STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

REQUEST FOR PROPOSALS

FOR DESIGN AND CONSTRUCTION ON STATE HIGHWAY IN

SAN DIEGO ON I-805 FROM JUST NORTH OF SR-52 TO JUST NORTH OF MIRA MESA BOULEVARD

CONTRACT NO. 11-2T2004

PROJECT ID 11000201914

11-SD-805-PM 23.2/26.7

Federal Aid Project

Addendum No. 1 Issued November 2, 2011

The Department issues this Addendum No. 1 to inform Proposers of the following changes and corrections to the RFP.

INSTRUCTIONS TO PROPOSERS

The Instructions to Proposers is modified as indicated by the deletions and additions set forth below.

Table 2-1 "Procurement Schedule" is modified as indicated below:

Table 2-1 Procurement Schedule	
Issuance of RFQ	May 10, 2011
SOQ Due Date	July 13, 2011
Prequalification Announcement	August 30, 2011
Issuance of RFP by Department to Prequalified Proposers	October 4, 2011
Data Room, Access Permitted	October 4, 2011
Pre-Bid Conference	October ~~19~~21, 2011
One-on-One Meetings	October 25-28, 2011
ATC One-on-One Meetings	November 16-17, 2011
ATC Submittal Due Date	November ~~16~~29, 2011
Request for Clarifications Submittal Deadline	~~November 23~~December 7, 2011
ATC Response Date	December ~~16~~23, 2011
Price Proposal Due Date	January ~~6~~20, 2012
Public Opening Date	January ~~6~~20, 2012
Good Faith Efforts Documentation Due Date	January 27, 2012
NTP1	March 29, 2012

Section 3.7 "Alternative Technical Concepts" is modified as indicated below:

3.7 Alternative Technical Concepts

Department has chosen to use the Alternative Technical Concepts (ATC) process set forth in this Section 3.7 to allow innovation and flexibility, to allow the design and construction to be completed together thereby minimizing conflicts and maximizing speed and efficiency, and ultimately to obtain the best value for the motoring public.

Department will only entertain ATC submittals that propose alternatives to the following Books and Sections:

Book 2, Section 13 Structures

Book 2, Section 15 Visual Quality Management

Book 2, Section 18 Maintenance of Traffic

Book 2, Section 21 Pavements

Proposers may propose **up to ~~six~~ eight (~~6~~8)** alternatives that are equal to or better in quality or effect as determined by Department in its sole discretion and that have been used elsewhere under comparable circumstances. Rejected ATCs and submitted ATCs that are deemed by Department to not qualify as an ATC are included in the maximum number of ATCs allowed.

Section 4.5 "Proposal Delivery" is modified as indicated below:

4.5 Proposal Delivery

Proposals and Good Faith Efforts Documentation shall be mailed or delivered to Department as set forth below:

Department of Transportation
Bidder's Exchange (MS26)
1727 30th St
Sacramento, CA 95816

Acknowledgment of receipt of the Price Proposals will be evidenced by the issuance of a receipt by a member of Department staff. Department will not accept facsimile or other electronically submitted Proposals. Department will not accept any Price Proposals delivered after the Price Proposal Due Date. Any Price Proposals received after the Price Proposal Due Date, will be rejected and not considered. Proposers are solely responsible for assuring that Department receives their Proposal by the Price Proposal Due Date, at the address listed above. Department shall not be responsible for delays in delivery caused by weather, difficulties experienced by couriers or delivery services, misrouting of packages by courier or delivery services, improper, incorrect or incomplete addressing of deliveries and other occurrences beyond the control of Department. Proposals and Good Faith Efforts Documentation shall be received between 7:00 a.m. and 2:00 p.m., Pacific Time, on the due dates identified in Section 2.

Appendix A.2 "Definitions" add the following definition:

Ultimate I-805 North Managed Lanes Project	The I-805 North Managed Lanes project described in the Project Report and the Environmental Document – Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI) in the Reference Information Documents (RID).

Appendix B, Section 3.5 is modified as indicated below:

3.5 Equal Employment Opportunity Certification (Form 5): The Proposal shall include an executed copy of Form 5, regarding participation in contracts subject to federal equal employment opportunity requirements. One copy of Form 5 must be executed by each of the Proposer, each Principal/Major Participant and any proposed ~~non-exempt~~ Subcontractors/Subconsultants. Form 5 should be duplicated and executed by the Proposer, Principal/Major Participants and proposed ~~non-exempt~~ Subcontractors/Subconsultants. The executed Form 5 shall be included in Volume 1A.

Appendix B, Section 3.7 is modified as indicated below:

3.7 Certification Regarding Use of Contract Funds for Lobbying (Form 7): The Proposal shall include executed copies of Form 7, regarding use of contract funds for lobbying. One copy of Form 7 must be executed by each of the Proposer, each Principal/Major Participant, and any proposed Subcontractors/Subconsultants. Form 7 should be modified and duplicated as needed and must be executed by Proposer, Principal/Major Participants, all proposed Subcontractors/Subconsultants. If applicable, provide Standard Form – LLL, "Disclosure of Lobbying Activities," included in Form7 (Part 3). The executed Form 7 shall be included in Volume 1A

BOOK 1 DESIGN-BUILD CONTRACT

The Book 1, Design-Build Contract, is modified as indicated by the deletions and additions set forth below.

Section 1.5 "Referenced Standards and Specifications" is modified as indicated below:

1.5 Referenced Standards and Specifications

Except as otherwise specified in the Contract Documents or otherwise directed by Department, Work specified by the number, symbol or title of any standard established by reference to a described publication affecting any portion of the Project shall comply with the latest edition or revision thereof and amendments and supplements thereto in effect ~~on~~ as of the Request For Proposals (RFP) issue Date unless modified by Addendum or Change Order~~the Proposal Due Date~~.

Section 10.2.2 "Highway Planting Establishment" is modified as indicated below:

10.2.2 Highway Planting Establishment

Notwithstanding anything to the contrary in Section 10.2, requirements regarding maintenance of trees, shrubs, vines and perennials furnished under the Contract Documents are set forth in Section 20 of the Standard Specifications. After Substantial Completion, there will be a ~~360~~ 365 Calendar Day Type 2 Plant Establishment period.

Section 19.2.2.5 "Unresolved Disputes" is modified as indicated below:

19.2.2.5 Unresolved Disputes

If the Dispute is not resolved by the tenth day by the Department's ~~District~~ Corridor Director and the Design-Builder's equivalent manager, the Parties shall proceed with the provisions of Section 19.2.3.

BOOK 2 PROJECT REQUIREMENTS

The Book 2, Project Requirements, is modified as indicated by the deletions and additions set forth below.

Section 2 Project Management

Section 2.4.2.3.4 Quality Manual – Design, "Concurrent Submittals" is modified as indicated below:

Concurrent Submittals

During Project Startup, a list and schedule of deliverables will be established and provided to the Department. This list will also be provided to FHWA and other third party reviewers.

It will be expected that more than one review package will be submitted for review at the same time requiring some of the reviews to be completed concurrently. However, the maximum number of submittals to the Department allowed per week and per type are as follows:

Design Plans	2
Structure Plans (one Bridge or DAR wall)	1
Structure Plans (other)*	2
Visual Quality Concepts and Plans	2
Other Reports/Plans	2

* Non-bridge structures: earth retaining walls, culverts, sign structures, walls, etc.

Section 4 Environmental Compliance

Add "1602 Department of Fish and Game Permit" attached to this addendum to Exhibit 4-B.

Section 8 Geotechnical

Section 8.2.1 "Standards" is modified as indicated below:

8.2.1 Standards

Perform the geotechnical work in accordance with the requirements of the standards listed by priority below.

If there is any conflict in standards, adhere to the standard with the highest priority. However, if the Design-Builder's Submittal has a higher standard than any of the listed standards, adhere to the Submittal standard.

If there is any unresolved ambiguity in standards, it is the Design-Builder's responsibility to obtain clarification from Department before proceeding with design and/or construction.

Use the most current version of each listed standard as of the date of the Request For Proposals (RFP) ~~due Date~~ unless otherwise specified herein or modified by Addendum or Change Order.

Geotechnical Standards and Requirements

Priority	**Agency**	**Title**
1	Department	Seismic Design Criteria
2	AASHTO	LRFD Bridge Design Specifications 4th Edition, with California Amendments to the AASHTO LRFD Bridge Design Specifications
3	AASHTO	LRFD Bridge Design Specifications, 5th Edition only for Section 10.5.4
4~~3~~	Department	Bridge Design Specifications (LFD Version April 2000)
5~~4~~	Department	Bridge Memo to Designers
6~~5~~	Department	Standard Special Provisions
7~~6~~	Department	Standard Specifications May 2006
8~~7~~	Department	Standard Plans May 2006
9~~8~~	Department	Soil and Rock Logging, Classification, and Presentation Manual
10~~9~~	Department	Foundation Report Preparation for Bridges
11~~0~~	Department	Guidelines for Structures Foundation Reports
12~~1~~	Department	Guidelines for Preparing Geotechnical Design Reports
13~~2~~	Department	Corrosion Guidelines
14~~3~~	ASTM	American Society of Testing and Materials (ASTM) Standards
15~~4~~	AASHTO	Standard Specifications for Transportation Materials and Methods of Sampling and Testing
16~~5~~	Department	California Test Methods
17~~6~~	Department	Independent Assurance Manual
18~~7~~	Department	Foundation Manual
19~~8~~	Department	Geotechnical Manual

Information and Procedure Guide

Department	GS Procedure: Report Titles and Guidelines
Department	Implementation of Caltrans 2009 Seismic Design Procedure
Department	GS Procedure: Overhead Sign Foundations
Department	Trenching and Shoring Manual
Department	Code of Safe Practices for Geotechnical Drilling
Department	Drafting and Plans Manual of Instructions

Section 8.2.3 "Preliminary Engineering Documents" is modified as indicated below:

8.2.3 Preliminary Engineering Documents

The Preliminary Engineering Documents provided in the Reference Information Documents (RID) show only ~~-~~preliminary information for the Project. These drawings and the supporting electronic files are included to illustrate the general scope of improvements. Verify all information prior to use. The Design Builder has the flexibility to make Project changes, but must not impair the essential functions and characteristics of the Project, such as safety, traffic operations, durability, desired appearance, maintainability, environmental protection, drainage, and other permitted constraints.

Soil boring information for the Project are provided in Exhibit 8-A. This boring information shall be considered part of the Contract Documents only to the extent that they are used to represent soil conditions at the time of drilling at the depths indicated within the respective borings drilled at the approximate locations shown. Presentation of this information in no way implies that subsurface conditions are the same at other locations and different times.

Section 8.3.1 "Geotechnical Execution Plan" is added as indicated below:

8.3.1 Geotechnical Execution Plan

The Design Builder must prepare a Geotechnical Execution Plan (GEP) and a list of geotechnical milestones and schedule meetings associated with the milestones~~ based on the preliminary Geotechnical Execution Plan submitted with the Proposal~~.

GEP must identify required geotechnical efforts for the design and construction of the Project.

GEP must discuss, but not limited to, the following aspects:

- Geotechnical design and construction issues;
- Assessment of potential bridge foundation and earth retaining system types;
- Planned subsurface exploration program;
- Planned geotechnical design methodologies and schedule; and
- Planned instrumentation and monitoring programs.

The Design-Builder must submit the draft GEP for review. Schedule a meeting, within fourteen (14) calendar days of the submittal of the draft GEP to present and discuss the geotechnical concept; the geotechnical needs of the Project; the draft Geotechnical Execution Plan and the meeting schedule.

The Design-Builder must submit Final Geotechnical Execution Plan for review and record.

Section 8.3.5 "Geotechnical Analysis and Design" is added as indicated below:

8.3.5 Geotechnical Analysis and Design

The Design-Builder shall evaluate potential effects on the Project elements associated with soil liquefaction, including loss of soil strength and stiffness, ground motion modifications, ground deformation, lateral spreading, slope instability, overall or global stability of foundations, loss of foundation capacity, imposed downdrag on deep foundations, and resulting foundation settlement, kinematic lateral loads on foundations due to soil movements, and seismically induced lateral earth pressure on earth retaining structures. The Design-Builder shall also provide design recommendations, including remedial measures. The Design-Builder shall meet the requirements of AASHTO *LRFD Bridge Design Specifications, 5th Edition, Section 10.5.4.2* for the above topics.

Section 8.4.1 "Bridge Foundation Test" is modified as indicated below:

8.4.1 Bridge Foundation Test

Driven Pile:

For pile diameter less than 18 inches, the pile nominal resistance shall be determined based on the Gates formula in accordance with the Caltrans Standard Specifications.

For pile diameter from 18 inches up to 36 inches: Perform one Pile Dynamic Analysis (PDA) Test for each Control Zone to verify pile nominal resistance. A Control Zone is a zone that has the same subsurface profile and engineering properties. Develop acceptance criteria for the Control Zone by using the PDA test result and the Wave Equation. Submit Driving System Submittal 14 days before pile driving.

For pile diameter greater than 36 inches, including Cast in Steel Shell (CISS): Perform one PDA test and one-static axial pile load test for each Control Zone to verify pile nominal resistance. A Control Zone is a zone that has the same subsurface profile and engineering properties. The acceptance criteria are in accordance with the provisions in Sections 10.7.3.8 and 10.7.3.10 of the California Amendments to the AASHTO LRFD Bridge Design Specifications for compression and tension, respectively.

For driven H-pile, the pile nominal resistance shall be determined in accordance with Caltrans' Standard Specifications.

CIDH Pile:

The construction of the CIDH piles shall follow all Department requirements including integrity testing of the CIDH piles using Gamma-Gamma test in accordance with California Test Method 233. All mitigation of detected anomalies shall require review and approval by Department.

The Design-Builder shall use one of the following procedures:

1. Pile load test on CIDH may be omitted if the piles are designed not exceeding the recommended maximum Side resistance and/or Base resistance in accordance with "Drilled Shafts: Construction Procedures and Design Methods, FHWA-IF-99-025 (FHWA, 1999).

2. Perform pile load test on a non-production pile with a minimum of one test per control zone to verify axial capacity. Perform pile load test in accordance with FHWA–NHI-10-016 (FHWA, 2010), Chapter 18 Specifications, Section X.6 (pages 18-49 to 18-50).

   Both conventional pile load testing and bi-directional Osterberg Cell ("O" Cell) method is permitted. O-Cell method is discussed in FHWA–NHI-10-016 (FHWA, 2010), Drilled Shaft Manual Section 17.2.2.2 Bi-directional (O-Cell) tests. Perform test and prepare report in accordance with FHWA–NHI-10-016 (FHWA, 2010) Chapter 18 Specifications, Section X5.3 (pages 18-45 to 18-48).

Provide the pile load test program, construction and pile load test specifications to the Department for review and approval 21 days prior to performing pile load test. The test pile and pile load test shall be completed and accepted by the Department before construction of any production piles. Test piles shall be sacrificial and shall not be used as production piles. After completion of a pile load test and the test pile is no longer needed, it shall be cut off 2 feet below final grade.

Add Exhibit 8-A "Log of Test Borings" attached to this addendum.

Section 13 Structures

Section 13.2.2 "Structure Plan Submittals" is modified as indicated below:

13.2.2 Structure Plan Submittals

Plan sheets for all structures shall be in accordance with the Department practices using Caltrans Standards, specifications, and details. Specific provisions for bridge detailing shall follow Caltrans Bridge Detailing Manual.

The following structure submittals shall be provided to the Department for review on each structure:

- Concept Design – Structure Type Selection (30%) Submittal
- Intermediate Design - Unchecked Structure Details (65%) Submittal
- Final Design - Checked Structure Details (100%) Submittal
- Released-for-Construction (RFC) Submittal
- Final As-Built Plans Submittal

All structure submittals across railroads (Overhead Structures) must comply with the Metropolitan Transit System (MTS) and ~~-~~*North County Transit District (NCTD) Guidelines for Projects on or Adjacent to Railroad* submittal criteria. Prior to final submission to the railroad companies, the Design-Builder must have 100% completed plans per Section 13.2.2.3 "Final Design - Checked Structure Details (100%) Submittal."~~.~~ The Design-Builder shall adhere to any railroad agreements as required in Section 6 "Utilities" or in Section 24 "Railroad."~~.~~

Section 13.2.2.2 "Intermediate Design – Unchecked Structure Details (65%) Submittal" is modified as indicated below:

13.2.2.2 Intermediate Design- Unchecked Structure Details (65%) Submittal

The Design-Builder shall submit the Intermediate Design – Unchecked Structure Details and Plans to the Department. The Department performs review on Unchecked Structure Details to discern and raise significant potential issues and to provide the Design-Builder with constructive feedback for use in preparing subsequent submittals. The structure design information shall be suitable for content and format review and coordination with other design disciplines to integrate all bridge appurtenances into the plan set. It is not necessary to have structural design checks complete at this stage.

The Intermediate (65%) ~~Bridge Plan packages~~ submittals shall include complete dimensional detailing for all bridge structural elements and include all detail design sheets. This shall include title sheets; bridge layouts; staging and removal plans; foundation report, foundation layouts; foundation details and design tables; boring logs; abutment details; bent details; framing plans and elevations; slab plans, typical sections and details; beam details and data sheets; deflection and camber diagrams; architectural elevations and other details as applicable. ~~-~~Packages shall list Caltrans bridge standards to be used. Proposed modification to the Department standards shall also be provided.

Individual detail sheet contents shall be in accordance with applicable checklists provided in Caltrans Bridge Detailing Manual.

Section 13.2.2.3 "Final Design Checked Structure Details (100 %) Submittal" is modified as indicated below:

13.2.2.3 Final Design Checked Structure Details (100 %) Submittal

Final Design Checked Structure Details (100 %) s~~S~~ubmittal shall include completed bridge layouts and final structural details for superstructure, substructure, and all bridge appurtenances. Package shall include Final Foundation Report, LOTB's, structure quantities, and structure special provisions.

The Final Design Checked Structure Details (100%) ~~Bridge~~ s~~S~~ubmittal will not be considered complete unless the calculations and plans are available, complete, and independently checked.

Section 13.3.1 “General Bridge Design Requirement” is modified as indicated below:

13.3.1 General Bridge Design Requirement

The Design-Builder shall provide all new structural components necessary for a complete and functional structural system that provides functionality, durability, ease of maintenance, safety and aesthetics. The Design Builder shall perform seismic study on the combined bridge structure, including both the existing bridge and widened bridge, and strengthen the existing bridge structure if required based on the seismic study.

The Design-Builder shall use the commercially available computer bridge analysis program CSI SAP2000 or CSI Bridge, to generate the seismic bridge analysis and design model.

Section 13.3.2 “Design Specifications” is modified as indicated below:

13.3.2 Design Specifications

The design shall be in accordance with AASHTO LRFD Bridge Design Specification, and applicable Interim Revisions and California Amendments to AASHTO LRFD Bridge Design Specification. Seismic design shall be in accordance with Caltrans Seismic Design Criteria (SDC) and Caltrans Bridge Memo to Designers~~.~~ (MTD). The Design-Builder shall ensure that existing structures to be widened shall be seismically evaluated and retrofitted in accordance to all applicable Department requirements and Standards that include but are not limited to SDC, MTD 20-1, MTD 20-3, MTD 20-6, MTD 20-12, MTD 20-14, and MTD 20-15.

The proposed bridges shall be designed and constructed to accommodate future overlay loads (35 psf).

The new bridge superstructure structural depth shall comply with Exhibit 13-A.

~~The Design-Builder shall ensure that existing structures to be widened shall be seismically evaluated and retrofitted in accordance to all applicable Department maintenance requirements.~~

Section 13.3.4 “Geotechnical Reports” is modified as indicated below:

13.3.4 Geotechnical Reports

The Design-Builder shall perform geotechnical investigations at the bridge site and produce Geotechnical Design Reports (GDRs) and Foundation Reports (FRs). Foundation type, capacity, estimated lengths, and bottom elevations shall be determined by the Design-Builder in accordance with the Geotechnical Report for the structure. Analysis shall include bearing capacities, factors of safety and an estimate of total and anticipated differential settlement for each structure. The Preliminary Foundation Reports, Geotechnical Design Reports and Foundation Reports shall conform to Technical Provisions Section 8, “Geotechnical”.

For preliminary geotechnical and seismicity information, see the Structures Preliminary Geotechnical Reports (SPGR), Preliminary Foundation Reports (PFR) and Preliminary Seiemic Design Recommendations (PSDR) included in the Reference Information Documents.

Section 13.3.10 "Bridge Aesthetics" is modified as indicated below:

13.3.10 Bridge Aesthetics

Aesthetic treatments shall be limited to those surfaces as outlined in the " Section 15 - Visual Quality Management" included in ~~EXHIBIT~~ Exhibit 15-A. The Design-Builder shall promote a consistent aesthetic "theme" for the entire Project corridor. While certain preliminary aesthetic and architectural renderings are included in the Preliminary Design and Technical Requirements, the Design-Builder shall be responsible for complying with all standards included in the Contract Documents to provide the required project elements. The Design-Builder's attention is directed to "Section 15 – Visual Quality Management" of the Technical Provisions.

Section 13.4.1 "Permanent Retaining Wall Structures" is modified as indicated below:

13.4.1 Permanent Retaining Wall Structures

The Design-Builder shall determine the location(s) and types of retaining walls needed on the Project. The Design-Builder shall minimize the need and visual impacts of all walls on the Project by utilizing wall profiles and alignments, which blend with the natural terrain. Where side slopes would exceed the right of way, retaining walls shall be used. Wall type selection and design by the Design-Builder shall meet all applicable Department requirements including, but not limited to, those related to differential settlement, Visual Quality Management, Utilities, Lighting, Signage, Drainage, and Landscaping. The Design-Builder shall notify the Department of any potential right of way conflicts at the preliminary design stage.

Where possible, adjacent retaining walls shall be interconnected or curved into the existing or finished grade to eliminate blunt ends and avoid the use of guardrails, attenuators, or other safety devises at the ends. Long vertical curves shall be used at the top of the wall's profile and avoid abrupt tangents and chords.

The Design-Builder shall not use any non pre-approved Proprietary wall systems. For Pre-Qualified Products Lists (Authorized Materials List) refer to: http://www.dot.ca.gov/hq/esc/approved_products_list/

When pre-approved proprietary or alternate wall systems other than the Department standard walls are used, the Design-Builder shall provide site specifics to the wall provider. Site specifics include, but are not limited to: profiles, wall heights, loading conditions (e.g. dead loads, live loads), results of foundation investigations, water conditions, all utilities (in-place, proposed, and future), site restrictions, expected wall cross section, and desirable wall face treatments. Any proposed pre-approved proprietary or alternate wall system will require prior approval from the Department. Walls types to be used at bridge abutments and/or approach embankments will also require prior approval.

The Design-Builder shall not use sheet pile, timber, or recycled material for permanent retaining walls or the retaining wall foundations.

The Design-Builder may use timber as temporary supports for soldier pile/tieback walls when a concrete facing is used.

Soil Nail and MSE walls shall not be used in front of the bridge abutments. For all retaining walls, total settlement and overall tolerances shall be based on site specific requirements determined by the geotechnical engineer. The Design-Builder shall ~~not change or mix~~ maintain a consistent architectural treatment ~~wall types~~ within an uninterrupted wall segment. Wall types can be intermixed, if the adjacent retaining walls ~~and adjacent wingwall~~ have the same architectural treatment ~~facing~~.

Section 13.5.1.1 "Bridge scope and work" is modified as indicated below:

13.5.1.1 Bridge scope and work

Widen the existing single span CIP/PS Box Girder bridges thereby closing the gap between the left and right structures. The structure description and general scope of work shall include the following:

- Design and construct abutments; the bridge structure shall match the existing span length of approximately 161 feet and shall be supported on Diaphragm type abutments ~~on Spread Footings~~.
- Design and construct bridge superstructure; the superstructure shall be a single span CIP/PS box girder bridge. The median widening is approximately 28 feet and the structure depth shall be 6'-6".
- Remove the existing barrier railing Type 9 and overhang from both left and right edge of decks and construct Concrete Barrier Type 60 at the median between left and right bridge widening.
- Temporary railing (Type K) should be placed on the existing shoulder areas to separate the construction-working zone with the highway traffic.
- Design and construct Approach Slab Type N(30D) at both ends of the bridge.
- Existing minimum vertical clearance is 15'-3"±. For CIP/PS Box Girder superstructure, falsework is required. Superstructure is proposed to be cast above grade and lowered into place to meet minimum vertical clearance requirement.
- Underground gas line, water line, electrical line, sewer line and telephone line are present within the vicinity of the structure. Potholes are recommended to determine the exact location of these utility lines.

Section 13.5.2.1 "Bridge scope and work" is modified as indicated below:

13.5.2.1 Bridge scope and work

The existing three span , 8'0" deep RC BOX Girder bridges were built in 1969 and widened in 1999 using 6'-0" deep CIP/PS Box Girder. Widen existing bridges to the inside there by closing the gap between the left and right structures. The structure description and general scope of work shall include the following:

- Design and construct abutments and column piers/bent substructures; the superstructure shall be approximately 353' long and shall be supported on single column bents and seat type abutments.
- ~~The widened structure shall be supported on Spread Footings at abutments and on large diameter CIDH piles on Bent locations.~~Pile foundation shall be used at bent locations.
- Design and construct bridge superstructure; the widened superstructure shall be three-span PC/PS Girder bridge. The median widening width is approximately 28 feet and the structure depth shall be minimum 6'-6" deep.
- ~~Design and construct bridge superstructure: the proposed superstructure is three spans, 6'-6" deep PC/PS girders. The proposed median widening width is approximately 28 feet.~~
- Remove the existing barrier rails Type 9-11 and overhang from left and right bridges. Construct Type 60 Concrete Barrier railing at the median.
- Temporary railing Type K should be placed on the existing shoulder areas to separate the construction-working zone with the highway traffic.
- Design and construct Approach Slab Type N(30S) at both ends of the bridge.
- Power line, water line, and sewer lines are present within the vicinity of the structure. Potholes are recommended to determine the exact location of these utility lines. Refer to Section 6, "Utilities" for the Technical Provisions.

Section 13.5.2.2 "Design/Construction issues" is modified as indicated below:

13.5.2.2 Design/Construction issues

- ~~The Design Builder shall perform seismic study on the combined bridge structure, including both the existing bridge and widened bridge, and strengthen the existing bridge structure if required from the seismic study.~~
- Railroad Traffic will be carried through bridge construction area. The proposed Structure shall be designed in accordance with the most current policies, requirements and standards of the Railroad Agencies.
- Temporary Right of Entry and access on the railroad's property is required for construction. Design Builder shall obtain all necessary railroad approval of plans and specifications prior to preparing documents in the final form.
- The proposed structures need to be constructed in sequence to allow temporarily deactivating and activating power lines.

Section 13.5.3.1 "Bridge scope and work" is modified as indicated below:

13.5.3.1 Bridge scope and work

Construct south facing Direct Access Ramps (DAR) Bridge Overhead ~~Bridge~~ at Carroll Canyon Road. The structure shall accommodate two-12 ft lanes, two-4 ft outside shoulders and 8 ft median and has an estimated total length of 482 feet. The bridge description and general scope of work shall include the following:

- Design and construct abutment and column piers/bent substructures; the superstructure shall be ~~is~~ supported on single-column bents and seat-type abutment. ~~The structure shall be supported on Large Diameter CIDH Piles with permanent steel casing at bents and piles footing at abutments.~~ Drilled pile foundations shall be used at bent locations.
- Design and construct bridge superstructure: the superstructure shall be a three-span CIP/PS box girder and the structural depth shall be 7'-3". The column section shall be square column with 1-ft by 1-ft chamfers at all exterior corners.
- The last span shall be supported on the newly built Carroll Canyon Road Bridge (Bridge No. 57C0786). ~~The Design Builder is advised to refer to Carroll Canyon Bridge (Bridge No. 57C0786) contract plans including change order documents and As-Built plans.~~
- Construct Concrete Barrier Type 60 at the median and Concrete Barrier Type 736 on edges of deck. Coordinate construction of new concrete barrier on edges of deck with concrete barriers over~~installed by~~ Carroll Canyon Road Bridge (Bridge No. 57C0786) currently under construction~~.~~.
- Design and construct structure approach slab Type N(30S) at approach side of the bridge.

Section 13.5.3.2 "Design/Construction issues" is modified as indicated below:

13.5.3.2 Design/Construction issues

- The design and construction of the DAR BOH shall meet the structural performance allowance (Exhibit 13-B) and coordinate with the adjacent Carroll Canyon Road Bridge (CCR Bridge No. 57C0786) currently under construction. For more detailed information, the Design-Builder shall refer to the Carroll Canyon Bridge (EA 11-2T0404) contract plans and documents including contract change order documents and As-Built plans.
- ~~Coordinate with the adjacent Carroll Canyon Road Bridge (CCR Bridge) currently under construction, for design and construction of the proposed structure. Contract number for the CCR Bridge project is11-2T0404.~~
- Railroad traffic will be carried through bridge construction area. The proposed Structure shall be designed in accordance with the most current policies, requirements and standards of the Railroad Agencies.
- Based on Structures Preliminary Geotechnical Report, the soil layers at the site may be considered prone to liquefaction during earthquakes.
- Temporary Right of Entry and access on the railroad's property is required for construction. Design Builder shall obtain all necessary railroad approval of plans and specifications prior to preparing documents in the final form.

Section 13.5.4.1 "Bridge scope and work" is modified as indicated below:

13.5.4.1 Bridge scope and work

Widen the existing Left and Right CIP/RC Box Girder bridges to the outside. This structure is formerly known as Carroll Canyon Bridge and Overhead. The existing six spans, 8'-6" deep, Left and Right Bridges were built in 1972 and retrofitted in 1998. The structure description and

work include the following:

- Design and construct abutments and column piers/bent substructures; the left bridge superstructure shall be supported on multicolumn bents, the right bridge superstructure shall be supported on single column bents and both left and right structures shall be supported on diaphragm type abutments.
- ~~The widened left and right structures shall be supported on Spread Footing at abutments and on large diameter CIDH piles with permanent steel casings on bent locations.~~Drilled pile foundations shall be used at bent locations.
- Design and construct left bridge superstructures; the left bridge superstructure shall be~~is~~ six spans, 8'-6" deep, CIP/RC Box Girder Bridge and shall be widened to the outside by 52.5 feet minimum and varies.
- Design and construct right bridge superstructure; the ~~-~~right superstructure shall be~~is~~ six spans, 8'-6" deep, CIP/RC Box Girder Bridge and shall be widened to the outside by 44 feet minimum and varies.
- Remove the existing barrier railings Type 9-11 and overhang over outside edge of left and right bridge decks and construct Concrete Barrier Rail Type 736 at the outside widened edge of decks.
- Reconstruct existing box girder (outside bay) between Abutment 1 and Bent 2 for both left and right bridges. Coordinate with the proposed "CARROLL CANYON DAR WALLS" for bridge removal limits.
- Replace existing Type 9-11 barrier rail with Concrete Barrier Type 742 on the inside edge of decks. Refer to "SOLEDAD CANYON BR & OH (RECONSTRUCT), Bridge No. 5787R/L" As-Built plans.

Section 13.5.4.2 "Design/Construction issues" is modified as indicated below:

13.5.4.2 Design/Construction issues

- Coordinate with the proposed "Carroll Canyon DAR" retaining walls for design and construction.
- ~~Adjust t~~The proposed Bent 5 skew (left bridge) shall be adjusted to clear existing Carroll Canyon Road Bridge (BR # 57C0786).
- Based on Preliminary Seismic Design Recommendations, the soil layers at the site may be considered prone to liquefaction under strong ground shaking.
- Temporary rail Type K needs to be placed on the existing shoulder area to separate the construction-working zone with the highway traffic.
- Power lines and sewer lines are present within the vicinity of the structure. Refer to Section "6 Utilities" for the Technical Provisions.
- Railroad Traffic will be carried through bridge construction area. There is a contract project by SANDBAG to add a new track, realign exiting track and construct a retaining wall and drainage system under the Soledad Canyon Bridge and Overhead. Refer to "Sorrento to Miramar- Phase 1" SANDAG Contract No. 1238901 for more information.

- The proposed structures shall be designed in accordance with the most current policies, requirements and standards of the Railroad Agencies.
- Temporary Right of Entry and access on the railroad's property is required for construction. Design Builder shall obtain all necessary railroad approval of plans and specifications prior to preparing documents in the final form.

Section 13.5.5.1 "Structure scope and work" is modified as indicated below:

13.5.5.1 Structure scope and work

Design and construct Direct Access Ramp (DAR) walls at Carroll Canyon Road. The structure description and work shall include the following:

- The earth-retaining structures shall have an estimated total length of 416 feet and maximum approximate wall height of 43 feet.
- The structure types shall meet the requirements specified in Section 13.4, Retaining Wall Design Requirements~~be Tieback retaining wall and Standard Plan Type 1 walls~~.
- Construct Concrete Barriers Type 742 and Type 736 on top of walls and Concrete Barrier on the lower roadway.
- Coordinate design and construction of the concrete barriers on top of DAR walls with the proposed concrete barriers on Soledad Canyon Road Bridge (Bridge No. 57 0787R/L).
- The wall architectural treatment and detailing shall be consistent with those being constructed for the Carroll Canyon (DAR) Retaining Walls, (Bridge No. 57E0075/76) under Contract No. 11-2T040. For specific structure architectural treatment requirements, the Design-Builder's attention is directed to "Section 1***5*** – Visual Quality Management" of the Technical Provisions.

Section 13.5.6.1 "Bridge scope and work" is modified as indicated below:

13.5.6.1 Bridge scope and work

Widen the existing single span CIP/PS Box Girder Bridge to the outside. The structure description and general scope of work shall include the following:

- Design and construct abutments; the bridge structure shall match the existing span length of approximately 167.33 feet and shall be supported ~~on open end~~ Diaphragm abutments ~~on CIDH Piles~~.
- Design and construct bridge superstructure; the superstructure shall be a single span CIP/PS box girder bridge with structure depth 7'-0". The outside widening shall be approximately 32.75 feet.
- Remove the existing barrier railing Type 9 and overhang from right edge of deck and construct Concrete Barrier Rail Type 736 and concrete Barrier Type 60 modified at the outside widened edge of deck.
- Remove and rebuild existing Type 25 barrier rail as required for deck construction from existing Bridge Number 57-0785S left edge of deck.

- Temporary railing (Type K) should be placed on the existing shoulder areas to separate the construction-working zone with the highway traffic.
- Design and construct Approach Slab Type N(30D) at both ends of the bridge and as required reconstructing the northbound I-805 off ramp gore.
- Remove and replace existing slope paving in between existing Right bridge and Bridge number 57-0785S. Aesthetic treatments to match existing slope paving aesthetic treatments. For specific structure architectural treatment requirements, the Design-Builder's attention is directed to "Section 15 – Visual Quality Management" of the Technical Provisions.

Section 13.5.6.2 "Design/Construction issues" is modified as indicated below:

13.5.6.2 Design/Construction issues

- There ~~is~~ are existing Tieback back walls under existing bridge at both abutment locations. Locate ~~the proposed CIDH~~ any piles, if used, to avoid existing tiebacks. Exact Tieback locations shall be field verified.

Section 13.6.4 "Falsework" is modified as indicated below:

13.6.4 Falsework

Each falsework construction shall be inspected before concrete placement by the Design-Builder's Licensed Engineer to certify in writing compliance with the approved drawings and certification that material used in construction of the falsework are adequate to support all loads and applied forces. Temporary bracing shall be provided during erection and removal of falsework and shown on the approved plans.

No adjustment of falsework grade or changes to any vertical or lateral component of falsework is allowed without the presence of the Design-Builder's Licensed Engineer.

Falsework shall not be adjusted, erected or removed over live traffic. Erection shall include all adjustments or removal of falsework components prior to concrete placement that contribute to the horizontal stability of the falsework system. Removal shall include lowering falsework, blowing sand from sand jacks, turning screws on screw jacks, and removing wedges.

Falsework over sidewalk or pedestrian walkways shall provide lighting, handrails and overhead cover with a width of not less than four (4) feet and extending ten (10) feet beyond the edges of deck.

In addition to the provisions in the Standard Specifications to allow for three (3) weeks ~~for~~ review of Falsework drawings by the Department, ~~after~~ a completed submittal ~~has been received~~ with independent checked calculations by Design Builder, to allow for eight (8) weeks review for bridges at all Railroad locations.

Falsework openings over highways and local streets shall provide a minimum width to allow for the number of traffic lanes which exist prior to construction plus Temporary K-Rail and three (3) inches clear, and at each location a minimum vertical clearance of 15'-0'' shall be provided for falsework openings. Temporary minimum horizontal and temporary minimum vertical

construction clearances shall be shown on Falsework plans. For portions the Project impacting the Railroad, the Design-Builder shall comply with Railroad requirements stated in the C & M Agreement prior to the commencement of any Falsework construction.

Add Exhibit 13-A "Bridge Structure Depth- Minimum Requirements" attached to this addendum.

Section 16 Signing, Pavement Marking, Signalization, and Lighting

Section 16.3.7.3 "Lighting Under Structures" is modified as indicated below:

16.3.7.3 Lighting Under Structures

The Design-Builder shall provide soffit ~~understructure~~ lighting for the following~~all~~ structures: Governor Drive UC (Bridge No. 57-0759R/L), Mira Mesa Blvd UC (Bridge No. 57-0785R) and Soledad Canyon Bridge (Bridge No. 57-0787R/L) on the spans that crosses the Carroll Canyon Road Bridge (Bridge No. 57C0786) ~~(except box culverts) within the Project limits~~.

The Design-Builder shall provide lighting that is consistent with the luminance levels and uniformity of the surrounding lighting system.

The Design-Builder shall design, furnish, and construct all understructure lighting to eliminate the need for lane closures during post-construction maintenance and shall locate luminaires to reduce the likelihood of tampering and damage by vandals.

Levels of illumination required under bridges shall be a minimum of 4.0 foot-candles measured horizontally on the surface of the walkway and vertically at a height of 6 feet above finished grade, with an average to minimum illumination uniformity ratio of 3:1.

REFERENCE INFORMATION DOCUMENTS (RID)

See revised RID Index for a list of provided Reference Information Documents in the Data Room.

EXHIBIT 4-B

Department-Provided Permits

Exhibit 4-B1 Biological Opinion

Exhibit 4-B2 Local Coastal Permit

Exhibit 4-B3 1602 Department of Fish and Game Permit

These exhibits are provided as electronic files.

CALIFORNIA DEPARTMENT OF FISH AND GAME
SOUTH COAST REGION (REGION 5)
3883 RUFFIN ROAD
SAN DIEGO, CA 92123

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2011-0179-R5
ROSE CANYON CREEK, SAN CLEMENTE CANYON CREEK AND SOLEDAD CANYON CREEK

CALTRANS DISTRICT 11
I-805 NORTH MANAGED LANES

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and California Department of Transportation (Caltrans) District 11 (Permittee) as represented by Ron Caraet, Project Manager.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on July 1, 2011, that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, DFG has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located on the Right of Way for Interstate 805 (I-805) from State Route 52 (SR-52) and to just south of the I-805/Interstate 5 (I-5) merge and includes alterations to the following jurisdictional areas:

1. San Clemente Canyon Creek and a wetland associated with San Clemente Canyon Creek, in the County of San Diego County, State of California; Latitude 32.8472, Longitude -117.1779, and;
2. Rose Canyon Creek and an adjacent tributary, in the County of San Diego County, State of California; Latitude 32.8643, Longitude -117.1887, and;
3. Four unnamed tributaries to Rose Canyon Creek, referred herein as unnamed Drainage 2 (Latitude 32.8674, Longitude -117.1937), unnamed Drainage 3 (Latitude 32.8694, Longitude -117.1939), unnamed Drainage 4 (Latitude

32.8700, Longitude -117.1926) and unnamed Drainage 5 (Latitude 32.8733, Longitude -117.1972)), in the County of San Diego County, State of California, and;

4. Soledad Canyon Creek, in the County of San Diego County, State of California; Latitude 32.8879, Longitude -117.2036, and;
5. An unnamed tributary to Soledad Canyon Creek, referred herein as unnamed Drainage 7 (Latitude 32.8918, Longitude -117.2098), in the County of San Diego County, State of California.

PROJECT DESCRIPTION

The project is limited to construction of four 12-foot wide managed lanes, two in each direction, with a four foot buffer area on each side, in the median of I-805 from SR-52 to just north of the La Jolla Village Drive and one High Occupancy Lane (HOV) from just north of the La Jolla Village Drive to just north of Mira Mesa Blvd., with widening of the outside portion of the roadway to accommodate the additional lanes. Additionally, the project will include a direct connector ramp at SR-52/I-805, a direct access ramp (DAR) at Carroll Canyon, a DAR at Nobel Drive, and a park and ride/ transit station at the southwest quadrant of Nobel and I-805. The project crosses three main canyons and several drainages.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: **Plants:** Wart-stemmed ceanothus (*Ceanothus verrocosus*), purple needlegrass (*Nassella pulchra*), blue-eyed grass (Sisyrinchium bellum), Palmer's sagewort (*Artemisia palmeri*), coast live oak (*Quercus agrifolia*), Nuttall's scrub oak (*Quercus dumosa*); **Invertebrates**: San Diego fairy shrimp (*Branchinecta sandiegonensis*); **Amphibians:** Pacific chorus frog (*Pseudacris regilla*), garden slender salamander (*Batrachoseps major*), bullfrog (*Rana catesbeiana*); **Reptiles**: southern Pacific rattlesnake (*Crotalus oreganos helleri*), red-diamond rattlesnake (*Crotalus ruber*), California kingsnake (*Lampropeltis getula*), two striped garter snake (*Thamnophis hammondii*), orange-throated whiptail (*Asidoscelis hyperythra beldingi*), western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), coast horned lizard (*Phrynosoma blainvillii*), southern pacific rattlesnake (Crotalus oreganos helleri); **Birds:** red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*),white tailed kite (*Elanus leucurus*), American kestrel (*Falco sparverius*), double crested cormorant (*Phalacrocorax auritus*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black-chinned hummingbird (*Archilochus alexandri*), ash throated flycatcher (*Myiarchus cinerascens*), black phoebe (*Sayornis nigricans*), white-throated swift (*Aeronautes saxatilis*), coastal California gnatcatcher (*Polioptila californica californica*), Bewick's wren (*Thryomanes bewickii*), yellow breasted chat (*Icteria virens*), yellow warbler (*Dendroica petechia brewsteri*), brown headed cowbird (*Molothrus ater*), common yellowthroat (*Ceothlypis trichas*), **Mammals**: Audubon's cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*

nudipes), coyote (*Canis latrans*), and all other aquatic and wildlife resources, including the riparian vegetation, such as mulefat (*Baccharis salicifolia*), coast live oak (*Quercus agrifolia* var. *agrifolia*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), arroyo willow (*Salix lasiolepis*), etc. which provides habitat for those species.

The adverse effects the project could have on the fish or wildlife resources identified above include: permanent impacts to 0.063 acre (246 linear feet) and temporary impacts to 1.83 acres (1440 linear feet) of southern willow scrub of streambed under the jurisdiction of the DFG.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to DFG personnel, or personnel from another state, federal, or local agency upon request.

1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.

1.3 Notification of Conflicting Provisions. Permittee shall notify DFG if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, DFG shall contact Permittee to resolve any conflict.

1.4 Designated Biologist. At least five days before initiating ground- or vegetation-disturbing activities, Permittee shall submit to the Department in writing the name, qualifications, business address, and contact information for a biological monitor (Designated Biologist). Permittee shall obtain the Department's written approval of the Designated Biologist prior to the commencement of project activities in the stream. The Designated Biologist shall be knowledgeable and experienced in the biology and natural history of local fish and wildlife resources present at the project site. The Designated Biologist shall be responsible for monitoring all project activities, including construction and any ground- or vegetation-disturbing activities in areas subject to this agreement

1.5 Designated Biologist Authority. The Designated Biologist shall have authority to immediately stop any activity that is not in compliance with this Agreement, and/or to order any reasonable measure to avoid or minimize impacts to fish and wildlife resources. Neither the Designated Biologist nor the Department shall be liable for any costs incurred as a result of compliance with this measure. This includes cease-work orders issued by the Department.

1.6 Designated Representative. Before initiating ground- or vegetation-disturbing project activities, Permittee shall designate a representative (Designated Representative) responsible for communications with the Department and overseeing compliance with this Agreement. The Permittee shall notify the Department in writing five days prior to commencement of ground- or vegetation-disturbing activities of the Designated Representative's name, business address, and contact information. Permittee shall notify the Department in writing if a substitute Designated Representative is selected or identified at any time during the term of this Agreement.

1.7 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time to verify compliance with the Agreement.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

2.1 Demarcate Work Area Boundary. In consultation with the designated Biologist, the Permittee or Designated Representative shall demarcate the outer perimeter of the work area to prevent damage to adjacent habitat and to provide visual orientation to its limits. Marking shall be in place during all periods of operation. All persons employed or otherwise working on the project site shall be instructed about the restrictions that the marking represents.

2.2 Work Period and Time Limits. The Permittee shall not remove vegetation within the stream from February 15 to September 1 to avoid impacts to nesting birds. However, the Permittee may remove vegetation during this time if a qualified biologist conducts a survey for nesting birds within one week of the vegetation removal, and ensures no nesting birds shall be impacted by the project. If nesting birds are present, no work shall occur until the young have fledged and will no longer be impacted by the project.

2.3 Erosion Control Measures. Permittee shall utilize erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter a river, stream, or lake.

2.4 Mud, Silt and Other Pollutants. Permittee shall prevent water containing mud, silt or other pollutants from grading, aggregate washing, equipment washing, or other activities to enter a lake or stream or to be place in locations that may be subjected to high storm flows.

2.5 Moving Equipment Across a Stream. When operations require moving of equipment across a flowing stream, Permittee shall conduct such operations without increasing stream turbidity. For repeated crossings, Permittee shall install a bridge, culvert, or rock fill crossing, approved by the Department prior to placement.

2.6 Equipment and Access. When work in a flowing stream is unavoidable, the entire stream flow shall be diverted around the work area by a barrier, temporary culvert, new channel, or other means approved by DFG. Location of the upstream and downstream diversion points shall be approved by DFG. Construction of the barrier and/or the new channel shall normally begin in the downstream area and continue in an upstream direction, and the flow shall be diverted only when construction of the diversion is completed. Channel bank or barrier construction shall be adequate to prevent seepage into or from the work area. Channel banks or barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock rip-rap, or other protective material. The enclosure and the supportive material shall be removed when the work is completed and removal shall normally proceed from downstream in an upstream direction. The Permittee shall obtain all written approvals from DFG prior to initiation of construction activities.

2.7 Equipment and Access (Pollution). Staging/storage areas for equipment and materials shall be located outside of the stream.

2.8 Conditions for Species of Special Concern. No direct or indirect impacts shall occur to any threatened or endangered species, including least Bell's vireo. If any threatened or endangered species could be impacted by the work proposed, the Permittee shall obtain the required state and federal threatened and endangered species permits.

2.9 Vegetation, Revegetation and Restoration. Vegetation removed from the stream shall not be stockpiled in the stream bed or on its bank. The sites selected on which to push this material out of the stream should be selected in compliance with the other provisions of this Agreement. Permittee will trim native vegetation back or cut above ground level to allow for it to grow back after the maintenance work is complete. Oak trees and sycamore trees will not be removed or trimmed back, except as described in the impacts analysis and mitigated for in the Deer Creek Mitigation plan.

2.10 Vegetation, Revegetation and Restoration. The Permittee shall clean all equipment of soil containing seed and plant material prior to entry into the streambed to prevent the spread of invasive exotic plant species from adjacent areas or other sites where equipment may have been previously used.

2.11 Vegetation, Revegetation and Restoration. The Permittee shall not plant, seed or otherwise introduce invasive exotic plant species into areas adjacent to wetland/riparian areas. Vehicles should be clean of plant material prior to entering these areas. Exotic plant species not to be introduced include those species listed on Lists A & B of the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999." This list includes such species as: pepper trees, pampas grass, fountain grass, ice plant, myoporum, tree of heaven, black locust, capeweed, periwinkle, sweet alyssum, English ivy, French broom, Scotch broom, and Spanish broom. A copy of the complete list can be obtained by contacting the California Invasive Plant Council at 1442-A Walnut Street, #462, Berkeley, CA 94709, or by accessing their web site at http://www.caleppc.org .

2.12 Habitat Protection. All native /sensitive habitats outside the permanent and temporary construction limits shall be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs shall be temporarily fenced during construction with orange plastic snow fence. No personnel, equipment, or debris will be allowed within the ESAs.

2.13 Habitat Protection (Herbicide Use). All herbicide use conditions for mixing, application and clean-up shall conform to all applicable federal, State, and local regulations, nothing in this Agreement represents a pesticide use recommendation that allows for an action that conflicts with pesticide use regulations.

2.14 Hazardous Materials. Debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, wildlife, or riparian habitat resulting from the project related activities shall be prevented from contaminating the soil and/or entering the waters of the State.

2.15 Litter and Pollution. The Permittee shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of the Permittee to ensure compliance.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

3.1 Permanent impacts to 0.04 acre of unvegetated channel will be mitigated at a ratio of 1:1 by creation of 0.04 acre of channel at the Deer Canyon mitigation site (Pardee, ref. 1600-2011-0099-R5).

3.2 Permanent impacts to 0.005 acre of disturbed southern willow scrub will be mitigated at a ratio of 2:1 by creation of 0.01 acre of southern willow scrub at the Deer Canyon mitigation site (Pardee, ref. 1600-2011-0099-R5).

3.3 Permanent impacts to 0.018 acre of southern willow scrub will be mitigated at a ratio of 3:1 by creation of 0.054 acre of southern willow scrub at the Deer Canyon mitigation site (Pardee, ref. 1600-2011-0099-R5).

3.4 Temporary impacts to 0.06 acre of unvegetated channel will be mitigated at a ratio of 1:1 on site following construction.

3.5 Temporary impacts to 0.65 acre of disturbed southern willow scrub will be mitigated at a ratio of 2:1 by creation of 0.65 acre of southern willow scrub at the Deer Canyon mitigation site (Pardee, ref. 1600-2011-0099-R5) and restoration of 0.65 acre of southern willow scrub on site following construction.

3.6 Temporary impacts to 1.12 acres of southern willow scrub will be mitigated at a ratio of 2:1 by creation of 1.12 acres of southern willow scrub at the Deer Canyon mitigation site (Pardee, ref. 1600-2011-0099-R5) and restoration of 1.12 acres of southern willow scrub on site following construction.

3.7 Mitigation For Unauthorized Impacts. The Permittee shall mitigate at a minimum 5:1 ratio for impacts beyond those authorized in this Agreement. In the event that additional mitigation is required, the type of mitigation shall be determined by the DFG, and may include creation, restoration, enhancement and/or preservation.

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

4.1 Notification Prior to and following Completion of Work. The Permittee shall notify DFG, in writing, at least five days prior to initiation of construction (project) activities and at least five days prior to completion of construction (project) activities, each time project activities occur. Notification shall be sent to DFG's South Coast Office at the address below, ATTN: Streambed Alteration Program – SAA # 1600-2011-0179-R5.

4.2 Mitigation Report. Permittee shall submit to the Department an annual mitigation status report by January 1 of each year for the Deer Canyon Mitigation Site. The number by species of plants replaced, an overview of the revegetation effort, and the method used to assess these parameters shall also be included. The report

shall include photos from designated photo stations and other relevant information such as: a summary of invasive species control, methods used to remove non-native plants, and a list of wildlife observed on site.

4.3 Pursuant to the California FGC Section 1605 (g) every four years during the term of this Agreement, until the Agreement expires, a Status Report shall be submitted to the DFG no later than 90 days prior to the end of each four year period (first status report due January 1, 2017), and shall include the following information:

1. A copy of the original Agreement.

2. The status of the activity covered by the Agreement.

    a. An evaluation of the success or failure of the measures in the Agreement to protect the fish and wildlife resources that the activity may substantially adversely affect.

    b. A discussion of any factors that could increase the predicted adverse impacts on fish and wildlife resources, and a description of the resources that may be adversely affected.

    c. Reports shall include photo documentation consisting of “before and after” photos of representative work areas for the reporting period.

    d. Upon receipt of the Status Report, the DFG will contact the Permittee to schedule an onsite inspection by DFG staff, to confirm that the Permittee is in compliance with the terms of this Agreement, and that the Agreement is adequately protecting fish and wildlife resources. These onsite inspections shall be conducted by DFG staff every four years during the term of this Agreement, until the Agreement expires.

    e. Following review of the Status Report and the onsite inspection, if the DFG determines that the measures in the Agreement no longer protect the fish and wildlife resources that are being substantially adversely affected by the activity, the DFG, in consultation with the Permittee, and within 45 days of receipt of the report, shall impose one or more new measures to protected the fish and wildlife resources affected by the activity.

CONTACT INFORMATION

Any communication that Permittee or DFG submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or DFG specifies by written notice to the other.

To Permittee:

Caltrans District 11
Ron Caraet
4050 Taylor Street, MS-331
San Diego, CA 92110
Ron.Caraet@dot.ca.gov

Cc: Robert A. James, Robert.A.James@dot.ca.gov

To DFG:

Department of Fish and Game
South Coast Region (R5)
4949 Viewridge Avenue
San Diego, Ca 92123
Attn: Lake and Streambed Alteration Program – Tim Dillingham
Notification #1600-2011-0179-R5
(858) 467-4250
Fax (858) 467-4299
tdilling@dfg.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute DFG's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

DFG may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before DFG suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before DFG suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited

to a directive to immediately cease the specific activity or activities that caused DFG to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes DFG from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects DFG's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

DFG may amend the Agreement at any time during its term if DFG determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by DFG and Permittee. To request an amendment, Permittee shall submit to DFG a completed DFG “Request to Amend Lake or Streambed Alteration” form and include with the completed form payment of the corresponding amendment fee identified in DFG’s current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter DFG approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). DFG shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)). .

EFFECTIVE DATE

The Agreement becomes effective on the date of DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on December 31, 2020, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify DFG in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 11

Ron Caraet — Oct. 21, 2011

Ron Caraet
Project Manager

Date

FOR DEPARTMENT OF FISH AND GAME

21 Oct 2011

Stephen M. Juarez
Environmental Program Manager

Date

Prepared by: Tim Dillingham
Staff Environmental Scientist

EXHIBIT 8-A

Log Of Test Borings:

- Carroll Canyon DAR
- Carroll Canyon Road Bridge

This exhibit is provided as an electronic file.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

REGISTERED CIVIL ENGINEER 7-21-11

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fernando De Haro No. C65286 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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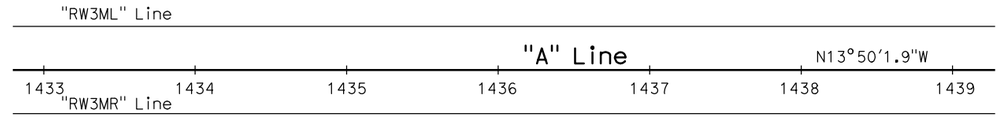
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

BENCH MARK

TBM: Nail set at 91.83′ Lt
Sta 1433+82.001 Rte 805.
Elev 277.53′

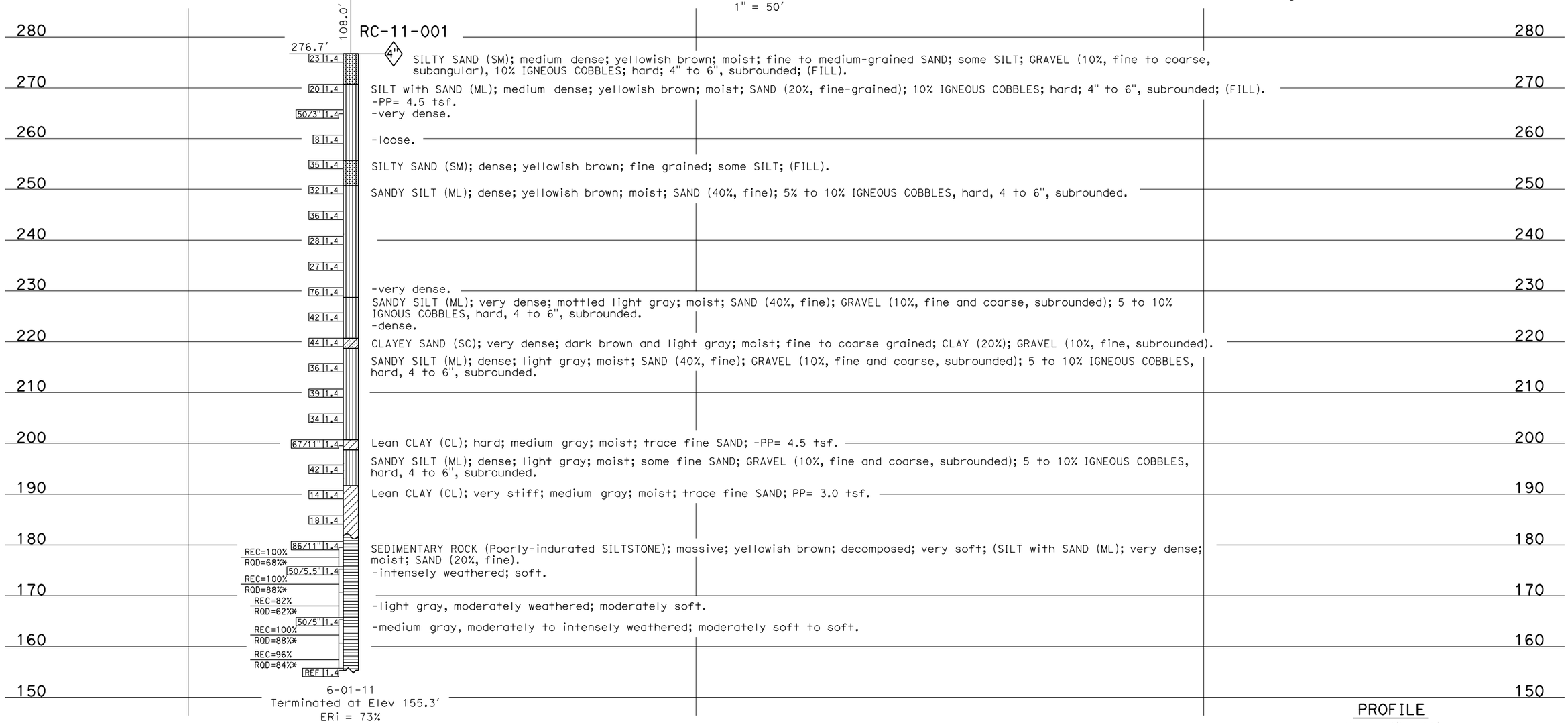
RC-11-001 4" RC-11-002 4"



PLAN

1" = 50′

Note: Ground water was not encountered during the 2011 subsurface investigation.



PROFILE

Horiz: 1" = 20′
Vert: 1" = 10′

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X	BRIDGE NO. 57-NEW POST MILE 26.7	CARROLL CANYON DAR LOG OF TEST BORINGS 1 OF 5
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore	DRAWN BY: F. Nguyen 07/11 CHECKED BY: E. Neupert	FIELD INVESTIGATION BY: F. De Haro			

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 11000000610 CONTRACT NO.: 11-081630

DISREGARD PRINTS BEARING EARLIER REVISION DATES → REVISION DATES 07-14-11 07-15-11 SHEET X OF X

FILE => carrollcnyn-dar1of5.dgn

USERNAME => s116982 DATE PLOTTED => 25-JUL-2011 TIME PLOTTED => 14:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

REGISTERED CIVIL ENGINEER 7-21-11

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fernando De Haro No. C65286 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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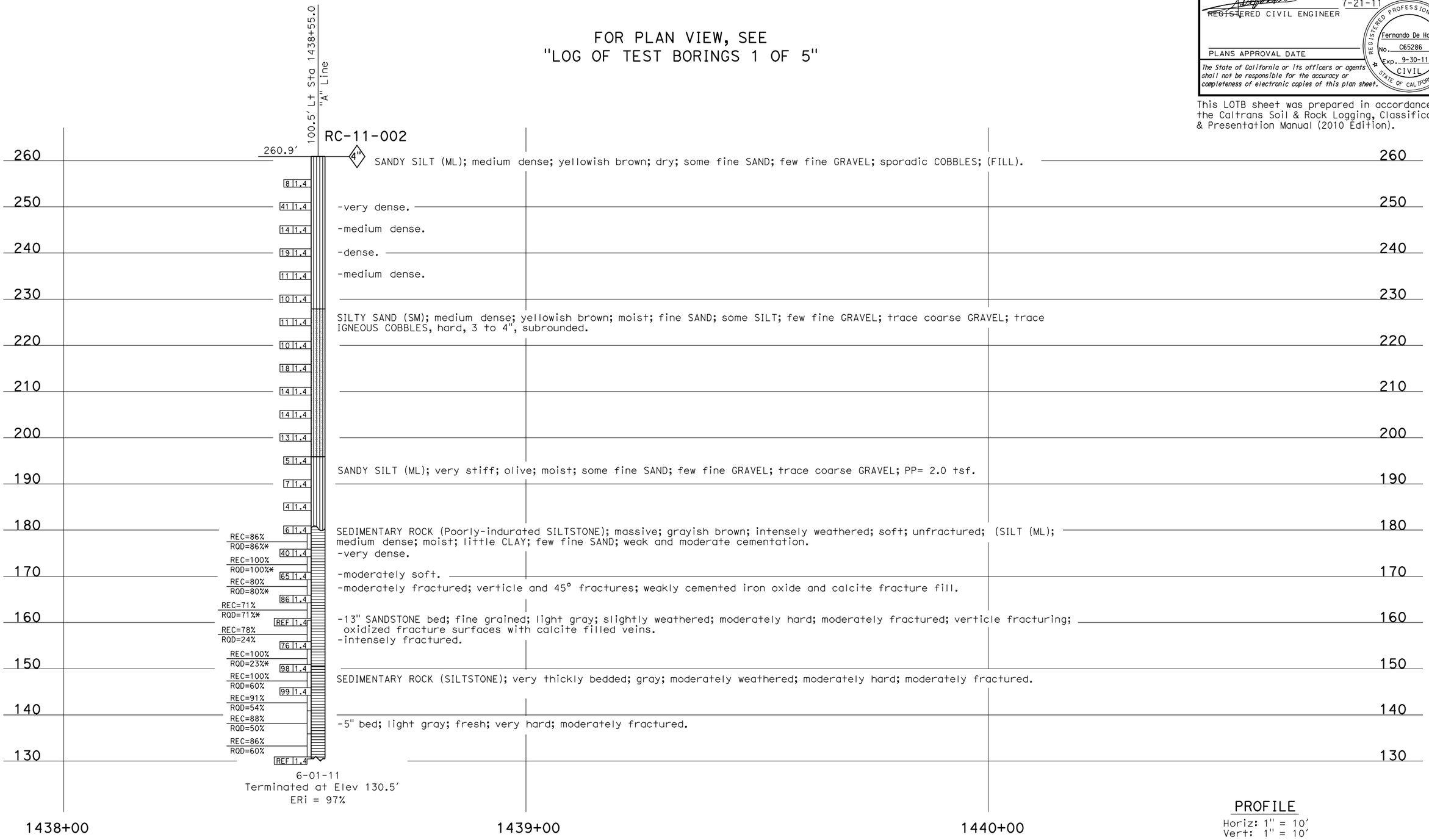
FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 5"



PROFILE
Horiz: 1" = 10'
Vert: 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X	BRIDGE NO. 57-NEW / POST MILE 26.7	CARROLL CANYON DAR
FUNCTIONAL SUPERVISOR NAME: M. DeSalvatore	DRAWN BY: F. Nguyen 07/11 / CHECKED BY: E. Neupert	FIELD INVESTIGATION BY: J. Klamecki				LOG OF TEST BORINGS 2 OF 5

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 11000000610 CONTRACT NO.: 11-081630

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 07-14-11 07-15-11

REVISION DATES				SHEET	OF
07-14-11	07-15-11			X	X

FILE => carrollcnyn-dar2of5.dgn

USERNAME => s116982 DATE PLOTTED => 25-JUL-2011 TIME PLOTTED => 14:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

REGISTERED CIVIL ENGINEER 7-21-11

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER Fernando De Haro No. C65286 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

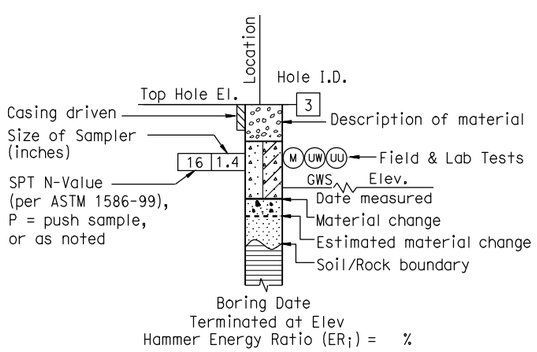
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

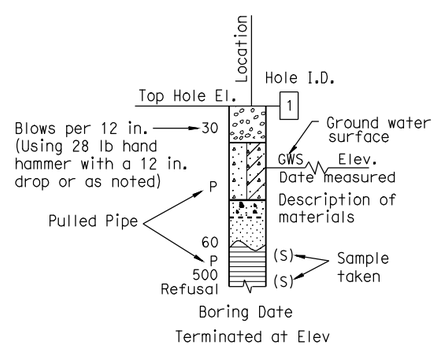
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

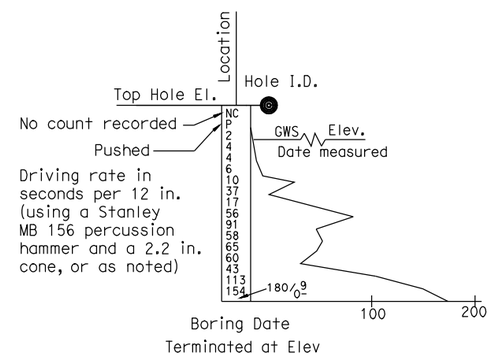
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



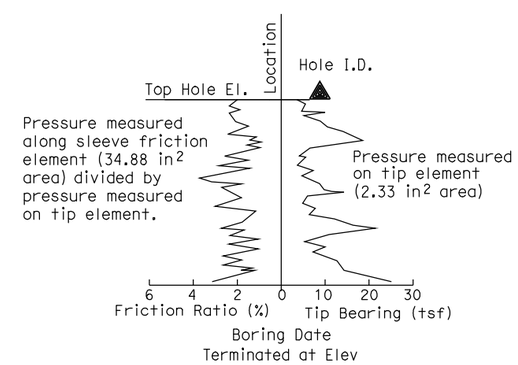
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

ENGINEERING SERVICES	MATERIALS AND GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X	BRIDGE NO. 57-NEW POST MILE 26.7	CARROLL CANYON DAR LOG OF TEST BORINGS 3 OF 5
	PREPARED BY: F. Nguyen 7/11				

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 11000000610 CONTRACT NO.: 11-081630

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET X | OF X

FILE => carrollcnyn-dar3of5.dgn

USERNAME => s116982 DATE PLOTTED => 25-JUL-2011 TIME PLOTTED => 14:12

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

REGISTERED CIVIL ENGINEER 7-21-11

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fernando De Haro No. C65286 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic/Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

ENGINEERING SERVICES

MATERIALS AND GEOTECHNICAL SERVICES

PREPARED BY: F. Nguyen 7/11

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X

BRIDGE NO. 57-NEW

POST MILE 26.7

CARROLL CANYON DAR

LOG OF TEST BORINGS 4 OF 5

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643

PROJECT NUMBER & PHASE: 11000000610

CONTRACT NO.: 11-081630

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET X OF X

FILE => carrollcnyn-dar4of5.dgn

USERNAME => s116982 DATE PLOTTED => 25-JUL-2011 TIME PLOTTED => 14:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

REGISTERED CIVIL ENGINEER 7-21-11

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fernando De Haro No. C65286 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

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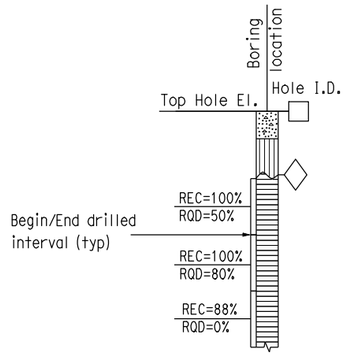
REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)

$$REC = \frac{\sum \text{Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100\%$$

$$RQD = \frac{\sum \text{Length of intact core pieces} \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100\%$$

RQD* Indicates soundness criteria not met.



BEDDING SPACING

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in. - 1 ft
Thinly Bedded	1 in. - 4 in.
Very Thinly Bedded	1/4 in. - 1 in.
Laminated	Less than 1/4 in.

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily by a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

WEATHERING DESCRIPTORS FOR INTACT ROCK

Description	Diagnostic Features					General Characteristics
	Chemical Weathering-Discoloration and/or Oxidation		Mechanical Weathering-Grain Boundary Conditions (Disaggregation) Primarily for Granitics and Some Coarse-Grained Sediments	Texture and Leaching		
	Body of Rock	Fracture Surfaces		Texture	Leaching	
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved	Minor leaching of some soluble minerals.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes."

ENGINEERING SERVICES

MATERIALS AND GEOTECHNICAL SERVICES

PREPARED BY: F. Nguyen 7/11

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH X

BRIDGE NO. 57-NEW

POST MILE 26.7

CARROLL CANYON DAR
LOG OF TEST BORINGS 5 OF 5

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3643
PROJECT NUMBER & PHASE: 11000000610
CONTRACT NO.: 11-081630

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET X | OF X

FILE => carrollcnyn-dar5of5.dgn

USERNAME => s116982 DATE PLOTTED => 25-JUL-2011 TIME PLOTTED => 14:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PLANS APPROVAL DATE

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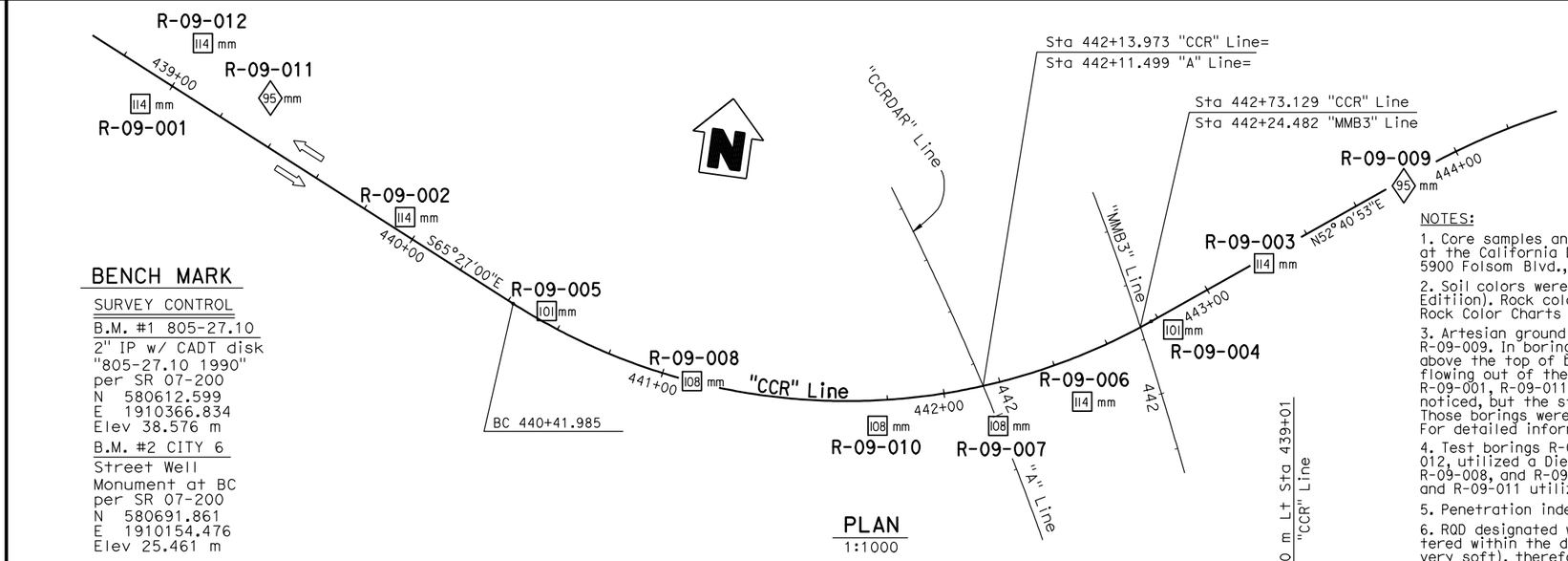
PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA



BENCH MARK

SURVEY CONTROL

B.M. #1 805-27.10
2" IP w/ CADT disk
"805-27.10 1990"
per SR 07-200
N 580612.599
E 1910366.834
Elev 38.576 m

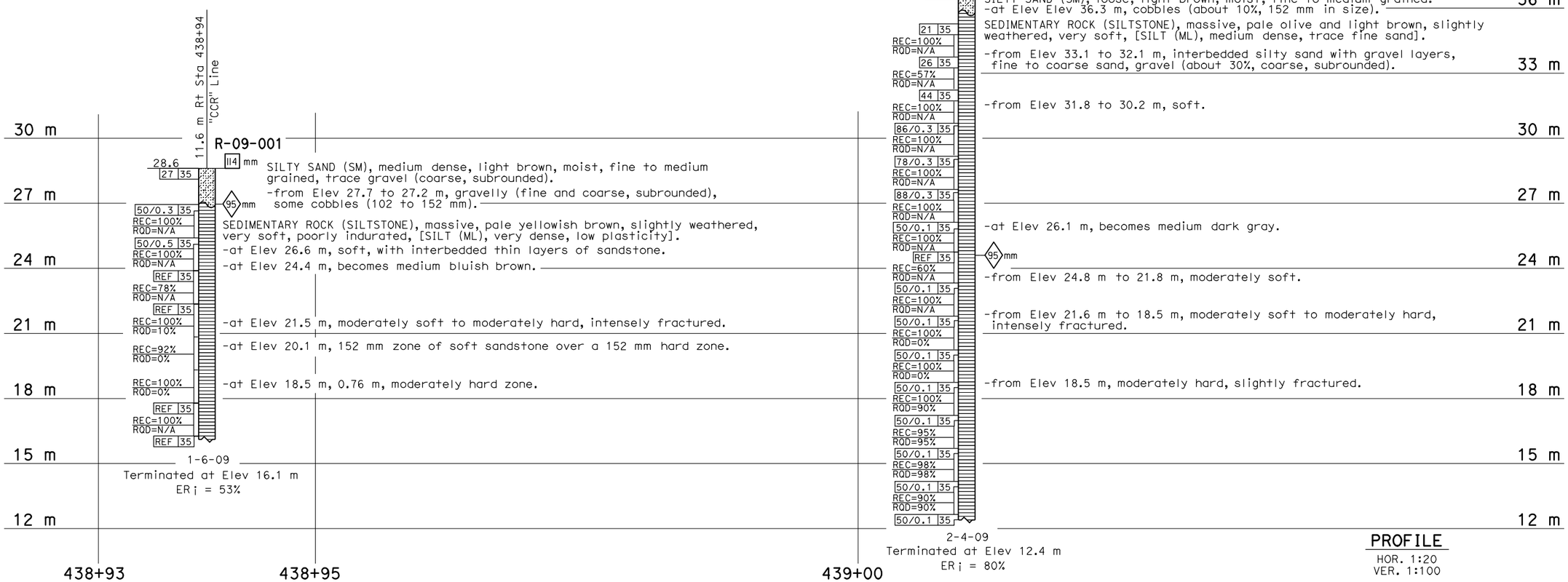
B.M. #2 CITY 6
Street Well
Monument at BC
per SR 07-200
N 580691.861
E 1910154.476
Elev 25.461 m

PLAN

1:1000

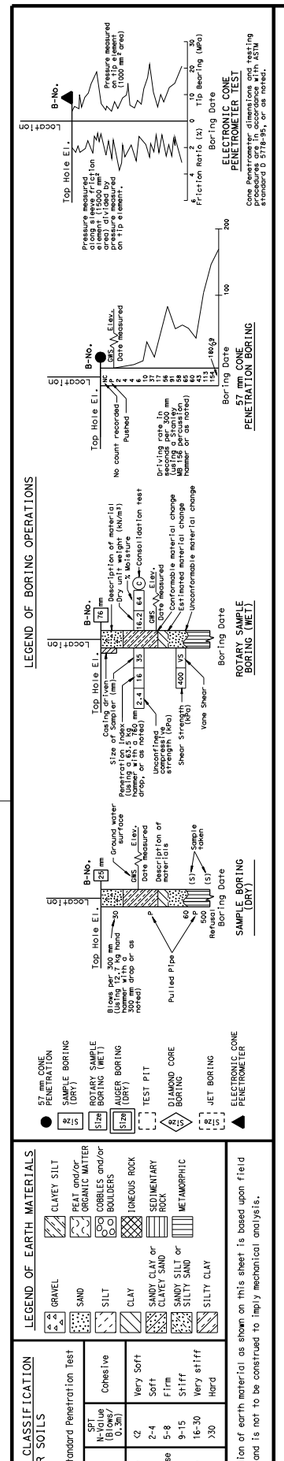
NOTES:

1. Core samples and laboratory rock strength data are available for viewing at the California Department of Transportation, Transportation Laboratory, 5900 Folsom Blvd., Sacramento, CA 95819.
2. Soil colors were determined by using Munsell Color Charts (1994, Revised Edition). Rock colors were determined using Geological Soiciety of America Rock Color Charts (1995, 8th Printing).
3. Artesian ground water was measured in three borings: R-09-003, R-09-007, and R-09-009. In borings R-09-003 and R-09-007 the static ground water was measured above the top of boring. In Boring R-09-005 artesian ground water was noticed flowing out of the top of boring. Ground water was not encountered in borings R-09-001, R-09-011 and R-09-012. In all other borings, artesian conditions were noticed, but the static ground water level was not measured in those borings. Those borings were immediately backfilled after completion of drilling operations. For detailed information see the LOTB sheets and Foundation Report.
4. Test borings R-09-001, R-09-002, R-09-003, R-09-006, R-09-009, and R-09-012, utilized a Diedrich automatic hammer. Borings R-09-004, R-09-005, R-09-008, and R-09-010, utilized a CME automatic hammer. Borings R-09-007, and R-09-011 utilized a Boart Longyear automatic hammer.
5. Penetration index value designated as "REF" means sampler refusal.
6. RQD designated with "N/A" (not applicable), infers that the rock encountered within the drilled interval was not sound rock (moderately soft to very soft), therefore RQD was not calculated.



PROFILE

HOR. 1:20
VER. 1:100



OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY: F. De Haro

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO. 57C-0786
KILOMETER POST

CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 1 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 04-21-09 04-23-09

SHEET OF

FILE => carroll-1of7.dgn

USERNAME => s116982 DATE PLOTTED => 13-JUL-2011 TIME PLOTTED => 09:10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PLANS APPROVAL DATE

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PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 7

R-09-011

14.8 m Lt Sta 439+31.4
"CCR" Line

34.2 | 95 mm

33 m — SILTY SAND with GRAVEL (SM), very dense, reddish brown, moist, with about 20% fine to coarse gravel, very hard, subangular.

97 | 35
-at Elev 32.4 m, with little clay.

28 | 35
REC=86% ROD=N/A

30 m — SEDIMENTARY ROCK (SILTSTONE), massive, light gray to light olive brown, slightly weathered, very soft, moist, poorly indurated, [SILT (ML), very dense, trace of clay and fine sand, nonplastic].

74 | 35
REC=86% ROD=N/A

-at Elev 28.1 m, moderately soft.

74 | 35
REC=100% ROD=N/A

27 m

84/0.3 | 35
REC=86% ROD=46%

-at Elev 26.5 m, 518 mm thick, moderately weathered, moderately hard, moderately fractured zone.

26 | 35
REC=91% ROD=0%

24 m — -at Elev 24.8 m, with 75 mm very hard cobble.

105/0.3 | 35
REC=86% ROD=54%

-at Elev 24.2 m, dark gray, moderately hard to moderately soft, moderately fractured, wet.

58/0.2 | 35
REC=100% ROD=63%

21 m

REF | 35
REC=88% ROD=20%

-at Elev 20.7 m, 110 mm moderately hard zone.

91/0.3 | 35
REC=100% ROD=N/A

18 m — -at Elev 18.3 m, moderately soft, poorly indurated.

120/0.3 | 35
REC=100% ROD=N/A

15 m

REC=100% ROD=N/A

50/0.1 | 35
REC=100% ROD=N/A

12 m

REC=74% ROD=N/A

57/0.2 | 35
REC=68% ROD=N/A

9 m

REC=100% ROD=N/A

REF | 35
REC=89% ROD=0%

-at Elev 8.4 m, 250 mm thick, slightly weathered, hard to very hard zone.
-at Elev 7.1 m, moderately to intensely fractured.

6 m

REC=80% ROD=0%

-at Elev 6.0 m, 75 mm thick, hard to very hard zone.

50/0.1 | 35
REC=71% ROD=N/A

REC=80% ROD=N/A

3 m

50/0.1 | 35
REC=95% ROD=N/A

REC=70% ROD=N/A

0 m

REF | 35
REC=85% ROD=N/A

REC=80% ROD=N/A

-3 m — SEDIMENTARY ROCK (SANDSTONE), massive, dark gray, slightly weathered very soft, poorly indurated, friable, [Poorly graded SAND (SP), very dense, wet.]
-at Elev -2.5 m, 300 mm thick, hard to very hard zone.

REF | 35
REC=60% ROD=30%

-at Elev -5.1 m, becomes hard, moderately to intensely fractured.

-6 m

REC=90% ROD=44%

-at Elev -6.0 m, 175 mm thick, hard to very hard zone.
-at Elev -6.5 m, with about 5% coarse gravel, rounded, very hard.

-9 m

2-4-09
Terminated at Elev -6.4 m
ERi= 74%

R-09-002

4.8 m Lt Sta 439+93.6
"CCR" Line

28.2 | 114 mm

12 | 35
SILT with SAND (ML), medium dense, brown, moist, fine sand, trace clay.

95 mm
SILTY SAND (SM), medium dense, light brown, moist, fine-grained, trace gravel (coarse, subrounded). At Elev 26.8 m, trace cobbles (about 150 mm size).

39 | 35
SILT with SAND (ML), dense, light brown, moist, fine sand.
-at Elev 24.9 m, very dense.

90/0.3 | 35
REC=100% ROD=N/A

24 m — SEDIMENTARY ROCK (SILTSTONE), massive, yellowish brown, slightly weathered, soft to very soft, poorly indurated, [SILT (ML), very dense, trace clay and fine sand].

50/0.1 | 35
REC=100% ROD=N/A

-at Elev 23.5 m, becomes medium bluish gray.
-from Elev 23.1 to 21.6 m, color varies from yellowish brown to bluish gray.

50/0.1 | 35
REC=99% ROD=N/A

21 m — -at Elev 21.6 m, becomes bluish gray, moderately soft, poorly indurated, slightly fissile.

REF | 35
REC=83% ROD=N/A

REF | 35
REC=96% ROD=N/A

18 m

REF | 35
REC=83% ROD=N/A

-at Elev 16.5 m, slight increase in fine sand content.

REF | 35
REC=91% ROD=N/A

15 m

REF | 35
REC=89% ROD=N/A

REF | 35
REC=68% ROD=N/A

-at Elev 13.0 m, moderately soft to soft, moderately to poorly indurated.

12 m

REC=60% ROD=N/A

REF | 35
REC=100% ROD=N/A

9 m — -at Elev 8.7 m, moderately soft.

REF | 35
REC=89% ROD=N/A

REF | 35
REC=100% ROD=N/A

6 m — -from Elev 5.9 to 4.5 m, interbedded layers of sandstone about 6 to 51 mm thick.
-from Elev 4.5 to 2.5 m, sandstone layer, very soft.

REC=80% ROD=N/A

3 m

REF | 35
REC=90% ROD=N/A

REC=85% ROD=N/A

0 m — -at Elev 2.5 m, 0.4 m siltstone layer, soft.

REF | 35
REC=91% ROD=20%

-at Elev -0.2 m, 0.3 m very hard siltstone layer, moderately fractured.

REC=83% ROD=N/A

-3 m — SEDIMENTARY ROCK (CONGLOMERATE), massive, light gray, slightly weathered, very soft, poorly indurated, [Well graded GRAVEL with SAND (GW), very dense, light gray, fine to coarse, subrounded gravels and cobbles; matrix consists of fine to coarse sand with silt, wet].

REC=68% ROD=N/A

-from Elev -3.0 to -3.21 m, sandstone layer, very soft, few cobbles (about 102 to 127 mm).

REF | 35
REC=60% ROD=N/A

-6 m — -at Elev -5.6 m, few cobbles (about 101 to 152 mm).

REC=37% ROD=N/A

REC=97% ROD=N/A

-9 m

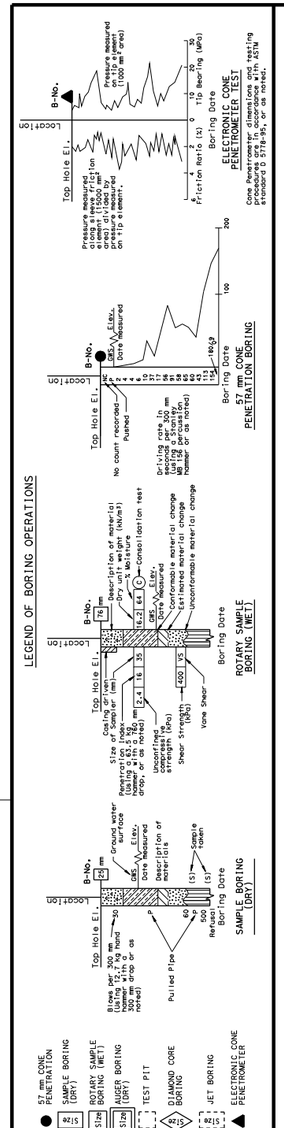
REF | 35

1-12-09
Terminated at Elev -8.8 m
ERi= 53%

439+25 | 439+75 | 440+25

PROFILE
HOR. 1:200
VER. 1:100

LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS

GRAVEL | SAND | SILT | CLAY | SANDY CLAY or CLAYEY SAND | SANDY SILT or SILTY SAND | SILTY CLAY | CLAYEY SILT | PEAT and/or ORGANIC MATTER | COBBLES and/or BOULDERS | IGNEOUS ROCK | SEDIMENTARY ROCK | METAMORPHIC

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>30	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY: F. De Haro, TM Liao

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO. 57C-0786
KILOMETER POST

CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 2 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 04-21-09 04-22-09 04-23-09

SHEET OF

FILE => carroll-2of7.dgn

USERNAME => s116982 DATE PLOTTED => 13-JUL-2011 TIME PLOTTED => 09:10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA

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FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 7

R-09-005

3.7 m Lt Sta 440+53.4 "CCR" Line

28.1

101 mm

ORGANIC SILT (OL), medium dense, dark brown, moist, few small (2 to 4 mm dia) roots and leaf litter.

Poorly graded SAND with GRAVEL (SP), very loose, medium brown to grayish brown, moist, medium to coarse sand with little to some rounded fine to coarse gravel to cobble, moderately hard, clasts.

-from Elev 25.0 to 24.6 m, becomes medium dense, with trace silt.

SEDIMENTARY ROCK (SILTSTONE), massive, gray to light brown, slightly weathered, very soft to soft, poorly indurated, [CLAYEY SILT (ML), loose, gray to light brown, moist, medium to low plasticity, trace to few fine sand].

-at Elev 21.8 m, trace fine sand, fissile.

-at Elev 21.5 m, becomes moderately soft to moderately hard, moderately fractured, fissile.

-at Elev 19.7 m, becomes soft to moderately soft, with some interbeds of fine sand.

-at Elev 18.6 m, becomes moderately soft to moderately hard.

-at Elev 17.1 m, few moderately hard zones, becomes intensely to moderately fractured, very thinly bedded lenses of fine sand.

-at Elev 15.9 m, becomes moderately hard, moderately fractured.

-between Elev 13.3 m and 13.1 m, moderately indurated, moderately to intensely fractured.

-between 13.1 m and 13.0 m, hard, well indurated, moderately to intensely fractured.

-at Elev 11.0 m, moderately hard to moderately soft.

SEDIMENTARY ROCK (SANDSTONE), massive, medium to dark gray, slightly weathered, hard, very well indurate, fine grained sand, moderately to intensely fractured.

-at Elev 9.8 m, very soft, poorly indurated, with some rounded coarse gravel to cobble-size, slightly weathered, hard clasts.

SEDIMENTARY ROCK (SILTSTONE), massive, dark gray, slightly weathered, soft to moderately soft.

-at Elev 7.9 m, thinly bedded with fine sand, moderately soft to moderately hard, weakly to moderately indurated, intensely fractured along bedding planes, fissile.

-at Elev 6.7 m, becomes moderately soft to moderately hard, very intensely to intensely fractured.

-at Elev 3.7 m, becomes moderately fractured.

-from Elev 1.5 m to 1.1 m, hard to very hard, very well indurated, moderately to intensely fractured.

-at Elev 0.8 m, moderately hard, intensely to moderately fractured.

95 mm SEDIMENTARY ROCK (CONGLOMERATE), massive,dark gray, slightly weathered, soft, poorly indurated, [Well-graded GRAVEL with SAND (GW), rounded fine gravel to cobble size clasts within a fine grained sand matrix, massive, medium to dark gray, matrix ranges from very hard to very soft, well to poorly indurated, slightly weathered and very hard clasts, very intensely to intensely fractured, wet].

25 35 | P 35 | 14 35 | REC=80% RQD=N/A | 13 35 | REC=80% RQD=N/A | 70 35 | REC=80% RQD=37% | 59 35 | REC=97% RQD=N/A | 92/0.2 35 | REC=100% RQD=8% | 50/0.1 35 | REC=100% RQD=53% | REC=90% RQD=40% | REF 35 | REC=78% RQD=16% | REC=84% RQD=0% | 50/0.1 35 | REC=76% RQD=26% | REC=40% RQD=0% | 50/0.1 35 | REC=95% RQD=0% | REC=96% RQD=0% | REF 35 | REC=94% RQD=0% | REC=90% RQD=30% | REF 35 | REC=96% RQD=28% | REC=90% RQD=30% | REF 35 | REC=88% RQD=48% | REF 35 | REC=65% RQD=37% | REC=44% RQD=0% | REF 35 | REC=76% RQD=0% | REF 35

1-27-09
Terminated at Elev -7.1 m
ERi = 82%

R-09-008

0.1 m Rt Sta 441+10.7 "CCR" Line

30.5

108 mm

SILT (ML), loose, medium to light brown, dry to moist, with trace of clay and sand, low to nonplastic.

-at Elev 27.7 m, becomes medium dense with trace rounded coarse gravel.

Poorly graded SAND with SILT (SP-SM), medium dense, dark gray, wet, fine sand (±80%), trace fine gravel and coarse sand, about 10% silt.

-at Elev 25.4 m, with rounded coarse gravel.

-at Elev 23.6 m, becomes dense.

Poorly graded SAND with SILT and GRAVEL (SP-SM), dense, dark gray, wet, fine to coarse (±20%) sand, rounded; fine (±20%) to coarse (±30%) gravel, few (±10%) silt.

SEDIMENTARY ROCK (SANDSTONE), massive, fine to medium grained, medium to dark gray, slightly weathered, very soft, poorly indurated, [Poorly graded SAND (SP), very dense].

SEDIMENTARY ROCK (CONGLOMERATE), massive, fine to medium grained matrix with rounded coarse gravel, thinly bedded, dark gray, slightly weathered, hard, well indurated, moderately fractured.

SEDIMENTARY ROCK (SANDSTONE), massive, fine to medium grained, medium gray, slightly weathered, very hard, slightly fractured.

-at Elev 20.0 m, very soft to soft, poorly indurated.

-at Elev 19.2 m, becomes interbedded with rounded fine to coarse gravel and cobble.

-at Elev 18.6 m, interbedded with rounded coarse gravel, very soft, poorly indurated, fine to medium grain sandy matrix.

-at Elev 17.8 m, 0.2 m zone of slightly weathered, hard to very hard, intensely to moderately fractured, well indurated sandstone.

SEDIMENTARY ROCK (SILTSTONE), massive, dark gray, slightly weathered, very soft to soft, poorly indurated, [SILT (ML), very dense, dark gray, moist, low plasticity].

-from Elev 14.4 m to 13.9 m, interbed of medium grained sand matrix with rounded fine gravel to cobble size clast.

-at Elev 13.9 m, moderately hard, intensely fractured.

-at Elev 11.9 m, becomes moderately hard to moderately soft.

95 mm -at about Elev 11.6 m, 76 mm hard zone.

-from Elev 10.7 m and 9.6 m, moderately soft.

-from Elev 9.4 m to 9.0 m, hard, moderately fractured, well indurated.

-from Elev 9.0 m to Elev 3.7 m, alternating layers of moderately soft to moderately hard, moderately to intensely fractured siltstone.

SEDIMENTARY ROCK (CONGLOMERATE), massive, medium gray, slightly weathered, soft, poorly indurated, [Well-graded GRAVEL with SAND (GW), fine to medium grained sand matrix with rounded coarse gravel to cobble size clasts], massive, medium gray matrix with multicolored hard clasts, very soft, poorly indurated matrix, wet].

-at Elev 2.2 m, becomes hard, intensely fractured, well indurated.

SEDIMENTARY ROCK (SILTSTONE), very thickly bedded, dark gray, slightly weathered, moderately soft to moderately hard, intensely to moderately fractured, poorly to well indurated.

SEDIMENTARY ROCK (CONGLOMERATE), massive, medium gray, slightly weathered, soft, poorly indurated, [Well-graded GRAVEL with SAND (GW), ,fine to medium grained sand matrix with mostly rounded coarse gravel and few cobble size clasts, wet], massive, medium gray matrix with multicolored clasts, very soft, poorly indurated matrix, hard to very hard clasts.

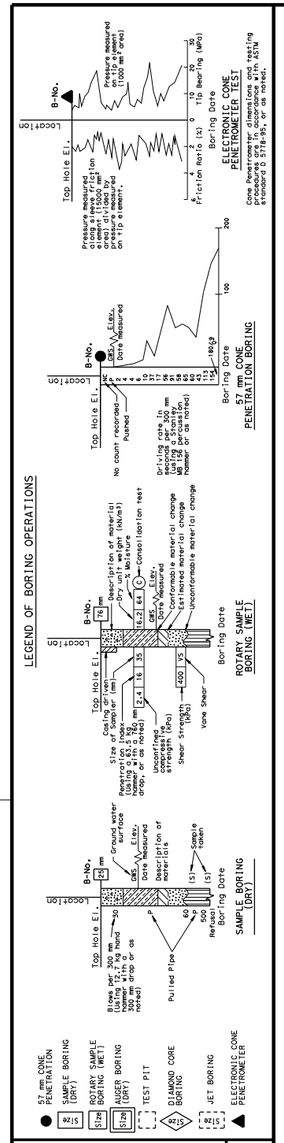
8 35 | 19 35 | 14 35 | 21 35 | 37 35 | 37 35 | REF 35 | REC=91% RQD=32% | 50/0.1 35 | REC=95% RQD=N/A | REF 35 | REC=80% RQD=0% | REF 35 | REC=87% RQD=N/A | 50/0.1 35 | REC=93% RQD=N/A | REC=100% RQD=0% | 50/0.1 35 | REC=59% RQD=24% | REC=100% RQD=10% | REF 35 | REC=100% RQD=41% | REC=100% RQD=0% | 50/0.1 35 | REC=100% RQD=19% | REC=88% RQD=14% | REF 35 | REC=73% RQD=0% | REC=56% RQD=0% | REF 35 | REC=81% RQD=0% | REC=80% RQD=7% | 50/0.1 35 | REC=62% RQD=0% | REC=40% RQD=N/A | REF 35 | REC=33% RQD=N/A | REC=40% RQD=N/A | REF 35

1-29-08
Terminated at Elev -9.2 m
ERi = 82%

30 m | 27 m | 24 m | 21 m | 18 m | 15 m | 12 m | 9 m | 6 m | 3 m | 0 m | -3 m | -6 m | -9 m

440+50 | 441+00 | 441+50

PROFILE
HOR. 1:200
VER. 1:100



LEGEND OF EARTH MATERIALS: GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

CONSISTENCY CLASSIFICATION FOR SOILS — According to the Standard Penetration Test

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31-50	Dense	9-15	Stiff
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		>30	Hard

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Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY: J. Klamecki

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN — DESIGN BRANCH

BRIDGE NO. 57C-0786 — KILOMETER POST

CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 3 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES — REVISION DATES (PRELIMINARY STAGE ONLY) 04-21-09 04-22-09 04-23-09 — SHEET OF

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USERNAME => s116982 DATE PLOTTED => 13-JUL-2011 TIME PLOTTED => 09:10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PLANS APPROVAL DATE

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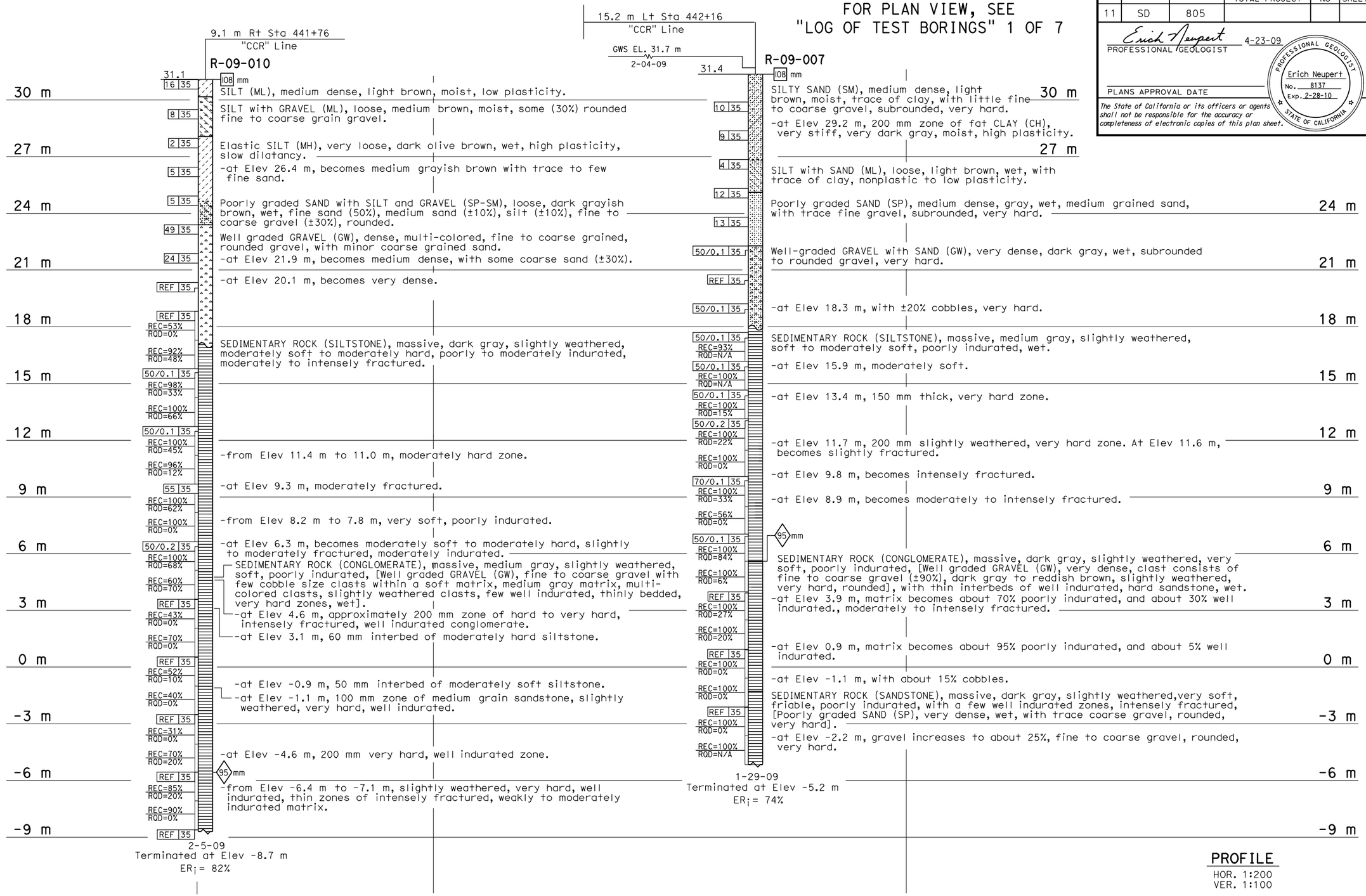
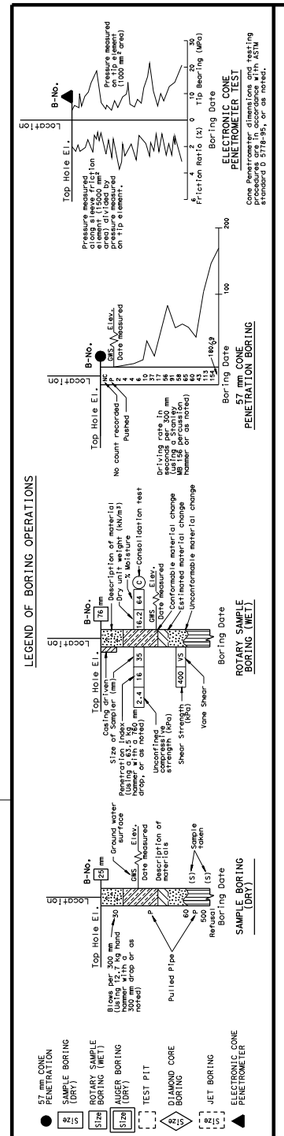
PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA

FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 7

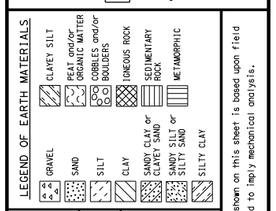


PROFILE
HOR. 1:200
VER. 1:100

LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS



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According to the Standard Penetration Test

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OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY: J. Klamecki, TM Liao

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO. 57C-0786
KILOMETER POST

CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 4 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 04-21-09 04-22-09 04-23-09

SHEET OF

FILE => carroll-4of7.dgn

USERNAME => s116982 DATE PLOTTED => 13-JUL-2011 TIME PLOTTED => 09:10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PLANS APPROVAL DATE

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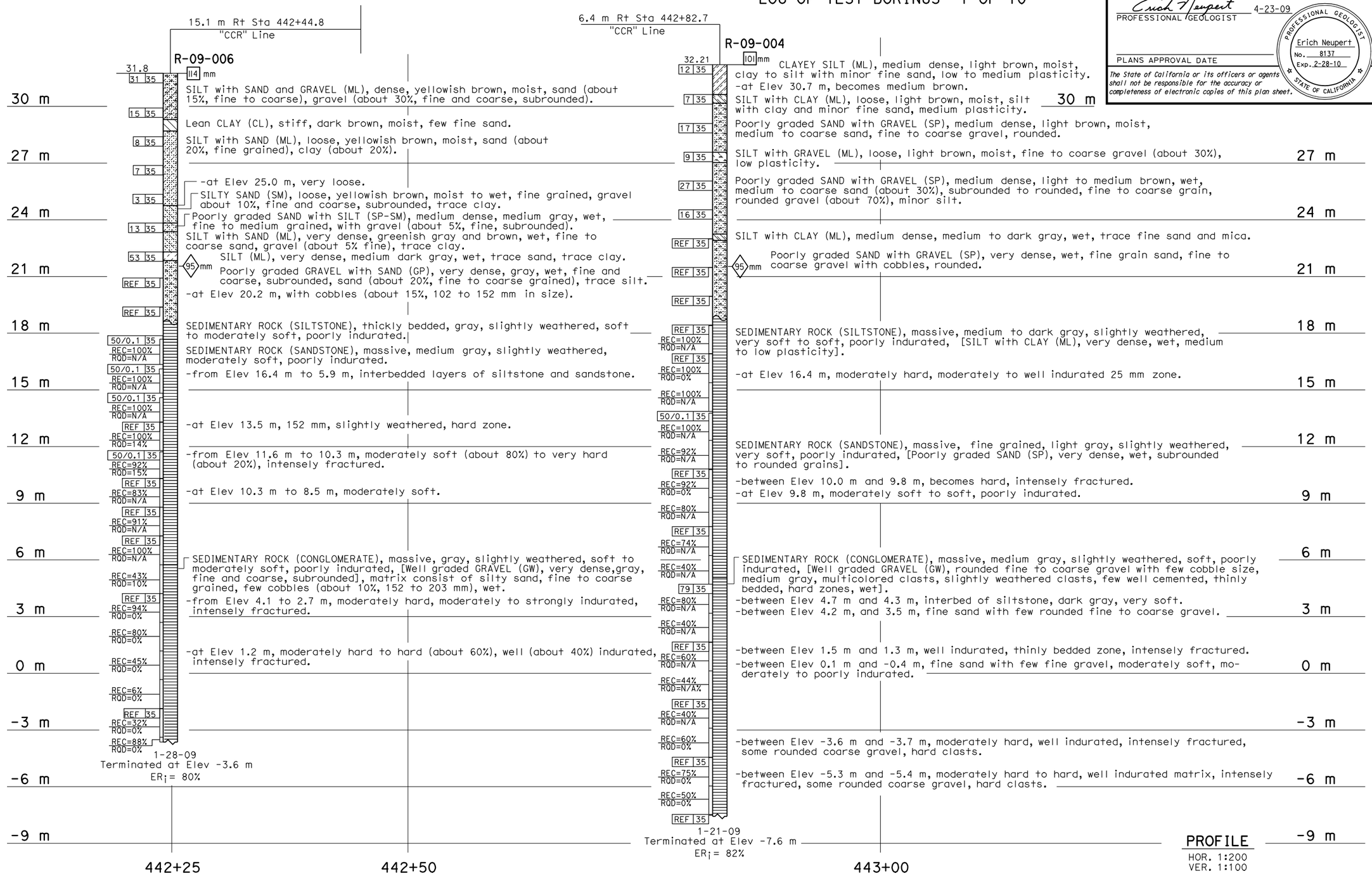
PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 10



LEGEND OF BORING OPERATIONS

ELECTRONIC CONE PENETROMETER TEST
PENETRATION BORING
ROTARY SAMPLE BORING (WET)
SAMPLE BORING (DRY)

LEGEND OF EARTH MATERIALS

GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

CONSISTENCY CLASSIFICATION FOR SOILS
According to the Standard Penetration Test

SPT N-Value (Blows/0.3m)	Granular	SPT N-Value (Blows/0.3m)	Cohesive
0-4	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>30	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 4/04)

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY:
F. De Haro, J. Klamecki

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO. 57C-0786
KILOMETER POST

CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 5 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 04-22-09 04-23-09

SHEET OF

FILE => carroll-5of7.dgn

USERNAME => s116982 DATE PLOTTED => 13-JUL-2011 TIME PLOTTED => 09:10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	805			

Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

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R-09-003

GWS EL. 32.3 m
1-28-09

1.8 m Rt Sta 443+21.8
"CCR" Line

31.8

114 mm

SILTY SAND (SM), loose, light brown, fine to medium grained, moist.

-from Elev 29.5 m to 28.5 m, medium dense, gravelly (fine and coarse, subrounded).
-at Elev 28.5 m, no gravel, loose.

-at Elev 26.9 m, becomes yellowish brown, fine grained.

95 mm

Poorly graded SAND with SILT and GRAVEL (SP-SM), loose to medium dense, yellowish brown, wet, fine to coarse grained, silt (about 10%), gravel (about 30%, fine and coarse, subrounded).

-few cobbles (±102 to 152 mm size), at Elev 24.8 m.

SILTY SAND (SM), very dense, light gray, wet, fine to medium grained.

Poorly graded SAND with SILT and GRAVEL (SP-SM), very dense, gray, wet, fine to coarse sand, about 10% silt, gravel (about 30%, fine and coarse, subrounded), trace cobbles (about 102 to 152 mm).

Poorly graded GRAVEL with SAND (GP), very dense, gray, fine and coarse, wet, sand (about 30%, fine to coarse grained), cobbles (about 10%, 102 to 152 mm).

SEDIMENTARY ROCK (SILTSTONE), thickly bedded, medium dark gray, slightly weathered, soft, poorly indurated, thin layered.

-from Elev 16.5 m to 15.0 m, interbedded with layers of sandstone, soft.

SEDIMENTARY ROCK (SANDSTONE), massive, medium gray, slightly weathered, soft, poorly indurated.

-from Elev 13.8 m to 12.3 m, moderately hard, intensely to moderately fractured.
-at Elev 12.3 m, 305 mm very hard zone.
-at Elev 12.0 m, becomes very soft, poorly indurated.

-at Elev 7.9 m, 229 mm, very hard zone, intensely fractured.

SEDIMENTARY ROCK (CONGLOMERATE), massive, gray, slightly weathered, soft, poorly indurated, [Well graded GRAVEL with SAND (GW), very dense, gray, fine and coarse, subrounded]. Matrix consists of silty sand, fine to coarse, wet.
-at Elev 5.7 m, 229 mm, well indurated, intensely fractured zone, with cobbles (about 102 to 152 mm in size).
-from 2.8 m to 1.3 m, isolated moderately hard, moderately indurated zones, intensely fractured, with cobbles (about 20%, 102 to 152 mm in size).
-from 1.3 m to -6.1 m, with some cobbles (about 40%, 102 to 152 mm).

-at Elev -1.4 m, 229 mm cobble.
-at Elev -2.0 m, moderately hard to moderately soft, intensely fractured.

-from Elev -4.6 m to -6.1 m, isolated will indurated, moderately hard to hard zones, intensely fractured.

SEDIMENTARY ROCK (SANDSTONE), thickly bedded, medium dark gray, slightly weathered, very soft to soft, poorly indurated, [SILTY SAND (SM), very dense, fine grained].

-at Elev -9.2 m, 127 mm cobble.

SEDIMENTARY ROCK (CONGLOMERATE), thickly bedded, gray, slightly weathered, soft, poorly indurated, [Well graded GRAVEL with SAND (GW), very dense, gray, fine and coarse, subrounded]. Matrix consists of silty sand, fine to coarse.

Elev	Blows	REC	RQD
30 m	5 35		
	15 35		
27 m	5 35		
	7 35		
24 m	23 35		
	50/0.1 35		
21 m	97/0.2 35		
	REF 35		
18 m	REF 35	63%	N/A
	50/0.1 35	48%	N/A
15 m	REF 35	85%	N/A
	50/0.1 35	42%	N/A
12 m	50/0.1 35	17%	0%
		0%	N/A
9 m		93%	N/A
	50/0.1 35	92%	0%
6 m	50/0.1 35	46%	N/A
	REF 35	44%	0%
3 m	REF 35	20%	N/A
		40%	0%
0 m		40%	N/A
	REF 35	27%	15%
-3 m	REF 35	37%	0%
		43%	0%
-6 m		50%	0%
	REF 35	65%	N/A
-9 m		88%	N/A
	REF 35	42%	N/A
-12 m		69%	N/A
	REF 35		

1-21-09
Terminate at Elev -11.4 m
ERi = 80%

R-09-009

2.1 m Rt Sta 443+77.9
"CCR" Line

31.7

95 mm

GWS EL. 31.1 m
2-04-09

SILTY SAND with GRAVEL (SM), medium dense, light brown, moist, fine to coarse grained, gravel (about 20%), mostly coarse, subangular.

SILTY SAND (SM), very dense, yellowish brown, moist, fine to medium grained.

SILT (ML), very dense, grayish brown, wet, trace clay.

Poorly graded GRAVEL with SAND (GP), very dense, gray, wet, coarse, subrounded, fine to coarse sand, silt (about 5%).

SEDIMENTARY ROCK (SANDSTONE), medium dark gray, slightly weathered, moderately soft, poorly indurated.

-from Elev 23.5 m to 22.9 m, siltstone layer, slightly weathered, moderately soft to moderately hard, intensely fractured.

-at Elev 19.1 m, moderately soft to moderately hard, poorly to moderately well indurated, intensely fractured.

SEDIMENTARY ROCK (CONGLOMERATE), thickly bedded, gray, slightly weathered, soft, poorly indurated, [Well graded GRAVEL with SAND (GW), very dense, gray, moist, fine and coarse, subrounded, ~~sand~~ (about 15%, fine and coarse), silt (about 5%), cobbles (about 10%, 102-152 mm)].

SEDIMENTARY ROCK (SANDSTONE), thickly bedded, medium dark gray, slightly weathered, very soft poorly indurated.

-at Elev 11.7 m, trace gravel (coarse, subrounded).

Elev	Blows	REC	RQD
30 m	23 35		
	23 35		
27 m	42 35		
	64 35		
24 m	REF 35	71%	N/A
	50/0.1 35	100%	0%
21 m	50/0.1 35	100%	N/A
	50/0.1 35	94%	0%
18 m	50/0.1 35	93%	0%
	50/0.1 35	98%	0%
15 m	50/0.1 35	48%	N/A
	REF 35	86%	N/A
12 m	50/0.1 35	19%	N/A
	REF 35		

1-29-09
Terminated at Elev 11.7 m
ERi = 80%

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 7

PROFILE
HOR. 1:200
VER. 1:100

443+20 443+50 443+75 444+00

LEGEND OF BORING OPERATIONS

LEGEND OF EARTH MATERIALS: GRAVEL, SAND, SILT, CLAY, SANDY CLAY or CLAYEY SAND, SANDY SILT or SILTY SAND, SILTY CLAY, CLAYEY SILT, PEAT and/or ORGANIC MATTER, COBBLES and/or BOULDERS, IGNEOUS ROCK, SEDIMENTARY ROCK, METAMORPHIC

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Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
DRAWN BY	I.G-Remmen, 3/09
CHECKED BY	

FIELD INVESTIGATION BY: F. De Haro

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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STRUCTURE DESIGN
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BRIDGE NO. 57C-0786
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CARROLL CANYON ROAD BRIDGE
LOG OF TEST BORINGS 6 OF 7

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

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CU 11
EA 2T0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 04-22-09 04-23-09

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Erich Neupert 4-23-09
PROFESSIONAL GEOLOGIST

PROFESSIONAL GEOLOGIST Erich Neupert No. 8137 Exp. 2-28-10 STATE OF CALIFORNIA

PLANS APPROVAL DATE

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WEATHERING DESCRIPTORS

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

Descriptors		Diagnostic features					General characteristics § (strength, excavation, etc.)
		Chemical weathering-Discoloration and/or oxidation		Mechanical weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
Alphanumeric descriptor	Descriptive term	Body of rock	Fracture surfaces †		Texture	Solutioning	
W1	Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck. Almost always rock excavation except for naturally weak or weakly cemented rocks such as siltstones or shales.
W2	Slightly weathered to fresh °						
W3	Slightly weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened. With few exceptions, such as siltstones or shales, classified as rock excavation.
W4	Moderately to slightly weathered °						
W5	Moderately weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened. Depending on fracturing, usually is rock excavation except in naturally weak rocks such as siltstones or shales.
W6	Intensely to moderately weathered°						
W7	Intensely weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened. Usually common excavation.
W8	Very intensely weathered						
W9	Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Always common excavation. Resistant minerals such as quartz may be present as "stringers" or "dikes."

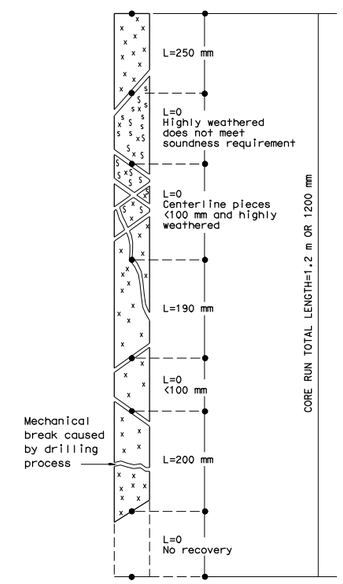
Note: This chart and its horizontal categories are more readily applied to rocks with feldspars and mafic minerals. Weathering in various sedimentary rocks, particularly limestones and poorly indurated sediments, will not always fit the categories established. This chart and weathering categories may have to be modified for particular site conditions or alteration such as hydrothermal effects; however, the basic framework and similar descriptors are to be used.

° Combination descriptors are permissible where equal distribution of both weathering characteristics are present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, dual descriptors should not be used where significant, identifiable zones can be delineated. When given as a range only two adjacent terms may be combined. "Decomposed to slightly weathered," or "moderately weathered to fresh" are not acceptable.

† Does not include directional weathering along shears or faults and their associated features. For example, a shear zone that carried weathering to great depths into a fresh rock mass would not require the rock mass to be classified as weathered.

§ These are generalizations and should not be used as diagnostic features for weathering or excavation classification. These characteristics vary to a large extent based on naturally weak materials or cementation and type of excavation

ROCK QUALITY DESIGNATION (RQD) & PERCENT RECOVERY (REC) LOGGING



RQD (ROCK QUALITY DESIGNATION)	DESCRIPTION OF ROCK QUALITY
0 - 25%	VERY POOR
25 - 50%	POOR
50 - 75%	FAIR
75 - 90%	GOOD
90 - 100%	EXCELLENT

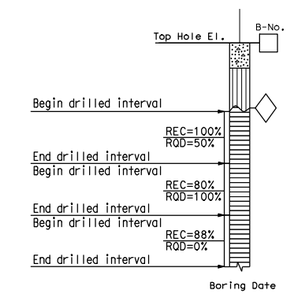
REC = Percent Core Recovery

$$REC = \frac{\sum \text{Length of all core pieces}}{\text{Total core run length}}$$

$$RQD = \frac{\sum \text{Length of sound core pieces} \geq 100 \text{ mm}}{\text{Total core run length}}$$

$$RQD = \frac{250+190+200}{1200} \times 100\%$$

RQD = 53% (fair)



(No Scale)
After Deere & Deere, 1989

FRACTURE DENSITY

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

FRACTURE DENSITY- Based on the spacing of all natural fractures in an exposure or core recovery lengths in boreholes; excludes mechanical breaks, shears, and shear zones; however, shear-disturbed zones (fracturing outside the shear) are included. Descriptors for fracture density apply to all rock exposures such as tunnel walls, dozer trenches, outcrops, or foundation cut slopes and inverts, as well as boreholes. Descriptive criteria presented below are based on borehole cores where lengths are measured along the core axis, for other exposures the criteria is distance measured between fractures (size of blocks).

UNFRACTURED (FD0): No fractures.

VERY SLIGHTLY FRACTURED (FD1): Core recovered mostly in lengths greater than 1 m.

SLIGHTLY TO VERY SLIGHTLY FRACTURED (FD2)*

SLIGHTLY FRACTURED (FD3): Core recovered mostly in lengths from 300 to 1000 mm, with few scattered lengths less than 300 mm or greater than 1000 mm.

MODERATELY TO SLIGHTLY FRACTURED (FD4)*

MODERATELY FRACTURED (FD5): Core recovered mostly in 100 to 300 mm lengths with most lengths about 200 mm.

INTENSELY TO MODERATELY FRACTURED (FD6)*

INTENSELY FRACTURED (FD7): Lengths average from 30 to 100 mm with scattered fragmented intervals. Core recovered mostly in lengths less than 100 mm.

VERY INTENSELY TO INTENSELY FRACTURED (FD8)*

VERY INTENSELY FRACTURED (FD9): Core recovered mostly as chips and fragments with a few scattered short core lengths.

* Combinations of fracture densities (e.g. very intensely to intensely fractured, or moderately to slightly fractured) are used where equal distribution of both fracture density characteristics are present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions.

ROCK HARDNESS DESCRIPTORS

Alphanumeric Descriptor	Descriptor	Criteria
H1	Extremely hard	Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.
H2	Very hard	Cannot be scratched with knife of sharp pick. Core or fragment breaks with repeated heavy hammer blows.
H3	Hard	Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.
H4	Moderately hard	Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.
H5	Moderately soft	Can be grooved 2 mm deep by knife or sharp pick with moderate or heavy pressure. Core or fragment breaks with light hammer blow or heavy manual pressure.
H6	Soft	Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
H7	Very soft	Can be readily indented, grooved or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

Any bedrock unit softer than H7, very soft, is to be described using ASTM D-2488 consistency descriptors.

Note: Although "sharp pick" is included in these definitions, descriptions of ability to be scratched, grooved or gouged by a knife is the preferred criteria.

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

BEDDING, FOLIATION, OR FLOW TEXTURE DESCRIPTORS

Descriptors	Thickness / Spacing
Massive	Greater than 3 m
Very thickly (bedded, foliated, or banded)	1 to 3 m
Thickly	300 mm to 1 m
Moderately	100 to 300 mm
Thinly	30 to 100 mm
Very thinly	10 to 30 mm
Laminated (intensely foliated or banded)	Less than 10 mm

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

Caltrans Metric

ENGINEERING SERVICES	GEOTECHNICAL SERVICES
PREPARED BY	I. G-Remmen
CHECKED BY	

OGS CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 8/05)

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LOG OF TEST BORINGS 7 OF 7

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EXHIBIT 13-A

Bridge Structure Depth- Minimum Requirements

This exhibit is provided as an electronic file.

EXHIBIT 13-A

Bridge Structure Depth- Minimum Requirements

STRUCTURAL SECTION	(STR. DEPTH / MAX SPAN)		COMMON SPAN RANGE **feet**
	SIMPLE	CONTINUOUS	
RC SLAB	0.06	0.045	16 - 44
RC T-BEAM	0.07	0.065	40 - 60
RC BOX	0.06	0.055	50 - 120
CIP/PS SLAB	0.03	0.03	40 - 65
CIP/PS BOX	0.045	0.04	100 - 250
PC/PS SLAB	0.03 (+3" AC)	0.03 (+3" AC)	20 - 50
PC/PS	0.06 (+3" AC)	0.055 (+3" AC)	30 - 120
BULB T GIRDER	0.05	0.045	90 - 145
PC/PS I	0.055	0.05	50 - 120
PC/PS BOX	0.06	0.045	120 - 200
STRUCT STEEL I GIRDER	0.045	0.04	60 - 300

Index of Reference Information Documents

A "**W**" under available column indicates documents that can be found on the Internet, an "**E**" indicates the document will be provided electronically, and "**CO**" indicates the Contractor shall obtain the document. Web sites are not guaranteed but are supplied for information. It is ultimately the Contractor's responsibility to locate the documents.

Title	Available
EXISTING INFORMATION	
Bridge_Log_Dist 11_Route 805.pdf	E
As-Built Plans	
11-045874.pdf -- 0.4 mile north of Route 163 to 0.6 mile north of Route 52 with connection to Route 52, PM 21.0/24.3, Year Complete: 1/25/1972	E
11-045884.pdf – 0.6 mile north of Route 52 to 0.1 mile north of Old Miramar Road, PM 24.2/26.7, Year Complete: 8/9/1971	E
11-045894.pdf – 0.1 mile north of Miramar Road to Route 5, PM 26.4/28.9 Year Complete: 10/12/1972	E
11-089714.pdf – 0.1 km south of Governor Drive Undercrossing to 0.8 km north of Rose Canyon Bridge Overhead, PM 24.2/25.5 Year Complete: 06/30/2003	E
57-0787 LR Soledad Canyon BOH asbuilt.pdf	E
57-0757S Soledad Canyon Offramp BOH asbuilt.pdf	E
57-0759_LR_governor bridge asbuilt.pdf	E
57-0760_LR_rose canyon BOH asbuilt.pdf	E
57-0761_la jolla village drive oc asbuilt.pdf	E
57-0762_eastgate mall road oc asbuilt.pdf	E
57-0785 LR_mira mesa blvd uc asbuilt.pdf	E

Title	Available
57-0786L_Sorrento valley blvd uc asbuilt.pdf	E
CAiCE and Survey Files	
S0717ABC surface smaller.zip – existing DTM	E
805_Exist Align.kcm --- existing Route 805 alignments and Mira Mesa Off –Ramp (CAiCE format)	E
805 existing alignments– existing Route 805 main lane and ramps traverses	E
805_Proposed Align.kcm --- proposed ramp alignments (CAiCE format)	E
805 new alignments.pdf--- proposed ramp traverses	E
805_2T0404 Align_Metric.kcm --- contract 2T0404 ramps alignments (CAiCE Metric format)	E
2T0404 ramp alignments.pdf – contract 2T0404 ramps traverses	E
805_089754_Align_Metric.kcm --- contract 089754 ramps alignments (CAiCE Metric format)	E
089754 ramp alignments.pdf – contract 089754 ramps traverses	E
Topography	
E0501_E0512_2d.dgn --- Existing Topo from south of Clairemont Mesa Blvd to north of Governor Dr., PM 22.6 /24.9	E
E0513_E0520_2d.dgn --- Existing Topo from north of Governor Dr. to north of Eastgate Mall Blvd, PM 24.9/ 26.3	E
E0521_E0525_2d.dgn --- Existing Topo from north of Eastgate Mall Blvd to north of Mira Mesa Blvd, PM 26.3/ 27.1	E
E0525_E0533_2d.dgn --- Existing Topo from north of north Mira Mesa Blvd to north of Sorrento Valley Blvd, PM 27.1/28.3	E
Aerial Images.zip	E
PROJECT STUDIES AND REPORTS	
2011_01_11_Final_Project_Report_link.pdf	E

Title	Available
I805N Final Environmental Document.pdf	E
2011_07_20 Signed MAR Approval Ltr I-805N.pdf	E
2011_07_26_structure_section_recommendation_2t2001.pdf	E
Technical Reports	
ADL Study	
2009_01_29_Aerially Deposited Lead Study Report.pdf	E
Air Quality Report	
2009_07_23_Final Air Quality Study.pdf	E
Community Impact Report	
2008_08_29_I-805 North.pdf	E
CSMP	
2009_08_04_Final_CSMP805_Conprehensive_Perf_Assessment.pdf	E
Foundation Reports (FR) For Carroll Canyon Road Bridge	
FR-Carroll-Canyon-Rd.zip – Zipped folder containing the following reports for the Carroll Canyon Road Bridge: • Preliminary Seismic Report • Final Seismic Design Letter • Foundation Report dated 04-13-09 • Revised Foundation Report - Bent 10 dated 06-23-11	E
Geotechnical Reports	
2007_12_18_Structures_Preliminary_Geo.pdf	E

Title	Available
2008_03_28_District_Preliminary_Geotech.pdf	E
Carroll Canyon DAR BOH & RET walls PFR.pdf	E
Governor Drive UC 57-059RL PFR.pdf	E
Rose Canyon BOH 57-760RL PFR.pdf	E
Soledad Canyon BOH 57-787LR Widen PFR.pdf	E
Hazardous Waste ISA	
2008_06_19 final isa.pdf	E
Limited Asbestos Survey Report.pdf	E
NADR	
2010_09_28_I-805_Final_NADR.pdf	E
Natural Environmental Study	
2008_10_30_Natural Env Study.doc	E
Noise Studies	
2003_03_17_I805 NSR Combined Figures.pdf	E
2008_05_13_805N Noise Analysis Final Report.pdf	E
2009_03_11_NSR addendum.pdf	E
2009_03_18_NSR addendum_tables.pdf	E
2010_09_27_Memo_Governor Dr_Noise.pdf	E

Title	Available
Preliminary Seismic Design Recommendation (PSDR)	
PSDR-Reports.zip – Zipped folder containing the following PSDR reports for: • Governor Dr. UC • Rose Canyon Bridge & OH • Soledad / Carroll Canyon Bridge & OH • DAR Bridge over Carroll Canyon Road Bridge • Construction of DAR Retaining Walls • Mira Mesa Blvd UC	E
SWDR	
2010_01_29_805N Final SWDR PA&ED.pdf	E
Traffic Reports	
2009_03_Final 805 N Traffic Forecast Appdx.pdf	E
2009_03 Final 805 North Traffic Forecast Report.pdf	E
2009_05_12 Carroll Canyon and Nobel DAR loc.pdf	E
2009_11_03_Final I-805 N Traffic Operations.pdf	E
Visual Impact Assessment	
2009_03_27_Final I805 VIA.pdf	E
Water Quality	
2009_10 805 North WQ Report.pdf	E

Title	Available
ONGOING CONTRACTS	
11-089754 contract plan --- La Jolla Village Drive Interchange (Metric) http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/11/11-089754/	W
11-2T0404 contract plan --- Carroll Canyon North DAR (Metric) http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/11/11-2T0404/	W
Hinge Design Memo_06-28-11.pdf	E
Hinge CCO Plans_6-28-11.pdf	E
CONCEPTUAL PLANS	
Project Feature Map.pdf	E
11-2T2004-Conceptual- Plans.pdf	E
Bridge Site	
57_0760RL_Rose_Cyn_Bridge.zip --- Bridge Site Submittal for Rose Canyon BOH (Provided to Proposers)	E
57_0787_Carroll Canyon_Bridge.zip --- Bridge Site Submittal for Carroll Canyon BOH (Provided to Proposers)	E
57_DAR2 Carroll Canyon DAR.zip --- Bridge Site Submittal for Carroll Canyon DAR (Provided to Proposers)	E
57_0759 Governor Drive Bridge.zip --- Bridge Site Submittal for Governor Drive Bridge (Provided to Proposers)	E