```
PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996                                                TIME 14.39.33

I.--HEADING
  'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'


                ****************
                *  INPUT DATA  *
                ****************



II.--PLANE FRAME ANALYSIS
     RIGID LINK FACTOR    =          1.00
     MEMBER FORCE FACTOR =           1.00

III.--STRUCTURE DATA

  III.A.--MATERIAL PROPERTIES
     MODULUS OF ELASTICITY OF CONCRETE  =    3.600E+06 (PSI)
     POISSON'S RATIO FOR CONCRETE       =      .15
     UNIT WEIGHT OF CONCRETE            =  150.0     (PCF)
     THICKNESS OF TWO-DIMENSIONAL SLICE =   14.00    (FT)

  III.B.--FLOOR DATA
     FLOOR WIDTH        =      55.00 (FT)
     FLOOR ELEVATION    =     -40.00 (FT)
     FLOOR FILLET SIZE =         .00 (FT)

  III.C.--BASE DATA

    III.C.1.--RIGHTSIDE
     DISTANCE FROM
      CENTERLINE       ELEVATION
          (FT)            (FT)
          86.00         -52.00

    III.C.2.--LEFTSIDE
     SYMMETRIC WITH RIGHTSIDE.

  III.D.--STEM DATA

    III.D.1.--RIGHTSIDE
     DISTANCE FROM
       STEM FACE       ELEVATION
          (FT)            (FT)
          31.00          22.40
          31.00          21.40
          31.00          20.40
          31.00         -13.75
          31.00         -21.75
          31.00         -40.00
          31.00         -40.00
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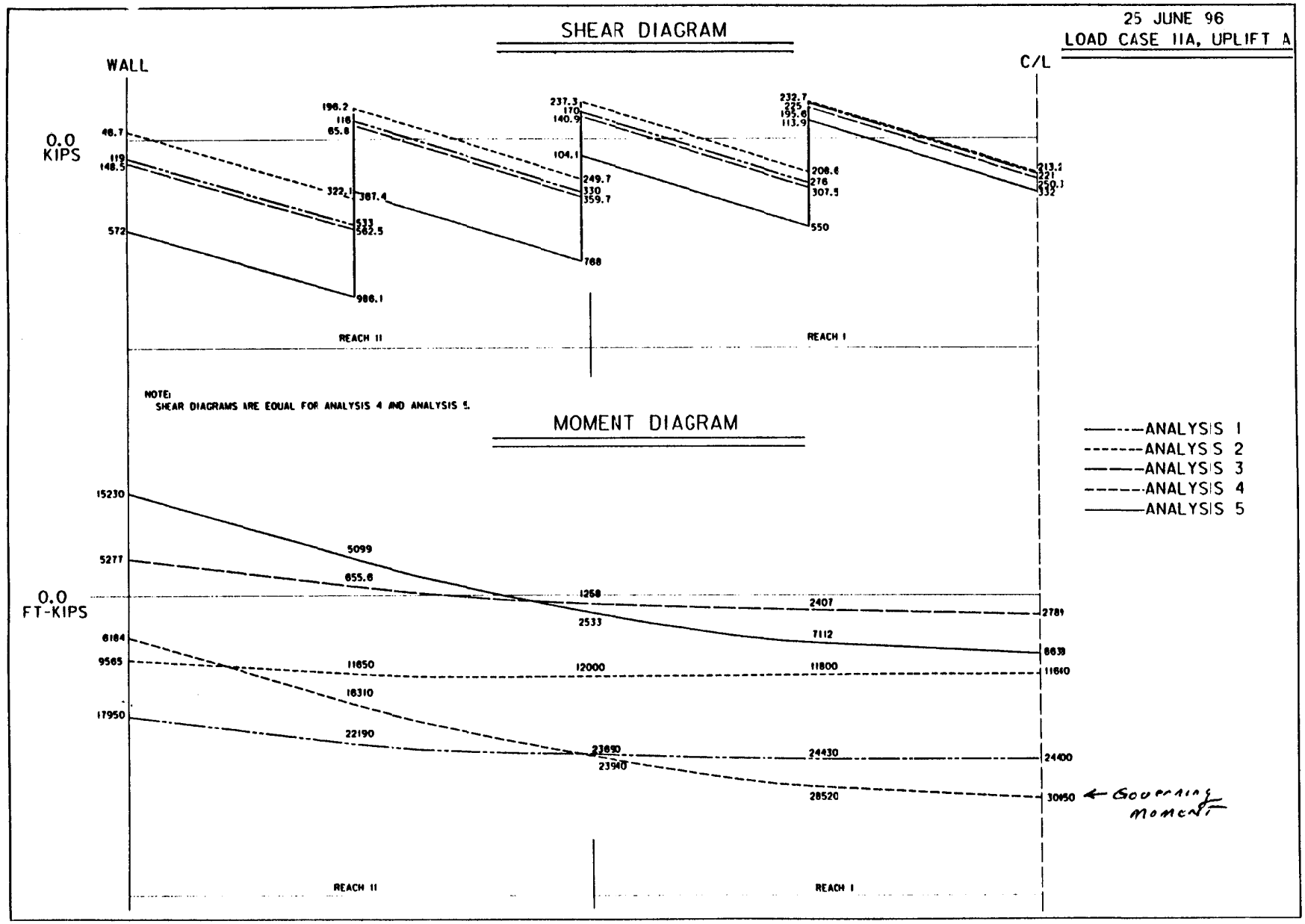
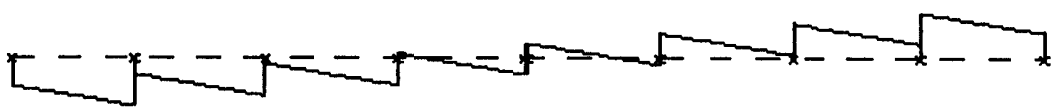

25 JUNE 96
LOAD CASE IIA, UPLIFT A
SHEAR DIAGRAM
WALL
C/L
0.0
KIPS
46.7
119
148.5
572
196.2
116
65.8
322.1
387.4
533
562.5
986.1
237.3
170
140.9
104.1
249.7
330
359.7
768
232.7
225
195.6
113.9
208.6
276
307.5
550
332
REACH II
REACH I
NOTE:
SHEAR DIAGRAMS ARE EQUAL FOR ANALYSIS 4 AND ANALYSIS 5.
MOMENT DIAGRAM
ANALYSIS 1
ANALYSIS 2
ANALYSIS 3
ANALYSIS 4
ANALYSIS 5
0.0
FT-KIPS
15230
5277
6184
9565
17950
5099
655.6
1258
2533
2407
7112
11850
12000
11800
18310
22190
23690
23940
24430
28520
2789
8638
11640
24400
30950
← Governing moment

CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 5
USE IGROSS FOR BASE SECTIONS



= 986.1 KIP SHEAR 24-JUN-1996 14:39:53
LOAD CASE 1

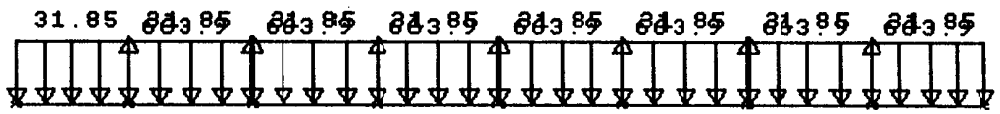
1200 x 110 x 36

Chamber Section

Load Case	U	Reach I V (kips)	Reach I Vu (kips)	Reach I M (ft - kips)	Reach I Mu (ft - kips)	Reach II V (kips)	Reach II Vu (kips)	Reach II M (ft - kips)	Reach II Mu (ft - kips)
1 - Normal Operation	2.21	338	747	22430	49570	694	1534	20600	45526
	2.21	543	1200	24050	53151	1057	**2336**	18100	40001
2A - Maximum Operation	2.21	308	681	24400	53924	563	1244	23690	52355
	2.21	550	**1216**	30050	**66411**	986	2179	23940	**52907**
2B - Maximum Operation	2.21	427	944	25300	55913	908	2007	18610	41128
	2.21	440	972	15460	34167	922	2038	22170	48996
3 - Dewatering	1.7	388	660	16500	28050	1444	2455	28400	48280
	1.7	493	838	6903	11735	1270	2159	30390	51663
Design Values		***Vu =***	***1216***	***Mu =***	***66411***	***Vu =***	***2336***	***Mu =***	***52907***

* For Load Case 3, Reach II, a reduction "d" from the face is allowed; therefore, this case does not govern for shear.

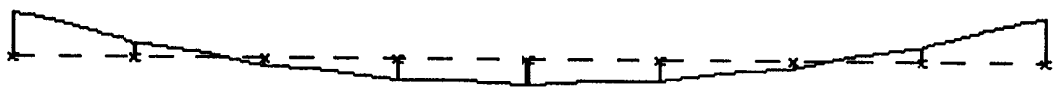
CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 5
USE IGROSS FOR BASE SECTIONS



24-JUN-1996 14.39.53

LOAD CASE 1

CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 5
USE IGROSS FOR BASE SECTIONS



= .1523E+5 FT-KIP MOMENT 24-JUN-1996 14.39.53
LOAD CASE 1

```
1*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
 PROGRAM CFRAME
 *-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
 RUN DATE = 24-JUN-1996
  JN TIME = 14.39.53
 CHAMBER SECTION-FILE: C:\PRECAST.LOC\BAS2ANL5.CFR
 LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 5
 USE IGROSS FOR BASE SECTIONS
```

*** JOINT DATA ***

JOINT	X	Y	FIXITY X	FIXITY Y	FIXITY R	KX	KY	KR
	--- FT ---					---KIP / IN---		IN-KIP/RAD
1	.00	.00	*	*	*			
2	13.00	.00						
3	27.00	.00						
4	41.00	.00						
5	55.00	.00						
6	69.00	.00						
7	83.00	.00						
8	97.00	.00						
9	110.00	.00	*	*	*			

*** MEMBER DATA ***

MEMBER	END A	END B	LENGTH FT	I FT**4	A FT**2	AS FT**2	E KSI	G KSI
1	1	2	13.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
2	2	3	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
3	3	4	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
4	4	5	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
5	5	6	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
6	6	7	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
7	7	8	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
8	8	9	13.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04

*** LOAD CASE 1

MEMBER	LA FT	PA KIP / FT	LB FT	PB KIP / FT	ANGLE DEG
1	.00	.3185E+02	13.00	.3185E+02	.00
2	.00	.3185E+02	14.00	.3185E+02	.00
3	.00	.3185E+02	14.00	.3185E+02	.00
4	.00	.3185E+02	14.00	.3185E+02	.00
5	.00	.3185E+02	14.00	.3185E+02	.00
6	.00	.3185E+02	14.00	.3185E+02	.00
7	.00	.3185E+02	14.00	.3185E+02	.00
8	.00	.3185E+02	13.00	.3185E+02	.00

JOINT	FORCE X KIP	FORCE Y KIP	MOMENT FT-KIP
2	.0000E+00	.6639E+03	.0000E+00
3	.0000E+00	.6639E+03	.0000E+00
4	.0000E+00	.6639E+03	.0000E+00
5	.0000E+00	.6639E+03	.0000E+00
6	.0000E+00	.6639E+03	.0000E+00
7	.0000E+00	.6639E+03	.0000E+00
8	.0000E+00	.6639E+03	.0000E+00

1 LOAD CASE 1

JOINT DISPLACEMENTS

JOINT	DX IN	DY IN	DR RAD
1	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.5746E-01	.1584E-03
3	.0000E+00	.1207E+00	.1874E-03
4	.0000E+00	.1669E+00	.1182E-03
5	.0000E+00	.1837E+00	.0000E+00
6	.0000E+00	.1669E+00	-.1182E-03
7	.0000E+00	.1207E+00	-.1874E-03
8	.0000E+00	.5746E-01	-.1584E-03
9	.0000E+00	.0000E+00	.0000E+00

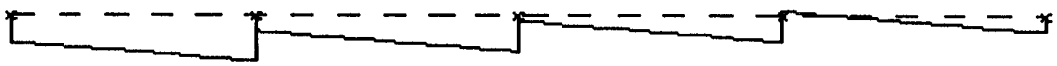
STRUCTURE REACTIONS

JOINT	FORCE X KIP	FORCE Y KIP	MOMENT FT-KIP
1	.0000E+00	-.5720E+03	-.1523E+05
9	.0000E+00	-.5720E+03	.1523E+05
TOTAL	.0000E+00	-.1144E+04	

1 MEMBER END FORCES

MEMBER	LOAD CASE	JOINT	AXIAL KIP	SHEAR KIP	MOMENT FT-KIP	MOMENT EXTREMA FT-KIP	LOCATION FT
1	1	1	.0000E+00	-.5720E+03	.1523E+05	.1523E+05	.00
		2	.0000E+00	.9861E+03	.5099E+04	.5099E+04	13.00
2	1	2	.0000E+00	-.3222E+03	.5099E+04	.5099E+04	.00
		3	.0000E+00	.7681E+03	-.2533E+04	-.2533E+04	14.00
3	1	3	.0000E+00	-.1041E+03	-.2533E+04	-.2533E+04	.00
		4	.0000E+00	.5500E+03	-.7112E+04	-.7112E+04	14.00
4	1	4	.0000E+00	.1139E+03	-.7112E+04	-.6908E+04	3.64
		5	.0000E+00	.3320E+03	-.8638E+04	-.8638E+04	14.00
5	1	5	.0000E+00	.3320E+03	-.8638E+04	-.6908E+04	10.36
		6	.0000E+00	.1139E+03	-.7112E+04	-.8638E+04	.00
6	1	6	.0000E+00	.5500E+03	-.7112E+04	-.2533E+04	14.00
		7	.0000E+00	-.1041E+03	-.2533E+04	-.7112E+04	.00
7	1	7	.0000E+00	.7681E+03	-.2533E+04	.5099E+04	14.00
		8	.0000E+00	-.3222E+03	.5099E+04	-.2533E+04	.00
8	1	8	.0000E+00	.9861E+03	.5099E+04	.1523E+05	13.00
		9	.0000E+00	-.5720E+03	.1523E+05	.5099E+04	.00

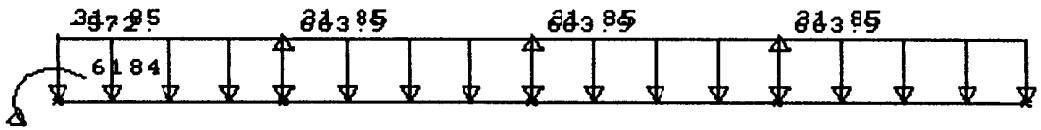
CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 4
USE IGROSS FOR BASE SECTIONS



= 986.1 KIP SHEAR 24-JUN-1996 14.26.21
LOAD CASE 1

```
010 CHAMBER SECTION-FILE: c:\precast.loc\bas2anl5.cfr*
020 LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 5*
030 USE Igross FOR BASE SECTIONS
040 KSI FT FT IN KIP
050 9 8 1 3000 0.15
060 1 0 0 2 13 0 3 27 0 4 41 0 5 55 0 6 69 0 7 83 0 8 97 0 9 110 0
080 FIX X 1 9 FIX Y 1 9 FIX R 1 9
090 GM 1 1 2 8 1 1
100 2016 66 15 1 TO 8
120 LOAD CASE 1 0 2 0 7 0
130 0 31.85 13 31.85 0 1 8
140 0 31.85 14 31.85 0 2 TO 7
210 0 663.94 0 2
220 0 663.94 0 3
230 0 663.94 0 4
240 0 663.94 0 5
250 0 663.94 0 6
260 0 663.94 0 7
270 0 663.94 0 8
```

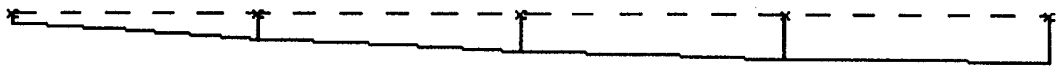
CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 4
USE IGROSS FOR BASE SECTIONS



24-JUN-1996 14.26.21

LOAD CASE 1

CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 4
USE IGROSS FOR BASE SECTIONS



= .3005E+5 FT-KIP MOMENT 24-JUN-1996 14.26.21
LOAD CASE 1

```
1*-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
 PROGRAM CFRAME
 *-*-*-*-*-*-*-*-*-*-*-*-*-*-*-*

  JN DATE = 24-JUN-1996
 RUN TIME = 14.26.21

 CHAMBER SECTION-FILE: C:\PRECAST.LOC\BAS2ANL4.CFR
 LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 4
 USE IGROSS FOR BASE SECTIONS
```

*** JOINT DATA ***

JOINT	X	Y	FIXITY X	FIXITY Y	FIXITY R	KX	KY	KR
	--- FT ---					---KIP / IN---		IN-KIP/RAD
1	.00	.00						
2	13.00	.00						
3	27.00	.00						
4	41.00	.00						
5	55.00	.00	*	*	*			

*** MEMBER DATA ***

MEMBER	END A	END B	LENGTH	I	A	AS	E	G
			FT	FT**4	FT**2	FT**2	KSI	KSI
1	1	2	13.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
2	2	3	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
3	3	4	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
4	4	5	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04

*** LOAD CASE 1

MEMBER	LA	PA	LB	PB	ANGLE
	FT	KIP / FT	FT	KIP / FT	DEG
1	.00	.3185E+02	13.00	.3185E+02	.00
2	.00	.3185E+02	14.00	.3185E+02	.00
3	.00	.3185E+02	14.00	.3185E+02	.00
4	.00	.3185E+02	14.00	.3185E+02	.00

JOINT	FORCE X	FORCE Y	MOMENT
	KIP	KIP	FT-KIP
1	.0000E+00	-.5720E+03	.6184E+04
2	.0000E+00	.6639E+03	.0000E+00
3	.0000E+00	.6639E+03	.0000E+00
4	.0000E+00	.6639E+03	.0000E+00

1 LOAD CASE 1

JOINT DISPLACEMENTS

JOINT	DX IN	DY IN	DR RAD
1	.0000E+00	-.6299E+00	.1352E-02
2	.0000E+00	-.3864E+00	.1191E-02
3	.0000E+00	-.1786E+00	.8757E-03
4	.0000E+00	-.4569E-01	.4624E-03
5	.0000E+00	.0000E+00	.0000E+00

STRUCTURE REACTIONS

JOINT	FORCE X KIP	FORCE Y KIP	MOMENT FT-KIP
5	.0000E+00	.3320E+03	-.3005E+05
TOTAL	.0000E+00	.3320E+03	

1 MEMBER END FORCES

MEMBER	LOAD CASE	JOINT	AXIAL KIP	SHEAR KIP	MOMENT FT-KIP	MOMENT EXTREMA FT-KIP	LOCATION FT
1	1	1	.0000E+00	-.5720E+03	-.6184E+04	-.6184E+04	.00
		2	.0000E+00	.9861E+03	-.1631E+05	-.1631E+05	13.00
2	1	2	.0000E+00	-.3221E+03	-.1631E+05	-.1631E+05	.00
		3	.0000E+00	.7680E+03	-.2394E+05	-.2394E+05	14.00
3	1	3	.0000E+00	-.1041E+03	-.2394E+05	-.2394E+05	.00
		4	.0000E+00	.5500E+03	-.2852E+05	-.2852E+05	14.00
4	1	4	.0000E+00	.1139E+03	-.2852E+05	-.2832E+05	3.64
		5	.0000E+00	.3320E+03	-.3005E+05	-.3005E+05	14.00

COMPUTATION SHEET

PROJECT [illegible]	PAGE OF	COMPUTED BY	DATE
SUBJECT [illegible]		CHECKED BY	DATE

Analysis 4

Avg Pile Loads

$P_{Avg} = [(806.77^k)(4) + (801.87^k)(2) + (648.77)(2) + (500.584)(5)]/13$

$= 663.94^k$

Unbalanced Load

$F = (663.94^k)(3'/2) - (31.85^k/ft)(55')$

$= 572.04^k$

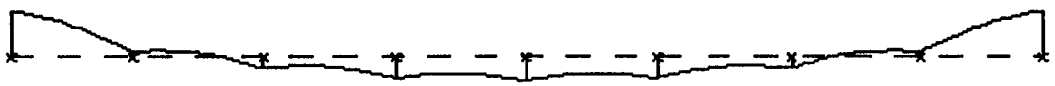
Moment $-6183.80^{ft\text{-}k} + (663.94^k)(14' + 75' + 42') - 572.04^k(55')$

$- 31.85^{ft\text{-}k}(55')^2/2$

$= -30,0[illegible].17^{ft\text{-}k}$

```
010 CHAMBER SECTION-FILE: c:\precast.loc\bas2anl4.cfr*
020 LOAD CASE 2A/MAXIMUM OPERATION/UPLIFT A /ANALYSIS 4*
030 USE Igross FOR BASE SECTIONS
040 KSI FT FT IN KIP
050 5 4 1 3000 0.15
060 1 0 0 2 13 0 3 27 0 4 41 0 5 55 0
080 FIX X 5 FIX Y 5 FIX R 5
090 GM 1 1 2 4 1 1
100 2016 66 15 1 TO 4
120 LOAD CASE 1 0 2 0 4 0
130 0 31.85 13 31.85 0 1
140 0 31.85 14 31.85 0 2 TO 4
200 0 -572.04 6183.80 1
210 0 663.94 0 2
220 0 663.94 0 3
230 0 663.94 0 4
```

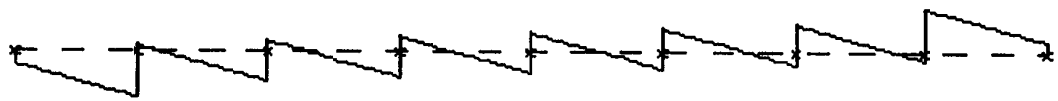
CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION CASE A/UPLIFT A /BASE FIXED AT WALL



= 5277. FT-KIP MOMENT 19-JUN-1996 15.35.30

LOAD CASE 1

CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION CASE A/UPLIFT A /BASE FIXED AT WALL



= 562.5 KIP SHEAR 19-JUN-1996 15.35.30
LOAD CASE 1

1 LOAD CASE 1

JOINT DISPLACEMENTS

INT	DX IN	DY IN	DR RAD
1	.0000E+00	.0000E+00	.0000E+00
2	.0000E+00	.2456E-01	.5097E-04
3	.0000E+00	.4200E-01	.5449E-04
4	.0000E+00	.5453E-01	.3340E-04
5	.0000E+00	.5905E-01	.0000E+00
6	.0000E+00	.5453E-01	-.3340E-04
7	.0000E+00	.4200E-01	-.5449E-04
8	.0000E+00	.2456E-01	-.5097E-04
9	.0000E+00	.0000E+00	.0000E+00

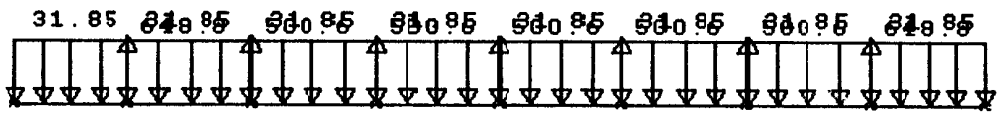
STRUCTURE REACTIONS

JOINT	FORCE X KIP	FORCE Y KIP	MOMENT FT-KIP
1	.0000E+00	-.1485E+03	-.5277E+04
9	.0000E+00	-.1485E+03	.5277E+04
TOTAL	.0000E+00	-.2969E+03	

1 MEMBER END FORCES

MEMBER	LOAD CASE	JOINT	AXIAL KIP	SHEAR KIP	MOMENT FT-KIP	MOMENT EXTREMA FT-KIP	LOCATION FT
1	1	1	.0000E+00	-.1485E+03	.5277E+04	.5277E+04	.00
		2	.0000E+00	.5625E+03	.6556E+03	.6556E+03	13.00
2	1	2	.0000E+00	.8625E+02	.6556E+03	.7722E+03	2.80
		3	.0000E+00	.3597E+03	-.1258E+04	-.1258E+04	14.00
3	1	3	.0000E+00	.1409E+03	-.1258E+04	-.9465E+03	4.48
		4	.0000E+00	.3050E+03	-.2407E+04	-.2407E+04	14.00
4	1	4	.0000E+00	.1956E+03	-.2407E+04	-.1806E+04	6.16
		5	.0000E+00	.2503E+03	-.2789E+04	-.2789E+04	14.00
5	1	5	.0000E+00	.2503E+03	-.2789E+04	-.1806E+04	7.84
		6	.0000E+00	.1956E+03	-.2407E+04	-.2789E+04	.00
6	1	6	.0000E+00	.3050E+03	-.2407E+04	-.9465E+03	9.52
		7	.0000E+00	.1409E+03	-.1258E+04	-.2407E+04	.00
7	1	7	.0000E+00	.3597E+03	-.1258E+04	.7722E+03	11.20
		8	.0000E+00	.8625E+02	.6556E+03	-.1258E+04	.00
8	1	8	.0000E+00	.5625E+03	.6556E+03	.5277E+04	13.00
		9	.0000E+00	-.1485E+03	.5277E+04	.6556E+03	.00

CHAMBER SECTION-FILE: C:
LOAD CASE 2A/MAXIMUM OPERATION CASE A/UPLIFT A /BASE FIXED AT WALL



19-JUN-1996 15.35.30

LOAD CASE 1

```
010 CHAMBER SECTION-FILE: c:\struc\cframe\base2aRb.cfr*
020 LOAD CASE 2A/MAXIMUM OPERATION CASE A/UPLIFT A /BASE FIXED AT WALL FACE
040 KSI FT FT IN KIP
050 9 8 1 3000 0.15
 ) 1 0 0 2 13 0 3 27 0 4 41 0 5 55 0 6 69 0 7 83 0 8 97 0 9 110 0
 0 FIX X 1 9 FIX Y 1 9 FIX R 1 9
090 GM 1 1 2 8 1 1
100 2016 66 15 1 TO 8
120 LOAD CASE 1 0 2 0 7 0
130 0 31.85 13 31.85 0 1 8
140 0 31.85 14 31.85 0 2 TO 7
210 0 648.77 0 2
220 0 500.58 0 3
230 0 500.58 0 4
240 0 500.58 0 5
250 0 500.58 0 6
260 0 500.58 0 7
270 0 648.77 0 8
```

```
1*-*-*-*-*-*-*-*-*-*-*-*-*-*-*
 PROGRAM CFRAME
 *-*-*-*-*-*-*-*-*-*-*-*-*-*-*
 RUN DATE = 19-JUN-1996
 RUN TIME = 15.35.30
```

CHAMBER SECTION-FILE: C:\STRUC\CFRAME\BASE2ARB.CFR
LOAD CASE 2A/MAXIMUM OPERATION CASE A/UPLIFT A /BASE FIXED AT WALL FACE

*** JOINT DATA ***

JOINT	X	Y	FIXITY X	FIXITY Y	FIXITY R	KX	KY	KR
	--- FT ---					---KIP / IN---		IN-KIP/RAD
1	.00	.00	*	*	*			
2	13.00	.00						
3	27.00	.00						
4	41.00	.00						
5	55.00	.00						
6	69.00	.00						
7	83.00	.00						
8	97.00	.00						
9	110.00	.00	*	*	*			

*** MEMBER DATA ***

MEMBER	END A	END B	LENGTH FT	I FT**4	A FT**2	AS FT**2	E KSI	G KSI
1	1	2	13.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
2	2	3	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
3	3	4	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
4	4	5	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
5	5	6	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
6	6	7	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
7	7	8	14.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04
8	8	9	13.00	.2016E+04	.6600E+02	.1500E+02	.3000E+04	.1304E+04

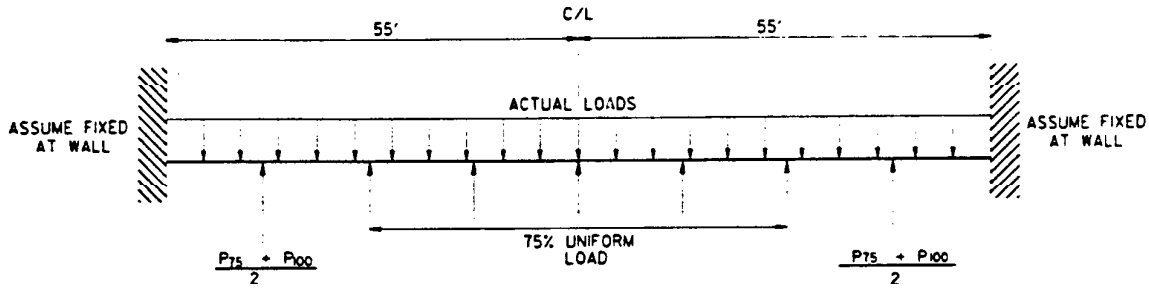
*** LOAD CASE 1

MEMBER	LA FT	PA KIP / FT	LB FT	PB KIP / FT	ANGLE DEG
1	.00	.3185E+02	13.00	.3185E+02	.00
2	.00	.3185E+02	14.00	.3185E+02	.00
3	.00	.3185E+02	14.00	.3185E+02	.00
4	.00	.3185E+02	14.00	.3185E+02	.00
5	.00	.3185E+02	14.00	.3185E+02	.00
6	.00	.3185E+02	14.00	.3185E+02	.00
7	.00	.3185E+02	14.00	.3185E+02	.00
8	.00	.3185E+02	13.00	.3185E+02	.00

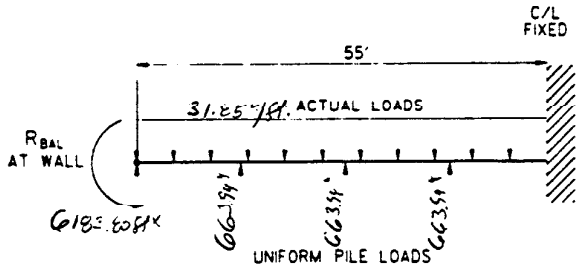
JOINT	FORCE X KIP	FORCE Y KIP	MOMENT FT-KIP
2	.0000E+00	.6488E+03	.0000E+00
3	.0000E+00	.5006E+03	.0000E+00
4	.0000E+00	.5006E+03	.0000E+00
5	.0000E+00	.5006E+03	.0000E+00
6	.0000E+00	.5006E+03	.0000E+00
7	.0000E+00	.5006E+03	.0000E+00
8	.0000E+00	.6488E+03	.0000E+00

MAXIMUM LOAD CASE 2A

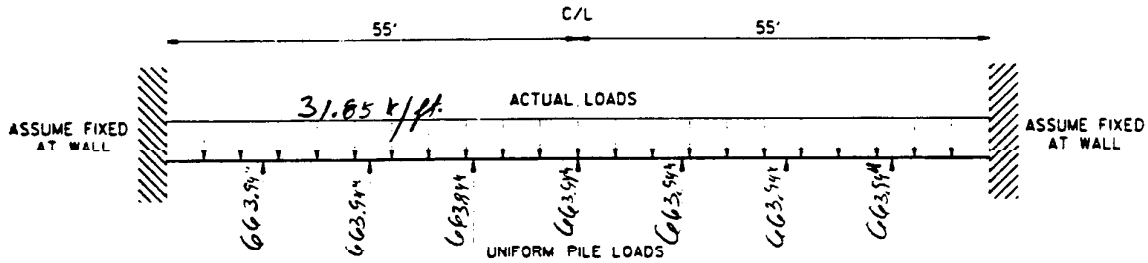
ANALYSIS 3

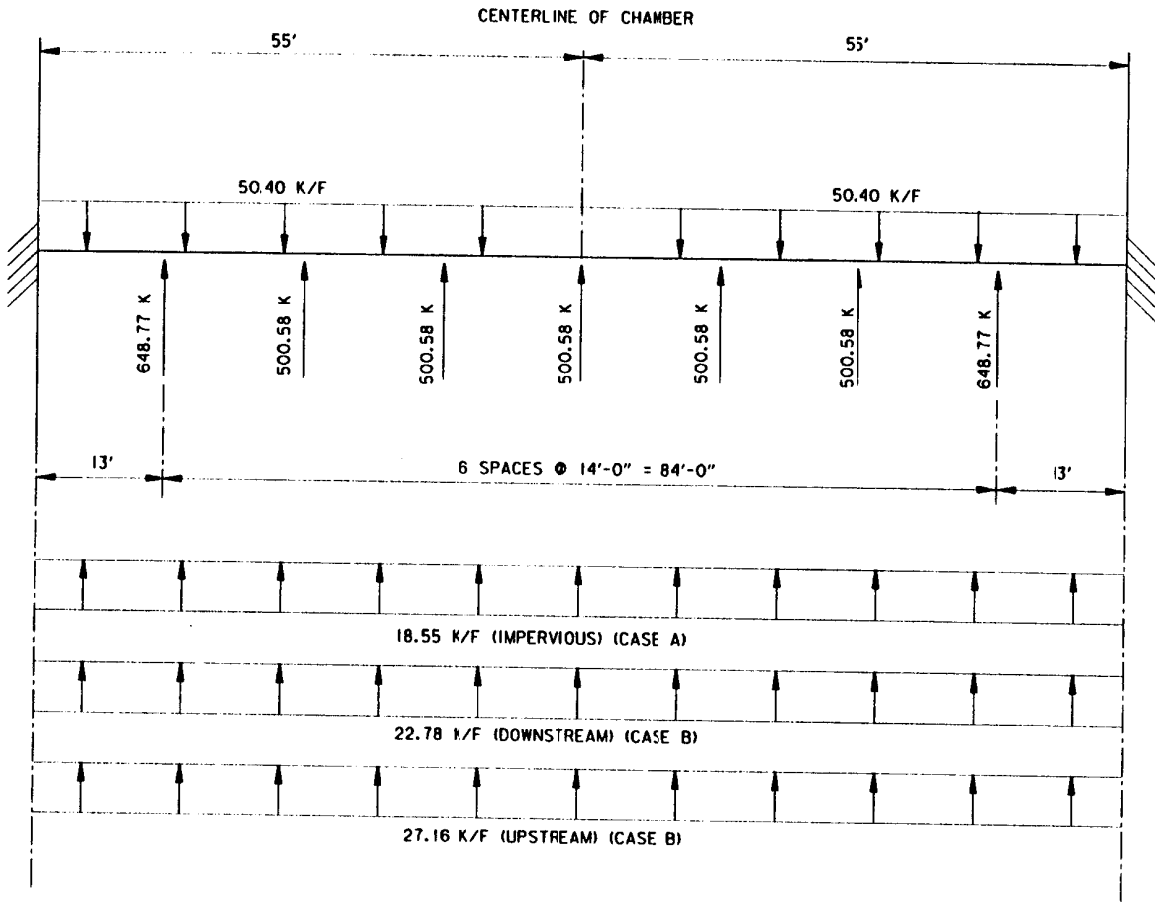


ANALYSIS 4



ANALYSIS 5





MAXIMUM OPERATIONS (A) - CHAMBER SECTION

Analysis 3

III.--UNFACTORED FORCES AT ENDS OF MEMBERS
(MEMBER FORCES ARE GIVEN AT ENDS OF FLEXIBLE LENGTH.)

III.A.--RIGHTSIDE MEMBERS - TYPE 31 MONOLITH
(POSITIVE AXIAL FORCE IS COMPRESSION.)
(POSITIVE SHEAR FORCE TENDS TO MOVE MEMBER UPWARD OR TOWARD STRUCTURE CENTERLINE.)
(POSITIVE MOMENT PRODUCES COMPRESSION ON TOP OF MEMBER OR ON SIDE OF MEMBER TOWARD STRUCTURE CENTERLINE.)

MEM NO	DISTANCE FROM CTR-LINE (FT)	ELEVATION (FT)	<--------FORCES (LBS OR LB-FT)-------> AXIAL	SHEAR	MOMENT
		***** BASE MEMBERS *****			
1	.00	-46.00	6.941E+05	2.132E+05	-1.166E+07
	14.00	-46.00	6.941E+05	2.327E+05	-1.179E+07
2	14.00	-46.00	6.950E+05	2.086E+05	-1.180E+07
	28.00	-46.00	6.950E+05	2.373E+05	-1.200E+07
3	28.00	-46.00	6.967E+05	2.497E+05	-1.201E+07
	42.00	-46.00	6.967E+05	1.962E+05	-1.163E+07
4	42.00	-46.00	6.993E+05	3.674E+05	-1.165E+07
	55.00	-46.00	6.993E+05	4.669E+04	-9.565E+06
5	63.00	-46.00	9.117E+05	-8.326E+04	-4.127E+06
	68.00	-46.00	9.117E+05	2.425E+05	-4.941E+06
6	68.00	-46.00	9.152E+05	5.286E+05	-4.962E+06
	78.00	-46.00	9.152E+05	-2.101E+05	-1.269E+06
		***** OUTSIDE STEM MEMBERS *****			
7	82.00	-40.00	1.239E+06	-1.234E+05	7.524E+05
	82.00	-21.75	9.319E+05	4.036E+04	-5.384E+05
8	84.50	-13.75	7.569E+05	-1.296E+05	-4.485E+05
	84.50	20.40	5.418E+05	-1.375E+05	2.253E+06
		***** INSIDE STEM MEMBERS *****			
9	59.00	-40.00	8.552E+05	2.091E+05	-2.713E+06
	59.00	-21.75	5.486E+05	-2.091E+05	1.103E+06
10	56.50	-13.75	7.193E+05	2.925E+05	-1.524E+06
	56.50	20.40	5.042E+05	1.375E+05	-1.726E+06
		***** CULVERT ROOF *****			
11	63.00	-17.75	3.309E+05	-3.051E+05	1.578E+06
	78.00	-17.75	3.309E+05	4.061E+04	-1.015E+06
		***** VOID ROOF *****			
12	58.00	21.40	1.375E+05	4.029E+05	-1.259E+06
	83.00	21.40	1.375E+05	4.406E+05	-1.729E+06

III.B.-- LEFTSIDE MEMBERS - TYPE 31 MONOLITH
SYMMETRIC WITH RIGHTSIDE

PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996 TIME 14.41.14

I.--HEADING
'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'

II.--RESULTS FOR RIGHTSIDE PILES

II.A.--PILE HEAD FORCES AND DISPLACEMENTS
(UNITS ARE POUNDS, FEET, AND RADIANS.)
(POSITIVE AXIAL FORCE IS COMPRESSION.)
(POSITIVE SHEAR TENDS TO MOVE PILE HEAD AWAY FROM CENTERLINE.)
(POSITIVE MOMENT PRODUCES COMPRESSION ON SIDE OF PILE TOWARD CENTERLINE.)
(POSITIVE AXIAL DISPLACEMENT IS DOWN.)
(POSITIVE LATERAL DISPLACEMENT IS AWAY FROM CENTERLINE.)
(POSITIVE ROTATION TENDS TO ROTATE PILE HEAD TOWARD CENTERLINE.)

PILE NO.	DIST. TO CTR-LINE	<-------PILE HEAD FORCES-------> AXIAL	SHEAR	MOMENT	<---PILE HEAD DISPLACEMENTS---> AXIAL	LATERAL	ROTATION
1	.00	4.263E+05	0.000E+00	0.000E+00	2.956E-02	0.000E+00	0.000E+00
2	14.00	4.414E+05	-8.604E+02	0.000E+00	3.060E-02	-1.012E-03	-1.501E-04
3	28.00	4.869E+05	-1.733E+03	0.000E+00	3.376E-02	-2.038E-03	-3.025E-04
4	42.00	5.636E+05	-2.600E+03	0.000E+00	3.907E-02	-3.059E-03	-4.539E-04
5	56.00	6.703E+05	-3.333E+03	0.000E+00	4.647E-02	-3.921E-03	-5.802E-04
6	68.00	7.711E+05	-3.487E+03	0.000E+00	5.346E-02	-4.102E-03	-6.016E-04
7	80.00	8.801E+05	-3.715E+03	0.000E+00	6.101E-02	-4.370E-03	-6.289E-04

II.B.--PILE ALLOWABLES COMPARISONS
ALLOWABLES DATA NOT PROVIDED FOR THIS SIDE.

III.--RESULTS FOR LEFTSIDE PILES
SYMMETRIC WITH RIGHTSIDE.

IV.--RESULTANTS OF PILE FORCES ON STRUCTURE
(POSITIVE HORIZONTAL IS TO THE RIGHT)
(POSITIVE VERTICAL IS UP)
(POSITIVE MOMENT IS COUNTERCLOCKWISE ABOUT CENTERLINE
(UNITS ARE POUNDS AND FEET)

	HORIZONTAL	VERTICAL	MOMENT
RIGHTSIDE PILES	1.5729E+04	4.0265E+06	2.0405E+08
LEFTSIDE PILES	-1.5729E+04	4.0265E+06	-2.0405E+08
TOTAL	0.0000E+00	8.0529E+06	0.0000E+00

NOTE RIGHTSIDE AND LEFTSIDE RESULTANTS INCLUDE ONE HALF OF FORCES FOR VERTICAL PILES ON CENTERLINE.

JT NO	DISTANCE FROM CTR-LINE (FT)	ELEVATION (FT)	<----DISPLACEMENT (FT OR RADIANS)----> HORIZONTAL	VERTICAL	ROTATION
		***** BASE JOINTS *****			
1	.00	-46.00	0.000E+00	2.956E-02	0.000E+00
2	14.00	-46.00	1.116E-04	3.060E-02	-1.501E-04
3	28.00	-46.00	2.233E-04	3.376E-02	-3.025E-04
4	42.00	-46.00	3.353E-04	3.907E-02	-4.539E-04
5	59.00	-46.00	4.397E-04	4.821E-02	-5.802E-04
6	68.00	-46.00	4.920E-04	5.346E-02	-6.016E-04
7	82.00	-46.00	5.971E-04	6.227E-02	-6.289E-04
		***** OUTSIDE STEM JOINTS *****			
8	82.00	-17.75	-1.701E-02	6.261E-02	-6.300E-04
9	84.50	21.40	-5.219E-02	6.520E-02	-1.251E-04
		***** INSIDE STEM JOINTS *****			
10	59.00	-17.75	-1.710E-02	4.843E-02	-6.277E-04
11	56.50	21.40	-5.242E-02	4.782E-02	-1.485E-03

II.B.-- LEFTSIDE DISPLACEMENTS - TYPE 31 MONOLITH
SYMMETRIC WITH RIGHTSIDE

III.--UNFACTORED FORCES AT ENDS OF MEMBERS
(MEMBER FORCES ARE GIVEN AT ENDS OF FLEXIBLE LENGTH.)

III.A.--RIGHTSIDE MEMBERS - TYPE 31 MONOLITH
(POSITIVE AXIAL FORCE IS COMPRESSION.)
(POSITIVE SHEAR FORCE TENDS TO MOVE MEMBER UPWARD OR TOWARD STRUCTURE CENTERLINE.)
(POSITIVE MOMENT PRODUCES COMPRESSION ON TOP OF MEMBER OR ON SIDE OF MEMBER TOWARD STRUCTURE CENTERLINE.)

MEM NO	DISTANCE FROM CTR-LINE (FT)	ELEVATION (FT)	<--------FORCES (LBS OR LB-FT)-------> AXIAL	SHEAR	MOMENT
		***** BASE MEMBERS *****			
1	.00	-46.00	6.941E+05	2.132E+05	-1.166E+07
	14.00	-46.00	6.941E+05	2.327E+05	-1.179E+07
2	14.00	-46.00	6.950E+05	2.086E+05	-1.180E+07
	28.00	-46.00	6.950E+05	2.373E+05	-1.200E+07
3	28.00	-46.00	6.967E+05	2.497E+05	-1.201E+07
	42.00	-46.00	6.967E+05	1.962E+05	-1.163E+07
4	42.00	-46.00	6.993E+05	3.674E+05	-1.165E+07
	55.00	-46.00	6.993E+05	4.669E+04	-9.565E+06
5	63.00	-46.00	9.117E+05	-8.326E+04	-4.127E+06
	68.00	-46.00	9.117E+05	2.425E+05	-4.941E+06
6	68.00	-46.00	9.152E+05	5.286E+05	-4.962E+06
	78.00	-46.00	9.152E+05	-2.101E+05	-1.269E+06
		***** OUTSIDE STEM MEMBERS *****			
7	82.00	-40.00	1.239E+06	-1.234E+05	7.524E+05
	82.00	-21.75	9.319E+05	4.036E+04	-5.384E+05
8	84.50	-13.75	7.569E+05	-1.296E+05	-4.485E+05
	84.50	20.40	5.418E+05	-1.375E+05	2.253E+06
		***** INSIDE STEM MEMBERS *****			
9	59.00	-40.00	8.552E+05	2.091E+05	-2.713E+06
	59.00	-21.75	5.486E+05	-2.091E+05	1.103E+06
10	56.50	-13.75	7.193E+05	2.925E+05	-1.524E+06
	56.50	20.40	5.042E+05	1.375E+05	-1.726E+06

		***** CULVERT ROOF *****			
11	63.00	-17.75	3.309E+05	-3.051E+05	1.578E+06
	78.00	-17.75	3.309E+05	4.061E+04	-1.015E+06
		***** VOID ROOF *****			
12	58.00	21.40	1.375E+05	4.029E+05	-1.259E+06
	83.00	21.40	1.375E+05	4.406E+05	-1.729E+06

III.B.-- LEFTSIDE MEMBERS - TYPE 31 MONOLITH
SYMMETRIC WITH RIGHTSIDE

PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996 TIME 14.41.14

I.--HEADING
'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'

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*******************************
*  RESULTS OF FRAME ANALYSIS  *
*******************************
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II.--STRUCTURE DISPLACEMENTS

II.A.--RIGHTSIDE DISPLACEMENTS - TYPE 31 MONOLITH
(POSITIVE HORIZONTAL DISPLACEMENT IS TOWARD STRUCTURE CENTERLINE.)
(POSITIVE VERTICAL DISPLACEMENT IS DOWN.)
(POSITIVE ROTATION IS COUNTERCLOCKWISE.)

JT NO	DISTANCE FROM CTR-LINE (FT)	ELEVATION (FT)	<----DISPLACEMENT (FT OR RADIANS)----> HORIZONTAL	VERTICAL	ROTATION
		***** BASE JOINTS *****			
1	.00	-46.00	0.000E+00	2.956E-02	0.000E+00
2	14.00	-46.00	1.116E-04	3.060E-02	-1.501E-04
3	28.00	-46.00	2.233E-04	3.376E-02	-3.025E-04
4	42.00	-46.00	3.353E-04	3.907E-02	-4.539E-04
5	59.00	-46.00	4.397E-04	4.821E-02	-5.802E-04
6	68.00	-46.00	4.920E-04	5.346E-02	-6.016E-04
7	82.00	-46.00	5.971E-04	6.227E-02	-6.289E-04
		***** OUTSIDE STEM JOINTS *****			
8	82.00	-17.75	-1.701E-02	6.261E-02	-6.300E-04
9	84.50	21.40	-5.219E-02	6.520E-02	-1.251E-04
		***** INSIDE STEM JOINTS *****			
10	59.00	-17.75	-1.710E-02	4.843E-02	-6.277E-04
11	56.50	21.40	-5.242E-02	4.782E-02	-1.485E-03

II.B.-- LEFTSIDE DISPLACEMENTS - TYPE 31 MONOLITH
SYMMETRIC WITH RIGHTSIDE

V.--CONCRETE AREAS

RIGHTSIDE AREA = 1.8389E+03 (SQFT)
LEFTSIDE AREA = 1.8389E+03 (SQFT)
TOTAL AREA = 3.6778E+03 (SQFT)

PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996 TIME 14.40.48

I.--HEADING
'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'

```
**********************
*  FRAME MODEL DATA  *
**********************
```

II.--RIGHTSIDE FRAME MODEL DATA

II.A.--RIGID BLOCK DATA (FT) - TYPE 31 MONOLITH
(NOTE 'X-COORD.' IS DISTANCE FROM CENTERLINE.)

		<----------CORNER LOCATIONS---------->						
BLOCK	CORNER NO.	1	2	3	4	5	6	CENTROID
1	X-COORD.	78.00	78.00	86.00	86.00	86.00	78.00	82.00
	ELEVATION	-52.00	-40.00	-40.00	-40.00	-52.00	-52.00	-46.00
2	X-COORD.	55.00	55.00	63.00	63.00	63.00	55.00	59.00
	ELEVATION	-52.00	-40.00	-40.00	-40.00	-52.00	-52.00	-46.00
3	X-COORD.	55.00	55.00	58.00	63.00	63.00	63.00	59.00
	ELEVATION	-21.75	-13.75	-13.75	-13.75	-21.75	-21.75	-17.75
4	X-COORD.	78.00	78.00	86.00	86.00	86.00	86.00	82.00
	ELEVATION	-21.75	-13.75	-13.75	-13.75	-21.75	-21.75	-17.75
5	X-COORD.	55.00	55.00	58.00	58.00	58.00	58.00	56.50
	ELEVATION	20.40	22.40	22.40	20.40	20.40	20.40	21.40
6	X-COORD.	83.00	83.00	86.00	86.00	86.00	86.00	84.50
	ELEVATION	20.40	22.40	22.40	21.40	20.40	20.40	21.40

II.B.--JOINT COORDINATES (FT)
(NOTE 'X-COORD.' IS DISTANCE FROM CENTERLINE.)

JOINT NO.	X-COORD.	ELEVATION
1	.00000	-46.00000
2	14.00000	-46.00000
3	28.00000	-46.00000
4	42.00000	-46.00000
5	59.00000	-46.00000
6	68.00000	-46.00000
7	82.00000	-46.00000
8	82.00000	-17.75000
9	84.50000	21.40000
10	59.00000	-17.75000
11	56.50000	21.40000

II.C.--MEMBER DATA (FT)
(NOTE 'X-COORD.' IS DISTANCE FROM CENTERLINE.)

MEM NO	FROM JT	TO JT	<COORDS AT ENDS OF FLEX LENGTH> <--FROM END--> X	ELEV	<---TO END---> X	ELEV	<-MEMBER DEPTH--> FROM END	TO END
1	1	2	.00	-46.00	14.00	-46.00	12.00	12.00
2	2	3	14.00	-46.00	28.00	-46.00	12.00	12.00
3	3	4	28.00	-46.00	42.00	-46.00	12.00	12.00
4	4	5	42.00	-46.00	55.00	-46.00	12.00	12.00
5	5	6	63.00	-46.00	68.00	-46.00	12.00	12.00
6	6	7	68.00	-46.00	78.00	-46.00	12.00	12.00
7	7	8	82.00	-40.00	82.00	-21.75	8.00	8.00
8	8	9	84.50	-13.75	84.50	20.40	3.00	3.00
9	5	10	59.00	-40.00	59.00	-21.75	8.00	8.00
10	10	11	56.50	-13.75	56.50	20.40	3.00	3.00
11	10	8	63.00	-17.75	78.00	-17.75	8.00	8.00
12	11	9	58.00	21.40	83.00	21.40	2.00	2.00

II.D.--PILE HEAD STIFFNESS COEFFICIENTS

PILE NO.	X-COORD. (FT)	BATTER (FT/FT)	<----------STIFFNESS COEFFICIENTS----------> B11 (LB/FT)	B22 (LB/FT)	B33 (LB-FT)	B13 (LB)
1	.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
2	14.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
3	28.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
4	42.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
5	56.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
6	68.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00
7	80.00	.00	8.5013E+05	1.4425E+07	0.0000E+00	0.0000E+00

III.-- LEFTSIDE FRAME MODEL DATA
SYMMETRIC WITH RIGHTSIDE

PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996 TIME 14.41.14

I.--HEADING
'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'

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*  RESULTS OF FRAME ANALYSIS  *
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II.--STRUCTURE DISPLACEMENTS

II.A.--RIGHTSIDE DISPLACEMENTS - TYPE 31 MONOLITH
(POSITIVE HORIZONTAL DISPLACEMENT IS TOWARD STRUCTURE CENTERLINE.)
(POSITIVE VERTICAL DISPLACEMENT IS DOWN.)
(POSITIVE ROTATION IS COUNTERCLOCKWISE.)

III.D.2.--LEFTSIDE
SYMMETRIC WITH RIGHTSIDE.

III.E.--CULVERT DATA

III.E.1.--RIGHTSIDE

DISTANCE FROM STEM FACE TO INTERIOR SIDE	=	8.00	(FT)
CULVERT WIDTH	=	15.00	(FT)
ELEVATION AT CULVERT FLOOR	=	-40.00	(FT)
CULVERT HEIGHT	=	18.25	(FT)
CULVERT FILLET SIZE	=	.00	(FT)

III.E.2.--LEFTSIDE
SYMMETRIC WITH RIGHTSIDE

III.F.--VOID DATA

III.F.1.--RIGHTSIDE

DISTANCE FROM STEM FACE TO INTERIOR SIDE	=	3.00	(FT)
VOID WIDTH	=	25.00	(FT)
ELEVATION AT VOID BOTTOM	=	-13.75	(FT)
VOID HEIGHT	=	34.15	(FT)
VOID TIES		NONE	

III.F.2.--LEFTSIDE
SYMMETRIC WITH RIGHTSIDE

IV.--BACKFILL DATA

IV.A.--RIGHTSIDE SOIL LAYER DATA (SURFACE SURCHARGE = .00 (PSF))

ELEV AT TOP (FT)	SATURATED UNIT WT. (PCF)	MOIST UNIT WT. (PCF)	<-PRESSURE COEFFICIENTS-> HORIZONTAL TOP	HORIZONTAL BOT.	SHEAR TOP	SHEAR BOT.
10.00	120.0	120.0	.500	.500	.000	.000

IV.B.--LEFTSIDE SOIL LAYER DATA
SYMMETRIC WITH RIGHTSIDE

V.--BASE REACTION DATA

V.A.--RIGHTSIDE PILE DATA

V.A.1.--PILE LAYOUT DATA

<------START-----> PILE NO.	DIST. FROM CENTERLINE (FT)	STOP PILE NO.	PILE NO. STEP	STEP IN CL DIST. (FT)
1	.00	1	1	.00
2	14.00	2	1	.00
3	28.00	3	1	.00
4	42.00	4	1	.00
5	56.00	5	1	.00
6	68.00	6	1	.00
7	80.00	7	1	.00

V.A.2.--PILE PROPERTIES

<----------START----------> STOP PILE

PILE NO.	MODULUS OF ELASTICITY (PSI)	SECT AREA (SQIN)	MOMENT OF INERTIA (IN**4)	LENGTH (FT)	AXIAL COEFF	HEAD FIXITY	PILE NO.	NO. STEP
1	2.90E+07	74.61	21045.50	150.00	1.00	.00	7	1

V.A.3.--SOIL PROPERTIES

<----------START----------> PILE NO.	CONSTANT COEFFICIENT (PSI)	LINEAR COEFFICIENT (PCI)	STOP PILE NO.	PILE NO. STEP
1	.000	7.400	7	1

V.A.4.--PILE HEAD STIFFNESS MATRICES
NONE

V.A.4.--PILE BATTER DATA
NONE

V.A.5.--PILE LOAD COMPARISON DATA
NONE

V.B.-- LEFTSIDE PILE DATA
SYMMETRIC WITH RIGHTSIDE

VI.--WATER DATA
WATER UNIT WEIGHT = 62.5 (PCF)

VI.A.--EXTERNAL WATER DATA

VI.A.1.--RIGHTSIDE EXTERNAL WATER DATA
GROUND WATER ELEVATION = -2.00 (FT)
SURCHARGE WATER NONE

VI.A.2.-- LEFTSIDE EXTERNAL WATER DATA
SYMMETRIC WITH RIGHTSIDE

VI.B.--UPLIFT WATER DATA
RIGHTSIDE UPLIFT WATER ELEVATION = -2.00 (FT)
LEFTSIDE UPLIFT WATER ELEVATION = -2.00 (FT)

VI.C.--INTERNAL WATER DATA
WATER ELEVATION IN CHAMBER = 17.60 (FT)
WATER ELEVATION IN RIGHTSIDE CULVERT = 17.60 (FT)
WATER ELEVATION IN LEFTSIDE CULVERT = 17.60 (FT)

VII.--ADDITIONAL LOAD DATA

VII.A.1.--ADDITIONAL LOADS ON RIGHTSIDE EXTERNAL STEM FACE
NONE

VII.A.2.--ADDITIONAL LOADS ON LEFTSIDE EXTERNAL STEM FACE
NONE

VII.B.1.--ADDITIONAL LOADS ON RIGHTSIDE INTERIOR STEM FACE
NONE

VII.B.2.--ADDITIONAL LOADS ON LEFTSIDE INTERIOR STEM FACE
NONE

VII.C.1.--ADDITIONAL LOADS ON RIGHTSIDE STEM TOP

CONCENTRATED LOAD DATA
NONE

DISTRIBUTED LOAD DATA

DIST FROM STEM FACE (FT)	HORIZONTAL LOAD (PSF)	VERTICAL LOAD (PSF)
.00	.00	2110.00
31.00	.00	2110.00

VII.C.2.--ADDITIONAL LOADS ON LEFTSIDE STEM TOP

CONCENTRATED LOAD DATA
NONE

DISTRIBUTED LOAD DATA
SYMMETRIC WITH RIGHTSIDE

VII.D.1.--ADDITIONAL LOADS ON RIGHTSIDE OF CHAMBER FLOOR
NONE

VII.D.2.--ADDITIONAL LOADS ON LEFTSIDE OF CHAMBER FLOOR
NONE

VII.E.1.--ADDITIONAL LOADS ON RIGHTSIDE OF STRUCTURE BASE
NONE

VII.E.2.--ADDITIONAL LOADS ON LEFTSIDE OF STRUCTURE BASE
NONE

VII.F.--EARTHQUAKE ACCELERATIONS
NONE

PROGRAM CWFRAM - ANALYSIS OF TWO-DIMENSIONAL U-FRAME OR W-FRAME STRUCTURES
DATE 25-JUN-1996 TIME 14.40.05

I.--HEADING
'IHNC LOCK LOAD CASE 2A - MAXIMUM OPERATION'

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*  RESULTS OF EQUILIBRIUM ANALYSIS  *
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II.--EFFECTS ON STRUCTURE RIGHTSIDE

II.A.--PRESSURES ON RIGHTSIDE SURFACE
(POSITIVE VERTICAL IS DOWN)
(POSITIVE HORIZONTAL IS TOWARD CENTERLINE)
(POSITIVE SHEAR IS DOWN)
(UNITS ARE POUNDS AND FEET)

<---------BACKFILL PRESSURE---------> GRND/SURCH

ELEVATION	VERTICAL	HORIZONTAL	SHEAR	WATER PRESSURE
22.400	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
21.400	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
20.400	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
17.600	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
10.000	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
-2.000	1.4400E+03	7.2000E+02	0.0000E+00	0.0000E+00
-13.750	2.1156E+03	1.0578E+03	0.0000E+00	7.3438E+02
-21.750	2.5756E+03	1.2878E+03	0.0000E+00	1.2344E+03
-40.000	3.6250E+03	1.8125E+03	0.0000E+00	2.3750E+03
-52.000	4.3150E+03	2.1575E+03	0.0000E+00	3.1250E+03

II.B.--PRESSURE ON RIGHTSIDE BASE
(POSITIVE PRESSURE IS UP; UNITS ARE POUNDS AND FEET)

DIST FROM CENTERLINE	SOIL REACTION PRESSURE	UPLIFT WATER PRESSURE
.000	0.0000E+00	3.1250E+03
14.000	0.0000E+00	3.1250E+03
28.000	0.0000E+00	3.1250E+03
42.000	0.0000E+00	3.1250E+03
55.000	0.0000E+00	3.1250E+03
56.000	0.0000E+00	3.1250E+03
63.000	0.0000E+00	3.1250E+03
68.000	0.0000E+00	3.1250E+03
78.000	0.0000E+00	3.1250E+03
80.000	0.0000E+00	3.1250E+03
86.000	0.0000E+00	3.1250E+03

II.C.--RESULTANTS OF LOADS ON STRUCTURE RIGHTSIDE
(POSITIVE VERTICAL IS DOWN)
(POSITIVE HORIZONTAL IS TOWARD CENTERLINE)
(POSITIVE MOMENT IS COUNTERCLOCKWISE ABOUT CHAMBER FLOOR CENTERLINE)
(UNITS ARE POUNDS AND FEET)

ITEM	HORIZONTAL	VERTICAL	MOMENT
BACKFILL	1.0676E+06	0.0000E+00	1.1440E+07
GROUND/SURCH WATER	1.0938E+06	0.0000E+00	5.1042E+06
INTERNAL WATER	-1.4515E+06	3.0115E+06	-1.2099E+08
UPLIFT WATER	0.0000E+00	-3.7625E+06	1.6179E+08
ADDL TOP STEM LOADS	0.0000E+00	9.1574E+05	-6.4560E+07
CONCRETE	0.0000E+00	3.8617E+06	-2.1265E+08
TOTAL THIS SIDE	7.0983E+05	4.0265E+06	-2.1987E+08

III.--EFFECTS ON STRUCTURE LEFTSIDE
SYMMETRIC WITH RIGHTSIDE

IV.--NET RESULTANTS OF ALL LOADS
(POSITIVE HORIZONTAL IS TO THE RIGHT)
(POSITIVE VERTICAL IS DOWN)
(POSITIVE MOMENT IS COUNTERCLOCKWISE ABOUT CENTERLINE)
(UNITS ARE POUNDS AND FEET)

TOTAL HORIZONTAL = 0.0000E+00
TOTAL VERTICAL = 8.0529E+06
TOTAL MOMENT = 0.0000E+00