

**Meeting of the Central Valley Flood Protection Board  
August 26, 2011  
Staff Report – Encroachment Permit  
Stockton East Water District  
Budiselich Dam Fish Passage Project, San Joaquin County**

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**1.0 – ITEM**

Consider approval of Permit No. 18552 (Attachment B)

**2.0 – APPLICANT**

Stockton East Water District

**3.0 – LOCATION**

The project is located in Stockton just east of Highway 99 and south of Waterloo Road. (Stockton Diverting Canal, San Joaquin County, see Attachment A)

**4.0 – DESCRIPTION**

The applicant proposes to construct seven fish passage rock weirs downstream of the Budiselich Flashboard Dam within the Stockton Diverting Canal.

**5.0 – PROJECT ANALYSIS**

The applicant is proposing to construct seven weir drop structures using large boulders downstream of the existing Budiselich Flashboard Dam. The foundation of the dam prevents upstream fish migration during low flows in the Stockton Diverting Canal and ultimately the Calaveras River. The proposed project will provide fish passage by controlling the channel profile.

The seven weirs will be spaced approximately 33-feet apart and will be constructed with 3-feet to 4-feet diameter rock that will be trenched into the existing channel so that very little of the weir(s) protrude above the existing stream channel profile. The first weir will

be approximately 135-feet wide and each weir downstream will be progressively narrower with the final weir having a width of approximately 50-feet (see Attachment C). Each weir will have a 10-foot wide and 1-foot deep low-flow notch to allow fish passage at flows greater than 30 cubic-feet-per-second (cfs). There will be a 1-foot drop between each weir to accommodate fish migration up the Stockton Diverting Canal past the Budiselich Flashboard Dam . Approximately 1,500 cubic yards of material will be removed from the channel to construct the weirs.

Fill between the weirs will be an engineered streambed material mix (1,830 cubic yards) that will be 2-feet to 4.5-feet thick and will consist of a range of different sized material ranging from 9-inch cobble down to sand and silt. Larger rock (15-inch diameter) will be used where the streambed material transitions into the existing low flow bank. The engineered streambed material is designed to prevent any potential channel erosion that could occur due to the minor increases in water velocities due to the project. Approximately 1,800 cubic yards of channel material and 150 cubic yards of existing riprap will be removed from the channel to accommodate the placement of the engineered streambed material. The Stockton Diverting Canal is approximately 300-feet wide at the site of the proposed project. The project conforms to all applicable Title 23 standards.

### **5.1 – Hydraulic Analysis**

A hydraulic analysis was performed using the hydraulic model Hec-Ras, a one-dimensional model developed by the U.S. Army Corps of Engineers. Existing conditions were compared to with-project conditions for several flows to include the 200, 100, and 50-year events.

Results show that the proposed rock weir design increased water surface elevations a maximum of 0.07-feet (0.84-inch) for the 100-year event. The length of channel where the increase in water surface elevation is greater than 0.05-feet is approximately 50-feet. A minimum freeboard of 3.95-feet was maintained for with-project conditions at the 100-year event which is 15,020 cubic feet per second (cfs). The 200-year flow, estimated to be 20,000 cfs, resulted in a water surface elevation increases similar to the 100-year event, with a maximum increase of 0.07-feet (0.84-inch). The levees provide a minimum of 1.91-feet of freeboard in the project area for the 200-year event.

Average water velocities did not change significantly between existing conditions and with- project conditions. The maximum increase in the average velocity over existing conditions was approximately 0.5 feet-per-second (ft/s). The velocity increases occur for approximately 125-feet of channel length in two locations. At the far upstream end of the hydraulic model, the velocity had a decrease of 0.02 ft/s over existing conditions.

Water velocities for existing conditions in the Stockton Diverting Canal range from 5.5 to 6.7 feet-per-second.

The San Joaquin County Flood Control and Water Conservation District requested that the Hec-Ras model be modified to use NGVD 29 as the vertical datum and that the Hec-Ras model results be compared to their existing HEC-2 model of the Stockton Diverting Canal model. Results of that comparison confirmed that the hydraulic effects from the proposed fish passage weirs are localized and considered insignificant.

## **5.2 – Geotechnical Analysis**

The proposed project has no significant geotechnical impacts as the weirs will be constructed in the low flow portion of the channel.

## **5.3 – Additional Staff Analysis**

This proposed project may be the first of several fish passage projects for the Mormon Slough, Stockton Diverting Canal, and Calaveras River channels (below Bellota Weir). Thirty-Seven (37) in-stream structures have been identified by the U.S. Fish and Wildlife Service that potentially impact fish passage in these streams. The identified in-stream structures were ranked from 0 to 7, with 7 representing the greatest fish passage impairment. Ten (10) of the identified in-stream structures were ranked at 5 or above; Budiselich Dam was ranked as a 5. The remaining in-stream structures may be replaced or retrofitted in the future to improve fish passage conditions in these waterways.

## **6.0 – AGENCY COMMENTS AND ENDORSEMENTS**

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

- The U.S. Army Corps of Engineers 208.10 comment letter has been received for this application and it will be incorporated into the permit as Exhibit A.
- The San Joaquin County Flood Control and Water Conservation District endorsed the proposed project by letter dated July 21, 2011. The letter will be incorporated into the permit as Exhibit B.

## **7.0 – CEQA ANALYSIS**

Board staff has prepared the following CEQA Findings:

The Board, acting as a responsible agency under CEQA, has independently reviewed the Draft Programmatic Environmental Assessment/Initial Study/Mitigated Negative Declaration (DPEA/IS/MND, July 2009), Final Programmatic Environmental Assessment/Initial Study/Mitigated Negative Declaration (FPEA/IS/MND, September 2009), and the Mitigation Monitoring and Reporting Plan (MMRP) for the Lower Calaveras River Anadromous Fish Barriers Improvement Project (SCH No. 2009082001) prepared by the lead agency, the Stockton East Water District. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2011/08-26-2011agenda.cfm> under a link for this agenda item.

The Stockton East Water District determined that the project would not have a significant effect on the environment and adopted the Mitigated Negative Declaration at the Board of Director's Meeting on September 15, 2009. The MMRP was adopted by the Board of Director's Meeting on November 17, 2009. Subsequently, the Stockton East Water District filed a Notice of Determination with the San Joaquin County Clerk on September 18, 2009. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's Mitigation Monitoring and Reporting Plan and address impacts to air quality, biological resources, cultural resources, geology, hazards and hazardous materials, hydrology and water quality, transportation and traffic, and utilities and public service. The description of the mitigation measures are further described in the adopted Mitigation Monitoring and Reporting Plan.

## **8.0 – SECTION 8610.5 CONSIDERATIONS**

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

The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department 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.

3. Effects of the decision on the entire State Plan of Flood Control:

Effects to the State Plan of Flood Control should be minimal as the hydraulic impacts from the proposed project are localized and considered insignificant.

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

Effects to the proposed project from reasonable projected future events should be minimal as the proposed project will be constructed in the channel of the Stockton Diverting Canal and hydraulic impacts are considered insignificant.

## **9.0 – STAFF RECOMMENDATION**

Staff recommends that the Board adopt the CEQA Findings, approve Permit No. 18552 and direct the Executive Officer to take the necessary actions to execute the permit and to file a Notice of Determination with the State Clearinghouse.

## **10.0 – LIST OF ATTACHMENTS**

- A. Location Maps and Photos
- B. Draft Permit No. 18552
- C. Design Drawings

Design Review:	Gary W. Lemon P.E.
Hydraulic Review:	Sungho Lee Ph.D.
Environmental Review:	Andrea Mauro
Document Review:	Mitra Emami P.E., Len Marino P.E.



# BUDISELICH FLASHBOARD DAM FISH PASSAGE IMPROVEMENT PROJECT PRELIMINARY DESIGN



**VICINITY MAP**  
NOT TO SCALE

**SHEET INDEX**

- C1 COVER SHEET
- C2 EXISTING CONDITIONS BASEMAP
- C3 CHANNEL PLAN & PROFILE
- C4 DETAILS
- C5 SECTIONS 1 OF 2
- C6 SECTIONS 2 OF 2

**ABBREVIATIONS**

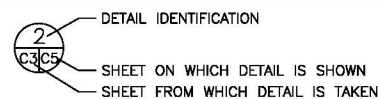
- |     |                               |      |                       |
|-----|-------------------------------|------|-----------------------|
| AB  | AGGREGATE BASE                | L    | LENGTH                |
| APN | ASSESSOR'S PARCEL NUMBER      | LF   | LINEAR FEET           |
| BMP | BEST MANAGEMENT PRACTICE      | MIN  | MINIMUM               |
| CMP | CORRUGATED METAL PIPE         | (N)  | NEW                   |
| CC  | CONCRETE                      | NTS  | NOT TO SCALE          |
| CY  | CUBIC YARD                    | R    | RADIUS                |
| DIA | DIAMETER                      | RD   | ROAD                  |
| (E) | EXISTING                      | RSP  | ROCK SLOPE PROTECTION |
| EG  | EXISTING GROUND               | SHT  | SHEET                 |
| EL  | ELEVATION                     | STA  | STATION               |
| EP  | EDGE OF PAVEMENT              | TBD  | TO BE DETERMINED      |
| ESM | ENGINEERED STREAMBED MATERIAL | TEMP | TEMPORARY             |
| FG  | FINISHED GRADE                | TYP  | TYPICAL               |
| H   | HORIZONTAL                    | V    | VERTICAL              |
| ID  | INSIDE DIAMETER               |      |                       |

**NOTES**

PLANS PREPARED BY:  
CALIFORNIA DEPARTMENT OF WATER  
RESOURCES, FISH PASSAGE IMPROVEMENT  
PROGRAM

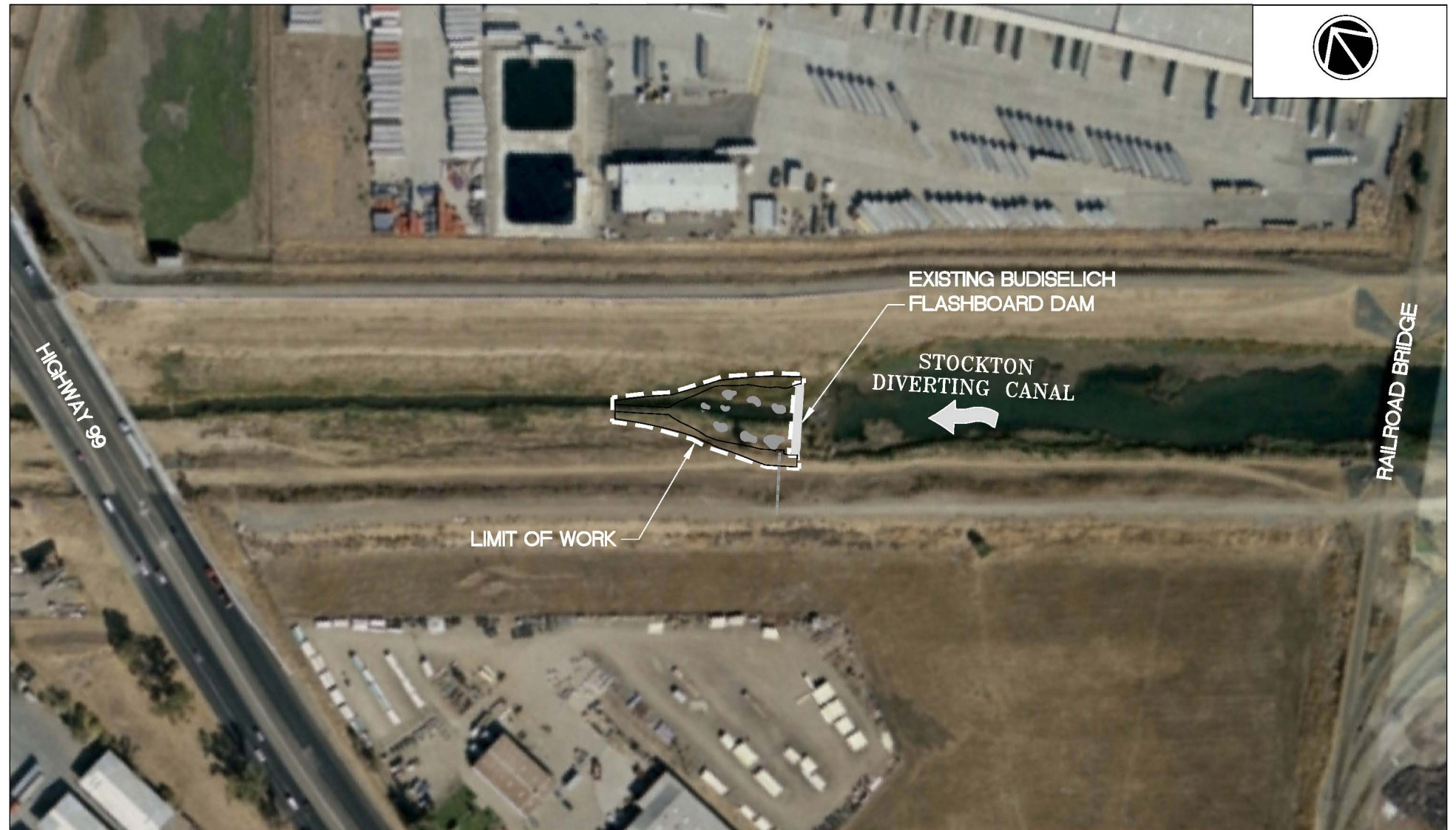
IN PARTNERSHIP WITH:  
STOCKTON EAST WATER DISTRICT

**DETAIL REFERENCE CONVENTION**



**LEGEND**

- EXISTING GROUND CONTOURS 498 500 502
- FINISHED GRADE CONTOURS 498 500 502
- SURVEYED POINT 488.68 (DESCRIPTION)



**PROJECT OVERVIEW**

SCALE: 1" = 100'  
0 50' 100' 200'

REVISION NO.	DATE	DESCRIPTION



CALIFORNIA DEPARTMENT OF WATER  
RESOURCES  
**FISH PASSAGE IMPROVEMENT PROGRAM**  
901 P STREET, SACRAMENTO, CA  
WWW.WATER.CA.GOV/FISHPASSAGE

COVER SHEET  
**BUDISELICH FLASHBOARD DAM  
FISH PASSAGE IMPROVEMENT PROJECT  
PRELIMINARY DESIGN**

**PRELIMINARY  
NOT FOR CONSTRUCTION**  
BAR IS ONE INCH  
ON ORIGINAL  
DRAWINGS; ADJUST  
SCALE FOR  
REDUCED PLOTS  
DATE: 06.08.2011  
DRAWN BY: CH  
CHECKED BY: RB & TG  
SHEET: **C1**

Z:\FishPassage\Projects\CAD\C3020111\Budiselich\Budiselich\_Concept1\_Plan\_06-2011.dwg



**Budiselich Photos**



Figure 1. Aerial photo of Budiselich Dam depicting current conditions with flashboards installed. The rock weir structures will be downstream of the flashboard dam (top left).





Figure 2. Photo depicting Budiselich Flashboard Dam (flashboards not installed). Photo taken from west bank looking east.



Figure 3. Photo depicting current conditions, looking downstream from flashboard dam





Figure 4. Photo of Budiselich Flashboard Dam, looking upstream with the flashboards not installed.

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**DRAFT**

STATE OF CALIFORNIA  
THE RESOURCES AGENCY  
**THE CENTRAL VALLEY FLOOD PROTECTION BOARD**

**PERMIT NO. 18552 BD**

**This Permit is issued to:**

Stockton East Water District  
PO Box 5157  
Stockton, California 95205

To place seven rock weirs (approximately 600 cubic yards total), placed approximately 33 feet apart, extending approximately 275 feet downstream of the Budiselich Flashboard Dam within the Stockton Diverting Canal. The project is located in Stockton just east of Highway 99 and south of Waterloo Road (Section 31, T2N, R7E, MDB&M, San Joaquin County Flood Control and Water Conservation District, Stockton Diverting Canal, San Joaquin 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. 18552 BD**

**THIRTEEN:** The permittee is advised to contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

**FOURTEEN:** The mitigation measures approved by the CEQA lead agency and the permittee are found in its Mitigation and Monitoring Reporting Program (MMRP) adopted by the CEQA lead agency. The permittee shall implement all such mitigation measures.

**FIFTEEN:** Submitted drawings and specifications shall be stamped and signed by a registered engineer and a copy sent to the Central Valley Flood Protection Board prior to the commencement of work.

**SIXTEEN:** All work approved by this permit shall be in accordance with the submitted drawings and specifications 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 Central Valley Flood Protection Board.

**SEVENTEEN:** The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection 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 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.

**EIGHTEEN:** The permittee shall defend, indemnify, and hold the Central Valley Flood Protection

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 Central Valley Flood Protection 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.

NINETEEN: The Central Valley Flood Protection Board, Department of Water Resources, and San Joaquin County Flood Control and Water Conservation District shall not be held liable for any damages to the permitted encroachment(s) resulting from flood fight, operation, maintenance, inspection, or emergency repair.

TWENTY: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY-ONE: The permittee shall contact the Department of Water Resources by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

TWENTY-TWO: The permittee shall be responsible for the repair of any damages that may occur to the project levees and/or any other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-THREE: Backfill material for excavations shall be placed in 4- to 6-inch layers and compacted to at least the density of the adjacent, firm, undisturbed material.

TWENTY-FOUR: All debris generated by this project shall be disposed of outside the Stockton Diverting Canal.

TWENTY-FIVE: Upon completion of the project, the permittee shall submit as-built drawings to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite LL30, Sacramento, California 95821.

TWENTY-SIX: After each period of high water, trees, brush, sediment, and other debris shall be kept cleared from the fish passage weirs and disposed of outside the floodway to maintain the capacity and flowage area of the Stockton Diverting Canal.

TWENTY-SEVEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources, San Joaquin County Flood Control and Water Conservation District, or any other agency responsible for maintenance.

TWENTY-EIGHT: If the installation of the fish passage weirs results in any adverse hydraulic impacts or scouring to the Stockton Diverting Canal the permittee shall provide appropriate mitigation acceptable to the Central Valley Flood Protection Board prior to the next flood season.

TWENTY-NINE: 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 Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

THIRTY: 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 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 damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

THIRTY-ONE: 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 Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

THIRTY-TWO: The permittee shall comply with all conditions set forth in the letter from the Department of the Army dated August 26, 2010, which is attached to this permit as Exhibit A and is incorporated by reference.

THIRTY-THREE: The permittee shall comply with all conditions set forth in the letter from the San Joaquin County Flood Control and Water Conservation District dated July 21, 2011, which is attached to this permit as Exhibit B and is incorporated by reference.



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 J Street  
Sacramento, California 95814-2922

Flood Protection and Navigation Section (18552)

**'AUG 26 2010**

Mr. Jay Punia, Executive Officer  
Central Valley Flood Protection Board  
3310 El Camino Avenue, Room 151  
Sacramento, California 95821

Dear Mr. Punia:

We have reviewed a permit application by Stockton East Water District (application number 18552). This project includes placing seven rock weirs (approximately 600 cubic yards total) within the Stockton Diverting Canal. This project is located in Stockton, just upstream from Highway 99, within the Stockton Diverting Canal, at 37.9805°N 121.2469°W NAD83, San Joaquin County, California.


The District Engineer has no objection to approval of this application by your Board from a flood control standpoint, subject to the following conditions:

- a. That the proposed work shall not interfere with the integrity or hydraulic capacity of the flood damage reduction project; easement access; or maintenance, inspection, and flood fighting procedures.
- b. That in the event erosion occurs at the site, the applicant shall repair the eroded areas and place adequate bank protection on the riverbank to prevent future erosion.
- c. That the proposed work shall not be performed during the flood season of November 1 to April 15, unless otherwise approved in writing by your Board.

A file (SPK-2009-01333) has been opened because a Section 10 and/or Section 404 permit may be required. Please advise the applicant to contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Division, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250.

A copy of this letter is being furnished to the acting chief of Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite LL30, Sacramento, CA, 95821.

Sincerely,

  
Michael D. Mahoney, P.E.  
Chief, Construction-Operations Division

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SAN JOAQUIN COUNTY

**FLOOD CONTROL & WATER  
CONSERVATION DISTRICT**P. O. BOX 1810  
1810 EAST HAZELTON AVENUE  
STOCKTON, CALIFORNIA 95201  
TELEPHONE (209) 468-3000  
FAX NO. (209) 468-2999THOMAS M. GAU  
DIRECTOR OF PUBLIC WORKS  
FLOOD CONTROL ENGINEER

July 19, 2011

Central Valley Flood Protection Board  
3310 El Camino Avenue  
Sacramento, California 95821

Attention: Floodway Protection Section

SUBJECT: CENTRAL VALLEY FLOOD PROTECTION BOARD PERMIT APPLICATION  
NO. 18552 FOR STOCKTON EAST WATER DISTRICT, ASSESSOR'S PARCEL  
NO. 101-210-06, IN THE STOCKTON DIVERTING CANAL, EAST OF STATE  
HIGHWAY ROUTE 99

Gentlemen:

Reference is made to the Central Valley Flood Protection Board Permit Application of the Stockton East Water District to construct a fish passage improvement project at an existing flashboard dam structure (Budiselich Flashboard Dam) in the Stockton Diverting Canal, River Mile 2.1. Improvements include retrofitting the existing dam with a roughened channel fish way, which will consist of six boulder weirs that extend approximately 100 feet downstream of the dam. Weirs will be spaced approximately 20 feet apart beginning at the dam with a one-foot elevation differential for each successive weir to provide a five percent channel slope. Angled riprap and rounded cobble will be used to build up the canal bed grade in the low flow portion of the channel.

The project is located in the Stockton Diverting Canal approximately 1,000 feet upstream of State Highway Route 99, in San Joaquin County, Section 31, Township 2 North, Range 7 East, Mount Diablo Base and Meridian, adjacent to property identified as San Joaquin County Assessor's Parcel No. 101-210-06.

The San Joaquin County Flood Control and Water Conservation District (District) has reviewed the Central Valley Flood Protection Board Permit Application of Stockton East Water District and has the following comments:

**STANDARD CONDITIONS**

1. The District shall not be responsible for the maintenance of the facilities specified in this Permit.
2. The District shall not be held responsible for any damages to the permitted encroachments due to the District's operation, maintenance, flood fight, inspection, or emergency repairs of the Stockton Diverting Canal.
3. The Permittee or Successors-In-Interest shall be responsible for the modification or possible removal of the facilities, as requested by the District, if required for any future flood control plans at the sole cost and expense of the Permittee or Successors-In-Interest.

4. The Permittee shall be liable for any damage to the Stockton Diverting Canal that may occur as a result of this project.
5. The project shall be constructed in accordance with the plans dated June 8, 2011 submitted with the application dated June 30, 2011. Any revisions to the project will require submittal of revised plans to the District for review and approval.
6. No work shall be allowed in the Stockton Diverting Canal between November 1st and April 15th.
7. The Permittee or Successors-In-Interest shall keep the encroachments properly maintained in accordance with applicable current or future local, State, and Federal standards.

**SPECIAL CONDITIONS**

1. Upon completion of the project, the Permittee or Successors-In-Interest shall submit a hard copy and an electronic copy in AutoCAD and pdf format of the as-built drawings to:

San Joaquin County Flood Control and Water Conservation District  
1810 East Hazelton Avenue  
Stockton, California 95205, and

San Joaquin Area Flood Control Agency  
22 East Weber Avenue  
Stockton, California 95202

If there are any questions regarding these comments, please contact me at (209) 953-7617.

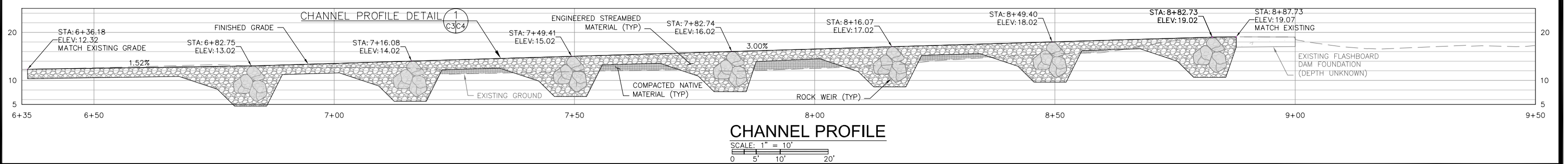
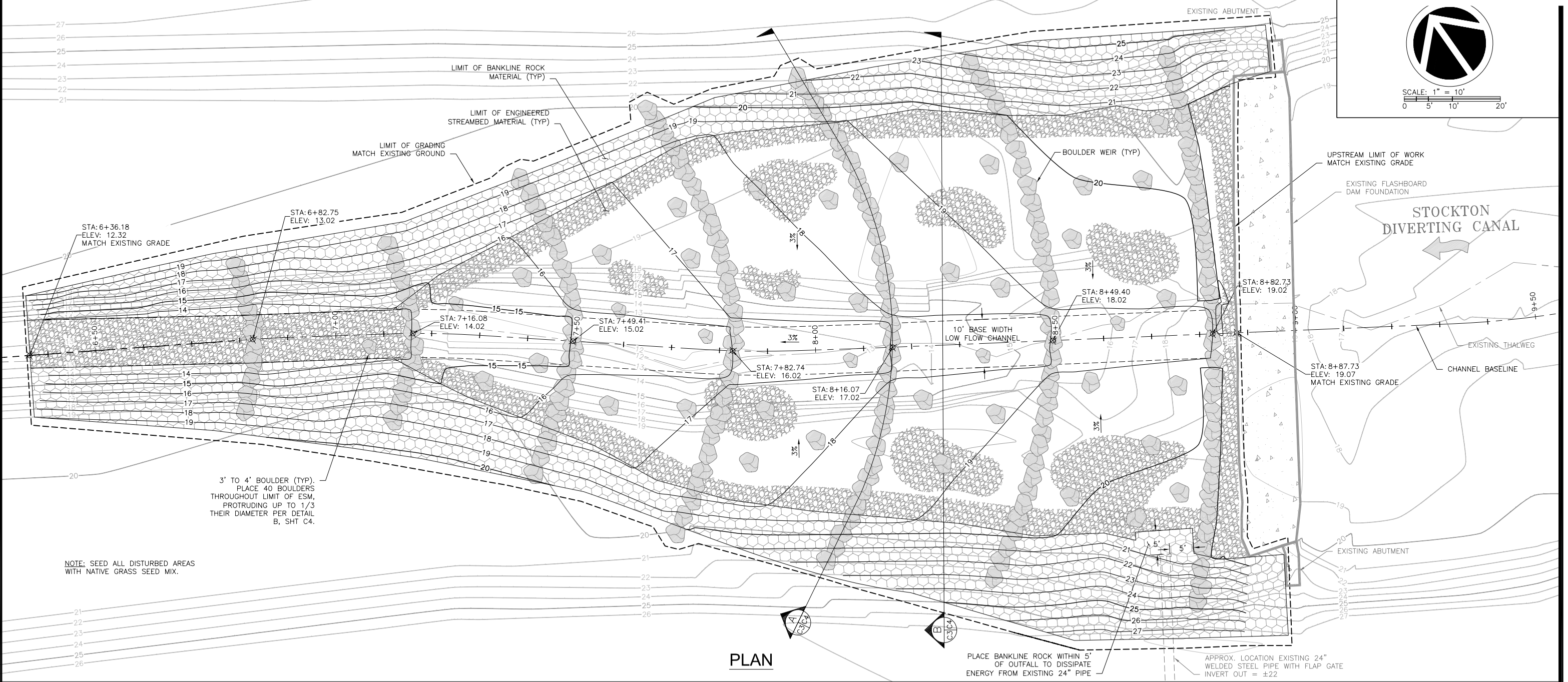
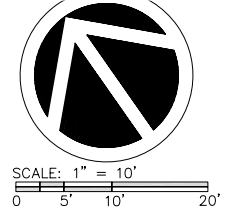
Sincerely,



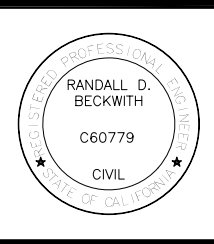
JOHN I. MAGUIRE, P.E.  
Engineering Services Manager

JIM:SS:to  
FM-11G023-T1





REVISION NO.	DATE	DESCRIPTION



**CALIFORNIA DEPARTMENT OF WATER RESOURCES**

**FISH PASSAGE IMPROVEMENT PROGRAM**

901 P STREET, SACRAMENTO, CA  
WWW.WATER.CA.GOV/FISHPASSAGE

**CHANNEL PLAN & PROFILE**

**BUDISELICH FLASHBOARD DAM FISH PASSAGE IMPROVEMENT PROJECT**

**PRELIMINARY DESIGN**

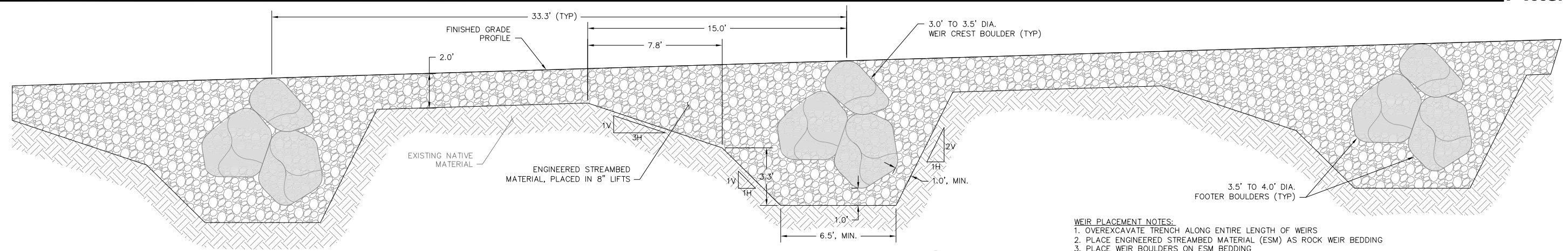
**PRELIMINARY NOT FOR CONSTRUCTION**

BAR IS ONE INCH ON ORIGINAL DRAWINGS; ADJUST SCALE FOR REDUCED PLOTS

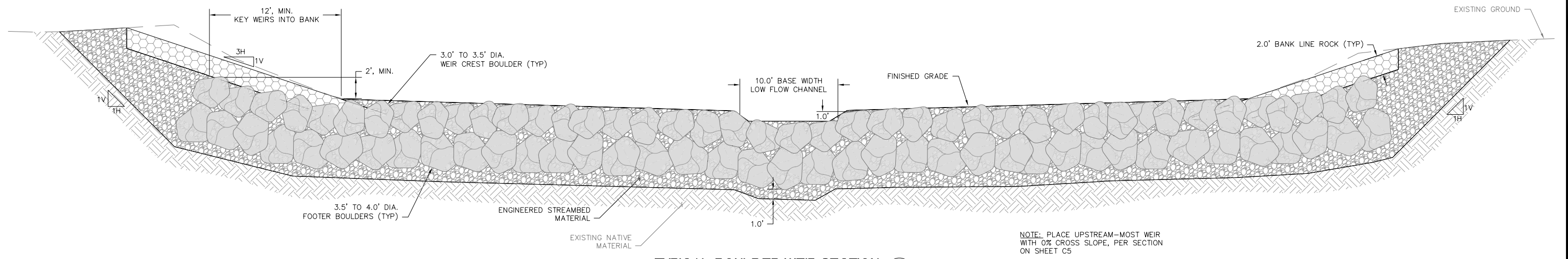
DATE: 06.08.2011

DRAWN BY: CH  
CHECKED BY: RB & TG

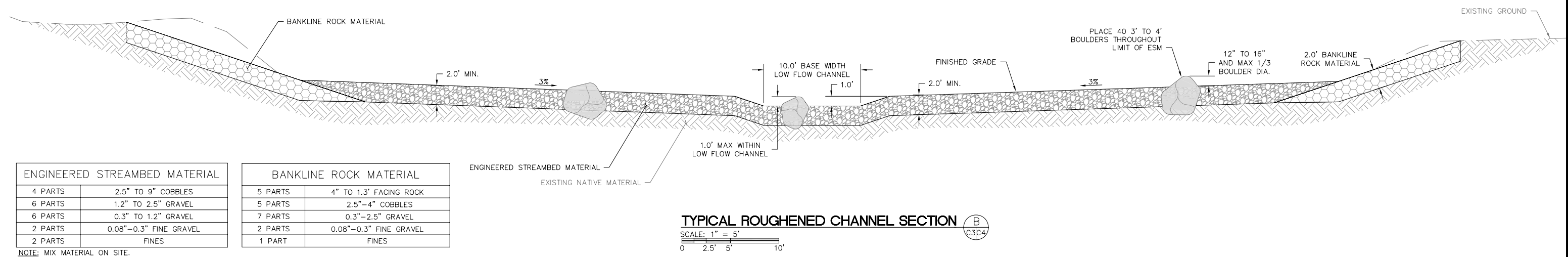
SHEET: **C3**



- WEIR PLACEMENT NOTES:**
1. OVEREXCAVATE TRENCH ALONG ENTIRE LENGTH OF WEIRS
  2. PLACE ENGINEERED STREAMBED MATERIAL (ESM) AS ROCK WEIR BEDDING
  3. PLACE WEIR BOULDERS ON ESM BEDDING
  4. BACKFILL VOIDS BETWEEN BOULDERS WITH ESM
  5. WASH ESM WITH WATER TO FILL VOIDS BETWEEN WEIR BOULDERS AND WITHIN ESM
  6. PLACE ESM TO FINISHED GRADE
  7. WASH ESM WITH WATER TO FILL VOIDS WITHIN ESM AND ENSURE ABOVE GRADE FLOW



NOTE: PLACE UPSTREAM-MOST WEIR WITH 0% CROSS SLOPE, PER SECTION ON SHEET C5



**ENGINEERED STREAMBED MATERIAL**

4 PARTS	2.5" TO 9" COBBLES
6 PARTS	1.2" TO 2.5" GRAVEL
6 PARTS	0.3" TO 1.2" GRAVEL
2 PARTS	0.08"-0.3" FINE GRAVEL
2 PARTS	FINES

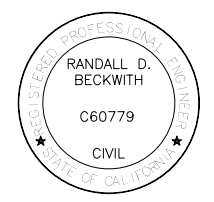
**BANKLINE ROCK MATERIAL**

5 PARTS	4" TO 1.3' FACING ROCK
5 PARTS	2.5"-4" COBBLES
7 PARTS	0.3"-2.5" GRAVEL
2 PARTS	0.08"-0.3" FINE GRAVEL
1 PART	FINES

NOTE: MIX MATERIAL ON SITE.

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REVISION NO.	DATE	DESCRIPTION



**CALIFORNIA DEPARTMENT OF WATER RESOURCES**

**FISH PASSAGE IMPROVEMENT PROGRAM**

901 P STREET, SACRAMENTO, CA  
 WWW.WATER.CA.GOV/FISHPASSAGE

**DETAILS**

**BUDISELICH FLASHBOARD DAM**

**FISH PASSAGE IMPROVEMENT PROJECT**

**PRELIMINARY DESIGN**

**PRELIMINARY NOT FOR CONSTRUCTION**

BAR IS ONE INCH ON ORIGINAL  
 DRAWINGS: ADJUST SCALE FOR REDUCED PLOTS

DATE: 06.08.2011

DRAWN BY: CH  
 CHECKED BY: RB & TG

SHEET: **C4**