

**Meeting of the Central Valley Flood Protection Board
July 27, 2012**

Staff Report

**California Department of Transportation, District 3
State Highway Route 65 Lincoln Bypass Project, Big Yankee Slough Crossing –
southbound, Placer County**

1.0 – ITEM

Consider approval of Permit No. 18654-2 (Attachment B).

2.0 – APPLICANT

California Department of Transportation (Caltrans), District 3.

3.0 – LOCATION

The project is located in Placer County, approximately 7.9 miles northwest of the City of Lincoln, 18.6 miles northwest of Roseville, and 4.3 miles south of Wheatland along the newly constructed State Highway Route 65 bypass, (see Attachment A).

4.0 – DESCRIPTION

Applicant is building three structures crossing Big Yankee Slough as part of the 12-mile, 4-lane freeway bypass around the City of Lincoln. This report is for the “left” bridge, southbound traffic, and it is a proposed structure. This southbound bridge (Caltrans bridge No. 19-0198L) is a two-span, cast in place, pre-stressed concrete box girder, 158 feet in length and 45 feet wide (see Attachment C).

5.0 – PROJECT ANALYSIS

The overall analysis of the proposed project described in Section 4.0, is described in Sections 5.1 and 5.2 below. The project is a proposed structure over Big Yankee Slough.

5.1 – Hydraulic Analysis

The model used for the one-dimensional hydraulic analysis was the USACE's Hydrologic Engineering Center (HEC-1), version 4.0.1E. The roughness coefficient for the bank was between 0.030 and 0.060. The analysis included a scenario for a 100-yr event with a design flow of 1,746 cfs.

According to the modeling results, the water surface elevation (WSE) is at 91.5 ft during a 100-yr and provides about 6.4 feet freeboard at a velocity of 5.4 fps (see Attachment D). The piles for the foundation were designed to withstand the maximum possible scouring of 83 feet (1929 NGVD Datum).

5.2 – Geotechnical Analysis

All work to be completed will be done in a manner that does not pose a threat to the structural integrity of the channel, structures, or floodway. Earthwork will be completed in compliance with Permit No. 18654-2 (Attachment B) and Title 23 Standards. Scouring is not critical as described in Section 5.1. All piles for support locations are steel H sections driven to a depth of about 88 feet at the abutments, and about 73 feet at the center support.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

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

- Letter from the USACE stating that the agency has no comments or recommendations because the work does not affect a federally-constructed project (originally written for northbound bridge). See Attachment E.

7.0 – CEQA ANALYSIS

Board staff has prepared the following CEQA Findings:

The Board, as a responsible agency under CEQA, has reviewed Draft and Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (SCH Number: 1990020626, May 2006) and Mitigation Monitoring Plan and State Route 65, Placer County, Highway Bypass Project prepared by the lead agency, Caltrans. 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/2012/07-27-2012.cfm> under a link for this agenda item. These documents are also available for review in hard copy at the Board and the Caltrans offices.

Caltrans has determined that the project would not have a significant effect on the environment and subsequently filed a Notice of Determination on May, 30, 2006 with the State Clearinghouse. 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 Plan and address impacts to biological resources, water quality, cultural resources, agricultural resources, hazards and hazardous materials, and land use.

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:

This project does not have significant impacts on the State Plan of Flood Control, as the project does not impair the structural or hydraulic functions of the system.

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

There are no foreseeable projected future events that would impact this project.

9.0 – STAFF RECOMMENDATION

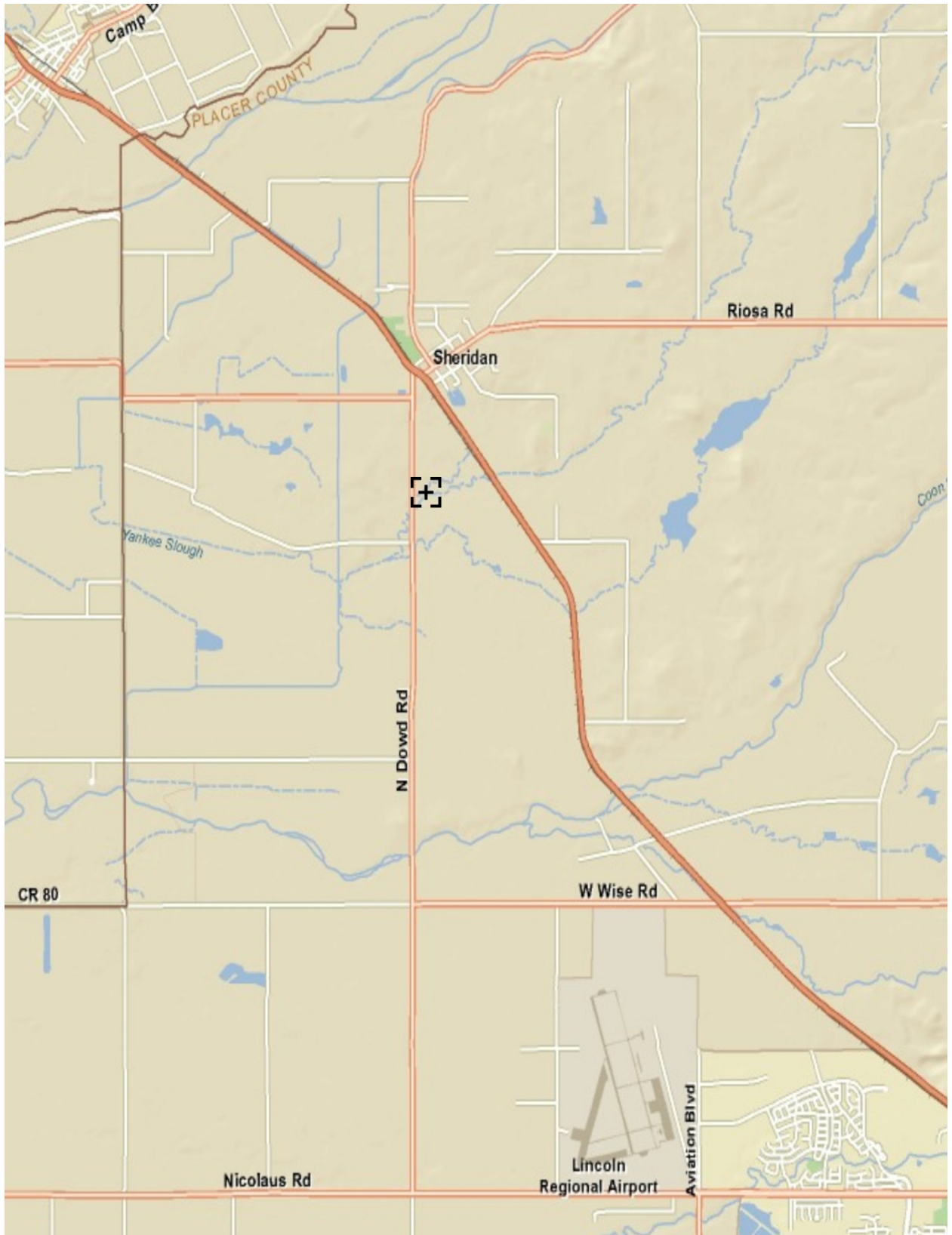
Staff recommends that the Board adopt the CEQA findings, approve the proposed bridge permit 18654-2, conditioned upon receipt of a U.S. Army Corps of Engineers comment letter indicating that the District Engineer has no objection to the project, subject to conditions and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

- A. Location Map
- B. Draft Permit No. 18654-2
- C. Structure Plan and Profile, and photos
- D. Hydraulic Summary Table and profile

Technical Review:	Sergio Guillen, P.E., Atkins
Staff Recommendations:	David R. Williams, P.E. – Senior Engineer, WR
Environmental Review:	James Herota, E.S.
Document Review:	David R. Williams, P.E. – Senior Engineer, WR Eric Butler, P.E. – Supervising Engineer, WR

ATTACHMENT A – LOCATION MAP





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

PERMIT NO. 18654-2 BD

This Permit is issued to:

CALTRANS - District 3
703 B Street
Marysville, California 95601-0911

The proposed work is for a cast-in-place/prestressed concrete box girder left bridge (19-0198L) crossing Big Yankee Slough in Placer County. The bridge will have two 11.8 ft. travel lanes and 7.9 ft. left and 9.8 ft. right shoulders, for a total width of 44.3 ft. The bridge will be divided into two spans at 78.75 ft. each, for a total bridge length of 157.5 ft., supported on concrete piers and Steel H-piles at all support locations. The superstructure depth will have a total thickness of 3.28 ft. Total embankment is measured 30 ft. from the beginning and end of bridge, consisting of approximately 4600 CY. Located on the E side of the Central Valley, part of the State Route 65 Lincoln Bypass crossing Big Yankee Slough, east of North Dowd Rd., north of Dalby Rd., south of Riosa Rd., about 25 miles (40.3 km) north of Sacramento, in western Placer County (Section 24, T13N, R5E, MDB&M, Placer County Flood Control and Water Conservation District, Big Yankee Slough, Placer 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. 18654-2 BD

THIRTEEN: The permittee shall contact the Department of Water Resources, Inspection Branch by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. The permittee shall also contact the Central Valley Flood Protection Board's Construction Supervisor at (916) 574-2646 for quality assurance inspection. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

FOURTEEN: 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.

FIFTEEN: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions, of the project conditions. The photo record shall be certified (signed and stamped) by a licensed land surveyor or professional engineer registered in the State of California and submitted to the Central Valley Flood Protection Board within 30 days of beginning the project.

SIXTEEN: 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.

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: 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.

NINETEEN: The permittee agrees to incur all costs for compliance with local, State, and Federal permitting and resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

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

TWENTY-ONE: The permittee shall be responsible for repair of any damages to the project levee and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-TWO: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

TWENTY-THREE: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-FOUR: 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.

TWENTY-FIVE: 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.

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

TWENTY-SEVEN: All debris generated by this project shall be disposed of outside the flood control project works.

TWENTY-EIGHT: All debris that may accumulate around the bridge piers and abutments within the floodway shall be completely removed from the floodway following each flood season.

TWENTY-NINE: The permittee shall comply with any conditions set forth by the Placer County Flood Control District if conditions are created.

THIRTY: 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 Central Valley Flood Protection Board and the Department of Water Resources, or any other agency responsible for maintenance.

THIRTY-ONE: Any lock on the gate must be accessible to maintenance and inspection personnel and must not be casehardened.

THIRTY-TWO: All fill material shall be imported impervious material with 20 percent or more passing the No. 200 sieve, a plasticity index of 8 or more, and a liquid limit of less than 50 and free of lumps or stones exceeding 3 inches in greatest dimension, vegetative matter, or other unsatisfactory material. Fill material shall be compacted in 4- to 6-inch layers to a minimum of 90 percent relative compaction as measured by ASTM Method D1557-91.

THIRTY-THREE: Drainage from the bridge or highway shall not be discharged onto the levee section or streambank.

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: Trees, brush, sediment, and other debris shall be kept cleared from the bridge site and disposed of outside the floodway to maintain the design flow capacity and flowage area.

THIRTY-SIX: If the bridge is damaged to the extent that it may impair the channel or floodway capacity, it shall be repaired or removed prior to the next flood season.

THIRTY-SEVEN: If the permitted encroachment(s) result in any adverse hydraulic impact or if the flows being conveyed in an overland release result in scouring the permittee shall provide appropriate mitigation acceptable to the Central Valley Flood Protection Board.

THIRTY-EIGHT: The permittee shall submit an evacuation plan to the Central Valley Flood Protection Board that meets the requirements of Section 114 of California Code of Regulations, Title 23, Regulations of the Central Valley Flood Protection Board within 60 days of the date of this permit.

THIRTY-NINE: A copy of all geotechnical studies and tests used in the design and construction

determination of the project shall be provided to and approved by the Central Valley Flood Protection Board prior to final construction.

FORTY: No further tree planting or work, other than that covered by this application, shall be performed in the area without prior approval of the Central Valley Flood Protection Board.

FORTY-ONE: Within 120 days of completion of the project, the permittee shall submit to the Central Valley Flood Protection Board a certification report, stamped and signed by a professional engineer registered in the State of California, certifying the work was performed and inspected in accordance with the Central Valley Flood Protection Board permit conditions and submitted drawings and specifications.

FORTY-TWO: All addendums or other changes made to the submitted documents by the permittee after issuance of this permit are subject to submittal and review for approval by the Central Valley Flood Protection Board prior to incorporation into the permitted project. Upon review and approval of any new submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes. The Central Valley Flood Protection Board shall have up to 90 days after receipt of any documents, plans, drawings, and specifications for the review process. The Central Valley Flood Protection Board and/or the Department of Water Resources may extend this review period by written notification.

FORTY-THREE: This permit is not valid until the Central Valley Flood Protection Board has received written notification from the U.S. Army Corps of Engineers (Corps) that the Corps has no opposition to this project. The permittee shall comply with all conditions set forth in the letter from the Corps once it is received, which is attached to this permit as Exhibit A and incorporated by reference.

FORTY-FOUR: The permittee should 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.

FORTY-FIVE: This permit shall run with the land and all conditions are binding on permittee's successors and assigns.

FORTY-SIX: A civil engineer registered in the State of California representing the permittee shall provide periodic reports and records to the Department of Water Resources that are acceptable to the Central Valley Flood Protection Board which certifies that all work accomplished by contract to the permittee was thoroughly inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

FORTY-SEVEN: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

FORTY-EIGHT: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Inspection Section, located at 3310 El Camino Ave, Room 256, Sacramento, California, 95821, upon completion of the project.

FORTY-NINE: 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.

FIFTY: Upon completion of the project, the permittee shall submit a final completion letter to: The Central Valley Flood Protection Board, 3310 El Camino Avenue, Suite 162, Sacramento, California 95821 and the Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite 256, Sacramento, California 95821.



BIG YANKEE SLOUGH BRIDGE RIGHT - LOOKING WEST

Summary

<i>Hydraulic / Hydrologic Summary</i> (1929 NGVD Datum)	Big Yankee 19-0198		Dowd Road 19C0233	North Yankee 19-0197	
	Right	Left		Right	Left
Drainage Area mi ²	7.1		7.1	8.3	
Structure depth (ft.)	3.2	3.2	2	4.625	4.625
Spans	2	2	3	1	1
Proposed Bridge Length (ft.)	158	158	133	115	115
Lowest modeled soffit elevation (ft.)	96.6	97.3	96.7	95.9	94.4
Q ₁₀₀ (cfs)	1746	1746	1746	2264	2264
Freeboard (ft.)	5.1	6.4	7.1	4.2	2.8
Water surface elevation (ft.)	91.5	90.9	89.6	91.7	91.6
Velocities bridge exit ft/s	4.0	5.4	5.1	2.9	3.7
Potential Scour Elevation At Piers (ft.)	83	83	82	N/A	N/A
Potential Scour Elevation at Abutments (ft.)	86.2	86.6	90.2	87.5	83.4

ATTACHMENT D – HYDRAULIC SUMMARY TABLE AND PROFILE

