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

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

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Kenneth Loncharich (resident engineer)	**04-0120R4**	**August 27, 2004**	**2**

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: August 9, 2004

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

The Design Criteria in the project plans requires that the Temporary Bypass Structure (TBS) be designed utilizing the Bridge Design Specification version April 2000. Initially during the design process, this requirement was being met, both pre-bid and after. However, it was later discovered, and confirmed with the Caltrans design group, that there was an error in the BDS 2000 regarding the method of calculation of the allowable design capacity of the bolts. The direction provided by the State was to utilize the May 2002 version of the BDS, which had corrected the error in the bolt capacity calculation. The impact of this change is that now more and/or larger bolts will be required. This expands into a much larger impact in that the additional and/or larger bolts cause the size of the connection to increase and thus the member sizes increase, adding weight to the structure. Additionally, due to the timing of the change, a considerable amount of rework is required to both the design plans and the structural steel shop drawings. This will not only cause additional costs to be incurred, but substantial delays to the completion of the design plans and structural steel detailing/fabrication/delivery will be realized. To minimize the time impact, it will be necessary to now employ additional structural steel detailing and fabrication firms so that these activities can occur concurrently. There will be increased costs associated with this. Another source of cost and delay to the steel fabrication stems from the necessity to have to purchase additional steel material. The delays to be caused by waiting for this material will also prolong the fabrication activities. The steel erection time and cost will also be impacted. All of this coupled together could ultimately delay the completion of the entire project. This issue could cause such a delay that the traffic switch to the TBS is pushed into the time period when bridge closures are not allowed. This consequential delay, if it were to occur, would be considered a part of the delay caused by this change.

Due to this change in the design criteria, we requested that a Contract Change Order be issued to implement the change and address the impacts. In the State's letter SL #68, which we received on August 9, 2004, the issuance of a change order was denied. Due to this, we file this Notice of Potential Claim. Some of our subcontractors are impacted by this change as well, such as our designer, Imbsen & Associates, Inc., our steel detailer/fabricator, Shanghai Grand Tower Steel Structure Co., and our steel erector, Danny's Construction Company, Inc.

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

The design criteria established by Caltrans and conveyed to us via the project plans required the use of a certain design manual to use in the design of the Temporary Bypass Structure, namely Bridge Design Specifications, LFD Version April 2000. The method of calculation specified in this manual for the clamping force of a bolt in a slip critical connection was later determined to be in error. Caltrans' designers were made aware of the discovery, and concurred that the criteria was in error. They requested that a later version of the design manual be used, which had accounted for the error. As this new version of the design manual was not part of the contract, then in accordance with Section 4-1.03 of the Standard Specifications, a change existed for which an adjustment to the contract was warranted. This adjustment was requested to include additional compensation and time of performance of the contract.

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

The cost impact of this matter comes from having to redesign the bolted connections, requiring engineering and drafting work, having to recreate many of the structural steel shop drawings, the procurement, fabrication and installation of additional structural steel and the procurement and installation of additional bolts. Time related overhead costs will also be incurred. To minimize the delay and subsequent overhead costs, we intend to employ an additional engineering firm to assist in the completion of the design work and to also perform structural steel detailing and shop drawing preparation. The purpose of this is to be able to perform these activities in parallel to each other in an attempt to make up for time lost due to this change. There will be additional costs associated with doing this. Another delay mitigation measure that we are still investigating is the possibility of separating the structural steel shipments, causing an additional delivery, to allow erection to begin sooner. This would help mitigate the delay, but additional shipping and handling costs would be incurred. We also anticipate that due to this delay, we will need to employ an additional fabrication facility, to allow the fabrication to occur in parallel, to help mitigate the delay and thus offset additional overhead costs. There will be an increase cost, for which the differential would be included in these costs.

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To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Kenneth Loncharich (resident engineer)	**04-0120R4**	**August 27, 2004**	**2** **Page 2**

Based on the above description of the costs, they are estimated to be as follows:

Redesign costs		$ 27,820
Recreate structural steel shop drawings		107,000
Procurement of additional bolts	25,000 each	150,000
Procurement of additional fabricated structural steel	165 short tons	290,400
Secondary engineering/shop drawing firm		130,000
Secondary fabrication facility		126,000
Additional structural steel delivery		208,650
Handling of additional delivery		20,000
Erection of additional structural steel and bolts		499,690
Time related overhead	assume 100 working days	1,263,158
	Estimated Grand Total	$2,822,718

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:

A Time Impact Analysis cannot be performed for this delay as it is not clear what the number of days delay will be. For the purposes of the above cost analysis, we have estimated a one hundred day delay. This will still allow about 20 days of float prior to when the period of no bridge closures begins. If the delay pushes into this period, the switching of traffic on to the Temporary Bypass Structure would not occur until after January 15, 2006, resulting in a total delay in the order of 195 working days. The above cost analysis would then adjust accordingly.

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.

C. C. Myers, Inc.

SUBCONTRACTOR or CONTRACTOR

(Circle One)

(Authorized Representative)

For subcontractor notice of potential claim

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

PRIME CONTRACTOR

(Authorized Representative)

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

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

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Kenneth Loncharich (resident engineer)	04-0120R4	August 27, 2004	2

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: August 6, 2004

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

The Notice to Contractors and Special Provisions for Contract No. 04-0120R4 includes a Design Criteria, which has been prepared for Caltrans by Juan A. Murillo of Parsons Brinkerhoff specifically for this project. Item 1 entitled "General" states that "The Temporary Bypass Structure shall be designed in accordance with 'Bridge Design Specifications' (BDS), LFD Version, April 2000, California Department of Transportation, (1996 AASHTO with interims, and revisions by Caltrans), modified or augmented as detailed in this design criteria document." To date we have had 14 Addenda to this criteria all of which we have incorporated into our design. This is the Job Specific Design Criteria we used in preparing our bid and our initial design.

The circumstances of this potential claim stem from the formula for the design of bolts in Section 10.57.3.1 of BDS 2000. This formula was used by us for the preliminary design used in preparing our bid and for the final design until such time that we determined that it was not compatible with the AASHTO criteria for bolt design. It was later determined that BDS 2000 was in error and later versions of BDS were revised.

As a result of this change, we have had to redesign the connections for the Viaduct Truss and the East Tie In, re-detail plan sheets and shop plans and revise quantities. We estimate that there will be a 1 to 3% increase in structural steel and an increase in the number of bolts. Also, we have experienced a delay of 15 working days in making these revisions.

(attach additional sheets as needed)

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

The basis for our claim is that we based our proposal, design effort and steel quantities, on the bolt design formula found in the "Project Design Criteria" provided by Caltrans. We have since determined that this bolt design formula was in error and its use resulted in an inadequate number of bolts. We submitted sample comparative calculations; see Attachment A, to Caltrans (Tom Ostrom) who in turn had the Structural Steel Committee review them. Both parties concurred with our conclusions.

As a result of this error in design criteria, we have incurred additional costs in labor and materials and associated time delays.

(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 the individual costs are attached hereto.

Estimated costs of this potential claim are outlined below:

1) Technical staff – Project Management, design engineers and draft persons were employed to make these revisions. Estimated Cost = $26,000 (See Attachment B for a breakdown)

2) Increase in number of bolts: The revision in the design formula yielded a 25% decrease in the clamping force resulting in a 33% increase in the number of bolts required for slip critical design.

3) Structural Steel Gussets, Fillers, Splices

   In many areas where bolt numbers increase, the steel connector plates need to be increased in size or supplemented.

   Estimate additional steel @ 1 to 3% of total weight

Total weight:	Viaduct	= 4,000 metric tons
	East Tie In	= 1,000 metric tons
	Total	= 5,000 metric tons

(attach additional sheets as needed)

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:

The estimated time expended on this effort is 15 working days. This time entailed the verification of the error in the criteria, the redesign and re-detailing of plans and the evaluation of quantities involved in this change.

(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.

Imbsen & Associates, Inc.

SUBCONTRACTOR or CONTRACTOR

(Circle One)

(Authorized Representative)

For subcontractor notice of potential claim

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

C C MYERS INC

PRIME CONTRACTOR

(Authorized Representative)

Attachment A

IMBSEN & ASSOCIATES, INC.
Engineering Consultants
A TRC Company

Sacramento ☐
Fresno ☐

FAXED 1/23/04

Facsimile Memo

To:	Fax Number:		
Tom Ostrom	227-8149	From:	Roy A. Imbsen
		Date:	1/23/04
		Project No:	1295-330.01
		☐	Confirmation Copy Mailed

SUBJECT: ____

Number of pages being transmitted including this cover sheet: 9

Tom:

As per our phone conversation yesterday I am faxing you calculations for the clamping force on a 3/4" ϕ bolt (A490) using the following specifications:

1. BOS 2000
2. BOS 2002
3. AASHTO 1996 (Interim 2000 & 1999)

I would appreciate your review and comments.

Thanks, Roy

9912 Business Park Drive, Suite 130
Sacramento, CA 95827
Phone: (916) 366-0632 • FAX: (916) 366-1501

7395 N. Palm Bluffs Avenue, Suite 104
Fresno, CA 93711
Phone: (559) 449-6190 • FAX: (559) 449-4591

Clamping Force for 3/4" Bolt – A490 Steel

BDS 2000 (See attached Sheet 10-104 BDS 2000)

Section 10.57.3 Slip-Critical Joints

$R_S = k_h \mu T_b A_b N_b N_s$ Where R_S = Slip Critical Strength

and, $T_b \cdot A_B$ = Clamping force
(See attached Sheet 10-11 BDS 2000)

$T_b = 0.7 f_u = 0.7 \times 150{,}000 = 105{,}000$ psi

A_b = Nominal section area = .442 in^2

yielding: $T_b \cdot A_b = 105{,}000 \times .442 = \underline{46{,}410^{\#}}$ for the clamping force.

$k_h = 1.0$, $\mu = 0.33$, N_b & N_s will be the same for each case

BDS 2002 (See attached Sheet 10-108 BDS 2002

Section 10.57.3.1 Slip Critical Joints

$R_S = k_h \mu T_b A_n N_b N_s$

where: R_S = Slip Critical Strength

and $T_b \cdot A_n$ = Clamping force

(See attached Sheet 10-12 BDS 2002)

T_b = 0.7 f_u = 0.70 X 150,000 = 105,000 PSI

A_n = net cross section area of the bolt

$T_b A_n$ = 105,000 X 0.334 = <u>35,070#</u> for the clamping force

K_h = 1.0, μ = 0.33 N_B & N_S will be the same for each case

AASHTO Sixteenth Edition 1996 with interims to 2002

AASHTO (Interim 2000 and 1999 see attached sheet 294)

$$\phi R_s = \phi F_s A_b N_b N_s$$

where $\phi F_s = \phi T_b \mu$ = design slip resistance

From Table 10.57A for Standard Hole

$\phi T_b \mu$ = 26 ksi

ϕ = 1.0, μ = 0.33

yielding

$$T_b = \frac{26}{1.0 \times .33} = 78,800 \text{ PSI}$$

A_b = nominal body area = .442 in^2

yielding $T_b A_b$ = 78,800 X .442 = <u>34,800#</u> clamping force

modified moments, but not to the original moments. Web bending-buckling shall be checked at overload according to Equation (10-173). For composite sections, D_c shall be calculated in accordance with Article 10.50(b). Sections that do not satisfy Equation (10-173) shall be modified to comply with the requirement.

10.57.1 Non-Composite Sections

At non-composite sections, the maximum overload flange stress shall not exceed $0.8F_y$.

10.57.2 Composite Sections

At composite sections, the maximum overload flange stress shall not exceed $0.95F_y$. In computing dead load stresses, the presence or absence of temporary supports during the construction shall be considered. For members with shear connectors provided throughout their entire length that also satisfy the provisions of Article 10.50.2.3, the overload flange stresses caused by loads acting on the appropriate composite section may be computed assuming the concrete deck to be fully effective for both positive and negative moment. For this case, the resulting stresses shall be combined with the stresses due to loads acting on the non-composite section to calculate D_c for checking web bending buckling.

10.57.3 Slip-Critical Joints

10.57.3.1 In addition to the requirements of Articles 10.56.1.3.1 and 10.56.1.3.2 for fasteners, the force caused by $D + 5(L + I)/3$, for H or HS truck load only, on a slip-critical joint shall not exceed the design slip strength, R_s (lb.), given by:

$$R_s = K_h \mu T_b A_b N_b N_s \qquad (10\text{-}172)$$

where:

A_b = nominal cross section area of the bolt (in.^{2})
N_b = number of bolts in the joint
N_s = number of slip planes
T_b = required minimum bolt tension stress specified in the Standard Specifications of California Department of Transportation or equal to 70% of specified minimum tensile strength of bolts given in Table 10.2C (psi)
μ = slip coefficient specified in Table 10.57A
K_h = hole size factor specified in Table 10.57B

Class A, B or C surface conditions of the bolted parts as defined in Table 10.57A shall be used in joints designated as slip-critical except as permitted in Article 10.57.3.2.

High strength bolts done according to the Standard Specifications of the California Department of Transportation, Section 55, will be tensioned and the contact surface condition of the assembly will be Class B.

TABLE 10.57A Slip Coefficient μ

Class Types	Contact Surface of Bolted Parts	μ
Class A	Clean mill scale and blast-cleaned surfaces with Class A coating	0.33
Class B	Blast-cleaned surfaces and blast-cleaned surfaces with Class B coating	0.5
Class C	Hot-dip galvanized surfaces roughened by wired brushing after galvanizing	0.33

Note: Coatings classified as Class A or Class B include those coatings which provide a mean slip coefficient not less than 0.33 or 0.5, respectively, as determined by Testing Method to Determine the Slip Coefficient for Coatings Used in the Bolted Joints. See Article 10.32.3.2.3.

TABLE 10.57B Hole Size Factor Slip K_h

Hole Types	K_h
Standard	1.0
Oversize and Short-slotted	0.85
Long-slotted holes with the slot perpendicular to the direction of the force	0.70
Long-slotted holes with the slot parallel to the direction of the force	0.60

10.57.3.2 Subject to the approval of the Engineer, coatings providing a slip coefficient less than 0.33 may be used provided the mean slip coefficient is established by test in accordance with the requirements of Article

TABLE 10.2C Minimum Material Properties – Fasteners

Type	ASTM Design	Availability			Strength	
		Material Type[a]	Grade	Diameter (in.)	Minimum Yield F_y (psi)	Minimum Tensile F_u (psi)
Unheaded Rod and Stud Material (only)	A36	C	-	to 8	36,000	58,000
	A572	HSLA	42	to 2	42,000	60,000
			50	to 6	50,000	65,000
	A588	HSLA ACR	-	to 4	50,000	70,000
				over 4 to 5	46,000	67,000
				over 5 to 8	42,000	63,000
	A307	C	C	-	36,000	58,000
Rivets	A502	C	1	-	NA	60,000[d]
		HSLA	2			80,000[d]
		HSLA, ACR	3			80,000[d]
Headed Bolt or Unheaded Rod Material	A354	A, QT	BD	$^1/_4$ to $2^1/_2$	130,000	150,000
				over $2^1/_2$ to 4	115,000	140,000
			BC	$^1/_4$ to $2^1/_2$	109,000	125,000
				over $2^1/_2$ to 4	99,000	115,000
	A449	C, QT	-	$^1/_4$ to 1 $1^1/_8$ to $1^1/_2$ $1^3/_4$ to 3	92,000 81,000 58,000	120,000 105,000 90,000
Headed Bolt Material (only)	A307	C	A, B	to 4	NA	60,000
	A325[b,c]	C, QT	-	$^1/_2$ to 1	92,000	120,000
				$1^1/_8$ to $1^1/_2$	81,000	105,000
	A490[b,c]	A, QT	-	$^1/_2$ to $1^1/_2$	130,000	150,000

[a] A = Alloy Steel
ACR = Atmospheric-Corrosion-Resistant Steel
C = Carbon Steel
HSLA = High-Strength Low-Alloy Steel
QT = Quenched and Tempered Steel

[b] Available with weathering (atmospheric corrosion resistance) characteristics comparable to ASTM A242 and A588 Steels.

[c] Threaded rod material with properties meeting ASTM A325,A490,and A449 specifications may be obtained with the use of an appropriate steel (such as ASTM A193,grade B7),quenched and tempered after fabrication.

[d] ASTM Specifications do not specify tensile strength for A502 rivets. A reasonable lower bound estimate F_u = 60,000 psi for Grade 1 and 80,000 for Grades 2 and 3 are a reasonable lower bound estimate (See Kulak, Fisher and Struik, Guide to Design for Bolted and Riveted Joints, Second Edition, John Wiley & Sons, 1987, New York, NY).

moments, but not to the original moments. Web bending-buckling shall be checked at overload according to Equation (10-173). For composite sections, D_c shall be calculated in accordance with Article 10.50(b). Sections that do not satisfy Equation (10-173) shall be modified to comply with the requirement.

10.57.1 Non-Composite Sections

At non-composite sections, the maximum overload flange stress shall not exceed $0.8F_y$.

10.57.2 Composite Sections

At composite sections, the maximum overload flange stress shall not exceed $0.95F_y$. In computing dead load stresses, the presence or absence of temporary supports during the construction shall be considered. For members with shear connectors provided throughout their entire length that also satisfy the provisions of Article 10.50.2.3, the overload flange stresses caused by loads acting on the appropriate composite section may be computed assuming the concrete deck to be fully effective for both positive and negative moment. For this case, the resulting stresses shall be combined with the stresses due to loads acting on the non-composite section to calculate D_c for checking web bend-buckling.

10.57.3 Slip-Critical Joints

10.57.3.1 In addition to the requirements of Articles 10.56.1.3.1 and 10.56.1.3.2 for fasteners, the force caused by the overload on a slip-critical joint shall not exceed the design slip strength, R_s (lb.), given by:

$$R_s = K_h \mu T_b A_n N_b N_s \qquad (10\text{-}172)$$

where:

A_n = net cross section area of the bolt (in.^{2})
N_b = number of bolts in the joint
N_s = number of slip planes
T_b = required minimum bolt tension stress specified in the Standard Specifications of California Department of Transportation or equal to 70% of specified minimum tensile strength of bolts given in Table 10.2C (psi)
μ = slip coefficient specified in Table 10.57A
K_h = hole size factor specified in Table 10.57B

Class A, B or C surface conditions of the bolted parts as defined in Table 10.57A shall be used in joints designated as slip-critical except as permitted in Article 10.57.3.2.

High strength bolts done according to the Standard Specifications of the California Department of Transportation, Section 55, will be tensioned and the contact surface condition of the assembly will be Class B.

TABLE 10.57A Slip Coefficient μ

Class Types	Contact Surface of Bolted Parts	μ
Class A	Clean mill scale and blast-cleaned surfaces with Class A coating	0.33
Class B	Blast-cleaned surfaces and blast-cleaned surfaces with Class B coating	0.5
Class C	Hot-dip galvanized surfaces roughened by wire brushing after galvanizing	0.33

Note: Coatings classified as Class A or Class B include those coatings which provide a mean slip coefficient not less than 0.33 or 0.5, respectively, as determined by Testing Method to Determine the Slip Coefficient for Coatings Used in the Bolted Joints. See Article 10.32.3.2.3.

TABLE 10.57B Hole Size Factor Slip K_h

Hole Types	K_h
Standard	1.0
Oversize and Short-slotted	0.85
Long-slotted holes with the slot perpendicular to the direction of the force	0.70
Long-slotted holes with the slot parallel to the direction of the force	0.60

10.57.3.2 Subject to the approval of the Engineer, coatings providing a slip coefficient less than 0.33 may be used provided the mean slip coefficient is established by test in accordance with the requirements of Article

TABLE 10.2C Minimum Material Properties – Fasteners

Type	ASTM Design	Availability			Strength	
		Material Type[a]	Grade	Diameter (in.)	Minimum Yield F_y (psi)	Minimum Tensile F_u (psi)
Unheaded Rod and Stud Material (only)	A36	C	-	to 8	36,000	58,000
	A572	HSLA	42	to 2	42,000	60,000
			50	to 6	50,000	65,000
	A588	HSLA ACR	-	to 4	50,000	70,000
				over 4 to 5	46,000	67,000
				over 5 to 8	42,000	63,000
	A307	C	C	-	36,000	58,000
Rivets	A502	C	1	-	NA	60,000[d]
		HSLA	2			80,000[d]
		HSLA, ACR	3			80,000[d]
Headed Bolt or Unheaded Rod Material	A354	A, QT	BD	1/4 to 2 1/2	130,000	150,000
				over 2 1/2 to 4	115,000	140,000
			BC	1/4 to 2 1/2	109,000	125,000
				over 2 1/2 to 4	99,000	115,000
	A449	C, QT	-	1/4 to 1 1 1/8 to 1 1/2 1 3/4 to 3	92,000 81,000 58,000	120,000 105,000 90,000
Headed Bolt Material (only)	A307	C	A, B	to 4	NA	60,000
	A325[b,c]	C, QT	-	1/2 to 1	92,000	120,000
				1 1/8 to 1 1/2	81,000	105,000
	A490[b,c]	A, QT	-	1/2 to 1 1/2	130,000	150,000

[a] A = Alloy Steel
ACR = Atmospheric-Corrosion-Resistant Steel
C = Carbon Steel
HSLA = High-Strength Low-Alloy Steel
QT = Quenched and Tempered Steel

[b] Available with weathering (atmospheric corrosion resistance) characteristics comparable to ASTM A242 and A588 Steels.

[c] Threaded rod material with properties meeting ASTM A325,A490,and A449 specifications may be obtained with the use of an appropriate steel (such as ASTM A193,grade B7),quenched and tempered after fabrication.

[d] ASTM Specifications do not specify tensile strength for A502 rivets. A reasonable lower bound estimate F_u = 60,000 psi for Grade 1 and 80,000 for Grades 2 and 3 are a reasonable lower bound estimate (See Kulak, Fisher and Struik, Guide to Design for Bolted and Riveted Joints, Second Edition, John Wiley & Sons, 1987, New York, NY).

TABLE 10.57A Design Slip Resistance for Slip-Critical Connections (Slip Resistance per Unit of Bolt Area, $\phi F_s = \phi T_b \mu$, ksi)

	Hole Type and Direction of Load Application							
	Any Direction				Transverse		Parallel	
	Standard		Oversize and Short Slot		Long Slots		Long Slots	
Contact Surface of Bolted Parts	AASHTO M 164 (ASTM A 325)[a]	AASHTO M 253 (ASTM A 490)	AASHTO M 164 (ASTM A 325)[a]	AASHTO M 253 (ASTM A 490)	AASHTO M 164 (ASTM A 325)[a]	AASHTO M 253 (ASTM A 490)	AASHTO M 164 (ASTM A 325)[a]	AASHTO M 253 (ASTM A 490)
Class A (Slip Coefficient 0.33) Clean mill scale and blast-cleaned surfaces with Class A coatings[b]	21	26	18	22	15	18	13	16
Class B (Slip Coefficient 0.50) Blast-cleaned surfaces and blast-cleaned surfaces with Class B coatings[b]	32	40	27	34	22	28	19	24
Class C (Slip Coefficient 0.33) Hot-dip galvanized surfaces roughened by wire brushing after galvanizing	21	26	18	22	15	18	13	16

[a] The tensile strength of M 164 (A 325) bolts decreases for diameters greater than 1 inch. The design values listed are for bolts up to 1-inch diameter. The design values shall be multiplied by 0.875 for diameters greater than 1 inch.

[b] Coatings classified as Class A or Class B include those coatings which provide a mean slip coefficient not less than 0.33 or 0.50, respectively, as determined by Testing Method to Determine the Slip Coefficient for Coatings Used in Bolted Joints. See Article 10.32.3.2.3.

10.57.3 Slip-Critical Joints

10.57.3.1 In addition to the requirements of 10.56.1.3.1 and 10.56.1.3.2 for fasteners, the force caused by D + 5(L + I)/3, for H or HS truck load only, on a slip-critical joint shall not exceed the design slip force (ϕR_s) given by

$$\phi R_s = \phi F_s A_b N_b N_s \qquad (10\text{-}172a)$$

where

$\phi F_s = \phi T_b \mu$, design slip resistance per unit of bolt area given in Table 10.57A, ksi;
A_b = area corresponding to the nominal body area of the bolt, sq in.;
N_b = number of bolts in the joint;
N_s = number of slip planes;
T_b = specified tension in the bolt;
μ = slip coefficient;
= 0.33 for clean mill scale and Class A coatings
= 0.50 for blast-cleaned surfaces and Class B coatings;
= 0.33 for hot-dip galvanized and roughened surfaces;
ϕ = 1.0 for standard holes;
= 0.85 for oversized and short slotted holes;
= 0.70 for long slotted holes loaded transversely;
= 0.60 for long slotted holes loaded longitudinally.

Class A, B, or C surface conditions of the bolted parts as defined in Table 10.57A shall be used in joints designated as slip-critical except as permitted in Article 10.57.3.2.

10.57.3.2 Subject to the approval of the Engineer, coatings providing a slip coefficient less than 0.33 may be used provided the mean slip coefficient is established by test in accordance with the requirements of Article 10.57.3.3, and the slip resistance per unit area established. The slip resistance per unit area shall be taken as equal to the slip resistance per unit area from Table 10.57A for Class A coatings as appropriate for the hole type and bolt type times the slip coefficient determined by test divided by 0.33.

10.57.3.3 Paint, used on the faying surfaces of connections specified to be slip critical, shall be qualified by test in accordance with "Test Method to Determine the Slip Coefficient for Coatings Used in Bolted Joints" as

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Attachment B
TBS Potential Claim #2 (DCR #26)
Imbsen & Associates, Inc.
Bay Bridge Temporary Bypass Structure Design Build

Labor Classification	Rate	Hours	Cost
Project Manager	$177.50	20	$3,550.00
Project Engineer	$132.50	30	$3,975.00
Senior Engineer	$125.00	40	$5,000.00
Engineer	$85.00	80	$6,800.00
Cadd	$62.50	100	$6,250.00
Total Design Engineering Cost			**$25,575.00**

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

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

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Kenneth Loncharich (resident engineer)	**04-0120R4**	**8/26/04**	

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: 8/6/04

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

The slip resistance value provided by IAI was determined by applying the erroneous formula in the BDS and was 33% higher than the correct value in AASHTO and subsequent revisions in the BDS. Hence, we underestimated the number of bolts by 33%.

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

IAI, Design Subcontractor, is tasked with accurately identifying all relevant contract provisions.

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

In order to get an accurate estimate, the connections need to be redesigned to determine the amount of added bolts. In order to provide an Order of Magnitude Estimate, we are using 25,000 added bolts. It is important to note that our attached estimate excludes procurement of bolts, redetailing and fabrication of steel costs for potential change in gusset plates that may consist of no holes but size of plates, redesign costs.

Order of Magnitude Estimate - $467,000 (See attachment)

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:

Time extension requested based on the fact that bolting tasks is on critical path of steel erection work. We anticipate an additional 4,989 man-hours. Extension of time based on our budgeted crew size of 35 men.

Time extension - 25 calendar days (See attachment for calculation of added days)

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.

DANNY'S CONSTRUCTION CO

SUBCONTRACTOR or CONTRACTOR
(Circle One)

(Authorized Representative)

For subcontractor notice of potential claim

RONALD PAZ

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

CC MYERS INC

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

Printed 8/27/2004 @ 1:08 PM

San Francisco Oakland Bay Bridge Temporary Bypass Structures

CHANGE ORDER PROPOSAL SUMMARY

Project Number: 04-0120R4 **Date: 11/25/2004**

Company: Dannys' Construction Co. Inc. Ref: **DCCI PCO: #**
DCCI COR: #
Caltran CCO: #
CC Myers: #

Prime Contractor ____ Subcontractor _X_.
(Attach summary sheet for each subcontractor proposal)

1.	Direct Labor		$ 309,318.00
2.	Material		$ -
3.	Equipment		$ 19,947.00
3a	Other		$ 39,840.00
4.	Subtotal Direct Cost		$ 369,105.00
5.	Subcontract Cost		
	b	$ -	
	c	$ -	
	d	$ -	
6.	Subtotal Subcontractors		$ -
7.	Subtotal Line 4 + Line 6		$ 369,105.00
8.	Markup on Directs M from Formula* X Line 4	26.5%	$ 97,813.00
9.	Markup on Sub Cost 0.05 x Line 6 (If subcontractor proposal, enter $0)		$ -
10.	Total Proposal - Nearest Thousands Line 7 + Line 8 + Line 9		**$ 467,000.00**
11.	Proposed Time Extension days (If schedule analysis and justification is not attached, enter 0)		**20**

Subcontractor summary sheets and supporting documents with detailed cost breakdowns are attached hereto

DCCI / RFC

San Francisco Oakland Bay Bridge East Span Seismic Safety Project Temporary Bypass Structures

PCO #

Title: Bolt quantity increase caused by the diffenence of Caltran Specification between 2000 and 2002

COR #

Item No.	Item Description	Quant.	Labor: Man Hours	Labor: Over Time	Labor: Unit Cost	Mat'l: Unit Cost	Equip.: Unit Cost	Other: Unit Cost	Cost: Labor	Cost: Mat'l	Cost: Equip.	Cost: Other	Cost: Totals
1	Direct Cost / Qty of bolts	33257	4989		62.00				309,318				309,318
	Extended Time Calculation												
	Total Crew (man)	35											
	Hours per day	8											
	Working Days	18											
	Calendar Days	25	=	0.83	Mnths								
	Indirect Cost												
2	Supervision / month	0.83			17,000							14,110	14,110
3	Field Engineer / month	0.83			15,000							12,450	12,450
4	Assistant Field Engineer / month	0.83			10,000							8,300	8,300
5	Clerk / month	0.83			6,000							4,980	4,980
6	Field Office / month	0.83					5,000				4,150		4,150
7	Water and sanitary / month	0.83					1,000				830		830
8	Small tools / man hours	4989					3.00				14,967		14,967
	Subtotals								**$309,318**		**$19,947**	**$39,840**	**$369,105**

Labor	$309,318
Mat'l	
Equip	$19,947
Other	$39,840
Total Requiring Mark Up	**$369,105**