

DEPARTMENT OF TRANSPORTATION

Toll Bridge Program

State's Position Paper

For the Dispute Review Board

on

Notice of Potential Claim No. 8

Weekly Statement of Working Days Report (WSWD) #112 Protest

Standard Specifications and Standard Plans, July 1999

Special Provisions, Contract 04-0120F4

Contractor: American Bridge/Fluor

Area Manager: Pete Siegenthaler

Resident Engineer: Gary Pursell

State's Position

on

Notice of Potential Claim No. 8

"WSWD #112 Protest"

DESCRIPTION OF POTENTIAL CLAIM

The Contractor, American Bridge/Fluour (ABF) claims that a submarine power cable was struck by the anchor of a passing vessel that was not under the care, custody or control of ABF or its supplier, Shanghai Zhenhua Port Machinery Company Ltd's (ZMPC). As a result a power outage occurred, and all work relating to the controlling operation at ZPMC's fabrication facility on Changxing Island, China was halted for 3 days from July 2, 2008 through and including July 4, 2008. The Contractor is requesting a non-compensable contract time extension of 6 days of impacts.

The Engineer has determined that this potential claim has no basis under the contract.

NOTIFICATION OF POTENTIAL CLAIM

The Contractor submitted Notice of Potential Claim (NOPC) No. 8 to the Engineer in ABF Letter No. 629 dated August 15, 2008 (Exhibit A.6). The Contractor's supplemental notice was submitted on August 29, 2008, in ABF Letter No. 648 (Exhibit A.7). The Engineer responded to NOPC No. 8 in State Letter No. 2698 on September 18, 2008 (Exhibit A.8). The Contractor has requested an excusable delay and non-compensable time extension of 6 days, 7 days, and 6 days for Phase 1, Phase 2, and Phase 3 respectively.

BACKGROUND

ZMPC is a steel fabrication facility that is a supplier to ABF. ZPMC is located on Changxing Island and is fabricating the T1 Tower and Orthotropic Box Girders for the SAS project. On July 3, 2008, ABF notified the Department of a power outage on Changxing Island. The power outage occurred on July 2, 2008, when a submarine power cable was struck by the anchor of an unknown power vessel. Power to the island was restored the evening of July 3, 2008. ABF claims that the power outage halted all work related to the controlling operation, namely the fabrication of T1 Tower. Caltrans inspector diaries show that some tower work continued at ZPMC during the power outage. The July 3, 2008, diary notes that checking, adjusting, and straightening of the longitudinal stiffeners on T1 Tower Skin A, east shaft was performed (Exhibit B.9).

CHRONOLOGY

July 2, 2008 Power outage on Changxing Island

July 3, 2008 ABF letter No. 580 notified the Department of a power outage on Changxing Island shutting down ZPMC's fabrication (Exhibit A.1).

July 3, 2008 Power restored on Changxing island in the evening

July 21, 2008 ABF Letter No. 597 protested WSWD #112 requesting that July 2-4, 2008 not be charged as working days (Exhibit A.2).

July 29, 2008 State Letter No. 2451 rejected ABF's request to consider the power outage days as non-working days (Exhibit A.3).

August 4, 2008 ABF Letter No. 612 (Exhibit A.4) declared the power outage at ZPMC an Act of God and therefore in accordance with Section 8-1.06, "Time of completion" of the Standard Specifications (Exhibit B.2), the three days of shut down should not be considered working days.

August 8, 2008 State Letter No. 2523 rejected the notion that the power outage constituted an Act of God since the power outage was caused by human actions (Exhibit A.5). The state letter also stated that non-working days do not apply to the SAS contract.

August 15, 2008 ABF Letter No. 629 includes NOPC 8 for protest of WSWD Report No 12 (Exhibit A.6).

August 29, 2008 ABF Letter No. 648 includes the supplemental notice of NOPC 8 for protest of WSWD Report No 12 indicating that a time impact analysis based on the July 2008 monthly schedule is forthcoming (Exhibit A.7).

September 18, 2008 State Letter No. 2698 acknowledges NOPC 8 and states that there is no merit to the claim (Exhibit A.8).

October 3, 2008 ABF Letter No. 700 disagrees with the Department's determination that the claim has no basis under the Contract (Exhibit A.9).

October 9, 2008 ABF referred dispute to the DRB in ABF Transmittal No. 1498
(Exhibit A.10).

STATE'S UNDERSTANDING OF THE CONTRACTOR'S POSITION

ABF summarized their position in ABF-CAL-LTR-700 dated October 3, 2008 (Exhibit A.9). ABF believes they are entitled to a non-compensable Contract time extension because of the following:

1. The three requirements for a contract time adjustment due to delayed activities outlined in Section 10-1.13 "Progress Schedule" of the special provisions have been met by ABF (Exhibit B.7).
2. The power outage is considered to be an Act of God under Special Provisions section 8-1.07 "Liquidated Damages" (Exhibit B.3)
3. The Department has the authority to suspend the work as it deems necessary, due to unsuitable weather or other conditions considered unfavorable for the suitable prosecution of the work.

STATE'S POSITION

The Engineer disagrees with the Contractor's claim for a time extension associated with the power outage at Changxing Island for the following reasons:

1. Non-working days do not apply to the SAS Contract regardless of weather, traffic, or unfavorable conditions or temporary suspension of the work.

A temporary suspension of the work was not and would not have been ordered by the Engineer for a power outage, equipment breakdowns, or for unfavorable weather.

The Special Provisions for the contract contain the following message:

"IMPORTANT SPECIAL NOTICES..."

- *The definition of a working day as been redefined for this project. (See Section 4 of these special provisions.)*
- *The time limit specified in the special provisions for the completion of work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single*

shift basis. It is expected that additional shifts will be required throughout the life of the contract to the extent deemed necessary to ensure that the work will be completed within the time limit specified. (See Section 4 of these special provisions.)”

Special Provision Section 4 “Beginning of Work, Time of Completion and Liquidated Damages” states in part:

“A working day is defined as any day, without exception.”

In addition, this special provision modifies Standard Specification 8-1.06, “Time of Completion”. This modification alerts the Contractor that weather days (e.g. events beyond the control of a contractor) will not be granted.

This specification specifically states: *“The second through fourth paragraphs, inclusive, and the first sentence of the fifth paragraph of Section 8-1.06, “Time of Completion,” of the Standard Specifications shall not apply.”* (Exhibit B.2)

The working day definition has been redefined by contract *as any day, without exception*. Therefore non-working days do not apply to the SAS Contract regardless of weather, traffic, power outages, equipment breakdowns, unfavorable conditions or temporary suspension of the work.

2. Power outage caused by human actions does not constitute an “Act of God”

The term “Act of God” is not ambiguous as suggested by ABF. The industry definition of Acts of God are an extraordinary and unexpected natural events without any human interference for which no one can be held responsible and which cannot be prevented. [Exhibit B.11]

ABF stated that the power outage occurred when a submarine power cable was struck by the anchor of an unknown power vessel. Therefore; the operator/owner of the power vessel that caused the accident is at fault.

In researching this incident, conflicting information has been found regarding the cause of the power outages. Newspapers in Shanghai have reported that it was caused when paint was dropped onto the power cable. [Exhibit B.12] Despite the conflicting reports it is clear that this power outage is not an Act of God and would therefore not be a basis for a time extension.

Section 8-1.07, “Liquidated Damages,” of the Standard Specification provides the contractual criterion for granting time extensions. The basis for granting time extensions is limited to acts of God or the public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargoes. Section 8-1.07 further provides that time

extensions will be granted if the Contractor is delayed in completing the work by reason of changes, or failure of the Department to acquire or clear right of way, or by moving the Contractor's plant, or by any act of the Engineer or of the Department not contemplated in the contract.

A power outage, or equipment breakdown, does not meet the specific criterion for in the contract granting a time extension; hence, a time extension cannot be granted.

Section 8-1.07 further states: "*It is the intention of the above provisions that the Contractor shall not be relieved of liability for liquidated damages...for any period of delay in completion of the work in excess of that expressly provided for in this Section 8-1.07.*" Since Section 8-1.07 does not provide for granting time extensions for power outages or equipment breakdown, this referenced clause specifically precludes the Department from granting a time extension for a power outage.

The Contractor has not provided a basis under the contract to justify granting a time extension.

3. Power Outages in China a Risk that Needs to be Managed by the Contractor

Having a stable power supply is vital to a fabrication shop. The prevalence of power outages in China is very well documented in studies performed by Universities and the World Bank. The University Of Michigan School Of Public Policy's April 24, 2006 report, *A Comparative Study of the Manufacturing and Services Industry* notes that "In China, power outages happen on average every other week; which is considered low compared to other developing countries." (Exhibit B.10) A report authored by David Dollar of the World Bank in May 2006 showed that there is approximately a 3% loss of output due to power outages in southeast China (Exhibit B.10).

ABF should have anticipated that power supply may be an issue when they chose ZPMC as a supplier for at least \$400 million worth of work. A risk analysis is typically part of the due diligence that is performed before a Contractor chooses to do business with a supplier/subcontractor. Power outages in China are part of the Contractor's risk of doing business in China. ABF has not submitted any documentation (letters, change order request, etc.) from ZPMC stating that they have been negatively impacted by the power outage. Therefore, it can be inferred that either ZPMC was not impacted or was able to easily mitigate the impacts because power outages are part of their business.

4. ABF and ZPMC are required to implement additional shifts to ensure progress conforms to the approved schedule.

Special Provisions Section 4 "Beginning of Work, Time of Completion and Liquidated Damages" states that "*should the Contractor fail to maintain the progress of the work in accordance with the "Progress Schedule (Critical Path Method)" required in these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the above mentioned schedule and that the work will be completed within the time limit specified.*" (Exhibit B.6)

Implementing additional shifts and additional resources to accelerate the affected activities was suggested as a mitigation measure in ABF's time impact analysis included in ABF-CAL-LTR-700. ABF and ZPMC are capable of implementing the suggested mitigation measures to offset the effects of the three day power outage.

SUMMARY

The Engineer has determined that this potential claim has no basis under the contract.

1. ABF and ZPMC is required to implement additional shifts to ensure progress conforms to the approved schedule.
2. Power outage caused by human actions does not constitute an "Act of God."
3. Power outages in China are part of the Contractor's Risk.
4. Non-working days do not apply to this Contract regardless of weather, traffic, or unfavorable conditions or temporary suspension of the work.

The Department does acknowledge that California Civil Code 1641 requires that "the whole contract should be taken together so as to give effect to every part, if reasonably practicable, each clause helping to interpret the other." This is a Seismic Retrofit Project where time is of the essence regardless of events, such as, weather, traffic, power outages and equipment breakdowns. The contract documents including Special Important Notices alert the contractor that time is of the essence and that any day is a working day without exception. The Contract Documents when reviewed as a whole do not allow for non-working days or an extension of contract time for power outages. The Contractor's Protest to WSWD No. 112 should be denied.

Exhibit A.1

03-Jul-2008

ABF-CAL-LTR-000580

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: POWER OUTAGE AT ZPMC ON CHANGXING ISLAND

Gentlemen:

It has come to the attention of American Bridge / Fluor Enterprises, Inc., Joint Venture (ABFJV) that commencing Monday July 1, 2008 there has been a power outage on Changxing Island, China that has shut down ZPMC's entire fabrication operation and has caused a delay that is beyond the control and without the fault or negligence of ABFJV and its subcontractors or suppliers, at any tier. To date, the power has not been restored. Once the extent of the delay can be determined, this information will be provided the Department.

If you have any questions, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director
MF/PW/cc

File: 02.01

Exhibit A.2

21-Jul-2008

ABF-CAL-LTR-000597

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: Protest of Weekly Statement of Working Days Report Number 112

Gentlemen:

American Bridge / Fluor Enterprises, Inc., A Joint Venture (ABFJV) is in receipt and review of Weekly Statement of Working & Overhead Days Report Number 112 provided under Department Transmittal No. CAL-ABF-TRN-000374 (attached). In accordance with Section 08-1.06 of the Standard Specifications, as modified by Section 4 of the Special Provisions; ABFJV takes exception to this report as written. As stated in our letter ABF-CAL-LTR-000580, dated July 03, 2008 (attached), a power outage, beyond the control of the Contractor, halted work on the controlling operation, namely the Fabrication of T1 Tower.

This power outage halted all work related to the controlling operation of the above referenced project at ZPMC's fabrication facility on Changxing Island, China from July 02, 2008 through and including July 04, 2008. Therefore, ABFJV requests that the affected three (3) days not be charged as working days in accordance with Section 8-1.07 of the Standard Specifications.

If you disagree with, have any questions or require any additional information regarding this matter, please contact our project office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director
MF/SVB/rt

Enclosure

File: 02.01
01.13.5.03

WEEKLY STATEMENT OF WORKING & OVERHEAD DAYS - TOLL BRIDGE
7-DAY Work Week

File Index No. 27

CONTRACT: 04-0120F4
SF-80-8.2/8.7

Date	Day	Weather OAKLAND SHANGHAI	Working Days Phase 1		Working Days Phase 2		Working Days Phase 3		REPORT NUMBER 112
			CCO	Other	CCO	Other	CCO	Other	
29-Jun-08	Sunday	Fair							5-Jul-08 No Work on Controlling Operation(s)
30-Jun-08	Monday	Fair	1		1		1		
1-Jul-08	Tuesday	Fair	1		1		1		
2-Jul-08	Wednesday	Fair	1		1		1		
3-Jul-08	Thursday	Fair	1		1		1		
4-Jul-08	Friday	Fair	1		1		1		
5-Jul-08	Saturday	Fair	1		1		1		
Days this week			7		7		7		
Days previously reported			773		773		773		
Total days to date			780		780		780		

COMPUTATION OF EXTENDED DATE FOR COMPLETION	Phase 1		Phase 2		Phase 3	
	Number of Days	Date	Number of Days	Date	Number of Days	Date
1. First Working Day (15 days after approval)	2130	18-May-06	2310	18-May-06	2490	18-May-06
2. Working days specified in Contract						
3. Computed Date for Completion						
4. Days Contract Suspended to date						
5. Total time adjustment days approved to date (CCO plus others)	0	16-Mar-12	0	12-Sep-12	0	11-Mar-13
6. Subtotal (Line 4 + Line 5)	30		30		30	
7. EXTENDED DATE FOR COMPLETION (Line 3 plus Line 6)	2160	15-Apr-12	2340	12-Oct-12	2520	10-Apr-13
8. Revised working days for contract (Line 2 plus Line 6)	780		780		780	
9. Total working days to date	1380		1560		1740	
10. WORKING DAYS REMAINING (Line 8 minus Line 9)						
11. ACTUAL PHASE COMPLETION (to be entered upon completion)						

Controlling Operation(s): T1 TOWER FABRICATION

RESIDENT ENGINEER'S SIGNATURE: *[Signature]* DATE: 7/14/08

Remarks: Phase 3 Time Complete 31.0%

The Contractor will be allowed fifteen (15) days in which to protest in writing the correctness of the Statement; otherwise, the settlement shall be deemed to have been accepted by the Contractor as corrected.

Contract awarded on April 18, 2006. Contract Approved May 3, 2006.
First working day is May 18, 2006.



375 Burma Road
Oakland, CA 94607 USA
Phone 510-808-4600
Fax 510-808-4601

03-Jul-2008

ABF-CAL-LTR-000580

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: POWER OUTAGE AT ZPMC ON CHANGXING ISLAND

Gentlemen:

It has come to the attention of American Bridge / Fluor Enterprises, Inc., Joint Venture (ABFJV) that commencing Monday July 1, 2008 there has been a power outage on Changxing Island, China that has shut down ZPMC's entire fabrication operation and has caused a delay that is beyond the control and without the fault or negligence of ABFJV and its subcontractors or suppliers, at any tier. To date, the power has not been restored. Once the extent of the delay can be determined, this information will be provided the Department.

If you have any questions, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE

Michael Flowers
Project Director
MF/PW/cc

File: 02.01

Exhibit A.3

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax



*Flex your power
Be energy efficient!*

July 29, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-002451

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Protest of WSWD Report No. 112

The Department has considered ABF-CAL-LTR-000597, dated July 21, 2008, protesting the accuracy of Weekly Statement of Working Day (WSWD) – Report Number 112. It is understood the protest is related to the designation that July 2, 2008 through July 4, 2008 inclusive, as chargeable working days, when a power outage had shut down operations at ZPMC.

It is the Departments understanding the power outage was caused when a submarine power cable servicing the island was damaged by the anchor of a vessel.

We are unable to consider the power outage days as non-working days as the Contract does not provide for the assessment of non-working days in any event. Section 4, "Beginning of Work, Time of Completion and Liquidated Damages," of the Special Provisions defines a working day as any day, with no exceptions. Furthermore, a power outage does not satisfy the Contract provisions for consideration of a time extension under section 8-1.07, "Liquidated Damages," of the Standard Specifications.

Sincerely,

A handwritten signature in cursive script that reads "Gary Purcell".

GARY PURSELL
Resident Engineer

cc: Don Ross
file: 05.03.01, 26.07, 27.01

Exhibit A.4

04-Aug-2008

ABF-CAL-LTR-000612

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

**PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110**

SUBJECT: Protest of WSWD Report No. 112

REFERENCE: Department Letter No. 05.03.01-002451 Dated July 29, 2008

Gentlemen:

American Bridge / Fluor Enterprises, Inc. Joint Venture (ABFJV) is in receipt of Department Letter No. 05.03.01-002451 dated July 29, 2008 provided in response to ABFJV letter ABF-CAL-LTR-000597, dated July 21, 2008. In its letter the Department advised that "a power outage does not satisfy the Contract provisions for consideration of a time extension under section 8-1.07, 'Liquidated Damages' of the Standard Specifications." ABFJV disagrees.

Section 8-1.07, 'Liquidated Damages' of the Standard Specifications provides that the "Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering and inspection for any portion of the delay in completion of the work beyond the time named in the special provisions for the completion of the work caused by acts of God..."

Acts of God have been defined as "an occurrence that could not have been prevented by human prudence" and "accidents which arise from physical causes, and which cannot be prevented."

These definitions are consistent with California Civil Code section 1511. Section 1511 provides in pertinent part; "**The want of performance of an obligation, or of an offer of performance, in whole or in part, or any delay therein is excused by the following causes, to the extent to which they operate (Emphasis in bold, ABFJV's).**

2. When it is prevented or delayed by an irresistible, superhuman cause..."

In the present situation, ZPMC was delayed by its inability to withstand the effect (irresistible) of the broken cable (cause) and as a result of the unavoidable event (the damage of a submarine power cable by the anchor of a passing vessel) ZPMC's performance was rendered impossible for 3 days. Certainly there is nothing that ZPMC or ABFJV could have done to prevent the event and attributing full responsibility for this disruption on ZPMC/ABFJV is inequitable.

ABF-CAL-LTR-000612

Page 2

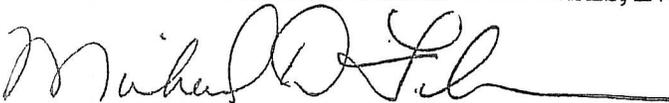
Section 8-1.05, Temporary Suspension of Work, of the Standard Specifications provides in pertinent part that the Engineer shall have the authority to suspend the work wholly or in part, for any time period as the Engineer deems necessary, due to unsuitable weather, or to such other conditions considered unfavorable for the suitable prosecution of the work. If the Engineer orders a suspension of a portion of the work which is the current controlling operation or operations, due to unfavorable conditions, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion".

ABFJV requests that the Department reconsider its contractual determination, provided in Department Letter No. 05.03.01-002451 regarding the three (3) day work stoppage. This determination should be based on the fact that the conditions (no electricity) brought by an outside influence, beyond the control of ZPMC or ABFJV, created a condition unfavorable for the suitable prosecution of the work and therefore, in accordance with Section 8-1.06, "Time of Completion" of the Standard Specifications, the three (3) days of shut down and lost production should not be considered working days.

Should you have any questions, or wish to discuss this matter further, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director

File: 02.01

Exhibit A.5

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax



*Flex your power
Be energy efficient!*

August 08, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-002523

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Protest of WSWD Report No. 112

The Department has reviewed ABF-CAL-LTR-000612 and 597, which protest the accuracy of Weekly Statement of Working Days (WSWD) Report No. 112, and further request the Department reconsider its contractual determination in State Letter 05.03.01-002451.

The additional information provided by ABF has not changed the Department's previous determination. A power outage caused by human actions is not a basis for consideration of time extension under Section 8-1.07, "Liquidated Damages," of the Standard Specifications as it does not constitute an Act of God.

Furthermore, a temporary suspension of the work was not, and would not have been ordered by the Engineer for a power outage, or unfavorable weather for that matter, as the Special Provisions define a working day as any day, with no exceptions. Non working days do not apply to the SAS Contract regardless of weather, traffic, unfavorable conditions, or temporary suspension of the work. Special Provision Section 4 removed the applicable non working day provisions of Section 8-1.06, "Time of Completion," of the Standard Specifications.

Should ABF wish to pursue this matter further, your attention is directed to Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications as amended by the Special Provisions.

Sincerely,

A handwritten signature in cursive script that reads "Gary Pursell".

GARY PURSELL
Resident Engineer

cc: Don Ross
file: 05.03.01

Exhibit A.6

15-Aug-2008

ABF-CAL-LTR-000629

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

**PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110**

**SUBJECT: Potential Claim Number 008
Submission of Initial Notice of Potential Claim
For Protest of Weekly Statement of working & Overhead Days
(WSWD) Report No. 112**

Gentlemen:

Pursuant to the Agreement, including Standard Specifications, Article 9-1.04, Notice of Potential Claim, American Bridge / Fluor, JV hereby submits the enclosed certified Form CEM 6201A, Initial Notice of Potential Claim, identified by the above number.

This Initial Notice of Potential Claim will be followed-up with a Supplemental Notice of Potential Claim.

We look forward to receiving your prompt acknowledgement of the above identified Initial Potential Claim.

If you have any questions, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE


Michael Flowers
Project Director

File: 01.07.8
02.01

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		FOR STATE USE ONLY	
INITIAL NOTICE OF POTENTIAL CLAIM		Received by	Date
CEM-6201A (NEW 9/2002)		(For resident engineer)	
TO Mr. Gary Pursell (resident engineer)	CONTRACT NUMBER 04-0120F4	DATE 08/15/08	IDENTIFICATION NUMBER 008

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: August 15, 2008

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

American Bridge / Fluor Enterprises, Inc. Joint Venture (ABFJV) hereby submits, pursuant to Section 9-1.04, Notice of Potential Claim, of the Standard Specifications, Notice of Potential Claim # 8, regarding the Department's failure to allow ABFJV an excusable delay and time extension of three (3) days for a power outage that halted all work related to the controlling operation of the above referenced project at ZPMC's fabrication facility on Changxing Island, China from July 02, 2008 through and including July 04, 2008.

The facts are not in dispute by the parties. A submarine power cable was struck by the anchor of a passing vessel that was not under the care, custody or control of ABFJV or its Supplier, ZPMC. As a result a power outage occurred, and all work relating to the controlling operation of the above referenced Project at ZPMC's fabrication facility on Changxing Island, China, was halted from July 02, 2008 through and including July 04, 2008.

ABFJV received Department Letter No. 05.03.01-002523 dated August 08, 2008 provided in response to ABFJV letter ABF-CAL-LTR-000597 dated July 21, 2008 and ABF-Cal-LTR-612 dated August 04, 2008. In this letter the Department rejected ABFJV's request for a three day time extension and provided two explanations for doing so. The first was "A power outage caused by human actions is not a basis for consideration of time extension under Section 8-1.07, Liquidated Damages, of the Standard Specifications as it does not constitute an Act of God." The second explanation provided in the letter was "a temporary suspension of the work was not, and would not have been ordered by the Engineer for a power outage, or unfavorable weather for that matter, as the Special Provisions define a working day as any day, with no exceptions. Non working days do not apply to the SAS Contract regardless of weather, traffic, unfavorable conditions, or temporary suspension of the work."

ABFJV disagrees with the Department's determination not to grant ABFJV a three day time extension.

Department Rational No. 1;

"A power outage caused by human actions is not a basis for consideration of time extension under Section 8-1.07, Liquidated Damages, of the Standard Specifications as it does not constitute an Act of God."

ABFJV Response:

The term "Act of God" is not defined in the Standard Specifications or the Special Provisions of the Contract and to date, the Department has failed to provide ABFJV any definition whatsoever.

California Civil Code section 1511. Section 1511 provides in pertinent part; "The want of performance of an obligation, or of an offer of performance, in whole or in part, or any delay therein is excused by the following causes, to the extent to which they operate.

2. When it is prevented or delayed by an irresistible, superhuman cause...”

A common definition of “Act of God” is a “fortuitous event” an “irresistible force” or an “inevitable accident” which under the Civil Code relieves debtor from incurring penalty for nonperformance of principal obligation within fixed period of time, means such an interposition of human agency as is, from its nature and power, absolutely uncontrollable, and is equivalent to an Act of God, accidents which are irresistible, an act which cannot be resisted, and unforeseen occurrence, not caused by either of the parties, or such as they could prevent, or an accident which human prudence can neither foresee nor prevent.

As stated in the preceding paragraph, Pursuant to California Civil Code section 1511 the performance delay caused by the “Irresistible Force” can be construed as an “Act of God” and therefore, the resulting days lost are excused.

“Excusable delays” are defined as events caused by third parties or incidents beyond the control of both the owner and the contractor. Examples typically include acts of God, unusual weather, strikes, fires, acts of government in its sovereign capacity, etc. and the contractor is normally entitled to a time extension but no compensation for delay damages.

If the parties can not agree that “Acts of God” is defined as accidents which are irresistible, acts which cannot be resisted or unforeseen occurrences not caused by either of the parties, such as they could be prevented, or an accident which human prudence can neither foresee nor prevent, the term “Acts of God” is clearly ambiguous.

“Ambiguity” is defined as doubtfulness, doubleness of meaning, indistinctness, uncertainty of meaning of an expression used in a written instrument, want of clearness or definiteness; or difficult to comprehend or distinguish. Courts have determined; where a Government contract contains a latent ambiguity, the Court will construe the ambiguous term against the Government as drafter of the contract, provided that the contractor's interpretation was reasonable.

Section 8-1.05, Temporary Suspension of Work, of the Standard Specifications, provides in pertinent part that “...the Engineer shall have the authority to suspend the work wholly or in part, for any time period as the Engineer deems necessary, due to unsuitable weather, or to such other conditions considered unfavorable for the suitable prosecution of the work. If the Engineer orders a suspension of a portion of the work which is the current controlling operation or operations, due to unfavorable conditions, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, “Time of Completion”.

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.

Equitably, ABFJV is entitled to a time extension pursuant to Section 8-1.07, Liquidated Damages, of the Standard Specifications because the shutdown of the plant was the direct result of an outside influence, beyond the control of ZPMC or ABFJV this outside influence created a condition, unfavorable for the suitable prosecution of the work, resulting in a three day production shutdown of the fabrication plant.

For the following reasons, explained in greater detail above, ABFJV is entitled to a three (3) day time extension;

- Legally, (California Civil Code section 1511),
- Contractually, (Section 8-1.07, Liquidated Damages, of the Standard Specifications)
- Court Precedent, (see definitions "Acts of God" and "Ambiguity")
- Common Practice, (see definition "Excusable Delay")
- Equity, (an unforeseeable delay brought about by an outside influence, beyond the control of ZPMC or ABFJV and Section 8-1.05, Temporary Suspension of Work, Standard Specifications,)

Department Rational No. 2;

"...a temporary suspension of the work was not, and would not have been ordered by the Engineer for a power outage, or unfavorable weather for that matter, as the Special Provisions define a working day as any day, with no exceptions. Non working days do not apply to the SAS Contract regardless of weather, traffic, unfavorable conditions, or temporary suspension of the work."

ABFJV Response:

Although the Department states that "a temporary suspension of the work was not, and would not have been ordered by the Engineer for a power outage", it is within the authority of the Engineer, pursuant to Section 8-1.05, Temporary Suspension of Work, of the Standard Specifications, to grant equitable relief when conditions exist that are considered unfavorable for the suitable prosecution of the work. The event causing the loss of electricity and the subsequent three day shut down of the fabrication facility could not have been foreseen by the parties at the time of bid and the conditions, the severed submarine electrical cable caused by the irresistible force, are definitely unfavorable for the suitable prosecution of the work.

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.

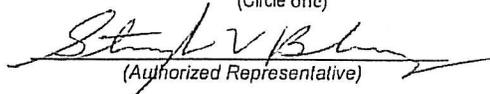
The Department advises that "...the Special Provisions define a working day as any day, with no exceptions. Non working days do not apply to the SAS Contract regardless of weather, traffic, unfavorable conditions, or temporary suspension of the work." The Department's purpose for providing this statement is not clear. ABFJV understands that the Contract defines "working days" as calendar days, inclusive of Saturdays, Sundays and holidays. The Contract clearly allows Contract time extensions and the addition of "working days" to the Time of Completion. When a time extension is agreed by the parties, the applicable number of working days will be added to the number of total working days remaining and this revised total will be reflected in the number of working days remaining provided in the Weekly Statement of Working Days, provided each week by the Department.

For the reasons set forth above, ABFJV is entitled to an excusable delay of three (3) days, for the breakage of the submarine electrical cable and subsequent loss of power at ZPMC's fabrication facility located on Changxing Island, China that from July 2, 2008 through July 4, 2008.

(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.

SUBCONTRACTOR or CONTRACTOR
(Circle one)


(Authorized Representative)

For a subcontractor Potential claim

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

PRIME CONTRACTOR

(Authorized Representative)

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

Exhibit A.7

29-Aug-2008

ABF-CAL-LTR-000648

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

**PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110**

**SUBJECT: Department Letter No. 05.03.01-002523 Dated August 8, 2008
Supplemental Notice of Potential Claim Number 008
Form CEM-6201 B**

Gentlemen:

American Bridge / Fluor Enterprises, Inc. Joint Venture (ABFJV) hereby submits, pursuant to Section 9-1.04, Notice of Potential Claim, of the Standard Specifications, Supplemental Notice of Potential Claim Number 008, Form CEM 6201B, in regard to the Department's refusal to allow ABFJV an excusable delay and non compensable time extension of three (3) days for a power outage that halted all work related to the controlling operation of the above referenced project at ZPMC's fabrication facility on Changxing Island, China from July 02, 2008 through and including July 04, 2008.

Should you have any questions, or wish to discuss this matter further, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE


Michael Flowers
Project Director

Enclosure

File: 01.07.8
02.01

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		FOR STATE USE ONLY	
SUPPLEMENTAL NOTICE OF POTENTIAL CLAIM		Received by	Date
CEM-6201B (NEW 9/2002)		(For resident engineer)	
TO Gary Pursell (resident engineer)	CONTRACT NUMBER 04-0120F4	DATE 29 August 2008	IDENTIFICATION NUMBER 008

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 15, 2008

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

A submarine power cable was struck by the anchor of a passing vessel that was not under the care, custody or control of ABFJV or its Supplier, ZPMC. As a result a power outage occurred, and all work relating to the controlling operation of the above referenced Project at ZPMC's fabrication facility on Changxing Island, China, was halted from July 02, 2008 through and including July 04, 2008.

(attach additional sheets as needed)

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

- Legally, (California Civil Code section 1511),
- Contractually,
 - Section 8-1.07, Liquidated Damages, Standard Specifications
 - Section 8-1.05, Temporary Suspension of Work, Standard Specifications
- Court Precedent, (definition "Acts of God" and "Ambiguity")
- Common Practice, (definition "Excusable Delay")
- Equity, (an unforeseeable delay brought about by an outside influence, beyond the control of ZPMC or ABFJV)

(attach additional sheets as needed),

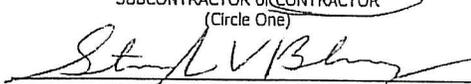
The estimated dollar cost of the potential claim including a description of how the estimate was derived and an itemized breakdown of individual costs are attached hereto.

Not applicable. The basis of this Potential Claim is a denied Request for an Excusable, Noncompensable Delay (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: A Time Impact Analysis will be submitted as soon as practicable and will be based on the accepted schedule update (data date July 20, 2008.)

(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.

American Bridge & Fluvior
 SUBCONTRACTOR or CONTRACTOR
 (Circle One)

 (Authorized Representative)

For a subcontractor potential claim

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

PRIME CONTRACTOR

(Authorized Representative)

Exhibit A.8

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax



*Flex your power
Be energy efficient!*

September 18, 2008

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-002698

Michael Flowers
Project Executive
American Bridge/Fluor, A JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Supplemental Notice of Potential Claim No. 8

The Department has reviewed ABF-CAL-LTR-000648, "Supplemental Notice of Potential Claim No. 8," dated August 29, 2008, which protests the accuracy of Weekly Statement of Working Days (WSWD) – Report Number 112. The Department has considered ABF's request to regard the power outage at the ZPMC fabrication facility as an "Act of God." The Department has reviewed the information provided by the Contractor, along with the requirements of the contract documents and has determined that this potential claim has no basis under the contract.

The contract does not provide for non-working day suspensions of the work for any reason, as every day is defined as a working day, with no exceptions, and the non-working day provisions of the Standard Specifications do not apply to the contract.

Furthermore, a power outage caused by human actions does not constitute an "Act of God," hence there is no basis to grant a time extension under the contract. Likewise, a plant malfunction or equipment breakdown would not be a basis for a time extension, nor would a vehicle accident or other human caused accident.

Should the Contractor desire to pursue this issue further, your attention is directed to the requirements and timelines of Standard Specification 9-1.04 as modified by the Special Provisions.

Sincerely,

A handwritten signature in cursive script that reads "Gary Pursell".

GARY PURSELL
Resident Engineer

cc: Don Ross
Darryl Schram
Scott Fabel

file: 05.03.01

Exhibit A.9

03-Oct-2008

ABF-CAL-LTR-000700

Mr. Gary Pursell
Resident Engineer
California Department of Transportation
333 Burma Road,
Oakland, CA 94607, USA

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No: 660110

SUBJECT: Protest of WSWD Report No. 112 - Notice of Potential Claim # 8

REFERENCE: Department Letter No. 05.03.01-002698 Dated September 18, 2008

Gentlemen:

American Bridge/Fluor Enterprises, Inc., A Joint Venture (ABFJV) hereby submits, pursuant to Section 9-1.04, Notice of Potential Claim, of the Standard Specifications as modified by the Special Provisions and Section 5-1.12, Dispute Review Board, of the Special Provisions, ABFJV's written reply to Department Letter No. 05.03.01-002698 dated September 18, 2008 provided by the Department in response to ABFJV letter ABF-CAL-LTR-000648, Supplemental Notice of Potential Claim No. 8 dated August 29, 2008.

The Department, in its latest response, determined that ABFJV's claim has no basis under the Contract. ABFJV disagrees.

The Issue

Is American Bridge/Fluor Enterprises, Inc., Joint Venture entitled to a non-compensable time adjustment due to delayed Work activities that arose from an unforeseeable event that completely halted the work of Shanghai Zhenhua Port Machinery Company Ltd, (ZPMC), ABFJV's steel fabricator?

The Event

On July 02, 2008 the anchor of an unknown vessel, navigating the Yangtze River struck and severed a submerged power cable that carries primary electrical service to Changxing Island, China. As a result thereof, a power outage occurred throughout Changxing Island from July 02, 2008 through July 04, 2008. This power outage resulted in a three (3) day delay, during which time ZPMC was shut down and unable to progress the Work.

This event was beyond the control and without the fault or negligence of ABFJV or ZPMC, or any ABFJV or ZPMC subcontractors or suppliers, at any tier.

ABF-CAL-LTR-000700

Page 2

Contract Provisions and California Civil Code Sections

The following provisions of the Contract and the California Civil Code support ABFJV's claim and provide the basis for ABFJV's entitlement to a time extension as claimed in Notice of Potential Claim No. 8.

- 10-1.13 Progress Schedule, Critical Path Method, Time Impact Analysis, Special Provisions
- 8-1.07 Liquidated Damages, Standard Specifications
- 8-1.05 Temporary Suspension Of Work, Standard Specifications
- California Civil Code Section 1654 - "in cases of uncertainty ...the language of a contract should be interpreted most strongly against the party who caused the uncertainty to exist."
- California Civil Code Section 1641 - "The whole of a contract is to be taken together... each clause helping to interpret the other"

Contract, Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis

Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis of the Contract Special Provisions provides that ABFJV may request a time adjustment due to delayed activities.

In the event a time adjustment for delayed activities is sought by ABFJV, Section 10-1.13 requires ABFJV to submit to the Department a written Time Impact Analysis that illustrates the impact of the delay to the current Contract Completion Date utilizing the current accepted schedule.

In order to qualify for the "Section 10-1.13 Time Adjustment" the following criteria must be met:

- A. The delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and
- B. The delay extends the actual performance of the work beyond the currently approved contract completion date.
- C. The delay impacts a fabrication or construction activity – delays to the Contractor's submittal or shop drawing process must impact a successor fabrication or construction activity. The Time Impact Analysis shall be based on the impact to fabrication or construction activities.

ABFJV meets all "Section 10-1.13 Time Adjustment" requirements for a time adjustment due to delayed activities.

Time Impact Analysis

During the time period, July 02, 2008 through July 04, 2008, the work performed by ZPMC was along the Contract Schedule Critical Path of activities. For this reason the power outage will delay and extend the actual performance of ABFJV's Work activities beyond the currently approved Contract Completion Date.

A copy of the Time Impact Analysis is attached.

ABF-CAL-LTR-000700

Page 3

Contract, Section 8-1.07 Liquidated Damages

Contract Section 8-1.07 Liquidated Damages of the Standard Specifications provides examples of various situations when ABFJV will be granted an extension of time. These include the following: acts of God or of the public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargoes.

The definition of the term "acts of God" is ambiguous. "Ambiguity" is defined as doubtfulness, doubleness of meaning, indistinctness, uncertainty of meaning of an expression used in a written instrument, want of clearness or definiteness; or difficult to comprehend or distinguish. As a result of this ambiguity, reasonable parties can not determine those situations that qualify for Section 8-1.07 consideration.

U.S. Courts have determined; where a Government contract contains a latent ambiguity, the Court will construe the ambiguous term against the Government as drafter of the contract, provided that the contractor's interpretation was reasonable. The Courts' determinations are consistent with California Civil Code Section 1654 which provides, "in cases of uncertainty ...the language of a contract should be interpreted most strongly against the party who caused the uncertainty to exist."

Additionally, the events listed in Contract Section 8-1.07 are not meant to be all inclusive. Other events that require the granting of a Contract time extension by the Department are identified throughout the Contract Special Provisions. The bulleted items below are examples.

- Delays due to Asbestos or Hazardous Substances
- Delays due to the Department delays in Working Drawing reviews
- Delays due to Coast Guard interference
- Delays due to floodway restrictions
- Delays due to migratory birds
- Delays due to American Peregrine Falcon, Double-Crested Cormorant, Western Gulls, California Least Tern, and California Brown Pelican nesting
- Delays due to harbor seals within the safety zone
- Delays due to California Sea Lions within the safety zone
- Delays due to delays due to spawning herring
- Delays due to delays due to Department ordered suspensions in accordance with Section 8-1.05 Temporary Suspension of Work

There is no distinction between a power outage and a shortage of materials, or a freight embargo or a labor dispute or the discovery of asbestos and as such, there is no legitimate reason why a power outage, sustained as described herein, should be treated differently, than one of the events listed above, for Contract purposes.

Force Majeure

The Department, in defense of its position not to grant a time extension, advises that events resulting from "human actions" are not "acts of God" and for this reason, a time extension is not allowable.

ABF-CAL-LTR-000700

Page 4

The term "acts of God" is not defined in the Contract, however, in the construction industry the terms "acts of God" and "force majeure" are sometimes used interchangeably. If there is a difference between the two terms, the subtle difference is that "acts of God" exclude the concept of human agency, whereas "force majeure" does not.

The Contract, as drafted, does not make this distinction. Section 8-1.07 identifies floods, tsunamis, and earthquakes as separate and distinct from "acts of God", although there is clearly no human agency involved in the creation of these events. Section 8-1.07 also conspicuously commingles events derived from human agency; strikes, labor disputes, shortage of materials, and freight embargoes with floods, tsunamis and earthquakes, events not derived from human agency, as events that merit the allowance of time extensions.

Under international law force majeure refers to an irresistible force or unforeseen event beyond the control of a State making it materially impossible to fulfill an obligation. The understanding of force majeure in French law is similar to that of international law. For a claimant to invoke force majeure in French or international law, the event proposed as force majeure must pass three tests:

- A. Externality: The claimant must have nothing to do with the event's happening
- B. Unpredictability: The event is unforeseeable.
- C. Irresistibility: The consequences of the event must have been unpreventable.

Note how closely the three international law "force majeure" requirements resemble the requirements for a time extension identified in Special Provisions Section 10-1.13 Progress Schedule, Critical Path Method.

Contract Section 8-1.07, Liquidated Damages, of the Standard Specifications is in-fact a force majeure clause. Therefore, because ABFJV passes the three tests identified above, ABFJV is entitled to a non-compensable, Contract time extension.

8-1.05 Temporary Suspension of Work, Standard Specifications

The Department has the authority to suspend the work as it deems necessary, due to unsuitable weather or other conditions considered unfavorable for the suitable prosecution of the work.

If the Department suspends a portion of the work which is the current controlling operation, due to unsuitable weather or other conditions considered unfavorable to the suitable prosecution of the work, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion."

Conclusion

California Civil Code Section 1641 requires that "the whole of a contract is to be taken together, so as to give effect to every part, if reasonably practicable, each clause helping to interpret the other". When the whole of the Contract is taken together, it is apparent that ABFJV, when delayed without its fault or negligence, by events beyond its control and the delay extends the actual performance of the Work beyond the currently approved Contract Completion Date, it is the intent of the Contract that the Department grant ABFJV an equitable time extension.

ABF-CAL-LTR-000700

Page 5

The requirements for an equitable time adjustment pursuant to Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis of the Special Provisions of the Contract are clear and unambiguous. ABFJV, having met all of the requirements of Section 10-1.13 is entitled to a non-compensable, Contract time extension.

Unless ABFJV is contacted by the Department on or before October 8, 2008 it is our intent to submit this matter to the Dispute Review Board. Should you have any questions, or wish to discuss this matter further, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE



Michael Flowers
Project Director

Encl: Time Impact Analysis

File: 01.07.8
02.01

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

<u>Index</u>	<u>Pages</u>
1 Introduction	2
2 Methodology	3
3 Results	4
4 Potential Mitigation Measures	5

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

1 Introduction

1.1 Project Schedule Data Date

The Project Update Schedule that this Time Impact Analysis is based on is Revision No. 4 which has a Data Date that is set at 01/20/08.

1.2 Background Information

A power outage at ZPMC's main fabrication facility located on Changxing Island from 02 July 2008 up to and including 04 July 2008 caused the Contractor to be unable to perform any work on activities forming the Project Controlling Operation.

1.3 Activities Potentially Impacted

All activities that were planned to take place at ZPMC's main fabrication facility during the days of the power outage were impacted, along with their relevant successor activities.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

2 Methodology

2.1 Changes to Project Schedule

In order to accurately reflect the negative effect of the power outage, the following steps were taken:

- A new Calendar was created in Primavera (P6) by copying the Calendar “6D-CH” and changing 02 July 2008 to 04 July 2008 inclusive to non-work days. For ease of identification, the new Calendar was titled “TIA4”
- The newly created “TIA4” Calendar was allocated to each activity that was planned to be worked on in the relevant time period (see attachment “TIA 4 - T1FAB Affected Activities as planned in January 08 Revision.pdf”).
- The Schedules were recalculated and the resources leveling calculations were carried out in Primavera (P6) using the same settings as per Revision No. 4.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

3 Results

3.1 Impact to Project Critical Path

After performing the recalculation of the Schedule, it was noted that the Project Critical Path and Total Float values had been impacted, as had the overall final Phase 1, 2 and 3 target handover dates. The following table indicates the target Phase 1, 2 and 3 dates prior to the Time Impact Analysis (Date Rev4), and the dates after the impact of the Time Impact Analysis are taken into consideration:

	Date U21	TF Rev4	Date TIA 4	TF TIA 4	Impact
Phase 1	04/13/12	+2d	04/19/12	-4d	-6d
Phase 2	12/20/12	-69d	12/27/12	-76d	-7d
Phase 3	05/01/13	-21d	05/07/13	-27d	-6d

The following listings of all of the activities in the logic path both before and after the Impact are being submitted as part of this submittal:

- o "TIA 4 - T1FAB Affected Activities as planned in January 08 Revision.pdf"
- o "TIA 4 - T1FAB Affected Activities as planned in January 08 Revision IMPACTED.pdf"
- o "TIA 4 - Full Critical Path Activities in January 08 Revision.pdf"
- o "TIA 4 - Full Critical Path Activities in January 08 Revision IMPACTED.pdf"

Based on this analysis of this excusable delay, ABFJV is entitled to an equitable non-compensable time extension, per the above noted impacts, of 6 days, 7 days and 6 days for Phase 1, Phase 2, and Phase 3 respectively.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

4 Potential Mitigation Measures

4.1 Suggested Mitigation Measures

The following are suggested potential mitigation measures that could be carried out in order to counter the negative effects and schedule impacts caused by the three (3) day power outage at the Shanghai Zhenhua Port Machinery Company Ltd, steel fabrication facility on Changxing Island, China:

- Implement second shifts to the affected erection / construction activities.
- Implement additional resources to accelerate the affected erection / construction activities of the T1 Tower.

TIME IMPACT ANALYSIS 3 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION

Activity ID	Activity Description	Start	Finish	CD	AD	RD	CH	IF	Complete	2007	2008	2009	2010	2011	2012	2013
T1FACB1000	Lift 1 - Shaft S - Prefabricate Plate S	22-Jun-08	01-Feb-08	10	0	10	6D-CH	-30	0%							
T1FACB1040	Lift 1 - Shaft S - Fabricate Plate B (Butt Weld)	02-Feb-08	14-Feb-08	7	0	7	6D-CH	-30	0%							
T1FACB1044	Lift 1 - Shaft S - Fabricate Plate D (Butt Weld)	15-Feb-08	22-Feb-08	7	0	7	6D-CH	-41	0%							
T1FACB1032	Lift 1 - Shaft W - Fabricate Plate C (Butt Weld)	23-Feb-08	11-Mar-08	15	0	15	6D-CH	-54	0%							
T1FACB1074	Lift 1 - Shaft W - Fit-Up & Weld PJP stiffeners to Skin Plate C	12-Mar-08	07-Apr-08	23	0	23	6D-CH	-54	0%							
T1FACB1090	Lift 1 - Shaft E - Fit-Up & Weld PJP stiffeners to Skin Plate A	08-Apr-08	18-Apr-08	10	0	10	6D-CH	-59	0%							
T1FACB1094	Lift 1 - Shaft E - Fit-Up & Weld PJP stiffeners to Skin Plate C	19-Apr-08	22-May-08	23	0	23	6D-CH	-55	0%							
T1FACB0132	Lift 2 - Shaft W - Fit-Up & Weld PJP Stiffeners to Skin Plate A	23-May-08	04-Jun-08	11	0	11	6D-CH	-59	0%							
T1FACB0172	Lift 2 - Shaft W - Weld CJP Stiffener to Skin Plate A	05-Jun-08	18-Jun-08	12	0	12	6D-CH	-59	0%							
T1FACB0244	Lift 2 - 77.00 m - Shaft W (Face A) - Fit-Up & Weld Doubler Plate to Skin Plate	19-Jun-08	21-Jun-08	3	0	3	6D-CH	-59	0%							
T1FACB1076	Lift 2 - Shaft W - Position & Tack Weld Diaphragms on Face A	23-Jun-08	01-Jul-08	8	0	6	6D-CH	-59	0%							
T1FACB1584	Lift 2 - Shaft W - Fit & Tack Weld Face E	02-Jul-08	05-Jul-08	4	0	4	6D-CH	-59	0%							
T1FACB1592	Lift 2 - Shaft W - Fit & Tack Weld Face B, C, D	07-Jul-08	12-Jul-08	6	0	6	6D-CH	-59	0%							
T1FACB1600	Lift 2 - Shaft W - Weld Shaft Assembly	14-Jul-08	09-Aug-08	24	0	24	6D-CH	-59	0%							
T1FACB4462	Lift 2 - Shaft W - Survey & Align for End Milling	11-Aug-08	15-Aug-08	5	0	5	6D-CH	-59	0%							
T1FACB4470	Lift 2 - Shaft W - Mill Field Splice 1	16-Aug-08	22-Aug-08	6	0	6	6D-CH	-59	0%							
T1FACB4476	Lift 2 - Shaft W - Mill Field Splice 2	23-Aug-08	29-Aug-08	6	0	6	6D-CH	-59	0%							
T1FACB4469	Lift 2 - Shaft N - Mill Field Splice 1	30-Aug-08	05-Sep-08	6	0	6	6D-CH	-59	0%							
T1FACB4476	Lift 2 - Shaft N - Mill Field Splice 2	06-Sep-08	12-Sep-08	6	0	6	6D-CH	-59	0%							
T1FACB4474	Lift 2 - Shaft E - Mill Field Splice 1	13-Sep-08	19-Sep-08	6	0	6	6D-CH	-59	0%							
T1FACB4482	Lift 2 - Shaft E - Mill Field Splice 2	20-Sep-08	26-Sep-08	6	0	6	6D-CH	-59	0%							
T1FACB4489	Lift 2 - Shaft E - Drill Doubler Plates & Attach Gusset Plates	27-Sep-08	15-Oct-08	10	0	10	6D-CH	-59	0%							
T1FACB4388	Lift 1 & 2 - Shaft E - Horizontally Drill Field Splice 1	16-Oct-08	27-Oct-08	10	0	10	6D-CH	-59	0%							
T1FACB4382	Lift 1 - Install Shafts & Shear PL on Base PL & Erect Face A Struts	29-Oct-08	10-Nov-08	12	0	12	6D-CH	-59	0%							
T1FACB4384	Lift 1 - Weld Shafts & Shear Plates to Base Plate	04-Nov-08	19-Dec-08	40	0	40	6D-CH	-59	0%							
T1FACB4396	Erect Lift 2 onto Lift 1	20-Dec-08	26-Dec-08	6	0	6	6D-CH	-59	0%							
T1FACB4398	Lift 2 - Erect Face A Struts	27-Dec-08	31-Dec-08	4	0	4	6D-CH	-59	0%							
T1FACB4400	Lift 2 - Erect, Mark, Drill & Bolt Face E Struts	01-Jan-09	08-Jan-09	8	0	8	6D-CH	-59	0%							

Run Date: 03-Oct-08 15:11
 Data Date: 20-Jan-08
 SUBMITTAL No.: ABF-SUB-000680-R2

American Bridge / FLUOR
 A JOINT VENTURE

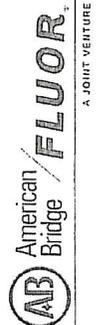
Sheet 1 of 6
 American Bridge / Fluor, A Joint Venture
 SFOBB Self Anchored Suspension Bridge
 20-January-2008 Revision Schedule

Remaining Level of Effort
 Actual Work
 Remaining Work
 Critical Remaining Work
 Milestone

Remaining Level of Effort
 Actual Work
 Remaining Work
 Critical Remaining Work
 Milestone

TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION

Activity ID	Activity Description	Start	Finish	ES	LS	EF	LF	DD	CR	Comp	2008	2009	2010	2011	2012	2013
T1FAB000400	Lift 2 - Install Cross Bracing	13-Jan-09	16-Jan-09	6	0	6	60-CH	-56	0%							
T1FAB004004	Lift 2 - Install Facades	17-Jan-09	17-Jan-09	1	0	1	60-CH	-50	0%							
T1FAB004106	Disassemble Lift 2 & Remove from Lift 1	19-Jan-09	05-Feb-09	10	0	10	60-CH	-50	0%							
T1FAB004408	Disassemble Lift 1	06-Feb-09	25-Feb-09	17	0	17	60-CH	-50	0%							
T1FAB004410	Lift 1 - Match to Slab Furnished Template	26-Feb-09	27-Feb-09	2	0	2	60-CH	-50	0%							
T1FAB004412	Lift 1 - Transfer Hole Locations	28-Feb-09	04-Mar-09	4	0	4	60-CH	-50	0%							
T1FAB004484	Lift 1 - Drill & Machine Holes	05-Mar-09	27-Mar-09	20	0	20	60-CH	-50	0%							
T1FAB004486	Paint Lift 1	05-Mar-09	08-Apr-09	30	0	30	60-CH	-50	0%							
T1FAB001170	T1 - Lift 1 - Inspect & Load for Sea Transport (Voyage 3) - T1 Lift 1	09-Apr-09	17-Apr-09	8	0	8	60-CH	-50	0%							
T1FAB001170	Inspect & Load for Sea Transport (Voyage 3) - T1 Lift 1	09-Apr-09	17-Apr-09	8	0	8	60-CH	-50	0%							
T1FAB002040	Sea Transport (Voyage 3) - T1 Tower	18-Apr-09	25-May-09	38	0	38	7D	-66	0%							
T1FAB002040	Deliver to SFOBB (Voyage 3) - T1 Lift 1	25-May-09	25-May-09	0	0	0	7D	-66	0%							
T1FAB002050	Perform Initial Inspection (Voyage 3) - T1 Tower	26-May-09	28-May-09	3	0	3	5D-SH	-47	0%							
T1FAB002060	Unload (Voyage 3) & Perform Final Inspection - T1 Tower	29-May-09	09-Jun-09	8	0	8	5D-SH	-47	0%							
T1CON000180	Erect Tower Shafts - T1 Lift 1	10-Jun-09	23-Jun-09	10	0	10	5D-SH	-47	0%							
T1CON000190	Survey & Align Shafts - T1 Lift 1	26-Jun-09	10-Jul-09	10	0	10	5D-SH	-47	0%							
T1CON000210	Install Struts - T1 Lift 1	13-Jul-09	21-Jul-09	7	0	7	5D-SH	-47	0%							
T1CON000220	Install Cross Braces - T1 Lift 1	22-Jul-09	23-Jul-09	2	0	2	5D-SH	-47	0%							
T1CON000260	Weld Shear Plates 9m - T1 Lift 1	24-Jul-09	02-Oct-09	50	0	50	5D-SH	-47	0%							
T1CON000280	Grout Baseplates	21-Sep-09	16-Oct-09	20	0	20	5D-SH	-47	0%							
T1CON000360	Erect Tower Shafts - T1 Lift 2	19-Oct-09	30-Oct-09	10	0	10	5D-SH	-47	0%							
T1CON000370	Survey & Align Shafts - T1 Lift 2	02-Nov-09	03-Nov-09	2	0	2	5D-SH	-47	0%							
T1CON000380	Install Cross Braces - T1 Lift 2	04-Nov-09	09-Nov-09	4	0	4	5D-SH	-47	0%							
T1CON000390	Install Struts - T1 Lift 2	06-Nov-09	10-Nov-09	3	0	3	5D-SH	-47	0%							
T1CON000400	Install Strut Facades - T1 Lift 2	11-Nov-09	18-Nov-09	6	0	6	5D-SH	-47	0%							
T1CON000050	Construct Erection Tower - T1 Lift 3	19-Nov-09	04-Dec-09	10	0	10	5D-SH	-47	0%							
T1CON000090	Extend Tower Crane - T1 Lift 2 to Lift 3	07-Dec-09	11-Dec-09	5	0	5	5D-SH	-47	0%							
T1CON000480	Erect Tower Shafts - T1 Lift 3	14-Dec-09	28-Dec-09	10	0	10	5D-SH	-47	0%							



A JOINT VENTURE

Remaining Level of Effort

Actual Work

Remaining Work

Critical Remaining Work

Milestone

Run Date: 03-Oct-08 15:11

Data Date: 20-Jan-08

SUBMITTAL No.: ABF-SUB-000680-R2

American Bridge / Fluor, A Joint Venture

SFOBB Self Anchored Suspension Bridge

20-January-2008 Revision Schedule

Sheet 2 of 5

TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION WITH 3 DAY IMPACT

Activity ID	Activity Description	Start	Finish	UB	LD	CU	IF	Comp %	2007	2008	2009	2010	2011	2012	2013
CACON000450	Install Cable Bands - Cable System	14-Jul-11	10-Aug-11	20	0	20	5D-SH	-51	0%						
CACON000460	Tension Cable Band Bolts - Cable System	01-Aug-11	26-Aug-11	20	0	20	5D-SH	-51	0%						
CACON000530	Install Suspender Ropes - Cable System	17-Aug-11	14-Sep-11	20	0	20	5D-SH	-51	0%						
CACON000540	Attach BG Lifts to Suspenders - Load Transfer	15-Sep-11	16-Dec-11	65	0	65	5D-SH	-51	0%						
TTCON000030	Load Transfer Complete	16-Dec-11	0	0	0	0	7D	-73	0%						
BDCON000220	Bolt Barrier - Bridge Deck Lifts 1W, 2W	19-Dec-11	29-Dec-11	8	0	8	5D-SH	-51	0%						
BDCON000460	Bolt Barrier - Bridge Deck Lifts 3W, 4W	30-Dec-11	11-Jan-12	8	0	8	5D-SH	-51	0%						
BDCON000760	Bolt Barrier - Bridge Deck Lifts 5W, 6W	12-Jan-12	23-Jan-12	8	0	8	5D-SH	-51	0%						
BDCON001060	Bolt Barrier - Bridge Deck Lifts 7W, 8W	24-Jan-12	02-Feb-12	8	0	8	5D-SH	-51	0%						
BDCON001360	Bolt Barrier - Bridge Deck Lifts 9W, 10W	03-Feb-12	14-Feb-12	8	0	8	5D-SH	-51	0%						
MECON001060	Install Dehumidification Ductwork - W2 Cable Shroud - Mechanical	19-Dec-11	14-Feb-12	40	0	40	5D-SH	-4	0%						
MECON001120	Install Dehumidification Unit - Y2 Cable Shroud - Mechanical	19-Dec-11	14-Feb-12	40	0	40	5D-SH	-4	0%						
BDCON001640	Bolt Barrier - Bridge Deck Lifts 11W, 12W	15-Feb-12	27-Feb-12	8	0	8	5D-SH	-51	0%						
MECON000005	Perform Testing - Phase 1 - Mechanical	15-Feb-12	06-Mar-12	14	0	14	5D-SH	-4	0%						
PGCON00130	Phase 1 Substantial Completion	07-Mar-12	0	0	0	0	7D	-6	0%						
BDCON001930	Bolt Barrier - Bridge Deck Lifts 13W, 14W	28-Feb-12	08-Mar-12	8	0	8	5D-SH	-51	0%						
PGCON000990	Phase 1 Complete (2160 Working Days)	19-Apr-12*	0	0	0	0	7D	-4	0%						
PGCON00140	Perform Final Inspection & Completion Work - Phase 1	07-Mar-12	19-Apr-12	32	0	32	5D-SH	-4	0%						
MECON001010	Install Compressed Air Piping (4 NPS), Valves & Components - Bridge Deck WB (sta 58+00 to 59+50) - Mechanical	09-Mar-12	19-Apr-12	30	0	30	5D-SH	-51	0%						
MECON001020	Install Compressed Air Piping (4 NPS), Valves & Components - Bridge Deck WB (sta 59+50 to 59+14) - Mechanical	20-Apr-12	01-Jun-12	30	0	30	5D-SH	-51	0%						
MECON001030	Install Compressed Air Piping (4 NPS), Valves & Components - Bridge Deck WB (sta 59+14 to 60+30) - Mechanical	04-Jun-12	16-Jul-12	30	0	30	5D-SH	-51	0%						
MECON001040	Install Compressed Air Piping (4 NPS), Valves & Components - Bridge Deck WB (sta 60+30 to 61+46) - Mechanical	17-Jul-12	27-Aug-12	30	0	30	5D-SH	-51	0%						
MECON001050	Install Compressed Air Piping (4 NPS), Valves & Components - Bridge Deck WB (sta 61+46 to 62+08) - Mechanical	28-Aug-12	09-Oct-12	30	0	30	5D-SH	-51	0%						
MECON001060	Test Compressed Air Piping WB - Mechanical	10-Oct-12	20-Nov-12	30	0	30	5D-SH	-51	0%						
MECON000790	Phase 2 Complete (2340 Working Days)	21-Nov-12	06-Dec-12	10	0	10	5D-SH	-51	0%						
PGCON00100	Perform Testing - Phase 2 - Mechanical	07-Dec-12*	27-Dec-12*	0	0	0	7D	-76	0%						
PGCON00110	Phase 3 Complete (2520 Working Days)	27-Dec-12	27-Dec-12	14	0	14	5D-SH	-51	0%						
PGCON00110	Phase 3 Complete (2520 Working Days)	07-May-13*	0	0	0	0	7D	-27	0%						

Run Date: 03-Oct-08 15:04
Data Date: 20-Jan-08
SUBMITTAL No.: ABF-SUB-000680-R2

Sheet 5 of 5

American Bridge / Fluor, A Joint Venture

SFOBB Self Anchored Suspension Bridge

20-January-2008 Revision Schedule

A JOINT VENTURE

Exhibit A.10



A JOINT VENTURE

375 Burma Road Oakland CA 94607
 Phone 510-808-4600 / Fax 510-808-4601

LETTER OF TRANSMITTAL
SAS Superstructure Project

Run Date 09-Oct-08
 Time 3:58 PM

Dated: 09-Oct-2008

TRANSMITTAL No: ABF-CAL-TRN-001498 Rev: 00

To: Gary Pursell
 California Department of Transportation
 333 Burma Road

Co/Job # 660110
 Contract # 04-0120F4
 Sub/Supplier:
 Sub/Supplier No:

Oakland CA 94607
 Phone: (510) 622-5100 Fax: (510) 622-5165

Subject: Notice of Potential Claim No. 8 - Protest of WSWD Report No. 112,
 Referral of Dispute to Dispute Review Board

Special Provis. (SP) REF:
 Standard Spec. (SS) REF:

RESUBMITTAL/SUPPLEMENTAL REF:

We are sending the following attached items: Attached

Via Fax

- | | | |
|---|---|---|
| <input type="checkbox"/> Plans | <input type="checkbox"/> Prog. Pmt | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Certificates of compliance | <input type="checkbox"/> Calculations | <input type="checkbox"/> Payroll |
| <input type="checkbox"/> Specs | <input type="checkbox"/> Copy of Letter | <input type="checkbox"/> Change Order |
| <input type="checkbox"/> Schedule | <input type="checkbox"/> Invoice | <input checked="" type="checkbox"/> Other |

Item	Date	Copies	Description	Drawing No	Rev	Subcon	Dwg No	Rev	Status	Pages
01	09-Oct-08	1	Copy of Letter to Dispute Review Board - NOPC #8							

These are transmitted as checked below:

- | | | |
|--|---|--|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> For Review/comment | <input type="checkbox"/> Return For Correction |
| <input checked="" type="checkbox"/> For Your Use | <input type="checkbox"/> For Information | <input type="checkbox"/> Other |

Remarks:

CC:

File: 02.01, 02.14

Submitted By: Riann Tavu
 (ABF Staff Member - Originator of Transmittal)

Checked & Sent By: <<< Original Signed >>>
 Contract Admin/DCS Staff

Received
 505127 09 Oct 08

09-Oct-2008

02.14-000003

Mr. Robert Smith
Dispute Review Board
222 West Washington Avenue, Suite 380
Madison, WI 53703

PROJECT: San Francisco Oakland Bay SAS Bridge Superstructure
Caltrans Contract No. 04-0120F4
ABF Job No. 660110

SUBJECT: Protest of WSWD Report No. 112 - Notice of Potential Claim # 8
Referral of Dispute to Dispute Review Board

Gentlemen:

American Bridge/Fluor Enterprises, Inc. A Joint Venture (ABFJV) notified the Department in writing on October 3, 2008 that it objects to the Department's Response, No. 05.03.01-002698 dated September 18, 2008, to the above referenced Notice of Potential Claim. Pursuant to the Contract Documents, including Special Provisions, Article 5-1.12, Dispute Review Board (DRB), ABFJV hereby refers the Dispute to the Dispute Review Board.

The Event

On July 02, 2008 an unknown vessel was navigating the Yangtze River, and its anchor struck and severed a submerged power cable that carries primary electrical service to Changxing Island, China, where Shanghai Zhenhua Port Machinery Company Ltd's, (ZPMC), ABFJV's steel fabricator's fabrication facility is located. As a result thereof, a power outage occurred throughout Changxing Island from July 02, 2008 through July 04, 2008. This power outage resulted in a three (3) day delay, during which time ZPMC was shut down and unable to progress the Work.

This event was beyond the control and without the fault or negligence of ABFJV or ZPMC, or any ABFJV or ZPMC subcontractors or suppliers, at any tier.

The Issue

Is ABFJV entitled to a non-compensable time adjustment due to delayed Work activities that arose from an unforeseeable event that completely halted the work of ZPMC, ABFJV's steel fabricator?

Dispute:

ABFJV requested a Time Extension due to the power outage at ZPMC. The Department declined to grant an extension reasoning "The contract does not provide for non-working day suspensions of the work for any reason, as every day is defined as a working day, with no exceptions, and the non-working day provisions of the Standard Specifications do not apply to the contract. Furthermore, a power outage caused by human actions does not constitute an "Act of God," hence there is no basis to grant a time extension under the contract. Likewise, a plant malfunction or equipment breakdown would not be a basis for a time extension, nor would a vehicle accident or other human caused accident."

02.14-000003

Page 2

ABFJV disagrees that the power outage at ZPMC's plant does not qualify as grounds for a time adjustment. ABFJV contends that under certain circumstances, when the whole of the Contract is taken together, the Contract allows a Time Extension for delays beyond the control and without the fault or negligence of the Contractor. For this reason, ABFJV is entitled to a Contract Change Order adjusting the Time of Completion.

Contract Provisions and California Civil Code Sections

The following provisions of the Contract and the California Civil Code support ABFJV's claim and provide the basis for ABFJV's entitlement to a time extension as claimed in Notice of Potential Claim No. 8.

- 10-1.13 Progress Schedule, Critical Path Method, Time Impact Analysis, Special Provisions
- 8-1.07 Liquidated Damages, Standard Specifications
- 8-1.05 Temporary Suspension Of Work, Standard Specifications
- California Civil Code Section 1654 - "in cases of uncertainty ...the language of a contract should be interpreted most strongly against the party who caused the uncertainty to exist."
- California Civil Code Section 1641 - "The whole of a contract is to be taken together... each clause helping to interpret the other"

Contract, Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis

Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis of the Contract Special Provisions provides that ABFJV may request a time adjustment due to delayed activities.

In the event a time adjustment for delayed activities is sought by ABFJV, Section 10-1.13 requires ABFJV to submit to the Department a written Time Impact Analysis that illustrates the impact of the delay to the current Contract Completion Date utilizing the current accepted schedule.

In order to qualify for the "Section 10-1.13 Time Adjustment" the following criteria must be met:

- A. The delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and
- B. The delay extends the actual performance of the work beyond the currently approved contract completion date.
- C. The delay impacts a fabrication or construction activity – delays to the Contractor's submittal or shop drawing process must impact a successor fabrication or construction activity. The Time Impact Analysis shall be based on the impact to fabrication or construction activities.

ABFJV meets all "Section 10-1.13 Time Adjustment" requirements for a time adjustment due to delayed activities.

Time Impact Analysis

During the time period, July 02, 2008 through July 04, 2008, ZPMC's scheduled work was on the Critical Path of the Contract Schedule. For this reason the power outage delayed and will extend the actual performance of ABFJV's Work activities beyond the currently approved Contract Completion Date.

02.14-000003

Page 3

A copy of the Time Impact Analysis is attached.

Contract, Section 8-1.07 Liquidated Damages

Contract Section 8-1.07 Liquidated Damages of the Standard Specifications provides examples of various situations when ABFJV will be granted an extension of time. These include the following: acts of God or of the public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargoes.

The definition of the term "acts of God" is ambiguous. "Ambiguity" is defined as doubtfulness, doubleness of meaning, indistinctness, uncertainty of meaning of an expression used in a written instrument, want of clearness or definiteness; or difficult to comprehend or distinguish. As a result of this ambiguity, reasonable parties can not determine those situations that qualify for Section 8-1.07 consideration.

U.S. Courts have determined; where a Government contract contains a latent ambiguity, the Court will construe the ambiguous term against the Government as drafter of the contract, provided that the contractor's interpretation was reasonable. The Courts' determinations are consistent with California Civil Code Section 1654 which provides, "in cases of uncertainty ...the language of a contract should be interpreted most strongly against the party who caused the uncertainty to exist."

Additionally, the events listed in Contract Section 8-1.07 are not meant to be all inclusive. Other events that require the granting of a Contract time extension by the Department are identified throughout the Contract Special Provisions. The bulleted items below are examples.

- Delays due to Asbestos or Hazardous Substances
- Delays due to the Department delays in Working Drawing reviews
- Delays due to Coast Guard interference
- Delays due to floodway restrictions
- Delays due to migratory birds
- Delays due to American Peregrine Falcon, Double-Crested Cormorant, Western Gulls, California Least Tern, and California Brown Pelican nesting
- Delays due to harbor seals within the safety zone
- Delays due to California Sea Lions within the safety zone
- Delays due to delays due to spawning herring
- Delays due to delays due to Department ordered suspensions in accordance with Section 8-1.05 Temporary Suspension of Work

There is no distinction between a power outage and a shortage of materials, or a freight embargo or a labor dispute or the discovery of asbestos in that all are unforeseen and beyond the control of the Contractor, and as such, there is no legitimate reason why a power outage, sustained as described herein, should be treated differently, than one of the events listed above, for Contract purposes.

02.14-000003

Page 4

Force Majeure

The Department, in defense of its position not to grant a time extension, advises that events resulting from "human actions" are not "acts of God" and for this reason, a time extension is not allowable.

The term "acts of God" is not defined in the Contract, however, in the construction industry the terms "acts of God" and "force majeure" are sometimes used interchangeably. If there is a difference between the two terms, the subtle difference is that "acts of God" exclude the concept of human agency, whereas "force majeure" does not.

The Contract, as drafted, does not make this distinction. Section 8-1.07 identifies floods, tsunamis, and earthquakes as separate and distinct from "acts of God", although there is clearly no human agency involved in the creation of these events. Section 8-1.07 also conspicuously commingles events derived from human agency; strikes, labor disputes, shortage of materials, and freight embargoes with floods, tsunamis and earthquakes, events not derived from human agency, as events that merit the allowance of time extensions.

Under international law force majeure refers to an irresistible force or unforeseen event beyond the control of a State making it materially impossible to fulfill an obligation. The understanding of force majeure in French law is similar to that of international law. For a claimant to invoke force majeure in French or international law, the event proposed as force majeure must pass three tests:

- A. Externality: The claimant must have nothing to do with the event's happening
- B. Unpredictability: The event is unforeseeable.
- C. Irresistibility: The consequences of the event must have been unpreventable.

Note how closely the three international law "force majeure" requirements resemble the requirements for a time extension identified in Special Provisions Section 10-1.13 Progress Schedule, Critical Path Method.

Contract Section 8-1.07, Liquidated Damages, of the Standard Specifications is in-fact a force majeure clause. Therefore, because ABFJV passes the three tests identified above, ABFJV is entitled to a non-compensable, Contract time extension.

8-1.05 Temporary Suspension of Work, Standard Specifications

The Department has the authority to suspend the work as it deems necessary, due to unsuitable weather or other conditions considered unfavorable for the suitable prosecution of the work.

If the Department suspends a portion of the work which is the current controlling operation, due to unsuitable weather or other conditions considered unfavorable to the suitable prosecution of the work, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion."

02.14-000003
Page 5

Conclusion

California Civil Code Section 1641 requires that "the whole of a contract is to be taken together, so as to give effect to every part, if reasonably practicable, each clause helping to interpret the other". When the whole of the Contract is taken together, it is apparent that ABFJV, when delayed without its fault or negligence, by events beyond its control and the delay extends the actual performance of the Work beyond the currently approved Contract Completion Date, it is the intent of the Contract that the Department grant ABFJV an equitable time extension.

The requirements for an equitable time adjustment pursuant to Section 10-1.13 Progress Schedule (Critical Path Method), Time Impact Analysis of the Special Provisions of the Contract are clear and unambiguous. ABFJV, having met all of the requirements of Section 10-1.13 is entitled to a non-compensable, Contract time extension.

We look forward to resolving the above identified disputed matter as quickly as possible.

Should you have any questions, or wish to discuss this matter further, please contact our office.

Sincerely,

AMERICAN BRIDGE/FLUOR ENTERPRISES, INC. A JOINT VENTURE


For Michael Flowers
Project Director

Encl: Time Impact Analysis

cc: Gary Pursell, P.E., Department of Transportation, State of California
Norman Anderson, DRB Member
Warren Bullock, DRB Member

File: 01.07.8
02.14



San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

<u>Index</u>	<u>Pages</u>
1 Introduction	2
2 Methodology	3
3 Results	4
4 Potential Mitigation Measures	5



San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

1 Introduction

1.1 Project Schedule Data Date

The Project Update Schedule that this Time Impact Analysis is based on is Revision No. 4 which has a Data Date that is set at 01/20/08.

1.2 Background Information

A power outage at ZPMC's main fabrication facility located on Changxing Island from 02 July 2008 up to and including 04 July 2008 caused the Contractor to be unable to perform any work on activities forming the Project Controlling Operation.

1.3 Activities Potentially Impacted

All activities that were planned to take place at ZPMC's main fabrication facility during the days of the power outage were impacted, along with their relevant successor activities.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

2 Methodology

2.1 Changes to Project Schedule

In order to accurately reflect the negative effect of the power outage, the following steps were taken:

- A new Calendar was created in Primavera (P6) by copying the Calendar "6D-CH" and changing 02 July 2008 to 04 July 2008 inclusive to non-work days. For ease of identification, the new Calendar was titled "TIA4"
- The newly created "TIA4" Calendar was allocated to each activity that was planned to be worked on in the relevant time period (see attachment "TIA 4 - TIFAB Affected Activities as planned in January 08 Revision.pdf").
- The Schedules were recalculated and the resources leveling calculations were carried out in Primavera (P6) using the same settings as per Revision No. 4.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

3 Results

3.1 Impact to Project Critical Path

After performing the recalculation of the Schedule, it was noted that the Project Critical Path and Total Float values had been impacted, as had the overall final Phase 1, 2 and 3 target handover dates. The following table indicates the target Phase 1, 2 and 3 dates prior to the Time Impact Analysis (Date Rev4), and the dates after the impact of the Time Impact Analysis are taken into consideration:

	Date U21	TF Rev4	Date TIA 4	TF TIA 4	Impact
Phase 1	04/13/12	+2d	04/19/12	-4d	-6d
Phase 2	12/20/12	-69d	12/27/12	-76d	-7d
Phase 3	05/01/13	-21d	05/07/13	-27d	-6d

The following listings of all of the activities in the logic path both before and after the Impact are being submitted as part of this submittal:

- o "TIA 4 - T1FAB Affected Activities as planned in January 08 Revision.pdf"
- o "TIA 4 - T1FAB Affected Activities as planned in January 08 Revision IMPACTED.pdf"
- o "TIA 4 - Full Critical Path Activities in January 08 Revision.pdf"
- o "TIA 4 - Full Critical Path Activities in January 08 Revision IMPACTED.pdf"

Based on this analysis of this excusable delay, ABFJV is entitled to an equitable non-compensable time extension, per the above noted impacts, of 6 days, 7 days and 6 days for Phase 1, Phase 2, and Phase 3 respectively.

San Francisco Oakland Bay SAS Bridge Superstructure
Contract No.: 04-0120F4
Time Impact Analysis #4

4 Potential Mitigation Measures

4.1 Suggested Mitigation Measures

The following are suggested potential mitigation measures that could be carried out in order to counter the negative effects and schedule impacts caused by the three (3) day power outage at the Shanghai Zhenhua Port Machinery Company Ltd, steel fabrication facility on Changxing Island, China:

- Implement second shifts to the affected erection / construction activities.
- Implement additional resources to accelerate the affected erection / construction activities of the T1 Tower.

TIME IMPACT ANALYSIS 4 - AFFECTED T1 FABRICATION ACTIVITIES IN JANUARY 08 REVISION

Activity Description	Start	Finish	CD	RD	CH	TF	Complete	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08
T1FABC0154	LIR 2 - Shaft E - Weld CJP Stiffener to Skin Plate B	02-Jul-08	02-Jul-08	1	0	1	5D-CH	-32	0%										
T1FABC0128	LIR 2 - Shaft N - Fit-Up & Weld PJP Stiffeners to Skin Plate D	19-Jun-08	02-Jul-08	13	0	13	6D-CH	-45	0%										
T1FABC0160	LIR 2 - Shaft E - Fit-Up & Weld PJP Stiffeners to Skin Plate E	20-Jun-08	02-Jul-08	11	0	11	6D-CH	-44	0%										
T1FABC0420	LIR 1 - Shaft N - Survey & Align for End Milling	27-Jun-08	02-Jul-08	5	0	5	6D-CH	-57	0%										
T1FABC0094	LIR 2 - Shaft E - 53.00 m (3B) - Final Machine & CNC Drill Diaphragm	25-Jun-08	03-Jul-08	7	0	7	6D-CH	-52	0%										
T1FABC0096	LIR 2 - Shaft E - 65.00 m (3B) - Final Machine & CNC Drill Diaphragm	25-Jun-08	03-Jul-08	6	0	6	6D-CH	-52	0%										
T1FABC0004	LIR 2 - Shaft E - 56.00 m (1A) - Final Machining of Diaphragm	28-Jun-08	03-Jul-08	4	0	4	6D-CH	-40	0%										
T1FABC0168	LIR 2 - Shaft N - Weld CJP Stiffener to Skin Plate D	03-Jul-08	03-Jul-08	1	0	1	6D-CH	-45	0%										
T1FABC0126	LIR 2 - Shaft N - Fit-Up & Weld PJP Stiffeners to Skin Plate C	17-Jun-08	03-Jul-08	15	0	15	6D-CH	-46	0%										
T1FABC0006	LIR 2 - Shaft E - 50.00 m (1A) - Final Machining of Diaphragm	30-Jun-08	03-Jul-08	4	0	4	6D-CH	-49	0%										
T1FABC0008	LIR 2 - Shaft E - 62.00 m (1A) - Final Machining of Diaphragm	30-Jun-08	03-Jul-08	4	0	4	6D-CH	-49	0%										
T1FABC0166	LIR 2 - Shaft N - Weld CJP Stiffener to Skin Plate C	04-Jul-08	04-Jul-08	1	0	1	6D-CH	-46	0%										
T1FABC0226	LIR 2 - 53.00 m - Shaft N (Face A) - Fit-Up & Weld Doubler Plate to Skin Plate	02-Jul-08	04-Jul-08	3	0	3	6D-CH	-69	0%										
T1FABC0234	LIR 2 - 65.00 m - Shaft N (Face A) - Fit-Up & Weld Doubler Plate to Skin Plate	02-Jul-08	04-Jul-08	3	0	3	6D-CH	-69	0%										
T1FABC0242	LIR 2 - 77.00 m - Shaft N (Face A) - Fit-Up & Weld Doubler Plate to Skin Plate	02-Jul-08	04-Jul-08	3	0	3	6D-CH	-59	0%										
T1FABC0098	LIR 2 - Shaft E - 77.00 m (3B) - Final Machine & CNC Drill Diaphragm	28-Jun-08	05-Jul-08	6	0	6	6D-CH	-50	0%										
T1FABC0164	LIR 2 - Shaft W - Fit & Teak Weld Face E	02-Jul-08	05-Jul-08	4	0	4	6D-CH	-50	0%										
T1FABC0010	LIR 2 - Shaft E - 68.00 m (1A) - Final Machining of Diaphragm	03-Jul-08	08-Jul-08	4	0	4	6D-CH	-48	0%										
T1FABC0012	LIR 2 - Shaft E - 71.00 m (1A) - Final Machining of Diaphragm	03-Jul-08	08-Jul-08	4	0	4	6D-CH	-48	0%										
T1FABC0014	LIR 2 - Shaft E - 74.00 m (1A) - Final Machining of Diaphragm	03-Jul-08	08-Jul-08	4	0	4	6D-CH	-48	0%										
T1FABC0200	LIR 2 - Shaft E - Weld CJP Stiffener to Skin Plate E	03-Jul-08	08-Jul-08	4	0	4	6D-CH	-44	0%										
T1FABC0016	LIR 2 - Shaft E - 60.75 m (1A) - Final Machining of Diaphragm	05-Jul-08	08-Jul-08	5	0	5	6D-CH	-49	0%										
T1FABC0426	LIR 1 - Shaft N - Mill Bottom of LIR 1	04-Jul-08	08-Jul-08	4	0	4	6D-CH	-57	0%										
T1FABC0162	LIR 2 - Shaft E - Weld CJP Stiffener to Skin Plate A	03-Jul-08	09-Jul-08	6	0	6	6D-CH	-57	0%										
T1FABC0160	LIR 2 - Shaft E - Fit-Up & Weld PJP Stiffeners to Skin Plate D	01-Jul-08	14-Jul-08	12	0	12	6D-CH	-57	0%										
T1FABC0156	LIR 2 - Shaft E - Fit-Up & Weld PJP Stiffeners to Skin Plate C	02-Jul-08	16-Jul-08	13	0	13	6D-CH	-45	0%										
T1FABC0155	LIR 2 - Shaft E - Fit-Up & Weld PJP Stiffeners to Skin Plate C	01-Jul-08	17-Jul-08	15	0	15	6D-CH	-46	0%										
T1FABC0162	LIR 2 - Shaft E - Weld Shaft Assembly	26-Jun-08	23-Jul-08	24	0	24	6D-CH	-56	0%										

Remaining Level of Effort

Actual Work

Remaining Work

Critical Remaining Work

↳ Milestone

Run Date: 03-Oct-08 14:12

Data Date: 20-Jan-08

SUBMITTAL No.: ABF-SUB-000680-P2

American Bridge / Fluor, A Joint Venture

SFOBB Self Anchored Suspension Bridge

20-January-2008 Revision Schedule

Sheet 1 of 1

A JOINT VENTURE

TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION

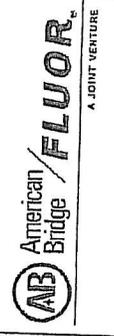
Activity ID	Activity Description	Start	Finish	CD	AD	CH	TR	2008	2009	2010	2011	2012
T1FABCB1800	LIR 1 - Shaft S - Prefabricate Plate B	22-Jan-08	01-Feb-08	10	0	10	6D-CH	-30	0%			
T1FABCB1840	LIR 1 - Shaft S - Fabricate Plate B (Bolt Weld)	02-Feb-08	14-Feb-08	7	0	7	6D-CH	-30	0%			
T1FABCB1844	LIR 1 - Shaft S - Fabricate Plate D (Bolt Weld)	15-Feb-08	22-Feb-08	7	0	7	6D-CH	-41	0%			
T1FABCB1832	LIR 1 - Shaft W - Fabricate Plate C (Bolt Weld)	23-Feb-08	11-Mar-08	15	0	15	6D-CH	-54	0%			
T1FABCB1874	LIR 1 - Shaft W - Fit-Up & Weld PJP stiffeners to Skin Plate C	12-Mar-08	07-Apr-08	23	0	23	6D-CH	-54	0%			
T1FABCB1890	LIR 1 - Shaft E - Fit-Up & Weld PJP stiffeners to Skin Plate A	09-Apr-08	18-Apr-08	10	0	10	6D-CH	-59	0%			
T1FABCB1894	LIR 1 - Shaft E - Fit-Up & Weld PJP stiffeners to Skin Plate C	19-Apr-08	22-May-08	23	0	23	6D-CH	-55	0%			
T1FABCB0132	LIR 2 - Shaft W - Fit-Up & Weld PJP stiffeners to Skin Plate A	23-May-08	04-Jun-08	11	0	11	6D-CH	-59	0%			
T1FABCB0172	LIR 2 - Shaft W - Weld CJP stiffener to Skin Plate A	05-Jun-08	16-Jun-08	12	0	12	6D-CH	-59	0%			
T1FABCB0244	LIR 2 - 77.00 m - Shaft W (Face A) - Fit-Up & Weld Doubler Plate to Skin Plate	19-Jun-08	21-Jun-08	3	0	3	6D-CH	-59	0%			
T1FABCB1576	LIR 2 - Shaft W - Position & Tack Weld Diaphragms on Face A	23-Jun-08	01-Jul-08	8	0	8	6D-CH	-59	0%			
T1FABCB1594	LIR 2 - Shaft W - Fit & Tack Weld Face E	02-Jul-08	05-Jul-08	4	0	4	6D-CH	-59	0%			
T1FABCB1592	LIR 2 - Shaft W - Fit & Tack Weld Face B, C, D	07-Jul-08	12-Jul-08	6	0	6	6D-CH	-59	0%			
T1FABCB1600	LIR 2 - Shaft W - Weld Shaft Assembly	14-Jul-08	09-Aug-08	24	0	24	6D-CH	-59	0%			
T1FABCB4462	LIR 2 - Shaft W - Survey & Align for End Milling	11-Aug-08	15-Aug-08	5	0	5	6D-CH	-59	0%			
T1FABCB4470	LIR 2 - Shaft W - Mill Field Splice 1	16-Aug-08	22-Aug-08	6	0	6	6D-CH	-59	0%			
T1FABCB4478	LIR 2 - Shaft W - Mill Field Splice 2	23-Aug-08	29-Aug-08	6	0	6	6D-CH	-59	0%			
T1FABCB4468	LIR 2 - Shaft N - Mill Field Splice 1	30-Aug-08	05-Sep-08	6	0	6	6D-CH	-59	0%			
T1FABCB4476	LIR 2 - Shaft N - Mill Field Splice 2	06-Sep-08	12-Sep-08	6	0	6	6D-CH	-59	0%			
T1FABCB4474	LIR 2 - Shaft E - Mill Field Splice 1	13-Sep-08	19-Sep-08	6	0	6	6D-CH	-59	0%			
T1FABCB4482	LIR 2 - Shaft E - Mill Field Splice 2	20-Sep-08	26-Sep-08	6	0	6	6D-CH	-59	0%			
T1FABCB4489	LIR 2 - Shaft E - Drill Doubler Plates & Attach Gusset Plates	27-Sep-08	15-Oct-08	10	0	10	6D-CH	-59	0%			
T1FABCB4328	LIR 1 & 2 - Shaft E - Horizontally Drill Field Splice 1	16-Oct-08	27-Oct-08	10	0	10	6D-CH	-59	0%			
T1FABCB4382	LIR 1 - Install Shafts & Shear PL on Base PL & Erect Face A Struts	28-Oct-08	10-Nov-08	12	0	12	6D-CH	-59	0%			
T1FABCB4364	LIR 1 - Weld Shafts & Shear Plates to Base Plate	04-Nov-08	19-Dec-08	40	0	40	6D-CH	-59	0%			
T1FABCB4396	Erect LIR 2 onto LIR 1	20-Dec-08	26-Dec-08	6	0	6	6D-CH	-59	0%			
T1FABCB4399	LIR 2 - Erect Face A Struts	27-Dec-08	31-Dec-08	4	0	4	6D-CH	-59	0%			
T1FABCB4400	LIR 2 - Erect, Mark, Drill & Bolt Face E Struts	01-Jan-09	09-Jan-09	8	0	8	6D-CH	-59	0%			

Sheet 1 of 5

American Bridge / Fluor, A Joint Venture
SFOBB Self Anchored Suspension Bridge
20-January-2008 Revision Schedule

Run Date: 03-Oct-08 15:11
Data Date: 20-Jan-08
SUBMITTAL No.: ABF-SUB-000660-R2

Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestones



TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION

Activity ID	Activity Description	Start	Finish	DD	AD	RD	CD	SD	SH	0%	
CACON000170	Install & Adjust PWS 11, 12, 13, 14, 15	11-Feb-11	17-Feb-11	5	0	5	0	5	5D-SH	-47	0%
CACON000180	Install & Adjust PWS 16, 17, 18, 19, 20	18-Feb-11	23-Feb-11	3	0	3	0	3	5D-SH	-47	0%
CACON000190	Install & Adjust PWS 21, 22, 23, 24, 25	24-Feb-11	29-Feb-11	3	0	3	0	3	5D-SH	-47	0%
CACON000200	Install & Adjust PWS 26, 27, 28, 29, 30	01-Mar-11	03-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000210	Install & Adjust PWS 31, 32, 33, 34, 35	04-Mar-11	06-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000220	Install & Adjust PWS 36, 37, 38, 39, 40	09-Mar-11	11-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000230	Install & Adjust PWS 41, 42, 43, 44, 45	14-Mar-11	16-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000240	Install & Adjust PWS 46, 47, 48, 49, 50	17-Mar-11	21-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000250	Install & Adjust PWS 51, 52, 53, 54, 55	22-Mar-11	24-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000260	Install & Adjust PWS 56, 57, 58, 59, 60	25-Mar-11	29-Mar-11	3	0	3	0	3	5D-SH	-47	0%
CACON000270	Install & Adjust PWS 61, 62, 63, 64, 65	30-Mar-11	01-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000280	Install & Adjust PWS 66, 67, 68, 69, 70	04-Apr-11	06-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000290	Install & Adjust PWS 71, 72, 73, 74, 75	07-Apr-11	11-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000300	Install & Adjust PWS 76, 77, 78, 79, 80	12-Apr-11	14-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000310	Install & Adjust PWS 81, 82, 83, 84, 85	15-Apr-11	19-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000320	Install & Adjust PWS 86, 87, 88, 89, 90	20-Apr-11	22-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000330	Install & Adjust PWS 91, 92, 93, 94, 95	25-Apr-11	27-Apr-11	3	0	3	0	3	5D-SH	-47	0%
CACON000340	Install & Adjust PWS 96, 97, 98, 99, 100	28-Apr-11	02-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000350	Install & Adjust PWS 101, 102, 103, 104, 105	03-May-11	05-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000360	Install & Adjust PWS 106, 107, 108, 109, 110	06-May-11	10-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000370	Install & Adjust PWS 111, 112, 113, 114, 115	11-May-11	13-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000380	Install & Adjust PWS 116, 117, 118, 119, 120	16-May-11	18-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000390	Install & Adjust PWS 120, 121, 122, 123, 124	19-May-11	23-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000400	Install & Adjust PWS 125, 127, 128, 129, 130	24-May-11	26-May-11	3	0	3	0	3	5D-SH	-47	0%
CACON000410	Install & Adjust PWS 131, 132, 133, 134, 135	27-May-11	01-Jun-11	3	0	3	0	3	5D-SH	-47	0%
CACON000420	Install & Adjust PWS 136, 137	02-Jun-11	06-Jun-11	3	0	3	0	3	5D-SH	-47	0%
CACON000430	Install Compaction Equipment - Cable System	07-Jun-11	15-Jun-11	5	0	5	0	5	5D-SH	-47	0%
CACON000440	Compact Suspension Cables - Cable System	14-Jun-11	12-Jul-11	20	0	20	0	20	5D-SH	-47	0%

Run Date: 03-Oct-08 15:11
Data Date: 20-Jan-08
SUBMITTAL No.: ABF-SUB-0000600-R2

Sheet 4 of 6
American Bridge / Fluor, A Joint Venture
SFOBB Self Anchored Suspension Bridge
20-January-2008 Revision Schedule

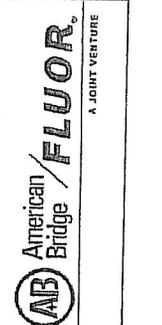
Remaining Level of Effort

Actual Work

Remaining Work

Critical Remaining Work

Milestone



TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION WITH 3 DAY IMPACT

Activity ID	Activity Description	Start	Finish	AD	RD	CD	TF	Conv	2008	2009	2010	2011	2012
T1FABC01000	LIR 1 - Shaft S - Prefabricate Plate B	22-Jun-08	01-Feb-08	10	0	10	6D-CH	-30	0%				
T1FABC01040	LIR 1 - Shaft S - Fabricate Plate B (Built Weld)	02-Feb-08	14-Feb-08	7	0	7	6D-CH	-30	0%				
T1FABC01044	LIR 1 - Shaft S - Fabricate Plate D (Built Weld)	15-Feb-08	22-Feb-08	7	0	7	6D-CH	-41	0%				
T1FABC01032	LIR 1 - Shaft W - Fabricate Plate C (Built Weld)	23-Feb-08	11-Mar-08	15	0	15	6D-CH	-54	0%				
T1FABC01074	LIR 1 - Shaft W - FR-Up & Weld PJP stiffeners to Skin Plate C	12-Mar-08	07-Apr-08	23	0	23	6D-CH	-54	0%				
T1FABC01090	LIR 1 - Shaft E - FR-Up & Weld PJP stiffeners to Skin Plate A	08-Apr-08	18-Apr-08	10	0	10	6D-CH	-59	0%				
T1FABC01094	LIR 1 - Shaft E - FR-Up & Weld PJP stiffeners to Skin Plate C	19-Apr-08	22-May-08	23	0	23	6D-CH	-55	0%				
T1FABC01032	LIR 2 - Shaft W - FR-Up & Weld PJP stiffeners to Skin Plate A	23-May-08	04-Jun-08	11	0	11	6D-CH	-59	0%				
T1FABC01072	LIR 2 - Shaft W - Weld CJP Stiffener to Skin Plate A	05-Jun-08	18-Jun-08	12	0	12	6D-CH	-59	0%				
T1FABC02044	LIR 2 - 77.00 m - Shaft W (Face A) - FR-Up & Weld Doubler Plate to Skin Plate	19-Jun-08	21-Jun-08	3	0	3	6D-CH	-59	0%				
T1FABC01576	LIR 2 - Shaft W - Position & Tack Weld Disphragms on Face A	23-Jun-08	01-Jul-08	8	0	8	6D-CH	-59	0%				
T1FABC01584	LIR 2 - Shaft W - FR & Tack Weld Face E	05-Jul-08	09-Jul-08	4	0	4	TIM4	-59	0%				
T1FABC01592	LIR 2 - Shaft W - FR & Tack Weld Face B, C, D	10-Jul-08	16-Jul-08	6	0	6	6D-CH	-62	0%				
T1FABC01600	LIR 2 - Shaft W - Weld Shaft Assembly	17-Jul-08	13-Aug-08	24	0	24	6D-CH	-62	0%				
T1FABC04462	LIR 2 - Shaft W - Survey & Align for End Milling	14-Aug-08	19-Aug-08	5	0	5	6D-CH	-62	0%				
T1FABC04470	LIR 2 - Shaft W - Mill Field Splice 1	20-Aug-08	26-Aug-08	6	0	6	6D-CH	-62	0%				
T1FABC04478	LIR 2 - Shaft W - Mill Field Splice 2	27-Aug-08	02-Sep-08	6	0	6	6D-CH	-62	0%				
T1FABC04468	LIR 2 - Shaft N - Mill Field Splice 1	03-Sep-08	09-Sep-08	6	0	6	6D-CH	-62	0%				
T1FABC04476	LIR 2 - Shaft N - Mill Field Splice 2	10-Sep-08	16-Sep-08	6	0	6	6D-CH	-62	0%				
T1FABC04474	LIR 2 - Shaft E - Mill Field Splice 1	17-Sep-08	23-Sep-08	6	0	6	6D-CH	-62	0%				
T1FABC04482	LIR 2 - Shaft E - Mill Field Splice 2	24-Sep-08	07-Oct-08	6	0	6	6D-CH	-62	0%				
T1FABC04489	LIR 2 - Shaft E - Drill Doubler Plates & Attach Gussel Plates	08-Oct-08	18-Oct-08	10	0	10	6D-CH	-62	0%				
T1FABC04398	LIR 1 & 2 - Shaft E - Horizontally Drill Field Splice 1	20-Oct-08	30-Oct-08	10	0	10	6D-CH	-62	0%				
T1FABC04362	LIR 1 - Install Shafts & Shear PL on Base PL & Erect Face A Struts	31-Oct-08	07-Nov-08	12	0	12	6D-CH	-62	0%				
T1FABC04364	LIR 1 - Weld Shafts & Shear Plates to Base Plate	07-Nov-08	23-Dec-08	40	0	40	6D-CH	-62	0%				
T1FABC04366	Erect LIR 2 onto LIR 1	24-Dec-08	30-Dec-08	6	0	6	6D-CH	-62	0%				
T1FABC04368	LIR 2 - Erect Face A Struts	31-Dec-08	03-Jan-09	4	0	4	6D-CH	-62	0%				
T1FABC04400	LIR 2 - Erect, Mark, Drill & Bolt Face E Struts	05-Jan-09	13-Jan-09	8	0	8	6D-CH	-62	0%				

Run Date: 03-Oct-08 15:04

Data Date: 20-Jan-08

SUBMITTAL No.: ABF-SUB-000680-R2

Sheet 1 of 5

American Bridge / FLUOR, A Joint Venture

SFOB Self Anchored Suspension Bridge

20-January-2008 Revision Schedule

A JOINT VENTURE

TIME IMPACT ANALYSIS 4 - FULL PROJECT CRITICAL PATH ACTIVITIES IN JANUARY 08 REVISION WITH 3 DAY IMPACT

Activity ID	Activity Description	17-Feb-11	24-Feb-11	01-Mar-11	08-Mar-11	15-Mar-11	22-Mar-11	29-Mar-11	05-Apr-11	12-Apr-11	19-Apr-11	26-Apr-11	03-May-11	10-May-11	17-May-11	24-May-11	31-May-11	07-Jun-11	14-Jun-11	21-Jun-11	28-Jun-11	05-Jul-11	12-Jul-11	19-Jul-11	26-Jul-11	02-Aug-11	09-Aug-11	16-Aug-11	23-Aug-11	30-Aug-11	06-Sep-11	13-Sep-11	20-Sep-11	27-Sep-11	04-Oct-11	11-Oct-11	18-Oct-11	25-Oct-11	01-Nov-11	08-Nov-11	15-Nov-11	22-Nov-11	29-Nov-11	06-Dec-11	13-Dec-11	20-Dec-11	27-Dec-11	03-Jan-12	10-Jan-12	17-Jan-12	24-Jan-12	31-Jan-12	07-Feb-12	14-Feb-12	21-Feb-12	28-Feb-12	06-Mar-12	13-Mar-12	20-Mar-12	27-Mar-12	03-Apr-12	10-Apr-12	17-Apr-12	24-Apr-12	01-May-12	08-May-12	15-May-12	22-May-12	29-May-12	05-Jun-12	12-Jun-12	19-Jun-12	26-Jun-12	03-Jul-12	10-Jul-12	17-Jul-12	24-Jul-12	31-Jul-12	07-Aug-12	14-Aug-12	21-Aug-12	28-Aug-12	04-Sep-12	11-Sep-12	18-Sep-12	25-Sep-12	02-Oct-12	09-Oct-12	16-Oct-12	23-Oct-12	30-Oct-12	06-Nov-12	13-Nov-12	20-Nov-12	27-Nov-12	04-Dec-12	11-Dec-12	18-Dec-12	25-Dec-12	01-Jan-13	08-Jan-13	15-Jan-13	22-Jan-13	29-Jan-13	05-Feb-13	12-Feb-13	19-Feb-13	26-Feb-13	05-Mar-13	12-Mar-13	19-Mar-13	26-Mar-13	02-Apr-13	09-Apr-13	16-Apr-13	23-Apr-13	30-Apr-13	07-May-13	14-May-13	21-May-13	28-May-13	04-Jun-13	11-Jun-13	18-Jun-13	25-Jun-13	02-Jul-13	09-Jul-13	16-Jul-13	23-Jul-13	30-Jul-13	06-Aug-13	13-Aug-13	20-Aug-13	27-Aug-13	03-Sep-13	10-Sep-13	17-Sep-13	24-Sep-13	01-Oct-13	08-Oct-13	15-Oct-13	22-Oct-13	29-Oct-13	05-Nov-13	12-Nov-13	19-Nov-13	26-Nov-13	03-Dec-13	10-Dec-13	17-Dec-13	24-Dec-13	31-Dec-13	07-Jan-14	14-Jan-14	21-Jan-14	28-Jan-14	04-Feb-14	11-Feb-14	18-Feb-14	25-Feb-14	04-Mar-14	11-Mar-14	18-Mar-14	25-Mar-14	01-Apr-14	08-Apr-14	15-Apr-14	22-Apr-14	29-Apr-14	06-May-14	13-May-14	20-May-14	27-May-14	03-Jun-14	10-Jun-14	17-Jun-14	24-Jun-14	01-Jul-14	08-Jul-14	15-Jul-14	22-Jul-14	29-Jul-14	05-Aug-14	12-Aug-14	19-Aug-14	26-Aug-14	02-Sep-14	09-Sep-14	16-Sep-14	23-Sep-14	30-Sep-14	07-Oct-14	14-Oct-14	21-Oct-14	28-Oct-14	04-Nov-14	11-Nov-14	18-Nov-14	25-Nov-14	02-Dec-14	09-Dec-14	16-Dec-14	23-Dec-14	30-Dec-14	06-Jan-15	13-Jan-15	20-Jan-15	27-Jan-15	03-Feb-15	10-Feb-15	17-Feb-15	24-Feb-15	03-Mar-15	10-Mar-15	17-Mar-15	24-Mar-15	31-Mar-15	07-Apr-15	14-Apr-15	21-Apr-15	28-Apr-15	05-May-15	12-May-15	19-May-15	26-May-15	02-Jun-15	09-Jun-15	16-Jun-15	23-Jun-15	30-Jun-15	07-Jul-15	14-Jul-15	21-Jul-15	28-Jul-15	04-Aug-15	11-Aug-15	18-Aug-15	25-Aug-15	01-Sep-15	08-Sep-15	15-Sep-15	22-Sep-15	29-Sep-15	06-Oct-15	13-Oct-15	20-Oct-15	27-Oct-15	03-Nov-15	10-Nov-15	17-Nov-15	24-Nov-15	01-Dec-15	08-Dec-15	15-Dec-15	22-Dec-15	29-Dec-15	05-Jan-16	12-Jan-16	19-Jan-16	26-Jan-16	02-Feb-16	09-Feb-16	16-Feb-16	23-Feb-16	02-Mar-16	09-Mar-16	16-Mar-16	23-Mar-16	30-Mar-16	06-Apr-16	13-Apr-16	20-Apr-16	27-Apr-16	04-May-16	11-May-16	18-May-16	25-May-16	01-Jun-16	08-Jun-16	15-Jun-16	22-Jun-16	29-Jun-16	06-Jul-16	13-Jul-16	20-Jul-16	27-Jul-16	03-Aug-16	10-Aug-16	17-Aug-16	24-Aug-16	31-Aug-16	07-Sep-16	14-Sep-16	21-Sep-16	28-Sep-16	05-Oct-16	12-Oct-16	19-Oct-16	26-Oct-16	02-Nov-16	09-Nov-16	16-Nov-16	23-Nov-16	30-Nov-16	07-Dec-16	14-Dec-16	21-Dec-16	28-Dec-16	04-Jan-17	11-Jan-17	18-Jan-17	25-Jan-17	01-Feb-17	08-Feb-17	15-Feb-17	22-Feb-17	01-Mar-17	08-Mar-17	15-Mar-17	22-Mar-17	29-Mar-17	05-Apr-17	12-Apr-17	19-Apr-17	26-Apr-17	03-May-17	10-May-17	17-May-17	24-May-17	31-May-17	06-Jun-17	13-Jun-17	20-Jun-17	27-Jun-17	04-Jul-17	11-Jul-17	18-Jul-17	25-Jul-17	01-Aug-17	08-Aug-17	15-Aug-17	22-Aug-17	29-Aug-17	05-Sep-17	12-Sep-17	19-Sep-17	26-Sep-17	03-Oct-17	10-Oct-17	17-Oct-17	24-Oct-17	31-Oct-17	06-Nov-17	13-Nov-17	20-Nov-17	27-Nov-17	04-Dec-17	11-Dec-17	18-Dec-17	25-Dec-17	01-Jan-18	08-Jan-18	15-Jan-18	22-Jan-18	29-Jan-18	05-Feb-18	12-Feb-18	19-Feb-18	26-Feb-18	04-Mar-18	11-Mar-18	18-Mar-18	25-Mar-18	01-Apr-18	08-Apr-18	15-Apr-18	22-Apr-18	29-Apr-18	06-May-18	13-May-18	20-May-18	27-May-18	03-Jun-18	10-Jun-18	17-Jun-18	24-Jun-18	01-Jul-18	08-Jul-18	15-Jul-18	22-Jul-18	29-Jul-18	05-Aug-18	12-Aug-18	19-Aug-18	26-Aug-18	02-Sep-18	09-Sep-18	16-Sep-18	23-Sep-18	30-Sep-18	07-Oct-18	14-Oct-18	21-Oct-18	28-Oct-18	04-Nov-18	11-Nov-18	18-Nov-18	25-Nov-18	02-Dec-18	09-Dec-18	16-Dec-18	23-Dec-18	30-Dec-18	06-Jan-19	13-Jan-19	20-Jan-19	27-Jan-19	03-Feb-19	10-Feb-19	17-Feb-19	24-Feb-19	03-Mar-19	10-Mar-19	17-Mar-19	24-Mar-19	31-Mar-19	07-Apr-19	14-Apr-19	21-Apr-19	28-Apr-19	05-May-19	12-May-19	19-May-19	26-May-19	02-Jun-19	09-Jun-19	16-Jun-19	23-Jun-19	30-Jun-19	07-Jul-19	14-Jul-19	21-Jul-19	28-Jul-19	04-Aug-19	11-Aug-19	18-Aug-19	25-Aug-19	01-Sep-19	08-Sep-19	15-Sep-19	22-Sep-19	29-Sep-19	06-Oct-19	13-Oct-19	20-Oct-19	27-Oct-19	03-Nov-19	10-Nov-19	17-Nov-19	24-Nov-19	01-Dec-19	08-Dec-19	15-Dec-19	22-Dec-19	29-Dec-19	05-Jan-20	12-Jan-20	19-Jan-20	26-Jan-20	02-Feb-20	09-Feb-20	16-Feb-20	23-Feb-20	02-Mar-20	09-Mar-20	16-Mar-20	23-Mar-20	30-Mar-20	06-Apr-20	13-Apr-20	20-Apr-20	27-Apr-20	04-May-20	11-May-20	18-May-20	25-May-20	01-Jun-20	08-Jun-20	15-Jun-20	22-Jun-20	29-Jun-20	06-Jul-20	13-Jul-20	20-Jul-20	27-Jul-20	03-Aug-20	10-Aug-20	17-Aug-20	24-Aug-20	31-Aug-20	07-Sep-20	14-Sep-20	21-Sep-20	28-Sep-20	05-Oct-20	12-Oct-20	19-Oct-20	26-Oct-20	02-Nov-20	09-Nov-20	16-Nov-20	23-Nov-20	30-Nov-20	07-Dec-20	14-Dec-20	21-Dec-20	28-Dec-20	04-Jan-21	11-Jan-21	18-Jan-21	25-Jan-21	01-Feb-21	08-Feb-21	15-Feb-21	22-Feb-21	01-Mar-21	08-Mar-21	15-Mar-21	22-Mar-21	29-Mar-21	05-Apr-21	12-Apr-21	19-Apr-21	26-Apr-21	03-May-21	10-May-21	17-May-21	24-May-21	31-May-21	06-Jun-21	13-Jun-21	20-Jun-21	27-Jun-21	04-Jul-21	11-Jul-21	18-Jul-21	25-Jul-21	01-Aug-21	08-Aug-21	15-Aug-21	22-Aug-21	29-Aug-21	05-Sep-21	12-Sep-21	19-Sep-21	26-Sep-21	03-Oct-21	10-Oct-21	17-Oct-21	24-Oct-21	31-Oct-21	06-Nov-21	13-Nov-21	20-Nov-21	27-Nov-21	04-Dec-21	11-Dec-21	18-Dec-21	25-Dec-21	01-Jan-22	08-Jan-22	15-Jan-22	22-Jan-22	29-Jan-22	05-Feb-22	12-Feb-22	19-Feb-22	26-Feb-22	04-Mar-22	11-Mar-22	18-Mar-22	25-Mar-22	01-Apr-22	08-Apr-22	15-Apr-22	22-Apr-22	29-Apr-22	06-May-22	13-May-22	20-May-22	27-May-22	03-Jun-22	10-Jun-22	17-Jun-22	24-Jun-22	01-Jul-22	08-Jul-22	15-Jul-22	22-Jul-22	29-Jul-22	05-Aug-22	12-Aug-22	19-Aug-22	26-Aug-22	02-Sep-22	09-Sep-22	16-Sep-22	23-Sep-22	30-Sep-22	07-Oct-22	14-Oct-22	21-Oct-22	28-Oct-22	04-Nov-22	11-Nov-22	18-Nov-22	25-Nov-22	02-Dec-22	09-Dec-22	16-Dec-22	23-Dec-22	30-Dec-22	06-Jan-23	13-Jan-23	20-Jan-23	27-Jan-23	03-Feb-23	10-Feb-23	17-Feb-23	24-Feb-23	03-Mar-23	10-Mar-23	17-Mar-23	24-Mar-23	31-Mar-23	07-Apr-23	14-Apr-23	21-Apr-23	28-Apr-23	05-May-23	12-May-23	19-May-23	26-May-23	02-Jun-23	09-Jun-23	16-Jun-23	23-Jun-23	30-Jun-23	07-Jul-23	14-Jul-23	21-Jul-23	28-Jul-23	04-Aug-23	11-Aug-23	18-Aug-23	25-Aug-23	01-Sep-23	08-Sep-23	15-Sep-23	22-Sep-23	29-Sep-23	06-Oct-23	13-Oct-23	20-Oct-23	27-Oct-23	03-Nov-23	10-Nov-23	17-Nov-23	24-Nov-23	01-Dec-23	08-Dec-23	15-Dec-23	22-Dec-23	29-Dec-23	05-Jan-24	12-Jan-24	19-Jan-24	26-Jan-24	02-Feb-24	09-Feb-24	16-Feb-24	23-Feb-24	02-Mar-24	09-Mar-24	16-Mar-24	23-Mar-24	30-Mar-24	06-Apr-24	13-Apr-24	20-Apr-24	27-Apr-24	04-May-24	11-May-24	18-May-24	25-May-24	01-Jun-24	08-Jun-24	15-Jun-24	22-Jun-24	29-Jun-24	06-Jul-24	13-Jul-24	20-Jul-24	27-Jul-24	03-Aug-24	10-Aug-24	17-Aug-24	24-Aug-24	31-Aug-24	07-Sep-24	14-Sep-24	21-Sep-24	28-Sep-24	05-Oct-24	12-Oct-24	19-Oct-24	26-Oct-24	02-Nov-24	09-Nov-24	16-Nov-24	23-Nov-24	30-Nov-24	07-Dec-24	14-Dec-24	21-Dec-24	28-Dec-24	04-Jan-25	11-Jan-25	18-Jan-25	25-Jan-25	01-Feb-25	08-Feb-25	15-Feb-25	22-Feb-25	01-Mar-25	08-Mar-25	15-Mar-25	22-Mar-25	29-Mar-25	05-Apr-25	12-Apr-25	19-Apr-25	26-Apr-25	03-May-25	10-May-25	17-May-25	24-May-25	31-May-25	06-Jun-25	13-Jun-25	20-Jun-25	27-Jun-25	04-Jul-25	11-Jul-25	18-Jul-25	25-Jul-25	01-Aug-25	08-Aug-25	15-Aug-25	22-Aug-25	29-Aug-25	05-Sep-25	12-Sep-25	19-Sep-25	26-Sep-25	03-Oct-25	10-Oct-25	17-Oct-25	24-Oct-25	31-Oct-25	06-Nov-25	13-Nov-25	20-Nov-25	27-Nov-25	04-Dec-25	11-Dec-25	18-Dec-25	25-Dec-25	01-Jan-26	08-Jan-26	15-Jan-26	22-Jan-26	29-Jan-26	05-Feb-26	12-Feb-26	19-Feb-26	26-Feb-26	04-Mar-26	11-Mar-26	18-Mar-26	25-Mar-26	01-Apr-26	08-Apr-26	15-Apr-26	22-Apr-26	29-Apr-26	06-May-26	13-May-26	20-May-26	27-May-26	03-Jun-26	10-Jun-26	17-Jun-26	24-Jun-26	01-Jul-26	08-Jul-26	15-Jul-26	22-Jul-26	29-Jul-26	05-Aug-26	12-Aug-26	19-Aug-26	26-Aug-26	02-Sep-26	09-Sep-26	16-Sep-26	23-Sep-26	30-Sep-26	07-Oct-26	14-Oct-26	21-Oct-26	28-Oct-26	04-Nov-26	11-Nov-26	18-Nov-26	25-Nov-26	02-Dec-26	09-Dec-26	16-Dec-26	23-Dec-26	30-Dec-26	06-Jan-27	13-Jan-27	20-Jan-27	27-Jan-27	03-Feb-27	10-Feb-27	17-Feb-27	24-Feb-27	03-Mar-27	10-Mar-27	17-Mar-27	24-Mar-27	31-Mar-27	07-Apr-27	14-Apr-27	21-Apr-27	28-Apr-27	05-May-27	12-May-27	19-May-27	26-May-27	02-Jun-27	09-Jun-27	16-Jun-27	23-Jun-27	30-Jun-27	07-Jul-27	14-Jul-27	21-Jul-27	28-Jul-27	04-Aug-27	11-Aug-27	18-Aug-27	25-Aug-27	01-Sep-27	08-Sep-27	15-Sep-27	22-Sep-27	29-Sep-27	06-Oct-27	13-Oct-27	20-Oct-27	27-Oct-27	03-Nov-27	10-Nov-27	17-Nov-27	24-Nov-27	01-Dec-27	08-Dec-27	15-Dec-27	22-Dec-27	29-Dec-27	05-Jan-28	12-Jan-28	19-Jan-28	26-Jan-28	02-Feb-28	09-Feb-28	16-Feb-28	23-Feb-28	02-Mar-28	09-Mar-28	16-Mar-28	23-Mar-28	30-Mar-28	06-Apr-28	13-Apr-28	20-Apr-28	27-Apr-28	04-May-28	11-May-28	18-May-28	25-May-28	01-Jun-28	08-Jun-28	15-Jun-28	22-Jun-28	29-Jun-28	06-Jul-28	13-Jul-28	20-Jul-28	27-Jul-28	03-Aug-28	10-Aug-28	17-Aug-28	24-Aug-28	31-Aug-28	07-Sep-28	14-Sep-28	21-Sep-28	28-Sep-28	05-Oct-28	12-Oct-28	19-Oct-28	26-Oct-28	02-Nov-28	09-Nov-28	16-Nov-28	23-Nov-28	30-Nov-28	07-Dec-28	14-Dec-28	21-Dec-28	28-Dec-28	04-Jan-29	11-Jan-29	18-Jan-29	25-Jan-29	01-Feb-29	08-Feb-29	15-Feb-29	22-Feb-29	01-Mar-29	08-Mar-29	15-Mar-29	22-Mar-29	29-Mar-29	05-Apr-29	12-Apr-29	19-Apr-29	26-Apr-29	03-May-29	10-May-29	17-May-29	24-May-29	31-May-29	06-Jun-29	13-Jun-29	20-Jun-29	27-Jun-29	04-Jul-29	11-Jul-29	18-Jul-29	25-Jul-29	01-Aug-29	08-Aug-29	15-Aug-29	22-Aug-29	29-Aug-29	05-Sep-29	12-Sep-29	19-Sep-29	26-Sep-29	03-Oct-29	10-Oct-29	17-Oct-29	24-Oct-29	31-Oct-29	06-Nov-29	13-Nov-29	20-Nov-29	27-Nov-29	04-Dec-29	11-Dec-29	18-Dec-29	25-Dec-29	01-Jan-30	08-Jan-30	15-Jan-30	22-Jan-30	29-Jan-30	05-Feb-30	12-Feb-30	19-Feb-30	26-Feb-30	04-Mar-30	11-Mar-30	18-Mar-30	25-Mar-30	01-Apr-30	08-Apr-30	15-Apr-30	22-Apr-30	29-Apr-30	06-May-30	13-May-30	20-May-30	27-May-30	03-Jun-30	10-Jun-30	17-Jun-30	24-Jun-30	01-Jul-30	08-Jul-30	15-Jul-30	22-Jul-30	29-Jul-30	05-Aug-30	12-Aug-30	19-Aug-30	26-Aug-30	02
-------------	----------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	----

Exhibit B.1

SECTION 8

PROSECUTION AND PROGRESS

- (2) In the event of disapproval, the Contractor shall at the Contractor's expense do that work that is necessary to leave the site in a neat condition to the satisfaction of the Engineer. If the work done affects any existing road or highway, the Contractor shall at the Contractor's expense restore it to its former condition, or the equivalent thereof, to the satisfaction of the Engineer.
- (3) All work done according to the contract prior to its approval, will, when the contract is approved, be considered authorized work and will be paid for as provided in the contract.
- (4) The Contractor shall not be entitled to any additional compensation or an extension of time for any delay, hindrance or interference caused by or attributable to commencement of work prior to the date on which the contract was approved by the Attorney General or the attorney appointed and authorized to represent the Department, except to the extent the delay, hindrance or interference would have been compensable hereunder had work been commenced on the date of the approval and the progress thereof been the same as that actually made.

8-1.04 PROGRESS SCHEDULE

- When required by the special provisions, the Contractor shall submit to the Engineer a practicable progress schedule within 20 working days of approval of the contract, and within 10 working days of the Engineer's written request at any other time.
- The Contractor may furnish the schedule on a form of the Contractor's choice or, if requested, the Engineer will furnish a form for the Contractor's use. If the Engineer furnishes a form, the Engineer will also furnish to the Contractor, on request, on or before the last day of each month a copy of the form showing the status of work actually completed during the preceding estimate period.
- The schedule shall show the order in which the Contractor proposes to carry out the work, the dates on which the Contractor will start the several salient features of the work (including procurement of materials, plant, and equipment), and the contemplated dates for completing those salient features.
- The progress schedules submitted shall be consistent in all respects with the time and order of work requirements of the contract.
- Subsequent to the time that submittal of a progress schedule is required in accordance with these specifications, no progress payments will be made for any work until a satisfactory schedule has been submitted to the Engineer.

8-1.05 TEMPORARY SUSPENSION OF WORK

- The Engineer shall have the authority to suspend the work wholly or in part, for any time period as the Engineer deems necessary, due to unsuitable weather, or to such other conditions considered unfavorable for the suitable prosecution of the work, or for any time period as the Engineer deems necessary due to the failure on the part of the Contractor to carry out orders given, or to perform any provision of the contract. The Contractor shall immediately comply with the written order of the Engineer to suspend the work wholly or in part. The suspended work shall be

SECTION 8

PROSECUTION AND PROGRESS

resumed when conditions are favorable and methods are corrected, as ordered or approved in writing by the Engineer.

- In the event that a suspension of work is ordered as provided above, and should that suspension be ordered by reason of the failure of the Contractor to carry out orders or to perform any provision of the contract; or by reason of weather conditions being unsuitable for performing any item or items of work, which work, in the sole opinion of the Engineer, could have been performed prior to the occurrence of the unsuitable weather conditions had the Contractor diligently prosecuted the work when weather conditions were suitable; the Contractor, at the Contractor's expense, shall do all the work necessary to provide a safe, smooth, and unobstructed passageway through construction for use by public traffic during the period of that suspension as provided in Sections 7-1.08, "Public Convenience," and 7-1.09, "Public Safety," and as specified in the special provisions for the work. In the event that the Contractor fails to perform the work above specified, the Department will perform that work and the cost thereof will be deducted from moneys due or to become due the Contractor.

- In the event that a suspension of work is ordered by the Engineer due to unsuitable weather conditions, and in the sole opinion of the Engineer, the Contractor has prosecuted the work with energy and diligence prior to the time that operations were suspended, the cost of providing a smooth and unobstructed passageway through the work will be paid for as extra work as provided in Section 4-1.03D or, at the option of the Engineer, that work will be performed by the Department at no cost to the Contractor.

- If the Engineer orders a suspension of all of the work or a portion of the work which is the current controlling operation or operations, due to unsuitable weather or to other conditions considered unfavorable to the suitable prosecution of the work, the days on which the suspension is in effect shall not be considered working days as defined in Section 8-1.06, "Time of Completion." If a portion of work at the time of the suspension is not a current controlling operation or operations, but subsequently does become the current controlling operation or operations, the determination of working days will be made on the basis of the then current controlling operation or operations.

- If a suspension of work is ordered by the Engineer, due to the failure on the part of the Contractor to carry out orders given or to perform any provision of the contract, the days on which the suspension order is in effect shall be considered working days if those days are working days within the meaning of the definition set forth in Section 8-1.06, "Time of Completion."

- In addition to the requirements specified above, the following shall apply:

If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation or contract time or additional compensation and contract time is due as a result of that suspension or delay, the Contractor shall submit to the Engineer in writing a request for

SECTION 8

PROSECUTION AND PROGRESS

adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for the adjustment.

Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost or time or cost and time required for the performance of the contract has increased as a result of the suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Engineer will notify the Contractor of the Engineer's determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under the provisions specified in this section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any term or condition of this contract.

Any contract adjustment warranted due to suspension of work ordered by the Engineer will be made in the same manner as provided for right of way delays in Section 8-1.09, "Right of Way Delays."

- In the event of a suspension of work under any of the conditions set forth in this Section 8-1.05, the suspension of work shall not relieve the Contractor of the responsibilities as set forth in Section 7, "Legal Relations and Responsibility."

8-1.06 TIME OF COMPLETION

- The Contractor shall complete all or any designated portion of the work called for under the contract in all parts and requirements within the time set forth in the special provisions.
- A working day is defined as any day, except as follows:
 - (a) Saturdays, Sundays and legal holidays;
 - (b) Days on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom adverse to the current controlling operation or operations, as determined by the Engineer, from proceeding with at least 75 percent of the normal labor and equipment force engaged on that operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations; or
 - (c) Days on which the Contractor is prevented, by reason of requirements in "Maintaining Traffic" of the special provisions, from working on the controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations.
- Should the Contractor prepare to begin work at the regular starting time of any day on which inclement weather, or the conditions resulting from the weather, or the condition of the work, prevents the work from beginning at the usual starting

Exhibit B.2

adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for the adjustment.

Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost or time or cost and time required for the performance of the contract has increased as a result of the suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Engineer will notify the Contractor of the Engineer's determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.

No contract adjustment will be allowed under the provisions specified in this section to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any term or condition of this contract.

Any contract adjustment warranted due to suspension of work ordered by the Engineer will be made in the same manner as provided for right of way delays in Section 8-1.09, "Right of Way Delays."

- In the event of a suspension of work under any of the conditions set forth in this Section 8-1.05, the suspension of work shall not relieve the Contractor of the responsibilities as set forth in Section 7, "Legal Relations and Responsibility."

8-1.06 TIME OF COMPLETION

- The Contractor shall complete all or any designated portion of the work called for under the contract in all parts and requirements within the time set forth in the special provisions.

• A working day is defined as any day, except as follows:

- (a) Saturdays, Sundays and legal holidays;
- (b) Days on which the Contractor is prevented by inclement weather or conditions resulting immediately therefrom adverse to the current controlling operation or operations, as determined by the Engineer, from proceeding with at least 75 percent of the normal labor and equipment force engaged on that operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations; or
- (c) Days on which the Contractor is prevented, by reason of requirements in "Maintaining Traffic" of the special provisions, from working on the controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations.

- ~~Should the Contractor prepare to begin work at the regular starting time of any day on which inclement weather, or the conditions resulting from the weather, or the condition of the work, prevents the work from beginning at the usual starting~~

Special Provision
 Section 4 "Beginning of
 Work Time of
 Completion and
 Liquidated Damages"-
 Second through fourth
 paragraphs, inclusive
 and the first sentence
 of the fifth paragraph
 shall not apply



SECTION 8

PROSECUTION AND PROGRESS

~~time and the crew is dismissed as a result thereof and the Contractor does not proceed with at least 75 percent of the normal labor and equipment force engaged in the current controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations, the Contractor will not be charged for a working day whether or not conditions should change thereafter during that day and the major portion of the day could be considered to be suitable for those construction operations.~~

~~• The current controlling operation or operations is to be construed to include any feature of the work (e.g., an operation or activity, or a settlement or curing period) considered at the time by the Engineer and the Contractor, which, if delayed or prolonged, will delay the time of completion of the contract.~~

~~• Determination that a day is a non-working day by reason of inclement weather or conditions resulting immediately therefrom, shall be made by the Engineer.~~ The Contractor will be allowed 15 days from the issuance of the weekly statement of working days in which to file a written protest setting forth in what respects the Contractor differs from the Engineer; otherwise, the decision of the Engineer shall be deemed to have been accepted by the Contractor as correct. The Engineer will furnish the Contractor a weekly statement showing the number of working days charged to the contract for the preceding week, the number of working days of time extensions being considered or approved, the number of working days originally specified for the completion of the contract and the number of working days remaining to complete the contract and the extended date for completion thereof, except when working days are not being charged in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work."

Special Provision
Section 4 "Beginning of
Work Time of
Completion and
Liquidated Damages"-
Second through fourth
paragraphs, inclusive
and the first sentence
of the fifth paragraph
shall not apply

8-1.07 LIQUIDATED DAMAGES

• It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the number of working days as set forth in the special provisions, damage will be sustained by the State of California, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the State will sustain in the event of and by reason of the delay; and it is therefore agreed that the Contractor will pay to the State of California, the sum set forth in the special provisions per day for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed; and the Contractor agrees to pay the liquidated damages herein provided for, and further agrees that the Department may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.

• It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the number of working days specified, the Director shall have the right to increase the number of working days or not, as the Director may deem best to serve the interest of the State, and if the Director decides to increase the number of working days, the Director shall further have the right to charge to the Contractor, or the Contractor's heirs, assigns or sureties and to deduct from the final payment for the work all or any part, as the Director may deem proper, of the actual cost of engineering, inspection,

Exhibit B.3

time and the crew is dismissed as a result thereof and the Contractor does not proceed with at least 75 percent of the normal labor and equipment force engaged in the current controlling operation or operations for at least 60 percent of the total daily time being currently spent on the controlling operation or operations, the Contractor will not be charged for a working day whether or not conditions should change thereafter during that day and the major portion of the day could be considered to be suitable for those construction operations.

- The current controlling operation or operations is to be construed to include any feature of the work (e.g., an operation or activity, or a settlement or curing period) considered at the time by the Engineer and the Contractor, which, if delayed or prolonged, will delay the time of completion of the contract.

- Determination that a day is a non-working day by reason of inclement weather or conditions resulting immediately therefrom, shall be made by the Engineer. The Contractor will be allowed 15 days from the issuance of the weekly statement of working days in which to file a written protest setting forth in what respects the Contractor differs from the Engineer; otherwise, the decision of the Engineer shall be deemed to have been accepted by the Contractor as correct. The Engineer will furnish the Contractor a weekly statement showing the number of working days charged to the contract for the preceding week, the number of working days of time extensions being considered or approved, the number of working days originally specified for the completion of the contract and the number of working days remaining to complete the contract and the extended date for completion thereof, except when working days are not being charged in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work."

8-1.07 LIQUIDATED DAMAGES

- It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the number of working days as set forth in the special provisions, damage will be sustained by the State of California, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the State will sustain in the event of and by reason of the delay; and it is therefore agreed that the Contractor will pay to the State of California, the sum set forth in the special provisions per day for each and every calendar day's delay in finishing the work in excess of the number of working days prescribed; and the Contractor agrees to pay the liquidated damages herein provided for, and further agrees that the Department may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.

- It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the number of working days specified, the Director shall have the right to increase the number of working days or not, as the Director may deem best to serve the interest of the State, and if the Director decides to increase the number of working days, the Director shall further have the right to charge to the Contractor, or the Contractor's heirs, assigns or sureties and to deduct from the final payment for the work all or any part, as the Director may deem proper, of the actual cost of engineering, inspection,

SECTION 8

PROSECUTION AND PROGRESS

superintendence, and other overhead expenses which are directly chargeable to the contract, and which accrue during the period of the extension, except that cost of final surveys and preparation of final estimate shall not be included in the charges.

. The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering and inspection for any portion of the delay in completion of the work beyond the time named in the special provisions for the completion of the work caused by acts of God or of the public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargoes, provided that the Contractor shall notify the Engineer in writing of the causes of delay within 15 days from the beginning of that delay. The Engineer shall ascertain the facts and the extent of the delay, and the Engineer's findings thereon shall be final and conclusive.

. No extension of time will be granted for a delay caused by a shortage of materials unless the Contractor furnishes to the Engineer documentary proof that the Contractor has made every effort to obtain the materials from all known sources within reasonable reach of the work in a diligent and timely manner, and further proof in the form of supplementary progress schedules, as required in Section 8-1.04, "Progress Schedule," that the inability to obtain the materials when originally planned, did in fact cause a delay in final completion of the entire work which could not be compensated for by revising the sequence of the Contractor's operations. The term "shortage of materials," as used in this section, shall apply only to materials, articles, parts or equipment which are standard items and are to be incorporated in the work. The term "shortage of materials," shall not apply to materials, parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the contract. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. Delays in obtaining materials due to priority in filling orders will not constitute a shortage of materials.

. If the Contractor is delayed in completion of the work by reason of changes made under Section 4-1.03, "Changes," or by failure of the Department to acquire or clear right of way, or by moving the Contractor's plant pursuant to Section 6-2.03, "Mandatory Local Material Sources," or by any act of the Engineer or of the Department, not contemplated by the contract, an extension of time commensurate with the delay in completion of the work thus caused will be granted, and the Contractor shall be relieved from any claim for liquidated damages, or engineering and inspection charges or other penalties for the period covered by that extension of time; provided that the Contractor shall notify the Engineer in writing of the causes of delay within 15 days from the beginning of the delay. The Engineer shall ascertain the facts and the extent of the delay, and the Engineer's findings thereon shall be final and conclusive.

. Except for the additional compensation provided for in Section 8-1.09, "Right of Way Delays," and except as provided in Public Contract Code Section 7102, the Contractor shall have no claim for damage or compensation for any delay or hindrance.

SECTION 8

PROSECUTION AND PROGRESS

. It is the intention of the above provisions that the Contractor shall not be relieved of liability for liquidated damages or engineering and inspection charges for any period of delay in completion of the work in excess of that expressly provided for in this Section 8-1.07.

8-1.08 TERMINATION OF CONTROL

. Failure to supply an adequate working force, or material of proper quality, or failure to comply with Section 10262 of the State Contract Act, or in any other respect to prosecute the work with the diligence and force specified by the contract, is grounds for termination of the Contractor's control over the work and for taking over the work by the State as provided in the State Contract Act.

. If the Contractor's control of the work is terminated or the Contractor abandons the work and the contract work is completed in conformance with the provisions in Section 10255 of the State Contract Act, any dispute concerning the amount to be paid by the State to the Contractor or the Contractor's surety or to be paid to the State by the Contractor or the Contractor's surety, under the provisions in Section 10258 of the State Contract Act, shall be subject to arbitration in conformance with the provisions in Section 9-1.10, "Arbitration." The surety shall be bound by the arbitration award and is entitled to participate in the arbitration proceedings.

8-1.09 RIGHT OF WAY DELAYS

. If, through the failure of the State to acquire or clear right of way, the Contractor sustains loss which could not have been avoided by the judicious handling of forces, equipment and plant, there shall be paid to the Contractor that amount that the Engineer may find to be a fair and reasonable compensation for that part of the Contractor's actual loss, that, in the opinion of the Engineer, was unavoidable, determined as follows:

Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a force account basis, as provided in Section 9-1.03A(3), "Equipment Rental," with the following exceptions:

- (1) The right of way delay factor for each classification of equipment shown in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is a part of the contract, will be applied to that equipment rental rate.
- (2) The time for which the compensation will be paid will be the actual normal working time during which the delay condition exists, but in no case will exceed 8 hours in any one day.
- (3) The days for which compensation will be paid will be the calendar days, excluding Saturdays, Sundays and legal holidays, during the existence of the delay, except that when rental of equipment is paid for under the provisions in Section 9-1.03A (3b), "Equipment not on the Work," no payment will be made for right of way delays in conformance with the provisions in this Section 8-1.09.

Exhibit B.4

SECTION 8

PROSECUTION AND PROGRESS

. It is the intention of the above provisions that the Contractor shall not be relieved of liability for liquidated damages or engineering and inspection charges for any period of delay in completion of the work in excess of that expressly provided for in this Section 8-1.07.

8-1.08 TERMINATION OF CONTROL

. Failure to supply an adequate working force, or material of proper quality, or failure to comply with Section 10262 of the State Contract Act, or in any other respect to prosecute the work with the diligence and force specified by the contract, is grounds for termination of the Contractor's control over the work and for taking over the work by the State as provided in the State Contract Act.

. If the Contractor's control of the work is terminated or the Contractor abandons the work and the contract work is completed in conformance with the provisions in Section 10255 of the State Contract Act, any dispute concerning the amount to be paid by the State to the Contractor or the Contractor's surety or to be paid to the State by the Contractor or the Contractor's surety, under the provisions in Section 10258 of the State Contract Act, shall be subject to arbitration in conformance with the provisions in Section 9-1.10, "Arbitration." The surety shall be bound by the arbitration award and is entitled to participate in the arbitration proceedings.

8-1.09 RIGHT OF WAY DELAYS

. If, through the failure of the State to acquire or clear right of way, the Contractor sustains loss which could not have been avoided by the judicious handling of forces, equipment and plant, there shall be paid to the Contractor that amount that the Engineer may find to be a fair and reasonable compensation for that part of the Contractor's actual loss, that, in the opinion of the Engineer, was unavoidable, determined as follows:

Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a force account basis, as provided in Section 9-1.03A(3), "Equipment Rental," with the following exceptions:

- (1) The right of way delay factor for each classification of equipment shown in the Department of Transportation publication entitled Labor Surcharge And Equipment Rental Rates, which is a part of the contract, will be applied to that equipment rental rate.
- (2) The time for which the compensation will be paid will be the actual normal working time during which the delay condition exists, but in no case will exceed 8 hours in any one day.
- (3) The days for which compensation will be paid will be the calendar days, excluding Saturdays, Sundays and legal holidays, during the existence of the delay, except that when rental of equipment is paid for under the provisions in Section 9-1.03A (3b), "Equipment not on the Work," no payment will be made for right of way delays in conformance with the provisions in this Section 8-1.09.

SECTION 8

PROSECUTION AND PROGRESS

Actual loss shall be understood to include no items of expense other than idle time of equipment and necessary payments for idle time of workers, cost of extra moving of equipment and cost of longer hauls. Compensation for idle time of equipment will be determined as provided in this Section 8-1.09 and compensation for idle time of workers will be determined as provided in Section 9-1.03A(1), "Labor," and no markup will be added in either case for overhead and profit. The cost of extra moving of equipment and the cost of longer hauls will be paid for as extra work as provided in Section 4-1.03D.

If performance of the Contractor's work is delayed as the result of the failure of the Department to acquire or clear right of way, an extension of time determined pursuant to the provisions in Section 8-1.07, "Liquidated Damages," will be granted.

8-1.10 UTILITY AND NON-HIGHWAY FACILITIES

• Attention is directed to Section 7-1.11, "Preservation of Property," and Section 7-1.12, "Indemnification and Insurance." The Contractor shall protect from damage utility and other non-highway facilities that are to remain in place, be installed, relocated or otherwise rearranged.

• It is anticipated that some or all of the utility and other non-highway facilities, both above ground and below ground, that are required to be rearranged (as used herein, rearrangement includes installation, relocation, alteration or removal) as a part of the highway improvement will be rearranged in advance of construction operations. Where it is not anticipated that the rearrangement will be performed prior to construction, or where the rearrangement must be coordinated with the Contractor's construction operations, the existing facilities that are to be rearranged will be indicated on the plans or in the special provisions. Where a rearrangement is indicated on the plans or in the special provisions, the Contractor will have no liability for the costs of performing the work involved in the rearrangement.

• The right is reserved to the Department and the owners of facilities, or their authorized agents, to enter upon the highway right of way for the purpose of making those changes that are necessary for the rearrangement of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with forces engaged in this work and shall conduct operations in such a manner as to avoid any unnecessary delay or hindrance to the work being performed by the other forces. Wherever necessary, the work of the Contractor shall be coordinated with the rearrangement of utility or other non-highway facilities, and the Contractor shall make arrangements with the owner of those facilities for the coordination of the work.

• Attention is directed to the possible existence of underground main or trunk line facilities not indicated on the plans or in the special provisions and to the possibility that underground main or trunk lines may be in a location different from that which is indicated on the plans or in the special provisions. The Contractor shall ascertain the exact location of underground main or trunk lines whose presence is indicated on the plans or in the special provisions, the location of their service laterals or other appurtenances, and of existing service lateral or appurtenances of any other underground facilities which can be inferred from the

Exhibit B.5

IMPORTANT SPECIAL NOTICES

The bidder's attention is directed to Section 2-1.03, "DVBE Goal for This Project," of these special provisions. The Department is evaluating opportunities for potential DVBE participation to establish an appropriate goal for this project.

The Department is also evaluating opportunities for potential Small Business participation to establish appropriate provisions and participation level for this project.

The bidder's attention is directed to Section 2-1.07, "Pre-Award Information/Questionnaire," Section 3, "Award and Execution of Contract," and Section 8-4.01, "Audits," of these special provisions.

Attention is directed to "**Pre-Bid Manufacturing/Fabrication Facility Audit Review Request Guidelines**" available to interested bidders and subcontractors on the Internet at <http://www.dot.ca.gov/hq/esc/tollbridge/SFOBB/Sfobb.html#04-0120F4>. Requests for the pre-bid audit review shall be submitted in writing with a completed Manufacturing and Fabrication Self Qualification Audit (MFSQA) form to the Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, California 94612, telephone: (510) 286-5209.

Responses to the "**Pre-Award Information/Questionnaire**" and "**Manufacturing and Fabrication Self-Qualification Audit**" included in the Proposal must be **submitted with the bid**.

The anticipated period of time within which the contract may be awarded has been extended for this project. See Section 3, "Award and Execution of Contract," of these Special Provisions.

Attention is directed to the pre-award qualifications meeting in Section 3-1.01A "Pre-Award Qualifications Meeting" of these special provisions.

Establishing to the satisfaction of the Department, the bidder's qualifications and ability to complete the bridge construction work in a safe and timely manner is a condition for being eligible for award of the contract.

- The definition of a working day has been re-defined for this project. (See Section 4 of these special provisions.)
- The time limit specified in the special provisions for the completion of work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. It is expected that additional shifts will be required throughout the life of the contract to the extent deemed necessary to ensure that the work will be completed within the time limit specified. (See Section 4 of these special provisions.)

Exhibit B.6

The contract provisions described herein shall be considered part of the cost of preparing bids and no separate payment will be made therefor.

3-1.01B AWARD AND EXECUTION OF CONTRACT

The award of the contract, if it be awarded, will be made within 30 days after the opening of the proposals. This period will be subject to extension for such further period as may be agreed upon in writing between the Department and the bidder concerned. The award, if made, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DVBE participation or has demonstrated, to the satisfaction of the Department, adequate good faith efforts to do so. Meeting the goal for DVBE participation or demonstrating, to the satisfaction of the Department, adequate good faith efforts to do so is a condition for being eligible for award of contract.

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds, to the Department so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: Department of Transportation MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, CA 95816

A "Payee Data Record" form will be included in the contract documents to be executed by the successful bidder. The purpose of the form is to facilitate the collection of taxpayer identification data. The form shall be completed and returned to the Department by the successful bidder with the executed contract and contract bonds. For the purposes of the form, payee shall be deemed to mean the successful bidder. The form is not to be completed for subcontractors or suppliers. Failure to complete and return the "Payee Data Record" form to the Department as provided herein will result in the retention of 20 percent of payments due the contractor and penalties of up to \$20,000. This retention of payments for failure to complete the "Payee Data Record" form is in addition to any other retention of payments due the Contractor.

Attention is directed to "California Company Preference" of these special provisions.

The amount of the California company reciprocal preference shall be equal to the amount of the preference applied by the state of the nonresident contractor with the lowest responsive bid, except where the "California company" is eligible for a California Small Business Preference, in which case the preference applied shall be the greater of the two, but not both.

If the bidder submitting the lowest responsive bid is not a "California company" and with the benefit of the reciprocal preference, a "California company's" responsive bid is equal to or less than the original lowest responsive bid, the "California company" will be awarded the contract at its submitted bid price except as provided below.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in "Order of Work," of these special provisions, Section 8-1.03, "Beginning of Work," Section 8-1.06, "Time of Completion," and Section 8-1.07, "Liquidated Damages," of the Standard Specifications, and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

The second through fourth paragraphs, inclusive, and the first sentence of the fifth paragraph of Section 8-1.06, "Time of Completion," of the Standard Specifications shall not apply. A working day is defined as any day, with no exceptions.

The work shall be completed in phases as described in Section 10-1.01 "Order of Work" of these special provisions.

Phase 1 work shall be diligently prosecuted to completion before the expiration of **2130 WORKING DAYS** beginning on the fifteenth day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$100,000 per day as liquidated damages, for each and every day's delay in completing Phase 1 work in excess of the number of working days prescribed above for Phase 1. For each and every working day less than the number of working days prescribed above for Phase 1, the Contractor will receive an incentive payment of \$50,000. Should the incentive apply concurrently with other incentives specified elsewhere in these special provisions, both will be earned. The total incentive for Phase 1 work will not exceed \$9,000,000.

Phase 2 work shall be diligently prosecuted to completion before the expiration of 180 working days after completion of Phase 1 or **2310 WORKING DAYS** beginning on the fifteenth day after approval of the contract, whichever is earlier.

The Contractor shall pay to the State of California the sum of \$100,000 per day as liquidated damages, for each and every day's delay in completing Phase 2 work in excess of the earliest completion date for Phase 2 as prescribed above.

Phase 3 work shall be diligently prosecuted to completion before the expiration of 360 working days after completion of Phase 1 or **2490 WORKING DAYS** beginning on the fifteenth day after approval of the contract, whichever is earlier.

The Contractor shall pay to the State of California the sum of \$100,000 per day as liquidated damages, for each and every day's delay in completing Phase 3 work in excess of the earliest completion date for Phase 3 as prescribed above.

Should two or more liquidated damages accrue concurrently, no more than \$100,000 per day will be assessed. Total liquidated damages for the project will not exceed \$125,000,000.

Inspection, testing, and review duties performed by the Engineer shall be considered as included in the number of working days for completion of the phases of work and no extensions of time will be allowed for such actions in determining liquidated damages or incentive payments.

The time limit specified for the completion of the work contemplated herein is considered insufficient to permit completion of the work by the Contractor working a normal number of hours per day or week on a single shift basis. Should the Contractor fail to maintain the progress of the work in accordance with the "Progress Schedule (Critical Path Method)" required in these special provisions, additional shifts will be required to the extent necessary to ensure that the progress conforms to the above mentioned schedule and that the work will be completed within the time limit specified.

Full compensation for additional costs occasioned by compliance with the provisions in this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

SECTION 5. GENERAL

SECTION 5-1. MISCELLANEOUS

5-1.01 WORKING DRAWINGS

Working drawings shall conform to the requirements in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions. Working drawings shall include supplements and calculations that are in addition to drawings.

Working drawings shall be submitted to the following location:

California Department of Transportation
Office of the Resident Engineer, Contract 04-0120F4
333 Burma Rd.
Oakland, CA 94607

Working drawings shall conform to the following:

- A. For initial review, 6 sets of the working drawings, shall be submitted. Submittal of drawings for items on the critical path shall be so noted on transmittal forms along with the corresponding activity codes from the progress schedule. After the Engineer has determined that a submittal is complete, 12 additional sets shall be submitted.
- B. Drawings shall be 559 mm x 864 mm, or 419 mm x 648 mm, or 279 mm x 432 mm in size, at the option of the Engineer. Supplements and calculations shall be 215 mm x 280 mm in size.
- C. For drawings, text size shall be nominally 2.8 mm high, minimum. For supplement and calculations, font size shall be 12, minimum.
- D. Each working drawing sheet and each page of supplement or calculation, shall include the jobsite name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, bridge number and contract number.
- E. Text and details shall be legible and suitable for photocopying and reduction.
- F. In addition to the paper copies of the working drawings, electronic files shall be submitted. Electronic files shall be portable document format (PDF) and shall be submitted on compact disk (CD) media. Each plan sheet shall be a separate PDF file on the CD. The electronic copy of the calculations and supplement shall be made into separate PDF files so that no more than 50 pages are included in a single file on the CD. The CD shall contain an index consisting of the file names and a description of the corresponding file contents. The files shall be listed in the sequence of: 1) index, 2) drawings, 3) supplement, and 4) calculations. If more than one CD is used for a given working drawing submittal, the index shall be included on each CD.
- G. Microfilms are required for approved shop drawings and shall be only a 24x reduction. The edge of the corrected original tracing image shall be clearly visible and visually parallel with the edges of the page. A clear, legible symbol shall be provided on the upper left side of each page to show the amount of reduction, and a horizontal and vertical scale shall be provided on each reduced print to facilitate enlargement to original scale.
- H. After review and approval of the working drawings, between 6 and 12 sets, as requested by the Engineer, shall be submitted to the Engineer for final approval. These sets will be the only sets stamped "Approved" and will be distributed for use during construction.
- I. At the completion of the contract, one compiled set of all approved working drawings (in electronic form and including all corrections and revisions) shall be furnished to the Engineer. The index shall be the first file on the CD.

Exhibit B.7

10-1.13 PROGRESS SCHEDULE (CRITICAL PATH METHOD)

Progress schedules will be required for this contract. Progress schedules shall utilize the Critical Path Method (CPM). Attention is directed to "Cooperation," and "Obstructions" of these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7, "Legal Relations and Responsibility," of the Standard Specifications. All schedules are required to reflect a reasonable plan to execute the contract scope of work. The Contractor shall be solely responsible for the content of the schedules and the execution of all contract requirements.

The provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply.

DEFINITIONS

The following definitions apply to this section "Progress Schedule (Critical Path Method)":

- A. Activity: Any task, or portion of a project, which takes time to complete.
- B. Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.
- C. Controlling Operation: The activity considered at the time by the Engineer, within that series of activities defined as the critical path, which if delayed or prolonged, will delay the time of completion of the contract.
- D. Critical Path: The series of activities, which determines the earliest completion of the contract (Forecast Completion Date). This is the longest path of activities having the least amount of float.
- E. Critical Path Method: A mathematical calculation to determine the earliest completion of the contract represented by a graphic representation of the sequence of activities that shows the interrelationships and interdependencies of the elements composing a project.
- F. Contract Completion Date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in accordance with Section 8-1.06, "Time of Completion," of the Standard Specifications.
- G. Early Completion Time: The difference in time between the current contract completion date and the Contractor's scheduled early forecast completion date as shown on the accepted baseline schedule, or schedule updates and revisions.
- H. Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network.
- I. Scheduled Completion Date: The completion date of the last scheduled work activity identified on the critical path.
- J. Free Float: The amount of time an activity can be delayed before affecting a subsequent activity.
- K. Hammock Activity: An activity added to the network to span an existing group of activities for summarizing purposes.
- L. Milestone: A marker in a network, which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
- M. Revision: A change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
- N. Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, and float.
- O. Total Float: The amount of time that an activity may be delayed without affecting the total project duration of the critical path.
- P. Update Schedule: The modification of the CPM progress schedule through a regular review to incorporate actual progress to date by activity and to reflect the current plan to complete the project.
- Q. Time Scaled Logic Diagram: A schematic display of the logical relationships of project activities, drawn from left to right to reflect project chronology with the positioning and length of the activity representing its duration.
- R. Bar Chart (Gantt Chart): A graphic display of scheduled-related information, activities or other project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.
- S. Near Critical Path: A path having 30 days or less of total float.
- T. Delay: The time period during which some part of the construction project has been extended beyond what was originally planned due to unanticipated circumstances. A delay occurs when the respective activity or group of activities, requiring additional time, impacts the completion of the successor construction activity and also extend the scheduled contract completion date.
- U. Data date: The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."

- V. Narrative Report: A document submitted with each schedule that discusses topics related to project progress and scheduling.
- W. State Owned Float Activity: The activity documenting time saved on the critical path by actions of the State. It is the last activity prior to the scheduled completion date.
- X. Time Impact Analysis: A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.

The Engineer will schedule and conduct a Preconstruction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within seven days after the bidder has received the contract for execution. At this meeting, the requirements of this section of the special provisions will be reviewed with the Contractor. The Contractor shall be prepared to discuss its schedule methodology, proposed sequence of operations, the activity identification system for labeling all work activities, the schedule file numbering system, and any deviations it proposes to make from the Stage Construction Plans. The Engineer will submit a scheduling shell project on electronic medium, displaying an activity code dictionary consisting of fields populated with the Caltrans scheduling codes, filters, layouts, report formats, contract milestones, and a resource dictionary. The Contractor shall utilize these codes, filters, layouts, etc. and may add other codes as necessary, to group and organize the work activities. Periodically the Engineer may request the Contractor to utilize additional filters, layouts or activity codes to be able to further group or summarize work activities.

Also, the Engineer and the Contractor shall review the requirements for all submittals applicable to the contract and discuss their respective preparation and review durations. All submittals and reviews are to be reflected on the Interim Baseline Schedule and the Baseline Schedule.

GENERAL SCHEDULE ITEMS

The following items are applicable to all schedules:

- A. Activity identification numbers for deleted activities are not to be reused. Added activities shall be assigned a new and unique activity identification number.
- B. Activity descriptions are not to be revised when the scope of the activity is changed. The existing activity shall be deleted and a new activity shall be added.
- C. When forecasting new durations for activities that have not started, the original duration field shall be revised.
- D. All Resource requirements shall be included for all new construction activities.
- E. All activities shall have durations of not more than 20 days and not less than one day unless permitted otherwise by the Engineer.
- F. All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.
- H. Negative lags shall not be assigned for any activity relationships.
- I. All out of sequence activities identified on the scheduling and leveling report shall be reviewed and their relationships either verified or changed.
- J. The Contractor shall not add job inefficiencies or weather days to a project calendar without prior approval by the Engineer.
- K. Offsite fabrication and material/equipment delivery activities shall be sufficiently detailed to allow monitoring of schedule progress.
- L. The Contractor shall provide to the Engineer two copies of all schedules on electronic medium, together with printed copies of the network diagrams or bar charts and tabular reports described under "Project Schedule Reports", and the Schedule Narrative Report.

The Engineer's review and acceptance of schedules shall not waive any contract requirements and shall not relieve the Contractor of any obligation thereunder or responsibility for submitting complete and accurate information. Schedules that are rejected shall be corrected by the Contractor and resubmitted to the Engineer within 5 days of notification by the Engineer, at which time a new review will begin.

Errors or omissions on schedules shall not relieve the Contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer, either the Contractor or the Engineer discover that any aspect of the schedule has an error or omission, it shall be corrected by the Contractor on the next update schedule.

INTERIM BASELINE SCHEDULE

Within 15 days after approval of the contract, the Contractor shall submit to the Engineer an Interim Baseline Project Schedule which will serve as the progress schedule for the first 120 days of the project, or until the Baseline Schedule is accepted, whichever is sooner. The Interim Baseline Schedule shall utilize the critical path method of scheduling. The

Interim Baseline Schedule shall depict how the Contractor plans to perform the work for the first 120 days of the contract. Additionally, the Interim Baseline Schedule shall show all required submittals working drawings, and review periods, and shall provide for all permits, and other non-work activities necessary to begin the work. The Contractor shall also submit a Summary Schedule, reflecting the duration of the contract, grouped by major areas of the project identified by the scheduling codes provided in the Caltrans scheduling codes or as defined by the Engineer. This summary schedule is for information purposes only and is to be used as a reference until the Baseline Schedule is accepted.

The Interim Baseline Schedule submittal shall include the data files used to generate the schedule on electronic medium.

The Engineer shall be allowed 10 days to review the schedule and to provide comments, including the Contractor's application of the supplied activity codes. All comments are to be implemented into the Baseline Schedule. Re-submittal of the Interim Baseline Schedule is not required. Late review of the Interim Baseline Schedule shall not restrain the submittal of the Baseline Schedule. No contract payments shall be made to the Contractor until a Interim Baseline Schedule is submitted in accordance with the above requirements.

BASELINE SCHEDULE

Within 90days, after approval of the contract, the Contractor shall submit to the Engineer a Baseline Project Schedule including the incorporation of all comments provided to the Interim Baseline Schedule. The Baseline Schedule shall have a data date of the day prior to the first working day of the contract. The schedule shall not include any actual start dates, actual finish dates, or constraint dates (except for Contract Milestone dates) and activities scheduled to start or finish between the data date and the run date shall reflect dates that can be attained. The Baseline Schedule shall meet interim milestone dates, contract milestone dates, stage construction requirements, internal time constraints, show logical sequence of activities, and must not extend beyond the number of days originally provided for in the contract.

All task activities shall be assigned to a project calendar. Each calendar shall identify a workweek, and holidays. Different calendars shall be used for work activities that occur on different work schedules. Activities for the preparation and the review of submittals; offsite fabrication, and material/equipment deliveries are to be assigned to the same calendar unless approved by the Engineer. All non-activity periods for Environmental work restrictions shall be identified with the appropriate calendars.

The Baseline CPM Schedule submitted by the Contractor shall have a sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. The Baseline Schedule shall depict how the Contractor plans to complete the whole work involved, and shall show all activities that define the critical path. Multiple critical paths and near-critical paths shall be kept to a minimum, as determined by the Engineer.

State owned float shall be considered a resource for the exclusive use of the State. The Engineer may accrue State owned float by the early completion of review of any type of required submittal when it saves time on the critical path. The Engineer will document State owned float by directing the Contractor to update the State owned float activity on the next schedule update. The Contractor shall include a log of the action on the State owned float activity and include a discussion of the actions in the narrative report. The Engineer may use State owned float to mitigate past or future State delays by offsetting potential time extensions.

The Contractor shall be responsible for assuring that all work sequences are logical and the network shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of work required for the performance of the contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the contract. If the Contractor fails to define any element of work, activity or logic, the Contractor in the next monthly update or revision of the schedule shall correct it.

The Baseline Schedule shall be supplemented with resource allocations for every task activity to a level of detail that facilitates report generation based on labor craft and equipment class for the Contractor and subcontractors.

The Contractor shall optimize labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not over committed in concurrent activities. The Contractor shall not create hammock activities for the purpose of resources loading. The Baseline Schedule shall not attribute negative float to any activity.

Along with the baseline progress schedule, the Contractor shall also submit to the Engineer time-scaled resource histograms of the labor crafts and equipment to be utilized on the contract.

Each schedule submitted to the Engineer will comply with all limits imposed by the contract, with all specified intermediate milestone and contract completion dates, and with all constraints, restraints or sequences included in the contract. The degree of detail shall include factors including, but not limited to:

- A. Physical breakdown of the project;
- B. Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of work shown in the contract, the planned substantial completion date, and the final completion date;
- C. Type of work to be performed, the sequences, and the major subcontractors involved;

- D. All purchases, submittals, submittal reviews, manufacture, fabrication, tests, delivery, and installation activities for all major materials and equipment, including submittal of requests for audits of manufacturers and fabricators in conformance with "Manufacturing and Fabrication Qualification Audit for Materials" of these special provisions;
- E. Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review.
- F. Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, railroads, and utilities as shown on the plans or specified in the specifications;
- G. Identification of each and every utility relocation and interface as a separate activity, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved;
- H. Actual tests, submission of test reports, and approval of test results;
- I. All start-up, testing, training, and assistance required under the Contract;
- J. Punchlist and final clean-up;
- K. Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours;
- L. Identification of each and every ramp closing and opening event as a separate one day activity, including designation by activity coding and description that it is a north-bound, south-bound, east-bound, west-bound, and entry or exit ramp activity;
- M. Separate resources graphs for the Contract's labor, equipment and critical path labor, with an accompanying analysis of each and explanation for any variances;
- N. Equipment and labor shall be differentiated by a cost account code within the resource dictionary.
- O. State owned float as the last activity in the schedule, at the end of which is the Scheduled Completion Date.

The Engineer will be allowed 30 days to review and accept or reject the baseline project schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 15-day review period by the Engineer will begin.

PROJECT SCHEDULE REPORTS

Schedules submitted to the Engineer including Interim Baseline, Baseline, and update schedules shall include time scaled network diagrams or bar charts in a layout format requested by the Engineer. The network diagrams or bar charts submitted to the Engineer shall also be accompanied by four computer-generated mathematical analysis tabular reports for each activity included in the project schedule. The reports (215-mm x 280-mm size) shall include a network diagram report showing the activity columns only, a predecessor and successor report, a resource report (Interim Baseline and Baseline Schedules), and a scheduling and leveling calculation report. The network diagram reports shall include, at a minimum, the following for each activity:

- A. Activity number and description;
- B. Activity codes;
- C. Original, actual and remaining durations;
- D. Early start date (by calendar date);
- E. Early finish date (by calendar date);
- F. Actual start date (by calendar date);
- G. Actual finish date (by calendar date);
- H. Late start date (by calendar date);
- I. Late finish date (by calendar date);
- J. Identify activity calendar ID;
- K. Total Float and Free Float, in work days; and
- L. Percentage complete.

Network diagrams or bar charts shall be sorted and grouped in a format requested by the Engineer reflecting the project breakdown per the Caltrans activity codes. They shall show a continuous flow of information from left to right per the project sorting and grouping codes; e.g., project milestones, submittals sub-grouped by description, and the construction activities sub-grouped by the scope breakdown structure. The primary paths of criticality shall be clearly and graphically identified on the diagrams or charts. The network diagram or bar chart shall be prepared on E-size sheets (914-mm x 1219-mm), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks or bar charts shall be subject to the approval of the Engineer.

Schedule network diagrams the tabular reports shall be submitted to the Engineer for acceptance in the following quantities:

- A. 2 sets of the Network Diagrams or Bar Charts;
- B. 2 copies of the tabular reports (215-mm x 280-mm size); and
- C. 2 copies on electronic medium, each with a backup of the current schedule file.

WEEKLY SCHEDULE MEETINGS

The Engineer and the Contractor shall hold weekly scheduling meetings to discuss the near term schedule activities, to address any long-term schedule issues, and to discuss any relevant technical issues. The Contractor shall develop a rolling 4-weeks schedule identifying the previous week worked and a 3-week look ahead. It shall provide sufficient detail to include the actual and planned activities of the Contractor and all the subcontractors for offsite and construction activities, addressing all activities to be performed and to identify issues requiring engineering action or input.

Each activity in the 4 week rolling schedule should be identified by an associated CPM schedule activity ID numbering system. This schedule should not be hand written. The Contractor shall utilize a schedule layout as acceptable by the Engineer. The schedule shall be electronically submitted to the Engineer one day prior to the scheduled meeting date.

MONTHLY CASH FLOW REPORTS

The Contractor shall allocate a portion of each bid item cost to the appropriate schedule activities. A minimum of one activity shall be added to the schedule for each bid item. The total of all activity costs shall equal the total contract bid amount. This information shall be sufficient to generate a monthly cash flow report showing the anticipated monthly contract progress payments. The format for the report shall be acceptable to the Engineer. Actual Progress Payments shall be made in accordance with Standard Specification 9-1.06, Partial Payments.

MONTHLY UPDATE SCHEDULES

The Contractor shall submit a Monthly Update Schedule to the Engineer once in each month within 5 days of the data date. The proposed update schedule prepared by the Contractor shall include all information available as of the 20th day of the month, or other data date as established by the Engineer. A detailed list of all proposed schedule changes such as logic, duration, lead/lag, forecast completion date, additions and deletions shall be submitted with the update.

The Monthly Update Schedule submitted to the Engineer will be accompanied by a Schedule Narrative Report. The report shall describe the physical progress during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float, and an explanation of potential delays or problems and their estimated impact on performance, milestone completion dates, forecast completion date, and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay or cost increases shall be included for consideration by the Engineer. The report shall follow the outline set forth below:

Contractor's Schedule Narrative Report Outline:

- A. Contractor's Transmittal Letter;
- B. Work completed during the period;
- C. Description of the current critical path;
- D. Description of current problem areas;
- E. Current and anticipated delays;
 - 1. Cause of the delay;
 - 2. Corrective action and schedule adjustments to correct the delay; and
 - 3. Impact of the delay on other activities, milestones, and completion dates;
- F. Changes in construction sequences;
- G. Pending items and status thereof;
 - 1. Permits;
 - 2. Change Orders;
 - 3. Time Extensions; and
 - 4. Non-Compliance Notices;
 - 5. Notice of Potential Claims
- H. Contract completion date(s) status;
 - 1. Ahead of schedule and number of days; and
 - 2. Behind schedule and number of days; and
- I. Include updated Network Diagram and Reports.
- J. Response to Previous Schedule Comments

Portions of the network diagram on which all activities are complete need not be reprinted and submitted in subsequent updates. However, the submitted schedule and the related reports shall constitute a clear record of progress of the work from award of contract to final completion.

On a date determined by the Engineer, the Contractor shall meet with the Engineer to review the monthly schedule update. At the monthly progress meeting, the Contractor and the Engineer shall review the updated schedule and shall discuss the content of the Narrative Report. The Engineer will be allowed 10 days after the meeting to review and accept or reject the update schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 5-day review period by the Engineer will begin. All efforts shall be made between the Engineer and the Contractor to complete the review and the acceptance process prior to the next update schedule data date. To expedite the process, a second meeting between the Engineer and the Contractor may be held.

SCHEDULE REVISIONS

If the Contractor desires to make a change to the accepted schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change, and proposed revisions to activities, logic and duration. The Contractor shall submit for acceptance an analysis showing the effect of the revisions on the entire project. The analysis shall include:

- A. An updated schedule not including the revisions. The schedule shall have a data date just prior to implementing the proposed revisions and includes a project completion date;
- B. A revised schedule that includes the proposed revisions. The schedule will have the same data date as the updated schedule and include a project completion date;
- C. The Contractor should add resources for all new activities, also adjust resources for those activities that their remaining duration were changed;
- D. A narrative explanation of the revisions and their impact to the schedule;
- E. Computer files of the updated schedule and the revised schedule sequentially numbered or renamed for archive (record) purposes.

The Engineer will provide a response within 10 days to Contractor's proposed schedule revisions.

Within 15 days, the Contractor shall submit a revised CPM network for approval when requested by the Engineer, or when any of the following occurs:

- A. There is a significant change in the Contractor's operations that will affect the critical path;
- B. The current updated schedule indicates that the contract progress is 4 weeks or more behind the planned schedule, as determined by the Engineer; or
- C. The Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, contract progress, or work by other contractors.

The Engineer shall be allowed 10 days to review and accept or reject a schedule revision. Rejected schedule revisions shall be revised and resubmitted to the Engineer within 10 days, at which time a new 10-day review period by the Engineer will begin. Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor. The revised schedule shall also include a narrative explanation of the revisions and their impact to the schedule.

TIME IMPACT ANALYSIS

When the Contractor requests a time adjustment due to contract change orders or delayed activities or if the Contractor or the Engineer considers that an approved or anticipated change will impact the critical path or contract progress, the Contractor shall submit to the Engineer a written Time Impact Analysis illustrating the impact of each change or delay to the current contract completion date or milestone completion date, utilizing the current accepted schedule. Each Time Impact Analysis shall include a schedule update (an accepted schedule with a data date within the previous month of the event) reflecting the "before conditions", and schedule revision reflecting the "after condition", both with the same data dates, demonstrating how the Contractor proposes to incorporate the change order or delay into the current schedule. The schedule revision shall include the sequence of activities and any revisions to the existing activities to demonstrate the impact of the delay, or change into the schedule. The Time Impact Analysis shall also include proposed mitigation measures or work arounds including but not limited to alternate work calendars, re-sequencing of other activities, or performing work activities out-of-sequence to minimize the impact of the change order or the delayed activities.

Each Time Impact Analysis shall demonstrate the estimated or actual time impact based on the events of delay, the estimated or actual date of the contract change order work performance, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the current schedule in effect at the time the change or delay was encountered.

Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities from the time of actual delay, or from the time the contract change order work is performed. Mitigation measures shall be included in the analysis. The Time Impact Analysis shall also consider the use of State owned float as a mitigation measure. Time extensions will not be granted nor will delay damages be paid unless:

- A. The delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and
- B. The delay extends the actual performance of the work beyond the currently approved contract completion date.
- C. The delay impacts a fabrication or construction activity – delays to the Contractor's submittal or shop drawing process must impact a successor fabrication or construction activity. The Time Impact Analysis shall be based on the impact to fabrication or construction activities.

Time Impact Analyses shall be submitted within 15 days after the delay occurs or after initiation of the contract change order. The schedule files will be submitted on electronic medium along with the Time Impact Analysis, which shall include a narrative description of the delay, its impact on contract completion or milestone dates and proposed mitigation measures. Mitigation measures utilized to minimize the impact of the change order or delay shall include but are not limited to work arounds, re-sequencing of work, alternate work calendars, increased resources, expedited procurement and use of State owned float.

A response to each Time Impact Analysis by the Engineer will be made within 15 days after receipt of the Time Impact Analysis. The Engineer's review shall utilize actual data unless it is appropriate to use estimated data. Resolution of each Time Impact Analysis by the Engineer shall be completed after all effects of the disruption are documented, which may include mitigation measures. A copy of the Time Impact Analysis accepted by the Engineer shall be returned to the Contractor and the accepted schedule revisions illustrating the impact of the contract change orders or delays shall be incorporated into the project schedule during the first update after acceptance. Until such time that the Contractor provides the analysis, the Engineer may, at his option, construct and utilize the project as-built schedule or other method to determine adjustments in contract time.

FINAL SCHEDULE UPDATE

Within 15 days after the acceptance of the contract by the Director, the Contractor shall submit a final update of the schedule with actual start and actual finish dates for all activities. This schedule submission shall be accompanied by a certification, signed by an officer of the company and the Contractor's Project Manager stating "To the best of my knowledge, the enclosed final update of the project schedule reflects the actual start and completion dates of the activities contained herein."

EQUIPMENT AND SOFTWARE

The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules utilizing the latest hardware and software technology. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The minimum computer system to be furnished shall include the following:

- A. Complete computer system, including keyboard, mouse, 530-mm color SVGA monitor (1,024x768 pixels), current Intel Pentium IV micro processor chip, or equivalent or later;
- B. Computer operating system software, compatible with the selected processing unit, for Windows NT/Windows 2000, equivalent;
- C. Minimum one gigabyte (1000 MB) of random access memory (RAM);
- D. A 20 gigabyte minimum hard disk drive, a 1.44 megabyte 90-mm floppy disk drive, 32x speed minimum CD-RW drive, Ethernet card, two UBCUSB ports, and 56k modem;
- E. A color-ink-jet plotter with a minimum 36 Megabytes RAM, capable of 300 dots per inch color, 600 dots per inch monochrome, or equivalent. Capable of printing fully legible, time scaled charts, and network diagrams, in four colors, with a minimum size of 914-mm by 1219-mm (E size) and is compatible with the selected system. Plotter paper and ink cartridges will be provided throughout the contract. HP Designjet 1055 CM, equivalent or later
- F. CPM software shall be Primavera Project Planner, Version 3.1 , or later;
- G. Scheduler Analyzer Pro or equivalent – a suite of programs to assist in schedule analysis, the latest version for Windows NT/ Windows 2000, or later and,
- H. Microsoft Office software, the latest version for Windows NT/Windows 2000, or later, and McAfee Virus software or equivalent.

Exhibit B.8

7-1.12B(8) Enforcement

- The Department may assure the Contractor's compliance with its insurance obligations. Thirty days before an insurance policy lapses or is canceled during the Contract period the Contractor shall submit to the Department evidence of renewal or replacement of the policy.
- If the Contractor fails to maintain any required insurance coverage, the Department may maintain this coverage and withhold or charge the expense to the Contractor or terminate this Contract.
- The Contractor is not relieved of its duties and responsibilities to indemnify, defend, and hold harmless the State, its officers, agents, and employees by the Department's acceptance of insurance policies and certificates.
- Minimum insurance coverage amounts do not relieve the Contractor for liability in excess of such coverage, nor do they preclude the State from taking other actions available to it, including the withholding of funds under this Contract.

7-1.12B(9) Self-Insurance

- Self-insurance programs and self-insured retentions in insurance policies are subject to separate annual review and approval by the State.
- If the Contractor uses a self-insurance program or self-insured retention, the Contractor shall provide the State with the same protection from liability and defense of suits as would be afforded by first-dollar insurance. Execution of the Contract is the Contractor's acknowledgement that the Contractor will be bound by all laws as if the Contractor were an insurer as defined under Insurance Code Section 23 and that the self-insurance program or self-insured retention shall operate as insurance as defined under Insurance Code Section 22.

Section 71.125, "Legal Actions Against the Department," of the Standard Specifications is replaced with the following:

7-1.125 Legal Actions Against the Department

- If legal action is brought against the Department over compliance with a state or federal law, rule, or regulation applicable to highway work, then:
 - A. If by court order the Department prohibits the Contractor from performing work, the resulting delay is a suspension related to the Contractor's performance as specified in Section 8-1.05C, "Suspensions Related to Contractor Performance," unless the Department terminates the contract.
 - B. If a court order other than an order to show cause or the final judgement in the action prohibits the Department from requiring you to perform work, the Department may delete the prohibited work or terminate the contract.

SECTION 9: MEASUREMENT AND PAYMENT

Issue Date: November 17, 2004

Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications is amended to read:

9-1.04 NOTICE OF POTENTIAL CLAIM

- It is the intention of this section that disputes between the parties arising under and by virtue of the contract be brought to the attention of the Engineer at the earliest possible time in order that the matters may be resolved, if possible, or other appropriate action promptly taken.
- Disputes will not be considered unless the Contractor has first complied with specified notice or protest requirements, including Section 4-1.03, "Changes," Section 5-1.116, "Differing Site Conditions," Section 8-1.06, "Time of Completion," Section 8-1.07, "Liquidated Damages," and Section 8-1.10, "Utility and Non-Highway Facilities."
- For disputes arising under and by virtue of the contract, including an act or failure to act by the Engineer, the Contractor shall provide a signed written initial notice of potential claim to the Engineer within 5 days from the date the dispute first arose. The initial notice of potential claim shall provide the nature and circumstances involved in the dispute which shall remain consistent through the dispute. The initial notice of potential claim shall be submitted on Form CEM-6201A furnished by the Department and shall be certified with reference to the California False Claims Act, Government Code Sections 12650-12655. The Contractor shall assign an exclusive identification number for each dispute, determined by chronological sequencing, based on the date of the dispute.
- The exclusive identification number for each dispute shall be used on the following corresponding documents:
 - A. Initial notice of potential claim.
 - B. Supplemental notice of potential claim.
 - C. Full and final documentation of potential claim.

D. Corresponding claim included in the Contractor's written statement of claims.

- The Contractor shall provide the Engineer the opportunity to examine the site of work within 5 days from the date of the initial notice of potential claim. The Contractor shall proceed with the performance of contract work unless otherwise specified or directed by the Engineer.

- Throughout the disputed work, the Contractor shall maintain records that provide a clear distinction between the incurred direct costs of disputed work and that of undisputed work. The Contractor shall allow the Engineer access to the Contractor's project records deemed necessary by the Engineer to evaluate the potential claim within 20 days of the date of the Engineer's written request.

- Within 15 days of submitting the initial notice of potential claim, the Contractor shall provide a signed supplemental notice of potential claim to the Engineer that provides the following information:

- A. The complete nature and circumstances of the dispute which caused the potential claim.
- B. The contract provisions that provide the basis of claim.
- C. The estimated cost of the potential claim, including an itemized breakdown of individual costs and how the estimate was determined.
- D. A time impact analysis of the project schedule that illustrates the effect on the scheduled completion date due to schedule changes or disruptions where a request for adjustment of contract time is made.

- The information provided in items A and B above shall provide the Contractor's complete reasoning for additional compensation or adjustments.

- The supplemental notice of potential claim shall be submitted on Form CEM-6201B furnished by the Department and shall be certified with reference to the California False Claims Act, Government Code Sections 12650-12655. The Engineer will evaluate the information presented in the supplemental notice of potential claim and provide a written response to the Contractor within 20 days of its receipt. If the estimated cost or effect on the scheduled completion date changes, the Contractor shall update information in items C and D above as soon as the change is recognized and submit this information to the Engineer.

- Within 30 days of the completion of work related to the potential claim, the Contractor shall provide the full and final documentation of potential claim to the Engineer that provides the following information:

- A. A detailed factual narration of events fully describing the nature and circumstances that caused the dispute, including, but not limited to, necessary dates, locations, and items of work affected by the dispute.
- B. The specific provisions of the contract that support the potential claim and a statement of the reasons these provisions support and provide a basis for entitlement of the potential claim.
- C. When additional monetary compensation is requested, the exact amount requested calculated in conformance with Section 9-1.03, "Force Account Payment," or Section 8-1.09, "Right of Way Delays," including an itemized breakdown of individual costs. These costs shall be segregated into the following cost categories:

1. Labor – A listing of individuals, classifications, regular hours and overtime hours worked, dates worked, and other pertinent information related to the requested reimbursement of labor costs.
2. Materials – Invoices, purchase orders, location of materials either stored or incorporated into the work, dates materials were transported to the project or incorporated into the work, and other pertinent information related to the requested reimbursement of material costs.
3. Equipment – Listing of detailed description (make, model, and serial number), hours of use, dates of use and equipment rates. Equipment rates shall be at the applicable State rental rate as listed in the Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates," in effect when the affected work related to the dispute was performed.
4. Other categories as specified by the Contractor or the Engineer.

D. When an adjustment of contract time is requested the following information shall be provided:

1. The specific dates for which contract time is being requested.
2. The specific reasons for entitlement to a contract time adjustment.
3. The specific provisions of the contract that provide the basis for the requested contract time adjustment.
4. A detailed time impact analysis of the project schedule. The time impact analysis shall show the effect of changes or disruptions on the scheduled completion date to demonstrate entitlement to a contract time adjustment.

E. The identification and copies of the Contractor's documents and the substance of oral communications that support the potential claim.

- The full and final documentation of the potential claim shall be submitted on Form CEM-6201C furnished by the Department and shall be certified with reference to the California False Claims Act, Government Code Sections 12650-12655.

- Pertinent information, references, arguments, and data to support the potential claim shall be included in the full and final documentation of potential claim. Information submitted subsequent to the full and final documentation submittal will not be considered. Information required in the full and final documentation of potential claim, as listed in items A to E above, that is not applicable to the dispute may be exempted as determined by the Engineer. No full and final documentation of potential claim will be considered that does not have the same nature and circumstances, and basis of claim as those specified on the initial and supplemental notices of potential claim.

- The Engineer will evaluate the information presented in the full and final documentation of potential claim and provide a written response to the Contractor within 30 days of its receipt unless otherwise specified. The Engineer's receipt of the full and final documentation of potential claim shall be evidenced by postal receipt or the Engineer's written receipt if delivered by hand. If the full and final documentation of potential claim is submitted by the Contractor after acceptance of the work by the Director, the Engineer need not provide a written response.

- Provisions in this section shall not apply to those claims for overhead costs and administrative disputes that occur after issuance of the proposed final estimate. Administrative disputes are disputes of administrative deductions or retentions, contract item quantities, contract item adjustments, interest payments, protests of contract change orders as provided in Section 4-1.03A, "Procedure and Protest," and protests of the weekly statement of working days as provided in Section 8-1.06, "Time of Completion." Administrative disputes that occur prior to issuance of the proposed final estimate shall follow applicable requirements of this section. Information listed in the supplemental notice and full and final documentation of potential claim that is not applicable to the administrative dispute may be exempted as determined by the Engineer.

- Unless otherwise specified in the special provisions, the Contractor may pursue the administrative claim process pursuant to Section 9-1.07B, "Final Payment and Claims," for any potential claim found by the Engineer to be without merit.

- 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.

Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications is amended to read:

9-1.07B Final Payment and Claims

- After acceptance by the Director, the Engineer will make a proposed final estimate in writing of the total amount payable to the Contractor, including an itemization of the total amount, segregated by contract item quantities, extra work and other bases for payment, and shall also show each deduction made or to be made for prior payments and amounts to be kept or retained under the provisions of the contract. Prior estimates and payments shall be subject to correction in the proposed final estimate. The Contractor shall submit written approval of the proposed final estimate or a written statement of claims arising under or by virtue of the contract so that the Engineer receives the written approval or statement of claims no later than close of business of the thirtieth day after receiving the proposed final estimate. If the thirtieth day falls on a Saturday, Sunday or legal holiday, then receipt of the written approval or statement of claims by the Engineer shall not be later than close of business of the next business day. The Contractor's receipt of the proposed final estimate shall be evidenced by postal receipt. The Engineer's receipt of the Contractor's written approval or statement of claims shall be evidenced by postal receipt or the Engineer's written receipt if delivered by hand.

- On the Contractor's approval, or if the Contractor files no claim within the specified period of 30 days, the Engineer will issue a final estimate in writing in conformance with the proposed final estimate submitted to the Contractor, and within 30 days thereafter the State will pay the entire sum so found to be due. That final estimate and payment thereon shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

- If the Contractor within the specified period of 30 days files claims, the Engineer will issue a semifinal estimate in conformance with the proposed final estimate submitted to the Contractor and within 30 days thereafter the State will pay the sum found to be due. The semifinal estimate and corresponding payment shall be conclusive and binding against both parties to the contract on each question relating to the amount of work done and the compensation payable therefor, except insofar as affected by the claims filed within the time and in the manner required hereunder and except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

- Except for claims for overhead costs and administrative disputes that occur after issuance of the proposed final estimate, the Contractor shall only provide the following two items of information for each claim:

- A. The exclusive identification number that corresponds to the supporting full and final documentation of potential claim.
- B. The final amount of requested additional compensation.

- If the final amount of requested additional compensation is different than the amount of requested compensation included in the full and final documentation of potential claim, the Contractor shall provide in the written statement of claims the reasons for the changed amount, the specific provisions of the contract which support the changed amount, and a statement of the reasons the provisions support and provide a basis for the changed amount. If the Contractor's claim fails to provide an exclusive identification number or if there is a disparity in the provided exclusive identification number, the Engineer will notify the Contractor of the omission or disparity. The Contractor shall have 15 days after receiving notification from the Engineer to correct the omission or disparity. If after the 15 days has elapsed, there is still an omission or disparity of the exclusive identification number assigned to the claim, the Engineer will assign the number. No claim will be considered that has any of the following deficiencies:

- A. The claim does not have the same nature, circumstances, and basis as the corresponding full and final documentation of potential claim.
- B. The claim does not have a corresponding full and final documentation of potential claim.
- C. The claim was not included in the written statement of claims.
- D. The Contractor did not comply with applicable notice or protest requirements of Sections 4-1.03, "Changes," 5-1.116, "Differing Site Condition," 8-1.06, "Time of Completion," 8-1.07, "Liquidated Damages," 8-1.10, "Utility and Non-Highway Facilities," and 9-1.04, "Notice of Potential Claim."

- Administrative disputes that occur after issuance of the proposed final estimate shall be included in the Contractor's written statement of claims in sufficient detail to enable the Engineer to ascertain the basis and amounts of those claims.

- The Contractor shall keep full and complete records of the costs and additional time incurred for work for which a claim for additional compensation is made. The Engineer or designated claim investigators or auditors shall have access to those records and any other records as may be required by the Engineer to determine the facts or contentions involved in the claims. Failure to permit access to those records shall be sufficient cause for denying the claims.

- The written statement of claims submitted by the Contractor shall be accompanied by a notarized certificate containing the following language:

Under the penalty of law for perjury or falsification and with specific reference to the California False Claims Act, Government Code Section 12650 et. seq., the undersigned,

(name)

(title)

(company)

hereby certifies that the claim for the additional compensation and time, if any, made herein for the work on this contract is a true statement of the actual costs incurred and time sought, and is fully documented and supported under the contract between parties.

Dated _____

/s/ _____

Subscribed and sworn before me this _____ day

of _____

(Notary Public)

My Commission

Expires _____

- Failure to submit the notarized certificate will be sufficient cause for denying the claim.
- Claims for overhead type expenses or costs, in addition to being certified as stated above, shall be supported and accompanied by an audit report of an independent Certified Public Accountant. Omission of a supporting audit report of an independent Certified Public Accountant shall result in denial of the claim and shall operate as a bar to arbitration, as to the claim, in conformance with the requirements in Section 10240.2 of the California Public Contract Code. Claims for overhead type expenses or costs shall be subject to audit by the State at its discretion. The costs of performing an audit examination and submitting the report shall be borne by the Contractor. The Certified Public Accountant's audit examination shall be performed in conformance with the requirements of the American Institute of Certified Public Accountants Attestation Standards. The audit examination and report shall depict the Contractor's project and company-wide financial records and shall specify the actual overall average daily rates for both field and home office overhead for the entire duration of the project, and whether the costs have been properly allocated. The rates of field and home office overhead shall exclude unallowable costs as determined in Title 48 of the Federal Acquisition Regulations, Chapter 1, Part 31. The audit examination and report shall determine if the rates of field and home office overhead are:

- A. Allowable in conformance with the requirements in Title 48 of the Federal Acquisition Regulations, Chapter 1, Part 31.
- B. Adequately supported by reliable documentation.
- C. Related solely to the project under examination.

- Costs or expenses incurred by the State in reviewing or auditing claims that are not supported by the Contractor's cost accounting or other records shall be deemed to be damages incurred by the State within the meaning of the California False Claims Act.

- If the Engineer determines that a claim requires additional analysis, the Engineer will schedule a board of review meeting. The Contractor shall meet with the review board or person and make a presentation in support of the claim. Attendance by the Contractor at the board of review meeting shall be mandatory.

- The District Director of the District that administered the contract will make the final determination of any claims which remain in dispute after completion of claim review by the Engineer or board of review meeting.

The final determination of claims will be sent to the Contractor by hand delivery or deposit in the U.S. mail. The Engineer will then make and issue the Engineer's final estimate in writing and within 30 days thereafter the State will pay the entire sum, if any, found due thereon. That final estimate shall be conclusive and binding against both parties to the contract on all questions relating to the amount of work done and the compensation payable therefor, except as otherwise provided in Sections 9-1.03C, "Records," and 9-1.09, "Clerical Errors."

- Failure of the Contractor to conform to the specified dispute procedures shall constitute a failure to pursue diligently and exhaust the administrative procedures in the contract and shall operate as a bar to arbitration in conformance with the requirements in Section 10240.2 of the California Public Contract Code.

SECTION 12: CONSTRUCTION AREA TRAFFIC CONTROL DEVICES

Issue Date: November 2, 2004

The second paragraph of Section 12-1.01, "Description," of the Standard Specifications is amended to read:

- Attention is directed to Part 6 of the MUTCD and of the MUTCD California Supplement. Nothing in this Section 12 is to be construed as to reduce the minimum standards in these manuals.

Section 12-2.01, "Flaggers," of the Standard Specifications is amended to read:

- Flaggers while on duty and assigned to traffic control or to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof, shall perform their duties and shall be provided with the necessary equipment in conformance with Part 6 of the MUTCD and of the MUTCD California Supplement. The equipment shall be furnished and kept clean and in good repair by the Contractor at the Contractor's expense.

The first paragraph of Section 12-3.01, "General," of the Standard Specifications is amended to read:

- In addition to the requirements in Part 6 of the MUTCD and of the MUTCD California Supplement, all devices used by the Contractor in the performance of the work shall conform to the provisions in this Section 12-3.

The first paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- The term "Construction Area Signs" shall include all temporary signs required for the direction of public traffic through or around the work during construction. Construction area signs are shown in or referred to in Part 6 of the MUTCD and of the MUTCD California Supplement.

The fourth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- All construction area signs shall conform to the dimensions, color and legend requirements of the plans, Part 6 of the MUTCD, Part 6 of the MUTCD California Supplement, and these specifications. All sign panels shall be the product of a commercial sign manufacturer, and shall be as specified in these specifications.

The eighth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- Used signs with the specified sheeting material will be considered satisfactory if they conform to the requirements for visibility and legibility and the colors conform to the requirements in Part 6 of the MUTCD and of the MUTCD California Supplement. A significant difference between day and nighttime retroreflective color will be grounds for rejecting signs.

Section 12-3.06A, "Stationary Mounted Signs," of the Standard Specifications is amended by deleting the third, fourth, fifth, and sixth paragraphs.

SECTION 19: EARTHWORK

Issue Date: December 31, 2001

The third paragraph of Section 19-1.02, "Preservation of Property," of the Standard Specifications is amended to read:

- In addition to the provisions in Sections 5-1.02, "Plans and Working Drawings," and 5-1.02A, "Excavation Safety Plans," detailed plans of the protective systems for excavations on or affecting railroad property will be reviewed for adequacy of protection provided for railroad facilities, property, and traffic. These plans shall be submitted at least 9 weeks

Exhibit B.9

RESIDENT ENGINEER'S DAILY REPORT
ASST. RESIDENT ENGINEER'S DAILY REPORT


- RESIDENT ENGINEER'S SUMMARY REPORT
- RESIDENT ENGINEER'S DAILY REPORT
- ASST. RESIDENT ENGINEER'S DAILY REPORT

Contract #: 04-0120F4

SAS Superstructure

04-SF-80-13.2 / 13.9

Report No: DR-000823 **Working Day Calendar:** 567 **Date:** 02-Jul-2008
Fabricator: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Fabricator Shift Hour:** 0:00 to 24:00
Location: Shanghai, China **RE Shift Hour:** 05:45 to 16:15
Weather: Partly Cloud **Temperature:** 75 F/ 90 F
Material Description: SAS Tower

Summary:

Left the Marriott at 05:45 for Changxing Island.

Jim is on vacation, so I was tracking production on skins, stiffeners, and assembly in the Heavy Tower shop. The information gathered from the production tracking was tabulated in the spreadsheets previously created.

In the Tower Heavy shop, the following work was ongoing:

- aligning and tack welding of stiffeners to skin plates (see note below for more detail)
- butt welding of skin plates and longitudinal stiffeners
- milling of the beveled edges of skin plates
- Drilling splice bolt holes in longitudinal stiffeners
- fitting the final segment joint in South shaft, Lift 1, Skin D

On the East shaft, Skin A, stiffener-to-skin tacking: They continued to tack weld, check for plumb, and do some adjusting of the stiffeners. Adjusting was being done by mechanical means with a small hand jack between the stiffeners, as well as heat straightening. By the end of the shift (short day), initial tack welding and adjusting was still ongoing.

On the South shaft, Skin A, stiffener-to-skin tacking: Last night, they added 2 more aligning jigs at the top of the stiffeners. This brings the total number of jigs to 16. At the beginning of the shift, it appeared as if all of the set screws on the jigs had been engaged, and are in their final position. They continued to tack weld all morning. The tacks are spaced at intervals of as low as 200mm.

On the CNC tables, the one in Heavy shop Bay 1 was performing layout and etching of stiffener locations on South shaft, Skin E. The CNC table in Heavy shop Bay 2 was performing final cuts/copies of diaphragms.

The work shift for ZPMC was cut short today due to a power outage at 10:20. The power did not return until after the end of the shift. During the power outage, I got caught up on paperwork, and had a meeting with ABF regarding surveying and dimensional verification.

The meeting with ABF regarding surveying and dimensional verification was from about 13:00 until 14:00. Present were Scott Kennedy, Ken Lee, and myself of CT, and Gene Rosamilia, Tom Lee, Song, and Levi of ABF. ABF went over in detail how they perform their checks and at what times.

Daily Report
(*Continued Page 2 of 2*)

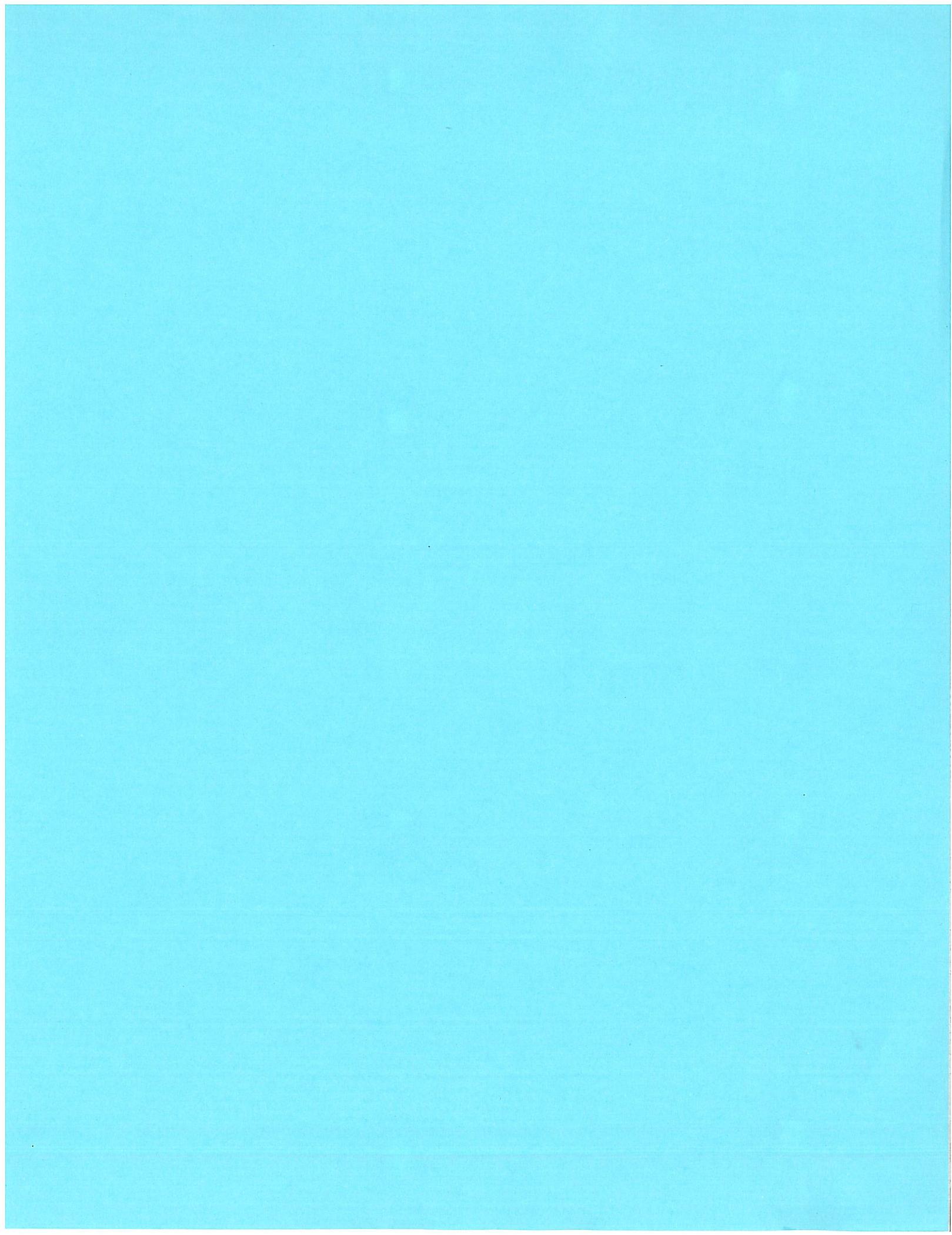
DR-000823

Arrived back at the Marriot at 17:25.

Shift hours: 8 regular & 3 OT

Prepared By:	Wright,Doug	06-Jul-2008
---------------------	-------------	-------------

Reviewed By:	Balan,Kannu	Sr. Engineer	28-Jul-2008
---------------------	-------------	--------------	-------------



**RESIDENT ENGINEER'S DAILY REPORT
ASST. RESIDENT ENGINEER'S DAILY REPORT**

- RESIDENT ENGINEER'S SUMMARY REPORT
 RESIDENT ENGINEER'S DAILY REPORT
 ASST. RESIDENT ENGINEER'S DAILY REPORT

Contract #: 04-0120F4
 SAS Superstructure
 04-SF-80-13.2 / 13.9

Report No: DR-000824 **Working Day Calendar:** 568 **Date:** 03-Jul-2008
Fabricator: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Fabricator Shift Hour:** 0:00 to 24:00
Location: Shanghai, China **RE Shift Hour:** 05:45 to 16:15
Weather: Partly Cloud **Temperature:** 78 F / 90 F
Material Description: SAS Tower

Summary:

Left the Marriott at 05:45 for Changxing Island.

Before leaving the Marriott, we received information that there was no power on the island, but the ferries were still running. Most people stayed and worked at room 602, but management wanted a couple of CT personnel on the island just in case they did start to do any work. So I came to the island for the Tower group.

I made 2 rounds throughout Tower Heavy shop bays, as well as Bays 1 thru 8, looking to see if any work was ongoing.

The only Tower related work ongoing was some checking, adjusting, and straightening of the longitudinal stiffeners on East shaft, Skin A.

The only other work ongoing was routine cleaning and maintenance.

I reviewed and updated the log of Non-Conformance Reports, and prepped some draft (outside of PMIV) responses to NPRs that I will be able to input into PMIV when I have a decent connection. The following NCRs and NPRs were reviewed today:

- NCR-0060, NPR-0023 – We have a TC review of the ABF response, but no TL-16 yet. I will request one from METS.
- NCR-0044, we have a TL-16 and a review of the ABF-C resolution, but an NPR has not yet been submitted by ABF. I put it on the list to suggest an NPR be submitted by ABF.

I was able to connect to the system and check e-mails, get into PMIV, etc because I have the air card from Ben Salvador and Mark Shindler. However, the connection was too slow to do anything but the basics of checking e-mails and sending small emails. PMIV is very slow when accessed in this way.

By the end of the shift, the power had still not been restored, and no additional work had started.

Arrived back at the Marriot at 15:10, then worked from room 602 to update my daily report, fill out my June TEC, and other misc paperwork.

Shift hours: 8 regular & 2 OT

DR-000824

Daily Report
(Continued Page 2 of 2)

Prepared By: Wright,Doug 06-Jul-2008

Reviewed By: Balan,Kannu Sr. Engineer 28-Jul-2008

**RESIDENT ENGINEER'S DAILY REPORT
ASST. RESIDENT ENGINEER'S DAILY REPORT**

- RESIDENT ENGINEER'S SUMMARY REPORT
 RESIDENT ENGINEER'S DAILY REPORT
 ASST. RESIDENT ENGINEER'S DAILY REPORT

Contract #: 04-0120F4
SAS Superstructure
04-SF-80-13.2 / 13.9

Report No: DR-000825 **Working Day Calendar:** 569 **Date:** 04-Jul-2008
Fabricator: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Fabricator Shift Hour:** 0:00 to 24:00
Location: Shanghai, China **RE Shift Hour:** 05:45 to 16:15
Weather: Partly Cloud **Temperature:** F/ F
Material Description: SAS Tower

Summary:

Left the Marriott at 05:45 for Changxing Island.

Jim is on vacation, so I was tracking production on skins, stiffeners, and assembly in the Heavy Tower shop. The information gathered from the production tracking was tabulated in the spreadsheets previously created.

The power was restored at about midnight this morning.

In the Tower Heavy shop, the following work was ongoing:

- aligning and tack welding of stiffeners to skin plates (see note below for more detail)
- butt welding of longitudinal stiffeners, no butt welding of skins today
- milling of the beveled edges of skin plates and longitudinal stiffeners
- Drilling splice bolt holes in longitudinal stiffeners

On the East shaft, Skin A, stiffener-to-skin tacking: They continued to tack weld, check for plumb, and do some adjusting of the stiffeners. Adjusting was being done by mechanical means with a small hand jack between the stiffeners, as well as heat straightening. By the end of the shift, initial tack welding and adjusting was still ongoing.

The straightening and adjusting of the East Skin A is more extensive and is going much more slowly than when they did the South Skin A.

On the South shaft, Skin A, stiffener-to-skin tacking: Tack welding continued throughout the shift. By the end of the shift, they were approximately 40% complete.

On the CNC tables, the one in Heavy shop Bay 1 was performing layout and etching of stiffener locations on South shaft, Skin E. The CNC table in Heavy shop Bay 2 was performing final cuts/copos of diaphragms.

I finalized the update of the production tracking spreadsheets and forwarded them to Balan for inclusion into his weekly update.

Arrived back at the Marriot at 16:15.

Shift hours: 10 OT

DR-000825

Daily Report
(Continued Page 2 of 2)

Prepared By: Wright,Doug 06-Jul-2008

Reviewed By: Balan,Kannu Sr. Engineer 28-Jul-2008

Exhibit B.10

China and India:

A Comparative Study of the Manufacturing and Services Industries

Submitted April 24th, 2006

by
Patricia Costa
Mayuri Guntupalli
Vishaal Rana
Huong Trieu

Prepared for the International Economic Development Program, Ford School of Public Policy,
University of Michigan

Table of Contents

EXECUTIVE SUMMARY	2
INTRODUCTION	2
OVERVIEW OF MANUFACTURING IN CHINA	4
China's Key Manufacturing Sectors: Electronics and Automotive Components.....	5
Factors Leading to China's Success in Manufacturing.....	6
<i>Preferential Government Policy</i>	6
<i>Foreign Investments</i>	7
<i>Infrastructure Investment</i>	8
<i>Human Capital</i>	8
Lessons Learned from China's Electronic and Automotive Component Sector	9
OVERVIEW OF MANUFACTURING IN INDIA	10
India's Key Manufacturing Sectors: Electronics and Automotive Components	11
Factors Leading to India's Growth in Manufacturing	11
<i>Preferential Government Policy</i>	12
<i>Human Capital</i>	12
<i>Large Domestic Markets</i>	13
<i>Quality and Trade Standards</i>	13
Factors Slowing India's Growth in Manufacturing	13
<i>Lower Levels of Foreign Investment than China</i>	13
<i>Lack of Infrastructure</i>	14
Recommendations for India's Manufacturing Sector Given China's Success	15
<i>Recommendation 1: Increase FDI Inflows</i>	15
<i>Recommendation 2: Improve Infrastructure</i>	16
OVERVIEW OF SERVICES IN INDIA.....	17
Factors Leading to India's Success in Services	17
<i>Passive Role of Government</i>	17
<i>English</i>	18
<i>Education</i>	19
<i>Entrepreneurship</i>	20
Lessons from India's IT Industry.....	21
OVERVIEW OF SERVICES IN CHINA	21
Differences between India and China's service sector	22
Factors Leading to China's Growth in Services	23
<i>English</i>	23
<i>Education</i>	24
Obstacles to Growth in Services in China	24
<i>IPR violations</i>	24
Recommendations for China's software industry/ITES given India's successes	25
<i>Recommendation 1: Become more export oriented</i>	25
<i>Recommendation 2: Create a better IPR regulatory environment</i>	25
<i>Recommendation 3: Improve English language education</i>	26
CONCLUSION.....	26

EXECUTIVE SUMMARY

The accelerated economic growth of both China and India in recent years has been the focus of significant policy discussion and analysis. China's economic growth has been led by manufacturing, while India's growth has been through information technology (IT). As both of these countries look to sustain their growth, China is striving to increase its presence in IT, while India strives to be a stronger player in manufacturing. Achieving these respective goals will require both countries to take a series of policy actions, which is the focus of this paper. For China to increase its IT sector, necessary policy steps include: focus current IT industry on global exports; spur entrepreneurship and reduce dependence on central government; create a strong trade association to improve regulatory environment; and improve quality and approach of educational system. Conversely, for India to improve its manufacturing sector, it must increase its FDI inflows for manufacturing and improve basic infrastructure.

INTRODUCTION

The rate at which China and India have been growing since the early 1990's has been a major topic of discussion around the world. Both countries are home to nearly a billion people and they experience tremendous GDP growth each year (See Table 1). They can attribute success of their growth to certain factors like large numbers of highly-skilled engineers and technicians, but certain differences in government policy and social and cultural behaviors have led to each country's success to come from different industries. One of the main factors that make India and China an interesting comparison is the fact that although they are similar in many ways, their differences have led each of the take different paths towards economic development.

Table 1: India and China Comparison of Key Indicators

Source: Economist Intelligence Unit.

Indicators	India	China
Size of Population	1.1 Billion	1.3 Billion
Type of Government	Democracy	Communist State
GDP Growth (2005)	7.9%	9.3%
Manufacturing as a % of GDP	16%	53.3% ¹
Services as a % of GDP	51.5%	32.2%
FDI Inflows (2005 – 2006)	7.5 Billion (predicted)	52 Billion
Remittances (2003)	17.4 Billion	4.6 Billion

Economic development is traditionally spurred by high rates of productivity which is often a result of a strong manufacturing sector. Much of China's approximately 9% GDP growth can be attributed to the strength of China's manufacturing sector which builds a variety of goods ranging from automobiles to textiles. India has also increased its productivity and economic development in the past decade, experiencing a GDP growth of 7.6% (CIA World Factbook). However, India's growth has been spurred by the service sector as opposed to its manufacturing sector. India's service sector comprises approximately 52% of its GDP while China's is significantly lower, at 32.2%. While these percentages are significantly lower than the average 70% found in developed countries, both countries are moving to increase this share (Economist, January 2006).

Different geographic regions tend to specialize in particular products because of comparative advantage. This is the case of manufacturing which tends to arise within geographic clusters. In China, areas such as Guangdong, Shanghai, and Shenzhen are characterized by their strong manufacturing base. For years manufacturing has contributed significantly to GDP output. However, the service industry is taking over as the primary contributor to GDP output and

¹ Includes construction

economic development. Like manufacturing, the service industry, and in particular the knowledge based service industry such as software development and IT enabled services, has also concentrated in very specific zones. Indian cities such as Bangalore, Chennai and, Mumbai are known for their vast numbers of IT related companies. Increased technology has affected both sectors but in opposite ways. Technological advances in manufacturing regions have resulted in reduced labor demands. Meanwhile, technological advances have helped achieve massive growth in the IT and software industries. Since services often demand more education-promoting strategies while manufacturing tends to encourage more infrastructure-centered policies, the policy implications of these two development strategies vary.

Increased technology and economic liberalization have significantly increased the flow of service delivery. Knowledge based service industry such as software and IT enabled services such as back office operations for businesses, software development, and call centers are becoming popular means for developing countries to increase their revenue flows. India is the poster child for the growth and dominance of the IT and IT enabled service (ITES) sectors. Given this success, China has realized that it too wants a piece of this lucrative pie and is currently making efforts to enhance its IT and ITES sectors to compete with India. India is also trying to emulate China's success in the manufacturing sector, given the increased competition in the IT and ITES service sectors. Can both countries simply copy each others development strategies?

OVERVIEW OF MANUFACTURING IN CHINA

China has experienced spectacular economic growth, quadrupling its GDP to become the second largest economy in the world based on its purchasing power parity (CIA Factbook, 2005). Much of this growth is driven by manufacturing. Today, China has become the manufacturing

center of the world. Exports of manufactured goods have risen at a rate of 15 percent per year to about \$730 billion in 2004 (EIU Country Report, 2006). China now makes 50 percent of the world's telephones, 17 percent of refrigerators, 41 percent of video monitors, 23 percent of washing machines, 30 percent of air conditioners, and 30 percent of color TVs (Rowen, 2003).

China's Key Manufacturing Sectors: Electronics and Automotive Components

China no longer is merely a place to churn out low-tech, high-labor components. In recent years, China has been especially prominent in developing its electronics and automotive component industries. The Chinese electronics industry has become the leading export industry in China, and has a significant presence globally across a wide spectrum of electronics products, from household electrical appliances to semiconductors. Today China makes \$60 billion worth of consumer electronics goods a year (Farrell, 2004).

China is also fast becoming an important source of automotive electronics for the global market. According to figures by Chinese supplier Asimco Technologies, in 2005, China exported \$1.49 billion worth of automotive electronics and electrical instruments. Moreover, last year, General Motors moved its global electronics purchasing office to Shanghai. Visteon Corporation has also announced that its global electronics group will be headquartered in Shanghai as well.

The combination of preferential government policies, foreign direct investment, great infrastructure, and human capital has contributed to the success in Chinese electronics and automotive component manufacturing.

Factors Leading to China's Success in Manufacturing

Preferential Government Policy

Among developing countries, the openness of China's trade and industrial policy are often cited as its comparative advantage. While interventionist government policies are often noted as adversely affecting economic efficiency, these policies have worked for China's manufacturing sector. The manufacturing sector requires large provision of investment capital, coordination of the localization process and the monitoring of technology transfer. More specifically, in the automotive and electronic sectors, the emphasis is on promotion of learning rather than innovation (Segal and Thun 2001). To further develop these industries, the government needs to be more interventionist. Local governments such as Shanghai have been very successful in coordinating investments across firms in the automotive industry to ensure a smooth supplier network (Segal and Thun, 2001). To date, the Shanghai area is considered one of the most robust manufacturing centers for electronics and automotive parts.

The Chinese government has led investment in the manufacturing sector by giving preferential loans to targeted industries. In recent years, the government has promoted growth in the value added manufacturing industries such as electronics and automotive components. Tools used to promote the electronics industry include public research, trade protection, sector-specific financial incentives, selective government procurement, and control of foreign participation, relaxed antitrust regulation, and the provision of training and education for sector-specific skills (Linden, 2003).

Additionally, the ease of doing business in China is very important. Compared to other countries in the Asia-Pacific, the cost and time to start up and close a business are lower in China (IFC Doing Business). Moreover, the costs and procedures involved in importing and exporting

a standardized shipment of goods in China are less than countries in the region (IFC Doing Business).

Foreign Investments

By welcoming foreign investment, China's open-door policy has added power to the economic transformation. In 2005, China received \$153 billion in foreign direct investment (US China Business Council). This foreign money has built factories, created jobs, linked China to international markets, and led to important transfers of technology. Through this strategy, multinationals have brought large sums of capital and senior talent to China, helping China develop its manufacturing arm without relying on local institutions.

Joint venture firms have also been a huge boon for the Chinese manufacturing sector. By employing local managers and workers, foreign-invested companies teach management, production, and marketing skills to local employees (Chuang and Hsu, 2004). The process is especially well delineated in the automotive electronics sector. The majority of the automotive electronics exports are coming from foreign-invested firms rather than fully domestic companies because most domestic companies lack the necessary advanced technology. Moreover, foreign companies are putting time and money into developing a local supplier network.

Through opening up its retail and distribution sectors, China has been successful in promoting the automotive component market. Automaker Ford Motor and foreign auto parts makers like Tenneco Automotive and Lear have set up production facilities in western China (US China Business Council 2004). High-tech companies are also establishing operations in western China: Intel Corp. announced a \$375 million chip testing and packaging facility in Chengdu, Sichuan (US China Business Council, 2004)

Infrastructure Investment

One of the most important success factors is China's superior infrastructure. It is especially essential in manufacturing. Good roads are needed to transport raw materials and finished products. Resources such as power supply and sound facilities are needed to prevent the interruption of production.

China invests heavily in maintaining its transport system. It makes enormous efforts to lower congestion levels on main railways. Additionally, China has built 25,000 km of four- to six-lane, access-controlled expressways in the past 10 years.

Having a stable power supply is very vital to manufacturing efficiency. Power outages can lead to loss of sales by forcing downtime or idle capacity on managers. Power disruptions waste material, damage equipment, add maintenance and repair costs, thus increasing the overall cost of doing business in a country. In China, power outages happen on average every other week, which is considered low compared to other developing countries (World Bank). To prevent power shortages, China is continuing to invest in power generating structures. The Chinese government continues to pay close attention to investing in infrastructure such as roads and transportation systems, manufacturing machinery, and communications systems (Hu and Khan, 1997).

Human Capital

Cheap labor is one of the main draws for firms relocating in China. Firms come in search of human resources. During our visit to Xian's High Tech Zone, we heard the same sentiment from the local business elites. Many hi-tech firms choose to locate in Xian because the surrounding universities provide an abundant supply of educated laborers. Similarly, one of the

reasons global electronics and car manufacturers are relocating its headquarters to Beijing and Shanghai is to access the readily available supply of cheap, skilled human capital.

In addition to its vast supply of cheap but skilled human capital, China has large numbers of foreign educated people coming back from Silicon Valley and other centers of innovation. China currently has 1,731 universities and continues to build more universities and trade schools. In 2005, there were an estimated 3.4 million college graduates (EIU China Country Report, 2006). In terms technical resources, China adds 600,000 new engineers every year (Christian Science Monitor).

Lessons Learned from China's Electronic and Automotive Component Sector

- In capital intensive industries, government interventions such as preferential industrial and fiscal policies are needed to channel growth.
- Foreign direct investment is important in facilitating technology transfer and capital investments.
- Manufacturing sector requires good infrastructure such as transport system and power supply.
- Investment in tertiary education is vital in the promotion of hi-tech industries because human capital is the key in a firm's expansion strategy.

OVERVIEW OF MANUFACTURING IN INDIA

While India's Information Technology services sector has been credited with much of India's economic growth (in 2004 51.1% of GDP), experts predict that manufacturing (in 2004 16% of GDP) will fuel India's next era of growth (EIU India Country Report, 2006). India's manufacturing sector has lagged behind those of China, Thailand, Malaysia, and Mexico. The main reasons multinational companies have not invested in India results from the lack of infrastructure including electricity, roads, and sea and air ports as well as government regulation and corruption. Despite these obstacles to growth, electrical and electronic components manufacturers ABB, Honeywell, and Siemens and automotive manufacturers DaimlerChrysler and Toyota Motor have started operations in India. Their incentives for starting production in India are low labor costs and the availability of high levels of technical expertise. Industry trends show an increase in skill-intensive manufacturing sectors. Approximately 50% of U.S. offshore is manufacturing in skill-intensive sectors, and this number is expected to increase to 70% by 2004 (Luthra, Mangaleswaran and Padhi 2005). Industry growth alone will not continue to attract multinational companies to India. If lessons learned from China's success are applied to India, it becomes evident that India mimics China's success in developing human capital and providing some preferential treatment. However, India needs to continue to take steps to improve its infrastructure and government regulation in order to increase FDI flows. A further examination of the electronic components and automotive manufacturing sectors will provide insight on what factors are spurring growth in these sectors and what government regulations need to be leveraged to increase growth.

India's Key Manufacturing Sectors: Electronics and Automotive Components

The ten key manufacturing sectors in India includes engineering, electronics, automotive, textiles, chemicals, leather, metals, machine tools, food processing and gems and jewelry. Of these ten sectors electronic and automotive components have had some of highest rates of growth.

Table 2: Information on India's Automobile and Electronics Sectors

Source: India Brand Equity Foundation. 2006. Manufacturing in India. February 13, 13-14.

Indicator	Automotive Sector	Electronics Sector
Key Sub-Sectors	<ul style="list-style-type: none"> • Commercial vehicles • Passenger vehicles • Two wheelers • Three wheelers 	<ul style="list-style-type: none"> • Consumer electronics • Industrial electronics • Computers • Strategic electronics • Communication & broadcasting equipment • Electronic components
Market Size (2004 -05)	Total vehicle production – 8.4 million	Total size – US\$11 billion
Domestic Growth Rate	CAGR – 14.2% last 4 years	
Export Growth Rate	CAGR – 39% last 4 years	16% between 2003 and 2004
Key Companies	Ford, General Motors, Hyundai, Hero Honda, Toyota, Daimler Chrysler, Tata Motors, Mahindra & Mahindra, Ashok Leyland, Hindustan Motors, Bajaj Auto, Maruti Suzuki etc.	Samsung, LG, Philips, Mirc Electronics, Flextronics, Solectron, Jabil Circuits, HCL Infosystems Ltd, Videocon International Ltd.

Factors Leading to India's Growth in Manufacturing

While there are certain similarities in India and China that encourage growth of the manufacturing sectors, there are key differences that can account for why China has been more successful in manufacturing than India. As mentioned in the section above, China has been successful in manufacturing because of preferential government policy, foreign investment, infrastructure investment, and human capital. Preferential government policy and human capital have also played a role in India's new growth in manufacturing, but other factors such as reliable suppliers, low cost of materials and labor, and a large domestic market have also encouraged the recent growth of manufacturing in India.

Preferential Government Policy

In order to encourage growth of the manufacturing sector the government has implemented reductions in import and customs duties. In the electronics sector the government has removed customs duty on raw materials and inputs for the manufacture of electronic components. In the automotive sector the government has reduced customs duties on raw materials and inputs for manufacture of automotive components from 20 – 15 percent (IBEF 2006). India has also developed Special Economic Zones (SEZ) that allowed for government, private, or joint sector initiatives to develop business. The SEZs provide high quality infrastructure facilities and support services, besides allowing for the duty free import of capital goods and raw materials (IBEF 2006).

Human Capital

India has an abundance of skilled engineers and technical experts. The U.S. and Singapore are the only countries that outrank India in the availability of skilled-workforce. In addition, India's employable skilled workforce is predicted to grow for the next 20 years, but China's skilled workforce will begin to decline in 2010. In 2003, India also had the lowest hourly labor costs among its major competitors at US\$0.74. India's competitors followed at the following rates: China US\$0.90, Thailand US\$1.20 and Mexico US\$1.68 (IBEF 2006).

India has a well-developed technical and tertiary education infrastructure that produces over 500 PhDs, 200,000 engineers, 300,000 non-engineering postgraduates and 2,100,000 other graduates each year (IBEF 2006). Eight percent of the Indian population between the ages of 25 and 34 receives tertiary education compared to only 5% of the Chinese population in that same age cohort. High levels of education not only lead to engineering and technical capability, but also strong managerial capability.

Large Domestic Markets

India's rising incomes and growing consumerism are the main factors aside from lower costs that make India appealing to foreign investment. As income rises, there is also an increase in domestic consumption. Between 2005 and 2006 domestic consumption was forecasted to increase by 8.7% (EIU 2006). While a large domestic market creates a good incentive for initial investment in India, companies need to realize that this is a limited source of growth and they need to be poised to export from India in order to truly expand.

Quality and Trade Standards

India's adherence to quality and trade standards makes exporting from India a viable option. India manufacturing companies have quality management programs in place including ISO 14001, TS 16949 and TQM that make them export ready. Approximately 80 percent of automotive component manufacturers in India meet ISO 9000 quality standards. In addition they are WTO compliant for Trade Related Intellectual Property (TRIPS) (IBEF 2006). Companies who set-up operations from India need to take advantage of these opportunities to expand India's manufacturing sector to serve international markets.

Factors Slowing India's Growth in Manufacturing

Lower Levels of Foreign Investment than China

Since the beginning of the 1990's, India has improved its manufacturing environment. In the first half of the 1990's, manufacturing exports grew 30% higher than the world export market, but during this time China's exports grew at a rate of 57% higher than the world market. One main factor that contributed to China's higher rates of growth was that during that time China averaged US\$40 billion in foreign investment annually while India averaged foreign investment

was only US\$3 during the same period of time. The main obstacles preventing investment were the regulatory quality and corruption, and provision of infrastructure (World Bank, 2004).

According to the World Bank 2004 Doing Business in India report, it is harder to do business in India than China. One supporting example of this fact is that in 2004 it took 89 days to start a business in India, but it only took 41 days to start a business in China. In addition, India also has stricter labor laws, which makes it much harder to hire and especially fire workers. This is also cited as an impediment to growth by businesses. Senior management at Indian firms also spends more time addressing regulatory issues than management of Chinese firms (11.9% in India vs. 7.8% in China) (World Bank 2004). The government officials in India responsible for overseeing various regulations including labor and tax provisions have more discretion over what rules and regulations they enforce. This leads to higher levels of corruption than other developing countries.

In addition to the ease of doing business, another factor that prevents FDI inflows is the tight regulations India places on FDI inflow. India's Leftist Government front government parties resist FDI inflows because they fear that an influx of multinationals will drive out local business.

Lack of Infrastructure

Infrastructure is often cited as the biggest impediment to growth of the manufacturing sector in India. Gains made through low labor costs are often lost through bottlenecks in power supply, telecommunication, and transportation. The following chart highlights differences between China and India for three major indicators.

Table 3: Objective Indicators of Bottlenecks in India and China

Source: World Bank. 2004. India: Investment Climate and Manufacturing Industry.

November, 34.

Telecommunication		Power Supply		Transportation	
Number of Days to get a new phone connection		Number of Days to get connected to a public grid		Average Inventory Days of Average Inputs	
India	China	India	China	India	China
29.8	9.3	47.8	25	32.5	24.2

Each of these factors increases cost of business in India and deter investment. Problems with lack of access to power supply are also exacerbated by frequent power outages. In terms of transportation, India has the second largest railways system in the world, but the high duties on transporting goods makes it an expensive way to move goods around the country. In addition, India lacks an interstate linking its key economic zones. These inefficiencies in transport lead to higher levels of inventory, which in turn leads to higher operating costs for companies.

Recommendations for India's Manufacturing Sector Given China's Success

Based on Key Lessons from China's Success in Manufacturing and India's Obstacles to Growth in Manufacturing, it is quite evident that India needs to increase its FDI flows and improve its infrastructure to increase growth in manufacturing.

Recommendation 1: Increase FDI Inflows

FDI inflows is one of the main factors that will enable India to improve its manufacturing sector. Higher FDI will allow India to further develop its infrastructure, which will lead to business development. To increase FDI, India needs to further liberalize FDI regulation. The one cultural factor that makes that more difficult for India than China is Indian nationalism.

Certain government parties are resistant to multinational investment in India. Unless there is an acceptance in the role foreign investment can play in making India stronger, this will continue to be a hurdle. Another main factor in increasing FDI flows is making it easier to enter and exit the Indian market. Until these factors are addressed foreign companies will continue to choose other destinations for their investment like China, Brazil, or Malaysia.

Recommendation 2: Improve Infrastructure

Making a serious investment infrastructure will help business grow and attract more investment to India as well. While the Indian government is taking some steps towards developing infrastructure through the Special Economic Zones, in order to truly be competitive they need to allow for better access to power supply and transportation. Following China's example of developing preferential treatment for access to power supply and transportation would lead to more investment in manufacturing.

OVERVIEW OF SERVICES IN INDIA

The Indian information technology (IT) industry has been the source of much discussion on the successful growth of a knowledge industry in a largely poor, developing country. Politicians, business leaders, and numerous academics have cited the growth of IT in India as a case study from which lessons on government intervention, effective business strategy, and economic development can be drawn. IT in India is spread across four key sectors- IT services, IT enabled services (ITES), software, and e-business. These sectors combine for a 2008 annual revenue forecast of \$87B, (NASSCOM) with numerous analysts suggesting higher revenue. Highlighting the rapid growth of IT in India, software was a small \$150MM industry in 1991, but grew to \$5.7B in 2000, an annual growth rate of 50%. (NASSCOM) The public and private sector factors that have contributed to this hyper growth of IT provide lessons for possible replication in China and other developing countries. These factors include the passive role of government, the prevalence of English speaking labor, the role of education, and the impact of entrepreneurship.

Factors Leading to India's Success in Services

Passive Role of Government

India's IT industry has flourished with minimal intervention or support from the central government. While the Indian government made itself famous (or infamous) to many business executives during the 1980s with its "license raj" bureaucracy, the government exhibited "benign neglect and active encouragement" with software, a story similar across India's entire IT sector (Arora, pg. 4). In particular, the Indian IT industry did not face a rigorous process for starting new companies, a certification that had often encumbered the formation of new businesses in

other industries. IT also faced limited labor restrictions on hours and overtime, while having the opportunity early in its development to receive foreign direct investment (Farrell, 2004).

Whether the Indian government consciously did not regulate IT, or just underestimated its possible growth, is unclear, but the resultant growth of the industry has been helped by the government being hands-off, especially when compared to regulated slow growth industries (financial institutions, retail). Rather than being lauded for facilitating IT growth, the central Indian government has often been criticized for its lack of widespread broadband infrastructure and slow technology adaptation. Similarly, the Indian government's special economic zones "have had difficulty attracting foreign and domestic investors" to spur IT (or other industry) growth (Asia Pacific Bulletin, 2006). Hence, it can even be argued that the Indian IT industry has growth *despite* the government.

English

At least 70MM individuals (Torreblanca) speak English at a professional level in India, a fact that is regularly cited as a critical advantage in India's IT growth (Dossani, 2005). This factor was especially critical during IT's nascent stage as multinationals still becoming familiar with the language of IT did not want the further challenge of managing language differences when creating offshore development centers or partnerships. India's English endowment became further magnified with the growth of email, as international linkages became increasingly cheap. Indian software engineers could easily market their new company or product using email or the Internet, while global companies could conversely reach out to hundreds of new possible partners, all accessible via the web. As India's IT industry has matured from software to business process offshoring (BPO), English has again been a comparative advantage as the sheer number of employable English speakers has made India a key FDI destination (#3 rank in A.T. Kearney

FDI index) for customer-facing services like call centers and billing, tasks for which communication is the key skill required.

Education

A common belief, especially in the popular press, is that India's IT growth is driven primarily by the success of its technical education. This is true to some degree, especially if citing absolute numbers, as India graduates between 130,000 and 150,000 engineers each year and has more than twice the number of annual college graduates of the United States (Farrell, 2005). Yet, of the college educated populace, India has only 4% engineers, while Germany and China have 20% and 33% respectively (Farrell, 2005). Further suggesting that India's government did not play a positive role in the growth of IT, India's aggregate "education policy has been widely criticized as being ineffective," as technical facilities are inadequate, limited interaction exists between industry and academia, and enormous student inequity exists (the IIT system is a world leader, but most Indian students attend significantly lower quality institutions) (Dossani, 2003, pg. 21). But particularly helpful to the growth of Indian IT is the historical style of education, which has focused on "rote learning" and prowess in mechanical computation (Friedman 2006, pg. A19). That style of training has been highly beneficial in developing the software industry and IT infrastructure, as labor-intensive computer coding and programming were disproportionately valued.² Similarly, the profound technological changes associated with IT required large numbers of technical graduates, especially relatively inexpensive, English speaking ones, which has been a major advantage for India, despite overall shortcomings in the education system.

² Note that this initial advantage in mechanical learning, at the expense of creativity, has been cited by Thomas Friedman and others as a future challenge for India as it tries to develop innovation industries like R&D

Entrepreneurship

While the heavily regulated post-Independence economy in India was not conducive to entrepreneurship, IT beginning the 1980s was an exception. To start, Indian IT entrepreneurs (especially in software) benefited greatly from the minimal start up capital necessary to start a firm (Arora). Given underdeveloped capital markets in India and the large number of technical workers, starting a software company was comparatively easy to manufacturing or other capital intensive industries. As multinationals began using India for IT services, early Indian IT entrepreneurs matched local talent with international projects, exposing local Indians to the tremendous growth opportunities internationally in IT. Amplified by the thousands of Indian engineers working abroad and “with only a limited demand for their services from the rest of their (Indian) economy,” numerous start-ups began to grow in geographic areas with high numbers of computer and electrical engineering graduates (Arora, pg.4). As a result, clusters of high tech areas formed in cities like Bangalore and Hyderabad, essentially creating natural high tech zones that pulled in greater amounts of investment. While the role of the Indian Diaspora was limited as entrepreneurs in the new technology clusters of India, it has been beneficial in linking local entrepreneurs with capital and technology abroad, especially in the United States (Arora). The consequence of this is that the Indian IT industry has been focused on the international market since its inception (Tschang), exposing it to tremendous growth opportunity and international standards for intellectual property (Arora). The Diaspora also supplemented shortcomings in India’s education system (which does not provide skills for global businesses success) by providing context to western investors about Indian business culture and also advising Indian entrepreneurs on the skills necessary to engage in international businesses.

Lessons from India's IT Industry

A number of policy lessons can be drawn from the Indian IT experience:

- Strong English ability, perhaps more so than technical skills, is necessary to be competitive in world labor market
- Government role of minimal intervention and/or reducing the complexity of new business formation is especially important in knowledge industries like IT
- High-tech areas, driven by the market, can pull in global capital, even if domestic capital raising opportunities are limited
- Foreign-born or out-of-country immigrants provide linkages to capital, technology, and culture to emerging entrepreneurs in native country

OVERVIEW OF SERVICES IN CHINA

One of China's fastest growing service industries is the software industry. The Chinese software industry is inherently different than India's and will likely take different paths. The majority of Chinese software services producers are domestic companies with domestic consumers. According to Gartner, Chinese firms comprise about a third of the domestic software market, with the government pushing for a 60% domination by 2010. (Tschang and Xue, 2003. pg. 4). Because software development creates more efficient manufacturing processes, China's software industry is in high demand. In addition, more and more Chinese are acquiring personal computers and mobile phones that require software advances.

Table 4. Output of software, computer industry and total GDP

Source: Tsang, Ted and Xue, Lan. 2003 *The Chinese Software Industry: A Strategy of Creating Products for the Domestic Market. Asian Development Bank Institute*. January, 2

(100 million yuan)

	Output of software industry	Output of computer industry	Software as proportion of computer industry	Total GDP	Software as proportion of GDP
1999	441.5	1720	25.6%	82000	0.54%
2000	593	2150	27.6%	89000	0.67%
Growth rate	34%	25%	-	8.5%	-

In addition to the software industry, China is also experiencing growth in other knowledge based service sectors. In particular, China is racing India in the IT enabled services/ Back Office Operations industry. As more and more companies move manufacturing operations to China, they have realized the potential for service operations in the form of data centers and call centers.

Differences between India and China's service sector

Similar to its support of the manufacturing sector, the Chinese government has provided extensive support to the software industry through tax breaks and high tech development zones. There are currently approximately 53 State-level new and high-tech development zones in China, the majority of which are heavily subsidized by the government (Chinagate). In addition, the government has established 15 national software industrial parks to encourage more R&D that will contribute to the growth of this sector. These development zones provide infrastructure and facilities for new companies and hence reduce the overhead costs of these start ups. The majority of the companies that develop in these zones are in the service industry. More than half of the approximately 1000 foreign start ups in Shanghai in 2002 were in the service sector (A.T. Kearney). Perhaps the government's most important role comes through its support of national R&D centers in the several dozen research institutes of the Chinese Academy of Sciences (CAS).

Many of the leading software industries have arisen as spin offs from CAS. This is vastly different to India, where the service sector has succeeded despite the limited interaction of the government.

Another major difference between the Chinese and Indian software sector is the fact that the latter is more export oriented whereas the former serves primarily domestic demand. A mere 5.6% of China's software industry was exported in 2000 versus approximately about 70% in India in 1998 (Tschang and Xue). Therefore, many of the software companies currently emerging and contributing to China's fast growth are not looking outside their borders to continue growing. Despite China's vast size, the software industry will be forced to look beyond the borders to continue its growth. Since software is a global industry, the future and success of the Chinese software industry will likely depend on its ability to sell its products in other countries.

Factors Leading to China's Growth in Services

English

The recent emergence of English education in China is likely attributed to the growth of the service sector. Because the government understands the importance of English-language knowledge to success in the Knowledge based service sector, the Ministry of Education, in 2001, required that all students begin their English language education. While on average level of proficiency is low due to a shortage of well-trained teachers, the government is making a clear effort (Farrel and Grant).

Education

To take advantage of the large technically educated labor pool, many American educated and trained Chinese entrepreneurs are moving back to China to develop ITES/BPO companies. According to Gartner, salaries amongst IT professionals in China are less than a sixth of those in the United States (Global Envision). Not only is there a cost advantage, but there is also an education advantage. Emphasis on Higher Education by Chinese officials, especially in software and technical training, are evident by simply visiting some of the university infrastructure. Beijing has 76 universities, Shanghai has 52, while Xian has 43 (Farrel and Grant). In 2000 China, spent 2.3% of GDP on education, compared to 5.1 % by the United States in the same year.

IBM for instance, opened three new data centers in Hong Kong and Shenzhen in the summer of 2003 to take advantage of the highly educated labor pool.

Obstacles to Growth in Services in China

IPR violations

Despite the efforts in education and infrastructure that China has started, one of the largest drawbacks is the constant threat of intellectual property rights violations in China. Rampant software piracy contributes to the smaller and weaker size of China's software firms. According to Dr. Xue, an industry expert we met with at Tsinghua University, China "clearly needs better protection of IPR since there are local software companies that suffer from violations." Some of the ways the government has attempted to curb IPR violations is by creating incentives for original IT innovation and R&D. Some examples of these include providing funds to research institutions such as the Chinese Academy of Sciences and Research University.

Recommendations for China's software industry/ITES given India's successes

As mentioned above, the Chinese and Indian service sectors are not identical. Despite the differences, most of India's lessons can be applied to ensure the success of the Chinese service sector.

Recommendation 1: Become more export oriented

The first recommendation that China should adopt to improve its software sector is to develop a more export oriented growth strategy. Being domestically focused could leave the industry susceptible to internal shocks. While China has an extensive supply of consumers, these will eventually be exhausted. China's software sector should therefore look abroad for future clients. The high tech development zones should provide technical assistance on exporting guidelines and globalization to help companies export abroad.

As soon as the Chinese software industry becomes more export oriented, it should become more entrepreneurial and less government support dependant. As soon as the software industry becomes more export oriented, it should be driven more by the market than by the government.

Recommendation 2: Create a better IPR regulatory environment

To ensure the continued success of the industry, China needs to focus on improving its protection of IPR and target pirating. A first step towards this goal is through the creation of an IT/Offshoring Trade Association similar to India's NASSCOM. The creation of this type of organization would allow companies to share best practices to increase efficiency and, apply more pressure to increase compliance with international IPR standards. In addition, the

government should create an IPR regulatory body. However, before this is possible, China must create incentives for its entrepreneurs to innovate, rather than simply copy.

Recommendation 3: Improve English language education

While some measures have been taken to ensure adequate English language skills for most Chinese students, the fluency level is a deterrent for many international companies looking to offshore their call and data centers to China. Therefore, universities should ensure that English classes are taught not only at the grammatical and theoretical level, but more emphasis is placed on enhancing communication skills. While China may never be able to compete with India in terms of English language fluency, it is imperative that the country at least takes measures to decrease the gap in language skills.

CONCLUSION

China and India have embarked on two very different development paths. Each has leveraged its strengths to develop its own industries. While China has been hugely successful in developing its manufacturing sector, it has fallen short on its service sector. While India has been tremendously successful in its service sector, it has fallen short on its manufacturing sector. As a result, China is looking towards India for lessons learned and vice versa.

To develop its manufacturing sector, India would need to improve its infrastructure, continue its development of human capital and provide some preferential treatment to increase FDI and the foster specific industry development. Besides allowing for the duty free import of capital goods and raw materials, similar to China, India has developed SEZs that provide high quality infrastructure facilities and support services to manufacturing firms. Learnings from China's experience would suggest that higher level of FDI is necessary for further growth in the

manufacturing sector. However, Indian nationalism would make it difficult for India to liberalize its FDI regulation. Certain government parties are resistant to multinational investment in India.

To develop its service industry, China would need to focus on an export oriented growth. Currently, the majority of Chinese software services producers are domestic companies with domestic consumers. Since software is inherently a global enterprise, China will need to look beyond its borders for expansion. With the internationalization of the industry, China would need to make extra efforts to stamp out intellectual property rights violations.

So far, China has channeled resources to grow its hi-tech service industries through science parks. Future growth would require less government intervention and more entrepreneurial activities because protected industries would not be able to compete in the global economy. Additionally, while a trade association would be important in ensuring better regulatory environment, this recommendation may be more challenging to implement because the Chinese government does not allow organizations outside the government. As a result, a NASCOM will not be possible in China.

Overall, China and India's experiences provide a productive comparison on success factors in developing specific industries. While the recommendations in this paper apply more directly to China and India, they can be applied more generally to other developing economies that encompass similar characteristics.

Resources

“Are you being Served?” 2006. *The Economist*. London: January 14th.

Arora, Ashish, et. al “The Indian Software Industry”; Heinz School Working Papers

Dossani, Rafiq. “Globalization and the Offshoring of Services: the case of India. Asia Pacific Research Center. August 15, 2005.

CIA Factbook, Center Intelligence Agency
<http://www.cia.gov/cia/publications/factbook/geos/ch.html>

“Can India Revitalize its Special Economic Zones to Rival Those in China?” *Asia Pacific Bulletin*. Feb. 1, 2006.

“China Country Report.” 2006. *Economist Intelligence Unit*

Chuang, Yih,-Chyi and Pi-Fum Hsu. 2004. “FDI, trade, and Spillover Efficiency: Evidence from China’s manufacturing Sector.” *Applied Economics*. Vol. 36(10)pp. 1103-1115.

Clayton, Mark. December 20, 2005. “Does the US face an engineering gap?” *Christian Science Monitor*. <http://www.csmonitor.com/2005/1220/p01s01-ussc.html>

Dossani, Rafiq. “Globalization and the Offshoring of Services: the case of India. Asia Pacific Research Center. August 15, 2005.

Embassy of India website (http://www.indianembassy.org/indiainfo/india_it.htm); NASSCOM, McKinsey.

Farrell, Diana. 2005. “Ensuring India’s Offshoring Future.” *McKinsey Quarterly: Special Edition*.

Farrell, Diana. 2004. “Sector by Sector: The strength of the Chinese and Indian economies will actually be decided at the industry level.” *McKinsey Quarterly: China Today Special Edition*.

Farrell Diana and Grant, Andrew J. 2005. “China’s looming talent Shortage”. *McKinsey Quarterly*.

Friedman, Thomas. “Worried About India's and China's Booms? So Are They.” *The New York Times*, March 24, 2006, page A19.

India Brand Equity Foundation (IBEF). 2006. "Manufacturing in India." February 13.

"India Country Report." 2006. *Economist Intelligence Unit*

"The Indian Tortoise and the Chinese Hare" *Global Envision*.
www.globalenvision.org/library/3/993

Linden, Greg. 2003. "Optical Storage in China: A Study of Strategic Industrial Policy."
Information Industry Storage Center.
<http://isic.ucsd.edu/papers/ChinaOpticalStorage.pdf>

Luthra, Shashank, Mangaleswaran, Ramesh, and Padhi, Asutosh. 2005. "When to Make India a Manufacturing Base." *McKinsey Quarterly*. 2005 Special Edition: *Fulfilling India's Promise*.

"Making Offshore Decisions." 2004. A.T. Kearney.

Rowen, Henry. 2003. "Will China take over world manufacturing?" *International Economy* Vol.17(1): 72.

Segal, Adam, and Eric Thun. 2001. "Thinking Globally, Acting Locally: Local Governments, Industrial Sectors, and Development in China." *Politics & Society* 29 (4): 557-588.

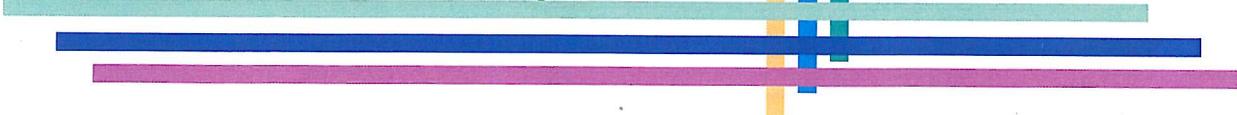
Torreblanca, Manuel. "India- Prescription for Growth." PriceWaterhouseCoopers Executive Perspectives.

Tschang, Ted and Xue, Lan. 2003. "The Chinese Software Industry: A Strategy of Creating Products for the Domestic Market" Asian Development Bank, January 15.

US-China Business Council <http://www.uschina.org/statistics/2005foreigninvestment.html>

World Bank. 2004. "India: Investment Climate and Manufacturing Industry."

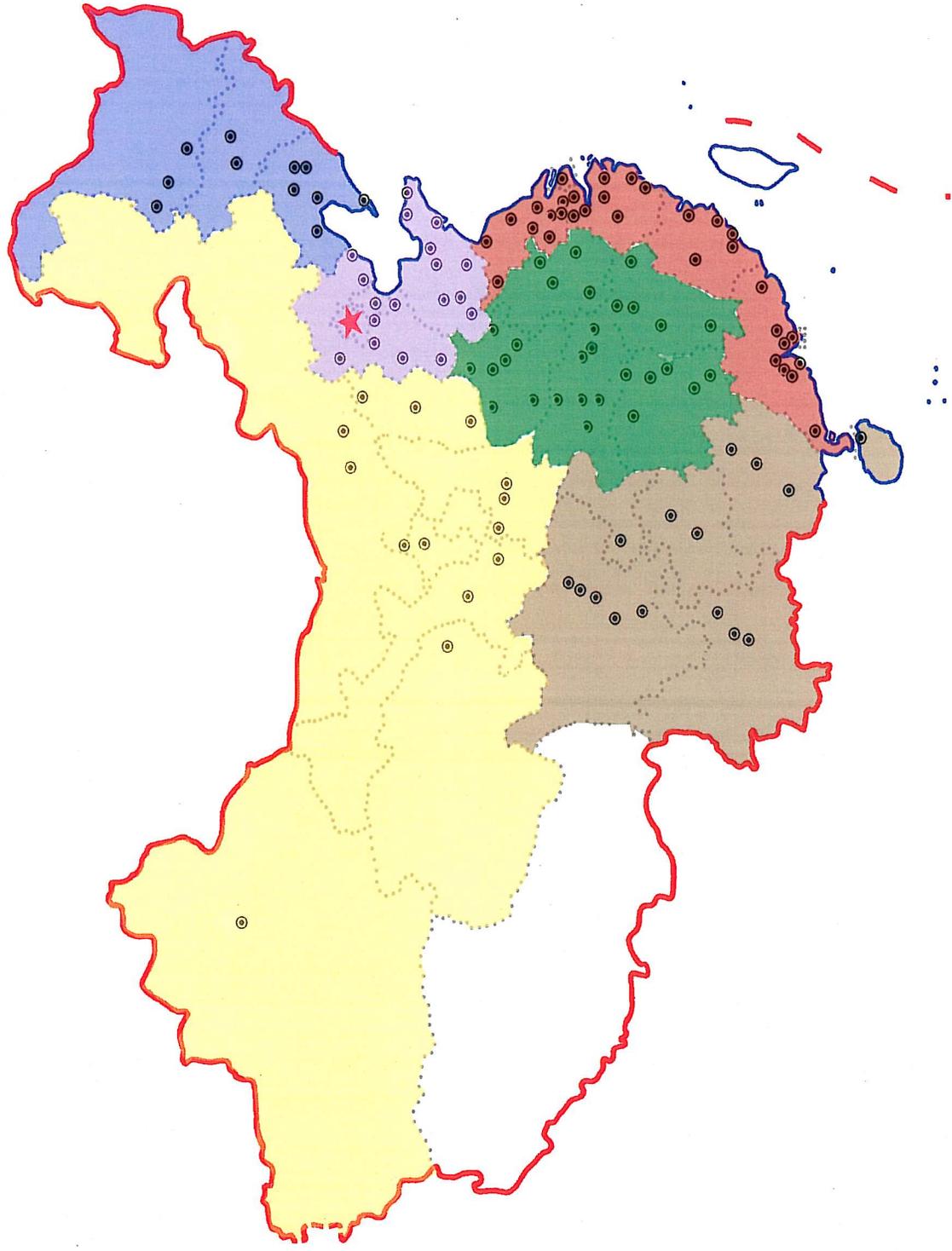
Zuliu Hu and Mohsin S. Khan "Why Is China Growing So Fast" IMF Economic Issue, June 1997 <http://www.imf.org/external/pubs/ft/issues8/index.htm>



**Investment climate
in 120 Chinese cities:
preliminary results
from a survey by NBS and World Bank**

David Dollar, World Bank, May 2006

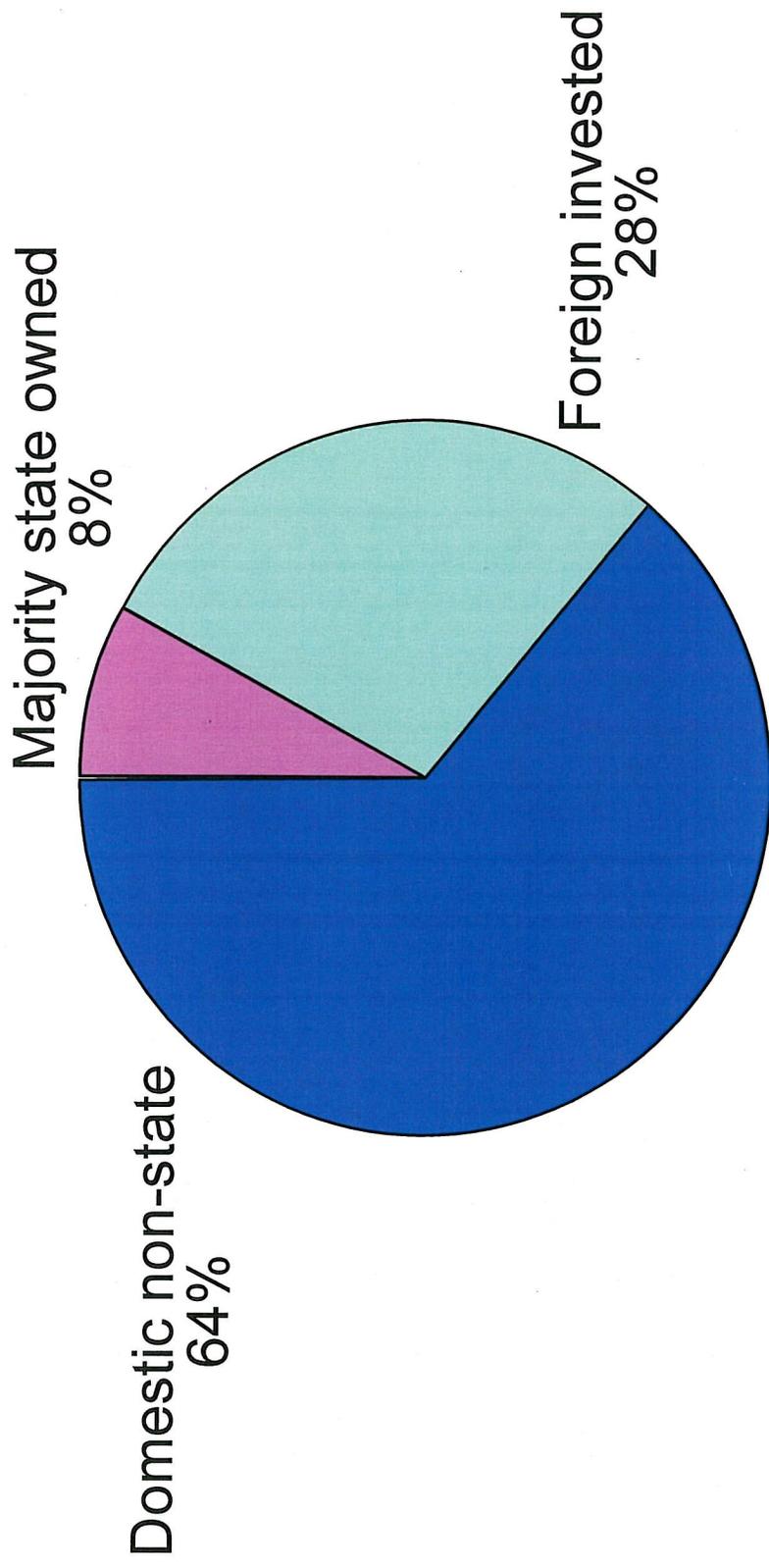
Six regions involved in investment climate survey



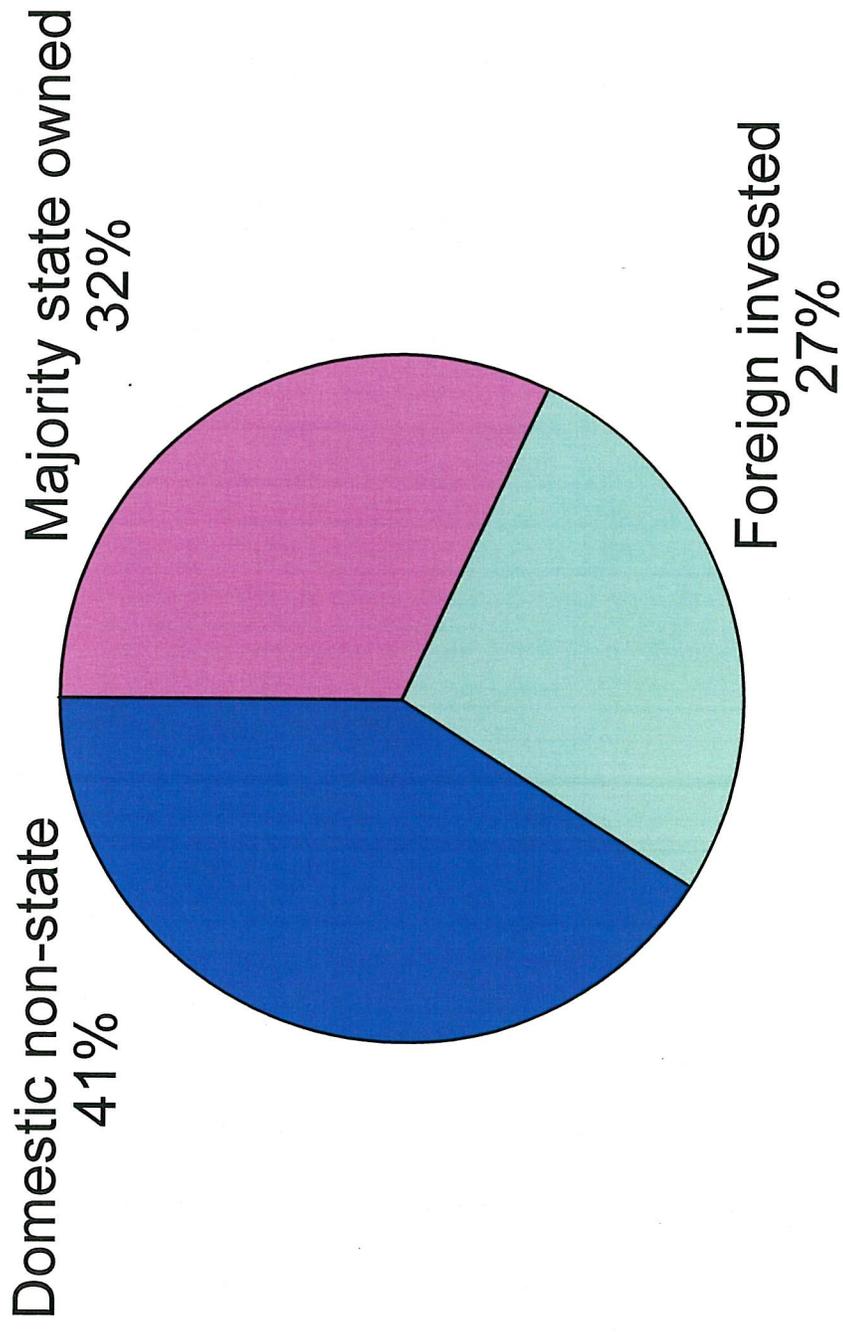
Survey design

- Covers all provincial capitals plus largest other cities in the province
- 100 firms from each of 116 cities, 200 firms from mega-cities (Beijing, Tianjin, Shanghai, Chongqing)
- Survey universe: for each city, top 10 manufacturing industries in terms of sales
- Divide firms with 10+ workers into top, middle, and bottom third in terms of sales; randomly choose from each group, 33, 33, and 34 firms, respectively

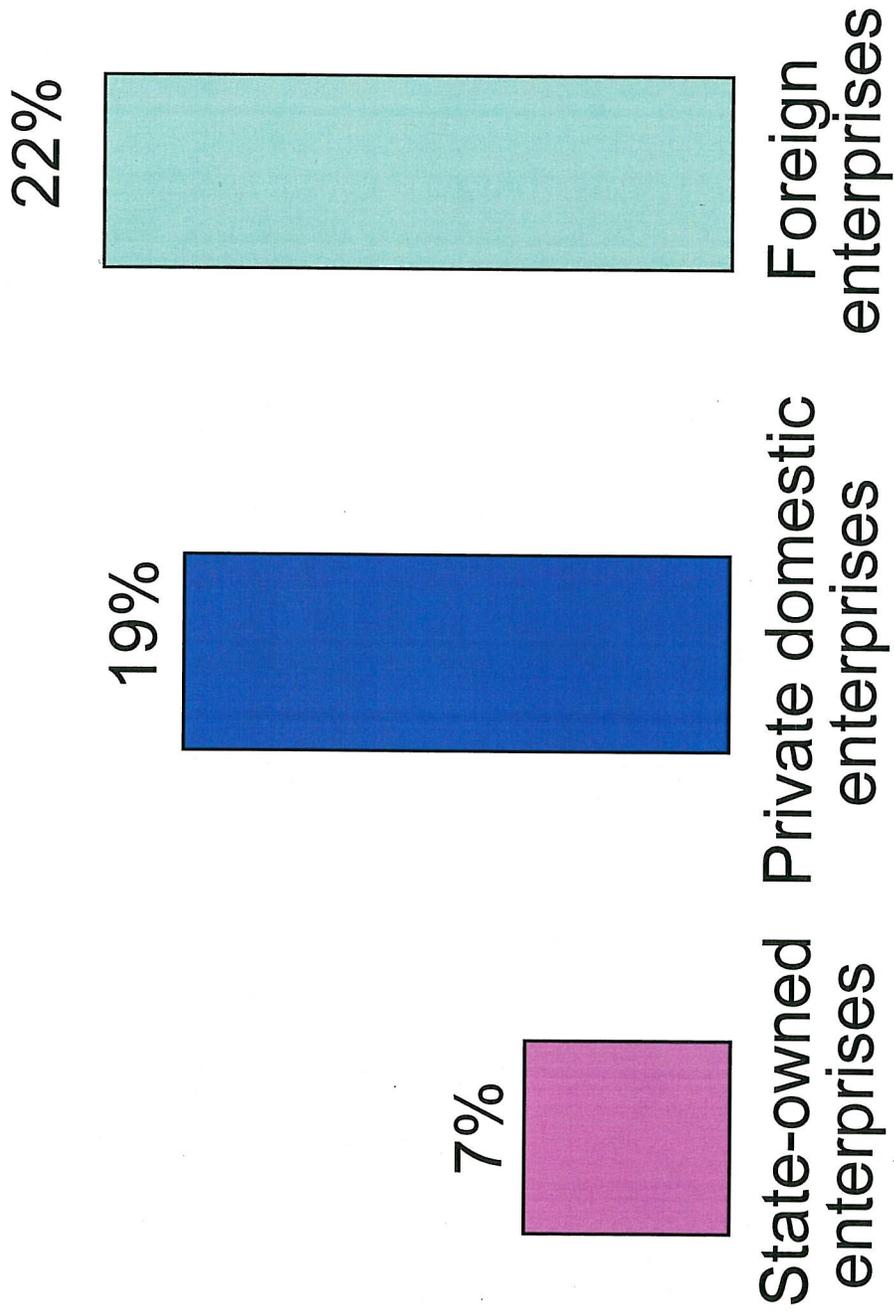
Distribution of sample firms by ownership



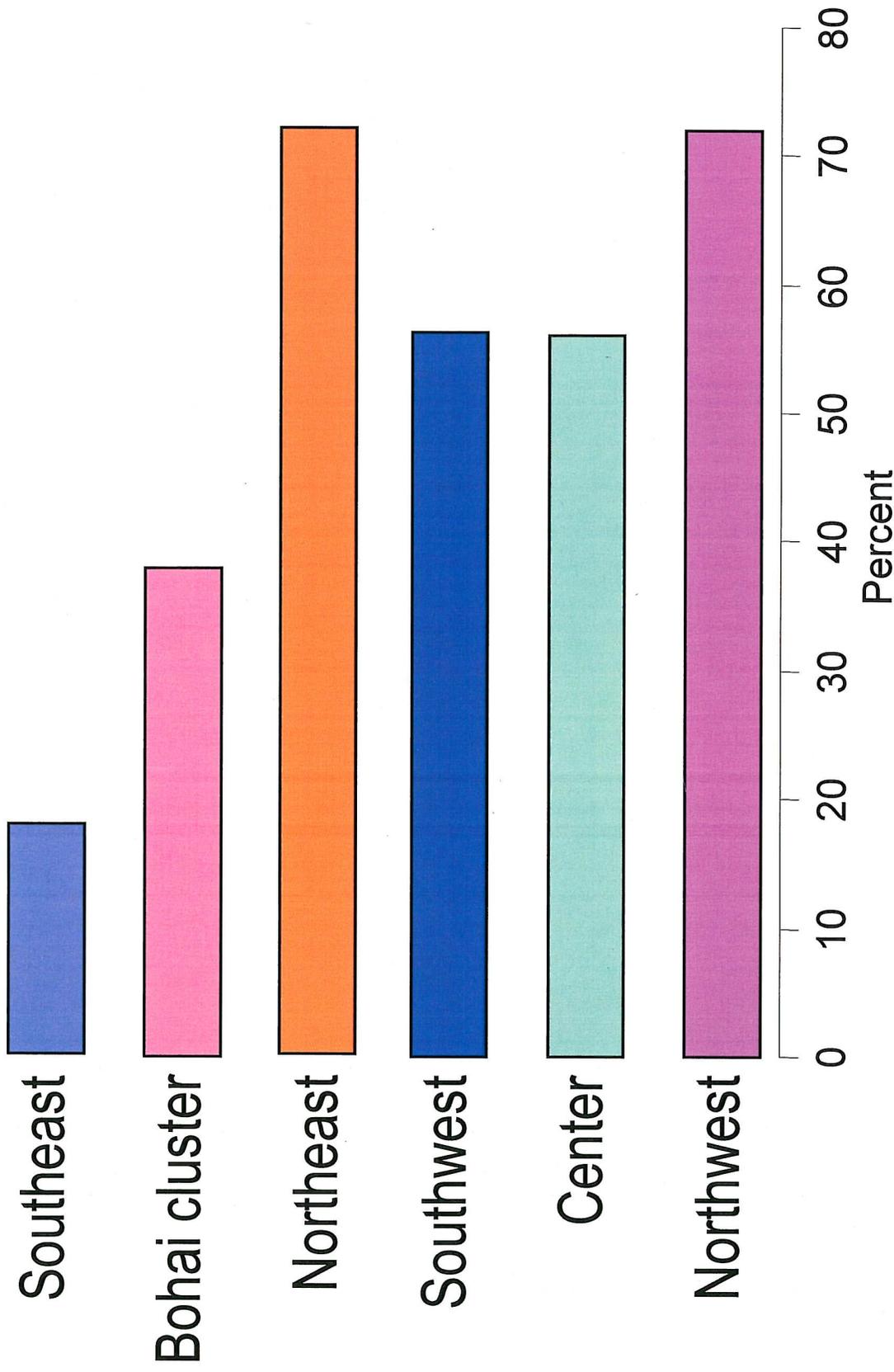
Distribution of sample firms' assets by ownership



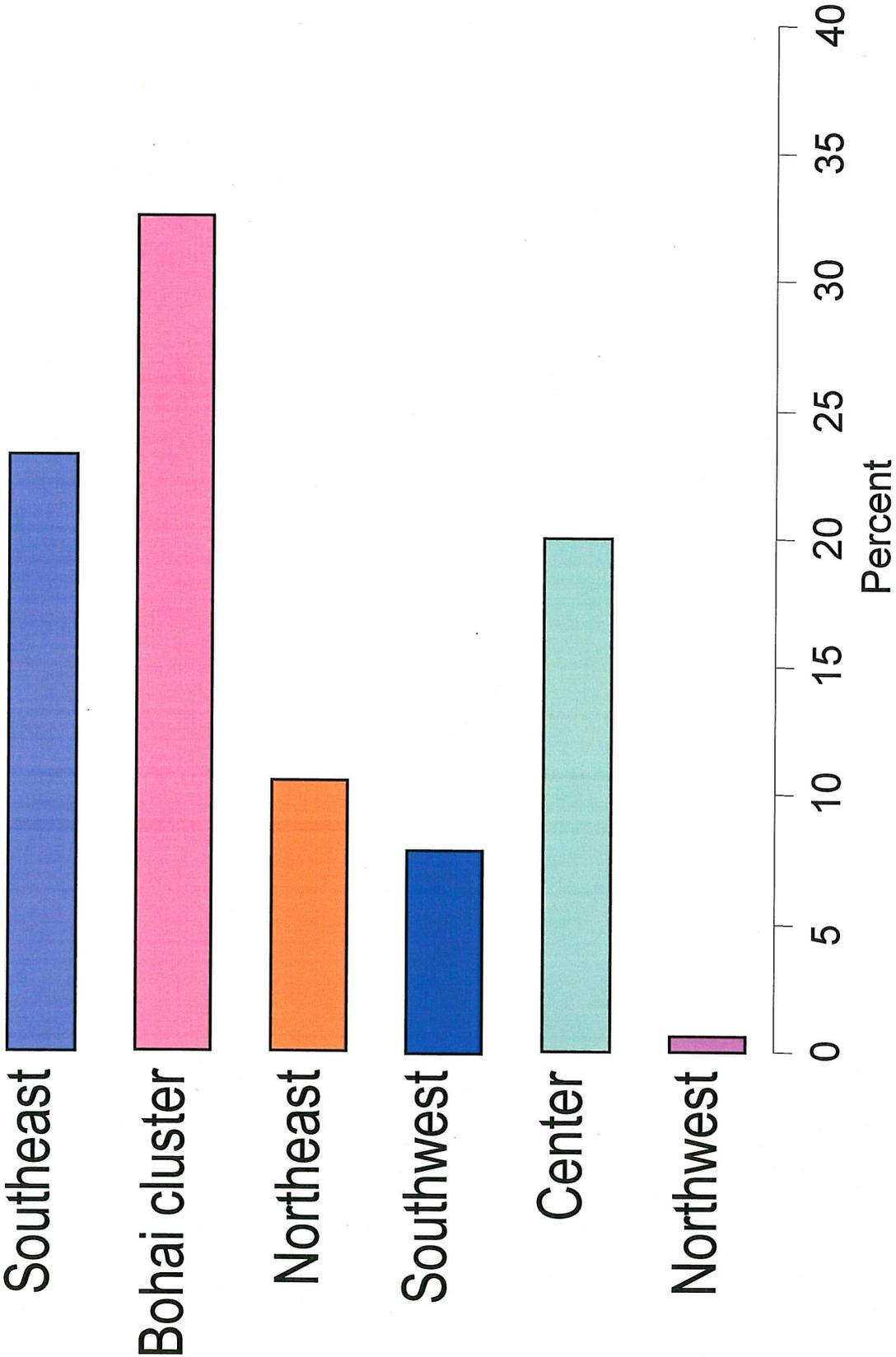
Rate of return on capital



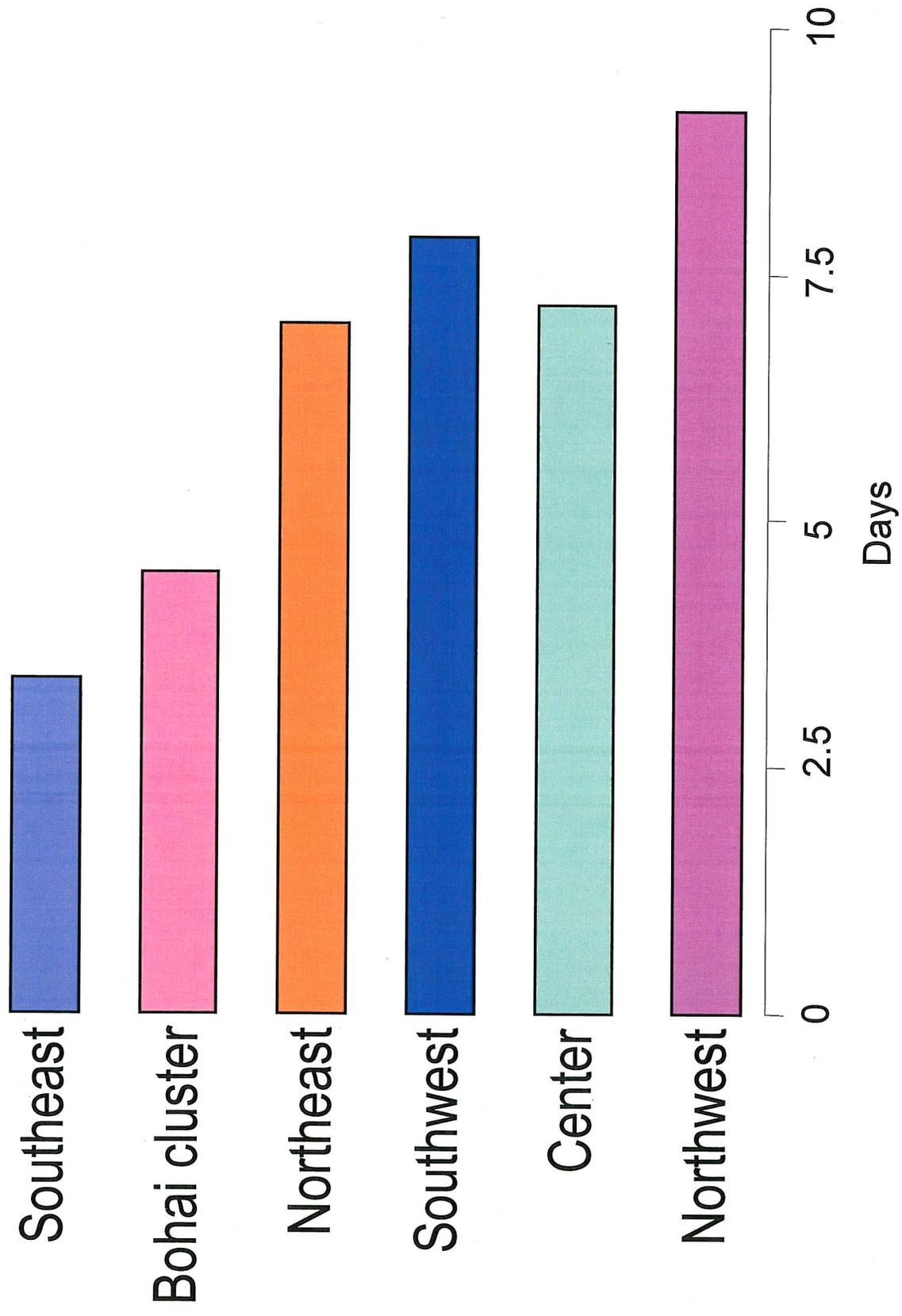
State enterprise share of industry output



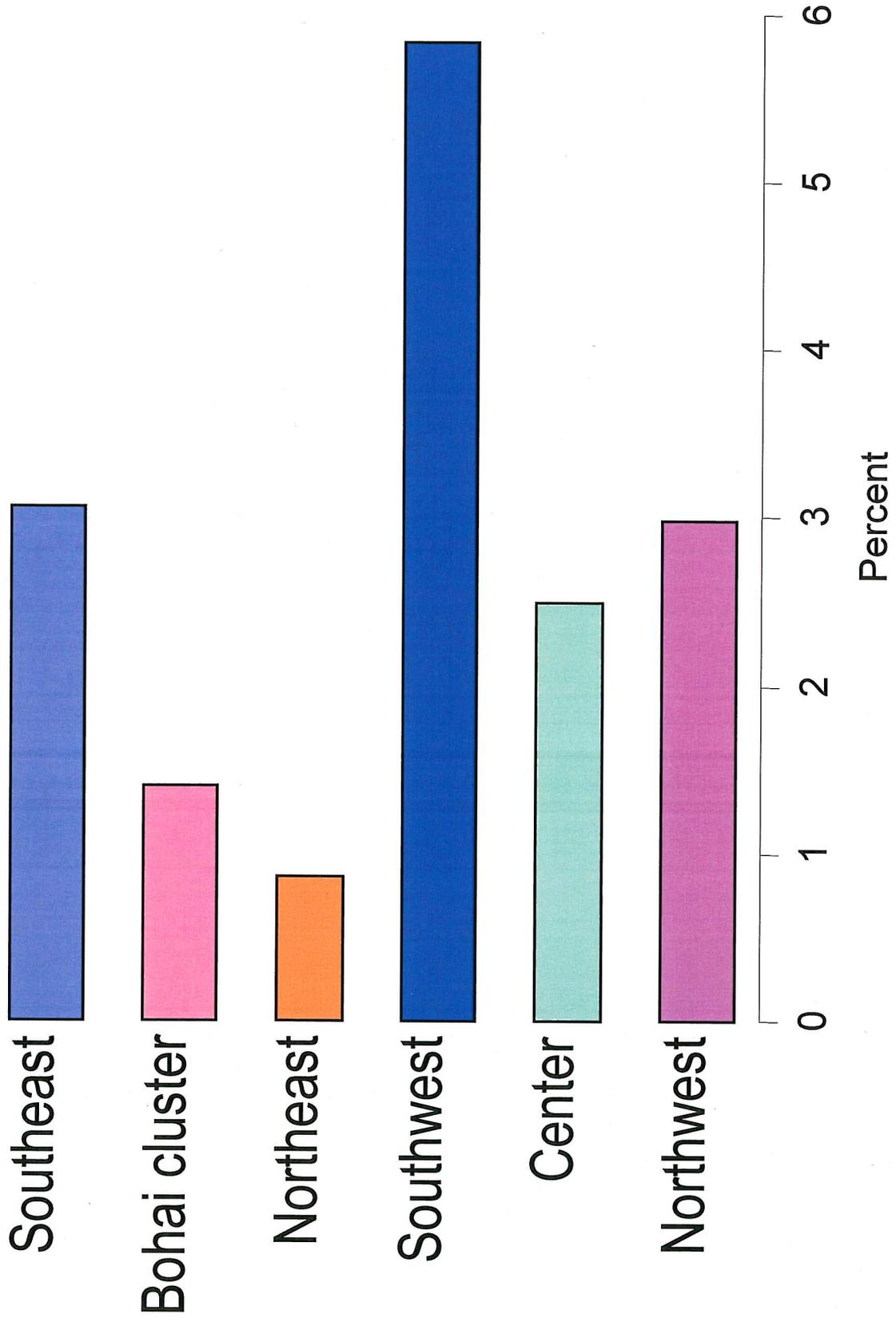
Private rate of return by region



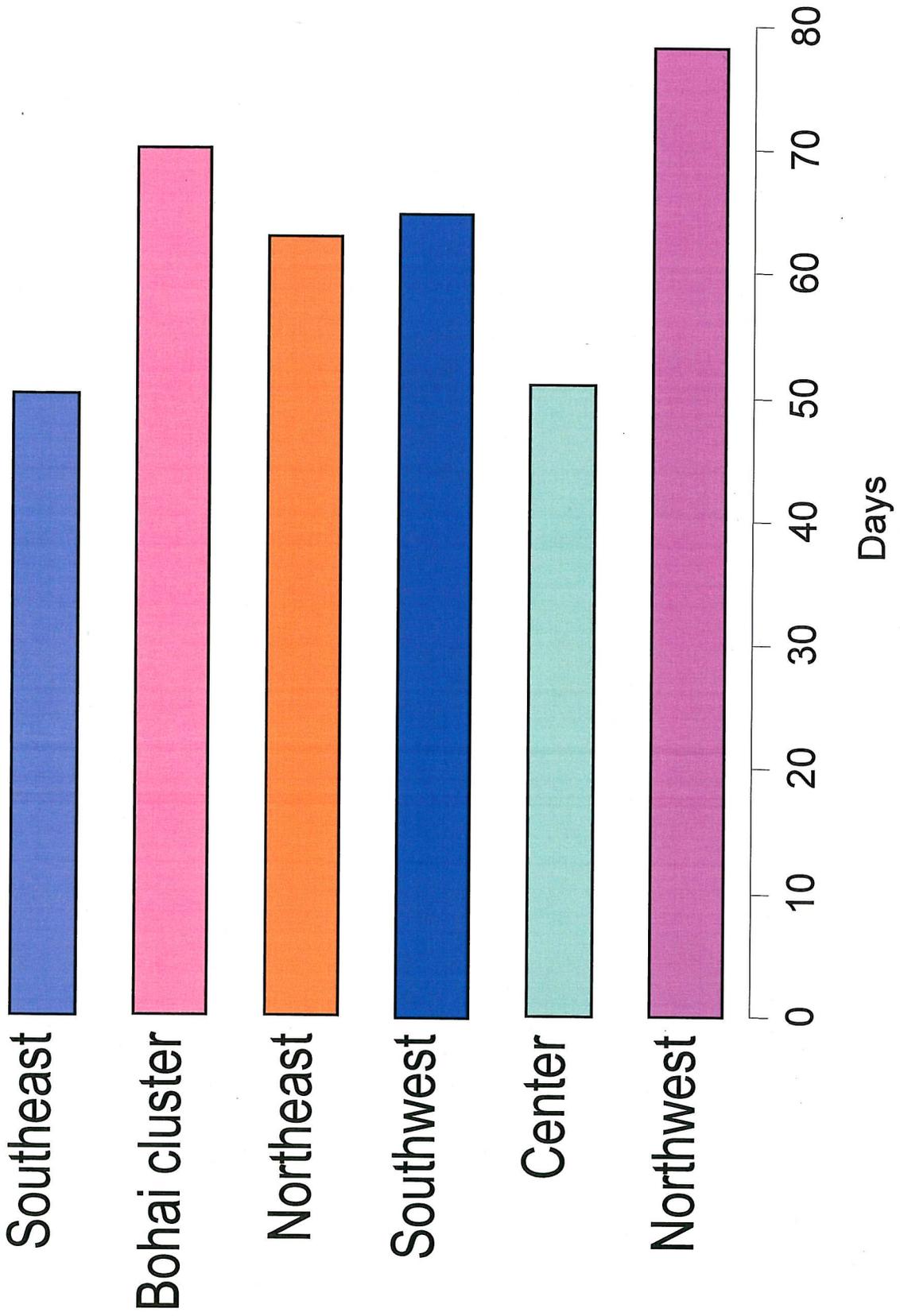
Customs clearance (exports)



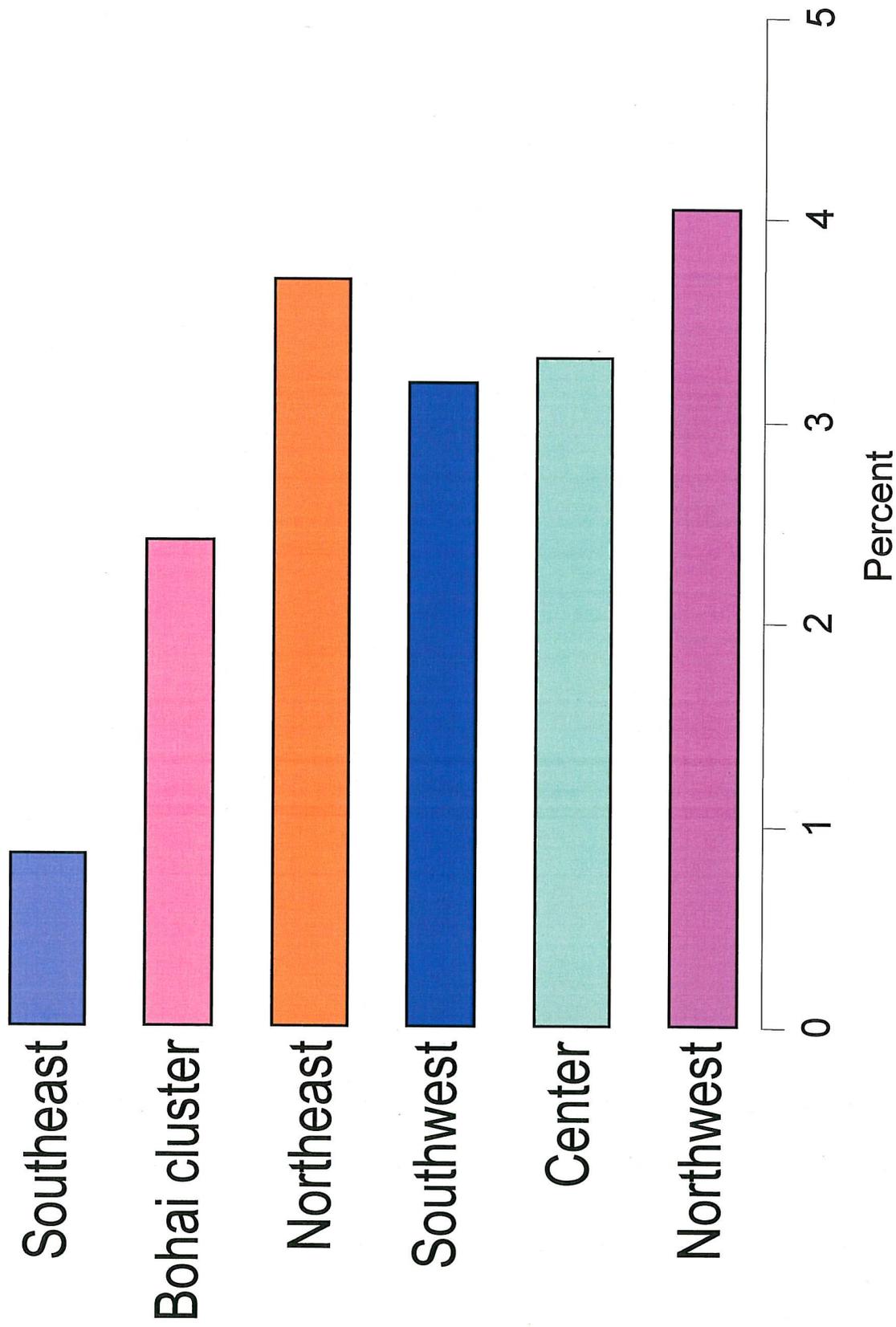
Output lost to power outages



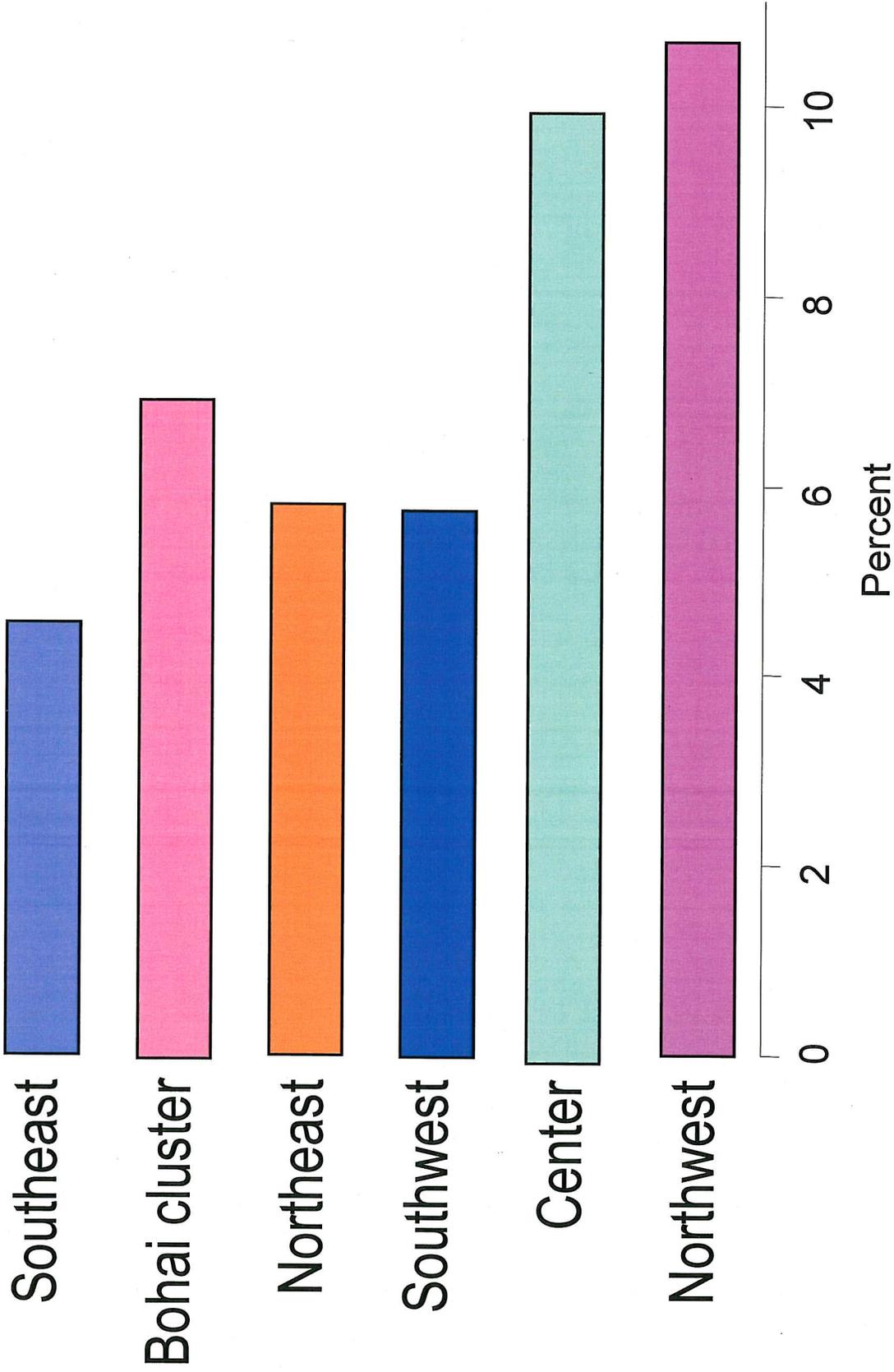
Days dealing with government bureaucracy



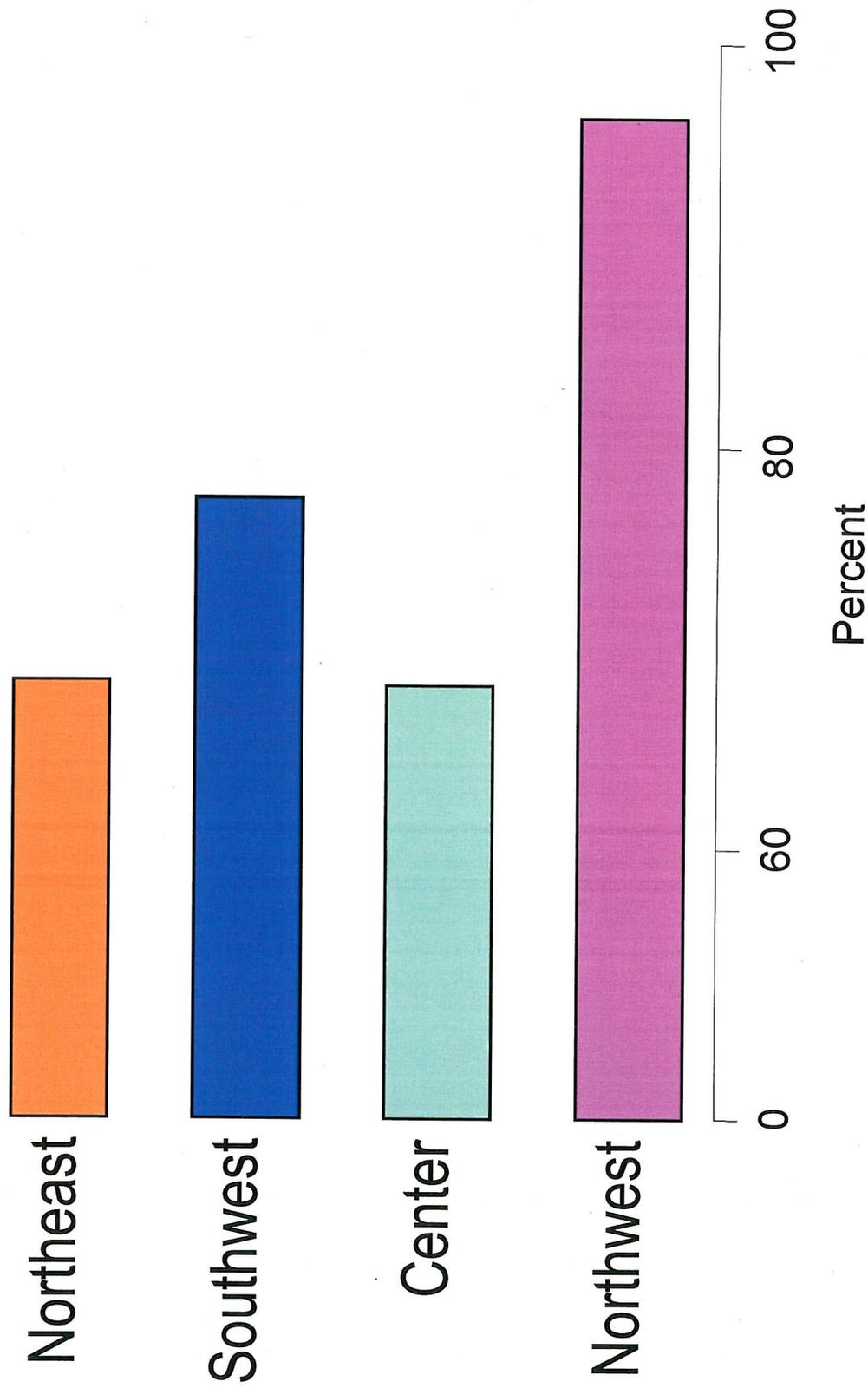
Surplus labor



Firms making informal payments to secure bank loan



Lagging regions: productivity gains from achieving Southeast investment climate



Policy: city level

- **Divest state enterprises**
- **Simplify business registration, procedures, red tape**
- **Improve logistics (customs, transport services)**

Exhibit B.11

Act of God Definitions

[NOLO Press](http://www.nolo.com)

<http://www.nolo.com>

An extraordinary and unexpected natural event, such as a hurricane, tornado, earthquake or even the sudden death of a person. An act of God may be a defense against liability for injuries or damages. Under the law of contracts, an act of God often serves as a valid excuse if one of the parties to the contract is unable to fulfill his or her duties -- for instance, completing a construction project on time.

[West's Encyclopedia of American Law](http://www.answers.com/topic/act-of-god)

<http://www.answers.com/topic/act-of-god>

A manifestation especially of a violent or destructive natural force, such as a lightning strike or earthquake, that is beyond human power to cause, prevent, or control.

[Business Dictionary](http://www.businessdictionary.com)

<http://www.businessdictionary.com>

Inevitable, unpredictable, and unreasonably severe event caused by natural forces without any human interference, and over which an insured party has no control, such as an earthquake, flood, hurricane, lightning, snowstorm. Acts of God are insurable accidents and valid excuses for non-performance of a contract. Also called act of nature. See also force majeure.

[Merriam-Webster](http://www.merriam-webster.com)

<http://www.merriam-webster.com>

An extraordinary interruption by a natural cause (as a flood or earthquake) of the usual course of events that experience, prescience, or care cannot reasonably foresee or prevent

Exhibit B.12

ShanghaiDaily.com

Published on ShanghaiDaily.com (<http://www.shanghaidaily.com/>)

http://www.shanghaidaily.com/sp/article/2008/200807/20080704/article_365624.htm

Power restored to Changxing Island

Created: 2008-7-4 9:14:15

Author: Yang Lifei

SHANGHAI'S power authority restored power to homes and businesses on Changxing Island late yesterday evening after a cable connecting Chongming Island was short circuited, Eastday.com reported today.

The Shanghai Municipal Electric Company confirmed the blackout that occurred on Wednesday morning was caused by ``external factors."

The company officials said they found paint had dropped onto the cable and this melted two 110-kilovolt cables above the Yangtze River, 2.5 kilometers from the island's southern coast

Rough waters and bad weather hampered efforts to reach the wires, but the company succeeded in completing the rush repairs after more than 30 hours.

"About 150 experienced repair staff and seven boats were dispatched to the scene," an official told the Website. ``We started to provide electricity at 8pm and the power supply to all island users was restored at 10:43pm."

Copyright © 2001-2009 Shanghai Daily Publishing House