SFOBB
Temporary Bypass Structure
(South South Detour)

Notice of Potential Claim No. 4
Engineering Costs
for
Pile Dynamic Monitoring

By:

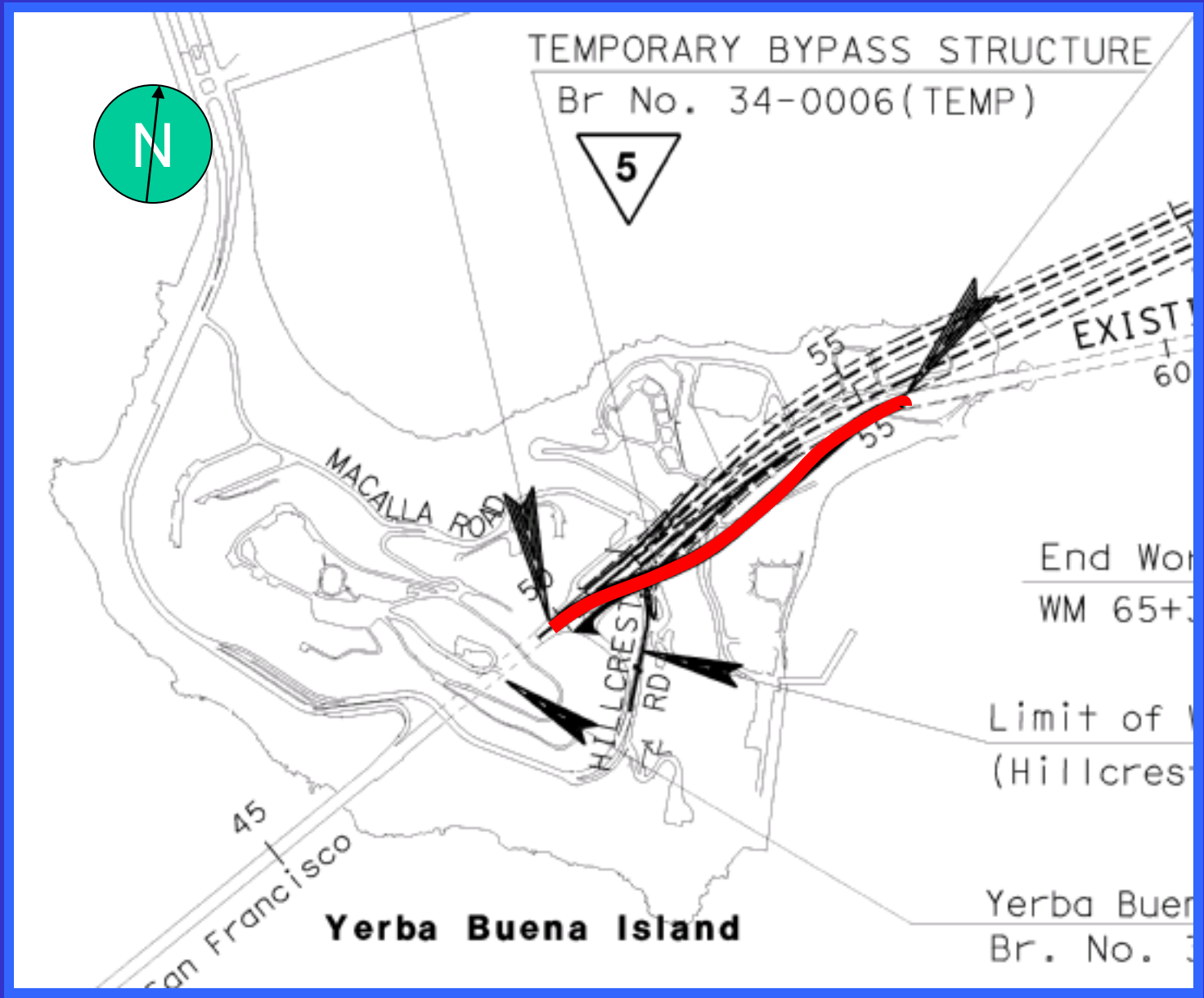
Gary Lai

Contractor:	C.C. Myers, Inc.
Engineer of Record:	Imbsen and Assoc. Inc. (IAI)
Project Manager:	Jon Tapping (Acting)
Construction Manager:	Rick Morrow
Senior Resident Engr.:	Mahantesh Anigol
Senior Structure Rep.:	Gary Lai

Contract

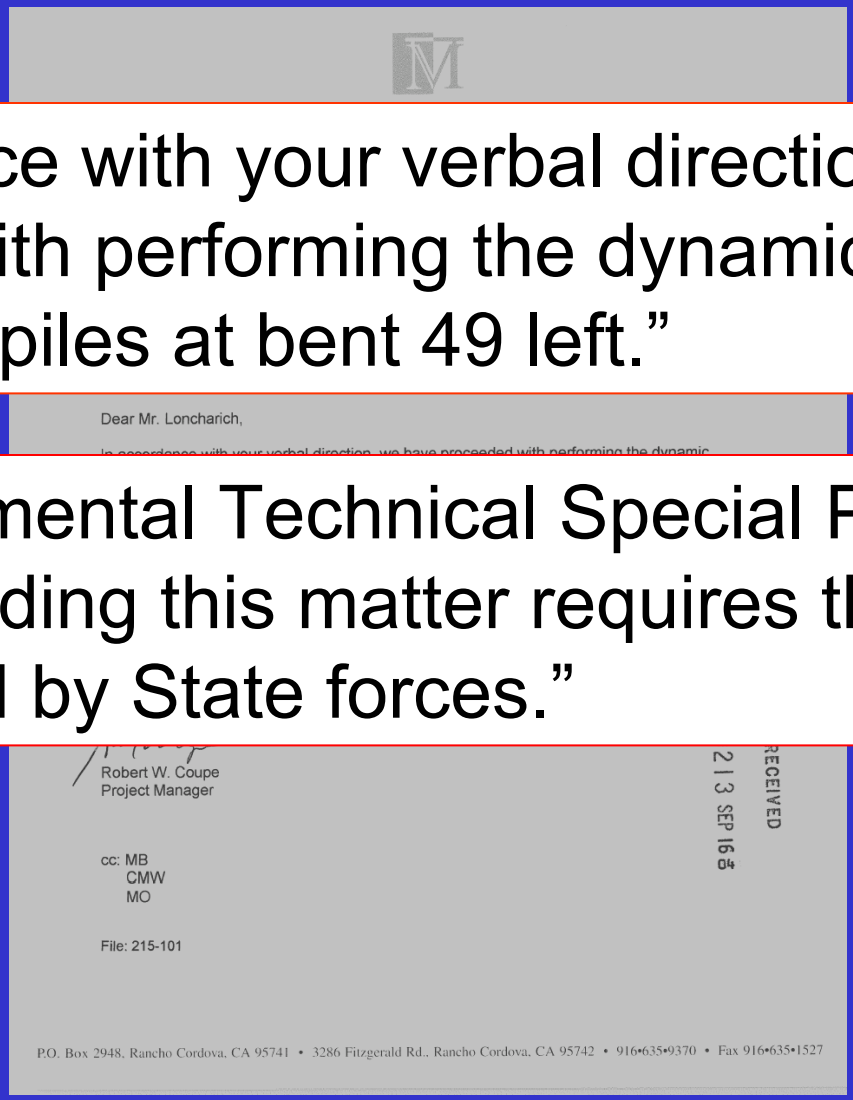
- Performance Based Contract (Design & Construct)
- Contract Type: A + B (Item + No. of days @ $12.6K/day-TRO)
- Bid Amount: $71,159,650
- Working Days Bid: 475
- First Working Day: July 10, 2004
- Current Status: Mainline work in progress
  Tie-In work under suspension

Project Location



C.C. Myers' Position

C.C. Myers' letter dated 9/15/04



Dear Mr. Loncharich,

Robert W. Coupe
Project Manager

cc: MB
CMW
MO

File: 215-101

RECEIVED
SEP 16 2004

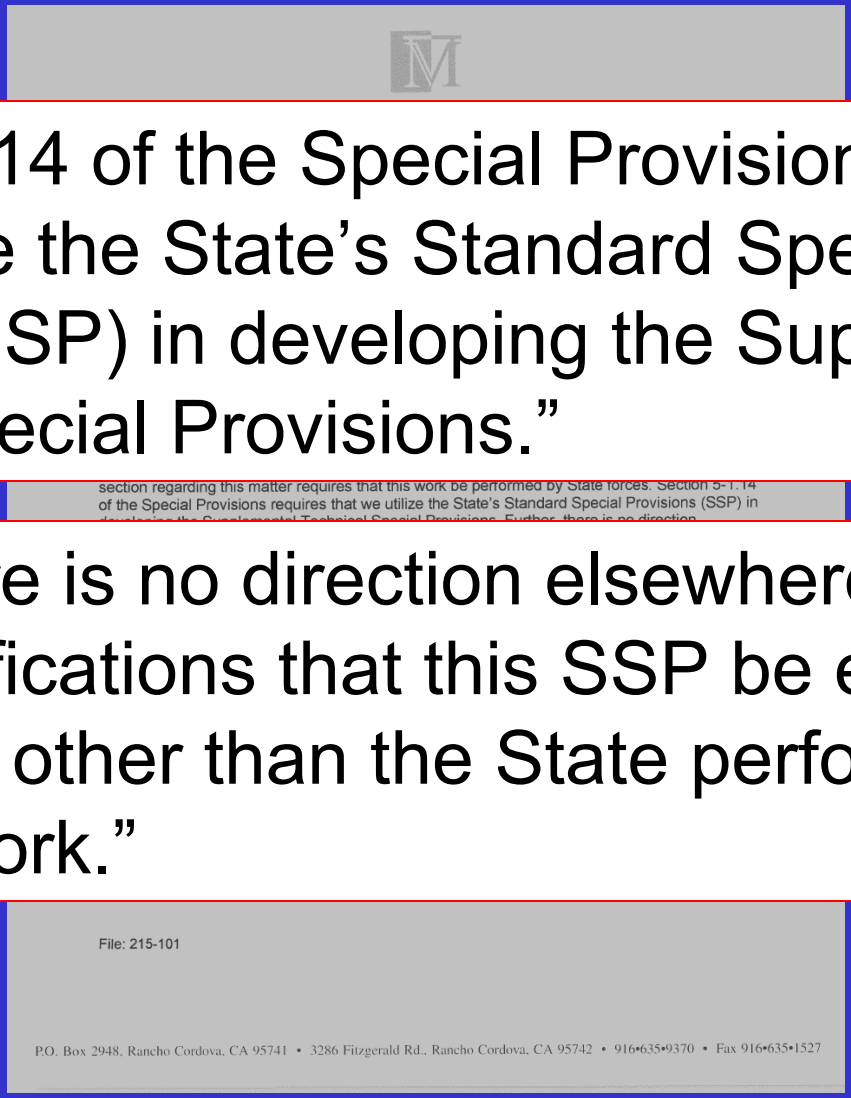
P.O. Box 2948, Rancho Cordova, CA 95741 • 3286 Fitzgerald Rd., Rancho Cordova, CA 95742 • 916•635•9370 • Fax 916•635•1527

"In accordance with your verbal direction, we have proceeded with performing the dynamic monitoring of the driven piles at bent 49 left."

"The Supplemental Technical Special Provisions section regarding this matter requires that this work be performed by State forces."

C.C. Myers' Position

C.C. Myers' letter dated 9/15/04



"Section 5-1.14 of the Special Provisions requires that we utilize the State's Standard Special Provisions (SSP) in developing the Supplemental Technical Special Provisions."

section regarding this matter requires that this work be performed by State forces. Section 5-1.14 of the Special Provisions requires that we utilize the State's Standard Special Provisions (SSP) in

"Further, there is no direction elsewhere in the project specifications that this SSP be edited to have anyone other than the State perform this monitoring work."

File: 215-101

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C.C. Myers' Submittal of NOPC 4b

Dated 11/4/04

"… As the Contractor performing the design work, we have no Engineering Basis for editing the SSP requirements that the Engineer perform certain tasks."

"There is no language that we have found in the contract that dictates that or provides an Engineering Basis for changing the scope of the Engineer's duties for this particular project."

requires that we utilize the State's Standard Special Provisions (SSP) in developing the Supplemental Technical Special Provisions. Although said section allows the SSP's to be edited, there is no direction anywhere in the project specifications that this SSP be edited to have anyone other than the State perform this monitoring work. Therefore, we have requested that the State issue a Contract Change Order to compensate us for the monitoring work. This request was made via our letter 215-STL.00035.

To date, the dynamic monitoring of the driven piles has only been performed at bent 49 of the Viaduct. The cost of this is estimated to be about $5,000. This only includes the cost of the dynamic analysis and the logging of the piles as they are driven. The support work provided during the pile driving operation to accomplish the dynamic monitoring is the responsibility of the Contractor in accordance with the Standard Special Provision, thus these costs are not included nor are they in contention.

The work remaining to be completed is at bents 47B, 48 and 52. We estimate that an additional $15,000 will be incurred to perform the pile dynamic monitoring at these locations, for a total potential claim amount of approximately $20,000.

The undersigned originator (Contractor or Subcontractor as appropriate) certifies that the above statements and attached documents are made in full cognizance of the California False Claims Act, Government Code Sections 12650-12655. The undersigned further understands and agrees that this potential claim to be further considered, unless resolved, must fully conform to the requirements in

C.C. Myers' Submittal of NOPC 4b

Dated 11/4/04

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL NOTICE OF POTENTIAL CLAIM
CEM-6201B (NEW 9/2002)

FOR STATE USE ONLY		
Received by:	(For Resident Engineer)	Date:

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Lourdes David (resident engineer)	04-0120R4	November 4, 2004	4

This is a Supplemental Notice of Potential Claim for additional compensation submitted as required under the provisions of Section 9-1.04 "Notice of Potential Claim" of the Standard Specifications. The act of the Engineer, or his/her failure to act, or the event, thing, occurrence, or other cause giving rise to the potential claim occurred on:

DATE: October 19, 2004

The particular nature and circumstances of this potential claim are described in detail as follows:

In accordance with the State's verbal direction, we proceeded with performing the dynamic monitoring of the driven pipe piles at bent 49. The Supplemental Technical Special Provisions section regarding this matter requires that this work be performed by State forces. Section 5-1.14 of the Special Provisions requires that we utilize the State's Standard Special Provisions (SSP) in developing the Supplemental Technical Special Provisions. Although said section allows the SSP's to be edited, there is no direction anywhere in the project specifications that this SSP be edited to have anyone other than the State perform this monitoring work. Therefore, we have requested that the State issue a Contract Change Order to compensate us for the monitoring work. Thi

On October 19, 2004, we received the S Contract Change Order to compensate us f

We seek reimbursement for the cost of the project, not just bent 49.

The basis of this potential claim including all relevant contract provisions are listed as follows:

In preparing the Supplemental Technical Special Provisions in accordance with Section 5-1.14 of the Special Provisions, we are allowed to edit the Standard Special Provisions to suit this project provided that we provide an Engineering Basis for such edits. As the Contractor performing the design work, we have no Engineering Basis for editing the Standard Special Provision requirements that the Engineer perform certain tasks. There is no language that we have found in the contract that dictates that or provides an Engineering Basis for changing the scope of the Engineer's duties for this particular project. Specifically, in this case, there is no direction provided in the contract to edit the Standard Special Provision for piling, with regard to who performs the dynamic monitoring. Without such direction, we are not allowed by Section 5-1.14 to make this change and therefore believe that the responsibility to perform this task lies with the Engineer, as written in the Standard Special Provision.

The estimated dollar cost of the potential claim including a description of how the estimate was derived and an itemized breakdown of the individual costs are attached hereto.

To date, the dynamic monitoring of the driven piles has only been performed at bent 49 of the Viaduct. The cost of this is estimated to be about $5,000. This only includes the cost of the dynamic analysis and the logging of the piles as they are driven. The support work provided during the pile driving operation to accomplish the dynamic monitoring is the responsibility of the Contractor in accordance with the Standard Special Provision, thus these costs are not included nor are they in contention.

The work remaining to be completed is at bents 47B, 48 and 52. We estimate that an additional $15,000 will be incurred to perform the pile dynamic monitoring at these locations, for a total potential claim amount of approximately $20,000.

Estimated Grand Total $ 20,000

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL NOTICE OF POTENTIAL CLAIM
CEM-6201B (NEW 9/2002)

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Lourdes David (resident engineer)	04-0120R4	November 4, 2004	4 Page 2

A time impact analysis of the disputed disruption has been performed and is attached hereto. The affect on the scheduled project completion date is as follows:

To date, there has been no effect on the completion date of the project as a result of this potential claim. We will monitor the future work remaining and submit the appropriate time impact analyses should schedule disruptions occur.

The undersigned originator (Contractor or Subcontractor as appropriate) certifies that the above statements and attached documents ons 12650-12655. The undersigned further , must fully conform to the requirements in Contractors written statement of claims in

Myers, Inc.

CTOR or CONTRACTOR
(Circle One)

(Authorized Representative)

For subcontractor notice of potential claim

This notice of potential claim in acknowledged, certified and forwarded by

PRIME CONTRACTOR

(Authorized Representative)

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814

State's Position

- Dynamic monitoring is a requirement of the design and not the contract
- Having State Forces perform the work is not consistent with the requirements of the Special Provisions
- For this contract the performance of dynamic monitoring and associated functions is to be performed by the Contractor.

Performance Based Contractor Design Concept

- Expedient implementation – C.C. Myers bid 475 days
- San Francisco-Oakland Bay Bridge is a Critical Structure
- State provided a design criteria contained within the Contract Plans
- State reviews the design for authorization for construction
- State provides quality assurance during the construction phase

Performance Based Contractor Design Concept

- Contractor responsible for the Design and Construction

Performance Based Contractor Design Concept

--------- End of Page 118 in the original Special Provisions ---------

However, should the Contractor elect to encase or cover those welds prior to receiving notification from the Engineer, it is expressly understood that the Contractor shall not be relieved of the responsibility for incorporating material in the work that conforms to the requirements of the plans and specifications. Material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover welds pending notification by the Engineer, and in the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The QC Inspector shall provide reports to the QCM on a daily basis for each day that welding is performed.

Except for noncritical weld repairs, the Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also of the proposed repair procedures to correct them. The Contractor shall allow the Engineer one week to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed

SECTION 9. DESCRIPTION OF BRIDGE WORK

The **bridge work** to be done **consists**, in general, **of designing and constructing the following structure to the limits and location shown on the plans titled:**

TEMPORARY BYPASS STRUCTURE
(Bridge No. 34-0006 TEMP)

The Temporary Bypass Structure is divided into the following three bridge structure segments:

A. West Tie-In - to be constructed with multiple lane closures and staged construction, and requiring removal of portions of the existing Route 80 concrete viaduct (Bridge No. 34-0004).
E. Viaduct – to connect the West Tie-In and East Tie-In.
F. East Tie-In – to be constructed in stages with a short-term closure of the entire bridge. The design concept envisions construction to include erection of the East Tie-In adjacent to the existing Route 80 steel truss (Bridge No. 33-0025) span YB4, between Pier YB-4 and Pier E-1, rolling-out span YB4 onto temporary supports, and rolling the East Tie-In into place.

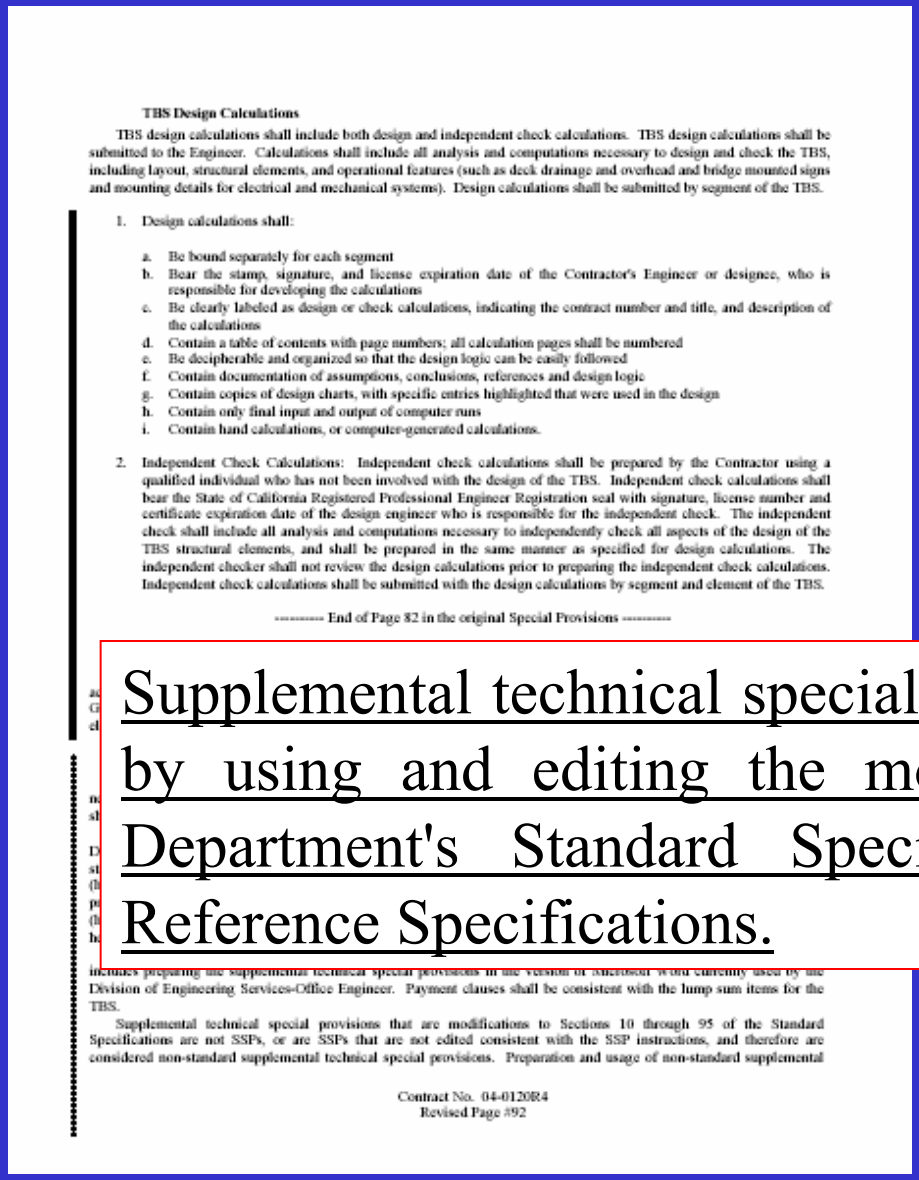
The bridge work includes the removal of portions of existing bridges, as specified in "Bridge Removal," elsewhere in these special provisions.

Contract No. 04-0120R4
Revised Page #132

Performance Based Contractor Design Concept

- Contractor responsible for the Design and Construction
- Special Provisions and Contract Plans provided flexibility for the design
- Designer has to makes choices regarding how the design is to be executed
- Edit the Standard Special Provisions to create project specific Supplemental Technical Special Provisions

Supplemental Technical Special Provisions (STSPs)



TBS Design Calculations

TBS design calculations shall include both design and independent check calculations. TBS design calculations shall be submitted to the Engineer. Calculations shall include all analysis and computations necessary to design and check the TBS, including layout, structural elements, and operational features (such as deck drainage and overhead and bridge mounted signs and mounting details for electrical and mechanical systems). Design calculations shall be submitted by segment of the TBS.

1. Design calculations shall:

   a. Be bound separately for each segment
   b. Bear the stamp, signature, and license expiration date of the Contractor's Engineer or designee, who is responsible for developing the calculations
   c. Be clearly labeled as design or check calculations, indicating the contract number and title, and description of the calculations
   d. Contain a table of contents with page numbers; all calculation pages shall be numbered
   e. Be decipherable and organized so that the design logic can be easily followed
   f. Contain documentation of assumptions, conclusions, references and design logic
   g. Contain copies of design charts, with specific entries highlighted that were used in the design
   h. Contain only final input and output of computer runs
   i. Contain hand calculations, or computer-generated calculations.

2. Independent Check Calculations: Independent check calculations shall be prepared by the Contractor using a qualified individual who has not been involved with the design of the TBS. Independent check calculations shall bear the State of California Registered Professional Engineer Registration seal with signature, license number and certificate expiration date of the design engineer who is responsible for the independent check. The independent check shall include all analysis and computations necessary to independently check all aspects of the design of the TBS structural elements, and shall be prepared in the same manner as specified for design calculations. The independent checker shall not review the design calculations prior to preparing the independent check calculations. Independent check calculations shall be submitted with the design calculations by segment and element of the TBS.

---------- End of Page 82 in the original Special Provisions ----------

Division of Engineering Services-Office Engineer. Payment clauses shall be consistent with the lump sum items for the TBS.

Supplemental technical special provisions that are modifications to Sections 10 through 95 of the Standard Specifications are not SSPs, or are SSPs that are not edited consistent with the SSP instructions, and therefore are considered non-standard supplemental technical special provisions. Preparation and usage of non-standard supplemental

Contract No. 04-0120R4
Revised Page #92

- Created through the editing of the State's Standard Special Provisions

Supplemental technical special provisions shall be prepared by using and editing the most current versions of the Department's Standard Special Provisions and Bridge Reference Specifications.

Standard Special Provisions

- Recognized by the Contractor as having been developed over time by the State
- Design-Bid-Build setups utilize this library of specifications to develop special provisions
- These specifications were written for designs by or under the control of the State in conformance with Engineering practice
- Contractor is responsible for the design, the edits should be made accordingly to reflect their design role
- Evident that this was understood by the first STSP submittals for the Viaduct Foundation

Supplemental Technical Special Provisions Timeline of Changes

Submittal 5-01 Preliminary STSPs

2004

Submittal 5-01
May 20, 2004

2005

Exhibit 1

Dynamic Monitoring

… Monitoring will be done by the **Contractor's** forces using **Contractor-furnished** dynamic pile analyzer monitoring instruments. …

Wave Equation

… The **Contractor's designer** will conduct a penetration and bearing analysis...

State Comment – Letter 34 – Exhibit 3

"Contractor's designer" is not defined by the contract

Submittal 18-01 Viaduct Foundations

2004

Submittal 18-01
Jul 07,2004

2005

Dynamic Monitoring

… Monitoring will be done by the **Contractor's** forces using Contractor-furnished dynamic pile analyzer monitoring instruments.

Wave Equation

… The **Contractor's Engineer** or designee will conduct a penetration and bearing analysis…

State Comment –
No comments made regarding this STSP edit

Exhibit 5

Submittal 30-00 Viaduct Substructures

2004

2005

Submittal 30-00
Aug 10, 2004

Dynamic Monitoring

… Monitoring will be done by the **State's** forces using State furnished dynamic pile analyzer monitoring instruments

Wave Equation

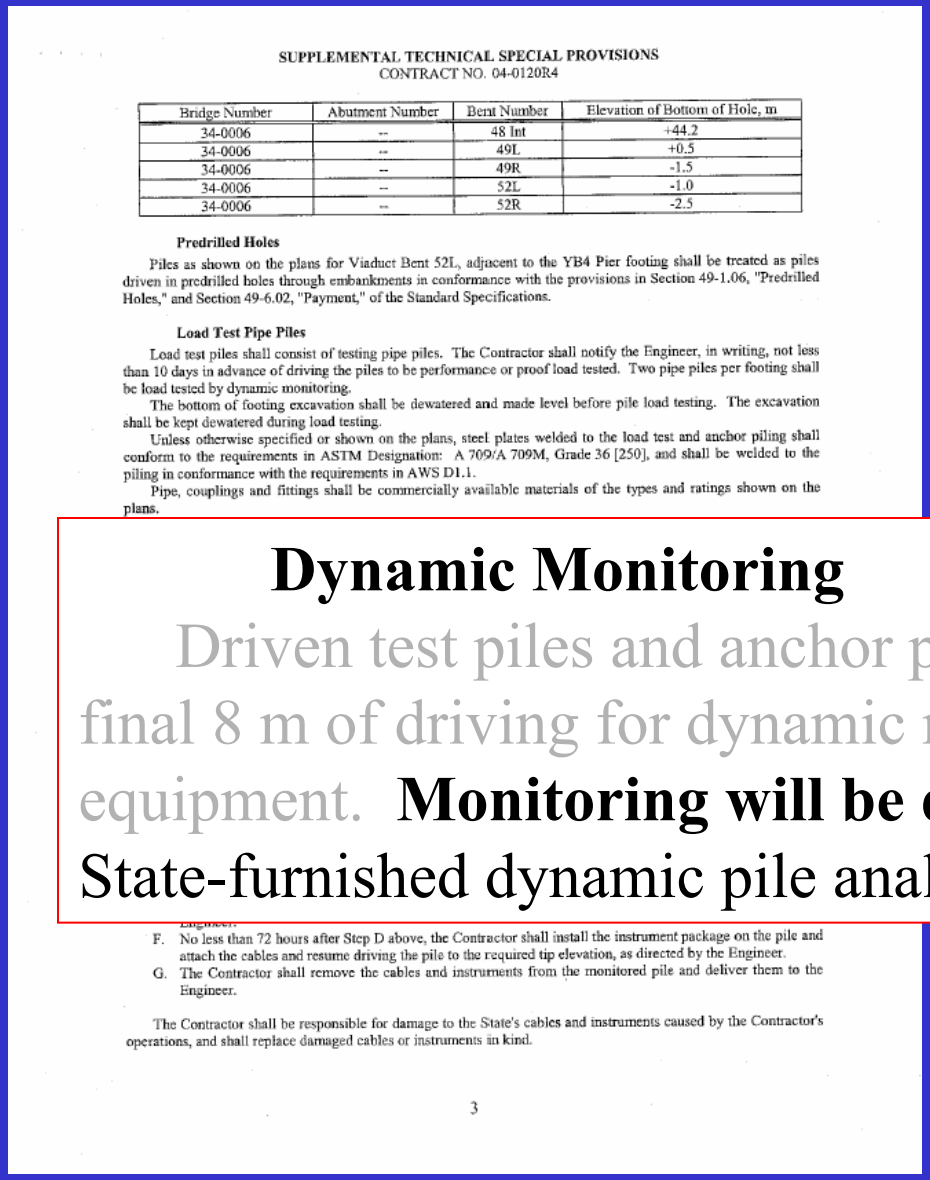
… **The Engineer** conduct a penetration and bearing analysis…

NOT APPROVED

State Comment – Letter 139 – Exhibit 8
Noted the switch in responsible parties for dynamic monitoring and other testing work. Requested explanation.

Exhibit 7

Submittal 30-00 - STSPs



SUPPLEMENTAL TECHNICAL SPECIAL PROVISIONS
CONTRACT NO. 04-0120R4

Bridge Number	Abutment Number	Bent Number	Elevation of Bottom of Hole, m
34-0006	--	48 Int	+44.2
34-0006	--	49L	+0.5
34-0006	--	49R	-1.5
34-0006	--	52L	-1.0
34-0006	--	52R	-2.5

Predrilled Holes

Piles as shown on the plans for Viaduct Bent 52L, adjacent to the YB4 Pier footing shall be treated as piles driven in predrilled holes through embankments in conformance with the provisions in Section 49-1.06, "Predrilled Holes," and Section 49-6.02, "Payment," of the Standard Specifications.

Load Test Pipe Piles

Load test piles shall consist of testing pipe piles. The Contractor shall notify the Engineer, in writing, not less than 10 days in advance of driving the piles to be performance or proof load tested. Two pipe piles per footing shall be load tested by dynamic monitoring.

The bottom of footing excavation shall be dewatered and made level before pile load testing. The excavation shall be kept dewatered during load testing.

Unless otherwise specified or shown on the plans, steel plates welded to the load test and anchor piling shall conform to the requirements in ASTM Designation: A 709/A 709M, Grade 36 [250], and shall be welded to the piling in conformance with the requirements in AWS D1.1.

Pipe, couplings and fittings shall be commercially available materials of the types and ratings shown on the plans.

F. No less than 72 hours after Step D above, the Contractor shall install the instrument package on the pile and attach the cables and resume driving the pile to the required tip elevation, as directed by the Engineer.

G. The Contractor shall remove the cables and instruments from the monitored pile and deliver them to the Engineer.

The Contractor shall be responsible for damage to the State's cables and instruments caused by the Contractor's operations, and shall replace damaged cables or instruments in kind.

3

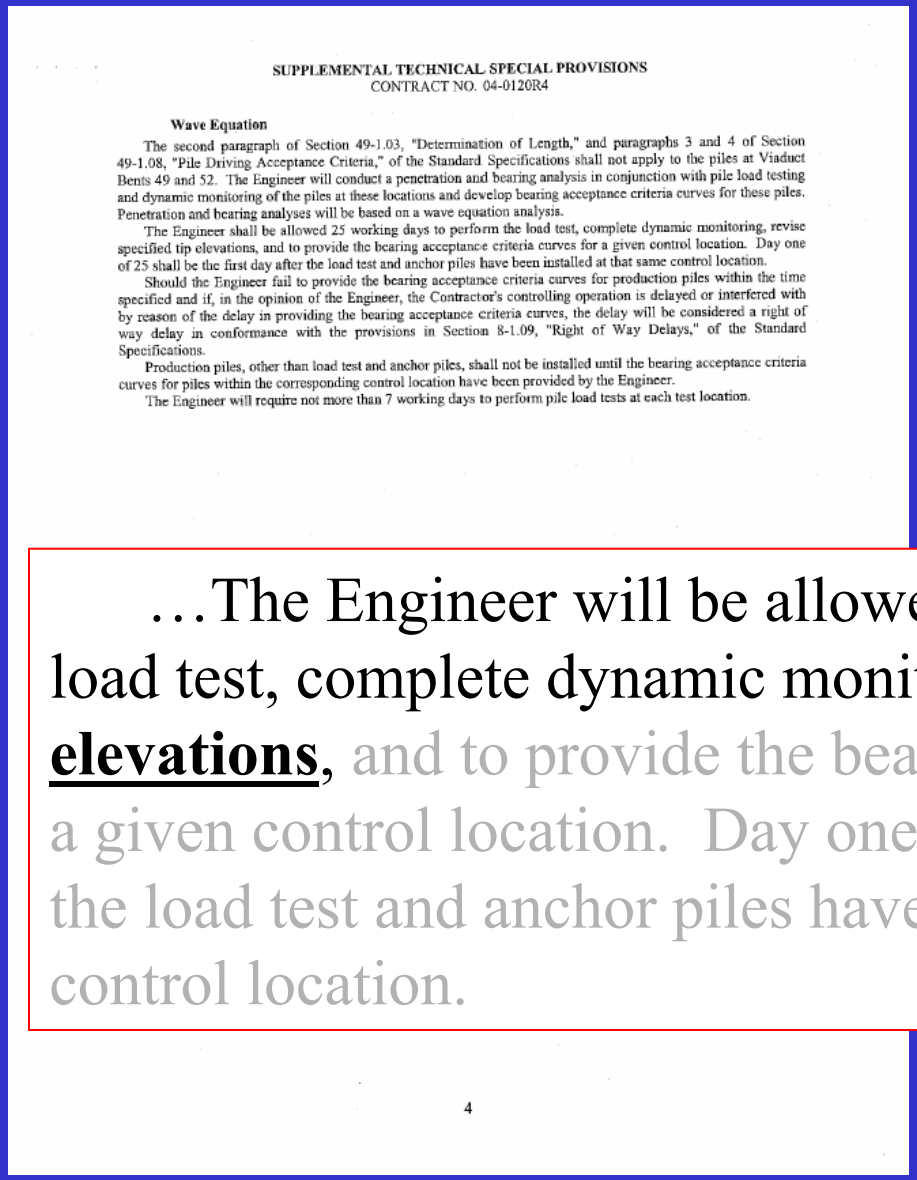
- Dynamic monitoring performed by the State

Dynamic Monitoring

Driven test piles and anchor piles will be monitored during the final 8 m of driving for dynamic response to the driving equipment. **Monitoring will be done by State forces** using State-furnished dynamic pile analyzer monitoring instruments.

Exhibit 7

…revise specified tip elevations.



SUPPLEMENTAL TECHNICAL SPECIAL PROVISIONS
CONTRACT NO. 04-0120R4

Wave Equation

The second paragraph of Section 49-1.03, "Determination of Length," and paragraphs 3 and 4 of Section 49-1.08, "Pile Driving Acceptance Criteria," of the Standard Specifications shall not apply to the piles at Viaduct Bents 49 and 52. The Engineer will conduct a penetration and bearing analysis in conjunction with pile load testing and dynamic monitoring of the piles at these locations and develop bearing acceptance criteria curves for these piles. Penetration and bearing analyses will be based on a wave equation analysis.

The Engineer shall be allowed 25 working days to perform the load test, complete dynamic monitoring, revise specified tip elevations, and to provide the bearing acceptance criteria curves for a given control location. Day one of 25 shall be the first day after the load test and anchor piles have been installed at that same control location.

Should the Engineer fail to provide the bearing acceptance criteria curves for production piles within the time specified and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in providing the bearing acceptance criteria curves, the delay will be considered a right of way delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Production piles, other than load test and anchor piles, shall not be installed until the bearing acceptance criteria curves for piles within the corresponding control location have been provided by the Engineer.

The Engineer will require not more than 7 working days to perform pile load tests at each test location.

4

- The State is to perform a load test, complete dynamic monitoring and revise specified tip elevations

…The Engineer will be allowed 25 working days to perform the load test, complete dynamic monitoring, **revise specified tip elevations**, and to provide the bearing acceptance criteria curves for a given control location. Day one of 25 shall be the first day after the load test and anchor piles have been installed at that same control location.

Exhibit 7

Shifting Design Task Onto the Owner

- What is required from the Contractor's STSPs ?
  - Perform dynamic monitoring
  - Analyze data using the wave equation method
  - Perform a load test
  - Revise specified pile tip elevations
- Not simply limited to the dynamic monitoring work
- The Contractor is essentially shifting a design task to the State
- Engineering justification for making the edits

Driven Pile Design

- Without the use of dynamic monitoring
  - Uses more conservative assumptions
  - No field verifications
  - Piles lengths tend to be longer without further geotechnical explorations
- Incorporation of dynamic monitoring
  - Initially use less conservative assumptions
  - Field testing required to validate the design assumptions
  - Pile lengths tend to be shorter

Driven Pile Design

- Economic benefits with the incorporation of dynamic monitoring
  - Shorter piles
  - Shorter installation times
- Added costs of performing the monitoring, data processing, and design review
- Ultimately the decision of the designer

Geotech Recommends the use of PDA

215-SHB0005-D

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6.1.1.4 Pile Testing Program

We recommend that at least two of the steel pipe piles per pile cap be evaluated using the Pile Driving Analyzer (PDA) and subsequent CAPWAP analyses. The PDA measures dynamic force and acceleration at the top of a pile, which can be processed in the field to determine pile integrity, pile stresses, and pile hammer performance during driving. CAPWAP analyses, performed after driving, compute pile capacity (ultimate, axial, compressive) from the measured PDA field data. **CAPWAP analyses performed on good quality field data typically yield capacity prediction that correspond well with static load test data.** To evaluate the time-dependent pile capacity increase (set-up) or decrease (relaxation), we recommend performing restrikes on all PDA test piles after a minimum waiting period of 3 days. The restrikes should also be evaluated using PDA measurements and subsequent CAPWAP analyses.

planned for foundation support at proposed bents 50L, 50R, 51L, and 51R. The 3.66 m CIDH

I:\Project\9000s\9198\1 Steel Superstructure\Reports\Preliminary\Viaduct\SFOBBTBSViaduct020404.doc 13

Exhibit 4

Dynamic Monitoring is Required by the Design

- Its incorporation is an economic benefit to the design and construction
- Recommended by the Geotechnical Report and accepted by the Contractor's Engineer through their incorporation of the requirements into the STSPs
- Dynamic monitoring is necessary to validate Imbsen and Associates, Inc.'s design assumptions
- Dynamic monitoring is therefore quality control
- Not a requirement of the Special Provisions

Dynamic Monitoring Is the Contractor's Responsibility

- Having State Forces perform Dynamic Monitoring and all the related tasks is not consistent with the requirements of the Special Provisions
  - The unapproved STSPs requires the State to perform design tasks
  - The Contractor is responsible for the design of the structures
- Dynamic monitoring is a requirement of the design and not the contract
  - Choice to incorporate this into the design was made by the designer
  - Essentially a quality control test for the design
- For this contract the performance of dynamic monitoring and associated functions is to be performed by the Contractor.


The End