KFM
E2 / T1 PROJECT
KIEWIT / PCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 15-Oct-07
Time 8:46 AM

Dated: 10/15/07

TRANSMITTAL No: KFM-TRN-000619 **Rev:** 00

To: **Pedro Sanchez**
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: NOPC 06-062007 - TBS Welder Trainee Issue DRB Position Paper

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☐ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	12-Oct-2007	1	TBS NOPC 06-062007 DRB Position Paper	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By:
Contract Admin/DCS Staff

RECEIVED
007485 OCT 15 07

Copy To: Job Office Files

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 12-Oct-07
Time 10:29 AM

Dated: 10/12/2007

TRANSMITTAL No: KFM-DRB-TRN-000004 **Rev:** 00

To: **Warren Bullock**
Dispute Review Board (DRB)
1122 Ferguson Road
Sebastopol CA 95472
Phone: 707-824-1874 Fax: 707-824-1874

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: NOPC #06-062007 -- Trans Bay Steel Welder Trainee Issue

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Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

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Item	Date	Copies	Description	Pages
01	12-Oct-2007	3	NOPC #6 Position Paper	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

Copies to Messrs. Maasberg and Lewis have been transmitted under separate cover.

Please contact the undersigned with any questions at 510-627-1066.

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

PMIS # 000091

Trans Bay Steel Corporation
Caltrans Contract 04-0120E4 SAS Foundations
E2, T1
NOPC – 06-062007 TBS Welder Trainee Issue

Disputes Review Board – Position Paper

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TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

Caltrans Contract 04-0120E4 SAS Foundations E2, T1
NOPC – 06-062007 TBS Welder Trainee Issue

Disputes Review Board – Position Paper

Executive Summary

Caltrans' objection to Trans Bay Steel's long established shop practice of training welding operators during the course of production work impacted timely production of piling and permanent casings for E2 and T1. In response to Non-Conformance Reports (NCR's) issued by Caltrans, TBS removed all trainees from production operations and altered these established shop training practices and procedures.

Caltrans initiated a contract change order (CCO-39) to mitigate some of the impacts of Caltrans contract interpretation. A Notice of Potential Claim (NOPC) was not filed at his time, because Trans Bay Steel tried to negotiate in good faith with Caltrans on the issuance of this CCO. Caltrans would not as part of CCO-039 negotiations acknowledge the impact of their contract interpretation on Trans Bay Steel's fabrication effort. CCO-39 negotiations could not be concluded before completion of the work and further discussion was abandoned by Caltrans. Due to indications from Caltrans that no further discussion was warranted, Trans Bay Steel and Kiewit/FCI/Manson, AJV worked to formally continue negotiations. Following formal rejection of Trans Bay Steel's request for continued negotiation of CCO-39 a Notice of Potential Claim was made and subsequently referred to the Disputes Resolution Board.

Trans Bay Steel's efforts to avoid additional Caltrans Non Conformance Reports, removed valuable production assets and manpower from production operations to be devoted exclusively to training. Due to limited training facilities, the rate at which trainees became available to be utilized on the permanent work was reduced. As a consequence of reduced productive capacity and delayed availability of trained welding operators pile production durations were extended and pile deliveries to the project were delayed. Additional efforts were expended by Trans Bay Steel to mitigate delays by re-tooling portions of the plant and to perform additional testing demanded by Caltrans for acceptance of work declared to be in non-conformance.

Description of Dispute

Trans Bay Steel contracted with Kiewit/FCI/Manson, AJV (KFM) to produce 16 ea 2.5m x 107m long heavy wall cast-in-steel-shell (CISS) pile shells for the E2 footing and 13 ea 2.5m x 37 m long heavy wall cast-in-drilled-hole (CIDH) permanent casings for the T1 footing. Trans Bay Steel's for this work was based on fabricating the piling in accordance with the Contract Special Provisions, the Standard Specifications, AWS D1.1 2002 and shop practices including welding operator training methods utilized by Trans Bay Steel on past Caltrans projects since 1998 in accordance with these codes and provisions.

The piles under this contract were manufactured from flat plate. Individual plates were cut to size and rolled into short tubular sections and welded along a longitudinal joint ("long seam") by automatic submerged arc welding (SAW) process. The short tubular sections, or "cans", were joined together by the automatic SAW process at the girth seams to form full length pile sections.

The automatic submerged arc weld process is a well established welding technology covered fully by provisions of AWS D1.1. The SAW process is characterized by high weld metal deposition rates, fixed remotely operated equipment, and suitability to production line shop welding of heavy fabrications by lower-skilled workers. At Trans Bay Steel, submerged arc welding is performed on fixed production stations utilizing powered manipulator booms and turning rolls operated remotely by the welding operator.

Caltrans inspectors objected to welding trainees coming in contact with the SAW welding equipment while in operation. Starting December 6, 2005 a series of Non-Conformance Reports were generated by Materials Engineering and Testing Services (METS) inspectors for operation of SAW welding stations by trainees even though the qualified welding operator of record was in full control of the welding operations. These Non Conformance Reports were issued to Kiewit/FCI/Manson, AJV by State Letter. With one exception where a trainee was allegedly left without supervision, the trainees cited in Non Conformance Reports as "unqualified welders" were in the presence of qualified welder at all times. The welds determined to be in question by Caltrans due to "unqualified welders" were otherwise made in complete conformance with contract provisions including contract provisions for use of qualified welders. Trans Bay Steel was in compliance with all contract provisions requiring that welding be performed by welders and welding operators qualified in accordance with provisions of AWS D1.1. Trans Bay Steel qualified welding operators and submitted their qualifications to Caltrans for approval. Trans Bay Steel employed qualified welders to perform all welding on the project. Quality Control records prepared by Trans Bay Steel record the qualified welder(s) employed on all welds.

Caltrans objection to use of trainees in the work became a regular topic of discussion at bi-weekly quality control / production coordination site meetings, (Please see Appendix H.). Trans Bay Steel clearly voiced their disagreement with Caltrans position. Caltrans was informed regularly of our disagreement with their position at every bi-weekly meeting. Trans Bay Steel notified Caltrans after every incident of our position, (Please see Appendix G.). After receipt of Non Conformance Reports in December 2005 and January 2006, Trans Bay Steel was compelled to alter its established production practices and exclude trainees from production operations. Trans Bay Steel established separate "training only" stations and training was performed off-line until after the trainees passed a welding operator qualification test.

The trainee issue continued as a constant disagreement with additional Non Conformance Reports written.

In addition to statements made at bi-weekly coordination meetings letters stating Trans Bay Steel's position were forwarded to Caltrans on: 2/24/06, 5/01/06, 5/11/06, 8/07/06, (Please see Appendix I).

In an apparent attempt to mitigate this disagreement Caltrans initiated a contract change order, eventually numbered CCO 39, to create a new welding operator / trainee qualification process. This would have created additional work for welder qualifications and QC personnel and would have been paid as extra work. Caltrans discussed how they wanted to allow Trans Bay Steel to continue training, however after Federal investigations involving the foundation welding on SFOBB, wanted the training done in this new format for the E2/T1 project only and not on future work.

Trans Bay Steel negotiated CCO 39 in good faith with Caltrans. It was Trans Bay's understanding that language was to be included under this new training requirement that would not set precedent and require Trans Bay Steel to perform training as required under this CCO on

future work and leave Trans Bay Steel's long established training practices in place. Language was to be added to "Grandfather" Trans Bay Steel's long established training practices, so that in the event if future Caltrans special provisions restricted training, Trans Bay Steel could continue to do so.

Trans Bay Steel continually asked Caltrans to include language as discussed in CCO 39 meetings. Some language was included, however the CCO as finally proposed by Caltrans failed to address a time frame that includes the directed change. Kiewit/FCI/Manson, AJV /Trans Bay Steel had previously requested this time frame be included. Trans Bay Steel's position was clearly laid out in letter dated October 31, 2006, and transmitted to Caltrans by KFM-CT-LET-214 in response to the as-issued CCO 39 [See Appendix I].

Caltrans failed to continue negotiations until prompted by Kiewit/FCI/Manson, AJV /Trans Bay Steel – see KFM-CT-LET-258 and –269. Following a meeting with Caltrans on June 12, 2007, Trans Bay Steel filed Notice of Potential Claim #06.

Subsequent denials of validity of claim have led to referral to Dispute Review Board.

Caltrans initiated negotiations for settlement of claim on September 18, 2007 and Trans Bay Steel has responded, but Caltrans' inital offer does not acknowledge key aspects of delay and is non-responsive.

Contractual Basis

Training practices are not addressed in the contract Standard Provisions, Special Provisions, or AWS D1.1 Structural Welding Code governing this work and included in the contract by reference. Caltrans made an independent determination that welding operator trainees working with a qualified welder could not participate in production welding operations as they were "unqualified". As a result Caltrans materially changed the character of Trans Bay's operations and caused extra work.

Tans Bay Steel performed work on E2, T1 in conformance with contract requirements that work be performed by qualified personnel. References to use of qualified welders and welding operators can be found in Special Provisions 8-3.01 as follows:

In addition to the requirements outlined in the appropriate code, the period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. If production welding will be performed without gas shielding, then qualification shall also be without gas shielding. Excluding welding of fracture critical members, a valid certification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

And in AWS D1.1 as follows:

Welders, welding operators and tack welders to be employed under this code, and using the shield arc welding SMAW, SAW, GMAW, GTAW, FCAW, ESW, or EGW processes, shall have been qualified by the applicable tests as described in Part C of this section.(see Commentary).

C4.1.2Performance Qualification of Welding Personnel.
The qualification tests are especially designed to determine the ability of the welders, welding operator, and tack welders to produce sound welds by following a WPS. The code does not

imply that anyone who satisfactorily completes qualification tests can do the welding for which they are qualified for all conditions that might be encountered during production welding. It is essential that welders, welding operators, and tack welders have some degree of training for these differences.

Trans Bay Steel qualified its welders in accordance with these requirements, submitted them for approval, and maintained their qualifications throughout the project as required by the Contract.

Trans Bay Steel can find no language addressing the use of trainees accompanying a qualified welder or welding operator engaged in the work. TBS has an established practice of placing new welding operator trainees with an experienced, qualified welding operator on the shop floor to learn the safety in use of the equipment and the SAW welding operation. The trainee works with the experienced operator starting with simple operations and progresses through supervised operation of the welding station as the trainee's skill and aptitude allow. The trainee performs all work under the direct supervision and control of the qualified welding operator who has total responsibility of the final weld. As the trainee is working with the experienced operator on permanent work, the qualified operator remains with the work and is the welding operator of record. Once the trainee becomes sufficiently proficient s/he will perform a qualification test in accordance with AWS D1.1 and contract requirements. After s/he successfully completes the qualification test, the welding operator is permitted by the contract provisions to perform work on the project without restriction. This practice is not excluded by any contract provision.

Trans Bay Steel has employed workers under this training scheme on Caltrans work with contract provisions similar to those on E2, T1 over a long time period as detailed below;

1998 San Mateo Bridge Piling -- Contract # 04-043624

Welding Operators were trained without conflict to the following special provisions and AWS Code:

"All requirements of the AWS welding codes shall apply unless specified Otherwise in the Standard Specifications, on the plans or in these special Provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS."

"8. Documentation of all certifications for welders who will be used, including all tests performed to qualify the welders and verification of the tests."

"Additional welders, not listed in the approved QCP, shall not be used in the work until an amended QCP, showing documentation of all certifications for these welders, including all tests performed to qualify these welders, verification of the tests, and an updated system for the identification and tracking of all welds, is submitted to, and approved in writing by the Engineer."

1999 Carquinez Bridge Piling -- Contract # 04-013014.

Welding Operators were trained without conflict to the following special provisions and AWS Code:

"All requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

"6. A system for the identification and tracking of all welds, NDT and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;"

"9.Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, tests performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness; "

"A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding, and shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each Quality Control Inspector shall also be included in the log."

"The period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. A valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory."

"All qualification tests for welders, welding operators, and WPSs used in welding operations will be witnessed by the Engineer or an independent third party acceptable to the Engineer."

2001 Richmond San Rafael Bridge Piling -- Contract # 04-0438U4

Welding Operators were trained without conflict to the following special provisions and AWS Code:

"All requirements of the AWS welding codes shall apply unless specified otherwise in the Welding Operators were trained without conflict to the following special provisions: Standardd Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS."

"6. A system for the identification and tracking of all welds, NDT and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;"

"9. Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, test performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness;" "

"A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all

welding, and shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each Quality Control Inspector shall also be included in the log."

"Any material not conforming to these requirements will be subject to rejection."

2001 Benicia Bridge Piling -- Contract # 04-0440U4

Welding Operators were trained without conflict to the following special provisions and AWS Code:

"All requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

"5. A system for the identification and tracking of all welds, nondestructive testing and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;"

"8. Documentation of all certifications for welders who will be used, including all tests performed to qualify the welders and verification of the tests;"

"Additional welders, not listed in the approved QCP, shall not be used in the work until an amended QCP, showing documentation of all certifications for these welders, including all tests performed to qualify these welders, verification of the tests, and an updated system for the identification and tracking of all welds, is submitted to, and approved in writing by the Engineer."

"Any material not conforming to these requirements will be subject to rejection."

2004 E2/T1 SAS Foundation Piling Contract -- # 04-0120E4

At first, Welding Operators were trained without conflict to the following special provisions and AWS Code. Then new subcontractors employed by METS, during production on the E2/T1 project, commencing on December 06, 2005, formed an opinion that this practice was not in conformance with the special provisions and AWS D1.1-2002

"Requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

"H. Copies of all certifications for welders for each welding process used. Certifications shall list the filler materials used, test position, base metal and thickness, tests performed, and the witnessing authority. The submitted documentation shall be approved by the Engineer prior to any project welding being performed by a welder or welding operator."

"I. A master list of qualified welders that will document the welders and welding operators name, ID, the qualified welding process, welding position, and the date for each individual qualification and person qualified."

"J. The written description of the Contractor's process for maintaining and providing the Engineer a current master list of qualified welders and welding operators that documents the names of each welder with the process, position, and date qualified as described in item "I" above."

"A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log."

"Material not conforming to these requirements will be subject to rejection."

Trans Bay Steel is entitled to compensation in accordance with Standard Contract Provisions in Section 4-1.03C – Changes in Character of Work and Section 4-1.03D – Extra Work.

Under Standard Provisions 4-1.03C Changes in Character of Work

> "If an ordered change in the plans or specifications materially changes the character of the work of a contract item from that on which the Contractor based the bid price, and if the change increases or decreases the actual unit cost of the changed item as compared to the actual or estimated actual unit cost of performing the work of that item in accordance with the plans and specifications originally applicable thereto, in the absence of an executed contract change order specifying the compensation payable an adjustment in compensation therefore will be made..."

Restriction of trainees to training-only operations increased the cost of performing the contracted work relative to how it was originally bid in accordance with the contract documents and past practices. Trans Bay Steel's training costs were increased, material and production flow was interrupted and altered, and the required time to perform the work was increased. The resulting increases in production and overhead costs are compensible.

Under Standard Provisions 4-1.03D Extra Work

> "New and unforeseen work will be classed as extra work when determined by the Engineer that the work is not covered by any of the various items for which there is a bid price or by combinations of those items."

Mitigation efforts undertaken by Trans Bay to train employees, improve schedule performance by modifying and upgrading plant equipment, and additional work to perform additional Non-Destructive Examination (NDE) and prepare follow-up quality control documentation are compensable.

Potential Claim Amount

Trans Bay Steel has prepared and submitted with its Final NOPC a cost proposal addressing its damages resulting from Caltran's specification interpretation. Damages fall into the following categories:

1. Welder training Stand-By Time – Trans Bay had more trainees on hand than training stations and employees had to wait before being trained with limited available productive work. Due to employment terms mandated to TBS by the United States Equal Employment Opportunity Commission, these employees could not be laid-off or terminated.

2. Clear Trainee Related Non Conformance Reports-Additional QC and Administrative time to close out issues.

3. Delay damages and Extended Overhead- Trans Bay Steel realized a 119 day delay to the schedule.

4. Additional Overtime for Ultrasonic Testing- Trans Bay Steel had to work the Non Destructive Testing into an already full schedule. Overtime was the only way to achieve this.

5. Equipment upgrades to Support Schedule- Once production equipment was turned into training work stations T1 delivery would have been greatly impacted. Trans Bay Steel modified an existing production line by heavier hydraulics and added an additional crane to handle the T1 load limits in shop floor space that was not originally planned per our estimate.

Trans Bay Steel has proposed estimated monetary damages to Caltrans of $1,809,981. This amount may be revised as a result of minor errors in tabulation discovered during preliminary negotiations with Caltrans. Impacts due to delays in availability of materials to KFM at the site will be assessed by KFM when an agreed TBS schedule impact is determined.

Conclusion

Caltrans objection to Trans Bay Steel's long established shop practice of training welding operators during the course of production work impacted timely production of piling and permanent casings for E2 and T1. In response to Non-Conformance Reports (NCR's) issued by Caltrans, Trans Bay Steel removed all trainees from production operations and altered these established shop training practices and procedures.

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Trans Bay Steel's efforts to avoid additional Caltrans Non Conformance Reports removed valuable production assets and manpower from production operations to be devoted exclusively to training. Due to limited training facilities, the rate at which trainees became available to be utilized on the permanent work was reduced. As a consequence of reduced productive capacity and delayed availability of trained welding operators pile production durations were extended and pile deliveries to the project were delayed. Additional costs were incurred by Trans Bay Steel to mitigate delays by re-tooling portions of the plant and to perform additional testing demanded by Caltrans for acceptance of work declared to be in non-conformance.

Appendix

A. Standard Specifications Section 49

STRUCTURES

SECTION 49: PILING

49-1 GENERAL

49-1.01 DESCRIPTION

. This work shall consist of furnishing and drilling for or driving foundation piles for structures in conformance with the details shown on the plans and as specified in these specifications and the special provisions.

. Attention is directed to the provisions in Section 7-1.09, "Public Safety." Before performing any pile handling or pile installation operation at any location that is closer than the length of the pile being handled or installed to the edge of any traveled way open to public use, the Contractor shall submit to the Engineer, as provided in Section 5-1.02, "Plans and Working Drawings," a detail plan of the measures that will be employed to provide for the safety of traffic and the public.

49-1.02 MATERIALS

. Foundation piling for structures shall consist of timber piles, precast prestressed or cast-in place concrete piles, steel piles or piles of such other materials as may be shown on the plans or required by the special provisions.

. When the plans or specifications permit the use of more than one type of pile, the same type of pile shall be used for all piles within each individual footing, unless otherwise permitted by the Engineer.

49-1.03 DETERMINATION OF LENGTH

. Foundation piles of any material shall be of such length as is required to develop the specified bearing value, to obtain the specified penetration and to extend into the cap or footing block as shown on the plans, or specified in the special provisions.

. At the Contractor's option, the Contractor may conduct additional foundation investigation, including installing and axial load testing additional non-production indicator piling. The Engineer shall approve locations of additional foundation testing. The Contractor shall notify the Engineer at least 5 working days prior to beginning additional foundation investigation.

. Additional foundation investigation shall be completed prior to requesting revised specified pile tip elevations or modification to the installation methods specified herein. Revisions to specified tip elevations and modifications to the specified installation methods will be subject to the provisions in Section 5-1.14, "Cost Reduction Incentive."

. Modification to the specified installation methods and specified pile tip elevation will not be considered at locations where lateral load demands control design pile tip elevations or when the plans state that specified pile tip elevation shall not be revised.

. The pile structural capacity design is based on the nominal strength as defined in Caltrans Bridge Design Specifications (Article 8.1.3) or the nominal resistance as defined in the Load Resistance Factor Design Bridge Design Specifications (Article 1.3.2.1). The nominal resistance of the pile, as shown on the plans, is the design capacity required to resist the factored axial load demands.

A-1

- Indicator compression pile load testing shall conform to the requirements in ASTM Designation: D 1143. The pile shall sustain the first compression test load applied which is equal to the nominal compression resistance, as shown on the plans, with no more than 13 mm total vertical movement at the top of the pile measured relative to the top of the pile prior to the start of compression load testing.
- Indicator tension pile load testing shall conform to the requirements in ASTM Designation: D 3689. The loading apparatus described as "Load Applied to Pile by Hydraulic Jack(s) Acting at One End of Test Beam(s) Anchored to the Pile" shall not be used. The pile shall sustain the first tension test load applied which is equal to the nominal tension resistance, as shown on the plans, with no more than 13 mm total vertical movement at the top of the pile measured relative to the top of the pile prior to the start of tension load testing.
- Indicator piling shall be removed in conformance with the provisions in Section 15-4.02, "Removal Methods," and the remaining holes shall be backfilled with earth or other suitable material approved by the Engineer.
- For driven piling, the Contractor shall furnish piling of sufficient length to obtain both the specified tip elevation and design load shown on the plans or specified in the special provisions. For cast-in-drilled-hole concrete piling, the Contractor shall construct piling of such length to develop the compression nominal resistance and to obtain the specified tip elevation shown on the plans or specified in the special provisions.
- The Contractor shall be responsible for furnishing piling of sufficient length to obtain the penetration and bearing value required.

49-1.04 LOAD TEST PILES

- When load test piles and anchor piles are shown on the plans or specified in the special provisions for a structure, the loading tests using those piles shall be completed before the remaining piles for that structure or specified control location are drilled, cast, cut to length or driven.
- Load test piles shall be installed with the same type of equipment that is to be used for installation of foundation piles.
- Load test piles which are shown on the plans or specified in the special provisions shall conform to the requirements for piling as specified in these specifications and, unless otherwise shown, shall be so located that they may be cut off and become a part of the completed structure.
- Load test piles which are not to be incorporated in the completed structure shall be removed in conformance with the provisions in Section 15-4.02, "Removal Methods," and the remaining holes shall be backfilled with earth or other suitable material approved by the Engineer.
- Load test anchorages in piles used as anchor piles shall conform to the following requirements:

High strength threaded steel rods shall conform to the provisions for bars in Section 50-1.05, "Prestressing Steel," except Type II bars shall be used.

High strength steel plates shall conform to the requirements in ASTM Designation: A 709, Grade 50.

Anchor nuts shall conform to the provisions in the second paragraph in Section 50-1.06, "Anchorages and Distribution."

A2

- The Contractor, at the Contractor's expense, may use additional cement or may use Type III cement in the concrete for the load test and anchor piles.
- Testing of load test piles shown on the plans and specified in the special provisions will be performed by the Engineer without cost to the Contractor. The loading tests will be made when the concrete in the load test and anchor piles has developed a compressive strength of at least 14 MPa.
- Should the Engineer fail to complete the load tests within the time specified in the special provisions and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in load testing of piles, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays."
- The Contractor shall furnish labor, materials, tools, equipment, and incidentals as required to assist the Engineer in the installation, operation and removal of State-furnished steel load test beams, State-furnished jacks, bearing plates, drills and other test equipment. This work will be paid for as extra work as provided in Section 4-1.03D.

49-1.05 DRIVING EQUIPMENT

- Driven piles shall be installed with impact hammers that are approved in writing by the Engineer. Impact hammers shall be steam, hydraulic, air or diesel hammers. Impact hammers shall develop sufficient energy to drive the piles at a penetration rate of not less than 3 mm per blow at the specified bearing value.
- Vibratory hammers shall not be used for installation of piles, unless otherwise shown on the plans or specified in the special provisions.
- Hammers with an external combustion engine that are not single action shall have a transducer that records ram velocity.
- Double acting diesel hammers with internal combustion engines shall have a transducer that records bounce chamber pressure.
- For hammers with no visual way of observing the ram stroke, a printed readout showing hammer energy during driving operation shall be provided to the Engineer by the Contractor.
- Steam or air hammers shall be furnished with boiler or air capacity at least equal to that specified by the manufacturers of the hammers to be used. The boiler or air compressor shall be equipped with an accurate pressure gage at all times. The valve mechanism and other parts of steam, air or diesel hammers shall be maintained in first class condition so that the length of stroke and number of blows per minute for which the hammer is designed will be obtained. Inefficient steam, air or diesel hammers shall not be used.
- When necessary to obtain the specified penetration and when authorized by the Engineer, the Contractor may supply and operate one or more water jets and pumps, or furnish the necessary drilling apparatus and drill holes not greater than the least dimension of the pile to the proper depth and drive the piles therein. Jets shall not be used at locations where the stability of embankments or other improvements would be endangered. In addition, for steel piles or steel shells, when necessary to obtain the specified penetration or to prevent damage to the pile during driving, the Contractor shall provide special driving tips or heavier pile sections or take other measures as approved by the Engineer.

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49-1.06 PREDRILLED HOLES

Piles, to be driven through embankment constructed by the Contractor, shall be driven in holes predrilled or spudded through the embankment when the depth of new embankment at the pile location is in excess of 1.5 m. The hole shall have a diameter of not less than the greatest dimension of the pile cross section plus 150 mm. After driving the pile, the space around the pile shall be filled to ground surface with dry sand or pea gravel.

Material resulting from predrilling holes shall be disposed of as provided in Section 19-2.06, "Surplus Material."

49-1.07 DRIVING

Driving equipment that damages the piling shall not be used. Driving heads or driving blocks which hold the pile in position directly under the hammer during driving shall be used.

Timber piles shall be fresh-headed and square and when permitted by the Engineer, the heads of the piles may be protected by means of heavy steel or wrought iron rings. During driving operations timber piling shall be restrained from lateral movement at intervals not to exceed 6 m over the length between the driving head and the ground surface. During driving operations, the timber pile shall be kept moving by continuous operation of the hammer. When the blow count exceeds either 2 times the blow count required in 300 mm, or 3 times the blow count required in 75 mm for the design bearing load as shown on the plans, computed in conformance with the provisions in Section 49-1.08, "Bearing Value and Penetration," additional aids shall be used to obtain the specified penetration. These aids may include the use of water jets or predrilling, where permitted, or the use of a larger hammer employing a heavy ram striking with a low velocity.

The heads of concrete piles or shells shall be protected from direct impact of the hammer by a cushion driving block. The cushion shall be maintained in good condition during the entire driving operation. The cushion driving block shall be so arranged that any reinforcing bars projecting above the piles will not be displaced or injured in driving.

Precast prestressed concrete piles shall not be driven until 14 days after casting.

Piles shall be driven to the position and line indicated on the plans. Piles materially out of line will be rejected. Rejected piles which interfere with the work shall be removed. Other rejected piles may either be removed or cut off and abandoned in place.

49-1.08 BEARING VALUE AND PENETRATION

Except for piles to be load tested, driven piles shall be driven to a bearing value of not less than the design loading shown on the plans unless otherwise specified in the special provisions or permitted in writing by the Engineer. In addition, when a pile tip elevation is specified, driven piles shall penetrate at least to the specified tip elevation, unless otherwise permitted in writing by the Engineer. Piles to be load tested shall be driven to the specified tip elevation.

When the pile design loading is omitted from the plans or the special provisions, timber piles shall be driven to a bearing value of 400 kN, and steel and concrete piles shall be driven to a bearing value of 625 kN.

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. The bearing values for driven piles shall be determined from the following formulas in which "P" is the safe load in kilonewtons, "E_r" is the manufacturer's rating for joules of energy developed by the hammer, and "s" is the penetration per blow in millimeters, averaged over the last few blows.

$$P = \frac{E_r}{6(s + 2.54)}$$

. The penetration "s" shall be measured only when there is no appreciable rebound of the hammer and only when the last blow is struck upon a sound pile head or driving block. The penetration per blow "s" may be measured either during initial driving or during redriving following a set period as determined by the Engineer.

49-1.09 CUTOFF AND EXTENSION

. Timber piles which are to be capped shall be accurately cut off so that true bearing is obtained on every pile without the use of shims. Piles inaccurately cut off shall be replaced. Splicing of timber piles will not be permitted, except by written permission of the Engineer. Timber piles under concrete footings shall be cut off at the designated elevations and anchor devices shall be installed as shown on the plans.

. Concrete piles shall be cut off at the designated elevations and anchored to the structure as shown on the plans.

. When pile anchor dowels are used, at the option of the Contractor, the dowels shall be anchored in cast or drilled holes in the concrete pile with neat cement paste. If holes are to be drilled, they shall be drilled by methods that will not damage the concrete, reinforcement or prestressing steel. The diameter of the holes shall be the minimum consistent with placing the neat cement paste and dowel. The holes shall be free of dust and other deleterious material when the neat cement paste is placed. Sufficient paste shall be placed in the holes before the dowels are inserted so that no voids remain after the dowels are inserted. The dowels shall be left undisturbed until the paste has hardened.

. When concrete pile extensions are constructed on driven or cast-in-place concrete piles, the piles shall be cut off and extended with a reinforced concrete extension in conformance with the details shown on the plans and the provisions in Section 51, "Concrete Structures."

. Steel shells for cast-in-place concrete piles shall be cut off at the designated elevation.

. The work of cutting off precast prestressed concrete piles shall be performed in such a manner as to avoid spalling or damaging the pile below cut-off. In case of damage, the pile shall be replaced or repaired by the Contractor at the Contractor's expense.

. Steel piles shall be cut off at the designated elevations and anchor devices shall be installed as shown on the plans.

. All cut off lengths of piling shall become the property of the Contractor and shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way."

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49-1.10 (BLANK)

49-2 TIMBER PILES

49-2.01 DESCRIPTION

. Timber piles shall conform to the requirements in ASTM Designation: D 25 for piles except as follows:

Butt and tip diameters shall be as specified in the following table:

Pile Length (meters)	Butt Diameter		Tip Diameter
	Minimum (millimeters)	Maximum (millimeters	Minimum (millimeters
Under 12	300	500	200
12 to 16	300	500	175
16 to 23	325	500	175
23 to 27	325	500	150
27 and Over	325	500	125

Butt diameters are measured approximately one meter from butt.

. The width of checks in untreated timber piles shall not exceed 10 mm. The width of checks in treated timber piles shall not exceed 10 mm after treatment or 13 mm immediately before driving.

49-2.02 INSPECTION

. Treated timber piles will be inspected by the Engineer after treatment.

49-2.03 REQUIREMENTS

. When preservative treatment of timber piles is required by the plans or specified in the special provisions, the treatment shall be creosote and shall conform to the provisions in Section 58, "Preservative Treatment of Lumber, Timber and Piling."

. Commercially treated piles from stock may be used for test piles.

. Untreated and treated timber piles shall be of Douglas fir or Southern Pine timber and shall be clean peeled.

. The natural moisture content of any untreated timber foundation pile when delivered to the jobsite shall be not less than 18 percent at 50-mm depth.

. Treated timber piles shall be driven within 6 months after treatment.

. The natural moisture content of any timber pile to be treated shall be not less than 18 percent at 50 mm depth immediately prior to treatment. Inspection prior to treatment shall be by an established inspecting agency. Inspection reports shall be submitted with each individual shipment, and each pile shall be stamped with the date of inspection.

. Timber piling shall be protected with steel straps placed at not more than 3-m centers along the pile. Five additional straps shall be placed on each pile; one each at 75 mm, 150 mm, 300 mm from the tip, and 2 within 600 mm of the butt.

. Steel strapping shall be approximately 40 mm wide, 0.75-mm in nominal thickness and shall be fabricated from cold-rolled heat-treated high tensile strapping. Strapping shall develop a tensile strength of at least 22 kN. Straps shall be held in place with clips which are secured by crimping twice in the clip length with a notch-type sealer. The clip shall be approximately 65 mm long and

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fabricated from 0.75-mm thick steel. The clip joint shall develop at least 75 percent of the strap tensile strength. Straps shall encircle the pile once and shall be tensioned as tight as possible either by hand operated or pneumatic tensioning tools.

All holes, cuts or daps in treated piles shall be treated with 2 applications of wood preservative conforming to the provisions in Section 58-1.04, "Wood Preservative for Brush Treatment."

49-2.04 TREATMENT OF PILE HEADS

The heads of all treated timber piles which are not embedded in concrete shall be treated by one of the following methods, after the piles have been driven and cut off to the proper elevation:

A. An application of wood preservative conforming to the provisions in Section 58-1.04, "Wood Preservative for Brush Treatment," shall first be applied to the head of the pile and a protective cap shall then be built up by applying alternate layers of loosely woven fabric and hot asphalt or tar similar to membrane waterproofing, using 3 layers of asphalt or tar and 2 layers of fabric. The fabric shall measure at least 150 mm more in each direction than the diameter of the pile and shall be turned down over the pile and the edges secured by binding with 2 turns of No. 10 galvanized wire. The fabric shall be wired in advance of the application of the final layer of asphalt or tar which shall extend down over the wiring.

B. The sawed surface shall be covered with 3 applications of a hot mixture of 60 percent creosote and 40 percent roofing pitch, or thoroughly brushcoated with 3 applications of hot creosote and covered with hot roofing pitch. A covering of 3.50-mm nominal thickness galvanized steel sheet shall be placed over the coating and bent down over the sides of each pile to shed water.

The method to be used shall be at the option of the Contractor, unless otherwise provided on the plans or in the special provisions.

The treatment of pile heads encased in concrete will not be required.

49-3 PRECAST PRESTRESSED CONCRETE PILES

49-3.01 DESCRIPTION

Precast prestressed concrete piles shall be constructed in conformance with the provisions in Sections 50, "Prestressing Concrete," and 51, "Concrete Structures."

When requested, the Contractor shall submit 2 sets of working drawings to the Engineer at the jobsite for the Engineer's use in administering the contract. The drawings shall conform to the provisions in Section 5-1.02, "Plans and Working Drawings," and shall show the pile dimensions, materials, prestressing methods, tendon arrangement and working stresses, including any addition or rearrangement of reinforcement from that shown on the plans.

Precast prestressed concrete piling will be inspected at the fabrication site. The Contractor shall notify the Engineer when materials have been delivered to the fabrication site and shall give the Engineer at least 10 days' notice after delivery before commencing the fabrication of the precast prestressed concrete piling. Materials to be used shall be made available to the Engineer so they can be

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examined. The Engineer shall have free access at all times to any portion of the fabrication site where the material is stored or where work on the material is being performed.

. Concrete for precast prestressed concrete piles shall be placed in smooth mortar-tight forms, so supported as to prevent appreciable deformation or settlement during placing or curing. Unformed surfaces shall be finished to a smooth surface. When removed from the form, the pile shall present true, smooth, even surfaces free from honeycombs and voids and shall be so straight that a line stretched from butt to tip on any face will not be more than 25 mm from the face of the pile at any point.

. When lifting anchors are used in precast prestressed concrete piles, the anchors shall be not less than 25 mm clear from the reinforcement or prestressing steel in the pile.

. Lifting anchors used in precast prestressed concrete piles without a class designation ending in "C" (corrosion resistant) shall be removed from that portion of the pile which extends above the final ground line and the holes filled in conformance with the provisions in Section 51-1.18A, "Ordinary Surface Finish."

. Lifting anchors used in precast prestressed concrete piles with a class designation ending in "C" (corrosion resistant) shall be removed to a depth of at least 25 mm below the surface of the concrete and the resulting hole shall be filled with epoxy adhesive before the piles are delivered to the job site. The epoxy adhesive shall conform to the provisions in Sections 95-1, "General," and 95-2.01, "Binder (Adhesive), Epoxy Resin Base."

49-3.02 CURING

. All newly placed concrete for precast prestressed concrete piles shall be cured in conformance with the provisions in Section 90-7.05, "Curing Precast Prestressed Concrete Piles."

49-3.03 HANDLING

. When raising or transporting precast prestressed concrete piles, the Contractor shall provide slings or other equipment to avoid any appreciable bending of the pile or cracking of the concrete. Piles materially damaged in handling or driving shall be replaced by the Contractor at the Contractor's expense. Precast prestressed concrete piles shall be so handled at all times as to avoid breaking or chipping the edges.

49-4 CAST-IN-PLACE CONCRETE PILES

49-4.01 DESCRIPTION

. Cast-in-place concrete piles shall consist of one of the following:

A. Steel shells driven permanently to the required bearing value and penetration and filled with concrete.
B. Drilled holes filled with concrete.

. The drilling of holes shall conform to the provisions in these specifications. Concrete filling for cast-in-place concrete piles is designated by compressive strength and shall have a minimum 28-day compressive strength of 25 MPa. The combined aggregate grading for the concrete shall be the 25-mm maximum

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grading. Concrete shall conform to the provisions in Section 90, "Portland Cement Concrete," and Section 51, "Concrete Structures." Reinforcement shall conform to the provisions in Section 52, "Reinforcement."

- Cast-in-place concrete piles shall be constructed so that the excavation methods and the concrete placement procedures shall provide for placing the concrete against undisturbed material in a dry or dewatered hole.
- The concrete filling for cast-in-place concrete piles shall be dense and homogeneous. The methods used to place the concrete shall prevent segregation. Concrete placed in steel shells, dry drilled holes or dewatered drilled holes shall not be permitted to fall from a height greater than 2.5 m without the use of adjustable length pipes or tubes unless the flow of concrete is directed into the center of the hole using a hopper and not allowed to strike the reinforcement, reinforcement bracing and other objects in the hole.
- Concrete filling for cast-in-place concrete piles shall be vibrated in the upper 5 m of the pile.
- Section 51-1.10, "Concrete Deposited Under Water," shall not apply to cast-in-drilled-hole concrete piling.
- After placing concrete, the temporarily exposed surfaces of the cast-in-place concrete piles shall be cured in conformance with the provisions in Section 90-7.03, "Curing Structures."

49-4.02 (BLANK)

49-4.03 DRILLED HOLES

- Except for cast-in-place concrete piling for soundwalls and retaining walls, when cast-in-place concrete piling is less than 600 mm in diameter, the Contractor may propose to increase the diameter and revise the pile tip elevation. The Contractor may propose to increase the diameter of cast-in-place concrete piling for soundwalls and retaining walls, but the pile tip elevations shall not be revised. No additional compensation or delays will be made for the Contractor's use of increased diameter cast-in-place concrete piling.
- The axis of the hole shall not deviate from plumb more than 40 mm per 3 m of length.
- Care shall be taken during excavation to prevent disturbing the foundation material surrounding the pile. Equipment or methods used for excavating holes shall not cause quick soil conditions or cause scouring or caving of the hole. After excavation is begun, the pile shall be constructed expeditiously in order to prevent deterioration of the surrounding foundation material from air slaking or from the presence of water. Deteriorated foundation material, including material that has softened, swollen or degraded, shall be removed from the sides and the bottom of the hole and shall be disposed of. The bottom of the drilled hole shall be cleaned just before placing reinforcement or concrete to remove any loose sand, gravel, dirt, and drill cuttings.
- After placing reinforcement and prior to placing concrete in the drilled hole, if caving occurs or deteriorated foundation material accumulates on the bottom of the hole, as determined by the Engineer, the reinforcement shall be removed and the bottom of the drilled hole cleaned.
- Water that has infiltrated the hole shall be removed before placing concrete therein. Fluvial or drainage water shall not be permitted to enter the hole.

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. Temporary steel casings shall be furnished and placed tight in the hole where shown on the plans and where necessary to control water or to prevent quick soil conditions or caving of the hole. Temporary casing shall be watertight and of sufficient strength to withstand the loads from installation, removal, lateral concrete pressures and earth pressures. The casing shall be non-corrugated and the surfaces shall be smooth, clean and free from hardened concrete. The casing shall be removed while the concrete is being placed. In a dewatered hole the concrete in the casing shall be maintained at a level at least 1.5 m above the bottom of the casing or at a level above the bottom of the casing adequate to prevent displacement of the concrete by material from outside the casing, whichever is greater. Casing may be vibrated or hammered when required to assist in removal of the casing from the hole, to prevent lifting of the reinforcement and to prevent concrete contamination. The withdrawal of casings shall not leave voids or cause contamination of the concrete with soil or other materials.

. Portions of the holes may be enlarged, backfilled with slurry cement backfill, concrete or other material, and redrilled to the specified diameter to control caving. Backfill material at enlarged piles shall be chemically compatible with concrete and steel, shall be drillable and shall have the necessary strength required for the conditions.

. Drill cuttings shall be disposed of in conformance with the provisions in Section 19-2.06, "Surplus Materials." Material resulting from placing concrete in piles shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," unless otherwise permitted in writing by the Engineer.

. The reinforcement shall be placed and secured symmetrically about the axis of the pile and shall be securely blocked to clear the sides of the hole.

. Reinforcement for cast-in-drilled-hole concrete piling with increased diameters and revised tip elevations shall conform to the following:

The size and number of the reinforcing bars, the percentage of bars required to extend to the pile tip and the size and pitch of the spiral reinforcement shall conform to the details shown on the plans for the original piles.

The required length of the spiral reinforcement and of any reinforcing bars which do not extend to the pile tip shall be that length which would have been required for the original specified or ordered tip elevation.

The diameter of the spiral reinforcement shall either remain the same as required for the original pile or be increased to provide not less than the concrete cover required for the original pile. Positive means shall be provided to ensure that the reinforcement is centered in the pile.

49-4.04 STEEL SHELLS

. Steel shells shall be of sufficient strength and rigidity to permit driving, and to prevent distortion caused by soil pressures or the driving of adjacent piles until filled with concrete. The shells shall also be sufficiently watertight to exclude water during the placing of concrete.

. The shells may be cylindrical or tapered, step-tapered, or a combination of either, with cylindrical sections.

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. Steel shells shall conform to the provisions for steel pipe piles specified in Section 49-5, "Steel Piles."

49-4.05 INSPECTION

. After being driven and prior to placing reinforcement and concrete therein, the steel shells shall be examined for collapse or reduced diameter at any point. Any shell which is improperly driven or broken or shows partial collapse to such an extent as to materially decrease its bearing value will be rejected. Rejected shells shall be removed and replaced, or a new shell shall be driven adjacent to the rejected shell. Rejected shells which cannot be removed shall be filled with concrete by the Contractor at the Contractor's expense. When a new shell is driven to replace a rejected shell, the Contractor, at the Contractor's expense, shall enlarge the footing as determined necessary by the Engineer.

. Driven shells and dewatered drilled holes shall be clean and free of water before reinforcement and concrete are placed.

. The Contractor shall have available at all times a suitable light for inspecting the entire length of the shells or dewatered holes before placing the reinforcement and concrete.

49-5 STEEL PILES

49-5.01 DESCRIPTION

. Steel piles shall include structural shape piles and pipe piles.

. Structural shape steel piles shall be of the rolled section shown on the plans or of the section specified in the special provisions and shall be structural steel conforming to the requirements in ASTM Designation: A 36/A 36M, or at the option of the Contractor, structural steel conforming to the requirements in ASTM Designation: A 572/A 572M.

. Steel pipe piles shall conform to the following requirements:

1. Steel pipe piles less than 360 mm in diameter shall conform to the requirements in ASTM Designation: A 252, Grade 2 or 3.
2. Steel pipe piles 360 mm and greater in diameter shall conform to the requirements in ASTM Designation: A 252, Grade 3.
3. Steel pipe piles shall be of the nominal diameter and nominal wall thickness shown on the plans or specified in the special provisions.
4. The carbon equivalency (CE) of steel for steel pipe piles, as defined in AWS D 1.1, Section XI5.1, shall not exceed 0.45.
5. The sulfur content of steel for steel pipe piles shall not exceed 0.05 percent.
6 Seams in steel pipe piles shall be complete penetration welds and shall conform to the requirements in AWS D1.1 and amendments to AWS D1.1 in these specifications and the special provisions. Incomplete penetration welds and defective welds of steel pipe piles shall be repaired or restored to achieve complete joint penetration groove welds.

. Steel piles shall not be joined by welded lap splicing.

. The manufacturer or fabricator of steel piles shall furnish a Certificate of Compliance stating that the piles being supplied conform to these specifications and to the special provisions. The Certificate of Compliance shall include test

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reports for tensile, chemical, and any specified nondestructive tests. Samples for testing shall be taken from the base metal, steel, coil or from the manufactured or fabricated piles .

49-5.02 SPLICING

. Steel pile splices shall conform to the requirements in AWS D 1.1 and the special provisions. Structural shape steel piling splices shall be complete joint penetration groove welds. Steel pipe pile splices that are made at a permanent manufacture or fabrication facility, and that are made prior to furnishing the Certificate of Compliance, shall be complete penetration welds. Steel pipe pile splices that are made in the field shall be complete joint penetration groove welds.

. Ends of steel pipe piling to be spliced that have been damaged during driving shall be removed to a sound and uniform section conforming to the tolerances for diameter, edge alignment and roundness required to meet the steel pile splice welding requirements. Pipe ends shall be field cut using automated guided cutting equipment. Manual flame cutting shall not be used.

49-6 MEASUREMENT AND PAYMENT

49-6.01 MEASUREMENT

. The length of timber, steel and precast prestressed concrete piles, and of cast-in-place concrete piles consisting of driven shells filled with concrete, shall be the total length in place in the completed work, measured along the longest side, from the tip of the pile to the plane of pile cut-off.

. The length of each cast-in-drilled-hole concrete pile to be paid for shall be the length, measured along the longest side, from the tip elevation shown on the plans, or the tip elevation ordered by the Engineer for the diameter of pile shown on the plans, to the plane of pile cut-off. No reduction in the length for payment will be made for any cast-in-drilled-hole concrete pile where the tip elevation is revised in conjunction with a request by the Contractor to increase the pile diameter.

. The length of load test piles and adjacent anchor piles to be paid for shall be the length as load tested.

. When concrete piles are extended by means of reinforced concrete extensions as provided in Section 49-1.09, "Cutoff and Extension," the length of the extension from the plane of pile cut-off to the top of the extension will be considered as concrete piling and will be paid for at the price per meter for furnish piling, or for cast-in-drilled-hole concrete piling, whichever item applies.

49-6.02 PAYMENT

. Timber, steel, precast prestressed concrete piles and cast-in-place concrete piles, consisting of driven shells filled with concrete, will be paid for at the contract price per meter for furnish piling and the contract unit price for drive pile.

. Cast-in-place concrete piles consisting of drilled holes filled with concrete will be paid for at the contract price per meter for cast-in-drilled-hole concrete piling. Any pile which has been increased in diameter as provided in Section 49-4.03, "Drilled Holes," will be paid for at the contract price per meter for the size of cast-in-drilled-hole concrete piling shown on the plans at that location.

. The contract price paid per meter for cast-in-drilled-hole concrete piling shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in drilling holes, disposing of the

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material resulting from drilling holes, casing holes and removing water when necessary, furnishing and placing concrete and reinforcement, and constructing reinforced concrete extensions, complete in place, to the required bearing and penetration as shown on the plans and as specified in these specifications and the special provisions, and as directed by the Engineer.

The contract price paid per meter for furnish piling of the type or class shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing the timber, steel or concrete piles at the site for driving, including steel shells and the filling materials for cast-in-place concrete piles, constructing reinforced concrete extensions, splicing piles and furnishing and installing pile anchors and lugs, as shown on the plans, and as specified in these specifications and the special provisions, and as directed by the Engineer.

Full compensation for furnishing all reinforcement and prestressing steel in concrete piles and concrete pile extensions, including reinforcement required to extend beyond the pile or extension as shown on the plans, shall be considered as included in the contract price paid per meter for furnish piling of the type or class shown in the Engineer's Estimate or the contract price paid per meter for cast-in-drilled-hole concrete piling, and no additional compensation will be allowed therefor.

If precast prestressed concrete piling or steel pipe piling is manufactured or fabricated more than 480 air line kilometers from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Whereas it is and will be impractical and extremely difficult to ascertain and determine the actual increase in such expenses, it is agreed that payment to the Contractor for furnishing piling of the types shown in the Engineer's Estimate will be reduced $5000 for each manufacture or fabrication site located more than 480 air line kilometers from both Sacramento and Los Angeles and an additional $3000 ($8000 total) for each manufacture or fabrication site located more than 4800 air line kilometers from both Sacramento and Los Angeles.

The contract unit price paid for drive pile shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in driving timber, concrete and steel piles, driving steel shells for cast-in-place concrete piles, placing filling materials for cast-in-place concrete piles and cutting off piles, all complete in place to the required bearing and penetration as shown on the plans and as specified in these specifications and the special provisions, and as directed by the Engineer.

Load test piles and adjacent anchor piles that become a part of the completed structure, or are shown on the plans or are specified, will be paid for at the contract prices for the type or class of piling shown in the Engineer's Estimate.

Full compensation for all jetting, drilling, providing special driving tips or heavier sections for steel piles or shells, or other work necessary to obtain the specified penetration and bearing value of the piles, for predrilling holes through embankment and filling the space remaining around the pile with sand or pea gravel, for disposing of material resulting from jetting, drilling or predrilling holes, and for all excavation and backfill involved in constructing concrete extensions as shown on the plans, and as specified in these specifications and the special provisions, and as directed by the Engineer shall be considered as included in the contract unit price paid for drive pile or in the contract price paid per meter for

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cast-in-drilled-hole concrete piling, and no additional compensation will be allowed therefor.

- No payment will be made for piles driven out of place or for imperfect piles, or for piles which are damaged in handling or driving.
- When, in addition to the requirements of the plans and specifications, lugs are ordered on steel piles, the Contractor shall furnish and place these devices and the cost thereof will be paid for as extra work as provided in Section 4-1.03D. No additional compensation will be allowed for driving piles on account of these additional requirements.

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Appendix

B. Special Provisions Section 8-3.01 Welding

8-3.01 WELDING

GENERAL

Flux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform welding for this project.

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans, or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	2002
D1.4	1998
D1.5	2002
D1.6	1999

Requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans, or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or AASHTO/AWS.

Section 6.1.1.1 of AWS D1.5 is replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and as necessary to ensure that materials and workmanship conform to the requirements of the contract documents.

Sections 6.1.3 through 6.1.4.3 of AWS D1.1, Section 7.1.2 of AWS D1.4, and Sections 6.1.1.2 through 6.1.3.3 of AWS D1.5 are replaced with the following:

The QC Inspector shall be the duly designated person who acts for and on behalf of the Contractor for inspection, testing, and quality related matters for all welding.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

The QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as an AWS Certified Welding Inspector (CWI) in conformance with the requirements in AWS QC1, " Standard for AWS Certification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in conformance with the requirements in AWS QC1, "Standard for AWS Certification of Welding Inspectors." The Assistant QC Inspector may perform inspection under the direct supervision of the QC Inspector provided the Assistant is always within visible and audible range of the QC Inspector. The QC Inspector shall be responsible for signing all reports and for determining if welded materials conform to workmanship and acceptance criteria. The ratio of QC Assistants to QC Inspectors shall not exceed 5 to 1.

When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

Section 6.14.6, "Personnel Qualification," of AWS D1.1, Section 7.8, "Personnel Qualification," of AWS D1.4, and Section 6.1.3.4, "Personnel Qualification," of AWS D1.5 are replaced with the following:

Personnel performing nondestructive testing (NDT) shall be qualified and certified in conformance with the requirements of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. The Written Practice of the NDT firm shall meet or exceed the guidelines of the ASNT Recommended Practice No. SNT-TC-1A. Individuals who perform NDT, review the results, and prepare the written reports shall be either:

A. Certified NDT Level II technicians, or;
B. Level III technicians who hold a current ASNT Level III certificate in that discipline and are authorized and certified to perform the work of Level II technicians.

Section 6.5.4 of AWS D1.5 is replaced with the following:

The QC Inspector shall inspect and approve each joint preparation, assembly practice, welding technique, joint fit-up, and the performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved Welding Procedure Specification (WPS) are met. The QC Inspector shall examine the work to make certain that it meets the requirements of Sections 3 and 6.26. The size and contour of all welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities should be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.

Section 6.6.5, "Nonspecified NDT Other than Visual," of AWS D1.1, Section 6.6.5 of AWS D1.4 and Section 6.6.5 of AWS D1.5 shall not apply.
For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS or other specified welding codes, in the Standard Specifications, or in these special provisions. Additional NDT required by the Engineer will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. Should any welding deficiencies be discovered by this additional NDT, all costs associated with the repair of the deficient area, including NDT of the weld and of the weld repair, and any delays caused by the repair, shall be at the Contractor's expense.
Repair work to correct welding deficiencies discovered by visual inspection or NDT, or by additional NDT directed or performed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.
The Engineer shall have the authority to verify the qualifications or certifications of any welder, QC Inspector, or NDT personnel to specified levels by retests or other means approved by the Engineer.
Continuous inspection shall be provided when any welding is being performed. Continuous inspection, as a minimum, shall include having a QC Inspector within such

close proximity of all welders or welding operators so that inspections by the QC Inspector of each welding operation at each welding location shall not lapse for a period exceeding 30 minutes.

Inspection and approval of all joint preparations, assembly practices, joint fit-ups, welding techniques, and the performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day welding is performed. For each inspection, including fit-up, Welding Procedure Specification (WPS) verification, and final weld inspection, the QC Inspector shall confirm and document compliance with the requirements of the AWS or other specified code criteria and the requirements of these special provisions on all welded joints before welding, during welding, and after the completion of each weld.

When joint weld details that are not prequalified to the details of Section 3 of AWS D1.1 or to the details of Figure 2.4 or 2.5 of AWS D1.5 are proposed for use in the work, the joint details, their intended locations, and the proposed welding parameters and essential variables, will be approved by the Engineer. The Engineer shall have 2 weeks to complete the review of the proposed joint detail locations. 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. Upon approval of the proposed joint detail locations and qualification of the proposed joint details, welders and welding operators using these details shall perform a qualification test plate using the WPS variables and the joint detail to be used in production. The test plate shall have the maximum thickness to be used in production and a minimum length of 180 mm and minimum finish welded width 460 mm. The test plate shall be mechanically and radiographically tested. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

In addition to the requirements specified in the applicable code, the period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. If production welding will be performed without gas shielding, then qualification shall also be without gas shielding. Excluding welding of fracture critical members, a valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's or welding operator's work remains satisfactory.

The Engineer will witness all qualification tests for WPSs that were not previously approved by the Department. An approved independent third party will witness the qualification tests for welders or welding operators. The independent third party shall be a current CWI and shall not be employed by the contractor performing the welding. The Engineer shall have 2 weeks to review the qualifications and copy of the current certification of the independent third party. 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 Contractor shall notify the Engineer

one week prior to performing any qualification tests. Witnessing of qualification tests by the Engineer shall not constitute approval of the intended joint locations, welding parameters, or essential variables.
In addition to the requirements of AWS D1.5 Section 5.12 or 5.13, welding procedures qualification, for work welded in conformance with that code, shall conform to the following requirements:

A. Unless considered prequalified, fillet welds, including reinforcing fillet welds, shall be qualified in each position. The fillet weld soundness test shall be conducted using the essential variables of the WPS as established by the Procedure Qualification Record (PQR.)
B. For qualification of joints that do not conform to Figures 2.4 and 2.5 of AWS D1.5, two WPS qualification tests are required. The tests conforming to AWS D1.5 Section 5.13 shall be conducted using both Figure 5.1 and Figure 5.3. The test conforming to Figure 5.3 shall be conducted using the same welding electrical parameters that were established for the test conducted conforming to Figure 5.1.
C. The travel speed, current, and voltage values that are used for tests conducted per AWS D1.5 Section 5.12 or 5.13 shall be consistent for each weld joint, and shall in no case vary by more than 10 percent for travel speed, 10 percent for current, and 7 percent for voltage.
D. For a WPS qualified in conformance with AWS D1.5 Section 5.13, the values to be used for calculating ranges for current and voltage shall be based on the average of all weld passes made in the test. Heat input shall be calculated using the average of current and voltage of all weld passes made in the test for a WPS qualified in conformance with Section 5.12 or 5.13.
E. To qualify for unlimited material thickness, two qualification tests are required for WPSs utilized for welding material thicknesses greater than 38 mm. One test shall be conducted using 20-mm thick test plates, and one test shall be conducted using test plates with a thickness between 38 mm and 50 mm. Two maximum heat input tests may be conducted for unlimited thickness qualification.
F. Macroetch tests are required for WPS qualification tests, and acceptance shall be per AWS D1.5 Section 5.19.3.
G. When a weld joint is to be made using a combination of qualified WPSs, each process shall be qualified separately.
H. When a weld joint is to be made using a combination of qualified and prequalified processes, the WPS shall reflect both processes and the limitations of essential variables, including weld bead placement, for both processes.
I. Prior to preparing mechanical test specimens, the PQR welds shall be inspected by visual and radiographic tests. Backing bar shall be 75 mm in width and shall remain in place during NDT testing. Results of the visual and radiographic tests shall comply with AWS D1.5 Section 6.26.2, excluding Section 6.26.2.2. Test plates that do not comply with both tests shall not be used.

WELDING QUALITY CONTROL

Welding quality control shall conform to the requirements in the AWS or other specified welding codes, the Standard Specifications, and these special provisions.
Unless otherwise specified, welding quality control shall apply when any work is welded in conformance with the provisions in Section 49, "Piling," Section 52, "Reinforcement," Section 55, "Steel Structures," or Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications.
In addition, welding quality control shall apply when welding is performed for the following work:

A. Miscellaneous metal

The welding of fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and herein.
The Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of welding, including materials and workmanship, performed by the Contractor and subcontractors. The QCM shall be the sole individual responsible to the Contractor for submitting, receiving, reviewing, and approving all correspondence, required submittals, and reports to and from the Engineer. The QCM shall be a registered professional engineer or shall be currently certified as a CWI or a CAWI.
The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.
Welding inspection personnel or NDT firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project, except for the following conditions:

A. The work is welded in conformance with AWS D1.5 and is performed at a permanent fabrication or manufacturing facility which is certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges and Fracture Critical endorsement F.
B. The welding is performed on pipe pile material at a permanent pipe manufacturing facility authorized to apply the American Petroleum Institute (API) monogram for API 5L pipe.

For welding performed at such facilities, the inspection personnel or NDT firms may be employed or compensated by the facility performing the welding.
Prior to submitting the Welding Quality Control Plan (WQCP) required herein, a pre-welding meeting between the Engineer, the Contractor's QCM, and a representative from each entity performing welding or inspection for this project, shall be held to discuss the requirements for the WQCP.
The Contractor shall submit to the Engineer, in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 2 copies of a separate WQCP for each subcontractor or supplier for each item of work for which welding is to be performed.
The Contractor shall allow the Engineer 2 weeks to review the WQCP submittal after a complete plan has been received. No welding shall be performed until the WQCP is 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 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.
An amended WQCP or any addendum to the approved WQCP shall be submitted to, and approved in writing by the Engineer, for proposed revisions to the approved WQCP. An amended WQCP or addendum will be required for revisions to the WQCP, including but not limited to a revised WPS; additional welders; changes in NDT firms, QC, or NDT personnel or procedures; or updated systems for tracking and identifying welds. The Engineer shall have 1 week to complete the review of the amended WQCP or addendum.

Work affected by the proposed revisions shall not be performed until the amended WQCP or addendum has been approved. 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.
Information regarding the contents, format, and organization of a WQCP, is available at the Transportation Laboratory or the following website:

http://www.dot.ca.gov/hq/esc/Translab/smbresources.htm

After final approval of the WQCP, amended WQCP, or addendum, the Contractor shall submit 7 copies to the Engineer of the approved documents. A copy of the Engineer approved document shall be available at each location where welding is to be performed A daily production log for welding shall be kept for each day that welding is performed. The log shall clearly indicate the locations of all welding. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log.
The following items shall be included in a Welding Report that is to be submitted to the Engineer within 10 days following the performance of any welding:

A. Reports of all visual weld inspections and NDT.
B. Radiographs and radiographic reports, and other required NDT reports.
C. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests and corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable.
D. Daily production log.

The following information shall be clearly written on the outside of radiographic envelopes: name of the QCM, name of the nondestructive testing firm, name of the radiographer, date, contract number, complete part description, and all included weld numbers or a report number, as detailed in the WQCP. In addition, all innerleaves shall have clearly written on them the part description and all included weld numbers, as detailed in the WQCP.
Reports regarding NDT shall be signed by both the NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.
The Engineer will review the Welding Report to determine if the Contractor is in conformance with the WQCP. Unless otherwise specified, the Engineer shall be allowed 10 days to review the report and respond in writing after a complete Welding Report has been received. Prior to receiving notification from the Engineer of the Contractor's conformance with the WQCP, the Contractor may encase in concrete or cover welds for which a Welding Report has been submitted. 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 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 QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans, the Standard Specifications, and these special provisions.

PAYMENT

Full compensation for conforming to the requirements of "Welding," and "Welding Quality Control," shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefore.

Appendix

C. Special Provisions Section 10-1.24 Piling

10-1.24 PILING

GENERAL

Piling shall conform to the provisions in Section 49, "Piling," of the Standard Specifications, and these special provisions.

Foundation information is included in the "Information Handout" available to the Contractor as provided for in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," of the Standard Specifications.

Soil samples and rock cores are available for viewing. Contact the Toll Bridge Duty Senior at the office of the Toll Bridge Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, CA 94612, email: duty_senior_district04@dot.ca.gov, telephone number (510) 286-5209.

Attention is directed to "Nonshrink Grout" and "Nonshrink Fiber Reinforced Grout," of these special provisions for grouting permanent steel casing at Pier 1 and cast-in-steel shell concrete piling at Pier E2.

Attention is directed to "Strong Motion Detection System," and "Pile Corrosion Monitoring System," of these special provisions regarding equipment to be installed in piling.

Attention is directed to "Miscellaneous Metal," of these special provisions regarding steel downhole casing to be installed in piling.

Attention is directed to "Sound Control Requirements," of these special provisions.

Attention is directed to "Earthwork," of these special provisions regarding oversize holes, foundation tolerances and isolation material for piles.

The requirements in Section 49-1.03, "Determination of Length," of the Standard Specifications shall not apply.

Driven piling shall be installed and shall be of such length as required to obtain the specified pile tip elevation and to extend into the pile cap, as shown on the plans.

All steel shells for cast-in-steel-shell piles shall be clearly marked along their entire length in increments of 250 mm with more prominent markings every meter. Marking shall be made by white paint lines 50 mm wide. Markings shall be accurately placed on the pile with a tape measure that is at least 30 meters in length such that the intended measurement is true at the bottom of the marking. Markings shall be visible from all directions and shall indicate cumulative length from the pile toe.

Cast-in-steel-shell pile installation procedures shall consider the presence of soft soils that allow piles to penetrate significant distances under self-weight and the weight of the hammer, dense soils and bedrock that result in hard driving, soils that gain strength during delays in driving, wind and wave excitation, and tidal flow fluctuation.

Cast-in-drilled-hole concrete pile installation procedures shall consider the presence of soft caving soil, dense soil, embedment in bedrock, wind and wave excitation, and tidal flow fluctuation.

"Attention is directed to "Project Information" of these special provisions for reference to a preliminary Underground Classification issued by the Division of Occupational Safety and Health, Mining and Tunneling Unit per California Code of Regulations Title 8 Division 1, Chapter 4, Subchapter 20 (Tunnel Safety Orders). This classification shall be considered applicable to all piles. The Contractor shall comply with the Tunnel Safety Orders with regard to any underground construction, including but not limited to the conditions stated on the Classification.

The Contractor, as the employer and the owner's agent, is responsible for making all arrangements necessary to perform underground construction, including but not limited to holding pre-job safety

conferences and providing notifications to the Division of Occupational Safety and Health Mining and Tunneling Unit. The Contractor shall notify the Engineer not less than 20 days prior to any worker entry into any location that the Tunnel Safety Orders classify as a tunnel or shaft. The Department will obtain additional gas classifications as needed by the Contractor.

Prior to the start of any construction activities, the Contractor shall designate, in writing to the Engineer, the on-site Safety Representative who is qualified to recognize hazardous conditions and is certified by the Division of Occupational Safety and Health.

Full compensation for complying with the requirements of the Tunnel Safety Orders shall be considered as included in the contract prices for the various items of work involved and no additional compensation will be allowed therefor."

CONTRACT NO. 04-0120E4
ADDED PER ADDENDUM NO. 4 DATED DECEMBER 19, 2003

DRIVING EQUIPMENT

Pile hammer energy input to the pile will be verified by the Engineer using dynamic monitoring.

Primary Hammer

The primary hammer shall be defined as a hydraulic impact hammer with a minimum manufacturer's rated energy of 1700 kJ. The Contractor shall maintain the primary hammer at the site and it shall be fully operational at all times during pile driving operations.

Jetting and drilling in conformance with Section 49-1.05 "Driving Equipment," of the Standard Specifications shall not be used.

At the option of the Contractor, vibratory hammers may be used to install piling to no deeper than El. –35 meters NGVD.

PILE ALIGNMENT TEMPLATE AND PILE HANDLING SUBMITTAL

The Contractor shall provide a pile alignment template to maintain support of the temporary and permanent steel shell, casings, and reinforcing steel cages during pile installation. Prior to installing piling, the Contractor shall submit to the Engineer for approval in accordance with the provisions in "Working Drawings," of these special provisions, working drawings for the pile alignment template and pile handling procedures.

The Contractor shall allow the Engineer 70 working days after complete drawings and all supporting calculations are submitted for review of the pile alignment template working drawings.

Pile handling shall conform to the recommendations in API RP2A "Recommended Practice for Planning, Designing, and Constructing Fixed Offshore Platforms."

Working drawings for the pile alignment template and pile handling procedures shall include the following:

A. Details for installation and removal of the pile alignment template.
B. Details and equipment used for handling of pile including the use of temporary lifting or handling attachments and supporting brackets.
C. Details and methods for cutting the pile at the specified cut-off elevation and removing the pile head, as applicable.
D. A list of all tasks required to install the piles and a written procedure for performing the work.

E. Details and equipment associated with maintaining the pile alignment template including cranes and crane vessels, mooring systems and anchor patterns, transport barges, pile supports and fastenings.

Working drawings for the pile alignment template and pile handling procedures shall be supplemented by calculations, and the calculations shall include the following:

A. Details and calculations demonstrating how the pile installation system will provide and maintain the specified axial and radial alignment of the pile to within an angle of 1 in 100 or to a lesser tolerance, if specified elsewhere in these special provisions.
B. Details and calculations demonstrating adequate support and stability for the pile with the full operating weight and dynamic loading of the proposed hammer at the top of the pile as applicable.
C. Provisions to provide stability and maintain alignment during placement of the piles and casings in wind, wave and current conditions.
D. Details and characteristics of any additional temporary alignment devices provided by the Contractor to prevent damage to in-place foundation elements during pile driving.
E. Provisions to prevent a driven pile from running under its own weight and the weight of the hammer, including, at a minimum, provisions to prevent the pile from penetrating below the top of the pile alignment template, steel foundation frame, as applicable or below water level.
F. Provisions for providing adequate work space for pile welding, cutting and inspection.
G. Provisions for ensuring the specified pile straightness, alignment, and support to prevent relative movement during field welding and to ensure that welding tolerances are met.
H. Method and equipment for monitoring pile alignment.
I. Calculation of pile stresses and deflections resulting from handling operations.

The temporary pile alignment template shall be removed after the installation of the piling. Any temporary piling required to support the pile alignment template shall be removed to at least 400 mm below original mudline or existing mudline at the time of pile removal, whichever is lower. Procedures for installation and removal of the alignment template and piles shall be included in the working drawing submittal.

DRIVING PILES

Pile heads to receive the hammer shall be square and smooth. The pile head face shall be perpendicular to the longitudinal axis of the pile. The maximum allowable deviation of any point on the pile head surface from a true perpendicular plane shall be 6 mm. Local deviations from a plane of best fit that are greater than 3 mm shall be ground smooth. Pile head steel shell thickness shall be equal to or greater than the steel shell thickness of the pile. Splice welds associated with the pile head shall be full penetration welds. After driving, the outer surface of the pile shall be no closer than 75 mm from the inner surface of the pile sleeve.

The Contractor shall survey each pile and record the top of pile location both vertically and horizontally and shall determine the pile's variance from the true line. Such variance shall be measured in two planes normal to each other. The top of pile location shall be surveyed immediately after each pile section is driven complete in place and also before a spliced pile section is driven. A second survey shall be carried out after all piles have been cut to their final elevations.

Pile surveying shall conform to "Construction Surveying," of these special provisions. All pile surveying data shall be submitted in writing to the Engineer at the completion of pile driving operations for a given work day.

A given pile that is driven to specified penetration and that fails to meet the alignment tolerances specified in this section will be rejected and replaced prior to driving other piles. Alternative corrective measures, if any, are subject to the prior approval of the Engineer and the cost of alternative measures shall be considered the sole responsibility of the Contractor.
Within 10 working days after the pile has been rejected, and prior to driving other piling, the Contractor shall revise his temporary pile alignment template. The Contractor shall submit to the Engineer for approval a plan for revised pile installation methods and this plan shall conform to the provisions in "Working Drawings," of these special provisions. Revised pile alignment template plans and pile handling shall also include the following:

A. A step by step description of the work to be performed, including revised pile driving alignment template drawings and handling procedures as necessary.
B. A list of affected details and plan sheets.

The Engineer will notify the Contractor in writing when a complete plan has been received. The Contractor shall allow the Engineer 15 working days to review the revised pile installation plan after a complete submittal has been received.

PILE DRIVING REFUSAL

The requirements in Section 49-1.08, "Bearing Value and Penetration," of the Standard Specifications shall not apply.
Pile driving refusal shall be defined as the time when pile driving resistance, using the primary hammer operating at full rated energy according to the manufacturer's specifications, meets one of the following conditions:

A. 250 blows for each 250 mm over a penetration of 1500 mm; or
B. 670 blows for 250 mm of penetration

If pile driving is interrupted for more than one hour, the above definition of refusal shall not apply until the pile has been driven 250 mm. During restart, or at any time, 670 blows in 125 mm shall be taken as pile driving refusal.

PILE DRIVING LOW RESISTANCE

If extremely low resistance to driving is experienced when driving within one meter of the specified pile tip elevation, the Engineer may modify the pile details shown on the plans.
When the Engineer directs the Contractor to modify the pile details shown on the plans, said work will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

PILE PENETRATION ACCEPTANCE

The requirements in Section 49-1.08, "Bearing Value and Penetration," of the Standard Specifications shall not apply.
Pile penetration acceptance shall be based on the following criteria:

A. Piles driven to the specified pile tip will be accepted.

B. Piles that encounter refusal during continuous driving within 10 meters of the specified pile tip elevation, will be accepted.
C. Within 10 meters above the specified pile tip elevation, if piles develop toe stresses in excess of 85 percent of the specified yield strength of the steel shell or pile stresses in excess of 90 percent of the specified yield strength of the steel shell, as determined by the Engineer, pile driving shall be terminated and the pile will be accepted.
D. For piles that develop stresses in excess of 90 percent of the specified yield strength of the steel shell, as determined by the Engineer, at an elevation more than 10 meters above the specified pile tip elevation, the Contractor shall reduce the pile hammer stroke and continue driving the pile to the specified pile tip elevation. When pile driving stresses are excessive and hammer stroke cannot be reduced without encountering refusal, the Contractor shall remove the soil plug and continue driving the piles to the specified pile tip elevation. Soil plug removal shall not extend below an elevation that is 7 meters above the pile toe at the time of refusal.
E. The Contractor shall provide a pile driving log at the completion of driving each pile or pile section. Upon completion of pile driving for a given pile, the Contractor shall allow the Engineer 48 hours to review the pile driving records. The Contractor shall not cut the top of the pile until the Engineer's review period is complete.
F. Unless otherwise directed by the Engineer, piles shall be driven continuously below El. –65 meters NGVD. If driving refusal is encountered as a result of delays in pile driving occurring within this zone, the Contractor shall be responsible for soil plug removal down to an elevation not less than 75 meters above the specified pile tip elevation, splicing the pile (including all weld nondestructive testing) and any other measures necessary to advance the pile.
G. For piles that encounter driving refusal at an elevation more than 10 meters above the specified pile tip elevation, the Contractor shall remove the soil plug and continue driving the piles. The Contractor's equipment and procedures shall be adequate to complete soil plug removal and resume driving within 48 hours. Soil plug removal shall not extend below an elevation that is 7 meters above the pile toe at the time of refusal.

DRIVING SYSTEM SUBMITTAL

Prior to installing driven piling , the Contractor shall provide a driving system submittal, including driveability analysis, in conformance with the provisions in "Working Drawings," of these special provisions. Technical data for all proposed driving systems (i.e., each hammer that may be brought onto the site) shall be included in the submittal. The driving system submittal shall contain an analysis showing that the proposed driving systems will install piling to the specified pile tip elevation without soil plug removal and without overstressing the pile. Submittals shall include the following:

A. Complete description of soil parameters used, including soil quake and damping coefficients, skin friction distribution, percentage shaft resistance, and total soil resistance to driving.
B. List of all hammer operation parameters assumed in the analysis, including manufacturer's rated energy, fuel settings, stroke limitations, and hammer efficiency.
C. Driveability studies that are based on a wave equation analysis using a computer program that has been approved by the Engineer. Driveability studies shall model the Contractor's proposed driving systems, including the hammers, capblocks, pile cushions, and followers. The analyses shall consider a range of total soil resistance to driving and associated percentage shaft resistance for plugged and unplugged cases. The range of soil resistance to driving and percentage shaft resistance shall be determined for site conditions ranging from 10 meters above the specified tip elevation to the specified tip elevation shown on the plans. Separate analyses shall be completed at elevations above the specified pile tip elevations where difficult driving or pile splices are anticipated.

Driveability analysis results shall include plots of the following:

1. Maximum pile head and pile toe compressive stress versus blows per 250 mm.

2.. Soil resistance to driving versus blows per 250 mm.

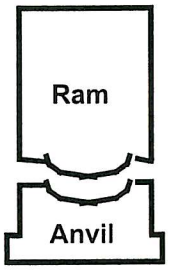
D. Details of equipment and procedures for removing the soil plug after successful pile driving and as a contingency in the case of driving refusal above an acceptable tip elevation.
E. Copies of all test results from any previous pile load tests, dynamic monitoring, and all driving records used in the analyses.
F. Completed "Pile and Driving Data Form," which is shown in these special provisions.
G. Estimated range of expected pile penetration due to self-weight and the weight of the hammer.
H. Written procedures for pile driving and a pile installation schedule, including at a minimum, the first and last pile.

The Contractor shall allow the Engineer 35 working days to review each driving system submittal.
The Contractor shall use the driving system and installation methods described in the approved driving system submittal for each pier location. Any change in hammers from those submitted and approved by the Engineer shall also meet the requirements for driving system submittals. Revised and new driving system submittals shall be approved by the Engineer prior to using corresponding driving systems on production piling. The Contractor shall allow the Engineer 35 working days to review each revised and each new driving system submittal after a complete set has been received, as determined by the Engineer.
Approval of pile driving equipment or installation methods shall not relieve the Contractor of his responsibility to drive piling free of damage to the specified penetration.

CALIFORNIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRANSPORTATION LABORATORY

PILE AND DRIVING DATA FORM

Structure Name :_____ Contract No.:_____
_____ Project:_____
Structure No.:_____ Pile Driving Contractor or Subcontractor____
Dist./Co./Rte./P.M.:_____ _____
(Pile Driven By)



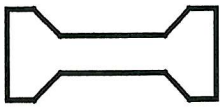
Hammer

Manufacturer:_____ Model:_____
Type:_____ Serial No.:_____
Rated Energy:_____ at _____ Length of Stroke

Modifications: _____
_____
_____
_____
_____

Capblock (Hammer Cushion)

Material:_____
Thickness:_____mm Area:_____mm²
Modulus of Elasticity - E:_____MPa
Coefficient of Restitution - e:



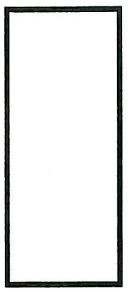
Pile Cap

Helmet
Bonnet
Anvil Block
Drivehead

Mass:_____kg

Pile Cushion

Material:_____
Thickness:_____mm Area: _____mm²
Modulus of Elasticity - E:_____MPa
Coefficient of Restitution - e:_____



Pile

Pile Type:_____
Length (In Leads):_____m
kg/m.:_____Taper:_____
Wall Thickness:_____mm
Cross Sectional Area:_____ mm²
Design Pile Capacity:_____kN
Description of Splice:_____
_____
Tip Treatment Description:_____

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- ☐ Translab, OSF Structures Foundations
- ☐ Resident Engineer

Note: If mandrel is used to drive the pile, attach separate manufacturer's detail sheet(s) including mass (kg) and dimensions.

Submitted By:_____ Date:_____

Phone No.:_____

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DYNAMIC MONITORING

Unless otherwise directed by the Engineer, the last 35 meters for each production pile will be monitored during driving for dynamic response to the driving equipment. Monitoring will be done by State forces using State-furnished dynamic pile analyzer monitoring instruments.

Monitoring instruments shall be fastened to the piles using the tapped holes shown on the plans.

If the Contractor's driving system is such that monitoring instruments will be underwater, the Contractor shall notify the Engineer, in writing, at least 50 working days prior to commencement of driving operations.

The Contractor shall provide electric power (120-volt, 60 cycles stable power) for the State's monitoring equipment, access to the piles including a working platform, and shelter for State monitoring personnel and equipment.

Piles to be dynamically monitored shall be made available to State forces at least 8 hours prior to lifting. The pile shall be positioned so that State forces have safe access to the top 35 meters of the pile length for the installation of anchorages and control marks for monitoring. The Contractor shall rotate the piles on the blocks as directed by the Engineer.

Piles to be dynamically monitored shall be prepared and driven in accordance with the following:

A. The Engineer will determine if the Contractor's handling operations during lifting of the pile segment to be monitored are such that pile monitoring instruments can be bolted to the pile prior to lifting without damage to the instruments. If the Engineer determines that instruments cannot be mounted prior to lifting of the pile, operations shall be suspended for approximately 30 minutes before hammer placement. During this time the Contractor shall attach monitoring instruments onto the pile.
B. Prior to resuming driving operations, the Contractor shall connect electrical cables to the instrument package as approved by the Engineer.
C. Driving operations shall resume as directed by the Engineer. The Contractor's driving equipment shall provide sufficient clearances for monitoring instruments such that piles can be driven to the specified pile tip elevation without damage to the monitoring instruments.

Within 4 hours of completion of driving operations, the Contractor shall remove the cables and instrument package from the pile and deliver them to the Engineer. If monitoring instruments are underwater at the end of driving, the Contractor shall provide a diver and shall retrieve the cables and instruments.

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.

CAST-IN-DRILLED-HOLE CONCRETE PILES

Cast-in-drilled-hole concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and these special provisions.

Cast-in-drilled-hole concrete piling (rock socket) shall consist of drilling or coring sockets in bedrock to the depths or lengths shown on the plans and as specified in these

special provisions and filling with reinforced concrete in conformance with the details shown on the plans and these special provisions. Cored holes, if used, shall conform to the provisions of Section 49-4.03, "Drilled Holes," of the Standard Specifications and these special provisions.

Equipment or methods used for drilling or coring holes shall not result in a smooth hole. Diamond drilling bits will not be permitted. The surface of drilled holes shall have a roughness of 6 mm full amplitude. Roughness of drilled holes shall be verified by the Contractor in the same manner as verification of pile cleanout provided in "Open Ended Cast-In-Steel-Shell Concrete Piling," of these special provisions.

Permanent steel casings are required at the locations shown on the plans. If permanent steel casing is not seated into bedrock at the permanent steel casing tip elevation indicated in the pile data table shown on the plans, the Contractor shall extend the cast-in-drilled-hole concrete piling, including bar reinforcing steel and permanent steel casing to achieve the required embedment into bedrock. The Contractor shall extend the specified tip elevation of the cast-in-drilled-hole concrete piling (rock socket) to maintain the length in bedrock as shown on the plans. The Contractor shall also extend the inspection pipes to 100 mm clear of the bottom of the drilled or cored hole. Payment for extending the specified tip elevations of the cast-in-drilled-hole concrete piling (rock socket) and cast-in-drilled-hole concrete piling including bar reinforcing, permanent steel casings, and inspection pipes when ordered by the Engineer will be made by extra work as provided in Section 4-1.03, "Extra Work," of the Standard Specifications."Should the Contractor elect to use a temporary casing for constructing cast-in-drilled-hole concrete piling, driving of temporary casings will not be permitted. The Contractor may use an impact hammer to seat the temporary casing provided the impact hammer energy does not exceed 200 kJ. Use of a marine pile driving energy attenuator will not be required." The provisions of "Welding" of these special provisions shall apply to permanent steel casings.

Cast-in-drilled-hole concrete piles may be constructed by excavation and depositing concrete under slurry.

MATERIALS

Concrete

Concrete deposited under slurry shall have a nominal penetration equal to or greater than 90 mm. Concrete shall be proportioned to prevent excessive bleed water and segregation. Concrete deposited under slurry shall contain not less than 400 kg of cement per cubic meter.

The combined aggregate grading used in concrete for cast-in-drilled-hole concrete piling shall be either the 25-mm maximum grading, the 12.5-mm maximum grading, or the 9.5-mm maximum grading and shall conform to the requirements in Section 90-3 "Aggregate Gradings," of the Standard Specifications.

Mineral Slurry

Mineral slurry shall be mixed and thoroughly hydrated in slurry tanks, and slurry shall be sampled from the slurry tanks and tested before placement in the drilled hole.

Slurry shall be recirculated or continuously agitated in the drilled hole to maintain the specified properties.

Recirculation shall include removal of drill cuttings from the slurry before discharging the slurry back into the drilled hole. When recirculation is used, the slurry shall be sampled and tested at least every 2 hours after beginning its use until tests show that the samples taken from the slurry tank and from near the bottom of the hole have consistent specified properties. Subsequently, slurry shall be sampled at least twice per shift as long as the specified properties remain consistent.

Slurry that is not recirculated in the drilled hole shall be sampled and tested at least every 2 hours after beginning its use. The slurry shall be sampled midheight and near the bottom of the hole. Slurry shall be recirculated when tests show that the samples taken from midheight and near the bottom of the hole do not have consistent specified properties.

Slurry shall also be sampled and tested prior to final cleaning of the bottom of the hole and again just prior to placing concrete. Samples shall be taken from midheight and near the bottom of the hole. Cleaning of the bottom of the hole and placement of the concrete shall not start until tests show that the samples taken from midheight and near the bottom of the hole have consistent specified properties.

Mineral slurry shall be tested for conformance to the requirements shown in the following table:

MINERAL SLURRY		
PROPERTY	REQUIREMENT	TEST
Density (kg/m^3) - before placement in the drilled hole - during drilling - prior to final cleaning - immediately prior to placing concrete	1030* to 1110* 1030* to 1200*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/liter) bentonite attapulgite	29 to 53 29 to 42	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 to 10.5	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - prior to final cleaning - immediately prior to placing concrete	less than or equal to 4.0	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 32 kg/m^3. Slurry temperature shall be at least 4 degrees Celsius when tested.		

Any caked slurry on the sides or bottom of hole shall be removed before placing reinforcement. If concrete is not placed immediately after placing reinforcement, the reinforcement shall be removed and cleaned of slurry, the sides of the drilled hole cleaned of caked slurry, and the reinforcement again placed in the hole for concrete placement.
Mineral slurry, if used, shall be replaced with water and the surface of the hole cleaned prior to placing concrete. Water shall conform to the provisions for "Water Slurry," of this section.

Water Slurry

At the option of the Contractor water may be used as slurry.
Water slurry shall be tested for conformance to the requirements shown in the following table:

WATER SLURRY		
PROPERTY	REQUIREMENT	TEST
Density (kg/m^3) - prior to final cleaning - just prior to placing concrete	1017 *	Mud Weight (Density) API 13B-1 Section 1
Sand Content (percent) - prior to final cleaning -just prior to placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, salt water slurry may be used, and the allowable densities may be increased up to 32 kg/m^3."		

Synthetic Slurry

Synthetic slurries shall be used in conformance with the manufacturer's recommendations and these special provisions. The following synthetic slurries may be used:

PRODUCT	MANUFACTURER
SlurryPro CDP	KB Technologies Ltd. Suite 216 735 Broad Street Chattanooga, TN 37402 (800) 525-5237
Super Mud	PDS Company c/o Champion Equipment Company 8140 East Rosecrans Ave. Paramount, CA 90723 (562) 634-8180
Shore Pac GCV	CETCO Drilling Products Group 1350 West Shure Drive Arlington Heights, IL 60004 (847) 392-5800

Inclusion of a synthetic slurry on the above list may be obtained by meeting the Department's requirements for synthetic slurries. The requirements can be obtained from the Office of Structure Design, P.O. Box 942874, Sacramento, CA 94274-0001.
Synthetic slurries listed may not be appropriate for a given site.
Synthetic slurries shall not be used in holes drilled in primarily soft or very soft cohesive soils as determined by the Engineer.
A manufacturer's representative, as approved by the Engineer, shall provide technical assistance for the use of their product, shall be at the site prior to introduction of the synthetic slurry into a drilled hole, and shall remain at the site until released by the Engineer.

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Synthetic slurries shall be sampled and tested at both mid-height and near the bottom of the drilled hole. Samples shall be taken and tested during drilling as necessary to verify the control of the properties of the slurry. Samples shall be taken and tested when drilling is complete, but prior to final cleaning of the bottom of the hole. When samples are in conformance with the requirements shown in the following tables for each slurry product, the bottom of the hole shall be cleaned and any loose or settled material removed. Samples shall be obtained and tested after final cleaning with steel reinforcement in place and just prior to placing concrete.

SlurryPro CDP synthetic slurries shall be tested for conformance to the requirements shown in the following table:

SLURRYPRO CDP KB Technologies Ltd.		
PROPERTY	REQUIREMENT	TEST
Density (kg/m^3) - during drilling - prior to final cleaning - just prior to placing concrete	less than or equal to 1075* less than or equal to 1025*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/liter) - during drilling -prior to final cleaning - just prior to placing concrete	53 to 127 less than or equal to 74	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	6 to 11.5	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - prior to final cleaning - just prior to placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 32 kg/m^3. Slurry temperature shall be at least 4 degrees Celsius when tested.		

Super Mud synthetic slurries shall be tested for conformance to the requirements shown in the following table:

SUPER MUD PDS Company		
PROPERTY	REQUIREMENT	TEST
Density (kg/m^3) - prior to final cleaning - just prior to placing concrete	less than or equal to 1025*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/liter) - during drilling - prior to final cleaning - just prior to placing concrete	34 to 64 less than or equal to 64	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 to 10.0	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - prior to final cleaning -just prior to placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 32 kg/m^3. Slurry temperature shall be at least 4 degrees Celsius when tested.		

Shore Pac GCV synthetic slurries shall be tested for conformance to the requirements shown in the following table:

Shore Pac GCV CETCO Drilling Products Group		
PROPERTY	REQUIREMENT	TEST
Density (kg/m^3) - prior to final cleaning - just prior to placing concrete	less than or equal to 1025*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/liter) - during drilling - prior to final cleaning - just prior to placing concrete	35 to 78 less than or equal to 60	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8.0 to 11.0	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - prior to final cleaning -just prior to placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 32 kg/m^3. Slurry temperature shall be at least 4 degrees Celsius when tested.		

Construction

The Contractor shall submit a placing plan to the Engineer for approval prior to producing the test batch for cast-in-drilled-hole concrete piling and at least 10 working days prior to constructing piling. The plan shall include complete description, details, and supporting calculations as listed below:

A. Requirements for all cast-in-drilled hole concrete piling:

1. Concrete mix design, certified test data, and trial batch reports.

2. Drilling or coring methods and equipment.
3. Proposed method for casing installation and removal when necessary.
4. Plan view drawing of pile showing reinforcement and inspection pipes, if required.
5. Methods for placing, positioning, and supporting bar reinforcement.
6. Methods and equipment for accurately determining the depth of concrete and actual and theoretical volume placed.
7. Methods and equipment for verifying that the bottom of the drilled hole is clean prior to placing concrete.
8. Methods and equipment for preventing upward movement of reinforcement, including the Contractor's means of detecting and measuring upward movement during concrete placement operations.

B. Additional requirements when concrete is placed under slurry:

1. Concrete batching, delivery, and placing systems including time schedules and capacities therefor. Time schedules shall include the time required for each concrete placing operation at each pile.
2. Concrete placing rate calculations. When requested by the Engineer, calculations shall be based on the initial pump pressures or static head on the concrete and losses throughout the placing system, including anticipated head of slurry and concrete to be displaced.
3. Suppliers test reports on the physical and chemical properties of the slurry and any proposed slurry chemical additives including Material Safety Data Sheet.
4. Slurry testing equipment and procedures.
5. Removal and disposal of excavation, slurry, and contaminated concrete, including methods and rates of removal.
6. Slurry agitating, recirculating, and cleaning methods and equipment.

In addition to compressive strength requirements, the consistency of the concrete to be deposited under slurry shall be verified before use by producing a batch to be tested. The test batch shall be produced and delivered to the project under conditions and in time periods similar to those expected during the placement of concrete in the piles. Concrete for the test batch shall be placed in an excavated hole or suitable container of adequate size to allow testing in conformance with California Test 533. Depositing of test batch concrete under slurry will not be required. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be 2 hours or less, the test batch shall demonstrate that the proposed concrete mix design achieves both the specified nominal penetration and a penetration of at least 50 mm after twice that time has elapsed. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be more than 2 hours, the test batch shall demonstrate that the proposed concrete mix design achieves both the specified nominal penetration and a penetration of at least 50 mm after that time plus 2 hours has elapsed. The time period shall begin at the start of placement. The concrete shall not be vibrated or agitated during the test period. Upon completion of testing, the concrete shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Concrete deposited under slurry shall not be vibrated until all concrete contaminated with soil, slurry, or other materials is removed. Concrete deposited under slurry shall be vibrated in the upper 6 m of the pile.

The concrete deposited under slurry shall be carefully placed in a compact, monolithic mass and by a method that will prevent washing of the concrete. Placing concrete shall be a continuous operation lasting not more than the time required for each concrete

placing operation at each pile, as submitted in the placing plan, unless otherwise approved in writing by the Engineer. The concrete shall be placed with concrete pumps and delivery tube system of adequate number and size to complete the placing of concrete in the time specified. The delivery tube system shall consist of one of the following:

A. A tremie tube or tubes, each of which are at least 250 mm in diameter, fed by one or more concrete pumps.
B. One or more concrete pump tubes, each fed by a single concrete pump.

The delivery tube system shall consist of watertight tubes with sufficient rigidity to keep the ends always in the mass of concrete placed. If only one delivery tube is utilized to place the concrete, the tube shall be placed near the center of the drilled hole. Multiple tubes shall be uniformly spaced in the hole. Internal bracing for the steel reinforcing cage shall accommodate the delivery tube system. Tremies shall not be used for piles without space for a 250-mm tube.

Spillage of concrete into the slurry during concrete placing operations will not be permitted. Delivery tubes shall be capped with a water tight cap, or plugged above the slurry level with a good quality, tight fitting, moving plug that will expel the slurry from the tube as the tube is charged with concrete. The cap or plug shall be designed to be released as the tube is charged. The pump discharge or tremie tube shall extend to the bottom of the hole before charging the tube with concrete. After charging the delivery tube system with concrete, the flow of concrete through a tube shall be induced by slightly raising the discharge end. During concrete placement, the tip of the delivery tube shall be maintained to prevent reentry of the slurry into the tube. Until at least 3 m of concrete has been placed, the tip of the delivery tube shall be within 150 mm of the bottom of the drilled hole, and then the embedment of the tip shall be maintained at least 3 m below the top surface of the concrete. Rapid raising or lowering of the delivery tube shall not be permitted. If the seal is lost or the delivery tube becomes plugged and must be removed, the tube shall be withdrawn, the tube cleaned, the tip of the tube capped to prevent entrance of the slurry, and the operation restarted by pushing the capped tube 3 m into the concrete and then reinitiating the flow of concrete.

When slurry is used, a fully operational standby concrete pump, adequate to complete the work in the time specified, shall be provided at the site during concrete placement. The slurry level shall be maintained within 300 mm of the top of the drilled hole.

A log of concrete placement for each drilled hole shall be maintained by the Contractor when concrete is deposited under slurry. The log shall show the pile location, tip elevation, dates of excavation and concrete placement, total quantity of concrete deposited, length and tip elevation of any casing, and details of any hole stabilization method and materials used. The log shall include a 215 mm x 280 mm sized graph of the concrete placed versus depth of hole filled. The graph shall be plotted continuously throughout placing of concrete. The depth of drilled hole filled shall be plotted vertically with the pile tip oriented at the bottom and the quantity of concrete shall be plotted horizontally. Readings shall be made at least at each 1.5 m of pile depth, and the time of the reading shall be indicated. The graph shall be labeled with the pile location, tip elevation, cutoff elevation, and the dates of excavation and concrete placement. The log shall be delivered to the Engineer within one working day of completion of placing concrete in the pile.

After placing reinforcement and prior to placing concrete in the drilled hole, if drill cuttings settle out of the slurry, the bottom of the drilled hole shall be cleaned. The Contractor shall verify that the bottom of the drilled hole is clean.
Material resulting from using slurry shall be disposed of in conformance with the provisions in "Dredging," of these special provisions.
Permanent steel casings shall be furnished and grouted in the hole where shown on the plans. Permanent casings shall not be driven. Permanent casings shall be watertight and of sufficient strength to withstand the loads from installation procedures, lateral concrete pressures, and earth pressures, and shall conform to the provisions of "Steel Pipe Piling" of these special provisions.

Acceptance Testing and Mitigation

Vertical inspection pipes for acceptance testing shall be provided in all cast-in-drilled-hole concrete piles, except when the holes are dry or dewatered.
Inspection pipes shall be Schedule 40 polyvinyl chloride pipe with a nominal inside diameter of 50 mm and NPS 2, Schedule 40, black steel pipe. Each inspection pipe shall be capped top and bottom and shall have watertight couplers to provide a clean, dry and unobstructed 50-mm diameter clear opening from 1.0 m above the pile cutoff down to the bottom of the reinforcing cage.
If the Contractor drills the hole below the specified tip elevation, the reinforcement and the inspection pipes shall be extended to 75 mm clear of the bottom of the drilled hole.
Inspection pipes shall be placed as shown on the plans 75 mm clear of the vertical reinforcement. The inspection pipes shall be placed to provide the maximum diameter circle that passes through the centers of the inspection pipes while maintaining the clear spacing required herein. The pipes shall be installed in straight alignment, parallel to the main reinforcement, and securely fastened in place to prevent misalignment during installation of the reinforcement and placing of concrete in the hole.
At the Pier T1 footing where inspection pipes are required by these special provisions, the Contractor shall construct working platforms at least 1.5 m above the higher high tide line and extend inspection pipes above the working platform. Acceptance testing shall be performed from the platform. The platform shall be sufficiently rigid to provide a safe, stable working area for the Engineer and testing equipment. The platform shall be designed for a minimum uniform load of 4.8 kPa. The Contractor shall submit working drawings for the platforms to the Engineer for review in accordance with the provisions in "Working Drawings," of these special provisions. The Engineer will submit to BCDC for final plan review; the Engineer and BCDC will review and the Engineer will provide comments to the Contractor within 70 calendar days. The Contractor will have 10 working days to revise and resubmit.
The Contractor shall log the location of the inspection pipe couplers with respect to the plane of pile cutoff. These logs shall be delivered to the Engineer upon completion of the placement of concrete in the drilled hole.
After placing concrete and before requesting acceptance tests, each inspection pipe shall be tested by the Contractor in the presence of the Engineer by passing a 48.3-mm diameter rigid cylinder 610 mm long through the complete length of pipe. If the 48.3-mm diameter rigid cylinder fails to pass any of the inspection pipes, the Contractor

shall attempt to pass a 32.0-mm diameter rigid cylinder 1.375 m long through the complete length of those pipes in the presence of the Engineer. If an inspection pipe fails to pass the 32.0-mm diameter cylinder, the Contractor shall immediately fill all inspection pipes in the pile with water.

The Contractor shall replace each inspection pipe that does not pass the 32.0-mm diameter cylinder with a 50.8-mm diameter hole cored through the concrete for the entire length of the pile. Cored holes shall be located as close as possible to the inspection pipes they are replacing, no more than 150 mm inside the reinforcement. Coring shall not damage the pile reinforcement. Cored holes shall be made with a double wall core barrel system utilizing a split tube type inner barrel. Coring with a solid type inner barrel will not be allowed. Coring methods and equipment shall provide intact cores for the entire length of the pile concrete. The coring operation shall be logged by an Engineering Geologist or Civil Engineer licensed in the State of California and experienced in core logging. Coring logs shall include complete descriptions of inclusions and voids encountered during coring, and shall be delivered to the Engineer upon completion. Concrete cores shall be preserved, identified with the exact location the core was recovered from within the pile, and made available for inspection by the Engineer.

Acceptance tests of the concrete will be made by the Engineer, without cost to the Contractor. Acceptance tests will evaluate the homogeneity of the placed concrete. Tests will include gamma-gamma logging. Tests may also include crosshole sonic logging and other means of inspection selected by the Engineer. The Contractor shall not conduct operations within 8.0 m of the gamma-gamma logging operations. The Contractor shall separate reinforcing steel as necessary to allow the Engineer access to the inspection pipes to perform gamma-gamma logging or other acceptance testing. After requesting acceptance tests and providing access to the piling, the Contractor shall allow 3 weeks for the Engineer to conduct these tests and make determination of acceptance if the 48.3-mm diameter cylinder passed all inspection pipes, and 4 weeks if only the 32.0-mm diameter cylinder passed all inspection pipes. Should the Engineer fail to complete these tests within the time allowance, and if in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in inspection, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

All inspection pipes and cored holes in a pile shall be dewatered and filled with grout after notification by the Engineer that the pile is acceptable. Placement and removal of water in the inspection pipes shall be at the Contractors expense. Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications. The inspection pipes and holes shall be filled using grout tubes that extend to the bottom of the pipes or holes or into the grout already placed.

If acceptance testing performed by the Engineer determines that a pile does not meet the requirements of these special provisions, then that pile will be rejected and all depositing of concrete under slurry or concrete placed using temporary casing for the purpose of controlling groundwater shall be suspended until written changes to the methods of pile construction are approved in writing by the Engineer.

The Contractor shall submit to the Engineer for approval a mitigation plan for repair, supplementation, or replacement for each rejected cast-in-drilled-hole concrete pile. This plan shall conform to the provisions in "Working Drawings," of these special provisions.

Prior to submitting this mitigation plan, the Engineer will hold a repair feasibility meeting with the Contractor to discuss the feasibility of repairing rejected piling. The Engineer will consider the size of the defect, the location of the defect, and the design information and corrosion protection considerations for the pile. This information will be made available to the Contractor, if appropriate, for the development of the mitigation plan. If the Engineer determines that it is not feasible to repair the rejected pile, the Contractor shall not include repair as a means of mitigation and shall proceed with the submittal of a mitigation plan for replacement or supplementation of the rejected pile.
If the Engineer determines that a rejected pile does not require mitigation due to structural, geotechnical, or corrosion concerns, the Contractor may elect to 1) repair the pile per the approved mitigation plan, or 2) not repair anomalies found during acceptance testing of that pile. For such unrepaired piles, the Contractor shall pay to the State, $400 per cubic meter for the portion of the pile affected by the anomalies. The volume, in cubic meters, of the portion of the pile affected by the anomalies, shall be calculated as the area of the cross-section of the pile affected by each anomaly, in square meters, as determined by the Engineer, multiplied by the distance, in meters, from the top of each anomaly to the specified tip of the pile. If the volume calculated for one anomaly overlaps the volume calculated for additional anomalies within the pile, the calculated volume for the overlap shall only be counted once. In no case shall the amount of the payment to the State for any such pile be less than $400. The Department may deduct the amount from any moneys due, or that may become due the Contractor under the contract.
Pile mitigation plans shall include the following:

A. The designation and location of the pile addressed by the mitigation plan.
B. A review of the structural, geotechnical, and corrosion design requirements of the rejected pile.
C. A step by step description of the mitigation work to be performed, including drawings if necessary.
D. An assessment of how the proposed mitigation work will address the structural, geotechnical, and corrosion design requirements of the rejected pile.
E. Methods for preservation or restoration of existing earthen materials.
F. A list of affected facilities, if any, with methods and equipment for protection of these facilities during mitigation.
G. The State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Kilometer Post , and the Contractor's (and Subcontractor's if applicable) name on each sheet.
H. A list of materials, with quantity estimates, and personnel, with qualifications, to be used to perform the mitigation work.
I. The seal and signature of an engineer who is licensed as a Civil Engineer by the State of California.

For rejected piles to be repaired, the Contractor shall submit a pile mitigation plan that contains the following additional information:

A. An assessment of the nature and size of the anomalies in the rejected pile.
B. Provisions for access for additional pile testing if required by the Engineer.

For rejected piles to be replaced or supplemented, the Contractor shall submit a pile mitigation plan that contains the following additional information:

A. The proposed location and size of additional piling.

B. Structural details and calculations for any modification to the structure to accommodate the replacement or supplemental piling.

All provisions for cast-in-drilled-hole concrete piling shall apply to replacement piling. The Contractor shall allow the Engineer 3 weeks to review the mitigation plan after a complete submittal has been received.

When repairs are performed, the Contractor shall submit a mitigation report to the Engineer within 10 days of completion of the repair. This report shall state exactly what repair work was performed and quantify the success of the repairs relative to the submitted mitigation plan. The mitigation report shall be stamped and signed by an engineer who is licensed as a Civil Engineer by the State of California. The mitigation report shall show the State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, and the Contractor (and Subcontractor if applicable) name on each sheet. The Engineer will be the sole judge as to whether a mitigation proposal is acceptable, the mitigation efforts are successful, and to whether additional repairs, removal and replacement, or construction of a supplemental foundation is required.

OPEN ENDED CAST-IN-STEEL-SHELL CONCRETE PILING

General

Cast-in-steel-shell concrete piling shall consist of open ended steel shells driven to the specified penetration and filled with reinforced cast-in-place concrete and shall conform to the provisions in Section 49-4, "Cast-in-Place Concrete Piles," of the Standard Specifications and these special provisions.

In addition to driving, drilling or jetting within open ended steel shells to remove the soil plug may be necessary to obtain the specified penetration. The diameter of drilled holes shall be less than the clear inside diameter of the piling, including the interior weld beads. Jetting methods and procedures shall demonstrate that soil plug removal can be done at a predicted rate and in a controlled manner. Equipment or methods used for drilling or jetting shall not cause quick soil conditions, scouring, or caving of the hole and shall not damage the interior weld beads. If soil plug removal operations extend below the limit of the seal course concrete, as shown on the plans, the Contractor shall fill the void created by drilling or jetting with additional seal course concrete. Drilling or jetting shall not disturb the soil plug within 7 meters of the pile toe at any time during pile installation. The steel shells shall be installed open ended and shall have interior and exterior weld beads, as shown on the plans.

Steel Shells

Attention is directed to "Steel Pipe Piling," of these special provisions.

Reinforcement

Reinforcement shall conform to the provisions in "Reinforcement," of these special provisions. Headed bar reinforcement shall conform to the provisions in "Headed Bar Reinforcement," of these special provisions.

Construction

The Contractor shall submit to the Engineer for approval, a cleanout and inspection plan for open ended cast-in-steel-shell concrete piling. Care shall be taken during cleaning out of open ended steel shells to prevent disturbing the foundation material surrounding the pile and damaging the interior weld beads. The pile soil plug, as shown on the plans, shall not be cleaned out. Equipment or methods used for cleaning out steel shells shall not cause quick soil conditions or cause scouring or caving around or below the piles.
Open ended steel shells shall be free of any soil, rock, or other material deleterious to the bond between concrete and steel prior to placing reinforcement and concrete. Interior surfaces of open ended steel shells and interior weld beads shall be 100% clean.
Verification of pile cleanout shall be demonstrated by a video camera capable of inspecting any location within the steel shell. At the option of the Engineer, verification of pile cleanout shall be by either real-time viewing of the inspection by the Engineer or by the Engineer viewing a recorded inspection of mutually agreed sections of the pile. Recordings shall indicate the azimuth and depth of the camera.
Drilling fluid, except for water, shall not be used inside the steel shell during the cleanout process.
The Contractor shall allow the Engineer 70 working days for review of the cleanout and inspection plan.
After the steel shells have been cleaned out, the pile shall be constructed expeditiously in order to prevent deterioration of the surrounding foundation material from the presence of water. Deteriorated foundation materials, including materials that have softened, swollen, or degraded, shall be removed from the bottom of the steel shells and shall be disposed of.
Material resulting from cleaning out the steel shells shall be disposed of in conformance with the provisions in "Dredging," of these special provisions, unless otherwise specified or permitted by the Engineer.
Reinforcement shall be placed and secured symmetrically about the axis of the pile and shall be securely blocked to clear the sides of the steel shell and the interior weld beads, and blocked or suspended to clear the top of the soil plug.
Concrete fill for cast-in-place concrete piles shall be placed continuously. Construction joints will not be permitted.
Concrete fill for cast-in-place piles shall be placed by use of a tremie tube or tubes, each of which are at least 250 mm in diameter. A hopper shall be attached to the tremie tube(s). Concrete pumps may be used to deliver concrete to a hopper that feeds the tremie tube(s). Pumping concrete directly down the tremie tube will not be permitted.
Internal bracing for the steel reinforcing cage shall accommodate the delivery tube system.
Delivery tubes shall be capped with a watertight cap, or plugged with a good quality, tight-fitting, moving plug. The cap or plug shall be designed to release as the tube is charged with concrete. The tremie tube shall extend to the top of the soil plug before charging the tube with concrete.

STEEL PIPE PILING

General

Steel pipe piling shall consist of steel shells for open ended cast-in-steel-shell concrete piling, and permanent steel casing for cast-in-drilled-hole concrete piling. Steel pipe piling shall conform to the provisions in Section 49-5, "Steel Piles," of the Standard Specifications and these special provisions.

Attention is directed to "Welding" of these special provisions regarding welding of steel pipe. Unless otherwise specified, welding of any work performed in conformance with the provisions in Section 49, "Piling," of the Standard Specifications, shall be in conformance with the requirements in AWS D1.1.

Wherever reference is made to the following American Petroleum Institute (API) specifications in the Standard Specifications, on the project plans, or in these special provisions, the year of adoption for these specifications shall be as follows:

API Codes	Year of Adoption
API SPEC 2B	1996

All requirements of the codes listed above shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions.

Handling devices may be attached to steel pipe piling. Welds attaching these devices shall be aligned parallel to the axis of the pile and shall conform to the requirements of field welding specified herein. All handling devices shall be removed from the permanent piling when no longer needed. All remaining welds shall be ground flush.

Prior to making attachments, the Contractor shall submit a plan to the Engineer that includes the locations, handling and fitting device details, connection details, welding and removal procedures. Attachments shall not be made to the steel pipe piling until the plan is approved in writing by the Engineer. The Engineer shall have 7 working days to review the plan.

For steel pipe piling, including any bar reinforcement in the piling, the time to be allowed for the Engineer to review the "Welding Report," specified in "Welding" of these special provisions, and respond in writing after all the required items have been received, shall be as follows:

Type of Welding	Review Time
Offshore field welding	48 hours
Bar reinforcement in piling	72 hours
All other pile welding	6 working days

Offshore field welding is defined as steel pipe pile splice welds made after stabbing the pile. No field welded steel pipe piling shall be installed, and no reinforcement in the piling shall be encased in concrete until the Engineer has approved the above requirements in writing.

At the Contractor's option, a steel pipe pile may be re-tapped to prevent pile set-up; however, the field welded splice shall remain at least one meter above the work platform until that splice is approved in writing by the Engineer.

The Contractor shall provide durable enclosures at field splice locations to allow welding during inclement weather conditions in accordance with the requirements in "Welding," of these special provisions.

Fabricated Steel Pipe

Fabricated steel pipe is defined as pipe produced at a permanent facility where a variety of steel fabrication including roll forming and welding steel plate into pipe is performed, where this pipe is at least 19 mm in wall thickness, where this pipe is produced in conformance with API SPEC 2B, and where this fabrication can be done on a daily basis. Fabricated steel pipe is a specifically engineered product. (i.e. Fabricated steel pipe is engineered for a specific project.)
Fabricated steel pipe used for steel pipe piling shall conform to API SPEC 2B and the following requirements:

A. An API site license and API monogram are not required.
B. Weld filler metal shall conform to the requirements in AWS D1.5 for the welding of ASTM Designation: A 709M, Grade 345 steel, except that the qualification, pretest, and verification test requirements need not be conducted if certified test reports are provided for the consumables to be used.
C. Steel pipe piles shall be fabricated from plate conforming to the requirements in ASTM A 709M, Grade 345 with Supplementary Requirement S83 "Non-Fracture-Critical, T, Material; Toughness Test and Marking" for Zone II.

D. The sulfur content of steel pipe piles shall not exceed 0.05 percent, except where through-thickness is designated on the plans. Where through-thickness is designated on the plans, steel shall conform to the low sulfur and 20% reduction of area requirements in AWS D1.5, Section 12.4.4.1.
E. The acceptance criteria for visual inspection of pile welds shall be AWS D1.1 criteria for statically loaded structures, except within the "Plastic Hinge Zone" designated on the plans, where the criteria for cyclically loaded structures subject to tensile stress shall apply.
F. The thickness transition between the pile sections with different wall thickness shall be no steeper than 1:3.

Pile Weld Beads

The profile of the pile weld beads shall conform to the details shown on the plans and AWS D1.1, Section 6.9 for cyclically loaded welds (weld beads are within the Plastic Hinge Zone of the pile), as modified herein.

A. The specified weld size shall be as shown on the plans, except a 1.5 mm undertolerance on bead height will be permitted providing the cumulative length does not exceed 10% of the weld length in any meter.
B. Undercut shall not exceed 0.25 mm.
C. The minimum reentrant angle between the base metal and weld bead is 90 degrees.
D. Overlap will not be permitted for specified weld bead heights of 10 mm or less. For specified weld bead heights that exceed 10 mm, overlap shall not exceed 3 mm in layers above the first, except overlap that restricts access for inspecting the weld toe will not be permitted regardless of size. Overlap will not be permitted for the first weld layer.

Pile weld beads shall be qualified by making a sample of the weld bead that is at least 1.5 m long. The weld shall conform to the specified geometry and shall be accepted visually and by MT. The macroetch specimens shall be taken from the areas with the

poorest profile as determined by the Engineer. The macroetch specimens shall not have any cracks or fissures; shall have full fusion to the parent metal and between passes; and shall conform to the specified profile requirements.

Field Welding

Field welding of steel pipe piling is defined as welding performed after the certificate of compliance has been furnished by the fabricator.
Field welding of permanent steel casings will not be permitted.
Field welding of steel shells shall conform to the following requirements:

A. Prior to positioning any 2 sections of steel pipe to be spliced by field welding, the Contractor shall minimize the offsets of the pipe ends to be joined .
B. Welds made in the flat position or vertical position (where the longitudinal pipe axis is horizontal) shall be single-vee or double-vee groove welds. Welds made in the horizontal position (where the longitudinal pipe axis is vertical) shall be single-bevel welds. Joint fit-ups shall conform to the requirements in AWS D1.1 and these special provisions.
C. The minimum thickness of the backing ring shall be 6 mm, and the ring shall be continuous. Splices in the backing ring shall be made by complete penetration welds. Radiographic or ultrasonic testing in conformance with the requirements in AWS D1.1, Section 6, shall be used on each splice weld to assure soundness of backing ring splices prior to final insertion into a pipe end. Attachment of backing rings to pipe ends shall be done using a continuous fillet weld on the inside of the pile. After fitting to the second pipe, tack welding shall be done in the root area of the weld splice or to spacers. Minimum size and length of tack welds shall be as defined by AWS D1.1, Section 2.4.6. The gap between the backing ring and the steel pipe piling wall shall be no greater than 2 mm, except as follows:

    1. Gaps greater than 2 mm, but not exceeding 6 mm may be seal welded using E7018 SMAW.
    2. Gaps exceeding 6 mm shall be repaired by welding using E7018 SMAW, the weld groove shall be ground to provide the intended groove shape, and the area shall be inspected using magnetic particle testing prior to starting the groove weld.

    Locations where fit-up gaps exceed 2 mm shall be marked so that they can be referenced during non-destructive testing (NDT). Backing rings shall have a minimum width of 3 times the thickness of the steel pipe piling to be welded so that the ring will not interfere with the interpretation of the NDT.

D. The weld groove root opening tolerance may be increased to a maximum of 5 mm over the specified tolerance.
E. Weld filler metal shall conform to the requirements in AWS D1.5, Table 4.1 or 4.2, for the welding of ASTM Designation: A 709M, Grade 345 steel, and shall be designated H8 or less by the manufacturer.
F. Prequalified welding procedures will not be permitted for pile splices. All field welding procedures shall be qualified by testing in conformance with the requirements in AWS D1.1 and these special provisions. Using the qualified weld procedure specification (WPS), a minimum of two additional weld mock-ups will be required to qualify offshore field welding, and both shall use full sized pipe pile sections to simulate the field girth weld. All mock-up welding shall be performed outside in the enclosure that will be used during offshore installation. Both welds shall be made in the positions to be used in production. Each weld need not exceed 1 m in length, and all passes shall be stopped and restarted at the same location in the middle of the weld. The first weld shall be prepared and welded using the proposed production weld joint detail and welding parameters. The second weld shall simulate the most onerous combination of weld root opening, root face and backing ring gap anticipated for field fit-up, as approved by the Engineer. The out-of-tolerance fit-up shall be repaired and accepted per these specifications before completing the weld. The completed welds shall be examined by the ultrasonic testing (UT) procedure proposed

for production joints, and any significant indications shall be marked for sectioning to confirm the UT results prior to mechanical testing the weldment. Qualification tests shall include all tests required by AWS D1.1, macroetch sections of the center stop-start location and all areas marked during UT, and Charpy V-Notch tests at -20°C of the weld metal. The Charpy tests shall meet 27 Joules minimum average and 20 Joules minimum individual.

G. The welding filler materials (wire/electrode and flux, if used) shall be considered an essential variable for welding procedure qualification. Any change in the filler material brand name or type shall require requalification of the welding procedure.

H. GMAW shall not be used for field welding.

I. For field welding, including attaching backing rings and making repairs, the preheat and interpass temperature shall be in conformance with AWS D1.1, Table 3.2, Category C; and the minimum preheat and interpass temperature shall be 65°C, regardless of the pipe wall thickness or steel grade. In the event welding is interrupted, preheating to 65°C must occur before welding is resumed. For girth welds with required preheat temperatures greater than 65°C, preheat temperatures shall be achieved and maintained using electric resistance heating bands for the entire length of the weld. The heaters shall be controlled by attached thermocouples at spacings not exceeding 2 m. For these welds, the minimum preheat temperature shall be maintained continuously from beginning to completion of the entire weld, even if welding is interrupted.

J. Welds shall not be water quenched. Welds shall be allowed to cool unassisted.

K. Stray current corrosion of the structure shall be avoided during installation at the site. Welding machines shall be placed on the structure being welded. Where this is not practical, the insulated welded power source output "ground" lead shall be connected directly to the work at a location close to the weld being made and shall not be permitted to touch the water. The minimum total cross sectional area of the return ground cable(s) shall be 645 circular mm per 1000 amperes per 30.5 m of cable. Grounding sufficiency shall be periodically monitored by simultaneously measuring the potential of the structure being welded and that holding the welding machines using a standard calomel electrode (SCE), Ag-AgCl or other reference electrode approved by the Engineer. A change in potential reading of 10% or more shall indicate insufficient grounding.

NONDESTRUCTIVE TESTING FOR STEEL PIPE PILING

Steel pipe piling shall receive nondestructive testing (NDT) in conformance with these special provisions.

Nondestructive Testing of Welds made at a Fabrication Facility

Twenty-five percent of each longitudinal and 100 percent of each circumferential weld made shall receive NDT by either radiographic, radioscopic, real time imaging systems or ultrasonic methods that are in conformance with the requirements in AWS D1.1. The acceptance and repair criteria shall conform to the requirements in AWS D1.1, Section 6, for statically loaded structures under tensile stress, except within the "Plastic Hinge Zone" designated on the plans, where the criteria for cyclically loaded nontubular connections subject to tensile stress shall apply. Any required repair, from defects located by NDT, shall be completed and then re-examined by the same NDT method with an additional 10 percent of the weld repair length, not to be less than 50 mm, at each end of the weld repair. In addition, if repairs are required in a portion of a weld not 100 percent examined by NDT, an additional 10 percent of the total length of the weld shall be examined by the same NDT method on each side of the previously inspected length for a total of 20 percent. If the additional NDT and original NDT required discover a cumulative length in weld repairs equal to or greater than 10 percent of the total weld length, than 100 percent of the weld length shall be examined by NDT.

Twenty-five percent of each pile interior and exterior weld bead shall receive magnetic particle examination in conformance with the requirements in AWS D1.1. The

acceptance and repair criteria shall conform to the requirements in AWS D1.1, Section 6, for statically loaded structures under tensile stress, except within the "Plastic Hinge Zone" designated on the plans, where the criteria for cyclically loaded nontubular connections subject to tensile stress shall apply. Any required repairs, from defects located by MT, shall be completed and then re-examined by MT with an additional 10 percent of the weld repair. In addition, if repairs are required in a portion of a weld not 100 percent examined by MT, an additional 10 percent of the total length of the weld shall be examined by MT on each side of the previously inspected length for a total of 20 percent. After the additional NDT is performed, and if more repairs are required, then 100 percent of the weld length shall receive MT.

Nondestructive Testing of Field Welds

Prior to performing ultrasonic NDT on field welds, the Contractor's welding inspection personnel shall have passed Caltrans' Ultrasonic Test. Field welding is defined as welding performed after the Certificate of Compliance has been furnished to the Engineer by the fabricator or manufacture for said materials. Information regarding the Caltrans Ultrasonic Test (titled "Notification of California Department of Transportation Qualification Requirement for Ultrasonic Testing Personnel) is included in the "Information Handout," available to the Contractor as provided for in Section 2-1.03, "Examination of Plans, Specifications, Contract and Site of Work," of the Standard Specifications. This test includes both written and practical examinations.
Splices made by field welding steel pipe piling shall receive NDT as follows:

UT shall be used for each field weld, including splices that are made onto a portion of the steel pipe piling that has been installed and any repair made to a splice weld. UT shall be performed over the full length of weld. In addition, Magnetic Particle testing (MT) shall be used for 100% of the root pass of all field welds unless otherwise directed by the Engineer. The acceptance criteria shall conform to the requirements in AWS D1.1, Section 6, for statically loaded nontubular connections subject to tensile stress. UT shall be performed in accordance with a written procedure that shall be reviewed by the Engineer before use. The UT procedure shall address the unambiguous interpretation of indications from the weld root and backing and shall describe the treatment of root fit-up repairs. The procedure shall define all measurements and/or marking that may be required prior to the start of welding. This procedure shall be demonstrated during weld mock-up qualification to verify its effectiveness in differentiating root and repair conditions.

MEASUREMENT AND PAYMENT (PILING)

The first paragraph of Section 49-6.01 "Measurement," of the Standard Specifications shall not apply.
The length of furnish pile to be paid for shall be the total length of the pile, as shown on the plans, measured along the centerline, from the specified pile tip of the pile to the plane of the pile cut-off. If the Contractor elects to furnish piling longer than the piling shown on the plans, no adjustment will be made to the length of piling to be paid and payment will be based on the length of pile shown on the plans.
The contract price paid per meter for cast-in-drilled-hole concrete piling shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in drilling holes, disposing of the material resulting from drilling holes, removing water when necessary, furnishing and placing concrete, and constructing reinforced concrete extensions, complete in place, to the required

penetration as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payment for cast-in-place concrete piling shall conform to the provisions in Section 49-6.02, "Payment," of the Standard Specifications and these special provisions except that reinforcement in the piling will be paid for by the kilogram as bar reinforcing steel (bridge).

The sixth paragraph of Section 49-6.02 "Payment," of the Standard Specifications shall not apply.

If steel shells are fabricated more than 480 airline kilometers from both Sacramento and Los Angeles, additional shop inspection expenses will be sustained by the State. Whereas it is and will be impractical and extremely difficult to ascertain and determine the actual increase in such expenses, it is agreed that payment to the Contractor for furnishing steel shells will be reduced $17 per meter of length of steel shell.

Full compensation for slurry, depositing concrete under slurry, test batches, inspection pipes, filling inspection holes and pipes with grout, drilling oversized cast-in-drilled-hole concrete piling, filling cave-ins and oversized piles with concrete, providing and verifying hole roughness, and redrilling through concrete, shall be considered as included in the contract prices paid per meter for cast-in-drilled-hole concrete piling of the types and sizes listed in the Engineer's Estimate, and no additional compensation will be allowed therefor.

The contract price paid per meter for cast-in-drilled-hole concrete piling (rock socket) of the sizes listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in drilling or coring holes, disposing of the material resulting from drilling or coring holes, and furnishing and placing concrete, complete in place, to the required penetration, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for designing, furnishing, constructing, and when no longer necessary, removing inspection platforms for pile acceptance testing, and providing transportation and access for the Engineer for pile acceptance testing, including extending inspection pipes up to the platform shall be considered as included in the contract prices paid per meter for cast-in-drilled-hole concrete piling of the sizes listed in the Engineer's Estimate and no additional compensation will be allowed therefor.

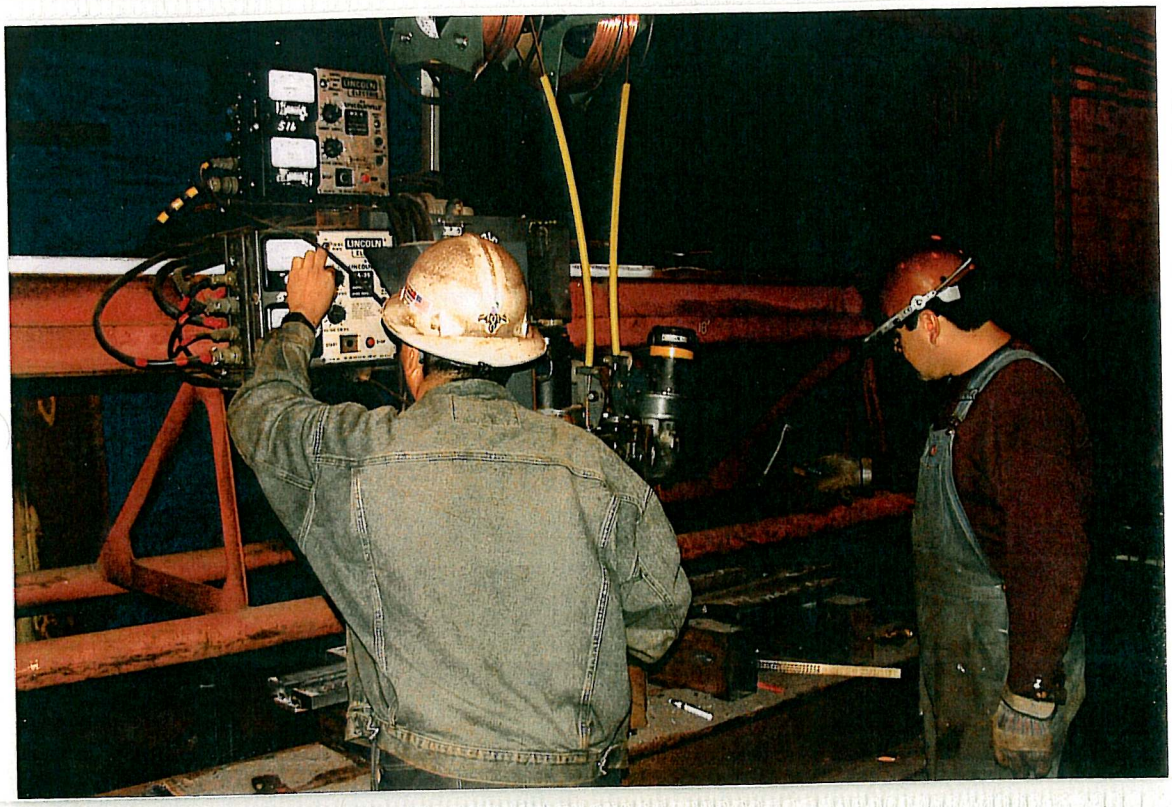
The contract price paid per meter for permanent steel casing of the sizes listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing permanent steel casing, complete in place, including weld beads, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for oversize holes and isolation material shall be considered as included in the contract price paid per meter for cast-in-drilled-hole concrete piling and no additional compensation will be allowed therefor.

Full compensation for cleaning out piles and providing video camera inspection for the steel shells shall be considered as included in the contract price paid per meter for cast-in-drilled-hole concrete piling and no additional compensation will be allowed therefor.

Appendix

D. Photograph of TBS long seam station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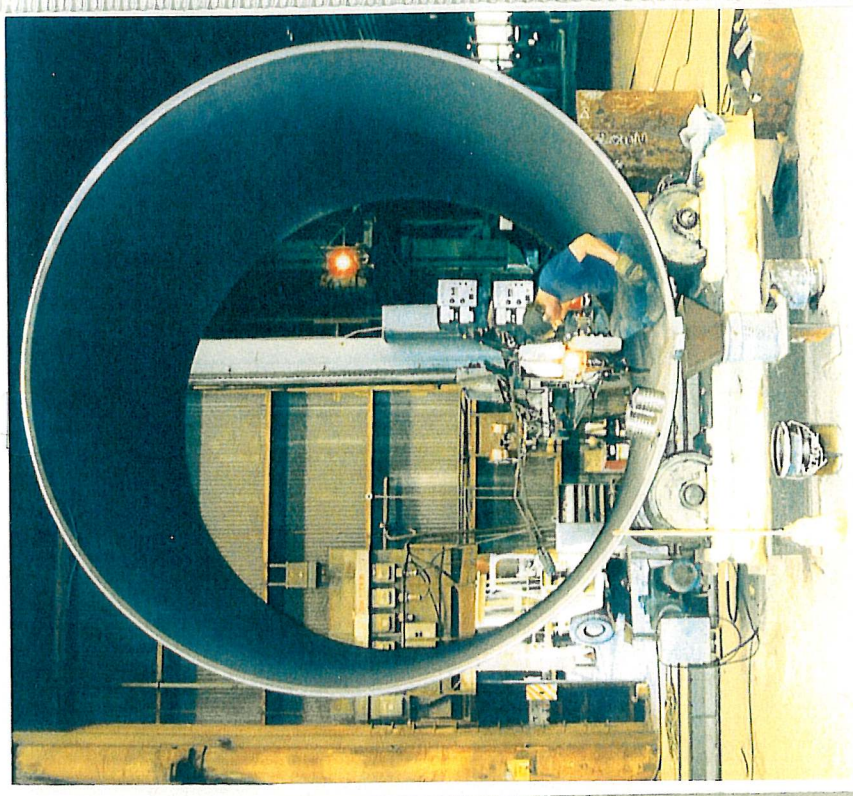
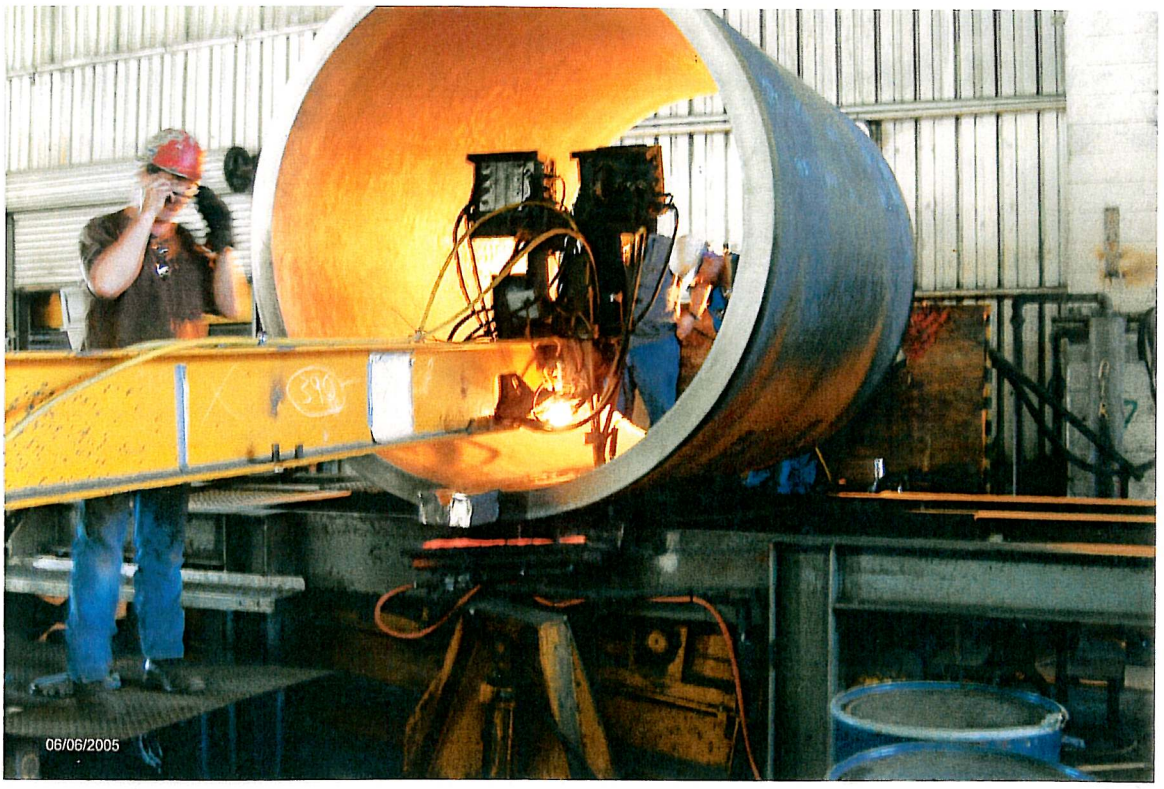


Appendix

E. Photograph of TBS White Bay long seam welding operation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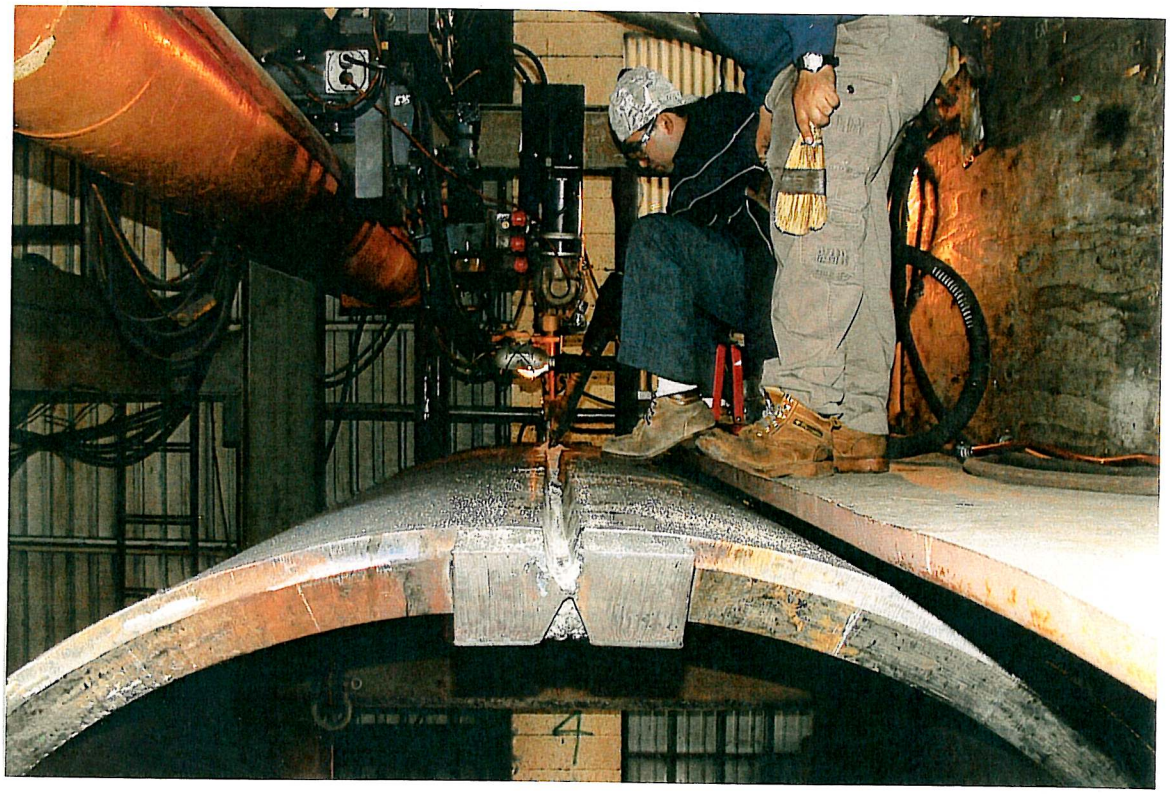
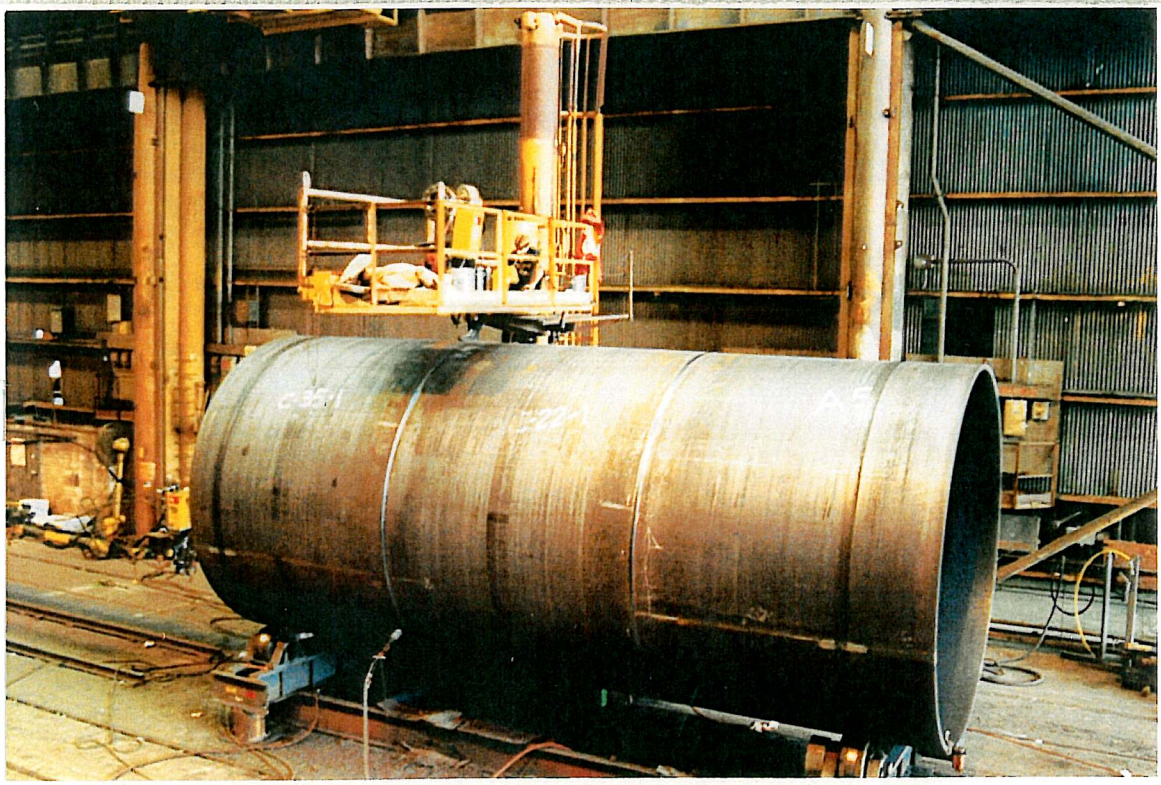
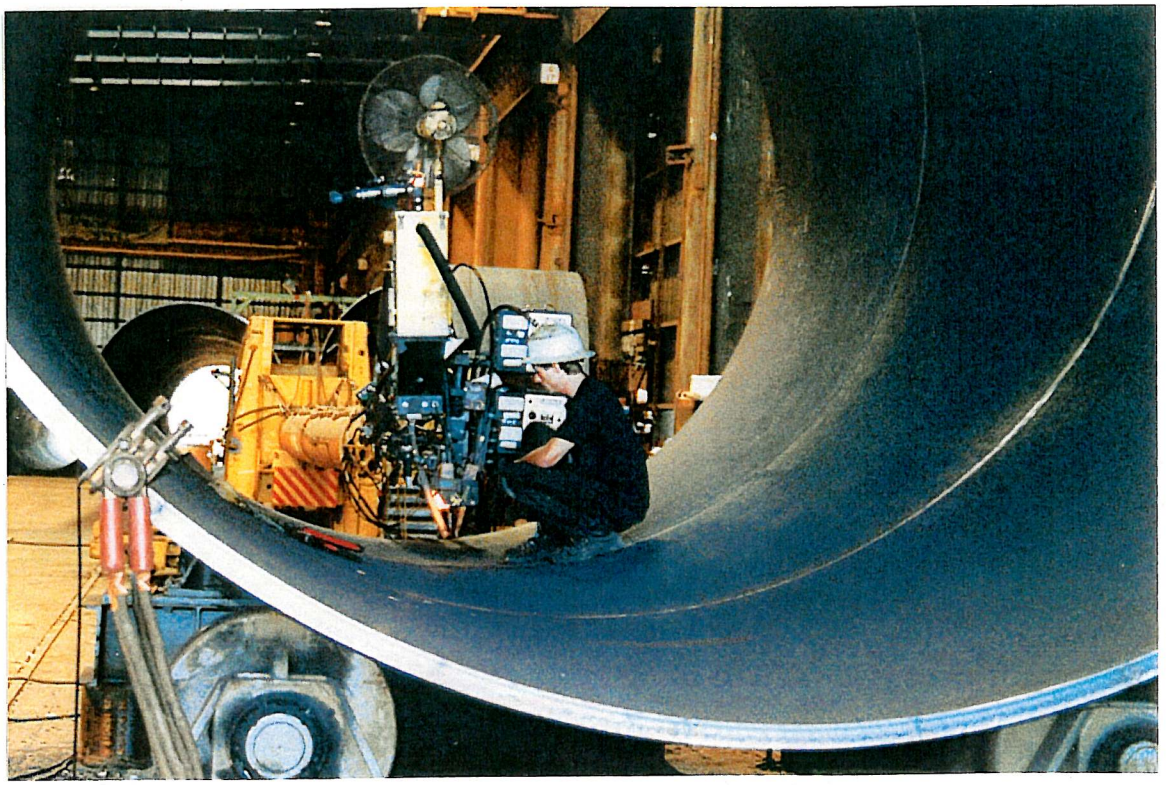


Appendix

F. Photograph of TBS girth seam station.



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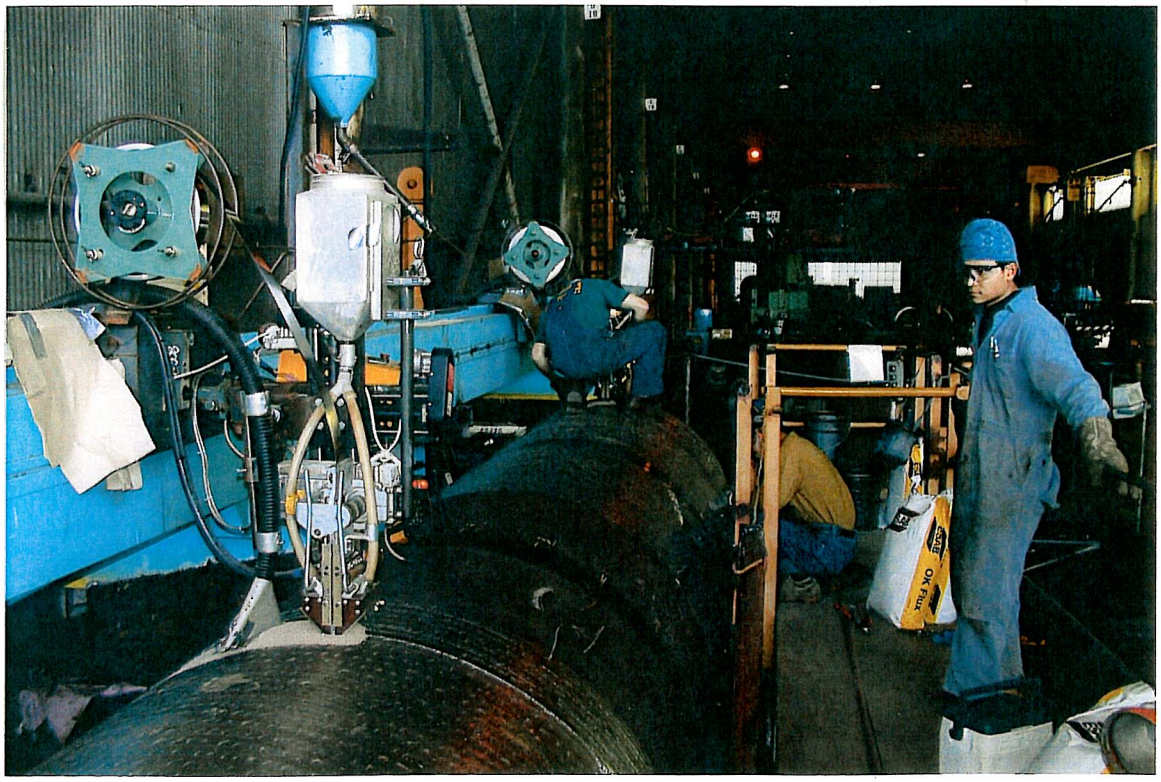
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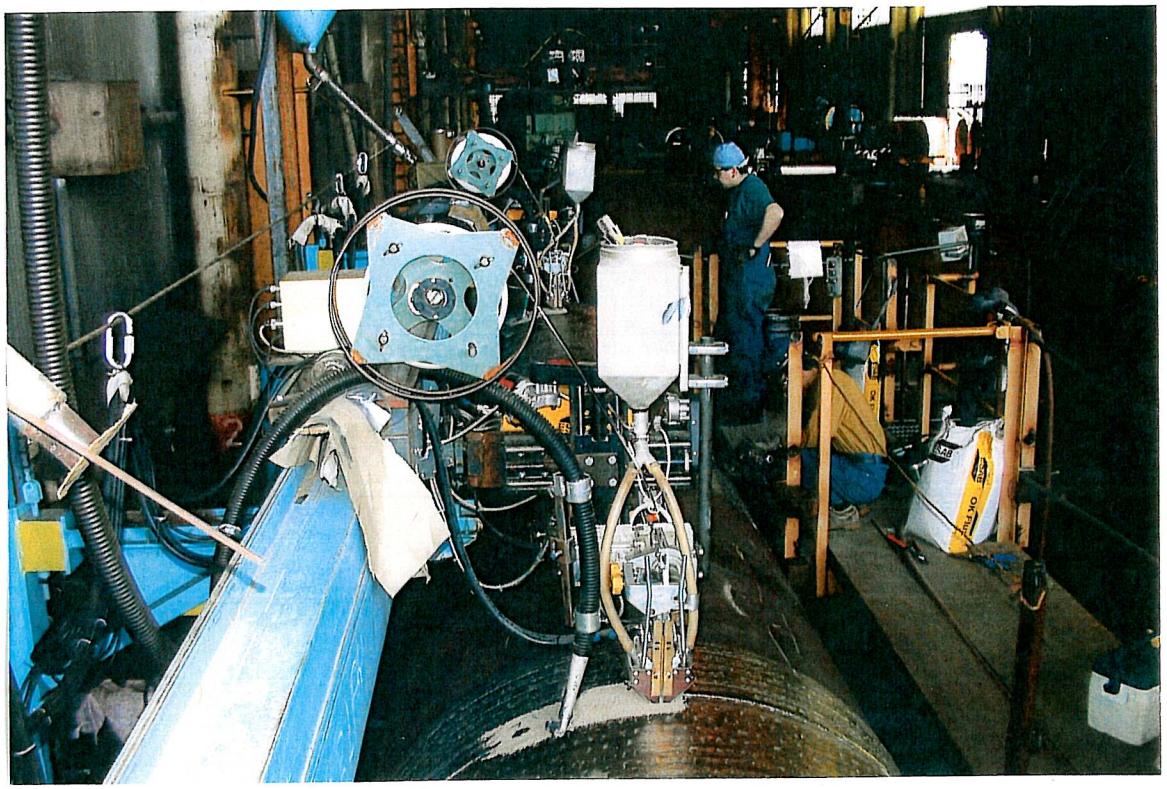

Appendix

G. List of NCR's and State letters.

Trans Bay Steel Welder Trainee Historical Events

Date	Document	Synopsis
11/16/2005	QC Issue 19	CT observes "non-certified welder(s) performing work"
12/6/2005	QC Issue 11	CT observes "non-certified welder(s) performing work"
1/31/2006	QC Issue 7	CT observes "non-certified welder(s) performing work"
2/1/2006	QC Issue 9	CT observes "non-certified welder(s) performing work"
2/2/2006	QC Issue 20	CT observes "non-certified welder(s) performing work"
2/13/2006	SL-801	NCR Notification - 1/31/06 (QC Issue 7)
2/13/2006	SL-803	NCR Notification - 2/1/06 (QC Issue 9)
2/13/2006	SL-810	NCR Notification - 12/6/06 (QC Issue 11)
2/14/2006	QC Issue 13	CT observes "non-certified welder(s) performing work"
2/14/1996	SL-0839	NCR Notification - 2/14/06 (QC Issue 13)
2/15/2006	KFM-TBS-LTR-021	Transmit SL-801, -803, -810 w/ request for response.
2/17/2006	QC Issue 21	CT observes "non-certified welder(s) performing work"
2/24/2006	TBS Letter	TBS policy to comply with Contract, Material Contract, and Code; qualified welders are performing work, NCR's to be addressed in later correspondence
4/4/2006	SL-0986	NCR Notification - 2/2/06 (QC Issue 20)
4/10/2006	SL-0994	NCR Notification - 2/17/06 (QC Issue 21)
4/18/2006	QC Issue 26	CT observes "non-certified welder(s) performing work"
5/1/2006	Meeting	TBS (Kavicky/Kroplin) Review Issue with ZinkiMorrow/Siegenthaler/Santos? as add-on to Skyway meeting.
5/1/2006	TBS Letter	TBS Training program is not in conflict with contract or code; per arrangement with US Equal Employment Opportunity Commission and Thai Community Development Center.
5/3/2006	SL-1085	NCR Notification - 4/18/06 (QC Issue 26)
5/5/2007	KFM-CT-LET-159	Transmit TBS Letter 5/1/06 to Caltrans
5/9/2006	QC Issue 30	CT observes "non-certified welder s performing work"
5/10/2006	PGH email	CCO-039 Draft from M. Woods received on-site. (1 st Draft?)
5/10/2006	PGH email	CCO-039 Comments from Paul Heggarty to M. Woods.
5/10/2006	SL-1137	Welding on non-standard joints by uncertified welders; welds will not be accepted. Not related to welder trainee Issue.
5/11/2006	TBS Letter	TBS Response to SL-1137; including discussion of trainee Issues.
5/12/2006	SL-1181	NCR Notification - 5/9/06 (QC Issue 30)
5/18/2006	KFM-TBS-LTR-023	Formal transmittal of SL-1137 w/ request for action. (Previously hand-delivered / emailed?)
5/22/2006	SL-1230	NCR Notification - 11/16/05 (QC Issue 19)
5/23/2006	KFM-CT-LET-164	Transmit TBS Letter 5/11/06 (re SL-1137 non-standard joints) to CT w/ request for CCO.
5/25/2006	MV email	Draft Letter and CCO-039 (2nd Draft?)
6/5/2006	SL-1301	Transmit Draft CCO-039 w/ request for pricing. (3rd Draft?)
6/7/2006	KFM-TBS-TRN-039	Transmit SL-1301 to TBS (follow up to email?)
6/20/2006	Meeting	Kavickv/Kroplin/Sieqenthaler/Woods/Vilcheck (ref. SL -1444)
6/23/2006	SL-1444	Request cost information not provided yet; language to be included to assure TBS does not relinquish rights.
6/30/2006	KFM-CT-TRN-267	KFM Transmit QC closing documents for NCR per SL-839 including TBS Letter 2/24/06.
7/21/2006	SB email	Draft CCO-39 handed out at Skyway (DAVI roll) meeting (4th Draft?)

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Date	Document	Synopsis
7/21/2006	MW email	Recap of TBS position, pricing, terms for impact payments (to John Hassard.)
7/25/2006	CT TRN-173	Transmit CCO-039 for signature.
8/7/2006	TBS Letter	Notification that CT position on welder trainees is wrong, time extension/costs to be submitted when quantified.
9/29/2006	KFM-CT - TRN-384	Return CCO-039 with proposed language changes.
10/24/2006	SL-2147	Re-issue CCO-039 with some language changes per TRN-384. (5th Draft?)
10/31/2006	TBS Letter	CCO-39
11/1/2006	KFM-CT -LET -214	Return CCO-039 with TBS Letter 8/7/06 attached in response.
12/27/2006	SL-2476	NCR's Resolved (SL801, -803, -810, -839, -986, -994, -1085, - 1181, -1230)
1/2/2007	CT Weekly Meeting	CCO-039 will not be issued per CT. (ref SL-2955)
3/8/2007	CCO Meeting	TBS discussion items are closed per CT (ref. SL-2955)
3/12/2007	SL-2955	Confirm 3/8/07 CT Meeting statement that issue is closed.
3/14/2007	KFM- TBS-L TR-025	Forward SL-2955; request response.
3/29/2007	TBS Fax	NOPC forwarded to KFM
3/30/2007	TBS Letter	Does not agree with SL-2955, have submitted costs for meeting w/ Sieaenthaler, no meeting occurred, therefore submit NOPC
4/2/2007	GA email	Return NOPC with comments.
4/4/2007	TBS Letter	Revised 3/30/07 Letter
4/6/2007	TBS Letter	Revised 3/30/07 Letter
4/10/2007	TBS Letter	Revised 3/30/07 Letter
4/19/2007	KFM-CT -LET -258	Transmit TBS Letter "3/30/07" (received 4/10/07) with request to continue negotiations.
5/22/2007	TBS Letter	No response to earlier correspondence, request meeting
6/1/2007	KFM-CT -LET -269	Transmit TBS Letter (5/22/07) w/ confirmation of meeting
6/19/2007	TBS Fax	NOPC forwarded to KFM NO. 1025
6/27/2007	SL-3235	Response to Transmittal No. 566
6/28/2007	KFM-TBS-TRN-089	SL-3235 Response to TBS
6/29/2007	TBS Fax	Supplemental NOPC Attachment 1025
7/3/2007	TBS Letter	Does not agree with SL-3235 and objects to the Engineer's response. Requesting referal to the DRB.

G2

Appendix

H.QC Issues Log (final form)

Issue #	TBS Issue	Part No. / Location	Description	Issue Date (Date item was identified)	Originator	TBS/ KF NCR Number	Caltrans NCR Date	Resolution / Action to be Taken	Status	B.I.C.
7		S-75 LS(ID) (E2-10B)	Non-certified welders (Chaopa, Suwanwiang) peforming work (welding trainees).	1/31/2006	Caltrans	9	1/31/2006	Submit welder qualifications and verify that all welds performed pass 100 % NDE.	NCR notification SL-801, 2/13/06. KFM-TBS LTR-021, 2/15/06, to comply with contract. Qualifications submitted, Sub-382R0, 3/7/06; approved SL-912, 3/13/06. UT status performed; reports pending. Resolved by SL-2476, 12/27/06.	Resolved
9		W-13 / U-159 GS(ID) (E2-5B)	Non-certified welders (Saenthamana, Pornsririsak)	2/1/2006	Caltrans	10	2/1/2006	Submit welder qualifications and verify that all welds performed pass 100 % NDE.	NCR notification SL-803, 2/13/06. KFM-TBS LTR-021, 2/15/06, to comply with contract. Mr "P" qualifications submitted, Sub-358, 2/23/06;rejected SL-876, 3/3/06. "P" resubmitted Sub-358R1, 3/9/06; approved SL-929, 3/21/06. Mr. "S" qualifications submit	Resolved
11		Q-8 LS (E2-14B)	Non-certified welder (Peregrina)	12/6/2006	Caltrans	8	12/6/2005	Submit welder qualifications and verify that all welds performed pass 100 % NDE.	NCR notification SL-810, 2/13/06. KFM-TBS LTR-021, 2/15/06, to comply with contract. Qualifications submitted Sub-358,2/23/06; rejected SL-876, 3/3/08. Resubmitted Sub-358R1, 3/9/06; approved SL-929, 3/21/06. Resolved per SL-2476, 12/27/06.	Resolved
13		NA	Non-certified welder (Pacheco) and KFM/TBS QCM failure to correct.	2/14/2006	Caltrans	12	2/14/2006	KFM direct TBS to follow contract provisions. Forward direction to CT to clear NCR.	NCR notification SL-839, 2/14/06. KFM resolution TRN-267; pending response. Resolved per SL-2476, 12/27/06.	Resolved
19		S-114 (E2-11B) S-121 (E2-12B) S-96 (E2-16) S-99 (E2-16)	Unqualified welders and QC. Welders H. Lopez, O. Chindavong, D. Johnson, G. Jones. QC Paige, Martel, Patrick.	11/16/2005	Caltrans	18	11/16/2005	Submit qualifications, NDE.	Weld dispostion and clearing doc's for S-114 & S-121 submitted Sub-453, 4/5/06; response SL-1516, 7/11/06 -- defer to CCO-039. NCR notification per SL-1230, 5/22/06. Resolved per SL-2476, 12/27/06.	Resolved

11

Issue #	TBS Issue	Part No. / Location	Description	Issue Date (Date item was identified)	Originator	TBS/ KFM NCR Number	Caltrans NCR Date	Resolution / Action to be Taken	Status	B.I.C.
20		?	Unqualified welders working with qualified welders as follows: Saenthamna and Pnimpol with Lopez, Piece XXX; Pacheco w/ Perez, Piece YYY; Wiriyasanti and Chaopa and Suwanwiang w/ Hildago, Piece ZZZ; Chairot w/ Rodriguez, Piece TTT.	2/2/2006	Caltrans	19	2/2/2006	Need welds ID'ed for NDT, submit qualifications.	Notification, SL-986, 4/4/06 made. Resolved per SL-2476, 12/27/06.	Resolved
21		N-12 (E2-X?)	Unqualified welder Pornkan; working with L. Hildalgo.	2/17/2006	Caltrans	20	2/17/2006	Submit qualification / NDE results.	Notification, SL-994, 4/10/06. Resolved per SL-2476, 12/27/06.	Resolved

H2

Appendix

I. Caltrans Letters and Correspondance

Issue #	TBS Issue	Part No. / Location	Description	Issue Date (Date item was identified)	Originator	TBS/ KFM NCR Number	Caltrans NCR Date	Resolution / Action to be Taken	Status	B.I.C.
7		S-75 LS(ID) (E2-10B)	Non-certified welders (Chaopa, Suwanwiang) peforming work (welding trainees).	1/31/2006	Caltrans	9	1/31/2006	Submit welder qualifications and verify that all welds performed pass 100 % NDE.	NCR notification SL-801, 2/13/06. KFM-TBS LTR-021, 2/15/06, to comply with contract. Qualifications submitted, Sub-382R0, 3/7/06; approved SL-912, 3/13/06. UT status performed; reports pending. Resolved by SL-2476, 12/27/06.	Resolved

Issue #	TBS Issue	Part No. / Location	Description	Issue Date (Date item was identified)	Originator	TBS/ KFM NCR Number	Caltrans NCR Date	Resolution / Action to be Taken	Status	B.I.C.
9		W-13 / U-159 GS(ID) (E2-5B)	Non-certified welders (Saenthamana, Pornsririsak)	2/1/2006	Caltrans	10	2/1/2006	Submit welder qualifications and verify that all welds performed pass 100 % NDE.	NCR notification SL-803, 2/13/06. KFM-TBS LTR-021, 2/15/06, to comply with contract. Mr "P" qualifications submitted, Sub-358, 2/23/06;rejected SL-876, 3/3/06. "P" resubmitted Sub-358R1, 3/9/06; approved SL-929, 3/21/06. Mr. "S" qualifications submit	Resolved

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

February 13, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000801

Subject: NCR - Trans Bay Steel, 01/31/06 (Unqualified Welders Performing SAW)

Dear Christopher,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc., on January 31, 2006. The NCR was generated when QA observed two unqualified welders, Mr. Jaran Chaopa and Mr. Uthit Suwanwiang, performing welding using the submerged arc welding process on the ID long seam weld No. S-75.

Please provide to the Department a description of what measures will be taken by the Contractor to resolve this NCR and to avoid this issue reoccurring on future production work.

If you have any questions or need additional information, please call Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE:	CO/JOB: 364-4347
ROUTED BY	NO: 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED: Y N	FILED TO:

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

February 13, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000803

Subject: NCR - Trans Bay Steel, 02/01/06 (Unqualified Welders Performing SAW)

Dear Christopher,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc., on February 2, 2006. The NCR was generated when QA observed two unqualified welders, Mr. Udon Saenthamna and Mr. Sathaporn Pornsririsak, performing welding using the submerged arc welding process on the ID girth seam weld joining piece mark Nos. W-113 and U-159.

Please provide to the Department a description of what measures will be taken by the Contractor to resolve this NCR and to avoid this issue reoccurring on future production work.

If you have any questions or need additional information, please call Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON A JV
DATE 2/13/06 CO/JOB 364-4347
ROUTED BY SDM NO 04-0120E4
TO: SPECIAL NOTES:
INTERNAL KFM COPIES TO:
EXTERNAL COPIES TO:
SCANNED: Y / N FILED TO: C1 Letter 803

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

February 13, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000810

Subject: NCR – Trans Bay Steel, 12/06/05 (Unqualified Welder Performing SAW)

Dear Christopher,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc. (TBS) on December 6, 2005. The NCR was generated when QA observed Mr. Raul Peregrina, TBS apprentice, using the submerged arc welding (SAW) process to perform the welding of one complete cover pass on workpiece No. Q-8 at the weld station in White Bay. Mr. Peregrina was not qualified to perform welding using the SAW process. Mr. Dan Peterson, the qualified welding operator who was assigned to White Bay during the shift, was not in the weld bay at any time during the weld performed by Mr. Peregrina. QA verbally notified Mr. Scott Martell, TBS QC Inspector, and Mr. William Kroplin, TBS QCM, on December 6, 2005, of this non-conformance.

Please describe what measures are to be taken by the Contractor to remedy this non-conformance. Please also describe how the Contractor shall avoid similar situations in future production work.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE	CO/JOB: 354-4347
ROUTED BY	NO: 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED: Y N	FILED TO:

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

February 17, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000839

Subject: NCR - Trans Bay Steel, 02/14/06 (QCMs for KFM and TBS Allowing Welding By Unapproved Welders)

Dear Chris,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel (TBS) on February 14, 2006. The NCR was generated when QA observed an unapproved welding operator, Mr. Mark Pacheco, performing welding on the inside diameter of pile casings for the Pier E2 footing. In the last several months, the Contractor's QCM and the TBS QCM allowed multiple welders to perform welding on this project prior to being approved by the Engineer and also allowed welding to be performed by welding personnel who were both unapproved and unqualified. These occurrences were repeated after QC was notified of this non-conformance.

As discussed this afternoon, please provide to the Department a description of what action is being taken by the Contractor to ensure that future production work is performed by qualified welding personnel who have been approved by the Engineer, in accordance with the requirements in Section 8-3.01, "Welding," of the Special Provisions, and AWS D1.1 (2002).

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE: 2/17/06	CO/JOB. 364-4347
ROUTED BY: SBH	NO: 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED (Y) N FILED TO: C+L Letter 839	

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 07-Jun-06
Time 10:20 AM

Dated: June 7, 2006

TRANSMITTAL No: KFM-TBS-TRN-000039 **Rev: 00**

To: **Bill Kavicky**
Trans Bay Steel
1025 Kaiser Rd.
Napa CA 94558
Phone: 707-259-0777 Fax: 707-259-1072

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: CCO-039 Welding Operator Trainee Plan

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☑ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	05-Jun-2006	1	SL-1301 CCO-039 Welding Operator Training Plan	

These are transmitted as checked below:

☐ For Approval	☑ For Review/Comment	☐ Return For Correction
☐ For Your Use	☐ As Requested	☐ For Information

Remarks:

Please review and comment on attached CCO. If any aspects are not acceptable to Trans Bay please provide alternate language for review with Caltrans.

KFM requests your written comments by June 15, 2006.

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Copy To: Job Office Files

An Equal Opportunity Employer

17

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb
Welding Quality Control Manager

April 4, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000986

Subject: NCR - Trans Bay Steel, 02/02/06 (Unapproved Welder Performing Production Work)

Dear Christopher,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc. (TBS) on February 2, 2006. The NCR was generated when QA observed the following instances of unqualified welding personnel performing production welding on E2 piling:

1) Mr. Udon Saenthamna, TBS shop helper, performed production welding with the assistance of Mr. Chinnawat Pnimpol, TBS shop helper, under the observation of Mr. Hector Lopez, TBS welder.

2) Mr. Mark Pacheco, TBS shop helper, performed production welding under the observation of Mr. Carlos Perez, TBS welder.

3) Mr. Saduk Wiriyasanti, TBS shop helper, performed production welding with the assistance of Mr. Jaran Chaopa and Mr. Uthit Suwanwiang, TBS shop helpers, under the observation of Mr. Leonardo Hidalgo, TBS welder.

4) Mr. Wicharn Chairot, TBS shop helper, performed production welding under the observation of Mr. William Rodriguez, TBS welder.

Mr. Bill Kroplin, TBS QC Manager, was verbally notified of this non-conformance on February 2, 2006.

Please describe what measures are to be taken by the Contractor to remedy this non-conformance. Please describe how the Contractor shall avoid the use of unqualified welding personnel on future production work.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT FCI MANSON, A JV
DATE 4/4/06 JOB 364-4347
ROUTED BY SBH W: 04 0120E4
TO SPECIAL NOTES:
ITEM COPIES TO:
EXTERNAL COPIES TO:
SCANNED: (Y) N FILED TO: C1 Letter 986

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb
Welding Quality Control Manager

April 10, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-000994

Subject: NCR – Trans Bay Steel (TBS) 02/17/06, (Unqualified Welder Performing Production Work)

Dear Chris,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc. (TBS) on February 17, 2006. The NCR was generated when QA observed that Mr. Nikhom Promkhan, TBS shop helper, performed production welding of E2 piling under the observation of Mr. Leonardo Hidalgo, TBS welder. Mr. Promkhan was not qualified to perform this work. Mr. Bill Kroplin, TBS QC Manager, was verbally notified of this non-conformance on February 17, 2006.

Please describe what measures are to be taken by the Contractor to remedy this non-conformance. Please describe how the Contractor shall avoid the use of unqualified welding personnel in future production work.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT-FCI-MANSON A JV

DATE 4/10/06	CO-JOB 364 4347
ROUTED BY SBH	NO 04 0120E4
TO	SPECIAL NOTES:

INTERNAL KFM COPIES TO:

EXTERNAL COPIES TO:

SCANNED: (Y) N FILED TO: CT letters 994

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

I10

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

May 1, 2006

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: SFOBB Skyway Contract# 04-012024 and E2TI Contract # 04-0120E4

Subject: Welder Training

Attn: Lee Zink,

The welder training issue at Trans Bay Steel Corporation is not in conflict with the Special Provisions nor is it in conflict with AWS D1.1 2002.

The welder training being performed at TBSC is in accordance with the Code, Specifications and an Agreement between TBSC, the United States Equal Employment Opportunity Commission and the Thai Community Development Center.

In the agreement with the USEEOC, TBSC is committed to train its employees and new hires in accordance with the same practices used over the past nine years in training our welders on Caltrans Projects. TBSC entered into this legal and binding agreement prior to any "issues" recently raised by METS. TBSC cannot deviate from these practices or we could be liable for discrimination.

Trans Bay Steel Corporation continues to honor all contractual commitments and looks forward to a long relationship with the USEEOC in providing employment and training to those who need this opportunity.

William M. Kavicky
Trans Bay Steel Corporation

Cc. George Atkinson
Chris Webb

I11

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb
Welding Quality Control Manager

May 3, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001085

Subject: NCR - Trans Bay Steel, 04/18/06 (Welding of Pile Segments by Unqualified Welders)

Dear Chris,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel (TBS) in Napa, California, on April 18, 2006. The NCR was generated when QA observed Mr. Nestor Rojas, welding operator trainee, performed submerged arc welding on the interior of girth seam weld No. 16 joining pile segment s-77 to segment s-69 on pile E2-16. Also, QA observed Mr. Juan Rodriguez, welding operator trainee, performed submerged arc welding on the exterior of girth seam weld No. 30 joining pile segment u-119 to segment u-110 on pile E2-15. QA verbally notified Mr. William Kroplin, TBS QCM, of this non-conformance on April 18, 2006.

Please describe what measures the Contractor will take to resolve this NCR and to avoid performing welding with unqualified welders in the future.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE 5/2/06	CO/JOB. 364-4347
ROUTED BY SBM	NO. 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED: (Y) N FILED TO: CF letters 1085	

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

I12

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

May 5, 2006

Serial Letter: KFM-LET-000159

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347

Subject: Trans Bay Steel Welder Training

Dear Pedro:

As a follow-up to the meeting Monday, May 1, 2006, between Caltrans, Kiewit/FCI/Manson, AJV, and Trans Bay Steel regarding welding trainees, please find the attached letter from Trans Bay Steel dated May 1, 2006. The attached letter addresses various Trans Bay Steel concerns with respect to this issue.

Please contact us at your convenience to discuss further.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Christopher J. Villa
Deputy Project Director

cc: file

I 13

Subj: **FW: Draft Comments**
Date: 6/14/2007 10:52:41 A.M. Pacific Daylight Time
From: George.Atkinson@KFMJV.COM
To: norgate707@aol.com

-----Original Message-----
From: Paul Hegarty
Sent: Wednesday, May 10, 2006 6:56 PM
To: George Atkinson
Subject: FW: Draft Comments

George,
See below commentary to date on the Caltrans draft.
Please forward this to those who need to proof read.

It was not my intention to communicate with Caltrans via e-mail, had Mark not asked me to do so, and sending this to Mark is not an official response. I know this is prohibited on Skyway. What are the ground rules for E2-T1?
Thanks.
Paul

-----Original Message-----
From: Paul Hegarty
Sent: Wed 5/10/2006 6:51 PM
To: mark_woods@dot.ca.gov
Cc:
Subject: Draft Comments

Mark,
As discussed please see below TBS comments on your draft.

The Short Page which starts "Section 8-3.01, shall be ammended..."
Last paragraph:
TBS comment: Will the extra work payment cover the cost to TBS of hiring an additional CWI?

The Long page which starts "The Contractor shalll be permitted..."

Caltrans Item 1:
TBS comment: The "team" should be defined by the trainee not by the named pair of trainee and qualified operator, so that TBS may make effective use of their trainees. TBS will need to mix and match these operators.

Caltrans Item 2:
TBS comment:
A. "utilizing RT as described..." shoud be qualified to state that the required RT is one shot over 15".

B. From a practical standpoint it is important that the trainee not be required to complete 100% of the weld which is used to qualify the team, otherwise subsequent shifts could not continue production to schedule.

C. Inspection and acceptance of the "team qualification". TBS propose that the additional RT which will be covered in the CCO is understood to be required for historical purposes as an audit of the TBS Trainee Program. As such this RT will be scheduled at the earliest opportunity which does not interfere with the production schedule. This may involve a small time lag from time to time to accumulate sufficient quantities of work to test or to add on to an otherwise heavy workload for the RT tech.s. In the interim TBS would carry out UT testing to qualify the "team" on which basis the team could continue with welding work on their next shift without NCR while the RT is being scheduled / carried out. Such work would only continue based upon acceptable UT results. Should the UT fail, then the requalification part of Caltrans

I14

Item 2 would apply.

Caltrans Item 3: TBS OK

Caltrans Item 4: TBS OK

Caltrans Item 5:
TBS comment: The requirement for the QC inspector to be "continuously present" is not fully defined and could limit the ability of the inspector to look after other work on his shift. This raises two questions / alternates:
A. Can this mean that the inspector would work under the 30 minute rule and oversee 4 or 5 teams of operators and still perform other inspection during the shift?
B. If the more restrictive QC inspector function is required then would it be possible for the Change Order to cover the cost to TBS of hiring an additional CWI for this purpose? (see also the same comment on the short page responses).

I hope this helps.

Regards,
Paul

I15

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

May 10, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001137

Subject: Welding By Unqualified Personnel at Trans Bay Steel

Dear Christopher,

The Department understands that welding was allowed to proceed on Pier E2 piling top sections at Trans Bay Steel using personnel who have not yet completed the qualification test for the non-standard joint geometry being used for those sections of piling. The Contractor is reminded that the "General" subsection of Section 8-3.01, "Welding," of the Special Provisions requires that personnel welding using joint details that are not prequalified per Section 3 of AWS D1.1 (2002) shall perform a qualification test plate which shall be both radiographically and mechanically tested.

Per the discussion on May 9, 2006, between the Department and Mr. Chris Webb, KFM Welding Quality Control Manager, and Mr. Dan Proctor, KFM Construction Manager, welds performed after May 9 by welding operators whose qualification plates have not been mechanically tested will not be accepted by the Department. Pending the results of the mechanical tests of the qualification plates, the Contractor may propose a resolution for the welds that have already been performed on the Pier E2 piling top sections.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 772-9038.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE: 5/10/06	CO/JOB: 364-4347
ROUTED BY SDM	NO: 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED: (Y) N FILED TO: C+ Letter 1137	

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.003

"Caltrans improves mobility across California"

I16

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

May 11, 2006

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: E2/T1 Foundations # 04-0120E4

Subject: Work Stoppage

Attn: Chris Villa

Trans Bay Steel is in receipt of KFM-LET-000023 and State Letter 1137.

TBS will make our best effort to minimize the disruption to the E2-T1 Pile schedule as a result of the State's letter which precipitated the sending home of a number of our welding operators on May 10, 2006. We will address a recovery schedule in so far as it is possible to do so, given the circumstances surrounding these events, in the coming days.

For some time now TBS's efforts to establish a smooth cycle of operations in pile production have been frustrated by the pattern of unreasonable actions of METS in our shop. The current issue of the bend testing is just one of many such cases.

It has taken far longer than necessary to establish procedures for the efficient qualification of welding operators in this case given the current critical nature of the schedule owing to reasons outside the control of TBS.

The State's slow progress toward an understanding , on their part, of how to document TBS's long standing Trainee Welding Operator Program has proven an unfortunate backdrop to establishing agreement on the simplest of issues on the shop floor.

There were protracted discussions in recent weeks in an effort to establish the exact details of the RT procedure to be followed to test each operator's qualification longitudinal seam weld. This in itself slowed down the process.

It was agreed at the site meeting of March 22, 2006 that TBS could propose and use an alternative to the Special Provisions requirement for a qualification test plate. Trans Bay RFI-202 (KFM-RFI-203) was submitted on March 23, 2006 in accordance with this agreement. A response was received some 42 days later on May 4, 2006. Had this response been issued by March 30, 2006 we may not have experienced the current delay.

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

The State's inspectors' indecision was further evidenced in the debate over how and where to cut bend test specimens from the run on / run off tabs on this weld. It wasn't until a shop floor discussion on Monday May 8, 2006 during the initial cutting operation that agreement was finally established. Once TBS had clear direction, albeit verbal, we prioritized the preparation of the specimens.

In the interim TBS understood that a good faith effort to continue with production was a reasonable measure in the interest of the job. TBS received verbal notification on Tuesday May 9, 2006 that a State Letter would be written not to accept any such welding in future and this essentially shut down the work

Please inform the Engineer that TBS has experienced three days delay thus far and that this time is most probably not recoverable. TBS requests that a Contract Change Order be written to cover this delay and the associated costs arising from it, which cannot be accurately determined at this time.

Please be assured that the testing of the side bend specimens will happen as soon as possible and the results will be shared with the State immediately in an effort to expedite the remobilization of the TBS labor force.

Please do not hesitate to contact my office at 707-259-0777.

William M. Kavicky
Trans Bay Steel Corporation

Cc. Paul Hegarty
George Atkinson

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb

May 12, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001181

Subject: NCR - Trans Bay Steel, 05/09/2006 (Welding by Unqualified Welder)

Dear Christopher,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel (TBS) in Napa, California on May 9, 2006. The NCR was generated when QA discovered an unqualified welding operator in the process of performing welding on the inside diameter girth seam between the Pier E2 pile top, pile segments E-5 to D-13. In addition, the welding operator did not maintain the required minimum preheat and inter-pass temperature at any location along the weld joint. QA verbally notified Mr. Bill Kroplin, TBS Quality Control Manager, of this non-conformance on May 9, 2006. Please refer to the Department's Letter No. 1137, dated May 10, 2006.

Please describe what measures the Contractor will take to resolve this NCR.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON, A JV
DATE 5/10/06 | CO/JOB. 364-4347
ROUTED BY SBY | NO. 04-0120E4
TO: | SPECIAL NOTES:
INTERNAL KFM COPIES TO:
EXTERNAL COPIES TO:
SCANNED: (Y) N FILED TO: C+ Letter 118

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

May 18, 2006

Serial Letter: KFM-TBS-LTR-000023

Trans Bay Steel
1025 Kaiser Rd.
Napa, CA 94558

Attention: Mr. Bill Kavicky,

Reference: SAS E2/T1 Foundation Project
(Caltrans Contract No. 04-0120E4)
KFM Job No. 364/4347
State Letter #05.003.01-001137

Subject: Welding by Unqualified Personnel

Dear Bill,

Please find the attached State Letter #1137, dated May 10, 2006 regarding the use of unqualified welders by Trans Bay Steel, ("TBS"). As discussed with you and as described in the State's letter, TBS' use of unqualified welders is apparently not in conformance with the contract requirements. Furthermore, as a result all welds performed after May 9, 2006 by unqualified welders will not be accepted by the State. KFM reminds TBS of their continuing obligations regarding prosecution of the work under our Material Contract. Please respond to these issues and propose a resolution for the welds already performed as described in State Letter #1137.

If you have any questions or comments, please contact this office.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Christopher J. Villa
Deputy Project Director

cc: file

I20

220 Burma Road, Oakland, CA 94607 • PO Box 23223, Oakland, CA 94623
Phone (510) 419-0120 • Fax (510) 832-1456

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Chris Webb
Welding Quality Control Manager

May 22, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001230

Subject: NCR Trans Bay Steel, 11/16/05 (Unapproved Welder Performing Production Work)

Dear Chris,

The Department issued a Non-conformance Report (NCR) at Trans Bay Steel, Inc. (TBS) on November 16, 2005. The NCR was generated when QA observed Mr. Hector Lopez, Mr. Oudalay Chinvanvong, Mr. David Johnson, Mr. Garret Jones and Mr. David Jones performing welding on E2 production piling. None of the listed welders were approved for this work by the Engineer. Mr. Bill Kroplin, TBS QC Manager, was verbally notified of this non-conformance on November 16, 2006.

Please describe what measures are to be taken by the Contractor to remedy this non-conformance. Please describe how the Contractor shall avoid the use of unqualified welding personnel on future production work.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON, A JV
DATE: 5/22/06 CO/JOB 364-4347
ROUTED BY SBH NO 04-0120E4
TO: SPECIAL NOTES:
INTERNAL ITEM COPIES TO:
EXTERNAL COPIES TO:
SCANNED (Y) N FILED TO: C-Letter 1230

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 09.006.03

I21

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

May 23, 2006 Serial Letter: KFM-LET-000164

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347
State Letter # 05.003.01-001137

Subject: Work Stoppage at TBS Facility due to the use of Unqualified Welders

Dear Pedro:

Please find attached, Trans Bay Steel's ("TBS") response to State Letter #1137 regarding welding by unqualified personnel at their facility. Please review and address TBS' request for a Contract Change Order to cover the cost associated with a three-day delay in productive operations.

If you have any comments or questions, please contact this office.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Christopher J. Villa
Deputy Project Director

cc: file

I22

From: George Atkinson (George.Atkinson@KFMJV.COM)
To: shawna_bagdon@yahoo.com
Date: Thursday, October 11, 2007 5:40:03 PM
Cc: norgate707@aol.com; tbsteel@sbcglobal.net
Subject: FW: E2-T1 CCO #39

-----Original Message-----
From: Dan Proctor
Sent: Thursday, May 25, 2006 10:30 AM
To: George Atkinson
Subject: FW: E2-T1 CCO #39

-----Original Message-----
From: Mark Vilcheck [mailto:mark_vilcheck@dot.ca.gov]
Sent: Wednesday, May 24, 2006 4:47 PM
To: Dan Proctor; Chris Webb
Cc: Mark Woods; Paul Hegarty
Subject: Re: E2-T1 CCO #39

Gentlemen,

Attached are draft documents which outline the path we would like to follow with respect to the welding operator trainees at TBS. This was developed out of internal discussions and conversations between Paul Hegarty, Bill Kavicky, and Mark Woods. Please let me know when we may discuss this further. Thanks.

MGV
510-772-9038

(See attached file: CCO 39 DRAFT IIb.doc)(See attached file: Draft Letter to clarify WQCP addendum b.doc)

I23

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Christopher Webb
Welding Quality Control Manager

May 18, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-XXXXXX

Subject: Contract Change Order No. 39, Welding Operator Training Plan

Dear Christopher,

As discussed in meetings with Mark Woods, Mark Vilcheck, Bill Kavicky (TBS), Chris Webb (KFM Welding QCM) and Paul Hegarty (KFM) between May 10 and May 18, 2006, Draft CCO No. 39 is attached. The Contractor will be permitted to utilize welding teams to perform submerged arc welding (SAW) on steel pipe piling as described in the Welding Quality Control Plan (WQCP) Addendum described in CCO No. 39, provided the following criteria are met:

1. The welding teams will be no more than 2 persons at a time; one trainee welding operator and a qualified experienced welding operator. The trainee may only be at the controls of the welding equipment under the direct supervision of a qualified experienced welding operator who has completed the qualification requirements in accordance with the contract Special Provisions.
2. The welding teams will be qualified as described in Section 4.19.1.1 of AWS D1.1-2002, utilizing radiographic testing (RT) of the initial 15" of the first production weld performed by the team(s). Should this qualification test fail, the entire weld will be radiographed and repaired as necessary. The team will then re-test on the next production weld and will follow the same procedure as stated in this section, until the team satisfactorily completes a production qualification. All RT for qualification and repair will be done as soon as practical following the completion of the weld by any combination of teams. Evaluation of this RT will be completed within three days of the completion of the weld, unless otherwise approved by the Engineer.
3. If the trainee is at the controls of the SAW welding machine, the qualified experienced welding operator will be actively supervising the trainee 100% of the time welding operations are ongoing. Additionally, the qualified experienced welding operator will always be in a position to monitor and control the welding equipment.
4. The qualified experienced welding operator will be responsible for the quality of the weld and all welding operations, including, but not limited to, welding machine settings, pre-heat, interpass temperature, electrode angle, and all essential variables that are required to provide the weld in accordance with the approved WPS and the contract documents.
5. When welding operations are being performed by welding teams, QC Inspector(s) will be continuously present who are solely dedicated to monitoring and reporting the welding parameters of these welding teams. Each dedicated QC Inspector will inspect no more than five teams at one time.

It should be noted that, at any time, the trainee may be permitted to qualify in accordance with the contract Special Provisions.

The welder qualification test shall be conducted solely by the trainee and he will not be coached or directed in the performance of the qualification test by any other individual.

If you have any questions regarding this matter, please contact Mark Woods at (510) 622-5107.

Sincerely,

Mark P. Woods
Senior Bridge Engineer

For: Pedro J. Sanchez
Resident Engineer

cc: P. Siegenthaler
P. Stolarski
R. Morrow
D. Coe
P. Sanchez
M. Vilcheck
R. Smith

file: 05.003.01, 49.0039

125

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HC-5(Rev. 5/93)

CONTRACT CHANGE ORDER NO. 39 SUPPL. NO. ---

ROAD 04-SF-80-13.4, 13.8 SHEET 1 OF 1 SHEETS

FEDERAL NO.(S) ACBRIM-080-(094)N CONTRACT NO.: 04-0120E4

To **Kiewit-FCI-Manson, a JV** Contractor

You are hereby directed to make herein described changes from the plans and specifications or do the following described work not provided in the plans and specifications of the contract.

NOTE: This change order is not effective until approved by The Chief Engineer.

Description of work to be done, estimate of quantities, and prices to be paid. Segregated between additional work based on contract unit prices and force account. Unless otherwise stated, rates for rental equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

CHANGE REQUESTED BY THE **ENGINEER**

The last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

DRAFT

In Section 8-3.01, "Welding," of the Special Provisions, the Welding Quality Control Plan (WQCP) shall be amended to allow the inclusion of a welder training plan for Submerged Arc Welding (SAW) on the steel pipe piling as approved by the Engineer. This plan will allow welding teams consisting of one trainee welding operator and an experienced, qualified welding operator to perform production work under the direct supervision of the experienced welding operator.

The approval requirements for all WQCP amendments or addenda shall remain unchanged.

Extra Work at Agreed Unit Price

For the work of additional Quality Control (QC), including Radiographic Testing, as approved by the Engineer, the Contractor shall receive and accept the unit prices listed below.

Additional RT:	XX acceptable RT shots @ $ XXX.00 per shot =	$XXXX.00
Additional QC inspection:	XXX hours @ $XX.00 per hour =	$XXXXX.00
	Estimate of Extra work = $XX,XXX.00	

This sum constitutes full and complete compensation for furnishing all labor, material, equipment, tools and incidentals including all markups by reason of this change.

Estimated Cost $XX,XXX.00

By reason of this order the time of completion will be adjusted as follows: **No Adjustment**

Submitted by: Pedro J. Sanchez, Resident Engineer Date _____

Approval Recommended by: Richard Morrow, Construction Manager Date _____

Approved: Chief Engineer by: Richard Morrow, Construction Manager Date _____

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.

Accepted, Date _____ Contractor Kiewit-FCI-Manson, a JV

By: _____ Title _____

If the contractor does not sign acceptance of this change order, his attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

I26

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Christopher Villa
Deputy Project Director

June 05, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001301

Subject: Contract Change Order No. 39, Welding Operator Training Plan

Dear Christopher,

As discussed in meetings with Mark Woods, Mark Vilcheck, Bill Kavicky (TBS), Chris Webb (KFM Welding QCM) and Paul Hegarty (KFM) from May 10 to May 18, 2006, a draft of Contract Change Order No. 39 is attached for review and comment. The Contractor will be permitted to utilize welding teams to perform submerged arc welding (SAW) on steel pipe piling as described in the Welding Quality Control Plan (WQCP) revision noted in the Change Order, provided the following criteria are met:

1. The welding teams will be no more than 2 people at a time -- 1 trainee welding operator and 1 qualified experienced welding operator. The trainee may only be at the controls of the welding equipment under the direct supervision of a qualified experienced welding operator who has completed the qualification requirements in accordance with the contract Special Provisions.

2. The welding teams will be qualified as described in Section 4.19.1.1 of AWS D1.1: 2002, utilizing radiographic testing (RT) of the initial 15" of the first production weld performed by the team(s). Should this qualification test fail, the entire weld will be repaired and subsequently radiographed as necessary. The team will then re-test on the next production weld and will follow the same procedure as stated above until the team satisfactorily completes a production qualification. All RT for qualification and repair will be done as soon as practicable following the completion of the weld by any combination of teams. Evaluation of this RT will be completed within three days of the completion of the weld unless otherwise approved by the Engineer.

3. If the trainee is at the controls of the SAW welding machine, the qualified experienced welding operator will actively supervise the trainee 100% of the time that welding operations are ongoing. In addition, the qualified experienced welding operator will always be in a position to monitor and control the welding equipment.

4. The qualified experienced welding operator will be responsible for the quality of the weld and all welding operations including, but not limited to, welding machine settings, pre-heat, interpass temperature, electrode angle, and all essential variables that are required to provide the weld in accordance with the approved WPS and the contract documents.

5. If welding operations are being performed by welding teams, QC Inspector(s) will be continuously present who are solely dedicated to monitoring and reporting the welding parameters of these welding teams. Each dedicated QC Inspector will inspect no more than five teams at one time.

Please note that at any time, the trainee may be permitted to qualify in accordance with the contract Special Provisions. The trainee will solely perform the welder qualification test, and no individual will either coach or direct the performance of the trainee during the qualification test.

Please review the draft Change Order and provide a cost estimate (including quantities, unit prices, and hourly rates as applicable) by Friday, June 16, 2006. If you have any questions regarding this matter, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

attachment: Draft Contract Change Order No. 39, total 1 sheet

cc: P. Siegenthaler
R. Morrow
P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 49.039

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON A JV
DATE: 6/16/06
ROUTED BY:
TO:
INTERNAL KFM COPIES TO
EXTERNAL COPIES TO
SCANNED: (Y) N FILED TO: 9211 letter 1301

I28

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 07-Jun-06
Time 10:20 AM

Dated: June 7, 2006

TRANSMITTAL No: KFM-TBS-TRN-000039 **Rev: 00**

To: **Bill Kavicky**
Trans Bay Steel
1025 Kaiser Rd.
Napa CA 94558
Phone: 707-259-0777 Fax: 707-259-1072

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: CCO-039 Welding Operator Trainee Plan

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☑ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	05-Jun-2006	1	SL-1301 CCO-039 Welding Operator Training Plan	

These are transmitted as checked below:

☐ For Approval	☑ For Review/Comment	☐ Return For Correction
☐ For Your Use	☐ As Requested	☐ For Information

Remarks:

Please review and comment on attached CCO. If any aspects are not acceptable to Trans Bay please provide alternate language for review with Caltrans.

KFM requests your written comments by June 15, 2006.

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Copy To: Job Office Files

An Equal Opportunity Employer

129

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Christopher Villa
Deputy Project Director

June 23, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-001444

Subject: Follow-up to the Department's Letter No. 1301, Contract Change Order No. 39

Dear Christopher,

The Department's Letter No. 1301 dated June 9, 2006, requested that Kiewit-FCI-Manson (KFM) provide a cost quote for the work of radiographic testing and additional Quality Control inspection to be provided at Trans Bay Steel (TBS) in accordance with Contract Change Order No. 39. The requested information has not yet been received the requested information.

Per the discussion between Mr. Bill Kavicky, Mr. Bill Kroplin, Mr. Peter Siegenthaler, Mr. Mark Woods, and Mr. Mark Vilcheck on June 20, 2006, the Department will consider the inclusion of additional language in CCO No. 39 in order to assure that, by agreeing to the Change Order, TBS does not relinquish any rights provided for in the contract. The Department understands that TBS will agree to the terms of this Change Order pending inclusion of such mutually agreed upon language.

Please provide KFM's comments and the requested cost information pertaining to CCO No. 39. The Department looks forward to reaching an agreement on this Change Order at the soonest possible time.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON, A JV
DATE: 6/23/06 | CO/JOB: 364-4347
ROUTED BY SBY | NO: 04-0120E4
TO: | SPECIAL NOTES:
INTERNAL KFM COPIES TO:
EXTERNAL COPIES TO:
SCANNED: (Y) N FILED TO: CT Letter 1444
Copy to CT Letter 1301

cc: P. Siegenthaler
R. Morrow
P. Sanchez
M. Woods

file: 05.003.01, 49.039

"Caltrans improves mobility across California"

130

KFM E2/T1 PROJECT
KIEWIT / FCI / MANSON, A JV
P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 30-Jun-06
Time 9:33 AM

Dated: 30-Jun-2006

TRANSMITTAL No: KFM-TRN-000267 **Rev:** 01

To: Pedro Sanchez
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: Response to NCR Issued by State Letter 839

Special Provis. (SP) REF: 08-3.01
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☑ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	24-Feb-2006	1	TBS Response Letter	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

KFM-TRN-267 R0 stated "In reference to the NCR issued by State Letter 839, KFM issued a formal letter to Trans Bay Steel that reminded the fabricator of their contractual obligations and requested a response that addresses how to resolve the non-conformances. This letter and the TBS responses are attached." The TBS response was inadvertently left out of this transmittal and is included here.

CC:

Submitted By: Chris Webb
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By: S Burke
Contract Admin/DCS Staff

Copy To: Job Office Files

An Equal Opportunity Employer

I31

From: George Atkinson (George.Atkinson@KFMJV.COM)
To: shawna_bagdon@yahoo.com
Date: Thursday, October 11, 2007 5:44:01 PM
Cc: norgate707@aol.com; tbsteel@sbcglobal.net
Subject: FW:

> -----Original Message-----
> From: Steve Borowski
> Sent: Friday, July 21, 2006 12:08 PM
> To: George Atkinson
> Cc: John Hassard
> Subject:
>
> > <<CCO 39.pdf>> George,
> This was "Introduced" by Cal Trans to TBS today at the Davi Roller Contingency Meeting. Please bring to John hassard's attention. I have discussed with Paul Hegarty.
> Steve

132

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HC-5(Rev. 5/93)

CONTRACT CHANGE ORDER NO. 39 SUPPL. NO. ---

ROAD 04-SF-80-13.4, 13.8 SHEET 1 OF 1 SHEETS

FEDERAL NO.(S) ACBRIM-080-(094)N CONTRACT NO.: 04-0120E4

To **Kiewit-FCI-Manson, a JV** Contractor

You are hereby directed to make herein described changes from the plans and specifications or do the following described work added in the plans and specifications of the contract.

NOTE: This change order is not effective until approved by The Chief Engineer.

Description of work to be done, estimate of quantities, and prices to be paid. Segregated between additional work and force account. Unless otherwise stated, rates for rental equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

CHANGE REQUESTED BY THE **ENGINEER**

The last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

DRAFT

The Welding Quality Control Plan (WQCP), shall be amended to allow the inclusion of a welder training plan for Submerged Arc Welding (SAW) on the steel pipe piling including the Radiographic Testing (RT) and additional Quality Control paid for below, as approved by the Engineer. This plan will allow welding teams consisting of one trainee welding operator and an experienced, qualified welding operator to perform production work under the direct supervision of the experienced welding operator.

The approval requirements for all WQCP amendments or addenda as stated in section 8-3.01, "Welding," of the Special Provisions, shall remain unchanged.

Extra Work at Agreed Unit Price

For the work of additional Quality Control (QC), including Radiographic Testing (RT), as approved by the Engineer, the Contractor shall receive and accept the unit prices listed below.

Additional RT:	24 acceptable RT shots @ $ 500.00 per shot =	$12,000.00
Additional QC inspection:	240 hours @ $75.00 per hour =	$18,000.00
	Estimate of Extra work = $30,000.00	

These prices constitute full and complete compensation for furnishing all labor, material, equipment, tools and incidentals including all markups by reason of this change.

This change order does not provide compensation for any unavoidable impacts to the steel pipe piling fabrication process as a result of the RT, additional QC inspection, or other related work ordered in this Change. In the event the Contractor, in accordance with all applicable contract requirements, submits cost and schedule information supporting such compensation, the Engineer will consider an adjustment of compensation and/or time for these impacts. Upon determination of merit, a supplemental change order shall be issued to compensate the Contractor for these impacts.

Estimated Cost $30,000.00

By reason of this order the time of completion will be adjusted as follows: **No Adjustment**

Submitted by: Pedro J. Sanchez, Resident Engineer Date _____

Approval Recommended by: Richard Morrow, Construction Manager Date _____

Approved: Chief Engineer by: Richard Morrow, Construction Manager Date _____

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.

Accepted, Date _____ Contractor Kiewit-FCI-Manson, a JV

By: _____ Title _____

If the contractor does not sign acceptance of this change order, his attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

John Hassard

From: Mark Woods [mark_woods@dot.ca.gov]
Sent: Friday, July 21, 2006 4:18 PM
To: John Hassard
Subject: RE: E2T1 CCO#39

John,

This is what Bill would like. Can we talk on Monday?

The Welding Quality Control Plan (WQCP), shall be amended to allow the inclusion of a welder training plan for Submerged Arc Welding (SAW) on the steel pipe piling including the Radiographic Testing (RT) and additional Quality Control paid for below, as approved by the Engineer. This plan will allow welding teams consisting of one trainee welding operator and an experienced, qualified welding operator to perform production work under the direct supervision of the experienced welding operator.

The approval requirements for all WQCP amendments or addenda as stated in section 8-3.01, "Welding," of the Special Provisions, shall remain unchanged.

Extra Work at Agreed Unit Price

For the work of additional Quality Control (QC), including Radiographic Testing (RT), as approved by the Engineer, the Contractor shall receive and accept the unit prices listed below.

Additional RT: 24 acceptable RT shots @ $ 500.00 per shot = $12,000.00

Additional QC inspection: 240 hours @ $75.00 per hour = $18,000.00

Estimate of Extra work = $30,000.00

These prices constitute full and complete compensation for furnishing all labor, material, equipment, tools and incidentals including all markups by reason of this change except as provided in the next paragraph.

This change order does not provide compensation for any unavoidable impacts to the steel pipe piling fabrication process regardless to time, as a result of the RT, additional QC inspection, or other related work ordered in this Change. In the event the Contractor, in accordance with all applicable contract requirements, submits cost and schedule information supporting such compensation, the Engineer will consider an adjustment of compensation and/or time for these impacts. Upon determination of merit, a supplemental change order shall be issued to compensate the Contractor for these impacts.

Mark Woods
Senior Bridge Engineer
SFOBB E2/T1 Bridge Construction Engineer
SFOBB Skyway Foundation Structure Representative
(510) 622-5107
(510) 385-6897 -- cell

I34

DEPARTMENT OF TRANSPORTATION – District 4 Toll Bridge
333 Burma Rd.
Oakland, CA 94607
Telephone (510) 286-0500 Fax (510) 286-0550

LETTER OF TRANSMITTAL

To: Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland CA 94607

Attn: Christopher Villa

Date: 25-Jul-2006

Contract No: 04-0120E4
04-SF-80-13.4. 13.8

Job Name: SAS T1 & E2 Foundations, SFOBB-ESSSP

Transmittal No.: 05.003.02-000173

Subject: Contract Change Order No. 39 (QC for Welder Trainees)

Enclosed please find the following items:

[ ]	Shop Drawings	[X]	Change Order	[ ]	Submittal(s)
[ ]	WSWD Report(s)	[ ]	Plans	[ ]	Other
[ ]	Daily Extra Work Reports	[ ]	Progress Payment	[ ]	Certified Payroll
[ ]	RFI	[ ]	State Letter	[ ]	Certificates of Compliance

Item	Copies	Sheets	Description	Dated
1	1	1	Contract Change Order No. 39	25-Jul-2006

These Are Transmitted As Checked Below:

[ ]	For Approval or Action	[ ]	Approved as submitted	[ ] Resubmit	___ Copies for approval
[ ]	For Your Use	[ ]	Approved as Noted	[ ] Submit	___ Copies for distribution
[ ]	As Requested	[ ]	Returned for Corrections	[ ] Return	___ Corrected prints
[ ]	For Review & Comment	[ ]	Other	[X] Sign and Return	

Remarks:

One (1) copy of Contract Change Order No. 39 is attached for Kiewit-FCI-Manson's (KFM) review and signature. Please sign and return the original Change Order to this office. However, if the Change Order is not acceptable to KFM, please return it along with a letter that explains KFM's position.

If you have any questions or need additional information, please contact this office.

Signed:

Tom Shimada
Asst. Structure Representative

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT FCI MANSON, A JV
DATE 7/25/06
ROUTED BY SBM
TO
CO/JOB 364-4347
NO 04-0120E4
SPECIAL NOTES:
INTERNAL KFM COPIES TO:
EXTERNAL COPIES TO:
SCANNED (Y) N FILED TO: CT TRN 173

Copy To:
File: 05.003.02, 49.039

I35

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HC-5(Rev. 5/93)

CONTRACT CHANGE ORDER NO. 39 SUPPL. NO. ---

ROAD 04-SF-80-13.4, 13.8 SHEET 1 OF 1 SHEETS

FEDERAL NO.(S) ACBRIM-080-(094)N CONTRACT NO.: 04-0120E4

To **Kiewit-FCI-Manson, a JV**, Contractor

You are hereby directed to make herein described changes from the plans and specifications or do the following described work not included in the plans and specifications of the contract.

NOTE: This change order is not effective until approved by The Chief Engineer.

Description of work to be done, estimate of quantities, and prices to be paid. Segregated between additional work at contract price and force account. Unless otherwise stated, rates for rental equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

CHANGE REQUESTED BY THE **ENGINEER**

The last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

The Welding Quality Control Plan (WQCP), shall be amended to allow the inclusion of a welder training plan for Submerged Arc Welding (SAW) on the steel pipe piling including the Radiographic Testing (RT) and additional Quality Control paid for below, as approved by the Engineer. This plan will allow welding teams consisting of one trainee welding operator and an experienced, qualified welding operator to perform production work under the direct supervision of the experienced welding operator.

The approval requirements for all WQCP amendments or addenda as stated in section 8-3.01, "Welding," of the Special Provisions, shall remain unchanged.

Extra Work at Agreed Unit Price

For the work of additional Quality Control (QC), including Radiographic Testing (RT), as approved by the Engineer, the Contractor shall receive and accept the unit prices listed below.

Additional RT:	24 acceptable RT shots @ $ 500.00 per shot =	$12,000.00
Additional QC inspection:	240 hours @ $75.00 per hour =	$18,000.00
	Estimate of Extra work = $30,000.00	

These prices constitute full and complete compensation for furnishing all labor, material, equipment, tools and incidentals including all markups by reason of this change except as provided in the next paragraph.

This change order does not provide compensation for any unavoidable impacts to the steel pipe piling fabrication process as a result of the RT, additional QC inspection, or other related work ordered in this Change. In the event the Contractor, in accordance with all applicable contract requirements, submits cost and schedule information supporting such compensation, the Engineer will consider an adjustment of compensation and/or time for these impacts. Upon determination of merit, a supplemental change order shall be issued to compensate the Contractor for these impacts.

Estimated Cost $ 30,000.00

By reason of this order the time of completion will be adjusted as follows: **No Adjustment**

Submitted by: P Sanchez Pedro J. Sanchez, Resident Engineer Date 7-25-06

Approval Recommended by: Mark Vilcheck, Structure Representative Date

Approved: Chief Engineer by: Rick Morrow, Construction Engineer Date

We, the undersigned contractor, have given careful consideration to the change proposed and hereby agree, if this proposal is approved, that we will provide all equipment, furnish all materials, except as may otherwise noted above, and perform all services necessary for the work above specified, and will accept as full payment therefore the prices shown above.

Accepted, Date Contractor Kiewit-FCI-Manson, a JV

By: Title

If the contractor does not sign acceptance of this change order, his attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

I36

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

August 7, 2006

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: E2/T1 Foundations # 04-0120E4

Subject: Welder Training and Related Incidents

Attn: Chris Villa,

It is and always has been Trans Bay Steel's policies and procedures to train submerged arc welders on the job under the direct supervision and control of a Caltrans certified and approved welder and be in conformance with our Material Contracts, Special Provisions and AWS Codes governing the work in our shop.

During production on the E2/T1 project, the State's subcontractors employed with METS determined that this practice was not in accordance with the special provisions and AWS D1.1-2002.

METS position created the following impacts:

- Stopped production by not accepting work which had a trainee involved.
- Loss of production and efficiency.
- Trainee standby time.
- Change in traditional training techniques.
- Additional 100% inspection on components.
- Delays in delivery schedules.
- Additional overtime for production and inspection.
- Unnecessary Administrative clearing documents.

All of which caused financial and schedule impacts to Trans Bay Steel as well as damages to the Contractor. Trans Bay Steel unwillingly removed trainees from the project to mitigate the delays to the schedule, because METS would not allow training to take place on the grounds that the welder training was in conflict with the special provisions and not allowed by the AWS code...

This letter serves as notice that Trans Bay Steel believes METS position was wrong.

Trans Bay Steel intends to request a time extension and cost increase as a result of these impacts as soon as they can be quantified.

TRANS BAY STEEL, CORP.

1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

We also request that any inappropriate documentation and NCRs related to the training activities be cleared by METS and restore our good reputation.

William M. Kavicky
Trans Bay Steel Corporation

Cc. Lee Zink
John Hassard
George Atkinson
Chris Webb

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 28-Sep-06
Time 4:34 PM

Dated: 29-Sep-2006

TRANSMITTAL No: KFM-TRN-000384 **Rev:** 00

To: **Pedro Sanchez**
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: Contract Change Order No. 0039 (returned with comments and changes)

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☑ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☐ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	28-Sep-2006	1	Contract Change Order 0039 (returned with comments and changes).	3

These are transmitted as checked below:

☐ For Approval	☑ For Review/Comment	☑ Return For Correction
☐ For Your Use	☐ As Requested	☐ For Information

Remarks:

**KFM has reviewed Contract Change Order No. 0039 and have the following comments and changes

CC:

Submitted By: Bob Liu
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By: Shelley Burks
Contract Admin/DCS Staff

I39

Copy To: Job Office Files

An Equal Opportunity Employer

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Lee Zink
Project Director

October 24, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-002147

Subject: Response to KFM Transmittal No. 384, Revision No. 00 (Contract Change Order No. 0039 (returned with comments and changes)

Dear Lee,

The Department has received Kiewit-FCI-Manson (KFM) in Transmittal No. 384, Revision No. 00, dated September 29, 2006, and has reviewed the suggested revisions to the text of Contract Change Order (CCO) No. 39 which were provided by KFM.

The Department notes that CCO No. 39 was written with the involvement of representatives of Trans Bay Steel (TBS), KFM, and the Department in order to achieve an agreeable change prior to its transmittal for signature. There were multiple meetings held with KFM, TBS, and the Department's representatives between late May, 2006, and July, 2006, for this purpose. Based on the conversation on July 21, 2006, between Mr. Bill Kavicky, Mr. Mark Woods, and Mr. Mark Vilcheck, it was understood that language that had been drafted into CCO No. 39 was agreeable to all parties. This agreed-upon language was included in CCO No. 39, transmitted to KFM on July 25, 2006.

Regarding the revisions to CCO No. 39 suggested in KFM's Transmittal No. 384, Revision No. 00, the Department takes no exception to the removal of the word "unavoidable" or to the removal of the phrase "the RT, additional QC inspection" from the last paragraph of the Change Order, as these changes do not effect the meaning or intent of the Change. The other suggested revisions do not provide any additional meaning to the Change and were not included in the revised CCO.

CCO No. 39 has been revised and is attached to this letter for KFM's review and signature. Please return the signed CCO No. 39 to the Department by November 1, 2006. If KFM chooses not to sign, please return the unsigned CCO No. 39 to the Department by November 1, 2006, along with an explanation of why this Change is no longer agreeable.

KFM is reminded of the requirements of Section 9-1.04, "Notice of Potential Claim", of the Standard Specifications, pertaining to timely notice of disputes arising under the contract.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

Attachment: CCO No. 39, 1 sheet, 8 ½ x 11

cc: P. Sanchez
M. Woods
R. Smith

file: 05.003.01, 49.039

SAS FOUNDATIONS E2/T1 PROJECT KIEWIT / FCI / MANSON, A JV	
DATE 10/25/06	CO/JOB. 364-4347
ROUTED BY SGM	NO: 04-0120E4
TO:	SPECIAL NOTES:
INTERNAL KFM COPIES TO:	
EXTERNAL COPIES TO:	
SCANNED: (Y) N FILED TO: KFM TRNS 384	

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

October 31, 2006

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: E2/T1 Foundations # 04-0120E4

Subject: CCO 39

Attn: John Hassard,

It is and always has been Trans Bay Steel's policies and procedures to train submerged arc welders on the job under the direct supervision and control of a Caltrans certified and approved welder and be in conformance with our Material Contracts, Special Provisions and AWS Codes governing the work in our shop.

During production on the E2/T1 project, commencing on December 06, 2005, the State's subcontractors employed with METS determined that this practice was not in accordance with the special provisions and AWS D1.1-2002.

METS position created the following impacts:

- Stopped production by not accepting work which had a trainee involved.
- Loss of production and efficiency.
- Trainee standby time.
- Change in traditional training techniques.
- Additional 100% inspection on components.
- Delays in delivery schedules.
- Additional overtime for production and inspection.
- Unnecessary Administrative clearing documents.

All of which caused financial and schedule impacts to Trans Bay Steel as well as damages to the Contractor. Trans Bay Steel unwillingly removed trainees from the project to mitigate the delays to the schedule, because METS would not allow training to take place on the grounds that the welder training was in conflict with the special provisions and not allowed by the AWS code.

This letter serves as notice that Trans Bay Steel believes METS position was wrong.

CCO 39 does not allow for the time frame commencing on December 06, 2005.

Trans Bay Steel intends to request a time extension and cost increase as a result of these impacts as soon as they can be quantified.

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

We also request that any inappropriate documentation and NCRs related to the training activities be cleared by METS and restore our good reputation.

William M. Kavicky
Trans Bay Steel Corporation

Cc. Lee Zink
Paul Hegarty
George Atkinson
Chris Webb

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

November 01, 2006 Serial Letter: KFM-LET-000214

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347
State Letter #05.003.01-002147, received on October 25, 2006

Subject: CCO#39 - Welder Trainee Plan

Dear Pedro:

As requested in State Letter # 2147, received on October 25th, KFM is returning the unsigned CCO #39 with an explanation of why this change is not agreeable.

Please find attached Trans Bay Steel's comments on the revised CCO #39 - Welder Trainee Plan. In short, Trans Bay Steel is unwilling to agree with the latest revisions because the language fails to address a time frame that includes the directed change. KFM and TBS have previously requested this time frame be included in both the referenced meetings with you and in KFM Transmittal #384. Subsequently, KFM is unable to agree to CCO#39 as currently submitted for our acceptance.

Please reconsider KFM and TBS's proposed revisions to the language of CCO #39 as previously transmitted to the State.

If you have any questions or comments, please contact this office.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Lee Zink
Project Director

cc: file

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Lee Zink
Project Director

December 27, 2006

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-002476

Subject: Completion of T1 Permanent Steel Casing Fabrication

Dear Christopher,

With the completion of the welding and delivery of the Pier T1 piles on December 18, 2006, it has become apparent that the nonconforming work cited in State Letter Nos. 801, 803, 810, 839, 986, 994, 1085, 1181, and 1230, has not been repeated. Therefore, the Department considers the NCRs noted in these State Letters to be resolved.

If you have any questions regarding this matter, please contact Mark Woods at (510) 622-5107.

Sincerely,

Mark Woods
Sr. Bridge Engineer

for: Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT	
KIEWIT / FCI / MANSON, A JV	
DATE 12/28/2006	CO/JOB 364 4347
ROUTED BY Cth	NO 04-0120E4
TO:	SPECIAL NOTES
INTERNAL KFM COPIES TO	
EXTERNAL COPIES TO:	
SCANNED: (Y) N	FILED TO: CT-Letter 2476

cc: P. Sanchez
M. Vilcheck
L. Woo
R. Smith

file: 05.003.01, 09.006.03

I45

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Lee Zink
Project Director

March 12, 2007

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-002955

Subject: Response to KFM Letter No. 214 (CCO #39 – Welder Trainee Plan)

Dear Lee,

Fabrication at Trans Bay Steel (TBS) has been carried as an open discussion item in the Agenda for the Weekly Meeting held between Kiewit-FCI-Manson (KFM) and the Department. KFM has indicated that this item is held open with respect to additional costs associated with work performed at TBS dating to December 6, 2005.

The Department notes that fabrication work on permanent steel casings and steel piling at TBS for Piers T1 and E2, respectively, was completed by December 14, 2006, and that the last permanent steel casing for Pier T1 was shipped from the TBS facility on December 18, 2006. No contract item work was performed at the TBS facility subsequent to December 18, 2006.

Attention is directed to the Department's Letter No. 2147 dated October 4, 2006, in which KFM was reminded of the requirements of Section 9-1.04, "Notice of Potential Claim," of the amended Standard Specifications, pertaining to timely notice of disputes arising under the contract. The Department has not received an Initial Notice of Potential Claim for any dispute related to contract work performed at TBS, which has been completed for a period of 85 days.

The Department notified KFM during the Weekly Meeting on January 2, 2007, that CCO No. 39 would not be issued. Per the conversation between KFM and the Department on March 8, 2007, the Department considers the discussion item pertaining to TBS that appears in the Agenda of the Weekly Meeting to be closed with no further discussion warranted for work performed under the contract at TBS.

If you have any questions or need additional information, please contact Mark Vilcheck at (510) 286-0526.

Sincerely,

Mark Vilcheck
Structure Representative

For: Pedro J. Sanchez
Resident Engineer

cc: P. Sanchez
M. Woods

file: 05.003.01

SAS FOUNDATIONS E2/T1 PROJECT
KIEWIT / FCI / MANSON, A JV
DATE: 3/13/07 | CO/JOB 364-4347
ROUTED BY: SBH | NO 04-0120E4
TO: | SPECIAL NOTES:
INTERNAL KFM COPIES TO:
EXTERNAL COPIES TO:
SCANNED: Y N FILED TO: E2T1 KFM Ltr 214

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

March 14, 2007 Serial Letter: KFM-TBS-LTR-000025

Trans Bay Steel
1025 Kaiser Rd.
Napa, CA 94558

Attention: Mr. Bill Kavicky

Reference: SAS E2/T1 Foundation Project (Caltrans Contract No. 04-0120E4)
KFM Job No. 364/4347

Subject: Welder Trainee Issue Resolution

Dear Bill,

Please find attached for your review and response SL-2955 regarding the CCO-039 Welder Trainee Plan. Also attached are the referenced letters KFM-CT-214 and CT-KFM-2147.

As detailed in SL-2955, the State is responding to the continuing discussion of potential claims for welder trainee issues. Trans Bay Steel has outlined their position previously on this issue in TBS letter dated October 31, 2006. KFM transmitted that letter to the State by the attached KFM-CT-214 letter along with the unsigned CCO-039 on November 1, 2006. Subsequent discussions with the State have indicated a lack of acceptance of TBS position on issues outlined in your letter. Furthermore, as TBS has been made aware in discussions with KFM, Caltrans has indicated they are unlikely to re-issue CCO-039 as the work that was to be covered by the CCO is no longer necessary due to completion of the E2/T1 fabrication work. The attached SL-2955 is written confirmation that CCO-039 will not be issued.

Looking ahead to closing your Material Contract on the E2T1 project, KFM requests TBS resolve this issue. Please carefully review our Material Contract and the Prime Contract to ensure that all appropriate administrative measures are being undertaken to reserve your rights should TBS desire to pursue this matter further. Please provide to KFM, no later than April 2, 2007, any additional information or notifications you wish us to forward to the State on your behalf, or a statement to the effect that this is no longer an issue for TBS. Contact us with any questions.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Dan Proctor
Construction Manager

cc: File

TRANS BAY STEEL

1025 KAISER RD. NAPA, CA 94558 PH:707-259-0777 FAX:707-259-1072

MAR 29 2007

1025 KAISER RD. NAPA CA. 94558 FAX: 707-259-1072 PHONE: 707-259-0777

TO: KFM

1-510 - ~~888-1456~~ 839-0666

FROM: Bill Kavicky

DATE: 3/29/07

ATTN: George Atkinson

TOTAL NO. OF PAGES INCLUDING COVER: 2

RE: Claim

NOTES/COMMENTS:

I48

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

NOTICE OF POTENTIAL CLAIM

CEM-6201 (REV 3/2001)

FOR STATE USE ONLY	
Received by _____ (For resident engineer)	Date _____

TO	CONTRACT NUMBER	DATE
Pedro J. Sanchez (resident engineer)	04-012E4 SAS T1 & E2 Foundations	3/27/07

This is a Notice of Potential Claim for additional compensation under the provisions of Section 9-1.04 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 12/06/05

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

Trans Bay Steel has always used a Helper/Trainee with a qualified and approved Submerged Arc Operator to perform welding on Caltrans Projects, i.e., San Mateo Bridge (1999), Carquinez Bridge (2000) , Benicia Bridge (2001), Richmond San Rafael Bridge (2002), San Francisco Oakland Bay Bridge (2003), in conformance with our material contracts, Caltrans Special Provisions and the AWS Code governing the work in our shop.

The reasons for which I believe additional compensation may be due are:

During production on the E2/T1 project, commencing on December 06, 2005, the State's subcontractor employed with METS determined that this practice was not in conformance with the special provisions and AWS D1.1-2002.

The nature of the costs involved and the amount of the potential claim are described as follows:
(if accurate cost figures are not available, provide an estimate, or describe the types of expenses involved.)

METS new position in 2005 created the following impacts: Stopped production by not accepting work which had a Helper/Trainee involved, Loss of production and efficiency, Trainee/Operator standby time, Change in traditional training techniques as allowed in past projects, Additional 100% inspection on components, Delays in delivery Schedules, work stoppages, Additional overtime for production and inspection to mitigate delays and administrative clearing documents. An estimate of costs at this time total: $ 1,843,650.00

The undersigned originator (Contractor or Subcontractor as appropriate) certifies that the above statements 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 be restated as a claim in response to the states proposed final estimate in accordance with Section 9-1.07B of the Standard Specifications.

Trans Bay Steel Corporation
SUBCONTRACTOR or CONTRACTOR
(Circle one)

(Authorized Representative)

For subcontractor notice of Potential claim

This notice of potential claim is acknowledged and forwarded by

Kiewit-FCI-Manson, JV
PRIME CONTRACTOR

(Authorized Representative)

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 263-2041 or TDD (916) 263-2044 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814-

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

March 30, 2007 Rev.1

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: SFOBB Skyway Contract# 04-012024 and E2TI Contract # 04-0120E4

Subject: Welder Training Issue

Attn: Dan Proctor,

Trans Bay Steel is in receipt of State Letter 002955 and does not agree with the State that the issue of welder training is closed.

Trans Bay has communicated to the State both verbally and in writing that damages occurred on the E2/T1 project based on METS position of the special provisions and the AWS Code in reference to the trainee issue.

Trans Bay was under the impression after a meeting with Pete Siegenthaler that Trans Bay needed to submit total costs of the dispute and a separate meeting would be held to determine the outcome, hoping to eliminate the need for an NOPC and a DRB ruling. Trans Bay made these cost estimates available, however the meeting did not take place.

In order to protect Trans Bay's rights in this matter we now submit the NPOC.

William M. Kavicky
Trans Bay Steel Corporation

Cc. George Atkinson
Lee Zinc
John Hassard

150

Subj: **TBS Welder Trainee NOPC - Specs/Forms**
Date: 4/2/2007 4:34:08 P.M. Pacific Daylight Time
From: George.Atkinson@KFMJV.COM
To: tbsteel@sbcglobal.net
CC: norgate707@aol.com, Meda.Schultz@KFMJV.COM, john.hassard@kiewit.com

Bill,

Initial comments on NOPC:

1. The forms have changed. You will need to re-do on Form CEM-6201A. I have attached a pdf of the NOPC spec (which you should have already) and copies of forms versions A, B, and C for initial, supplemental, and final NOPC's.

2. Your letter references Skyway also. Is there a reason for this or should it refer only to E2T1?

3. Our understanding, without consulting with John Hassard who is unavailable this week, is that your preliminary estimate transmitted to KFM on 8/7/06 was not officially transmitted to CT. The last sentence in the third paragraph of your letter suggests that it was. "Trans Bay made these cost estimates available, however the meeting did not take place." would be more accurate based on my understanding of the facts.

4. KFM has no comment on the wording at this time.

Thanks,

George Atkinson

<<NOPC Spec & Forms.pdf>>

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KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

April 19, 2007 Serial Letter: KFM-LET-000258

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347

Subject: Trans Bay Steel Welder Trainee Issue

Dear Pedro:

Please find attached a letter from our pile fabrication vendor Trans Bay Steel, Corporation (TBS) regarding impacts to their work due to the Department's interpretation of our contract with respect to welder trainees.

Proposed CCO-039 addressed some aspects of this issue but did not fully reflect our understanding of negotiations. At the Department's request KFM and TBS have explained the cause for disagreement and the impacts of the Department's contract interpretations, most recently in KFM LET-214. The Department's response, SL-2955, fails to address the fundamental disagreement regarding welder trainee practices that was a critical element of CCO-039 negotiations.

KFM and TBS believe that negotiation of all the issues for CCO-039 remains incomplete. KFM and TBS request the Department continue negotiations on welder trainee contract interpretation. In the interim, KFM requests the Department issue a change order for the extra work described in previous correspondence.

Please contact us to discuss this issue at your convenience.

Sincerely,
KIEWIT/FCI/MANSON, a JV

Lee Zink
Project Director

cc: file

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

May 22, 2007

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: E2/T1 Foundations # 04-0120E4

Subject: Welder Training and Related Incidents

Attn: George Atkinson,

Once again the issue of welder Training has become silent without an acceptable reply from the State.

Since there seems to be a continuing disagreement on this issue Trans Bay has no other recourse than to request KFM to make arrangements for a DRB Hearing on this matter.

The only possible remedy that Trans Bay can suggest at this time to avoid DRB is to have the long overdue meeting with the Caltrans representatives on this project, including Pete Siegenthaler and Tony Anziano.

William M. Kavicky
Trans Bay Steel Corporation

Cc. Lee Zink
John Hassard

153

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

June 1, 2007 Serial Letter: KFM-LET-000269

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347

Subject: Trans Bay Steel Welder Trainee Issue

Dear Pedro:

As has been discussed with the State in recent weeks, Kiewit/FCI/Manson, AJV (KFM) believes issues regarding use of welder trainees by our fabricator Trans Bay Steel (TBS) remain outstanding.

KFM's last correspondence with the State on this issue was our letter KFM-LET-258 dated April 19, 2007 to which we have not received a written reply. KFM has received a follow-up letter from Trans Bay Steel dated May 22, 2007, which is attached for your review.

As per discussions with State representatives, KFM proposes to meet with the State and TBS at 1:30 PM, June 7, 2007, to review the history of this issue and basis for TBS entitlement. Please confirm this meeting at your earliest convenience.

Please contact us with any questions in the meantime.

Sincerely,
KIEWIT/FCI/MANSON, a JV

For
Lee Zink
Project Director

Attachment

cc: file

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Dan Proctor

June 27, 2007

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-003235

Subject: Response to Transmittal No. 566, Revision No. 00 (Initial Notice of Potential Claim #06-062007 - TBS' Welder Trainee Issue)

Dear Dan,

The Department has received Kiewit-FCI-Manson (KFM) Transmittal No. 566, Revision No. 00, dated June 20, 2007, which provided the Contractor's initial notice of potential claim (NOPC) No. 06 regarding alleged impacts to Trans Bay Steel Corp. (TBS) steel pipe piling production work performed using unqualified trainee welders due to the Department's rejection of this work.

Production work at TBS was completed by December 14, 2006. During the Weekly Meeting on January 2, 2007, the Department notified KFM that CCO No. 39 would not be issued. The Department's Letter No. 2147, dated October 24, 2006 transmitted the Department's final offer for CCO No. 39 and referred KFM to the requirements of Section 9-1.04, "Notice of Potential Claim," of the amended Standard Specifications. The Department's Letter No. 2955, dated March 12, 2007, informed KFM that the Department considered the Weekly Meeting Agenda's issue pertaining TBS to be closed with no further discussion, and again referred KFM to the requirements of Section 9-1.04, "Notice of Potential Claim," of the amended Standard Specifications, pertaining to timely notice of disputes arising under the contract.

The submitted initial notice of potential claim was not submitted within 5 days from the date the dispute first arose, therefore, it fails to comply with the requirements in Section 9-1.04 of the July 1999 Standard Specifications, which was amended in Section 1 of this project's Special Provisions.

In Accordance with Section 9-1.04 "Notice of Potential Claim" of the amended Standard Specifications, failure of the Contractor to conform to specified dispute procedures shall constitute a failure to pursue diligently and exhaust the administrative procedures in the contract and is deemed as the Contractor's waiver of the potential claim and a waiver of the right to a corresponding claim for the disputed work in the administrative claim process in conformance with Section 9-1.07B "Final Payment of Claims", and shall operate as a bar to arbitration pursuant to Section 10240.2 of the California Public Contract Code.

If you have any question, please contact this office.

Sincerely,

Pedro J. Sanchez
Resident Engineer

SAS FOUNDATIONS E2/T1 PROJECT
DATE 6/27/07
ROUTE
TO.
SCANNED (Y) N FILED TO. TRN5606

cc: R. Morrow
P. Sanchez
M. Woods
M. Vilcheck

file: 05.003.01, 62.001.06

155

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 28-Jun-07
Time 10:56 AM

Dated: 6/28/2007

TRANSMITTAL No: KFM-TBS-TRN-000089 **Rev:** 00

To: **Bill Kavicky**
Trans Bay Steel
1025 Kaiser Rd.
Napa CA 94558
Phone: 707-259-0777 Fax: 707-259-1072

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: SL-3235 Response to TBS Initial NOPC re. Welder Trainee Issue

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☑ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	27-Jun-2007	1	SL-3235	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

IS6

Copy To: Job Office Files

An Equal Opportunity Employer

TRANS BAY STEEL, CORP.

1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

July 3, 2007

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: SFOBB Skyway Contract# 04-012024 and E2TI Contract # 04-0120E4

Subject: State Response to NOPC#6

Attn: Dan Proctor,

Trans Bay Steel is in receipt of State Letter 003235 and objects to the Engineer's response that incorrectly determines that there was not timely notice and because of this the potential claim has been waived.

Caltrans was well aware of the welder training issue. This topic was discussed at the bi-weekly meetings. CCO 39 was issued and was to be negotiated with mutually agreed upon language. The negotiations could not be resolved and the State abandoned further discussions.

Due to the Engineer's response in Letter# 3235, we request that you formally object to this decision and refer this matter to DRB.

William M. Kavicky
Trans Bay Steel Corporation

Cc. George Atkinson
Lee Zink
John Hassard

157

Appendix

J. NOPC Correspondence

NOPC-6
"INITIAL NOTICE"

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 20-Jun-07
Time 1:51 PM

Dated: 20-Jun-2007

TRANSMITTAL No: KFM-TRN-000566 **Rev:** 00

To: Pedro Sanchez
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: Initial Notice of Potential Claim #06-062007 - TBS' Welder Trainee Issue

Special Provis. (SP) REF:
Standard Spec. (SS) REF: 9-1.04

RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☐ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	20-Jun-2007	0	Initial Notice of Potential Claim #6	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☑ As Requested	☐ For Information

Remarks:

Please find attached KFM's Initial Notice of Potential Claim #6 sent on behalf of our Material Supplier, Trans Bay Steel.

KFM will submit the supplemental Notice of Potential Claim as required by Contract Specification 9-1.04.

CC:

Submitted By: Meda Schultz
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By:
Contract Admin/DCS Staff

J1

Copy To: Job Office Files

An Equal Opportunity Employer

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
INITIAL NOTICE OF POTENTIAL CLAIM
CEM-6201A (NEW 9/2002)

[redacted]

TO	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Pedro J. Sanchez (Resident Engineer)	04-0120E4	6/19/07	06-062007

This is an initial 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: 6/15/07

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

SEE ATTACHED NO. 1025

(attach additional sheets as needed)

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 Section 9-1.04 of the Standard Specifications and must be restated as a claim in the Contractors written statement of claims in conformance with Section 9-1.07B of the Standard Specifications.

Trans Bay Steel Corp.
SUBCONTRACTOR or CONTRACTOR
(Circle One)

(Authorized Representative)

For a subcontractor potential claim
This notice of potential claim is acknowledged, certified and forwarded by

Kiewit-FCI-Manson, JV
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.

J2

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

6/19/07

State of California
Department of Transportation

RE: CONTRACT NUMBER: 04-0120E4 E2/T1 SAS Foundations
INITIAL NOTICE OF POTENENTIAL CLAIM
Form No. CEM-6201A

"Attachment No. 1025"

Trans Bay Steel has always used a Helper/Trainee with a qualified and approved Submerged Arc Operator to perform welding on Caltrans Projects, i.e., San Mateo Bridge (1999), Carquinez Bridge (2000), Benicia Bridge (2001), Richmond San Rafael Bridge (2002), San Francisco Oakland Bay Bridge (2003), in conformance with our material contracts, Caltrans Special Provisions and the AWS code governing the work in our shop.

During production on the E2/T1 project, commencing on December 06, 2005, the State's subcontractor employed with METS determined that this practice was not in conformance with the special provisions and AWS D1.1-2002. Trans Bay disagrees with METS new position.

METS new position in 2005 created the following impacts: Stopped production by not accepting work which had a Helper/Trainee involved, Loss of production and efficiency, Trainee/Operator standby time, Change in traditional training techniques as allowed in past projects, Additional 100% inspections on components, Delays in delivery Schedules, work stoppages, Additional overtime for production and inspection to mitigate delays and administrative clearing documents.

The State's refusal to issue or negotiate the requested change order associated with the above described is evidenced in numerous written correspondences and meeting minutes dating to late 2005 and continuing to the present. This refusal to issue an agreeable change order led to a June 15, 2007 meeting to discuss the key issues involved.
It was at this meeting that an impasse was reached and as such has resulted in the filing of this Initial Notice of Potential Claim.

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STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 286-0538, (510) 286-0550 fax

Kiewit-FCI-Manson, JV
220 Burma Rd.
Oakland, CA 94607

Attn: Mr. Dan Proctor

June 27, 2007

Contract No. 04-0120E4
04-SF-80-13.4, 13.8
SAS T1 & E2 Foundations
SFOBB-ESSSP

Letter No. 05.003.01-003235

Subject: Response to Transmittal No. 566, Revision No. 00 (Initial Notice of Potential Claim #06-062007 - TBS' Welder Trainee Issue)

Dear Dan,

The Department has received Kiewit-FCI-Manson (KFM) Transmittal No. 566, Revision No. 00, dated June 20, 2007, which provided the Contractor's initial notice of potential claim (NOPC) No. 06 regarding alleged impacts to Trans Bay Steel Corp. (TBS) steel pipe piling production work performed using unqualified trainee welders due to the Department's rejection of this work.

Production work at TBS was completed by December 14, 2006. During the Weekly Meeting on January 2, 2007, the Department notified KFM that CCO No. 39 would not be issued. The Department's Letter No. 2147, dated October 24, 2006 transmitted the Department's final offer for CCO No. 39 and referred KFM to the requirements of Section 9-1.04, "Notice of Potential Claim," of the amended Standard Specifications. The Department's Letter No. 2955, dated March 12, 2007, informed KFM that the Department considered the Weekly Meeting Agenda's issue pertaining TBS to be closed with no further discussion, and again referred KFM to the requirements of Section 9-1.04, "Notice of Potential Claim," of the amended Standard Specifications, pertaining to timely notice of disputes arising under the contract.

The submitted initial notice of potential claim was not submitted within 5 days from the date the dispute first arose, therefore, it fails to comply with the requirements in Section 9-1.04 of the July 1999 Standard Specifications, which was amended in Section 1 of this project's Special Provisions.

In Accordance with Section 9-1.04 "Notice of Potential Claim" of the amended Standard Specifications, failure of the Contractor to conform to specified dispute procedures shall constitute a failure to pursue diligently and exhaust the administrative procedures in the contract and is deemed as the Contractor's waiver of the potential claim and a waiver of the right to a corresponding claim for the disputed work in the administrative claim process in conformance with Section 9-1.07B "Final Payment of Claims", and shall operate as a bar to arbitration pursuant to Section 10240.2 of the California Public Contract Code.

If you have any question, please contact this office.

Sincerely,

Pedro J. Sanchez
Resident Engineer

cc: R. Morrow
P. Sanchez
M. Woods
M. Vilcheck

file: 05.003.01, 62.001.06

SAS FOUNDATIONS E2/T1 PROJECT
DATE 6/27/07
ROUTE
TO.
SCANNED (Y) N FILED TO. TRN5600

J4

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

July 3, 2007

Serial Letter: KFM-LET-000289

California Department of Transportation
SFOBB – E2T1 Project
333 Burma Road
Oakland, CA 94607

Attention: Pedro Sanchez

Reference: SAS E2/T1 Foundation Project
Caltrans Contract No 04-0120E4
KFM Job No. 364/4347

Subject: NOPC #06-062007 -- Objection to Engineer's Response in SL-3235

Dear Pedro:

Kiewit/FCI/Manson, AJV (KFM) and its supplier Trans Bay Steel (TBS) have received and reviewed the Department's letter SL-3235 regarding Initial Notice of Potential Claim (NOPC) #06-062007. Please review TBS's response in the attached letter dated July 3, 2007. As a result of our review, KFM and TBS hereby object to the Engineer's response with respect to TBS's request for recognition of a contract change to comply with the Department's interpretations regarding TBS's welding operator training program and NOPC #06-062007.

KFM and TBS have fully complied with the contract in their attempts to negotiate a settlement with respect to the welder trainee issue. Furthermore, the Department was actively involved in this issue from the outset and has not been prejudiced by the timing of the NOPC. Therefore, KFM and TBS object to the Engineer's incorrect decision that the Contractor has failed to "conform to specified dispute procedures", failed "to pursue diligently and exhaust the administrative procedures in the contract", and is deemed to have waived the right to pursue claims related to this issue under the terms of the contract, up to and including arbitration.

KFM and TBS have complied with contract requirements and the Department's requests with respect to negotiation of Contract Change Order (CCO) – 039 as follows:

- In accordance with the Department's request in SL-2147, KFM LET-214 dated November 1, 2006 replied with an explanation of why proposed CCO-039 was not acceptable and was being returned un-signed. The Department's letter SL-2147 did not describe the proposed CCO-039 as a "final offer." KFM did not receive a written reply to this letter until receiving SL-2955, dated March 12, 2007.

JS

- The Department's letter SL-2955 confirms statements made at weekly coordination meetings that CCO-039 will not be issued and no further discussion with respect to work performed at TBS is warranted. In response, KFM and TBS explained in KFM LET-258 that issues raised in negotiations leading up to CCO-039 and in KFM LET-214 had not been addressed by the Department and requested negotiations be continued.

- KFM and TBS filed NOPC #06-062007 on June 20, 2006, five days after meeting with the Department to review the status of welding operator trainee negotiations. KFM and TBS were informed at that meeting that the Department does not recognize any contract changes with respect to changes made by TBS to their training program in response to "Non-Conformance Reports" issued by the Department.

KFM, on TBS's behalf, requests the Department to acknowledge this objection and reconsider the Engineer's decision with respect to the history of negotiation of this issue and recognize the validity of TBS's Notice of Potential Claim. KFM and TBS would welcome continued negotiations towards settlement of this issue.

Sincerely,
KIEWIT/FCI/MANSON, a JV

for

Lee Zink
Project Director

Attachment

cc: file

J6

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

July 3, 2007

Kiewit/FCI/Manson A JV
P.O. Box 23223
Oakland, Ca. 94623

Reference: SFOBB Skyway Contract# 04-012024 and E2TI Contract # 04-0120E4

Subject: State Response to NOPC#6

Attn: Dan Proctor,

Trans Bay Steel is in receipt of State Letter 003235 and objects to the Engineer's response that incorrectly determines that there was not timely notice and because of this the potential claim has been waived.

Caltrans was well aware of the welder training issue. This topic was discussed at the bi-weekly meetings. CCO 39 was issued and was to be negotiated with mutually agreed upon language. The negotiations could not be resolved and the State abandoned further discussions.

Due to the Engineer's response in Letter# 3235, we request that you formally object to this decision and refer this matter to DRB.

William M. Kavicky
Trans Bay Steel Corporation

Cc. George Atkinson
Lee Zink
John Hassard

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NOPC-6 "SUPPLEMENTAL"

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 03-Jul-07
Time 11:19 AM

Dated: 7/3/2007

TRANSMITTAL No: KFM-TRN-000568 Rev: 00

To: **Pedro Sanchez**
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: Supplemental Notice of Potential Claim #06-062007 – TBS Welder Trainees

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☐ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	29-Jun-2007	1	Supplemental Notice of Potential Claim #06-062007	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:
Please find attached Supplemental Notice of Potential Claim #06-062007 sent on behalf of our supplier Trans Bay Steel.

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By:
Contract Admin/DCS Staff

J7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL NOTICE OF POTENTIAL CLAIM
CEM-2201B (NEW 9/2002)

TO	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
PEDRO J. SANCHEZ (Resident Engineer)	04-0120E4	6/29/07	06-062007

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: 6/15/07

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

SEE ATTACHED NO. 1026

(attach additional sheets as needed)

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

SEE ATTACHED NO. 1026

(attach additional sheets as needed)

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

SEE ATTACHED NO. 1026

(attach sheets as required)

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:

SEE ATTACHED NO. 1026

(attach time impact analysis as required)

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 Section 9-1.04 of the Standard Specifications and must be restated as a claim in the Contractors written statement of claims in conformance with Section 9-1.07B of the Standard Specifications.

TRANS BAY STEEL CORP.
SUBCONTRACTOR or CONTRACTOR
(Circle One)

(Authorized Representative)

For a subcontractor potential claim
This notice of potential claim is acknowledged, certified and forwarded by

KIEWIT/FCI/MANSON JV
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.

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

June 29, 2007

State of California
Department of Transportation

RE: Contract Number 04-0120E4 E2/T1 SAS Foundations
Initial Notice of Potential Claim 06-062007, dated 6/19/07
Supplemental Notice of Potential Claim
Form No. CEM-6201B

Supplemental Notice of Potential Claim
"Attachment No. 1026"

Trans Bay Steel submitted the "Initial Notice of Potential" ID 06-062007 on 6/19/07. This Supplemental is issued to provide additional information as required by Special Provisions Section 9-1.04.

Trans Bay Steel has always used Trainees with a qualified and approved Submerged Arc Operator to perform welding on Caltrans Projects, i.e., San Mateo Bridge (1999), Carquinez Bridge (2000), Benicia Bridge (2001), Richmond San Rafael Bridge (2002), San Francisco Oakland Bay Bridge (2003), in conformance with our material contracts, Caltrans Special Provisions and the AWS Code governing the work in our shop.

During production on the E2/T1 project, commencing on December 06, 2005, the State's subcontractor employed with METS took a new position alleging that this practice was not in conformance with the special provisions and AWS D1.1-2002. Trans Bay disagrees with METS' new position. Section 8, Section 10 of the special provisions and AWS D1.1-2002 governing this work is silent and does not restrict the use of Trainees.

Commencing December 2005, the formerly accepted practice of using trainees in production work on the E2/T1 piles became a consistent topic at the weekly production meeting between KFM, Caltrans and Trans Bay. Discussions with Caltrans led to an agreement that it would not be necessary to issue an NOPC or have this matter referred to DRB if a change order, CCO39 was issued with mutually agreeable terms and conditions to address the welder training issues and the resulting impacts to Trans Bay Steel.

In October 2006, negotiations on CCO 39 were not successfully concluded due to the lack of acknowledgement concerning the time periods affected by these changes. After Trans Bay notified the State, they were silent on this issue until their letter of January 2007 notified us that they were not going to negotiate CCO 39 due to the production being completed.

The above change in Cal-trans / METS policy resulted in damages to Trans Bay Steel and delayed pile deliveries. Trans Bay's estimated damages are as follows:

1. Additional training required to comply with new Cal-trans trainee policy.
   Increased training (est.): $513,000 (standby time: 6840 hr's @ $75 per hr)

2. Additional work to clear invalid NCR's related to welder trainees.
   Est. amount to clear NCR's: $27,600.

3. Schedule impact and delay damages, including, but not limited to:

   Loss of efficiencies.
   Delayed Utilization of personnel.
   Extra inspection.
   Interruption of work flow.

J10

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

Scheduled delivery of last T1 pile: 22 Aug 06 (Jan 06 schedule)
"Actual" delivery of last T1 pile: 18 Dec 06 (17 week / 119 calendar day delay)
Delay Damages (est.): $3,498,600 (119 days @ $29,400 per day)
$100,800 (additional overtime for UT)

Total Trans Bay Steel Estimated Damages: $4,140,000

J11

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 05-Jul-07
Time 9:03 AM

Dated: 7/6/2007

TRANSMITTAL No: KFM-TRN-000569 **Rev: 00**

To: **Pedro Sanchez**
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: NOPC #06-062007 Referral to DRB

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☑ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

Item	Date	Copies	Description	Pages
01	05-Jul-2007	1	KFM-DRB LET-000003 w/attachments	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By:
Contract Admin/DCS Staff

JJ2

Copy To: Job Office Files

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

July 5, 2007

Serial Letter: KFM-DRB-LTR-000003

Dispute Review Board (DRB)
1122 Ferguson Road
Sebastopol, CA 95472

Attention: Mr. Warren Bullock

Reference: SAS E2/T1 Foundation Project (Caltrans Contract No. 04-0120E4)
KFM Job No. 364/4347

Subject: NOPC #06-062007 -- Referral to Board

Dear Warren,

Please find attached Notice of Potential Claim #06-062007. This NOPC remains in dispute and in accordance with Section 5-1.15 "Disputes Review Board" of the Special Provisions, KFM hereby refers this NOPC to the Disputes Resolution Board. KFM requests a hearing on this matter be scheduled in accordance with Section 5-1.15, "Disputes Review Board."

Please contact this office if you have any comments or questions.

Sincerely,
KIEWIT/FCI/MANSON, a JV

FOR
Lee Zink
Project Director

Attachments: Transmittal 566 – Initial Notice of Potential Claim #06-062007
State Letter 3235 – Response to Transmittal No. 566
KFM Letter 289 -- Objection to Engineers Response in SL-3235

cc: Mr. Richard Lewis -- DRB Member
Mr. Ronald Maasberg – DRB Member
Mr. Pedro Sanchez – Resident Engineer
Mr. William Kavicky – Trans Bay Steel, Inc.

J13

NOPC-6 - "FULL & FINAL"

KFM
E2 / T1 PROJECT
KIEWIT / FCI / MANSON, A JV

P.O. BOX 23223 Oakland, CA 94623
Phone (510) 419-0120 / Fax (510) 832-1456

LETTER OF TRANSMITTAL
SAS Foundations E2/T1 Project

Run Date 13-Jul-07
Time 3:50 PM

Dated: 7/13/07

To: **Pedro Sanchez**
Caltrans - SAS E2/T1 Foundation Project
333 Burma Road
Oakland CA 94607
Phone: 510-286-0538 Fax:

TRANSMITTAL No: KFM-TRN-000572 **Rev: 00**
Co/Job # 364-4347
Contract # 04-0120E4
Sub/Supplier:
Sub/Supplier No:

Subject: Final Notice of Potential Claim #06-062007 -- TBS Welder Trainees

Special Provis. (SP) REF:
Standard Spec. (SS) REF:
RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: ☑ Attached ☐ Via Fax

☐ Contract Plans/Specs	☐ Certs of Compl./Samples	☐ Working Drawings
☐ Drawings/Calculations	☐ Schedule	☐ WQCP and/or Addenda
☐ Change Order	☐ Progress Estimate Request	☐ Weekly Welding Reports
☐ Copy of Letter	☐ Payroll Information	☐ CWR Procedure

tem	Date	Copies	Description	Pages
01	13-Jul-2007	1	TBS Final Notice of Potential Claim #06-062007	

These are transmitted as checked below:

☐ For Approval	☐ For Review/Comment	☐ Return For Correction
☑ For Your Use	☐ As Requested	☐ For Information

Remarks:

CC:

Submitted By: George Atkinson
(KFM Staff Member – Originator of Transmittal)

Checked & Sent By:
Contract Admin/DCS Staff

J14

Copy To: Job Office Files

An Equal Opportunity Employer

STATE OF CALIFORNIA: DEPARTMENT OF TRANSPORTATION
FULL AND FINAL DOCUMENTATION OF POTENTIAL CLAIM
CEM-6201C (NEW 9/2002)

FOR STATE USE ONLY
Received By (Resident engineer) Date

TO	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Pedro J. Sanchez (resident engineer)	04-0120E4	7/13/07	06-062007

This is the Full and Final Documentation 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: 6/15/07

The complete and factual narration of events which fully describe the nature and circumstances that caused the dispute or disagreement and potential claim are attached hereto.

Attached
(attach sheets as required for full and final documentation)

The basis of this claim including all relevant contract provisions and a statement of the reasons these provisions support and provide basis for entitlement of the potential claim are attached hereto.

Attached
(attach sheets as required for full and final documentation)

The identification and copies of any documents and substance of any oral communication that support the potential claim are attached hereto.

Attached
(attach sheets as required for full and final documentation)

The exact dollar amount requested and an itemized breakdown of individual costs segregated by labor, materials, equipment and other are attached hereto.

Attached
(attach sheets as required for full and final documentation)

The exact amount of any time adjustment requested including justification thereof and time impact analysis are attached hereto.

Attached
(attach sheets as required for full and final documentation)

The *undersigned originator* (Contractor or Subcontractor as appropriate) certifies that the above statements and attached documentation 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 Section 9-1.04 of the *Standard Specifications* and must be restated as a claim in the Contractors written statement of claims in conformance with Section 9-1.07B of the *Standard Specifications*.

Trans Bay Steel Corporation
SUBCONTRACTOR or CONTRACTOR
(Circle One)

(Authorized Representative)

For a subcontractor potential claim
This notice of potential claim is acknowledged, certified and forwarded by

Kiewit-FCI-Manson, JV
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.

J15

TRANS BAY STEEL, CORP.
1025 KAISER ROAD, NAPA, CA 94558
TELEPHONE: (707)259-0777 FAX: (707)259-1072

July 13, 2007

State of California
Department of Transportation

RE: Contract Number 04-0120E4 E2/T1 SAS Foundations
Notice of Potential Claim 06-062007

Full And Final Notice of Potential Claim
"Attachment No. 1027"

Trans Bay Steel submitted the "Initial Notice of Potential" ID 06-062007 on 6/19/07 and the Supplemental Notice on 6/30/07. This Full and Final is issued to provide additional information as required by Special Provisions Section 9-1.04.

Trans Bay Steel has always used Trainees with a qualified and approved Submerged Arc Operator to perform welding on Caltrans Projects, i.e., San Mateo Bridge (1999), Carquinez Bridge (2000), Benicia Bridge (2001), Richmond San Rafael Bridge (2002), San Francisco Oakland Bay Bridge (2003), in conformance with our material contracts, Caltrans Special Provisions and the AWS Code governing the work in our shop.

During production on the E2/T1 project, commencing on December 06, 2005, the State's subcontractor employed with METS took a new position alleging that this practice was not in conformance with the special provisions and AWS D1.1-2002. Trans Bay disagrees with METS new position. Section 8-3.01, Section 10-1.24 of the special provisions and AWS D1.1-2002 governing this work are silent and do not restrict the use of Trainees. Complying with METS's new position caused a change in character to the work performed by TBS and caused additional work to be performed by TBS which are compensable in accordance with Standard Specification 4-1.03C and 4-1.03D.

Commencing December 2005, the formerly accepted practice of using trainees in production work on the E2/T1 piles became a consistent topic at the weekly production meeting between KFM, Caltrans and Trans Bay. Discussions with Caltrans led to an agreement that it would not be necessary to issue an NOPC or have this matter referred to DRB if a change order, CCO39 was issued with mutually agreeable terms and conditions to address the welder training issues and the resulting impacts to Trans Bay Steel.

In October 2006, negotiations on CCO 39 were not successfully concluded due to the lack of acknowledgement concerning the time periods affected by these changes. After Trans Bay notified the State, they were silent on this issue until their letter of January 2007 notified us that they were not going to negotiate CCO 39 due to the production being completed.

The above change in Cal-trans / METS policy resulted in damages to Trans Bay Steel and delayed pile deliveries. Please see attached estimated damages.

JB

TRANS BAY STEEL
E2 / T1 PILE FABRICATION
CAL-TRANS 04-0120E4

DATE: 7/13/2007

NOPC 6: WELDER TRAINEE POLICY CHANGE

CAL-TRANS / METS REQUIRED TRANS BAY STEEL TO TRAIN NEW SUBMERGED ARC WELDERS "OFF-LINE" FROM MAIN PRODUCTION FLOW, IN-LIEU OF USING TRANS BAY'S ESTABLISHED "ON THE JOB" TRAINING POLICIES AND PROCEDURES. THIS CHANGE IN POLICY RESULTED IN DAMAGES TO TRANS BAY STEEL & DELAYED PILE DELIVERY. THE ESTIMATED DAMAGES AND DELAYS ARE DETAILED BELOW.

PART 1: WELDER TRAINING

TRAINEE "STANDBY" TIME (SEE NOTES 1 & 2 AND "STANDBY" CHART)

TRAINEE "STAND BY" TIME DUE TO MORE TRAINEE'S THAN TRAINING STATIONS AVAILABLE. (4) WELDERS IN TRAINING PER DAY.

(4) TRAINING STATIONS AVAILABLE: 2 DAY SHIFT & 2 SWING SHIFT

75 DAYS @ **9 TRAINEES** PER DAY (30 JAN - 14 MAY 06: 15 WEEKS)	**5**	**ON STANDBY PER DAY**	
	HR'S	**RATE**	
(5) PER DAY = 40 HR / DAY X 75 DAYS =	3000	$75	$225,000
60 DAYS @ **12 TRAINEE'S** PER DAY (15 MAY - 6 AUG 06: 12 WK'S)	**8**	**ON STANDBY PER DAY**	
	HR'S	**RATE**	
(8) PER DAY = 64 HR / DAY X 60 DAYS =	3840	$75	$288,000

PART 1 TRAINING "STANDBY": ESTIMATED DAMAGES = $513,000

PART 2: CLEAR WELDER TRAINEE RELATED NCR'S

A. CLEAR NCR'S ISSUED BY METS (SEE NOTE 3)
NCR 8, 9, 10, 18, 19, 20 / COVERING (11) LS WELDS & (1) GS WELD.

1. ADDITIONAL LS UT (100% VS 25%)	**HR'S**	**RATE**	
11 LONG SEAMS @ 16 HR EACH =	176	$75	$13,200
2. QC ADMINISTRATIVE TIME			
12 WELD SEAMS / 6 NCR'S =	192	$75	$14,400

PART 2 NCR: ESTIMATED DAMAGES = $27,600

JN

PART 3: EXTENDED TRAINING AND ESTIMATED SCHEDULE IMPACT

A. EXTENDED TRAINING TIME (ESTIMATED)

1. AFTER THE RESTART OF E2 / T1 PILE JOB, TRANS BAY HIRED ADDITIONAL WELDER TRAINEE'S IN AN EFFORT TO INCREASE MANNING LEVELS AND AND HAVE ALL WELDING STATIONS FULLY MANNED ON ALL (3) SHIFTS, (SEE ATTACHED DAILY MANNING REQUIREMENTS CHART)

2. THE TRAINING METHOD THAT HAD TO BE USED TO SATISFY THE NEW CAL-TRANS TRAINEE POLICY RESULTED IN A (27) WEEK TRAINING PERIOD. TRAINEE'S HAD TO BE TRAINED AT WELDING STATIONS DEDICATED TO TRAINING, OFF OF THE NORMAL PRODUCTION LINE. 4 TRAINING STATIONS (2 DAY / 2 SWING). **21 TRAINEE'S / 4 "OFF-LINE" STATIONS / 27 WEEKS (30 JAN - 6 AUG 06)**

   MEN TRAINED PER WEEK = .78 (21 TRAINEE'S / 27 WEEKS)
   TRAINED PER STATION / PER WK = .195 (.78 TRAINED PER WK / 4 STATIONS)

3. TRANS BAY'S PREVIOUSLY USED METHOD TRAINED WELDERS ON THE NORMAL PRODUCTION LINE WELD STATIONS. USING THIS METHOD TRANS BAY WOULD HAVE USED 12 STATIONS (6 DAY / 6 SWING) TO TRAIN WELDERS. **21 TRAINEE'S / 12 "ON-LINE" STATIONS**

   MEN TRAINED PER WEEK (TRANS BAY METHOD) = 2.34
   (12 STATIONS X .195 PER WEEK / PER STATION)

   TRANS BAY TRAINING TIME = 8.97 WEEKS (21 TRAINEE'S / 2.34 PER WEEK)

4. "EXTENDED" TRAINING TIME USING NEW CAL-TRANS POLICY = **18 WEEKS**
   (27 WEEKS "ACTUAL" MINUS 9 WEEKS "ESTIMATED")

   GOAL OF HAVING ALL WELDING STATIONS FULLY MANNED WAS DELAYED BY 18 WEEKS AS A RESULT OF NEW TRAINING POLICY.

B. SCHEDULE IMPACT & DELAYS (ESTIMATED)

1. IMPACTS TO SCHEDULE RESULTING FROM EXTENDED TRAINING PERIOD.

   A. (18) WEEKS WITHOUT ALL WELD STATIONS FULLY MANNED ON ALL (3) SHIFTS.
      WELDERS OFF OF WELD STATIONS: 21 PER DAY
      PLANNED WELDERS PER SHIFT: 14
      PRODUCTION LOSS PER DAY: 1.5 SHIFTS (21 MEN / 14 PER SHIFT)

      PRODUCTION LOSS FOR 18 WEEK EXTENSION:
      1.5 SHIFTS X 126 DAYS (18 WK X 7 DAYS) = 189 SHIFTS
      189 SHIFTS / 3 SHIFTS PER DAY = 63 DAYS

      ESTIMATED DELAY DUE TO EXTENDED TRAINING = 9 WEEKS (63 DAYS / 7)

2. IMPACTS TO SCHEDULE RESULTING FROM "TRAINING ONLY" WELD STATIONS AND "INSTRUCTOR ONLY" WELDERS.

A. (4) "TRAINING ONLY" STATIONS LOST TO PRODUCTION FOR (27) WEEK TRAINING PERIOD.(2 STATIONS DAY SHIFT / 2 SWING)

PERCENT OF TOTAL STATIONS LOST: 25% (2 LOST / 8 STATIONS)
(8 STATIONS / ARCING & WELD BEAD STATIONS EXCLUDED)

ESTIMATED DELAY DUE TO "TRAINING ONLY" STATIONS = 6.75 WEEKS
(25% OF 27 WEEKS)

B. (4) "INSTRUCTOR" WELDERS LOST TO PRODUCTION FOR (27) WEEK TRAINING PERIOD.

PERCENT OF "INSTRUCTOR" WELDERS LOST: 9.76% (4 LOST / 41 TOTAL)

ESTIMATED DELAY DUE TO "INSTRUCTOR ONLY" WELDERS = 2.63 WEEKS
(9.76% OF 27 WEEKS)

TOTAL ESTIMATED SCHEDULE DELAYS	**WEEKS**	
DELAY FOR EXTENDED TRAINING PERIOD =	9	
DELAY "TRAINING ONLY" STATIONS =	6.75	
DELAY "INSTRUCTOR ONLY" WELDERS =	2.63	
ESTIMATED TOTAL DELAY =	**18.38**	**WEEKS**

3. **"ACTUAL"** E2 / T1 PILE SCHEDULE DELAY SHOWN BELOW:
DELAY = 119 CALENDAR DAYS (17 WEEKS)
JAN 06 "SCHEDULE" = LAST T1 PILE @ 22 AUG 06
"ACTUAL" DELIVERY = LAST T1 PILE @ 18 DEC 06

NOTE: TRANS BAY WAS ABLE TO COMPLETE E2 / T1 DELIVERIES SLIGHTLY BETTER THAN THE "ESTIMATED" DELAY OF 18.38 WK'S

TRANS BAY EXTENDED OVERHEAD PER DAY =	**$9,299**	**(SEE NOTE 4)**	
NOPC 6 RELATED DELAY =	119	DAYS	
ESTIMATED DELAY DAMAGES =	**$1,106,581**		$1,106,581

C. ADDITIONAL OVERTIME FOR UT INSPECTION TO SUPPORT SCHEDULE

1. SOUNDWELD UT INSPECTORS WORKING 7-DAY WEEK

(2) UT INSPECTORS PER OT DAY =	16	HR'S PER DAY	
NUMBER OF OT DAYS =	60	2 DAYS PER WEEK	
(30 JAN - 27 AUG 06 / 30 WKS)			
TOTAL OT HOURS =	960		
OT HOURLY RATE =	$105		
RT OVERTIME: ESTIMATED DAMAGES =	**$100,800**		$100,800

J19

D. EQUIPMENT UPGRADE TO SUPPORT SCHEDULE

1. WELD STATIONS M4 AND BOOM 4 WERE USED AS "TRAINING ONLY" LONG SEAM STATIONS. THESE WERE ORIGINALLY PLANNED TO BE USED FOR WELDING THE HEAVIER 85MM AND 95MM CANS.

2. WITH ABOVE STATIONS OUT OF THE PRODUCTION WELDING LINE, OUR "WHITE BAY" STATION CRANE AND HYDRAULIC HANDLING SYSTEMS HAD TO UPGRADED TO TAKE THE HEAVIER CANS ORIGINALLY SCHEDULED FOR M4 AND BOOM 4 STATIONS

SET UPGRADED CRANE IN-PLACE =	$2,000	RENTAL CRANE	
LABOR TO COMPLETE CRANE =	$48,000	640 HR @ $75 HR	
UPGRADE HYDRAULIC SYTEMS =	$12,000	160 HR @ $75 HR	
"WHITE BAY" UPGRADE =	**$62,000**		$62,000

PART 3 SCHEDULE IMPACT: ESTIMATED DAMAGES = $1,269,381

NOPC 6 TOTAL ESTIMATED DAMAGES = $1,809,981

NOTES:

1. METS WOULD NOT ALLOW OUR TRAINEE'S TO BE PUT INTO THE NORMAL PRODUCTION FLOW. AS A RESULT, THE TRAINEE'S HAD TO BE ROTATED THROUGH THE WELD STATIONS BEING USED FOR TESTING. THIS METHOD RESULTED IN A PORTION OF THE TRAINEE'S BEING ON **"STAND BY"** WAITING FOR AN OPEN TRAINING STATION.

2. TRAINING TIMES AND DAMAGES BASED ON (21) WELDER TRAINEE'S THAT WERE HIRED BY TRANS BAY STEEL SINCE JAN 06.

3. CAL-TRANS / METS HAS ISSUED (6) NCR'S RELATED TO THE USE OF WELDER TRAINEE'S AT TRANS BAY STEEL.

4. TRANS BAY DAILY "EXTENDED" OVERHEAD IS BASED ON THE PERCENTAGE OF TOTAL OVERHEAD CHARGEABLE TO THE E2 / T1 PROJECT.

TOTAL DAILY "OVERHEAD" =	$11,771	(DOES NOT INCLUDE DIRECT LABOR)
E2 / T1 PORTION =	**$9,299**	(79% OF TOTAL)

E2 / T1 WELDER TRAINEE STANDBY
30 JAN 06 - 6 AUG 06

WK NO.	TRAINEE WORK WEEK	WELDER TRAINEE'S PER DAY	TRAINEE HR / WK (5 DAY WK)	TRAINEE'S STATIONS PER DAY	"ACTUAL" TRAINING HR / WK	TRAINEE "STANDBY" HR'S PER WEEK
1	30 JAN - 5 FEB 06	9	360	4	160	200
2	6 FEB - 12 FEB 06	9	360	4	160	200
3	13 FEB - 19 FEB 06	9	360	4	160	200
4	20 FEB - 26 FEB 06	9	360	4	160	200
5	27 FEB - 5 MAR 06	9	360	4	160	200
6	6 MAR - 12 MAR 06	9	360	4	160	200
7	13 MAR - 19 MAR 06	9	360	4	160	200
8	20 MAR - 26 MAR 06	9	360	4	160	200
9	27 MAR - 2 APR 06	9	360	4	160	200
10	3 APR - 9 APR 06	9	360	4	160	200
11	10 APR - 16 APR 06	9	360	4	160	200
12	17 APR - 23 APR 06	9	360	4	160	200
13	24 APR - 30 APR 06	9	360	4	160	200
14	1 MAY - 7 MAY 06	9	360	4	160	200
15	8 MAY - 14 MAY 06	9	360	4	160	200
			5400		**2400**	**3000**
1	15 MAY - 21 MAY 06	12	480	4	160	320
2	22 MAY - 28 MAY 06	12	480	4	160	320
3	29 MAY - 4 JUN 06	12	480	4	160	320
4	5 JUN - 11 JUN 06	12	480	4	160	320
5	12 JUN - 18 JUN 06	12	480	4	160	320
6	19 JUN - 25 JUN 06	12	480	4	160	320
7	26 JUN - 2 JUL 06	12	480	4	160	320
8	3 JUL - 9 JUL 06	12	480	4	160	320
9	10 JUL - 16 JUL 06	12	480	4	160	320
10	17 JUL - 23 JUL 06	12	480	4	160	320
11	24 JUL - 30 JUL 06	12	480	4	160	320
12	31 JUL - 6 AUG 06	12	480	4	160	320
			5760	(NOTE 1)	**1920**	**3840** (NOTE 2)

TIME FRAME	STAND-BY HOURS	RATE / HR	TOTAL $
30 JAN - 14 MAY 06	3000	$75.00	$225,000
15 MAY - 6 AUG 06	3840	$75.00	$288,000
	TOTAL "STANDBY" =		**$513,000**

NOTES

1. ONLY (4) WELDER TRAINING STATIONS AVAILABLE PER DAY, (2 DAY SHIFT & 2 SWING SHIFT). 32 HR'S PER DAY / 160 PER WK.
2. "STAND BY" HR'S EQUALS (TOTAL OF TRAINEE HR'S PER DAY X 5 DAYS) MINUS ("ACTUAL" TRAINING HR'S PER WEEK).

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04-0120E4BAY BRIDGE
E-2 / T-1 PILE
DAILY MANNING REQUIREMENTS

WORK STATION	"PRE-TERMINATION" ORIG. MANNING PLAN DAYS	SWING	GRAVE	"POST-TERMINATION" INCREASED MANNING PLAN DAYS	SWING	GRAVE
BURNING	1	1		1	1	
PLATE ROLL (DAVI)	1	0		1	0	
PLT ROLL (BERTCH)	2	0		2	0	
PILE GS FITTING	2	1		2	1	
GRINDERS	2	1		2	1	1
WELDING STATIONS						
1. "WHITE BAY": LS ID	1	1	1	1	1	1
2. "WHITE BAY": LS OD ARC	1			1	1	1
3. "WHITE BAY": LS OD	1	1		1	1	1
4. "NEW" M4 LS STATION (TRAINING STA) (ADDED AFTER RESTART)				1	1	1
5. BOOM 4 LS ID & OD (TRAINING STA)				1	1	1
6. GIRTH SEAMS BOOM 1	1	1	1	1	1	1
7. GIRTH SEAMS BOOM 2	1	1		1	1	1
8. GIRTH SEAM ID'S: BAY 2	1	1		1	1	1
9. GIRTH SEAM OD ARC: BAY 2	1			1	1	1
10. GIRTH SEAM OD'S: BAY 2	1	1		1	1	1
11. BEAD WELDS: ID	1	1		1	1	1
12. BEAD WELDS: OD	1	1		1	1	1
13. ADDITIONAL "*QUALIFIED*" WELDERS TO ASSIST AT ALL STATIONS.				2	2	1
CRANE PRE-FAB	1	1		1	1	
CRANE BAY 1	0.5	0.5		0.5	0.5	0.5
CRANE BAY 2	0.5	0.5		0.5	0.5	0.5
RIGGING WHITE BAY	0.25	0.25		0.25	0.25	0
RIGGING PRE-FAB	0.25	0.25		0.25	0.25	0
RIGGING BAY 1	0.25	0.25		0.25	0.25	0
RIGGING BAY 2	0.25	0.25		0.25	0.25	0
TOTALS	21	14	2	25	20	15

	REQ'D		REQ'D
FITTERS	3	FITTERS	3
WELDERS	20	WELDERS	41
BURNERS	2	BURNERS	2
ROLLERS	3	ROLLERS	3
GRINDERS	3	GRINDERS	4
CRANE	4	CRANE	5
RIGGERS	2	RIGGERS	2
TOTAL =	37	TOTAL =	60

NOTES:

TRANS BAY HIRED ADDITIONAL WELDER TRAINEE'S AFTER E2 / T1 PILES WERE RESTARTED IN JAN 06. THE GOAL / PLAN WAS TO INCREASE MANNING LEVELS ON E2 / T1 IN AN EFFORT TO IMPROVE SCHEDULE.

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E2 / T1 MANNING LEVELS
1 JAN 06 - 17 DEC 06

7/13/07

WK NO.	WORK WEEK	TOTAL TRANS BAY AVERAGE MEN / DAY	(AVERAGE) MEN / DAY PIPE BEAM	TOTAL MEN / DAY E2 / T1	E2 / T1 TRAINEE'S PER DAY	E2 / T1 NON-TRAINEE PRODUCTION PER DAY
1	2 JAN - 8 JAN 06	40	13	27	0	27
2	9 JAN -15 JAN 06	40	13	27	0	27
3	16 JAN - 22 JAN 06	44	13	31	0	31
4	23 JAN - 29 JAN 06	43	13	30	0	30
5	30 JAN - 5 FEB 06	58	13	45	9	36
6	6 FEB - 12 FEB 06	59	13	46	9	37
7	13 FEB - 19 FEB 06	59	13	46	9	37
8	20 FEB - 26 FEB 06	61	13	48	9	39
9	27 FEB - 5 MAR 06	61	13	48	9	39
10	6 MAR - 12 MAR 06	63	13	50	9	41
11	13 MAR - 19 MAR 06	63	13	50	9	41
12	20 MAR - 26 MAR 06	64	13	51	9	42
13	27 MAR - 2 APR 06	63	13	50	9	41
14	3 APR - 9 APR 06	62	13	49	9	40
15	10 APR - 16 APR 06	63	13	50	9	41
16	17 APR - 23 APR 06	60	13	47	9	38
17	24 APR - 30 APR 06	63	13	50	9	41
18	1 MAY - 7 MAY 06	63	13	50	9	41
19	8 MAY - 14 MAY 06	62	13	49	9	40
20	15 MAY - 21 MAY 06	60	13	47	12	35
21	22 MAY - 28 MAY 06	62	13	49	12	37
22	29 MAY - 4 JUN 06	71	13	58	12	46
23	5 JUN - 11 JUN 06	70	13	57	12	45
24	12 JUN - 18 JUN 06	69	13	56	12	44
25	19 JUN - 25 JUN 06	71	13	58	12	46
26	26 JUN - 2 JUL 06	73	13	60	12	48
27	3 JUL - 9 JUL 06	72	13	59	12	47
28	10 JUL - 16 JUL 06	71	13	58	12	46
29	17 JUL - 23 JUL 06	71	13	58	12	46
30	24 JUL - 30 JUL 06	69	13	56	12	44
31	31 JUL - 6 AUG 06	67	13	54	12	42
32	7 AUG - 13 AUG 06	67	13	54	0	54
33	14 AUG - 20 AUG 06	69	13	56	0	56
34	21 AUG - 27 AUG 06	69	13	56	0	56
35	28 AUG - 3 SEP 06	69	14	55	0	55
36	4 SEP -10 SEP 06	69	14	55	0	55
37	11 SEP - 17 SEP 06	67	14	53	0	53
38	18 SEP - 24 SEP 06	64	14	50	0	50
39	25 SEP - 1 OCT 06	67	14	53	0	53
40	2 OCT - 8 OCT 06	67	14	53	0	53
41	9 OCT - 15 OCT 06	67	14	53	0	53
42	16 OCT - 22 OCT 06	66	14	52	0	52
43	23 OCT - 29 OCT 06	65	14	51	0	51
44	30 OCT - 5 NOV 06	65	14	51	0	51
45	6 NOV - 12 NOV 06	64	14	50	0	50
46	13 NOV - 19 NOV 06	64	14	50	0	50
47	20 NOV - 26 NOV 06	63	14	49	0	49
48	27 NOV - 3 DEC 06	61	14	47	0	47
49	4 DEC - 10 DEC 06	61	14	47	0	47
50	11 DEC - 17 DEC 06	54	44	10	0	10
			NOTE 1,2, 3			
	LAST T-1 PILE SHIPPED 12/18/06					

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E2 / T1 MANNING LEVELS
1 JAN 06 - 17 DEC 06

SCHEDULE DELAY	(13 JAN 06) SCHEDULE	ACTUAL	DELAY
DELIVER LAST T-1 PILE	8/22/2006	12/18/2006	17 WEEKS

MANNING LEVEL BREAKDOWN		
AVAEAGE MEN PER DAY E2 / T1 =	49	2 JAN - 10 DEC 06
AVERAGE MEN PER DAY PIPE BEAMS =	13	3 JAN - 10 DEC 06
AVERAGE MEN PER DAY TOTAL =	62	
E2 / T1 % BASED ON MANNING =	79%	

NOTES:

1. PIPE BEAM HR'S = 17,467 HR'S (2 JAN - 27 AUG 06 / 34 WEEKS)
   - HR'S / WEEK = 513.73 (AVERAGE)
   - HR'S PER DAY = 102.74 (BASED ON 5 DAY WEEK)
   - MEN PER DAY = 12.84 (102.74 HR'S / 8)

2. PIPE BEAM HR'S = 8,684 HR'S (28 AUG - 10 DEC 06 / 15 WEEKS)
   - HR'S / WEEK = 578.93 (AVERAGE)
   - HR'S PER DAY = 115.78 (BASED ON 5 DAY WEEK)
   - MEN PER DAY = 14.47 (115.78 HR'S / 8)

3. PIPE BEAM HR'S = 1741 HR'S (11 DEC - 17 DEC 06 / 1 WEEK)
   - HR'S / WEEK = 1741 (AVERAGE)
   - HR'S PER DAY = 348.2 (BASED ON 5 DAY WEEK)
   - MEN PER DAY = 43.52 (348.2 HR'S / 8)

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Appendix

K. FOIAR Documents that have not been received

Appendix

L. Special provisions 8-3.01 Welding, for San Mateo, Carquinez, Benicia, Richmond San Rafael

SECTION 8-3. WELDING

8-3.01 WELDING ELECTRODES

Flux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform any type of welding for this project.

8-3.02 WELDING QUALITY CONTROL

Welding quality control shall conform to the requirements in the AWS welding codes, the Standard Specifications and these special provisions.

Welding quality control shall apply when any work is welded in conformance with the provisions in Section 49, "Piling," Section 52, "Reinforcement," Section 55, "Steel Structures," or Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications.

In addition, welding quality control shall apply when welding is performed for the following work:

Joint seal assemblies

Bridge deck drainage system

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	1996
D1.4	1992
D1.5	1995
D1.5 (metric only)	1996

All requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

The welding of all fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and herein.

The Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of welding, including materials and workmanship, performed by the Contractor and all subcontractors.

The QCM shall be the sole individual responsible to the Contractor for submitting, receiving, and approving all correspondence, required submittals, and reports to and from the Engineer.

The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.

Except for welding that is performed at a permanent fabrication facility which is certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges, welding inspection personnel or nondestructive testing (NDT) firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. For welding performed at such facilities, the inspection personnel or NDT firms may be employed or compensated by the fabrication facility performing the welding.

Prior to submitting the Quality Control Plan (QCP) required herein, a prewelding meeting between the Engineer, Contractor and any welding subcontractors or entities hired by these subcontractors to be used in the work, shall be held to discuss the requirements for the QCP.

Prior to performing any welding, the Contractor shall submit to the Engineer, in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 3 copies of a separate QCP for each item of work for which welding is to be performed. As a minimum, each QCP shall

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include the following:
1. The name of the welding firm and the NDT firm to be used;
2. A manual prepared by the NDT firm that shall include equipment, testing procedures, code of safe practices, the Written Practice of the NDT firm, and the names, qualifications and documentation of certifications for all personnel to be used;
3. The name of the QCM and the names, qualifications and documentation of certifications for all Quality Control (QC) Inspectors and Assistant Quality Control Inspectors to be used;
4. An organizational chart showing all QC personnel and their assigned QC responsibilities;
5. The methods and frequencies for performing all required quality control procedures, including QC inspection forms to be used, as required by the specifications including:
(a) all visual inspections;
(b) all NDT including radiographic geometry, penetrameter and shim selection, film quality, film processing, radiograph identification and marking system, and film interpretation and reports; and
(c) alibration procedures and calibration frequency for all NDT equipment;

6. A system for the identification and tracking of all welds, NDT and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;
7. Standard procedures for performing noncritical repair welds. Noncritical repair welds are defined as welds to deposit additional weld beads or layers to compensate for insufficient weld size and to fill limited excavations that were performed to remove unacceptable edge or surface discontinuities, rollover or undercut. The depth of these excavations shall not exceed 65 percent of the specified weld size;
8. The welding procedure specification (WPS), including documentation of all supporting Procedure Qualification Record (PQR) tests performed, and the name of the testing laboratory who performed the tests, to verify the acceptability of the WPS. The submitted WPS shall be within the allowable period of effectiveness;
9. Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, tests performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness; and
10. One copy each of all AWS welding codes and the FCP which are applicable to the welding to be performed. These codes and the FCP shall become the permanent property of the Department.
The Engineer shall have 10 working days to review the QCP submittal after a complete plan has been received. No welding shall be performed until the QCP is approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the QCP, 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.
An amended QCP or addendum shall be submitted to, and approved in writing by the Engineer, for any proposed revisions to the approved QCP. An amended QCP or addendum will be required for any revisions to the QCP, including but not limited to a revised WPS, additional welders, changes in NDT firms or procedures, QC or NDT personnel, or updated systems for tracking and identifying welds. The Engineer shall have 3 working days to complete the review of the amended QCP or addendum. Work that is affected by any of the proposed revisions shall not be

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performed until the amended QCP or addendum has been approved. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the amended QCP or addendum, 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.

After final approval of the QCP, amended QCP or addendum, the Contractor shall submit to the Engineer 7 copies each of these approved documents.

A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding, and shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each Quality Control Inspector shall also be included in the log.

It is expressly understood that the Engineer's approval of the Contractor's QCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any of the requirements of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials and equipment may be rejected notwithstanding approval of the QCP.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 7 days following the performance of any welding:

1. Reports of all visual weld inspections and NDT;
2. Radiographs and radiographic reports, and other required NDT reports;
3. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests, corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable; and
4. Daily production log.

All reports regarding NDT, including radiographs, shall be signed by both NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.

The Engineer shall review the Welding Report to determine if the Contractor is in conformance with the QCP. Except for steel piling, the Engineer shall be allowed 7 days to review the report and respond in writing after a complete Welding Report has been received. The review time for steel piling shall be as specified in "Piling" elsewhere in these special provisions. Prior to receiving notification from the Engineer of the Contractor's conformance with the QCP, the Contractor may encase in concrete or cover any welds for which a Welding Report has been submitted. 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. Any material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover any welds pending notification by the Engineer, and should the Engineer fail to complete the review and provide notification within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in notification, 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.

Sections 6.1.1 through 6.1.3.3 of AWS D 1.1, Sections 7.1.1 and 7.1.2 of AWS D 1.4, and Sections 6.1.1.1 through 6.1.3.3 of AWS D 1.5 are replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a

minimum, the Contractor shall perform inspection and testing prior to welding, during welding and after welding as specified in this section and additionally as necessary to ensure that materials and workmanship conform to the requirements of the contract documents.
The Quality Control (QC) Inspector shall be the duly designated person who performs inspection, testing, and quality matters for all welding.
Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

All QC Inspectors shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as AWS Certified Welding Inspectors (CWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors."
The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors," or has equivalent qualifications. The QC Inspector shall monitor the Assistant QC Inspector's work, and shall be responsible for signing all reports.
When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.
Section 6.14.7, "Personnel Qualification," of AWS D 1.1, Section 7.7.6, "Personnel Qualification," of AWS D 1.4 and Section 6.1.3.4, "Personnel Qualification," of AWS D 1.5 are amended to read:
Personnel performing NDT shall be qualified in conformance with the requirements in the current edition of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. The Written Practice of the NDT firm shall meet or exceed the requirements of the current edition of the ANST Recommended Practice No. SNT-TC-1A. Only individuals who are 1) qualified for NDT Level II, or 2) Level III technicians who have been directly certified by the ASNT and are authorized to perform the work of Level II technicians, shall perform NDT, review the results, and prepare the written reports.
Section 6.5.4, "Scope of Examination," of AWS D 1.1 and Section 7.5.4 of AWS D 1.4 are amended to read:
The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met.
Section 6.5.4 of AWS D 1.5 is amended to read:
The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met. The QC Inspector shall examine the work to make certain that it meets the requirements of section 3 and 9.21. The size and contour of welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities should be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.
The Engineer shall have the authority to verify the qualifications or certifications of any welder, Quality Control Inspector, or NDT personnel to specified levels by retests or other means.
A sufficient number of QC Inspectors shall be provided to ensure continuous inspection when any welding is being performed. Continuous inspection, as a minimum, shall include (1) having QC Inspectors continually present on all shifts when any welding is being performed, or (2) having a QC Inspector within such close proximity of all welding operations that inspections by the QC Inspector of

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each operation, at each welding location, shall not lapse for a period exceeding 30 minutes.

Inspection and approval of the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day that welding is performed.

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, base metal repairs, or any other type of repairs not submitted in the QCP, the Engineer shall be notified immediately in writing when any welding problems or deficiencies are discovered and also of the proposed repair procedures to correct them. The Engineer shall have 5 working days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the proposed repair procedures, 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.

When joint details that are not prequalified by the applicable AWS codes are proposed for use in the work, all welders using these details shall perform a qualification test plate using the approved WPS variables and the joint detail to be used in production. The test plate shall be the maximum thickness to be used in production. The test plate shall be mechanically or radiographically tested as directed by the Engineer. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. A valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

All qualification tests for welders, welding operators, and WPSs used in welding operations will be witnessed by the Engineer or an independent third party acceptable to the Engineer.

Section 6.6.5, "Nonspecified Nondestructive Testing Other Than Visual," of AWS D 1.1, Section 6.6.5 of AWS D 1.4 and Section 6.6.5 of AWS D 1.5 shall not apply.

For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS welding codes, in the Standard Specifications or in these special provisions. Additional NDT required by the Engineer, will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. Should any welding deficiencies be discovered by this additional NDT, the cost of the testing will not be paid for as extra work, and shall be at the Contractor's expense.

All required repair work to correct welding deficiencies, whether discovered by the required visual inspection or NDT, or by additional NDT directed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.

At the completion of all welding, the QCM shall sign and furnish to the Engineer, a certificate of compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans and the provisions of the Standard Specifications and these special provisions.

Full compensation for conforming to all of the requirements of this section, Welding Quality Control, shall be considered as included in the contract prices paid for the various contract items of work involved and no additional

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compensation will be allowed therefor.

SECTION 8-3. WELDING

8-3.01 WELDING

GENERAL

Flux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform welding for this project.

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans, or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	2000
D1.4	1998
D1.5	1995
D1.5 (metric only)	1996
D1.6	1999

Requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans, or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

Sections 6.1.1.1 of AWS D 1.5 is replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.

Sections 6.1.3 through 6.1.4.3 of AWS D 1.1, Section 7.1.2 of AWS D 1.4, and Sections 6.1.1.2 through 6.1.3.3 of AWS D 1.5 are replaced with the following:

The QC Inspector shall be the duly designated person who acts for and on behalf of the Contractor for inspection, testing, and quality related matters for all welding.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

The QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as an AWS Certified Welding Inspector (CWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Certification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors." The Assistant QC Inspector may perform inspection under the direct supervision of the QC Inspector within visible and audible range. The QC Inspector shall be responsible for signing all reports and for determining if welded assemblies conform to workmanship and acceptance criteria. The ratio of QC Assistants to QC Inspectors shall not exceed 5 to 1.

When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

Section 6.14.6, "Personnel Qualification," of AWS D 1.1, Section 7.7.6, "Personnel Qualification," of AWS D 1.4, and Section 6.1.3.4, "Personnel Qualification," of AWS D 1.5 are replaced with the following:

Personnel performing nondestructive testing (NDT) shall be qualified and certified in conformance with the requirements of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. The Written Practice of the NDT firm shall meet or exceed the guidelines of the ASNT Recommended Practice No. SNT-TC-1A. Only individuals who are either 1) certified as an NDT Level II technician, or 2) Level III technicians who hold a current ASNT Level III certificate in that discipline and are authorized and certified to perform the work of Level II technicians, shall perform NDT, review the results, and prepare the written reports.

Section 6.5.4 of AWS D 1.5 is replaced with the following:

The QC Inspector or CAWI shall inspect and approve each joint preparation, assembly practice, welding technique, joint fit-up, and the performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved Weld Procedure Specification (WPS) are met. The QC Inspector shall examine the work to make certain that it meets the requirements of Sections 3 and 9.21. The size and contour of all welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities shall be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.

Section 6.6.5, "Nonspecified Nondestructive Testing Other Than Visual," of AWS D 1.1, Section 6.6.5 of AWS D 1.4 and Section 6.6.5 of AWS D 1.5 shall not apply.

For any welding, the Engineer may perform or direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS welding codes, in the Standard Specifications, or in these special provisions to verify that the welds are free of defects as defined by the AWS codes specified in this contract. The Contractor will not be entitled to compensation for additional NDT performed by the Engineer. All additional NDT directed by the Engineer that is performed by the Contractor will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. The cost of labor and consumables for this additional NDT shall not exceed the cost of any regularly scheduled NDT of the same type on this project. Should any welding defects be discovered by this additional NDT, all costs associated with the repair of the deficient area, including NDT of the weld repair and any delays caused by the repair shall be at the Contractor's expense.

In addition to the requirement outlined in the applicable AWS codes, all joints and portions thereof welded in conformance with the Standard Specifications Section 55, Structural Steel, shall meet the following requirements:

A. Weld surfaces shall be ground smooth and flush when noted on the plans.
B. Welds indicated to be subject to tensile forces that receive Radiographic Testing (RT) shall be ground smooth and flush on both sides by the Contractor prior to RT.
C. Groove weld surface profiles that interfere with the performance of the NDT procedure or produce questionable test results shall be ground smooth and blended with the adjacent material.
D. Fillet weld surface profiles that interfere with the performance of the NDT procedure or produce questionable test results shall be ground to blend the toes smoothly with adjacent base metal.

Questionable test results are defined as test results containing relevant or non-relevant indications or results from a situation where a defect may have been masked by the weld profile. Finger dampening the ultra-sonic (UT) signal shall not be considered resolution of questionable test results.

Required repair work to correct welding deficiencies discovered by visual inspection or NDT, or by additional NDT directed or performed by the Engineer, and any associated delays or expenses caused to the Contractor performing the repairs, shall be at the Contractor's expense.

The Engineer shall have the authority to verify the qualifications or certifications of any welder, QC Inspector, or NDT personnel to specified levels by retests as defined by AWS 1.5 or other means approved by the Engineer.

QC inspections shall be provided to ensure continuous inspection when any welding is being performed. Continuous inspection, as a minimum, shall include (1) having QC Inspectors continually present on the shop floor or project site when any welding operation is being performed, and (2) having a QC Inspectors within such close proximity of all welders or operators so that inspections by the QC Inspector of each operation, at each welding location, shall not lapse for a period exceeding 30 minutes.

Inspection and approval of all joint preparations, assembly practices, joint fit-ups, welding techniques, and the performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day that welding is performed. For each inspection, the QC Inspector shall confirm and document compliance with the requirements of the AWS code criteria and the requirements of these special provisions on all weld joints before welding, during welding, and after the completion of each weld.

When joint details that are not prequalified to the details of Section 3 of AWS D1.1 or the details of Figure 2.4 or 2.5 of AWS D1.5 are proposed for use in the work, the joint details, their intended locations, and proposed welding parameters and essential variables shall be approved by the Engineer. The Engineer shall have 14 calendar days to complete the review of the proposed joint detail locations. 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 costs, 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. Upon approval of the joint detail locations, and qualification of the non-standard joint details, welders and welding operators using these details shall perform a qualification test plate using the WPS variables and the joint detail to be used in production. The test plate shall have the maximum thickness to be used in production and shall have a minimum length of 180 mm and minimum 460 mm finish welded width. The test plate shall be mechanically and radiographically tested. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The Engineer will witness qualification tests for WPSs. An approved independent third party will witness the qualification tests for welders or welding operators. The independent third party shall be a current CWI as certified by the American Welding Society and shall not be employed by the contractor performing the welding. The Contractor shall allow the Engineer 14 calendar days to review the qualifications and copy of the current certification of the independent third party. 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 costs, 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. Five calendar days notice shall be provided to the Engineer prior to any qualification tests being completed. Witnessing of qualification tests by the Engineer shall not constitute approval of the intended joint locations, welding parameters, or essential variables.

In addition to the requirements outlined in the appropriate code, the period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. If production welding will be performed without gas shielding, then qualification shall also be without gas shielding. Excluding welding of fracture critical members, a valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

In addition to the requirements of AWS D1.5 Section s 5.12 or 5.13, the following requirements shall be met when qualifying welding procedures:

1. Unless considered prequalified, fillet welds, including reinforcing fillet welds, shall be qualified in each position. The fillet weld soundness test shall be conducted using the essential variables of the WPS as established by the Procedure Qualification Record (PQR).
2. Tests to qualify a groove weld WPS shall use Figure 5.1.
3. For qualification of weld joints that do not conform to Figures 2.4 and 2.5, two Weld Procedure Specification (WPS) qualification tests are required. The tests per Section 5.13 are to be conducted using both Figure 5.1 and Figure 5.3. The test per Figure 5.3 is to be conducted using the same welding electrical parameters that were established for the test conducted per Figure 5.1.
4. The travel speed, amperage and voltage values that are used for tests conducted per Section 5.12 or 5.13 shall be consistent for each weld joint, and shall in no case vary by more than 10% for travel speed, 10% for amperage, and 7% for voltage.
5. For WPS qualified per Section 5.13, the values to be used for calculating ranges for amperage, voltage and travel speed are to be based on the average of all weld passes made in the test. Heat input shall be calculated using the average of amperage, voltage and travel speed of all weld passes made in the test for WPS qualified per Section 5.12 or 5.13.
6. In order to qualify unlimited thickness, two qualification tests are required for WPSs utilized for welding thicknesses greater than 38 mm. One test is to be conducted using 20 mm thick test plates and one test is to be conducted using test plates with a thickness between 38 mm and 50 mm. Two maximum heat input tests may be conducted for unlimited thickness qualification.
7. Three Macroetch tests are required for all WPS qualification tests. Acceptance is per Section 5.19.3.
8. When a weld joint is to be made using a combination of qualified WPSs, each process is to be qualified separately.
9. When a weld joint is to be made using a combination of qualified and prequalified processes, the WPS needs to reflect both processes and the limitations of essential variables for both processes. This includes weld bead placement.
10. Prior to preparing mechanical test specimens, the PQR welds shall be inspected visually and by radiographic tests. Backing bar shall be 75 mm in width and remain in place during NDT testing. Results of the visual and radiographic tests are to comply with Section 9.21.2, excluding Section 9.21.2.2. Test plates that do not comply with both tests are not to be used.

WELDING QUALITY CONTROL

Welding quality control shall conform to the requirements in the AWS specified welding codes, the Standard Specifications, and these special provisions.

Unless otherwise specified, welding quality control shall apply when any work is welded in conformance with the provisions in Section 49, "Piling," Section 52, "Reinforcement," Section 55, "Steel Structures," or Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications.

In addition, welding quality control shall apply when welding is performed for the following work:

A. Miscellaneous metal

The welding of fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and the contract.

The Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of welding, including materials and workmanship, performed by the Contractor and subcontractors.

The QCM shall be the sole individual responsible to the Contractor for submitting, receiving, reviewing, and approving all correspondence, required submittals, and reports to and from the Engineer. The QCM shall be a professionally registered engineer or shall be currently certified as CWI or CAWI.

The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.

Welding inspection personnel or NDT firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project, except for the following conditions:

A. The work is welded in conformance with AWS D1.5 or D1.1, as applicable, and is performed at a permanent fabrication or manufacturing facility which is certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges and Fracture Critical endorsement F.
B. The welding is performed on pipe pile material at a permanent pipe manufacturing facility where an automatic welding process or seamless pipe operation is used in conformance with the requirements in the applicable welding code as specified elsewhere in these special provisions.

For welding performed at such facilities, the inspection personnel or NDT firms may be employed or compensated by the facility performing the welding.

Prior to submitting the Welding Quality Control Plan (WQCP) required herein, a pre-welding meeting between the Engineer, the Contractor's QCM, and a representative from each entity performing welding for this project, shall be held to discuss the requirements for the WQCP.

The Contractor shall submit to the Engineer, in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 2 draft copies of a separate WQCP for each item of work for each subcontractor and supplier which welding is to be performed.

The Contractor shall allow the Engineer 14 calendar days to review the WQCP submittal after a complete plan has been received. No welding shall be performed until the WQCP is 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 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.

An amended WQCP or any addendum to the approved WQCP shall be submitted to, and approved in writing by the Engineer, for proposed revisions to the approved WQCP. An amended WQCP or addendum will be required for revisions to the WQCP, including but not limited to a revised WPS, additional welders, changes in NDT firms or procedures, QC, or NDT personnel, or updated systems for tracking and identifying welds. The Engineer shall have 14 calendar days to complete the review of the amended WQCP or addendum. Work affected by the proposed revisions shall not be performed until the amended WQCP or addendum has been approved. 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.

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Each WQCP shall include the following items, as determined by the Engineer. The WQCP shall be divided into the designated sections with each revision and addendum clearly annotated and numbered. Each welding and NDT firm shall have separate sections for each firm.

Organization

A. The name of the welding firm.
B. Name of QCM hired by Contractor, if applicable.
C. Name of Quality Control Inspection Firm hired by Contractor, if applicable.
D. Name of NDT Firm hired by Contractor, if applicable.
E. Organizational chart showing the QCM, all subcontractors performing welding, QC firms and personnel, and NDT firms and personnel.

Qualifications / Certifications

F. Copy of AISC Category III Certification, if applicable.
G. Name, qualifications, and copies of certifications for the following individuals:
   1. QCM, if applicable.
   2. QC Inspectors
   3. Assistant QC Inspectors

H. Copies of all certifications for welders for each welding process and position that will be used. Certifications shall list the filler metals used, test position, base metal and thickness, tests performed, and the witnessing authority. The submitted documentation shall be approved by the Engineer prior to any project welding being performed by a welder or welding operator.
I. A master list of qualified welders that will document the welders and welding operators name, ID, the qualified welding process, welding position, and the date for each individual qualification and person qualified.
J. The written description of the Contractor's process for maintaining and providing the Engineer a current master list of qualified welders and welding operators that documents the names of each welder with the process, position, and date qualified as described in item "I" above.

QC Procedures

K. The methods and frequencies for performing all required visual inspections and documentation by which continuous visual inspection will not lapse for a period exceeding 30 minutes.
L. A written description of the system and method of documentation the Contractor will use for the identification and tracking of all welds, NDT, any required repairs, and re-inspection of non-conforming welds. The Contractor's system shall include provisions for permanently identifying each weld and the person who performed the weld, NDT, inspection, and repair.
M. Copies of the Quality Control forms to be used to include certificates of compliance, daily production logs, daily reports, and visual inspection report forms.
N. Documentation of the filler metal, flux, electrode flux combination and shielding gas certifications to be used in the work and documentation of manufacturer's recommended electrode operating ranges.
O. Authorized copy or original codebook for each of all AWS welding codes and the FCP, which are applicable to the welding being performed.
P. Standard procedures for performing non-critical repair welds. Noncritical repair welds are defined as welds to deposit additional weld beads or layers to compensate for insufficient weld size and to fill limited excavations that were performed to remove unacceptable edge or surface discontinuities, overlap or undercut. The depth of these excavations shall not exceed 65 percent of the specified weld size.

WPS and PQR

Q. Pre-qualified Welding Procedure Specifications (WPS), if applicable.
R. Documentation, when applicable, of Procedure Qualification Record (PQR) tests within the allowable period of effectiveness.
S. Name of independent third party who performed or witnessed qualification tests, if applicable.
T. Non-prequalified Welding Procedure Specifications (WPSs) supported by PQR testing.
U. Documentation from the Engineer approving any deviation from non-standard joint details, code requirements or other contract documents.

NDT Other Than Visual Procedures

V. Written Practice of the NDT inspection personnel or firm.
W. Name of certifying authority and outside Level III, if applicable.
X. Names, qualifications, and documentation of certifications of NDT personnel to be used to include level of certifications and expiration date.
Y. List of NDT equipment, calibration procedures, frequencies and current qualification/calibration documentation of equipment to be used.
Z. Procedures, methods and frequencies for performing all required NDT as required by the specification to include minimum amounts required.
AA. Code of Safe Practices when Radiographic Testing (RT) is performed.
BB. A written description of the system for placing all identification and tracking information on each radiograph when Radiographic Testing (RT) is performed.
CC. Copies of NDT report forms to be used.

After final approval of the WQCP, amended WQCP, or addendum, the Contractor shall submit 7 copies to the Engineer of the approved documents. A copy of the Engineer approved document shall be available at each location where welding is to be performed.

It is expressly understood that the Engineer's approval of the Contractor's WQCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformance with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any requirement of the plans and specifications nor relieve the Contractor of any obligation thereunder; and defective work, materials, and equipment may be rejected notwithstanding approval of the WQCP.

A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 10 calendar days following the performance of any welding:

A. Reports of all visual weld inspections and NDT.
B. Radiographs and radiographic reports, and other required NDT reports.
C. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests and corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable.
D. Daily production log.

Radiographic envelopes shall have clearly written on the outside of the envelope the following information: name of the QCM, name of the nondestructive testing firm, name of the radiographer, date, contract number, complete part description, and all included weld numbers or a report number, as detailed in the WQCP. In addition, all innerleaves shall have clearly written on them the part description and all included weld numbers, as detailed in the WQCP.

Reports regarding NDT shall be signed by both the NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.

The Engineer will review the Welding Report to determine if the Contractor is in conformance with the WQCP. Unless otherwise specified, the Engineer shall be allowed 10 calendar days to review the report and respond in writing after a complete Welding Report has been received. Prior to receiving notification from the Engineer of the Contractor's conformance with the WQCP, the Contractor may encase in concrete or cover welds for which a Welding Report has been submitted. 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 10 calendar days 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 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 QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans, the Standard Specifications, and these special provisions.

PAYMENT

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SECTION 8-4. STRUCTURAL STEEL

8-4.01 STEEL AUDITS

Steel audits shall apply when any structural steel is manufactured or fabricated in conformance with the provisions in Section 55, "Steel Structures," of the Standard Specifications.

Steel audit shall include the following items that are conducted in the sequence listed:

1. General steel meeting;
2. Contractor's steel facility audit (self-audit);
3. Engineer's steel facility audit (Caltrans-audit).

The general steel meeting shall be between the Engineer, the Contractor (including structural steel manufacturers and fabricators, steel suppliers, or entities hired by these subcontractors and suppliers to be used in the work). This meeting shall be held in the San Francisco Bay Area. At least 7 working days prior to this meeting, the Contractor shall submit a complete list of facilities that will be used for the manufacture and fabrication of structural steel items. The facility list shall include the mailing address, the physical address, the owners, the managers, and specific description(s) of the items (as shown in the Engineer's Estimate) that are to be produced at the respective facility. The list shall designate the sequence in which the facilities are to be audited. If a fabricator or manufacturer has more than one facility where work will be performed, each facility shall be listed separately.

The audit form is included in the "Information Handout," available to the Contractor as provided for in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," of the Standard Specifications.

The Contractor shall perform a self-audit and submit the completed steel audit form to the Engineer. The Contractor shall allow the Engineer 28 working days to review the audit.

After the Contractor has successfully completed a self-audit, as determined by the Engineer, the Contractor shall request a Caltrans-audit. The Contractor shall allow the Engineer 70 working days to complete the Caltrans-audit.

Should the Engineer fail to complete a given audit within 70 working days (of the receipt of the request for an Engineer's audit), and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in completing said audit, 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.

It shall be the Contractor's responsibility to ensure that the steel facility personnel provide the Engineer sufficient access and cooperation so that the Engineer can complete the audit within the time specified. The Contractor's welding Quality Control Manager (QCM) and the facility quality control personnel shall be present and cooperative during the Engineer's audit. If welding is not used for the items produced at a given facility, then the welding QCM will not be required to attend.

Successful completion of an audit shall not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in these special provisions and as shown on the plans.

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Should a steel facility fail a self-audit or Caltrans-audit, as determined by the Engineer, the Contractor or facility owner(s) shall correct deficiencies noted by the Engineer and successfully complete a revised self-audit prior to requesting another Caltrans-audit.

At the Contractor's option, the Contractor may replace a facility that fails an audit with a new facility. All the previously specified audit requirements shall apply to replacement facilities. The time required for the audits (including the Caltrans-audit) shall be as previously specified. A new audit list with sequence designation shall be submitted with the Contractor's audit for the replacement facility.

No more than 3 Caltrans-audits will be performed for a given facility.

If a steel facility fails the third Caltrans-audit, deductions will be made for materials produced by that facility. Deductions will be made to compensate for the additional quality assurance inspection and testing that will be performed by the Engineer in the absence of an approved audit. Whereas it is and will be impractical and extremely difficult to ascertain and determine the actual increase in such expense it is agreed that payment to the Contractor for furnishing the materials will be reduced as follows. If the steel facility is within 480 airline kilometers from both Sacramento and Los Angeles, the deduction shall be $0.04 per kg of steel item produced at this facility. If the steel facility is more than 480 airline kilometers from both Sacramento and Los Angeles, the deduction shall be $0.05 per kg of steel item produced at this facility. These deductions for failure of the third audit shall be in addition to deductions for inspection by the Engineer as specified in "Structural Steel," of these special provisions.

Prior to production of a given steel element, the general steel meeting, the self-audits, and the Caltrans-audit (or the deduction) shall be approved by the Engineer.

Full compensation for conforming to the requirements of "Steel Audits" shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SECTION 8-3. WELDING

8-3.01 WELDING ELECTRODES

Flux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform any type welding for this project.

8-3.02 WELDING QUALITY CONTROL

Welding quality control shall apply to the items of work described herein and shall conform to the requirements in the AWS welding codes, the Standard Specifications and these special provisions.

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	1996
D1.4	1992
D1.5	1995
D1.5 (metric only)	1996

All requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

Except for steel piling, welding performed anywhere other than at a permanent fabrication facility that is certified under the AISC Quality Certification Program, Category III, Major Steel Bridges, shall conform to the provisions for welding quality control as specified herein. Welding of steel piling shall conform to the provisions in "Piling" elsewhere in these special provisions and to the provisions for welding quality control specified herein.

The welding of all fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and herein.

Unless otherwise specified, when any type of welding is performed on items of work including 1) steel piles, 2) bar reinforcement, 3) steel structures, 4) column casings and 5) miscellaneous metal, the Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of all welding, including materials and workmanship, performed by the Contractor and all subcontractors.

The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.

No welding inspection personnel or nondestructive testing (NDT) firms to be used in the work shall be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project.

The QCM shall be the sole individual responsible to the Contractor for submitting and receiving all correspondence and required submittals and reports regarding welding to and from the Engineer.

Prior to submitting the Quality Control Plan (QCP) required herein, a pre-welding meeting shall be held between the Engineer, Contractor and any welding subcontractors to be used in the work to discuss the requirements for the QCP.

Prior to performing any welding, the Contractor shall submit to the Engineer, in accordance with the provisions of Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 3 copies of a separate QCP for each item of work for which welding is to be performed. As a minimum, each QCP shall include the following:

1. The name of the welding firm and the NDT firm to be used;
2. A manual prepared by the NDT firm that shall include equipment, testing procedures, code of safe practices, the Written Practice of the NDT firm, and the names, qualifications and documentation of certifications for all personnel to be used;
3. The name of the QCM and the names, qualifications and documentation of certifications for all Quality Control (QC) Inspectors and Assistant Quality Control Inspectors to be used;
4. An organizational chart showing all QC personnel and their assigned QC responsibilities;
5. The methods and frequencies for performing all required quality control procedures, including QC inspection forms to be used, as required by the specifications including:

   (a) all visual inspections;

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(b) all NDT including radiographic geometry, penetrameter and shim selection, film quality, film processing, radiograph identification and marking system, and film interpretation and reports; and
(c) calibration procedures and calibration frequency for all NDT equipment;

6. A system for the identification and tracking of all welds, NDT and any required repairs, and a procedure for the reinspection of any repaired welds. The system shall have provisions for 1) permanently identifying each weld and the person who performed the weld and 2) placing all identification and tracking information on each radiograph;
7. Standard procedures for performing noncritical repair welds. Noncritical repair welds are defined as welds to deposit additional weld beads or layers to compensate for insufficient weld size and to fill limited excavations that were performed to remove unacceptable edge or surface discontinuities, rollover or undercut. The depth of these excavations shall not exceed 65 percent of the specified weld size;
8. The welding procedure specification (WPS), including documentation of all supporting Procedure Qualification Record (PQR) tests performed, and the name of the testing laboratory who performed the tests, to verify the acceptability of the WPS. The submitted WPS shall be within the allowable period of effectiveness;
9. Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, tests performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness; and
10. One copy each of all AWS welding codes and the FCP which are applicable to the welding to be performed. These codes and the FCP shall become the permanent property of the Department.

The Engineer shall have 10 working days to review the QCP submittal after a complete plan has been received. No welding shall be performed until the QCP is approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the QCP, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

An amended QCP or addendum shall be submitted to, and approved in writing by the Engineer, for any proposed revisions to the approved QCP. An amended QCP or addendum will be required for any revisions to the QCP, including but not limited to a revised WPS, additional welders, changes in NDT firms or procedures, QC or NDT personnel, or updated systems for tracking and identifying welds. The Engineer shall have 3 working days to complete the review of the amended QCP or addendum. Work that is affected by any of the proposed revisions shall not be performed until the amended QCP or addendum has been approved. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the amended QCP or addendum, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

After final approval of the QCP, amended QCP or addendum, the Contractor shall submit to the Engineer 7 copies each of these approved documents.

A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding, and shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each Quality Control Inspector shall also be included in the log.

It is expressly understood that the Engineer's approval of the Contractor's QCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any of the requirements of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials and equipment may be rejected notwithstanding approval of the QCP.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 7 days following the performance of any welding:

1. Reports of all visual weld inspections and NDT;
2. Radiographs and radiographic reports, and other required NDT reports;
3. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests, corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable; and
4. Daily production log.

All reports regarding NDT, including radiographs, shall be signed by both NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.

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The Engineer shall review the Welding Report to determine if the Contractor is in conformance with the QCP. Except for steel piling, the Engineer shall be allowed 7 days to review the report and respond in writing after a complete Welding Report has been received. The review time for steel piling shall be as specified in "Piling" elsewhere in these special provisions. Prior to receiving notification from the Engineer of the Contractor's conformance with the QCP, the Contractor may encase in concrete or cover any welds for which a Welding Report has been submitted. 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. Any material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover any welds pending notification by the Engineer, and should the Engineer fail to complete the review and provide notification within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in notification, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Sections 6.1.1 through 6.1.3.3 of AWS D 1.1, Sections 7.1.1 and 7.1.2 of AWS D 1.4, and Sections 6.1.1.1 through 6.1.3.3 of AWS D 1.5 are replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing prior to welding, during welding and after welding as specified in this section and additionally as necessary to ensure that materials and workmanship conform to the requirements of the contract documents.

The Quality Control (QC) Inspector shall be the duly designated person who performs inspection, testing, and quality matters for all welding.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

All QC Inspectors shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as AWS Certified Welding Inspectors (CWI) in accordance with the provisions of AWS QC1, "Standard and Guide for Qualification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in accordance with the provisions of AWS QC1, "Standard and Guide for Qualification of Welding Inspectors," or has equivalent qualifications. The QC Inspector shall monitor the Assistant QC Inspector's work, and shall be responsible for signing all reports.

When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

Section 6.14.7, "Personnel Qualification," of AWS D 1.1, Section 7.7.6, "Personnel Qualification," of AWS D 1.4 and Section 6.1.3.4, "Personnel Qualification," of AWS D 1.5 are amended to read:

Personnel performing NDT shall be qualified in accordance with the current edition of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. Only individuals who are 1) qualified for NDT Level II, or 2) Level III technicians who have been directly certified by the ASNT and are authorized to perform the work of Level II technicians, shall perform NDT, review the results, and prepare the written reports.

Section 6.5.4, "Scope of Examination," of AWS D 1.1 and Section 7.5.4 of AWS D 1.4 are amended to read:

The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met.

Section 6.5.4 of AWS D 1.5 is amended to read:

The QC Inspector shall inspect and approve the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met. The QC Inspector shall examine the work to make certain that it meets the requirements of section 3 and 9.21. The size and contour of welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities should be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.

The Engineer shall have the authority to verify the qualifications or certifications of any welder, Quality Control Inspector, or NDT personnel to specified levels by retests or other means.

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A sufficient number of QC Inspectors shall be provided to ensure continuous inspection when any welding is being performed. Continuous inspection, as a minimum, shall include (1) having QC Inspectors continually present on all shifts when any welding is being performed, or (2) having a QC Inspector within such close proximity of all welding operations that inspections by the QC Inspector of each operation, at each welding location, shall not lapse for a period exceeding 30 minutes.

Inspection and approval of the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day that welding is performed.

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, base metal repairs, or any other type of repairs not submitted in the QCP, the Engineer shall be notified immediately in writing when any welding problems or deficiencies are discovered and also of the proposed repair procedures to correct them. The Engineer shall have 5 working days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the proposed repair procedures, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

When joint details that are not prequalified by the applicable AWS codes are proposed for use in the work, all welders using these details shall perform a qualification test plate using the approved WPS variables and the joint detail to be used in production. The test plate shall be the maximum thickness to be used in production. The test plate shall be mechanically or radiographically tested as directed by the Engineer. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. A valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

All qualification tests for welders, welding operators, and WPSs used in welding operations will be witnessed by the Engineer or an independent third party acceptable to the Engineer.

Section 6.6.5, "Nonspecified Nondestructive Testing Other Than Visual," of AWS D 1.1, Section 6.6.5 of AWS D 1.4 and Section 6.6.5 of AWS D 1.5 shall not apply.

For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS welding codes, in the Standard Specifications or in these special provisions. Additional NDT required by the Engineer, will be paid for as extra work in accordance with Section 4-1.03D, "Extra Work," of the Standard Specifications. Should any welding deficiencies be discovered by this additional NDT, the cost of the testing will not be paid for as extra work, and shall be at the Contractor's expense.

All required repair work to correct welding deficiencies, whether discovered by the required visual inspection or NDT, or by additional NDT directed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.

At the completion of all welding, the QCM shall sign and furnish to the Engineer, a certificate of compliance in accordance with Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in accordance with the details shown on the plans and the provisions of the Standard Specifications and these special provisions.

Full compensation for conforming to all of the requirements of this section, Welding Quality Control, shall be considered as included in the contract prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

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SECTION 8-3. WELDING

8-3.01 WELDING

General

ux core welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform any type of welding for this project.

Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans, or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	2000
D1.4	1992
D1.5	1995
D1.5 (metric only)	1996
D1.6	1999

Requirements of the AWS welding codes shall apply unless specified otherwise in the Standard Specifications, on the plans, or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or ANSI/AASHTO/AWS.

Sections 6.1.2 through 6.1.4.3 of AWS D 1.1, Sections 7.1.1 and 7.1.2 of AWS D 1.4, and Sections 6.1.1.1 through 6.1.3.3 of AWS D 1.5 are replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform pection and testing prior to welding, during welding, and after welding as specified in this section and additionally as cessary to ensure that materials and workmanship conform to the requirements of the contract documents.

The QC Inspector shall be the duly designated person who acts for and on behalf of the Contractor for inspection, testing, and quality related matters for all welding.

Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.

Each QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as an AWS Certified Welding Inspector (CWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors," or has equivalent qualifications. The QC Inspector shall monitor the Assistant QC Inspector's work, and shall be responsible for signing all reports.

When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

Section 6.14.6, "Personnel Qualification," of AWS D 1.1, Section 7.7.6, "Personnel Qualification," of AWS D 1.4, and Section 6.1.3.4, "Personnel Qualification," of AWS D 1.5 are replaced with the following:

Personnel performing NDT shall be qualified in conformance with the requirements of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. The Written Practice of the NDT firm shall meet or exceed the requirements of the ASNT Recommended Practice No. SNT-TC-1A, 1996 edition and current addendums. Only individuals who are 1) qualified for NDT Level II, or 2) Level III technicians who have been directly certified by the ASNT and are authorized to perform the work of Level II technicians, shall perform NDT, review the results, and prepare the written reports.

Section 6.5.4, "Scope of Examination," of AWS D 1.1 and Section 7.5.4 of AWS D 1.4 are replaced with the following:

The QC Inspector shall inspect and approve the joint preparation, joint fit-up, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved WPS are met.

tion 6.5.4 of AWS D 1.5 is replaced with the following:

The QC Inspector shall inspect and approve the joint preparation, joint fit-up, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code

and the approved WPS are met. The QC Inspector shall examine the work to make certain that it meets the requirements of Sections 3 and 9.21. The size and contour of welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities should be aided by strong light magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer. Section 6.6.5, "Nonspecified Nondestructive Testing Other Than Visual," of AWS D 1.1, Section 6.6.5 of AWS D 1.4 and Section 6.6.5 of AWS D 1.5 shall not apply.

For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS welding codes, in the Standard Specifications, or in these special provisions. Additional NDT required by the Engineer, will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. Should any welding deficiencies be discovered by this additional NDT, the cost of the testing will not be paid for as extra work but shall be at the Contractor's expense.

Required repair work to correct welding deficiencies, whether discovered by the required visual inspection or NDT, or by additional NDT directed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.

The Engineer shall have the authority to verify the qualifications or certifications of any welder, QC Inspector, or NDT personnel to specified levels by retests or other means.

A sufficient number of QC Inspectors shall be provided to ensure continuous inspection when any welding is being performed. Continuous inspection, as a minimum, shall include (1) having QC Inspectors continually present when any welding operation is being performed, or (2) having a QC Inspector within such close proximity of all welding operations that inspections by the QC Inspector of each operation, at each welding location, shall not lapse for a period exceeding 30 minutes.

Inspection and approval of the joint preparation, assembly practice, welding techniques, and performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day that welding is performed.

When joint details that are not prequalified by the applicable AWS codes are proposed for use in the work, welders using these details shall perform a qualification test plate using the approved WPS variables and the joint detail to be used in production. The test plate shall be the maximum thickness to be used in production. The test plate shall be mechanically or radiographically tested as directed by the Engineer. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. A valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's work remains satisfactory.

Welding Quality Control

Attention is directed to "Nondestructive Testing For Steel Pipe Piling," elsewhere in these special provisions regarding additional requirements for Caltrans UT certification requirements.

Welding quality control shall conform to the requirements in the AWS welding codes, the Standard Specifications, and these special provisions.

Unless otherwise specified, welding quality control shall apply when any work is welded in conformance with the provisions in Section 49, "Piling," Section 52, "Reinforcement," Section 55, "Steel Structures," Section 56-1, "Overhead Sign Structures," and Section 75, "Miscellaneous Metal," of the Standard Specifications.

In addition, welding quality control shall apply when welding is performed for the following work:

A. Modular Joint Seal Assemblies
B. Circular Segmented Bearings
C. Bridge Deck Drainage System

The welding of fracture critical members (FCMs) shall conform to the provisions specified in the Fracture Control Plan (FCP) and herein.

The Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of welding, including materials and workmanship, performed by the Contractor and subcontractors.

The QCM shall be the sole individual responsible to the Contractor for submitting, receiving, and approving all correspondence, required submittals, and reports to and from the Engineer.

The QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM shall not be employed or compensated by NDT firms to be used in the work. The QCM may be an employee of the Contractor.

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The QCM shall be currently certified as an AWS Certified Welding Inspector (CWI) in conformance with the requirements in AWS QC1, "Standard and Guide for Qualification of Welding Inspectors."
Welding inspection personnel or NDT firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project, except for the following conditions:

A. The welding is performed at a permanent fabrication facility which is certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges.
B. The welding is performed at a permanent fabrication facility that is certified under the AISC Quality Certification Program, Category Sbd, Conventional Steel Building Structures. This condition shall apply only for work welded in conformance with the provisions in Section 56-1, "Overhead Sign Structures" or Section 86-2.04, "Standards, Steel Pedestals and Posts," of the Standard Specifications.
For welding performed at such certified facilities, the inspection personnel or NDT firms may be employed or compensated by the fabrication facility performing the welding.
Prior to submitting the Welding Quality Control Plan (WQCP) required herein, a pre-welding meeting between the Engineer, Contractor, and any entity performing welding and NDT for this project, shall be held to discuss the requirements for the WQCP. The pre-welding meeting shall be held in the San Francisco Bay Area.
Prior to performing any welding, the Contractor shall submit to the Engineera separate WQCP for each item of work for which welding is to be performed. The WQCPs shall conform to the requirements of "Working Drawings," elsewhere in these special provisions.
As a minimum, each WQCP shall include the following:
A. The name of the welding firm and any required NDT firm, should one be required;
B. A manual prepared by the NDT firm that shall include equipment, testing procedures, code of safe practices, the Written Practice of the NDT firm, and the names, qualifications, and documentation of certifications for all personnel to be used;
The names, qualifications, and documentation of certifications for the QCM and all QC Inspectors and Assistant QC Inspectors to be used;
D. An organizational chart showing all QC personnel and their assigned QC responsibilities;
E. The methods and frequencies for performing all required quality control procedures, including QC inspection forms to be used, as required by the specifications including:
• all visual inspections;
• all NDT including radiographic geometry, penetrameter and shim selection, film quality, film processing, radiograph identification and marking system, and film interpretation and reports; and
• calibration procedures and calibration frequency for all NDT equipment.
F. A system for the identification and tracking of all welds, NDT, and any required repairs, and a procedure for the reinspection of repaired welds. The system shall have provisions for:
F. permanently identifying each weld and the person who performed the weld;
G. placing all identification and tracking information on each radiograph;
H. a method of reporting nonconforming welds to the Engineer; and
I. a method of documentation of repairs and reinspection of nonconforming welds.
G. Standard procedures for performing noncritical repair welds. Noncritical repair welds are defined as welds to deposit additional weld beads or layers to compensate for insufficient weld size and to fill limited excavations that were performed to remove unacceptable edge or surface discontinuities, overlap or undercut. The depth of these excavations shall not exceed 65 percent of the specified weld size;
H. The WPS, including documentation of all supporting Procedure Qualification Record (PQR) tests performed, and the name of the testing laboratory who performed the tests, to verify the acceptability of the WPS. The submitted WPS shall be within the allowable period of effectiveness;
I. Documentation of all certifications for welders for each weld process and position that will be used. Certifications shall list the electrodes used, test position, base metal and thickness, tests performed, and the witnessing authority. All certifications shall be within the allowable period of effectiveness;
Ten copies each of all AWS welding codes and the FCP which are applicable to the welding to be performed. These codes and the FCP shall become the permanent property of the Department; and
Forms to be used for Certificates of Compliance, daily production logs, and daily reports.
L. Documentation or Caltrans' UT certification as specified in "Nondestructive Testing for Steel Pipe Piling," elsewhere in these special provisions.

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The Engineer shall have 10 working days to review a WQCP submittal after a complete plan has been received.

An amended WQCP or addendum shall be submitted to, and approved in writing by the Engineer, for proposed revisions to the approved WQCP. An amended WQCP or addendum will be required for revisions to the WQCP, including but not limited to a revised WPS, addition of welders, changes in NDT firms or procedures, QC, or NDT personnel, or updated systems for tracking and identifying welds. The Engineer shall have 10 working days to complete the review of the amended WQCP or addendum. Work that is affected by any of the proposed revisions shall not be performed until the amended WQCP or addendum has been approved.

It is expressly understood that the Engineer's approval of the Contractor's WQCP shall not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications. The Engineer's approval shall not constitute a waiver of any requirement of the plans and specifications nor relieve the Contractor of any obligation thereunder, and defective work, materials, and equipment may be rejected notwithstanding approval of the WQCP.

A daily production log for welding shall be kept by the QCM for each day that welding is performed. The log shall clearly indicate the locations of all welding, except partial penetration longitudinal seam welds performed in conformance with Section 86-2.04, "Standards, Steel Pedestals and Posts," of the Standard Specifications. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 7 days following the performance of any welding. :

A. Reports of all visual weld inspections and NDT;

B. Radiographs and radiographic reports, and other required NDT reports;

C. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests and corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable; and

D. Daily production log.

Radiographic envelopes shall have clearly written on the outside of the envelope the following information: name of the QCM, name of the nondestructive testing firm, name of the radiographer, date, contract number, complete part description, and all included weld numbers or a report number, as detailed in the WQCP. In addition, all innerleaves shall have clearly written on them the part description and all included weld numbers, as detailed in the WQCP.

Reports regarding NDT, including radiographs, shall be signed by both the NDT technician and the person that performed the review, and then submitted directly to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures.

The Engineer will review the Welding Report to determine if the Contractor is in conformance with the WQCP. Unless otherwise specified, the Engineer shall be allowed 7 working days to review the report and respond in writing after a complete Welding Report has been received. Prior to receiving notification from the Engineer of the Contractor's conformance with the WQCP, the Contractor may encase in concrete or cover welds for which a Welding Report has been submitted. 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 should the Engineer fail to complete the review and provide notification within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in notification, 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.

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 Engineer shall have 5 working days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. Should the Engineer fail to complete the review within this time allowance, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the proposed repair procedures, 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.

The QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was

performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans and the ovisions of the Standard Specifications and these special provisions.

Payment
Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SECTION 8-4. STRUCTURAL STEEL
8-4.01 STEEL AUDITS

Steel audits shall apply when any structural steel is manufactured or fabricated in conformance with the provisions in Section 55, "Steel Structures, " of the Standard Specification. In addition, steel audits shall apply when any structural steel is manufactured or fabricated in conformance with "Circular Segmented Bearing," and "Modular Joint Seal Assemblies," of these special provisions.
Steel audit shall include the following items that are conducted in the sequence listed:
1. General steel meeting;
2. Contractor's steel facility audit (self-audit);
3. Engineer's steel facility audit (Caltrans-audit).

The general steel meeting shall be between the Engineer, the Contractor (including structural steel manufacture's and fabricators, steel suppliers, or entities hired by these subcontractors and suppliers to be used in the work). This meeting shall be held in the San Francisco Bay Area. At least 5 working days prior to this meeting, the Contractor shall submit a complete list of facilities that will be used for the manufacture and fabrication of structural steel items. The facility list shall include the mailing address, the physical address, the owners, the managers, and specific description(s) of the items (as shown in the Engineer's Estimate) that are to be produced at the respective facility. The list shall designate the sequence in which the ;ilities are to be audited. If a fabricator or manufacturer has more than one facility where work will be performed, each .acility shall be listed separately.
The audit form is included in the "Information Handout," available to the Contractor as provided for in Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," of the Standard Specifications.
The Contractor shall perform a self-audit and submit the completed steel audit form to the Engineer. The Contractor shall allow the Engineer 15 working days to review the audit.
After the Contractor has successfully completed a self-audit, as determined by the Engineer, the Contractor shall request a Caltrans' audit. The Contractor shall allow the Engineer 50 working days to complete the Caltrans-audit.
Should the Engineer fail to complete a given audit within 50 working days (of the receipt of the request for an Engineer's audit), and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in completing said audit, 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.
It shall be the Contractor's responsibility to ensure that the steel facility personnel provide the Engineer sufficient access and cooperation so that the Engineer can complete the audit within the time specified. The Contractor's welding Quality Control Manager (QCM) and the facility quality control personnel shall be present and cooperative during the Engineer's audit. If welding is not used for the items produced at a given facility, then the welding QCM will not be required to attend.
Successful completion of an audit shall not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in these special provisions and as shown on the plans.
Should a steel facility fail an self-audit or Caltrans-audit, as determined by the Engineer, the Contractor or facility owner(s) shall correct deficiencies noted by the Engineer and successfully complete a revised self-audit prior to requesting another Caltrans-audit.
At the Contractor's option, the Contractor may replace a facility that fails an audit with a new facility. All the previously specified audit requirements shall apply to replacement facilities. The time required for the audits (including the Caltransaudit) shall be as previously specified. A new audit list with sequence designation shall be submitted with the Contractor's audit for the replacement facility.
No more than 3 Caltrans-audits will be performed for a given facility.
If a steel facility fails the third Caltrans-audit, deductions will be made for materials produced by that facility.
ductions will be made to compensate for the additional quality assurance inspection and testing that will be performed by the Engineer in the absence of an approved audit. Whereas it is and will be impractical and extremely difficult to ascertain and determine the actual increase in such expense it is agreed that payment to the Contractor for furnishing the materials will be reduced as follows. If the steel facility is within 480 airline kilometers from both Sacramento and Los Angeles, the

deduction shall be $0.04 per kg of steel item produced at this facility. If the steel facility is more than 480 airline kilometers from both Sacramento and Los Angeles, the deduction shall be $0.05 per kg of steel item produced at this facility. These ductions for failure of the third audit shall be in addition to deductions for inspection by the Engineer as specified in Circular Segmental Bearings," "Modular Joint Seals," and "Structural Steel," of these special provisions.

Prior to production of a given steel element, the pre-precast meeting, the self-audits and the Caltrans-audit (or the deduction) shall be approved by the Engineer.
Full compensation for conforming to of the requirements of "Steel Audits," shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

Appendix

M. Welding Operator Training Video, (Still Being Edited)