DRAINAGE
CALCULATIONS

I-5/MARCH LANE
IMPROVEMENT PROJECT

PROJECT No. 95-04

PREPARED BY: MARK. THOMAS & CO., INC.

DATE: APRIL 22, 1995

PREPARED FOR: CITY OF STOCKTON

CALTRANS DISTRICT 10

PROPERTY OF
DEPARTMENT OF PUBLIC WORKS
DRAINAGE CALCULATIONS
I-5/MARCH LANE IMPROVEMENT PROJECT

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1. Dimensions of the structural sections are subject to tolerances specified in the standard specifications.

2. Super-elevation as shown or as directed by the Engineer.

3. See layout sheets for locations of sidewals, curb and gutter.

4. See drainage details for gutter typical section.

5. See layout sheets for locations of concrete barrier (type 500 Moody).

6. See construction details for pavement and curb elevations.

7. See stage construction sheets for temporary pavement.

8. Exists pavement sections shown are based on AS-BUILT INFORMATION & are subject to variation due to construction tolerances & internal roadway maintain activities.

9. See sheet c-7 for curb details, including transitions.

TYPICAL CROSS SECTION

FINAL PS&E NO SCALE X-1
PROJECT LOCATION

MARCH IN
CITY OF STOCKTON'S
STORM DESIGN CALC. SHEETS
### Storm Design Sheet

**City of Stockton**

**Department of Public Works**

**Subject:** March Ln/1-S Improvement Project

**Description System:** Drainage to 1 From 2

**Beginning Design Data:**
- Assumed Time to Inlet = 11 Minutes
- Elevation HGL at Beginning of System = N/A
- Elevation HGL at End of System = N/A

**25 Year Storm**

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* ARCH PIPE ANALYZED AS CIRCULAR

* 1D MINUTE MINIMUM
### STORM DESIGN SHEET

**CITY OF STOCKTON**
**DEPARTMENT OF PUBLIC WORKS**

**SUBJECT:** MARCH LN / I-5 IMPROVEMENT PROJECT

**DESCRIPTION SYSTEM:** DRAINING TO 1 FROM 4

BEGINNING DESIGN DATA: ASSUMED TIME TO INLET = 10 MINUTES

ELEVATION HGL AT BEGINNING OF SYSTEM =

ELEVATION HGL AT END OF SYSTEM =

**25 YR STORM**

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**TOTAL ΔHGL:**

Σ ΔHGL = 0.26

**APPROX. AVERAGE SLOPE:** 0.0007

**JOB NO:** 95-04
**PAGE:** 3 of 4

**DES. BY:** RPB
**DATE:** 4-18-49

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- Eqs.
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HEAD LOSS Eqs. Used

**Head Loss Due to Pipe Friction**:

\[ h_L = 4.66 \frac{n^2}{d} \left( \frac{Q^2}{d^{10.8}} \right) \]

Used: \( n = 0.015 \)

**Head Loss Due to Exits and Entrances**

Exits

\[ h_L = \frac{V^2}{2g} \]

Entrances

\[ h_L = 0.5 \times \frac{V^2}{2g} \]

**Head Loss Due to Junction Structures**

\[ h_L = 0.02517 \times \frac{Q^2}{d^4} \times K \]

See following table for values.
TABLE OF HEAD LOSS FACTORS THROUGH STRUCTURES

<table>
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<th>DESCRIPTION</th>
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<td>6. Approaching 90° Deflection with same pipe size</td>
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<td>7. 90° Deflection with change in pipe size</td>
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<td>8. Drop Manhole</td>
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<td>9. Short Radius Curves - 50' and Down</td>
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EQUUS. = \[ h_L = K \times \frac{V^2}{2g} \]

Substituting: \( V = \frac{Q}{A} \) AND \( A = \frac{\pi d^2}{4} \)

\[ h_L = 0.02517 \times \frac{Q^2 \times K}{d^4} \]
DRAINAGE INLET CALCS.
SPREAD WIDTH CALCS.
DRAINAGE INLET ANALYSIS
(See following pages for calculations)

<table>
<thead>
<tr>
<th>SYSTEM No.</th>
<th>ITEM No.</th>
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<th>ANALYSIS</th>
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<td>6</td>
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<td>&quot;ML&quot; 19+77.5 Lt</td>
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The following are locations where spread width may be critical and have been checked using the bypass calculation sheets to make sure drainage spread width does not encroach into the travelled way.

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<td>In sump approaching sag inlets</td>
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Note: All Q's are based on a 25 year event and a Time of Concentration of 10 minutes.
INLET CALCULATIONS

Calc by Rob
Check by D C

Date 4-18-95
Date 5-2-95

Sheet

Dis 16 + 49.5 R

q_e = 

q_p = 

q_25 = 0.26 AC * 0.9 * 2.2 = 0.51 cfs

Nomograph 7-832.4A

s = G - D (G - G')

z = 1.60
n = 0.15
b = 1.60

q_25 = 0.51 cfs

Y = 0.30

W = 0.160

A = 2XW = 0.27

V = \frac{q_25}{0.51} = 0.38 fps

EPR Method w/side inflow

Y_{av} = \frac{d}{1.15}, q_g = W Y_{av} = 1.33 \times 0.15 \times 1.89 = 0.38 cfs

Side Inflow

\hat{q}'' = 0.15

q_a = 0.38 - 0.13 = 0.13 cfs

L = 3

q = q_a = 0.15

L = 0.51

q_b = 0.63 \times 0.13 = 0.05 cfs

Use \hat{q}' depression, \hat{y} = 0

q_{bypass} = q_25 - q_g - q_b = 0.05 cfs

Remarks: OK - MINIMAL BYPASS

FG
+ pavement
EP
+ shoulder
Gutter grade
-depression
TG

Min depth =

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

T_c = + + + min i = + + + + + + + c

inlet FL = outlet FL = I = + + + x + + +

s = \frac{q_25}{K'} D = \frac{d}{D} =

C = a = \frac{V}{D} = fps T =

by P.R.C. 6/7/62
INLET CALCULATIONS

Calc by ROB Date 4-18-95 Co SJ Rte 5 Sec
Chck by DL Date 5-1-95 Item

DIS "ML" 16 + 48.6 L+

\[ Q_e = \frac{16}{1} + \frac{48.6}{1} \]

\[ Q_p = \] 

\[ Q_{25} = 0.14 \text{ AC} \times 0.9 \times 2.2 = 0.28 \text{ cfs} \]

Nomograph 7-832.4A

\[ s = \frac{G - D(DG)}{I} = \frac{0.0089}{1} \quad t = 16.0 \%
\]

\[ z = 16.0 \quad n = 0.015 \quad R = 402 \quad Q_{25} = 0.28 \text{ cfs} \quad Y = 0.25 \]

\[ W = 0.25 \quad A = 0.19 \quad V = \frac{0.28}{0.19} = 1.47 \text{ fps} \]

Use type DI (TYPE A) inlet w/183' x 3' grate(s)

EPA Method w/side inflow

\[ Y_{av} = \frac{0.125}{1.33} \quad Q_g = W_{av}Y_{av}I = 1.33 \times 0.125 \times 1.47 \rightarrow 0.24 \text{ cfs} \]

Side Inflow

\[ q = \frac{0.28 - 0.24}{0.04} = \text{ cfs} \quad I = 3 \]

\[ Y' = Y - \frac{Q_{25}}{1.33} = 0.08 \quad \phi = 0.01 \quad L_a = 4 \]

\[ \phi = \frac{3}{4} \quad \phi = 0.175 \quad Q_b = 0.01 \text{ cfs} \]

Outfitted depression, use bypass

\[ Q_{bypass} = Q_{25} - Q_g - Q_b = 0.28 - 0.24 - 0.01 \]

Remarks: OK - MINIMAL BYPASS

Base = ____
Cover = ____
t+pipe = ____
Min depth = ____

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = \text{inlet FL} = \text{outlet FL} = I = \text{"x"} \]

\[ s = \text{K} = \text{D} = \text{D} = 1 \]

\[ c = \text{a} = \text{V} = \text{fps} \]

by P.B.C. 6/7/82

4ES902b
Calc by Rob  Date 4-18-95  Co ST Rte 5 Sec __  
Chck by __ Date 5-2-95  Item __

DIS "ML" 18+30.0 Lt

$q_e=$

$q_p=$

$q_{25} = 0.06 A_c \times 0.9 \times 2.2 = 0.12 \text{ cfs}$

Nomograph 7-832.4A

$s = \frac{G - D}{I} = \frac{40}{G - D} = \frac{40}{0.015} = 26.67 \text{ in}$

$z = 0.06 A_c = 2.4 \text{ in}$

$A_c = 0.07 \text{ in}$

$V = \frac{Q_{25}}{A_c} = \frac{0.12}{0.07} = 1.71 \text{ fps}$

Use type 62 inlet w/ 24-12 grate(s)

EPR Method w/side inflow

$Y_{av} = 0.03 \text{ in}$

$q_g = W_{av} Y_{av} = 2 \times 0.03 \times 1.71 = 0.10 \text{ cfs}$

Side Inflow

$\text{depress(d)} = 0.1$ \quad $q_a = 0.12 - 0.10 = 0.02 \text{ cfs}$ \quad $I = 3$

$Y' = Y - \frac{W_{av}}{2(0.025)} = 0.01$

$q_a = \frac{q_b}{I_a} \quad I_a = \frac{q_a}{q_b} = 0.02 \text{ cfs}$

Use \text{ depression, } \frac{a}{Y} = \frac{q_{bypass}}{q_{25} - q_g - q_p} = 0.12 - 0.01 - 0.0

Remarks: \text{ NO BYPASS} \quad \text{ Base=} \text{ Cover=} \text{ t+pipe=} \text{ Min depth=} \text{ gutter grade=} \text{ depression=} \text{ Min depth=} \text{ FL=} \text{ Tc=} \text{ +pavement=} \text{ EP=} \text{ +shoulder=} \text{ outlet pipe=} \text{ inlet PI=} \text{ outlet PI=} \text{ I=} x \text{ s=} \text{ K=} \text{ D=} \text{ c=} \text{ a=} \text{ V=} \text{ fps T=} \text{ by P.R.C. 677/62}

Outlet Pipe (Ref.: King's Handbook, pp 7-99 and 7-41)
INLET CALCULATIONS

Calc by Rob  Date 4-18-95  Co SJ Rte 5 Sec____
Check by DL  Date 5-2-85  Item____

DI:  "ML"  19+77.5  Lt

\[ Q_e = \] 

\[ Q_p = \] 

\[ Q_{25} = \left[ 0.45 \times A - 2 \times (70 \times 50) \right] \times 0.9 \times 2.2 = 0.57 \text{ cfs} \]

OVER CROSSING

BPR Nomograph 1073.02 (inlet @ sump)

\[ P = 7 \]  \( Q = 0.57 \text{ cfs} \)  \( h = \) __
\[ A = 4.57 \text{ sq ft} \]  \( Q = 0.57 \text{ cfs} \)  \( h = \) __
\[ h = 0 \]  \( t = 5 \% \)  \( W = 0 \)  \( F = 0.05 \)

Use type GO inlet w/24-12x grate(s) & 0.1' depression

Note: Area and perimeter shall be divided by 2 for inlets without a curb opening.

Areas of grates

24-9 = 5.28 sq ft
18-9 = 3.66 sq ft
24=12 = 4.88 sq ft
36R = 5.28 sq ft
24-15 = 4.47 sq ft
24-12x = 4.57 sq ft

PG
pavement
EP
shoulder
Gutter grade
-depression
TG

Base=___  Cover=___  t+p=___

Min depth=___

Outlet Pipe (Ref.: King's Handbook, pp 7-99 and 7-41)

\[ T_e = \text{____} + \text{____} = \text{____} \text{ min} \]
\[ l = \text{____} \]
\[ Q_{25} = \text{____} \text{ cfs} \]

inlet FL=______  outlet FL=______  \( L = \text{____} \text{"} x \text{____} \text{"} \)

\( s = \text{____} \)  \( K = \text{____} \)  \( D = \text{____} \text{"} \)
\( D = \text{____} \text{"} \)
\( c = \text{____} \)  \( a = \text{____} \)

\( V = \text{____} \text{ fps} \)

\( T = \text{____} \text{ Min} \)

by F.H.C.  5/22/62
INLET CALCULATIONS

Calc by: ROB
Check by: DL
Date: 4-18-95
Date: 5-2-95
Co: SJ
Item: Rte 5 Sec
Sheet: 6 i

DIS "ML" 21 + 29.2 Lt

\[ Q_e = \]

\[ Q_p = \]

\[ Q_{25} = 0.09 \times 0.9 \times 2.2 = 0.18 \text{ cfs} \]

Nomograph 7-832.4A

\[ s = G - D \left( \frac{G'}{I} \right) = \]

\[ z = \frac{Z}{n} = 0.015 \]

\[ W = \frac{0.09}{0.05} = 1.8 \]

Use type GZ inlet w/ 2A-12 grate(s)

EPA Method w/side inflow

\[ Y_{av} = 0.045 \]

\[ Q_g = W_y Y_{av} V = 2 \times 0.045 \times 2.2 = 0.20 \text{ cfs} \]

Side Inflow

\[ Q_a = \]

\[ Q_e = \]

\[ L = \]

Use depression, \( \frac{h}{Y} = \)

\[ Q_{bypass} = Q_{25} - Q_g - Q_b = \]

Remarks: NO BYPASS

PG

+travement

EP

+shoulder

Gutter grade

-Depression

Min depth

TG

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = \]

\[ T_1 = \]

\[ i = \]

\[ Q_{25} = \]

\[ \text{inlet FL= } \]

\[ \text{outlet FL=} \]

\[ I = \]

\[ s = \]

\[ K = \]

\[ D = \]

\[ a = \]

\[ V = \]

\[ T = \]

by F.R.C. 6/17/92
INLET CALCULATIONS

Calc by: R. B.  
Date: 4-20-95

Check by: D. C.   
Date: 5-2-95

Cost
Item
Sheet

EXIST

\[ N^x \text{ 1700+50} \]

\[ q_e = \ \text{---} \]

\[ q_p = \ \text{---} \]

\[ q_{25} = 0.39 \times 0.9 \times 2.2 = 0.77 \text{ cfs} \]

Nomograph 7-832.4A

\[ s = \frac{4 - D (G-G')}{{\frac{1}{2}}} = \frac{4 - 0.015}{0.015} = 1333 \]

\[ y = \frac{4}{0.05} = 4.8 \]

\[ A = \frac{y - wy}{0.58} = \frac{0.77}{0.58} = 1.33 \text{ fps} \]

Use type G1 inlet w/ 24-12 grate(s)

EBR Method w/side inflow

\[ Y_{av} = 0.12 \]

\[ q_g = w - y_{av} v = 2(0.12)(1.33) = 0.32 \text{ cfs} \]

Side Inflow

\[ q_a = w - y_{gt} v = 0.77 - 0.32 = 0.45 \text{ cfs} \]

\[ L = 3 \]

\[ \frac{q_a}{L} = 0.14 \]

\[ q_a = 0.075 \]

\[ L_a = 6 \]

\[ L_a = 0.5 \]

\[ q_b = 0.05(0.45) = 0.29 \text{ cfs} \]

Use 0.1 depression, \( \frac{q}{v} = 0.71 \)

Bypass: Add to \( Q \)

Outlet Pipe (Ref. King's Handbook, pp7-99 and 7-41)

\[ T_c = \_ + \_ = \_ \text{ min} \]

\[ i = \_ \]

\[ Q_{25} = \_ \]

inlet FL = \_ , outlet FL = \_

\[ I = \_ \]

\[ D = \_ \]

\[ c = \_ \]

\[ D = \_ \]

\[ v = \_ \text{ fps} \]

\[ T = \_ \text{ by F.R.C. 67/76} \]
INLET CALCULATIONS

Calc by: ROB
Chck by: LC

Date: 4-22-75
Date: 5-2-75

Co SJ: Rate 5
Item: Sec

DIS "N" 11.95 + 46.5 LT

q_e = 

q_p = 

q_{25} = 0.52 \times 0.9 \times 2.2 = 1.03 \text{ cfs} + 0.16 \text{ cfs Bypass}

\[ = 1.19 \text{ cfs} \]

Nomograph 7-832.4A

From EXIST @ "N" 1700 + 50 LT

s = G-D(G-G') = 

z = 2.0 \text{ ft}

q_{25} = 1.19 \text{ cfs}

W = 0.05 \text{ ft}

A = \text{ WY} = 

A = 0.36 \text{ ft}^2

V = \frac{a}{A} = \frac{0.36}{0.36} = 3.3 \text{ fps}

Use type (G1) inlet w/ 24-12 grate(s)

EFR Method w/side inflow

\[ Y_{av} = 0.095 \]

\[ q_g = w_g Y_{av} V = 2(0.095)(3.3) = 0.63 \text{ cfs} \]

Side Inflow

Depress(d) 0.2

q_a = 1.19 - 0.63 = 0.56 \text{ cfs}

\[ I_a = 3 \]

\[ Y' = Y - \frac{w_g t}{0.19 - 2(0.05)} = 0.09 \]

\[ q_{a6} = 0.067 \]

\[ I_a = \frac{3}{0.36} = 0.36 \]

\[ q_{a6} = 0.425 \]

\[ q_{a6}(0.425)(0.56) = 0.24 \text{ cfs} \]

Use 0.2" depression, \[ \frac{q}{Y} = 2.22 \]

q_{bypass} = q_{25} - q_g - q_{b} = 1.19 - 0.63 - 0.2

Remarks: USE 0.2" DEPRESSION

Bypass = 0.32 \text{ cfs}

FG

+Pavement

EP

+Shoulder

gutter grade

-depression

TG

Min depth = OK

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = + \text{ min} \]

\[ i = \]

\[ q_{25} = \]

inlet FI = \text{ outlet FI} = \text{ I} = \text{ "x"} \]

\[ s = \]

\[ K' = \]

\[ D = \]

\[ D = \]

\[ c = \]

\[ a = \]

\[ V = \text{ fps} \]

T =

by PRC. 6/17/76
INLET CALCULATIONS

Calc by ROB
Check by DJ
Date 4-18-95
Date 5-1-95
Co SJ Rte 5 Sec
Item

ML 19+77.5 R+

Qe =

Qp =

Q25 = \left[ \frac{0.43AC - 2\times(60\times50)}{2} \right] \times 0.9 \times 2.2 = 0.58 \text{ cfs}

BPR Nomograph 1073.02 (inlet @ sump)
P = 7'
A = 4.57
h = 0'
t = 5 '%
W = 0.05

Use type G0 inlet w/ 24-12x grate(s) & 0.1' depression

Note: Area and perimeter shall be divided by 2 for inlets without a curb opening.

Areas of grates
24-9 = 5.28"'
24=12 = 4.88"'
24-15 = 4.47"'
24-12x = 4.67'

Outlet Pipe (Ref.: King's Handbook, pp 7-99 and 7-41)

Tc = _______ + _______ = min
i = _______ Q_{25} = _______ = _______ cfs

inlet FL = _______ outlet FL = _______
L = _____' _____" x _____'
s = _______ K = _______ = _______ D = _______
c = _____ a = _______ = _______ V = _______ = _______ fps
T = _______ Min

by F.H.C. 5/22/62
INLET CALCULATIONS

Calc by Rob
Check by DC
Date 4-18-95
Date 5-2-90

DIS. 'ML' 21+29.2 RT

\[ Q_e = \ldots \]
\[ Q_d = \ldots \]
\[ Q_{25} = 0.08AC \times 0.9 \times 2.2 = 0.16 \text{ cfs} \]

Nomograph 7-832.4A
\[ s = C - D(\frac{G - G'}{G}) \]
\[ z = \frac{20}{n} \]
\[ n = 0.015 \]
\[ \frac{20}{0.015} = 1333 \]
\[ q_{25} = 0.16 \text{ cfs} \]
\[ Y = 0.09 \]
\[ W = \frac{0.09}{0.05} = 1.8 \]
\[ A = \frac{NV}{0.081} = 0.081 \]
\[ V = \frac{0.16}{0.081} = 1.98 \text{ fps} \]

Use type G2 inlet w/ 24-12x grate(s)

EFR Method w/side inflow
\[ Y_{ay} = \ldots \]
\[ Q_e = W_{av} Y_{ay} = 2 \times 0.045 \times 1.98 = 0.18 \text{ cfs} \]

Side Inflow
\[ \text{depress}(d) \]
\[ Q_a = \ldots \]
\[ I_a = \ldots \]

Use depression, \( \frac{Y}{Y'} = \ldots \)

Remarks: NO BYPASS

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)
\[ T_c = \ldots \]
\[ Q_{25} = \ldots \]

inlet FI = \ldots ' outlet FI = \ldots '

by F.R.C. 6/7/62

455902b
INLET CALCULATIONS

Calc by Rab
Chck by D.C.

Date 4-18-95
Date 5-2-95

Co SJ Rate 5 Sec
Item

Dis. 1692 + 50.9 RT

Q_e =

Q_p =

Q_{25} = 0.95 AC x 0.9 x 2.2 = 1.88 cfs

Nomograph 7-832.4A

s = G - D(G - G') = s = 0.015''/'' t = 5''

Z = 20
n = 0.015
Z = 20
n = 0.015

1323

Q_{25} = 1.88 cfs

Y = 0.23

Y = 0.23

A Wy = 0.53

V = A = 1.88 - 3.54 fps

Use type G1 inlet w/ 24-12 grate(s)

EPR Method w/side inflow

\( Y_{av} = \frac{0.12}{12} \)

\( Q_g = W g Y_{av} V = 2x(12)(3.54) = 0.85 \) cfs

Side Inflow

depress(d) 0.2''

\( Q_e = 1.88 - 0.85 = 1.03 \) cfs

L = 3

\( Y' = Y - Y g = 0.23 - (2)(0.05) = 0.13 \)

\( \frac{Q_e}{L} = \frac{0.97}{0.3} \)

L_a = 0.28

\( \frac{Q_e}{Q_a} = 0.8 \)

\( Q_b = 0.38(1.03) = 0.39 \) cfs

Use 0.2'' depression, \( \frac{Y'}{Y} = 1.54 \)

Q_{bypass} = Q_{25} - Q_g - Q_b = 1.88 - 0.85 - 0.39 = 0.64 cfs

Remarks: USE 0.2'' DEPRESSION

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\( T_c = \) min

\( i = \)

\( Q_{25} = \)

inlet PI =

outlet PI =

I =

s =

K' =

D =

D =

c =

a =

V =

fps

T =

by F.R.C. 6/27/52

OK
INLET CALCULATIONS

Calc by RCB
Date 4-18-95

Check by D.L.
Date 5-2-95

DIS "P" 1694 + 62.6 ft

\[ q_e = \]

\[ q_p = \]

\[ q_{25} = 0.83 \times AC \times 0.9 \times 2.2 = 1.164 \text{ cfs} \]

Nomograph 7-832.4A

\[ s = G - D\left(\frac{G - G'}{1}\right) \]

\[ z = \frac{20}{20} = 0.015 \]

\[ \frac{z}{n} = 0.015 \times 1333 = 1.164 \text{ cfs} \]

\[ y = 0.23 \]

\[ w = 0.05 \times 4.16 \]

\[ A = 0.53 \]

\[ V = 1.64 \times 3.09 \text{ fps} \]

Use type G1 inlet w/ 24 x 12 grate(s)

BPR Method w/side inflow

\[ Y_{av} = 0.115 \]

\[ q_g = \frac{w_g Y_{av} V}{A} = 2 \times (0.115 \times 3.09) = 0.71 \text{ cfs} \]

Side Inflow

\[ \text{depress(d)} 0.2 \]

\[ \frac{q_a}{1.14 - 0.71} = 0.92 \text{ cfs} \]

\[ I = 3 \]

\[ \frac{y'}{Y} = 0.23 - 2(0.05) = 0.13 \]

\[ \frac{q_a}{I_a} = 0.96 \]

\[ I_a = 9.58 \]

\[ I_a = 0.31 \]

\[ \frac{q_a}{q_a} = 0.39 \]

\[ q_g = 0.39(0.92) = 0.36 \text{ cfs} \]

Use 0.2' depression, \( \frac{y}{Y} = 1.15 \)

\[ q_{bypass} = q_{25} - q_g - q_h = 1.14 - 0.71 - 0.36 \]

Remarks: USE 0.2' DEPRESSION

BYPASS GOES TO AC OVERSIDE DRAIN

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = \]

\[ a = \]

\[ q_{25} = \]

\[ \text{inlet FI=} \]

\[ \text{outlet FI=} \]

\[ I = \]

\[ x = \]

\[ s = \]

\[ K' = \]

\[ D = \]

\[ D = \]

\[ c = \]

\[ a = \]

\[ V = \]

\[ \text{fps} \]

\[ T = \]

by F.B.C. 6/7/62
INLET CALCULATIONS

DSC  10M  168.2 + 39.6 R+  

q_e = ____________________________ 

q_p = ____________________________ 

q_{25} = 0.160 \text{AC} \times 0.9 \times 2.2 = 1.30 \text{ cfs} 

Nomograph 7-832.4A

s = G - D \left( \frac{G - D'}{L} \right) = ______________________  \text{ s = 0.0013'}  \quad t = 5' 

z = 20  \quad n = 0.015  \quad \frac{z}{n} = 20 = 1.3 \text{ cfs y = 0.32'} 

w = 0.32 \quad l = 0.4  \quad A = \frac{w}{y} = 1.02  \quad v = \frac{q}{A} = 1.30 \text{ fps} 

\text{Use type GI inlet w/ 24-12 grate(s)} 

EPR Method w/side inflow

Y_{av} = \frac{0.16}{1.27} \quad q_g = w_y Y_{av} \quad v = 2(0.16)(1.27) = 0.41 \text{ cfs} 

Side Inflow

depress(d) 0.2'  \quad q_a = 1.30 - 0.41 = 0.89 \text{ cfs}  \quad I = 3' 

w' = w_y - w_t = 0.32 - 2(0.05) = 0.22  \quad q_a = 0.165  \quad I_a = 5.4' 

I = 3/5.4 = 0.55  \quad \frac{q_a}{q_a} = 0.69  \quad q_b = 0.69 \times 0.89 = 0.61 \text{ cfs} 

Use 0.2' depression, \frac{a}{y} = 0.91 \quad q_{bypass} = q_{25} - q_g - q_b = 1.30 - 0.41 - 0.61 \quad \text{Bypass = 0.28 cfs} 

Remarks: 0.2 DEPRESSION NOT 0.1' 

FG 

+ pavement 

EP 

+ shoulder 

+ gutter grade 

- depression 

- Min depth = 

TG 

FL = 

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

T_c =  +  min  \quad i =  \quad q_{25} =  \quad c 

inlet FL =  \quad outlet FL =  \quad I =  \quad "x" =  \quad s =  \quad k' =  \quad d =  \quad D =  

c =  \quad a =  \quad V =  \quad fps  \quad T =  \quad by F.R.C. 6/7/62
INLET CALCULATIONS

Calc by: Rob
Check by: [signature]
Date: 4-18-95
Co SJ Rte 5 Sec
Item

DIS: "OM" 1685+30.2 RT

$q_e$ =

$q_p$ =

$q_{25} = 0.25 AC \times 0.9 \times 2.2 = 0.5 \text{ cfs} + 0.28 \text{ cfs bypass} = 0.78 \text{ cfs}

Nomograph 7-832.4A

\[ s = \frac{G-D(G-G')}{\frac{1}{I}} \]

\[ z = \frac{20}{n} = 0.15 \]

\[ 0.015 \times 20 = 0.20 \]

\[ t = 5 \% \]

\[ W = 0.25 \]

\[ 0.05 \times 5.3 = 0.265 \]

\[ A = 7 \text{ WY} = \frac{20}{20} = 0.70 \]

\[ V = \frac{20}{1.70} = 1.11 \text{ fps} \]

Use type G1 inlet w/ 24-12 grate(s)

EPR Method w/side inflow

\[ Y_{av} = \frac{20}{0.13} \]

\[ q_g = \frac{W}{Y_{av}} \times 2(0.13)(1.11) = 0.29 \text{ cfs} \]

Side Inflow

Depress(d) = 0.2

\[ q_a = 0.78 - 0.29 = 0.49 \text{ cfs} \]

\[ I = 3 \]

\[ y' = Y - \frac{W}{G} = 0.265 - 2(0.05) = 0.165 \]

\[ q_a = 0.125 \]

\[ I_a = \frac{3}{3.92} = 0.76 \]

\[ \frac{q_a}{q_a} = 0.85 \]

\[ q_b = 0.85 \times 0.49 = 0.42 \text{ cfs} \]

Use 0.2 depression, \( \frac{a}{y'} = 1.21 \)

\[ q_{bypass} = q_{25} - q_g = 0.78 - 0.29 - 0.6 = 0.07 \text{ cfs bypass} \]

Remarks:

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = \text{ min } \]

\[ i = \]

\[ q_{25} = \]

\[ \text{ inlet FL} = \]

\[ \text{ outlet FL} = \]

\[ I = \]

\[ "x" = \]

\[ s = \]

\[ K = \]

\[ D = \]

\[ D = \]

\[ c = \]

\[ a = \]

\[ V = \text{ fps} \]

\[ T = \]

by F.R.C. 6/7/62
INLET CALCULATIONS

Calc by ROB
Date 4-18-95
Check by DL
Date 5-2-95
CoSJ Rte 5 Sec
Item 24 Exist

DIS "P" 1702 + 10.0 ft

\[ Q_e = \quad \]  
\[ Q_p = \quad \]  
\[ Q_{25} = 0.21 \text{AC} \times 0.9 \times 2.2 = 0.41 \text{cfs} \]

Nomograph 7-832.4A

\[ s = D - (\frac{Q - C}{I}) = \quad \]  
\[ z = 20 \quad n = 0.015 \quad z = 20 \]  
\[ \frac{Q_{25}}{n} = 1333 \quad Q_{25} = 0.41 \text{cfs} \]  
\[ y = 0.21 \]  
\[ w = 0.21 \]  
\[ A = \frac{1}{2} wy = 0.44 \]  
\[ v = \frac{Q}{A} = 0.93 \text{fps} \]

Use type G1 inlet w/ 24-12 grate(s)

EPS Method w/side inflow

\[ Y_{av} = 0.105 \quad Q_g = w_y Y_{av} V = 2(0.105)(0.93) = 0.20 \text{cfs} \]

Side Inflow

\[ d = 0.1 \quad Q_a = 0.41 - 0.20 = 0.21 \text{cfs} \]  
\[ L_a = 3 \]  
\[ Y' = Y - w_y t = 0.21 - 2(0.05) = 0.11 \quad Q_e = 0.054 \]  
\[ L_a = 3.89 \]  
\[ Q_a = 0.85 \]  
\[ Q_b = 0.85(0.21) = 0.18 \text{cfs} \]

Use 0.1 depression, \( \frac{a}{a} = 0.91 \)

\[ Q_{bypass} = Q_{25} - Q_g - Q_b = 0.41 - 0.20 - 0.1 \text{cfs} \]

Remarks: NEGIGBLE BYPASS

FG

+pavement

EP

+shoulder

gutter grade

-depression

-TG

FL


Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

\[ T_c = \quad + \quad = \quad \text{min} \quad i = \quad Q_{25} = \quad = \quad c \]

inlet FL = \quad outlet FL = \quad I = \quad \]  
\[ s = \quad K' = \quad D = \quad D = \quad c = \quad a = \quad V = \quad \text{fps} \]

by F.B.C. 6/7/62

45902b
INLET CALCULATIONS

q_e =

q_p =

q_25 = 0.19 AC x 0.9 x 2.2 = 0.38 cfs + 0.07 cfs by pass

= 0.45 cfs

Nomograph 7-832.4A

s = C - D (G - G') = 

z = 50

n = 0.015

z = 50

n = 0.015

3333

q_25 = 0.45 cfs

y = 0.145

w = 0.145

0.02

A = \frac{Q}{W}

V = \frac{Q}{A}

fpe

Use type inlet. 

DIST FROM BARRIER TO ETW = B! 

DRAINAGE DOES NOT ENCROACH

OK

Side Inflow

depress(d) = Q_a = \_

Q_a = \_

I_a = \_

Y' = Y - W t = \_

Q_a = \_

I_a = \_

I_a = \_

Q_a = \_

Min depth =

Use depression, \t\frac{Y}{Y'} = \_

Q_{bypass} = q_25 - Q_g - Q_b = \_

Remarks:

Base = 

t + pipe = 

Min depth =

gutter grade =

-depression =

TG =

FL =

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

T_c = \_

i = \_

q_{25} = \_

inlet FL = \_

outlet FL = \_

I = \_

D = \_

c = \_

a = \_

V = \_

fpe

T = \_

by P.B.C. 6/7/6
INLET CALCULATIONS

Calc by ROB
Date 4-22-95
Check by D.L.
Date 5-2-95
Co SJ Rte 5
Sheet
Item

SPREAD WIDTH
CALC

DIE. "ML" 19+77.5 R+ + L+ 

Q_s= 

Q_p= 

Q_{25}= 0.45 AC/2 sides x 0.9 x 22 = 0.45 cfs

Nomograph 7-832.4A

s = G - D \left( \frac{G'}{L} \right) = \frac{s}{0.016'} \quad t = 5 

z = 20 \quad n = 0.015 \quad z = 20 \quad n = 0.015 \quad 1333 \quad Q_{25}= 0.45 cfs \quad y = 0.20 

w = 0.20 \quad 4.0 \quad A = \frac{Q}{V} \quad y = \frac{Q}{A} \quad \text{fp}

Use type inlet w/ grate(s)

BPR Method w/side inflow

Y_{av}= \quad Q_{g} = \text{grav} \quad \text{cfs}

Side Inflow

depress(d) \quad Q_a= \quad \text{cfs} \quad L= \quad 

Y' = Y - W_g = \quad \frac{Q_a}{I_a} = \quad \text{cfs} \quad I_a= \quad 

I_a = \quad \frac{Q_a}{Q_b} = \quad \text{cfs} \quad B=

Use depression, \quad \frac{a}{y} = \quad Q_{by} = \quad Q_{25} - Q_g - Q_b = \quad 

Remarks: 

PG 

travement \quad Base= 

EP \quad Cover= 

shoulder \quad t+pipe= 

gutter grade \quad Min depth= 

-depression \quad FL= 

TG \quad = 

Outlet Pipe (Ref.: King's Handbook, pp7-99 and 7-41)

T_c= \quad + \quad \min \quad i= \quad Q_{25}= \quad 

inlet FL= \quad \text{outlet FL=} \quad I= \quad x \quad 

s= \quad K' = \quad D = \quad D= \quad 

c= \quad a= \quad V= \quad \text{fps} \quad T= \quad 

by F.B.C. 6/77/
MISCELLANEOUS
CHARTS AND TABLES
NOMOGRAPHS FOR FLOW IN TRIANGULAR CHANNELS

Equation

\[ Q = 0.56 \left( \frac{Z}{n} \right)^{5/2} y^{1/3} \]

n: roughness coefficient in Manning formula

Z: reciprocal of cross slope

INSTRUCTIONS

1. Connect Z/n ratio with slope (S) and connect discharge (Q) with depth (Y). These two lines must intersect at TURNING LINE for complete solution.

2. For shallow V-shaped channel as shown use Nomograph with Z = T/Y.

3. To determine discharge Q_A in portion of channel having width X: determine depth Y for total discharge in entire section A. Then use Nomograph to determine Q_B in section B for depth

\[ Y' = Y - \left( \frac{X}{Z} \right) \]

4. To determine approx. discharge in composite section: follow instruction 3 to obtain discharge in section A at assumed depth Y; obtain Q_B for slope ratio Z_B and depth Y', then

\[ Q_T = Q_A + Q_B \]

EXAMPLE

Given:

\[ S_f = 0.03 \]

\[ Z = 24 \]

n = 0.02

\[ Z/n = 1200 \]

Y = 0.22

Find:

Q = 2.0 CFS

Based on chart by FEDERAL HIGHWAY ADMINISTRATION
(a) Discharge per foot of length of curb opening inlets when intercepting 100% of gutter flow.

(b) Partial interception ratio for inlets of length less than $L_a$. (*) represents inlet depression.
$$p = 2(a + b)$$
$$A = 6qw$$

HEAD (H) IN FEET

$$Q/P = 3.0 \text{ ft}^2$$

HEADS UP TO 0.8, CURVE (C) APPLIES
HEADS ABOVE 1.4, CURVE (B) APPLIES
HEADS BETWEEN 0.8 & 1.4, TRANSITION
SECTOR B OPERATION IS INDEFINITE

DISCHARGE PER FOOT OF PERIMETER (Q/F)
DISCHARGE PER FOOT OF AREA (Q/A)

CAPACITY OF GRATE INLET IN SUMP
WATER PONDED ON GRATE

BUREAU OF PUBLIC ROADS
DIVISION TWO
WASH., D.C.
### Table 819.2B

<table>
<thead>
<tr>
<th>Type of Drainage Area</th>
<th>Runoff Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business:</strong></td>
<td></td>
</tr>
<tr>
<td>Downtown areas</td>
<td>0.70 - 0.95</td>
</tr>
<tr>
<td>Neighborhood areas</td>
<td>0.50 - 0.70</td>
</tr>
<tr>
<td><strong>Residential:</strong></td>
<td></td>
</tr>
<tr>
<td>Single-family areas</td>
<td>0.30 - 0.50</td>
</tr>
<tr>
<td>Multi-units, detached</td>
<td>0.40 - 0.60</td>
</tr>
<tr>
<td>Multi-units, attached</td>
<td>0.60 - 0.75</td>
</tr>
<tr>
<td>Suburban</td>
<td>0.25 - 0.40</td>
</tr>
<tr>
<td>Apartment dwelling areas</td>
<td>0.50 - 0.70</td>
</tr>
<tr>
<td><strong>Industrial:</strong></td>
<td></td>
</tr>
<tr>
<td>Light areas</td>
<td>0.50 - 0.80</td>
</tr>
<tr>
<td>Heavy areas</td>
<td>0.60 - 0.90</td>
</tr>
<tr>
<td>Parks, cemeteries:</td>
<td>0.10 - 0.25</td>
</tr>
<tr>
<td>Playgrounds</td>
<td>0.20 - 0.40</td>
</tr>
<tr>
<td>Railroad yard areas:</td>
<td>0.20 - 0.40</td>
</tr>
<tr>
<td>Unimproved areas:</td>
<td>0.10 - 0.30</td>
</tr>
<tr>
<td>Lawns:</td>
<td></td>
</tr>
<tr>
<td>Sandy soil, flat, 2%</td>
<td>0.05 - 0.10</td>
</tr>
<tr>
<td>Sandy soil, average, 2-7%</td>
<td>0.10 - 0.15</td>
</tr>
<tr>
<td>Sandy soil, steep, 7%</td>
<td>0.15 - 0.20</td>
</tr>
<tr>
<td>Heavy soil, flat, 2%</td>
<td>0.13 - 0.17</td>
</tr>
<tr>
<td>Heavy soil, average, 2-7%</td>
<td>0.18 - 0.25</td>
</tr>
<tr>
<td>Heavy soil, steep, 7%</td>
<td>0.25 - 0.35</td>
</tr>
<tr>
<td>Streets:</td>
<td></td>
</tr>
<tr>
<td>Asphaltic</td>
<td>0.70 - 0.95</td>
</tr>
<tr>
<td>Concrete</td>
<td>0.80 - 0.95</td>
</tr>
<tr>
<td>Brick</td>
<td>0.70 - 0.85</td>
</tr>
<tr>
<td>Drives and walks</td>
<td>0.75 - 0.85</td>
</tr>
<tr>
<td><strong>Roofs:</strong></td>
<td>0.75 - 0.95</td>
</tr>
</tbody>
</table>

Regional analysis methods utilize records for streams or drainage areas in the vicinity of the stream under consideration which would have similar characteristics to develop peak discharge estimates. These methods provide techniques for estimating annual peak stream discharge at any site, gaged or ungauged, for probability of recurrence from 50% (2 years) to 1% (100 years). Application of these methods is convenient, but the procedure is subject to some limitations.

Regional Flood - Frequency equations developed by the U.S. Geological Survey for use in California are given in Figure 819.2C. These equations are based on regional regression analysis of data from 705 gaging stations. Nomographs and complete information on use and development of this method may be found in "Magnitude and Frequency of Floods in California" published in June, 1977 by the U.S. Department of the Interior, Geological Survey.

The Regional Flood-Frequency equations are applicable only to sites within the flood-frequency regions for which they were derived and on streams with virtually natural flows. For example, the equations are not generally applicable to small basins on the floor of the Sacramento and San Joaquin Valleys as the annual peak data which are the basis for the regression analysis were obtained principally in the adjacent mountain and foothill areas. Likewise, the equations are not directly applicable to streams in urban areas affected substantially by urban development. In urban areas the equations may be used to estimate peak discharge values under natural conditions and then by use of the techniques described in the publication or HEC 19, adjust the discharge values to compensate for urbanization.

Further limitations on the use of USGS Regional Flood-Frequency equations are:

<table>
<thead>
<tr>
<th>Region</th>
<th>Drainage Area (A)</th>
<th>Mean Annual Precip (P)</th>
<th>Altitude Index (H) 1000 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Coast</td>
<td>0.2-3000</td>
<td>19-104</td>
<td>1.0-5.7</td>
</tr>
<tr>
<td>Northeast</td>
<td>0.2-25</td>
<td>all</td>
<td>all</td>
</tr>
<tr>
<td>Sierra</td>
<td>0.2-9000</td>
<td>7-85</td>
<td>0.1-9.7</td>
</tr>
<tr>
<td>Central Coast</td>
<td>0.2-4000</td>
<td>8-52</td>
<td>0.1-2.4</td>
</tr>
<tr>
<td>South Lahontan-Colorado</td>
<td>0.2-25</td>
<td>all</td>
<td>all</td>
</tr>
</tbody>
</table>
DRAINAGE

PLANS & PROFILES
VERIFY ELEVATION OF WATER, GAS AND ELECTRICAL LINES
to see if the storm drainage can be built per plan
prior to constructing any portion of systems A-B-C-D.
Left-Turn Lane Additions at Various Intersections

SJCOG 2016 CMAQ APPLICATION

Prepared by: CITY OF STOCKTON
Due Date: January 27, 2017
SJCOG 2016 CMAQ APPLICATION

CMAQ Project Submittal Form

Agency: City of Stockton

Application Prepared by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Phone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Todd Greenwood</td>
<td>City Traffic Engineer</td>
<td>(209)937-8237</td>
<td>1/16/17</td>
</tr>
</tbody>
</table>

Check all that apply

- Project is eligible for CMAQ under Federal guidelines.
- Use of Toll Credits will not redirect nonfederal funds away from transportation.
- X Project complies with American Disability Act.
- X Project can be obligated within the timelines identified below.
- X Project map is attached, if applicable.
- X Project is consistent with the project list submitted for 2018 RTP update.
- X Project scope will remain the same as identified below, if awarded CMAQ funds.
- X Air Quality emission reduction calculations using ARB method are attached.
- X Applicable Air Quality Exempt Code (Refer to the Exempt code list, Appendix B)
- X Project is on the roadway included in the Federal Aid System
- X Project is part of agency Short or Long Range Plans (attach appropriate documentation)

Certification Statement

I have been duly authorized to submit the following project proposal to the San Joaquin Council of Governments for scoring and possible programming. I certify that the information and response contained herein are accurate to the best of my knowledge. I acknowledge that project readiness is a key component of the scoring criteria. By signing this document I am committing my agency to provide the required non-federal matching funds, and deliver the proposed project within the scope and schedule specified in this application should this project be awarded funding.

Signature: ___________________________ Date: 1/24/17
** SJCOG 2016 CMAQ APPLICATION **

The following information will be used directly in the development of the FTIP. Please use care in writing the descriptions.

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Left Turn Lane Additions at Various Intersections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Location and Limits:</strong></td>
<td>At the intersections of March Lane/Feather River Drive, Airport Way/Sperry Road, and West Lane/Bianchi Road, within approximately 1200' from each direction.</td>
</tr>
<tr>
<td><strong>Project Description (Scope):</strong></td>
<td>The project will install additional left turn lanes at the following intersections and approaches 1) one additional left turn lanes to all four approaches at West Lane/Bianchi Road. 2) one WB left turn lane at March Lane/Feather River Drive. 3) one left turn lane to each NB and SB at Airport Way/Sperry/Arch-Airport Road. Some traffic signal facilities such as poles and vehicle detections will be upgraded to accommodate the new additions. Re-time the traffic signals. All work will occur within the existing ROW.</td>
</tr>
</tbody>
</table>

| CMAQ Request: | $1,881,262 |
| Local Match: | $243,738 |
| **Total Project Cost:** | $2,125,000 |

**Project Delivery Schedule**

<table>
<thead>
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<tr>
<td>PE</td>
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<td></td>
<td></td>
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<td>$282,189</td>
</tr>
<tr>
<td>ROW</td>
<td></td>
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<tr>
<td>Const.</td>
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<td></td>
<td></td>
<td>$1,599,073</td>
<td></td>
<td></td>
<td>$1,599,073</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$282,189</td>
<td></td>
<td>$1,599,073</td>
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<td></td>
<td>$1,881,262</td>
</tr>
<tr>
<td><strong>Local (Identify the Source of local match, refer to the “Appendix A” )</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PE</td>
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<td>$36,561</td>
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<tr>
<td>ROW</td>
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<tr>
<td>Const.</td>
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<td>$207,177</td>
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<td>$207,177</td>
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<tr>
<td>Total</td>
<td></td>
<td>$36,561</td>
<td></td>
<td>$207,177</td>
<td></td>
<td></td>
<td>$243,738</td>
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<tr>
<td><strong>Project Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

2
Category A: Air Quality Benefits

Air Quality benefits

| $28.84/lb | Cost-Effectiveness-dollars/pound (Submit calculations as attachment) |

Please check the appropriate box; this information will be used by the person scoring your application to look in the relevant scoring sections. Project will only receive points under one category, check the box that best describes the proposed project category.

- Category B: Proposed Project will maintain/sustain the existing transportation system
- X Category C: Proposed Project will relieve congestion
- Category D: Proposed Project is System Expansion

Category B: Maintain Sustain the Existing Transportation

B-1 For Transit Projects Only

Please refer to ARB 2005 Methods Guidance, for On-Road Cleaner Vehicle Purchases on page 4 in the Comments section of the Inputs Table. Use the life of the project suggested defaults as the life cycle of the vehicle to be replaced.

Explain the current age and condition of the capital equipment to be replaced / rehabilitated:

If the proposed project is a rehab project, how long will the useful life be extended?

Provide the age of the vehicle at programmed replacement year:

Describe the applicable life cycle and level of improvement (e.g. urgent, normal, prolong %):
Category C: Improve System Efficiency and Effectiveness

C-1-a Check all that applies to the proposed Roadway Project:

- Signal interconnect of 8 or more signals
- Change intersection to interchange
- Traffic operations system and Transportation Systems Management (TSM) projects
- New traffic signal (not interconnected) or roundabout
- Geometric improvements (left or right turn pockets or other intersection improvements) on all intersection approaches
  - Signal interconnect project of 3 to 7 signals
  - Grade separations that do not add through lanes
- Geometric improvements (left or right turn pockets or other intersection improvements) on some intersection approaches
  - Turn lanes or acceleration/deceleration lanes
  - Pave shoulders

C-1-b Check all that applies to the proposed Transit Project:

- Significantly increase rail transit vehicle capacity (Explain below)
- Substantially improve headways (Explain below)
- Significantly increase service reliability/on-time performance (Explain below)
- Interconnection or fare coordination project
- Intermodal facility (including park and ride lots) that accommodate major transfers (Explain below)
- Significantly reduces travel/transfers time on existing route by 12% or more
- Minor increase in service reliability/on-time performance (Explain below)
- Minor interconnection or fare coordination project (Explain below)
- Intermodal facility (including park and ride lots) that accommodates significant transfers (Explain below)
- Reduces travel time on existing route by less than 12%
- Medium increase in transit vehicle capacity (Explain below)
- Medium improvement to headways (Explain below)
- Bus turnouts/bulbs/pads
C-2 Freight Movement Project:

Does proposed project improve freight movement on the truck routes? If yes, please provide information on the daily truck traffic.

Yes. West Lane, March Lane, Airport Way, and Sperry Road/Arch-Airport Road are major truck routes in the city. Airport Way, Sperry Road/Arch-Airport Road are designed STAA routes. The average daily traffic at West Lane/Bianchi is 52,042, and the truck volume is 780/day or 1.5%. At March Lane/Feather River Drive, the daily truck volume is 437 or 1%, and at Airport Way/Sperry Road/Arch-Airport Road, the daily truck volume is 8,940 or 20.3%.

Does proposed project involve a major intermodal freight facility? If yes, explain.

Yes. Sperry Road/Arch-Airport Road connects interstate 5 and State Route 99 and other major intermodal freight facilities such as Stockton Airport and the BNSF facility at the east end of Arch Road.

Does proposed project involve truck stop electrification? If yes, explain.

No.
SIGNAL COORDINATION

Subcategory: (5b) Traffic Flow or Signalization (timing, surveillance)

Air District Name:

Local Government Name: Not Applicable

Project Name: Left Turn Lane Additions at Various Locations

Description: Add additional left turn lanes at existing signalized intersections within existing ROW; upgrade traffic signal to accommodate the new left turn lanes.

Implementing Agency: City of Stockton

Private Agency: No

FUNDING:

MV Fees Funding: $0

Moyer Funding: $0

Other CoFunding: $243,738

MSRC Funding: $0

CMAQ Funding: $1,881,262

Capital Recovery Factor: 0.07

Project Analysis Period: 20 years

Days (D): 250 operating days per year

Congested Traffic: 90,149 traffic volume during congested period

Length (L) of congested roadway: 2.72 miles

Annual VMT (VMT): 61,301,320 annual miles

EMISSION FACTORS:

$30\text{MPH}$ Before Speed Factor $35\text{MPH}$ After Speed Factor

ROG: 0.09 grams

NOx: 0.28 grams per mile

PM10: 0.05 grams per mile

EMISSION REDUCTIONS:

Pounds per Year Tons per Year

ROG: 1,350 0.68

NOx: 675 0.34

PM10: 527 0.26

Total: 4,384 1.28

COST-EFFECTIVENESS OF:

Motor Vehicle Fees and/or Moyer Funds: $0.00 per pound $0 per ton

CMAQ Funds: $28.84 per pound $57,681 per ton

All Funding Sources: $32.58 per pound $65,154 per ton
Cost-Effectiveness Calculation Assumptions
Left Turn Lane Additions at Various Intersections

- Project Analysis Period: 20 Years
- Operating Days per Year: 250
- Congested Traffic: Periods when the intersections scored LOS D or worse.
- Before Speed: 25 congested speed on average
- After Speed: 30 congested speed on average
- Congested Roadway Seg: 1200' from each approach at each project intersection=2.72 Miles
EPA Categories for Exempt Projects
With Air Quality Codes
(40CFR 93.126-128)

1.01 Railroad/highway crossing.
1.03 Safer non-Federal-aid system roads.
1.04 Shoulder Improvements.
1.05 Increasing Sight Distance.
1.06 Safety Improvement Program.
1.07 Traffic control devices and operating assistance other than signalization projects.
1.08 Railroad/highway crossing warning devices.
1.09 Guardrails, median barriers, crash cushions.
1.10 Pavement resurfacing and/or rehabilitation.
1.11 Pavement marking demonstration.
1.12 Emergency Relief (23 U.S.C. 125).
1.13 Fencing.
1.14 Skid treatments.
1.15 Safety roadside rest areas.
1.16 Adding medians.
1.17 Truck climbing lanes outside the urbanized area.
1.18 Lighting improvements.
1.19 Widening narrow pavements or reconstructing bridges (no additional travel lanes).
1.20 Emergency truck pullovers.
2.01 Operating assistance to transit agencies.
2.02 Purchase of support vehicles.
2.03 Rehabilitation of transit vehicles.
2.04 Purchase of office, shop, and operating equipment for existing facilities.
2.05 Purchase of operating equipment for vehicles (e.g. radios, fareboxes, lifts, etc.).
2.06 Construction or renovation of power, signal, and communications systems.
2.07 Construction of small passenger shelters and information kiosks.
2.08 Reconstruction or renovation of transit buildings and structures.
2.09 Rehabilitation or reconstruction of track structures, track, and trackbed in existing right of way.
2.10 Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.
2.11 Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR 771.
3.01 Continuation of ride-sharing and van-pooling promotion activities at current levels
3.02 Bicycle and pedestrian facilities.
4.01 Non Construction related activities.
4.05 Engineering studies
4.06 Noise attenuation.
4.07 Advance land acquisitions
4.08 Acquisition of scenic easements.
4.09 Plantings, landscaping, etc.
4.10 Sign removal.
4.11 Directional and informational signs.
4.12 Transportation enhancement activities
4.13 Repair of damage caused by natural disasters, civil unrest, or terrorist actgs, except projects involving substantial functional, locational or capacity.

5.01 Intersection channelization projects.
5.02 Intersection signalization projects at individual intersections.
5.03 Changes in vertical and horizontal alignment.
5.04 Interchange reconfiguration projects.
5.05 Truck size and weight inspection stations.
5.06 Bus terminals and transfer points.
5.07 Traffic signal synchronization projects.
## 2016 CMAQ APPLICATION

**Project Title:** Left Turn Lane Additions at Various Locations  
**Dept.:** PW  
**Prepared by:** DY  
**Checked By:** TG  
**Date:** 01/10/2017

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>ITEM COST</th>
</tr>
</thead>
<tbody>
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<td>Mobilization</td>
<td>LS</td>
<td>1</td>
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<td>$20,000.00</td>
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<tr>
<td>2</td>
<td>Traffic Control System</td>
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<td>3</td>
<td>Information Signs</td>
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<td>12</td>
<td>$500.00</td>
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<tr>
<td>4</td>
<td>Traffic Signal Pole with Mast Arm</td>
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Sub-Total: $1,379,300.00

Add Contingency: 10%  
$137,930.00

**Total Construction Cost** (Rounded): $1,517,000

### Other Project Costs (Estimated as a Percentage of the Construction Cost)

**A** Design

1.) Consultant Contract  
15.0% (Rounded): $228,000

2.) Employee/Staff Costs  
10.0% (Rounded): $152,000

**B** Construction Engineering

1.) Construction Management Contract  
10.0% (Rounded): $152,000

2.) Employee/Staff Costs  
5.0% (Rounded): $76,000

**E** Materials & Supplies  
0.0% (Rounded): $ -

**Total Other Project Cost:** $608,000

**Sub-Total Project Cost:** $2,125,000

**Indirect Cost:** 0.0% (Rounded): $ -

**Total Project Cost:** $2,125,000
**PEAK HOUR ITM SUMMARY**

#001 Feather River Drive & March Lane

<table>
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<td>Thursday, May 05, 2016</td>
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<td>March Lane</td>
<td>VICINITY</td>
<td>Stockton, CA</td>
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### Southbound Lanes

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### Eastbound Lanes

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### Westbound Lanes

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</table>

**QUALITY TRAFFIC DATA, LLC**

9701 W Pico Blvd, Suite 205, Los Angeles, CA 90035
Phone: 310-341-0019 Fax: 310-807-9247 info@QualityTrafficData.com

| AM COUNT | 6:45 AM TO 8:45 AM |
| MD COUNT | - TO - |
| PM COUNT | 4:00 PM TO 6:00 PM |
## Average Daily Traffic Volumes
### Quality Traffic Data, LLC

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### Totals

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### QUALITY TRAFFIC DATA, LLC
9701 W Pico Blvd, Suite 205, Los Angeles, CA, 90035
Phone: 310-341-0019  Fax: 310-807-9247  info@QualityTrafficData.com
PEAK HOUR ITM SUMMARY

#001  Airport Way & Sperry (Arch-Airport)

LOCATION:  001
NORTH / SOUTH:  Airport Way
EAST / WEST:  Sperry (Arch-Airport)

DATE:  Tuesday, May 03, 2016
VICINITY:  Stockton, CA

GTD PROJE:  2016176
AM PEAK:  7:15 AM
MD PEAK:  
PM PEAK:  3:45 PM

SOUTHBOUND LANES

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EASTBOUND LANES

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NORTHBOUND LANES

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MD COUNT:  - TO -
PM COUNT:  3:30 PM TO 5:30 PM

QUALITY TRAFFIC DATA, LLC
9701 W Pico Blvd, Suite 205, Los Angeles, CA 90035
Phone: 310-341-0019  Fax: 310-807-9247  Info@QualityTrafficData.com
Average Daily Traffic Volumes
Quality Traffic Data, LLC

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PEAK HOUR ITM SUMMARY

#009 West Lane & Bianchi Road

LOCATION: 009
NORTH / SOUTH: West Lane
EAST / WEST: Bianchi Road

GTE PROJECT: 2016151
DATE: Tuesday, May 03, 2016
VICINITY: Stockton, CA

AM PEAK: 7:15 AM
MD PEAK: 
PM PEAK: 4:30 PM

SOUTHBOUND LANES

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TOTAL: 218 2100 150

WESTBOUND LANES

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TOTAL: 563 2218 459

SIGNALIZED

QUALITY TRAFFIC DATA, LLC
9701 W Pico Blvd, Suite 205, Los Angeles, CA 90035
Phone: 310-341-0019  Fax: 310-807-9247  Info@QualityTrafficData.com

AM COUNT: 6:45 AM TO 8:45 AM
MD COUNT: - TO -
PM COUNT: 3:30 PM TO 5:30 PM
### Average Daily Traffic Volumes

**Quality Traffic Data, LLC**

**GTD PROJECT #:** 2016151 - 009  
**START DATE:** Tuesday, May 03, 2016  
**ON STREET:** Bianchi Road (E/W)  
**CROSS STREET:** West Lane (N/S)  
**LOCATION:** Stockton, CA  
**GPS COORDINATES:**

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### Quality Traffic Data, LLC

9701 W Pico Blvd, Suite 205, Los Angeles, CA, 90035  
Phone: 310-341-0019  
Fax: 310-807-9247  
Info@QualityTrafficData.com
Left Turn Lane Addition at Various Intersections

Intersection Photos

Airport Way/Sperry Rd/Arch-Airport Rd

Trucks making left turns from the SB and NB left turn pockets

Truck volume at the intersection is over 20%
March Lane at Feather River Drive

Congested WB Left Turn and Through Lanes

Congested March Lane EB through traffic

Left Turn Lane Addition at Various Intersections
West Lane and Bianchi Road

Congested NB Left Turn and Through Lanes

Congested WB Left Turn and Through Lanes

Left Turn Lane Addition at Various Intersections
CONSTRUCTIBILITY REVIEW

BELOWS TO:
FILE FOLDER: 15-005
FILE NUMBER: 07391

Prepared For:
THE CITY OF STOCKTON
July 5, 1995
July 5, 1995

Eric Alvarez, Assistant Engineer
Public Works Department
City of Stockton
City Hall, Room 317
Stockton, CA 95202-1997

Re: Constructibility and Biddability Review
City of Stockton - I-5/March Lane Improvement Project

Dear Eric:

Enclosed are five copies of our report for the Constructibility and Biddability Review of the I-5/March Lane Improvement Project.

We feel that our report is complete, however there were several factors which complicated our review. Among these are:

- The special provisions provided for our review are not the final version for this project.

- There were no page numbers or section numbers in the Special Provisions to reference.

- Sections 1-5 were being revised and we did not receive a copy of these sections until Thursday, June 27, 1995.

The detailed review was carried out by the following members of our team:

   Connie Preston, P.E., Project Manager/Civil Review
   Robert Salaber, P.E., Structure Review
   Steve Sarrafaazadeh, Electrical Review
   Jim Harwood, Civil Review

The general consensus of the reviewers is that the plans are clear with very few ambiguities, therefore, most of our comments regarding the plans are minor. Our Civil Reviewer, Jim Harwood, was particularly impressed with the staging plans.

The specifications, however, had several ambiguous areas which would benefit from strengthening. Some of our comments may have already been incorporated by the designer as there are concurrent revisions being made. During the review process, we worked closely with Rob Himes of Mark Thomas & Co. Inc., and he is working on incorporating some of our changes and recommendations. Some of our comments may not warrant a change since they may be requirements of the City of Stockton, EBMUD, or Caltrans.
Our main areas of concern regarding the specifications are:

- The CPM specifications should be strengthened given the impact to traffic on this project. The City / Engineer must have some control over the Contractor's progress to help alleviate the effects on the travelling public.

- The specifications and/or plans should incorporate more signing and requirements to alleviate the impact to the businesses on March Lane. Even though the business owners have not shown concern at past meetings, once construction gets under way they may have complaints about the effects of work on their business. We wish to make you aware that we foresee this as a potential problem which may result in claims from the business owners against the City.

- The EBMUD requirements may slow the project down and the Contractor may have difficulty complying with some of them. Although these requirements are out of the City's control, we advise you of the potential for delays and claims.

- The City may want to delay the start of the project until after the Christmas holiday season or provide for a "shut down" during the affected months (Nov-Dec). This might be a good public relations plan.

- If the City has not already done so, we recommend the City arrange for a public information contact to update the public on detours and project status.

- If the City is concerned about the length of time it may take to complete this project, a incentive/disincentive clause would encourage the Contractor to finish early. Although liquidated damages are provided for in the amount of $1,000.00 day, this may not be sufficient.

As you review our report, please feel free to call our office with any questions. As agreed, under separate cover we have provided a copy of our review to Mark Thomas & Co., Inc.

We look forward to meeting with you at the subsequent briefing at a date to be agreed upon.

Sincerely yours,

Connie Preston, P.E.
Project Manager

op: 9511
cc: Mark Thomas & Co.
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Notice Inviting Bids

- Prevailing Wage Rates - missing date of applicable General Prevailing Wage Rate publication.

Section 2-1.016 - Design Engineer May Not Bid on Construction Contract

- "Standard provisions" should read "standard specifications"

- There is a conflict between DBE goals in the Notice Inviting Bids (15%) (Page 3) and Section 3-1.01B, Minority and Women Business Enterprise Goals (15% DBE and 5% WBE).

Section 3-1.01F - Labor Standards Provisions / California Labor Code

- Sub-paragraph 3 - This paragraph does not make sense.

Section 4-1.00 - Beginning of Work, Time of Completion and Liquidated Damages

- Paragraph 4 - Start of working days should be clarified. It is typical to start working days X number of days after contract award, Notice to Proceed, etc. The way the specification reads now leaves start the date up to the Contractor.

- Paragraph 5 - Specify the number of working days for plant establishment work.

- Considering the large impact this project will have on the travelling public on one of Stockton's main thoroughfares, the City may want to consider an incentive / disincentive clause if funds are available to encourage early completion.

- It is recommended that the City look into specifying working days for completing each stage of the work and have internal liquidated damages. This may minimize construction delays to the public.

Section 5-1.15 - Payments

- Portion of bridge removal to be paid - What is the Engineer's Estimate for this item? It is probable that the Contractor will complete all of the bridge removal in one payment period - in which case, the Contractor should be paid the entire lump sum amount. In addition, if debris pads and/or other protection are
required during the demolition operation, the cost of bridge removal may increase.

**Section 5-1.18 - Adjustment of Contract Bid Items and Supplemental Work**

- This is an unusual specification - Is this the City’s supplemental fund for CCO work? If not, why is this included?

**Section 5-1.19 - Relations with East Bay Municipal Utility District and Santa Fe Pacific Pipelines**

- Paragraph 3, Note 1 - Be aware this implies that all demolition debris must be hauled off the EBMUD right-of-way at the end of each work shift. Typically, debris is hauled off after all demolition is complete.

- Paragraph 5 - This may require a detour.

**General**

- There is no Section for claim filing procedures. Will this be in accordance with the Caltrans standards?
Section 10-1.01 - Order of Work

- Paragraph 1, line 3 - should read, "...and these Special Provisions."

- Who determines if work in subsequent stages is "non conflicting" and whether or not progress is satisfactory? Add "...and as approved by the Engineer." to the end of the fourth paragraph to clarify.

- Paragraph 8, "The contractor shall schedule his operation so there is the least amount of time delay from removal of existing facilities for the completion of new improvements in each segment of the project." How is this enforced?

- Paragraph 8, "...ordering electrical within 15 days..." is different than the 20 days specified in section 10-3A.02, Equipment List and Drawings.

Section 10-1.02 - Construction Staking

- Paragraph 3 - It might be beneficial to require the stake markings to conform to the Caltrans Construction Staking Manual in lieu of having the contractor submit proposed stake markings to be used.

- Ensure that the vertical alignment, grid-grade notes, slope stake listing and coordinates of centerlines and layout are readily available to furnish to the Contractor as specified in Paragraph 4.

- Who is staking the Right of Way lines if requested by the Contractor as specified in Paragraph 6? Insure this is coordinated.

Section 10-1.03 - Cooperation

- Verify working days for utility company's relocations as specified in Paragraph 2.

- Verify working days for utility company to adjust facilities to grade as specified in Paragraph 5.

- Are the working days specified for the above-referenced utility work included in the contract time or are these days "right-of-way" delays? This should be clarified in the contract. Reference Section 10-1.02, "Obstructions."
Section 10-1. - Preservation of Property

- There is potential for argument regarding the determination of trees, shrubs and other plants damaged or injured by the Contractor's operations. Consideration should be made regarding how the City will document the condition of vegetation prior and post construction and how this issue will be handled during construction.

Section 10 - 1. - Progress Schedule

- Considering the impact to traffic on this project and the large volume of traffic, the City may want to consider a more detailed scheduling specification (CPM requirements) which would force the Contractor to alter the work progress should it fall behind. This will aid in planning, monitoring and controlling the impact upon the travelling public.

Section 10-1.1?? - Construction Area Signs

- This section should be more project specific and include signs for the travelling public.

Section 10-1.2?? - Vibration Monitoring

- Third sentence in second paragraph does not make sense and is redundant. This sentence should be deleted.

- Misspelled "performed" in fourth sentence of Paragraph 2.

- Last Paragraph - "working" should be "work" and "maintaining" should be "maintain."

- The payment clause states that the lump sum price for vibration monitoring includes "...all the work involved ... for changing operations as necessary to maintain acceptable vibration levels..." may be subject to a claim dispute if the Contractor has a problem maintaining acceptable vibration levels. Are the required vibration levels (.75 in/sec) realistic for the work to be performed - i.e., pile driving? If the contractor builds the concrete access pad as indicated in the plans, removal may cause a problem since demolition would probably exceed .75 in/sec.

- The forty foot requirement is unclear. The three-component orthogonal transducer package seems vague. More specific details should be included so
the contractor knows what to bid on and what is acceptable to EBMUD.

Section 10-1.?? - Resident Engineer's Field Office

- It might be easier to set aside funds and do this as extra work so the Resident Engineer has a more direct say in what is provided.

- Misspelled words:
  
  Paragraph 2: vehicles (vehicals), sufficient (suffiecient), trailer (trailier)
  Paragraph 5: least (leat)

- Delete "in the Standard Specifications" from the payment clause.

Section 10-1.?? - Remove Fence

- The fourth paragraph states that "Temporary fence, if required, to secure right of way prior to permanent fence installation..." The plans &.or specifications should specify where temporary fence will be required so that the item can be bid properly.

- Misspelled words:
  
  Paragraph 4: required (requied)
  Paragraph 5: paid (padi), and incidentals (andincidentals), work (owrk)

Section 10-1.?? - Maintaining Traffic

- This specification allows the Contractor to close commercial driveways and cross references Section 5-1.21, "Maintaining Driveway Access," of the Special Provisions which states that at least one ingress/egress driveway be maintained for the Denny's/Marie Callender, et al, site and the Unocal site. We recommend - for safety and to avoid confusion - the Contractor provide information signs to direct traffic ingress and egress to the commercial establishments. It is important the City keep the business owners satisfied as this project severely impacts accessibility and convenience for their clientele. Also, there is no provision for non-work during the holiday season. We recommend the City look into this.

- The Utility dimensions for falsework lighting do not match the plan dimensions. Also, based on a scaling of the plans, the 69" and 66" aqueducts are about 10' apart and the falsework width openings overlap.
MARCH LANE CONSTRUCTIBILITY REVIEW

Specifications - Section 10

- In the third to the last Paragraph of this Section, the specifications require that the Contractor provide additional pedestrian walkways during pile driving, footing wall, and other bridge construction. We recommend the Contractor submit for the Engineer's approval a plan to maintain pedestrian access prior to starting work.

- The statement, "The exact location of the openings will be determined by the Engineer." should read, "...approved by the Engineer." for liability reasons.

- There may be a problem enforcing the parking requirements of contractor employees. The section reads, "Personal vehicles, ...including any section closed to public traffic."

Section 10-1.?? - For Lane Closure

- Title, "For Lane Closure" - is the word "For" included here in error?

- The last Paragraph of this Section should have a payment clause such as, "Full compensation for this work shall be considered as included in the prices paid for traffic control (or the various items of work involved and no additional compensation will be allowed therefor.

Section 10-1.?? - Barricades

- Duplicate payment clause.

Section 10-1.?? - Portable Changeable Message Sign

- This Specification references the section pertaining to "Maintaining Traffic," of the Special Provisions for additional information. The section for Maintaining Traffic in the Special Provisions does not include information on CMS.

Section 10-1.?? - Existing Highway Facilities

- Last Paragraph - To clarify this clause, we suggest adding either, "Match existing bent and abutment lines or use theoretical bearings." to this paragraph.

Section 10-1.?? - Temporary Pipeline Protection

- How would contract time be affected if the Contractor elects to submit an
alternate method of protecting the pipeline to EBMUD for approval? We recommend clarification in this Section to alleviate a potential claim.

- Paragraph 5 - Clarify if the word "on" should be deleted, or read "only."

**Section 10-1.1?? - Remove Fence**

- Duplicate Section.

**Section 10-1.1?? - Salvage Metal Bridge Railing**

- The statement "...anchors shall be removed to a depth of not less than one foot below subgrade or one foot below finished grade..." Is "one foot" correct?

**Section 10-1.1?? - Remove Pavement Markers**

- Missing payment clause.

**Section 10-1.1?? - Remove Traffic Stripes and Pavement Markings**

- Missing payment clause.

**Sections 10-1.1?? - Reconstruct Valve Box, Reconstruct Water Meter, and Reconstruct Brick Baluster, Relocate Hydrant, Relocate Mailbox, Relocate Bench, Relocate Water Meter, Reconstruct Air Release Valve, Relocate Reinforced Concrete Pipe Flared End Section, Relocate Commercial Sign, Adjust Manhole, and Adjust Valve Box**

- All of these Sections lack payment clauses. They should all reference Section 15-2.06, "Measurement," and Section 15-2.07, "Payment," of the Standard Specifications or have independent measurement and payment clauses in the referenced Special Provision sections.

- Missing sections in the Special Provisions for: Item 31 - Reconstruct Gate, and Item 45 - Modify Inlet.

**Section 10-1.1?? - Cold Plane Asphalt Concrete Pavement**

- There are no provisions to enforce the requirements in Paragraph 8 requiring that the Contractor's operations are "scheduled such that not more than 7 days shall elapse between the time when transverse joints are planed ... and the permanent surfacing is placed..." This is a weak specification; however,
the RE could withhold payment on the progress estimate if necessary.

Section 10-1.?? - Bridge Removal Portion

- How does bridge removal affect the EBMUD pipeline and the bike/pedestrian path? Debris pads such as timber or dirt piles should be required to protect the facilities subject to approval by the Engineer. Also, how will the contractor haul the material off-site? Is the concrete pad necessary for this work? Will the bike/pedestrian path be detoured or closed during this work?

Section 10-1.?? - Earthwork

- Sub-paragraph 3 of Paragraph 6 - the use of a grading factor "...to be determined in the field by the Engineer..." may cause high bids on the item since the Contractor will need to bid conservatively. This is not a typical specification for earthwork.

Section 10-1.?? - Remove Concrete

- This item "...will be paid for by the cubic yard, measured before and during removal operations" implies that this operation will need continual monitoring by inspectors. Perhaps including, "The actual removal limits may exceed those shown on the plans." would clarify the conditions.

Section 10-1.?? - Erosion Control

- The legume seed requirements seem rather extensive. Have these specifications been compared to other similar specifications? It may be possible to simplify the requirements.

Section 10-1.?? - Highway Planting (Mitigation)

- There is no specification for this item - Item No. 53, Highway Planting (Mitigation) Should this be in accordance with Section 20-4, "Highway Planting" of the Standard Specifications?

Section 10-1.?? - Plant Establishment Work

- There is no specification for this item - Item No. 55, "Plant Establishment Work." Should this be in accordance with Section 20-4.08, "Plant Establishment Work," of the Standard Specifications?
MARCH LANE CONSTRUCTIBILITY REVIEW

Specifications - Section 10

- Consideration should be made to separate the contract time for this work from the other contract work. This is typical on most State contracts.

**Section 10-1.?? - Aggregate Subbase**

- Triplicate Paragraph 2 - one immediately following the Paragraph 2 and one at the end of the Paragraph 7. These should be deleted.

**Section 10-1.?? - Asphalt Concrete**

- Paragraph 4, Note 4 requires that a rubber roller be used on the AC. Rubber rollers are seldom used in the industry and may cause a conflict with the Contractor. Expect the contractor to question this.

- Paragraph 4, Note 5 - The specified prime coat, MC250 may not be available because of environmental restrictions. We are researching this matter. It is our understanding that SC250 has replaced MC250; however, SC70 is a commonly used prime coat.

**Section 10-1.?? - Piling**

- Subparagraph 4 of Paragraph 5 incorrectly references "Section 15-4.05, Removal Methods," of the Standard Specifications. This should read, "Section 15-4.02, Removal Methods."

- Are there test piles on this project? There do not appear to be any on the plans - if not, the test pile specification could be eliminated.

- Specification sections designated for "Jetting and Drilling" and "Predrilled Holes" could be included in "Piling."

**Section 10-1.?? - Predrilled Holes**

- This Section specifies that, "...piles which are designated on the plans to be predrilled..." There are no piles shown on the plans requiring predrilling. This statement should be eliminated.

**Section 10-...?? - Tieback Anchors**

- Are the design consultants available to review any proposed changes to the tieback system by the Contractor as specified in Paragraph 10?
Paragraph 18 - We recommend that galvanizing conform to the requirements in Section 75-1.05, "Galvanizing," of the Standard Specifications.

Paragraph 28 - "A minimum of 14 tiebacks shall be performance tested." Is this for each wall, or total? This should be clarified. Also, this sentence should read, "...performance or proof."

Paragraph 29 - "The test load shall be held constant for 10 minutes." Is this the proof or performance test?

Paragraph 30 contradicts Paragraph 29.

Paragraph 33 - Acceptability requirements for proof tested tiebacks. Who determines if the pattern of movements is similar to that of adjacent performance tested tiebacks? We recommend, "...as determined by the Engineer" be added to this clause. Even so, this specification may be disputed by the Contractor.

The statement "No change in the number of tieback anchors to be paid for will be made because of the use by the Contractor of an alternative number of tiebacks." What if he designs a system that uses half as many, do we still pay him for the total number on the plans? This statement is confusing. This is not a final pay item.

Section 10-1.??? - Deck Closure Pours

The statement, "...unless otherwise directed by the Engineer," should be "approved by the Engineer."

Section 10-1.?? - Structure Approach Slabs (Type R)

There are duplicate approach slab sections. The Section titled "Structure Approach Slab," appears to be more complete.

Section 10-1.?? - Removing Existing Pavement and Base Materials

Missing payment clause.

Section 10-1.?? - Aggregate Base (Approach Slab)

Paragraph 1 - Referenced Section 26-1.02B, "Class 2 Aggregate Base," of the Standard Specifications. Section 26-1.02B is titled, "Class 3 Aggregate Base,"
and references the special provisions for the requirements. There is no Class 3 AB on this project.

- Payment clause is in wrong Section ("Structure Approach Slab").

**Section 10-1.?? - Structure Approach Slab**

- Paragraph 5 - Why are the profilograph requirements waived?
- Contains payment clause of AB (approach slab).
- "Reinforced Concrete Slabs" - duplicate specifications.
- "Structure Approach Slabs" and "Aggregate Base (Approach Slab)"; This spec is written for a one night operation, which is not necessary because traffic is not affected.
- The specifications should require 95% compaction for the AB.
- There are two "Structure Approach Slabs" sections and one "Reinforced Concrete Slabs" which is redundant and confusing.

**Section 10-1.?? - Geocomposite Drain**

- This is a duplicate Specification. Reference Section 10-1.??, "Tieback Anchors," There are separate payment items for geocomposite drains which may be confusing.

**Section 10-1.??? Paving Notch Extension**

- This specification is written for an overnight operation which is unnecessary since traffic is not affected.

**Section 10-1.?? Refinishing Bridge Decks**

- Missing payment clause and there does not appear to be an Item for this work.
- Clarify only the areas above the buttress (?) section of the abutments. Perhaps the concrete can be just ground down instead of removing 3/4 inch below the surface.
• Perhaps another method which results in a adequate surface may be requested by the Contractor subject to approval by the Engineer.

Section 10.1.?? - Shotcrete

• Paragraph 2 - This paragraph references Section, "Order of Work" for test panel requirements. "Order of Work" does not include any provisions for shotcrete test panels. The referenced provisions are included in the "Shotcrete" specification.

• The statement, "Shotcrete extending into the space shown on the plans for cast-in-place concrete shall be removed." may require a tolerance or as directed by the Engineer.

• Shotcrete is not a final pay item.

Section 10-1.?? - Brick Wall

• Paragraph 4 - Who approves the brick for matching the existing? We recommend the Engineer approve the Contractor's choice of brick to ensure proper match of new and old brick.
MARCH LANE CONSTRUCTIBILITY REVIEW
Specifications - Electrical

EL4 - 10-3A.15 - Photovoltaic Control

- "Contractor" should read "Contactor."

EL5 - 10-3A.17 - Payment

- Since this is under the State's signals, Paragraph 2 should specify State-owned roadway lighting and should not include City lighting shown on Sheets 91 and 92. Also there is no bid item for Paragraph 2.

EL5- 10-3A.18 - Wide Area Video

- What about payment for this item? If it is presumed to be under the temporary system, there is no bid item.

EL7 - 10-3B.4 - Maintaining Existing Electrical Systems

- Last sentence, Paragraph 1, traffic signals may have to be turned off at other times, such as changing conductors in the exiting conduit. Delete after "...3:30 p.m."

- Paragraph 2 - during construction, the Engineer may require very costly temporary equipment. How does the Contractor bid for this possibility?

EL8 - Division 16 Electrical

- Shouldn't this be entitled, "DIVISION 2"?

EL8 - 10.1.01 - Scope

- Paragraph 2 of this Section is the same as Paragraph 3, Subsection 2A-1.00. How does a Contractor bid for the unknown work?

EL9 - 10.2B.1 - Material

- "Attention is directed to "Section 6, City-furnished materials..." There is no Section 6.
MARCH LANE CONSTRUCTIBILITY REVIEW
Specifications - Electrical

EL10 - 2B.5 - Standards

- Delete Paragraph 2. There is no new Type 1B pole in the contract.
- Delete Paragraph 3. There are no overhead utilities.

10 - 2B.6 - Conduit

- Paragraph 7 - why are words TOP and ACROSS capitalized?

EL16 - 10.9 - Conductors

- Paragraphs 12 and 13 (splicing conductors) are in conflict. Plans for "C"-shaped connector do not show twisting 5 turns. Caltrans requires "C" connector for splicing, then soldering; no twisting (ES-13).

EL17 - 10.12 - Service

- Paragraph 3, Line 1, specifies unmetered service equipment. Note in the last sentence refers to meter socket. Also, according to the plans, only one service cabinet is required for City lighting (E-4, Note 13 Sta. 23 + 95). The service cabinet for City signals at Quail Lake is existing. Telephone is not required for the new service cabinet. Delete reference to Pacific Bell in this Paragraph.

EL20 - 10.14 - Pedestrian Signals

- Paragraph 2, "... shall be Type G..." What is Type G?

EL21 - 10.15 - Detectors

- Paragraph 4 specifies 4 number 18 conductors. Only 2 conductors per cable are required (E-11, Sheet 99). Also, the second sentence reads, "The conductors shall be twisted together..." Does this mean all are twisted together?
- Paragraph 10, second sentence, "...each loop..." Does this mean install loop wires in the slots, wait one hour, then pour sealant? What happens to traffic all this time? The idea of this sealant is to pour it right away and let traffic go over it without delay. The last sentence does not make any sense.
- Paragraph 16, third sentence, "Splices between loops and lead-in cables shall not be made..." How can loops operate without splicing to lead-in cable?
Should read, "Splices shall not be soldered between ..."

- Paragraph 18 - All sensor units at Location 3 (City signals) are existing. Specifications delineate method of connecting the loops. If motor cycle test fails, could it be due to a bad censor unit? Also, under heavy traffic conditions, the motor cycle test is almost impossible. The Contractor should only be responsible for his work installing loops and lead-in cables. Testing the loops should be done per Section 86-2.14B, Field Testing, of the Standard Specifications, and Notes 9 and 10 on ES-5A of the Standard Plans.

**EL23 - 10.16 - Luminaires**

- Paragraph 2 - add, "and lamps" after "ballast." Last sentence, change "lights" to "luminaires."

**EL23 - 10.18 - Payment**

- This Section indicates the LS payment includes intersection highway lighting and traffic signals. Assuming this means electrical equipment at Location 3 (Quail Lane), then no payment is specified for City street lighting system shown on E-3 and E-4, Sheets 91 and 92. Also, there is no item listed in Schedule 1 or 2 of the bid items.

- Last Paragraph - delete all after, "...paid for..." and add, "...signals and lighting, Location 3, and no additional compensation will be allowed thereafter."

**EL24 - 10.19 - Salvaging and Reinstalling or Stockpiling Electrical Equipment**

- Paragraph 3, "...included in the contract lump sum for modifying signals..." There are no modifying signal items.
C-2

- There is a construction keyway shown in the back of all new vertical curbs and gutters. As this is more costly, why is it necessary?

C-3

- The plans require 5/8" x 24" (3 each) at all expansion and cold joints in "vertical curb and gutters." This is not typical.

C-4

- A removal method for temporary pipeline protection should be planned prior to placing of same.

C-5

- A reminder should be noted on the plans that potholing for aqueducts is to be by hand.

C-6

- The 16" DIP from Station ML 17 + 46 to 21 + 58 has a flow line of -6.0. This implies that there will be water in the excavation during construction which will be timely. Also, where will the Contractor pump the water? How will this affect the staging?
MARCH LANE CONSTRUCTIBILITY REVIEW

Plan Review - Electrical

E-1 - Sheet 89

- General Notes #9 - "Contractor shall re-program the controller..." All programming and timing of the controller shall be done by City or State, not by the Contractor.

E-2 - Sheet 90

- Note 7 indicates 2#8 for signs and 2#6 for highway lighting. Notes 14 and 16 should all be the same as Note 7 (E-5).

Note 35, "...existing ... remove 3#14." Why remove, they are temporary. The whole thing will be removed.

E-3, E-4 and E-16 - Sheets 91, 92 and 94

- 2" conduit is to be installed from the N.E. corner of intersection of N.B. offramp and March Lane (E-9) on the right shoulder of N.B. onramp to existing pull box at P1702 + 90 (Note 11) for future ramp metering. 2#8 and 2#6 conductors can be installed in this conduit and spliced to existing conductors in this pull box to power two lights and sign on S.B. offramp. This will eliminate proposed conduit shown on E-3 and E-6 on the S.B. offramp. This will change Cable Schedule on E-10. Adds 2#8 for sign lighting in runs 2, 3, 4, and 6 and deletes 2#8 sign lighting in runs 2 and 3 on E-8. This will save money.

E-7 and E-9 - Sheets 95 and 97

- At several locations with detector hand holes, plans show connecting two hand holes and continuing to pull box. Is the connection between two hand holes a conduit? How is that installed? Also, type "D" loop (ES-5B) is shown only in the left turn lanes. How about the other lanes?

E-8 - Conductor Schedule

- Add 2#8 for sign lighting in runs 6 and 7.

E-9 - ???

- Since there is a conduit for future ramp metering, then it is a good idea to add Item 18 (ES-2D) in the service cabinet and add 2#8 between the cabinet and
the pull box at location C (N.E.) corner. It is a lot less expensive to do it now than in the future.

By each service cabinet (E-4, City lighting system and E-9, State signal and lighting systems) plans should show the system number and metered and unmetered loads.

E-12 - ??

- Note on the bottom of Conductor Schedule: "Remove all existing signal ... install new signal cables..." How is this done between 9:00 a.m. and 3:00 p.m.? Refer to signal shut down time allowed in the contract.

E-14 - ??

- Plan indicates removing 3#14, 4DLC from conduit runs at the south side of the intersection at this stage (Stage 2). And E-5 indicates installing 2 DLCs in the same three conduit runs (E-15). Why remove in Stage 2 and install in Stage 3? Leave all conductors as is. They will all be removed at the end stage of construction.

E-17 - ??

- This plan shows an existing wood pole on the sidewalk near Station ML24-10 as an existing PG&E service point. There is no wood pole. There is an existing PG&E vault across the street. Conduit and conductors are owned by PG&E. PG&E can relocate this pull box and provide service to both State and City lighting systems at this location. This should eliminate 2"C, 3#0 proposed to be installed by the contractor crossing March Lane shown on E-9 and 2"C 3#2 proposed to be installed by the Contractor on E-4. On both Drawings E-4 and E-9, the PG&E service point will be on the south side of March Lane. This should save some money. Note 51 on E-2 directs the Contractor to confirm this with PG&E.
C-9 - Sheet 19

- As previously discussed with the designers, we are concerned about access into this area. There does not appear to be a ready solution and it may be best to evaluate the access issues from a construction standpoint during a site visit.

- It appears from the restricted area above the aqueducts, especially at Bent 2, there will be a problem with the embankment during excavation and pile driving operations if the work approach is from the north side of the bent. The whole area may require a slab detail. We foresee substantial difficulty in working in the restricted area and enforcing the requirements. It might be feasible to strengthen the enforcement/violation aspects of the specification.

SC-8 - Sheet 48

- There may be a problem with the mast arm of the tie back drill rig extending into live traffic. The distance from the plate of the tie back to the edge of travelled way should be noted either in the specifications or the drawings. Vertical clearance should not be a problem because of the slight slope of the tie back and the soffit slope of the bridge.

Sheet 111

- The top of the tie back wall under the bridge does not extend to the break in the soffit.

Sheet 113

- Why does the walkway slope up and back down? Also, with the lowering of the roadway and the raising of the walkway, should the barrier rail height be extended to accommodate the walkway?

Sheet 115

- Add note regarding allowable deviations of the horizontal dimensions to accommodate tie backs in the abutment areas which conflict with the pile locations. This area may have problems because of the existing pile conditions, overpours and pea gravel backfill.
Sheet 116

- Is the existing pile CIDH or driven? If driven, then it can be reasonably expected the area around the pile will be backfilled with pea gravel which will cause sloughing and reattainment problems. Perhaps this should be noted and some accommodation made.

- Cave-ins and sloughing of embankment material are to be expected - is there a point where the shotcrete depth would warrant additional reinforcement?

- A minor note. The top of the wall under the bridge will be pigeon paradise - look out below.

Sheet 122

- The stage construction should clarify the bridge stage construction as it does not correlate with the project stage construction.

Sheet 123

- Traditionally, during widenings and bent and abutment extensions, there has been confusion whether to build the bent and abutments along the same line as the existing or to the theoretical design bearings. What does the designer want if there is a discrepancy? Generally, line is strung to the new section off the existing, regardless of the actual bearing. A note may be warranted.

Sheet 124

- The "Remove Existing Wall 3'-0" below finished grade (typ)." note is only for the interior wingwall, the exterior will be removed to 1'-9" below grade.

- What is the extended portion dimension on the drill and bond dowels?

Sheet 125

- Are there more reinforcement details for the large concrete abutment buttress(?) section? Also, the dimension of the dowel extension is not specified, is there a reason?

- The Section B-B plan does not correlate with the cut. A B-B section cut plan is warranted.
Sheet 126

- There is no apparent positive tie in from the bottom mat of reinforcement in the top deck and the bent cap reinforcement - is this intended?

Sheet 127

- Section A-A, the middle spiral detail is missing.

Sheet 128

- Falsework Release Alternative 1 - the Contractor generally pushes for a shorter closure pour waiting period, and the field Engineer monitors the relaxation of the bridge deck and then makes a decision when the closure pour time is acceptable. With a conventionally reinforced box girder, the time frame may be less. Perhaps a note, "Unless otherwise approved by the Engineer," is an option. In Alternatives 1 and 2, the note "if needed" is confusing. Does this mean that there is an option not have a closure pour?
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**REQUEST**

Request "No U-Turn" sign for EB March Lane at left-turn pocket / raised median into In-and-Out Burger / Super 8 Motel entrance driveway between Feather River Dr. and I-5 SB offramp.

**ANALYSIS**

<table>
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**ACTION**

Created W.O. to install R34 sign for EB March Lane on existing R34 sign pole at left-turn pocket for WB March Lane.

W.O. Issued 7-2-02
Install R34 (No U-turn) sign for EB March Lane on existing R34 sign pole for WB March Lane at raised concrete median for opposing left-turn pockets at the entrance driveway for In-and-Out Burger and Super 8 Motel.
**Traffic Service Request (TSR) Form**

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**REQUEST**

Highlight and make more visible the raised concrete medians and raised concrete left-turn lane channelizing line on March Lane between Interstate Highway Route 5 and Feather River Dr.

**ANALYSIS**

Correctible Accident [ ]

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Raised concrete medians and raised concrete left-turn lane channelizing line need to be highlighted to improve their visibility to motorists.

Created W.O. to: 1) Paint the raised concrete curbs with yellow paint with glass beads around the perimeter of the end of the median for a length of 10' from the nose at each of 6 locations., 2) Paint the 144 LF of raised concrete left-turn lane channelizing line on WB March Lane at Feather River Dr. with white paint with glass beads., 3) Install 1-way clear reflective markers to north side of 198 LF left-turn lane channelizing line per CalTrans striping Detail 38., 4) Install an additional 63 LF for EB and an additional 130 LF for WB of striping Detail 38A/38C at the left-turn lane median at In-n-Out Burger driveway to create triangular transition channelizing lines., 5) Install Type "Q" marker at
Ms. Larson (who works at Placer Title Co.) is requesting a painted stop line on EB March Ln. to stop vehicles at the WB March Ln. left-turn lane into the private driveway to 2800 W. March Ln. professional center. She states that it is very difficult to cross four EB lanes when EB traffic queues up at the signal at the I-5 SB on-ramp signal.

The majority of the high EB traffic volume on March Lane between Feather River Dr. and the I-5 interchange during the AM peak hours is due to the closure of Brookside Rd. at the I-5 overcrossing during the I-5 widening project. This high traffic volume condition is temporary per TGreenwood. The installation of a solid 12” wide stop line across the four EB lanes has the potential of creating more broadside type collisions than the current condition. When vehicles stop at the stop line in the no. 1 and 2 EB lanes, the stopped vehicles block the sight of the SB left-turning vehicles for the EB vehicles in the no. 3 and 4 lanes creating a greater safety condition. The installation of the above-mentioned painted stop line across the 4 EB lanes is denied per TGreenwood.

Addressed above-mentioned analysis information to Ms. Larson per phone call. No further action required.
Traffic Service Request (TSR) Form

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<td>X-Street2</td>
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</table>

- Last Name: Rishwain
- First Name: Adrienne
- Home Phone: (209) 476-192
- Address: 2800 W. March Ln., Ste. 360
- E-Mail: adrienne@atlaspropertiesinc.com
- Zip Code: 95219
- CRMS #: 1205585

REQUEST

Ms. Rishwain, property manager for Atlas Properties, Inc., manages the March Tower office building located at 2800 W. March Ln. located on the south side of March Ln. between Feather River Dr. and I-5 Freeway. She is requesting any means to reduce traffic collisions from illegal U-turns from the WB mid-block left-turn lane (where signs are clearly posted (R3-4) restricting them) and stripping to be installed across the four EB lanes to create a gap in EB traffic to allow the left-turn movement into the professional center private driveway during peak traffic hours.

ANALYSIS

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There is a high volume of traffic which uses the unsignalized EB & WB March Ln. left-turn lanes situated mid-block between I-5 Freeway and Feather River Dr. at the private driveways which provide access to the professional center on the south side and the commercial center on the north side. Vehicles using the WB March Ln. mid-block left-turn lane cross four EB lanes to enter the private driveway to the professional center. Vehicles using the EB March Ln. mid-block left-turn lane cross three WB lanes to enter the private driveway to enter the commercial center. The installation of a solid 12" wide stop line across the four EB lanes has the potential of creating more broadside type collisions than the current condition. When vehicles stop at the stop line in the no. 1 and 2 EB lanes, the stopped vehicles block the sight of the SB left-turning vehicles for the EB vehicles in the no. 3 and 4 lanes creating a greater safety condition. See TSR #2011208.

******* Recommendation: Install W70 (CA) "CROSS TRAFFIC AHEAD" warning signs with distance supplemental warning plaques on: 1) EB March Ln. in advance of the WB March Ln. left-turn lane into the private driveway to 2800 W. March Ln. professional center, 2) WB March Ln. in advance of the EB March Ln. left-turn lane into the private driveway to the Home Depot commercial center.

ACTION

Issued W.O. to install: 1) W70 (CA) (36" x 36") over W16-2aP (250 FT) (30" x 18") on S.L. pole #14196 on EB March Ln. in advance of the professional center private driveway, 2) W70 (CA) (36" x 36") over W16-2aP (200 FT) (30" x 18") on S.L. pole #14195 on WB March Ln. in advance of the commercial center private driveway. Stockton PD was contacted by TGreenwood to provide selective enforcement of illegal U-turn movements on March Ln. at the subject mid-block left-turn lanes. Ms. Rishwain was contacted by e-mail on 1-08-2013 to notify her of the above-mentioned information.
Ms. Rishwain, property manager for Atlas Properties, Inc., manages the March Tower office building located at 2800 W. March Ln. located on the south side of March Ln. between Feather River Dr. and I-5 Freeway. She is requesting any means to reduce traffic collisions from illegal U-turns from the WB mid-block left-turn lane (where signs are clearly posted (R3-4) restricting them) and striping to be installed across the four EB lanes to create a gap in EB traffic to allow the left-turn movement into the professional center private driveway during peak traffic hours.

There is a high volume of traffic which uses the unsignalized EB & WB March Ln. left-turn lanes situated mid-block between I-5 Freeway and Feather River Dr. at the private driveways which provide access to the professional center on the south side and the commercial center on the north side. Vehicles using the WB March Ln. mid-block left-turn lane cross four EB lanes to enter the private driveway to the professional center. Vehicles using the EB March Ln. mid-block left-turn lane cross three WB lanes to enter the private driveway to the commercial center. The installation of a solid 12" wide stop line across the four EB lanes has the potential of creating more broadside type collisions than the current condition. When vehicles stop at the stop line in the no. 1 and 2 EB lanes, the stopped vehicles block the sight of the SB left-turning vehicles for the EB vehicles in the no. 3 and 4 lanes creating a greater safety condition. **Recommendation: Install W70 (CA) "CROSS TRAFFIC AHEAD" warning signs with distance supplemental warning plaques on: 1) EB March Ln. in advance of the WB March Ln. left-turn lane into the private driveway to 2800 W. March Ln. professional center, 2) WB March Ln. in advance of the EB March Ln. left-turn lane into the private driveway to the Home Depot commercial center. **Issued W.O. to Install: 1) W70 (CA) (36" x 36") over W16-2aP (250 FT) (30" x 18") on S.L. pole #14196 on EB March Ln. in advance of the professional center private driveway, 2) W70 (CA) (36" x 36") over W16-2aP (200 FT) (30" x 18") on S.L. pole #14195 on WB March Ln. in advance of the commercial center private driveway. Stockton PD was contacted by TGreenwood to provide selective enforcement of illegal U-turn movements on March Ln. at the subject mid-block left-turn lanes. **Ms. Rishwain was contacted by e-mail from TGreenwood on 1-08-2013 to notify her of the above-mentioned information.

Date Expect Closed: 01/19/2013
Date Closed: 01/08/2013 3:05 PM By: Robin Suess
1) REMOVE "ZERO WASTE CALIFORNIA" SIGN FROM S.L. POLE #14196. 2) INSTALL W70 (CA) (36" x 36") OVER W16-2aP (250 FT) (30" x 18") ON S.L. POLE #14196 ON EB MARCH LN. (POSITION NEW SIGNS ABOVE EXISTING R30E (CA)). 3) INSTALL W70 (CA) (36" x 36") OVER W16-2aP (200 FT) (30" x 18") ON S.L. POLE #14196 ON WB MARCH LN.
My name is Adrienne Rishwain and I am the property manager for Atlas Properties, Inc. We manage the March Tower office building located on the southwest corner of March Lane and Interstate 5.

I know that Shelley Burcham with S.J. Partnership had previously made a request to Michael McDowell to inquire about the possibility of having some type of striping installed to keep the section open for westbound traffic that is attempting to turn into the driveway between our building and Dave Wong's.

We have had numerous traffic accidents in this area due to either people making illegal u turns when a sign is clearly posted and also when traffic is backed up at the freeway light and the far left lane flags for turning vehicles to pass through and then oncoming traffic hits a vehicle. Our monument sign has been replaced three times in the past five years due to these accidents and we are hoping that traffic engineering can help.

ATLAS PROPERTIES, INC.
Adrienne Rishwain, Property Manager
Mr. Rishwain,

I apologize for not getting back to you sooner.

Staff has observed what you described in your email -- lane nearest the center median backing up from the traffic signal at I-5 and motorists waving left turners to cross in front of them...only to be greeted by motorists in the other three lanes. And as motorists slow down while entering the subject driveway (south side of March Lane) there are conflicts with eastbound through lanes #3 and #4 (2 lanes nearest south side of March Ln)

We are unable to support the suggestion of installing striping across March Lane. This would result in a false sense of security for the westbound left turners when they are under the impression that eastbound traffic on March is supposed to stop at these lines and yield to them.

**Actions Taken:**

A work order has been issued to install a warning sign reading "Cross Traffic Ahead - 250 FT" on the south side of March Lane facing eastbound traffic.

Requested the Police Department to provide selective enforcement of illegal U-turn movements on March Lane at the subject left turn lane.

If you have any questions or additional concerns, please reply email or call 639-2551

TG

---

Todd Greenwood  
City Traffic Engineer  
City of Stockton Public Works 22 E. Weber Avenue  
Stockton, CA 95202-2317  
Phone: (209) 937-8611  
Fax: (209) 937-8277  
Email: Todd.greenwood@stocktongov.com
Traffic Service Request (TSR) Form

Ms. Torres is requesting the installation of a traffic signal at the Palm Crossing Shopping Center / Home Depot / In-N-Out Burger private driveway (north side of March Ln.) and the professional center private driveway (south side of March Ln.) between Feather River Dr. and I-5. She states that this improvement would relieve the congestion on Feather River Dr. at Home Depot / Moss Creek Circle and improve traffic flow at these driveways.

The suggested intersection(s) are added to the traffic signal candidate list. A study is conducted every two years to update the City's Traffic Signal Priority List for those intersections which have been requested to provide signals within the City. A traffic study is conducted for each intersection to determine if a traffic signal is warranted. If warrants are met, the location is then ranked on the priority list based on a variety of factors. Those traffic signals ranked at the top of the priority list are installed when funding becomes available. Thank you for notifying the City of Stockton Public Works Department about your concern at this location.
I had a brainstorm! Consider this...an intersection/traffic light control where the Home Depot In & Out Burger driveway is...allow left turns or straight across to Dave Wongs, etc. this totally removes all the U-turns at Feather River (large numbers) for vehicles trying to get back in an eastward direction and/or I-5 north or south. Relieves alot of congestion on Feather River drive FROM Home Depot lot (all exits) relieves U-turn traffic on Moss Creek Circle.....****come on...this is genius...call me...yes, an expense, but so efficient! Please consider this option. Bonus feature, IT IS AN INTERSECTION WITH TRAFFIC CONTROL BY SIGNAL LIGHTS...CAN THE IN & OUT BURGER PATRONS SIT ON MARCH LANE AND BACK IT UP TO THE I-5 off ramp? No, they cannot. Tell me why this is not a multi faceted excellent idea? You did it on Hammer Lane mid-block (near Costco) and at Home Depot/Loews (Hammer Lane mid block signal light)
MEMORANDUM
ATSS 423-7076
To: Gordon Marts
Date: December 4, 1992
File: 10-SJ-99 PM 29.0/30.6
I-5 March Lane IC
10-43420K

From: DEPARTMENT OF TRANSPORTATION

Subject: Project Study Report Approval

Attached for your review and approval is a Project Study Report (PSR) to widen ramps and construct auxiliary lane at the Interstate 5 March Lane Interchange. The PSR was initiated as a result of mitigation of traffic impacts by the Brookside project being developed by Grupe Development Company (Conditions of approval between City of Stockton and Grupe attached).

Interstate 5 serves as a major interregional route for recreational and commerce traffic and also serves as a major commute route. During the afternoon peak hour commute the March Lane NB off-ramp currently stacks up onto the mainline freeway auxiliary lane.

The PSR discusses one alternative in detail. Other alternatives such as constructing an "urban interchange" or a "par clo" interchange are more expensive and are eliminated from consideration because of the increased costs due to structure work or right of way impacts.

As an option for consideration by the City, Caltrans would support construction of an interim improvement as follows: Widen NB off-ramp approach to three lanes consisting of a combined left/through lane and dual right turn lanes. This requires that March Lane be limited to two through lanes traveling east between the March Lane SB & NB ramps and require four through lanes traveling east between the March Lane NB ramps and Quail Lakes/Da Vinci Drive. These geometrics are similar to the existing Hammer Lane NB off ramp. The cost of the work within the State R/W for the interim improvement would be less than $300,000 allowing the project to be constructed as an encroachment permit project. All project development work including environmental clearance and preparation of the plans would be the responsibility of the City of Stockton and Caltrans would review the plans to issue an encroachment permit. The interim project would be beneficial to help relieve the traffic from stacking up onto the mainline auxiliary lane when built. A disadvantage of the interim project is that traffic would be subjected to construction on the ramps on two separate occasions. There may also be negative reaction by the public and impacted businesses if the timing between the interim and ultimate project construction is not several years.

The project was approved on April 28, 1992 for Minor A program funds for 50% of the cost of widening the EBMUD bridge ($268,000) for the 92-93 or 93-94 fiscal year. The actual year when the funds will be needed will most likely be later to correspond to the schedule shown in the Measure K Strategic Plan. The Strategic Plan shows the San Joaquin County Council of Governments acting as the Local Transportation Authority (SJCOC) contributing $600,000 to the project and the City of Stockton would fund the remaining amount of the construction cost at $508,900. It is assumed a portion of the City's share of the project will be funded from the Stockton Development Impact Fee Program.
The City of Stockton has indicated they will request the SJCOG to request Caltrans to prepare the Project Report and Environmental Document (PR&ED) for the ultimate project and provide oversight of preparation of the Plans, Specifications and Estimates. This is consistent with State Statutes where the majority of a measure project is funded by local money. This project is identified in the resource allocations made to the Special Funded Projects branch for the 92/93 and 93/94 fiscal years.

I recommend that the PSR be approved and for Caltrans staff to proceed to prepare the PR&ED for the ultimate project.

Recommended:  Matthew E. Bailey

MATTHEW E. BAILEY

Approved:  Gordon A. Marts  James B. Giotto

GORDON A. MARTS  JAMES B. GIOTTONINI
PROJECT STUDY REPORT

MARCH LANE/I-5 INTERCHANGE MODIFICATIONS

ON ROUTE: INTERSTATE 5
Between PM 29.0
And PM 30.6

Gordon A. Marts
District Director
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INTRODUCTION

The project proposes to widen March Lane to an eight-lane cross-section through the Interstate 5 interchange and widen the I-5 northbound off-ramp to a two-lane exit with three lanes over the EBMUD easement bridge and four lanes on the approach to March Lane. One of the four approach lanes will be signed as: "Quail Lakes Drive (North)". Additionally, a second eastbound left-turn lane at the March Lane/Quail Lakes Drive intersection will be added. Widening of March Lane under I-5 will include increasing the height of the retaining walls on both sides of March Lane. The existing two-lane entrance for the northbound on-ramp will be lengthened by widening to the north to accommodate the proposed dual eastbound left turn lanes at the I-5 northbound ramps/March Lane intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. No non-standard design features are proposed. Widening of March Lane between Quail Lakes Drive and the I-5 northbound ramp intersection to eight lanes is also proposed as separate work within the City's jurisdiction.

The project is needed to increase the traffic-service capacity of the interchange necessary to support forecast traffic volumes at acceptable levels of service. The City of Stockton is proposing the interchange modifications and will act as the lead agency.

The total estimated construction cost including City work is $1,903,900. The total cost has been separated into the cost to construct the improvements within State Right-of-Way requiring State oversight and costs within the City’s Right-of-Way. The two costs are presented below:
Construction Cost

March Lane (in State R/W) and
I-5 Northbound On/Off-Ramp Improvements $1,376,900

March Lane (City R/W)
Improvements $ 527,000

TOTAL: $1,903,900

The interchange improvements within State R/W will be funded jointly by the City of Stockton, San Joaquin County Council of Governments (acting as the Local Transportation Authority) and Caltrans. Caltrans participation in the project is limited to 50% of the cost to widen the EBMUD bridge (~$268,000) on the I-5 northbound off-ramp (not to exceed $300,000). Street improvements within City R/W will be funded 100% by the City of Stockton.

2. BACKGROUND

Route 5 is a north/south interstate freeway traversing California from the Mexican Border at Tijuana to the Oregon State line north of Yreka (about 797 miles). In District 10, I-5 traverses Merced, Stanislaus and San Joaquin Counties from the Fresno County Line south of Los Banos to the Sacramento County Line near Galt (about 110 miles). It is a Federal Aid Interstate (FAI) route which was added to the Freeway and Expressway (F&E) System when the F&E System was established in 1959. The existing facility through the project area is a six-lane freeway. Route 5 is functionally classified as a Principal Arterial (PA) throughout its length. It is a major truckline route of statewide and national significance, and is part of the Interregional Road System (IRRS) adopted in July, 1989. It serves interstate, intrastate and interregional traffic and has also become a local commuter route through the City of Stockton.

CalTrans has completed a Project Study Report to widen Interstate 5 from six to eight lanes from Monte Diablo Avenue to north of Eight Mile Road. This widening project is expected to be proposed for programming in the 1994 STIP, with a proposed construction year of approximately 2001.

Auxiliary lanes on I-5 extend south across the Calaveras River bridges from the northbound off-ramp and southbound on-ramp. The southbound on-ramp auxiliary lane terminates as an off-ramp to Ryde Avenue. The northbound off-ramp auxiliary lane begins as a single lane on-ramp from Plymouth Road. A Project Study Report was approved in June, 1990 for the Plymouth/Ryde ramp relocation (PM 28.90/29.51). This
programmed Caltrans project includes the relocation of both ramps, south, to Alpine Avenue significantly increasing the weaving distance associated with the auxiliary lanes and is scheduled for construction in 1994.

March Lane currently has two through lanes per direction under I-5 with dual left-turn lanes on the westbound approach to the I-5 southbound ramp intersection. A single left-turn lane is located on the eastbound approach to the March Lane/I-5 northbound ramp intersection.

Brookside Memorandum of Understanding was signed by the City of Stockton and CalTrans on December 27, 1989 (Attachment "G").

Preliminary studies were conducted to analyze the feasibility and need for a Calaveras River bridge west of I-5. Traffic projections for this PSR assumed no Calaveras River bridge to represent a "worst case" condition. From a traffic demand standpoint, the 20-year volumes at March Lane/I-5 without the bridge are acceptable (LOS "D" or better) with the Ultimate modifications to the interchange; however the Calaveras River bridge is needed to obtain acceptable LOS "D" or better for the I-5 mainline. The addition of a Calaveras River bridge would reduce "local" traffic on I-5 and improve traffic operations at the I-5/March Lane interchange. An alternatives analysis of the Calaveras River bridge is currently being prepared as part of the City of Stockton's "streets and roads" study being performed by a consultant.

3. NEED AND PURPOSE

There is an existing deficiency at the intersection of I-5 northbound ramps and March Lane. Field observations and manual traffic counts have shown that there is a significant amount of weaving occurring in the section of March Lane between the I-5 interchange and Quail Lakes Drive.

As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into commercial driveways preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane at Quail Lakes Drive does not always flow freely due to some of the vehicles making another stop and immediate left-turn into the shopping center north of March Lane. As vehicles in the northbound right-turn lane wait for gaps in the eastbound traffic stream to cross March Lane, standing vehicle queues form on the northbound off-ramp. During peak demand periods, these queues have been observed backing-up into the auxiliary lane on I-5. The queuing further compounds the turbulence associated with the short weaving distance between the northbound on-ramp from Plymouth Road and the March Lane off-ramp.
In 1988, the Brookside Community Project (Brookside Estates) was approved by the City of Stockton and annexed into the City. The approved Brookside Estates project will develop 1,300 acres along March Lane west of I-5. The Brookside Estates project will develop a mixture of land use types including high- and low-density residential, administrative, professional, commercial, recreational and institutional.

Brookside Estates which is currently under construction, will generate approximately 50,000 vehicle trip ends on a daily basis. The subject interchange will serve a significant amount of the Brookside Estates traffic. Increases in traffic volumes generated from the Brookside Estates project coupled with traffic volume growth from other approved projects throughout Stockton will impact traffic operations at the subject interchange to unacceptable service levels.

Forecast volumes on mainline I-5 indicate the need for mainline widening and providing a new Calaveras River bridge crossing to handle much of the local traffic which is now forced to use Interstate 5 due to an inadequate parallel local road system. I-5 mainline operations will be impacted by increases in regional trips through the City of Stockton and planned/approved development which will be served by I-5. Without a new local road crossing of the Calaveras River, peak hour volumes on I-5, south of March Lane, are forecast to exceed 13,500 (8830 NB/5020 SB) in PM peak hour. The addition of a parallel bridge over the Calaveras River would reduce volumes on Interstate 5 and at the Interstate 5/March Lane interchange. However, mainline and interchange volumes would remain large enough to warrant widening of Interstate 5 and modifications to the interchange. Widening of Mainline I-5 through the March Lane Interchange were addressed in the CalTrans PSR for I-5 mainline widening which was approved on September 22, 1992.

Without the proposed interchange modifications, both March Lane/I-5 ramp intersections are projected to operate at LOS "F" (unacceptable) conditions. Projected increases in east/west traffic and traffic oriented to the south on I-5 are the primary causes of the forecasted unacceptable service levels. With the proposed geometric and traffic control improvements, the interchange is projected to operate at LOS "D" during peak demand periods.

4. ANALYSIS OF PROPOSAL

The project within State Right-of-Way proposes to widen March Lane under I-5, to eight (8) 12-foot lanes (six through lanes and back-to-back dual left-turn lanes). To widen March Lane under I-5, encroachment into the existing embankments will occur on both sides of March Lane. It also proposes to widen the I-5 northbound off-ramp to a two-lane exit with further widening to a three-lane section at the bridge over the East Bay Municipal Utility District (EBMUD) easement. North of the EBMUD easement bridge, a taper to four lanes is proposed. The four lanes on the northbound off-ramp approach to March Lane will include a left-turn lane, a shared through plus left-turn lane, a
controlled right-turn lane to eastbound March Lane, and an uncontrolled free right-turn lane. The existing two-lane entrance on the I-5 northbound on-ramp will be extended north and widened, tapering to one lane prior to the gore area with mainline I-5. The northbound on-ramp widening is necessary to accommodate the eastbound dual left turn lanes proposed at the I-5 northbound off-ramp intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. All of the improvements will be constructed within existing State Right-of-Way boundaries. None of the proposed improvements would reduce sight distance at the interchange.

In conjunction with the proposed improvements within State Right-of-Way, March Lane will be constructed between I-5 northbound ramps and Quail Lakes Drive to include four eastbound lanes with dual left-turn lanes to northbound Quail Lakes Drive (see Attachment "B"). The eastbound dual left-turn lanes will be protected with a one foot wide raised median to restrict weaving from the northbound off-ramp right turn lane. The existing Denny's parking lot in the southeast quadrant of the interchange will require modification to provide the necessary City Right of Way for the March Lane westbound right turn lane. Additional City Right-of-Way is required along the south side of March Lane.

The Traffic Index (TI) used for the design of the ramp is listed in Attachment E. The project proposal includes no non-standard design features. The 20-year growth traffic projections were analyzed with the proposed Ultimate geometrics and the results indicated that Level-of-Service "D" or better is expected during the peak hours of traffic operations (see Attachment "C").

5. SYSTEM PLANNING

The long-range route concept for I-5 through the Stockton area is an eight-lane freeway and a Level-of-Service (LOS) "D". The existing facility is six lanes to the north of Route 12 (including through the project), and four lanes on north to the Sacramento County Line.

The 1989 RDP proposed to upgrade the six-lane facility to eight lanes from north of Country Club Boulevard to Hammer Lane, with the possibility of extending the eight lanes north to Eight Mile Road. This proposal is also a current candidate list HE-13 project (No. 739) with a current estimated cost of $34.9 Million. The San Joaquin County Council of Governments (COG) included this project as a Flexible Congestion Relief (FCR) Program project in their 1992 RTIP. It is also anticipated that there may be some local developer participation in the cost of these added lanes through mitigation process. The additional lane in each direction would be added in the existing 60-foot median.
6. **HAZARDOUS WASTES**

There are no hazardous waste sites located within the project limits (see Attachment F).

7. **TRAFFIC MANAGEMENT PLAN**

Significant delays due to construction are anticipated and, therefore, a Traffic Management Plan (TMP) is needed for this project. The existing queuing problem on the northbound off-ramp would be compounded during construction when EBMUD bridge would operate with a single lane. Lane reductions on March Lane would also contribute to significant delays. District 10 Division of Traffic Operations will be consulted to develop a concise TMP. The construction cost estimate includes $60,000 plus contingencies for traffic management and control during construction.

8. **ENVIRONMENTAL CLEARANCE**

A. **PROJECT SCOPE**

The project includes widening of March Lane to an eight-lane cross section under I-5, adding lanes to March Lane between I-5 and Quail Lakes Drive, and widening the northbound on and off ramps. The environmental analysis limits of the project will extend from the western State Right-of-Way on March Lane to Quail Lakes Drive (1,350 feet). The western State Right-of-Way limit on March Lane is located 150 feet west of the March Lane/I-5 southbound on/off ramps intersection. The analysis will also include 1,360 feet along the I-5 northbound off-ramp and 1,560 feet along the I-5 northbound on-ramp. Existing Right-of-Way on March Lane, immediately east of the northbound ramps intersection, will be expanded to accommodate the additional roadway width. The Right-of-Way increase on the north side will be comprised of an area approximately 220 feet long and 10 feet wide and the Right-of-Way increase on the south side will be comprised of a triangular shaped area of approximately 100 feet long and 10 feet wide at the base of the triangle. Both of these areas are within the City of Stockton, therefore, State Right-of-Way will not need to be increased to implement the project.

Federal NEPA clearance is required because the project includes increasing the capacity of a ramp on an interstate route.

B. **SETTING**

The subject interchange is located in an urbanized area. Land uses in the vicinity of the project area include commercial uses along the March Lane corridor including restaurants, motels and retail businesses. To the north and south of the commercial uses along March Lane, residential land uses exist in the form of single family homes.
There are no waterways or streams within the environmental analysis limits. Vegetation consists of highway landscaping within existing Right-of-Way.

C. PREVIOUS ENVIRONMENTAL STUDIES

An EIR was prepared for the Brookside Community Project proposed by Grupe Development Company: State Clearinghouse No. 88022316. The lead agency for the EIR was the City of Stockton and the Final EIR was certified on April 17, 1989. The EIR (with addendums) was recertified on November 4, 1991. Improvements to the March Lane/I-5 interchange were identified in the EIR as mitigation for the development.

An EIR was prepared for the City of Stockton General Plan Revision, State Clearinghouse No. 88072506. The lead agency for the EIR was the City of Stockton. The Final EIR was certified on January 16, 1990.

D. STUDIES REQUIRED

Biological

A Natural Environmental Study (NES) will need to be prepared by a professional biologist. The study will certify whether or not any endangered species are present.

The Burrowing Owl has been known to be in the subject area and will be evaluated by the biologist.

Physical

- Noise Analysis

A noise analysis (study) will need to be prepared for the environmental document to meet federal standards. It is anticipated that noise walls at the subject interchange would not be required.

- Air Quality Analysis

The subject interchange is located in the San Joaquin Valley Air Basin which has been designated as an air quality non-attainment area by the U.S. Environmental Protection Agency for ozone, carbon-monoxide (CO), and 10-micron particulate matter (PM10).

The proposed interchange modifications are included in the San Joaquin County Council of Government's 1992 Transportation Improvement Program (TIP). A quantitative regional analysis with all TIP projects was conducted to determine conformity with the 1990 federal Clean Air Act Amendments. The analysis
substantiated that the RTP and TIP conformed to the Clean Air Act Amendments. The Environmental Protection Agency and Federal Highway Administration ultimately accepted these findings. A project level air quality analysis will be required to show a reduction in carbon monoxide (CO) violation. An Air Quality Conformity Statement will be required.

Socioeconomic

No special studies will be required under this category.

Cultural Resources

CalTrans will determine the area of potential effect (APE) and FHWA will approve APE. Archaeological documentation will be required to confirm that no archaeological or historical resources are present.

An inventory of buildings will be done to document any historical structures.

It is not anticipated that resources are present, however, a federal Section 106 will need to be prepared. A statement of negative findings will satisfy the requirements.

Coordination with Native American representatives will be included as a part of the Cultural Resources Evaluation.

E. DOCUMENTATION

The project will increase capacity on an interstate route ramp and will, therefore, require FHWA (NEPA) clearance.

It is anticipated that the environmental clearance will include a Categorical Exemption (CE) under CEQA with CalTrans as the lead agency and a Categorical Exclusion under NEPA with FHWA as the lead agency.

9. FUNDING/SCHEDULING

CalTrans District 10 and the San Joaquin County Council of Governments (acting as Local Transportation Authority) will enter into a Cooperative Agreement to identify the roles and responsibilities of each agency from preliminary engineering through completion of construction. The interchange improvements will be jointly funded by the City of Stockton, San Joaquin County Council of Governments and Caltrans with an understanding (stipulated in Cooperative Agreement) that 50% of the cost to widen the EBMUD bridge on the I-5 northbound off-ramp (not to exceed $300,000) will be funded by the State. State funding will be derived from "Minor A Projects" funds.
As a separate project to the proposed March Lane/I-5 Interchange modifications, Caltrans also approved a Project Study Report for the widening of I-5 mainline from Mount Diablo Avenue to north of Eight Mile Road. The proposed first stage widening would improve I-5 mainline from six to eight lanes which will be proposed for programming in the 1994 STIP with a proposed construction year of 2001.

Separate from the specific commitments made by the City of Stockton to fund the March Lane/I-5 Interchange modifications, the City also recognizes it's responsibility to pay it's fair share of future mainline improvements to I-5. The City has already adopted a process to collect traffic mitigation fees which include financing a portion of I-5 mainline improvements.

10. **DISTRICT CONTACT**

Questions or comments regarding this Project Study Report may be directed to:

CalTrans - District 10  
1976 East Charter Way  
Stockton, CA 95201

Matthew E. Bailey, Chief  
Special Funded Projects Branch A  
(209) 948-7072  
ATSS 423-7072
PROJECT STUDY REPORT

REGISTERED CIVIL ENGINEER STAMP

INTERCHANGE MODIFICATIONS AT INTERSTATE 5/MARCH LANE

10-SJ-05 PM 29.0/30.6

This report was prepared under my direction and responsible charge. I attest to the technical information contained herein and have judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions and decisions are based.

Robert R. Hammar, P. E.
Registered Civil Engineer

Date 8/6/92
12. **PROJECT MANAGER**

The designated project manager for this project is Matthew E. Bailey. He has been involved with the development of this project and concurs with this project proposal.
PROJECT STUDY REPORT
INTERCHANGE MODIFICATIONS AT
INTERSTATE 5/MARCH LANE
10-SJ-05 PM 29.0/30.6

Prepared By:  
Robert R. Hammar, P.E.
Omni-Means

Submitted By:  
James Giottonini
City of Stockton

Reviewed and Recommended By:  
Matthew E. Bailey
Project Manager, CalTrans

Mary Beth Herritt
Deputy District Director, Engineering Services, CalTrans

Approved By:  
Gordon A. Marts
District Director, CalTrans

Date: 12-29-92
ATTACHMENTS

VICINITY MAP A

TYPICAL CROSS-SECTIONS, GEOMETRICS, TOPOGRAPHY, AND RAMP PROFILES B

TRAFFIC ANALYSIS/DATA C

COST ESTIMATES D

R-VALUES AND TRAFFIC INDEXES E

HAZARDOUS WASTE (ISA CHECKLIST) F

MEMORANDUM OF UNDERSTANDING - BROOKSIDE (BETWEEN CALTRANS & CITY OF STOCKTON) G

RIGHT-OF-WAY FACT SHEET H

ADVANCE BRIDGE PLANNING STUDY I
ATTACHMENT A

VICINITY MAP
ATTACHMENT B

TYPICAL CROSS-SECTIONS

GEOMETRICS

TOPO GRAPHIC

RAMP PROFILES
PROJECT STUDY REPORT PLANS ON
INTERSTATE 5
IN STOCKTON
BETWEEN CALAVERAS RIVER &
FOURTEEN MILE SLOUGH

To be supplemented by Standard Plans dated January, 1988

END OF PROJECT
P.M. 30.6
STA. 1733+50

BEGINNING OF PROJECT
P.M. 29.0
STA. 1676+00

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

INCL. OF SHEETS
1 TITLE TITLE SHEET
2 K-1 TYPICAL CROSS SECTIONS
3 G-1 GEOMETRICS I-5 STA. 1670+00 TO 1684+00
4 G-2 GEOMETRICS I-5 STA. 1680+00 TO 1695+00
5 G-3 GEOMETRICS MARSH LN. STA. 6+50 TO 21+50
6 G-4 GEOMETRICS I-5 STA. 1693+00 TO 1707+50
7 G-5 GEOMETRICS I-5 STA. 1707+50 TO 1722+50
8 G-6 GEOMETRICS I-5 STA. 1722+50 TO 1733+50
9 G-7 GEOMETRICS AND TOPOGRAPHY I-5 STA. 1680+00 TO 1695+00
10 G-7-1 GEOMETRICS AND TOPOGRAPHY MARSH LN. STA. 6+50 TO 21+50
11 P-1 PROFILES OF RAMPS N,W,O, & P
1. TYPE "A-2-4" CURB TO BE REMOVED
2. SAWCUT EXIST. AC 1'-0" OFF EDGE OF PAVEMENT AND MIDDLE TRAVELED WAY TO 4'-13" LANES
3. OUT-OF-PLANE FOR RIGHT SIDE WIDENING SHALL EXTEND INWARD TO REACH UN-CONTAMINATED OROGNICAL BASE MATERIAL

RAMP "O"
STA. 1682+50
N.T.S.

HEDGE POINT

12" 12" 12" 12" Var. 8" 5" Var. 15" Var. R/N

2.00" CL 2 AB BACKING

0.65" AC OVERLAY
1.05" CI 4 TYPE "A" AS (EXISTING)

3.50" TYPE "B" AC

0.75" CL 2 AB

0.40" TYPE "B" AC

1.35" CL 2 AB

REPLACE EXIST. TVP & BARRIER RAILING MTH TYPE 25 BARRIER RAILING

EXIST. 2" WATER LINE

EXIST. 2" WATER LINE

EXPAND EXIST. AC DIKE BRIDGE STRUCTURE TO:
50.0' TOTAL WIDTH

EBROD AQUEDUCT UNDERCROSSING RAMP "O"
STA. 1685+43 TO 1687+00
H.T.S.

HEDGE POINT

12" 12" 12" 12" Var. 8" 5" Var. 15" Var. R/N

2.00" CL 2 AB BACKING

0.65" AC OVERLAY
1.05" CI 4 TYPE "A" AS (EXISTING)

3.50" TYPE "B" AC

0.75" CL 2 AB

0.40" TYPE "B" AC

1.35" CL 2 AB

REPLACE EXIST. TVP & BARRIER RAILING MTH TYPE 25 BARRIER RAILING

NOTE:

FOR MARCH LANE SEE SHEET 5 OF 11
TYPICAL CROSS-SECTIONS STA. 13112
TO 16+32 AND STA. 18+00 TO 18+15.
EXISTING AUXILIARY LANE BEGINS AT STA. 16 734+00 AT THE END OF EXISTING RAMP L, NORTHBOUND ON-RAMP AT THE CALVERAS RIVER BRIDGE.

MARCH LANE LINING (NOTE: 4-7/8 FEET INTO EXISTING PAVED ROAD ON NORTH AND SOUTH SIDES OF MARCH LANE AND CONSTRUCT 2'-7" HIGH RETAINING WALLS AND 2'-8" MEY SIDEWALKS TYPICAL)

EXISTING 16.3" SD PIPE LINE R/N

NOTE: FUTURE MAIN LANE WIDER AND MEDIAN BARRIER NOT A PART.

G-2

GEOMETRICS
I-5 FROM STATION 1680+00 TO 1695+00
MARCH LANE FROM STATION 8+00 TO 18+00
SCALE 1" = 50'
SHEET NO. 4
END OF PROJECT

INTERSTATE 5

EXIST
TOE OF FILL

EXIST
TOE OF FILL

CALTRANS RIGHT-OF-WAY

G-6

NOTE: FUTURE MALL LINE
WIDENOING AND MEDIAN
BARRENS NOT A PART.

GEOMETRICS
1-5 FROM STATION 1732+50 TO 1733+50
SCALE 1" = 50' SHEET NO. B
March Lane Undercrossing Note:
Cut 3 feet into existing paved slope on north and south sides of March Lane and construct 2'-0" high retaining walls and 2'-0" wide sidewalks typical.

GT-1
Geometrics and Topography
1-5 FROM STATION 1800+00 TO 1850+00
March Lane FROM STATION 5+50 TO 15+00
Scale 1" = 50' SHEET NO. 9
ATTACHMENT C

TRAFFIC ANALYSIS/DATA
TRAFFIC
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
-EXISTING-

The traffic operating conditions on Interstate 5 (I-5) from the Plymouth Road/Ryde Avenue connections in the south to the northern March Lane ramps were evaluated as a part of this analysis. I-5, through the limits of study, is comprised of six (6) mainline travel lanes (3 per direction). The northbound and southbound sections of I-5 between Ryde Avenue/ Plymouth Road and March Lane are Type A weaving areas. Type A weaving areas include single auxiliary lanes which connect an on-ramp with a downstream off-ramp. Using the Highway Capacity Manual (HCM) methods for measuring weaving length, the existing northbound and southbound weaving lengths are 1,010 feet and 1,360 feet, respectively. The southbound off-ramp and northbound on-ramp at March Lane are single lane ramp junctions. Table 1 lists the existing Level-of-Service (LOS) at subject weaving areas and ramp junctions.

The I-5 mainline and March Lane/I-5 existing volumes are depicted in Figure 1. The I-5 volumes are based on the CalTrans 1990 countbook. The peak hour volumes at March Lane were counted on June 18, 1991. The peak hour counts from the 1990 countbook were split 60/40 for the PM peak and 44/56 for the AM peak. The volumes at the I-5 Calaveras River crossing were used as the starting point and volumes were adjusted north and south from that segment.

The Project Study Report (PSR) prepared by CalTrans District 10 for the Plymouth/Ryde Ramp Relocation (May 8, 1990) project identifies the inadequate weaving distance that exists between the on/off ramps at Plymouth Road and Ryde Avenue with the March Lane interchange. The inadequate weaving distance has resulted in a significant number of accidents within the weaving area (primarily rear-end type accidents). A three year Traffic Surveillance and Analysis Survey (TASAS) study from October 1, 1986 through September 30, 1989 was taken between PM 29.2 and PM 29.8 along Route SJ-5 (see Attachment E). The TASAS Table B indicates that the actual accident rate is 1.21 Accs/MV (accidents per Million Vehicles) compared to the expected accident rate of 0.68 Accs/MV. The PSR recommend relocating the existing Ryde Avenue/Plymouth Road ramps south to Alpine Avenue. The project is included in the 1990 HSOPP Plan (Project #741A) for funding in the 1993/94 fiscal year.
<table>
<thead>
<tr>
<th>RAMP WEAVING AREA</th>
<th>WEAVING LENGTH</th>
<th>LOS AM</th>
<th>LOS PM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ramp Junctions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Southbound Off-Ramp @ March Lane</td>
<td>N/A</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>- Diverge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Northbound On-Ramp @ March Lane</td>
<td>N/A</td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td>B</td>
<td>D</td>
</tr>
<tr>
<td>- Merge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weaving Areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 between March Lane and Ryde Avenue (Southbound)</td>
<td>1,360 ft.</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>- Weaving</td>
<td></td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>- Non-Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 between Plymouth Road and March Lane (Northbound)</td>
<td>1,010 ft.</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>- Weaving</td>
<td></td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>- Non-Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N/A: Not applicable  
LOS: Levels-of-Service
LEGEND

ADT
P.M. PEAK HOUR VOLUME
A.M. PEAK HOUR VOLUME

NOTE: 1-5 MAHUNE PEAK HOUR VOLUMES ROUNDED TO NEAREST 10.

EXISTING CONDITIONS 1990
FIGURE 1
<table>
<thead>
<tr>
<th>RAMP WEAVING AREA</th>
<th>WEAVING LENGTH</th>
<th>LOS AM</th>
<th>LOS PM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ramp Junctions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Southbound Off-Ramp</td>
<td>N/A</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>@ March Lane</td>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Diverge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Northbound On-Ramp</td>
<td>N/A</td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>@ March Lane</td>
<td></td>
<td>B</td>
<td>D</td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Merge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weaving Areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 between March Lane and Ryde Ave</td>
<td>1,360 ft.</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>and Ryde Avenue (Southbound)</td>
<td></td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>- Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Non-Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 between Plymouth Road and March</td>
<td>1,010 ft.</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Lane (Northbound)</td>
<td></td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>- Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Non-Weaving</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTERSECTIONS - MARCH LANE/I-5 RAMPS
-EXISTING-

The I-5 southbound and northbound ramps at March Lane are currently operated at three-phase signals. The two ramp/surface street intersections are coordinated to provide optimum progression through the interchange. The two intersections were evaluated using the PASSER III software package developed by the Texas Transportation Institute. The PASSER III program optimizes the signal timing at both ramp/surface street intersections of a diamond interchange and then determines the delay and LOS on individual movements and on an overall interchange basis.

Operational Level-of-Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level-of-Service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the V/C ratio for the lane group or approach in question.

For this analysis, AM and PM peak hour turning movement volumes observed on June 18, 1991 (Tuesday) were used. The traffic counts indicate that 1,319 vehicles utilize the I-5 northbound off-ramp to March Lane during the PM peak hour on an average weekday. As a part of the PM peak hour count, the number of vehicles making the northbound turn and proceeding into the eastbound left-turn lane at Quail Lakes Drive were separated from the right-turning vehicles which continue east on March Lane past Quail Lakes Drive. This separation of right-turning vehicles indicated that 30 percent (or 326 vehicles) of the northbound right-turns have destinations north on Quail Lakes Drive.

Observations between the interchange of northbound I-5 and March Lane and the intersection of Quail Lakes and March Lane have shown there is a large amount of traffic weaving occurring in this section. As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into driveways serving one of the restaurants preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane
at Quail Lakes Drive does not always flow freely due to some of the vehicles making another immediate left-turn into the shopping center north of March Lane.

The existing AM and PM peak hour volumes at the March Lane interchange were analyzed with the existing geometrics and control. The PASSER III results indicated that the southbound ramps intersection is operating at LOS "C" and LOS "C" for the AM and PM peak hours, respectively. The northbound ramps intersection operates at LOS "C" in the AM peak and LOS "C" in the PM peak. Queues forming on the northbound approach are the result of right-turning vehicles stopping in the lane waiting to cross over to the eastbound left-turn lanes at Quail Lakes Drive. There is no known analytical method of incorporating the condition into the overall LOS of the intersection, therefore, it was not included.

The westbound approach at the I-5 northbound/March Lane intersection experiences a lane utilization imbalance where the lane adjacent to the median carries the majority of traffic. Motorists in this lane are preparing to enter the left-turn lanes under I-5 with destinations south on I-5. Therefore, a considerable amount of queuing occurs in the lane adjacent to the median.

Traffic volume projections for the estimated construction year (1995) are depicted in Figure 3.
CONSTRUCTION YEAR TRAFFIC PROJECTIONS (1995)

FIGURE 3

NOTE: I-5 MAINLINE PEAK HOUR VOLUMES ROUNDED TO NEAREST 10.
REVISED 2-17-92

LEGEND

ADT
P.M. PEAK HOUR VOLUME
A.M. PEAK HOUR VOLUME
Traffic Projections
Year 2015
Figure 4

Note: 1-5 Mainline peak hour volumes rounded to nearest 10.

2-9-92
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The long-range Route Concept Report for I-5 through the Stockton area is an eight-lane freeway and a "D" Level-of-Service (LOS). Currently, I-5 reduces from eight mainline lanes to six north of Country Club Boulevard. Figure 4 depicts the 20-year growth traffic projections. With no improvements to I-5 in the subject area, the mainline lanes would operate at-capacity in the southbound direction during the AM peak and in the northbound direction during the PM peak hour. There would be significant northbound mainline queuing that originates at the lane reduction north of Country Club Boulevard. The projected PM peak hour northbound volume at the Calaveras River is 8830 VPH. South of the Plymouth Road on-ramp the PM volume is 8140. Based on these volumes, the facility would operate at-capacity with the concept eight-lanes. Using a per-lane capacity of 1850 to account for 10% trucks, the section of I-5 south of the Plymouth Road on-ramp would operate at a volume-to-capacity ratio of 1.10 which corresponds to LOS "F". With five lanes, the V/C ratio is 0.88 which corresponds to LOS "D". The weaving area from Plymouth to March is forecast to have 2744 weaving vehicles in the PM peak. This would cause significant turbulence in the gore areas of the on/off ramps. The projected PM peak northbound off-ramp volume at March Lane (2400 VPH) warrants a two-lane off-ramp with the auxiliary lane dropping at the ramp. The two-lane off-ramp design would improve the weaving turbulence since the mainline lane adjacent to the auxiliary lane would be used by a portion of the off-ramp traffic up to the diverge point.

The southbound section of I-5 over the Calaveras river is projected to carry 7600 vehicles in the AM peak hour. 2163 weaving vehicles are projected for the March Lane/Ryde Avenue weaving area. The segment of I-5 south of the Ryde Avenue off-ramp has an AM peak hour projection of 7100 which corresponds to a V/C ratio of 0.87 (LOS "D") with four mainline lanes. The four mainline lanes/one auxiliary lane cross-section would provide acceptable service levels in the critical AM peak southbound condition with localized turbulence at the on/off ramp gore areas.

The traffic projections which accompany the ultimate geometrics include an AM peak volume of 1,913 vph on the I-5 southbound on-ramp from March Lane. The AM peak hour projection exceeds the 1,500 vph threshold described in the HDM. Therefore, a two-lane on-ramp is warranted based on the HDM criteria.
The AM peak hour projection for the southbound on-ramp corresponds to the highest directional volumes on mainline I-5 (southbound during the AM peak hour). The I-5 mainline lanes are projected to operate at or near capacity southbound during the AM peak hour. The existing southbound on-ramp continues as an auxiliary lane to the Ryde Avenue off-ramp. The relocation of the Ryde/Plymouth ramps to Alpine Avenue would increase the weaving length associated with the auxiliary lane. The configuration of the existing southbound on-ramp, with the programmed improvements to the auxiliary lane, will support project volumes at an acceptable level.

Maintaining the existing single lane to auxiliary lane configuration would geometrically meter the on-ramp traffic and result in less turbulence with mainline traffic. The increase in auxiliary lane length as a result of the Ryde/Plymouth ramp relocation would provide sufficient length for on-ramp vehicles to merge with mainline vehicles.

The forecasted peak hour traffic demand under the 20-year growth condition warrants the addition of I-5 mainline travel lanes. The forecasted 20-year volumes indicate that I-5 in the subject area would require a ten-lane configuration to maintain LOS "D" service levels. Therefore, planning for such improvements is justified.
INTERSECTIONS - MARCH LANE/I-5 RAMPS
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The I-5/March Lane interchange intersections were analyzed under a 20-year growth conditions. The improvements include widening March Lane to six through lanes and providing dual eastbound left-turns at the northbound ramps under the I-5 structure.

The forecasted traffic volumes were derived from the Stockton City-Wide traffic model using the General Plan buildout with approved projects condition. The roadway network does not include a Calaveras River Bridge to the west of I-5 in order to provide a "worst case" traffic demand condition at the March Lane interchange. On several traffic movements, the forecast demand is lower than the existing count. Changes in travel patterns due to land development and planned roadways (included in model network) are the primary cause of the decrease in volumes.

I-5 Southbound Ramps/March Lane

With Ultimate improvements, the I-5 southbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the southbound ramps intersection it would operate at LOS "F" (AM) and LOS "F" (PM).

I-5 Northbound Ramps/March Lane

With Ultimate improvements, the I-5 northbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the northbound ramps intersection, it would operate at LOS "F" (AM) and LOS "F" (PM).

Year 2015 traffic volume projections are depicted in Figure 4.
ATTACHMENT D

COST ESTIMATE
PROJECT COST ESTIMATE SUMMARY

Type of Estimate (Pre-PSR, PSR, PR, etc.): PSR
Program Code:

Project Description: Project Study Report

Limits: Northbound off-ramp improvements at March Lane/I-5 interchange between PM 29.0/30.6, March Lane widening between I-5 to Quail Lakes Drive.

Proposed Improvement (Scope): Widen March Lane to an eight-lane cross section through the Interstate 5 interchange. Widen I-5 northbound off-ramp to a two-lane exit with three lanes over eastbound easement bridge and four lanes on the approach to March Lane.

ROADWAY ITEMS $ 840,900
STRUCTURE ITEMS $ 536,000
SUBTOTAL CONSTRUCTION $1,376,900
RIGHT-OF-WAY $ 0
TOTAL PROJECT COST $1,376,900

Reviewed by Program Manager _____________________________ (Signature)

Approved by Project Manager _____________________________ (Signature)

Phone No. _____________________________ Date ________________
## Preliminary Project Cost Estimate

### Section 1 Earthwork

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Excavation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imported Borrow</td>
<td>2,371</td>
<td>C.Y.</td>
<td>$ 6.00</td>
<td>$14,250</td>
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<tr>
<td>Clearing &amp; Grubbing</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop Water Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition</td>
<td>40,000</td>
<td>S.F.</td>
<td>0.50</td>
<td>20,000</td>
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**Total Earthwork** $39,250

### Section 2 Structural Section

<table>
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<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCC Pavement (Depth)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCC Pavement (Depth)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Asphalt Concrete</td>
<td>3,084</td>
<td>TON</td>
<td>30.00</td>
<td>92,520</td>
</tr>
<tr>
<td>Lean Concrete</td>
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<td></td>
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<tr>
<td>Cement-Treated Base</td>
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<td>TON</td>
<td>14.00</td>
<td>53,650</td>
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<tr>
<td>Aggregate Base</td>
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<td>TON</td>
<td>10.00</td>
<td>9,250</td>
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<tr>
<td>Aggregate SubBase</td>
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<td></td>
<td></td>
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<tr>
<td>Permeable Material Blanket &amp; Edge Drains</td>
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</table>

**Total Structural Section** $155,620

### Section 3 Drainage

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<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Drainage Facilities</td>
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<tr>
<td>Storm Drains</td>
<td>320</td>
<td>L.F.</td>
<td>50.00</td>
<td>16,000</td>
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<tr>
<td>Pumping Plants</td>
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<td></td>
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<tr>
<td>Project Drainage (X-Drains, oversize, etc.)</td>
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<td></td>
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</tbody>
</table>

**Total Drainage** $16,000

---

* Attach sketch showing typical structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.*
# Preliminary Project Cost Estimate

**10-SJ-5**  
**DIST-CO-RTE**  
**PM:** 29.0/30.6  
**EA:**  
**PP No:**

## Section 4 Specialty Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retaining Walls (7' high)</td>
<td>400</td>
<td>L.F.</td>
<td>120.00</td>
<td>$48,000</td>
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<td>Retaining Walls (3' high)</td>
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<td>L.F.</td>
<td>60.00</td>
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<tr>
<td>Soundwalls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/Animal Passes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relocate Private Irrigation Facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement Planting/Irrigation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscaping/Irrigation (normally separate project)</td>
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<tr>
<td>Erosion Control</td>
<td>3,800</td>
<td>S.Y.</td>
<td>0.41/SY</td>
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<td>Slope Protection</td>
<td>20,000</td>
<td>S.F.</td>
<td>2.00/SF</td>
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<td>Barriers and Guardrails</td>
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<td></td>
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<tr>
<td>Hazardous Waste Work</td>
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<td>Environmental Mitigation</td>
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**Total Specialty Items**  $100,400

## Section 5 Traffic Items

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<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>Lighting</td>
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</tr>
<tr>
<td>Traffic Signals</td>
<td>2</td>
<td>EA</td>
<td>$100,000</td>
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<tr>
<td>Permanent Signing</td>
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<tr>
<td>Traffic Control Systems</td>
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<td>Lump Sum</td>
<td>50,000</td>
<td>50,000</td>
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<tr>
<td>Traffic Management Plan</td>
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<td>Lump Sum</td>
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</tr>
</tbody>
</table>

**Total Traffic Items**  $260,000

**Subtotal Sections 1-5**  $571,100
PRELIMINARY
PROJECT COST ESTIMATE

Section 6 Minor Items
Subtotal Items 1-5  571,100 x 5%
Concrete Curb, Gutter, Sidewalk

<table>
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<tr>
<th>Unit Cost</th>
<th>Section Cost</th>
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<tbody>
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<td>$ 51,700</td>
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TOTAL MINOR ITEMS

Section 7 Roadway Mobilization
Subtotal Sections 1-5
Minor Items

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<thead>
<tr>
<th>Sum</th>
<th>10%</th>
<th>$ 57,100</th>
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<tr>
<td>571,100</td>
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TOTAL ROADWAY MOBILIZATION

Section 8 Roadway Additions
Supplemental
Subtotal Sections 1-5
Minor Items (Schedule 6)
Mobilization
Minor Items (Section 7)
Contingency

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<th>Sum</th>
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<tbody>
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<td>644,100</td>
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TOTAL ROADWAY ADDITIONS

TOTAL ROADWAY ITEMS
(Total of Sections 1-8)  $840,900

Estimate Prepared By:  D.E. Howe  Phone #: 916-782-8688  Date:  26 February 1992

* Use appropriate percentage per 3-8.3 of Project Development Procedures Manual, Pre-PSR 30%-50%, PSR 25%, PR 20%, PAR 15%, After PAR 10%.
PRELIMINARY
PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTF
PM: 29.0/30.6
EA:
PP No:

II. STRUCTURES ITEMS

Bridge Name  EBMUD - Ramp "O"
Widening

Structure Type

Width Ft.
(out to out)

Span Lengths Ft.

Total Area Sq. Ft.

Footing Type
(pile/spread)

Cost Per Sq. Ft.
(incl. 10% mobilization
and 25% contingency)

Total Cost for Structure

SUBTOTAL STRUCTURES ITEMS $536,000

Railroad Related Costs

TOTAL STRUCTURES ITEMS $536,000

COMMENTs

Per Bissell & Karn, Inc., Advanced Bridge Study
dated 18 February 1992

Estimate Prepared By: Walt LaFranchi,
Bissell & Karn

Phone #: 916-363-1304  Date: 26 February 1992

(If appropriate, attach additional pages and backup.)
PRELIMINARY
PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTE
PM: 29.0/30.6
EA:
PP No:

III. RIGHT-OF-WAY

<table>
<thead>
<tr>
<th>Current Values</th>
<th>Escalation Rates</th>
<th>Escalated Values</th>
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<tbody>
<tr>
<td>Acquisition, including excess lands and damages to remainder(s)</td>
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</tr>
<tr>
<td>Utility Relocation (State share)</td>
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</tr>
<tr>
<td>Clearance/Demolition</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>RAP</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Title and Escrow Fees</td>
<td>%</td>
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</tr>
<tr>
<td>TOTAL RIGHT-OF-WAY</td>
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<td>0</td>
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</table>

CONSTRUCTION CONTRACT WORK

COMMENTS

These right-of-way estimates should also be updated on your RW 1-6 Capital Cost screens, as discussed in the February 20, 1991 Draft memo by Richard Golub concerning Right-of-Way Capital Plan Procedures.

Attach Right-of-Way Data Sheet as backup

* Escalated to assumed year of advertising of

Estimate Prepared By: D.E. Howe
Phone #: 916-782-8688  Date: 26 February 1992

(If appropriate, attach additional pages and backup.)
# Bridge Estimate

- **Preliminary Estimate**
- **General Plan Estimate**
- **Engineer's Estimate**

**Cost Index**: 216

**Bridge**: EBMUD Aqueduct Undercrossing (Widen)
**BR NO.:** 29-226S

**Superstructure**: CIP Reinforced Conc Box Girder
**D = 5'-0"**
**Length**: 255.85' x **Width**: 24' = **Bridge Deck Area**: 6,140 S.F.

<table>
<thead>
<tr>
<th>Contract Items</th>
<th>O/S.F.</th>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Amount</th>
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<tbody>
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<td>Remove Concrete Bridge (Portion)</td>
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<td>LS</td>
<td>220</td>
<td>$35.00</td>
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<td></td>
<td>CY</td>
<td>115</td>
<td>45.00</td>
<td>5,175.00</td>
</tr>
<tr>
<td>Structure Backfill (Bridge)</td>
<td></td>
<td>CY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furnish 70T Piling</td>
<td></td>
<td>LF</td>
<td>2,750</td>
<td>11.00</td>
<td>30,250.00</td>
</tr>
<tr>
<td>Drive 70T Pile</td>
<td></td>
<td>EA</td>
<td>42</td>
<td>1050.00</td>
<td>44,100.00</td>
</tr>
<tr>
<td>Structural Concrete, Bridge</td>
<td></td>
<td>CY</td>
<td>540</td>
<td>350.00</td>
<td>189,000.00</td>
</tr>
<tr>
<td>Bar Reinforcing Steel</td>
<td></td>
<td>LB</td>
<td>154,000</td>
<td>.52</td>
<td>80,080.00</td>
</tr>
<tr>
<td>Concrete Barrier (Type 25)</td>
<td></td>
<td>LF</td>
<td>285</td>
<td>50.00</td>
<td>14,250.00</td>
</tr>
</tbody>
</table>

**Comments:**
Pricing assumes this bridge represents only bridge in the contract. Cost excludes seismic retrofit of existing bridge and upgrade of left barrier.

**$87.30**/SF

<table>
<thead>
<tr>
<th>Items</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Total</td>
<td>365,555.00</td>
</tr>
<tr>
<td>Mobilization (10%)</td>
<td>42,839.44</td>
</tr>
<tr>
<td>Sub Total Bridge Items ( /SF)</td>
<td>428,394.44</td>
</tr>
<tr>
<td>Contingencies (25%)</td>
<td>107,093.61</td>
</tr>
<tr>
<td>Bridge Total ( /SF)</td>
<td>535,493.05</td>
</tr>
<tr>
<td>Bridge Removal (Contingency incl)</td>
<td></td>
</tr>
<tr>
<td>Work by Railroad or Utility Forces</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>535,493.05</td>
</tr>
<tr>
<td>For Budget Purposes Say</td>
<td>$536,000.00</td>
</tr>
</tbody>
</table>

**By**: WJY
**Date**: 2/18/92
ATTACHMENT E

R-VALUES AND TRAFFIC INDEXES
Mr. Bob Hammar  
Omni Means. Engineers and Planners  
2240 Douglas Boulevard, Suite 260  
Roseville, CA 95661

Subject: FLEXIBLE PAVEMENT DESIGNS  
I-5 INTERCHANGE AT MARCH LANE AND  
EIGHT MILE ROAD  
STOCKTON, CALIFORNIA

Dear Mr. Hammar:

In accordance with your request, Kleinfelder, Inc. is submitting flexible pavement designs on the I-5 March Lane and Eight Mile Road project in Stockton, California. Our proposal File No. 20-V91-121 dated September 3, 1991, discusses our understanding of the scope of work. Your plans dated April 23, 1990 and July 31, 1991 were used to locate the areas for sampling.

On November 18, 1991, three finished subgrade soil samples were obtained by a representative of Kleinfelder, Inc. at locations listed below, to evaluate Resistance-Values (R-Values) in accordance with Cal-301 for the Caltrans method of pavement design. The samples designated as off-ramps were obtained from the slope areas from material which appeared to be imported fill beneath aggregate base.

Our calculations are based on traffic indices provided by State of California District 10 Traffic Forecasting and Analysis Section and City of Stockton Transportation and Planning Section. We also assume that Class II aggregate base, aggregate subbase, and subgrade materials, along with construction procedures, will comply with applicable Caltrans requirements.
Following is a summary of R-Value test results and recommended pavement sections:

**RESISTANCE-VALUE TESTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Exudation Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1, 18 feet south of existing Eight Mile Road &amp; between north bound and south bound overpasses (Native black silty clay)</td>
<td>28</td>
</tr>
<tr>
<td>#2, North bound off-ramp, 12 feet east of existing I-5 down-ramp &amp; and 200 feet south of Eight Mile Road &amp; (Brown silty sand with aggregate)</td>
<td>41</td>
</tr>
<tr>
<td>#3, North bound off-ramp, 12 feet east of existing I-5 off-ramp &amp; and 250 feet south of March Lane &amp; (Brown silty sand with aggregate)</td>
<td>37</td>
</tr>
</tbody>
</table>

**PAVEMENT SECTION**

<table>
<thead>
<tr>
<th>Thickness of Asphalt Concrete</th>
<th>Thickness of Aggregate Base</th>
<th>Thickness of Aggregate Subbase</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAFFIC INDEX — 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 off-ramp @ March Lane</td>
<td>0.65'</td>
<td>1.35'</td>
</tr>
<tr>
<td>Alternative Section</td>
<td>0.65'</td>
<td>1.00'</td>
</tr>
<tr>
<td>TRAFFIC INDEX — 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eight Mile Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Off ramp @ Eight Mile Rd.</td>
<td>0.55'</td>
<td>0.85'</td>
</tr>
</tbody>
</table>
PAVEMENT SECTION

<table>
<thead>
<tr>
<th>Thickness of Asphalt Concrete</th>
<th>Thickness of Aggregate Base</th>
<th>Thickness of Aggregate Subbase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight Mile Road I-5 overcrossing</td>
<td>0.50'</td>
<td>1.25'</td>
</tr>
<tr>
<td>Alternative Section</td>
<td>0.50'</td>
<td>0.75'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.55'</td>
</tr>
</tbody>
</table>

TRAFFIC INDEX - 9.5

We trust this letter provides the necessary information. If you have any questions, please contact us at your earliest convenience.

Respectfully submitted,

KLEINFELDER, INC.

Dennis A. Quashnick, P.E.
Project Engineer

DAQ:md 11/91
Attachments
SAMPLE LOCATION: March Lane and I-5 Road Improvements
SAMPLE DESCRIPTION: Black organic clay (Native)
DATE SAMPLED: November 19, 1991

EXUDATION PRESSURE - 1b/in²

COVER THICKNESS BY STABILOMETER - ft

COVER THICKNESS BY EXPANSION PRESSURE - ft

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, 1b/in²</td>
<td>270</td>
<td>620</td>
<td>170</td>
</tr>
<tr>
<td>EXPANSION DIAL (.0001&quot;)</td>
<td>0</td>
<td>42</td>
<td>0</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, 1b/ft²</td>
<td>0</td>
<td>182</td>
<td>0</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>26</td>
<td>55</td>
<td>20</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>14.9</td>
<td>12.6</td>
<td>16.3</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, 1b/ft³</td>
<td>114.8</td>
<td>121.0</td>
<td>109.1</td>
</tr>
<tr>
<td>R VALUE AT 300 lb/in² EXUDATION PRESSURE</td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (TI = )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SAMPLE LOCATION: March Lane and I-5 Road Improvements
SAMPLE DESCRIPTION: Brown silty sand with rock, Import
DATE SAMPLED: November 19, 1991

**EXUDATION PRESSURE - lb/in²**

**COVER THICKNESS BY STABILOMETER - ft**

**R - VALUE**

---

**COVER THICKNESS BY EXPANSION PRESSURE - ft**

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, lb/in²</td>
<td>170</td>
<td>130</td>
<td>660</td>
</tr>
<tr>
<td>EXPANSION DIAL (.0001&quot;)</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, lb/ft²</td>
<td>0</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>25</td>
<td>17</td>
<td>72</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>12.0</td>
<td>13.0</td>
<td>9.2</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, lb/ft³</td>
<td>126.2</td>
<td>122.3</td>
<td>130.5</td>
</tr>
<tr>
<td>R VALUE AT 300 lb/in² EXUDATION PRESSURE</td>
<td></td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (TI = )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SAMPLE LOCATION:** March Lane and I-5 Road Improvements  
**SAMPLE DESCRIPTION:** brown eury sand with small aggregate – impact  
**DATE SAMPLED:** November 19, 1991

---

**EXUDATION PRESSURE - 1b/in²**

![Graph showing exudation pressure vs. cover thickness by stabilometer]

**COVER THICKNESS BY STABILOMETER - ft**

---

**COVER THICKNESS BY EXPANSION PRESSURE - ft**

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, 1b/in²</td>
<td>330</td>
<td>160</td>
<td>480</td>
</tr>
<tr>
<td>EXPANSION DIAL (0.0001&quot;&quot;)</td>
<td>7</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, 1b/ft²</td>
<td>30</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>40</td>
<td>25</td>
<td>68</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>13.7</td>
<td>15.2</td>
<td>12.3</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, 1b/ft³</td>
<td>122.3</td>
<td>119.9</td>
<td>119.7</td>
</tr>
<tr>
<td>R VALUE AT 300 1b/in² EXUDATION PRESSURE</td>
<td></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (TI = ...)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ATTACHMENT F

HAZARDOUS WASTE

(INITIAL SITE ASSESSMENT CHECKLIST)
HAZARDOUS WASTE REVIEW

DISTRICT 10 INITIAL SITE ASSESSMENT (ISA) CHECKLIST

Revised 4/30/89

Project Information

District: 10  County: Joaquin  Route: 5  Postmile:  

Description: Interstate 5: Appx. 900 feet north of March Lane south to the southern bank of the Calaveras River. March Lane: Feather River Drive east to Appx. 200 feet east of Da Vinci Drive

Is the project on the exempt list (over): [Signature: D. S. Yarde] 2/7/92

Project Screening:


2. Project Setting: Rural or Urban? City of Stockton: Urban Area

   Current Land use? Interstate Freeway and Municipal Street

   Adjacent Land use? Commercial Retail, Multi-family, High School, Gas Station (Industrial, Local Industry, Commercial, Agriculture, Residential, Other)

Check Federal, State, and local environmental and health regulatory agency records: See Section 3.3 of the HWR prepared by Kleinfelder (24-220158-A00), dated January 24, 1992.

Conduct Field Inspection:

Storage Structures/Pipelines:

Underground Tanks  No  Surface Tanks  No  Transformers  No  Sumps  No  Drains  No  Dampers  No  Lids  No

Contamination:

Spills, Leaks, Illegal dumping, etc.

Potential Asbestos:

(Asbestos, lead, etc.)

Buildings  NA  Sprayed-on fireproofing  NA  Pipe wrap  NA  Friable tile  NA  Acoustical plaster  NA  Serpentine  NA  Paint  NA  Other  NA

6. Other comments and/or observations: Union 76, 7-Eleven, City of Stockton Fire Department: "The Stockton Municipal Utility Dist. Mechanical maintenance operation owns a pump station adjacent to Interstate 5. There have been no documented releases of chemicals from these facilities. See discussion of environmental concerns in Section 4 of the HWR prepared by Kleinfelder, Jan 1992, Report No. 24-920158, dated January 24, 1992.

Isa Determination

Does the project have potential hazardous waste involvement? Based on Records Reviewed, Not at this Time

Is additional ISA work needed before task orders can be prepared for the Preliminary Site Investigation? Not at this Time

NA

Date of additional time required: NA

ISA Conducted by: Kleinfelder

3077 Fite Circle
Sacramento, CA 95827
(916) 366-1701
POTENTIALLY EXEMPT PROJECTS

- pavement reconstruction, resurfacing and placement of seal coat,
- work on bridge structures and appurtenant facilities such as traffic or control devices (beware of existing lead base paints),
- addition of lanes in the median of a divided highway,
- repair and maintenance of the highway and all appurtenant facilities,
- removal and/or replacement of distinctive roadway markings such as painted stripes, raised pavement markers, thermoplastic tape, raised bars, etc.,
- landscaping within highway right of way,
- bridge maintenance painting when performed in conformance with the requirements of air pollution control and water pollution control agencies having jurisdiction,
- abandonment, removal, reconstruction or alteration of railroad grade crossing protection,
- addition or replacement of devices such as glare screen, median barrier, fencing, guardrail, safety barriers, energy attenuators, guide posts, markers, safety cables, ladders, signs,
- installation of noise barriers and alterations to existing buildings to provide for noise attenuation (beware of friable asbestos),
- projects to eliminate hazards within the operating areas,
- modifying existing features such as curbs, dikes, headwalls, slopes, ditches, etc. within the right of way to improve safety,
- maintenance of existing landscaping, native growth and water supply reservoirs (excluding the use of economic poisons, as defined in Division 7, Chapter 2, Calif. Agr. Code),
- maintenance of fish screens, fish ladders, wildlife habitat, etc. to protect fish and wildlife resources,
- minor widening of less than a lane width and/or adding paved shoulders,
- minor operational improvements, such as median and side ditch paving, drainage facilities,
- installation or modification of traffic control systems and devices including addition of new elements, such as signs, signals, controllers, etc.
- installation, removal or modification of regulatory, warning and information signs including new copy on existing on and off premise signs,
- addition of auxiliary lanes within existing right of way (beware of contaminated groundwater from nearby leaking tanks),
- minor alteration or widening of existing grade separation structures.

Use this list carefully; the discovery of hazardous waste after a project has gone to construction will result in long and costly delays.
ATTACHMENT G

MEMORANDUM OF UNDERSTANDING
(BROOKSIDE)

BETWEEN CITY OF STOCKTON AND CALTRANS
MEMORANDUM OF UNDERSTANDING

10-SJ-5

Brookside

The City of Stockton is now processing a major development encompassing over 1,300 acres which consists of residential, employment, commercial and recreational uses. The project is located west of Interstate 5 near the March Lane Interchange. Traffic studies of the proposal indicate that improvements to the I-5/March Lane interchange will be necessary to accommodate the project. These changes will include modification of the March Lane interchange and possible main line changes such as auxiliary lanes and ramp extensions.

This Memorandum of Understanding constitutes solely a guide to the obligations, intentions and policies of the parties involved. It is not intended to authorize funding or project effort nor is it a legally binding contract.

GENERAL

1. All phases of the project, from inception through construction, whether accomplished by the City, Caltrans or others, will be developed in accordance with Federal and Caltrans policies, procedures, practices and standards that apply to Caltrans.

2. The City of Stockton (hereinafter known as the City) is to fund one hundred percent (100%) of all preliminary and design engineering costs, including, but not limited to, costs for preparation of environmental documents. It is the intent of the City of Stockton that all costs incurred as a result of this Memorandum of Understanding will be paid for by the project applicant or by the Stockton Development Impact Fee Program.

3. City to prepare a Project Study Report (PSR), Project Report (PR), and Environmental Document (ED), along with detailed Plans, Specifications and Estimate (PS&E) prepared at no cost to the State of California.

4. All City/Consultant contracts for the various work are to include a provision that the consultant(s) will be available throughout the length of the project.

5. The type of environmental document(s) required will be determined after the Initial Study/Assessment has been prepared.

6. The City will submit preliminary studies to Caltrans for review and approval or comment prior to submittal of information for the Draft Environmental Document (DED).

7. Caltrans will approve all conceptual freeway and interchange geometrics for all of the proposed improvements, including new or modified freeway agreements, if necessary. Proposals for new or revised access on the Interstate System must follow a two-step FHWA procedure: (1) conceptual approval which includes a traffic operational and safety analysis; and (2) NEPA clearance.
8. Caltrans will provide oversight and approval of the PSR, PR and ED. Caltrans will provide advice, review and committee participation at no cost to local government. All other study costs will be borne by others.

9. Any donations of land by property owners must be in compliance with all Federal laws and regulations governing donations.

10. Caltrans will prepare cooperative agreements defining more specifically the responsibilities of the parties for each phase of work at the appropriate time.

11. Caltrans will be responsible for preparation of revised freeway agreements (if required).

12. Lists of general responsibility for detailed steps in the project development process are appended to this MOU as Appendix A. These lists are intended as a guide to Caltrans and City staffs.

District Director, District 10
Caltrans

Date

12/10

Public Works Director
City of Stockton

Date

12/27/85

Attest:
### Appendix A: Planning Phase Activities

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Responsibility</th>
<th>Caltrans</th>
<th>City</th>
</tr>
</thead>
</table>

#### A. Preliminary Coordination

1. Project Identification
2. Furnish Information for PSR
3. Field Review of Site
4. Prepare Draft PSR
5. Finalize and Submit PSR
6. Approve PSR

#### B. Project Authorization

1. Add Project to appropriate programming document.
2. Request O-Phase EA
3. Draft Cooperative Agreement
4. Comments on Cooperative Agreement
5. Finalize Cooperative Agreement
6. Approve and Execute Cooperative Agreement
C. ENVIRONMENTAL ANALYSIS AND DOCUMENT PREPARATION

1. Establish PDT
2. Approve PDT
3. Lead Agency Determination
4. Project Category Determination
5. Prepare Preliminary Environmental Assessment
6. Review and approve preliminary Environmental Assessment
7. Prepare and Submit Notice of Preparation/Notice of Intent
8. Identify Preliminary Alternative and Costs
9. Hold Initial Public Information Meeting
10. Prepare and Submit Environmental Studies and Reports
11. Review and Approve Environmental Studies and Reports
12. Prepare and Submit Draft Environmental Document (DED)
13. Review DED in District
<table>
<thead>
<tr>
<th>PROJECT ACTIVITY</th>
<th>RESPONSIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CALTRANS</td>
</tr>
<tr>
<td>7. Public Notice of Opportunity/Public Hearing and Availability of DED</td>
<td>X</td>
</tr>
<tr>
<td>8. Prepare Master Distribution and Invitation List</td>
<td>X</td>
</tr>
<tr>
<td>9. Review and Approve Distribution and Invitation List</td>
<td>X</td>
</tr>
<tr>
<td>10. Circulate DED to Local Agencies, Clearinghouse and Public</td>
<td>X</td>
</tr>
<tr>
<td>11. Conduct Map Display</td>
<td>X</td>
</tr>
<tr>
<td>12. Make all Arrangements for Public Hearing</td>
<td>X</td>
</tr>
<tr>
<td>13. Review and Approve Public Hearing Arrangements</td>
<td>X</td>
</tr>
<tr>
<td>14. Conduct Public Hearing</td>
<td>X</td>
</tr>
<tr>
<td>15. Prepare Responses to Correspondence and Comment</td>
<td>X</td>
</tr>
<tr>
<td>PROJECT ACTIVITY</td>
<td>RESPONSIBILITY</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>PROJECT ACTIVITY</td>
<td>CALTRANS</td>
</tr>
<tr>
<td>16. Review and Approve Responses to Correspondence</td>
<td>X</td>
</tr>
<tr>
<td>17. Prepare Record of Public Hearing</td>
<td>X</td>
</tr>
<tr>
<td>18. Review and Approve Record of Public Hearing</td>
<td>X</td>
</tr>
<tr>
<td>19. Distribute Record of Public Hearing</td>
<td>X</td>
</tr>
<tr>
<td>20. Prepare and Submit Alternative Selection Request</td>
<td>X</td>
</tr>
<tr>
<td>21. Review and Approve Alternative Selection Request</td>
<td>X</td>
</tr>
<tr>
<td>22. Prepare and Submit Final Environmental Document</td>
<td>X</td>
</tr>
<tr>
<td>23. Prepare and Submit Draft Project Approval Report</td>
<td>X</td>
</tr>
<tr>
<td>24. Finalize and Submit for Approval Project Approval Report, Final Environmental Document and Draft Freeway Agreement</td>
<td>X</td>
</tr>
<tr>
<td>25. Review and Approval of Project Report, Final Environmental Document Draft Freeway Agreement</td>
<td>X</td>
</tr>
<tr>
<td>26. Finalize and Execute Freeway Agreement</td>
<td>X</td>
</tr>
</tbody>
</table>
RIGHT OF WAY DATA SHEET

Dist 10 Co sj Rte 5: PM 29.0/30 E.A. See Environmental Checklist & Initial Stu
Date February 20, 1992 Proj.Des.: March Lane PSR

Subj: Right of Way Data - Alternate N/A

R/W Cost Estimate:
A. Acquisition, including Excess Land and Damages to Remainder $______
B. Utility Relocation (State share) $______
C. Clearance/Demolition $______
D. RAP $______
E. Title and Escrow Fees $______

F. Construction Contract Work: $______

Total R/W Estimate: $______

Parcel Data:

Type X
A
B
C
D

Utilities U4-1
-2
-3
-4
U5-7
-8
-9

RR Involvements
None
C&M Agrmt
Svc Contract
Lic/RE/Clauses
Misc R/W Work:

RAP Displ
Clear/Demo
Const Permits

Total: ______

reas: R/W ______ Excess ______ # of Excess Parcels ______

Description of Major Items of Construction Contract Work:

General Description of R/W and Excess (zoning, use, major improvements, critical
or sensitive parcels, etc.):

None Required XX

NOTE: All Right-of-Way to be acquired adjacent to existing CalTrans Right-of-Way
shall pertain to the jurisdiction of the City of Stockton.

Is there an effect on Assessed Valuation? Yes ______ Not Significant XX ______ No ______

Are Utility Facilities or Rights of Way Affected? Yes ______ No XX (If yes, explain.)

A. Are Railroad Facilities or Rights of Way Affected? Yes ______ No XX (If yes, explain

B. Name(s) of railroad(s) NA ______
C. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facilities be more cost effective than construction of facility to perpetuate the rail services? (See Procedural Handbook Volume 4a, Chapter 440 for further detail.) Yes____ No XX (If yes, explain.)

5. Were any sites with underground tanks, hazardous wastes and/or material found? Yes____ None Evident XX (If yes, attach memorandum per Section 101.026, P&M Procedures Handbook.)

9. Are RAP displacements required? Yes____ No XX (If yes, provide the following information.)

No. of single family_________ No. of business/nonprofit_________
No. of multi-family_________ No. of farm_________

Based on _________ Relocation Impact Statement/Study dated _________, it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

10. Are material, borrow and/or disposal sites required? Yes No XX Unknown____

11. Are there potential relinquishments and/or abandonments? Yes No XX (If yes, explain.)

12. Are there existing and/or potential Airspace sites? Yes No XX (If yes, explain.)

13. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less than formula lead time and/or if significant pressures for project advancement are anticipated.)

14. Is it anticipated all R/W work will be performed by Caltrans' staff? Yes No XX

Evaluations Prepared By:
1. R/W: Name XX Date 2/20/92
2. Railroad: Name Date
3. Utilities: Name XX Date 2/20/92

I have reviewed the above data and find it to be complete, current and accurate.

XX CITY OF STOCKTON Date

C. Environmental Branch
C.R. Strain
T.A. Rasmussen
Utilities
File
M. Ballance
ATTACHMENT I

ADVANCE BRIDGE PLANNING STUDY
BRIDGE ESTIMATE

☐ PRELIMINARY ESTIMATE
☐ GENERAL PLAN ESTIMATE
☐ ENGINEER'S ESTIMATE

BY: W.J.Y. DATE: 2-18-92

COST INDEX = 216

BRIDGE: EBMUD AQUEDUCT UNDERCROSSING (WIDEN) BR. NO.: 29-226S

SUPERERSTRUCTURE: CIP REINFORCED CONC BOX GIRDER D = 5'-0"
LENGTH: 255.85' X WIDTH: 24' = BRIDGE DECK AREA: 6,140 S.F.

<table>
<thead>
<tr>
<th>CONTRACT ITEMS</th>
<th>Q/S.F.</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOVE CONCRETE BRIDGE (PORTION)</td>
<td></td>
<td>LS</td>
<td>220</td>
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<td>7,700.00</td>
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<tr>
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<tr>
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<td>2,750</td>
<td>11.00</td>
<td>30,250.00</td>
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<td>FURNISH 70T PILING</td>
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<td>LF</td>
<td>45</td>
<td>105.00</td>
<td>4,410.00</td>
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<tr>
<td>DRIVE 70T PILE</td>
<td></td>
<td>EA</td>
<td>540</td>
<td>350.00</td>
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<td>.52</td>
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<td>Concrete Barrier (Type 25)</td>
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<td>LF</td>
<td>285</td>
<td>50.00</td>
<td>14,250.00</td>
</tr>
</tbody>
</table>

COMMENTS:
Pricing assumes this bridge represents only bridge in the contract. Cost excludes seismic retrofit of existing bridge and upgrade of left barrier.

$87.30/SF

SUB TOTAL                               | 385,555.00
MOBILIZATION (10%)                      | 42,839.44
SUB TOTAL BRIDGE ITEMS (/SF)            | 428,394.44
CONTINGENCIES (25%)                     | 107,098.61
BRIDGE TOTAL (/SF)                      | 535,493.05
BRIDGE REMOVAL (CONTINGENCY INCL)       | 535,493.05
WORK BY RAILROAD OR UTILITY FORCES     | 535,493.05
GRAND TOTAL                             | 535,493.05
FOR BUDGET PURPOSES SAY                 | $535,000.00
ELEVATION
1" = 50'

BB 1685 + 42.10'
Elev. 22.55'

EB 1687 + 97.95'
Elev. 21.30'

TYPICAL SECTION
1" = 10'

Note:
1. Cost as shown excludes retrofit of existing bridge and upgrade of existing corridor.

Date of estimate: 2/18/92
Str. Depth = 5'0"
Length = 255.85'
Width = 24'
Area = 6140 S.F.
Cost / $' including:
10% mobilization &
25% contingency = $87,300
Total Cost = $536,000

DESIGNED BY
W. LaFranchi 2-92

DRAWN BY
G. Brown 2-92

CHECKED BY

APPROVED BY

EBMUD AQUEDUCT UC (WID)

BISELL & KARN, INC.

ADVANCE PLANNING STUDY

SCALE: AS NOTED
June 15, 1993

Mr. Bob Murdoch  
City of Stockton  
425 N. El Dorado Street  
Stockton, CA 95202

Subject: Brookside Community Addendum to the EIR  
March Lane/I-5 Ramps

Dear Bob:

We have completed our review of the Brookside Community Addendum to the EIR (dated August 25, 1991). This letter summarizes our findings and conclusions on our review.

The EIR concluded that back-to-back left-turn lanes on March Lane would be adequate for both the proposed level of development and a maximum buildout scenario of the Brookside Community. The traffic analysis for the EIR was based on a planning level analysis and the conclusions that were drawn were based solely on an intersection capacity analysis and did not consider the operational details including left-turn queue storage.

The output from the PASSER III traffic analysis software in the Appendix indicates that the internal left-turn queues will be in the range of 12 to 16 vehicles even for the proposed land use alternative, yet the back-to-back left-turn lane arrangement provides storage for a maximum of 8 vehicles in either direction. The vehicles that cannot be accommodated in the back-to-back left-turn lanes would spill into the adjacent through lanes. Left-turn queues that spill into the adjacent through lanes will block one of the three through lanes thus seriously reducing the capacity for the through movements and the left-turn movements below that used for the EIR analysis.

The average queue length projected for the left-turn pockets using the General Plan projections used in the Stockton Streets Improvement project is 9 vehicles in either direction. This average queue length would exceed the available storage with the back-to-back left-turn lanes blocking one of the three adjacent through lanes. The maximum queue lengths projected in the Stockton Streets Improvement project would be about 20 to 23 vehicles in either direction which would impede traffic flow at the respective upstream intersections resulting in potential gridlock in both directions.
There were also some differences in the traffic projections between the EIR and the Stockton Streets Improvement project, however, the differences were not significant. In addition, under both traffic projections (the EIR and the Stockton Streets Improvement project), the projected queue lengths cannot be accommodated with back-to-back left-turn lanes.

In summary, the Brookside Community Addendum to the EIR traffic analysis was a planning level analysis and did not consider left-turn queue storage. The PASSER III output in the Appendix indicates that the back-to-back left-turn lane arrangement would not be able to accommodate the projected left-turn queues which would result in left-turning vehicles blocking one of the adjacent through lanes in either direction. The maximum projected queue lengths would impede traffic flow at the upstream intersections potentially creating a gridlock situation at this interchange.

If you have any questions regarding any of the information above, please call me or Warren Tighe at (510) 763-2061.

Sincerely,

DKS ASSOCIATES
A California Corporation

Thomas J. Krakow, P.E.
Principal

kgaibrooketir.let
MEMORANDUM
ATSS 423-7072

To : GORDON MARTS
    District Director

Date: May 4, 1994

File: 10-SJ-5 P.M. 29.0/30.6
I-5/March Lane IC Mod.
EA 10254-434200

From : DEPARTMENT OF TRANSPORTATION
      Matthew Bailey, Project Manger

Subject : Supplemental PSR Approval

Attached for your review and approval is a Supplemental Project Study Report for the modification of the I-5/March Lane interchange. The original PSR was approved on December 29, 1992 and is an attachment to the Supplemental PSR.

The project was originally proposed to widen March Lane from six to eight lanes within the State R/W. The City of Stockton prepared an addendum to the final EIR for the Brookside Community Project due to additional and subsequent traffic analysis performed for the March Lane/I-5 interchange. This addendum proposed to widen March Lane to ten lanes which would have resulted in non-standard design features including 3.0 m (10') lanes and 0.60 m (2') shoulders. The ten-lane proposal was not agreed by either myself as the project manager or Ken Hintzman as the District's Project Development Coordinator.

The nine-lane alternative as proposed in the Supplement PSR is preferred to provide four-foot shoulders and 4-foot horizontal clearance. It requires the construction of tie-back retaining walls and lowering the grade line of March Lane under I-5 to achieve 4.75 m (15') vertical clearance.

The City of Stockton has secured the additional funds needed to meet the increase in cost. The State share of funding for the project remains at $268,000 (Minor A funds up to a maximum of $300,000). Out of the $2.6 million total estimated cost, the San Joaquin County Council of Governments is contributing $600,000 and the balance of $1,732,000 will be funded by the City of Stockton.
The City of Stockton has selected Mark Thomas and Company to do the design engineering and a kick-off meeting was already held on March 4, 1994. It is anticipated that design will take approximately one year and that construction will begin in the Spring of 1995. Caltrans has prepared a Conceptual Approval Report for FHWA's approval. Once conceptual approval has been granted, the Categorical Exemption/Exclusion can be approved and attached to the Project Report for Approval. It is anticipated that the Conceptual Approval will be granted in June/July and the Project Report will be completed in the same month of 1994.

I recommend that the Supplemental PSR be approved.

Recommended By:  
Matthew Bailey  
Project Manager

Concurred By:  
Asif J. Haq  
Deputy District Director  
Engineering Services

Approved By:  
Gordon A. Marts  
District Director
SUPPLEMENTAL PROJECT STUDY REPORT
March Lane/I-5 Interchange Modifications

GORDON A. MARTS
Caltrans District 10 Director
SUPPLEMENTAL PROJECT STUDY REPORT

1. PREVIOUS STUDIES

Previously proposed scope of improvements conceptually approved by Caltrans in an approved Project Study Report dated December 29, 1992, have been revised as a result of the City of Stockton's "Streets and Roads" study. The study has identified the need for additional left-turn storage on March Lane in State Right-of-Way. Revisions to the previous Project Study Report are discussed below, and all other features remain as discussed in the previous Project Study Report (copy attached).

2. INTRODUCTION

The project within the State Right-of-Way proposes to widen March Lane under I-5, to nine (9) lanes with two (2) 1.2 m (4-foot) shoulders. To widen March Lane under I-5, encroachment into the existing embankments up to the existing piles will occur on both sides of March Lane including construction of the tie-back retaining walls and lowering the grade of March lane approximately 0.30 m (1-foot) to maintain 4.6 m (15-foot) vertical clearance. Widening of March Lane under the I-5 mainline undercrossings will include construction of safety shaped concrete barriers for the protection of bridge elements with sidewalk to be located between the barrier and tie-back walls on both sides of March Lane. The existing two-lane entrances for the southbound and northbound on-ramps will be lengthened by widening to accommodate the dual left-turns at the I-5 ramp/March Lane intersections and to provide sufficient merging distance. The northbound off-ramp will be widened to provide a two-lane exit with three lanes over the EBMUD aqueduct bridge and four lanes at the ramp terminus. The southbound off-ramp terminus will include widening to three lanes. The physical components of an ramp metering system located in the ground or under pavement will be placed as part of this project.

3. ENVIRONMENTAL CLEARANCE

The project includes widening March Lane under I-5, adding lanes to March Lane between Feather River Drive and Quail Lakes Drive, and widening the on and off ramps. Existing City Right-of-Way on March Lane will be expanded to accommodate the additional roadway width. The City Right-of-Way increase on the east side of I-5 will be comprised of an area approximately 500 feet (152.4m) long and varying from 5-23 feet (1.52-7m) wide. The Right-of-Way increase on the west side of I-5 will be comprised of a area of approximately 800 feet (243.9m) long and varying from 4-25 feet (1.22-7.65m) wide. Both of these areas are within the City of Stockton, therefore, State Right-of-Way will not need to be increased to implement the project.

Federal NEPA clearance and conceptual approval is required because the project includes increasing access onto an Interstate route by widening the street width within the current access control width. A portion of the project is also being funded with Regional Surface Transportation Program (Federal) funds.
It is anticipated that the environmental clearance will include a Categorical Exemption (CE) under CEQA with Caltrans as the lead agency and a Categorical Exclusion under NEPA with FHWA as the lead agency.

4. NON-STANDARD DESIGN FEATURES

Three non-standard features are proposed and described in more detail in the Design Fact Sheets attached. 3.3m (11-foot) lanes in lieu of 3.6m (12-foot) lanes and 1.2m (4-foot) shoulders/horizontal clearance are proposed in lieu of 2.4m (8-foot) shoulders/horizontal clearance. The non-standard features are necessary to afford the number of lanes needed to provide acceptable levels of service at the March Lane/I-5 ramp intersections. To provide standard lane, shoulder or horizontal clearance widths, the existing I-5 mainline freeway undercrossings would require replacement and the cost would be prohibitively expensive in addition to impacts to the traveling public by detours and traffic lane closures.

5. FUNDING/SCHEDULING

Caltrans District 10 and the City of Stockton have entered into a Cooperative Agreement to identify the roles and responsibilities of each agency from preliminary engineering through final design. Caltrans is preparing the Project Report and is contributing $96,000 to the final design costs with the remaining design costs being paid for by the City of Stockton. The interchange construction improvements are jointly funded by the City of Stockton, San Joaquin County Council of Governments and Caltrans with an understanding (stipulated in Cooperative Agreement) that 50% of the cost to widen the EBMUD bridge on the I-5 northbound off-ramp (not to exceed $300,000) will be funded by the State. State construction funding will be derived from "Minor A Project" funds in the 1994/5 fiscal year.

It is anticipated that the Project Report will be completed in April of 1994 with PS&E to be completed by a consultant under contract to the City by January of 1995. Construction would start in the spring of 1995. A portion of the City funding for the project is being funded with Regional Surface Transportation Program (Federal) funds.

6. DISTRICT CONTACT

Questions or comments regarding this Supplemental Project Report may be directed to:

Caltrans - District 10
1976 East Charter Way
Stockton, CA 95201

Matthew E. Bailey, Chief (209) 948-7072
Special Funded Projects Branch A ATSS 423-7072

7. REGISTERED CIVIL ENGINEER STAMP

This report was prepared under my direction and responsible charge. I attest to the technical information contained herein and have judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions and decisions are based.

Francisco Miranda, P.E.
Registered Civil Engineer

5/5/94
8. **PROJECT MANAGER**

The designated project manager for this project is Matthew E. Bailey. He has been involved with the development of this project and concurs with this project proposal.

9. It is recommended that the improvements proposed in the supplemental Project Study Report be approved.

Reviewed and Recommended By:
Matthew E. Bailey
Project Manager, Caltrans

Concurred By:
Asif J. Haq
Deputy District Director,
Engineering Services, Caltrans

Approved By:
Gordon A. Marts
District 10 Director, Caltrans

10. **ATTACHMENTS**

A) VICINITY MAP
B) TYPICAL CROSS-SECTION
C) GEOMETRIC LAYOUT SHEET
D) COST ESTIMATE
E) DESIGN FACT SHEET
F) PROJECT STUDY REPORT
PROJECT COST ESTIMATE SUMMARY

Type of Estimate (Pre-PSR, PSR, PR, etc): PSR

Project Description: Project Study Report

Limits: Northbound off-ramp improvements at March Lane/I-5 interchange between PM 29.0/30.6, March Lane widening between I-5 to Quail Lakes Drive.

Proposed improvement (Scope): Widen March Lane to a nine-lane cross section through the Interstate 5 interchange. Widen I-5 northbound off-ramp to a two-lane exit with three lanes over EBMUD easement bridge and four lanes on the approach to March Lane.

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<th>Item</th>
<th>Amount</th>
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<tr>
<td>PSR ROADWAY ITEMS</td>
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<td>ADDITIONAL ROADWAY</td>
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<tr>
<td>PSR STRUCTURE ITEMS</td>
<td>$536,000</td>
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<tr>
<td>ADDITIONAL STRUCTURES</td>
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<tr>
<td><strong>SUBTOTAL CONSTRUCTION</strong></td>
<td><strong>$2,480,000</strong></td>
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<tr>
<td>CITY RIGHT-OF-WAY</td>
<td>$94,000</td>
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<tr>
<td><strong>TOTAL PROJECT COST</strong></td>
<td><strong>$2,574,000</strong></td>
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Reviewed by Program Manager

(Signature)

Approved by Project Manager

(Signature)

Phone No.

ATTACHMENT D
## PRELIMINARY COST ESTIMATE

**MARCH LANE UNDERCROSSING**

<table>
<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>AVERAGE PRICE PER UNIT</th>
<th>COST</th>
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<tr>
<td>AC</td>
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<tr>
<td>AB</td>
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<td>AS</td>
<td>1,160 CY</td>
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<td>STRUCTURE EXC.</td>
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<td>TYPE 50 BARRIER</td>
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<td>CHAIN LINK FENCE</td>
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<td>7,100</td>
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<td></td>
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<tr>
<td><strong>10% MINOR ITEM</strong></td>
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<td>129,400</td>
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<td><strong>10% MOBILIZATION</strong></td>
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<td>14,234</td>
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<td><strong>10% ROADWAY ADDITION</strong></td>
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<td>14,234</td>
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<tr>
<td><strong>25% CONTINGENCY</strong></td>
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<td>35,585</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$207,000</strong></td>
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# Preliminary Cost Estimate for Retaining Wall

## March Lane Undercrossing

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<tr>
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<th>Quantities</th>
<th>Average Price Per Unit</th>
<th>Costs</th>
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<td>Existing Slope Exc.</td>
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<td>Toe Wall Exc.</td>
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<td>Slope Paving Exc.</td>
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<td>Struct. Concrete Retaining Wall</td>
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<td>Pervious Backfill Matl.</td>
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<td>Bar Reinforcing Steel</td>
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<td>Architectural Treatment</td>
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<td>24,927</td>
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</table>

| Total Mobilization                | 663,472    |
| Total Contingency                 | 165,868    |

**Total Costs:** $896,000
FACT SHEET
EXCEPTIONS FROM MANDATORY DES.

PREPARED & RECOMMENDED BY:

Francisco R. Miranda
FRANCISCO MIRANDA
Project Engineer

5-31-94
Date
(209) 948-6199
Telephone

CONCURRED BY:

Matt Bailey
Project Manager

6-30-94
Date
(209) 948-7072
Telephone

APPROVED BY:

Ken Hintzman
Project Development Coordinator
for Chief, OPPD

6-30-94
Date
I. PROPOSED PROJECT AND NONSTANDARD FEATURE(S)

A. Project Description:

The project within State right of way proposes to widen March Lane under Interstate 5 to nine lanes (six through lanes, and three left turn lanes) with two 4-foot shoulders. To widen March Lane under Interstate 5, encroachment into the existing embankments up to existing piles will occur on both sides of March Lane including construction of tie-back retaining walls and lowering the grade of March Lane approximately 1 foot to maintain 15 foot vertical clearance. Widening of March Lane under Interstate 5 will include installing safety shaped concrete barriers for the protection of bridge elements with sidewalk to be located between the barrier and tie-back walls on both sides of March Lane. The existing two-lane entrances for the southbound and northbound on-ramps will be lengthened by widening to provide storage for ramp metering and standard merging distance. The northbound off-ramp will be widened to provide a two-lane exit with three lanes over the EBMUD aqueduct bridge and four lanes at the ramp terminus. The southbound off-ramp terminus will include widening to three lanes. The physical components of a ramp metering system located in the ground or under pavement will be placed as part of this project.

B. Nonstandard Features:

1. March Lane street widths under the Interstate 5 bridge will be reduced from 12 to 11 feet.

C. Total Project Cost:

The City of Stockton is proposing the interchange modifications and will act as the lead agency. The total estimated construction cost including City work is $2,600,000. The interchange improvements will be funded jointly by the City of Stockton, San Joaquin County Council of Governments (acting as the Local Transportation Authority) and Caltrans. Caltrans participation in the project is limited to 50% of the cost to widen the EBMUD bridge ($268,000) on the Interstate 5 northbound off-ramp (not to exceed $300,000). The balance of the project costs of $2,332,000 will be funded by the City of Stockton.

II. EXISTING CONDITIONS

Interstate 5 through the project area is a 12-foot six-lane freeway. Interstate 5 serves as an interstate, intrastate
and major interregional route for recreational and commercial traffic. It also serves as a major local commuter route through the City of Stockton. During the afternoon peak hour commute, the March Lane NB off-ramp currently is congested onto the mainline freeway auxiliary lane forming a queue.

March Lane has two 12-foot through lanes with 6' shoulders per direction under Interstate 5 with 12-foot one back-to-back and one left-turn lanes. All four ramps are currently single lane ramps widened to two lanes at the ramp terminus/entrances. The existing northbound off-ramp is two lanes over the 24 foot EBMUD aqueduct bridge and is striped with 0 foot shoulders.

III. STANDARD FOR WHICH EXCEPTION IS REQUESTED

The basic lane width shall be 12 feet for multilane highways as indicated in the California Highway Design Manual Index 301.1.

IV. REASON FOR REQUESTING EXCEPTION

This exception is being requested because the proposed project is the only reasonable alternative to relieve the impact of existing traffic congestion which currently queues and backs up onto the Interstate 5 mainline. Other alternatives that were considered are listed below:

A. Standard 12-foot lanes and 4-foot shoulders would require replacing the existing Interstate 5 structures with longer structures. The excessive construction costs and traffic management costs make this alternative unfeasible.

B. No build. Currently, Brookside Estates is under construction and will generate approximately 50,000 vehicle trip-ends on a daily basis. The subject interchange will serve a significant amount of the Brookside Estates traffic. Increases in traffic volumes generated from the Brookside Estates project coupled with traffic volume growth from other approved projects throughout Stockton will impact traffic operations at the subject interchange to unacceptable service levels.

The segments of March Lane adjacent to I-5 will match the lane widths of March Lane under I-5. Beyond the two adjacent segments, east and west of I-5, March Lane will have equal or narrower lane widths than those within the State right of way.
Without the proposed interchange modifications, both March Lane/I-5 ramp intersections are projected to operate at LOS "F" (unacceptable) conditions. Projected increases in east/west traffic and traffic oriented to the south on I-5 are the primary causes of the forecasted unacceptable service levels. With the proposed geometric and traffic control improvements, the interchange is projected to operate at LOS "D" during peak demand periods.

V. ADDED COST TO MAKE STANDARD

The added cost required to meet the mandatory design standards as stated in Alternative A below would require replacing the existing Interstate 5 structures with longer structures which will be an additional approximately $6,000,000 that makes this alternative unfeasible.

VI. TRAFFIC DATA

Traffic Data for the existing and projected conditions are shown in the attachments.

VII. ACCIDENT ANALYSIS

According to TASAS Table B accident summary, in the three-year period from 1991 to 1993, twenty-two accidents were recorded to have happened in March Lane within the State right of way. All accidents were concentrated around the two ramp/March Lane intersections, 10 around the NB ramps/March Lane intersection and 12 around the SB ramps/March Lane intersection.

Eight (36%) of the 22 accidents were sideswipe type. The rest were broadside (32%), rear-end (20%) and other type (12%). Analyzing the traffic reports for each of these 22 accidents it is possible to conclude that the sideswipe accidents are the ones that could be more closely associated to lane width.

Out of the 8 sideswipe accidents, 6 occurred at the intersection of March Lane with the SB freeway ramps. Therefore, this intersection represents the worst case-scenario.

Out of the 6 sideswipe accidents that occurred at the intersection of March Lane with the SB freeway ramps, only 4 can be associated to lane width; three of them happened when drivers were turning from the SB off-ramp onto EB March Lane, and one while turning from WB March Lane onto the SB on-ramp.
The expected rate of accidents for a four-legged signalized intersection in an urban area is 0.54 according to Caltrans’ 1991 Accident Data on California State Highways Book. The actual rate of accidents for the movement from the SB-off ramp onto EB March Lane is 0.43 accidents per million vehicles computed with a left-turning volume of 6400 vpd (turning volume for 1990). This actual rate of 0.43 is less than the expected accident rate of 0.54.

VIII. INCREMENTAL IMPROVEMENTS

No incremental improvements are feasible. Widening to eight lanes and standard shoulders does not provide enough storage for left turning vehicles under the bridge. On the other hand, widening to ten lanes would require replacement of the freeway bridge structures, which is too costly as mentioned in VI above.

IX. FUTURE CONSTRUCTION

Caltrans has completed a Project Study Report to widen Interstate 5 from six to eight lanes from Monte Diablo Avenue to north of Eight Mile Road. A portion of this widening project is expected to be proposed for programming in the next STIP. The Interstate 5 widening project will not correct the nonstandard design features for which this design exception is being requested.

X. PROJECT REVIEWS, CONCURRENCE

The proposed project has been reviewed on separate dates in January 1994 and concurred with by Jerry Champa, Headquarters Geometrician; Ken Hintzman, Project Development Coordinator; and George Wishman, FHWA Area Engineer. Previously, the City of Stockton had proposed 10 foot lanes and 0 foot shoulders/horizontal clearance in an effort to fit ten lanes on March Lane under Interstate 5. Upon discussions between Caltrans and the City and on the recommendation of the Project Manager and Project Development Coordinator, the nine lane concept with 11 foot lanes and 4 foot shoulders/horizontal clearance is being proposed for approval of the nonstandard design features.

XI. ATTACHMENTS

Layout Sheet, Existing Conditions
Layout Sheet, Proposed March Lane Widening
Traffic Data, Existing Conditions (1990)
Traffic Data, Projected Conditions (2015)
Cross Section
MEMORANDUM
ATSS 423-7076

To : Gordon Marts

Date: December 4, 1992

File: 10-SJ-99 PM 29.0/30.6
1-5 March Lane IC
10-43420K

From : DEPARTMENT OF TRANSPORTATION

Subject : Project Study Report Approval

Attached for your review and approval is a Project Study Report (PSR) to widen ramps and construct auxiliary lane at the Interstate 5 March Lane Interchange. The PSR was initiated as a result of mitigation of traffic impacts by the Brookside project being developed by Grupe Development Company (Conditions of approval between City of Stockton and Grupe attached).

Interstate 5 serves as a major interregional route for recreational and commerce traffic and also serves as a major commute route. During the afternoon peak hour commute the March Lane NB off-ramp currently stacks up onto the mainline freeway auxiliary lane.

The PSR discusses one alternative in detail. Other alternatives such as constructing an "urban interchange" or a "par clo" interchange are more expensive and are eliminated from consideration because of the increased costs due to structure work or right of way impacts.

As an option for consideration by the City, Caltrans would support construction of an interim improvement as follows: Widen NB off-ramp approach to three lanes consisting of a combined left/through lane and dual right turn lanes. This requires that March Lane be limited to two through lanes traveling east between the March Lane SB & NB ramps and require four through lanes traveling east between the March Lane NB ramps and Quail Lakes/Da Vinci Drive. These geometrics are similar to the existing Hammer Lane NB off ramp. The cost of the work within the State R/W for the interim improvement would be less than $300,000 allowing the project to be constructed as an encroachment permit project. All project development work including environmental clearance and preparation of the plans would be the responsibility of the City of Stockton and Caltrans would review the plans to issue an encroachment permit. The interim project would be beneficial to help relieve the traffic from stacking up onto the mainline auxiliary lane when built. A disadvantage of the interim project is that traffic would be subjected to construction on the ramps on two separate occasions. There may also be negative reaction by the public and impacted businesses if the timing between the interim and ultimate project construction is not several years.

The project was approved on April 28, 1992 for Minor A program funds for 50% of the cost of widening the EBMUD bridge ($268,000) for the 92-93 or 93-94 fiscal year. The actual year when the funds will be needed will most likely be later to correspond to the schedule shown in the Measure K Strategic Plan. The Strategic Plan shows the San Joaquin County Council of Governments acting as the Local Transportation Authority (SJCOG) contributing $600,000 to the project and the City of Stockton would fund the remaining amount of the construction cost of $508,900. It is assumed a portion of the City's share of the project will be funded from the Stockton Development Impact Fee Program.
December 4, 1992

The City of Stockton has indicated they will request the SJCOG to request Caltrans to prepare the Project Report and Environmental Document (PR&ED) for the ultimate project and provide oversight of preparation of the Plans, Specifications and Estimates. This is consistent with State Statutes where the majority of a measure project is funded by local money. This project is identified in the resource allocations made to the Special Funded Projects branch for the 92/93 and 93/94 fiscal years.

I recommend that the PSR be approved and for Caltrans staff to proceed to prepare the PR&ED for the ultimate project.

Recommended: Matthew E. Bailey
MATTHEW E. BAILEY

Approved: Gordon A. Marts
JAMES B. GIOTTONINI
PROJECT STUDY REPORT

MARCH LANE/I-5 INTERCHANGE MODIFICATIONS

ON ROUTE: INTERSTATE 5
Between PM 29.0
And PM 30.6

Gordon A. Marts
District Director
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PROJECT STUDY REPORT

1. INTRODUCTION

The project proposes to widen March Lane to an eight-lane cross-section through the Interstate 5 interchange and widen the I-5 northbound off-ramp to a two-lane exit with three lanes over the EBMUD easement bridge and four lanes on the approach to March Lane. One of the four approach lanes will be signed as: "Quail Lakes Drive (North)". Additionally, a second eastbound left-turn lane at the March Lane/Quail Lakes Drive intersection will be added. Widening of March Lane under I-5 will include increasing the height of the retaining walls on both sides of March Lane. The existing two-lane entrance for the northbound on-ramp will be lengthened by widening to the north to accommodate the proposed dual eastbound left turn lanes at the I-5 northbound ramps/March Lane intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. No non-standard design features are proposed. Widening of March Lane between Quail Lakes Drive and the I-5 northbound ramp intersection to eight lanes is also proposed as separate work within the City's jurisdiction.

The project is needed to increase the traffic-service capacity of the interchange necessary to support forecast traffic volumes at acceptable levels of service. The City of Stockton is proposing the interchange modifications and will act as the lead agency.

The total estimated construction cost including City work is $1,903,900. The total cost has been separated into the cost to construct the improvements within State Right-of-Way requiring State oversight and costs within the City's Right-of-Way. The two costs are presented below:
Construction Cost

March Lane (in State R/W) and
1-5 Northbound On/Off-Ramp Improvements  $1,376,900

March Lane (City R/W)
Improvements  $ 527,000

TOTAL:  $1,903,900

The interchange improvements within State R/W will be funded jointly by the City of Stockton, San Joaquin County Council of Governments (acting as the Local Transportation Authority) and Caltrans. Caltrans participation in the project is limited to 50% of the cost to widen the EBMUD bridge (~$268,000) on the I-5 northbound off-ramp (not to exceed $300,000). Street improvements within City R/W will be funded 100% by the City of Stockton.

2. BACKGROUND

Route 5 is a north/south interstate freeway traversing California from the Mexican Border at Tijuana to the Oregon State line north of Yreka (about 797 miles). In District 10, I-5 traverses Merced, Stanislaus and San Joaquin Counties from the Fresno County Line south of Los Banos to the Sacramento County Line near Galt (about 110 miles). It is a Federal Aid Interstate (FAI) route which was added to the Freeway and Expressway (F&E) System when the F&E System was established in 1959. The existing facility through the project area is a six-lane freeway. Route 5 is functionally classified as a Principal Arterial (PA) throughout its length. It is a major truckline route of statewide and national significance, and is part of the Interregional Road System (IRRS) adopted in July, 1989. It serves interstate, intrastate and interregional traffic and has also become a local commuter route through the City of Stockton.

CalTrans has completed a Project Study Report to widen Interstate 5 from six to eight lanes from Monte Diablo Avenue to north of Eight Mile Road. This widening project is expected to be proposed for programming in the 1994 STIP, with a proposed construction year of approximately 2001.

Auxiliary lanes on I-5 extend south across the Calaveras River bridges from the northbound off-ramp and southbound on-ramp. The southbound on-ramp auxiliary lane terminates as an off-ramp to Ryde Avenue. The northbound off-ramp auxiliary lane begins as a single lane on-ramp from Plymouth Road. A Project Study Report was approved in June, 1990 for the Plymouth/Ryde ramp relocation (PM 28.90/29.51). This
programmed Caltrans project includes the relocation of both ramps, south, to Alpine Avenue significantly increasing the weaving distance associated with the auxiliary lanes and is scheduled for construction in 1994.

March Lane currently has two through lanes per direction under I-5 with dual left-turn lanes on the westbound approach to the I-5 southbound ramp intersection. A single left-turn lane is located on the eastbound approach to the March Lane/I-5 northbound ramp intersection.

Brookside Memorandum of Understanding was signed by the City of Stockton and CalTrans on December 27, 1989 (Attachment "G").

Preliminary studies were conducted to analyze the feasibility and need for a Calaveras River bridge west of I-5. Traffic projections for this PSR assumed no Calaveras River bridge to represent a "worst case" condition. From a traffic demand standpoint, the 20-year volumes at March Lane/I-5 without the bridge are acceptable (LOS "D" or better) with the Ultimate modifications to the interchange; however the Calaveras River bridge is needed to obtain acceptable LOS "D" or better for the I-5 mainline. The addition of a Calaveras River bridge would reduce "local" traffic on I-5 and improve traffic operations at the I-5/March Lane interchange. An alternatives analysis of the Calaveras River bridge is currently being prepared as part of the City of Stockton's "streets and roads" study being performed by a consultant.

3. **NEED AND PURPOSE**

There is an existing deficiency at the intersection of I-5 northbound ramps and March Lane. Field observations and manual traffic counts have shown that there is a significant amount of weaving occurring in the section of March Lane between the I-5 interchange and Quail Lakes Drive.

As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into commercial driveways preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane at Quail Lakes Drive does not always flow freely due to some of the vehicles making another stop and immediate left-turn into the shopping center north of March Lane. As vehicles in the northbound right-turn lane wait for gaps in the eastbound traffic stream to cross March Lane, standing vehicle queues form on the northbound off-ramp. During peak demand periods, these queues have been observed backing-up into the auxiliary lane on I-5. The queuing further compounds the turbulence associated with the short weaving distance between the northbound on-ramp from Plymouth Road and the March Lane off-ramp.
In 1988, the Brookside Community Project (Brookside Estates) was approved by the City of Stockton and annexed into the City. The approved Brookside Estates project will develop 1,300 acres along March Lane west of I-5. The Brookside Estates project will develop a mixture of land use types including high- and low-density residential, administrative, professional, commercial, recreational and institutional.

Brookside Estates which is currently under construction, will generate approximately 50,000 vehicle trip ends on a daily basis. The subject interchange will serve a significant amount of the Brookside Estates traffic. Increases in traffic volumes generated from the Brookside Estates project coupled with traffic volume growth from other approved projects throughout Stockton will impact traffic operations at the subject interchange to unacceptable service levels.

Forecast volumes on mainline I-5 indicate the need for mainline widening and providing a new Calaveras River bridge crossing to handle much of the local traffic which is now forced to use Interstate 5 due to an inadequate parallel local road system. I-5 mainline operations will be impacted by increases in regional trips through the City of Stockton and planned/approved development which will be served by I-5. Without a new local road crossing of the Calaveras River, peak hour volumes on I-5, south of March Lane, are forecast to exceed 13,500 (8830 NB/5020 SB) in PM peak hour. The addition of a parallel bridge over the Calaveras River would reduce volumes on Interstate 5 and at the Interstate 5/March Lane interchange. However, mainline and interchange volumes would remain large enough to warrant widening of Interstate 5 and modifications to the interchange. Widening of Mainline I-5 through the March Lane Interchange were addressed in the CalTrans PSR for I-5 mainline widening which was approved on September 22, 1992.

Without the proposed interchange modifications, both March Lane/I-5 ramp intersections are projected to operate at LOS “F” (unacceptable) conditions. Projected increases in east/west traffic and traffic oriented to the south on I-5 are the primary causes of the forecasted unacceptable service levels. With the proposed geometric and traffic control improvements, the interchange is projected to operate at LOS “D” during peak demand periods.

4. ANALYSIS OF PROPOSAL

The project within State Right-of-Way proposes to widen March Lane under I-5, to eight (8) 12-foot lanes (six through lanes and back-to-back dual left-turn lanes). To widen March Lane under I-5, encroachment into the existing embankments will occur on both sides of March Lane. It also proposes to widen the I-5 northbound off-ramp to a two-lane exit with further widening to a three-lane section at the bridge over the East Bay Municipal Utility District (EBMUD) easement. North of the EBMUD easement bridge, a taper to four lanes is proposed. The four lanes on the northbound off-ramp approach to March Lane will include a left-turn lane, a shared through plus left-turn lane, a
controlled right-turn lane to eastbound March Lane, and an uncontrolled free right-turn lane. The existing two-lane entrance on the 1-5 northbound on-ramp will be extended north and widened, tapering to one lane prior to the gore area with mainline 1-5. The northbound on-ramp widening is necessary to accommodate the eastbound dual left turn lanes proposed at the 1-5 northbound off-ramp intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. All of the improvements will be constructed within existing State Right-of-Way boundaries. None of the proposed improvements would reduce sight distance at the interchange.

In conjunction with the proposed improvements within State Right-of-Way, March Lane will be constructed between I-5 northbound ramps and Quail Lakes Drive to include four eastbound lanes with dual left-turn lanes to northbound Quail Lakes Drive (see Attachment "B"). The eastbound dual left-turn lanes will be protected with a one foot wide raised median to restrict weaving from the northbound off-ramp right turn lane. The existing Denny’s parking lot in the southeast quadrant of the interchange will require modification to provide the necessary City Right of Way for the March Lane westbound right turn lane. Additional City Right-of-Way is required along the south side of March Lane.

The Traffic Index (TI) used for the design of the ramp is listed in Attachment E. The project proposal includes no non-standard design features. The 20-year growth traffic projections were analyzed with the proposed Ultimate geometrics and the results indicated that Level-of-Service "D" or better is expected during the peak hours of traffic operations (see Attachment "C").

5. SYSTEM PLANNING

The long-range route concept for I-5 through the Stockton area is an eight-lane freeway and a Level-of-Service (LOS) "D". The existing facility is six lanes to the north of Route 12 (including through the project), and four lanes on north to the Sacramento County Line.

The 1989 RDP proposed to upgrade the six-lane facility to eight lanes from north of Country Club Boulevard to Hammer Lane, with the possibility of extending the eight lanes north to Eight Mile Road. This proposal is also a current candidate list HE-13 project (No. 739) with a current estimated cost of $34.9 Million. The San Joaquin County Council of Governments (COG) included this project as a Flexible Congestion Relief (FCR) Program project in their 1992 RTIP. It is also anticipated that there may be some local developer participation in the cost of these added lanes through mitigation process. The additional lane in each direction would be added in the existing 60-foot median.
6. **HAZARDOUS WASTES**

There are no hazardous waste sites located within the project limits (see Attachment F).

7. **TRAFFIC MANAGEMENT PLAN**

Significant delays due to construction are anticipated and, therefore, a Traffic Management Plan (TMP) is needed for this project. The existing queuing problem on the northbound off-ramp would be compounded during construction when EBMUD bridge would operate with a single lane. Lane reductions on March Lane would also contribute to significant delays. District 10 Division of Traffic Operations will be consulted to develop a concise TMP. The construction cost estimate includes $60,000 plus contingencies for traffic management and control during construction.

8. **ENVIRONMENTAL CLEARANCE**

A. **PROJECT SCOPE**

The project includes widening of March Lane to an eight-lane cross section under I-5, adding lanes to March Lane between I-5 and Quail Lakes Drive, and widening the northbound on and off ramps. The environmental analysis limits of the project will extend from the western State Right-of-Way on March Lane to Quail Lakes Drive (1,350 feet). The western State Right-of-Way limit on March Lane is located 150 feet west of the March Lane/I-5 southbound on/off ramps intersection. The analysis will also include 1,360 feet along the I-5 northbound off-ramp and 1,560 feet along the I-5 northbound on-ramp. Existing Right-of-Way on March Lane, immediately east of the northbound ramps intersection, will be expanded to accommodate the additional roadway width. The Right-of-Way increase on the north side will be comprised of an area approximately 220 feet long and 10 feet wide and the Right-of-Way increase on the south side will be comprised of a triangular shaped area of approximately 100 feet long and 10 feet wide at the base of the triangle. Both of these areas are within the City of Stockton, therefore, State Right-of-Way will not need to be increased to implement the project.

Federal NEPA clearance is required because the project includes increasing the capacity of a ramp on an interstate route.

B. **SETTING**

The subject interchange is located in an urbanized area. Land uses in the vicinity of the project area include commercial uses along the March Lane corridor including restaurants, motels and retail businesses. To the north and south of the commercial uses along March Lane, residential land uses exist in the form of single family homes.
There are no waterways or streams within the environmental analysis limits. Vegetation consists of highway landscaping within existing Right-of-Way.

C. PREVIOUS ENVIRONMENTAL STUDIES

An EIR was prepared for the Brookside Community Project proposed by Grupe Development Company: State Clearinghouse No. 88022316. The lead agency for the EIR was the City of Stockton and the Final EIR was certified on April 17, 1989. The EIR (with addenda) was recertified on November 4, 1991. Improvements to the March Lane/I-5 interchange were identified in the EIR as mitigation for the development.

An EIR was prepared for the City of Stockton General Plan Revision, State Clearinghouse No. 88072506. The lead agency for the EIR was the City of Stockton. The Final EIR was certified on January 16, 1990.

D. STUDIES REQUIRED

Biological

A Natural Environmental Study (NES) will need to be prepared by a professional biologist. The study will certify whether or not any endangered species are present.

The Burrowing Owl has been known to be in the subject area and will be evaluated by the biologist.

Physical

- Noise Analysis

A noise analysis (study) will need to be prepared for the environmental document to meet federal standards. It is anticipated that noise walls at the subject interchange would not be required.

- Air Quality Analysis

The subject interchange is located in the San Joaquin Valley Air Basin which has been designated as an air quality non-attainment area by the U.S. Environmental Protection Agency for ozone, carbon-monoxide (CO), and 10-micron particulate matter (PM10).

The proposed interchange modifications are included in the San Joaquin County Council of Government's 1992 Transportation Improvement Program (TIP). A quantitative regional analysis with all TIP projects was conducted to determine conformity with the 1990 federal Clean Air Act Amendments. The analysis
substantiated that the RTP and TIP conformed to the Clean Air Act Amendments. The Environmental Protection Agency and Federal Highway Administration ultimately accepted these findings. A project level air quality analysis will be required to show a reduction in carbon monoxide (CO) violation. An Air Quality Conformity Statement will be required.

**Socioeconomic**

No special studies will be required under this category.

**Cultural Resources**

CalTrans will determine the area of potential effect (APE) and FHWA will approve APE.

Archaeological documentation will be required to confirm that no archaeological or historical resources are present.

An inventory of buildings will be done to document any historical structures.

It is not anticipated that resources are present, however, a federal Section 106 will need to be prepared. A statement of negative findings will satisfy the requirements.

Coordination with Native American representatives will be included as a part of the Cultural Resources Evaluation.

E. **DOCUMENTATION**

The project will increase capacity on an interstate route ramp and will, therefore, require FHWA (NEPA) clearance.

It is anticipated that the environmental clearance will include a Categorical Exemption (CE) under CEQA with CalTrans as the lead agency and a Categorical Exclusion under NEPA with FHWA as the lead agency.

9. **FUNDING/SCHEDULING**

CalTrans District 10 and the San Joaquin County Council of Governments (acting as Local Transportation Authority) will enter into a Cooperative Agreement to identify the roles and responsibilities of each agency from preliminary engineering through completion of construction. The interchange improvements will be jointly funded by the City of Stockton, San Joaquin County Council of Governments and Caltrans with an understanding (stipulated in Cooperative Agreement) that 50% of the cost to widen the EBMUD bridge on the I-5 northbound off-ramp (not to exceed $300,000) will be funded by the State. State funding will be derived from "Minor A Projects" funds.
As a separate project to the proposed March Lane/I-5 Interchange modifications, Caltrans also approved a Project Study Report for the widening of I-5 mainline from Mount Diablo Avenue to north of Eight Mile Road. The proposed first stage widening would improve I-5 mainline from six to eight lanes which will be proposed for programming in the 1994 STIP with a proposed construction year of 2001.

Separate from the specific commitments made by the City of Stockton to fund the March Lane/I-5 Interchange modifications, the City also recognizes it's responsibility to pay it's fair share of future mainline improvements to I-5. The City has already adopted a process to collect traffic mitigation fees which include financing a portion of I-5 mainline improvements.

10. DISTRICT CONTACT

Questions or comments regarding this Project Study Report may be directed to:

CalTrans - District 10
1976 East Charter Way
Stockton, CA 95201

Matthew E. Bailey, Chief  (209) 948-7072
Special Funded Projects Branch A  ATSS 423-7072
PROJECT STUDY REPORT

REGISTERED CIVIL ENGINEER STAMP

INTERCHANGE MODIFICATIONS AT
INTERSTATE 5/MARCH LANE

10-SJ-05 PM 29.0/30.6

This report was prepared under my direction and responsible charge. I attest to the technical information contained herein and have judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions and decisions are based.

Robert R. Hammar, P. E.
Registered Civil Engineer
12. **PROJECT MANAGER**

The designated project manager for this project is Matthew E. Bailey. He has been involved with the development of this project and concurs with this project proposal.
PROJECT STUDY REPORT
INTERCHANGE MODIFICATIONS AT
INTERSTATE 5/MARCH LANE
10-SJ-05 PM 29.0/30.6

Prepared By: Robert R. Hammar, P.E.
Omni-Means

Submitted By: James Giottonini
City of Stockton

Reviewed and Recommended By: Matthew E. Bailey
Project Manager, CalTrans

Mary Beth Herritt
Deputy District Director, Engineering Services, CalTrans

Approved By: Gordon A. Marts
District Director, CalTrans

Date: 12-29-95
ATTACHMENTS

VICINITY MAP A

TYPICAL CROSS-SECTIONS, GEOMETRICS, B
TOPOGRAPHY, AND RAMP PROFILES C

TRAFFIC ANALYSIS/DATA D

COST ESTIMATES E

R-VALUES AND TRAFFIC INDEXES F

HAZARDOUS WASTE G
(ISA CHECKLIST)

MEMORANDUM OF UNDERSTANDING - H
BROOKSIDE (BETWEEN CALTRANS I
& CITY OF STOCKTON)

RIGHT-OF-WAY FACT SHEET J

ADVANCE BRIDGE PLANNING STUDY K
ATTACHMENT A

VICINITY MAP
ATTACHMENT B

TYPICAL CROSS-SECTIONS

GEOMETRICS

TOPO GRAPHIC

RAMP PROFILES
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT STUDY REPORT PLANS ON
INTERSTATE 5
IN STOCKTON
BETWEEN CALAVERAS RIVER &
FOURTEEN MILE SLough

To be supplemented by Standard Plans dated January, 1988

END OF PROJECT
P.M. 30.6
STA. 1733+50

BEGINNING OF PROJECT
P.M. 29.0
STA. 1676+00
EXISTING AUXILILARY LANE BEGINS AT STA. 1673+00 AT THE END OF EXISTING RAMP L, NORTHBOUND ON-RAMP AT THE CALAVERAS RIVER BRIDGE.

MARCH LANE UNDERCROSSING NOTE:
CUT 5 FEET HIGH EXISTING PAVED SLOPE ON NORTH AND SOUTH SIDES OF MARCH LANE AND CONSTRUCT 2'-7" HIGH RETAINING WALLS AND 2'-6" HIGH SIDEWALKS TYPICAL.

NOTE: FUTURE MARCH LANE MEDIAN AND MEDIAN BARRIER NOT A PART.

G-2

GEOMETRICS
1:5 FROM STATION 1880+00 TO 1951+00
MARCH LANE FROM STATION 6+60 TO 18+00
SCALE 1" = 50'
SHEET NO. 4
March Lane Undercrossing Note:
Cut 5 feet into existing paved slope on north and south sides of March Lane and construct 3'-7" high retaining walls and 2'-4" wide sidewalks typical.

Existing auxiliary lane bridge at Sta. 1673+00 at the end of existing ramp L, northbound on ramp A.

Omni-Means

Geometrics and Topography

GT-1

Scale 1" = 50'
RAMP "A" MARCH LANE

RAMP "B" MARCH LANE

1000
As may be planned as noted. See Section Proposed Vertical Cross Transverse in expanded March Lane as RAMP "B"
ATTACHMENT C

TRAFFIC ANALYSIS/DATA
TRAFFIC
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
-EXISTING-

The traffic operating conditions on Interstate 5 (I-5) from the Plymouth Road/Ryde Avenue connections in the south to the northern March Lane ramps were evaluated as a part of this analysis. I-5, through the limits of study, is comprised of six (6) mainline travel lanes (3 per direction). The northbound and southbound sections of I-5 between Ryde Avenue/ Plymouth Road and March Lane are Type A weaving areas. Type A weaving areas include single auxiliary lanes which connect an on-ramp with a downstream off-ramp. Using the Highway Capacity Manual (HCM) methods for measuring weaving length, the existing northbound and southbound weaving lengths are 1,010 feet and 1,360 feet, respectively. The southbound off-ramp and northbound on-ramp at March Lane are single lane ramp junctions. Table 1 lists the existing Level-of-Service (LOS) at subject weaving areas and ramp junctions.

The I-5 mainline and March Lane/I-5 existing volumes are depicted in Figure 1. The I-5 volumes are based on the CalTrans 1990 countbook. The peak hour volumes at March Lane were counted on June 18, 1991. The peak hour counts from the 1990 countbook were split 60/40 for the PM peak and 44/56 for the AM peak. The volumes at the I-5 Calaveras River crossing were used as the starting point and volumes were adjusted north and south from that segment.

The Project Study Report (PSR) prepared by CalTrans District 10 for the Plymouth/Ryde Ramp Relocation (May 8, 1990) project identifies the inadequate weaving distance that exists between the on/off ramps at Plymouth Road and Ryde Avenue with the March Lane interchange. The inadequate weaving distance has resulted in a significant number of accidents within the weaving area (primarily rear-end type accidents). A three year Traffic Surveillance and Analysis Survey (TASAS) study from October 1, 1986 through September 30, 1989 was taken between PM 29.2 and PM 29.8 along Route SJ-5 (see Attachment E). The TASAS Table B indicates that the actual accident rate is 1.21 Accs/MV (accidents per Million Vehicles) compared to the expected accident rate of 0.68 Accs/MV. The PSR recommend relocating the existing Ryde Avenue/Plymouth Road ramps south to Alpine Avenue. The project is included in the 1990 HSOPP Plan (Project #741A) for funding in the 1993/94 fiscal year.
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<td>I-5 Southbound Off-Ramp</td>
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<td>I-5 Northbound On-Ramp</td>
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<td>Weaving Areas</td>
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<td>I-5 between March Lane and Ryde Avenue</td>
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<tr>
<td>- Non-Weaving</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>I-5 between Plymouth Road and March Lane</td>
<td>1,010 ft.</td>
<td></td>
</tr>
<tr>
<td>(Northbound)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Weaving</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>- Non-Weaving</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>
EXISTING CONDITIONS
1990
FIGURE 1

NOTE: I-5 MARILUNE PEAK HOUR VOLUMES ROUNDED TO NEAREST 10.
INTERSECTIONS - MARCH LANE/I-5 RAMPS
-EXISTING-

The I-5 southbound and northbound ramps at March Lane are currently operated at three-phase signals. The two ramp/surface street intersections are coordinated to provide optimum progression through the interchange. The two intersections were evaluated using the PASSER III software package developed by the Texas Transportation Institute. The PASSER III program optimizes the signal timing at both ramp/surface street intersections of a diamond interchange and then determines the delay and LOS on individual movements and on an overall interchange basis.

Operational Level-of-Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level-of-Service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the V/C ratio for the lane group or approach in question.

For this analysis, AM and PM peak hour turning movement volumes observed on June 18, 1991 (Tuesday) were used. The traffic counts indicate that 1,319 vehicles utilize the I-5 northbound off-ramp to March Lane during the PM peak hour on an average weekday. As a part of the PM peak hour count, the number of vehicles making the northbound turn and proceeding into the eastbound left-turn lane at Quail Lakes Drive were separated from the right-turning vehicles which continue east on March Lane past Quail Lakes Drive. This separation of right-turning vehicles indicated that 30 percent (or 326 vehicles) of the northbound right-turns have destinations north on Quail Lakes Drive.

Observations between the interchange of northbound I-5 and March Lane and the intersection of Quail Lakes and March Lane have shown there is a large amount of traffic weaving occurring in this section. As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into driveways serving one of the restaurants preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane
at Quail Lakes Drive does not always flow freely due to some of the vehicles making another immediate left-turn into the shopping center north of March Lane.

The existing AM and PM peak hour volumes at the March Lane interchange were analyzed with the existing geometrics and control. The PASSER III results indicated that the southbound ramps intersection is operating at LOS "C" and LOS "C" for the AM and PM peak hours, respectively. The northbound ramps intersection operates at LOS "C" in the AM peak and LOS "C" in the PM peak. Queues forming on the northbound approach are the result of right-turning vehicles stopping in the lane waiting to cross over to the eastbound left-turn lanes at Quail Lakes Drive. There is no known analytical method of incorporating the condition into the overall LOS of the intersection, therefore, it was not included.

The westbound approach at the I-5 northbound/March Lane intersection experiences a lane utilization imbalance where the lane adjacent to the median carries the majority of traffic. Motorists in this lane are preparing to enter the left-turn lanes under I-5 with destinations south on I-5. Therefore, a considerable amount of queuing occurs in the lane adjacent to the median.

Traffic volume projections for the estimated construction year (1995) are depicted in Figure 3.
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The long-range Route Concept Report for I-5 through the Stockton area is an eight-lane freeway and a "D" Level-of-Service (LOS). Currently, I-5 reduces from eight mainline lanes to six north of Country Club Boulevard. Figure 4 depicts the 20-year growth traffic projections. With no improvements to I-5 in the subject area, the mainline lanes would operate at-capacity in the southbound direction during the AM peak and in the northbound direction during the PM peak hour. - There would be significant northbound mainline queuing that originates at the lane reduction north of Country Club Boulevard. The projected PM peak hour northbound volume at the Calaveras River is 8830 VPH. South of the Plymouth Road on-ramp the PM volume is 8140. Based on these volumes, the facility would operate at-capacity with the concept eight-lanes. Using a per-lane capacity of 1850 to account for 10% trucks, the section of I-5 south of the Plymouth Road on-ramp would operate at a volume-to-capacity ratio of 1.10 which corresponds to LOS "F". With five lanes, the V/C ratio is 0.88 which corresponds to LOS "D". The weaving area from Plymouth to March is forecast to have 2744 weaving vehicles in the PM peak. This would cause significant turbulence in the gore areas of the on/off ramps. The projected PM peak northbound off-ramp volume at March Lane (2400 VPH) warrants a two-lane off-ramp with the auxiliary lane dropping at the ramp. The two-lane off-ramp design would improve the weaving turbulence since the mainline lane adjacent to the auxiliary lane would be used by a portion of the off-ramp traffic up to the converge point.

The southbound section of I-5 over the Calaveras river is projected to carry 7600 vehicles in the AM peak hour. 2163 weaving vehicles are projected for the March Lane/Ryde Avenue weaving area. The segment of I-5 south of the Ryde Avenue off-ramp has an AM peak hour projection of 7100 which corresponds to a V/C ratio of 0.87 (LOS "D") with four mainline lanes. The four mainline lanes/one auxiliary lane cross-section would provide acceptable service levels in the critical AM peak southbound condition with localized turbulence at the on/off ramp gore areas.

The traffic projections which accompany the ultimate geometrics include an AM peak volume of 1,913 vph on the I-5 southbound on-ramp from March Lane. The AM peak hour projection exceeds the 1,500 vph threshold described in the HDM. Therefore, a two-lane on-ramp is warranted based on the HDM criteria.
The AM peak hour projection for the southbound on-ramp corresponds to the highest directional volumes on mainline I-5 (southbound during the AM peak hour). The I-5 mainline lanes are projected to operate at or near capacity southbound during the AM peak hour. The existing southbound on-ramp continues as an auxiliary lane to the Ryde Avenue off-ramp. The relocation of the Ryde/Plymouth ramps to Alpine Avenue would increase the weaving length associated with the auxiliary lane. The configuration of the existing southbound on-ramp, with the programmed improvements to the auxiliary lane, will support project volumes at an acceptable level.

Maintaining the existing single lane to auxiliary lane configuration would geometrically meter the on-ramp traffic and result in less turbulence with mainline traffic. The increase in auxiliary lane length as a result of the Ryde/Plymouth ramp relocation would provide sufficient length for on-ramp vehicles to merge with mainline vehicles.

The forecasted peak hour traffic demand under the 20-year growth condition warrants the addition of I-5 mainline travel lanes. The forecasted 20-year volumes indicate that I-5 in the subject area would require a ten-lane configuration to maintain LOS "D" service levels. Therefore, planning for such improvements is justified.
INTERSECTIONS - MARCH LANE/I-5 RAMPS
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The I-5/March Lane interchange intersections were analyzed under a 20-year growth conditions. The improvements include widening March Lane to six through lanes and providing dual eastbound left-turns at the northbound ramps under the I-5 structure.

The forecasted traffic volumes were derived from the Stockton City-Wide traffic model using the General Plan buildout with approved projects condition. The roadway network does not include a Calaveras River Bridge to the west of I-5 in order to provide a "worst case" traffic demand condition at the March Lane interchange. On several traffic movements, the forecast demand is lower than the existing count. Changes in travel patterns due to land development and planned roadways (included in model network) are the primary cause of the decrease in volumes.

I-5 Southbound Ramps/March Lane

With Ultimate improvements, the I-5 southbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the southbound ramps intersection it would operate at LOS "F" (AM) and LOS "F" (PM).

I-5 Northbound Ramps/March Lane

With Ultimate improvements, the I-5 northbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the northbound ramps intersection, it would operate at LOS "F" (AM) and LOS "F" (PM).

Year 2015 traffic volume projections are depicted in Figure 4.
ATTACHMENT D

COST ESTIMATE
PROJECT COST ESTIMATE SUMMARY

Type of Estimate (Pre-PSR, PSR, PR, etc.): PSR

Program Code:

Project Description: Project Study Report

Limits: Northbound off-ramp improvements at March Lane/1-5 interchange between PM 29.0/30.6, March Lane widening between 1-5 to Quail Lakes Drive.

Proposed Improvement (Scope): Widen March Lane to an eight-lane cross section through the Interstate 5 interchange. Widen 1-5 northbound off-ramp to a two-lane exit with three lanes over eastbound easement bridge and four lanes on the approach to March Lane.

ROADWAY ITEMS $ 840,900
STRUCTURE ITEMS $ 536,000
SUBTOTAL CONSTRUCTION $ 1,376,900
RIGHT-OF-WAY $ 0
TOTAL PROJECT COST $ 1,376,900

Reviewed by Program Manager ___________________________ (Signature)

Approved by Project Manager ___________________________ (Signature)

Phone No. ___________________________ Date ________________
PRELIMINARY
PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTF
PM: 29.0/30.6
EA: 
PP No:

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<tr>
<th>1. ROADWAY ITEMS</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
<th>Section Cost</th>
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<tbody>
<tr>
<td><strong>Section 1 Earthwork</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Roadway Excavation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imported Borrow</td>
<td>2,371</td>
<td>C.Y.</td>
<td>$ 6.00</td>
<td>$14,250</td>
<td></td>
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<tr>
<td>Clearing &amp; Grubbing</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Develop Water Supply</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition</td>
<td>40,000</td>
<td>S.F.</td>
<td>0.50</td>
<td>20,000</td>
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<tr>
<td><strong>Total Earthwork</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 39,250</td>
</tr>
</tbody>
</table>

| **Section 2 Structural Section** |          |      |            |           |              |
| PCC Pavement (Depth) |          |      |            |           |              |
| PCC Pavement (Depth) |          |      |            |           |              |
| Asphalt Concrete     | 3,084    | TON  | 30.00      | 92,520    |              |
| Lean Concrete        |          |      |            |           |              |
| Cement-Treated Base  |          |      |            |           |              |
| Aggregate Base       | 3,832    | TON  | 14.00      | 53,650    |              |
| Aggregate SubBase    | 925      | TON  | 10.00      | 9,250     |              |
| Permeable Material   |          |      |            |           |              |
| Blanket & Edge Drains|         |      |            |           |              |
| **Total Structural Section** |          |      |            |           | $155,420     |

| **Section 3 Drainage** |          |      |            |           |              |
| Large Drainage Facilities |      |      |            |           |              |
| Storm Drains            | 320     | L.F. | 50.00      | 16,000    |              |
| Pumping Plants          |          |      |            |           |              |
| Project Drainage        |          |      |            |           |              |
| (X-Drains, oversize, etc.) |      |      |            |           |              |
| **Total Drainage**      |          |      |            |           | $ 16,000     |

* Attach sketch showing typical structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.
### PRELIMINARY
### PROJECT COST ESTIMATE

10-SJ-5  
DIST-CO-RTF  
PM: 29.0/30.6  
EA:  
PP No:

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<th>Section 6 Specialty Items</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
<th>Section Cost</th>
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<td>Retaining Walls (7' high)</td>
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<td>L.F.</td>
<td>120.00</td>
<td>$48,000</td>
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<td>L.F.</td>
<td>60.00</td>
<td>$10,800</td>
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<td>Soundwalls</td>
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<tr>
<td>Equipment/Animal Passes</td>
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<td>Relocate Private Irrigation Facilities</td>
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<tr>
<td>Replacement Planting/Irrigation</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscaping/Irrigation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(normally separate project)</td>
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</tr>
<tr>
<td>Erosion Control</td>
<td>3,800</td>
<td>S.Y.</td>
<td>0.41/SY</td>
<td>$1,558</td>
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<tr>
<td>Slope Protection</td>
<td>20,000</td>
<td>S.F.</td>
<td>2.00/SF</td>
<td>$40,000</td>
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<tr>
<td>Barriers and Guardrails</td>
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<td></td>
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<tr>
<td>Hazardous Waste Work</td>
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<td></td>
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<td></td>
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<tr>
<td>Environmental Mitigation</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Section 5 Traffic Items                    |          |      |            |            |              |
| Lighting                                   |          |      |            |            |              |
| Traffic Signals                            | 2        | EA   |            | $100,000   | $200,000     |
| Permanent Signing                          |          |      |            |            |              |
| Traffic Control Systems                    |          |      |            |            |              |
| Traffic Management Plan                    |          |      |            |            |              |

**Total Specialty Items**                      |          |      |            |            | **$100,400** |

**Total Traffic Items**                        |          |      |            |            | **$260,000** |

**SUBTOTAL SECTIONS 1-5**                      |          |      |            |            | **$371,100** |
## Preliminary Project Cost Estimate

**Section 6 Minor Items**

<table>
<thead>
<tr>
<th>Subtotal Items 1-5</th>
<th>571,100</th>
<th>x 5%</th>
<th>Unit Cost</th>
<th>28,555</th>
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<tr>
<td>Concrete Curb, Gutter, Sidewalk</td>
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<td>23,100</td>
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</table>

**TOTAL MINOR ITEMS**

<table>
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<tr>
<th>Section Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 51,700</td>
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</table>

**Section 7 Roadway Mobilization**

| Subtotal Sections 1-5 | 571,100 | x 10% | 57,100 |

**TOTAL ROADWAY MOBILIZATION**

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<tbody>
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**Section 8 Roadway Additions**

**Supplemental**

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<th>Subtotal Sections 1-5</th>
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<td>Minor Items (Schedule 6)</td>
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<tr>
<td>Mobilization Minor Items (Section 7)</td>
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<tr>
<td>Contingency</td>
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**TOTAL ROADWAY ADDITIONS**

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<tbody>
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</table>

**TOTAL ROADWAY ITEMS** (Total of Sections 1-8)

<table>
<thead>
<tr>
<th>Section Cost</th>
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</thead>
<tbody>
<tr>
<td>$840,000</td>
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</tbody>
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---

Estimate Prepared By: D.E. Howe

Phone #: 916-782-8688 Date: 26 February 1992

* Use appropriate percentage per 3-8.3 of Project Development Procedures Manual, Pre-PSR 30%-50%, PSR 25%, PR 20%, PAR 15%, After PAR 10%.
II. STRUCTURES ITEMS

<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>EB MUD - Ramp &quot;O&quot; Widening</th>
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</thead>
<tbody>
<tr>
<td>Structure Type</td>
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<tr>
<td>Width Ft. (out to out)</td>
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<tr>
<td>Span Lengths Ft.</td>
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<tr>
<td>Total Area Sq. Ft.</td>
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</tr>
<tr>
<td>Footing Type (pile/spread)</td>
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</tr>
<tr>
<td>Cost Per Sq. Ft. (inc. 10% mobilization and 25% contingency)</td>
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<tr>
<td>Total Cost for Structure</td>
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</tr>
</tbody>
</table>

SUBTOTAL STRUCTURES ITEMS $536,000

TOTAL STRUCTURES ITEMS $536,000

Railroad Related Costs

COMMENTS

Per Bissell & Kern, Inc., Advanced Bridge Study
Dated 18 February 1992

Estimate Prepared By: Walt Lafranchi,
Bissell & Kern
Phone #: 916-363-1304 Date: 26 February 1992

(If appropriate, attach additional pages and backup.)
III. RIGHT-OF-WAY

<table>
<thead>
<tr>
<th>Current Values</th>
<th>Escalation Rates</th>
<th>Escalated Values*</th>
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<tbody>
<tr>
<td>Acquisition, including excess lands and damages to remainder(s)</td>
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<tr>
<td>Utility Relocation (State share)</td>
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<tr>
<td>Clearance/Demolition</td>
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<td></td>
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<tr>
<td>RAP</td>
<td>x</td>
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<tr>
<td>Title and Escrow Fees</td>
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TOTAL RIGHT-OF-WAY 0

CONSTRUCTION CONTRACT WORK

COMMENTS

These right-of-way estimates should also be updated on your RW 1-6 Capital Cost screens, as discussed in the February 20, 1991 draft memo by Richard Solub concerning Right-of-Way Capital Plan Procedures.

Attach Right-of-Way Data Sheet as backup

* Escalated to assumed year of advertising of

Estimate Prepared By: D.E. Howe  
Phone #: 916-782-8688  Date: 26 February 1992

(If appropriate, attach additional pages and backup.)
BRIDGE ESTIMATE

☐ PRELIMINARY ESTIMATE
☐ GENERAL PLAN ESTIMATE
☐ ENGINEER'S ESTIMATE

BY W.J.Y. DATE 2-18-92

COST INDEX = 216

BRIDGE: EBMUD AQUEDUCT UNDERCROSSING (WIDEN)  
BR. NO. 28-2255

SUPERERSTRUCTURE: CIP REINFORCED CONC BOX GIRDER  
LENGTH: 255.85'  X WIDTH: 24' = BRIDGE DECK AREA: 6,140 S.F.

D = 5' 0".

<table>
<thead>
<tr>
<th>CONTRACT ITEMS</th>
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<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
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<td>220</td>
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<tr>
<td>STRUCTURE EXCAVATION (BRIDGE)</td>
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<tr>
<td>STRUCTURE BACKFILL (BRIDGE)</td>
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<td>11.00</td>
<td>30,250.00</td>
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<tr>
<td>FURNISH 70T PILING</td>
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<td>105.00</td>
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<tr>
<td>DRIVE 70T PILE</td>
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<td>540</td>
<td>350.00</td>
<td>189,000.00</td>
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<tr>
<td>STRUCTURAL CONCRETE, BRIDGE</td>
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<td>80,080.00</td>
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<tr>
<td>CONCRETE BARRIER (TYPE 251)</td>
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<td>285</td>
<td>50.00</td>
<td>14,250.00</td>
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| COMMENTS:  
PRICING ASSUMES THIS BRIDGE REPRESENTS ONLY BRIDGE IN THE CONTRACT. COST EXCLUDES SEISMIC RETROFIT OF EXISTING BRIDGE AND UPGRADE OF LEFT BARRIER.  

$87.30/SF

SUB TOTAL 385,535.00
MOBILIZATION (10%) 42,839.44
SUB TOTAL BRIDGE ITEMS (S/F) 428,354.44
CONTINGENCIES (25%) 107,098.61
BRIDGE TOTAL (S/F) 535,453.05
BRIDGE REMOVAL (CONTINGENCY INCL)  535,453.05
WORK BY RAILROAD OR UTILITY FORCES  
GRAND TOTAL 535,453.05
FOR BUDGET PURPOSES SAY  $535,000
ATTACHMENT E

R-VALUES AND TRAFFIC INDEXES
Mr. Bob Hammar  
Omni Means. Engineers and Planners  
2240 Douglas Boulevard, Suite 260  
Roseville, CA 95661

Subject: FLEXIBLE PAVEMENT DESIGNS  
I-5 INTERCHANGE AT MARCH LANE AND EIGHT MILE ROAD  
STOCKTON, CALIFORNIA

Dear Mr. Hammar:

In accordance with your request, Kleinfelder, Inc. is submitting flexible pavement designs on the I-5 March Lane and Eight Mile Road project in Stockton, California. Our proposal File No. 20-91-121 dated September 3, 1991, discusses our understanding of the scope of work. Your plans dated April 23, 1990 and July 31, 1991 were used to locate the areas for sampling.

On November 16, 1991, three finished subgrade soil samples were obtained by a representative of Kleinfelder, Inc. at locations listed below, to evaluate Resistance-Values (R-Values) in accordance with Cal-301 for the Caltrans method of pavement design. The samples designated as off-ramps were obtained from the slope areas from material which appeared to be imported fill beneath aggregate base.

Our calculations are based on traffic indices provided by State of California District 10 Traffic Forecasting and Analysis Section and City of Stockton Transportation and Planning Section. We also assume that Class II aggregate base, aggregate subbase, and subgrade materials, along with construction procedures, will comply with applicable Caltrans requirements.
Following is a summary of R-Value test results and recommended pavement sections:

**RESISTANCE-VALUE TESTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Exudation Pressure</th>
</tr>
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<tbody>
<tr>
<td>#1, 18 feet south of existing Eight Mile Road &amp; between north bound and south bound overpasses (Native black silty clay)</td>
<td>28</td>
</tr>
<tr>
<td>#2, North bound off-ramp, 12 feet east of existing I-5 down-ramp &amp; and 200 feet south of Eight Mile Road &amp; (Brown silty sand with aggregate)</td>
<td>41</td>
</tr>
<tr>
<td>#3, North bound off-ramp, 12 feet east of existing I-5 off-ramp &amp; and 250 feet south of March Lane &amp; (Brown silty sand with aggregate)</td>
<td>37</td>
</tr>
</tbody>
</table>

**PAVEMENT SECTION**

| Traffic Index - 12 | | |
|-------------------|-------------------|-------------------|-------------------|
|                   | Thickness of Asphalt Concrete | Thickness of Aggregate Base | Thickness of Aggregate Subbase |
| I-5 off-ramp @ March Lane | 0.65' | 1.35' | |
| Alternative Section | 0.65' | 1.00' | 0.35' |

**Traffic Index - 10**

| Eight Mile Road I-5 Off ramp @ Eight Mile Rd. | 0.55' | 0.85' |
SAMPLE LOCATION: Marsh Lane and I-5 Road Improvements
SAMPLE DESCRIPTION: Brown silty sand with rock, Imprint
DATE SAMPLED: November 19, 1991

EXUDATION PRESSURE - lb/in²

COVER THICKNESS BY STABILOMETER - ft

COVER THICKNESS BY EXPANSION PRESSURE - ft

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
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<th>C</th>
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</table>
SAMPLE LOCATION: March Lane and 3rd Road Improvements
SAMPLE DESCRIPTION: Road fill and with small aggregate - compact
DATE SAMPLED: November 19, 1991

EXUDATION PRESSURE - lb/in²

COVER THICKNESS BY STABILOMETER - ft

COVER THICKNESS BY EXPANSION PRESSURE - ft

<table>
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</table>
HAZARDOUS WASTE

(INITIAL SITE ASSESSMENT CHECKLIST)
HAZARDOUS WASTE REVIEW

DISTRICT 10 INITIAL SITE ASSESSMENT (ISA) CHECKLIST
Revised 4/30/89

Section Information

Street: 10 County: Joaquin Route: 5 Postmile: EA: __________

D: Interstate 5: Appx. 900 feet north of March Lane south to the southern bank of the Calaveras River. March Lane: Feather River Drive east to Appx. 200 feet east of Da Vinci Drive

Project Development Coordinator: __________________________ Telephone: __________________________

Environmental Coordinator: __________________________ Telephone: __________________________

If the project on the exempt list (over): __________________________

If project (DOES NOT) have potential for Hazardous Waste Involvement: __________________________

Based on information provided in 1/24/92 Report Environmental Branch Chief

2/7/92

Project Screening


RAW Clearance? __________ Subsurface Utilities? __________

Project Setting: Rural or Urban? __________

City of Stockton: Urban Area

Current Land use? Interstate Freeway and Municipal Street

Adjacent Land uses? Commercial Retail: Multi-family: High School: Gas Station

(Industrial, Light Industry, Commercial, Agriculture, Residential, others)

Check Federal, State, and local environmental and health regulatory agency records: See Section 3.3 of the HWR prepared by Kleinfelder (24-220158-A00), dated January 24, 1992.

Conduct Site Inspection:

Date: __________________________

Image Structures/ Piping:

Contamination: 

Petroleum, heavy metals, illegal dumping, etc.

Potential Asbestos: 

Upholstery, lead, etc.

Underground Tanks No Surface Tanks No

Oil Sumps No Other: __________

Other: __________

Surface Sumps No Surface Sumps No

Service Stations No Other: __________

Other: __________

Dumps No Oil Spills No Other: __________

Other: __________

Transformers No Other: __________

Other: __________

Landfills No Other: __________

Other: __________

Additional record search of past land uses: See Section 3.3 of the HWR prepared by Kleinfelder (24-220158-A00)

Other comments and observations: 3 adjacent facilities have permitted underground storage tanks: Union 76, 7-Eleven, City of Stockton Fire Department. The Stockton Municipal Utility District. Mechanical maintenance operation owns a pump station adjacent to Interstate 5. There have been no documented releases of chemicals from these facilities. See discussion of environmental concerns in Section 4 of the HWR prepared by Kleinfelder, January 24, 1992. Report No. 24-220158, dated January 24, 1992.

Is Determination

Based on Records Reviewed, Not at this Time

Additional ISA work needed before task orders can be prepared for the Preliminary Site Investigation? Not at this Time

Site of additional time required: NA

Customized by: __________

Kleinfelder

3077 Fite Circle
Sacramento, CA 95827
(916) 366-1701

Date: __________
POTENTIALLY EXEMPT PROJECTS

- pavement reconstruction, resurfacing and placement of seal coat,
- work on bridge structures and appurtenant facilities such as traffic or control devices (beware of existing lead base paints),
- addition of lanes in the median of a divided highway,
- repair and maintenance of the highway and all appurtenant facilities,
- removal and/or replacement of distinctive roadway markings such as painted stripes, raised pavement markers, thermoplastic tape, raised bars, etc,
- landscaping within highway right of way,
- bridge maintenance painting when performed in conformance with the requirements of air pollution control and water pollution control agencies having jurisdiction,
- abandonment, removal, reconstruction or alteration of railroad grade crossing protection,
- addition or replacement of devices such as glare screen, median barrier, fencing, guardrail, safety barriers, energy attenuators, guide posts, markers, safety cables, ladders, signs,
- installation of noise barriers and alteration to existing buildings to provide for noise attenuation (beware of friable asbestos),
- projects to eliminate hazards within the operating area,
- modifying existing features such as curbs, dikes, headwalls, slopes, ditches, etc. within the right of way to improve safety,
- maintenance of existing landscaping, native growth and water supply reservoirs (excluding the use of toxic poisons, as defined in Division 7, Chapter 2, Cal. Ag. Code),
- maintenance of fish screens, fish ladders, wildlife habitat, etc. to protect fish and wildlife resources,
- minor widening of less than a lane width and/or adding paved shoulders,
- minor operational improvements, such as median and side ditch paving, drainage facilities,
- installation or modification of traffic control systems and devices including addition of new elements, such as signs, signals, controllers, etc.
- installation, removal or modification of regulatory, warning and information signs including new copy on existing on and off premise signs,
- addition of auxiliary lanes within existing right of way (beware of contaminated groundwater from nearby leaking tanks),
- minor alteration or widening of existing grade separation structures.

Use this list carefully; the discovery of hazardous waste after a project has gone to construction will result in long and costly delays.
ATTACHMENT G

MEMORANDUM OF UNDERSTANDING
(BROOKSIDE)

BETWEEN CITY OF STOCKTON AND CALTRANS
MEMORANDUM OF UNDERSTANDING

10-SJ-5

Brookside

The City of Stockton is now processing a major development encompassing over 1,300 acres which consists of residential, employment, commercial and recreational uses. The project is located west of Interstate 5 near the March Lane Interchange. Traffic studies of the proposal indicate that improvements to the I-5/March Lane interchange will be necessary to accommodate the project. These changes will include modification of the March Lane interchange and possible main line changes such as auxiliary lanes and ramp extensions.

This Memorandum of Understanding constitutes solely a guide to the obligations, intentions and policies of the parties involved. It is not intended to authorize funding or project effort nor is it a legally binding contract.

GENERAL

1. All phases of the project, from inception through construction, whether accomplished by the City, Caltrans or others, will be developed in accordance with Federal and Caltrans policies, procedures, practices and standards that apply to Caltrans.

2. The City of Stockton (hereinafter known as the City) is to fund one hundred percent (100%) of all preliminary and design engineering costs, including, but not limited to, costs for preparation of environmental documents. It is the intent of the City of Stockton that all costs incurred as a result of this Memorandum of Understanding will be paid for by the project applicant or by the Stockton Development Impact Fee Program.

3. City to prepare a Project Study Report (PSR), Project Report (PR), and Environmental Document (ED), along with detailed Plans, Specifications and Estimate (PS&E) prepared at no cost to the State of California.

4. All City/Consultant contracts for the various work are to include a provision that the consultant(s) will be available throughout the length of the project.

5. The type of environmental document(s) required will be determined after the Initial Study/Assessment has been prepared.

6. The City will submit preliminary studies to Caltrans for review and approval or comment prior to submittal of information for the Draft Environmental Document (DED).

7. Caltrans will approve all conceptual freeway and interchange geometrics for all of the proposed improvements, including new or modified freeway agreements, if necessary. Proposals for new or revised access on the Interstate System must follow a two-step FHWA procedure: (1) conceptual approval which includes a traffic operational and safety analysis; and (2) NEPA clearance.
8. Caltrans will provide oversight and approval of the PSR, PR and ED. Caltrans will provide advice, review and committee participation at no cost to local government. All other study costs will be borne by others.

9. Any donations of land by property owners must be in compliance with all Federal laws and regulations governing donations.

10. Caltrans will prepare cooperative agreements defining more specifically the responsibilities of the parties for each phase of work at the appropriate time.

11. Caltrans will be responsible for preparation of revised freeway agreements (if required).

12. Lists of general responsibility for detailed steps in the project development process are appended to this MOU as Appendix A. These lists are intended as a guide to Caltrans and City staffs.

[Signatures and dates]

District Director, District 10
Caltrans

Date: 12/27/80

Public Works Director
City of Stockton

Date: 12/27/85

Attest:
### Appendix A: PLANNING PHASE ACTIVITIES

<table>
<thead>
<tr>
<th>PROJECT ACTIVITY</th>
<th>RESPONSIBILITY</th>
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<tbody>
<tr>
<td></td>
<td>CALTRANS CITY</td>
</tr>
</tbody>
</table>

### A. PRELIMINARY COORDINATION

1. Project Identification
2. Furnish Information for PSR
3. Field Review of Site
4. Prepare Draft PSR
5. Finalize and Submit PSR
6. Approve PSR

### B. PROJECT AUTHORIZATION

1. Add Project to appropriate programming document
2. Request O-Phase EA
3. Draft Cooperative Agreement
4. Comments on Cooperative Agreement
5. Finalize Cooperative Agreement
6. Approve and Execute Cooperative Agreement
C. ENVIRONMENTAL ANALYSIS AND DOCUMENT PREPARATION

1. Establish PDT
2. Approve PDT
3. Lead Agency Determination
4. Project Category Determination
5. Prepare Preliminary Environmental Assessment
6. Review and approve preliminary Environmental Assessment
7. Prepare and Submit Notice of Preparation/Notice of Intent
8. Identify Preliminary Alternative and Costs
9. Hold Initial Public Information Meeting
10. Prepare and Submit Environmental Studies and Reports
11. Review and Approve Environmental Studies and Reports
12. Prepare and Submit Draft Environmental Document (DED)
13. Review DED in District
7. Public Notice of Opportunity/Public Hearing and Availability of DED
   X
8. Prepare Master Distribution and Invitation List X X
9. Review and Approve Distribution and Invitation List X
10. Circulate DED to Local Agencies, Clearinghouse and Public X
11. Conduct Map Display X X
12. Make all Arrangements for Public Hearing X
13. Review and Approve Public Hearing Arrangements X
14. Conduct Public Hearing X X
15. Prepare Responses to Correspondence and Comment X
16. Review and Approve Responses to Correspondence X
17. Prepare Record of Public Hearing X
18. Review and Approve Record of Public Hearing X
19. Distribute Record of Public Hearing X
20. Prepare and Submit Alternative Selection Request X
21. Review and Approve Alternative Selection Request X
22. Prepare and Submit Final Environmental Document X
23. Prepare and Submit Draft Project Approval Report X
24. Finalize and Submit for Approval Project Approval Report, Final Environmental Document and Draft Freeway Agreement X
25. Review and Approval of Project Report, Final Environmental Document Draft Freeway Agreement X
26. Finalize and Execute Freeway Agreement X
ATTACHMENT H

RIGHT-OF-WAY FACT SHEET
RIGHT OF WAY DATA SHEET

Dist: 10  Co: 51  Rte: 5  PM: 29.0/30.
E.A.: See Environmental Checklist & Initial Study
Date: February 20, 1992
Proj. Des.: March Lane PSR

obj: Right of Way Data - Alternate  N/A

R/W Cost Estimate:
A. Acquisition, including Excess Land and Damages to Remainder $______
B. Utility Relocation (State share) $______
C. Clearance/Demolition $______
D. RAP $______
E. Title and Escrow Fees $______
F. Construction Contract Work: $--0--

Total R/W Estimate: $--0--

Parcel Data:

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<th>Utilities</th>
<th>RR Involvements</th>
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<td>None</td>
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<td></td>
<td>-2</td>
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<tr>
<td></td>
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<td>Clear/Demo</td>
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<tr>
<td></td>
<td></td>
<td>Const Permits</td>
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</table>

Total: R/W:--0-- Excess: --0-- # of Excess Parcels: --0--

Description of Major Items of Construction Contract Work:

General Description of R/W and Excess (zoning, use, major improvements, critical or sensitive parcels, etc.): None Required

NOTE: All Right-of-Way to be acquired adjacent to existing CalTrans Right-of-Way shall pertain to the jurisdiction of the City of Stockton.

Is there an effect on Assessed Valuation? Yes No

Are Utility Facilities or Rights of Way Affected? Yes No (If yes, explain.)

A. Are Railroad Facilities or Rights of Way Affected? Yes No (If yes, explain)

B. Name(s) of railroad(s) NA

NA: No Action
C. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facilities be more cost effective than construction of facility to perpetuate the rail services? (See Procedural Handbook Volume 4a, Chapter 440 for further detail.)

Yes___ No XX (If yes, explain.)

Were any sites with underground tanks, hazardous wastes and/or material found?
Yes___ None Evident XX (If yes, attach memorandum per Section 101.026, P&M Procedures Handbook.)

Are RAP displacements required? Yes___ No XX (If yes, provide the following information.)

No. of single family_________ No. of business/nonprofit_________
No. of multi-family_________ No. of farm_________

Based on __________ Relocation Impact Statement/Study dated ____________

it is anticipated that sufficient replacement housing (will/will not) be available
without Last Resort Housing.

Are material, borrow and/or disposal sites required? Yes__ NoXX__ Unknown__

Are there potential relinquishments and/or abandonments? Yes___ No XX (If yes, explain.)

Are there existing and/or potential Airspace sites? Yes___ No XX (If yes, explain.)

Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss
if District proposes less than formula lead time and/or if significant pressures
for project advancement are anticipated.)

Is it anticipated all R/W work will be performed by Caltrans' staff? Yes___ No XX

Evaluations Prepared By:

1. R/W: Name_________ [Signature] Date 2/20/92

2. Railroad: Name_________ [Signature] Date

3. Utilities: Name_________ [Signature] Date 2/20/92

have reviewed the above data and find it to be complete, current and accurate.

Environmental Branch
C.R. Strain
T.A. Rasmussen
Utilities
File
M. Ballance

[Signature] Date

CITY OF STOCKTON
ATTACHMENT I

ADVANCE BRIDGE PLANNING STUDY
BRIDGE ESTIMATE

☐ PRELIMINARY ESTIMATE
☐ GENERAL PLAN ESTIMATE
☐ ENGINEER'S ESTIMATE

BY WJY
DATE 2-16-92
COST INDEX = 216

BRIDGE: EB MUD AQUEDUCT UNDERCROSSING (WIDEN) BR. NO. 29-2265

SUPERERSTRUCTURE: CIP REINFORCED CONC BOX GIRDER
D = 5' - 0"
LENGTH: 255.85' X WIDTH: 24' = BRIDGE DECK AREA: 6,140 S.F.

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<th>PRICE</th>
<th>AMOUNT</th>
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<td>220</td>
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COMMENTS:
PRICING ASSUMES THIS BRIDGE REPRESENTS ONLY BRIDGE IN THE CONTRACT. COST EXCLUDES SEISMIC RETROFIT OF EXISTING BRIDGE AND UPGRADE OF LEFT BARRIER.

$87.30/SF

| SUB TOTAL                           | 385,555.00 |
| MOBILIZATION (10%)                  | 42,839.44  |
| SUB TOTAL BRIDGE ITEMS ( /SF)       | 428,394.44 |
| CONTINGENCIES (25%)                 | 107,098.61 |
| BRIDGE TOTAL ( /SF)                 | 535,493.05 |
| BRIDGE REMOVAL (CONTINGENCY INCL)   | 535,493.05 |
| WORK BY RAILROAD OR UTILITY FORCES  |            |
| GRAND TOTAL                         | 535,493.05 |
| FOR BUDGET PURPOSES SAY             | 535,000.00 |
Assume 70 Ton Pile Footings
Datum Elev. -30.0 Abut 1 Bent 2 Bent 3
1685 1686 1687 1688

ELEVATION
1" = 50'

TYPICAL SECTION
1" = 10'

Note:
1. Cost as shown excludes retrofit of exit bridge and upgrade of existing barrier.

Date of estimate: 2/18/92
Str. Depth = 5.0'
Length = 255.85'
Width = 24'
Area = 6,140 SF.
Cost / $/ft including: 10% Mobilization & 25% Contingency = $87,730
Total Cost = $536,000

W. LaFranchi 2-92
G. Brown 2-92
BISSELL & KARN, INC.
September 20, 1993
File No. 93858

James B. Giottonini
Public Works Director
City of Stockton
Public Works Department, Room 317
425 North El Dorado Street
Stockton, California 95202

Re: I-5/March Lane Interchange
Revised Fee Proposal

Dear Mr. Giottonini:

As discussed in our meeting of Sept. 8, 1993, we have reviewed our scope and fee for the subject project, and lowered our proposed fee accordingly. Following is a summary of our proposed changes.

PROJECT SCOPE REVISIONS

1. The Da Vinci Drive bridge has been deleted from the project.

2. As an option, we have estimated potential design savings if the lowering of March Lane was eliminated (Provided Caltrans obtains design exceptions). Eliminating the need for lowering will eliminate temporary signals and reduce effort for Traffic Handling plans.

DESIGN-SLOPE REVISIONS

1. Geotechnical and Environmental work will be performed by Caltrans, and therefore are eliminated from our scope.

2. Design effort for Da Vinci bridge has been eliminated. Because of economies of scale Gamayo-Sanchez had assumed with the bridge and retaining wall, the reduction is not 100% of the total bridge effort.

3. Landscape work effort has been reduced. This assumes As-builts for March Lane median landscape are available and the concept will be the same. The reduction in fee also assumes no upgrade on change in Caltrans irrigation (reconstruction only).

4. As suggested by Matt Bailey, level of effort profile sheets has been eliminated. However, more effort will be required for grid-grade details in Construction Details, plus General Cross Sections, which are generated from profile (i.e. the design effort is still required, even if the sheets are eliminated). There is a net reduction in total fee with this change, however.

5. Drainage level of effort has been reduced. We are assuming no upgrading of existing facilities as no construction budget is allotted for upgrading anyway.
6. I have asked subconsultants to lower estimates for TAC meetings; their attendance will be limited to meetings where specific issues may require detailed technical response.

7. The estimated level of effort for temporary signals was reduced. This reduction assumes 1 temporary signal at each ramp intersection, which would work with the lowering of on side of March Lane only.

8. The number of formal submittals has been reduced to three, roughly corresponding to 70%, 100%, and final. Additionally, MT&Co will provide a staging concept with the Geometric Approval Drawings (GAD); Matt Bailey considers this package to be a 30% submittal.

9. Structures submittals must still follow Division of Structures procedures (Type Selection/General Plan, Unchecked Details and Check Details).

10. Right of Way Engineering activities have been reduced significantly as well. Caltrans will prepare any Appraisal Mapping or Right of Way Mapping, MT&Co will field locate the available Caltrans corner points and provide information to District 10. Our primary effort will consist of preparing a Master Acquisition diagram plus plat and descriptions.

11. The Right of Way and Utility report has been eliminated.

12. As discussed in our meeting, we are now proposing to use Judith Buethé instead of Zebra Communications for Public Relations. A revised scope with corresponding reduced fee is enclosed. This scope has been reviewed with Bob Murdoch of your staff already, with his comments incorporated.

**CHARGE RATE REVISIONS**

MT&Co is willing to reduced our multiplier from 2.90 to 2.75 for this project. We not believe our standard charge rate schedule is excessive, but we recognize the fiscal constraints of the project. In the interests of developing a long term relationship with the City of Stockton, we are willing to "share the burden."

With the revisions noted above, revised total "not to exceed" fee for the project is $436,588 (approximately $424,600 if no lowering of March Lane is required).

The revised MBE/WBE total participation is 32.5%.

Please review the enclosed scope and detailed fee breakdown, and let us know if this is acceptable.

We look forward to working with you and you staff on this project.

Yours very truly,

MARK THOMAS & CO. INC.

[Signature]

Timothy R. Fleming

---

TRF:db
Enclosures: 1. Revised Project Scope
2. MT&Co man-hour breakdown/Fee estimate
3. Subconsultants fee estimates
copy w/enc.: Richard Tanaka, Mark Thomas & Co.
CURRENT PROJECT SCOPE
SCOPE OF WORK

DESCRIPTION OF PROJECT

1.1 PROJECT DESCRIPTION

This project will improve the operation of March Lane in the vicinity of I-5. This interchange is a tight diamond configuration, with I-5 crossing over March Lane. March Lane under the structure consists of four through lanes plus single lane left turns. The operation problems are caused by limited through capacity, inadequate stacking capacity, and inadequate operational coordination between signals.

In particular, the most significant operational problems appear to be caused by the proximity of Quail Lakes Drive immediately east of the interchange, and the volume of traffic on March Lane. Northbound I-5 off-ramp traffic wishing to cross March Lane to turn left to Quail Lakes must wait for an appropriate "window" in traffic; this causes ramp traffic to queue to the I-5 auxiliary lane, creating a mainline safety problem. This existing operational problem will be exacerbated upon full development of Brookside development west of the interchange.

The proposed improvements are as follows:

1. Widen March Lane to three lanes each direction, plus double left turn lanes (back to back) to the interchange ramps. This widening will required retaining walls at the face of the March Lane Undercrossing abutment.

2. Widen the I-5 ramps, especially the northbound off-ramp, which will be widened to a double lane off-ramp opening into four lanes at the intersection with March Lane. The northbound ramp widening will require widening of the existing ramp bridge over East Bay Municipal District (EBMUD) aqueduct. Based on our initial field review, it appears that additional retaining walls may be required at the off-ramp bridge to maintain embankment within existing Caltrans Right of Way.

3. Widen the eastbound approaches to the Quail Lakes Drive/DaVinci Drive and reconstruct the traffic signal. **No widening of DaVinci Drive, or the bridge over EBMUD, will be required.**

Some of the major project concerns are as follows:

1. Widening of March Lane under the I-5/March Lane undercrossing will require close review of the available vertical clearance. The As-builts indicate 15 feet available vertical clearance, which is the minimum acceptable for this type of facility. The existing undercrossing structure has variable depth (haunched) girders, which will limit vertical clearance for roadway widening. In the revised project geometrics, it is assumed that March Lane will be lowered "in excess" of 4 inches under the structure.

Lowering the structure will be very expensive for roadway construction costs, potential costs for utility lowering, engineering costs, and in terms of public perception. Our work program includes survey verification of the existing bridge soffit to clearly identify whether vertical clearance is available. An
option to consider, if possible, is to increase the roadway cross slope on the widening on the order of 2.5 to 3%; based on our preliminary data, this would not eliminate the need for lowering, but would reduce impacts to utilities and drainage.

2. The retaining walls under the structure will be on the order of 12 to 14 feet high by 160 feet long. Aesthetic treatment of this wall will be important to soften its appearance. Our efforts will focus on interaction with City staff and the public to identify appropriate textures and patterns for formliners for aesthetic treatment. Specific goals will be to reduce potential for graffiti, be inexpensive to construct, and be aesthetically complimentary to the existing undercrossing geometric treatment.

3. Public relations will be an important element as well. Our focus will be on initial meetings with local residents and business owners to discuss the proposed finished project with projected long term impacts. As design progresses, discussions will shift to construction impacts and to specific details of stage construction and detour handling. Again, the focus will be on maintaining access to businesses.

1.2 STANDARDS

1.2a) AASHTO Policy on Geometric Design of Highway and Structures (AASHTO 1990)
1.2b) Caltrans Design Manual
1.2c) Caltrans Traffic Manuals
1.2d) Manual of Uniform Traffic Control Devices
1.2e) Caltrans Division of Structures (DOS) Manuals
1.2f) Caltrans Project Development Manual
1.2g) Caltrans & FHWA Environmental Guidelines & Manuals
1.2h) Caltrans Drafting Manual
1.2i) Caltrans CADD Manual
1.2j) City of Stockton Design Standards
1.2k) Other manuals and guidelines as applicable

1.3 CONTACTS FOR THIS PROJECT

1.3a) City of Stockton Project Coordinator

    Robert Murdoch
    425 N.El Dorado Street
    Stockton, California 95202-1997
    (209) 944-8492

1.3b) Consultant Project Manager

    Timothy R. Fleming, P.E.
    Mark Thomas & Co. Inc.
    530 Bercrest Drive Suite C
    Sacramento, California 95814
    (916) 552-2964

1.4 DESIGN CRITERIA

1.4a) March Lane, urban area criteria: Design speed = 40 MPH
    Route I-5 Ramps: Design Speed 50 mph at ramp merge/diverge
1.4b) Bridge Criteria
    H-20 Loading, span length, clearances, etc.
1.4c) Survey
    Topographic, field controls, etc.
1.4d) Materials
    Test Method 130, corrosion tests, culvert field review and compilation, etc.
1.4e) Drainage Criteria
    Surface, 25 year design for roadway
1.4f) Traffic Engineering Criteria
    Ramp & Public Roadway Access - at all times, unless detours are provided
    Lane closure - night only, or as directed by District 10 Traffic Coordinator

GENERAL CONDITIONS AND REQUIREMENTS

This project will be subject to the design criteria noted above, plus the following general conditions and requirements:

2.1 Consultant shall carry out the instructions as received from the City Project Manager and shall cooperate with EBMUD, Caltrans, FHWA and any others working on the project.

2.2 In those instances where the Consultant believes a better design or solution to the problem is possible, Consultant shall promptly notify City Project Manager of these concerns, together with the reasons therefore.

2.3 The data and plans will be reviewed by City and Caltrans staff for conformity with applicable Design Standards, the approved Project Study Report, and the approved Environmental Document. Reviews by City and Caltrans will not include detailed checking of design components and related details or the accuracy with which such designs are depicted on plans. The responsibility for accuracy and completeness of such items remains solely that of Consultant.

2.4 The plans, designs, estimates, calculations, reports and other documents furnished under this scope of services shall be of a quality acceptable to City and Caltrans. The criteria for acceptance shall be a product of neat appearance, well-organized, technically and grammatically correct, checked and having the preparer and checker identified. The minimum standard of appearance, organization and contents of the drawings shall be that of similar types produced by Caltrans.

2.5 The page identifying preparers of engineering reports, the title sheet for specifications and each sheet of plans, shall bear the professional seal, certificate number, registration classification, expiration date of the certificate, and signature of the professional engineer(s) responsible for their preparation.

2.6 Consultant may establish direct contact with governmental regulatory and resource agencies and others for the purpose of obtaining information, expertise and assistance in developing baseline data and resource inventories. The Consultant shall maintain a record of all such contacts and shall transmit copies of those records to City and State on a regular basis. Formal submittal to regulatory agencies shall only be made after approval of submittal by City staff.

2.7 Materials to be furnished by CITY/STATE
Project Study Report and Approved Environmental Document
Survey control data (existing highway control monuments and coordinates)
Existing Rights of way maps
Copies of as-builts
Pertinent correspondence/project file
Project general provisions
Internal memos pertinent to the project
Other planning study data

2.8 Work to be performed by CITY/STATE or others

Prepare Materials Investigation and Report - CALTRANS
Prepare Foundation Investigation and Report - CALTRANS
Execute all utility agreements
Right of Way Appraisals and Acquisition - CITY
Advertise and award process for construction - CITY
Construction administration - CITY
Potholing of utilities by respective utility owners -

DETAILED SCOPE OF SERVICES

PHASE 1 - DESIGN SERVICES SCOPE OF WORK

3.1 TASK 1 - PROJECT REVIEW/PROJECT MANAGEMENT

3.1a Kick-off Meeting

Consultant shall meet with City and Caltrans staff to review the project scope of work, schedule, design standards, environmental mitigation measures, and PS&E requirements for the project. This meeting will also address project coordination and responsibilities and define key project issues and goals. Caltrans responsibilities for completion of Environmental Documentation, Materials Report, and Foundation Report will also be discussed.

Work by Consultant will include preparation of initial agenda for review and approval of City's Project Manager, distribution of the agenda to applicable parties, and preparation of Project Development Team initial roster. Consultant shall conduct meeting and issue meeting minutes.

Deliverables:

3.1a) Draft Meeting Agenda
3.1b) Project Development Team Roster
3.1c) Meeting Minutes

3.1b Project Management

Task Description

Consultant shall provide Project Management services to assure delivery of the project on schedule, budget, and according to established quality control goals.

Project Management shall also include active coordination with City and Caltrans staff, plus coordination with adjacent projects.
General Project Management

a) Supervise, coordinate and monitor design for conformance with City and Caltrans' standards and policies.
b) Maintain project files.
c) Prepare CPM schedule and updates. Apply for Caltrans' encroachment permit for design and survey work.
d) Prepare monthly progress reports and invoices.
e) Correspondence and memos.

Meetings

a) Regular scheduled design coordination meetings:

Assist in design coordination progress meetings, to be held at 15%, 35%, 50%, 75%, and 100% completion stages. Includes preparation of meeting agenda in consultation with City Project Manager, distribution of approved meeting agenda, arrangement of attendance of meeting participants, and preparation and distribution of meeting minutes.

Consultant, at or before these progress review meetings, shall supply two copies of all completed or partially completed reports, studies, plans, specifications and estimates which have been developed or altered during the previous month.

b) A safety review meeting will be held when deemed appropriate by Caltrans staff, but prior to the submittal of Final PS&E.

c) A type selection meeting with Caltrans DOS will be held in Sacramento approximately 10 days after the submittal of the Type Selection Report and General Plans for the Undercrossing Retaining Walls and the Northbound Off-ramp Bridge.

d) Utility coordination meetings as may be required to explain interchange improvement plans, to review schedule and/or design conflicts, and to funding responsibilities.

e) Informal design meetings may be held on an as-needed basis. If important design decisions are made, informal minutes shall be prepared by the Consultant and distributed to appropriate team members and the project file.

Quality Control Program

a) Establish QC Program.

A successful QC program focuses first on process, then on traditional checking methods. MT&Co philosophy is that if the approach is not sound, plan checks will be too late to correct problems and maintain schedule. The MT&Co Quality Control plan consists of established procedures for performing the work (which are reassessed with each project), including methods for design calculations, establishing appropriate levels of design development for intermediate submittals, identification of required plan checks (who, what, when), design checklists, and methods of project documentation.

MT&Co will implement and maintain the following quality control procedures during the preparation of plans and documents relating to this
project:

1) QC program in effect for the duration of this contract.
2) Design and calculations are independently checked, corrected and backchecked.
3) All related correspondence and memorandum routed and received by affected persons and then filed in appropriate file.
4) Where different disciplines are involved, means to assure that conflicts and misalignment do not exist.
5) When requested, Consultant shall provide evidence that QC program is functioning.
6) All plans, calculations, documents, and other items submitted for review shall be marked clearly as being fully checked and that the preparation of the material followed the quality control plan established for the work.

Public Relations Program

Public Relations will primarily consist of two public meetings and coordination with the media. The purpose of the public meetings will be present the project to neighboring homes and businesses, and to solicit input into various aesthetic design elements (i.e. median landscape and retaining wall treatment), as well as suggestions for plan refinements for minimizing public inconvenience. The primary focus of media coverage for this project will be to inform the motoring public as to potential delays and alternative routes, modes of transportation, or to encourage car-pooling. The following strategy will be used:

Meetings:

Two public meetings will be held in nearby facilities to present the project to neighboring home and business owners, organizations, and schools, as well as other interested citizens and groups. The purpose of these meetings will be to present information on the project, detour plans, and method of construction. Information given at the meetings will also explain how this work will affect citizens and business owners and what steps will be taken to minimize and inconvenience to them.

Care will be taken at the meetings to present information about the project in straightforward, easily understood terms. Further, oral and written citizen input will be solicited on how traffic flow can be handled to minimize disruption to area businesses and inconvenience to mass transit, private vehicle drivers, bicyclists, and pedestrians who use the interchange. This approach will help citizens plan shopping and commute trips during construction.

the neighborhood meetings could be held in the early evening at Claudia Landeen Elementary school west of the interchange and at the Venetian Bridges Recreation Center or Quail Lakes Recreation Center east of the interchange. Follow-up letters are not included in this scope, but if required, will be written, produced, and sent.

Publicity:

The Consultant will keep the print and broadcast media informed on progress of the project by means of personal contacts, as well as printing, production.
and sending two press releases. Topics for press releases and articles could include initiation of the project, upcoming public meetings, how to contact project operations sources with suggestions on traffic control, the Hotline, significant milestones reached, detour plans, how to access businesses, methods of construction, steps being taken to minimize inconvenience, safety issues, as well as aesthetics of the completed project.

Along with formal print and broadcast media outlets, the Consultant will inform Community and organization newsletters, and write an article about the project for one issue of "Cityscape".

Mailers:

A mailing universe will be established to include the 5773 homes and 727 businesses in the area, defined as the corridor from the Brookside development west of Interstate 5 east to Pershing Avenue, south to Calaveras River, and north to 14 Mile Slough. Elected officials representing the City, County, State, and school districts in the area will be included, as well as other interested governmental entities, such as COG, SMART, EBMUD, FHWA, and Caltrans. Special interest groups, churches, homeowner's associations, and other private organizations can be added to the list.

Two mailers announcing the public meetings will be sent to the mailing universe defined above. The list will be augmented with names from telephone and personal contacts.

Business/Organization Contacts:

On either side of I-5, a list of March Lane area businesses which may be directly affected will be developed for additional contacts, as indicated.

Elected officials, other governmental entities, special interest groups, churches, homeowner associations, and other private organizations mentioned above will be kept on a separate list. These entities and organizations will receive the broader mailings; the Public Relations consultant will initiate or respond to personal contacts, whenever indicated to meet project goals or citizen's desire for information and input.

Hotline:

The Stockton Street Improvement Project Hotline will serve as an official source for project-related information. A log of calls will be kept and dispensed to pertinent project staff.

PROJECT MANAGEMENT DELIVERABLES:

a) 1 copy QC plan  
b) 1 copy project files  
c) 5 copies CPM Chart  
d) 1 copy schedule updates  
e) 2 copies of record of minutes plus distribution  
f) 3 copies of monthly progress reports and invoices  
g) 1 copy meeting minutes for public meetings  
h) 1 press release as noted

3.2 TASK 2 PERFORM SURVEYS
Task Description:

The first item of work in this task will be to assemble and review existing data, including the Project Study Report and the Brookside Environmental Document and Mitigation Plan, for determination of extent of surveys. The remaining focus of this task is to perform photogrammetric surveys for overall mapping and perform detailed field surveys to locate drainage facilities, pavement conforms, utilities, etc. Concurrent with aerial control surveys, boundaries and freeway will be surveyed for use in Right of Way documents in Task 5.

3.3-1 Field Surveys

Field surveys will consist of preparation of digital photogrammetric mapping to Caltrans standards (1"=50' scale, with 1 foot contours and spot elevations at 50 foot grid to 0.10 feet), supplemented with field topography for determination of accurate elevations at conforms and critical right of way or other controls. This mapping will be compiled digitally in conformance with the topography symbology of the Caltrans' CADD and Drafting and Plans Manuals. Digital mapping will be prepared in Intergraph Microstation and Autocad 12 formats; MT&Co will download the Intergraph files to Intergraph IGDS VMS readable format on 9 track magnetic tape for Caltrans use.

The detailed survey information will be prepared as follows:

- Perform field surveys necessary for design, specifically at edge of bridge and pavement, roadway crown, temporary conforms for stage construction, locations of culverts, storm drainage facilities, utility covers and inverts. Field verify March Lane Undercrossing abutment and soffit location and elevation, as well as actual vertical clearance to structure.

- Roadway and bridge conform design will be based on field surveyed data. Contour grading and roadway quantities to be supplemented by calculation of digital terrain model.

- Supplement topography with location of existing fences, poles, signs, street lights, and trees. Trees shall be located by size and type, with drip line located.

- Locate visible utility facilities such as manholes, utility poles and bases, guy anchors, vaults, fire hydrants, and valve boxes.

- Survey points and lines will be established, marked, identified and referenced, and documented as required to complete the PS&E in accordance with the Caltrans Survey Manual.

- Survey notes, drawings, calculations and other survey documents/materials will be completed as required for PS&E in accordance with Caltrans Survey Manual.

- A copy of all original survey documents resulting from this contract, including original field data, adjustment calculations, final results, and appropriate intermediate documents will be delivered to Caltrans.

- The final results of all surveys will be delivered to Caltrans in the format specified below:
1) Horizontal Control - alpha/numeric hard copy point listing with adjusted California Coordinate System northing and easting and appropriate descriptions.
2) Vertical Control - alpha/numeric hard copy listing with adjusted elevations, to District 10 approved datum.
3) Topography, including photogrammetric mapping - alpha/numeric hard copy listing, hard copy drawing, and CADD digital drawings.
4) Terrain for each cross-section - alpha/numeric listing, and hard copy drawing.

3.3 TASK 3 PREPARE BASE PLANS/DESIGN CONCEPTS:

Task Description:

Base mapping will consist of digital plans of photogrammetry plus field surveyed information, plus right of way and control information, geometrics, and property ownership. Because this mapping will be digitally stored, it can be reproduced at any desired scale. The Geometric Approval Drawings will be at a scale of 1"=50' to conform to Caltrans standards.

MT&Co also uses this task to define other significant elements of the project (in this case, this task will include supplemental Environmental Studies, Drainage, Traffic/Signals, Staging/Traffic Handling, and Landscape/Aesthetics Concepts) which can have a significant impact on the overall project. Following are the proposed items of work in Task 3:

3.3a Supplemental Environmental Studies

Based on available information, it is expected that four environmental technical studies will be necessary for the planning process: biology, cultural resources, air quality analysis, and environmental noise assessments. Caltrans staff will perform all required supplemental environmental studies.

3.3b Traffic Review/Signal Memorandum

The purpose of this phase of work is to document signal design criteria (maintenance, controller type, phasing, interconnect, etc.). In a Traffic meeting with City and Caltrans staff, the maintenance responsibility for the various intersection would be confirmed. Provisions for interconnect from Quail Lakes Drive to Feather River (i.e. conduit, cable, and pull boxes will be made. Once City and Caltrans have agreed to concepts, then design concept for signal, lighting, and signing will be summarized in a memo.

Design concepts would be discussed and memorialized in the draft Technical Memorandum, in the form of meeting minutes. The following would be addressed in the memorandum:

1. Identify signing requirement, primarily for sign structures. Identify sign structure locations (off-ramps, overcrossing mounted, advanced structures, sign overlays on existing advanced panels, etc.). Also identify sign illumination requirements.

2. Identify lighting requirements at roadway intersections, ramp intersections, off-ramps (diverge point), on-ramps (merge points), and City streets. Identify preferences for treatment of electrical services, such as need for and location
of new service points, need for new service cabinets, different services/circuits for City/Caltrans systems, locations of photoelectric cells, incorporation of city lighting into signal standards, type and spacing of lighting standards, etc.

3. Identify need to provide conduit and pull boxes for future irrigation controllers.

Deliverables:

a) 5 copies of the Traffic Technical Memorandum

3.3c Geometric Approval Drawings (GAD)

The basic geometric approval drawings are complete, based on the aerial geometrics supplied by the City. However, in this phase of work, these geometrics will be shown on the base mapping developed in Task 2, with field surveyed control and right of way information shown.

Typical cross sections and profiles will be shown as well. In particular, the existing overcrossing will be reviewed for vertical clearance; roadway cross sections will be reviewed to determine if the existing March Lane will need to be lowered, or if a modified cross slope could be used to maintain 15 feet minimum vertical clearance.

Deliverables:

a) 3 blueprints of planimetric mapping at 1"=50' scale.
b) 10 blueprints of GAD.

3.3d Utility Plans

This phase consists of compiling base mapping for use by Utilities in marking their facilities and evaluating for potential conflicts. The following procedure is proposed:

a) Request system mapping and As-builts from utility companies.

b) Compile mapping on base plans using system mapping, as-built information, visible and surveyed locations of surface utility facilities.

c) Prepare cover letter for utility companies. After review and approval by City staff, send plans and cover letter to Utilities for their confirmation and/or location of facilities.

d) Revise utility mapping per utility comments.

e) Return corrected utility mapping to utilities "for information only".

Deliverables:

a) Approximately 20 sets preliminary utility mapping
b) Draft and final cover letter
c) Final utility mapping plans

3.3e Roadway Drainage Report
A Roadway Drainage Report will be required for District 10 review and approval of permanent roadway drainage facilities. The drainage report will review existing drainage facilities and recommend improvements, maintaining historic drainage courses. Upgrading of culvert capacity, if required, will be discussed. (Based on project construction budget, upgrading of drainage facilities is not anticipated; because I-5 is elevated, the mainline is not at risk of flooding.) Drainage inlets will be analyzed for capacity and design spread of water along curb faces. This type of project can be tricky; runoff is increased with additional pavement, but available "freeboard" is reduced with the lowered roadway. Detailed drainage tributary areas will be mapped from project topographic mapping; rainfall intensity curves will be developed from Department of Water Resources data, and a rational analysis using HYDRAIN will be used to obtain design flows for culverts and ditches.

Additionally, the Roadway Drainage Report will supply information required for compliance with the National Pollution Discharge Elimination System (NPDES) permit, as specified in Caltrans memorandum to District Directors, dated September 17, 1992. Specifically, the report will determine if the total affected area of disturbance is greater than five acres; a draft Notice of Intent (NOI) will be prepared for review and execution by the City of Stockton prior to Construction. The Storm Water Pollution Prevention Plan (SWPPP) will be prepared by the Construction Contractor, assuming use of Caltrans proposed special provision for this work. To assist the Contractor, the following information will be provided in the Drainage Report and the R.E. File, to be used in the SWPPP:

- Topographic map with discharge points
- Site Map showing:
  - Location of stormwater structures and controls
  - Areas designated to store soils and wastes
  - Areas of cut and fill
  - Drainage patterns and slopes after major grading
  - Areas of soil disturbance
  - Surface water locations
  - Areas of potential erosion where controls will be used
  - Existing and planned paved areas
  - Locations of post-construction storm water structures
  - Vehicle storage and service areas (anticipated)
- Estimate of net increase in sediment load
- Discussion of possible methods for erosion control

Deliverables:

a) 5 copies draft Drainage Report
b) 10 copies final Drainage Report

3.3f Stage Construction/Traffic Handling Evaluation

Stage Construction and Traffic Handling concepts should be reviewed with Preliminary Roadway plans to verify that extraordinary (and expensive) traffic staging will not be required. Concept plans are prepared to review how existing ramp and City street movements are maintained during construction. Additionally, discussion will be included regarding need for temporary signals and corresponding levels of service if there is a temporary reduction in lanes. This document will serve as a tool for the PDT in developing detailed strategy for public relations for construction impacts.
a) Develop construction staging concept plan at 1"=100'.

b) Review available 24 hour 7 day mainline traffic counts for traffic trends so that lane closure charts can be developed.

c) Based on this traffic data, develop appropriate lane closure charts for ramp conforms, bridge work, median crossovers, etc.

d) Identify long term detour requirements (if necessary) for mainline and City street closures. Develop detour routing plan for distribution and review.

Deliverables:

a) 5 bluelines of construction staging concept plans
b) 3 copies of traffic operational analysis report including lane closure analysis and charts
c) 5 bluelines of detour routing plans
d) Memorandum on staging and coordination issues

3.3g Landscape/Aesthetic Concepts

This project will disrupt existing median landscaping and adjacent streetscape. Additionally, the widening under the I-5 undercrossing structure will result in 12 foot high retaining walls approximately 200 foot long on each side of the road. This phase of work will review existing landscape and aesthetic features, confirm what will and will not remain, and develop concept plans for replacement median landscape and retaining wall aesthetic treatment. Median replacement landscape will match existing landscaping on the west side of I-5 (As-builts to be provided by the City).

Design for landscape and irrigation in Caltrans R/W will only consist of replacement of disturbed irrigation lines or planting, based on As-built drawings. No upgrade, enhancement, or revisions of landscape and irrigation systems will be included.

The work plan will include preparation of sample boards with alternative aesthetic treatments for the walls. The boards would include sketches of the proposed treatment, and if possible, photographs of similar installations. These treatments would be reviewed first with City staff, then presented at one or more of the public meetings for concurrence.

Deliverables:

a) Concept layout retaining wall aesthetics
b) Median landscape alternative concepts boards

3.4 TASK 4 GEOTECHNICAL INVESTIGATION

Task Description:

The geotechnical investigation for this project will include preparation of a Materials Report and Foundation Report, plus a soils investigation for widening of March Lane and adjacent intersections. Caltrans has the responsibility of preparing the Materials Report and Foundation Report, and will also provide geotechnical design criteria for March Lane pavement sections. Specifically, the Foundation Report will recommend foundations for the EBMUD Aqueduct
Crossing (widen) plus retaining wall types and design criteria for the March Lane Undercrossing retaining walls. Design criteria for retaining walls at the ramp structure widening, if required, will be included as part of the Foundation Report. The Materials Report will recommend pavement design for ramp work and portions of March Lane within Caltrans right of way.

No geotechnical investigation is included with this contract; no sampling of soils for various volatile organic compounds and heavy metals will be performed.

3.5 TASK 5 RIGHTS OF WAY/PERMITTING/UTILITY COORDINATION

It is assumed City staff will be responsible for right of way appraisals and acquisition, as well as executing any required utility agreements. MT&Co staff and subconsultants will provide support services for these activities.

The various right of way activities are described as follows:

3.5a Hazardous Waste Investigation

There are no known Hazardous Waste contamination sites in the construction area, and no testing will occur based on results of the Initial Site Assessment.

3.5b Utility Conflict Mapping

The utility companies are notified of the potential work during the Base Mapping phase (Task 3) for this project. Once GAD's are developed, the Utility Conflict maps will be prepared. These utility plans show the existing roadway facility with existing utility facilities, superimposed on proposed geometrics. Utility conflicts are noted, and sent to the respective utilities. The utility company is then requested to reply with a relocation plan and reimbursement claim.

3.5c Right of Way Retracement (Hard Copy) Surveys

MT&Co will field survey existing right of way and property lines in the interchange area, specifically where right of way acquisition is required. Title Reports will be supplied by the City; the reports should be ordered with copies of all vesting deeds, including deeds of easements or other encumbrances, and include the same information for contiguous parcels under common ownership. This information will be checked in the field to resolve any discrepancies. Retracement Maps (Hard Copy Surveys) will be prepared showing record annotation (bearings, distances) and field measured distances. These maps will be prepared as draft plans for Caltrans use in preparing R/W exhibits.

3.5d Appraisal Mapping

No Appraisal mapping will be prepared.

3.5e Legal Descriptions

Legal descriptions will be prepared for the properties to be acquired (10 parcels assumed total).

3.5f R/W and Utility Impact Report

No report will be prepared. If significant R/W impacts appear, they will be brought to attention of City staff, and a memorandum prepared, if necessary.
3.5g Hazardous Waste Remediation

No hazardous waste remediation effort is assumed.

3.5h Right of Way Mapping

Right of Way mapping, if required, will be prepared by Caltrans.

Deliverables:

a) 16 sets utility conflict maps
b) 3 bluelines R/W retracement maps

3.6 TASK 6- DESIGN OF BRIDGE STRUCTURES

Structure Considerations:

Design of bridge widening and retaining walls will be coordinated with the Externally Financed Projects Branch of Caltrans Division of Structures.

Ramp Bridge Widening Considerations:

This project will widen the existing 26' wide ramp bridge by approximately 25 feet. The existing structure is a continuous conventionally reinforced box girder, four spans totalling 248 feet in length, with an end diaphragm abutment. The structure type for widening will probably be the same as existing for compatibility in deflections. Approach slabs would be required. Review of the existing structure for seismic loads will be required.

Longitudinal joints are not recommend for this project; closure pour will be required between the existing and new structures.

The embankment approaches to the structure will be widened with the structure as a separate construction project from the March Lane and other ramp modifications. From initial field visitations, it appears that some additional retaining walls may be required to maintain embankment within Caltrans Right of Way. These walls could be conventional reinforced concrete cantilever-type walls (i.e. Type I), or Mechanically Stabilized Earth (MSE) walls. The comments for wall aesthetics for March Lane would also apply to these walls, if required.

Retaining Wall Considerations:

The retaining wall under the March Lane Undercrossing will be either a soil nail or tie-back wall, most likely the latter. The wall facing aesthetics will be a prime consideration; most likely a cast in place facing using standard formliners would be proposed, with layout of formliner patterns complimentary to the strong geometric pattern of the existing sloping face abutment. Other considerations will be constructability (i.e. support of existing subsurface material at the abutment, the number and spacing of piles, etc.) and wall drainage.

3.6a Bridge Type Selection/General Plan

1) Perform site surveys as necessary to determine existing topography and also to establish construction survey controls for bridge and retaining wall layouts
and their relationship to existing structure.

2) Prepare type selection report (including vicinity map and general plan estimate) and falsework opening requirements. Prepare seismic retrofit strategy; accommodation of seismic loads in the new widened structure should be relatively straightforward.

3) Prepare bridge and retaining wall general plans.

4) Attend type selection meeting (not including DaVinci bridge).

5) Update and finalize general plan. Final General Plan to be completed concurrent with 30% roadway submittal.

Deliverables:

a) 5 copies of draft type selection report  
b) 8 copies of final report and 40 copies of the general plan  
c) 8 copies of foundation report

3.6b Unchecked Details Submittal

Unchecked details consist of 100% complete bridge and retaining wall plans that are designed and detailed and deemed ready for the independent check. This submittal is made concurrent with, or in advance of the 50% roadway submittal.

Deliverables:

a) 4 sets of design plans  
b) 2 copies of draft special provisions  
c) 2 copies of the preliminary quantities  
d) 2 copies of the draft foundation report

3.6c Checked Details Submittal

Checked details consist of 100% complete, checked bridge plans that are designed and detailed and deemed ready for bidding. This submittal is made concurrent with, or in advance of the 70% roadway submittal.

Deliverables:

a) 7 sets of design plans (checked and signed)  
b) 2 copies of edited special provisions  
c) 1 copy of the design calculations  
d) 1 copy of the design check calculations  
e) 1 copy of the detailed quantities (with check)  
f) 2 copies of the foundation report

3.6d Final Approved PS&E

Final corrected plans are submitted as the Final Approved PS&E. This submittal is made concurrent with the 100% roadway submittal.

Deliverables:

a) 2 sets of design plans
b) 2 copies of final special provisions

c) 1 copy of the final design calculations

d) 1 copy of the final design check calculations

e) 1 reproducible and 2 prints of 4 scale plans (deck contours)

f) RE File information

3.7 TASK 7 - DETAILED PROJECT DESIGN

Task Description

Once the project is defined in Tasks 1 through 6, detailed project design can begin. The PS&E package will be submitted at 70%, 100%, and final stages of completion. The intent of intermediate submittals is to define the project for review by City and Caltrans staff, and to allow for major comments prior to investment of significant design effort in design details. The approach will be to develop a skeleton plan set based on the Geometric Approval Drawings, and build upon the set by adding plan information and additional detail sheets until a complete, buildable, and biddable package is reached. Because this project is on a State Facility, the plans will be prepared to Caltrans format; this approach will allow for smoother Caltrans design reviews.

The northbound off-ramp bridge will be included in the I-5/March lane bid package.

The following plan sheets will comprise the final plan packages:

Northbound off-ramp Plans:

<table>
<thead>
<tr>
<th>No.</th>
<th>Plan</th>
<th>Scale</th>
<th>Estimated Number of Sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Title Sheet</td>
<td>1&quot;=500'</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Typical Cross Sections</td>
<td>1&quot;=10'</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Standard Plan List</td>
<td>1&quot;=10'</td>
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Total Ramp Layout/Bridge Plan Sheets 25

Roadway Plans (March Lane):

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-16-
1. Title Sheet 1"=500’ 1
2. Typical Cross Sections 1"=10’ 2
3. Standard Plan List 2
4. Key Map and Line Index 1
5. Layout & Utilities 1"=50’ 4
6. Profile/Superelevations 1"=10'(V),50'(H) 4
7. Construction Details 6
8. Drainage Plan 1"=50’ 4
9. Drainage Profile and Details 6
10. Drainage Quantity Sheet 2
11. Stage Construction and Traffic Handling 10
12. Construction Area Signs 1
13. Pavement Delineation Plans & Quantities 6
14. Summary of Quantities 3
15. Signs 4
16. Highway Planting 8
17. Electrical: Traffic Signals/Interconnect 8
18. Temporary Signal Plans (3 stages assumed) 6
19. General Cross Sections 12

Total Estimated Roadway Plan Sheets 90

Structure Plans (Retaining Walls, DaVinci Bridge):

| 1. Retaining Wall General Plan 1 |
| 2. Wall Layout & Profile 1 |
| 3. Wall Reinforcing Details 2 |
| 4. Wall Aesthetic Details 2 |
| 5. Retaining Wall Drainage 1 |
| 6. DaVinci General Plan 1 |
| 7. DaVinci Foundation Plan 1 |
| 8. DaVinci Abutment Layout & Details 2 |
| 9. Typical Section 1 |
| 10. Girder Layout 1 |
| 11. Miscellaneous Details 1 |
| 12. Log of Test Borings 2 |

Total Structure Plan Sheets 16

Plan Descriptions:

Descriptions of pertinent information regarding the above anticipated plan sheets are provided as follows:

3.7-1 Bridge Plans

The description of the required bridge plans and structure types are noted above. The bridge plans will be prepared in conformance with the Division of Structures "Memo to Designers", "Bridge Design Details", "Externally Financed Projects Manual", and the modified AASHTO Bridge Design Specifications.

3.7-2 Ramp and Roadway Design
Ramp and roadway design plans will follow Caltrans plan format. Typical Cross Section and Layouts will be provided. Construction details will be required for sidewalks, monuments, traffic islands, intersection grading, median paving, curbs, bus turnouts, etc. Separate sheets will be provided for Profiles and Superelevation Diagrams.

3.7-3 Hydraulic Structures (Drainage Plans and Culvert Plans)

Culverts, ditches, and inlets will be shown on the drainage plans. Drainage systems will be numbered, with letters assigned to individual drainage items. Drainage profiles will be on separate sheets, followed by Drainage Details and Drainage Quantities. Details will be required for any City standards, including manholes and trench sections.

3.7-4 Signal Design

Traffic signals will be shown on the "E" sheets, with separate sheets, specifications, and pay items for City, County, and Caltrans systems. It is assumed that improvement of highway lighting will not be required. Ramp metering may be required with improvement of the interchange; however, because it is not included with the PSR, we have omitted it from our fee proposal.

Separate signal plans will be required for temporary signals required for stage construction, should the roadway need to be lowered under the March Lane Undercrossing.

3.7-5 Landscape Plans

Landscape replacement plans will be prepared for replacement planting at the ramps, plus median landscaping on March Lane. Replacement irrigation systems will be included as required, with electrical service coordinated with signal design. Erosion Control plans will be included with Construction Details.

3.7-6 Plan Preparation

Plans will be prepared for each bid package and submitted at the 70%, 100%, and final stages. The purpose of the phased approach is to provide sufficient level of plan development for meaningful reviews, but not provide excessive detailed design that may have to be revised for subsequent submittals. Following is a description of the contents of each submittal.

a) 70% Review

After submittal of GAD’s and Staging/Traffic Handling concepts, MT&Co will prepare plans based on their review comments and completion of the project design.

The 70% submittal represents a biddable package with respect to geometric layout, profiles, and drainage; however, some details will need to be "fleshed out"; on recent MT&Co projects, this submittal has been considered to be Draft PS&E. The corresponding bridge submittal is the "Unchecked Details".

Signal plans will be submitted for the first time; this submittal will
include locations of signal heads, conduit, and service location. The conductor schedule will not be completed at this time, however.

Deliverables:

7 blueline sets (full size)

b) 100% Review

This submittal represents complete Draft PS&E, ready for bidding. Major design features have been reviewed at least twice at this stage; however, some plan details are submitted for the first time at this submittal.

Deliverables:

7 blueline sets (full size)
70% review comments (City, County, Caltrans)

c) Final Submittal

This submittal represents final checked plans, ready for bidding, with changes as requested in the 100% review.

Prepare RE File (separate file to DOS for bridge related items). File will include list of project contacts, memos to Resident Engineer, Quantity Calculations for use in releasing progress payments, utility agreements, permits, right of way contracts, and copies of relevant reports.

Prepare Surveyor's File including copies of all survey notes and calculations. Prepare cutsheets for slope staking, rough grades and finish grades. Include control line traverses and ties to right of way lines.

Deliverables for final PS&E:

- 7 bluelines of final plans (complete set)
- 2 copies of RE File and Surveyor’s File
- 100% review comments

PHASE 2 CONSTRUCTION SERVICES

4.1 TASK 1 - BIDDING ASSISTANCE

Advertising and Bidding procedures will be the responsibility of City. Consultant will coordinate and schedule a pre-bid meeting on the project.

It is critical to maintain impartiality during the bidding process; the Consultant will assist the City during the bidding period as required, with the knowledge that assistance of bidders must be on an equal basis. To maintain this impartiality, the following procedures is used: While the project is being advertised for bids, all questions concerning the intent shall be referred to City Project Engineer for resolution. The Consultant will provide consultation with City staff in interpretation of the contract documents. The interpretation of these items will be analyzed for decision by City as to the proper procedure required. Corrective action taken will either be in the form of an addendum prepared by the Consultant and issued by City, or by a covering change order.
after the award of the construction contract.

4.2 TASK 2 - CONSTRUCTION ASSISTANCE

Task Description:

Construction of the project will be the responsibility of the City. During the construction phase, Consultant will work closely with Resident Engineer to assist and advise RE in order to minimize construction conflicts and to expedite project completion.

4.3a Construction Support

1. Attend pre-construction meeting.

2. Provide ongoing consultation and interpretation of contract documents as required. Respond to contractors' inquiries through Resident Engineer's request. This task would include an allowance for six site visits.

3. Review proposed change orders and make recommendations if requested by Resident Engineer.

4. Review submittals and shop drawings, when requested by the Construction Manager. Provide construction assistance as required. Construction staking information will be provided with the PS&E package, but interpretation of these documents will occur as required.
ESTIMATED STAFFING HOUR AND ESTIMATED FEE
STATUS MEETING AGENDA
I-5/MARCH LANE INTERCHANGE PS&E
CITY OF STOCKTON

Date: May 27, 1994 (time to be determined)

Location: City of Stockton
Department of Public Works
425 N. El Dorado Street Room 317
Stockton, CA 95201

Agenda:

I Overview of Project Progress
   A. Mapping Status
   B. Geometrics status
      o preliminary geometrics
      o March Lane profile
      o Cross Sections
   C. Northbound off-ramp/retaining wall options

II Staging/Construction Issues
   A. Equipment access thru EBMUD
   B. Off-ramp lane closure at bridge
   C. March Lane staging/traffic handling

III Right of Way/Utility Status
   A. Utility mapping
      o preliminary conflicts
      o need for potholing
   B. Preliminary R/W impacts
      o parcels for acquisition
      o parking lot impacts (Denny's)

IV CPM Schedule/Management Issues
   A. Current schedule
   B. Critical activities

V Distribution
   Mr. Robert Murdoch, City of Stockton
   Mr. Dave Mendoza, Caltrans District 6
   Mr. Rob Himes/Ken Doty/Hatem Ahmed, MT&Co
   Mr. Gary Grimes, Gameo-Sanchez Associates
   Mr. Dan Yau, CES Planning & Engineering
   Mr. Tim Intraoka, Orsee Design Associates
   Ms. Judith Buethe

TOTAL P.01
TO: City of Stockton Public Works

ATTENTION: Bob Murdoch

DATE: 9/20/93
FILE NO.: 93858
RE: I-5/March Lane
Revised Fee

We Are Sending
☐ Per Your Request
☐ Enclosed
☐ By Mail
☐ By Printer

☐ By Messenger
☐ By UPS/Special Delivery
☐ Under Separate Cover

For your
☐ Action
☐ Approval
☐ Review
☐ Comments
☐ Use

☐ File/Information
☐ Construction
☐ Quotation

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REMARKS: Bob:
1. See cover letter for summary of revisions we made.
2. Significant scope changes have been underlined.
3. If you have any questions or need more copies, please call.

MARK THOMAS & CO. INC.

By: Tim Fleming

Copies to:

TRANSPORTATION FACILITIES  HIGHWAYS AND BRIDGES  MUNICIPAL ENGINEERING  ASSESSMENT DISTRICTS  HYDROLOGY AND DRAINAGE
ITE DEVELOPMENT  BUSINESS PARKS  SURVEYING  CONSTRUCTION MANAGEMENT  CONSTRUCTION LAYOUT AND INSPECTION  SPECIAL DISTRICT MANAGEMENT
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**TOTAL PHASE 2 SERVICES**

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<td>6.c Checked Details</td>
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<td>6.d Retaining Wall Layout</td>
<td>14,352</td>
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<td>6.e Retaining Wall Details</td>
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**TASK 7 - Detailed Project Design**

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<td>Typical Cross Sections</td>
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<td>Layout Sheets</td>
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<td>Profile and Superelevation</td>
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<td>Construction Details</td>
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<td>Drainage Layout</td>
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<td>Drainage Profiles and Quantities</td>
<td>8,752</td>
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<td>Pavement Delineation/Quantities</td>
<td>6,556</td>
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<tr>
<td>Stage Construction/Detour/Traffic Handling</td>
<td>15,299 5,792</td>
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<td>Summary Of Quantities Sheets</td>
<td>5,192</td>
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<td>Sign Plans</td>
<td>1,172 8,943</td>
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<td>Landscape Plans</td>
<td>660 18,690</td>
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<td>Electrical/Lighting/Sign Illumination Plans</td>
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**PHASE 2 CONSTRUCTION SERVICES**

**TASK 2 - Bidding Assistance**

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<tr>
<td>Respond to Inquiries</td>
<td>750 209</td>
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<td><strong>Subtotal Task 2</strong></td>
<td>760 209</td>
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**TASK 3 - Construction Assistance**

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<tr>
<td>3.1 Preconstruction Meeting</td>
<td>620</td>
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<tr>
<td>3.2 Ongoing consultation</td>
<td>5,648 2,926 2,110</td>
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<tr>
<td>3.3 Review/comment progress payments</td>
<td>4,832 627 1,040</td>
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<td>3.4 CCO review/recommendation</td>
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<td>17,066 3,553 3,150</td>
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**TOTAL PHASE 2 SERVICES** | 17,826 3,762 3,150 |

**Grand Total Project Fees** | 287,577 48,455 36,265 | 7,029 15,546 34,620 |
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<thead>
<tr>
<th>Fee Summary</th>
<th>Base Fee</th>
<th>Sub-Markup</th>
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<tr>
<td>By Consultant</td>
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<tr>
<td>Mark Thomas &amp; Co. Inc.</td>
<td>287,577</td>
<td>7095.76</td>
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<tr>
<td>CCS Planning</td>
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<tr>
<td>Gameyo-Sanchez</td>
<td>36,265</td>
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<td>36,265</td>
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<tr>
<td>Kleinfelder</td>
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<tr>
<td>PAR Environmental</td>
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<td></td>
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<tr>
<td>Judith Buehle</td>
<td>7,025</td>
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<tr>
<td>Aelytek Inc.</td>
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<tr>
<td>Orsee Design</td>
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<td>TOTAL FEE NOT TO EXCEED</td>
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<td>436,588</td>
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<td>TASK</td>
<td>Principal/Engineer</td>
<td>Senior Engineer</td>
<td>Design Engineer</td>
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<tr>
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<td>1. Technical Advisory Committee (TAC) Meetings – 6 meetings</td>
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<td>30</td>
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<td>2. Permanent Traffic Signal PS&amp;E</td>
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<td>55</td>
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<td>3. Temporary Traffic Signal PS&amp;E</td>
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<tr>
<td>4. Street Lighting/Signal Interconnect/Sign Illumin. PS&amp;E</td>
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<td>5. Sign PS&amp;E</td>
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<td>6</td>
<td>12</td>
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<td>7. Construction Submittal Review</td>
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<td>8. Pre-construction Meeting &amp; Field Reviews</td>
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<td>24</td>
<td>147</td>
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* Including CAD, computer plotting, reproduction, travel and other project related expenses.
FEE ESTIMATE
GAMAYO-SANCHEZ AND ASSOCIATES
# Proposal Manhour/fee Estimate

**Job Name:** March Lane/I-5 Interchange  
**Client:** Mark Thomas Co.  
**Company:** Gamayo, Sanchez Assoc., Inc.  
**Revised:** 9/10/93

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<thead>
<tr>
<th>Task Description</th>
<th>Principal Engineer</th>
<th>Senior Structural Engineer</th>
<th>Junior Engineer</th>
<th>Additional Engineer</th>
<th>Clerical Support</th>
<th>Prime Supplies</th>
<th>Total Hours</th>
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<tr>
<td>I. Preliminary Phase</td>
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<td>2. Research/Familiarization</td>
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<td>3. Assist geotechnical engineer in establishing criteria</td>
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<td>6. Preparation of additional calculations &amp; drawings</td>
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<td>after plan review by city or outside agency</td>
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<td>III. Construction Phase</td>
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<td>3. Field observation/misc.</td>
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<td>IV. General</td>
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<tr>
<td>Printing &amp; Supplies</td>
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<td>114</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$36,265.00</strong></td>
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</table>
FEE ESTIMATE
JUDITH BUETHE
MARCH LAND/INTERSTATE 5 INTERCHANGE IMPROVEMENTS

SCOPE OF WORK

Judith Buethe Marketing and Public Relations

Our vision for public participation will ensure effective communication with affected citizens, businesses, special interest groups, governmental entities, and the general public. Thorough public briefings and publicized opportunities for involvement will reduce the prospect of misunderstandings and help meet project goals to minimize impacts on area businesses, as well as minimize inconvenience to neighbors and frequent users of the March Lane/Interstate 5 Interchange.

The recommended program for public participation incorporates the specific elements contained in the City's Request for Proposals. Following are the program elements to be done by Judith Buethe:

Program Elements

1. Public Meetings

Two public meetings, to present design proposals to the public, will be coordinated by JB, who will arrange for set-up and supplies, such as comment cards, agendas, pens, and sign-in sheets, as well as beverages to be served. These meetings will be held in nearby facilities to present the project to neighboring home and business owners, organizations, and schools, as well as to other interested citizens and groups. The purpose of these meetings will be to provide information on the project, detour plans, and methods of construction. Information given at the meetings will also explain how this work will affect citizens and business owners and what steps will be taken to minimize any inconvenience to them.

Care will be taken at the meetings to present thorough information about the project in straightforward, easily understood terms. Further, oral and written citizen input will be solicited on how traffic flow can be handled to minimize disruption to area businesses and inconvenience to mass transit, private vehicle drivers, bicyclists, and pedestrians who use the interchange. This approach will help citizens plan commute and shopping trips during construction.

The neighborhood meetings could be held in the early evening at Claudia Landeen Elementary School west of the interchange and at the Venetian Bridges Recreation Center or Quail Lakes Recreation Center east of the interchange.

Follow-up letters to people who attend the neighborhood meetings are not included
in this scope, but if required, will be written, produced, and sent.

2. **Publicity**

JB will keep the print and broadcast media informed on progress of the project by means of personal contacts, as well as writing, production, and sending two press releases. Topics for news releases and articles could include initiation of the project, upcoming public meetings, how to contact project operations sources with suggestions on traffic control, the Hotline, significant milestones reached, detour plans, how to access businesses, methods of construction, steps being taken to minimize inconvenience, and safety issues, as well as aesthetics of the completed project.

Along with formal print and broadcast media outlets, JB will inform community and organization newsletters.

JB will write an article about the project for one issue of "CityScape."

3. **Mailers**

A mailing universe will be established to include the 5,773 homes and 727 businesses in the area, defined as the corridor from the Brookside development west of Interstate 5 east to Pershing Avenue, south to the Calaveras River, and north to 14-Mile Slough. Elected officials representing the city, county, state, and school districts in the area will be included, as well as other interested governmental entities, such as COG, SMART, EBMUD, FHWA, and Caltrans. Special interest groups, churches, homeowners' associations, and other private organizations can be added to the list.

Two mailers announcing the public meetings will be sent to the mailing universe defined above. The list will be augmented with names from telephone and personal contacts.

4. **Business/organization contacts**

On either side of I-5, a list of March Lane area businesses which may be directly affected will be developed for additional contacts, as indicated.

Elected officials, other governmental entities, special interest groups, churches, homeowners associations, and other private organizations mentioned in #3 will be kept on a separate list. We will ensure each of these entities and organizations receives the broader mailings, and we will initiate or respond to personal contacts, whenever indicated to meet project goals or citizens' desires for information and input.
5. **Project Hotline**

The Stockton Street Improvement Project Hotline will serve as an official source for project-related information. A log of calls will be kept and dispensed to pertinent project consultants and city officials.

6. **TAC and Team Meetings**

JB will attend TAC and team meetings as required (perhaps two).

Additionally, the public relations consultant will be available for consulting as needed.
<table>
<thead>
<tr>
<th>Hours</th>
<th>Cost</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>360</td>
<td>Public Meetings (2)</td>
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<tr>
<td>8</td>
<td>480</td>
<td>Meetings (3 hrs each x 2)</td>
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<tr>
<td>6</td>
<td>360</td>
<td>Preparation (4 hrs x 2)</td>
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<td></td>
<td>130</td>
<td>Follow-up (3 hrs x 2)</td>
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<td>50</td>
<td>Tables/chairs (100 chairs @ .70 = $70; 10</td>
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<td></td>
<td>tables @ $6 - $60 totals $130 x 1 meeting)</td>
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<td></td>
<td>75</td>
<td>Sound system</td>
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<td>150</td>
<td>Supplies (cost. cards, agendas, pens, etc)</td>
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<td>Beverages (75 @ $1/each x 2)</td>
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**Publicity**

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<th>Cost</th>
<th>Item</th>
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<td>6</td>
<td>360</td>
<td>Press releases (2 x 3 hours each)</td>
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<td>100</td>
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<td>3</td>
<td>180</td>
<td>Article in &quot;CityScape&quot; (1 x 3 hrs)</td>
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<td>9</td>
<td>684</td>
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**Mailers** (5,773 households and 727 business owners)

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<th>Cost</th>
<th>Item</th>
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<tbody>
<tr>
<td>8</td>
<td>480</td>
<td>Mailer to announce public meetings</td>
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<tr>
<td>3200</td>
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<td>Production and mailing</td>
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<td>Design</td>
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<td>Typesetting</td>
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<td>8</td>
<td>4380</td>
<td>Sub-Total</td>
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**Hotline**

**TAC and Team Meetings**

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<th>Cost</th>
<th>Item</th>
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<tr>
<td>6</td>
<td>360</td>
<td>TAC meetings (3 hrs each)</td>
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<tr>
<td>37</td>
<td>7029</td>
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---

1. Assumes necessity of chairs/tables if one of the recreation centers is used.

2. Assumes use of SSIP Hotline.
TO: Tim Fleming

DATE: 9-20-93

TIME: 11:20

# OF PAGES (INCLUDING COVER): 5

NOTES: Scope work & budget (revised) or March 1993/1-5.

FROM: Judith Buethe
Marketing and Public Relations
P. O. Box 773, Stockton, CA 95201
PHONE: 209/948-4257
FAX: 209/942-3080
FEE ESTIMATE
ORSEE DESIGN ASSOCIATES
PROPOSED SCOPE OF SERVICES.
I5 - March Lane Improvements

The scope of the landscape architectural services is divided into the following Tasks:

Task 1.0 Coordination / Meetings / Interface

Task 1.1 Project Familiarization
  1.1a - Review overall program requirements.
  1.1b - Review public input to-date, and agency requirements.
  1.1c - Review site conditions and constraints.
  1.1d - Compile above information.

Task 1.2 - Schematic Design
  1.2a - Gather and review data pertinent to the project including site and civil engineering
         parameters, City of Stockton street & median landscape plan.
  1.2b - Prepare Schematic Design Plans (2 alternatives) for median island areas.
  1.2c - Prepare probable Construction Cost Estimate (schematic).
  1.2d - Attend 1 public meeting.

Task 2.0 Develop Architecture Treatment of Retaining Wall System

Task 2.1 - Materials Analysis
  2.1a - Study the most cost effective methods for construction, indicate aesthetics
         alternatives, alternative materials - color palette, etc. for compliance with State and
         agency requirements.
  2.1b - Develop (2 alternate) elevation studies and materials boards.

Task 2.2 - Design Study
  2.2a - Prepare graphics for presentation.
  2.2b - Prepare probable Construction Cost Estimate (Preliminary)
  2.2c - Attend 1 public meeting

Task 2.3 - Deliverables
  Deliverables for Task 2.3 are as follows:
  - Elevation Studies - 2 alternatives.
  - Materials/Color boards - 2

Task 3.0 - Plan, Specifications and Estimates

Task 3.1 - Project Management and Coordination
  3.1a - Management
  3.1b - Interface Coordination
  3.1c - Documentation
  3.1d - Base Plans @ 1" = 50' scale for replacement planting and irrigation modifications.
         @ 1" = 20' scale for median island development.
3.1e - Deliverables
Deliverables for Task 3.1 are as follows:
- Draft base plans

Task 3.2 - Draft PS&Q Design Phase (50% Submittal)
3.2a - Plan Sheets - (as noted) scale on 22" X 34" plan sheets on CADD:
  Preliminary replacement planter plans
  Preliminary irrigation modification plan
  Preliminary median planting/paving plans
  Preliminary median irrigation plans
3.2b - Special Provisions
3.2c - Preliminary Construction Quantities and Estimate
3.2d - Deliverables
  - Draft Plan Sheets
  - Special Provisions
  - Preliminary Construction Quantities and Estimate

Task 3.3 - Final PS&Q Delivery (70% Submittal)
3.3a - Plan Sheets
  Final Replacement Planting and Irrigation modification Plans
  Final Median Planting, Paving and Irrigation Plans
  Final Details
3.3b - Special Provisions
3.3c - Final Quantities and Estimate
3.3d - Resident Engineer's File
3.3e - Final Draft PS&E
3.3f - Deliverables
  Deliverables for Task 3.4 are as follows
  - Design plan sheets
  - Specifications and Special Provisions
  - Quantities Estimate

Task 3.4 - Final PS&E
3.4a - Plans, Specifications and Estimates
3.4b - Construction Bid Documents
3.4c - Resident Engineer's File
3.4d - Submittals
  - Bid Documents
  - Resident Engineer's File

Task 3.5 - Construction Bidding Phase
3.5a - Extra Work
  Consultant shall perform Services under this Task only at the request of the Client.

Task 3.6 - Construction Phase Services
3.6a - Extra Work
  Consultant shall perform Services under this Task only at the request of the Client.
ASSUMPTIONS:

1. Mark Thomas & Company, Inc. shall provide the Following:
   A. Base Maps
      1. Hard copy @ 1" = 50' scale and 1" = 20' scale (as required)
      2. DXF CADD files @ 1" = 50' scale and 1" = 20' scale (as required)
   B. Data on Existing Utilities and Utilities Review Checklist

2. CD's shall be based on City of Stockton's Standards not Caltrans Standards.
   A. Orsee Design Associates will provide work according to Caltrans Standards on an Extra Service basis.

3. 3 submittals @ 50%, 70% and final.

4. Orsee Design Associates shall use existing data from City of Stockton for street tree and median Construction Documents.

5. Orsee Design Associates shall attend 2 public meetings
### Total Project Cost

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**Note:**
- Landscape Architecture
- Close Design Associates, Inc.
- 15 - March Lane Improvements
- September 13, 1993 (Revised)
FEE ESTIMATE
AELYTEK, INC.
Mark Thomas & Co., Inc.
530 Bercut Drive "C"
Sacramento, CA 95814
Attn: tim Fleming

Sept. 13, 1993
E-124793

Dear Tim,

With reference to your FAX of 9/7/93 and our telephone conversation of 9/10/93, our revised fee for the I-5/March Lane project in Stockton is $15,546.10, please see the revised fee breakdown enclosed.

Very Truly Yours,
AELYTEK, Inc.

[Signature]
Robert D. Pettit
Vice President
# FEE BREAKDOWN FOR I-5/MARCH LANE, STOCKTON

## 1. Direct Labor

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**TOTAL DIRECT LABOR** $4325.71

## 2. Indirect Labor

Indirect labor @ 21% of direct labor = $908.40

**TOTAL INDIRECT LABOR** $908.40

## 3. Material & Equipment

140hrs of stereoplotter @ $20/hr = $2800.00
70hrs of CAD system @ $3.90/hr = $273.00

**TOTAL M & E** $3073.00

## 4. General & Admin Overhead

G & AO @ 100% of direct labor = $4325.71

**TOTAL G&AO** $4325.71

**subtotal lines 1-2-3-4** $12632.82
10% profit $1263.28

**TOTAL** $13896.10

## 5. Subcontracted Items

Aerial photography, diaps, prints $1150.00
Photo index $500.00

**TOTAL SUBS** $1650.00

**TOTAL** $15546.10
PRELIMINARY BRIDGE REPORT,
TYPE SELECTION RECOMMENDATION
AND SEISMIC STABILITY STUDY

EBMUD AQUEDUCT UNDERCROSSING

10-SJ-5-29.9
EA 434201

PREPARED BY:

MARK THOMAS & CO. INC.

T.R.FLEMING
No. 38131
Exp. 3/31/97
CIVIL

TIMOTHY FLEMING
PROJECT MANAGER

Date: 7/20/94
EBMUD Aqueduct Undercrossing:

I. Introduction

The East Bay Municipal Utility District (EBMUD) Aqueduct UC is an offramp (northbound) from Route 5 to March Lane in the City of Stockton. The interchange is located in an urbanized area, and is bordered by development.

The structure spans EBMUD Mokohime Aqueduct, consisting of 66 inch, 69 inch, and 89 inch diameter water transmission lines plus a 10 inch petroleum products (Santa Fe Pacific pipeline) high pressure transmission line.

EBMUD Aqueduct Undercrossing is a four span, reinforced concrete box girder bridge constructed in 1968, providing a total width of approximately 26 feet. It is proposed to widen the structure additional 25'-6" to the east to carry 3 lanes of traffic with 8' and a 4' shoulders. Standard Caltrans procedure is to seismically evaluate the existing structure prior to its being widened. This report reviews the proposed widening of the EBMUD Aqueduct UC, as well as evaluating the seismic adequacy of the existing structure.

II. As-Built Data

The original structure is a four continuous spans throughout its length. Features of Original Structure:

Columns

The original bridge columns, each 2'-6"x3'-6", are lightly reinforced, under-reinforced by today's standards. The 12 #11 bars per column sum to 0.9% of the gross concrete area, less than today's 1% minimum per AASHTO criteria. The main column bars adequately developed into the superstructure. The confinement steel is considered poor with #4 bar at 12 inch spacing.

Bent Cap

The bent cap is less reinforced than the columns.
Footings

The pile footings at bents 2 and 4 are 7'-4" square. The pile footings at bent 3 is 9'-0" square. At all bents the footings are lightly reinforced at the bottom of footing only.

Abutments

The abutments are diaphragm type, bearing on 45 tons piles.

Material Properties used for analysis
Yield strength of reinforcing steel, fy: 44 ksi
Ultimate concrete compressive strength, fc: 5 ksi (per Caltrans Memo to Designers 20-4).

III. Proposed Structure

The proposed structure is a four span, cast-in-place, reinforced concrete box girder with span length of 36.75', 91.0', 91.0', and 37.1'. Total bridge length is 255.83' with a closure pour that connects the widening with the existing bridge. Diagram type abutments are proposed.

The structure has been chosen to match the existing bridge type and depth. It is also economical and a familiar construction method for this span length for the general contractors. The proposed abutment type matches the existing abutment and allows temperature movements for the short spans.

IV. Design and Construction Data

Aesthetic Requirements

The widening matches the existing structure requirements.

Alignment and grade

Bridge layout conforms to "OM" line as shown on the general plans. This layout is also shown on the project geometric approval drawings.

Approaches

Asphalt approaches for existing bridge shows cracks and have settled. Due to heavy onramp traffic and to avoid backup on freeway, place structure approach slab Type R (10D) at both sides of existing and widening structures.
Bridge Rail

Place Type 25 concrete barrier on the right side of the widening, and replace existing barrier with Type 25 concrete barrier on the left side of the existing bridge. Remove existing barrier on the right side of the existing bridge.

Clearances

Proposed widening will not encroach on the existing 12.67' vertical clearance. Minimum horizontal falsework opening of 16' with 10' clear height will be provided for pedestrian traffic at underneath bridge between bents 3 and 4.

Construction Season

During any time of the year.

Temperature Range

25 to 110 degrees Fahrenheit.

Coordination

Widening to be located in Environmental Area II, not exposed to de-icing or chemicals. No special deck protection required.

Structure Depth

Widening shows 5.0' structure depth for the 91' span, matching existing. No minimum vertical clearance requirements during construction.

Detour

A three stage construction is proposed for maintaining traffic during widening construction. The stages and respective traffic handling on the northbound offramp are as follows:

1. First stage will consist of building the bridge widening while traffic is maintained on the existing bridge.

2. The second stage will remove existing bridge rail and construct closure pour. Only one lane of traffic can be maintained; it will be maintained on the existing bridge. We estimate one to two weeks are required for this stage.
3. The third stage will remove existing Type 9 barrier and pour left concrete barrier Type 25. Traffic will be allowed on the widened bridge using 8' shoulder and 2 traffic lanes.

District 10 and the City of Stockton also will need to review this proposed traffic handling.

**Drains**

None on the structure.

**Foundation**

Abutments and bents will be supported on driven 45 tons piles. Piles within 50' from EBMUD Aqueduct will be predrilled to the depth of the "spring lines" of the pipes. The source of the geotechnical data is Preliminary Geologic/Geotechnical Information by "Department of Transportation - Division of New Technology, Materials and Research Office of Technology" dated April 25, 1994.

The pertinent geotechnical data is listed below:

- Ground Water surface elevation: 4.5 ft
- Potential of Liquefaction: low
- Potential for scour: none
- Depth to rock-like material: 150 feet
- Peak horizontal bedrock acceleration: 0.15g
- Controlling seismic faults: Greenville, 38 km (24 miles) from site
- Geologic Data: Soft to stiff clayey, slightly compact to compact sandy silt, and slightly compact to dense silty to clean sand
- Foundation Data Original structure: driven concrete piles (45 tons)

**Widen structure**

Match existing driven concrete piles (45 tons)

**Skew**

Approximately 19 degrees to the left.

**Sequence of Operations**

Widening and closure pour to be built in two stages as shown on the bridge general plan.

**Cross Slope**

Match existing, 2%+. 
Width of Bridge

48’ clear width between Type 25 barrier railings.

Utilities

The bridge spans three significant water transmission mains (66 inch, 69 inch, and 89 inch diameter), plus a 10 inch high pressure petroleum products pipeline.

No utilities will be included within the widening structure.

V. Analysis and Findings

The moment ductility method express the overstresses of a column in terms of the ratio of its seismic elastic demand, Md, to its nominal moment capacity, Mn. The Demand/Capacity (D/C) ratio per Caltrans’ Memo to Designers 20-4 is not to exceed 2.0 for rectangular multi-column bents. If the D/C ratios do not fall below this limit, Caltrans recommends checking the performance of the structure with the displacement ductility method.

Results of Moment Ductility Analysis:

Seisab was utilized to determine the seismic demand forces on the columns. PC yield program was used to determine the column capacities. The footing elevations are approximately the same at all bents. Bents 2 and 4 top of columns have D/C ratios of 1.2, while bent 3 has D/C ratios of 1.8 at the top and D/C ratios of 3.0 at the bottom due to its rigid fixity at the bottom. A second analysis allowed a lap splice failure at the bottom of bent 3 columns, thus creating a hinging condition. Bents 2 and 4 top of columns have D/C ratios of 1.9 while bent 3 has D/C ratios of 2.0 at the bottom. The soil behind abutments will not be mobilized after allowing a hinging condition at the bottom of bent 3 columns.

Berkley method was used to analyze bent columns shear. Bents 2, 3, and 4 columns have sufficient capacities to resist shear.

Conclusions

Existing structure was analyzed with the purely elastic moment ductility approach. The existing structure is seismically adequate, in addition to that, the widening will enhance integrity.
Attachments:

1. Vicinity Map
2. Bridge General Plan
3. Structure Type Selection Memorandum
4. Bridge Cost Estimate
5. Existing Bridge As-builds
6. Seismic stability Study D/C ratios
Bridge General Plan
Structure Type Selection Memorandum
**STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION**

**STRUCTURE TYPE SELECTION**

**DSD 0045 (REV. 2/90)**

**PROJECT IDENTIFICATION**

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**DESIGN GROUP**

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**CONSTRUCTION COST - $**

| EBMUD Aqueduct U.C. (Widen) | $512,000 |

**DESIGN HR'S REQ'D**

| -- |

**TYPES CONSIDERED:**

- R/C Box Girder, end diaphragm abutments

**PREVIOUS COMMUNITY AESTHETIC OR ECOLOGICAL COMMITMENTS:**

---

**ARCHITECTURAL RECOMMENDATIONS (SKETCH ELEV & X-SECT; GIVE STD. COL. NO.)**

None - used vertical sloping exterior girder with overhangs to match existing. 2'6"x3'-6" prismatic columns, Type 25 concrete barriers.

---

**ENGINEERING AND ARCHITECTURAL SUMMARY:**

Reinforced concrete box girder selected due to bridge economics.

No minimum vertical clearance requirements during construction.

Architecture to be consistent with EBMUD Aqueduct Undercrossing.

End diaphragm was chosen for the shortness of the spans.

---

(1) DESIGN ENGR
(2) BD DES SUPV
(3) BD ARCH PLNR
(4) CHIEF STRUCT DES
(5) FILE

**PROJECT ENGINEER**

Majdi Kanaan

**PROJECT ARCHITECT**
Bridge Cost Estimate
## MARK THOMAS & CO. INC.
### BRIDGE GENERAL PLAN ESTIMATES

**BRIDGE**  EBMUD AQUEDUCT UNDERCROSSING (WIDEN)  
**TYPE**  2 SPANS CIP/PS CONCRETE BOX GIR  
**LENGTH**  265'-10 1/4"  
**WIDTH**  25'-6"  
**AREA**  6524 SF  
**BR. NO.**  29-2283  
**RCVD BY**  PM  
**DISTRICT**  10  
**CO**  SJ  
**RTE**  5  
**DATE**  7/18/94

**DESIGN SECTION**  
**PROJECT INCLUDES**  
**AND $**  

**QUANTITY**  
**PRICE**  
**AMOUNT**  

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**SUBTOTAL**  $393,650

**MOBILIZATION**  10%  $39,365

**CONTINGENCIES**  -20%  $78,730

**BRIDGE TOTAL**  ($/SF)  $78

**GRAND TOTAL**  $511,745

**FOR BUDGET PURPOSES - SAY**  $512,000

**COMMENTS**

---

**ESTIMATING - LAST**
Existing Bridge As-buils
Note: For bent footing dimensions and pile layout see bent details.
Bottom of footing elevation is ~3.0 for Bents 3 & 4
~4.0 for Bents 2

NO AS BUILT CHANGES

G.W. Cusson Jr.
Engineer
10-060104
LTS-9-69-49
Seismic stability
Study D/C ratios
### SEISMIC STABILITY STUDY

EBMUD AQUEDUCT UNDERCROSSING

**BRIDGE # 29-226 S**

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MK 7/14/94
Moment Ductility Results

EBMUD Aqueduct Undercrossing
Demand to Capacity (D/C) Ratios
Existing Condition
(Bent 3 Bottom Fixed)

LEGEND

INDICATES PIN END OF COLUMN

INDICATES FIXED END OF COLUMN

INDICATES D/C RATIO OF COLUMN

NOTE: CALTRAN’S ALLOWABLE MAXIMUM B/C RATION PER MULTIPLE RECTANGULAR COLUMN BENTS IS 1.5–2.0.
## SEISMIC STABILITY STUDY

EBMUD AQUEDUCT UNDERCROSSING

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INDICATES D/C RATIO OF COLUMN

NOTE: CALTRAN'S ALLOWABLE MAXIMUM B/C RATION PER MULTIPLE RECTANGULAR COLUMN BENTS IS 1.5–2.0.
REQUEST FOR PROPOSALS (RFP) TO PROVIDE
CONSULTANT SERVICES FOR THE DESIGN OF THE
MARCH LANE/INTERSTATE 5 INTERCHANGE IMPROVEMENTS

I. INTRODUCTION

The City of Stockton (CITY) is soliciting proposals for the preparation of Plans, Specifications, and Estimates (PS&E) in accordance with the California Department of Transportation (Caltrans) requirements for the construction of interchange improvements to the March Lane/ Interstate 5 Interchange in the City of Stockton.

The overall interchange improvements will be broken into two (distinct) projects that can be bid separately. One project will cover the widening of the EBMUD bridge structure located on the northbound off-ramp. The second project will cover the remaining improvements to the interchange. This separation will allow the second project to be eligible for State-Local Partnership funding. Each project will be required to be a complete PS&E package but will note the need for coordination between the construction contracts.

A Project Study Report (PSR) and Preliminary Engineering (P.E.) plans have been completed for this project and are attached. Where there are geometric differences between the two documents the P.E. plans shall govern. In addition, the Caltrans/City Cooperative Agreement has been attached and Consultant shall comply with all requirements noted.

CONSULTANT shall obtain all necessary permits and comply with the permit requirements and insure that applicable permit requirements are incorporated into the design.

II. CONSULTANT'S RESPONSIBILITIES - SCOPE OF SERVICES

1. Technical Advisory Committee (TAC) Meetings. City will establish a TAC for the design of interchange improvements. CONSULTANT shall meet with the TAC up to six (6) times and prepare meeting agenda and minutes. As a minimum, the following TAC meetings will be held during the design of the project: (1) Initial meeting at start of contract; (2) At the 15% design stage; (3) at the 35% design stage; (4) at the 50% design stage; (5) at the 70% design stage; and, (6) At the 100% design submittal. Meetings to be held in City Hall.

2. Public Meetings. Attend up to five (5) public meetings to present design proposals to the City Council and/or the public. At least two (2) of these meetings shall be held in a nearby facility to present the project to the neighboring home
and business owners. The purpose of these meetings will be to provide information on the project, detour plans, methods of construction, and to explain how this work will affect them and what steps will be taken to minimize any inconvenience to them.

3. Surveying and Right-of-Way Engineering. CONSULTANT shall perform all necessary field surveying. Prepare required right-of-way maps, parcel descriptions and Record of Survey(s) for property acquisitions and easements. The parcel descriptions, Records of Survey, etc., required for the acquisition of easements and right-of-way shall be completed within 90 calendar days after the CONSULTANT receives a notice to proceed on the project.

Establish control points for construction staking which will be performed by others.

4. Environmental Requirements. This project is subject to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City will be processing an addendum to the Brookside EIR that will satisfy CEQA requirements. CONSULTANT shall be responsible for providing the necessary environmental studies to obtain NEPA clearance and assisting Caltrans in assembling the Project Report. Coordination with Caltrans will be required. The PSR outlines the studies that will be required. CONSULTANT shall incorporate all environmental mitigation into the design.

5. Architectural Considerations. Landscaping of the areas affected will be required. Coordination with Caltrans and other property owners will be necessary. Artistic enhancement of the March Lane cross-section under the structure is to be included.

6. Soils Testing. CONSULTANT will perform all necessary soils testing to design the project and prepare the construction specifications. This testing shall include a check for hazardous waste. CONSULTANT shall develop a Hazardous Waste Contingency Plan in the event the construction contractor encounters hazardous waste.

7. Coordination with Utility Companies. CONSULTANT will contact the various utility companies, prior to the 15% design stage, to inform them of the proposed project. CONSULTANT will meet as required with the various utility companies to review the proposed designs and its impact upon the utilities. CONSULTANT will determine the approximate time required for the relocation of utilities and, where necessary, include provisions for utility company relocation of its facilities during the construction of the project. Provide copies of the project plans to the utility companies. Show the location of all the utilities on the project plans. Widening of the bridge structure across the East Bay Municipal Utilities District (EBMUD) easement will be necessary. Coordination with EBMUD and Caltrans for the widening of the
bridge structure will be critical.

8. Coordination with Caltrans. CONSULTANT shall review the CITY/Caltrans agreement and comply with the requirements of same. A copy of the agreement is attached for your information. Caltrans will be part of the TAC, however, CONSULTANT shall meet with Caltrans in addition to the TAC meetings as necessary to coordinate design.

9. Plans, Specifications, and Estimates (PS&E). CONSULTANT shall prepare PS&E in accordance with Caltrans requirements for the project. CONSULTANT shall submit ten (10) copies of plans for City and Caltrans review at the 35%, 50, 70%, and 100% design stages.

At the 70% design stage (or sooner, if available) CONSULTANT shall submit complete structural drawings (including all structural details) and calculations to the CITY for checking by others.

Design of traffic detour, signing and striping are an important part of the project design. It is essential that the interchange operate as fully as possible during construction. Detour alignment, pavement thickness and elevations shall be shown on the construction drawings. If the proposed detours require modification to existing traffic signals, CONSULTANT will include the necessary modifications in the construction drawings. CONSULTANT shall include detailed design, signing and striping plans for the various detours required during construction. CONSULTANT shall review traffic detour and signing plans with the City's Traffic Engineer.

Landscaping, irrigation system, street lighting, pavement design and relocation of City-owned utilities (water, sanitary sewers and storm drains) are a part of the project design. Any relocation of City-owned utilities will be performed by the contractor as part of the construction of the improvements.

Provide controls for construction staking which will be performed by others. Use USGS elevation datum. and City horizontal control system.

Provide details for project construction signs indicating that construction funding is from the following sources: Measure K, Public Facility Fees, State and Federal Funding.

Prepare a list of bid items to be included in the bid form, prepare the special provisions and detailed specifications, and prepare the estimate of construction cost. Submit same to CITY and Caltrans for review and comment. CONSULTANT shall submit to the CITY one camera ready copy and three (3) sets of the final PS&E for each separate project.

10. Assistance with Construction Bidding. Provide

11. Construction Submittals. CONSULTANT shall review, comment and make recommendations on the contractor’s material submittals and shop drawings. Review of contractor’s shoring plans, detour signing and striping plans, etc., will be performed by others.

12. Questions During Construction. CONSULTANT shall attend the pre-construction conference. The CITY intends to hire an engineering firm for the construction management of the project. The construction management firm will be responsible for inspection, construction staking, materials testing, interpretation of plans and specifications, review of shoring and detour plans, etc. If questions arise during construction over the intent of the design, the CONSULTANT will be expected to respond to such questions in a timely fashion. CONSULTANT shall attend a minimum of six (6) field reviews during construction.

III. CITY’S RESPONSIBILITIES

1. Easements and Right-of-Way. CITY will provide all necessary title reports, perform appraisals and provide all acquisition services.

2. Access to Maps and Records. CITY will provide CONSULTANT with access to CITY maps and records relating to the project.

3. Bid Documents. CITY will assemble all bid documents. CITY will provide all copies of plans, specifications and bid documents.

4. Call for Bids and Contract Award. CITY will administer the call for bids and submit the recommendation on contract award to the City Council.

5. Contract Administration. CITY will provide the contract administration including: construction staking, construction inspection, review of shoring plans, review of detour plans, and preparation of record drawings.

IV. DESIGN SCHEDULE

CONSULTANT shall complete the design of the project within twelve (12) months of receiving the Notice to Proceed.

Within 30 days after receiving CITY comments on the 100% design submittal, CONSULTANT shall submit to the CITY one camera-ready copy of the plans, specifications, estimates for the project.

V. PROPOSAL CONTENT
Proposals shall include a scope of work detailing all design tasks and the schedule for their completion. The plans and specifications shall be completed within the above time schedule. The proposal shall be limited to 50 pages. The CONSULTANT'S proposal, which shall be evaluated by the CITY's Selection Committee, shall also include the following:

(a) Description of previous projects of similar type, scope, size and technology. Description shall include project name, client, and client references.

(b) Name, responsibilities, and experience of personnel that will be assigned to work on element components, that amount of time they can be expected to give to the project, and their availability to the CITY.

(c) Resumes of designated personnel.

(d) Current workload and future commitments of available personnel, particularly those key persons expected to be assigned to the project.

(e) List all firms that will be a subcontractor and their project assignment. Include the name, address and telephone number of each firm, as well as the name of the key individual that will be working on the project.

(f) The proposal shall include a fee schedule in a separate sealed envelope with a "not to exceed" price.

(h) The CITY's affirmative action forms must be filled out and submitted with your proposal. A copy of the forms, as well as the CITY's AFFIRMATIVE ACTION GUIDELINES AND PROCEDURES FOR RESPONDENTS TO A CITY OF STOCKTON REQUEST FOR PROPOSALS, are attached.

VI. SERVICES AGREEMENT

A draft of the CITY's services agreement is attached for your information.

VII. SELECTION PROCESS

Proposals received by the CITY will be reviewed by the Consultant Selection Committee. Upon the basis of the proposal content, the Committee will select three to five firms for oral interviews.

The CITY will also submit a sealed cost estimate for the CONSULTANT's work on the project. Once the Consultant Selection Committee has selected a CONSULTANT, the CONSULTANT's sealed price proposal will be opened. The CITY will then negotiate a contract with the selected firm based upon the CONSULTANT's price
and the CITY's estimate.

If agreement cannot be reached, the CITY will then negotiate with the second ranking firm. The compensation discussed with one prospective CONSULTANT will not be disclosed or discussed with another CONSULTANT. When the Consultant Selection Committee has made a final selection and negotiated a price for the work, it will recommend that selection to the City Council. Confirmation and approval of the CONSULTANT recommended by the Consultant Selection Committee is subject to the approval of the City Council.

Seven (7) copies and one unbound original of your proposal, signed by an authorized representative, shall be delivered to JAMES B. GIOTTONINI, PUBLIC WORKS DIRECTOR, CITY HALL, 425 N. EL DORADO, ROOM 317, STOCKTON, CA 95202, on or before 5:00 p.m. on August 27, 1993.

If you have any questions, please contact Bob Murdoch at (209) 944-8492.
AGREEMENT FOR CONSULTING SERVICES

ARTICLE I

PARTIES AND PURPOSE

Section 1.1 Parties

THIS AGREEMENT is entered into as of this ______ day of
_________ 199_, by and between the CITY OF STOCKTON, a municipal
corporation (hereinafter "CITY"), and <___ NAME OF CONTRACTOR___
____________________________________>, (hereinafter "CONTRACTOR").

Section 1.2 Purpose

CITY wishes to enter into an agreement with CONTRACTOR <___

__________________________

GENERAL DESCRIPTION OF SERVICES

__________________________

__________________________

__________________________

__________________________> (hereinafter "Project").

ARTICLE 2

SCOPE OF SERVICES

Section 2.1 Scope of Services

CONTRACTOR, for the benefit and at the direction of CITY,
shall perform the scope of services as set forth in Exhibit "A,"
atached and incorporated by this reference.
Section 2.2  Time For Commencement and Completion of Work

CONTRACTOR shall commence work within <___> days of executing this agreement, and complete work under this agreement by <____
__________>. CONTRACTOR shall not be responsible for delays caused by the failure of CITY staff or agents to provide required data or review documents within the appropriate time frames.

Section 2.3  Meetings

CONTRACTOR shall attend meetings as needed, to be determined by CITY in consultation with CONTRACTOR.

Section 2.4  Staffing

CONTRACTOR acknowledges that CITY has relied on CONTRACTOR's special capabilities and on the qualifications of CONTRACTOR's principals and staff as identified in its proposal to CITY. The scope of services shall be performed by CONTRACTOR, unless agreed to otherwise by CITY in writing. <_____________ SPECIAL STAFF DESIGNATIONS ________________>

CITY shall be notified by CONTRACTOR of any change of Project Manager and CITY is granted the right of approval of any replacement in its sole discretion. Should CITY, in its sole discretion, disapprove of the Project Manager's replacement, this agreement shall transfer to the original Project Manager's new employer, with new employer's written consent.

CONTRACTOR certifies that it is prepared to and can perform all services within the scope of services within the time frame specified. CONTRACTOR certifies that it has complied with any and all applicable licensing requirements.
Section 2.5 Subcontracts

CITY acknowledges that CONTRACTOR may subcontract certain portions of the scope of services to subcontractors as specified and identified in the "Scope of Services." Should any subcontractors be replaced or added after CITY's approval, CITY shall be notified within ten (10) days and said subcontractors shall be subject to CITY's approval prior to initiating any work on the Project. CONTRACTOR shall remain fully responsible for the complete and full performance of said services and shall pay all such subcontractors.

ARTICLE 3

COMPENSATION

Section 3.1 Compensation

CONTRACTOR's compensation for all work under this agreement shall conform to the provisions of Exhibit "B," attached and incorporated by this reference.

Section 3.2 Method of Payment

CONTRACTOR shall submit invoices for work completed on a monthly basis, providing, without limitation, details as to amount of hours, individual performing said work, hourly rate, and indicating to what aspect of the scope of services said work is attributable. Invoices submitted shall be consistent with Exhibit "B."

Section 3.3 Costs

CONTRACTOR shall be reimbursed by CITY as set forth in detail in Section 3.2 for all direct costs, if any, such as filing fees
and photo processing expenses that it advances on behalf of CITY for the Project and all direct costs such as copying, facsimile, messenger, and express or other overnight delivery services that are necessary for the Project to proceed expeditiously. Such costs shall not exceed the total <________________________>

Section 3.4 Auditing

Upon CITY's request, CONTRACTOR shall allow CITY access to any books, documents, papers, and records of the contractor and/or subcontractors which CITY deems to be directly pertinent to the project for the purpose of making audit, examination, excerpts, and transcriptions.

ARTICLE 4

MISCELLANEOUS PROVISIONS

Section 4.1 Nondiscrimination

In performing services under this agreement, CONTRACTOR shall not discriminate in the employment of its employees or in the engagement of any subcontractors on the basis of race, color, religion, sex, sexual orientation, marital status, national origin, ancestry, age, or any other criteria prohibited by law. If this contract exceeds Twenty Thousand Dollars ($ 20,000), CONTRACTOR shall abide by the CITY'S Minority and Women Equal Employment Opportunity (EEO) Program.
Section 4.2  Insurance Requirements

CONTRACTOR shall submit proof of insurance coverage for personal injury and property damage with limits of not less than <AMOUNT SET BY RISK> per occurrence, naming CITY as an additional insured by the appropriate endorsement, and in a form acceptable to CITY. Carrier(s) shall provide notice to CITY of any change in or limitation of coverage or of cancellation of the policy no less than thirty (30) days prior to the effective date of the change, limitation, or cancellation. <______________ Options for Auto Insurance, Worker's Compensation Insurance, and Professional Liability Insurance to be determined by Risk Management pursuant to City Manager Administrative Procedures Directive FIN--023, as amended from time to time, and inserted here.>

Section 4.3  Attorney's Fees

In the event any dispute between the parties arises under or regarding this agreement, the prevailing party in any litigation of the dispute shall be entitled to reasonable attorney's fees from the party who does not prevail as determined by the court.

Section 4.4  Successors and Assigns

CITY and CONTRACTOR each bind themselves, their partners, successors, assigns, and legal representatives to this agreement without the written consent of the others. CONTRACTOR shall not assign or transfer any interest in this agreement without the prior written consent of CITY. Consent to any such transfer shall be at the sole discretion of CITY.
Section 4.5 Notices

Any notice required to be given by the terms of this agreement shall be deemed to have been given when the same is personally served or sent by certified mail or express or overnight delivery, postage prepaid, addressed to the respective parties as follows:

To CITY: City of Stockton
Attention: <DEPARTMENT HEAD, OR CITY MANAGER>
425 North El Dorado Street
Stockton, California 95202

To CONTRACTOR: <NAME OF FIRM>
<Address>

Section 4.6 Cooperation of CITY

CITY shall cooperate fully in a timely manner in providing relevant information that it has at its disposal.

Section 4.7 Ownership of Documents

Documents and photographs shall become the property of CITY upon completion of the Project or upon termination of this agreement for any reason. Upon termination, all information collected, work product, and documents shall become the property of CITY and CONTRACTOR shall deliver the same to CITY within ten (10) days of termination of this agreement.

CITY agrees to hold CONTRACTOR harmless from any liability resulting from CITY's use of such documents for any purpose other than the purpose for which they are prepared.
Section 4.8  CONTRACTOR is Not an Employee of CITY

It is understood that CONTRACTOR is not acting hereunder in any manner as an employee of CITY, but solely under this agreement as an independent contractor, and CITY shall not under any circumstances be liable to CONTRACTOR or any person or persons acting for or under it for any deaths, injuries, or property damage received or claimed, unless any such liability arises by virtue of negligence by CITY, its officers, agents, or employees, and CONTRACTOR agrees to defend and hold CITY free and harmless from liability therefor which is not due to any fault of CITY, its officers, agents, or employees.

Section 4.9  Change Orders

CITY reserves the right to make changes to this agreement. Any such changes will be set forth in a written contract change order.

Individual change orders of Twenty Thousand Dollars ($20,000) or greater require City Council approval. For contracts approved by the City Council for initial prices under One Hundred Thousand Dollars ($100,000), cumulative change orders which exceed twenty percent (20%) of the initial contract price require City Council approval. For agreements with initial prices of One Hundred Thousand Dollars ($100,000) or more, cumulative change orders which exceed Twenty Thousand Dollars ($20,000) plus ten percent (10%) of the initial contract price over One Hundred Thousand Dollars ($100,000) require City Council approval. Change orders not meeting the above criteria require approval by the authorized CITY official executing this agreement. The dollar amounts of change
orders approved by specific City Council action, plus the dollar amounts of any change orders which predate such specific City Council action, shall not be counted in computing the authority limits set forth above for CITY officials to approve change orders hereunder.

In emergency situations, the authorized CITY official may issue a change order beyond the authority limits described above in order to:

(a) prevent interruption of the work which would result in a substantial increase in the costs to, or liability of, CITY; or

(b) protect the work, equipment, materials to be used in the work, human safety, or the environment at or near the work from substantial and immediate danger of injury; or

(c) protect, where damage or injury has occurred, the work, equipment or materials to be used in the work, human safety, or the environment at or near the site of the work from further or additional damage or injury or deterioration.

The authorized CITY official shall have the authority to issue change orders in such sums as is reasonably necessary for such emergency purposes. After issuing a change order in an emergency situation described above, the authorized CITY official shall report such action and the reasons therefor to the City Council in writing not later than its next regularly scheduled meeting.
Section 4.10  Termination

Either party to this agreement may terminate this agreement by giving the other party at least ten (10) days written notice. Where phases are anticipated within the Scope of Services, at which an intermediate decision is required concerning whether to proceed further, CITY may terminate at the conclusion of any such phase. Upon termination, CONTRACTOR shall be entitled to payment as set forth in the attached Exhibit "B" to the extent that the work has been performed. Upon termination, CONTRACTOR shall immediately suspend all work on the Project and deliver any documents or work in progress to CITY.

Section 4.11  Severability

The invalidity in whole or in part of any provision of this agreement shall not void or affect the validity of any other provision of this agreement.

Section 4.12  Captions

The captions of the sections and subsections of this agreement are for convenience only and shall not be deemed to be relevant in resolving any question of interpretation or intent.

Section 4.13  Entire Agreement

This agreement represents the entire and integrated agreement between CITY and CONTRACTOR and supersedes all prior negotiations, representations, or agreements, either written or oral. This agreement may be amended only by written instrument signed by CITY and CONTRACTOR.
Section 4.14  Applicable Law

This agreement shall be governed by the laws of the State of California.

Section 4.15  Contract Terms Prevail

All exhibits and this agreement are intended to be construed as a single document. Should any inconsistency occur between the specific terms of this agreement and the attached exhibits, the terms of this agreement shall prevail.

Section 4.16  Authority

The undersigned hereby represent and warrant that they are authorized by the parties to execute this agreement.

Section 4.17  Ownership of Documents

All documents, photographs, reports, analyses, audits, computer tapes or cards, or other material documents or data, and working papers, whether or not in final form, which have been obtained or prepared for this project, shall be deemed the property of CITY. Upon CITY's request, CONTRACTOR shall allow CITY to inspect all such documents during regular business hours. Upon termination or completion, all information collected, work product and documents shall be delivered by CONTRACTOR to CITY within ten (10) days.
CITY agrees to hold CONTRACTOR harmless from any liability resulting from CITY's use of such documents for any purpose other than the purpose for which they were prepared.

IN WITNESS WHEREOF, CITY and CONTRACTOR have executed this agreement as of the date first above written.

ATTEST:

By ____________________________

CITY CLERK

CITY OF STOCKTON, a municipal corporation

By: ____________________________

City Manager

"CITY"

APPROVED AS TO FORM:

Dated: __________________________

R. THOMAS HARRIS
CITY ATTORNEY

By ____________________________

CITY ATTORNEY

<CONTRACTOR>

By: ____________________________

Its: ____________________________

(Printed Name)

"CONTRACTOR"

[CONTRACTOR'S ATTORNEY]

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EXHIBIT LIST

A. SCOPE OF SERVICES
B. FEE SCHEDULE
City of Stockton Arterial Streets Improvement Project

DEPARTMENT OF PUBLIC WORKS
CITY OF STOCKTON, CALIFORNIA

MARCH LANE
PRELIMINARY DESIGN
SHEET 1

PROJECT NOTES

1. GENERAL DRAINAGE SYSTEMS SHALL MATCH EXISTING TYPE. PROPOSED RETURNING MILS ARE CALLED OUT ON THE PLAN.
2. EXISTING SHOES AND BLOWERS SHALL MATCH EXISTING TYPE. PROPOSED RETURNING MILS ARE CALLED OUT ON THE PLAN.
3. EXISTING TANKS AND INSTALL TANKS. A ZONEABLE TANKS OF THE EXISTING TANKS.
4. EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
5. EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
6. EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
7. EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
8. EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.

GENERAL NOTES

- POTENTIAL CONFLICTS WITH EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
- POTENTIAL CONFLICTS WITH EXISTING STORM DRAIN PIPE AND INSTALL PIPES. A ZONEABLE TANKS OF THE EXISTING TANKS.
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PROJECT NOTES

1. Storm drain and gutters shall match existing type. Proposed design widths are called out on the plan.
2. Drainage shall be replaced to match existing.
3. Repair existing storm drain and install new. A hydraulic study of the existing storm drainage system may be required prior to final design preparation.
4. Modify line at the intersection to be extended by 1' to meet Caltrans minimum clearance requirements. Reconstruction may extend from existing curb to 29' beyond curb. Number shall not exceed 29' beyond curb along the north side of the project.
5. Additional existing feature will be removed (if required).
7. Relocate existing streetlight to 28' back of curb face along the left at station 94+00, behind the proposed sidewalk along the right at station 96+00, and within the median at station 98+50.
8. Install new signal pole and mast arm. Proposed signal equipment to be located between proposed curb and paved lane. Additional clearance may be required for the traffic control.
10. Install signal median.
11. Install 8" high flexible bar lane separator.

GENERAL NOTES

- Potential conflicts with existing utilities may occur as a result of proposed improvements. The detailed location of utilities are not shown. Contact the utility owner's representative during preparation of construction documents.
- All proposed features shall occur during preparation of construction documents.
- Additional data compilation has been prepared for study purposes only. This plan is not for construction.
- Relocate traffic lane where necessary.
- All new curb and gutter have wheelchairs ramps per City of Stockton Standards (typical).
- Grade break shall not exceed 2% (typical).

LEGEN:
- Existing pull box
- Existing signal controller
- Existing fire hydrant
- Existing sign

City of Stockton Arterial Streets Improvement Project
DEPARTMENT OF PUBLIC WORKS
CITY OF STOCKTON, CALIFORNIA
MARCH LANE/SB I-5
PRELIMINARY DESIGN
INTERSECTION STUDY

DKS Associates
City of Stockton Arterial Streets Improvement Project
DEPARTMENT OF PUBLIC WORKS
CITY OF STOCKTON, CALIFORNIA
MARCH LANE/SB I-5
PRELIMINARY DESIGN
INTERSECTION STUDY

Approved by: FL
Drawn by: BM
Checked by: LA
Rev: 01-18
August 9, 1993

REQUEST FOR PROPOSALS--MARCH LANE/INTERSTATE 5 INTERCHANGE IMPROVEMENTS

Enclosed is a Request for Proposal (RFP) for the design of the March Lane/Interstate 5 Interchange Improvements in the City of Stockton, California. Also, enclosed are the following documents:

1. Preliminary engineering plans for the improvements by DKS Associates (5 sheets). These drawings are generated from Autocad files and will be available to the selected Consultant to use in the final design.

2. Cooperative Agreement between the City of Stockton and Caltrans

3. Project Study Report (PSR) for the interchange

4. A sample agreement for consultant services


To clarify the RFP, the following shall be noted:

1. Public relations will be an important role in the successful completion of this project. Informing and interacting with citizens, property owners, and business owners and the incorporation of public input when possible will be essential.

2. There will be several environmental studies required in order to meet NEPA requirements. These studies are outlined in the enclosed PSR. The consultant should insure that a qualified firm is available to perform the noted studies.

3. The widening beneath the I-5 overcrossing will result in extensive concrete retaining walls that will require aesthetic treatments.
REQUEST FOR PROPOSALS--MARCH LANE/INTERSTATE 5 INTERCHANGE IMPROVEMENTS

4. The City of Stockton has a policy to promote the involvement of local firms in projects.

Please fill out the necessary forms, sign, and return seven (7) copies and one (1) unbound original of your Proposal as indicated by August 27, 1993, before 5:00 p.m. Make sure all documents required by the agreement, contract, etc., are provided.

Your firm should be prepared to attend an interview and make a presentation to the Selection Committee on Thursday, September 2, 1993, in the Council Chambers located on the second floor of City Hall at 425 N. El Dorado Street. The schedule for interviews will be as follows:

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moffat &amp; Nichol Engineers</td>
<td>8:30</td>
</tr>
<tr>
<td>Mark Thomas</td>
<td>9:30</td>
</tr>
<tr>
<td>HDR Engineers</td>
<td>10:30</td>
</tr>
<tr>
<td>DKS Associates</td>
<td>11:30</td>
</tr>
<tr>
<td>Spink</td>
<td>1:00</td>
</tr>
<tr>
<td>Nolte and Associates</td>
<td>2:00</td>
</tr>
</tbody>
</table>

Your interview should take about 45 minutes--30 minutes for your presentation and 15 minutes for questions by the Selection Committee. Please insure that your presentation is made within the 30 minute time period and that you are prepared to start at the time noted. If you have any questions, please contact Bob Murdoch at (209) 944-8492.

JAMES B. GIOTTONINI
PUBLIC WORKS DIRECTOR

JBG:RM:cc

Enclosures

cc: Councilmember Loralee McGaughey
    Dwane Milnes, City Manager (w/encl.)
    Gary Ingraham, Assistant City Manager
    Paul M. Sensibaugh, Public Works
    Debbie Hale, COG
    Matt Bailey, Caltrans
    Bob Murdoch, Public Works
Via Federal Express 9/10/93

Mr. Win S. Westfall
Nolte and Associates
60 South Market Street, Suite 600
San Jose, CA 95113

Mr. Timothy R. Crush
Spink Corporation
2590 Venture Oaks Way
Sacramento, CA 95833-3288

Mr. Tom Krakow
DKS Associates
1956 Webster Street, Suite 300
Oakland, CA 94612-2939

Mr. Conrad P. Bridges
HDR Engineering, Inc.
5175 Hillsdale Circle
El Dorado Hills, CA 95762-5700

Mr. Robert D. Nichol
Moffatt & Nichol Engineers
3000 Citrus Circle, Suite 230
Walnut Creek, CA 94598

Mr. Timothy R. Fleming
Mark Thomas & Co., Inc.
530 Bercut Drive, Suite C
Sacramento, CA 95814

(Picked-Up 8/10/93)
REQUEST FOR PROPOSALS (RFP) TO PROVIDE CONSULTANT SERVICES FOR THE DESIGN OF THE MARCH LANE/INTERSTATE 5 INTERCHANGE IMPROVEMENTS

I. INTRODUCTION

The City of Stockton (CITY) is soliciting proposals for the preparation of Plans, Specifications, and Estimates (PS&E) in accordance with the California Department of Transportation (Caltrans) requirements for the construction of interchange improvements to the March Lane/Interstate 5 Interchange in the City of Stockton.

The overall interchange improvements will be broken into two (distinct) projects that can be bid separately. One project will cover the widening of the EBMUD bridge structure located on the northbound off-ramp. The second project will cover the remaining improvements to the interchange. This separation will allow the second project to be eligible for State-Local Partnership funding. Each project will be required to be a complete PS&E package but will note the need for coordination between the construction contracts.

A Project Study Report (PSR) and Preliminary Engineering (P.E.) plans have been completed for this project and are attached. Where there are geometric differences between the two documents the P.E. plans shall govern. In addition, the Caltrans/City Cooperative Agreement has been attached and Consultant shall comply with all requirements noted.

CONSULTANT shall obtain all necessary permits and comply with the permit requirements and insure that applicable permit requirements are incorporated into the design.

II. CONSULTANT’S RESPONSIBILITIES - SCOPE OF SERVICES

1. Technical Advisory Committee (TAC) Meetings. City will establish a TAC for the design of interchange improvements. CONSULTANT shall meet with the TAC up to six (6) times and prepare meeting agenda and minutes. As a minimum, the following TAC meetings will be held during the design of the project: (1) Initial meeting at start of contract; (2) At the 15% design stage; (3) at the 35% design stage; (4) at the 50% design stage; (5) at the 70% design stage; and, (6) At the 100% design submittal. Meetings to be held in City Hall.

2. Public Meetings. Attend up to five (5) public meetings to present design proposals to the City Council and/or the public. At least two (2) of these meetings shall be held in a nearby facility to present the project to the neighboring home
and business owners. The purpose of these meetings will be to provide information on the project, detour plans, methods of construction, and to explain how this work will effect them and what steps will be taken to minimize any inconvenience to them.

3. Surveying and Right-of-Way Engineering. CONSULTANT shall perform all necessary field surveying. Prepare required right-of-way maps, parcel descriptions and Record of Survey(s) for property acquisitions and easements. The parcel descriptions, Records of Survey, etc., required for the acquisition of easements and right-of-way shall be completed within 90 calendar days after the CONSULTANT receives a notice to proceed on the project.

Establish control points for construction staking which will be performed by others.

4. Environmental Requirements. This project is subject to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The City will be processing an addendum to the Brookside EIR that will satisfy CEQA requirements. CONSULTANT shall be responsible for providing the necessary environmental studies to obtain NEPA clearance and assisting Caltrans in assembling the Project Report. Coordination with Caltrans will be required. The PSR outlines the studies that will be required. CONSULTANT shall incorporate all environmental mitigation into the design.

5. Architectural Considerations. Landscaping of the areas affected will be required. Coordination with Caltrans and other property owners will be necessary. Artistic enhancement of the March Lane cross-section under the structure is to be included.

6. Soils Testing. CONSULTANT will perform all necessary soils testing to design the project and prepare the construction specifications. This testing shall include a check for hazardous waste. CONSULTANT shall develop a Hazardous Waste Contingency Plan in the event the construction contractor encounters hazardous waste.

7. Coordination with Utility Companies. CONSULTANT will contact the various utility companies, prior to the 15% design stage, to inform them of the proposed project. CONSULTANT will meet as required with the various utility companies to review the proposed designs and its impact upon the utilities. CONSULTANT will determine the approximate time required for the relocation of utilities and, where necessary, include provisions for utility company relocation of its facilities during the construction of the project. Provide copies of the project plans to the utility companies. Show the location of all the utilities on the project plans. Widening of the bridge structure across the East Bay Municipal Utilities District (EBMUD) easement will be necessary. Coordination with EBMUD and Caltrans for the widening of the
bridge structure will be critical.

8. Coordination with Caltrans. CONSULTANT shall review the CITY/Caltrans agreement and comply with the requirements of same. A copy of the agreement is attached for your information. Caltrans will be part of the TAC, however, CONSULTANT shall meet with Caltrans in addition to the TAC meetings as necessary to coordinate design.

9. Plans, Specifications, and Estimates (PS&E). CONSULTANT shall prepare PS&E in accordance with Caltrans requirements for the project. CONSULTANT shall submit ten (10) copies of plans for City and Caltrans review at the 35%, 50, 70%, and 100% design stages.

At the 70% design stage (or sooner, if available) CONSULTANT shall submit complete structural drawings (including all structural details) and calculations to the CITY for checking by others.

Design of traffic detour, signing and striping are an important part of the project design. It is essential that the interchange operate as fully as possible during construction. Detour alignment, pavement thickness and elevations shall be shown on the construction drawings. If the proposed detours require modification to existing traffic signals, CONSULTANT will include the necessary modifications in the construction drawings. CONSULTANT shall include detailed design, signing and striping plans for the various detours required during construction. CONSULTANT shall review traffic detour and signing plans with the City’s Traffic Engineer.

Landscaping, irrigation system, street lighting, pavement design and relocation of City-owned utilities (water, sanitary sewers and storm drains) are a part of the project design. Any relocation of City-owned utilities will be performed by the contractor as part of the construction of the improvements.

Provide controls for construction staking which will be performed by others. Use USGS elevation datum and City horizontal control system.

Provide details for project construction signs indicating that construction funding is from the following sources: Measure K, Public Facility Fees, State and Federal Funding.

Prepare a list of bid items to be included in the bid form, prepare the special provisions and detailed specifications, and prepare the estimate of construction cost. Submit same to CITY and Caltrans for review and comment. CONSULTANT shall submit to the CITY one camera ready copy and three (3) sets of the final PS&E for each separate project.

10. Assistance with Construction Bidding. Provide

11. Construction Submittals. CONSULTANT shall review, comment and make recommendations on the contractor’s material submittals and shop drawings. Review of contractor’s shoring plans, detour signing and striping plans, etc., will be performed by others.

12. Questions During Construction. CONSULTANT shall attend the pre-construction conference. The CITY intends to hire an engineering firm for the construction management of the project. The construction management firm will be responsible for inspection, construction staking, materials testing, interpretation of plans and specifications, review of shoring and detour plans, etc. If questions arise during construction over the intent of the design, the CONSULTANT will be expected to respond to such questions in a timely fashion. CONSULTANT shall attend a minimum of six (6) field reviews during construction.

III. CITY'S RESPONSIBILITIES

1. Easements and Right-of-Way. CITY will provide all necessary title reports, perform appraisals and provide all acquisition services.

2. Access to Maps and Records. CITY will provide CONSULTANT with access to CITY maps and records relating to the project.

3. Bid Documents. CITY will assemble all bid documents. CITY will provide all copies of plans, specifications and bid documents.

4. Call for Bids and Contract Award. CITY will administer the call for bids and submit the recommendation on contract award to the City Council.

5. Contract Administration. CITY will provide the contract administration including: construction staking, construction inspection, review of shoring plans, review of detour plans, and preparation of record drawings.

IV. DESIGN SCHEDULE

CONSULTANT shall complete the design of the project within twelve (12) months of receiving the Notice to Proceed.

Within 30 days after receiving CITY comments on the 100% design submittal, CONSULTANT shall submit to the CITY one camera-ready copy of the plans, specifications, estimates for the project.

V. PROPOSAL CONTENT
Proposals shall include a scope of work detailing all design tasks and the schedule for their completion. The plans and specifications shall be completed within the above time schedule. The proposal shall be limited to 50 pages. The CONSULTANT'S proposal, which shall be evaluated by the CITY's Selection Committee, shall also include the following:

(a) Description of previous projects of similar type, scope, size and technology. Description shall include project name, client, and client references.

(b) Name, responsibilities, and experience of personnel that will be assigned to work on element components, that amount of time they can be expected to give to the project, and their availability to the CITY.

(c) Resumes of designated personnel.

(d) Current workload and future commitments of available personnel, particularly those key persons expected to be assigned to the project.

(e) List all firms that will be a subcontractor and their project assignment. Include the name, address and telephone number of each firm, as well as the name of the key individual that will be working on the project.

(f) The proposal shall include a fee schedule in a separate sealed envelope with a "not to exceed" price.

(h) The CITY's affirmative action forms must be filled out and submitted with your proposal. A copy of the forms, as well as the CITY's AFFIRMATIVE ACTION GUIDELINES AND PROCEDURES FOR RESPONDENTS TO A CITY OF STOCKTON REQUEST FOR PROPOSALS, are attached.

VI. SERVICES AGREEMENT

A draft of the CITY's services agreement is attached for your information.

VII. SELECTION PROCESS

Proposals received by the CITY will be reviewed by the Consultant Selection Committee. Upon the basis of the proposal content, the Committee will select three to five firms for oral interviews.

The CITY will also submit a sealed cost estimate for the CONSULTANT's work on the project. Once the Consultant Selection Committee has selected a CONSULTANT, the CONSULTANT's sealed price proposal will be opened. The CITY will then negotiate a contract with the selected firm based upon the CONSULTANT's price
and the CITY's estimate.

If agreement cannot be reached, the CITY will then negotiate with the second ranking firm. The compensation discussed with one prospective CONSULTANT will not be disclosed or discussed with another CONSULTANT. When the Consultant Selection Committee has made a final selection and negotiated a price for the work, it will recommend that selection to the City Council. Confirmation and approval of the CONSULTANT recommended by the Consultant Selection Committee is subject to the approval of the City Council.

Seven (7) copies and one unbound original of your proposal, signed by an authorized representative, shall be delivered to JAMES B. GIOTTONINI, PUBLIC WORKS DIRECTOR, CITY HALL, 425 N. EL DORADO, ROOM 317, STOCKTON, CA 95202, on or before 5:00 p.m. on August 27, 1993.

If you have any questions, please contact Bob Murdoch at (209) 944-8492.
AGREEMENT FOR CONSULTING SERVICES

ARTICLE I

PARTIES AND PURPOSE

Section 1.1  Parties

THIS AGREEMENT is entered into as of this ______ day of
_________ 199___, by and between the CITY OF STOCKTON, a municipal
corporation (hereinafter "CITY"), and <_____ NAME OF CONTRACTOR_____
____________________________>, (hereinafter "CONTRACTOR").

Section 1.2  Purpose

CITY wishes to enter into an agreement with CONTRACTOR <____

GENERAL DESCRIPTION OF SERVICES

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

____________________________________________________________________>
(Hereinafter "Project").

ARTICLE 2

SCOPE OF SERVICES

Section 2.1  Scope of Services

CONTRACTOR, for the benefit and at the direction of CITY, shall perform the scope of services as set forth in Exhibit "A," attached and incorporated by this reference.
Section 2.2  Time For Commencement and Completion of Work

CONTRACTOR shall commence work within <__> days of executing this agreement, and complete work under this agreement by <____ ________>. CONTRACTOR shall not be responsible for delays caused by the failure of CITY staff or agents to provide required data or review documents within the appropriate time frames.

Section 2.3  Meetings

CONTRACTOR shall attend meetings as needed, to be determined by CITY in consultation with CONTRACTOR.

Section 2.4  Staffing

CONTRACTOR acknowledges that CITY has relied on CONTRACTOR's special capabilities and on the qualifications of CONTRACTOR's principals and staff as identified in its proposal to CITY. The scope of services shall be performed by CONTRACTOR, unless agreed to otherwise by CITY in writing. <__________________ SPECIAL STAFF DESIGNATIONS__________________>

CITY shall be notified by CONTRACTOR of any change of Project Manager and CITY is granted the right of approval of any replacement in its sole discretion. Should CITY, in its sole discretion, disapprove of the Project Manager's replacement, this agreement shall transfer to the original Project Manager's new employer, with new employer's written consent.

CONTRACTOR certifies that it is prepared to and can perform all services within the scope of services within the time frame specified. CONTRACTOR certifies that it has complied with any and all applicable licensing requirements.
Section 2.5  Subcontracts

CITY acknowledges that CONTRACTOR may subcontract certain portions of the scope of services to subcontractors as specified and identified in the "Scope of Services." Should any subcontractors be replaced or added after CITY's approval, CITY shall be notified within ten (10) days and said subcontractors shall be subject to CITY's approval prior to initiating any work on the Project. CONTRACTOR shall remain fully responsible for the complete and full performance of said services and shall pay all such subcontractors.

ARTICLE 3

COMPENSATION

Section 3.1  Compensation

CONTRACTOR's compensation for all work under this agreement shall conform to the provisions of Exhibit "B," attached and incorporated by this reference.

Section 3.2  Method of Payment

CONTRACTOR shall submit invoices for work completed on a monthly basis, providing, without limitation, details as to amount of hours, individual performing said work, hourly rate, and indicating to what aspect of the scope of services said work is attributable. Invoices submitted shall be consistent with Exhibit "B."

Section 3.3  Costs

CONTRACTOR shall be reimbursed by CITY as set forth in detail in Section 3.2 for all direct costs, if any, such as filing fees
and photo processing expenses that it advances on behalf of CITY for the Project and all direct costs such as copying, facsimile, messenger, and express or other overnight delivery services that are necessary for the Project to proceed expeditiously. Such costs shall not exceed the total ________________.

Section 3.4 Auditing

Upon CITY's request, CONTRACTOR shall allow CITY access to any books, documents, papers, and records of the contractor and/or subcontractors which CITY deems to be directly pertinent to the project for the purpose of making audit, examination, excerpts, and transcriptions.

ARTICLE 4

MISCELLANEOUS PROVISIONS

Section 4.1 Nondiscrimination

In performing services under this agreement, CONTRACTOR shall not discriminate in the employment of its employees or in the engagement of any subcontractors on the basis of race, color, religion, sex, sexual orientation, marital status, national origin, ancestry, age, or any other criteria prohibited by law. If this contract exceeds Twenty Thousand Dollars ($20,000), CONTRACTOR shall abide by the CITY'S Minority and Women Equal Employment Opportunity (EEO) Program.
Section 4.2 Insurance Requirements

CONTRACTOR shall submit proof of insurance coverage for personal injury and property damage with limits of not less than <__AMOUNT SET BY RISK__> per occurrence, naming CITY as an additional insured by the appropriate endorsement, and in a form acceptable to CITY. Carrier(s) shall provide notice to CITY of any change in or limitation of coverage or of cancellation of the policy no less than thirty (30) days prior to the effective date of the change, limitation, or cancellation. <__________________>

Options for Auto Insurance, Worker's Compensation Insurance, and Professional Liability Insurance to be determined by Risk Management pursuant to City Manager Administrative Procedures Directive FIN--023, as amended from time to time, and inserted here.>

Section 4.3 Attorney's Fees

In the event any dispute between the parties arises under or regarding this agreement, the prevailing party in any litigation of the dispute shall be entitled to reasonable attorney's fees from the party who does not prevail as determined by the court.

Section 4.4 Successors and Assigns

CITY and CONTRACTOR each bind themselves, their partners, successors, assigns, and legal representatives to this agreement without the written consent of the others. CONTRACTOR shall not assign or transfer any interest in this agreement without the prior written consent of CITY. Consent to any such transfer shall be at the sole discretion of CITY.
Section 4.5  Notices

Any notice required to be given by the terms of this agreement shall be deemed to have been given when the same is personally served or sent by certified mail or express or overnight delivery, postage prepaid, addressed to the respective parties as follows:

To CITY:  City of Stockton
Attention: <DEPARTMENT HEAD, OR CITY MANAGER>
425 North El Dorado Street
Stockton, California 95202

To CONTRACTOR: <NAME OF FIRM>
<ADDRESS>

Section 4.6  Cooperation of CITY

CITY shall cooperate fully in a timely manner in providing relevant information that it has at its disposal.

Section 4.7  Ownership of Documents

Documents and photographs shall become the property of CITY upon completion of the Project or upon termination of this agreement for any reason. Upon termination, all information collected, work product, and documents shall become the property of CITY and CONTRACTOR shall deliver the same to CITY within ten (10) days of termination of this agreement.

CITY agrees to hold CONTRACTOR harmless from any liability resulting from CITY's use of such documents for any purpose other than the purpose for which they are prepared.
Section 4.8 CONTRACTOR is Not an Employee of CITY

It is understood that CONTRACTOR is not acting hereunder in any manner as an employee of CITY, but solely under this agreement as an independent contractor, and CITY shall not under any circumstances be liable to CONTRACTOR or any person or persons acting for or under it for any deaths, injuries, or property damage received or claimed, unless any such liability arises by virtue of negligence by CITY, its officers, agents, or employees, and CONTRACTOR agrees to defend and hold CITY free and harmless from liability therefor which is not due to any fault of CITY, its officers, agents, or employees.

Section 4.9 Change Orders

CITY reserves the right to make changes to this agreement. Any such changes will be set forth in a written contract change order.

Individual change orders of Twenty Thousand Dollars ($20,000) or greater require City Council approval. For contracts approved by the City Council for initial prices under One Hundred Thousand Dollars ($100,000), cumulative change orders which exceed twenty percent (20%) of the initial contract price require City Council approval. For agreements with initial prices of One Hundred Thousand Dollars ($100,000) or more, cumulative change orders which exceed Twenty Thousand Dollars ($20,000) plus ten percent (10%) of the initial contract price over One Hundred Thousand Dollars ($100,000) require City Council approval. Change orders not meeting the above criteria require approval by the authorized CITY official executing this agreement. The dollar amounts of change
orders approved by specific City Council action, plus the dollar amounts of any change orders which predate such specific City Council action, shall not be counted in computing the authority limits set forth above for CITY officials to approve change orders hereunder.

In emergency situations, the authorized CITY official may issue a change order beyond the authority limits described above in order to:

(a) prevent interruption of the work which would result in a substantial increase in the costs to, or liability of, CITY; or

(b) protect the work, equipment, materials to be used in the work, human safety, or the environment at or near the work from substantial and immediate danger of injury; or

(c) protect, where damage or injury has occurred, the work, equipment or materials to be used in the work, human safety, or the environment at or near the site of the work from further or additional damage or injury or deterioration.

The authorized CITY official shall have the authority to issue change orders in such sums as is reasonably necessary for such emergency purposes. After issuing a change order in an emergency situation described above, the authorized CITY official shall report such action and the reasons therefor to the City Council in writing not later than its next regularly scheduled meeting.
Section 4.10 Termination

Either party to this agreement may terminate this agreement by giving the other party at least ten (10) days written notice. Where phases are anticipated within the Scope of Services, at which an intermediate decision is required concerning whether to proceed further, CITY may terminate at the conclusion of any such phase. Upon termination, CONTRACTOR shall be entitled to payment as set forth in the attached Exhibit "B" to the extent that the work has been performed. Upon termination, CONTRACTOR shall immediately suspend all work on the Project and deliver any documents or work in progress to CITY.

Section 4.11 Severability

The invalidity in whole or in part of any provision of this agreement shall not void or affect the validity of any other provision of this agreement.

Section 4.12 Captions

The captions of the sections and subsections of this agreement are for convenience only and shall not be deemed to be relevant in resolving any question of interpretation or intent.

Section 4.13 Entire Agreement

This agreement represents the entire and integrated agreement between CITY and CONTRACTOR and supersedes all prior negotiations, representations, or agreements, either written or oral. This agreement may be amended only by written instrument signed by CITY and CONTRACTOR.
Section 4.14  **Applicable Law**

This agreement shall be governed by the laws of the State of California.

Section 4.15  **Contract Terms Prevail**

All exhibits and this agreement are intended to be construed as a single document. Should any inconsistency occur between the specific terms of this agreement and the attached exhibits, the terms of this agreement shall prevail.

Section 4.16  **Authority**

The undersigned hereby represent and warrant that they are authorized by the parties to execute this agreement.

Section 4.17  **Ownership of Documents**

All documents, photographs, reports, analyses, audits, computer tapes or cards, or other material documents or data, and working papers, whether or not in final form, which have been obtained or prepared for this project, shall be deemed the property of CITY. Upon CITY's request, CONTRACTOR shall allow CITY to inspect all such documents during regular business hours. Upon termination or completion, all information collected, work product and documents shall be delivered by CONTRACTOR to CITY within ten (10) days.
CITY agrees to hold CONTRACTOR harmless from any liability resulting from CITY's use of such documents for any purpose other than the purpose for which they were prepared.

IN WITNESS WHEREOF, CITY and CONTRACTOR have executed this agreement as of the date first above written.

ATTEST:

By ____________________________
   CITY CLERK

CITY OF STOCKTON, a municipal corporation

By: ____________________________
   City Manager
   "CITY"

APPROVED AS TO FORM:

Dated: _________________________

R. THOMAS HARRIS
CITY ATTORNEY

<CONTRACTOR>

By: ____________________________
   Its: __________________________
   (Printed Name)
   "CONTRACTOR"

APPROVED AS TO FORM:

[CONTRACTOR'S ATTORNEY]
EXHIBIT LIST

A. SCOPE OF SERVICES

B. FEE SCHEDULE
MEMORANDUM
ATSS 423-7076

To: Gordon Marts

Date: December 4, 1992

File: 10-SJ-99 PM 29.0/30.6

I-5 March Lane IC
10-43420K

From: DEPARTMENT OF TRANSPORTATION

Subject: Project Study Report Approval

Attached for your review and approval is a Project Study Report (PSR) to widen ramps and construct auxiliary lane at the Interstate 5 March Lane Interchange. The PSR was initiated as a result of mitigation of traffic impacts by the Brookside project being developed by Grupe Development Company (Conditions of approval between City of Stockton and Grupe attached).

Interstate 5 serves as a major interregional route for recreational and commerce traffic and also serves as a major commute route. During the afternoon peak hour commute the March Lane NB off-ramp currently stacks up onto the mainline freeway auxiliary lane.

The PSR discusses one alternative in detail. Other alternatives such as constructing an "urban interchange" or a "par clo" interchange are more expensive and are eliminated from consideration because of the increased costs due to structure work or right of way impacts.

As an option for consideration by the City, Caltrans would support construction of an interim improvement as follows: Widen NB off-ramp approach to three lanes consisting of a combined left/through lane and dual right turn lanes. This requires that March Lane be limited to two through lanes traveling east between the March Lane SB & NB ramps and require four through lanes traveling east between the March Lane NB ramps and Quail Lakes/Da Vinci Drive. These geometries are similar to the existing Hammer Lane NB off ramp. The cost of the work within the State R/W for the interim improvement would be less than $300,000 allowing the project to be constructed as an encroachment permit project. All project development work including environmental clearance and preparation of the plans would be the responsibility of the City of Stockton and Caltrans would review the plans to issue an encroachment permit. The interim project would be beneficial to help relieve the traffic from stacking up onto the mainline auxiliary lane when built. A disadvantage of the interim project is that traffic would be subjected to construction on the ramps on two separate occasions. There may also be negative reaction by the public and impacted businesses if the timing between the interim and ultimate project construction is not several years.

The project was approved on April 28, 1992 for Minor A program funds for 50% of the cost of widening the EBMUD bridge ($266,000) for the 92-93 or 93-94 fiscal year. The actual year when the funds will be needed will most likely be later to correspond to the schedule shown in the Measure K Strategic Plan. The Strategic Plan shows the San Joaquin County Council Governments acting as the Local Transportation Authority (SJCOG) contributing $500,000 to the project and the City of Stockton would fund the remaining amount of the construction cost of $508,900. It is assumed a portion of the City's share of the project will be funded from the Stockton Development Impact Fee Program.
The City of Stockton has indicated they will request the SJCOG to request Caltrans to prepare the Project Report and Environmental Document (PR&ED) for the ultimate project and provide oversight of preparation of the Plans, Specifications and Estimates. This is consistent with State Statutes where the majority of a measure project is funded by local money. This project is identified in the resource allocations made to the Special Funded Projects branch for the 92/93 and 93/94 fiscal years.

I recommend that the PSR be approved and for Caltrans staff to proceed to prepare the PR&ED for the ultimate project

Recommended: Matthew E. Bailey
MATTHEW E. BAILEY

Approved: Gordon A. Marts  James B. Giottonini
GORDON A. MARTS  JAMES B. GIOTTONINI
PROJECT STUDY REPORT

MARCH LANE/I-5 INTERCHANGE MODIFICATIONS

ON ROUTE: INTERSTATE 5
Between PM 29.0
And PM 30.6

Gordon A. Marts
District Director
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1. INTRODUCTION

The project proposes to widen March Lane to an eight-lane cross-section through the Interstate 5 interchange and widen the I-5 northbound off-ramp to a two-lane exit with three lanes over the EBMUD easement bridge and four lanes on the approach to March Lane. One of the four approach lanes will be signed as: "Quail Lakes Drive (North)". Additionally, a second eastbound left-turn lane at the March Lane/Quail Lakes Drive intersection will be added. Widening of March Lane under I-5 will include increasing the height of the retaining walls on both sides of March Lane. The existing two-lane entrance for the northbound on-ramp will be lengthened by wideining to the north to accommodate the proposed dual eastbound left turn lanes at the I-5 northbound ramps/March Lane intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. No non-standard design features are proposed. Widening of March Lane between Quail Lakes Drive and the I-5 northbound ramp intersection to eight lanes is also proposed as separate work within the City’s jurisdiction.

The project is needed to increase the traffic-service capacity of the interchange necessary to support forecast traffic volumes at acceptable levels of service. The City of Stockton is proposing the interchange modifications and will act as the lead agency.

The total estimated construction cost including City work is $1,903,900. The total cost has been separated into the cost to construct the improvements within State Right-of-Way requiring State oversight and costs within the City’s Right-of-Way. The two costs are presented below:
Construction Cost

March Lane (in State R/W) and
I-5 Northbound On/Off-Ramp Improvements $1,376,900

March Lane (City R/W)
Improvements $ 527,000

TOTAL: $1,903,900

The interchange improvements within State R/W will be funded jointly by the City of Stockton, San Joaquin County Council of Governments (acting as the Local Transportation Authority) and Caltrans. Caltrans participation in the project is limited to 50% of the cost to widen the EBMUD bridge (~$268,000) on the I-5 northbound off-ramp (not to exceed $300,000). Street improvements within City R/W will be funded 100% by the City of Stockton.

2. BACKGROUND

Route 5 is a north/south interstate freeway traversing California from the Mexican Border at Tijuana to the Oregon State line north of Yreka (about 797 miles). In District 10, I-5 traverses Merced, Stanislaus and San Joaquin Counties from the Fresno County Line south of Los Banos to the Sacramento County Line near Galt (about 110 miles). It is a Federal Aid Interstate (FAI) route which was added to the Freeway and Expressway (F&E) System when the F&E System was established in 1959. The existing facility through the project area is a six-lane freeway. Route 5 is functionally classified as a Principal Arterial (PA) throughout its length. It is a major truckline route of statewide and national significance, and is part of the Interregional Road System (IRRS) adopted in July, 1989. It serves interstate, intrastate and interregional traffic and has also become a local commuter route through the City of Stockton.

CalTrans has completed a Project Study Report to widen Interstate 5 from six to eight lanes from Monte Diablo Avenue to north of Eight Mile Road. This widening project is expected to be proposed for programming in the 1994 STIP, with a proposed construction year of approximately 2001.

Auxiliary lanes on I-5 extend south across the Calaveras River bridges from the northbound off-ramp and southbound on-ramp. The southbound on-ramp auxiliary lane terminates as an off-ramp to Ryde Avenue. The northbound off-ramp auxiliary lane begins as a single lane on-ramp from Plymouth Road. A Project Study Report was approved in June, 1990 for the Plymouth/Ryde ramp relocation (PM 28.90/29.51). This
programmed Caltrans project includes the relocation of both ramps, south, to Alpine Avenue significantly increasing the weaving distance associated with the auxiliary lanes and is scheduled for construction in 1994.

March Lane currently has two through lanes per direction under I-5 with dual left-turn lanes on the westbound approach to the I-5 southbound ramp intersection. A single left-turn lane is located on the eastbound approach to the March Lane/I-5 northbound ramp intersection.

Brookside Memorandum of Understanding was signed by the City of Stockton and CalTrans on December 27, 1989 (Attachment "G").

Preliminary studies were conducted to analyze the feasibility and need for a Calaveras River bridge west of I-5. Traffic projections for this PSR assumed no Calaveras River bridge to represent a "worst case" condition. From a traffic demand standpoint, the 20-year volumes at March Lane/I-5 without the bridge are acceptable (LOS "D" or better) with the ultimate modifications to the interchange; however the Calaveras River bridge is needed to obtain acceptable LOS "D" or better for the I-5 mainline. The addition of a Calaveras River bridge would reduce "local" traffic on I-5 and improve traffic operations at the I-5/March Lane interchange. An alternatives analysis of the Calaveras River bridge is currently being prepared as part of the City of Stockton's "streets and roads" study being performed by a consultant.

3. NEED AND PURPOSE

There is an existing deficiency at the intersection of I-5 northbound ramps and March Lane. Field observations and manual traffic counts have shown that there is a significant amount of weaving occurring in the section of March Lane between the I-5 interchange and Quail Lakes Drive.

As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into commercial driveways preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane at Quail Lakes Drive does not always flow freely due to some of the vehicles making another stop and immediate left-turn into the shopping center north of March Lane. As vehicles in the northbound right-turn lane wait for gaps in the eastbound traffic stream to cross March Lane, standing vehicle queues form on the northbound off-ramp. During peak demand periods, these queues have been observed backing-up into the auxiliary lane on I-5. The queuing further compounds the turbulence associated with the short weaving distance between the northbound on-ramp from Plymouth Road and the March Lane off-ramp.
In 1988, the Brookside Community Project (Brookside Estates) was approved by the City of Stockton and annexed into the City. The approved Brookside Estates project will develop 1,300 acres along March Lane west of I-5. The Brookside Estates project will develop a mixture of land use types including high- and low-density residential, administrative, professional, commercial, recreational and institutional.

Brookside Estates which is currently under construction, will generate approximately 50,000 vehicle trip ends on a daily basis. The subject interchange will serve a significant amount of the Brookside Estates traffic. Increases in traffic volumes generated from the Brookside Estates project coupled with traffic volume growth from other approved projects throughout Stockton will impact traffic operations at the subject interchange to unacceptable service levels.

Forecast volumes on mainline I-5 indicate the need for mainline widening and providing a new Calaveras River bridge crossing to handle much of the local traffic which is now forced to use Interstate 5 due to an inadequate parallel local road system. I-5 mainline operations will be impacted by increases in regional trips through the City of Stockton and planned/approved development which will be served by I-5. Without a new local road crossing of the Calaveras River, peak hour volumes on I-5, south of March Lane, are forecast to exceed 13,500 (8830 NB/5020 SB) in PM peak hour. The addition of a parallel bridge over the Calaveras River would reduce volumes on Interstate 5 and at the Interstate 5/March Lane interchange. However, mainline and interchange volumes would remain large enough to warrant widening of Interstate 5 and modifications to the interchange. Widening of Mainline I-5 through the March Lane Interchange were addressed in the CalTrans PSR for I-5 mainline widening which was approved on September 22, 1992.

Without the proposed interchange modifications, both March Lane/I-5 ramp intersections are projected to operate at LOS “F” (unacceptable) conditions. Projected increases in east/west traffic and traffic oriented to the south on I-5 are the primary causes of the forecasted unacceptable service levels. With the proposed geometric and traffic control improvements, the interchange is projected to operate at LOS "D" during peak demand periods.

4. ANALYSIS OF PROPOSAL

The project within State Right-of-Way proposes to widen March Lane under I-5, to eight (8) 12-foot lanes (six through lanes and back-to-back dual left-turn lanes). To widen March Lane under I-5, encroachment into the existing embankments will occur on both sides of March Lane. It also proposes to widen the I-5 northbound off-ramp to a two-lane exit with further widening to a three-lane section at the bridge over the East Bay Municipal Utility District (EBMUD) easement. North of the EBMUD easement bridge, a taper to four lanes is proposed. The four lanes on the northbound off-ramp approach to March Lane will include a left-turn lane, a shared through plus left-turn lane, a
controlled right-turn lane to eastbound March Lane, and an uncontrolled free right-turn lane. The existing two-lane entrance on the I-5 northbound on-ramp will be extended north and widened, tapering to one lane prior to the gore area with mainline I-5. The northbound on-ramp widening is necessary to accommodate the eastbound dual left turn lanes proposed at the I-5 northbound off-ramp intersection. Modifications to the existing traffic signals at the interchange are proposed to supplement the geometric modifications. All of the improvements will be constructed within existing State Right-of-Way boundaries. None of the proposed improvements would reduce sight distance at the interchange.

In conjunction with the proposed improvements within State Right-of-Way, March Lane will be constructed between I-5 northbound ramps and Quail Lakes Drive to include four eastbound lanes with dual left-turn lanes to northbound Quail Lakes Drive (see Attachment "B"). The eastbound dual left-turn lanes will be protected with a one foot wide raised median to restrict weaving from the northbound off-ramp right turn lane. The existing Denny's parking lot in the southeast quadrant of the interchange will require modification to provide the necessary City Right of Way for the March Lane westbound right turn lane. Additional City Right-of-Way is required along the south side of March Lane.

The Traffic Index (TI) used for the design of the ramp is listed in Attachment E. The project proposal includes no non-standard design features. The 20-year growth traffic projections were analyzed with the proposed Ultimate geometrics and the results indicated that Level-of-Service "D" or better is expected during the peak hours of traffic operations (see Attachment "C").

5. SYSTEM PLANNING

The long-range route concept for I-5 through the Stockton area is an eight-lane freeway and a Level-of-Service (LOS) "D". The existing facility is six lanes to the north of Route 12 (including through the project), and four lanes on north to the Sacramento County Line.

The 1989 RDP proposed to upgrade the six-lane facility to eight lanes from north of Country Club Boulevard to Hammer Lane, with the possibility of extending the eight lanes north to Eight Mile Road. This proposal is also a current candidate list HE-13 project (No. 739) with a current estimated cost of $34.9 Million. The San Joaquin County Council of Governments (COG) included this project as a Flexible Congestion Relief (FCR) Program project in their 1992 RTIP. It is also anticipated that there may be some local developer participation in the cost of these added lanes through mitigation process. The additional lane in each direction would be added in the existing 60-foot median.
6. **HAZARDOUS WASTES**

There are no hazardous waste sites located within the project limits (see Attachment F).

7. **TRAFFIC MANAGEMENT PLAN**

Significant delays due to construction are anticipated and, therefore, a Traffic Management Plan (TMP) is needed for this project. The existing queuing problem on the northbound off-ramp would be compounded during construction when EBMUD bridge would operate with a single lane. Lane reductions on March Lane would also contribute to significant delays. District 10 Division of Traffic Operations will be consulted to develop a concise TMP. The construction cost estimate includes $60,000 plus contingencies for traffic management and control during construction.

8. **ENVIRONMENTAL CLEARANCE**

A. **PROJECT SCOPE**

The project includes widening of March Lane to an eight-lane cross section under I-5, adding lanes to March Lane between I-5 and Quail Lakes Drive, and widening the northbound on and off ramps. The environmental analysis limits of the project will extend from the western State Right-of-Way on March Lane to Quail Lakes Drive (1,350 feet). The western State Right-of-Way limit on March Lane is located 150 feet west of the March Lane/I-5 southbound on/off ramps intersection. The analysis will also include 1,360 feet along the I-5 northbound off-ramp and 1,560 feet along the I-5 northbound on-ramp. Existing Right-of-Way on March Lane, immediately east of the northbound ramps intersection, will be expanded to accommodate the additional roadway width. The Right-of-Way increase on the north side will be comprised of an area approximately 220 feet long and 10 feet wide and the Right-of-Way increase on the south side will be comprised of a triangular shaped area of approximately 100 feet long and 10 feet wide at the base of the triangle. Both of these areas are within the City of Stockton, therefore, State Right-of-Way will not need to be increased to implement the project.

Federal NEPA clearance is required because the project includes increasing the capacity of a ramp on an interstate route.

B. **SETTING**

The subject interchange is located in an urbanized area. Land uses in the vicinity of the project area include commercial uses along the March Lane corridor including restaurants, motels and retail businesses. To the north and south of the commercial uses along March Lane, residential land uses exist in the form of single family homes.
There are no waterways or streams within the environmental analysis limits. Vegetation consists of highway landscaping within existing Right-of-Way.

C. PREVIOUS ENVIRONMENTAL STUDIES

An EIR was prepared for the Brookside Community Project proposed by Grupe Development Company. State Clearinghouse No. 88022316. The lead agency for the EIR was the City of Stockton and the Final EIR was certified on April 17, 1989. The EIR (with addendums) was recertified on November 4, 1991. Improvements to the March Lane/I-5 interchange were identified in the EIR as mitigation for the development.

An EIR was prepared for the City of Stockton General Plan Revision, State Clearinghouse No. 88072506. The lead agency for the EIR was the City of Stockton. The Final EIR was certified on January 16, 1990.

D. STUDIES REQUIRED

Biological

A Natural Environmental Study (NES) will need to be prepared by a professional biologist. The study will certify whether or not any endangered species are present.

The Burrowing Owl has been known to be in the subject area and will be evaluated by the biologist.

Physical

- Noise Analysis

A noise analysis (study) will need to be prepared for the environmental document to meet federal standards. It is anticipated that noise walls at the subject interchange would not be required.

- Air Quality Analysis

The subject interchange is located in the San Joaquin Valley Air Basin which has been designated as an air quality non-attainment area by the U.S. Environmental Protection Agency for ozone, carbon-monoxide (CO), and 10-micron particulate matter (PM10).

The proposed interchange modifications are included in the San Joaquin County Council of Government’s 1992 Transportation Improvement Program (TIP). A quantitative regional analysis with all TIP projects was conducted to determine conformity with the 1990 federal Clean Air Act Amendments. The analysis
substantiated that the RTP and TIP conformed to the Clean Air Act Amendments. The Environmental Protection Agency and Federal Highway Administration ultimately accepted these findings. A project level air quality analysis will be required to show a reduction in carbon monoxide (CO) violation. An Air Quality Conformity Statement will be required.

Socioeconomic

No special studies will be required under this category.

Cultural Resources

CalTrans will determine the area of potential effect (APE) and FHWA will approve APE.

Archaeological documentation will be required to confirm that no archaeological or historical resources are present.

An inventory of buildings will be done to document any historical structures.

It is not anticipated that resources are present, however, a federal Section 106 will need to be prepared. A statement of negative findings will satisfy the requirements.

Coordination with Native American representatives will be included as a part of the Cultural Resources Evaluation.

E. DOCUMENTATION

The project will increase capacity on an interstate route ramp and will, therefore, require FHWA (NEPA) clearance.

It is anticipated that the environmental clearance will include a Categorical Exemption (CE) under CEQA with CalTrans as the lead agency and a Categorical Exclusion under NEPA with FHWA as the lead agency.

9. FUNDING/SCHEDULING

CalTrans District 10 and the San Joaquin County Council of Governments (acting as Local Transportation Authority) will enter into a Cooperative Agreement to identify the roles and responsibilities of each agency from preliminary engineering through completion of construction. The interchange improvements will be jointly funded by the City of Stockton, San Joaquin County Council of Governments and Caltrans with an understanding (stipulated in Cooperative Agreement) that 50% of the cost to widen the EBMUD bridge on the I-5 northbound off-ramp (not to exceed $300,000) will be funded by the State. State funding will be derived from “Minor A Projects” funds.
As a separate project to the proposed March Lane/I-5 Interchange modifications, Caltrans also approved a Project Study Report for the widening of I-5 mainline from Mount Diablo Avenue to north of Eight Mile Road. The proposed first stage widening would improve I-5 mainline from six to eight lanes which will be proposed for programming in the 1994 STIP with a proposed construction year of 2001.

Separate from the specific commitments made by the City of Stockton to fund the March Lane/I-5 Interchange modifications, the City also recognizes it’s responsibility to pay it’s fair share of future mainline improvements to I-5. The City has already adopted a process to collect traffic mitigation fees which include financing a portion of I-5 mainline improvements.

10. **DISTRICT CONTACT**

Questions or comments regarding this Project Study Report may be directed to:

CalTrans - District 10  
1976 East Charter Way  
Stockton, CA 95201

Matthew E. Bailey, Chief  
Special Funded Projects Branch A  
(209) 948-7072  
ATSS 423-7072
PROJECT STUDY REPORT

REGISTERED CIVIL ENGINEER STAMP

INTERCHANGE MODIFICATIONS AT INTERSTATE 5/MARCH LANE

10-SJ-05 PM 29.0/30.6

This report was prepared under my direction and responsible charge. I attest to the technical information contained herein and have judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions and decisions are based.

Robert R. Hammar, P. E.
Registered Civil Engineer

8/6/92
12. **PROJECT MANAGER**

The designated project manager for this project is Matthew E. Bailey. He has been involved with the development of this project and concurs with this project proposal.
PROJECT STUDY REPORT
INTERCHANGE MODIFICATIONS AT
INTERSTATE 5/MARCH LANE
10-SJ-05 PM 29.0/30.6

Prepared By:  
Robert R. Hammar, P.E.
Omni-Means

Submitted By:  
James Giottonini
City of Stockton

Reviewed and Recommended By:
Matthew E. Bailey
Project Manager, CalTrans

Asif Haq
Deputy-District Director, Engineering Services, CalTrans

Approved By:  
Gordon A. Marts
District Director, CalTrans

Date: 12-29-95
ATTACHMENTS

VICINITY MAP A

TYPICAL CROSS-SECTIONS, GEOMETRICS, TOPOGRAPHY, AND RAMP PROFILES B

TRAFFIC ANALYSIS/DATA C

COST ESTIMATES D

R-VALUES AND TRAFFIC INDEXES E

HAZARDOUS WASTE (ISA CHECKLIST) F

MEMORANDUM OF UNDERSTANDING - BROOKSIDE (BETWEEN CALTRANS & CITY OF STOCKTON) G

RIGHT-OF-WAY FACT SHEET H

ADVANCE BRIDGE PLANNING STUDY I
ATTACHMENT A

VICINITY MAP
ATTACHMENT B

TYPICAL CROSS-SECTIONS

GEOMETRICS

TOPO GRAPHIC

RAMP PROFILES
PROJECT STUDY REPORT PLANS ON INTERSTATE 5 IN STOCKTON BETWEEN CALAVERAS RIVER & FOURTEEN MILE SLOUGH

To be supplemented by Standard Plans dated January, 1985

END OF PROJECT
P.M. 30.6
STA. 1733+50

BEGINNING OF PROJECT
P.M. 29.0
STA. 1676+00

STOCKTON
NOTE
FOR MARCH LANE SEE SHEET 5 OF 11.
TYPICAL CROSS-SECTION STA. 131+22
TO 18+38 AND STA. 18+40 TO 19+50.

X-1
TYPICAL CROSS-SECTIONS
NO SCALE
SHEET No. 2
BEGIN PROJECT
NOTE: FUTURE RAMP LANE
BARRIER NOT PART.
EXISTING AUXILIARY LANE BEGINS AT STA. 1673+00 AT THE END OF EXISTING RAMP L, NORTHBOUND ON-RAMP AT THE CALAVERAS RIVER BRIDGE.

MARCH LANE UNDERCROSSING NOTE:
CUT 5 FEET INTO EXISTING PAVED SLOPE
ON NORTH AND SOUTH SIDES OF MARCH LANE
AND CONSTRUCT 2-7 HIGH RETAINING WALLS
AND 2-6 HIGH SIDEWALKS TYPICAL

EXISTING 16.5" SF PIPE LINE R/W

NOTE: FUTURE MARY LANE
WIDENING AND MEDIAN
BARRIER NOT A PART.
ATTACHMENT C

TRAFFIC ANALYSIS/DATA
TRAFFIC
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
-EXISTING-

The traffic operating conditions on Interstate 5 (I-5) from the Plymouth Road/Ryde Avenue connections in the south to the northern March Lane ramps were evaluated as a part of this analysis. I-5, through the limits of study, is comprised of six (6) mainline travel lanes (3 per direction). The northbound and southbound sections of I-5 between Ryde Avenue/ Plymouth Road and March Lane are Type A weaving areas. Type A weaving areas include single auxiliary lanes which connect an on-ramp with a downstream off-ramp. Using the Highway Capacity Manual (HCM) methods for measuring weaving length, the existing northbound and southbound weaving lengths are 1,010 feet and 1,360 feet, respectively. The southbound off-ramp and northbound on-ramp at March Lane are single lane ramp junctions. Table 1 lists the existing Level-of-Service (LOS) at subject weaving areas and ramp junctions.

The I-5 mainline and March Lane/I-5 existing volumes are depicted in Figure 1. The I-5 volumes are based on the CalTrans 1990 countbook. The peak hour volumes at March Lane were counted on June 18, 1991. The peak hour counts from the 1990 countbook were split 60/40 for the PM peak and 44/56 for the AM peak. The volumes at the I-5 Calaveras River crossing were used as the starting point and volumes were adjusted north and south from that segment.

The Project Study Report (PSR) prepared by CalTrans District 10 for the Plymouth/Ryde Ramp Relocation (May 8, 1990) project identifies the inadequate weaving distance that exists between the on/off ramps at Plymouth Road and Ryde Avenue with the March Lane interchange. The inadequate weaving distance has resulted in a significant number of accidents within the weaving area (primarily rear-end type accidents). A three year Traffic Surveillance and Analysis Survey (TASAS) study from October 1, 1986 through September 30, 1989 was taken between PM 29.2 and PM 29.8 along Route SJ-5 (see Attachment E). The TASAS Table B indicates that the actual accident rate is 1.21 Accs/MV (accidents per Million Vehicles) compared to the expected accident rate of 0.68 Accs/MV. The PSR recommend relocating the existing Ryde Avenue/Plymouth Road ramps south to Alpine Avenue. The project is included in the 1990 HSOPP Plan (Project #741A) for funding in the 1993/94 fiscal year.
TABLE 1
RAMP JUNCTIONS/WEAVING AREAS
-EXISTING-

<table>
<thead>
<tr>
<th>RAMP WEAVING AREA</th>
<th>WEAVING LENGTH</th>
<th>LOS AM</th>
<th>LOS PM</th>
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</thead>
<tbody>
<tr>
<td>Ramp Junctions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Southbound Off-Ramp @ March Lane</td>
<td>N/A</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>I-5 Northbound On-Ramp @ March Lane</td>
<td>N/A</td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
<td>D</td>
</tr>
<tr>
<td>Weaving Areas</td>
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<tr>
<td>I-5 between March Lane and Ryde Avenue (Southbound)</td>
<td>1,360 ft.</td>
<td>D</td>
<td>D</td>
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<tr>
<td></td>
<td></td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>I-5 between Plymouth Road and March Lane (Northbound)</td>
<td>1,010 ft.</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>

N/A: Not applicable
LOS: Levels-of-Service
LEGEND

**ADT**
**P.M. PEAK HOUR VOLUME**
**A.M. PEAK HOUR VOLUME**

NOTE: I-5 MAHUNE PEAK HOUR VOLUMES ROUNDED TO NEAREST 10.
<table>
<thead>
<tr>
<th>RAMP WEAVING AREA</th>
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<td>I-5 Southbound Off-Ramp @ March Lane</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>- Diverge</td>
<td></td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>I-5 Northbound On-Ramp @ March Lane</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Freeway</td>
<td></td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>- Merge</td>
<td></td>
<td>B</td>
<td>D</td>
</tr>
<tr>
<td><strong>Weaving Areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 between March Lane and Ryde Avenue (Southbound)</td>
<td>1,360 ft.</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>- Weaving</td>
<td></td>
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</tr>
<tr>
<td>- Non-Weaving</td>
<td></td>
<td>C</td>
<td>C</td>
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<tr>
<td>I-5 between Plymouth Road and March Lane (Northbound)</td>
<td>1,010 ft.</td>
<td>E</td>
<td>E</td>
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<tr>
<td>- Weaving</td>
<td></td>
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<tr>
<td>- Non-Weaving</td>
<td></td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>
INTERSECTIONS - MARCH LANE/I-5 RAMPS
-EXISTING-

The I-5 southbound and northbound ramps at March Lane are currently operated at three-phase signals. The two ramp/surface street intersections are coordinated to provide optimum progression through the interchange. The two intersections were evaluated using the PASSER III software package developed by the Texas Transportation Institute. The PASSER III program optimizes the signal timing at both ramp/surface street intersections of a diamond interchange and then determines the delay and LOS on individual movements and on an overall interchange basis.

Operational Level-of-Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level-of-Service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the V/C ratio for the lane group or approach in question.

For this analysis, AM and PM peak hour turning movement volumes observed on June 18, 1991 (Tuesday) were used. The traffic counts indicate that 1,319 vehicles utilize the I-5 northbound off-ramp to March Lane during the PM peak hour on an average weekday. As a part of the PM peak hour count, the number of vehicles making the northbound turn and proceeding into the eastbound left-turn lane at Quail Lakes Drive were separated from the right-turning vehicles which continue east on March Lane past Quail Lakes Drive. This separation of right-turning vehicles indicated that 30 percent (or 326 vehicles) of the northbound right-turns have destinations north on Quail Lakes Drive.

Observations between the interchange of northbound I-5 and March Lane and the intersection of Quail Lakes and March Lane have shown there is a large amount of traffic weaving occurring in this section. As vehicles exit from northbound I-5 onto eastbound March Lane, a significant number merge over to turn left on Quail Lakes Drive. This maneuver is complicated by eastbound traffic attempting to turn right onto Da Vinci Drive or into driveways serving one of the restaurants preceding Da Vinci Drive. In addition, the eastbound March Lane left-turn lane
at Quail Lakes Drive does not always flow freely due to some of the vehicles making another immediate left-turn into the shopping center north of March Lane.

The existing AM and PM peak hour volumes at the March Lane interchange were analyzed with the existing geometrics and control. The PASSER III results indicated that the southbound ramps intersection is operating at LOS "C" and LOS "C" for the AM and PM peak hours, respectively. The northbound ramps intersection operates at LOS "C" in the AM peak and LOS "C" in the PM peak. Queues forming on the northbound approach are the result of right-turning vehicles stopping in the lane waiting to cross over to the eastbound left-turn lanes at Quail Lakes Drive. There is no known analytical method of incorporating the condition into the overall LOS of the intersection, therefore, it was not included.

The westbound approach at the I-5 northbound/March Lane intersection experiences a lane utilization imbalance where the lane adjacent to the median carries the majority of traffic. Motorists in this lane are preparing to enter the left-turn lanes under I-5 with destinations south on I-5. Therefore, a considerable amount of queuing occurs in the lane adjacent to the median.

Traffic volume projections for the estimated construction year (1995) are depicted in Figure 3.
MAINLINE/RAMP JUNCTIONS/WEAVING AREAS
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The long-range Route Concept Report for I-5 through the Stockton area is an eight-lane freeway and a "D" Level-of-Service (LOS). Currently, I-5 reduces from eight mainline lanes to six north of Country Club Boulevard. Figure 4 depicts the 20-year growth traffic projections. With no improvements to I-5 in the subject area, the mainline lanes would operate at-capacity in the southbound direction during the AM peak and in the northbound direction during the PM peak hour. There would be significant northbound mainline queuing that originates at the lane reduction north of Country Club Boulevard. The projected PM peak hour northbound volume at the Calaveras River is 8830 VPH. South of the Plymouth Road on-ramp the PM volume is 8140. Based on these volumes, the facility would operate at-capacity with the concept eight-lanes. Using a per-lane capacity of 1850 to account for 10% trucks, the section of I-5 south of the Plymouth Road on-ramp would operate at a volume-to-capacity ratio of 1.10 which corresponds to LOS "F". With five lanes, the V/C ratio is 0.88 which corresponds to LOS "D". The weaving area from Plymouth to March is forecast to have 2744 weaving vehicles in the PM peak. This would cause significant turbulence in the gore areas of the on/off ramps. The projected PM peak northbound off-ramp volume at March Lane (2400 VPH) warrants a two-lane off-ramp with the auxiliary lane dropping at the ramp. The two-lane off-ramp design would improve the weaving turbulence since the mainline lane adjacent to the auxiliary lane would be used by a portion of the off-ramp traffic up to the diverge point.

The southbound section of I-5 over the Calaveras river is projected to carry 7600 vehicles in the AM peak hour. 2163 weaving vehicles are projected for the March Lane/Ryde Avenue weaving area. The segment of I-5 south of the Ryde Avenue off-ramp has an AM peak hour projection of 7100 which corresponds to a V/C ratio of 0.87 (LOS "D") with four mainline lanes. The four mainline lanes/one auxiliary lane cross-section would provide acceptable service levels in the critical AM peak southbound condition with localized turbulence at the on/off ramp gore areas.

The traffic projections which accompany the ultimate geometrics include an AM peak volume of 1,913 vph on the I-5 southbound on-ramp from March Lane. The AM peak hour projection exceeds the 1,500 vph threshold described in the HDM. Therefore, a two-lane on-ramp is warranted based on the HDM criteria.
The AM peak hour projection for the southbound on-ramp corresponds to the highest directional volumes on mainline I-5 (southbound during the AM peak hour). The I-5 mainline lanes are projected to operate at or near capacity southbound during the AM peak hour. The existing southbound on-ramp continues as an auxiliary lane to the Ryde Avenue off-ramp. The relocation of the Ryde/Plymouth ramps to Alpine Avenue would increase the weaving length associated with the auxiliary lane. The configuration of the existing southbound on-ramp, with the programmed improvements to the auxiliary lane, will support project volumes at an acceptable level.

Maintaining the existing single lane to auxiliary lane configuration would geometrically meter the on-ramp traffic and result in less turbulence with mainline traffic. The increase in auxiliary lane length as a result of the Ryde/Plymouth ramp relocation would provide sufficient length for on-ramp vehicles to merge with mainline vehicles.

The forecasted peak hour traffic demand under the 20-year growth condition warrants the addition of I-5 mainline travel lanes. The forecasted 20-year volumes indicate that I-5 in the subject area would require a ten-lane configuration to maintain LOS "D" service levels. Therefore, planning for such improvements is justified.
LEGEND

NOTE: 1-5 MAJOR LINE PEAK HOUR VOLUMES ROUNDED TO NEAREST 10.
Z-9-92
RIGHT OF WAY DATA SHEET

Dist 10  Co 51  Rte 5:  PM 29.0/30.
E.A. See Environmental Checklist & Initial Study
Date: February 20, 1992
Proj/Des.: March Lane ESR

Subj: Right of Way Data - Alternate N/A

R/W Cost Estimate:
A. Acquisition, including Excess Land and Damages to Remainder $__________
B. Utility Relocation (State share) $__________
C. Clearance/Demolition $__________
D. RAP $__________
E. Title and Escrow Fees $__________
F. Construction Contract Work: $ 0- Total R/W Estimate: $ 0-

Parcel Data:

<table>
<thead>
<tr>
<th>Type</th>
<th>Utilities</th>
<th>RR Involvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>U4-1</td>
<td>None</td>
</tr>
<tr>
<td>A</td>
<td>-2</td>
<td>C&amp;M Agrmt</td>
</tr>
<tr>
<td>B</td>
<td>-3</td>
<td>Svc Contract</td>
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<tr>
<td>C</td>
<td>-4</td>
<td>Lic/RE/Clauses</td>
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<tr>
<td>D</td>
<td>U5-7</td>
<td>Misc R/W Work:</td>
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<tr>
<td></td>
<td>-5</td>
<td>RAP Displ</td>
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<tr>
<td></td>
<td>-9</td>
<td>Clear/Demo</td>
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<tr>
<td></td>
<td></td>
<td>Const Permits</td>
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</table>

-0-

Feas: R/W 0- Excess - # of Excess Parcels

Description of Major Items of Construction Contract Work:

General Description of R/W and Excess (zoning, use, major improvements, critical or sensitive parcels, etc.): None Required XX

NOTE: All Right-of-Way to be acquired adjacent to existing CalTrans Right-of-Way shall pertain to the jurisdiction of the City of Stockton.

Is there an effect on Assessed Valuation? Yes____ Not Significant XX No____

Are Utility Facilities or Rights of Way Affected? Yes____ No XX (If yes, explain.)

A. Are Railroad Facilities or Rights of Way Affected? Yes____ No XX (If yes, explain

B. Name(s) of railroad(s) NA XX
C. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facilities be more cost effective than construction of facility to perpetuate the rail services? (See Procedural Handbook Volume 4a, Chapter 440 for further detail.)
Yes No (If yes, explain.)

5. Were any sites with underground tanks, hazardous wastes and/or material found?
Yes None Evident No (If yes, attach memorandum per Section 101.026, P&M Procedures Handbook.)

? Are RAP displacements required? Yes No (If yes, provide the following information.)

No. of single family_________ No. of business/nonprofit_________
No. of multi-family_________ No. of farm_________

Based on Relocation Impact Statement/Study dated , it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

10. Are material, borrow and/or disposal sites required? Yes No Unknown

11. Are there potential relinquishments and/or abandonments? Yes No (If yes, explain.)

11. Are there existing and/or potential Airspace sites? Yes No (If yes, explain.)

13. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less than formula lead time and/or if significant pressures for project advancement are anticipated.)

14. Is it anticipated all R/W work will be performed by Caltrans' staff? Yes No

Evaluations Prepared By:
1. R/W: Name Date 2/20/92
2. Railroad: Name Date
3. Utilities: Name Date 2/20/92

I have reviewed the above data and find it to be complete, current and accurate.

Environmental Branch
C.R. Strain
T.A. Rasmussen
Utilities
File

City of Stockton
ATTACHMENT I

ADVANCE BRIDGE PLANNING STUDY
<table>
<thead>
<tr>
<th>CONTRACT ITEMS</th>
<th>Q/S.F.</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOVE CONCRETE BRIDGE (PORTION)</td>
<td>LS</td>
<td></td>
<td></td>
<td></td>
<td>$15,000.00</td>
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<tr>
<td>STRUCTURE EXCAVATION (BRIDGE)</td>
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<td></td>
<td>220</td>
<td>$35.00</td>
<td>7,700.00</td>
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<tr>
<td>STRUCTURE BACKFILL (BRIDGE)</td>
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<td>115</td>
<td>$45.00</td>
<td>5,175.00</td>
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<tr>
<td>FURNISH 70T PILING</td>
<td>LF</td>
<td></td>
<td>2,750</td>
<td>11.00</td>
<td>30,250.00</td>
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<tr>
<td>DRIVE 70T PILE</td>
<td>EA</td>
<td></td>
<td>42</td>
<td>1050.00</td>
<td>44,100.00</td>
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<tr>
<td>STRUCTURAL CONCRETE, BRIDGE</td>
<td>CY</td>
<td></td>
<td>540</td>
<td>350.00</td>
<td>189,000.00</td>
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<tr>
<td>BAR REINFORCING STEEL</td>
<td>LB</td>
<td></td>
<td>164,000</td>
<td>.52</td>
<td>80,080.00</td>
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<tr>
<td>CONCRETE BARRIER (TYPE 22)</td>
<td>LF</td>
<td></td>
<td>285</td>
<td>50.00</td>
<td>14,250.00</td>
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</table>

| SUB TOTAL                                           | 385,585.00 |
| MOBILIZATION (10%)                                  | 42,639.44  |
| SUB TOTAL BRIDGE ITEMS (/SF)                         | 429,394.44 |
| CONTINGENCIES (25%)                                 | 107,098.51 |
| BRIDGE TOTAL (/SF)                                  | 535,493.05 |
| BRIDGE REMOVAL (CONTINGENCY INCL)                   |            |
| WORK BY RAILROAD OR UTILITY FORCES                  |            |
| GRAND TOTAL                                         | 535,493.05 |
| FOR BUDGET PURPOSES: SAY                             | $535,000   |

COMMENTS:
Pricing assumes this bridge represents only bridge in the contract. Cost excludes seismic retrofit of existing bridge and upgrade of left barrier.

$57.30/SF
Assume 70 Ton Pile Footings

Datum Elev. -30.0 Abut 1 Bent 2 Bent 3 14' Bent 4 Abut 5

**ELEVATION**

1' = 50'

**TYPICAL SECTION**

1' = 10'

*Note:*

1. Cost as shown excludes retrofit of existing bridge and upgrade of existing barrier.

Date of estimate: 2/18/93

Site Depth: 5.0'

Length: 255.85

Width: 324'

Cost/Element

10% Mobilization

25% Contingency

Total Cost: $536,000

**DESIGNED BY**

W. LaFranchi 2-93

**DRAWN BY**

G. Brown 2-92

**EARTHWORK**

EBMUD AQUEDUCT UC (WID)

**MATERIALS**

EBMUD R/W

2nd Aqueduct

1st Aqueduct

5 P Pipe Line

3rd Aqueduct

EBMUD R/W
INTERSECTIONS - MARCH LANE/I-5 RAMPS 
- 20 YEAR PROJECTIONS (GENERAL PLAN BUILDOUT) -

The I-5/March Lane interchange intersections were analyzed under a 20-year growth conditions. The improvements include widening March Lane to six through lanes and providing dual eastbound left-turns at the northbound ramps under the I-5 structure.

The forecasted traffic volumes were derived from the Stockton City-Wide traffic model using the General Plan buildout with approved projects condition. The roadway network does not include a Calaveras River Bridge to the west of I-5 in order to provide a "worst case" traffic demand condition at the March Lane interchange. On several traffic movements, the forecast demand is lower than the existing count. Changes in travel patterns due to land development and planned roadways (included in model network) are the primary cause of the decrease in volumes.

I-5 Southbound Ramps/March Lane

With Ultimate improvements, the I-5 southbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the southbound ramps intersection it would operate at LOS "F" (AM) and LOS "F" (PM).

I-5 Northbound Ramps/March Lane

With Ultimate improvements, the I-5 northbound ramps at March Lane would operate at LOS "D" (AM) and LOS "D" (PM).

With no improvements to the northbound ramps intersection, it would operate at LOS "F" (AM) and LOS "F" (PM).

Year 2015 traffic volume projections are depicted in Figure 4.
ATTACHMENT D

COST ESTIMATE
PROJECT COST ESTIMATE SUMMARY

Type of Estimate (Pre-PSR, PSR, PR, etc.): PSR
Program Code: 10-SJ-5
DIST-CO-RTE
PM: 29.0/30.6
EA:
PP No:

Project Description: Project Study Report

Limits: Northbound off-ramp improvements at March Lane/1-5 interchange between PM 29.0/30.6, March Lane widening between 1-5 to Quail Lakes Drive.

Proposed Improvement (Scope): Widen March Lane to an eight-lane cross section through the Interstate 5 interchange. Widen I-5 northbound off-ramp to a two-lane exit with three lanes over eastbound easement bridge and four lanes on the approach to March Lane.

ROADWAY ITEMS $ 840,900
STRUCTURE ITEMS $ 536,000
SUBTOTAL CONSTRUCTION $1,376,900
RIGHT-OF-WAY $ 0
TOTAL PROJECT COST $1,376,900

Reviewed by Program Manager ____________________________ (Signature)

Approved by Project Manager ___________________________ (Signature)

Phone No. ____________________________ Date ____________________________
## PRELIMINARY
### PROJECT COST ESTIMATE

**10-SJ-5**  
**DIST-CO-RTG**  
**PM:** 29.0/30.6  
**EA:**  
**PP No:**

### 1. ROADWAY ITEMS

#### Section 1. Earthwork

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Unit Cost</th>
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<tr>
<td>Roadway Excavation</td>
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<tr>
<td>Imported Borrow</td>
<td>2,371</td>
<td>C.Y.</td>
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<td>Clearing &amp; Grubbing</td>
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<td>Lumo Sum</td>
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<td>5,000</td>
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<tr>
<td>Developing Water Supply</td>
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<td></td>
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<tr>
<td>Demolition</td>
<td>40,000</td>
<td>S.F.</td>
<td>0.50</td>
<td>20,000</td>
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**Total Earthwork:** $39,250

#### Section 2. Structural Section

- **PCC Pavement (Depth)**
- **PCC Pavement (Depth)**
- **Asphalt Concrete**
  - Quantity: 3,084 TON  
  - Unit Price: $ 30.00  
  - Unit Cost: 92,520
- **Lean Concrete**
- **Cement-Treated Base**
- **Aggregate Base**
  - Quantity: 3,832 TON  
  - Unit Price: $ 14.00  
  - Unit Cost: 53,650
- **Aggregate Subbase**
  - Quantity: 925 TON  
  - Unit Price: $ 10.00  
  - Unit Cost: 9,250
- **Permeable Material Blanket & Edge Drains**

**Total Structural Section:** $155,420

#### Section 3. Drainage

- **Large Drainage Facilities**
- **Storm Drains**
  - Quantity: 320 L.F.  
  - Unit Price: $ 50.00  
  - Unit Cost: 16,000
- **Pumping Plants**
- **Project Drainage (X-Drains, Oversize, etc.)**

**Total Drainage:** $16,000

*Attach sketch showing typical structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.*
## PRELIMINARY PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTE
PM: 29.0/30.6
EA:
PP No:

### Section 4 Specialty Items

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<thead>
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<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
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<th>Unit Cost</th>
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<td>L.F.</td>
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<td>(3' high)</td>
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<td>L.F.</td>
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<td>Soundwalls</td>
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<td>Equipment/Animal Passes</td>
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<tr>
<td>Relocate Private Irrigation Facilities</td>
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<td>Replacement Planting/ Irrigation</td>
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<tr>
<td>Landscaping/Irrigation (normally separate project)</td>
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<td>Erosion Control</td>
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<td>S.Y.</td>
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<td>Slope Protection</td>
<td>20,000</td>
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<td>Barriers and Guardrails</td>
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<td>Hazardous Waste Work</td>
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<td>Environmental Mitigation</td>
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| Total Specialty Items                     |          |      | $100,400   |           |

### Section 5 Traffic Items

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<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
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<tr>
<td>Lighting</td>
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<td>Permanent Signing</td>
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<tr>
<td>Traffic Control Systems</td>
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<td>50,000</td>
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<tr>
<td>Traffic Management Plan</td>
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| Total Traffic Items                       |          |      | $260,000   |           |

| SUBTOTAL SECTIONS 1-5                     |          |      | $571,100   |           |
PRELIMINARY PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTE
PM: 29.0/30.6
EA:
PP No:

Section 6 Minor Items
Subtotal Items 1-5 571,100 x 5%
Concrete Curb, Gutter, Sidewalk

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<td>23,100</td>
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TOTAL MINOR ITEMS

Section 7 Roadway Mobilization
Subtotal Sections 1-5
Minor Items

571,100 Sum x 10%
57,100

TOTAL ROADWAY MOBILIZATION $57,100

Section 8 Roadway Additions
Supplemental
Subtotal Sections 1-5
Minor Items (Schedule 6)
Mobilization
Minor Items (Section 7)
Contingency 644,100 Sum x 25%

TOTAL ROADWAY ADDITIONS $161,000

TOTAL ROADWAY ITEMS (Total of Sections 1-8) $840,900

Estimate Prepared By: D.E. Howe Phone #: 916-782-8688 Date: 26 February 1992

* Use appropriate percentage per 3-6.3 of Project Development Procedures Manual, Pre-PSR 30%-50%, PSR 25%, PR 20%, PAR 15%, After PAR 10%.
PRELIMINARY
PROJECT COST ESTIMATE

10-SJ-5
DIST-CO-RTE
PM: 29.0/30.6
EA:
PP No:

11. STRUCTURES ITEMS

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<thead>
<tr>
<th>Bridge Name</th>
<th>EBMUD - Ramp &quot;O&quot; Widening</th>
</tr>
</thead>
</table>

Structure Type

Width Ft.
(out to out)

Span Lengths Ft.

Total Area Sq. Ft.

Footing Type
(pile/spread)

Cost Per Sq. Ft.
(including 10% mobilization
and 25% contingency)

Total Cost for Structure

SUBTOTAL STRUCTURES ITEMS $536,000

Railroad Related Costs

TOTAL STRUCTURES ITEMS $536,000

COMMENTS

Per Bissell & Kern, Inc., Advanced Bridge Study
dated 18 February 1992

Estimate Prepared By: Walt Lafranchi,
Bissell & Kern

Phone #: 916-363-1304 Date: 26 February 1992

(if appropriate, attach additional pages and backup.)
III. RIGHT-OF-WAY

<table>
<thead>
<tr>
<th></th>
<th>Current Values</th>
<th>Escalation Rates</th>
<th>Escalated Values*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition, including excess lands and damages to remainder(s)</td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Utility Relocation (State share)</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance/Demolition</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAP</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title and Escrow Fees</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL RIGHT-OF-WAY</strong></td>
<td><strong>0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONSTRUCTION CONTRACT WORK

COMMENTS

These right-of-way estimates should also be updated on your RW 1-6 Capital Cost screens, as discussed in the February 20, 1991 draft memo by Richard Colvin concerning Right-of-Way Capital Plan Procedures.

Attach Right-of-Way Data Sheet as backup

* Escalated to assumed year of advertising of

---

Estimate Prepared By: D.E. Howe
Phone #: 916-782-8688 Date: 26 February 1992

(If appropriate, attach additional pages and backup.)
### Bridge Estimate

- **Preliminary Estimate**
- **General Plan Estimate**
- **Engineer's Estimate**

**Cost Index:** 216

**Bridge:** EBMUD Aqueduct Undercrossing (Widen)  
**BR. No.:** 29-2255

**Superstructure:** CIP Reinforced Conc Box Girder  
**D = 5' 0''**

**Length:** 235.85'  
**Width:** 24'  
**= Bridge Deck Area:** 5,840 sq ft

<table>
<thead>
<tr>
<th>Contract Items</th>
<th>O/S.F.</th>
<th>Unit</th>
<th>Quantity</th>
<th>Price</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove Concrete Bridge (Portion)</td>
<td></td>
<td>LS</td>
<td>220</td>
<td>$35.00</td>
<td>7,700.00</td>
</tr>
<tr>
<td>Structure Excavation (Bridge)</td>
<td></td>
<td>CY</td>
<td>115</td>
<td>$45.00</td>
<td>5,175.00</td>
</tr>
<tr>
<td>Structure Backfill (Bridge)</td>
<td></td>
<td>CY</td>
<td>115</td>
<td>$45.00</td>
<td>5,175.00</td>
</tr>
<tr>
<td>Furnish 70T Piling</td>
<td></td>
<td>LF</td>
<td>2,750</td>
<td>$11.00</td>
<td>30,250.00</td>
</tr>
<tr>
<td>Drive 70T Pile</td>
<td></td>
<td>EA</td>
<td>42</td>
<td>1,050.00</td>
<td>44,100.00</td>
</tr>
<tr>
<td>Structural Concrete, Bridge</td>
<td></td>
<td>CY</td>
<td>540</td>
<td>$350.00</td>
<td>189,000.00</td>
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<tr>
<td>Bar Reinforcing Steel</td>
<td></td>
<td>LB</td>
<td>154,000</td>
<td>.52</td>
<td>80,300.00</td>
</tr>
<tr>
<td>Concrete Barrier (Type 25)</td>
<td></td>
<td>LF</td>
<td>255</td>
<td>50.00</td>
<td>12,750.00</td>
</tr>
</tbody>
</table>

**Comments:**  
Pricing assumes this bridge represents only bridge in the contract. Cost excludes seismic retrofit of existing bridge and upgrade of left barrier.

**$57.30/SF**

**Sub Total**  
**Mobilization (10%)**  
**Sub Total Bridge Items ( /SF)**  
**Contingencies (25%)**  
**Bridge Total ( /SF)**  
**Bridge Removal (Contingency Incl)**  
**Work by Railroad or Utility Forces**

**Grand Total**  
**For Budget Purposes: Say**  
**$535,000.00**
ATTACHMENT E

R-VALUES AND TRAFFIC INDEXES
Mr. Bob Hammar
Omni Means. Engineers and Planners
2240 Douglas Boulevard, Suite 260
Roseville, CA 95661

Subject: FLEXIBLE PAVEMENT DESIGNS
I-5 INTERCHANGE AT MARCH LANE AND
EIGHT MILE ROAD
STOCKTON, CALIFORNIA

Dear Mr. Hammar:

In accordance with your request, Kleinfelder, Inc. is submitting flexible pavement designs on the I-5 March Lane and Eight Mile Road project in Stockton, California. Our proposal File No. 20-91-111 dated September 3, 1991, discusses our understanding of the scope of work. Your plans dated April 20, 1990 and July 11, 1991 were used to locate the areas for sampling.

On November 18, 1991, three finished subgrade soil samples were obtained by a representative of Kleinfelder, Inc. at locations listed below, to evaluate Resistance-Values (R-Values) in accordance with Cal-301 for the Caltrans method of pavement design. The samples designated as off-ramps were obtained from the slope areas from material which appeared to be imported fill beneath aggregate base.

Our calculations are based on traffic indices provided by State of California District 10 Traffic Forecasting and Analysis Section and City of Stockton Transportation and Planning Section. We also assume that Class II aggregate base, aggregate subbase, and subgrade materials, along with construction procedures, will comply with applicable Caltrans requirements.
Following is a summary of R-Value test results and recommended pavement sections:

**RESISTANCE-VALUE TESTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Exudation Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1, 18 feet south of existing Eight Mile Road &amp; between north bound and south bound overpasses (Native black silty clay)</td>
<td>28</td>
</tr>
<tr>
<td>#2, North bound off-ramp, 12 feet east of existing I-5 down-ramp &amp; and 200 feet south of Eight Mile Road &amp; (Brown silty sand with aggregate)</td>
<td>41</td>
</tr>
<tr>
<td>#3, North bound off-ramp, 12 feet east of existing I-5 off-ramp &amp; and 250 feet south of March Lane &amp; (Brown silty sand with aggregate)</td>
<td>37</td>
</tr>
</tbody>
</table>

**PAVEMENT SECTION**

<table>
<thead>
<tr>
<th>Thickness of Asphalt Concrete</th>
<th>Thickness of Aggregate Base</th>
<th>Thickness of Aggregate Subbase</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAFFIC INDEX — 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 off-ramp @ March Lane</td>
<td>0.65'</td>
<td>1.35'</td>
</tr>
<tr>
<td>Alternative Section</td>
<td>0.65'</td>
<td>1.00'</td>
</tr>
<tr>
<td>TRAFFIC INDEX — 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eight Mile Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-5 Off-ramp @ Eight Mile Rd.</td>
<td>0.55'</td>
<td>0.85'</td>
</tr>
</tbody>
</table>
PAVEMENT SECTION

<table>
<thead>
<tr>
<th>Thickness of</th>
<th>Thickness of</th>
<th>Thickness of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>Aggregate</td>
<td>Aggregate</td>
</tr>
<tr>
<td>Concrete</td>
<td>Base</td>
<td>Subbase</td>
</tr>
</tbody>
</table>

TRAFFIC INDEX - 9.5

Eight Mile Road
I-5 over-crossing

<table>
<thead>
<tr>
<th>Traffic</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50'</td>
<td>1.25'</td>
</tr>
</tbody>
</table>

Alternative Section

<table>
<thead>
<tr>
<th>Traffic</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.50'</td>
<td>0.75'</td>
</tr>
</tbody>
</table>

We trust this letter provides the necessary information. If you have any questions, please contact us at your earliest convenience.

Respectfully submitted,

KLEINFELDER, INC.

Dennis A. Quashnick, P.E.
Project Engineer

DAQ:md 11/91
Attachments
**SAMPLE LOCATION:** Martin Lane and I-5 Road Improvements  
**SAMPLE DESCRIPTION:** Black organic clay (Native)  
**DATE SAMPLED:** November 10, 1991

### EXUDATION PRESSURE - lb/in²

<table>
<thead>
<tr>
<th>COVER THICKNESS BY STABILOMETER - ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
</tr>
<tr>
<td>2.2</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>1.8</td>
</tr>
<tr>
<td>1.6</td>
</tr>
<tr>
<td>1.4</td>
</tr>
<tr>
<td>1.2</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>0.8</td>
</tr>
<tr>
<td>0.6</td>
</tr>
<tr>
<td>0.4</td>
</tr>
<tr>
<td>0.2</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COVER THICKNESS BY EXPANSION PRESSURE - ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
</tr>
<tr>
<td>0.4</td>
</tr>
<tr>
<td>0.6</td>
</tr>
<tr>
<td>0.8</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>1.2</td>
</tr>
<tr>
<td>1.4</td>
</tr>
<tr>
<td>1.6</td>
</tr>
<tr>
<td>1.8</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>2.2</td>
</tr>
<tr>
<td>2.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, lb/in²</td>
<td>270</td>
<td>620</td>
<td>170</td>
</tr>
<tr>
<td>EXPANSION DIAL (.0001&quot;)</td>
<td>0</td>
<td>42</td>
<td>0</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, lb/ft²</td>
<td>0</td>
<td>182</td>
<td>0</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>26</td>
<td>55</td>
<td>20</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>14.9</td>
<td>12.6</td>
<td>16.3</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, lb/ft³</td>
<td>114.8</td>
<td>121.0</td>
<td>109.1</td>
</tr>
<tr>
<td>R VALUE AT 300 lb/in² EXUDATION PRESSURE</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (TI = )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

KLEINFELDER

PLATE
**SAMPLE LOCATION:** March Lane and I-9 Road Improvements

**SAMPLE DESCRIPTION:** Brown silty sand with rock, import

**DATE SAMPLED:** November 19, 1991

---

**EXUDATION PRESSURE - lb/in²**

<table>
<thead>
<tr>
<th>COVER THICKNESS BY STABILOMETER - ft</th>
<th>0</th>
<th>0.2</th>
<th>0.4</th>
<th>0.6</th>
<th>0.8</th>
<th>1.0</th>
<th>1.2</th>
<th>1.4</th>
<th>1.6</th>
<th>1.8</th>
<th>2.0</th>
<th>2.2</th>
<th>2.4</th>
<th>2.6</th>
<th>2.8</th>
<th>3.0</th>
<th>3.2</th>
<th>3.4</th>
<th>3.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>R - VALUE</td>
<td>0</td>
<td>20</td>
<td>40</td>
<td>60</td>
<td>80</td>
<td>100</td>
<td>800</td>
<td>600</td>
<td>400</td>
<td>200</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

---

**COVER THICKNESS BY EXPANSION PRESSURE - ft**

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, lb/in²</td>
<td>170</td>
<td>130</td>
<td>660</td>
</tr>
<tr>
<td>EXPANSION DIAL (.0001&quot;)</td>
<td>0</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, lb/ft²</td>
<td>0</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>25</td>
<td>17</td>
<td>72</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>12.0</td>
<td>13.0</td>
<td>9.2</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, lb/ft³</td>
<td>126.2</td>
<td>122.3</td>
<td>130.5</td>
</tr>
<tr>
<td>R VALUE AT 300 lb/in² EXUDATION PRESSURE</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (T) =</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**KLEINFELDER**

**PLATE**

**RESISTANCE VALUE**
SAMPLE LOCATION: Maple Lane and I-95 Road Improvements

SAMPLE DESCRIPTION: Brown sandy sand with small aggregate - Impure

DATE SAMPLED: November 19, 1991

EXUDATION PRESSURE - lb/in²

COVER THICKNESS BY STABILIZER - ft

COVER THICKNESS BY EXPANSION PRESSURE - ft

<table>
<thead>
<tr>
<th>SPECIMEN</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXUDATION PRESSURE, lb/in²</td>
<td>330</td>
<td>160</td>
<td>480</td>
</tr>
<tr>
<td>EXPANSION DIAL (.0001&quot;)</td>
<td>7</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>EXPANSION PRESSURE, lb/ft²</td>
<td>30</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td>RESISTANCE VALUE, R</td>
<td>40</td>
<td>25</td>
<td>68</td>
</tr>
<tr>
<td>% MOISTURE AT TEST</td>
<td>13.7</td>
<td>15.2</td>
<td>12.3</td>
</tr>
<tr>
<td>DRY DENSITY AT TEST, lb/ft³</td>
<td>122.3</td>
<td>119.9</td>
<td>119.7</td>
</tr>
<tr>
<td>R VALUE AT 300 lb/in² EXUDATION PRESSURE</td>
<td></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>R VALUE BY EXPANSION PRESSURE (T = )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ATTACHMENT F

HAZARDOUS WASTE

(INITIAL SITE ASSESSMENT CHECKLIST)
HAZARDOUS WASTE REVIEW

DISTRICT 10 INITIAL SITE ASSESSMENT (ISA) CHECKLIST

Revised 4/30/89

Project Information
San
Interstate

District: 10 County: Joaquin Route: 5 Postmile: 0

Description: Interstate 5: Appx. 900 feet north of March Lane south to the southern bank of the Calaveras River. March Lane: Feather River Drive east to Appx. 200 feet east of Da Vinci Drive.

Project Development Consultant: Telephone:

Environmental Coordinator: Telephone:

Is the project on the exempt list (over):

Project (DOES NOT) Have Potential for Hazardous Waste Involvement:

Based on information provided in 11/4/92 Report Environmental Branch Chief

Date: 2/4/92

Project Screening

1. Project Features:
   - New RAW?
   - Surface Water?
   - Railroad Involvement?
   - RAW Clearance?
   - Subsurface Utilities?

2. Project Setting:
   - Rural or Urban?
   - City of Stockton: Urban Area

   Current Land Use:
   - Interstate Freeway and Municipal Street

   Adjacent Land Use:
   - Commercial Retail, Multi-family, High School, Gas Station

3. Check Federal, State, and Local Environmental and Health Regulatory Agency Records:

   See Section 3.3 of the HWR prepared by Kleinfelder (24-220158-A00), dated January 24, 1992.

   Regional Water Quality Control Board, Department of Health Services, Local Environmental Health Agency, District Plans & Photos

4. Conduct Field Inspection:

   Storage Structures/Pipelines:

   Underground Tunnels: No
   Surface Tanks: No
   Transformers: No
   Sumps: No
   Drums: No
   Landfill: No
   Other: No

   Contamination:
   - Spills, leaks, illegal dumping, etc.
   - Surface Staining: No
   - Oil Sheen: No
   - Vegetation Burning: No
   - Other:

   Potential Asbestos:
   - Asbestos, lead, etc.

   Buildings:
   - Sprayed on exterior: N/A
   - Pipe wrap: N/A
   - PBBA: N/A
   - Insulation: N/A
   - Asbestos: N/A
   - Serpentine: N/A
   - Paint: N/A
   - Other: N/A

5. Additional record search of past land uses:

   See Section 3.3 of the HWR prepared by Kleinfelder (24-220158-A00)

6. Other comments and/or observations:

   3 adjacent facilities have permitted underground storage tanks:

   Union 7-11, 7-Eleven, City of Stockton Fire Department. The Stockton Municipal Utility Dist. Mechanical maintenance operation owns a pump station adjacent to Interstate 5. There have been no documented releases of chemicals from these facilities. See discussion of environmental concerns in Section 4 of the IWR prepared by Renteria, Jan 1992, Report No. 24-220158, dated January 24, 1992.

ISA Determination

Does the project have potential hazardous waste involvement? Based on Records Reviewed, Not at this Time

Is additional ISA work needed before task orders can be prepared for the Preliminary Site Investigation? Not at this Time

Date of additional time required: NA

Kleinfelder

3077 Fite Circle
Sacramento, CA 95827
(916) 366-1701
POTENTIALLY EXEMPT PROJECTS

- pavement reconstruction, resurfacing and placement of seal coat,
- work on bridge structures and appurtenant facilities such as traffic or control devices (beware of existing lead base paints),
- addition of lanes in the median of a divided highway,
- repair and maintenance of the highway and all appurtenant facilities,
- removal and/or replacement of distinctive roadway markings such as painted stripes, raised pavement markers, thermoplastic tape, raised bars, etc.
- landscaping within highway right of way,
- bridge maintenance painting when performed in conformance with the requirements of air pollution control and water pollution control agencies having jurisdiction,
- abandonment, removal, reconstruction or alteration of railroad grade crossing protection,
- addition or replacement of devices such as glare screen, median barrier, fencing, guardrail, safety barriers, energy attenuators, guide posts, markers, safety cables, ladders, signs,
- installation of noise barriers and alteration to existing buildings to provide for noise attenuation (beware of friable asbestos),
- projects to eliminate hazards within the operating areas,
- modifying existing features such as curbs, dikes, headwalls, slopes, ditches, etc. within the right of way to improve safety,
- maintenance of existing landscaping, native growth and water supply reservoirs (excluding the use of economic poisons, as defined in Division 7, Chapter 2, Calif. Ag. Code),
- maintenance of fish screens, fish ladders, wildlife habitat, etc. to protect fish and wildlife resources,
- minor widening of less than a lane width and/or adding paved shoulders,
- minor operational improvements, such as median and side ditch paving, drainage facilities,
- installation or modification of traffic control systems and devices including addition of new elements, such as signs, signals, controllers, etc.
- installation, removal or modification of regulatory, warning and information signs including new copy on existing on and off premise signs,
- addition of auxiliary lanes within existing right of way (beware of contaminated groundwater from nearby leaking tanks),
- minor alteration or widening of existing grade separation structures.

Use this list carefully; the discovery of hazardous waste after a project has gone to construction will result in long and costly delays.
ATTACHMENT G

MEMORANDUM OF UNDERSTANDING
(BROOKSIDE)

BETWEEN CITY OF STOCKTON AND CALTRANS
MEMORANDUM OF UNDERSTANDING

10-SJ-5

Brookside

The City of Stockton is now processing a major development encompassing over 1,300 acres which consists of residential, employment, commercial and recreational uses. The project is located west of Interstate 5 near the March Lane Interchange. Traffic studies of the proposal indicate that improvements to the I-5/March Lane interchange will be necessary to accommodate the project. These changes will include modification of the March Lane interchange and possible main line changes such as auxiliary lanes and ramp extensions.

This Memorandum of Understanding constitutes solely a guide to the obligations, intentions and policies of the parties involved. It is not intended to authorize funding or project effort nor is it a legally binding contract.

GENERAL

1. All phases of the project, from inception through construction, whether accomplished by the City, Caltrans or others, will be developed in accordance with Federal and Caltrans policies, procedures, practices and standards that apply to Caltrans.

2. The City of Stockton (hereinafter known as the City) is to fund one hundred percent (100%) of all preliminary and design engineering costs, including, but not limited to, costs for preparation of environmental documents. It is the intent of the City of Stockton that all costs incurred as a result of this Memorandum of Understanding will be paid for by the project applicant or by the Stockton Development Impact Fee Program.

3. City to prepare a Project Study Report (PSR), Project Report (PR), and Environmental Document (ED), along with detailed Plans, Specifications and Estimate (PS&E) prepared at no cost to the State of California.

4. All City/Consultant contracts for the various work are to include a provision that the consultant(s) will be available throughout the length of the project.

5. The type of environmental document(s) required will be determined after the Initial Study/Assessment has been prepared.

6. The City will submit preliminary studies to Caltrans for review and approval or comment prior to submittal of information for the Draft Environmental Document (DED).

7. Caltrans will approve all conceptual freeway and interchange geometries for all of the proposed improvements, including new or modified freeway agreements, if necessary. Proposals for new or revised access on the Interstate System must follow a two-step FHWA procedure: (1) conceptual approval which includes any traffic operational and safety analysis; and (2) NEPA clearance.
8. Caltrans will provide oversight and approval of the PSR, PR and ED. Caltrans will provide advice, review and committee participation at no cost to local government. All other study costs will be borne by others.

9. Any donations of land by property owners must be in compliance with all Federal laws and regulations governing donations.

10. Caltrans will prepare cooperative agreements defining more specifically the responsibilities of the parties for each phase of work at the appropriate time.

11. Caltrans will be responsible for preparation of revised freeway agreements (if required).

12. Lists of general responsibility for detailed steps in the project development process are appended to this MOU as Appendix A. These lists are intended as a guide to Caltrans and City staffs.

______________________________
District Director, District 10
Caltrans

12/4/90
Date

______________________________
Public Works Director
City of Stockton

12/27/89
Date

Attest:
Appendix A: PLANNING PHASE ACTIVITIES

<table>
<thead>
<tr>
<th>PROJECT ACTIVITY</th>
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<td><em>CITY</em></td>
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A. PRELIMINARY COORDINATION

1. Project Identification        X  X
2. Furnish Information for PSR    X
3. Field Review of Site          X  X
4. Prepare Draft PSR              X
5. Finalize and Submit PSR        X
6. Approve PSR                    X

B. PROJECT AUTHORIZATION

1. Add Project to appropriate programming document.   X  X
2. Request O-Phase EA              X
3. Draft Cooperative Agreement     X
4. Comments on Cooperative Agreement X  X
5. Finalize Cooperative Agreement  X
6. Approve and Execute Cooperative Agreement X  X
## C. ENVIRONMENTAL ANALYSIS AND DOCUMENT PREPARATION

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<td>Prepare and Submit Notice of Preparation/ Notice of Intent X</td>
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<td>Prepare and Submit Draft Environmental Document (DED) X</td>
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<td>Public Notice of Opportunity/Public Hearing and Availability of DED</td>
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<td>Make all Arrangements for Public Hearing</td>
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<td>Review and Approve Public Hearing Arrangements</td>
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<td>14.</td>
<td>Conduct Public Hearing</td>
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<td>15.</td>
<td>Prepare Responses to Correspondence and Comment</td>
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16. Review and Approve Responses to Correspondence

17. Prepare Record of Public Hearing

18. Review and Approve Record of Public Hearing

19. Distribute Record of Public Hearing

20. Prepare and Submit Alternative Selection Request

21. Review and Approve Alternative Selection Request

22. Prepare and Submit Final Environmental Document

23. Prepare and Submit Draft Project Approval Report

24. Finalize and Submit for Approval Project Approval Report, Final Environmental Document and Draft Freeway Agreement

25. Review and Approval of Project Report, Final Environmental Document Draft Freeway Agreement

26. Finalize and Execute Freeway Agreement
ATTACHMENT H

RIGHT-OF-WAY FACT SHEET
NOMINATION FOR APWA
PUBLIC WORKS
PROJECTS OF THE YEAR
AWARD
for the
March Lane/Interstate 5
Interchange Project
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1. SITE MAP
2. SUPPORTING DATA
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March Lane/Interstate 5 Interchange Project
SITE MAP
PROJECT DESCRIPTION/OVERVIEW:

The March Lane/Interstate 5 (I-5) Interchange in Stockton, California is the busiest entrance from I-5 to Stockton. As one of only two major east-west arterials to link I-5 and State Route 99, March Lane provides direct access to central business and residential districts and is considered a "gateway" to the city. With a pre-project average daily traffic (ADT) of 37,000 at Level of Service (LOS) "C", traffic jams were a regular occurrence during the morning, noon, and evening peak hours. The backup of vehicles on March Lane often extended more than a quarter mile from the interchange, causing gridlock at the adjacent street intersections of Quail Lakes Drive and Feather River Drive. High eastbound left turn volumes and conflicting movements at Quail Lakes Drive often caused vehicles to back up to the interchange. This, in turn, caused vehicles to back up on the north bound off-ramp and onto the lanes of northbound I-5 itself. Without the improvements, the Level of Service by the year 2012 was projected to drop to Level "F", which corresponds to major traffic jams and long delays along both March Lane and I-5.

The March Lane/I-5 Interchange project was an approximate $5.5 Million project that was designed to improve traffic flows and increase traffic safety for this busy interchange. The attached Exhibit A illustrates the lane configuration after the project completion and Exhibit B shows the local newspaper's (The Record) story on the project construction. Through lanes on March Lane were increased from four to six (three each way) and a double-left turn lane was added for north bound Quail Lakes Drive. Additional lanes were added on all on-ramps and off-ramps with I-5. The widening of the north bound off-ramp required construction of a 256 foot wide, four span, reinforced cast-in-place box girder bridge over an East Bay Municipal Utility District (EBMUD) right-of-way. The north bound off-ramp striping and signing were designed to separate east bound March Lane traffic from Quail Lakes Drive traffic to eliminate the conflicting movements. A dedicated lane was also provided with free right turns onto east bound March Lane. A narrow median strip was added to separate the Quail Lakes dual left turn lanes from east bound March Lane traffic. The widening of March Lane required removal of slope paving under the existing I-5 bridge, construction of tie-back retaining walls in front of the abutment piles and lowering of March Lane itself to provide proper vertical clearance. Interconnected traffic signals were installed at three locations to further enhance traffic capacity. Additional work included storm drain and water main improvements, extensive median island and parkway landscaping, utility relocations and retrofitting of parking lots for adjacent businesses. Installation of a sewage transfer station and connecting 21" sewer main was also added during the construction phase in order eliminate the need to excavate the freshly paved
street and to reduce overall disruption to area traffic. Following completion of the project, the ADT had risen to 48,000 vehicles, while the LOS remained at Level “C”. The resulting projected LOS for the year 2012 has risen to Level “D”.

The March Lane/I-5 Interchange project is a model of a successful urban area freeway intersection rehabilitation project and is a shining example of partnering at every possible level. The first level occurred with the conception and funding of the project. Although the March Lane/I-5 interchange is primarily owned and maintained by the California Department of Transportation (Caltrans), it was designed and constructed by the City of Stockton, as lead agency, with oversight from Caltrans. The City’s need to quickly alleviate traffic congestion and improve safety were the primary reasons for constructing the project. The funding was as follows:

Federal Funds 14%
Measure K* 20%
State of California 6%
City of Stockton 60%

*Note: Measure K is a local sales tax that was approved by the voters for use on transportation projects throughout the region.

Both Caltrans and EBMUD assigned construction engineers to provide oversight and intermittent checks on the design, construction and management of the project. The City selected Mark Thomas and Associates to provide design services and Parsons Brinckerhoff Construction Services, Inc. to provide construction management (CM)/inspection/materials testing for the project. Teichert Construction was selected as prime contractor.

The second level of partnering occurred during the design phase wherein involvement and support was actively solicited from area residents and merchants.

The partnering concept was further expanded during the construction phase of the project to include not only all applicable City departments, the prime contractor, subcontractors, design, construction management and public relations consultants, but also affected utility companies, local homeowners’ associations and the media. Exhibit C is the charter that was formulated at the partnering session for construction. The needs and expectations of these team members were discussed and the ground work was laid for a successful project. All of the team members bought into the strong public relations effort and everyone worked to maintain strong public relations throughout the project. The utility company crews and the contractor were surprisingly helpful in this regard.

The project team practiced partnering at its highest level throughout the project. The result was a synergistic team that, despite numerous challenges, finished the project on time and within budget and thereby, delivered our commitment to the citizens of Stockton. The final construction contingency (i.e., the funds required to correct errors, omissions, and
unforeseen occurrences) was less than one percent. This is extremely rare on a complex project of this nature. The regional norm for a freeway interchange such as this with multiple stages of construction is approximately 10 percent. The financial success of the project is not only attributable to a solid design. The project team encountered several challenging issues that were collectively solved in a speedy manner to benefit both the City and the contractor as well as the general public.

A primary objective of the design and construction of the March Lane/I-5 Interchange construction was to keep traffic moving at preconstruction levels and maintaining access to the commercial uses along March Lane. A key obstacle to this was the fact that the entire project frontages on both sides of March Lane are totally built out with high traffic generation from businesses and restaurants. Public input demanded a neat and orderly construction sequence that would not deter customers away from the businesses. In this and every regard, the project was a total success. Although traffic on March Lane had to be shifted five times during construction, it was accomplished with a minimum disruption. In fact, after just a few weeks of construction, traffic was moving better than before due to the opening of new lanes on the northbound off-ramp and an additional left turn lane for Quail lakes Drive. Matt Bailey, a Senior Caltrans Engineer, was quoted in the local newspaper during the first months of the project saying “I drive by there every night. Two years ago there was regular backup in the auxiliary lane, but I hardly see one there now. In our opinion, the project improved the operations of the mainline freeway”. Usually the standard of success on complex projects like this is to have minimal complaints. It is very rare to have the public and local press praise the construction effort so frequently.

The following sections provide support of why the project team members believe the March Lane/I-5 project is worthy of an APWA Public Works Projects of the Year Award for 1997. The following supporting documentation is categorized as shown in the application.

**COMPLETION DATE:**

As awarded, the original date for contract completion was June 27, 1997. Actual substantial completion was achieved on September 2, 1997. The corresponding delay of 45 working days resulted from award of only three additional days for contract change orders that affected the project schedules’ critical path and award of 42 non-working days due to inclement weather during the severe storms and flooding of January 1997.

**CONSTRUCTION SCHEDULE, MANAGEMENT, AND CONTROL TECHNIQUES USED:**

The actual construction sequence for the March Lane/I-5 Interchange project closely followed the stage construction drawings developed included in the contract plans. The design team did an excellent job of staging the work to minimize adverse impacts to the traveling public as well as maintaining access to businesses along the corridor.
contract documents required the contractor to prepare and submit a Critical Path Method (CPM) schedule. Following initial review of the submitted CPM schedule for compliance with the contract documents, extensive meetings were held between the CM staff, contractor, and City Public Works staff to discuss ways to refine the schedule to speed up the project while not compromising quality, public convenience or safety. These meetings resulted in a shortened overall schedule which was used as a management tool throughout the life of the project. The final schedule included all previously established significant milestones and construction stages. Concurrent work by utility companies was also shown along with the preceding one month written “Notice To Relocate” for each utility.

The construction schedule was tightly monitored throughout the project. Weekly scheduling/coordination meetings were held that routinely included the contractor, CM staff and City personnel. The public relations consultant attended as needed. Representatives of utility companies also attended a few weeks prior and during the time that their forces were performing work on the project. The weekly meetings were critical in accomplishing no schedule delays on the project. All of the decision makers were in the room at one time and most issues were resolved instantly. Information from the weekly schedule reviews were then incorporated into monthly updates of the CPM schedule by use of PRIMAVERA scheduling software. The project team did an excellent job of looking ahead and solving issues before they became problems or resulted in delays. Although some challenging issues arose during the course of construction, only three working days were added to the contract time as a result of contract change orders. This is an excellent indication that tight schedule control and planning took place on the project. In addition, a significant level of coordination with utility companies occurred that resulted in no utility or right-of-way delays on the project. This is a significant accomplishment considering the complexity of the project and the great amount of utility relocations that had to be done.

It was also very critical to keep the other third party project team members informed throughout the project to avoid delays. Work was done within EBMUD and Caltrans rights-of-way. These agencies have stringent notification requirements for work within their right-of-way. Anticipation of their needs by the project team and thorough coordination resulted in zero lost time in this regard. At the end of the project, both Caltrans and EBMUD were very pleased with the construction process.

A useful tool in the control of the schedule was the “Weekly Statement of Working Days” issued by the Resident Engineer. This was a detailed form that identified the current controlling operation and the future critical path as well as time charged and non-working days allowed due to weather. The use of the Weekly Statement of Working Days insured timely and precise tracking and communicating of the project schedule status so that no disagreements would arise toward the end of the project.

As previously mentioned, 42 non-working days were awarded to inclement weather and severe winter flooding. In anticipation of a possible lengthy delay during the middle of the project, the project team developed several options, including cost/benefit reviews, of possible ways to minimize the delay.

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APWA Public Works Projects of the Year 1997
March Lane/I-5 Interchange Project
Stockton, California
SAFETY PROGRAM AND PERFORMANCE:

A primary goal of all the team members was zero time lost due to injuries on the project, not only for contractor personnel, but also for utility company workers, CM staff, and agency staff. This goal was 100 percent realized in that there was no lost-time injuries on the project.

Project safety programs were discussed in detail at both the pre-project partnering and the pre-construction conference. The contractor was assigned primary responsibility for jobsite safety. As such, the contractor prepared and submitted an “Injury and Illness Prevention Plan” and a “Code of Safe Practices”, which was reviewed for thoroughness by the CM staff. The documents submitted were based on requirements of the California-Occupational Safety and Health Administration (Cal-OSHA) Construction Safety Orders. The CM staff was assigned to monitor the contractor’s compliance with the safety documents. All of the CM staff were required to read and sign the two safety documents described above.

At the partnering session, the contractor voiced concern that the potential safety hazard is outside personnel coming onto the jobsite that are not familiar with the safety requirements. Thus, it was decided that all personnel who were expected to visit the jobsite at least once should read and sign the “Code of Safe Practices”. In addition, it was agreed that all outside personnel should contact the CM staff for a job tour prior to entering the work area.

The contractor has been in business for over a hundred years and has an excellent safety program and history. There were very few instances that required the CM staff to point out safety concerns to the contractor. The contractor had weekly tool box safety meetings, which were attended by CM staff. Minutes of the contractor’s toolbox safety meetings were forwarded to the Resident Engineer for distribution. The intent here was to make sure that the CM staff was aware of the safety concerns of the contractor for particular items of work. The contractor’s toolbox safety meetings usually focused on issues related to upcoming scheduled work (i.e., pipe placement, paving, etc.). Thus, everyone on the jobsite was reminded of pending safety concerns for the immediate future.

In an effort to be self policing, the contractor’s safety program included unannounced site reviews by an independent Safety Officer to review for compliance. The CM staff also conducted biweekly safety meetings among themselves to discuss what was happening on the jobsite relative to safety. The Resident Engineer distributed copies of Cal-OSHA Trenching and Shoring manuals to all inspection staff so they could monitor conditions in the field. The OSHA Construction Safety Orders were also discussed at the CM’s safety meetings.

Safety was also a scheduled agenda item for each of the weekly progress meetings. At that time, all team members participated in discussions regarding safety concerns they had about past, present, or upcoming work. It should be stressed that worker safety was not
the only concern. The entire project team was zealous in monitoring safety for public traffic and pedestrians. All Caltrans traffic signing and pavement delineation standards were met or exceeded. Paved temporary walkways were provided for the public along with fences/barriers as needed to protect pedestrians from project excavations and potential hazards. The previously mentioned EBMUD easement contained a joint pedestrian/bikeway which required the installation of overhead protection from falling materials from the bridge widening work above. The CM staff and contractor made daily inspections through the project to check traffic control devices. These inspections often resulted in adding traffic control devices to provide the clearest, safest construction zones possible. The contractor was very proactive in repainting temporary pavement delineation if it began to look faded. In the event of a traffic accident within the construction zone, both the CM staff and contractor conducted investigations. The resulting reports were then reviewed to determine if additional traffic safety measures were warranted.

ENVIRONMENTAL CONSIDERATIONS:

The March Lane/I-5 Interchange is located within an urbanized area. Therefore, exposure to fish, wildlife, and vegetation was minimal. However, the entire surrounding region drains into the nearby California Delta, which is the largest supply of drinking and recreational water in California. Protecting the Delta from polluted discharges was the primary environmental challenge.

The contractor was required to submit a detailed plan for controlling erosion, water pollutant discharge and noise and air pollution on the project. This plan included the placement of dikes or berms on the tops of embankment slopes to divert runoff into drainage inlets rather than letting it run down slopes and cause erosion. Drainage inlets were protected by a variety of “Best Management Practices” (BMP’s) to prevent silt and pollutants from entering the storm drain systems. The BMP’s consisted of placing straw bales, silt fences, and desilting basins around drainage inlets to filter out sediments before they could enter the storm drains. All desilting basins were designed for a storm of at least a five-year frequency. This was based on drawings showing the disturbed area contributing to each desilting basin and corresponding calculations to determine the capacity of each basin. The contract plans also called for interim and permanent erosion control devices such as hydroteering, straw mulch, and adhesive fiber on the slopes to further minimize erosion.

Other sources of water pollution were also accounted for, including oil, grease, fuel, lubricants, paints, solvents, and debris. Rinsing of concrete trucks was done in designated areas that were at least one hundred yards from the nearest storm drain inlet. The washout area confined the wash out materials for future clean up and did not allow it to escape into the storm drains. Fueling operations were confined to pre-selected areas which were later cleaned up by the contractor.
COMMUNITY RELATIONS:

Community support was the focal point of the March lane/I-5 Interchange project. The City's primary objective was to construct a quality and economic project without further disrupting public traffic. Thus, the project had to stay clean and orderly while entrances to businesses were maintained in an attractive manner. It is common for some establishments to go out of business when stuck in the middle of a long term public works construction project. Often, motorists (potential customers) will avoid a cluttered construction zone in which delays are common. The project team was committed to not let this happen on the March Lane Project. It was further discussed that the team's efforts would not be totally successful unless an aggressive public information plan was implemented to let the public know that all businesses were open, traffic delays were actually less than before construction began, lane closures would be limited to non-commute times, and that the construction zone was clean and safe.

The community relations aspect of the project began well before the construction of the project. During the early design phase of the project, the design team and public relations consultant met with the affected businesses. The intent was to gather input from the business representatives about project aesthetics and design. The team also met with the nearby Quail Lakes Homeowners Association Manager to discuss traffic/staging issues. Additionally, two design phase public meetings were held to inform the public of the upcoming project and to accommodate any public needs that were practical. In addition to newspaper ads, mailers were sent out to thousands of residents and businesses within a five-mile radius of the project. Key project information was listed on the mailers so that the public would be informed even if they could not attend the meetings.

The public relations efforts were continued during the construction phase in order to achieve unprecedented success for community involvement for the project. The City continued the services of the public relations consultant to work in conjunction with CM and City staffs to formulate a public relations plan. At the formal partnering session, the public relations consultant presented the PR effort to all team members. The contractor was fully committed to support the City's public relations plan. As explained by Doug Urbick, Regional Manager for Teichert Construction, "We are a local company and also want to portray ourselves positively to the public on this important project".

Before construction began, a public informational meeting was held to give the public an overview of the project, explain the traffic handling plan, discuss access issues and the project schedule, and answer questions. The meeting was hosted by the PR consultant. The Resident Engineer, Contractor's Regional Manager and Project Manager, and many City Public Works staff were there to make presentations and answer questions. The presentation exhibited a really partnering attitude among the project team. It was unusual for a contractor to participate so heavily in a public meeting hosted by the owner. It was refreshing example of how successful events and projects can be if everyone works with one common goal. The meeting was heavily attended and the contractor, Resident
Engineer and City staff stayed late answering questions and making contacts with the interested public. A copy of the public mailer/invitation that was sent out is shown as Exhibit D. It is included to exhibit the professional quality and effort that was put forth for the meeting. Other completed community relations included the following efforts:

A meeting was held with the Editor and a Reporter for “The Record” prior to the beginning of construction. The City’s Project Manager was in attendance along with the Resident Engineer and the Regional Manager for the contractor. The purpose of the meeting was to convey to the local media that a substantial effort would be put forth on the March Lane/I-5 Interchange project to maintain a high level of public support for the project. The construction staging was discussed to illustrate the project was being constructed in stages that would cause the least public inconvenience possible. The team members wanted the media to know that this project was not “business as usual”. Thus, a request was made that "The Record" should not arbitrarily take the position the project would be a nightmare for motorists and business owners along the route. The Editor decided to do a weekly feature on the project that would detail work coming up in the subsequent week (i.e., what the public could expect). To accomplish this, a weekly press release was sent to "The Record" by the project team. The weekly update was a collaborative effort that began with the contractor providing a statement of planned work. The Resident Engineer and PR consultant would then work together to issue a press release that was easy for the public to understand. This update was completed and published every week without fail. The Editor of "The Record" also created an Internet site that the public could access for continuous information about the project. In addition, the PR consultant also established a phone hotline for the project to access current project information. The phone number was posted on signs at the project limits and invited the public to call with questions or concerns. Calls that were received were forwarded to the Resident Engineer for prompt attention or action. A written log of all calls was maintained.

In attempting to “practice what we were preaching”, the team members diligently worked to minimize traffic disruptions. Moreover, meetings were held with all interested parties before traffic switches to make sure they went well. Often, switching traffic from one position to another (i.e., from stage to stage) can cause the most disruption. However, the traffic switches went well on this project and the public was notified in advance of the work via the weekly updates and changeable message signs posted two days in advance of the work. “Doorstep” community relations were practiced throughout the project by the CM staff. This involved stopping and talking to business owners and managers to let them know what was happening. Excellent relationships were established early and maintained throughout the project.

As a grand finale to the public relations efforts, a major completion ceremony was held at the end of the project. The City’s intent was to let the public know that the project was done, that traffic never flowed better, and the adjacent businesses were eager for their patronage. This was a collaborative effort with the business owners. Several of the restaurants contributed to the effort with free food and beverages. A mini-parade and ribbon-cutting ceremony were held with speakers including the Mayor, Caltrans District
Director and others. The event was covered by local newspapers, radio stations, and television stations and was a terrific success. Exhibits E to G show the public mailers informing the public of the re-opening as well as newspaper articles and photos of the event.

As described above, the public relations effort was impressive for a project of this size. Andy Ewing, owner of the adjacent "Carl's Jr." Restaurant reported that he had his best year of business during the construction period. There were also letters of commendation from business owners and homeowners groups sent to "The Record" that praised the project team for their efforts. There were many quotes from the general public which were occasionally featured by "The Record" that revealed satisfaction with the way the project was handled.

UNUSUAL ACCOMPLISHMENTS:

A number of unusual accomplishments contributed significantly to the success of the project. The unusually high rainfall and resulting severe winter flooding could have had a severe impact on the construction schedule. Many of the areas of March Lane to be reconstructed were on the critical path schedule. In many cases, this work was originally scheduled for short periods of dry and workable weather which were followed by a prediction of severe storms. The contractor proposed leaving the existing asphalt in place until after the predicted storms passed through. The City agreed not to charge working days on the clear days. After the rains, the asphalt was removed and the ground was relatively dry underneath. Had the City and contractor not come to this partnering decision, the contractor could have removed the existing asphalt before the heavy rains and the ground would have been saturated, resulting in many lost weeks waiting for the soil to dry. Chances are good that another storm would have hit before the drying was done, which would have meant more delays. Waiting for a week-long dry forecast, and then accelerating work in small areas saved many days overall. The contractor also made a great effort on one occasion by covering the subgrade of one area with visqueen when a surprise storm hit.

Another situation that caused adverse conditions was groundwater encountered during the installation of the sewage transfer station. The proximity of the California Delta causes substantial ground water within the project limits. The contractor installed dewatering wells in advance of the work. However, when the pipe installation started, major groundwater still existed. Some caving of the existing street occurred. The contractor worked a 23-hour shift on one occasion to make a maintenance hole connection and rebuild the street before the morning commute.

There were other adverse conditions that could have affected the project's success. A previously unknown telephone duct bank was discovered within portion of March Lane that had to be lowered. Despite designing a revision to the proposed storm drain system, a portion of the phone system still had to be relocated. Waiting on Pacific Bell to do the
work, which is customary for their facilities, would have delayed the critical path by almost three months. The solution was to have the City’s contractor relocate the duct bank in the presence of a Pacific Bell inspector to expedite the work. Pacific Bell then reimbursed the City for this. A great deal of coordination on behalf of the CM staff, City, design consultant, Pacific Bell and the contractor was completed in a very short period of time and resulted in no project delay.

Toward the end of the project, a significant portion of the work dealing with traffic control was completed as night work. Done without additional cost to the City, this reduced the temporary control costs by the contractor and resulting in a significant reduction in the inconvenience to the public.

Perhaps the most significant accomplishment for the March Lane/I-5 project is the astoundingly low final cost overrun. A total of 31 contract change orders were processed, resulting in less than one percent construction cost overrun charged to the original funding sources. This amount included an approximate $70,000 overrun due to a change in the quantity for roadway embankment experienced in the first month of construction. The reason the cost stayed so low is that the project team proactively looked for ways to reduce costs and was successful in using value engineering. Thus, for most change orders resulting in cost increases, a change order resulting in a credit for one reason or another would be found. The contractor was agreeable to most of these changes since schedule savings usually resulted. The contractor also proposed two Cost Reduction Incentive Proposals (CRIP) which provided significant savings to the project. Per the Standard Specifications, the savings realized by these CRIPs were split between the City and the contractor.

ADDITIONAL CONSIDERATIONS:

There were two technical aspects of the project that are worthy of note:

Construction of the EBMUD Bridge required pile driving adjacent to three large diameter aqueducts (63", 68", and 87"). These aqueducts carry water from the Sierra Mountains to the San Francisco Bay Area. Millions of people depend on the water flowing through these aqueducts. The aqueducts are old, thin-walled, and only have five feet of cover. Two bridge bents were built within the EBMUD right-of-way. Two measures were taken to protect the aqueducts. First, a Portland Cement Concrete (PCC) slab was poured at grade to bridge over the aqueducts. The slab was 1.25' thick, reinforced, and rested on top of 4 inches of Styrofoam. The intent of the pad was to protect the aqueducts from heavy construction equipment loads. Second, vibration monitoring was done during pile driving operations. The contractor drove a test pile while the vibration was monitored at the closest and oldest aqueduct. The maximum allowable peak-particle velocity was 0.75 inch per second. EBMUD officials were concerned that this limit would be exceeded. However, the contractor used a small enough pile-driving hammer to stay under the allowable vibration limits and the operation was a total success.

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March Lane/I-5 Interchange Project
Stockton, California
 Autoscope cameras were used in lieu of traditional traffic signal detector loops for temporary traffic control throughout the project. Using pole mounted cameras which detect vehicles, the Autoscope system enabled traffic signals to remain fully actuated during traffic switches. The contractor merely had to re-aim the cameras when traffic was switched from one position to another. Typically, if pavement detector loops are used, traffic signals remain on fixed time for several days while the new loops are being installed. The Autoscope system worked so well that the City left the cameras in place for permanent vehicle detection. Please see Exhibit H for a newspaper story pertaining to the Autoscope system.

**SUMMARY**

Hopefully, this supporting data has exhibited the dedication and professionalism of the project team and demonstrated the project’s worthiness for receipt of the APWA Public Works Projects of the Year Award for 1997. The March Lane/I-5 Interchange was a complex project that was initially dreaded by the public and those involved. Thanks to the combined efforts of all those involved, the project's success exceeds all expectations and will serve as a model for future large scale improvement projects.

The attached photos also exhibit the quality of the project. Materials Test results were consistently excellent. The craftsmanship was some of the best to be found. Most importantly, the project works! The design concepts for handling the traffic were so successful that the City is using the same concept for two other interchanges currently under design.

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APWA Public Works Projects of the Year 1997
March Lane/I-5 Interchange Project
Stockton, California
EXHIBITS
Motorists turn north onto Quail Lakes Drive from March Lane, with the Interstate 5 overpass in the background.

March Lane’s big fix about to start

By Nancy Price
Record Staff Writer

Near-gridlock on March Lane at Interstate 5 spurs Stockton residents like Linn Smith to look for alternative rush-hour routes.

Smith, who heads the Brookside West Homeowners Association, favors Brookside Road but wants it to be her little secret — “please don’t tell anyone, or they’ll start driving it.”

Dennis Calvird, a real estate broker who heads the Quail Lakes Owners Association, recalls his neighborhood was fairly rural 20 years ago when he moved in.

That was long before Brookside developed west of the freeway and growth continued east of 1-5, causing traffic to mushroom to 25,000 cars a day.

“When we moved, here we could look out our back window and see the Hilton,” Calvird said. “March Lane was a lane. Now, it’s a freeway.”

March Lane will soon be 10 lanes wide near 1-5.

Stockton is gearing up for a $33.8 million construction project to widen March Lane, widen freeway onramps and off ramps, change traffic signals and add lane barriers to channel traffic to Quail Lakes Drive.

The project is scheduled to start Monday and could take a year to complete, officials say.

“I’m looking forward to the change, but I’m not looking forward to the construction project,” Smith said. “But there’s no question it needs to be done.”

Aware of the project’s possible disruptions for neighborhood residents and merchants, Stockton officials have taken major steps to raise public awareness about the impending road work.

Twenty-five city employees and contractors involved in the project signed a charter pledging "to construct a safe, quality project with the least inconvenience," maintain public confidence and support merchants.

Possibly the most significant pledge on the 16-item charter is No. 2, which vows to complete the pave-

"Stockton Record" Article describing the Project.
Project Charter

The March Lane/I-5 Project team will work together to construct a safe, quality project with the least inconvenience to the public.

- No unresolved issues
- Schedule: complete pavement portion by December 1
- Maximize public convenience and maintain public support
- Award-winning project
- Quality project
- Safety: accident free, injury free.
- Total commitment of all participants
- Open and honest communication
- Streamline all documentation
- Team members need to be responsive
- Utilize CRIP's
- Support local merchants
- Anticipate and solve issues before they become problems
- Profitable for all
- Enjoyable working relationships
- No utility damage

Project Charter formulated at the Partnering Session.

EXHIBIT “C”
COME ON BACK TO THE MARCH LANE/I-5 INTERCHANGE

with
Mayor Gary Podesto,
City of Stockton
Paul Durant,
Indy 500 Driver for A.J. Foyt
Classic Cars
Engine 10,
Stockton Fire Department
Teichert Construction
Oldies 100
SMART

FOR THE
GRAND RE-OPENING
AND PROCESSION

Ceremonies at 9:30 A.M.,
Tuesday, September 9, 1997
Quail Lakes Shopping Center
(Interstate 5 and March Lane)

Come Join in the Celebration!

Working with the City of Stockton, area businesses, area citizens, San Joaquin Council of Governments and Cal Trans has been the following project team:
Mark Thomas & Co., Inc. (Design), Parsons Brinckerhoff Construction Services, Inc. (Construction management and inspection services), Teichert Construction (Construction), along with Kleinfelder, Inc., Farwest Safety, Judith Buethe Public Relations, Kent's Oil Service, Collins Electrical Co., Inc., Cal-Fence, and Yamaguchi Landscaping.

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Invitation to Completion Ceremony.

EXHIBIT “E”
Just call him Mr. Motorist

Stockton Mayor Gary Podesto rides Tuesday in a 1957 Austin Healy, driven by owner Betty Angle, as they lead a parade of cars turning onto Quail Lakes Drive from March Lane during a ceremony to open the improved Interstate 5/March Lane interchange.

New, improved March Lane passes test

As Mr. Motorist, I drove the new March Lane/I-5 Interchange on Tuesday to see if Stocktonians now have the right to life, liberty, and a left turn onto Quail Lakes Drive.

Although the $42 million interchange (a fancy word for the crossroads at March Lane and Interstate 5) opened days ago, Mayor Gary Podesto on Tuesday took point on an official “Grand Re-opening” procession.

Tooting ceremoniously alongside Podesto were the Delta A’s classic car club, Teichert Construction bigwigs, a fire engine, city buses, Oldies 100 and Indy 500 driver Paul Durante.

Durante was appropriate because until the city fixed this snarled crossroads, only an Indy 500 driver was qualified drive it. Especially hard-pressed were the poor slabs bustling east on March Lane who had to jockey for the coveted left turn onto Quail Lakes Drive. It was ugly.

But engineers widened March Lane to 10 lanes near the freeway, added offramp lanes, improved traffic signals and built a special, separate lane for drivers headed to Quail Lakes.

Does it work?

Podesto speaks before cutting the ceremonial ribbon Tuesday. The former Sizzler restaurant, in the background, was razed later in the day. For details: Page B6.

The radical left

Yes, and pretty well, actually. The fun starts as you glide down the I-5 northbound offramp toward March Lane. The offramp has been smoothed, widened and decked with signs explaining which lanes to take.

Warning! Your fate is decided on this offramp. Drivers who wait until they hit eastbound March Lane to make their move toward Quail Lakes Drive may find themselves locked out of the left-turn lanes by a long, new median.

Shocked souls find themselves sweeping along eastward-ho right alongside drivers who successfully entered the left-turn lanes, but they cannot join them. They must soldier straight ahead and pass Quail Lakes Drive, as in the bad old days of yore.

Of course, there’s always four-wheeling over the median. A chance to road test that new Humvee. But difficulty entering the left-turn chute is causing illegal hanky-panky of a different kind. At the Quail Lakes Drive, disgruntled left-turn wannabes are making illegal left turns from March Lane and U-turns from the center lanes. Yo, traffic cop!

I posted myself on the median and asked

Please see FITZGERALD, B3
motorist George Milla how he figured out the correct lane.

"I just guessed," Milla admitted.

Better access

A few desperate connivers, realizing they’ve missed the turn lane, veer into the Marie Callender’s driveway with the idea of jouncing through the lot and sneaking into the March/Quail Lakes intersection from the south.

Don’t try this. The parking lot between Marie’s, Carl’s Jr. (and its drive-through) and 7-Eleven is already a morass of bizarre automotive cross-currents.

“They don’t have a chance,” opined Sat Dhonda, the 7-Eleven’s manager, viewing the swirling strays.

On the other hand, business owners downstream of the new left-turn lane say their prospects have improved.

“I think it’s going to help us tremendously,” ventured Peter Charlitou, owner of Testarosa Bar & Grill. “Especially coming from Brookside to our area and also from the freeway going north. Much, much easier access.”

The city is pleased, too: Road builders plan to apply the same traffic detangler on the Benjamin Holt Drive and Hammer Lane interchanges. Neighborhood residents are forewarned to lay in a stock of aspirin for traffic-delaying construction expected for August of 1998 or spring of ’99.

All in all, traffic swishes along much better through the new March Lane/I-5 crossroads. The repaved surface is bump-free, cars should no longer stack up on the offramp far onto the interstate, and motorists trying to make left turns into Quail Lakes no longer resemble ESPN2’s “Extreme Games.”

Just be alert on the northbound offramp, and you’ll have happy motoring.

Fitzgerald’s column appears Wednesdays, Fridays and Sundays. Mail: P.O. Box 900, Stockton, CA 95201. Phone: 546-8270. E-mail: michaelf@recordnet.com
Membership

RIBBON CUTTINGS

MARCH LANE/INTERSTATE-5 INTERCHANGE celebrated its grand reopening on September 9. Mayor Gary Pedesto led the procession of antique and specialty cars from Feather River Drive to the Quail Lakes Parking Lot for the ribbon cutting ceremony.

THE PERFECT CUP, a new Chamber member and new business in San Joaquin County, celebrated its grand opening. The company serves coffee specialties and is located inside Joseph's Hospital waiting room area. Miriam Scott is the owner. Ph: 461-5040.

Port-O-Call Sept. 1997
Eye in the sky

Big Brother isn't watching you, but your car soon might be under observation when it queues up at Stockton intersections. City traffic engineers soon will have a system of cameras along Pacific Avenue and March Lane to help synchronize traffic signals and improve traffic flow. Above, Frank Quares of Collins Electric installs one of the cameras at Benjamin Holt Drive and Pacific Avenue. City traffic engineer Gary Tautsumi said cameras will be installed on Pacific Avenue from Harding Way to Rivara Road and on March Lane from Pacific to Interstate 5 in two to three months. The $6.5 million system is expected to be installed citywide by January 1998, he said. Federal air-quality funds are paying for the construction.
PHOTOGRAPHS
March Lane Undercrossing at I-5 (Pre-Construction - Slope Paving).

March Lane Undercrossing at I-5 (Post Construction - Tieback Retaining Walls).
March Lane Median Island east of I-5 (Pre-Construction).

March Lane Median Island east of I-5 (Post Construction).
Northbound I-5 Off-Ramp to March Lane (Pre-Construction).

Northbound I-5 Off-Ramp to March Lane (Post Construction).
March Lane east of I-5.

Eastbound March Lane left turn lanes (to Quail Lakes).
EBMUD Undercrossing at I-5 Northbound Off-Ramp (to March Lane).

Ribbon Cutting at the Completion Ceremony.