Meeting of the Central Valley Flood Protection Board
August 24, 2018

Permit Staff Report

Merced County
Black Rascal Creek Bridge, Merced County

1.0 – ITEM

Consider approval of Permit No. 19312 (Attachment B).

2.0 – APPLICANT

Merced County (County).

3.0 – PROJECT LOCATION

The project is located south of Yosemite Avenue, approximately 3,900 feet north of the intersection of Bradely Lateral Road and East Olive Avenue in Merced County (Black Rascal Creek, Merced County, see Attachment A).

4.0 – PROJECT DESCRIPTION

The County proposes to remove an existing private bridge and to construct three new bridges for a new roadway crossing Black Rascal Creek. The northbound bridge will be single span, 38.5 feet long and 39 feet wide, and the southbound bridge will be single span, 38.5 feet long and 53.5 feet wide. The third bridge will be a private bridge to replace the existing private bridge and will be constructed just downstream of the proposed two new bridges. The new private bridge will be single span, 38.5 feet long and 17 feet wide.

The three new bridges will be clear span bridges over the creek. Bents and abutments will be located outside the channel and banks (see Attachment C).

5.0 – AUTHORITY OF THE BOARD

California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710

California Code of Regulations Title 23, Division 1 (Title 23)

- § 6, Need for a Permit
- § 13.3, Consent Calendar
- § 112, Streams Regulated and Nonpermissible Work Periods
- § 121, Erosion Control
- § 128, Bridges

6.0 – PROJECT ANALYSIS

Black Rascal Creek is listed as a regulated stream in Title 23, Article 8, Section 112, Table 8.1. There are no levees along Black Rascal Creek in the project area. The proposed project will be in compliance with all Title 23 standards. The three new bridge structures will span over Black Rascal Creek. Two of the bridges will carry northbound and southbound Campus Parkway traffic. The third bridge will replace an existing private bridge that connects farms bisected by the creek.

6.1 – Hydraulic Analysis

The design flow for Black Rascal Creek is 320 cubic feet per second (cfs). HEC-RAS, a one-dimensional hydraulic model developed by the United States Army Corps of Engineers (USACE), was used to analyze the potential hydraulic impacts due to the project. The design flow was evaluated for existing and proposed conditions.

The hydraulic analysis shows that the lowest point of the proposed new bridges will be approximately 3.8 feet for the northbound bridge and 3.65 feet for the southbound bridge above the design water surface elevation (DWSE) at the design flow. In addition, the hydraulic analysis shows 0.06-foot increase for the northbound bridge and 0.03-foot increase for the southbound bridge in DWSE. It also shows a 0.07 foot per second decrease for the northbound bridge, 0.12 foot per second increase for the southbound bridge in velocity at the design flow.

The existing private bridge is approximately 2.33 feet below the DWSE at the design flow. The lowest point of the proposed new private bridge will be approximately 2 feet above the DWSE at the design flow, an improvement of more than 4.33 feet. In addition, the hydraulic analysis shows no change in DWSE and 0.19 foot per second increase for the new private bridge in velocity at the design flow (see Attachment D).

6.2 – Geotechnical Analysis

There are no levees associated with this project; therefore, a geotechnical analysis was not required.

7.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- There are no Local Maintaining Agencies in the area for the proposed bridge project.
- The USACE Sacramento District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project.

8.0 – CEQA ANALYSIS

Board staff has prepared the following California Environmental Quality Act (CEQA) determination:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft and Final Environmental Impact Reports (SCH No. 2000121003, April 2005, DEIR, February 2013, FEIR, November 2005), Mitigation Monitoring and Reporting Plan (MMRP) and the Addendum (June 2018) for the Campus Parkway Project, prepared by the CEQA lead agency, Merced County. These documents, including project design, may be viewed or downloaded from the Board website at http://www.cvfpb.ca.gov/event/August-2018-board-meeting.cfm under a link for this agenda item, and are also available for review in hard copy at the Board and Merced County offices.

Merced County determined that the project, as described in the DEIR and FEIR, would have a significant effect on the environment and filed a Notice of Determination with the Merced County Clerk on December 20, 2006, and with the State Clearinghouse on December 26, 2006. Merced County completed an Addendum (June 2018) that re-validated the DEIR and FEIR and concluded only minor technical changes or additions to the previous document were necessary and that it need not be circulated for public review per CEQA Guidelines Section 15164.

The County incorporated mandatory mitigation measures into the project plans to avoid or mitigate impacts. These mitigation measures, included in the County's Final EIR and MMRP, address impacts to aesthetics, biological resources, geology, hazards and hazardous materials, hydrology and noise. These mitigation measures are within the responsibility and jurisdiction of the County and have been adopted by the County. The Draft and Final EIR found less than significant impacts under hydrology for flood related impacts associated project.

In accordance with CEQA Guidelines Section 15096(e), Board staff independently reviewed the County's DEIR, FEIR, and Addendum, and finds these environmental documents prepared by the lead agency adequately address hydrology impacts, including potential flood risk, for the Board's approval of Permit 19312 to authorize work to construct the bridges over the regulated stream, which is within the Board's jurisdiction as it relates to maintenance of the State's flood control system. The Board, as a responsible agency, is responsible for mitigating and avoiding only the direct and indirect environmental effects of those parts of the project which it decides to carry out, finance, or approve (CEQA Guidelines Section 15096(g); Public Resources Code § 21002.1(d)).

Here, the Board's action is limited to approving an encroachment permit for work to construct and operate the replacement bridges, and the Board's jurisdiction is limited to imposing conditions or mitigation related to maintaining the State Plan of Flood Control. The mitigation measures in the County's EIR and MMRP do not address issues over which the Board has jurisdiction, therefore, no specific findings under CEQA Guidelines section 15906, subdivision (h) are required; these mitigation measures are within the jurisdiction of the County, and have been adopted by the County.

The Draft and Final EIR and Addendum identified less than significant impacts related to flood risk, which is the one resource area within the Board's jurisdiction as a responsible agency. The EIR conclusions related to flood risk are further supported by the USACE hydraulic model analysis relied upon by Board staff, which confirm the proposed bridges will result in less than significant hydraulic impacts. Based on staff's review of the environmental documents, the hydrologic analysis, and the entirety of the record, staff finds there is no substantial evidence to support a fair argument that the project may result in significant impacts related to flood risk within the Board's jurisdiction. Because the Board's approval of the encroachment permit for the proposed bridges results in less than significant impacts related to flood risk, which is the only resource area within the Board jurisdiction to address, no

findings under CEQA Guidelines section 15906, subdivision (h) or consideration of alternatives is required.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of the Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Suite 170, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, federal, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

   The Board has considered all the evidence presented in this matter, including the application for Permit No. 19312, and all supporting hydraulic and other technical documentation provided by the County.

2. The best available science that relate to the scientific issues presented by the Executive Officer, legal counsel, the Department of Water Resources or other parties that raise credible scientific issues:

   The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit. On the issue of hydraulic impacts, the County developed and applied a HEC-RAS hydraulic model. This model is considered one of the best available scientific tools for the purpose of evaluating DWSE changes due to the proposed project.

3. Effects of the decision on the facilities of the State Plan of Flood Control (SPFC), and consistency of the proposed project with the Central Valley Flood Protection Plan Update (CVFPP) as adopted by Board Resolution 2017-10 on August 25, 2017:

   The proposed project is located approximately 1.6 miles downstream of any SPFC facilities and will improve existing hydraulic conditions by increasing the conveyance area under the bridges. The proposed project is consistent with the adopted 2017 CVFPP as it reduces the chance of flooding by increasing the conveyance area.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

The proposed project will be constructed with at least 2 feet of clearance above the DWSE. The new bridges will better accommodate changes in hydrology due to climate change. Therefore, there are no expected adverse effects to the proposed project from reasonable projected future events.

10.0 – STAFF RECOMMENDATION

Board staff recommends that the Board:

Adopt:

- CEQA finding: The Board, acting as a responsible agency under CEQA, has independently reviewed and considered the environmental documents prepared for the project. Approving the Permit 19312 would not result in any significant adverse impacts related to flood risk and no additional mitigation measures within the Board's jurisdiction are required.

Approve:

- Encroachment Permit No. 19312 in substantially the form provided in Attachment B; and

Direct:

- The Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination pursuant to CEQA with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

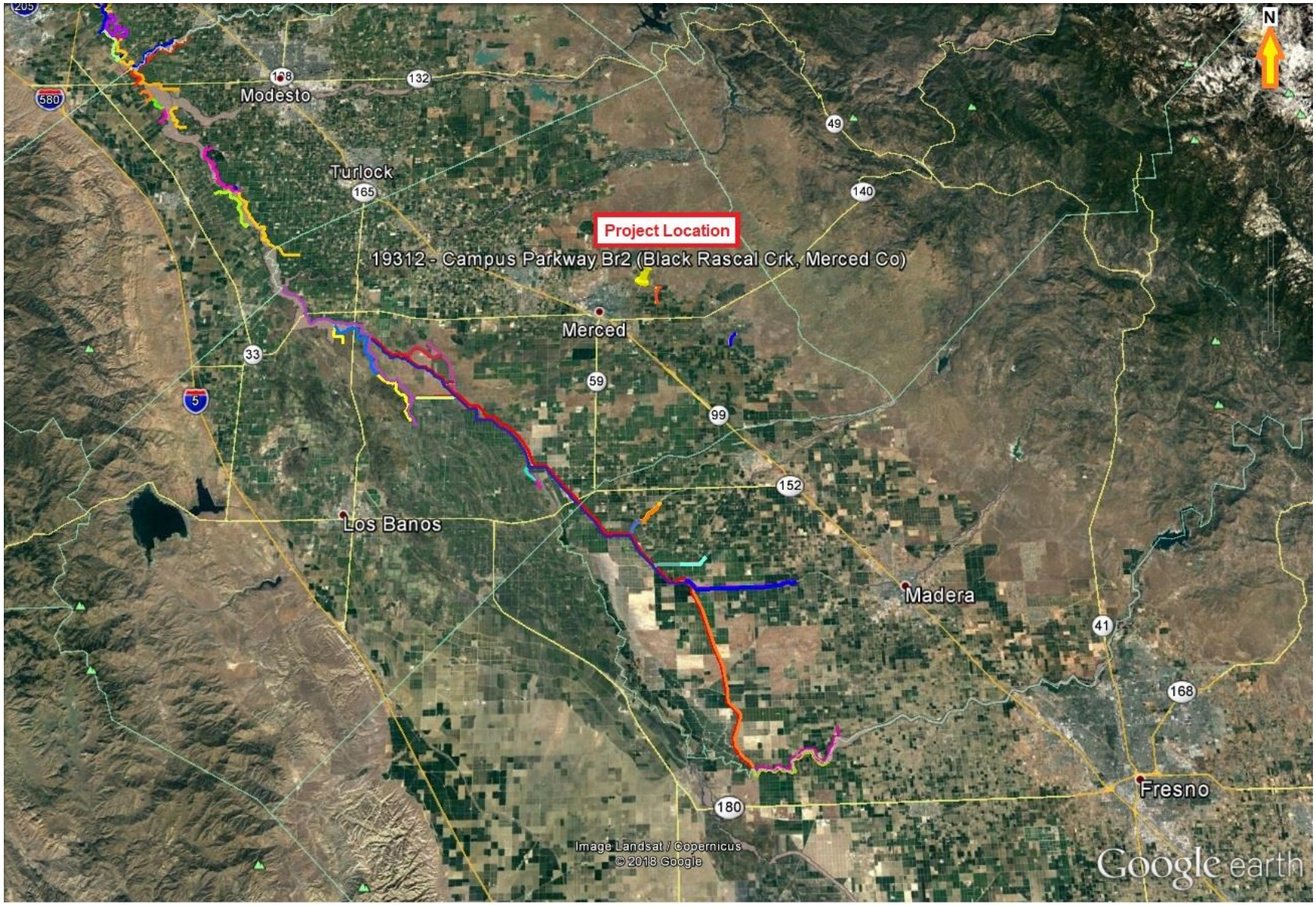
A. Location Maps and Photos

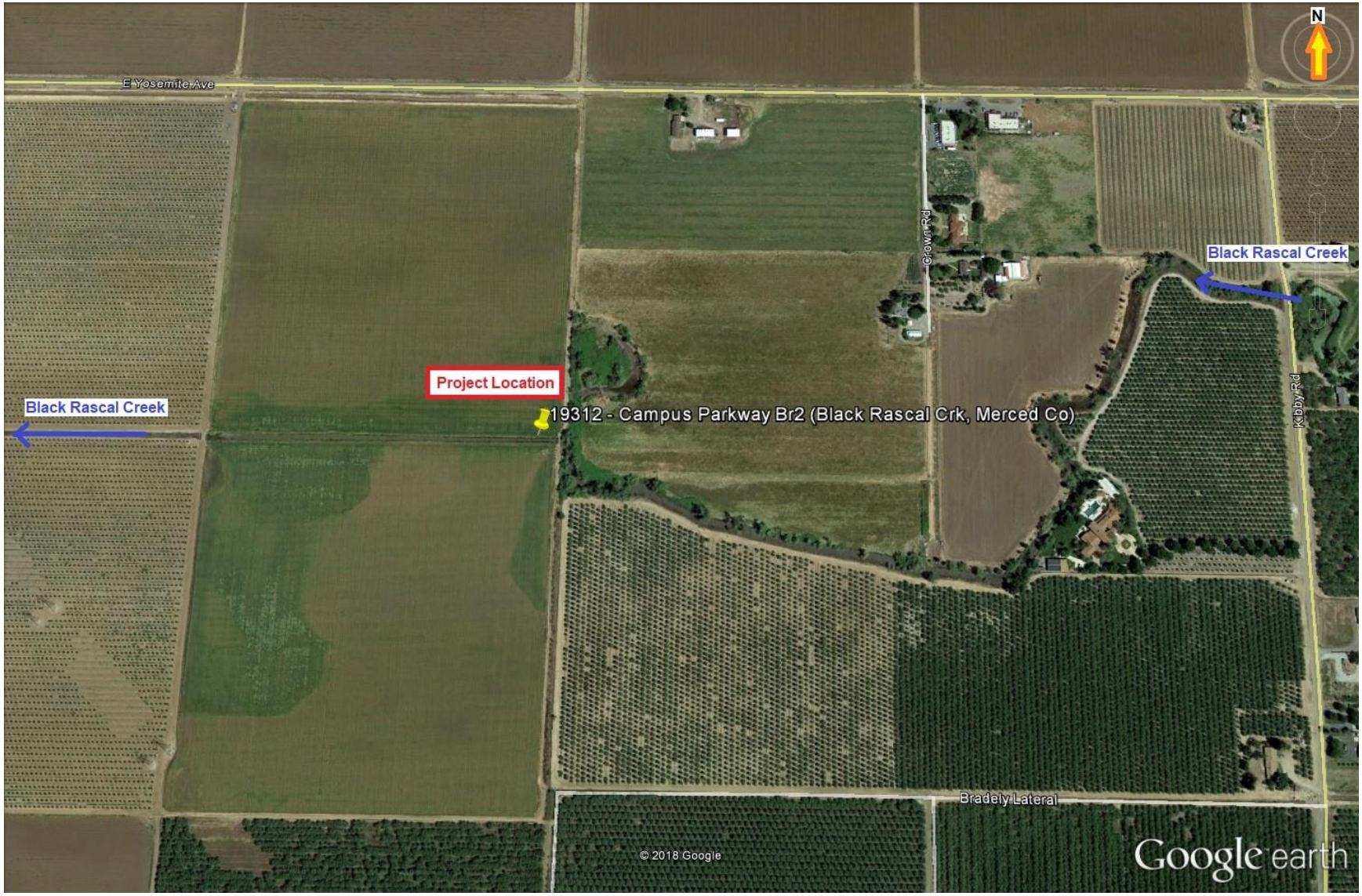
B. Draft Permit No. 19312

C. Project Drawings

D. Hydraulic Profile Information

Design Review:	Sungho Lee, PE, Engineer, Water Resources, Permitting Section
Environmental Review:	James Herota, Senior Environmental Scientist
Document Review:	Gary Lemon, PE, Senior Engineer, Permitting Section Chief
	Kelly Soule, PE, Acting Operations Branch Chief
	Michael C. Wright, PE, Acting Chief Engineer
Legal Review:	Christina Morkner Brown, Deputy Attorney General


N
Modesto
Turlock
Project Location
19312 - Campus Parkway Br2 (Black Rascal Crk, Merced Co)
Merced
Los Banos
Madera
Fresno
580
132
165
49
140
33
5
59
99
152
41
168
180
Image Landsat / Copernicus
© 2018 Google
Google earth


N
E Yosemite Ave
Crowell Rd
Black Rascal Creek
Project Location
19312 - Campus Parkway Br2 (Black Rascal Crk, Merced Co)
Black Rascal Creek
Kirby Rd
Bradely Lateral
© 2018 Google
Google earth


Project Footprint
19312 - Campus Parkway Br2 (Black Rascal Crk, Merced Co)
N
© 2018 Google
Google earth

Photo 1: View of Existing Structure crossing Black Rascal Creek, looking South.

Photo 2: View from Existing Structure of Black Rascal Creek, looking East.

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DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 19312 BD

This Permit is issued to:

Merced County
345 W. 7th Street
Merced, California 95340

To construct three new bridges for a new roadway crossing Black Rascal Creek. The left bridge for southbound lane will be single span, 38.5 feet long, and 53.5 feet wide and the right bridge for northbound will be single span, 38.5 feet long, and 39 feet wide. A third, private bridge will replace an existing private bridge. It will be constructed just downstream of proposed two new bridges. The new private bridge will be single span, 38.5 feet long, and 17 feet wide. Three new bridges will be clear span bridge over the creek. Bents and abutments will be located outside the channel and banks.

The project is located south of Yosemite Avenue, approximately 3,900 feet north of the intersection of Bradely Lateral and E. Olive Avenue and crossing Black Rascal Creek in Merced County, at 37.32785˚N 120.42382˚W, Black Rascal Creek, Merced County.

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

_____
Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 19312 BD

LIABILITY AND INDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board (Board) and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FOURTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Board and the State, safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

FIFTEEN: The Board and Department of Water Resources shall not be held liable for any damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

AGENCY CONDITIONS

SIXTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications dated December 2, 2011 except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Board.

SEVENTEEN: Correspondence was received from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated June 26, 2018, signifying that the District Engineer has no comments or recommendations regarding flood control because the proposed project does not affect a federally constructed project.

EIGHTEEN: Permittee shall pay to the Board, an inspection fee(s) to cover inspection cost(s), including staff and/or consultant time and expenses, for any inspections before, during, post-construction, and regularly thereafter as deemed necessary by the Board.

NINETEEN: The permittee shall be responsible for the repair of any damages to the channel, banks, floodway, or other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY: In the event that levee or bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

TWENTY-ONE: The Board reserves the right to add additional, or modify existing, conditions when there is a change in ownership and/or maintenance responsibility of the work authorized under this permit.

TWENTY-TWO: The permittee agrees to notify new property/encroachment owner(s) that they are required to submit a permit Name Change request form to the Board upon completion of the sale. The new owner(s) will be required to comply with all permit conditions. Name Change forms are available at http://cvfpb.ca.gov/

PRE-CONSTRUCTION

TWENTY-THREE: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard, to schedule a preconstruction conference with the inspector that is assigned to your project. Failure to do so at least 10 working days prior to start of work may result in a delay of the project.

CONSTRUCTION

TWENTY-FOUR: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Board. Failure to submit a Time Variance Request to the Board at least 10 working days prior to November 1 may result in a delay of the project.

TWENTY-FIVE: Piers, bents, and abutments being dismantled shall be removed to at least 1 foot below the natural ground line and at least 3 feet below the bottom of the low-water channel.

TWENTY-SIX: Backfill material for excavations within the bank section and within 10 feet of bridge supports within the floodway shall be placed in 4- to 6-inch layers and compacted to a minimum of 90 percent relative compaction as measured by the current ASTM D1557 standard and above optimum moisture content.

TWENTY-SEVEN: No material stockpiles, temporary buildings, or equipment shall remain in the Black Rascal Creek floodway during the flood season from November 1 to April 15.

POST-CONSTRUCTION

TWENTY-EIGHT: All debris generated by this project shall be disposed outside of the Black Rascal Creek floodway.

TWENTY-NINE: Cleared trees and brush shall be completely burned or removed from the Black Rascal Creek floodway, and downed trees or brush shall not remain in the Black Rascal Creek floodway during the flood season from November 1 to April 15.

THIRTY: The work area shall be restored to at least the condition that existed prior to commencement of work.

OPERATIONS AND MAINTENANCE

THIRTY-ONE: The permittee shall maintain the permitted encroachment(s) in the manner required and as requested by the authorized representative of the Board, the Department of Water Resources, or any other agency responsible for maintenance and shall, at all times, allow officials from these agencies to access any adjacent areas as necessary for flood control.

THIRTY-TWO: The permitted encroachment(s) shall not interfere with operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Board or Department of Water Resources. If the permittee does not comply, the Board may modify or remove the encroachment(s) at the permittee's expense.

THIRTY-THREE: After each period of high water, debris that accumulates at the site shall be completely removed from the Black Rascal Creek floodway.

THIRTY-FOUR: If erosion occurs adjacent to the permitted encroachment(s), the permittee shall repair the eroded areas and place adequate revetment on the affected areas to prevent further erosion.

THIRTY-FIVE: If the bridge is damaged to the extent that it may impair the flow capacity in Black

Rascal Creek, it shall be repaired or removed prior to the next flood season.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

THIRTY-SIX: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Board at the permittee's or successor's cost and expense.

THIRTY-SEVEN: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the project is not maintained or is damaged by any cause. If the permittee does not comply, or in the event of an emergency, the Board may remove the encroachment(s) at the permittee's expense.

END OF CONDITIONS

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County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
001	343

COUNTY OF MERCED

DEPARTMENT OF PUBLIC WORKS

PROJECT PLANS FOR THE CONSTRUCTION OF

CAMPUS PARKWAY (SEGMENT 3) PROJECT

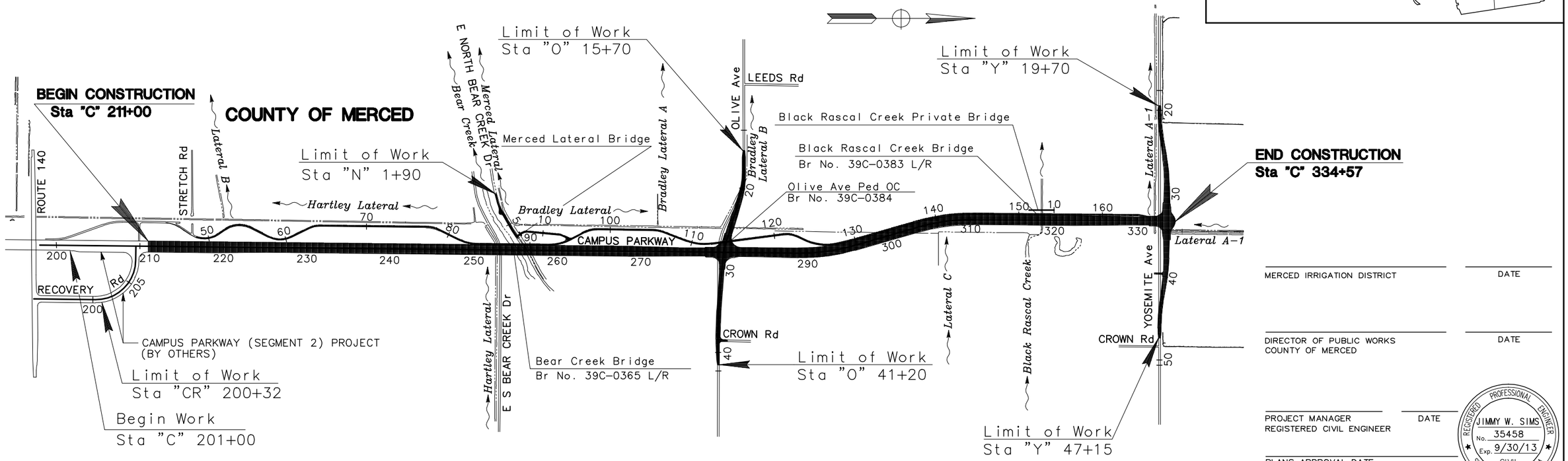
IN THE COUNTY OF MERCED IN MERCED

ON CAMPUS PARKWAY BETWEEN CONNECTOR ROAD AND YOSEMITE AVENUE

THE COUNTY OF MERCED STANDARDS THAT ARE UTILIZED FOR THIS PROJECT ARE INCLUDED IN THE SPECIAL PROVISIONS AND SUPPLEMENTED BY CALTRANS STANDARD PLANS DATED MAY 2006 AND CALTRANS STANDARD SPECIFICATIONS DATED MAY 2006

INDEX OF PLANS

LOCATION MAP



MERCED IRRIGATION DISTRICT — DATE

DIRECTOR OF PUBLIC WORKS
COUNTY OF MERCED — DATE

PROJECT MANAGER
REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JIMMY W. SIMS
No. 35458
Exp. 9/30/13
CIVIL
STATE OF CALIFORNIA

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Underground Service Alert
TWO DAYS BEFORE YOU DIG
Call: TOLL FREE 1 (800) 642-2444

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

12-06-2011
95% SUBMITTAL
NOT FOR CONSTRUCTION

NO SCALE

COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS 345 W. 7th STREET MERCED, CA 95340	
MARK THOMAS & COMPANY, INC. 1960 ZANKER ROAD SAN JOSE, CA 95112	
Contract No.	

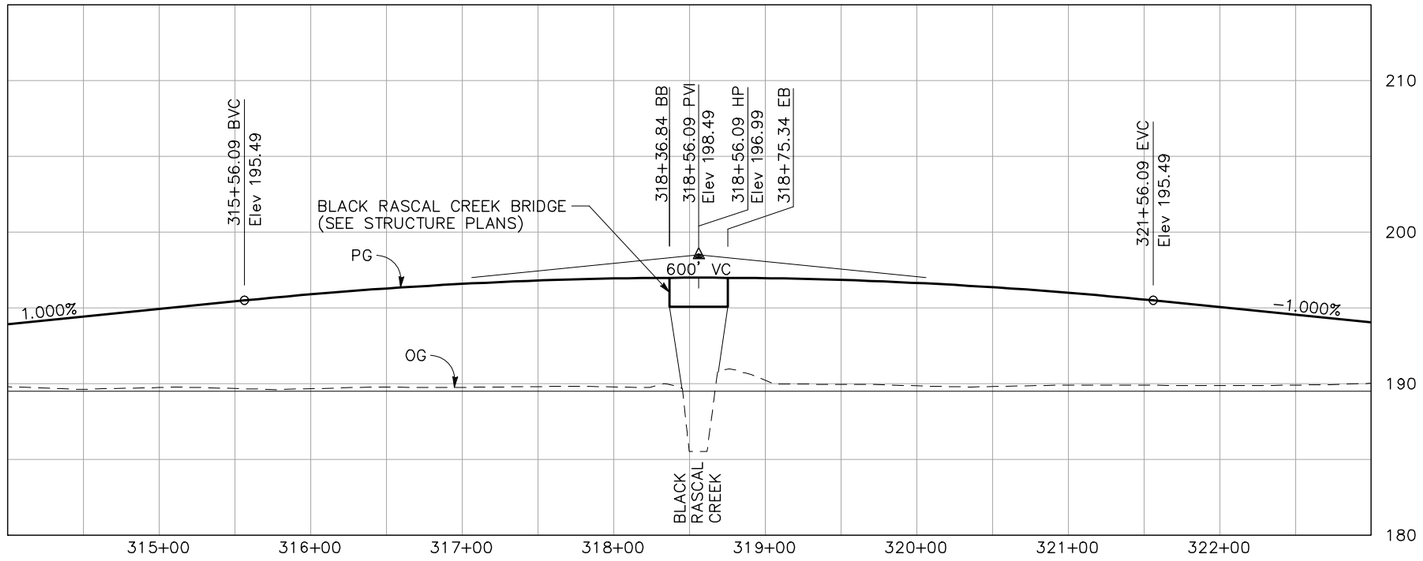
APPROVED AS TO IMPACT ON COUNTY FACILITIES AND CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER	COUNTY DESIGN OVERSIGHT APPROVAL	REGISTRATION No.	LICENSE Exp DATE	DATE SIGNED
JIMMY SIMS	STEVEN ROUGH	C43610	12/31/2012	

LAST REVISION 00-00-00
DATE PLOTTED => 12-2-2011
TIME PLOTTED => 8:50 AM

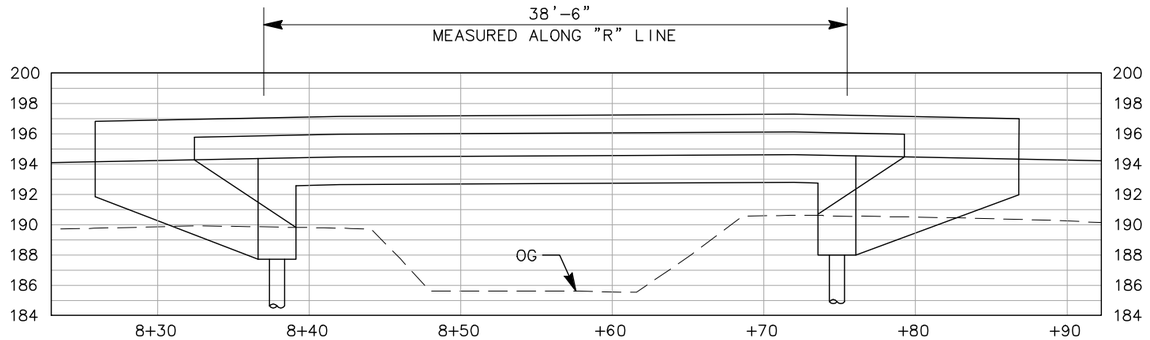
BORDER LAST REVISED 8/1/2008 | COUNTY WEB SITE IS: HTTP//WWW.CO.MERCED.CA.US/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => Jnettleton
DGN FILE => 56-0211B-Phase III-T1.dwg

V:\Merced County-56-0211B-Campus Pkwy Phase II\CADD\Drawing\95% PS&E - Phase II\Title Sheet\56-0211B-Phase III-T1.dwg 12/2/2011 8:50 AM



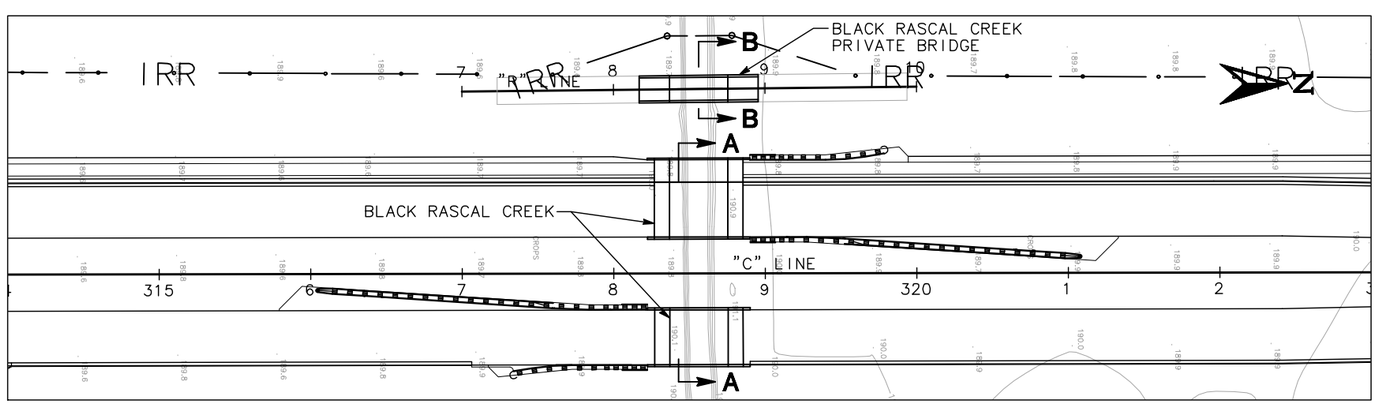
BLACK RASCAL CREEK BRIDGE

SCALE: VERTICAL 1" = 10'
SCALE: HORIZONTAL 1" = 100'



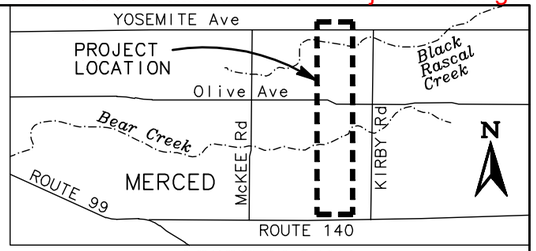
BLACK RASCAL CREEK PRIVATE BRIDGE

SCALE: VERTICAL 1" = 10'
SCALE: HORIZONTAL 1" = 10'

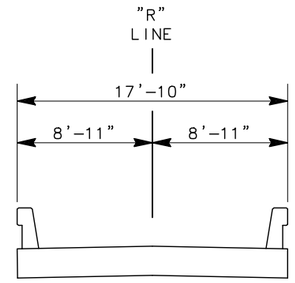


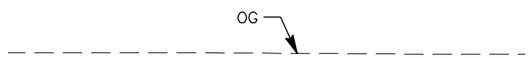
SCALE: 1" = 100'

County of Merced
Campus Parkway
Black Rascal Creek



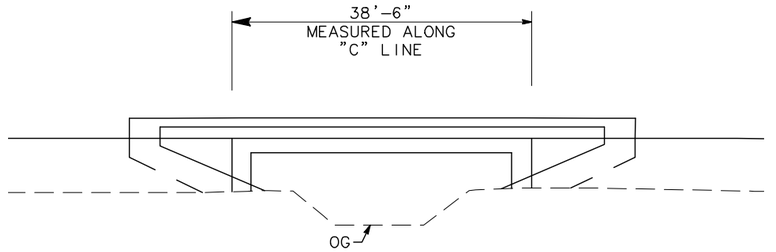
VICINITY MAP





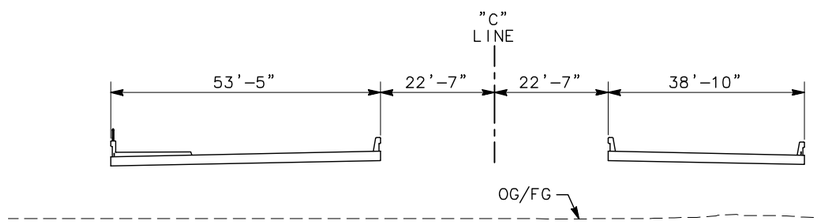
SECTION B-B

SCALE: 1" = 10'



BLACK RASCAL CREEK BRIDGE

SCALE: 1" = 30'

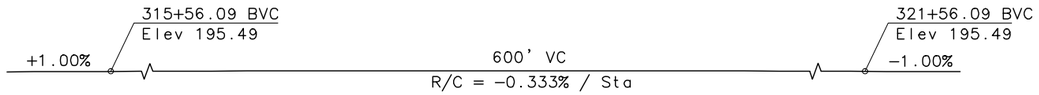


SECTION A-A

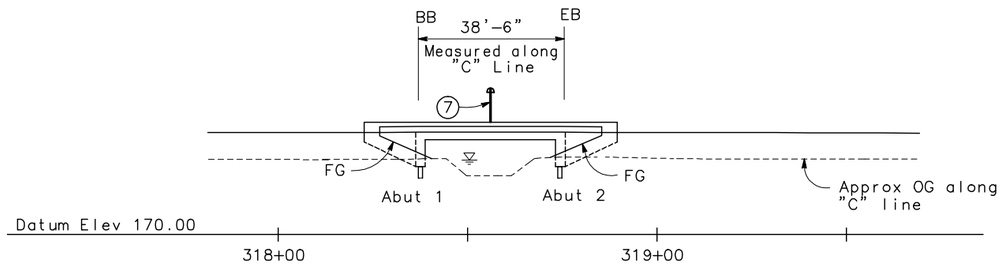
SCALE: 1" = 30'

PROPOSED CONSTRUCTION OF BLACK RASCAL CREEK

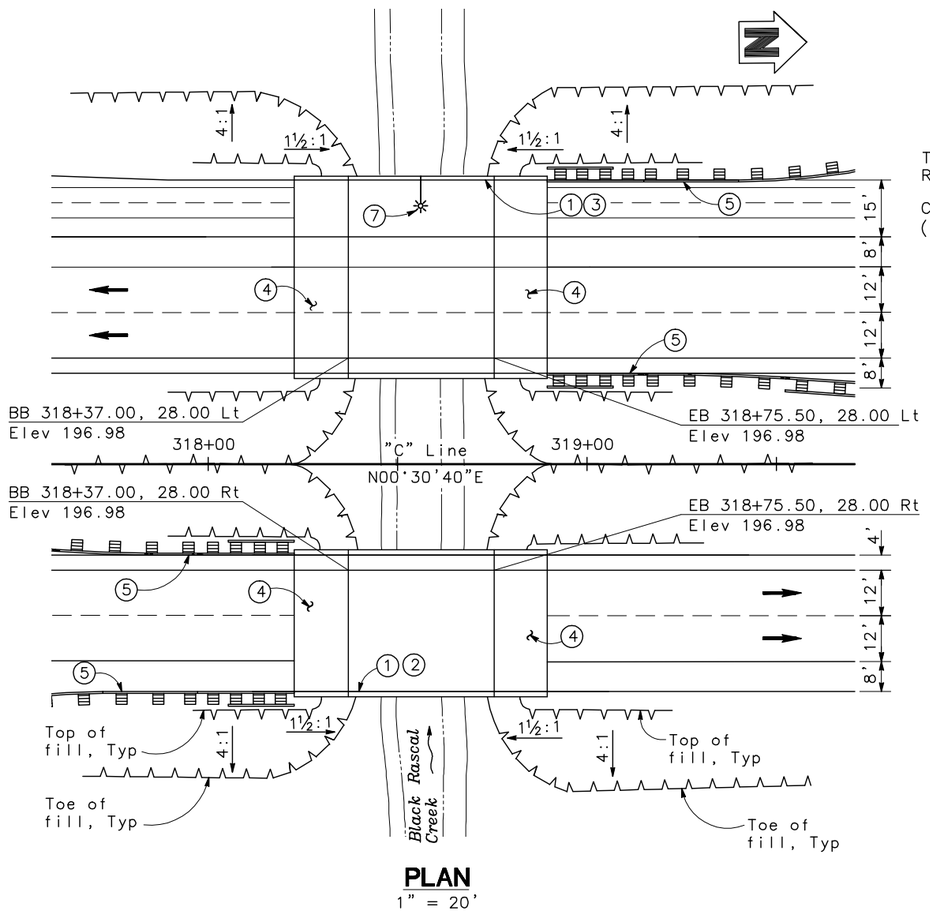
MERCED COUNTY	SHEET 1 OF 1
345 WEST 7th ST	
MERCED, CA 95340	CONTACT:
DAY TIME PHONE (209) 385-7601	STEVEN ROUGH MERCED COUNTY
DATE: 02-17-12	



PROFILE GRADE
NO SCALE



ELEVATION
1" = 20'



PLAN
1" = 20'

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
318	343

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

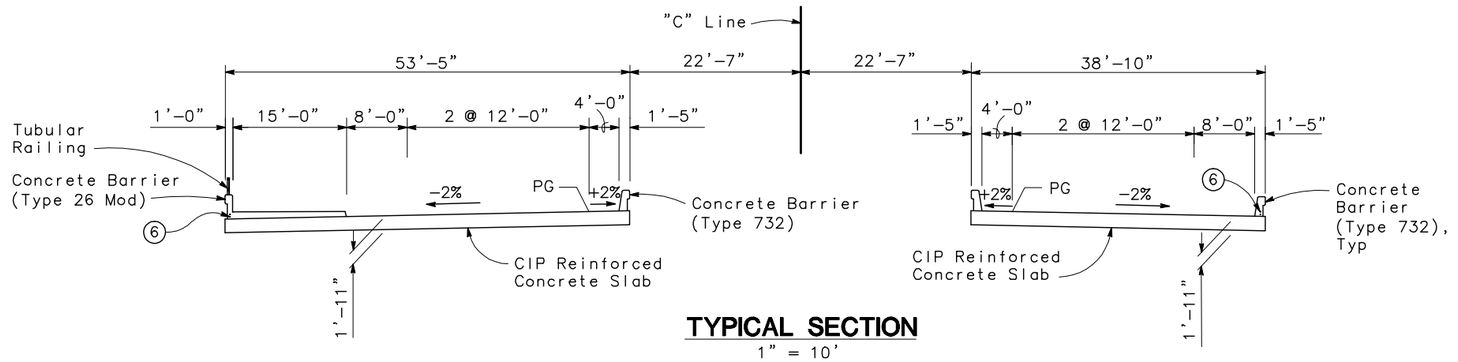
PROFESSIONAL ENGINEER — REGISTERED — PO-KANG CHEN — No. S3112 — Exp 09/30/13 — STRUCTURE — STATE OF CALIFORNIA

MARK THOMAS & COMPANY, INC.
1960 ZANKER ROAD
SAN JOSE, CA 95112

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

QUANTITIES

	LEFT		RIGHT	
STRUCTURE EXCAVATION (BRIDGE)	112	CY	90	CY
STRUCTURE BACKFILL (BRIDGE)	60	CY	50	CY
FURNISH PILING (CLASS 90) (ALTERNATIVE W)	905	LF	644	LF
DRIVE PILE (CLASS 90) (ALTERNATIVE W)	20	EA	16	EA
STRUCTURAL CONCRETE, BRIDGE	215	CY	159	CY
STRUCTURAL CONCRETE APPROACH SLAB TYPE EQ(10)	40	CY	29	CY
JOINT SEAL (MR = ½")	107	LF	78	LF
BAR REINFORCING STEEL (BRIDGE)	32,142	LB	23,875	LB
TUBULAR RAILING	65	LF	N/A	
CONCRETE BARRIER (TYPE 26 Mod)	65	LF	N/A	
CONCRETE BARRIER (TYPE 732)	65	LF	130	LF



TYPICAL SECTION
1" = 10'

NOTES

1. Paint "BLACK RASCAL CREEK BRIDGE"
2. Paint "BR NO. 39C0383R"
3. Paint "BR NO. 39C0383L"
4. Structure Approach Slab Type EQ(10)
5. MBGR, See Road Plans
6. 2-2" Dia electrical conduits
7. Electrolier, see "Electrical Plans".

For "General Notes", see "Deck Contours" sheet.
For "Pile Data Table", see "Foundation Plan" sheet.
For "Hydrologic Summary", see "Foundation Plan" sheet.

INDEX TO PLANS

DESIGN	BY V. SHERBY	CHECKED Z. SIVIGLIA	LRFD DESIGN	LIVE LOADING: HL93 w/ 'LOW BOY' AND PERMIT DESIGN VEHICLE		PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	J. PASSALACQUA PROJECT ENGINEER
DETAILS	BY G. BOYKO	CHECKED Z. SIVIGLIA	LAYOUT	BY V. SHERBY	CHECKED Z. SIVIGLIA		
QUANTITIES	BY P. VULLIET	CHECKED V. SHERBY	SPECIFICATIONS	BY J. PASSALACQUA	PLANS AND SPECS COMPARED P. CHEN		

BRIDGE NO. 39C0383R/L

CAMPUS PARKWAY BRIDGE OVER BLACK RASCAL CREEK
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:
PROJECT NUMBER & PHASE:

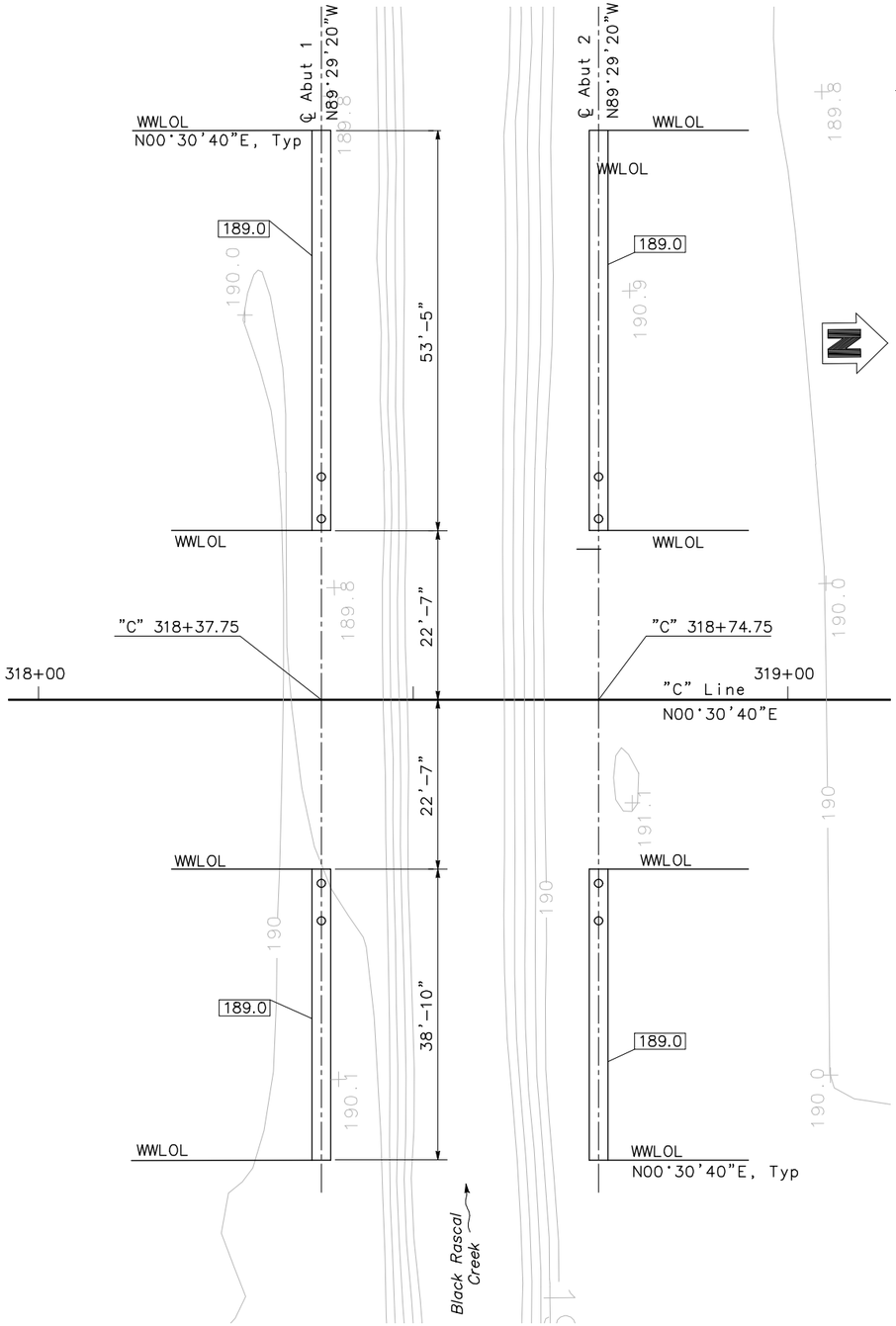
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)					SHEET	OF
11/12/10	~~10/20/11~~	~~11/11/11~~	11/21/11		1	10

FILE => 01 Black Rascal Creek GP.dwg

CONTRACT NO.:

PROJECT ID:



PLAN
1" = 10'

LEGEND

Indicates Bottom of Abutment Elevation

Indicates Pile (not all piles shown)

DATUM

North American Vertical datum of 1988(NAVD88) based on NGS Benchmark D 1420 (PID: HS4524) having an elevation of 182.92'.

BENCH MARKS

Benchmark No. 1 (Point No. 4005)
Set 3/4" iron pipe with plastic plug stamped "MTCo Control" at centerline of dirt farm road north of the irrigation Control.
Elevation 191.00' (NAVD88)

Benchmark No. 2 (Point No. 4006)
Set 3/4" iron pipe with plastic plug stamped "MTCo Control" 12' Southeast of 12" standpipe.
Elevation 190.69' (NAVD88)

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
320	343

REGISTERED CIVIL ENGINEER DATE

PO-KANG CHEN
No. S3112
Exp. 09/30/13
STRUCTURE
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MARK THOMAS & COMPANY, INC.
1960 ZANKER ROAD
SAN JOSE, CA 95112

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

HYDROLOGIC SUMMARY

Drainage Area x.x Square Mile

	Design Flood	Base Flood	Overtopping Flood
Frequency (Years)	____	____	____
Discharge (Cubic Foot per Sec)	____	____	____
Water Surface (Elevation at Bridge)	____	____	____

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation

PILE DATA TABLE - LEFT

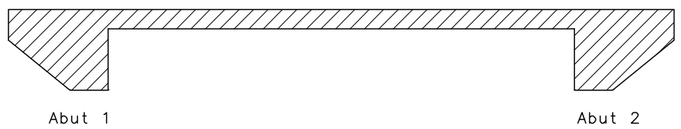
B2-5

Location	Pile Type	Nominal Resistance (kip)		Design Tip Elevations (ft)	Specified Tip Elevations (ft)	Nominal Driving Resistance (kip)
		Compression	Tension			
Abut 1	Class 90 Alt "W"	190	0	146.0	146.0	190
Abut 2	Class 90 Alt "W"	190	0	142.0	142.0	190

PILE DATA TABLE - RIGHT

B2-5

Location	Pile Type	Nominal Resistance (kip)		Design Tip Elevations (Ft)	Specified Tip Elevations (Ft)	Nominal Driving Resistance (kip)
		Compression	Tension			
Abut 1	Class 90 Alt "W"	170	0	149.0	149.0	170
Abut 2	Class 90 Alt "W"	170	0	149.0	149.0	170



Structural Concrete, Bridge

CONCRETE TYPE LIMITS
NO SCALE

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

SCALE: AS SHOWN	VERT.DATUM NAVD 88	HORZ.DATUM NAD 83	DESIGN	BY V. SHERBY	CHECKED Z. SIVIGLIA	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	J. PASSALACQUA PROJECT ENGINEER
PHOTOGRAMMETRY AS OF:	ALIGNMENT TIES		DETAILS	BY G. BOYKO	CHECKED Z. SIVIGLIA		
SURVEYED BY	DRAFTED BY		QUANTITIES	BY P. VULLIET	CHECKED V. SHERBY		
FIELD CHECKED BY	CHECKED BY						

BRIDGE NO. 39C0383R/L

CAMPUS PARKWAY BRIDGE OVER BLACK RASCAL CREEK
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:
PROJECT NUMBER & PHASE:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)					SHEET	OF
~~7/15/08~~	~~10/12/11~~	12/02/11			3	10

FILE => 03 Black Rascal Creek FP.dwg

CONTRACT NO.: PROJECT ID:

V:\Merced County-56-0211B-Campus Pkwy Phase II\CADD\Structures\Black Rascal Creek\03 Black Rascal Creek FP.dwg 12/2/2011 4:03 PM

USERNAME => Gboyko DATE PLOTTED => 12-2-2011 TIME PLOTTED => 4:03 PM

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
326	343

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/13 — GEOTECHNICAL — STATE OF CALIFORNIA

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

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

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
- (PP) Pocket Penetrometer
- (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)
- (TV) Pocket Torvane
- (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)
- (VS) Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 – 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

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.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

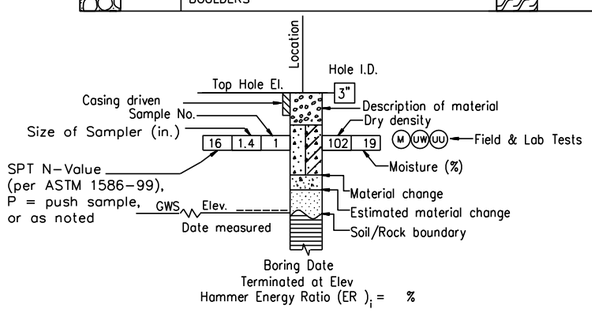
PLASTICITY OF FINE-GRAINED SOILS

Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

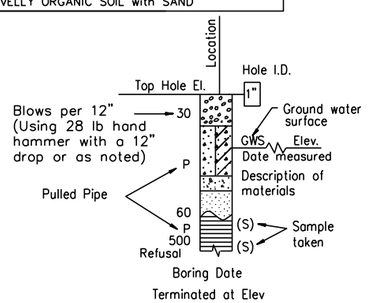
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring 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 5778–95)
□	O	Other

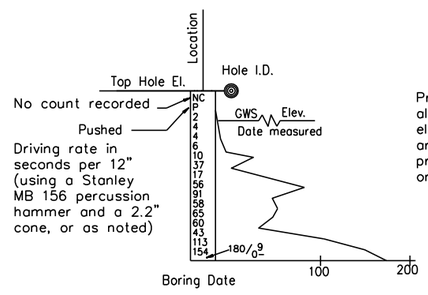
Note: Size in inches.



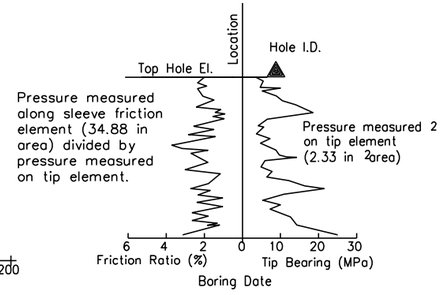
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DESIGN OVERSIGHT	DRAWN BY	L. TRAN	L.S. BHANGOO	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	G. PARIKH
SIGN OFF DATE	CHECKED BY	G. PARIKH	FIELD INVESTIGATION BY: DATE:		PROJECT ENGINEER

BRIDGE NO. 39C0383R/L

CAMPUS PARKWAY BRIDGE
OVER BLACK RASCAL CREEK
LOG OF TEST BORINGS

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
10/17/11	9	10

FILE => $REQUEST

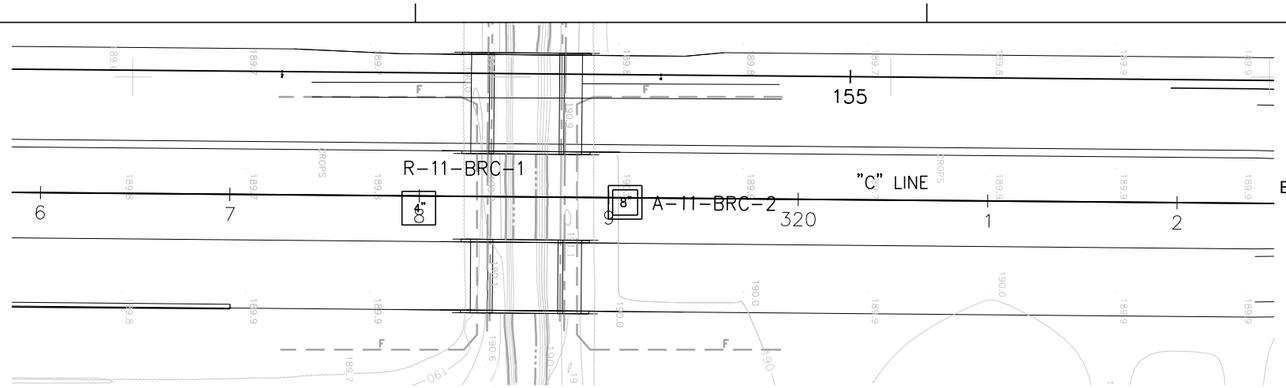
CONTRACT NO.: X PROJECT ID: X

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

Notes:
Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

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

All dimensions are in feet unless otherwise shown



PLAN
1"=40'

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
327	343

REGISTERED CIVIL ENGINEER DATE

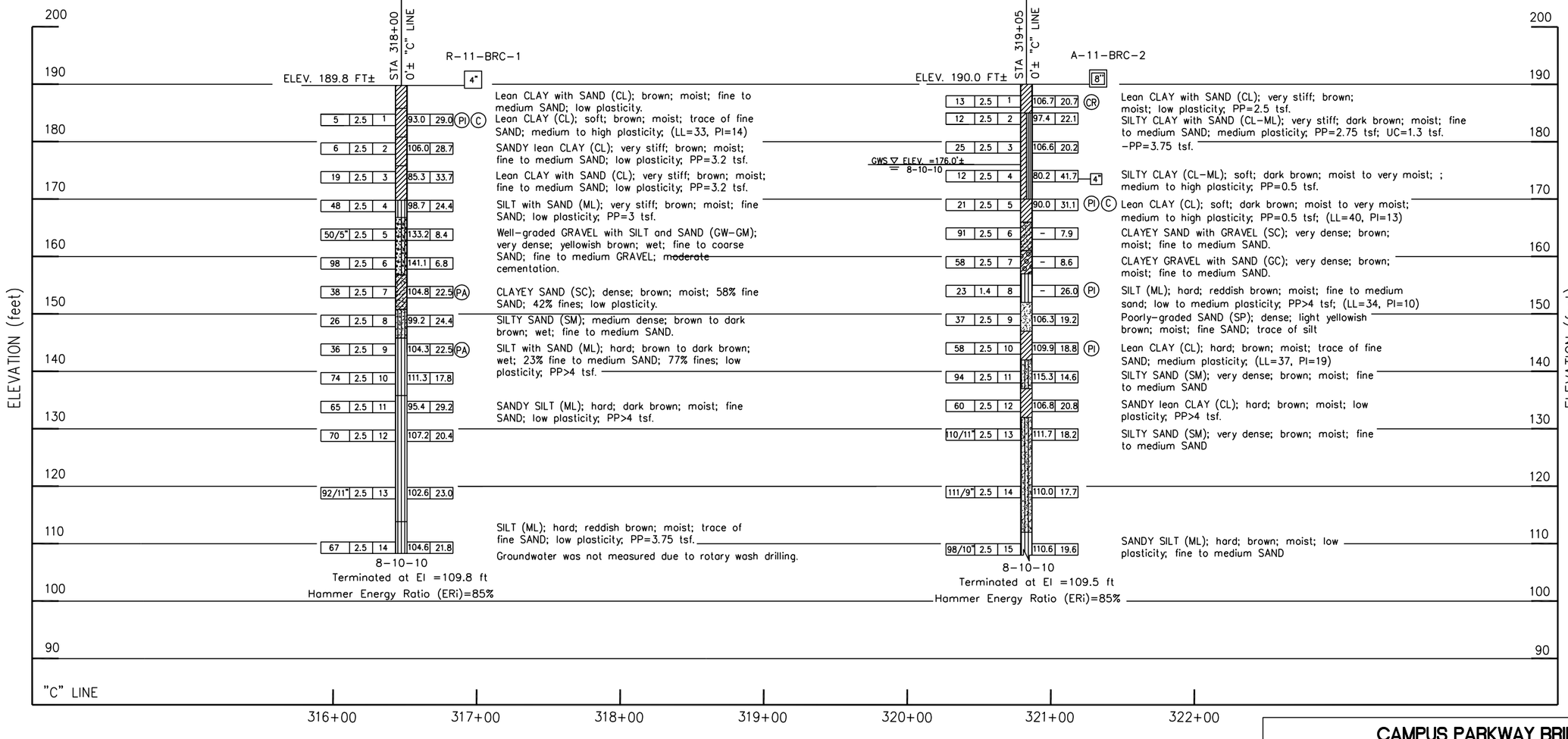
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp.12/31/13
GEOTECHNICAL
STATE OF CALIFORNIA

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 40'

DESIGN OVERSIGHT	DRAWN BY	L. TRAN	L.S. BHANGOO	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	G. PARIKH	BRIDGE NO.	CAMPUS PARKWAY BRIDGE
SIGN OFF DATE	CHECKED BY	G. PARIKH	FIELD INVESTIGATION BY: DATE: AUGUST 2010		PROJECT ENGINEER	39C0383R/L	OVER BLACK RASCAL CREEK
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		UNIT: X PROJECT NUMBER & PHASE: X	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	LOG OF TEST BORINGS

REVISION DATES	SHEET	OF
10/17/11	10	10

CONTRACT NO.: X PROJECT ID: X

FILE => $REQUEST

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
311	343

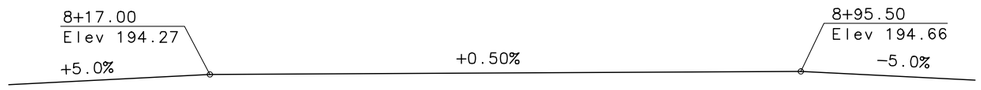
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

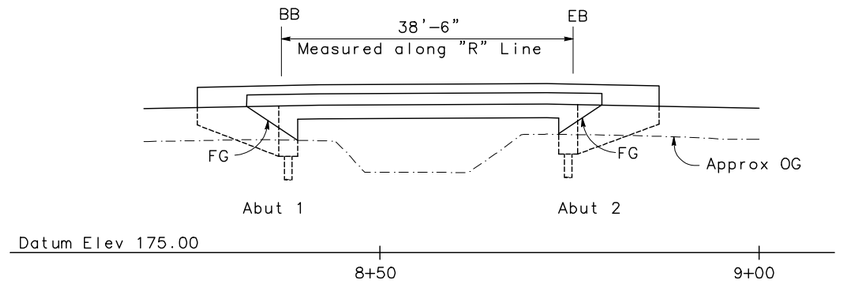
REGISTERED PROFESSIONAL ENGINEER
PO-KANG CHEN
No. S3112
Exp 09/30/13
STRUCTURE
STATE OF CALIFORNIA

MARK THOMAS & COMPANY, INC.
1960 ZANKER ROAD
SAN JOSE, CA 95112

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340



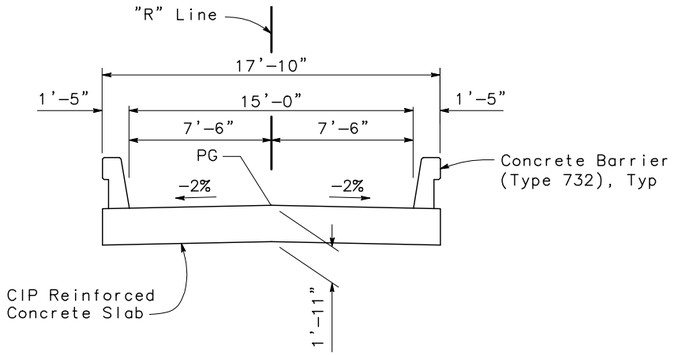
PROFILE GRADE
NO SCALE



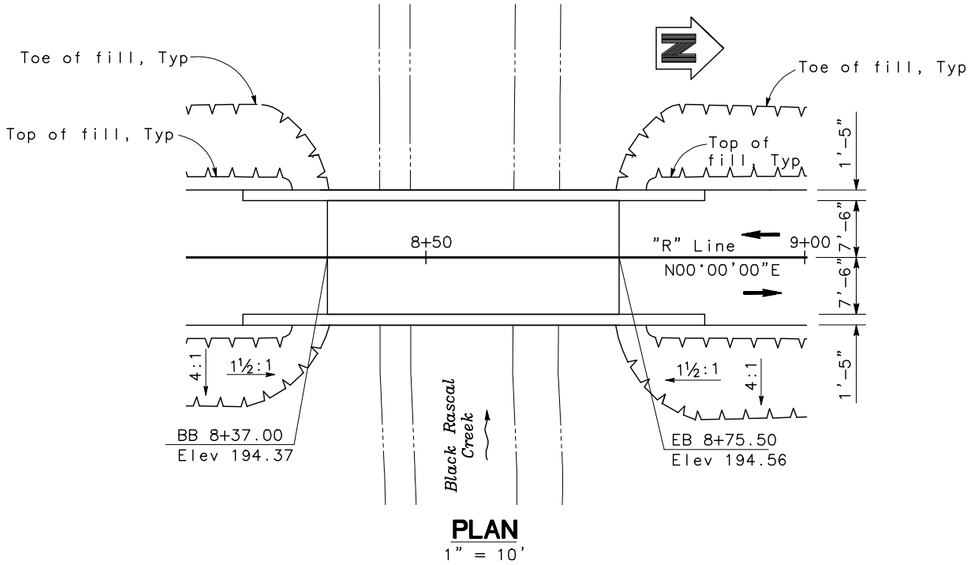
ELEVATION
1" = 10'

QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	49	CY
STRUCTURE BACKFILL (BRIDGE)	29	CY
FURNISH PILING (CLASS 90) (ALTERNATIVE W)	394	LF
DRIVE PILE (CLASS 90) (ALTERNATIVE W)	8	EA
STRUCTURAL CONCRETE, BRIDGE	74	CY
BAR REINFORCING STEEL (BRIDGE)	11,582	LB
CONCRETE BARRIER (TYPE 732)	126	LF



TYPICAL SECTION
1/4" = 1'−0"



PLAN
1" = 10'

INDEX TO PLANS

NOTES

For "General Notes", see "Deck Contours" sheet.
For "Pile Data Table", see "Foundation Plan" sheet.
For "Hydrologic Summary", see "Foundation Plan" sheet.

DESIGN	BY V. SHERBY	CHECKED Z. SIVIGLIA	LRFD DESIGN	LIVE LOADING: HL93 w/ 'LOW BOY' AND PERMIT DESIGN VEHICLE		PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	J. PASSALACQUA PROJECT ENGINEER
DETAILS	BY G. BOYKO	CHECKED Z. SIVIGLIA	LAYOUT	BY J. NETTLETON	CHECKED Z. SIVIGLIA		
QUANTITIES	BY P. VULLIET	CHECKED V. SHERBY	SPECIFICATIONS	BY J. PASSALACQUA	PLANS AND SPECS COMPARED P. CHEN		

PRIVATE ACCESS BRIDGE OVER BLACK RASCAL CREEK
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)
V:\MERCED COUNTY-56-0211B-CAMPUS PKWY PHASE II\CADD\STRUCTURES\BLACK RASCAL CREEK PA BRIDGE\01 BLACK RASCAL CREEK PA_ GP.DWG 12/2/2011 4:06:00 PM

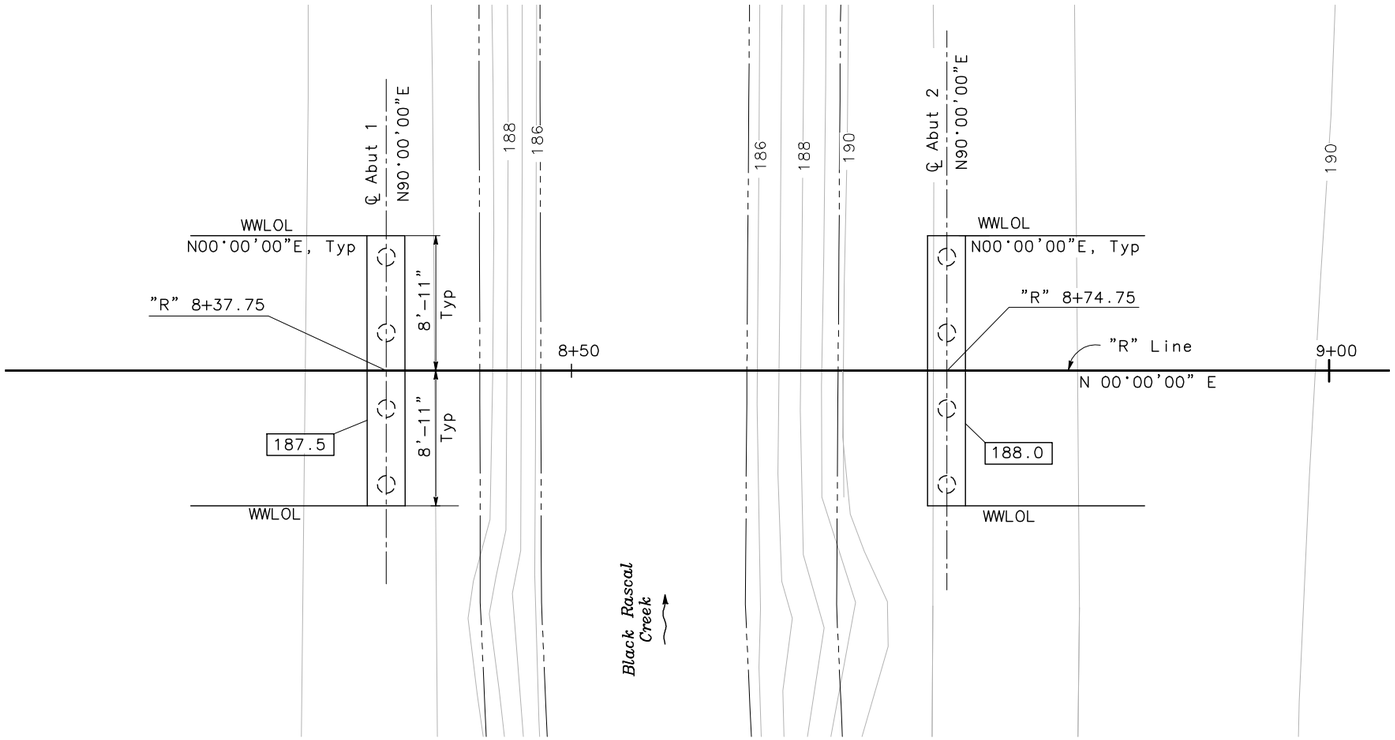
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:
PROJECT NUMBER & PHASE:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)				SHEET	OF
11/~~11~~/10	10/~~17~~/11	10/21/11		1	7

FILE => 01 Black Rascal Creek PA_ GP.dwg
CONTRACT NO.:
PROJECT ID:



PLAN
1" = 5'-0"

BENCH MARKS

Benchmark No. 1 (Point No. 4005)
Set 3/4" iron pipe with plastic plug stamped "MTCo Control" at centerline of dirt farm road north of the irrigation Control.
Elevation 191.00' (NAVD88)

Benchmark No. 2 (Point No. 4006)
Set 3/4" iron pipe with plastic plug stamped "MTCo Control" 12' Southeast of 12" standpipe.
Elevation 190.69' (NAVD88)

DATUM

North American Vertical datum of 1988(NAVD88) based on NGS Benchmark D 1420 (PID: HS4524) having an elevation of 182.92'.

LEGEND

Indicates Bottom of Footing Elevation

Indicates Pile (not all piles shown)

HYDROLOGIC SUMMARY

Drainage Area x.x Square Mile

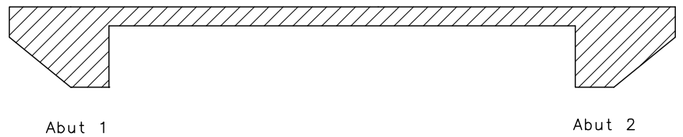
	Design Flood	Base Flood	Overtopping Flood
Frequency (Years)			
Discharge (Cubic Foot per Sec)			
Water Surface (Elevation at Bridge)			

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation

PILE DATA TABLE

B2-5

Location	Pile Type	Nominal Resistance (kip)		Design Tip Elevations (Ft)	Specified Tip Elevations (Ft)	Nominal Driving Resistance (kip)
		Compression	Tension			
Abut 1	Class 90 (Alt "W")	190	0	137.0	137.0	190
Abut 2	Class 90 (Alt "W")	190	0	140.5	140.5	190



Structural Concrete, Bridge

CONCRETE TYPE LIMITS

NO SCALE

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
313	338

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

PO-KANG CHEN
No. S3112
Exp. 09/30/13
STRUCTURE
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

MARK THOMAS & COMPANY, INC.
1960 ZANKER ROAD
SAN JOSE, CA 95112

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

SCALE: AS SHOWN	VERT.DATUM NAVD 88	HORZ.DATUM NAD 83	DESIGN	BY V. SHERBY	CHECKED Z. SIVIGLIA	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	J. PASSALACQUA PROJECT ENGINEER
PHOTOGRAMMETRY AS OF:	ALIGNMENT TIES		DETAILS	BY G. BOYKO	CHECKED Z. SIVIGLIA		
SURVEYED BY	DRAFTED BY		QUANTITIES	BY P. VULLIET	CHECKED		
FIELD CHECKED BY	CHECKED BY						

PRIVATE ACCESS BRIDGE OVER BLACK RASCAL CREEK
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 7/16/10)
V:\MERCED COUNTY-56-0211B-CAMPUS PKWY PHASE II\CADD\STRUCTURES\BLACK RASCAL CREEK PA BRIDGE\03 BLACK RASCAL CREEK PA_FP.DWG 12/2/2011 4:06:40 PM

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:
PROJECT NUMBER & PHASE:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)					SHEET	OF
~~11/12/10~~	10/20/11	11/21/11			3	7

FILE => 03 Black Rascal Creek PA_FP.dwg
CONTRACT NO.:
PROJECT ID:

V:\Merced County-56-0211B-Campus Pkwy Phase II\CADD\Structures\Black Rascal Creek PA Bridge\03 Black Rascal Creek PA_FP.dwg 12/2/2011 4:06 PM

USERNAME => Gboyko DATE PLOTTED => 12-2-2011 TIME PLOTTED => 4:06 PM

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
316	343

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — GARY PARIKH — No. G.E. 666 — Exp. 12/31/13 — GEOTECHNICAL — STATE OF CALIFORNIA

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

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

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
- (PP) Pocket Penetrometer
- (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)
- (TV) Pocket Torvane
- (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)
- (VS) Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 – 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

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.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

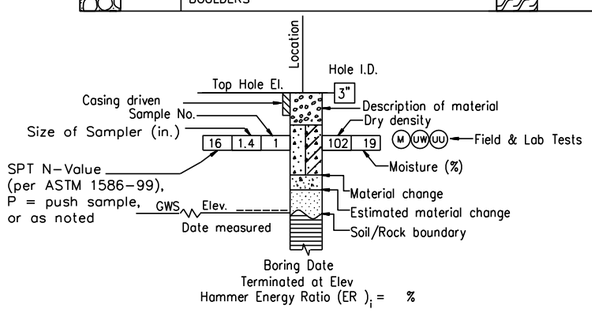
PLASTICITY OF FINE-GRAINED SOILS

Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

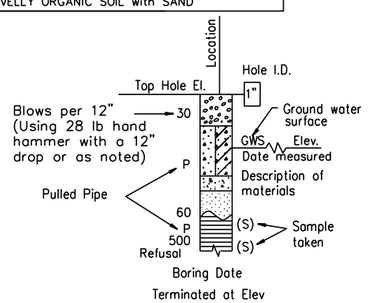
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring 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 5778–95)
□	O	Other

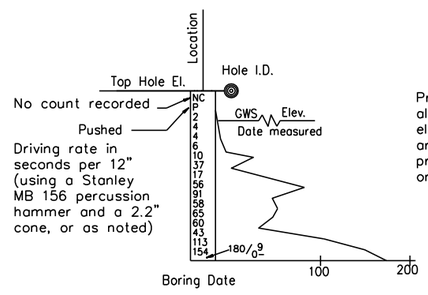
Note: Size in inches.



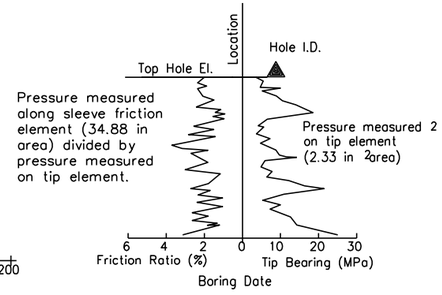
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DESIGN OVERSIGHT	DRAWN BY	L. TRAN	L.S. BHANGOO	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	G. PARIKH	BRIDGE NO.	PRIVATE ACCESS BRIDGE OVER BLACK RASCAL CREEK
SIGN OFF DATE	CHECKED BY	G. PARIKH	FIELD INVESTIGATION BY: DATE:		PROJECT ENGINEER		LOG OF TEST BORINGS

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: X
PROJECT NUMBER & PHASE: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
10/17/11	6	7

FILE => $REQUEST

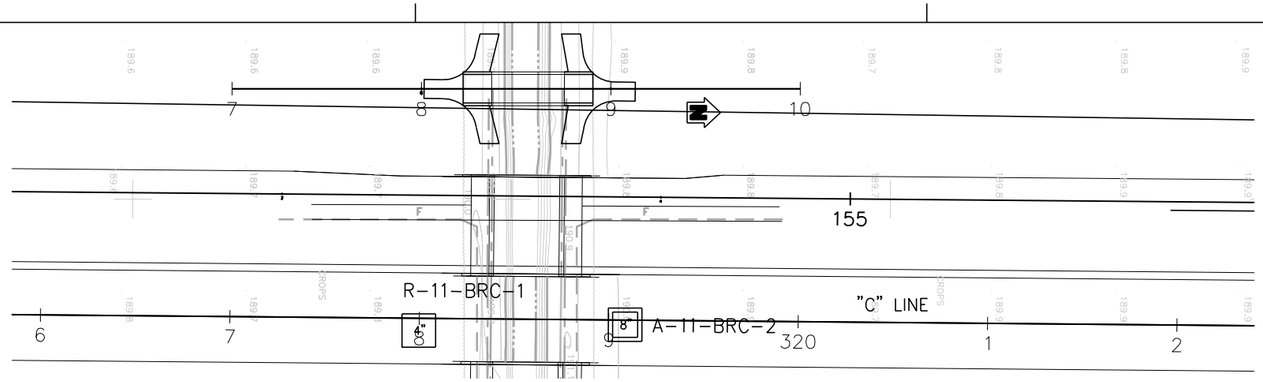
CONTRACT NO.: X PROJECT ID: X

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

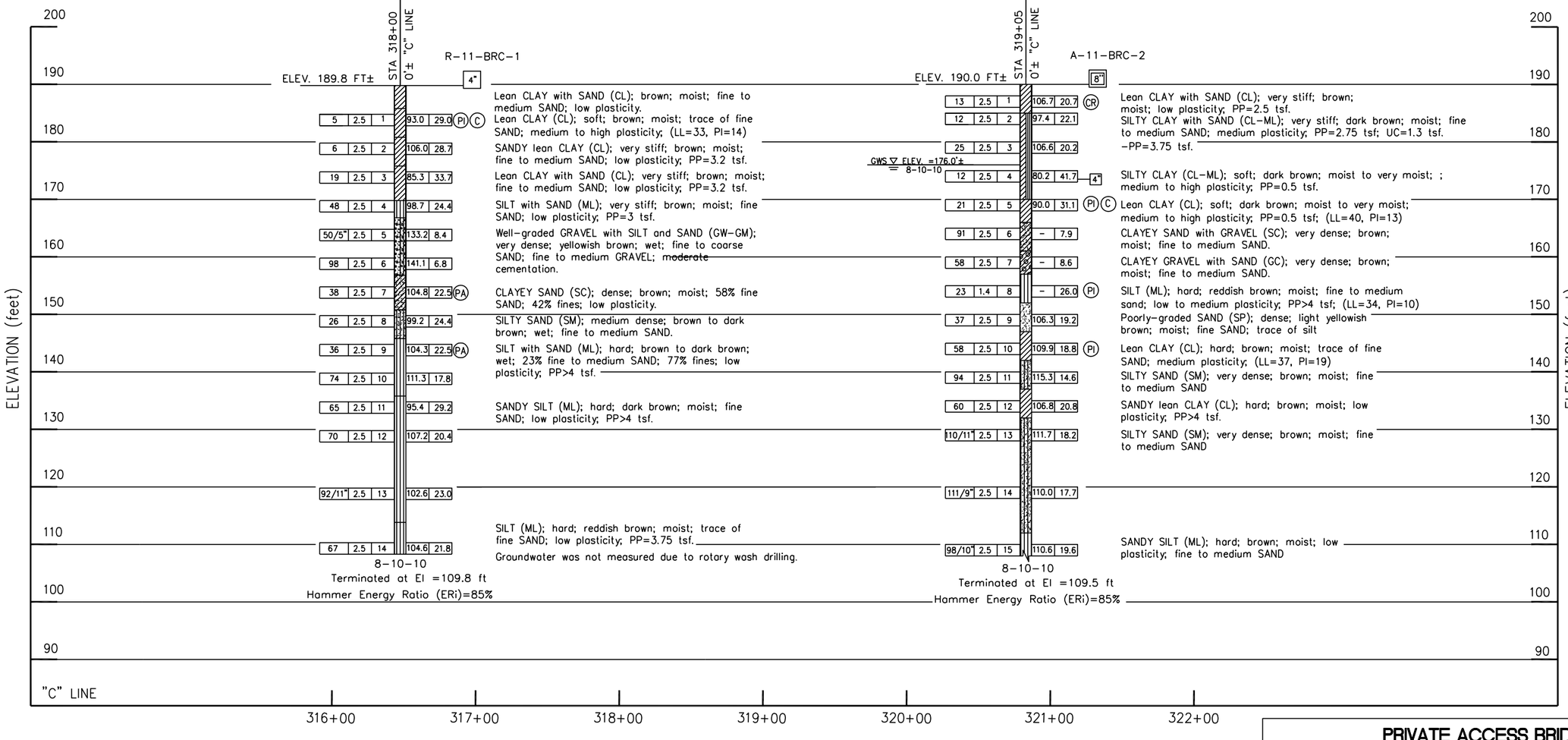
Notes:
Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

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

All dimensions are in feet unless otherwise shown



PLAN
1"=40'



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 40'

County of Merced
Campus Parkway
Black Rascal Creek

SHEET No.	TOTAL SHEETS
317	343

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE COUNTY OF MERCED OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
GARY PARIKH
No. G.E. 666
Exp.12/31/13
GEOTECHNICAL
STATE OF CALIFORNIA

PARIKH CONSULTANTS, INC.
2360 QUME DRIVE, SUITE A
SAN JOSE, CA 95131

COUNTY OF MERCED
DEPARTMENT OF PUBLIC WORKS
345 W. 7TH STREET
MERCED, CA 95340

DESIGN OVERSIGHT	DRAWN BY	L. TRAN	L.S. BHANGOO	PREPARED FOR THE COUNTY OF MERCED DEPARTMENT OF PUBLIC WORKS	G. PARIKH	BRIDGE NO.
SIGN OFF DATE	CHECKED BY	G. PARIKH	FIELD INVESTIGATION BY: DATE: AUGUST 2010		PROJECT ENGINEER	

PRIVATE ACCESS BRIDGE
OVER BLACK RASCAL CREEK
LOG OF TEST BORINGS

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

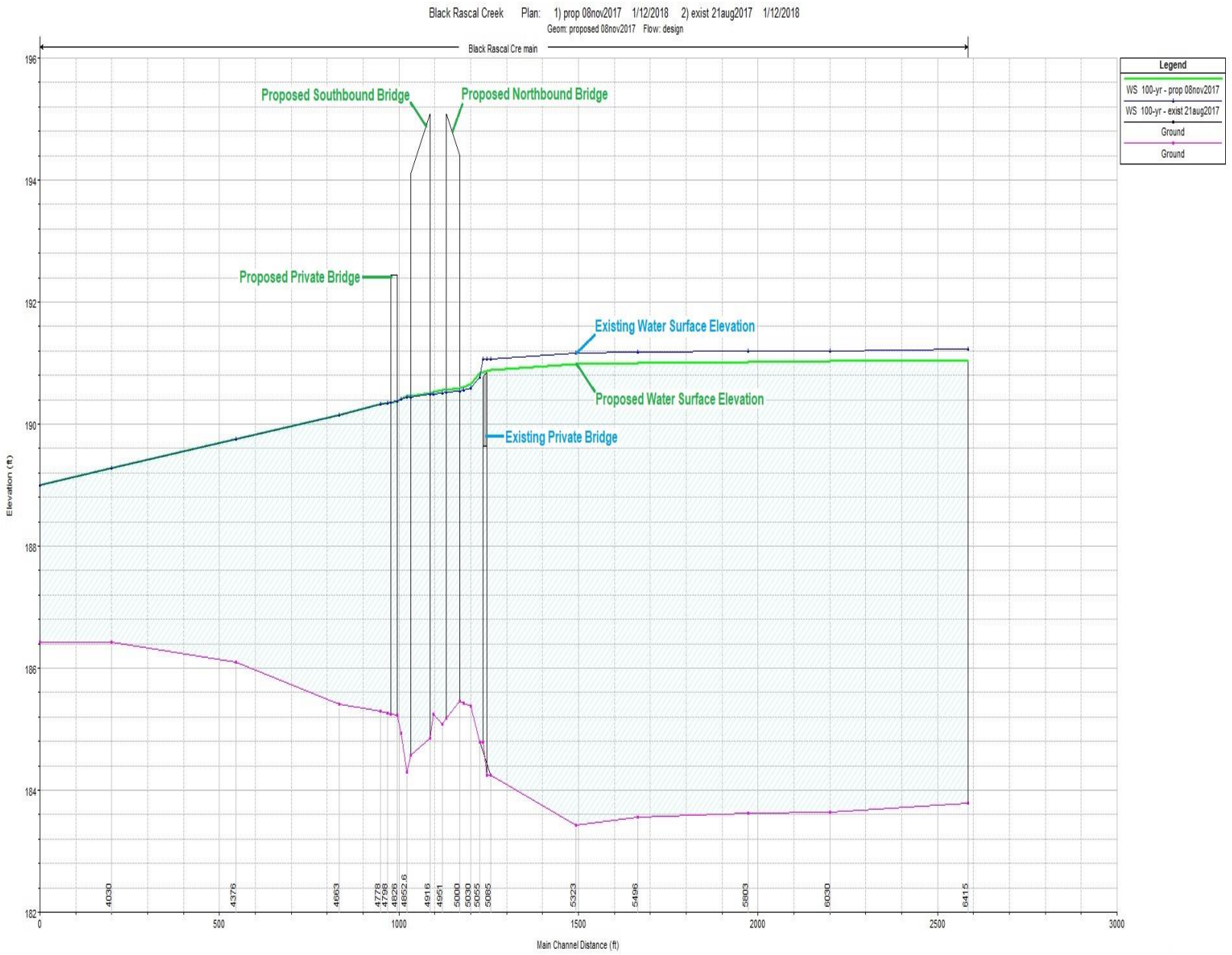
UNIT: X
PROJECT NUMBER & PHASE: X

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES	SHEET	OF
10/17/11	7	7

FILE => $REQUEST
CONTRACT NO.: X PROJECT ID: X

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME



No. 19312 - Attachment D - Hydraulic Profile Information

HEC-RAS River: Black Rascal Cre Reach: main Profile: 100-yr

Reload Data

Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
main	6030	100-yr	prop 08nov2017	320.00	183.64	191.03		191.05	0.000072	1.06	473.78	251.33	0.08
main	6030	100-yr	exist 21aug2017	320.00	183.64	191.20		191.22	0.000061	0.99	516.95	252.59	0.07
main	5803	100-yr	prop 08nov2017	320.00	183.62	191.02		191.03	0.000048	0.82	546.00	202.59	0.07
main	5803	100-yr	exist 21aug2017	320.00	183.62	191.20		191.20	0.000041	0.77	581.09	204.20	0.06
main	5496	100-yr	prop 08nov2017	320.00	183.55	191.00	185.55	191.02	0.000056	0.89	365.14	96.80	0.07
main	5496	100-yr	exist 21aug2017	320.00	183.55	191.18	185.55	191.19	0.000051	0.85	385.43	207.94	0.07
main	5323	100-yr	prop 08nov2017	320.00	183.42	190.99	185.78	191.00	0.000090	0.89	358.06	1585.00	0.08
main	5323	100-yr	exist 21aug2017	320.00	183.42	191.17	185.78	191.18	0.000076	0.85	376.28	1864.11	0.08
main	5085	100-yr	prop 08nov2017	320.00	184.25	190.88	187.38	190.96	0.000419	2.18	146.70	33.41	0.18
main	5085	100-yr	exist 21aug2017	320.00	184.25	191.07	187.38	191.14	0.000368	2.09	153.79	63.08	0.17
main	5055	100-yr	prop 08nov2017	320.00	184.78	190.83	187.91	190.94	0.000868	2.62	122.00	37.78	0.26
main	5055	100-yr	exist 21aug2017	320.00	184.78	190.78	187.91	190.89	0.000893	2.66	120.10	36.99	0.26
main	5030	100-yr	prop 08nov2017	320.00	185.38	190.65	188.61	190.89	0.001872	3.95	82.34	32.61	0.37
main	5030	100-yr	exist 21aug2017	320.00	185.38	190.59	188.61	190.84	0.001970	4.02	80.52	30.61	0.38
main	5010	100-yr	prop 08nov2017	320.00	185.43	190.61	188.59	190.85	0.001900	3.95	82.65	35.91	0.37
main	5010	100-yr	exist 21aug2017	320.00	185.43	190.55	188.59	190.80	0.002006	4.02	81.06	33.83	0.38
main	5000			Bridge									
main	5000	100-yr	exist 21aug2017	320.00	185.46	190.55	188.56	190.78	0.001877	3.89	96.11	109.97	0.37
main	4961	100-yr	exist 21aug2017	320.00	185.18	190.52	188.08	190.70	0.001357	3.49	102.21	505.36	0.32
main	4951	100-yr	prop 08nov2017	320.00	185.09	190.55	187.99	190.73	0.001270	3.43	95.39	654.21	0.31
main	4951	100-yr	exist 21aug2017	320.00	185.09	190.51	187.99	190.68	0.001247	3.38	109.01	592.33	0.30
main	4926	100-yr	prop 08nov2017	320.00	185.24	190.52	188.04	190.70	0.001245	3.40	96.40	749.85	0.30
main	4926	100-yr	exist 21aug2017	320.00	185.24	190.49	188.04	190.65	0.001163	3.28	122.67	707.44	0.29
main	4916			Bridge									
main	4916	100-yr	exist 21aug2017	320.00	184.86	190.49	187.81	190.64	0.001008	3.13	128.14	721.00	0.27
main	4862.6	100-yr	exist 21aug2017	320.00	184.57	190.44	187.67	190.58	0.000945	3.05	131.95	956.60	0.27
main	4852.6	100-yr	prop 08nov2017	320.00	184.29	190.46	187.54	190.61	0.000959	3.11	104.57	1019.68	0.27
main	4852.6	100-yr	exist 21aug2017	320.00	184.29	190.44	187.53	190.57	0.000874	2.96	136.09	985.03	0.26
main	4836	100-yr	prop 08nov2017	320.00	184.93	190.41	187.94	190.58	0.001226	3.37	96.47	941.74	0.30
main	4836	100-yr	exist 21aug2017	320.00	184.93	190.41	187.94	190.55	0.001089	3.18	128.93	940.20	0.28
main	4826			Bridge									
main	4826	100-yr	exist 21aug2017	320.00	185.23	190.38	188.12	190.54	0.001232	3.29	124.44	935.76	0.30
main	4808	100-yr	exist 21aug2017	320.00	185.25	190.36	188.10	190.52	0.001231	3.28	124.40	989.58	0.30
main	4798	100-yr	prop 08nov2017	320.00	185.26	190.34	188.09	190.52	0.001381	3.46	93.74	992.84	0.32
main	4798	100-yr	exist 21aug2017	320.00	185.26	190.35	188.09	190.51	0.001218	3.26	124.70	1016.19	0.30
main	4778	100-yr	prop 08nov2017	320.00	185.29	190.33	188.07	190.48	0.001169	3.21	128.00	969.47	0.30
main	4778	100-yr	exist 21aug2017	320.00	185.29	190.33	188.07	190.48	0.001169	3.21	128.00	969.47	0.30