DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	13.2/13.9	981R2	1204

REGISTERED ENGINEER - CIVIL

12-6-04

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER John Sun No. C 54648 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

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T.Y. LIN / MOFFATT & NICHOL
825 BATTERY STREET
SAN FRANCISCO, CA 94111

To get to the web site, go to: http://www.dot.ca.gov

POST-TENSIONING CHARACTERISTICS ASSUMED FOR DESIGN

1. Prestressing strand
   - Friction curvature coefficient : 0.20
   - Friction wobble coefficient : 0.0007/m
   - Anchor set : 6 mm
2. Prestressing monostrand (Tie-down cables only)
   - Friction curvature coefficient : N/A
   - Friction wobble coefficient : 0.0007/m
   - Anchor set : 6 mm
3. High strength rods (where applicable)
   - Friction curvature coefficient : 0.25
   - Friction wobble coefficient : 0.0007/m
   - Anchor set : 2 mm
4. High strength PT rod (75 mm)
   - Friction curvature coefficient : 0.25
   - Friction wobble coefficient : 0.0012/m
   - Anchor set : 2 mm
5. Prestressing strands shall conform to ASTM A416, low relaxation, 7-wire strands, with guaranteed minimum ultimate strength of 1860 MPa.
6. Prestressing monostrands (Tie-down cables only) shall conform to ASTM A416, low relaxation, 7-wire strands, with guaranteed minimum ultimate strength of 1860 MPa.
7. High strength rods (ASTM A354 Grade BD) shall have a guaranteed minimum ultimate strength of 965 MPa.
8. High strength rods (ASTM A354 Grade BC) shall have a guaranteed minimum ultimate strength of 793 MPa.
9. High strength rods (ASTM A722) shall have a guaranteed minimum ultimate strength of 1030 MPa.
10. High strength PT rods (75 mm) shall have a guaranteed minimum ultimate strength of 1030 MPa.

PRETENSIONING/GROUTING SEQUENCE

1. The pretensioning and grouting sequence of the Pier W2 prestressing strand tendons and of the Pier W2 high strength anchor rods (anchor bolts) shall be included with the Contractor's erection plan. The Contractor shall submit the erection plan along with the pretensioning and grouting sequence to the Engineer for review and approval.
2. The pretensioning and grouting sequence of the Pier T1 (Tower) high strength anchor rods (anchor bolts) shall be included with the Contractor's erection plan. The Contractor shall submit the erection plan along with the pretensioning and grouting sequence to the Engineer for review and approval.
3. The pretensioning and grouting sequence of the Pier E2 prestressing strand tendons and of the Pier E2 Bearing and Pier E2 Shear Key high strength anchor rods (anchor bolts) shall be included with the Contractor's erection plan. The Contractor shall submit the erection plan along with the pretensioning and grouting sequence to the Engineer for review and approval.

STRESSING FORCE LIMITS

1. All high strength anchor rods (anchor bolts) shall be pretensioned by jacking to 70% of their ultimate tensile strength, unless noted otherwise.
2. Force in all permanent high strength prestressing tendons shall not exceed 70% of the guaranteed minimum ultimate strength of the tendon after seating.
3. Force in all permanent high strength rods (anchor bolts) shall not exceed 70% of the guaranteed minimum ultimate strength of the bar after seating.

CONCRETE

1. A minimum compressive strength of 36 MPa (f'ci) shall be attained in the concrete of Pier W2 and Pier E2 crossbeams prior to stressing.

HIGH STRENGTH NONSHRINK GROUT

1. All high strength nonshrink grout shall attain a minimum compressive strength of f'ci=75% f'c (MPa) prior to being subjected to subsequent loading and before pretensioning operations.

PT DUCTS

1. Ducts for prestressing strand tendons and high strength rods (anchor bolts) shall consist of galvanized corrugated steel ducts, unless noted otherwise.
2. Prebent ducts shall be used for prestressing tendons with radius less than 10 m.
3. Prestressing strand tendon suppliers shall provide and use extra strong steel pipes (ASTM A53 Type S, Grade B (fy = 240 MPa) and necessary hardware connecting the steel pipes to galvanized corrugated steel ducts where radius of PT ducts is less than 5000 mm.
4. Based on the Contractor's stressing sequence, local strengthening of PT ducts (e.g. extra strong steel pipes) at critical location's may be required.

GROUT FOR PT DUCTS/PIPE SLEEVES

1. Tie-down cables with monostrands shall not be grouted.
2. Ducts shall be grouted with nonshrink grout (f'c=60 MPa).
3. Nonshrink grout shall attain a strength of 36 MPa (f'ci) minimum before being subjected to stresses due t subseqent loading.

BLOCKOUT CONCRETE

1. After completion of all pretensioning and grouting operations, the blockout closure reinforcement shall be bent into place over the anchors before the blockouts are filled with concrete (f'c=60 MPa).

REGISTERED PROFESSIONAL ENGINEER Marwan N. Nader No. C 054426 Exp. 12/31/07 CIVIL STATE OF CALIFORNIA

FOR REVISIONS ONLY

MARK	DATE	DESCRIPTIONS	BY	CH'D	CCO#
2	02/28/07	TIE-DOWN CABLE PRESTRESSING NOTES	JD	AS	23
1	07/21/06	CONCRETE STRENGTH, ISD	MN	NV	23

REVISIONS

CONTRACT CHANGE ORDER NO. ____
SHEET ___ OF ___

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

R. Valizadeh/V. Toan/Y.L./W.L./F.C.
DESIGN OVERSIGHT
Y. Lu
SIGN OFF DATE 02/28/07

Rev. Date: 5-18-98

DESIGN	BY J. Sun	CHECKED J. Duxbury	
DETAILS	BY J. Sun	CHECKED J. Duxbury	
QUANTITIES	BY J. Sun	CHECKED J. Duxbury	

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

R. Manzanarez
PROJECT ENGINEER

BRIDGE NO. 34-0006L/R
KILOMETER POST 13.2/13.9

CU 04
EA 0120F1

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT
SELF-ANCHORED SUSPENSION BRIDGE
(SUPERSTRUCTURE & TOWER)

PRESTRESSING NOTES

DISREGARD PRINTS BEARING EARLIER REVISION DATES 04/08/02 07/21/02 12/19/02

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 564R2 OF

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USERNAME => bkwok