory Test Results

Sieve Analysis

Percent Finer than No. 200

Plasticity Chart

R-Value Test

Maximum Density/Optimum Moisture Curve

CSPB Compression Tests

Compressive Strength vs. Cement Content

Appendix D: Laboratory Test Pictures

Attachment 1: Falling weight Deflectometer Report

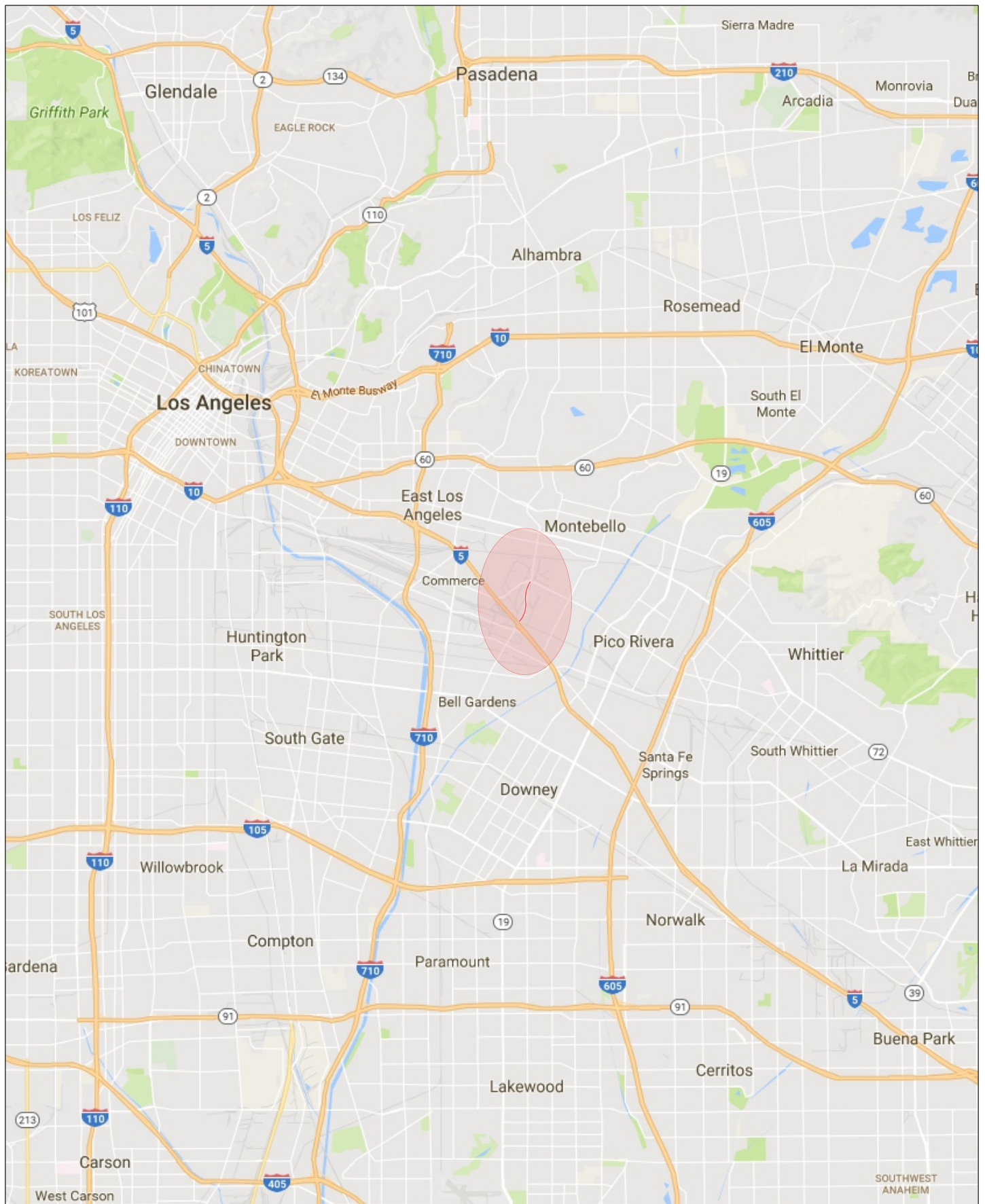
REFERENCES

1. Pavement Management Program Update for City of Commerce-Prepared by NCE (2015)
2. Thickness Design for Concrete Highway and Street Pavements – Portland Cement Association (1995)
3. Highway Design Manual – Caltrans (2012)
4. Flexible Pavement Rehabilitation Manual – Caltrans (2001)
5. Full Depth Reclamation Using Cement-Caltrans (2013)

APPENDICES

APPENDIX A

MAPS, PLANS AND FIGURES



Geo-Advantec Inc.

VICINITY MAP

FIGURE

PROJECT NO.

17-1041-A

Garfield Avenue Pavement Rehabilitation - Commerce, CA

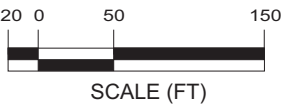
A-1

DATE

06-28-2017



Geo-Advantec Inc.		CORING AND POTHOLE LOCATION PLAN	Garfield Avenue Pavement Rehabilitation - Commerce, CA	FIGURE A-2a
PROJECT NO.	17-1041-A			
DATE	06-28-2017			



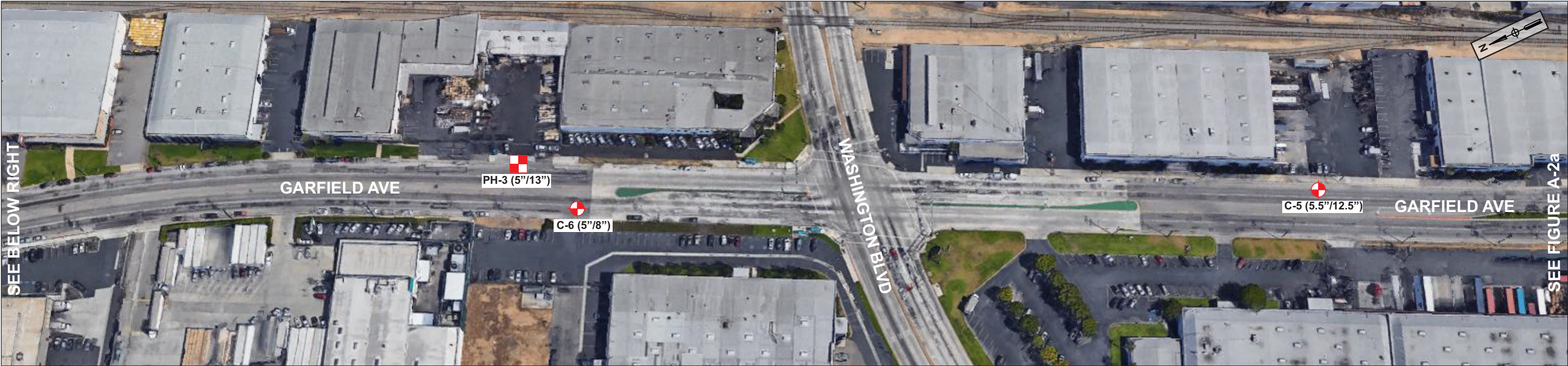
C-4 (4.5"/13")

PH-1 (5.5"/16")
R-v

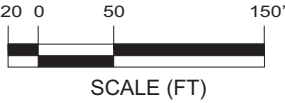
LEGEND

CORING (May 2017)
(AC/Base thickness)

POTHOLE (May 2017)
(AC/Base thickness)
R-value



Geo-Advantec Inc.		CORING AND POTHOLE LOCATION PLAN	FIGURE A-2b
PROJECT NO.	17-1041-A	Garfield Avenue Pavement Rehabilitation - Commerce, CA	
DATE	06-28-2017		



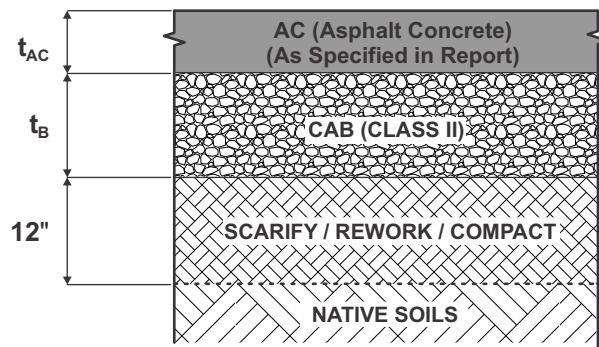
C-8 (5.5"/7.5")

PH-4 (5"/13")
R-v

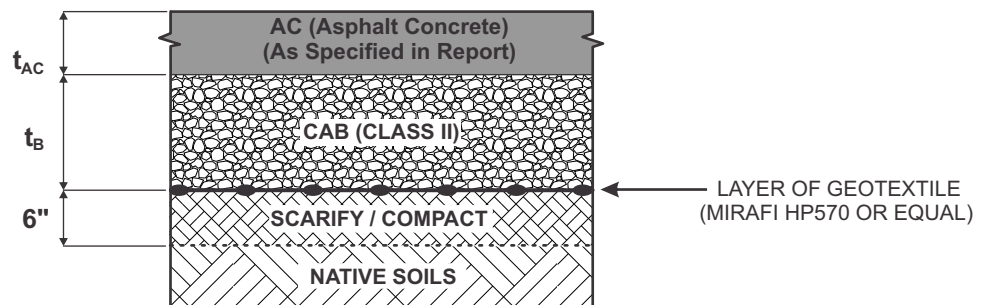
LEGEND

CORING
(AC/Base thickness)

POTHOLE
(AC/Base thickness)
R-value



ASPHALT CONCRETE PAVEMENT (OPTION I)



ASPHALT CONCRETE PAVEMENT (OPTION II)

Geo-Advantec Inc.		ASPHALT CONCRETE PAVEMENT SECTIONS	FIGURE A-3
PROJECT NO.	17-1041-A	Garfield Avenue Pavement Rehabilitation - Commerce, CA	
DATE	06-28-2017		

APPENDIX C

LABORATORY TEST RESULTS

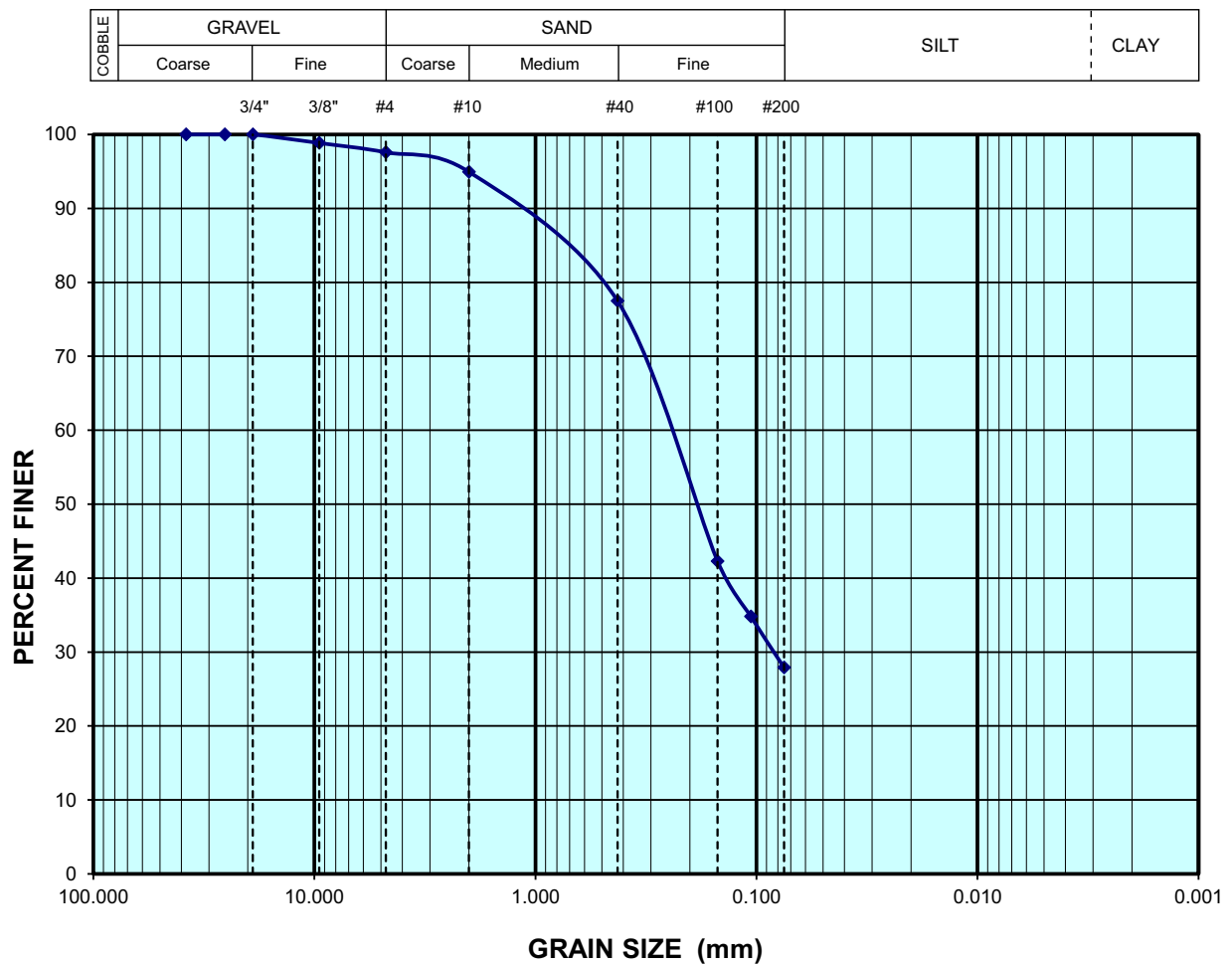
PARTICLE SIZE DISTRIBUTION REPORT

Project: Garfield Avenue Pavement Rehabilitation
 Site: Commerce, CA
 Tech: MN
 Sample: C-1@SG
 Material: Clayey SAND (SC)

Project No. 17-1041-A
 Date: 6/6/2017

Test Specification: ASTM D422

Sieve	Mesh Opening (mm)	Percent Passing (%)
1 1/2 in	38.1	100.0 %
1 in	25.4	100.0 %
3/4 in	19.0	100.0 %
3/8 in	9.51	98.8 %
No. 4	4.75	97.6 %
No. 10	2.00	94.9 %
No. 40	0.425	77.5 %
No. 100	0.150	42.3 %
No. 140	0.106	34.8 %
No. 200	0.075	27.9 %



Geo-Advantec Inc.

SIEVE ANALYSIS

FIGURE

PROJECT NO.	17-1041-A
DATE	06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

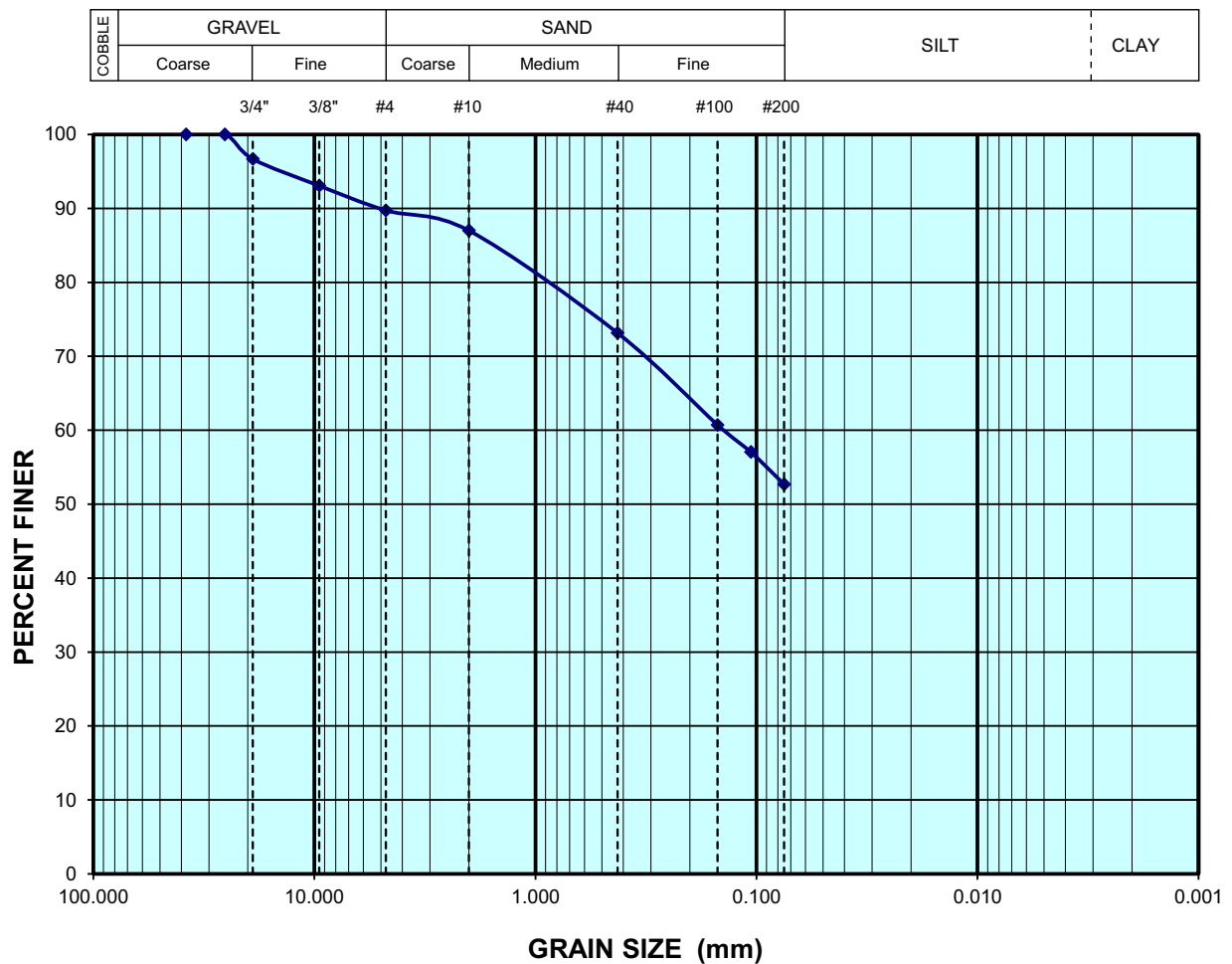
PARTICLE SIZE DISTRIBUTION REPORT

Project: Garfield Avenue Pavement Rehabilitation
 Site: Commerce, CA
 Tech: MN
 Sample PH-1@SG
 Material Sandy SILT (ML)

Project No. 17-1041-A
 Date: 6/6/2017

Test Specification: ASTM D422

Sieve	Mesh Opening (mm)	Percent Passing (%)
1 1/2 in	38.1	100.0 %
1 in	25.4	100.0 %
3/4 in	19.0	96.7 %
3/8 in	9.51	93.1 %
No. 4	4.75	89.7 %
No. 10	2.00	87.0 %
No. 40	0.425	73.2 %
No. 100	0.150	60.7 %
No. 140	0.106	57.0 %
No. 200	0.075	52.7 %



Geo-Advantec Inc.

SIEVE ANALYSIS

FIGURE

PROJECT NO.	17-1041-A
DATE	06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

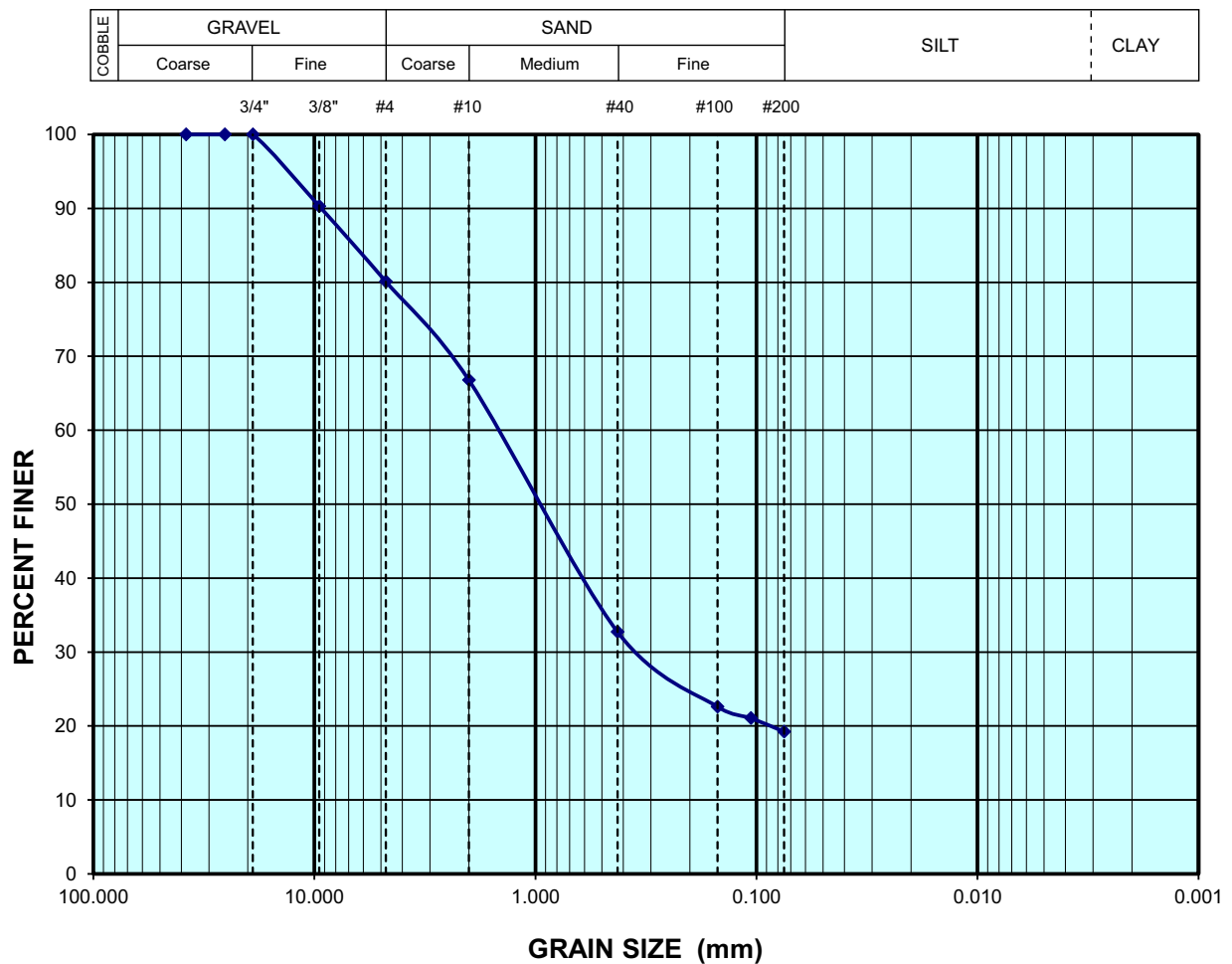
PARTICLE SIZE DISTRIBUTION REPORT

Project: Garfield Avenue Pavement Rehabilitation
 Site: Commerce, CA
 Tech: MN
 Sample PH-4@SG
 Material Silty SAND with gravel (SM)

Project No. 17-1041-A
 Date: 6/6/2017

Test Specification: ASTM D422

	Mesh	Percent
Sieve	Opening	Passing
	(mm)	(%)
1 1/2 in	38.1	100.0 %
1 in	25.4	100.0 %
3/4 in	19.0	100.0 %
3/8 in	9.51	90.3 %
No. 4	4.75	80.1 %
No. 10	2.00	66.8 %
No. 40	0.425	32.7 %
No. 100	0.150	22.6 %
No. 140	0.106	21.1 %
No. 200	0.075	19.2 %



Geo-Advantec Inc.

SIEVE ANALYSIS

FIGURE

PROJECT NO.	17-1041-A
DATE	06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

SIEVE ANALYSIS (SOIL PASSING #200) ASTM D1140

<u>Boring</u>	<u>Depth (ft)</u>	<u>PRE-WASH</u>	<u>AFTER WASH</u>	<u>% - # 200</u>	<u>SOIL TYPE</u>
		<u>DRY WEIGHT</u> <u>(gm)</u>	<u>DRY WEIGHT</u> <u>(gm)</u>		
C-2	SG	263.8	108.9	58.7	CL-ML
C-6	SG	370.7	303.2	18.2	SM
PH-2	SG	3,168.2	1,575.8	50.3	CL-ML
PH-3	SG	98.0	35.3	64.0	CL

Geo-Advantec Inc.

PERCENT FINER THAN NO. 200 SIEVE

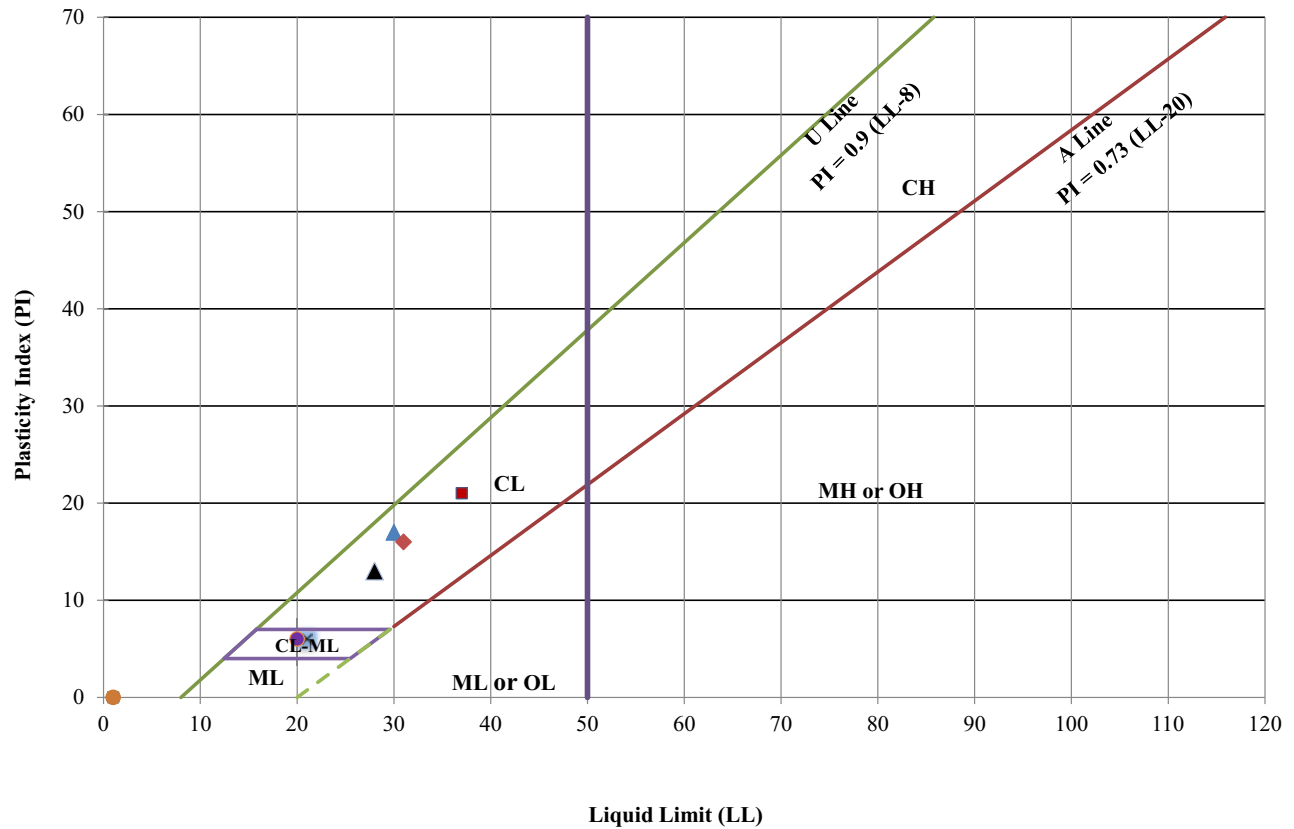
FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

PLASTICITY CHART (ASTM D4318)



Symbol	Source	Depth (ft)	Classification	Natural M.C. (%)	Liquid Limit (LL)	Plasticity Index (PI)	%Passing #200 Sieve
✕	C-2	SG	Sandy SILTY CLAY (CL-ML)		21	6	58.7
■	C-4	SG	Lean CLAY (CL)		37	21	
●	C-6	SG	Silty SAND (SM)		NP	NP	18.2
▲	C-7	SG	Lean CLAY (CL)		30	17	
◆	C-8	SG	Lean CLAY (CL)		31	16	
■	PH-1	SG	Sandy SILT (ML)		NP	NP	52.7
●	PH-2	SG	Sandy SILTY CLAY (CL-ML)		20	6	50.3
▲	PH-3	SG	Sandy Lean CLAY (CL)		28	13	64

Geo-Advantec Inc.

PLASTICITY CHART

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

R-VALUE TEST DATA

Project Garfield Avenue Pavement Rehabilitation

Project No. 17-1041-A Date Tested 6/5/2017

Site Location Commerce, CA

Test Specification ASTM D 2844

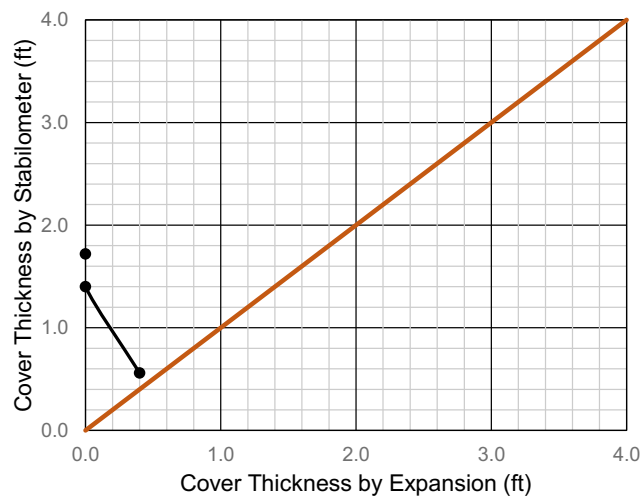
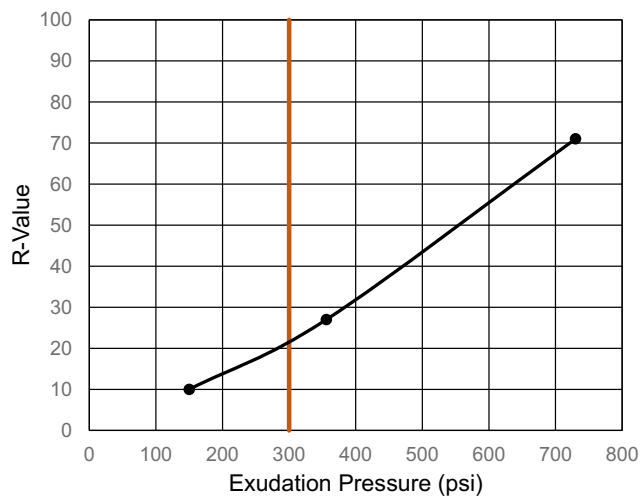
Boring No. PH-1 Sample Depth Subgrade

Test Performed by AP

Soil Description Sandy Silt (ML)

Mold Number	D	E	F	
Water Added, g	15	0	-9	
Compact Moisture, %	11.0	9.5	8.5	
Compaction Gage Pressure, psi	50	200	300	
Exudation Pressure, psi	150	356	730	
Sample Height, Inches	2.3	2.3	2.3	
Gross Weight Mold, g	3028	3003	2909	
Tare Weight Mold, g	1969	1955	1869	
Net Sample Weight, g	1059	1048	11040	
Expansion, $\times 10^{-4}$ inches	0	0	12	
Stability 2,000 (160 psi)	65/133	45/95	20/32	
Turns Displacement	4.01	3.74	3.51	
R-Value Uncorrected	11	31	74	
R-Value Corrected	10	27	71	
Dry Density, pcf	125.7	126.1	126.2	
Traffic Index	8	8	8	
G.E. by Stability	1.72	1.4	0.56	
G.E. by Expansion	0.00	0.00	0.40	

R-VALUE	By Exudation	21
	By Expansion	*N/A
	At Equilibrium (by Exudation)	21
Remarks	Gf = 1.34, and 0.0% Retained on the 3/4"	



Geo-Advantec Inc.

R-VALUE TEST RESULTS

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

R-VALUE TEST DATA

Project Garfield Avenue Pavement Rehabilitation

Project No. 17-1041-A Date Tested 6/5/2017

Site Location Commerce, CA

Test Specification ASTM D 2844

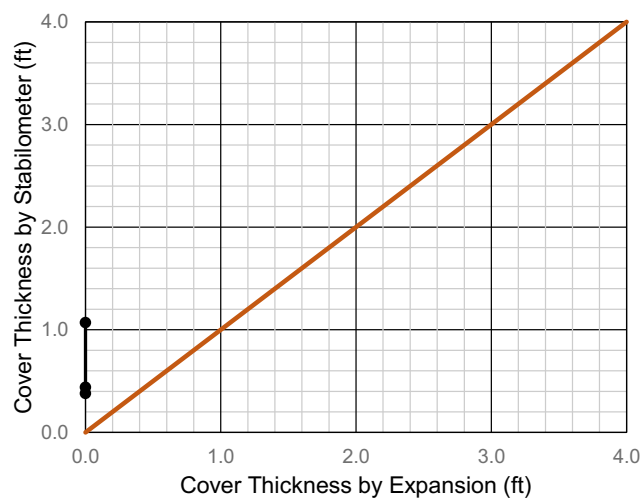
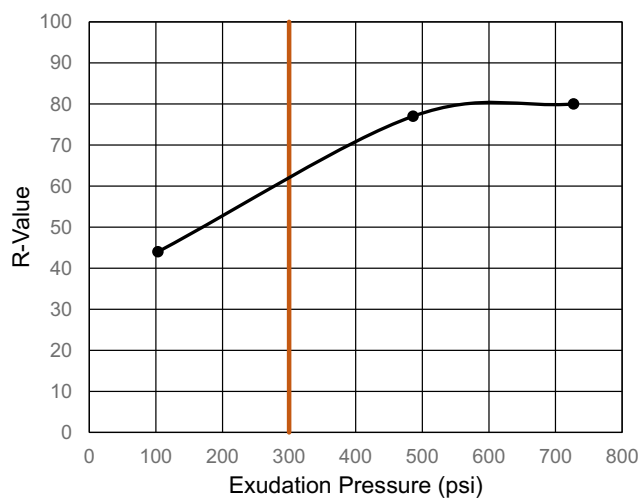
Boring No. PH-4 Sample Depth Subgrade

Test Performed by AP

Soil Description Silty Sand with Gravel (SM)

Mold Number	G	H	I	
Water Added, g	0	17	36	
Compact Moisture, %	6.3	7.9	9.8	
Compaction Gage Pressure, psi	190	160	50	
Exudation Pressure, psi	727	486	103	
Sample Height, Inches	2.4	2.4	2.4	
Gross Weight Mold, g	2925	2948	2944	
Tare Weight Mold, g	1827	1837	1819	
Net Sample Weight, g	1097	1111	1125	
Expansion, $\times 10^{-4}$ inches	0	0	0	
Stability 2,000 (160 psi)	13/21	13/23	32/62	
Turns Displacement	3.99	4.28	4.43	
R-Value Uncorrected	81	78	47	
R-Value Corrected	80	77	44	
Dry Density, pcf	130.4	130.1	129.4	
Traffic Index	8	8	8	
G.E. by Stability	0.38	0.44	1.07	
G.E. by Expansion	0.00	0.00	0.00	

R-VALUE	By Exudation	62
	By Expansion	*N/A
	At Equilibrium (by Exudation)	62
Remarks	Gf = 1.34, and 3.9% Retained on the 3/4"	



Geo-Advantec Inc.

R-VALUE TEST RESULTS

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

MAXIMUM DENSITY / OPTIMUM MOISTURE

Project: Garfield Avenue Pavement Rehabilitation
 Site: Commerce, CA
 Tech: RR

Job No. 17-1041-A
 Date: 6/8/2017

Test Specification: ASTM D-558 B

Rammer

Mold Dia.: 4.0 inches
 Height: 4.58 inches

Layers: 3.0
 Blows per Layer: 25.0

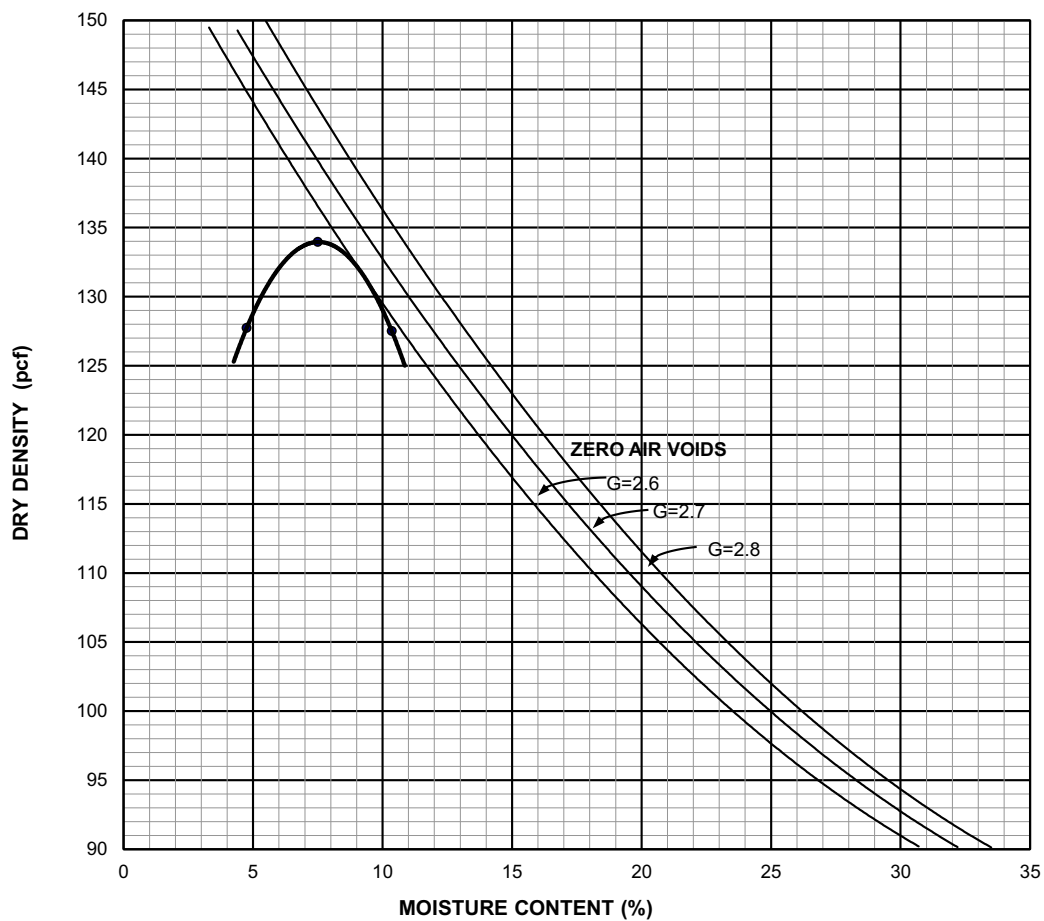
Manual: X
 Automatic: _____

Sample: #1

Material: Reclaimed Cement Treated Base

Remarks: 70% CMB - 30% Pulverized AC - 6% Type II/V Portland Cement

MAXIMUM DRY DENSITY: 134.0 pcf
OPTIMUM MOISTURE CONTENT: 7.5 %



Geo-Advantec Inc.

MAXIMUM DENSITY / OPTIMUM MOISTURE

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

COMPRESSION TEST REPORT

Client Information

Project No.: 17-1041-A Project Name: Garfield Avenue Pavement Rehabilitation
 Project Address: _____
 Client: City of Commerce Telephone # _____
 Client Address: _____

Specimen Information

Type: X RCTB _____ Grout _____ Mortar _____ Shotcrete _____
 Casting Date: 6/9/2017 Cast By: R. Reynaga Ambient Air: 87°F Set No.: 1
 Cement Type: II/V Slump: _____ (C143) _____ Admixture: 4% Cement (C1064) _____ Air %: _____ (C173) _____
 Expected 28 Days Strength: _____ PSI Mix Design: 30% AC - 70% Base Time Batched: 10:15AM
 Batching Plant: GAI laboratory Truck No.: _____ Sample Time: _____
 Location in Structure: _____ Ticket No.: _____
 Sampled From: _____

Number of Samples: 2 Date Samples Received: 6/9/17 Curing Method: moist cabinet
 Test At: 3 Days 2x 7 Days 14 Days 28 Days

The Material ☒ was ☐ was not
 Sampled and Tested in Accordance with
 the Requirements of the Approved Documents.

The Material Tested ☐ met ☐ did not meet
 The Requirements of the Approved Documents

FOR OFFICE USE ONLY

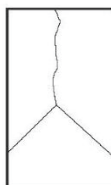
Lab Number	Sample Age	Diameter (In.)	Height (In.)	Width (In.)	Area (SQ In.)	Test Date	Type of Fracture	Applied Load (lb)	Calc. P.S.I.* Adjusted
843A	7 days	4.00	4.59	4.00	12.57	6/16/2017	3	7480	550
843B	7 days	4.00	4.58	4.00	12.57	6/16/2017	3	7600	560

Avg 7-Day Strength: **560**

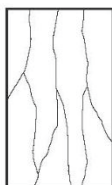
TYPE 1



TYPE 2



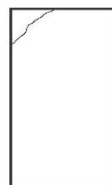
TYPE 3



TYPE 4



TYPE 5



TYPE 6



Remarks: ***Height/Diameter Adjustment**

per ASTM-C42

Moist cabinet cured 7-days,

Water Bath 4 hrs prior to capping

Applicable Test Methods: ASTM-C42, D559, D1633

Lab Manager: _____

Geo-Advantec Inc.

COMPRESSION TEST REPORT

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

COMPRESSION TEST REPORT

Client Information

Project No.: 17-1041-A Project Name: Garfield Avenue Pavement Rehabilitation
 Project Address: _____
 Client: City of Commerce Telephone # _____
 Client Address: _____

Specimen Information

Type: X RCTB _____ Grout _____ Mortar _____ Shotcrete _____
 Casting Date: 6/9/2017 Cast By: R. Reynaga Ambient Air: 87°F Set No.: 1
 Cement Type: II/V Slump: _____ (C143) _____ Admixture: 6% Cement (C1064) _____ Air %: _____ (C173) _____
 Expected 28 Days Strength: _____ PSI Mix Design: 30% AC - 70% Base Time Batched: 12:30pm
 Batching Plant: GAI laboratory Truck No.: _____ Sample Time: _____
 Location in Structure: _____ Ticket No.: _____
 Sampled From: _____

Number of Samples: 2 Date Samples Received: 6/9/17 Curing Method: moist cabinet
 Test At: 3 Days 2x 7 Days 14 Days 28 Days

The Material ☒ was ☐ was not
 Sampled and Tested in Accordance with
 the Requirements of the Approved Documents.

The Material Tested ☐ met ☐ did not meet
 The Requirements of the Approved Documents

FOR OFFICE USE ONLY

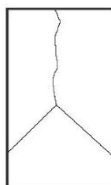
Lab Number	Sample Age	Diameter (In.)	Height (In.)	Width (In.)	Area (SQ In.)	Test Date	Type of Fracture	Applied Load (lb)	Calc. P.S.I.* Adjusted
844A	7 days	4.00	4.58	4.00	12.57	6/16/2017	3	13400	970
844B	7 days	4.00	4.55	4.00	12.57	6/16/2017	3	13310	960

Avg 7-Day Strength: **970**

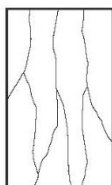
TYPE 1



TYPE 2



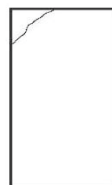
TYPE 3



TYPE 4



TYPE 5



TYPE 6



Remarks: ***Height/Diameter Adjustment**

per ASTM-C42

Moist cabinet cured 7-days,

Water Bath 4 hrs prior to capping

Applicable Test Methods: ASTM-C42, D559, D1633

Lab Manager: _____

Geo-Advantec Inc.

COMPRESSION TEST REPORT

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA

COMPRESSION TEST REPORT

Client Information

Project No.: 17-1041-A Project Name: Garfield Avenue Pavement Rehabilitation
 Project Address: _____
 Client: City of Commerce Telephone #: _____
 Client Address: _____

Specimen Information

Type: X RCTB _____ Grout _____ Mortar _____ Shotcrete _____
 Casting Date: 6/9/2017 Cast By: R. Reynaga Ambient Air: 87°F Set No.: 1
 Cement Type: II/V Slump: _____ (C143) _____ Admixture: 8% Cement (C1064) _____ Air %: _____ (C173) _____
 Expected 28 Days Strength: _____ PSI Mix Design: 30% AC - 70% Base Time Batched: 3:00PM
 Batching Plant: GAI laboratory Truck No.: _____ Sample Time: _____
 Location in Structure: _____ Ticket No.: _____
 Sampled From: _____

Number of Samples: 2 Date Samples Received: 6/9/17 Curing Method: moist cabinet
 Test At: 3 Days 2x 7 Days 14 Days 28 Days

The Material ☒ was ☐ was not
 Sampled and Tested in Accordance with
 the Requirements of the Approved Documents.

The Material Tested ☐ met ☐ did not meet
 The Requirements of the Approved Documents

FOR OFFICE USE ONLY

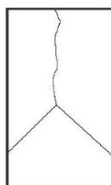
Lab Number	Sample Age	Diameter (In.)	Height (In.)	Width (In.)	Area (SQ In.)	Test Date	Type of Fracture	Applied Load (lb)	Calc. P.S.I.* Adjusted
845A	7 days	4.00	4.58	4.00	12.57	6/16/2017	3	20070	1450
845B	7 days	4.00	4.55	4.00	12.57	6/16/2017	3	21020	1520

Avg 7-Day Strength: **1490**

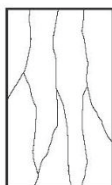
TYPE 1



TYPE 2



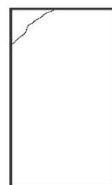
TYPE 3



TYPE 4



TYPE 5



TYPE 6



Remarks: ***Height/Diameter Adjustment**

per ASTM-C42

Moist cabinet cured 7-days,

Water Bath 4 hrs prior to capping

Applicable Test Methods: ASTM-C42, D559, D1633

Lab Manager: _____

Geo-Advantec Inc.

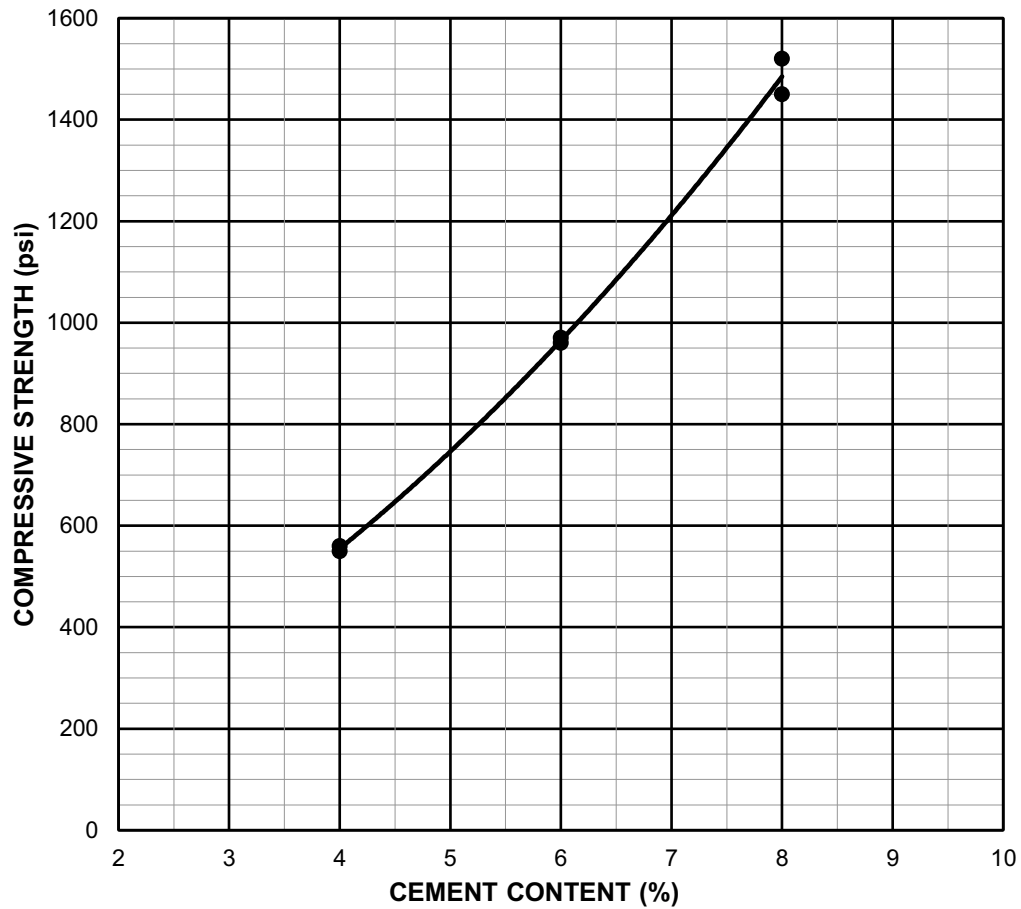
COMPRESSION TEST REPORT

FIGURE

PROJECT NO. 17-1041-A

DATE 06-28-2017

Garfield Avenue Pavement Rehabilitation - Commerce, CA



Lab No.	Cement Content ⁽¹⁾ (%)	Compressive Strength (psi)
843A	4	550
843B	4	560
844A	6	970
844B	6	960
845A	8	1450
845B	8	1520

Notes:

(1) Cement content is a percent of the dry material weight prior to adding cement

Geo-Advantec Inc.		COMPRESSIVE STRENGTH VS CEMENT CONTENT	FIGURE
PROJECT NO.	17-1041-A	Garfield Avenue Pavement Rehabilitation - Commerce, CA	
DATE	06-28-2017		

APPENDIX D

LABORATORY TEST PICTURES



Photo 1. Samples of Pulverized Materials with different cement contents



Photo 2. Compression Test on sample

Geo-Advantec Inc.		LABORATORY TEST PICTURES	FIGURE D-1
PROJECT NO.	17-1041-A	Garfield Avenue Pavement Rehabilitation - Commerce, CA	
DATE	06-28-2017		

ATTACHMENTS

ATTACHMENT 1

FALLING WEIGHT DEFLECTOMETER REPORT



FOUNDATION MECHANICS INC.

421 E. El Segundo Blvd., El Segundo, CA 90245

(310) 322-1920 Fax (310) 322-5146

Attn:

Geo-Advantec Inc.	Matin Noorzay Senior Project Engineer Geo-Advantec, Inc.
G Geotechnical Engineering	Office: (909) 305-0400 Ext. 108
A Earthquake Engineering	Mobile: (951) 463-1930
I Inspection and Testing	Fax: (909) 907-0704
I Engineering Geology	Email: MNoorzay@GeoAdvantec.Com
	Website: http://geoadvantec.com/



Ref.: # FWD Testing according to Caltrans Test Method 356 (CTM 356) and CALTRANS flexible pavement rehabilitation Calculations on Garfield Ave in the City of Commerce.

To Matin Noorzay,

20 June 2017

Per Sub Contract Agreement from Geo-Advantec Inc., Foundation Mechanics Inc. (FMI) performed Falling Weight Deflectometer (FWD) testing on the four lanes defined in the required test sections for this contract. The slow and fast lanes of Garfield Ave were tested in each direction for a total of four lanes with the limits being between Telegraph Rd and Ferguson Dr.

- 1 Garfield Ave from Telegraph to Ferguson_ Slow Lane (North)
- 2 Garfield Ave from Telegraph to Ferguson_ Fast Lane (North)
- 3 Garfield Ave from Ferguson to Telegraph_ Slow Lane (South)
- 4 Garfield Ave from Ferguson to Telegraph_ Fast Lane (South)

Sincerely,

Gary Sanati

President
Foundation Mechanics Inc.
WWW.JILSFWD.COM
GSanati@JILSFWD.COM

Federal I.D. Number: 94-2634232

FWD Testing:

The FWD is an impulse load-deflection device that applies a dynamic impulse load by dropping a weight onto a circular load plate placed on the pavement surface. Deflection transducers measure the resulting pavement deflections (deflection units are in mils or .001 inches) – generating the so-called “deflection basin”. Figure 1 illustrates this concept. For this project, one transducer was located at the center of the loading plate with the remaining six sensors spaced at 8, 12, 18, 24, 36 and 48 inches from the center of the plate as shown in Figure 2. At each test point, three drops of 9 kips (1 kip = 1000 lbf) and at intervals of 250ft required by the Caltrans Test Method 356.

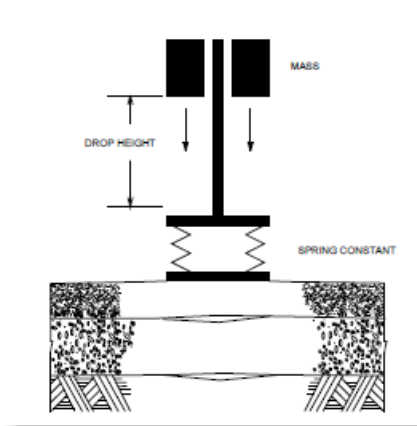


Figure 1. FWD concept

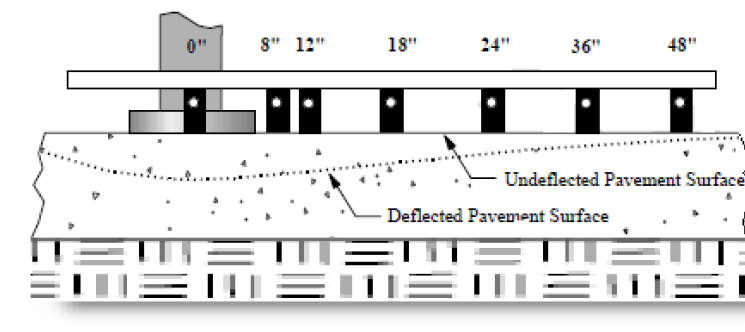
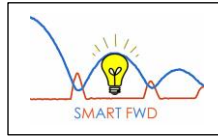
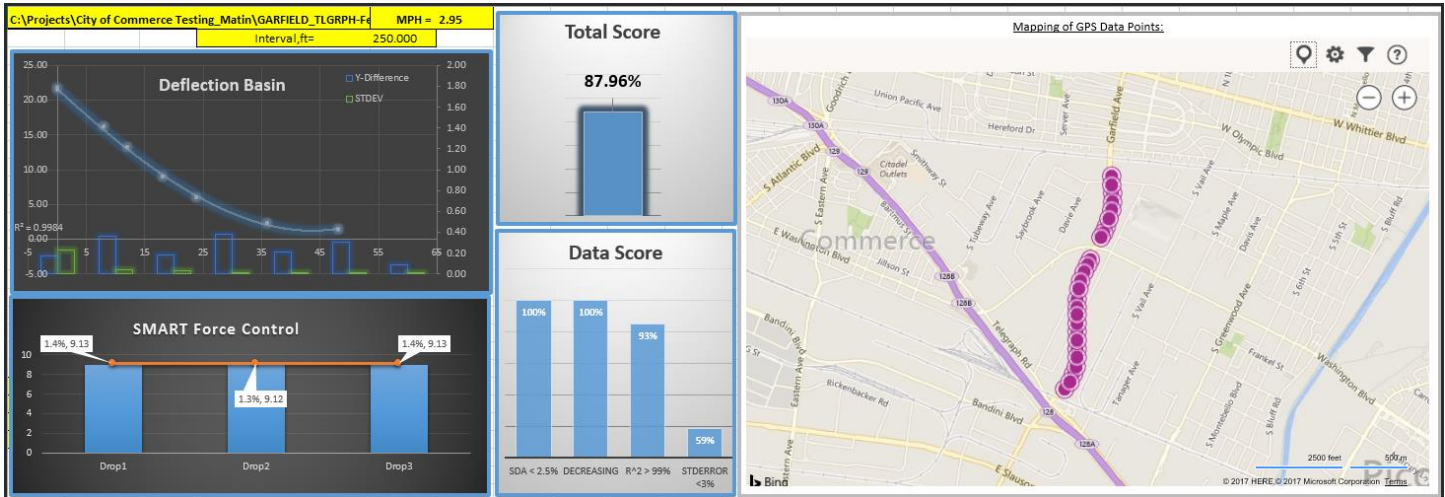


Figure 2. Shows sensor positions

DATA SCORE:

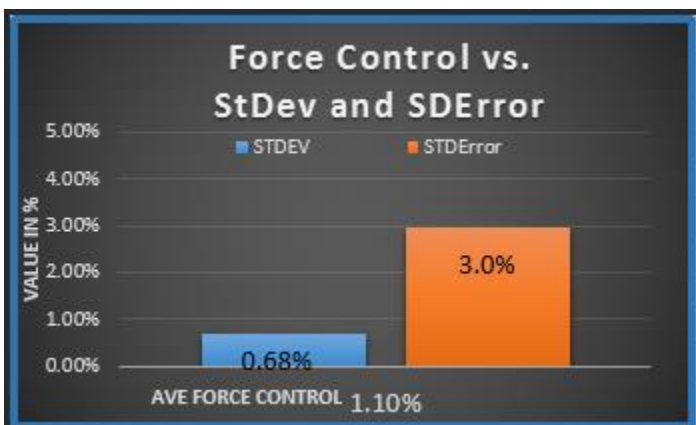


The Data Score is a quality control system developed by JILS to evaluate each file collected by the FWD system. It incorporates four components that imply both the quality of the data from the FWD and the condition of the pavement. The first two components are strictly FWD quality control parameters and the last two components imply the pavement condition. Here is a print out of the DATA SCORE for Garfield Ave.



The data was collected at every 250 feet and at a rate of 2.95 MPH. The total score was 87.96% being dropped by the last two components R^2 values and the Standard error of deflection basin curve fit because of their values of 59%. This could be due to the condition of the road as an average of 75% or higher cracking was observed. The first two components of SDA and Decreasing show that the FWD was performing at 100%.

Another parameter used to ensure the FWD is performing properly is a plot showing its force control vs STDEV and STDev. This shows the average force control of the system was 1.10% (amazing!) and STDEV was 0.68% with the average STDev being 3.0% for the pavement.



FWD 2017 Calibration Certificate:



FWD Calibration

Date of Calibration: 07-Jun-2017

Calibration Center: Foundation Mechanics Inc.
Calibration Center Operator: Adrian Elizondo

Signature: Gary Santos

FWD Owner: JILS_20_085
FWD Manufacturer: JILS
FWD Model: JILS-20-FWD
FWD Serial Number: SN 085
FWD Operator: Santos Abundio

Reference Load Cell: DYNA006
Reference Accelerometer: SN 8734
WinFWDCal Software: Version 2.2.12

LOAD CELL CALIBRATION

Serial Number	Initial Gain	Reference Gains	Average Gain	Final Gain
		1 2		
011968-1	1.000	1.005 1.005	1.005	1.005

DEFLECTION SENSOR CALIBRATION

Serial Number	Initial Gain	Reference Gains	Relative Gains	Final Gain
		1 2	1 2	
FMI085-01	1.008	1.005 1.005	1.004 1.004	1.004
FMI085-02	1.005	1.010 1.010	1.010 1.010	1.010
FMI085-03	1.003	1.000 1.000	1.001 1.001	1.001
FMI085-04	1.009	1.009 1.009	1.008 1.008	1.008
FMI085-05	0.991	1.000 1.000	1.001 1.000	1.001
FMI085-06R	0.976	0.990 0.990	0.990 0.990	0.990
FMI085-07	0.995	1.004 1.004	1.005 1.005	1.005

Messages:

Load Cell:

All data checks passed

Sensor Reference Calibration:

Reference Calibrations Accepted.

Reference Trial Acceptance Criteria Met.

Sensor Relative Calibration:

Sensor Calibration Completed!

Final Acceptance Criteria are met for all sensors.

M5

Date-Time: 6/ 9/2017 13:45:52

Sensors: FMI085-01, FMI085-02, FMI085-03, FMI085-04, FMI085-05,
FMI085-06R, FMI085-07

Weight/spring: 3

Location: City

Temp: 82.26

Operator: ADRIAN

Comments: Starting

1 1 759.000 1 8.94 30.84 26.65 21.46 13.47 7.88 1.78 0.30 125.5

1 1 759.000 1 8.93 30.39 26.25 21.23 13.38 7.79 1.79 0.30 125.5

1 1 759.000 1 8.99 30.38 26.25 21.29 13.40 7.79 1.77 0.27 125.5

Drop Sequence Completed Time: 13:46 Air Temp (F): 80.6

GPS: Quality : DGPS Fix Latitude = 34 deg0.383055 N Longitude = 118
deg7.885639 W PDOP = 0.00

Note: FAST LANE-FERGUSON TO TELEGRAPH STAGGER

2 1 1034.000 1 9.22 17.21 14.08 11.58 8.42 5.81 1.84 0.71 127.3

2 1 1034.000 1 8.99 16.63 13.64 11.24 8.20 5.66 1.81 0.70 127.3

2 1 1034.000 1 9.12 16.75 13.72 11.33 8.26 5.72 1.83 0.69 127.3

Drop Sequence Completed Time: 13:47 Air Temp (F): 85.9

GPS: Quality : DGPS Fix Latitude = 34 deg0.336604 N Longitude = 118
deg7.882522 W PDOP = 1.90

Note: FAST LANE-FERGUSON TO TELEGRAPH STAGGER

3 1 1125.000 1 8.94 25.29 20.96 17.33 12.50 8.49 2.70 0.80 127.3

3 1 1125.000 1 9.10 25.55 21.24 17.60 12.73 8.68 2.77 0.83 127.3

3 1 1125.000 1 9.01 25.05 20.82 17.27 12.49 8.51 2.70 0.80 127.3

Drop Sequence Completed Time: 13:48 Air Temp (F): 79.5

GPS: Quality : DGPS Fix Latitude = 34 deg0.321610 N Longitude = 118
deg7.881779 W PDOP = 1.90

Note: FAST LANE-FERGUSON TO TELEGRAPH STAGGER

4 1 1376.000 1 9.11 17.76 14.88 12.16 8.71 5.11 2.29 0.78 121.3

4 1 1376.000 1 9.05 17.43 14.63 12.00 8.62 5.05 2.27 0.77 121.3

4 1 1376.000 1 9.02 17.24 14.51 11.91 8.55 5.00 2.25 0.76 121.3

Drop Sequence Completed Time: 13:50 Air Temp (F): 81.1

GPS: Quality : DGPS Fix Latitude = 34 deg0.280249 N Longitude = 118
deg7.878928 W PDOP = 1.90

Note: SEVERE ALLIGATOR CRACKING

5 1 1628.000 1 8.97 12.68 9.93 7.26 4.40 2.61 0.93 0.60 121.4

5 1 1628.000 1 8.81 12.39 9.76 7.17 4.35 2.59 0.92 0.60 121.4

5 1 1628.000 1 8.90 12.38 9.79 7.21 4.38 2.60 0.93 0.60 121.4

Drop Sequence Completed Time: 13:51 Air Temp (F): 79.4

GPS: Quality : DGPS Fix Latitude = 34 deg0.238696 N Longitude = 118
deg7.879698 W PDOP = 1.90

Note: SEVERE ALLIGATOR CRACKING

6 1 1875.000 1 9.00 19.12 15.26 12.24 8.13 4.80 1.34 0.65 123.8

6 1 1875.000 1 9.14 19.11 15.29 12.29 8.19 4.81 1.34 0.65 123.8

6 1 1875.000 1 9.02 18.75 15.08 12.16 8.10 4.79 1.35 0.65 123.8

Drop Sequence Completed Time: 13:52 Air Temp (F): 81.1

GPS: Quality : DGPS Fix Latitude = 34 deg0.198960 N Longitude = 118
deg7.886515 W PDOP = 1.90

Note: SEVERE ALLIGATOR CRACKING

7 1 2125.000 1 9.08 18.66 15.22 11.48 7.10 4.02 1.23 0.54 127.6

7 1 2125.000 1 9.05 18.45 15.11 11.45 7.10 4.03 1.27 0.59 127.6

7 1 2125.000 1 9.06 18.33 15.02 11.40 7.03 3.97 1.20 0.52 127.6

Drop Sequence Completed Time: 13:53 Air Temp (F): 83.3
GPS: Quality : DGPS Fix Latitude = 34 deg0.158834 N Longitude = 118
deg7.899725 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
8 1 2375.000 1 9.16 16.07 12.45 9.94 6.69 4.42 1.83 0.84 121.1
8 1 2375.000 1 8.98 15.64 12.14 9.77 6.58 4.35 1.81 0.82 121.1
8 1 2375.000 1 9.14 15.78 12.27 9.90 6.65 4.39 1.82 0.82 121.1
Drop Sequence Completed Time: 13:54 Air Temp (F): 82.1
GPS: Quality : DGPS Fix Latitude = 34 deg0.120813 N Longitude = 118
deg7.918625 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
9 1 2626.000 1 8.85 21.37 16.07 13.14 9.33 6.18 2.66 1.30 122.3
9 1 2626.000 1 8.82 20.84 15.83 13.02 9.24 6.14 2.64 1.30 122.3
9 1 2626.000 1 8.94 21.20 15.89 13.06 9.26 6.12 2.61 1.26 122.3
Drop Sequence Completed Time: 13:55 Air Temp (F): 82.7
GPS: Quality : DGPS Fix Latitude = 34 deg0.083517 N Longitude = 118
deg7.940821 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
10 1 3425.000 1 9.17 16.61 13.45 11.14 8.22 5.96 2.96 1.35 124.5
10 1 3425.000 1 9.14 16.41 13.35 11.08 8.21 5.97 2.98 1.36 124.5
10 1 3425.000 1 9.16 16.28 13.28 11.03 8.18 5.97 2.98 1.37 124.5
Drop Sequence Completed Time: 13:57 Air Temp (F): 80.0
GPS: Quality : DGPS Fix Latitude = 33 deg59.965183 N Longitude = 118
deg8.010212 W PDOP = 1.90
Note: FROM 262 FT MARK IS CONCRETE SECTION TO HERE
11 1 3627.000 1 8.99 13.47 10.70 8.72 6.34 4.52 2.21 1.02 124.6
11 1 3627.000 1 9.02 13.35 10.67 8.74 6.39 4.60 2.28 1.08 124.6
11 1 3627.000 1 9.07 13.27 10.61 8.70 6.38 4.59 2.26 1.06 124.6
Drop Sequence Completed Time: 13:58 Air Temp (F): 82.8
GPS: Quality : DGPS Fix Latitude = 33 deg59.935225 N Longitude = 118
deg8.028024 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
12 1 3878.000 1 8.68 16.40 13.92 11.14 7.59 5.40 2.65 1.42 125.3
12 1 3878.000 1 8.84 16.59 14.19 11.36 7.75 5.53 2.73 1.45 125.3
12 1 3878.000 1 8.91 16.61 14.20 11.39 7.77 5.54 2.72 1.45 125.3
Drop Sequence Completed Time: 13:59 Air Temp (F): 82.8
GPS: Quality : DGPS Fix Latitude = 33 deg59.897984 N Longitude = 118
deg8.049631 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
13 1 4126.000 1 9.03 11.74 9.72 8.22 6.02 4.45 2.35 1.30 123.1
13 1 4126.000 1 9.10 11.68 9.71 8.24 6.03 4.45 2.35 1.30 123.1
13 1 4126.000 1 9.08 11.66 9.72 8.27 6.04 4.46 2.37 1.31 123.1
Drop Sequence Completed Time: 14:00 Air Temp (F): 80.0
GPS: Quality : DGPS Fix Latitude = 33 deg59.859710 N Longitude = 118
deg8.066971 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
14 1 4377.000 1 8.97 12.69 10.37 8.52 6.08 4.08 1.55 0.83 120.8
14 1 4377.000 1 9.09 12.80 10.49 8.65 6.21 4.18 1.59 0.85 120.8
14 1 4377.000 1 9.12 12.73 10.43 8.61 6.18 4.16 1.58 0.85 120.8
Drop Sequence Completed Time: 14:00 Air Temp (F): 81.6
GPS: Quality : DGPS Fix Latitude = 33 deg59.819123 N Longitude = 118
deg8.078340 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
15 1 4625.000 1 9.04 13.48 10.05 7.46 4.76 3.00 1.43 0.91 125.2

```

15 1 4625.000 1 9.03 13.35 9.90 7.41 4.72 2.97 1.45 0.91 125.2
15 1 4625.000 1 9.10 13.48 9.99 7.49 4.79 3.02 1.45 0.91 125.2
Drop Sequence Completed Time: 14:01 Air Temp (F): 82.1
GPS: Quality : DGPS Fix Latitude = 33 deg59.778437 N Longitude = 118
deg8.083626 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
16 1 4816.000 1 9.04 10.28 8.27 6.78 5.00 3.68 2.03 1.23 126.8
16 1 4816.000 1 9.02 10.16 8.23 6.76 4.99 3.69 2.06 1.25 126.8
16 1 4816.000 1 9.00 10.12 8.21 6.75 5.00 3.69 2.07 1.27 126.8
Drop Sequence Completed Time: 14:02 Air Temp (F): 80.7
GPS: Quality : DGPS Fix Latitude = 33 deg59.746913 N Longitude = 118
deg8.084034 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
17 1 5125.000 1 8.77 9.58 7.61 6.21 4.42 3.19 1.61 0.96 124.2
17 1 5125.000 1 9.13 9.88 7.90 6.46 4.61 3.34 1.70 1.00 124.2
17 1 5125.000 1 8.98 9.69 7.79 6.36 4.55 3.29 1.67 0.98 124.2
Drop Sequence Completed Time: 14:03 Air Temp (F): 82.6
GPS: Quality : DGPS Fix Latitude = 33 deg59.695969 N Longitude = 118
deg8.084316 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
18 1 5378.000 1 8.83 17.02 13.01 10.52 5.94 3.33 1.57 1.00 128.3
18 1 5378.000 1 8.97 17.19 13.22 10.18 6.07 3.44 1.61 1.04 128.3
18 1 5378.000 1 8.90 16.96 13.04 10.02 5.98 3.40 1.59 1.03 128.3
Drop Sequence Completed Time: 14:04 Air Temp (F): 79.0
GPS: Quality : DGPS Fix Latitude = 33 deg59.654378 N Longitude = 118
deg8.084615 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
19 1 5636.000 1 9.09 10.74 8.60 7.00 4.88 3.33 1.62 0.98 122.8
19 1 5636.000 1 8.97 10.52 8.49 6.94 4.83 3.31 1.61 0.97 122.8
19 1 5636.000 1 8.96 10.49 8.46 6.94 4.82 3.31 1.61 0.98 122.8
Drop Sequence Completed Time: 14:04 Air Temp (F): 80.6
GPS: Quality : DGPS Fix Latitude = 33 deg59.611562 N Longitude = 118
deg8.084934 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
20 1 5875.000 1 9.00 9.10 7.11 5.91 4.46 3.22 1.65 1.12 89.3
20 1 5875.000 1 8.92 8.99 7.05 5.88 4.46 3.24 1.68 1.15 89.3
20 1 5875.000 1 8.97 8.98 7.05 5.91 4.48 3.25 1.67 1.14 89.3
Drop Sequence Completed Time: 14:06 Air Temp (F): 78.4
GPS: Quality : DGPS Fix Latitude = 33 deg59.572153 N Longitude = 118
deg8.085405 W PDOP = 1.90
Note: TREE SHADE...SEVERE ALLIGATOR CRACKING
21 1 6125.000 1 8.74 11.99 10.31 8.25 5.13 3.53 1.72 1.04 120.4
21 1 6125.000 1 8.89 12.08 10.43 8.40 5.22 3.61 1.76 1.07 120.4
21 1 6125.000 1 8.80 11.88 10.30 8.29 5.20 3.57 1.73 1.05 120.4
Drop Sequence Completed Time: 14:07 Air Temp (F): 85.0
GPS: Quality : DGPS Fix Latitude = 33 deg59.530996 N Longitude = 118
deg8.085427 W PDOP = 1.90
Note: SEVERE ALLIGATOR CRACKING
22 1 6375.000 1 9.22 15.00 12.89 10.80 7.72 5.90 3.40 1.97 120.3
22 1 6375.000 1 9.03 14.61 12.56 10.49 7.50 5.73 3.28 1.88 120.3
22 1 6375.000 1 9.19 14.87 12.81 10.70 7.65 5.85 3.37 1.93 120.3
Drop Sequence Completed Time: 14:15 Air Temp (F): 81.7
GPS: Quality : DGPS Fix Latitude = 33 deg59.489282 N Longitude = 118
deg8.085041 W PDOP = 0.00

```

Note: SEVERE ALLIGATOR CRACKING

23 1 6625.000 1 8.92 16.09 13.08 10.69 7.82 5.43 2.64 1.52 126.3

23 1 6625.000 1 9.02 16.08 13.15 10.80 7.93 5.51 2.72 1.57 126.3

23 1 6625.000 1 9.00 15.91 13.03 10.71 7.86 5.47 2.69 1.55 126.3

Drop Sequence Completed Time: 14:16 Air Temp (F): 83.3

GPS: Quality : DGPS Fix Latitude = 33 deg59.448818 N Longitude = 118

deg8.093574 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING

24 1 6874.000 1 9.04 12.12 9.02 7.21 5.18 3.67 1.87 1.02 130.4

24 1 6874.000 1 8.94 11.78 8.81 7.04 5.06 3.58 1.82 0.99 130.4

24 1 6874.000 1 9.01 11.91 8.95 7.18 5.15 3.66 1.86 1.01 130.4

Drop Sequence Completed Time: 14:16 Air Temp (F): 83.0

GPS: Quality : DGPS Fix Latitude = 33 deg59.410110 N Longitude = 118

deg8.109723 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING

25 1 7124.000 1 8.76 11.90 9.58 7.55 4.94 2.94 1.34 0.79 123.2

25 1 7124.000 1 8.91 12.04 9.72 7.67 5.04 3.00 1.39 0.83 123.2

25 1 7124.000 1 8.99 12.00 9.66 7.63 5.00 2.97 1.35 0.81 123.2

Drop Sequence Completed Time: 14:17 Air Temp (F): 81.4

GPS: Quality : DGPS Fix Latitude = 33 deg59.373779 N Longitude = 118

deg8.132744 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING

26 1 7383.000 1 8.70 18.65 16.23 13.84 9.25 6.43 3.37 1.99 126.3

26 1 7383.000 1 8.86 18.77 16.39 14.02 9.42 6.58 3.43 2.05 126.3

26 1 7383.000 1 9.01 18.82 16.28 13.88 9.37 6.56 3.43 2.01 126.3

Drop Sequence Completed Time: 14:18 Air Temp (F): 86.8

GPS: Quality : DGPS Fix Latitude = 33 deg59.340161 N Longitude = 118

deg8.164506 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING

27 1 7533.000 1 8.92 19.18 16.31 14.08 11.13 8.48 5.24 3.37 129.5

27 1 7533.000 1 9.00 18.98 16.25 14.08 11.19 8.55 5.35 3.50 129.5

27 1 7533.000 1 8.96 18.61 15.95 13.81 10.95 8.36 5.18 3.33 129.5

Drop Sequence Completed Time: 14:19 Air Temp (F): 85.2

GPS: Quality : DGPS Fix Latitude = 33 deg59.321469 N Longitude = 118

deg8.184061 W PDOP = 0.00

Note: LAST TEST....SEVERE ALLIGATOR CRACKING

M5

Date-Time: 6/ 9/2017 12:20:26

Sensors: FMI085-01, FMI085-02, FMI085-03, FMI085-04, FMI085-05,
FMI085-06R, FMI085-07

Weight/spring: 3

Location: City of Commerce

Temp: 74.83

Operator: ADRIAN ELIZONDO

Comments: Starting

1 1 750.000 1 8.85 21.25 18.15 15.49 12.16 7.78 3.28 1.37 123.7

1 1 750.000 1 8.92 20.71 17.84 15.30 11.67 7.69 3.27 1.35 123.7

1 1 750.000 1 9.05 20.82 17.97 15.42 11.62 7.76 3.30 1.37 123.7

Drop Sequence Completed Time: 12:26 Air Temp (F): 85.2

GPS: Quality : DGPS Fix Latitude = 34 deg0.378934 N Longitude = 118
deg7.888163 W PDOP = 0.00

Note: STARTING AT 750 FT PAST CONCRETE SLABS UNDER BRIFGE

2 1 1030.000 1 9.02 17.55 14.71 12.15 9.07 6.50 2.69 0.99 127.1

2 1 1030.000 1 9.06 17.27 14.54 12.02 9.02 6.50 2.71 0.99 127.1

2 1 1030.000 1 8.96 16.85 14.23 11.76 8.83 6.37 2.66 0.97 127.1

Drop Sequence Completed Time: 12:26 Air Temp (F): 79.6

GPS: Quality : DGPS Fix Latitude = 34 deg0.332582 N Longitude = 118
deg7.885001 W PDOP = 0.00

Note: STARTING AT 750 FT PAST CONCRETE SLABS UNDER BRIFGE

3 1 1250.000 1 8.88 32.54 25.88 19.36 10.13 4.78 1.19 0.67 136.1

3 1 1250.000 1 8.99 32.52 25.97 19.28 10.24 4.86 1.21 0.67 136.1

3 1 1250.000 1 9.08 32.38 25.81 19.00 10.17 4.82 1.21 0.68 136.1

Drop Sequence Completed Time: 12:27 Air Temp (F): 80.4

GPS: Quality : DGPS Fix Latitude = 34 deg0.296378 N Longitude = 118
deg7.882840 W PDOP = 0.00

Note: SEVERE LLIGATOR CRACKING AND PATCHES

4 1 1500.000 1 9.01 22.87 18.51 14.48 8.73 4.88 1.83 0.90 121.5

4 1 1500.000 1 9.11 22.85 18.59 14.55 8.78 4.93 1.85 0.89 121.5

4 1 1500.000 1 9.00 22.50 18.31 14.33 8.63 4.85 1.83 0.89 121.5

Drop Sequence Completed Time: 12:28 Air Temp (F): 78.7

GPS: Quality : DGPS Fix Latitude = 34 deg0.255216 N Longitude = 118
deg7.881805 W PDOP = 0.00

Note: SEVERE LLIGATOR CRACKING AND PATCHES

5 1 1750.000 1 9.19 19.18 16.01 12.60 8.15 4.91 1.43 0.45 134.6

5 1 1750.000 1 9.21 18.91 15.84 12.52 8.10 4.87 1.43 0.44 134.6

5 1 1750.000 1 9.11 18.59 15.61 12.34 7.98 4.80 1.41 0.44 134.6

Drop Sequence Completed Time: 12:29 Air Temp (F): 79.0

GPS: Quality : DGPS Fix Latitude = 34 deg0.214472 N Longitude = 118
deg7.885520 W PDOP = 0.00

Note: SEVERE LLIGATOR CRACKING AND PATCHES

6 1 2006.000 1 9.21 3.05 1.94 1.73 1.46 1.24 0.93 0.75 129.5

6 1 2006.000 1 9.11 3.00 1.93 1.71 1.45 1.23 0.94 0.76 129.5

6 1 2006.000 1 9.26 3.03 1.96 1.73 1.46 1.25 0.94 0.76 129.5

Drop Sequence Completed Time: 12:30 Air Temp (F): 77.3

GPS: Quality : DGPS Fix Latitude = 34 deg0.173758 N Longitude = 118
deg7.896835 W PDOP = 0.00

Note: SEVERE LLIGATOR CRACKING AND PATCHES

7 1 2250.000 1 8.69 17.21 13.65 10.98 7.49 4.90 2.24 1.29 126.9

7 1 2250.000 1 8.74 17.17 13.64 11.01 7.53 4.94 2.27 1.31 126.9

7 1 2250.000 1 8.93 17.44 13.88 11.22 7.68 5.04 2.30 1.32 126.9

Drop Sequence Completed Time: 12:30 Air Temp (F): 78.0
GPS: Quality : DGPS Fix Latitude = 34 deg0.135714 N Longitude = 118 deg7.912791 W PDOP = 0.00
Note: SEVERE LLIGATOR CRACKING AND PATCHES
8 1 2501.000 1 9.02 19.49 17.23 14.49 11.15 8.06 3.78 2.01 127.2
8 1 2501.000 1 9.20 19.21 16.95 14.29 11.01 7.96 3.75 2.00 127.2
8 1 2501.000 1 9.13 18.82 16.60 14.04 10.82 7.84 3.70 1.98 127.2
Drop Sequence Completed Time: 12:31 Air Temp (F): 82.9
GPS: Quality : DGPS Fix Latitude = 34 deg0.098074 N Longitude = 118 deg7.934277 W PDOP = 0.00
Note: SEVERE LLIGATOR CRACKING AND PATCHES
9 1 3351.000 1 9.03 23.23 20.18 17.58 13.80 10.28 4.13 1.56 129.6
9 1 3351.000 1 9.06 22.82 19.98 17.46 13.78 10.29 4.16 1.57 129.6
9 1 3351.000 1 9.06 22.76 19.97 17.46 13.80 10.32 4.17 1.59 129.6
Drop Sequence Completed Time: 12:36 Air Temp (F): 81.2
GPS: Quality : GPS Fi Latitude = 33 deg59.972883 N Longitude = 118 deg8.009761 W PDOP = 0.00
Note: FROM 2500 TO HERE CONCRETE SECTION BEFOR AND AFTER WAHINGTON
10 1 3502.000 1 8.88 23.73 20.97 18.62 12.79 7.86 2.94 1.09 130.0
10 1 3502.000 1 9.04 23.94 21.25 18.98 13.06 8.06 3.02 1.12 130.0
10 1 3502.000 1 8.96 23.47 20.91 18.72 12.86 7.94 2.99 1.13 130.0
Drop Sequence Completed Time: 12:37 Air Temp (F): 82.4
GPS: Quality : GPS Fi Latitude = 33 deg59.950544 N Longitude = 118 deg8.023119 W PDOP = 0.00
Note:
11 1 3750.000 1 9.13 21.96 18.26 15.57 10.92 7.28 3.86 2.26 128.1
11 1 3750.000 1 8.93 21.26 17.66 15.23 10.68 7.14 3.78 2.22 128.1
11 1 3750.000 1 8.98 21.26 17.69 15.27 10.74 7.16 3.80 2.23 128.1
Drop Sequence Completed Time: 12:38 Air Temp (F): 84.7
GPS: Quality : GPS Fi Latitude = 33 deg59.913816 N Longitude = 118 deg8.045176 W PDOP = 0.00
Note: SEVERE CRACKING
12 1 4015.000 1 8.83 14.91 13.18 10.47 6.97 4.32 2.06 1.15 122.3
12 1 4015.000 1 9.25 15.20 13.56 10.67 7.15 4.45 2.16 1.21 122.3
12 1 4015.000 1 8.80 14.59 12.95 10.75 6.94 4.28 2.07 1.15 122.3
Drop Sequence Completed Time: 12:39 Air Temp (F): 82.4
GPS: Quality : GPS Fi Latitude = 33 deg59.873984 N Longitude = 118 deg8.065187 W PDOP = 0.00
Note: SEVERE CRACKING
13 1 4233.000 1 9.06 12.44 10.54 8.68 6.32 4.46 2.29 1.31 129.8
13 1 4233.000 1 9.04 12.38 10.50 8.67 6.31 4.46 2.28 1.32 129.8
13 1 4233.000 1 9.12 12.41 10.52 8.71 6.35 4.49 2.31 1.32 129.8
Drop Sequence Completed Time: 12:40 Air Temp (F): 78.0
GPS: Quality : GPS Fi Latitude = 33 deg59.838790 N Longitude = 118 deg8.077203 W PDOP = 0.00
Note: SEVERE CRACKING
14 1 4500.000 1 9.03 15.62 12.74 10.14 7.28 5.28 2.60 1.30 124.0
14 1 4500.000 1 9.13 15.60 12.69 10.12 7.24 5.26 2.58 1.27 124.0
14 1 4500.000 1 9.04 15.50 12.69 10.15 7.28 5.30 2.62 1.28 124.0
Drop Sequence Completed Time: 12:41 Air Temp (F): 79.1
GPS: Quality : GPS Fi Latitude = 33 deg59.795167 N Longitude = 118 deg8.085094 W PDOP = 0.00
Note: SEVERE CRACKING
15 1 4751.000 1 9.02 14.20 10.85 8.30 5.33 3.21 1.41 0.86 122.9

15 1 4751.000 1 9.07 14.10 10.85 8.35 5.38 3.27 1.44 0.88 122.9
 15 1 4751.000 1 9.00 13.88 10.75 8.29 5.37 3.27 1.46 0.90 122.9
 Drop Sequence Completed Time: 12:42 Air Temp (F): 79.0
 GPS: Quality : GPS Fi Latitude = 33 deg59.753735 N Longitude = 118
 deg8.087158 W PDOP = 0.00
 Note: SEVERE CRACKING
 16 1 5000.000 1 9.12 12.93 10.60 8.53 5.98 4.08 1.90 1.08 126.9
 16 1 5000.000 1 9.19 12.77 10.49 8.50 5.98 4.09 1.89 1.08 126.9
 16 1 5000.000 1 9.13 12.61 10.36 8.42 5.94 4.06 1.88 1.06 126.9
 Drop Sequence Completed Time: 12:43 Air Temp (F): 83.2
 GPS: Quality : GPS Fi Latitude = 33 deg59.713011 N Longitude = 118
 deg8.087525 W PDOP = 0.00
 Note: SEVERE CRACKING
 17 1 5250.000 1 8.84 15.84 14.03 11.40 7.50 4.59 1.96 1.08 123.9
 17 1 5250.000 1 8.81 15.61 13.91 11.32 7.44 4.54 1.95 1.06 123.9
 17 1 5250.000 1 8.95 15.75 14.02 11.42 7.55 4.59 2.01 1.11 123.9
 Drop Sequence Completed Time: 12:44 Air Temp (F): 81.5
 GPS: Quality : GPS Fi Latitude = 33 deg59.671468 N Longitude = 118
 deg8.087822 W PDOP = 0.00
 Note: SEVERE CRACKING
 18 1 5500.000 1 9.15 11.66 9.57 7.97 5.92 4.41 2.34 1.38 124.7
 18 1 5500.000 1 8.87 11.19 9.22 7.73 5.75 4.30 2.29 1.36 124.7
 18 1 5500.000 1 9.05 11.31 9.33 7.84 5.85 4.38 2.33 1.36 124.7
 Drop Sequence Completed Time: 12:45 Air Temp (F): 80.0
 GPS: Quality : GPS Fi Latitude = 33 deg59.630242 N Longitude = 118
 deg8.087989 W PDOP = 0.00
 Note: SEVERE CRACKING
 19 1 5751.000 1 9.15 9.33 7.42 5.72 4.31 3.15 1.79 1.11 133.8
 19 1 5751.000 1 9.20 9.20 7.35 5.70 4.29 3.13 1.77 1.11 133.8
 19 1 5751.000 1 9.13 9.07 7.27 5.66 4.27 3.11 1.76 1.10 133.8
 Drop Sequence Completed Time: 12:46 Air Temp (F): 79.9
 GPS: Quality : GPS Fi Latitude = 33 deg59.588863 N Longitude = 118
 deg8.087957 W PDOP = 0.00
 Note: SEVERE CRACKING
 20 1 6002.000 1 8.89 9.11 7.14 5.86 4.38 3.23 1.71 1.13 127.6
 20 1 6002.000 1 8.84 8.85 6.97 5.75 4.30 3.17 1.68 1.11 127.6
 20 1 6002.000 1 8.98 8.92 7.05 5.81 4.35 3.21 1.71 1.14 127.6
 Drop Sequence Completed Time: 12:47 Air Temp (F): 83.7
 GPS: Quality : Fix not valid Latitude = 33 deg59.582673 N Longitude = 118
 deg8.088375 W PDOP = 0.00
 Note: SEVERE CRACKING
 21 1 6252.000 1 9.02 16.52 13.54 11.32 8.59 6.15 3.36 1.82 127.7
 21 1 6252.000 1 9.12 16.35 13.46 11.29 8.58 6.12 3.36 1.81 127.7
 21 1 6252.000 1 8.98 16.03 13.24 11.12 8.45 6.03 3.30 1.76 127.7
 Drop Sequence Completed Time: 12:53 Air Temp (F): 82.8
 GPS: Quality : DGPS Fix Latitude = 33 deg59.505755 N Longitude = 118
 deg8.087391 W PDOP = 0.00
 Note: SEVERE CRACKING
 22 1 6529.000 1 9.08 13.50 11.68 9.45 6.72 4.67 2.47 1.64 126.6
 22 1 6529.000 1 9.04 13.33 11.61 9.43 6.69 4.63 2.45 1.63 126.6
 22 1 6529.000 1 8.94 13.18 11.52 9.33 6.63 4.59 2.42 1.61 126.6
 Drop Sequence Completed Time: 12:54 Air Temp (F): 78.1
 GPS: Quality : DGPS Fix Latitude = 33 deg59.460123 N Longitude = 118
 deg8.093287 W PDOP = 0.00

Note: SEVERE CRACKING

23	1	6752.000	1	8.98	5.15	3.82	3.13	2.01	1.50	0.93	0.67	124.5
----	---	----------	---	------	------	------	------	------	------	------	------	-------

23	1	6752.000	1	9.05	5.11	3.80	3.13	2.01	1.50	0.92	0.66	124.5
----	---	----------	---	------	------	------	------	------	------	------	------	-------

23	1	6752.000	1	8.97	4.98	3.72	3.05	1.94	1.44	0.87	0.61	124.5
----	---	----------	---	------	------	------	------	------	------	------	------	-------

Drop Sequence Completed Time: 12:55 Air Temp (F): 81.7

GPS: Quality : DGPS Fix Latitude = 33 deg59.424810 N Longitude = 118

deg8.105402 W PDOP = 0.00

Note: SEVERE CRACKING

24	1	7002.000	1	9.02	12.22	10.00	8.14	5.46	3.49	1.88	1.33	123.2
----	---	----------	---	------	-------	-------	------	------	------	------	------	-------

24	1	7002.000	1	9.09	12.11	9.94	8.12	5.48	3.52	1.95	1.37	123.2
----	---	----------	---	------	-------	------	------	------	------	------	------	-------

24	1	7002.000	1	9.11	12.00	9.85	8.07	5.44	3.50	1.93	1.33	123.2
----	---	----------	---	------	-------	------	------	------	------	------	------	-------

Drop Sequence Completed Time: 12:56 Air Temp (F): 83.3

GPS: Quality : DGPS Fix Latitude = 33 deg59.387529 N Longitude = 118

deg8.125846 W PDOP = 0.00

Note: SEVERE CRACKING

25	1	7250.000	1	8.82	16.46	13.53	11.52	8.89	6.55	3.59	2.09	124.2
----	---	----------	---	------	-------	-------	-------	------	------	------	------	-------

25	1	7250.000	1	8.81	16.32	13.39	11.43	8.84	6.51	3.60	2.13	124.2
----	---	----------	---	------	-------	-------	-------	------	------	------	------	-------

25	1	7250.000	1	9.04	16.52	13.71	11.73	9.10	6.71	3.70	2.15	124.2
----	---	----------	---	------	-------	-------	-------	------	------	------	------	-------

Drop Sequence Completed Time: 12:57 Air Temp (F): 79.4

GPS: Quality : DGPS Fix Latitude = 33 deg59.353749 N Longitude = 118

deg8.153451 W PDOP = 0.00

Note: SEVERE CRACKING

26	1	7497.000	1	9.08	23.26	19.48	16.20	12.40	9.29	5.21	3.19	130.5
----	---	----------	---	------	-------	-------	-------	-------	------	------	------	-------

26	1	7497.000	1	9.04	22.85	19.20	15.98	12.23	9.19	5.15	3.35	130.5
----	---	----------	---	------	-------	-------	-------	-------	------	------	------	-------

26	1	7497.000	1	8.99	22.48	18.94	15.80	12.09	9.10	5.09	3.85	130.5
----	---	----------	---	------	-------	-------	-------	-------	------	------	------	-------

Drop Sequence Completed Time: 12:59 Air Temp (F): 82.5

GPS: Quality : DGPS Fix Latitude = 33 deg59.323449 N Longitude = 118

deg8.185809 W PDOP = 0.00

Note: SEVERE CRACKING

M5

Date-Time: 6/ 9/2017 14:23:29

Sensors: FMI085-01, FMI085-02, FMI085-03, FMI085-04, FMI085-05,
FMI085-06R, FMI085-07

Weight/spring: 3

Location: City

Temp: 85.01

Operator: ADRIAN

Comments: Starting

1 1 7533.000 1 9.05 19.14 16.26 13.63 10.33 7.50 4.20 2.38 129.7

1 1 7533.000 1 8.83 18.46 15.87 13.35 10.17 7.43 4.17 2.36 129.7

1 1 7533.000 1 8.88 18.27 15.75 13.28 10.12 7.41 4.16 2.35 129.7

Drop Sequence Completed Time: 14:24 Air Temp (F): 84.6

GPS: Quality : DGPS Fix Latitude = 33 deg59.319676 N Longitude = 118
deg8.178873 W PDOP = 0.00

Note: TELEGRAPH TO FERGUSON....SEVERE ALLIGATOR CRACKING...STAGGER

2 1 7370.000 1 9.25 13.84 12.08 10.41 8.14 5.95 3.34 1.83 119.8

2 1 7370.000 1 9.04 13.38 11.72 10.14 7.97 5.84 3.29 1.81 119.8

2 1 7370.000 1 9.06 13.41 11.72 10.14 7.97 5.84 3.30 1.81 119.8

Drop Sequence Completed Time: 14:24 Air Temp (F): 88.4

GPS: Quality : DGPS Fix Latitude = 33 deg59.339765 N Longitude = 118
deg8.156442 W PDOP = 0.00

Note: TELEGRAPH TO FERGUSON....SEVERE ALLIGATOR CRACKING...STAGGER

3 1 7121.000 1 9.16 17.25 13.23 10.31 6.50 4.10 1.79 1.05 119.9

3 1 7121.000 1 8.97 16.76 12.94 10.12 6.37 4.03 1.77 1.06 119.9

3 1 7121.000 1 8.90 16.56 12.87 10.04 6.33 4.01 1.78 1.05 119.9

Drop Sequence Completed Time: 14:26 Air Temp (F): 84.1

GPS: Quality : DGPS Fix Latitude = 33 deg59.372406 N Longitude = 118
deg8.126480 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING.

4 1 6865.000 1 9.09 19.82 15.61 12.82 9.26 6.33 3.01 1.72 125.6

4 1 6865.000 1 9.20 19.75 15.59 12.82 9.24 6.28 2.94 1.66 125.6

4 1 6865.000 1 9.02 19.43 15.42 12.70 9.16 6.25 2.97 1.70 125.6

Drop Sequence Completed Time: 14:27 Air Temp (F): 81.5

GPS: Quality : DGPS Fix Latitude = 33 deg59.409845 N Longitude = 118
deg8.102722 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING.

5 1 6625.000 1 9.30 14.46 12.24 10.14 7.42 5.10 2.36 1.24 122.0

5 1 6625.000 1 9.12 14.14 12.01 9.95 7.29 5.00 2.32 1.19 122.0

5 1 6625.000 1 9.17 14.15 12.00 9.97 7.31 5.01 2.30 1.19 122.0

Drop Sequence Completed Time: 14:28 Air Temp (F): 81.4

GPS: Quality : DGPS Fix Latitude = 33 deg59.447408 N Longitude = 118
deg8.087766 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING.

6 1 6375.000 1 8.95 6.96 5.92 4.91 3.64 2.77 1.61 1.02 124.5

6 1 6375.000 1 8.99 6.88 5.86 4.87 3.62 2.77 1.61 1.02 124.5

6 1 6375.000 1 8.84 6.68 5.70 4.75 3.54 2.70 1.55 0.99 124.5

Drop Sequence Completed Time: 14:29 Air Temp (F): 81.5

GPS: Quality : DGPS Fix Latitude = 33 deg59.488387 N Longitude = 118
deg8.079983 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING.

7 1 6125.000 1 9.37 13.03 10.66 8.75 6.45 4.74 2.50 1.30 123.6

7 1 6125.000 1 9.13 12.51 10.30 8.48 6.28 4.62 2.44 1.29 123.6

7 1 6125.000 1 9.12 12.41 10.22 8.45 6.24 4.60 2.42 1.29 123.6

Drop Sequence Completed Time: 14:30 Air Temp (F): 88.1
GPS: Quality : DGPS Fix Latitude = 33 deg59.529484 N Longitude = 118 deg8.079104 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

8	1	5875.000	1	8.93	15.33	12.91	10.48	7.66	5.48	2.69	1.44	127.9
8	1	5875.000	1	8.93	15.26	12.88	10.48	7.68	5.51	2.73	1.46	127.9
8	1	5875.000	1	9.10	15.38	12.97	10.59	7.74	5.55	2.72	1.44	127.9

Drop Sequence Completed Time: 14:31 Air Temp (F): 86.7
GPS: Quality : DGPS Fix Latitude = 33 deg59.570854 N Longitude = 118 deg8.078631 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

9	1	5625.000	1	8.73	13.37	10.90	8.84	6.23	4.15	1.96	1.08	124.3
9	1	5625.000	1	8.90	13.38	10.94	8.90	6.29	4.21	1.99	1.11	124.3
9	1	5625.000	1	9.09	13.61	11.16	9.08	6.43	4.30	2.04	1.13	124.3

Drop Sequence Completed Time: 14:31 Air Temp (F): 82.9
GPS: Quality : DGPS Fix Latitude = 33 deg59.611958 N Longitude = 118 deg8.078500 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

10	1	5375.000	1	8.92	13.91	10.98	8.86	5.97	3.94	1.45	0.87	121.4
10	1	5375.000	1	8.91	13.77	10.93	8.86	6.00	3.99	1.50	0.90	121.4
10	1	5375.000	1	9.09	13.95	11.10	9.00	6.09	4.06	1.53	0.89	121.4

Drop Sequence Completed Time: 14:32 Air Temp (F): 88.6
GPS: Quality : DGPS Fix Latitude = 33 deg59.653290 N Longitude = 118 deg8.078221 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

11	1	5122.000	1	8.84	13.73	10.48	8.35	5.57	3.32	1.43	0.76	123.7
11	1	5122.000	1	8.97	13.80	10.59	8.49	5.69	3.41	1.48	0.83	123.7
11	1	5122.000	1	8.97	13.71	10.56	8.46	5.67	3.40	1.46	0.80	123.7

Drop Sequence Completed Time: 14:33 Air Temp (F): 86.9
GPS: Quality : DGPS Fix Latitude = 33 deg59.695152 N Longitude = 118 deg8.078017 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

12	1	4875.000	1	9.03	13.56	11.04	8.90	5.97	3.87	1.83	1.14	123.1
12	1	4875.000	1	8.95	13.36	10.89	8.78	5.84	3.80	1.79	1.11	123.1
12	1	4875.000	1	8.96	13.27	10.86	8.74	5.81	3.78	1.79	1.12	123.1

Drop Sequence Completed Time: 14:34 Air Temp (F): 89.3
GPS: Quality : DGPS Fix Latitude = 33 deg59.735786 N Longitude = 118 deg8.077738 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

13	1	4624.000	1	8.94	11.11	8.72	6.80	4.61	3.17	1.72	0.95	128.6
13	1	4624.000	1	8.93	10.96	8.64	6.77	4.59	3.16	1.73	0.94	128.6
13	1	4624.000	1	9.12	11.13	8.80	6.90	4.68	3.22	1.73	0.95	128.6

Drop Sequence Completed Time: 14:35 Air Temp (F): 86.4
GPS: Quality : DGPS Fix Latitude = 33 deg59.777324 N Longitude = 118 deg8.077297 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

14	1	4374.000	1	9.06	11.17	9.25	7.67	5.79	4.17	1.98	1.01	126.1
14	1	4374.000	1	9.28	11.11	9.20	7.65	5.76	4.14	1.93	0.93	126.1
14	1	4374.000	1	8.93	10.77	8.95	7.46	5.63	4.04	1.88	0.91	126.1

Drop Sequence Completed Time: 14:36 Air Temp (F): 87.9
GPS: Quality : DGPS Fix Latitude = 33 deg59.818136 N Longitude = 118 deg8.071640 W PDOP = 0.00
Note: SEVERE ALLIGATOR CRACKING.

15	1	4122.000	1	8.93	8.78	5.09	3.36	1.68	1.24	0.93	0.77	121.9
----	---	----------	---	------	------	------	------	------	------	------	------	-------

15 1 4122.000 1 8.85 8.65 5.03 3.37 1.68 1.25 0.91 0.75 121.9
 15 1 4122.000 1 9.09 8.75 5.13 3.46 1.76 1.30 0.97 0.79 121.9
 Drop Sequence Completed Time: 14:36 Air Temp (F): 86.5
 GPS: Quality : DGPS Fix Latitude = 33 deg59.858604 N Longitude = 118
 deg8.060331 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING.
 16 1 3872.000 1 8.86 18.10 14.15 11.25 7.62 5.02 2.10 0.95 123.7
 16 1 3872.000 1 8.83 17.77 13.95 11.11 7.57 4.99 2.09 0.94 123.7
 16 1 3872.000 1 9.03 18.16 14.27 11.38 7.76 5.12 2.14 0.99 123.7
 Drop Sequence Completed Time: 14:37 Air Temp (F): 89.2
 GPS: Quality : DGPS Fix Latitude = 33 deg59.897365 N Longitude = 118
 deg8.043216 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING.
 17 1 3625.000 1 9.02 19.21 15.27 12.72 9.08 6.68 3.57 1.93 125.0
 17 1 3625.000 1 9.07 19.00 15.15 12.64 9.03 6.65 3.52 1.88 125.0
 17 1 3625.000 1 8.99 18.45 14.97 12.55 8.94 6.57 3.47 1.85 125.0
 Drop Sequence Completed Time: 14:38 Air Temp (F): 89.2
 GPS: Quality : DGPS Fix Latitude = 33 deg59.934129 N Longitude = 118
 deg8.021938 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING.
 18 1 3376.000 1 8.96 15.30 12.01 9.61 7.10 5.28 3.07 1.83 127.0
 18 1 3376.000 1 9.00 15.18 12.00 9.63 7.13 5.31 3.10 1.85 127.0
 18 1 3376.000 1 8.90 14.98 11.86 9.53 7.06 5.26 3.06 1.85 127.0
 Drop Sequence Completed Time: 14:39 Air Temp (F): 85.9
 GPS: Quality : DGPS Fix Latitude = 33 deg59.971089 N Longitude = 118
 deg8.000053 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING.
 19 1 2625.000 1 9.19 12.32 9.39 7.62 5.54 4.01 2.09 1.17 126.0
 19 1 2625.000 1 9.03 11.92 9.19 7.44 5.42 3.92 2.05 1.14 126.0
 19 1 2625.000 1 9.11 11.88 9.21 7.47 5.46 3.96 2.07 1.14 126.0
 Drop Sequence Completed Time: 14:41 Air Temp (F): 86.4
 GPS: Quality : DGPS Fix Latitude = 34 deg0.082523 N Longitude = 118
 deg7.935269 W PDOP = 0.00
 Note: FROM 3376 FT MARK CONCRETE SECTION TO THIS MARK 2625
 20 1 2373.000 1 8.92 16.24 12.88 9.87 6.25 3.79 1.43 0.78 117.4
 20 1 2373.000 1 8.87 16.00 12.72 9.80 6.21 3.77 1.42 0.76 117.4
 20 1 2373.000 1 9.01 16.21 12.94 9.97 6.31 3.83 1.44 0.77 117.4
 Drop Sequence Completed Time: 14:42 Air Temp (F): 85.8
 GPS: Quality : DGPS Fix Latitude = 34 deg0.119740 N Longitude = 118
 deg7.913129 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING ALL LANE
 21 1 2125.000 1 8.93 20.20 15.28 11.00 5.52 2.79 1.04 0.66 121.3
 21 1 2125.000 1 9.09 20.40 15.52 11.17 5.65 2.85 1.06 0.67 121.3
 21 1 2125.000 1 8.92 20.03 15.29 10.95 5.52 2.78 1.03 0.66 121.3
 Drop Sequence Completed Time: 14:43 Air Temp (F): 84.7
 GPS: Quality : DGPS Fix Latitude = 34 deg0.157575 N Longitude = 118
 deg7.894354 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING ALL LANE
 22 1 1875.000 1 8.95 27.92 21.81 15.60 8.96 4.67 1.00 0.38 123.7
 22 1 1875.000 1 9.04 27.92 21.90 15.64 9.01 4.71 1.01 0.39 123.7
 22 1 1875.000 1 8.97 27.57 21.69 15.45 8.91 4.67 1.04 0.42 123.7
 Drop Sequence Completed Time: 14:45 Air Temp (F): 81.2
 GPS: Quality : DGPS Fix Latitude = 34 deg0.197335 N Longitude = 118
 deg7.881177 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING ALL LANE

23 1 1625.000 1 9.12 21.99 16.16 11.91 6.83 3.65 1.22 0.78 129.2

23 1 1625.000 1 9.19 21.93 16.22 12.00 6.87 3.67 1.25 0.79 129.2

23 1 1625.000 1 9.13 21.78 16.12 11.93 6.82 3.65 1.22 0.76 129.2

Drop Sequence Completed Time: 14:46 Air Temp (F): 80.1

GPS: Quality : DGPS Fix Latitude = 34 deg0.238103 N Longitude = 118 deg7.874084 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING ALL LANE

24 1 1366.000 1 9.22 13.73 10.53 7.97 5.17 3.12 1.14 0.53 125.4

24 1 1366.000 1 9.14 13.36 10.34 7.78 5.06 3.07 1.12 0.52 125.4

24 1 1366.000 1 9.16 13.28 10.25 7.72 5.03 3.05 1.12 0.52 125.4

Drop Sequence Completed Time: 14:47 Air Temp (F): 85.5

GPS: Quality : DGPS Fix Latitude = 34 deg0.280615 N Longitude = 118 deg7.873227 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING ALL LANE

25 1 1125.000 1 8.69 13.28 10.44 8.23 5.75 3.81 1.55 0.64 121.1

25 1 1125.000 1 8.92 13.44 10.62 8.39 5.89 3.91 1.60 0.67 121.1

25 1 1125.000 1 8.88 13.33 10.54 8.34 5.85 3.90 1.60 0.68 121.1

Drop Sequence Completed Time: 14:48 Air Temp (F): 80.6

GPS: Quality : DGPS Fix Latitude = 34 deg0.320579 N Longitude = 118 deg7.875751 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING ALL LANE

26 1 875.000 1 8.75 28.10 23.56 18.75 12.10 7.21 1.79 0.37 118.3

26 1 875.000 1 9.00 28.48 23.93 19.12 12.38 7.37 1.83 0.37 118.3

26 1 875.000 1 9.00 28.17 23.74 18.98 12.32 7.32 1.81 0.37 118.3

Drop Sequence Completed Time: 14:49 Air Temp (F): 83.1

GPS: Quality : DGPS Fix Latitude = 34 deg0.361868 N Longitude = 118 deg7.878545 W PDOP = 0.00

Note: LAST TEST....SEVERE ALLIGATOR CRACKING ALL LANE

27 1 750.000 1 9.11 16.95 14.01 10.88 7.08 4.17 1.24 0.39 126.7

27 1 750.000 1 9.17 16.84 13.97 10.91 7.11 4.20 1.28 0.44 126.7

27 1 750.000 1 8.72 16.06 13.30 10.40 6.78 3.98 1.20 0.39 126.7

Drop Sequence Completed Time: 14:50 Air Temp (F): 79.6

GPS: Quality : DGPS Fix Latitude = 34 deg0.382395 N Longitude = 118 deg7.879969 W PDOP = 0.00

Note: LAST TEST....SEVERE ALLIGATOR CRACKING ALL LANE

M5

Date-Time: 6/ 9/2017 13: 6:51

Sensors: FMI085-01, FMI085-02, FMI085-03, FMI085-04, FMI085-05,
FMI085-06R, FMI085-07

Weight/spring: 3

Location: City of Commerce

Temp: 87.45

Operator: ADRIAN ELIZONDO

Comments: Starting

1 1 7495.000 1 9.43 13.91 11.90 10.29 7.75 5.64 2.93 1.72 123.4

1 1 7495.000 1 9.36 13.66 11.79 10.22 7.75 5.61 2.89 1.71 123.4

1 1 7495.000 1 9.09 13.19 11.36 9.83 7.41 5.38 2.74 1.59 123.4

Drop Sequence Completed Time: 13:07 Air Temp (F): 87.8

GPS: Quality : DGPS Fix Latitude = 33 deg59.316878 N Longitude = 118
deg8.177918 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

2 1 7250.000 1 8.84 16.09 14.29 12.02 9.26 6.88 3.31 1.76 118.1

2 1 7250.000 1 8.77 16.00 14.21 11.96 9.25 6.88 3.34 1.78 118.1

2 1 7250.000 1 8.93 16.12 14.37 12.09 9.37 6.98 3.39 1.80 118.1

Drop Sequence Completed Time: 13:08 Air Temp (F): 81.2

GPS: Quality : DGPS Fix Latitude = 33 deg59.347174 N Longitude = 118
deg8.146032 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

3 1 6998.000 1 9.20 15.94 12.89 10.25 6.73 3.73 1.51 0.89 119.2

3 1 6998.000 1 9.21 15.72 12.79 10.21 6.71 3.74 1.57 0.92 119.2

3 1 6998.000 1 9.06 15.42 12.58 10.04 6.58 3.68 1.55 0.90 119.2

Drop Sequence Completed Time: 13:09 Air Temp (F): 88.8

GPS: Quality : DGPS Fix Latitude = 33 deg59.381375 N Longitude = 118
deg8.117536 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

4 1 6750.000 1 8.97 14.67 12.52 10.20 6.73 4.58 2.29 1.53 124.7

4 1 6750.000 1 9.04 14.69 12.55 10.27 6.83 4.67 2.36 1.60 124.7

4 1 6750.000 1 8.98 14.50 12.45 10.22 6.82 4.69 2.38 1.63 124.7

Drop Sequence Completed Time: 13:10 Air Temp (F): 84.9

GPS: Quality : DGPS Fix Latitude = 33 deg59.418324 N Longitude = 118
deg8.096392 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

5 1 6524.000 1 9.24 13.01 10.49 8.64 6.33 4.51 2.26 1.32 123.3

5 1 6524.000 1 9.19 12.81 10.38 8.55 6.28 4.48 2.26 1.32 123.3

5 1 6524.000 1 9.06 12.61 10.23 8.45 6.20 4.42 2.23 1.31 123.3

Drop Sequence Completed Time: 13:11 Air Temp (F): 82.0

GPS: Quality : DGPS Fix Latitude = 33 deg59.453349 N Longitude = 118
deg8.083847 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

6 1 6245.000 1 8.78 17.09 14.21 12.11 9.32 7.09 3.79 2.23 122.6

6 1 6245.000 1 9.11 17.36 14.46 12.35 9.54 7.28 3.93 2.28 122.6

6 1 6245.000 1 8.94 16.99 14.19 12.16 9.38 7.15 3.83 2.24 122.6

Drop Sequence Completed Time: 13:12 Air Temp (F): 87.2

GPS: Quality : DGPS Fix Latitude = 33 deg59.499586 N Longitude = 118
deg8.077013 W PDOP = 0.00

Note: PATCHES AND ALLIGATOR SEVERE CRACKING

7 1 6000.000 1 9.03 15.68 13.01 11.33 7.06 4.45 2.04 1.20 123.2

7 1 6000.000 1 9.01 15.46 12.83 11.23 7.01 4.42 2.02 1.18 123.2

7 1 6000.000 1 9.13 15.52 12.91 11.33 7.09 4.47 2.05 1.21 123.2

Drop Sequence Completed Time: 13:13 Air Temp (F): 82.8
GPS: Quality : DGPS Fix Latitude = 33 deg59.540114 N Longitude = 118
deg8.076376 W PDOP = 0.00
Note: PATCHES AND ALLIGATOR SEVERE CRACKING
8 1 5750.000 1 9.03 15.96 13.38 11.36 8.83 6.47 3.32 1.88 121.6
8 1 5750.000 1 9.08 15.83 13.33 11.36 8.85 6.48 3.32 1.87 121.6
8 1 5750.000 1 9.05 15.60 13.14 11.21 8.74 6.41 3.24 1.86 121.6
Drop Sequence Completed Time: 13:13 Air Temp (F): 85.5
GPS: Quality : DGPS Fix Latitude = 33 deg59.581373 N Longitude = 118
deg8.076239 W PDOP = 0.00
Note: PATCHES AND ALLIGATOR SEVERE CRACKING
9 1 5497.000 1 8.82 11.64 9.43 7.76 5.63 3.76 1.92 1.13 124.8
9 1 5497.000 1 8.89 11.65 9.47 7.83 5.68 3.77 1.96 1.14 124.8
9 1 5497.000 1 8.90 11.52 9.38 7.76 5.64 3.73 1.91 1.13 124.8
Drop Sequence Completed Time: 13:14 Air Temp (F): 85.5
GPS: Quality : DGPS Fix Latitude = 33 deg59.623117 N Longitude = 118
deg8.076181 W PDOP = 0.00
Note: PATCHES AND ALLIGATOR SEVERE CRACKING
10 1 5249.000 1 8.95 14.50 12.20 9.74 7.06 4.77 2.23 1.12 120.7
10 1 5249.000 1 9.00 14.39 12.14 9.75 7.05 4.77 2.24 1.13 120.7
10 1 5249.000 1 8.96 14.28 12.07 9.68 7.01 4.74 2.22 1.14 120.7
Drop Sequence Completed Time: 13:15 Air Temp (F): 81.6
GPS: Quality : DGPS Fix Latitude = 33 deg59.664116 N Longitude = 118
deg8.075774 W PDOP = 0.00
Note: SEVERE CRACKING
11 1 5000.000 1 9.08 9.72 7.78 6.50 4.85 3.57 1.85 1.14 124.5
11 1 5000.000 1 9.21 9.70 7.78 6.52 4.89 3.60 1.86 1.15 124.5
11 1 5000.000 1 9.09 9.56 7.69 6.45 4.84 3.56 1.85 1.15 124.5
Drop Sequence Completed Time: 13:16 Air Temp (F): 83.0
GPS: Quality : DGPS Fix Latitude = 33 deg59.705118 N Longitude = 118
deg8.075952 W PDOP = 0.00
Note: SEVERE CRACKING
12 1 4800.000 1 9.15 12.01 9.64 7.81 5.59 3.81 1.79 1.14 125.4
12 1 4800.000 1 9.02 11.75 9.47 7.70 5.52 3.76 1.76 1.12 125.4
12 1 4800.000 1 9.03 11.70 9.43 7.68 5.50 3.75 1.75 1.11 125.4
Drop Sequence Completed Time: 13:18 Air Temp (F): 89.7
GPS: Quality : DGPS Fix Latitude = 33 deg59.738022 N Longitude = 118
deg8.076298 W PDOP = 0.00
Note: SEVERE CRACKING
13 1 4550.000 1 8.97 12.49 9.18 7.28 4.89 3.17 1.38 0.77 125.7
13 1 4550.000 1 9.07 12.47 9.21 7.33 4.93 3.18 1.39 0.77 125.7
13 1 4550.000 1 8.88 12.18 9.01 7.17 4.81 3.09 1.35 0.75 125.7
Drop Sequence Completed Time: 13:19 Air Temp (F): 83.7
GPS: Quality : DGPS Fix Latitude = 33 deg59.779401 N Longitude = 118
deg8.075188 W PDOP = 0.00
Note: SEVERE CRACKING
14 1 4249.000 1 8.94 14.41 11.08 8.54 5.74 3.37 1.47 0.66 120.3
14 1 4249.000 1 8.82 14.12 10.90 8.44 5.70 3.34 1.48 0.70 120.3
14 1 4249.000 1 8.99 14.42 11.21 8.66 5.86 3.43 1.52 0.71 120.3
Drop Sequence Completed Time: 13:20 Air Temp (F): 90.1
GPS: Quality : DGPS Fix Latitude = 33 deg59.828412 N Longitude = 118
deg8.067558 W PDOP = 0.00
Note: SEVERE CRACKING
15 1 3998.000 1 8.89 16.86 13.68 11.24 8.23 5.80 2.76 1.57 124.5

15 1 3998.000 1 8.81 16.60 13.57 11.19 8.22 5.82 2.78 1.60 124.5
 15 1 3998.000 1 9.05 16.79 13.75 11.36 8.33 5.90 2.83 1.63 124.5
 Drop Sequence Completed Time: 13:21 Air Temp (F): 85.5
 GPS: Quality : DGPS Fix Latitude = 33 deg59.868043 N Longitude = 118
 deg8.054324 W PDOP = 0.00
 Note: SEVERE CRACKING
 16 1 3728.000 1 8.97 21.88 18.90 16.04 12.39 9.31 4.92 2.52 120.4
 16 1 3728.000 1 8.93 21.53 18.65 15.92 12.33 9.29 4.93 2.53 120.4
 16 1 3728.000 1 8.84 21.22 18.41 15.73 12.22 9.21 4.88 2.51 120.4
 Drop Sequence Completed Time: 13:21 Air Temp (F): 89.3
 GPS: Quality : DGPS Fix Latitude = 33 deg59.909302 N Longitude = 118
 deg8.034084 W PDOP = 0.00
 Note: SEVERE CRACKING
 17 1 3499.000 1 9.05 23.88 21.02 18.17 13.66 9.78 4.82 2.50 123.5
 17 1 3499.000 1 9.01 23.41 20.73 17.98 13.57 9.76 4.84 2.52 123.5
 17 1 3499.000 1 8.98 23.36 20.70 17.96 13.58 9.77 4.85 2.54 123.5
 Drop Sequence Completed Time: 13:22 Air Temp (F): 82.5
 GPS: Quality : DGPS Fix Latitude = 33 deg59.943069 N Longitude = 118
 deg8.014157 W PDOP = 0.00
 Note: SEVERE CRACKING
 18 1 3322.000 1 9.06 15.88 13.42 11.74 9.42 7.42 4.43 2.42 126.4
 18 1 3322.000 1 8.97 15.52 13.16 11.53 9.26 7.33 4.39 2.42 126.4
 18 1 3322.000 1 9.06 15.59 13.24 11.59 9.32 7.37 4.42 2.42 126.4
 Drop Sequence Completed Time: 13:23 Air Temp (F): 86.9
 GPS: Quality : DGPS Fix Latitude = 33 deg59.969659 N Longitude = 118
 deg7.998964 W PDOP = 0.00
 Note: SEVERE CRACKING
 19 1 2591.000 1 9.13 22.23 16.44 13.44 9.07 6.05 2.40 1.45 134.2
 19 1 2591.000 1 9.12 21.90 16.37 13.40 9.06 6.06 2.42 1.48 134.2
 19 1 2591.000 1 9.13 21.76 16.35 13.38 9.05 6.05 2.41 1.46 134.2
 Drop Sequence Completed Time: 13:25 Air Temp (F): 88.3
 GPS: Quality : DGPS Fix Latitude = 34 deg0.077894 N Longitude = 118
 deg7.935286 W PDOP = 0.00
 Note: FROM 3320 FT MARK IS CONCRETE SECTION TO THIS SECTION
 20 1 2449.000 1 8.94 22.21 18.18 14.61 10.26 6.47 2.13 0.77 127.2
 20 1 2449.000 1 8.99 21.87 17.93 14.48 10.20 6.46 2.14 0.77 127.2
 20 1 2449.000 1 9.00 21.81 17.93 14.50 10.22 6.49 2.16 0.79 127.2
 Drop Sequence Completed Time: 13:26 Air Temp (F): 88.6
 GPS: Quality : DGPS Fix Latitude = 34 deg0.098992 N Longitude = 118
 deg7.923068 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING
 21 1 2250.000 1 8.79 23.82 20.57 17.70 13.14 9.32 5.18 2.85 133.9
 21 1 2250.000 1 8.82 23.97 20.61 17.80 13.27 9.39 5.23 2.88 133.9
 21 1 2250.000 1 8.91 23.60 20.83 18.02 13.49 9.53 5.30 2.90 133.9
 Drop Sequence Completed Time: 13:27 Air Temp (F): 89.9
 GPS: Quality : DGPS Fix Latitude = 34 deg0.128452 N Longitude = 118
 deg7.905815 W PDOP = 0.00
 Note: SEVERE ALLIGATOR CRACKING AND PATCHES
 22 1 1999.000 1 9.10 18.88 15.93 12.98 9.23 6.46 3.39 1.80 126.8
 22 1 1999.000 1 9.06 18.64 15.77 12.89 9.20 6.44 3.38 1.80 126.8
 22 1 1999.000 1 9.01 18.32 15.50 12.68 9.05 6.33 3.32 1.77 126.8
 Drop Sequence Completed Time: 13:28 Air Temp (F): 82.7
 GPS: Quality : DGPS Fix Latitude = 34 deg0.167038 N Longitude = 118
 deg7.888224 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES

23 1 1749.000 1 8.98 16.54 12.49 10.04 7.22 5.35 2.91 1.65 126.2

23 1 1749.000 1 8.92 16.34 12.42 10.01 7.22 5.35 2.92 1.65 126.2

23 1 1749.000 1 8.99 16.34 12.51 10.08 7.27 5.40 2.97 1.68 126.2

Drop Sequence Completed Time: 13:29 Air Temp (F): 84.9

GPS: Quality : DGPS Fix Latitude = 34 deg0.207312 N Longitude = 118 deg7.876591 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES

24 1 1500.000 1 8.74 32.31 25.58 20.02 13.33 7.80 2.65 1.47 135.0

24 1 1500.000 1 8.97 32.92 26.35 20.67 13.80 8.11 2.78 1.55 135.0

24 1 1500.000 1 8.90 32.55 26.15 20.54 13.72 8.07 2.77 1.53 135.0

Drop Sequence Completed Time: 13:30 Air Temp (F): 85.5

GPS: Quality : DGPS Fix Latitude = 34 deg0.248285 N Longitude = 118 deg7.871027 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES

25 1 1246.000 1 9.21 12.09 8.01 5.73 3.67 2.53 1.29 0.71 126.0

25 1 1246.000 1 9.21 11.88 7.96 5.70 3.66 2.52 1.30 0.71 126.0

25 1 1246.000 1 9.10 11.67 7.86 5.63 3.60 2.49 1.28 0.71 126.0

Drop Sequence Completed Time: 13:31 Air Temp (F): 87.2

GPS: Quality : DGPS Fix Latitude = 34 deg0.289624 N Longitude = 118 deg7.871289 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES

26 1 1000.000 1 8.90 16.66 13.45 10.91 7.92 5.37 2.10 0.74 123.6

26 1 1000.000 1 8.97 16.63 13.42 10.91 7.92 5.38 2.12 0.75 123.6

26 1 1000.000 1 8.88 16.26 13.18 10.74 7.80 5.30 2.07 0.74 123.6

Drop Sequence Completed Time: 13:32 Air Temp (F): 85.5

GPS: Quality : DGPS Fix Latitude = 34 deg0.330859 N Longitude = 118 deg7.874172 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES

27 1 749.000 1 9.04 10.08 7.63 5.96 4.02 2.82 1.43 0.80 127.0

27 1 749.000 1 9.07 10.01 7.63 5.97 4.03 2.83 1.44 0.81 127.0

27 1 749.000 1 9.04 9.94 7.58 5.94 4.00 2.80 1.43 0.79 127.0

Drop Sequence Completed Time: 13:33 Air Temp (F): 80.3

GPS: Quality : DGPS Fix Latitude = 34 deg0.371966 N Longitude = 118 deg7.876567 W PDOP = 0.00

Note: SEVERE ALLIGATOR CRACKING AND PATCHES...LAST TEST