

FOR CONTRACT NO.: 06-0G2704

INFORMATION HANDOUT

ENCROACHMENT PERMITS

KERN COUNTY DEPARTMENT OF PUBLIC WORKS

MATERIALS INFORMATION

FOUNDATION REPORT DATED 8/30/2011
FOUNDATION REVIEW DATED 12/14/2011
X-TENSION TERMINAL SYSTEM DETAIL

ROUTE: 06-Ker-58-M108.9

2700 "M" Street
Bakersfield, CA 93301
(661) 862-8827
(661) 862-8987 Fax

COUNTY OF KERN
State of California
Resource Management Agency
Roads Department

Permit No.
0066 - 12

1/24/2012

ENCROACHMENT PERMIT

CALIFORNIA DEPARTMENT OF TRANSPORTATION STEPHEN WINZENREAD
500 SOUTH MAIN STREET (760) 872-5222 Phone
BISHOP CA 93514 () - Cell
(760) 872-0717 Fax

In compliance with your request of 1/4/2012 and subject to all the terms, conditions and restrictions contained below and on the reverse side hereof.

PERMISSION IS HEREBY GRANTED TO
PLACE TEMPORARY SIGNS, MESSAGE BOARDS AND BEACONS IN COUNTY RIGHT OF WAY FOR WORK BEING DONE ON BUSINESS
58 OVERCROSSING IN MOJAVE PER ATTACHED DIAGRAMS.

Special attention is directed to Item #8 on the reverse side of this permit.
No equipment to remain in county right-of-way during the hours of darkness.
Equipment shall be located in such a manner as to allow two way traffic to pass at all times.

**** YOU MUST NOTIFY THE INSPECTOR 24 HOURS PRIOR TO STARTING WORK OR YOUR PERMIT MAY BE REVOKED ****
Notify Frank Lane at (661) 301-5703, 24 hours prior to starting work, for inspection and prior to any backfill.

Signing shall be in accordance with Section 21401 of the Vehicle Code of the State of California, the State of California Department of Transportation's Manual of Traffic Controls (Warning Signs, Lights and Devices for Use in Performance of Work Upon Highways), and as directed by the Roads Department.

Permit not valid for work outside county maintained right-of-way.

Final Inspection Tag may be obtained upon completion.

No work to be performed under this permit on Saturday, Sunday or holidays.

This permit is to be strictly construed and no work other than that specifically mentioned above is authorized hereby.

This permit must be on the job site at all times while work is in progress.

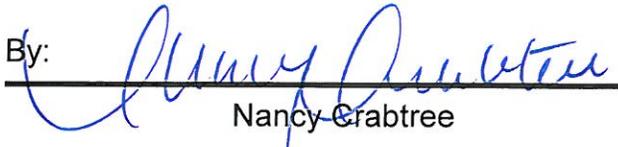
This permit shall be void unless the work herein contemplated shall have been completed before sundown.

Tuesday 07/31/2012

This permit is expressly conditioned upon the performance of the work. Failure to so perform said work in accord with specifications herein above set forth shall be deemed an immediate revocation of this permit and without notice.

KERN COUNTY ROADS DEPARTMENT

Signature on Application

By: 
Nancy Crabtree

Signature of Permittee

(SUBJECT TO ALL TERMS, CONDITIONS, AND RESTRICTIONS ON THE REVERSE SIDE HEREOF)

1. Definition: This permit is issued under Chapter 12.16 of the County of Kern Ordinance Code, and Section 1460 of the Streets and Highways Code. The term "encroachment" is used in this permit as defined in said provision. The term "grantor" shall mean the Roads Department of the County of Kern.
 2. Acceptance of Provisions: The Permittee agrees that the performance of any work under this permit shall constitute an acceptance by the Permittee of provisions hereof. A surety bond in a form and amount satisfactory to the Grantor may be required to ensure performance in accordance with all terms, conditions and restrictions hereof. This permit is granted with the understanding that no precedent shall be established on the question of permitting any certain kind of encroachment within county right-of-way.
 3. Comply with Government Code Section 4217: No permit to excavate shall be valid unless the applicant has been provided an inquiry identification number by a regional notification center pursuant to Section 4216.
 4. Notice Prior to Starting Work: Prior to commencing any work authorized herein, the Permittee shall give 24 hours notice to the person specified on the reverse side hereof. If work is discontinued for a period of twenty-four (24) hours, twenty-four (24) hours notice shall be given before restarting work.
 5. Keep Permit on the Work Site: This permit shall be kept at the site of the work and upon request must be shown to any representative of the Grantor or any Law Enforcement Officer.
 6. Permits from Other Agencies: The Permittee shall, whenever required by law, secure a written order or consent to the doing of the work from the California Public Utilities Commission, or any other public board having jurisdiction, this permit shall not be valid or effective until such order or consent is obtained.
 7. Storage of Material: No material shall be stored within eight (8) feet of the edge of pavement or traveled way, or within the shoulder line where the shoulders are wider than eight (8) feet. Such material shall not be so stored for more than three (3) consecutive calendar days.
 8. Clean Up Right-of-Way: Upon completion of work, all brush, timber, scraps and other material shall be entirely removed and the right-of-way left in a condition satisfactory to the Grantor.
 9. Standards of Construction: All work shall conform to recognized county standards of construction and the State of California, Department of Transportation, Standard Specifications, current edition. The provisions of the permit shall supercede the Standard Specifications, if in conflict.
 10. Supervision of Grantor: All work to be done shall be subject to the supervision and satisfaction of the Grantor.
 11. Future Moving of Installation: The Permittee agrees that upon request by the Grantor, said encroachment will be immediately removed at the Permittee's own sole risk, cost and expense.
 12. Liability for Damages: The Permittee shall indemnify the County of Kern, and any of its officers, employees, servants and agents, and shall defend and hold them harmless from any and all claim of liability for personal injury or property damage due to any acts or failure to act in connection with any construction, repair or maintenance arising from or in connection with any work permitted herein.
 13. Making Repairs: The Permittee shall promptly make any and all repairs to right-of-way surfaces and road paving unless the Grantor gives notice of its election to make such repairs itself. If the Grantor gives such notice, the Permittee shall immediately purchase and have delivered at the site materials specified by the Grantor. All payments for labor, equipment and other charges by the Grantor for or on account of such work shall be made by the Permittee within ten (10) days from the date of any bill, written order or voucher sent by or approved by the Grantor. The Grantor may require a deposit in an amount sufficient to cover the estimated cost before starting such
 14. Care of Drainage: If the work herein contemplated shall interfere with established drainage, suitable provision shall be made by the Permittee for the situation so as not to present a hazard or cause damage.
 15. Submit As-Builts: After completion of underground or surface work of consequence or if work differs from the plans submitted for the permit, the Permittee shall, when requested, furnish to the Roads Department, an As-Built plan showing the exact location of encroachment and other details.
 16. Construction and Repair: The Permittee shall properly construct, maintain and repair any encroachment authorized herein and shall exercise reasonable care in inspecting and immediately repairing any injury to the highway which occurs as a result of the existence of said encroachment or as the result of any work done hereunder.
- PIPES, CONDUITS, ETC.**
17. Crossing Roadway: Service and other small diameter pipes shall be jacked or otherwise forced underneath pavement without disturbing the surface thereof. The pavement or roadway shall not be cut or otherwise disturbed unless specifically permitted on the reverse side hereof. Service pipes are not permitted inside culvert structures used as drainage facilities.
 18. Casings: A casing is required for all pipes crossing road containing water, gas, oil, or other liquids.
 19. Limit of Excavation: No excavation shall be made closer than eight (8) feet from the edge of pavement except as may be specified on the reverse side hereof.
 20. Tunneling: No tunneling is permitted except as specifically authorized on the reverse side hereof.
 21. Depth of Pipes: There shall be a minimum of thirty-six (36) inches of cover over sewer lines and a minimum of thirty (30) inches over all other pipelines or conduits.
 22. Backfilling: All backfill is to be moistened as necessary and thoroughly tamped. Backfill material shall be of a uniform grading as directed by the Grantor. Backfill shall also comply with any provisions on the reverse side hereof.
 23. Maintain Surface: The Permittee shall maintain the surface over all structures placed hereunder as long as same shall exist.
 24. Pipes Along the Roadway: Pipes and utilities paralleling the pavement shall be located at such distance and at such depth from the pavement as specifically directed on the reverse side hereof. Cutting of tree roots is not permitted.
 25. Location of Pole Lines: Pole lines shall be located as specifically directed on the reverse side hereof.
 26. Public Utilities Commission Orders: All clearance and type of construction shall be in accordance with all applicable orders of the California Public Utilities Commission unless more restrictive provisions are required by County Ordinance.
 27. Permission from Property Owners: Whenever deemed necessary by the Grantor, the Permittee shall secure written permission from abutting property owners prior to the starting of any work hereunder.
- ROAD APPROACHES, CONNECTING PAVEMENT AND MINOR WORK**
28. Grades and Specifications: Grades and types of construction shall be as detailed by plans or stated on the reverse side hereof. Rev. 09/04

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. Dan Adams
Chief
Bridge Design Branch 10
Bridge Design South 2
Structure Design
Division of Engineering Services

Date: August 30, 2011

File: 06-Ker-58-PM R108.9
06-0G2700
0600020145
Bus 58 West OC (Br. 54-0496)
Windscreen Installation

Attention: Ryan Stiltz

**From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5**

Subject: Foundation Report

Introduction

Per your request, the Office of Geotechnical Design North (OGDN) has prepared this Foundation Report for the proposed Windscreen Installation on Business 58 West OC (Br. No. 50-0496) project in Kern County.

The purpose of this report is to document and discuss site subsurface geotechnical conditions and to provide geotechnical design and construction recommendations. Two soil test borings were performed to investigate the subsurface conditions at the site.

Existing Facilities and Proposed Improvement

Business Route 58 crosses over State Route 58 at the project site. The OC bridge is a 2-span, approximately 300-foot long, reinforced concrete structure built in 2003. The bridge consists of a 10-foot shoulder and two 12-foot lanes on each direction and a 20-foot paved median. Strong winds occur in the project area. Wind speeds often exceed 35 mph and have been recorded up to 70 mph on the bridge. The direction of the prevailing winds is perpendicular or nearly perpendicular to the longitudinal direction of the bridge, causing vehicular accidents on the bridge and the approaching embankments.

The proposed project will install windscreen on the west side of Bus 58 between the onramp and offramp termini of the bridge. The windscreen will be chain linked fence with vertical inserts or polypropylene mesh fabric. On the bridge, the windscreen will be installed on top of the bridge barrier. For the off bridge portions, modified Type 736S concrete barrier (Standard Plan B15-6) and its associated 16-inch Cast-In-Drilled-Hole (CIDH) pile foundation (Standard Plan B15-8) will be constructed to support the windscreen.

Pertinent Report and Publications

The following documents and maps were reviewed to assist in assessment of the proposed project site conditions:

- General Plan, Business 58 West OC, Bridge No. 50-0496, 06-KER-58, Contract No. 06-0G2700, 2011
- Geology Map of California, Bakersfield Sheet, Scale 1:250,000, CDMG 1964,
- Groundwater Level Data of Wells 32S36E21Q001M, 12N12W35R001S, 32S36E34E003M, and 11N12W18B002S, Department of Water Resource, 1949 – 1962
- Geotechnical Services Design Manual, V1.0, August 2009
- 2006 Standard Plan B15-6, B15-7, and B15-8

Physical Setting

Topography and Drainage

The project site is located in an area transitioning from the Sierra Nevada mountain ranges to the Mojave Desert and is gently sloping downward southeasterly. In the immediate project area, the ground surface elevations vary from approximately 3140 to 3125 feet above mean sea level. Lands in the area are predominantly undeveloped. No drainage feature is observed in the immediate project area.

Geology

The site is in the southern portion of the Sierra Nevada Mountain range of California. The Sierra is about 400 miles long north to south and about 70 miles wide east to west. Rocks of the Sierra formed deep underground at more than 100 million years ago. Uplift of these rocks due to tectonic movements formed the Sierra Nevada at about 4 million years ago. At about 2.5 million years ago, glaciers carved out deep canyons throughout the Sierra. Erosion from glaciers, rains, rivers, and creeks exposed the granite and formed the light-colored mountains and cliffs that make up the range.

Based on the Geologic map of California, Bakersfield Sheet, the site lies on the Recent Quaternary Alluvium, which consists primarily of sands, silts, and gravels.

Seismicity

Based on the Caltrans Seismic Design procedure, the governing active fault at the site is the

Garlock fault zone, Western Section (Fault ID No. 349) with a maximum magnitude of 7.8. The fault is referred as a left lateral strike slip fault dipping vertically. The rupture distance from the fault to the site is about 2.34 miles.

Based on the subsurface materials encountered at the site as discussed below, a shear wave velocity, V_{s30} , of 900 feet per second (f/s) is considered applicable at the site. Using the V_{s30} , a deterministic spectral acceleration (SA) spectrum from the fault and a probabilistic SA spectrum from the "USGS 2008 Interactive Deaggregation (Beta)" model were generated for the site and compared with the Minimum State Deterministic SA spectrum. A design acceleration response spectrum (ARS) curve with an estimated peak ground acceleration (PGA) of 0.44g is developed based on the comparison. The curve is the envelope of the deterministic SA spectrum from the fault and the USGS Probabilistic SA spectrum, and is shown in Figure 1 in the Appendix.

Our office also performed a liquefaction analysis. The result indicates insignificant potential for liquefaction during an earthquake. The potential for surface rupture at the site due to fault movement is also considered insignificant since there is no known fault projecting towards to or passing directly through the project site.

Subsurface Conditions

Subsurface Soil Condition

The site was investigated with two soil test borings, A-11-001 and A-11-002, on July 26, 2011. The borings were advanced using Caltrans Acker AD2 drill rig equipped with 4.5-inch-diameter hollow-stem augers. The borings were drilled to a maximum depth of about 51.5 feet below the existing ground surface. The borings encountered fill materials consisting predominantly of sands. Varying contents of gravels, silts, and clays were encountered in the sands. The standard penetration testing values (N-values) recorded in the fill materials ranged from 14 to 53 blows per foot, indicating that the materials exhibit apparent densities of medium dense to very dense.

Logs of Test Borings (LOTB) are being prepared by Geotechnical Services, Office of Geotechnical Support Branch D – Contracts, Graphics & Records, and will be forwarded when completed. Mrs. Irma Gamarra-Remmen of the Contracts, Graphics, & Records branch may be contacted directly for the information on the As-Built LOTBs.

Groundwater

Groundwater was not encountered in the soil test borings. Data recorded in four groundwater monitoring wells of the Department of Water Resources (32S36E21Q001M, 32S36E34E003M,

12N12W35R001S, 11N12W18B002S) located within 4 miles from the project site were used to evaluate the groundwater condition at the site. Based on the data, groundwater levels were more than 240 feet below the ground surface in the project area.

Corrosivity

Two bulk samples were collected from the site and were tested for corrosion evaluation, result of which is provided in the following table.

SIC Number (TL 101)	Sample Location	Sample Type	Sample Depth (ft)	Minimum Resistivity ¹ (ohm-cm)	pH ²	Chloride Content ³ (ppm)	Sulfate Content ⁴ (ppm)
702937	A-11-001	Soil	0 – 10	4503	7.85	n/a	n/a
702938	A-11-002	Soil	0 - 15	4641	8.05	n/a	n/a

Notes:

1, 2 – CTM 643; 3 – CTM 422; 4 – CTM 417

The department considers a site to be corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples taken at the site:

Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on previous projects in the area, the subsurface materials are considered non-corrosive to the proposed concrete foundation elements.

Foundation Recommendations

The site is suitable for the proposed modified Type 736S concrete barrier and the associated 16-inch CIDH pile foundations. Sloped ground surface condition (Case 2 of B15-6 and B15-8) should be used for design due to the existing embankment slope.

We understand that the vertical loads acting on the CIDH piles will be light (9-kips), consisting only of the weights of the windscreen, the concrete barrier, and the pile itself. Therefore, length of pile specified in B15-8 should be sufficient for vertical load support. Tip elevation of the CIDH piles will be controlled by lateral loading demand. Analysis of laterally loaded pile is typically performed by SD and thus is out of the scope of this report. The following soil parameters are recommended for design of the CIDH piles.

Unit Weight, γ	120	pcf
Internal Friction Angle, ϕ	34	degree
Modulus of Horizontal Subgrade Reaction, k	120	pci

Foundation Construction Consideration

Groundwater is anticipated to be deep at the project site and thus should not affect the proposed construction. Minor seepage may be encountered potentially due to localized groundwater conditions. Varying contents of gravels were encountered at the site. If these conditions exist, some difficulty in drilling and maintaining the stability of the drilled holes may be encountered during CIDH pile installations and temporary casing maybe needed.

The recommendations contained in this memorandum are based on specific project information regarding structure type, location, and design loads that have been provided. If any changes to the structure are proposed during final project design, OGDN should review those changes to determine if the foundation recommendations contained herein are still applicable.

If you have any questions or comments, please contact Thomas Song at (916) 227-1057 or John Huang at (916) 227-1037.



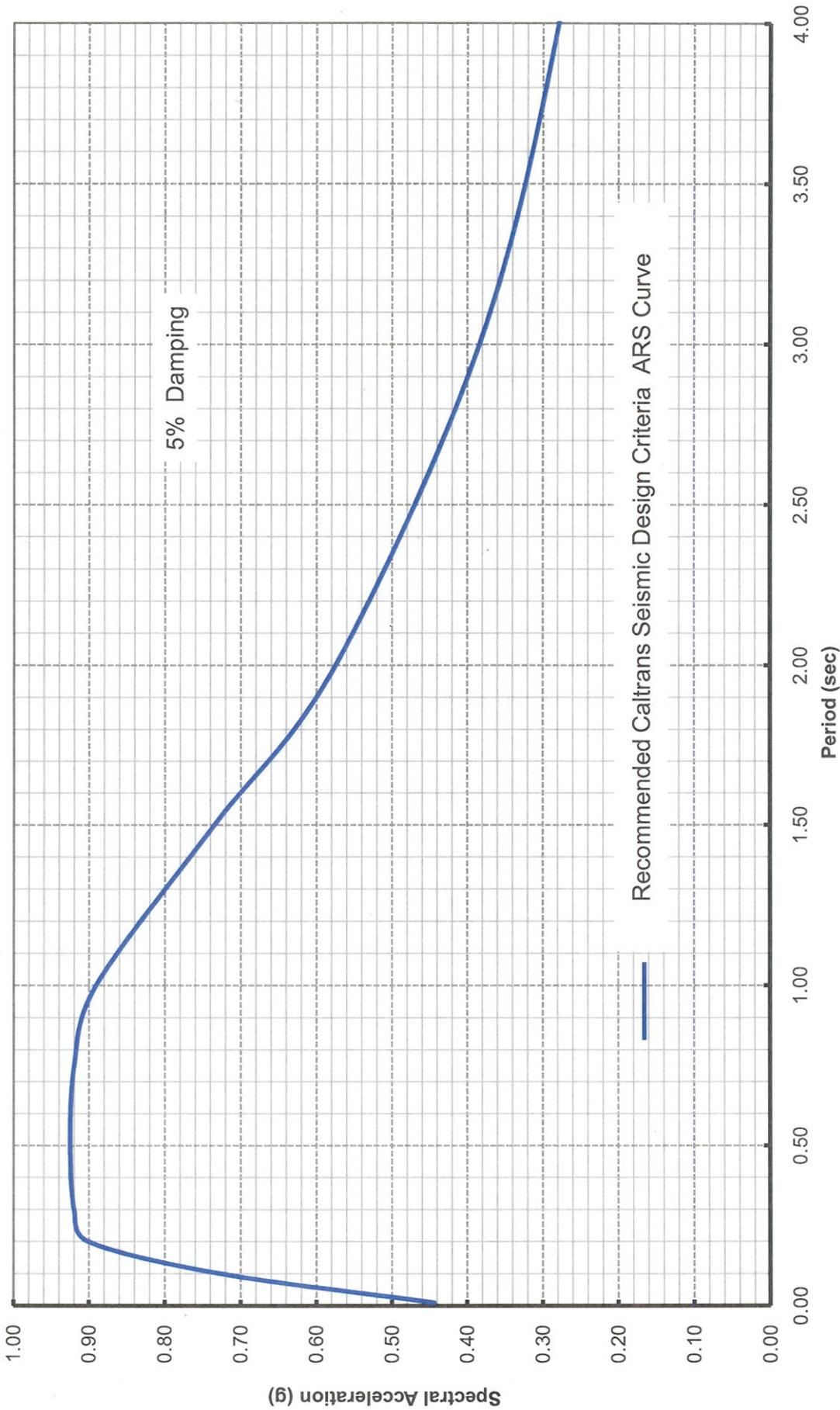
NAXIN THOMAS SONG, PE
Transportation Engineer
Office of Geotechnical Design – North
Branch E

Mr. Dan Adams
August 30, 2011
Page 6

Foundation Report
06-Ker-58-PM R108.9
Bus 58 West OC (Br. 54-0496)
Windscreen Installation
06-0G2700

c: District Project Manager, Philip Sanchez
GS Corporate, Mark Willian
District Construction R.E. Pending File
Structure Construction R.E. Pending File
DES Office Engineer, Office of PS&E
District Materials Engineer, Doug Lambert

APPENDIX



DEPARTMENT OF TRANSPORTATION
 Division of Engineering Services
 Geotechnical Services
 Office of Geotechnical Design - North
 (OGDN)

PROJECT NO./EA: 0600020145 /06-0G2700
 DATE: 8/29/2011

06-KER-58 PM R108.9
 Business 58 West OC (BR. 54-0496)
 Windscreen Installation

Recommended Acceleration Response Spectrum

Figure 1

FOUNDATION REVIEW

DIVISION OF ENGINEERING SERVICES GEOTECHNICAL SERVICES

To: **Structure Design**

1. Design
2. R.E. Pending File
3. Specifications & Estimates
4. File

Geotechnical Services

1. GD - North ; South ; West
2. GS File Room

Date: 12/14/11

Business 58 West OC
Structure Name Wind screen

06-Kear-58 - 109.9
District County Route km Post

District Project Development District Project Engineer 66-062701 E.A. Number 50-496 Structure Number

Foundation Report By: T. Song Dated: 8/30/11

Reviewed By: R. Stiltz (SD) R. [Signature] (GS)

General Plan Dated: 12/14/11 Foundation Plan Dated: _____

No changes. The following changes are necessary.

FOUNDATION CHECKLIST

<p>Pile Types and Design Loads</p> <p><input checked="" type="checkbox"/> Pile Lengths</p> <p><input checked="" type="checkbox"/> Predrilling</p> <p><input checked="" type="checkbox"/> Pile Load Test</p> <p><input checked="" type="checkbox"/> Substitution of H Piles For Concrete Piles</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </p>	<p>Footing Elevations, Design Loads, and Locations</p> <p><input checked="" type="checkbox"/> Seismic Data</p> <p><input checked="" type="checkbox"/> Location of Adjacent Structures and Utilities</p> <p><input checked="" type="checkbox"/> Stability of Cuts or Fills</p> <p><input checked="" type="checkbox"/> Fill Time Delay</p>	<p>Effect of Fills on Abutments and Bents</p> <p><input checked="" type="checkbox"/> Fill Surcharge</p> <p><input checked="" type="checkbox"/> Approach Paving Slabs</p> <p><input checked="" type="checkbox"/> Scour</p> <p><input checked="" type="checkbox"/> Ground Water</p> <p><input checked="" type="checkbox"/> Tremie Seals/Type D Excavation</p>
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[Signature] 10
Structure Design Bridge Design Branch No.

[Signature]
Geotechnical Services

