DYNAMIC ENGINEERING CONSULTANT CO., LTD.

Column Whit Axial Force and Moment X - X

(Ultimate Stress Design method in accordance with ACI 318)

Job No.	:	193018
Rev.	:	0
Initial	:	CKJ
Date	:	12-Nov-20

Column No. CT-1 Roof FL.

Project : อาคารทิศตะวันออก

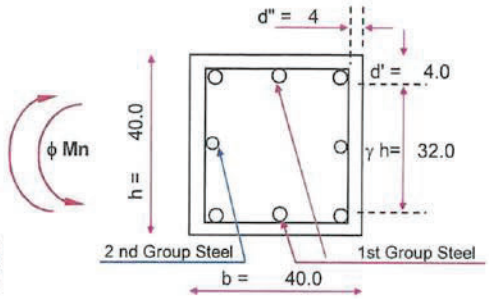
filename : COLUMN

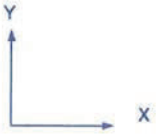
Concrete Strength	fc'	=	350	[kg/cm^2]		
	fy SD	=	4000	[kg/cm^2]		
	fy RD	=	2400	[kg/cm^2]		
Column Dimension	b	=	40	[cm]		
	h	=	40	[cm]		
	d'	=	4	[cm]		
	d"	=	4	[cm]		
Load	ϕ Pn	=	5	[T]		
Moment	ϕ Mn	=	1	[T-m]		
Separate Steel 2 group	1 st.	=	8	As =	16.1	[cm^2]
	2 nd.	=	4	As =	8.0	[cm^2]
Steel Reinforcement	No.	=	12			
	d	=	36	[cm]		
d (εu/(εy+εu))	Cb	=	21.771	[cm]		
	ρ of Steel	=	0.015	OK		

Main Steel Used 12 DB 16 — DB 16

Stirrup RB 9 @ 0.250 — RB 9

e b = 0.15 [cm]





Clumn (40 x 40)

Steel 12 DB 16

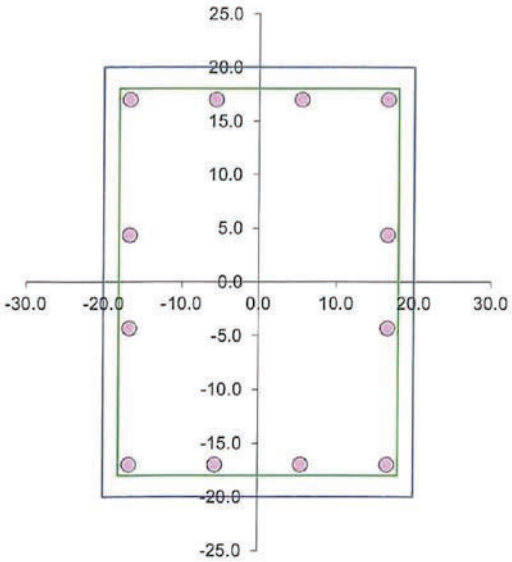
Stirrup RB 9 @ 0.250

Boundary of tie stirrup Column

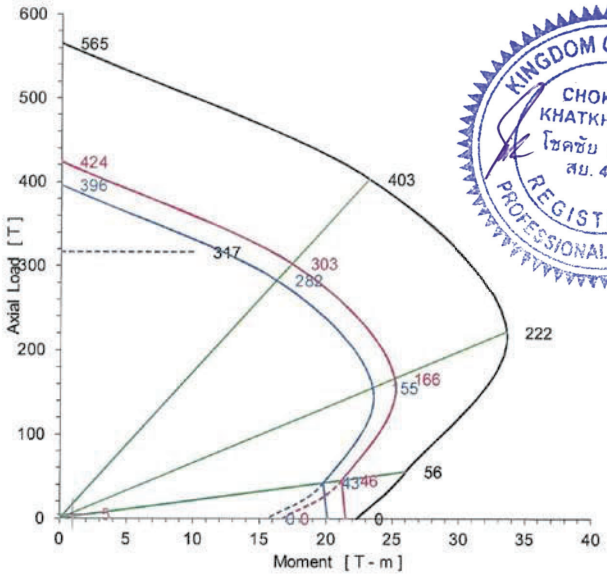
Boundary of sprial stirrup Column

Boundary of Ultimate Capacity

Column Section



Column whit Axial Load and Moment x-x



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Column CT-1 (40 x 40)

DYNAMIC ENGINEERING CONSULTANT CO., LTD.

Column Whit Axial Force and Moment X - X

(Ultimate Stress Design method in accordance with ACI 318-89)

Job No.	:	193018
Rev.	:	0
Initial	:	CKJ
Date	:	12-Nov-20

Column No. C-X

Project : อาคารทิศตะวันออก

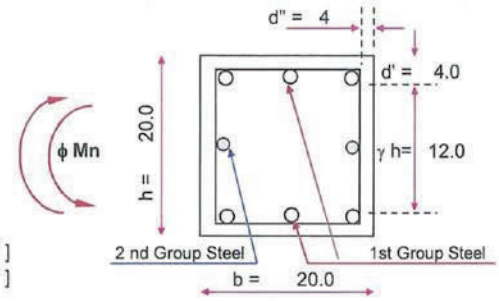
filename : COLUMN

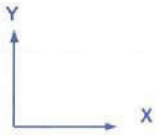
Concrete Strength	fc'	=	350	[kg/cm^2]		
	fy SD	=	4000	[kg/cm^2]		
	fy RD	=	2400	[kg/cm^2]		
Column Dimension	b	=	20	[cm]		
	h	=	20	[cm]		
	d'	=	4	[cm]		
	d"	=	4	[cm]		
Load	ϕ Pn	=	10	[T]		
Moment	ϕ Mn	=	1	[T-m]		
Separate Steel 2 group	1 st.	=	4	As =	8.0	[cm^2]
	2 nd.	=	0	As =	0.0	[cm^2]
Steel Reinforcement	No.	=	4			
	d	=	16	[cm]		
d(εu/(εy+εu))	Cb	=	9.676	[cm]		
	ρ of Steel	=	0.020	OK		

Main Steel Used: 4 DB 16 — DB 16

Stirrup: RB 9 @ 0.150 — RB 9

e b = 0.10 [cm]





Clumn (20 x 20)

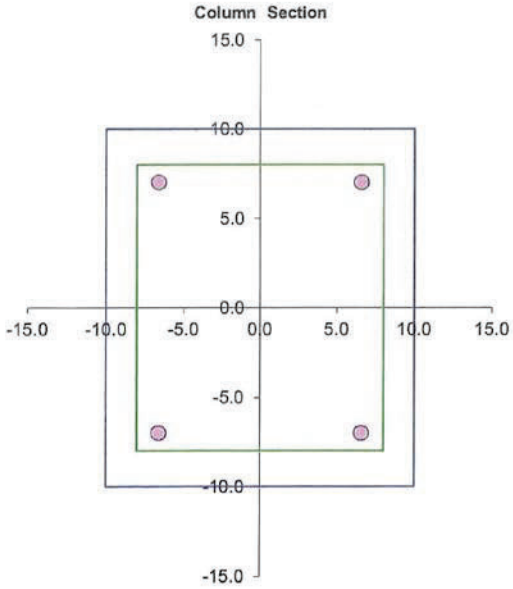
Steel 4 DB 16

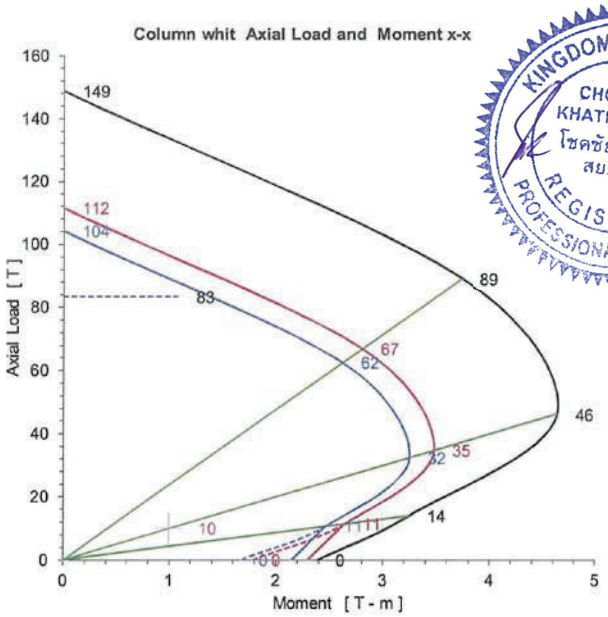
Stirrup RB 9 @ 0.150

Boundary of tie stirrup Column

Boundary of sprial stirrup Column

Boundary of Ultimate Capacity





Column C-X (20 x 20)

3. รายการคำนวณพื้นคอนกรีต อัดแรงภายหลัง

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-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:                Nov 11,2020   At Time: 10:4
PROJECT FILE:                                                          FL2-CH


P R O J E C T   T I T L E:
Government Complex
FL2-CH

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
=============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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Max spacing between strands (factor of slab depth) 8.00
Tendon profile type and support widths..... (see section 9)

ANALYSIS OPTIONS USED:
Structural system ....(using EQUIVALENT FRAME).... TWO-WAY
Moments REDUCED to face of support ..... YES

2 - I N P U T G E O M E T R Y

2.1.1 PRINCIPAL SPAN DATA OF UNIFORM SPANS

SPAN	TYPE	FORM	LENGTH m	WIDTH cm	DEPTH cm	TOP FLANGE width cm	TOP FLANGE thick. cm	BOTTOM/MIDDLE FLANGE width cm	BOTTOM/MIDDLE FLANGE thick. cm	REF HEIGHT cm	MULTIPLIER left	MULTIPLIER right
C	U	1	3.55	450.00	23.00					.00	.90	.10
1	U	1	8.40	450.00	23.00					.00	.90	.10
2	U	1	8.40	450.00	23.00					.00	.90	.10
3	U	1	8.40	450.00	23.00					.00	.90	.10
4	U	1	8.40	450.00	23.00					.00	.90	.10
5	U	1	8.40	450.00	23.00					.00	.90	.10
C	U	1	2.80	450.00	23.00					.00	.90	.10

LEGEND:
1 - SPAN
C = Cantilever
2 - TYPE
U = Uniform; prismatic
N = Nonuniform section

3 - FORM
1 = Rectangular section
2 = T or Inverted L section
3 = I section
4 = Extended T or L section
7 = Joist
8 = Waffle
11 - Top surface to reference line

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2.2 - S U P P O R T W I D T H A N D C O L U M N D A T A

JOINT	SUPPORT WIDTH cm	LOWER COLUMN LENGTH m	LOWER COLUMN B(DIA) cm	LOWER COLUMN D cm	LOWER COLUMN CBC*	UPPER COLUMN LENGTH m	UPPER COLUMN B(DIA) cm	UPPER COLUMN D cm	UPPER COLUMN CBC*
1	80.00	4.30	100.00	80.00	(1)	3.60	100.00	80.00	(1)
2	80.00	4.30	100.00	80.00	(1)	3.60	100.00	80.00	(1)
3	100.00	4.30	100.00	80.00	(1)	3.60	100.00	80.00	(1)
4	100.00	4.30	100.00	80.00	(1)	3.60	100.00	80.00	(1)
5	100.00	4.30	100.00	80.00	(1)	3.60	100.00	80.00	(1)

```
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-------------------------------------------------------------------------------

   6    100.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ............................ = 1
Hinged at near end, fixed at far end ........................ = 2
Fixed at near end, hinged at far end ........................ = 3
Fixed at near end, roller with rotational fixity at far end .. = 4



3 - I N P U T   A P P L I E D   L O A D I N G
===============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                   Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE    T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------
CANT   L      U        .300      .00      3.55                          1.350
CANT   D      U        .370      .00      3.55                          1.665
CANT   SW     U                  .00      3.55                          2.484

 1     L      U        .300      .00      8.40                          1.350
 1     D      U        .370      .00      8.40                          1.665
 1     SW     U                  .00      8.40                          2.484

 2     L      U        .300      .00      8.40                          1.350
 2     D      U        .370      .00      8.40                          1.665
 2     SW     U                  .00      8.40                          2.484

 3     L      U        .300      .00      8.40                          1.350
 3     D      U        .370      .00      8.40                          1.665
 3     SW     U                  .00      8.40                          2.484

 4     L      U        .300      .00      8.40                          1.350
 4     D      U        .370      .00      8.40                          1.665
 4     SW     U                  .00      8.40                          2.484

 5     L      U        .300      .00      8.40                          1.350
 5     D      U        .370      .00      8.40                          1.665
 5     SW     U                  .00      8.40                          2.484

CANT   L      U        .300      .00      2.80                          1.350
CANT   D      U        .370      .00      2.80                          1.665
CANT   SW     U                  .00      2.80                          2.484
```

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 ------------------------------------------------------------------------------

  NOTE: LIVE LOADING is SKIPPED with a skip factor of      .75


 3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
 ==============================================================================

                      UNIFORM
                      ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
 SPAN  CLASS  TYPE    LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
 -1-----2------3---------4------------5-------6-----------7-------8------------
 CANT   L      U          .300
 CANT   D      U          .370
  1     L      U          .300
  1     D      U          .370
  2     L      U          .300
  2     D      U          .370
  3     L      U          .300
  3     D      U          .370
  4     L      U          .300
  4     D      U          .370
  5     L      U          .300
  5     D      U          .370
 CANT   L      U          .300
 CANT   D      U          .370
  NOTE: SELFWEIGHT INCLUSION REQUIRED
        LIVE LOADING is SKIPPED with a skip factor of      .75


 4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
 ==============================================================================

 4.1   For Uniform Spans and Cantilevers only

 SPAN          AREA              I                Yb              Yt
               cm^2              cm^4             cm              cm
 -1-------------2----------------3----------------4-------------5-----
  CANT.       10350.00         .4563E+06        11.50           11.50
   1          10350.00         .4563E+06        11.50           11.50
   2          10350.00         .4563E+06        11.50           11.50
   3          10350.00         .4563E+06        11.50           11.50
   4          10350.00         .4563E+06        11.50           11.50
   5          10350.00         .4563E+06        11.50           11.50
  CANT.       10350.00         .4563E+06        11.50           11.50

 Note:
   --- = Span/Cantilever is Nonuniform, see block 4.2
```

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5 - DEAD LOAD MOMENTS, SHEARS & REACTIONS

SPAN	< 5.1 SPAN MOMENTS (Tm) > M(l)*	Midspan	M(r)*	< 5.2 SPAN SHEARS (T) > SH(l)	SH(r)
CANT	-----	-----	-26.14	-----	14.73
1	-24.42	12.20	-24.36	-17.43	17.42
2	-24.38	12.21	-24.38	-17.43	17.43
3	-24.38	12.21	-24.38	-17.43	17.43
4	-24.38	12.21	-24.38	-17.43	17.43
5	-24.48	12.26	-24.18	-17.46	17.39
CANT	-16.26	-----	-----	-11.62	-----

Note:
* = Centerline moments

JOINT	< 5.3 REACTIONS (T) >	<- 5.4 COLUMN MOMENTS (Tm) -> Lower columns	Upper columns
1	32.16	.80	.92
2	34.84	-.01	-.01
3	34.85	.00	.00
4	34.85	.00	.00
5	34.89	-.04	-.05
6	29.01	3.70	4.22

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6 - LIVE LOAD MOMENTS, SHEARS & REACTIONS

<-- 6.1 LIVE LOAD SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right
CL	-----		-----		-8.51		-----	4.79
1	-7.95	-.08	3.97	-.08	-7.93	-.06	-5.67	5.67
2	-7.93	-.07	3.97	-.07	-7.93	-.07	-5.67	5.67
3	-7.93	-.07	3.97	-.07	-7.93	-.07	-5.67	5.67
4	-7.93	-.07	3.97	-.07	-7.93	-.07	-5.67	5.67
5	-7.96	-.09	3.99	-.06	-7.87	-.03	-5.68	5.66
CR	-5.29		-----		-----		-3.78	-----

Note:
* = Centerline moments

JOINT	<- 6.2 REACTIONS (T) -> max	min	<-------- 6.3 COLUMN MOMENTS (Tm) --------> <--- LOWER COLUMN ---> max	min	<--- UPPER COLUMN ---> max	min
1	10.50	4.80	3.92	-3.66	4.47	-4.17

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2	11.41	5.63	3.62	-3.62	4.12	-4.13
3	11.41	5.64	3.62	-3.62	4.12	-4.12
4	11.41	5.64	3.62	-3.62	4.12	-4.12
5	11.41	5.65	3.60	-3.62	4.11	-4.12
6	9.47	3.77	3.66	-2.46	4.17	-2.80

Note: Block 6.1 through 6.3 values are maxima of all skipped loading cases

7 - M O M E N T S REDUCED TO FACE-OF-SUPPORT

7.1 R E D U C E D DEAD LOAD MOMENTS (Tm)

SPAN	<- left* ->	<- midspan ->	<- right* ->
CANT	-----	-----	-20.58
1	-17.78	12.20	-17.72
2	-17.74	12.21	-16.19
3	-16.19	12.21	-16.19
4	-16.19	12.21	-16.19
5	-16.27	12.26	-16.01
CANT	-10.97	-----	-----

Note:
* = face-of-support

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7.2 R E D U C E D LIVE LOAD MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
CL	-----		-----		-6.70	
1	-5.79	-.08	3.97	-.08	-5.77	-.07
2	-5.77	-.07	3.97	-.07	-5.27	-.07
3	-5.27	-.07	3.97	-.07	-5.27	-.07
4	-5.27	-.07	3.97	-.07	-5.27	-.07
5	-5.29	-.09	3.99	-.06	-5.21	-.03
CR	-3.57		-----		-----	

Note:
* = face-of-support

8 - SUM OF DEAD AND LIVE MOMENTS (Tm)

Maxima of dead load and live load span moments combined
for serviceability checks (1.00DL + 1.00LL)

<----- left* ------> <---- midspan ----> <----- right* ----->

```
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 ------------------------------------------------------------------------------

 SPAN       max        min         max        min         max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
 CL        -----                  -----                  -27.28
  1       -23.57     -17.86       16.17      12.12      -23.49     -17.79
  2       -23.51     -17.81       16.18      12.14      -21.46     -16.26
  3       -21.46     -16.26       16.18      12.14      -21.46     -16.26
  4       -21.46     -16.26       16.18      12.14      -21.46     -16.26
  5       -21.56     -16.36       16.25      12.20      -21.22     -16.04
 CR       -14.54                  -----                  -----

 Note:
    * = face-of-support


 9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
 ==============================================================================

 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon


 9.2      T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
 ----------1--------2----------3----------4----------5------
 CANT      1                             .000
  1        1       .100       .500       .100       .000
  2        1       .100       .500       .100       .000
  3        1       .100       .500       .100       .000
  4        1       .100       .500       .100       .000
  5        1       .100       .500       .100       .000
 CANT      1       .100


 9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
 ==============================================================================
 Tendon editing mode selected: TENDON SELECTION

          <--------  SELECTED VALUES  -------->   <--- CALCULATED VALUES --->
            FORCE    <- DISTANCE OF CGS (cm) ->       P/A         Wbal     Wbal
  SPAN      (T/-)      Left     Center    Right     (Kg/cm^2)    (T/-)    (%DL)
 --1----------2---------3--------4--------5-----------6----------7--------8--
```

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CANT	212.283	-11.50		-4.20	20.78	2.491	60
1	217.759	-4.20	-9.40	-5.20	21.04	1.160	28
2	149.672	-5.20	-17.40	-4.20	14.46	2.155	52
3	142.305	-4.20	-17.40	-4.20	13.75	2.130	51
4	145.344	-4.20	-17.40	-4.20	14.04	2.175	52
5	144.370	-4.20	-17.40	-4.20	13.95	2.161	52
CANT	137.792	-4.20		-11.50	13.60	2.621	63

Approximate weight of strand ..... 528.5 Kg

9.35 - TENDON SELECTION DATA:

TYPE	SEL.	FORCE (T)	<C>	<1>	<2>	<3>	<4>	<5>	<C>
A	12	12.06	<==========>						
B	6	12.04	<========|						

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	<- BASED ON STRESS CONDITIONS -> LEFT*	CENTER	RIGHT*	<- BASED ON MINIMUM P/A -> LEFT	CENTER	RIGHT
CANT	-----	-----	161.37	-----	-----	103.50
1	178.57	77.13	184.35	103.50	103.50	103.50
2	124.45	47.01	85.73	103.50	103.50	103.50
3	88.29	47.77	87.28	103.50	103.50	103.50
4	88.29	48.12	90.12	103.50	103.50	103.50
5	90.82	48.78	85.96	103.50	103.50	103.50
CANT	31.03	-----	-----	103.50	-----	-----

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2)(tension shown positive)

	L E F T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	R I G H T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
CL	-----	-----	-----	-----	17.02	-----	-----	-58.38
1	23.39	-----	-----	-65.29	23.58	-----	-----	-66.66
2	6.40	-7.97	-----	-49.47	12.34	-.76	-----	-40.71
3	14.29	-----	-----	-42.19	15.02	-----	-----	-42.09
4	14.68	-----	-----	-42.31	14.24	-----	-----	-42.75
5	14.65	-----	-----	-42.97	14.46	-----	-----	-41.77
CR	5.78	-3.22	-----	-32.59	-----	-----	-----	-----

Note:
* = face-of-support

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C E N T E R

	TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
CL	-----	-----	-----	-----
1	-----	-51.74	9.66	-.53
2	-----	-34.53	5.61	-4.59
3	-----	-35.37	7.87	-2.33
4	-----	-35.50	7.41	-2.79
5	-----	-35.66	7.76	-2.45
CR	-----	-----	-----	-----

9.7 POST-TENSIONING B A L A N C E D M O M E N T S, SHEARS & REACTIONS

SPAN	<-- S P A N M O M E N T S (Tm) --> left*	midspan	right*	<-- SPAN SHEARS (T) --> SH(l)	SH(r)
CANT	-----	-----	12.32	-----	7.60
1	5.97	-3.99	5.59	-.22	-.22
2	12.43	-8.22	10.93	-.22	-.22
3	10.25	-7.61	10.13	-.02	-.02
4	10.15	-7.67	10.15	.00	.00
5	10.13	-7.64	10.06	.00	.00
CANT	6.93	-----	-----	5.93	-----

Note:
* = face-of-support

joint	<--REACTIONS (T)-->	<-- COLUMN MOMENTS (Tm) --> Lower columns	Upper columns
1	.223	-4.254	-4.846
2	-.006	3.425	3.901
3	-.195	-.384	-.438
4	-.022	.010	.012
5	-.001	-.010	-.011
6	.001	-.655	-.746

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10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min

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CL	-----		-----		-40.20	
1	-43.74	-34.05	15.67	8.79	-41.93	-32.24
2	-34.47	-24.78	24.86	17.98	-29.81	-20.98
3	-30.51	-21.68	25.10	18.22	-30.23	-21.40
4	-30.19	-21.36	25.28	18.40	-30.19	-21.36
5	-30.37	-21.52	25.36	18.47	-29.87	-21.06
CR	-21.43		-----		-----	

Note:
* = face-of-support

10.2 SECONDARY MOMENTS (Tm)

SPAN	<-- left* -->	<- midspan ->	<-- right* -->
1	-9.01	-8.16	-7.32
2	.18	1.01	1.81
3	1.11	1.25	1.39
4	1.43	1.43	1.43
5	1.41	1.40	1.40

Note:
* = face-of-support

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	10.3 FACTORED REACTIONS (T)		10.4 FACTORED COLUMN MOMENTS (Tm) <-- LOWER column -->		<-- UPPER column -->	
JOINT	max	min	max	min	max	min
1	63.10	53.40	3.54	-9.35	4.03	-10.65
2	68.17	58.34	9.56	-2.75	10.89	-3.13
3	67.99	58.18	5.77	-6.53	6.57	-7.44
4	68.17	58.35	6.16	-6.14	7.02	-6.99
5	68.24	58.45	6.06	-6.22	6.90	-7.09
6	56.72	47.02	10.75	.35	12.25	.40

11 - M I L D S T E E L

Support cut-off length for minimum steel(length/span) ... .17
Span cut-off length for minimum steel(length/span) ... .33
Top bar extension beyond where required ..... 30.00 cm
Bottom bar extension beyond where required ..... 30.00 cm

REINFORCEMENT based on NO REDISTRIBUTION of factored moments

11.1 TOTAL WEIGHT OF REBAR = .0 Kg AVERAGE = .0 Kg/m^2
TOTAL AREA COVERED = 217.57 m^2

```
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11.2.1     S T E E L    A T    M I D - S P A N
                    T O P                                    B O T T O M
          As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  4       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  5       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)


11.3.1     S T E E L    A T    S U P P O R T S
                    T O P                                    B O T T O M
          As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  4       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  5       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  6       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-------------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.


11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|


11.5.2     ARRANGEMENT OF BOTTOM BARS

-------|-------- BOTTOM STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|


12 -  P U N C H I N G   S H E A R   C H E C K
==============================================================================
```

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LEGEND:
CONDITION... 1 = INTERIOR COLUMN
2 = END COLUMN
3 = CORNER COLUMN
4 = EDGE COLUMN (PARALLEL TO SPAN)
5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
PERFORM SHEAR CHECK MANUALLY
6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

CASE..... 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)

		FACTORED ACTIONS		<- PUNCHING SHEAR STRESSES IN Kg/cm^2 ->					
JNT	COND.	shear T	moment T-m	due to shear	due to moment	TOTAL	allow-able	STRESS RATIO	CASE
1	4	63.10	20.01	9.91	3.07	12.98	16.56	.78	1
2	4	68.17	20.46	10.70	3.14	13.84	16.56	.84	1
3	4	67.99	13.98	10.68	2.14	12.82	16.56	.77	1
4	4	68.17	13.18	10.70	2.02	12.73	16.56	.77	1
5	4	68.24	13.31	10.72	2.04	12.76	16.56	.77	1
6	4	56.72	23.00	8.91	3.53	12.44	16.56	.75	1

PUNCHING SHEAR CHECK SATISFACTORY
NO ADDITIONAL REBAR OR CHANGE IN SECTION IS NECESSARY

13 - MAXIMUM S P A N D E F L E C T I O N S

Concrete`s modulus of elasticity ..... Ec = 287.00 T/cm^2
Creep factor ..... K = 2.00
Ieffective/Igross...(due to cracking)..... K = 1.00

Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
Values in parentheses are (span/max deflection) ratios

	<.....DEFLECTION ARE ALL IN cm			, DOWNWARD POSITIVE.....>	
SPAN	DL	DL+PT	DL+PT+CREEP	LL	DL+PT+LL+CREEP
CANL	.6	.2	.7(477)	.2(1711)	1.0(373)
1	.4	.3	.8(993)	.1(6347)	1.0(859)
2	.4	.1	.4(2110)	.1(6331)	.5(1582)
3	.4	.2	.5(1741)	.1(6331)	.6(1365)
4	.4	.2	.5(1750)	.1(6332)	.6(1371)
5	.4	.2	.5(1699)	.1(6278)	.6(1337)
CANR	.2	.1	.3(1089)	.1(3604)	.3(836)

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-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:                Nov 12,2020   At Time: 13:7
PROJECT FILE:                                                          FL2-C7


P R O J E C T   T I T L E:
Government Complex
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1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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Max spacing between strands (factor of slab depth)        8.00
Tendon profile type and support widths............   (see section 9)

ANALYSIS OPTIONS USED:
Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
Moments REDUCED to face of support ...............        YES


2 - I N P U T   G E O M E T R Y
===============================================================================

                2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
-------------------------------------------------------------------------------
S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
A  P  R| LENGTH| WIDTH   DEPTH|  width thick.| width thick.|HEIGHT| left right
N  E  M|   m   |   cm      cm  |   cm     cm  |  cm     cm  |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
1  U  1    7.50 800.00   23.00                                .00   .50   .50
2  U  1    8.00 800.00   23.00                                .00   .50   .50
-------------------------------------------------------------------------------
LEGEND:
1 - SPAN                                  3 - FORM
      C = Cantilever                            1 = Rectangular section
2 - TYPE                                        2 = T or Inverted L section
      U = Uniform; prismatic                    3 = I section
      N = Nonuniform section                    4 = Extended T or L section
                                                7 = Joist
                                                8 = Waffle
                                           11 - Top surface to reference line


    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

       SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
        WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
JOINT    cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1       .00      4.30     .00     .00  (2)       3.60     .00     .00  (2)
   2    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)
   3    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ............................ = 1
Hinged at near end, fixed at far end ........................ = 2
Fixed at near end, hinged at far end ........................ = 3
Fixed at near end, roller with rotational fixity at far end .. = 4
```

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3 - I N P U T   A P P L I E D   L O A D I N G
==============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                   Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE    T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------

 1     L      U        .300      .00     7.50                          2.400
 1     D      U        .370      .00     7.50                          2.960
 1     SW     U         .        .00     7.50                          4.416

 2     L      U        .300      .00     8.00                          2.400
 2     D      U        .370      .00     8.00                          2.960
 2     SW     U                  .00     8.00                          4.416


 NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
==============================================================================

                    UNIFORM
                    ( T/m^2),    ( CON. or PART. )    ( M O M E N T )
SPAN  CLASS  TYPE   LINE( T/m)   (  T@m or  m-m  )    (  T-m  @  m  )
-1-----2------3---------4------------5-------6-----------7-------8------------

 1     L      U        .300
 1     D      U        .370
 2     L      U        .300
 2     D      U        .370
 NOTE: SELFWEIGHT INCLUSION REQUIRED
       LIVE LOADING is SKIPPED with a skip factor of     .75


4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
==============================================================================

4.1   For Uniform Spans and Cantilevers only
```

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 SPAN          AREA              I               Yb              Yt
               cm^2             cm^4             cm              cm
 -1-------------2----------------3---------------4-------------5-----
   1          18400.00        .8111E+06         11.50           11.50
   2          18400.00        .8111E+06         11.50           11.50

 Note:
   --- = Span/Cantilever is Nonuniform, see block 4.2



 5 -  D E A D   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ==============================================================================

       < 5.1  S P A N   M O M E N T S   (Tm)  >    < 5.2 SPAN SHEARS  (T)  >
  SPAN      M(l)*        Midspan          M(r)*          SH(l)        SH(r)
 --1---------2--------------3---------------4--------------5-----------6-------
   1          .00          26.60          -50.52          -20.92       34.40
   2       -46.52          22.08          -27.34          -31.90       27.11

 Note:
    * = Centerline moments


 JOINT   < 5.3 REACTIONS (T)   >   <- 5.4 COLUMN MOMENTS  (Tm)   ->
 --1---------------2---------------Lower columns----Upper columns----
   1              20.92                  .00              .00
   2              66.30                 1.87             2.13
   3              27.11                12.78            14.56


 6 -  L I V E   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ==============================================================================

     <-- 6.1  L I V E   L O A D  SPAN MOMENTS  (Tm)  and SHEAR FORCES (T)  -->

    <----- left* -----> <--- midspan ---> <---- right* -----> <--SHEAR FORCE-->
 SPAN    max       min      max      min       max       min     left    right
 -1-------2---------3--------4--------5---------6---------7--------8--------9--
  1       .00       .00     8.66    -1.05    -16.44     -2.10    -6.81    11.19
  2    -15.14     -2.81     7.18     -.87     -8.90      1.07   -10.38     8.82

 Note:
    * = Centerline moments


       <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN ---> <--- UPPER COLUMN --->
 JOINT        max        min          max         min          max        min
 --1-----------2----------3------------4----------5------------6----------7----
```

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  1          7.18       -.37          .00        .00          .00        .00
  2         21.57      10.11         4.62      -4.02         5.27      -4.57
  3          9.47       -.65         4.83       -.67         5.50       -.76

Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
==============================================================================

          7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

 SPAN        <- left* ->  <- midspan ->   <- right* ->
--1---------------2-------------3-------------4-------------------------------
  1               .00         26.60        -34.25
  2            -31.50         22.08        -14.71

Note:
   * = face-of-support


          7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
SPAN       max        min         max        min         max        min
-1----------2----------3-----------4----------5-----------6----------7-----
 1          .00        .00        8.65      -1.05      -11.14      -1.96
 2       -10.25      -2.57        7.18       -.87       -4.79        .83

Note:
   * = face-of-support


8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
==============================================================================
Maxima of dead load and live load span moments combined
for serviceability checks    (  1.00DL +  1.00LL )

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
SPAN       max        min         max        min         max        min
-1----------2----------3-----------4----------5-----------6----------7-----
 1          .00        .00       35.26      25.55      -45.39     -36.21
 2       -41.75     -34.06       29.26      21.21      -19.50     -13.88

Note:
   * = face-of-support


9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
```

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 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon


 9.2      T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
 ----------1--------2----------3----------4----------5------
  1         1       .100       .500       .100       .000
  2         1       .100       .500       .100       .000
```

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```
 9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
 ==============================================================================
 Tendon editing mode selected: TENDON SELECTION

          <--------  SELECTED VALUES  -------->   <--- CALCULATED VALUES --->
            FORCE   <- DISTANCE OF CGS (cm) ->       P/A        Wbal     Wbal
  SPAN      (T/-)     Left     Center    Right     (Kg/cm^2)    (T/-)    (%DL)
 --1----------2---------3--------4--------5-----------6----------7--------8--
   1      268.564   -11.50   -17.40    -4.20        14.60      3.648       49
   2      267.797    -4.20   -17.40   -11.50        14.55      3.197       43

 Approximate weight of strand ..........................      282.1 Kg


 9.35 - TENDON SELECTION DATA:

 TYPE  SEL. FORCE  <------------------ TENDON EXTENTS ----------------------->
            (T )          <1>   <2>
 --1----2-----3---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
   B   10   12.12       <===========|
   C   12   12.14       |===========>


 9.5   R E Q U I R E D  MINIMUM  P O S T - T E N S I O N I N G  FORCES (T   )

          <- BASED ON STRESS CONDITIONS ->      <-  BASED ON MINIMUM P/A  ->
  SPAN       LEFT*     CENTER      RIGHT*           LEFT     CENTER     RIGHT
 --1----------2----------3----------4---------------5---------6---------7----
   1          .00      155.72     221.38          184.00    184.00    184.00
```

```
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   2       200.26     104.62        .00          184.00    184.00    184.00

 Note:
    * = face-of-support


 9.6   S E R V I C E   S T R E S S E S   (Kg/cm^2)(tension shown positive)

                 L E F T *                                R I G H T *
            TOP                BOTTOM                TOP                BOTTOM
      max-T    max-C    max-T    max-C      max-T    max-C    max-T    max-C
 -1------2--------3--------4--------5----------6--------7--------8--------9--
  1    -----   -14.30    -----   -14.30      22.42    -----    -----   -51.58
  2    19.85    -----    -----   -48.93       2.20    -5.77    -----   -30.78

 Note:
    * = face-of-support


                                  C E N T E R
                             TOP                BOTTOM
                        max-T    max-C    max-T    max-C
 -1-----------------------2--------3--------4--------5---------------------
  1                     -----   -44.27    15.08    -----
  2                     -----   -40.55    11.44    -----


 9.7   POST-TENSIONING   B A L A N C E D   M O M E N T S, SHEARS & REACTIONS

          <-- S P A N   M O M E N T S (Tm  ) -->     <-- SPAN SHEARS (T ) -->
  SPAN     left*          midspan        right*          SH(l)      SH(r)
 --1---------2--------------3--------------4---------------5----------6------
   1          .00         -14.32          19.29           -.41       -.41
   2        17.49         -10.92           7.87          -1.21      -1.21

 Note:
    * = face-of-support


          <--REACTIONS (T )-->      <--  COLUMN MOMENTS  (Tm  ) -->
 -joint------------2-----------------Lower columns-----Upper columns-----
   1              .406                   .000              .000
   2              .801                 -1.399            -1.593
   3            -1.207                 -4.537            -5.168


 10 - F A C T O R E D   M O M E N T S   &   R E A C T I O N S
 ==============================================================================
 Calculated as ( 1.40D + 1.70L + 1.00 secondary moment effects)
```

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10.1   FACTORED DESIGN MOMENTS  (Tm)

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
SPAN       max        min         max        min         max        min
-1----------2----------3-----------4----------5-----------6----------7-----
 1          .00        .00       53.47      36.97      -64.05     -48.45
 2       -60.87     -47.81       47.99      34.31      -19.63     -10.08

Note:
   * = face-of-support


10.2   SECONDARY MOMENTS  (Tm)
SPAN    <-- left* -->   <- midspan  ->   <-- right* -->
-1-----------2----------------3----------------4--------
 1            .00             1.52             2.84
 2            .65             4.88             9.10

Note:
   * = face-of-support


     10.3 FACTORED REACTIONS      10.4 FACTORED COLUMN MOMENTS  (Tm)
               (T)             <-- LOWER column -->   <-- UPPER column -->
JOINT      max        min         max        min         max        min
-1----------2----------3-----------4----------5-----------6----------7-----
 1        41.90      29.06         .00        .00         .00        .00
 2       130.29     110.81        9.08      -5.61       10.34      -6.39
 3        52.84      35.65       21.56      12.22       24.57      13.92


11 - M I L D   S T E E L
===============================================================================

Support cut-off length for minimum steel(length/span) ...     .17
Span    cut-off length for minimum steel(length/span) ...     .33
Top     bar extension beyond where required .............  30.00 cm
Bottom  bar extension beyond where required .............  30.00 cm


      REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
-------------------------------------------------------------------------------
11.1     TOTAL WEIGHT OF REBAR =        22.8  Kg     AVERAGE =       .2 Kg/m^2
         TOTAL AREA COVERED    =      124.00   m^2


11.2.1     S T E E L   A T   M I D - S P A N
                    T O P                                  B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)        3.1  (    3.1      .0      .0)
```

```
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   2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)


 11.3.1     S T E E L   A T   S U P P O R T S
                      T O P                                   B O T T O M
          As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
 --1------2---------3-------4-------5-----------6---------7-------8-------9----
   1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
   2      7.4  (    7.4      .0      .0)         .0  (     .0      .0      .0)
   3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

 11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

 -------------------------------------------------------
 SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
 --1----2-----3------4----5-------6---------7----------
   1    1     T      4 #  5 x     60        8.0
   1    2     B      1 #  6 x    136        2.8
   1    3     B      1 #  6 x     98        2.8
 -------------------------------------------------------
 Notes:
 Bar location - T = Top, B = Bottom.
 NUM - Number of bars.
 For two-way systems a minimum of 4 bars is specified over the supports.
 Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
 positioning of bars.


 11.5.1     ARRANGEMENT OF TOP BARS

 -------|----------- TOP STEEL -----------------|
 SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
 --1----|--2------3-----|---4----5------6-------|
   1    |  1   RIGHT    |   4 #  5 x     60     |
 -------|---------------|-----------------------|
   2    |  1   LEFT     |   2 #  5 x     30     |
 -------|---------------|-----------------------|


 11.5.2     ARRANGEMENT OF BOTTOM BARS

 -------|-------- BOTTOM STEEL -----------------|
 SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
 --1----|--2------3-----|---4----5------6-------|
   1    |  2   CENTER   |   1 #  6 x    135     |
   1    |  3   CENTER   |   1 #  6 x     97     |
 -------|---------------|-----------------------|


 12 -  P U N C H I N G   S H E A R   C H E C K
 ==============================================================================

 LEGEND:
```

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 CONDITION... 1 = INTERIOR COLUMN
              2 = END COLUMN
              3 = CORNER COLUMN
              4 = EDGE COLUMN (PARALLEL TO SPAN)
              5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                  PERFORM SHEAR CHECK MANUALLY
              6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

 CASE........ 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
              2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)


            FACTORED ACTIONS   <- PUNCHING SHEAR STRESSES IN Kg/cm^2 ->
             shear   moment    due to   due to              allow-   STRESS
 JNT  COND.    T      T-m      shear    moment    TOTAL      able    RATIO  CASE
 -1----2-------3-------4---------5---------6--------7---------8-------9-----10-
  1    6    -------  -------   ------   ------   ------    ------   ----  --
  2    1     130.29    19.42    14.88     2.44    17.32     17.96    .96   1
  3    2      52.84    46.13     8.30     6.16    14.46     16.56    .87   1

 PUNCHING SHEAR CHECK NOT CARRIED OUT FOR SUPPORT WITH CONDITIONS 5 OR 6


 13 - MAXIMUM  S P A N   D E F L E C T I O N S
 ==============================================================================

 Concrete`s modulus of elasticity ............. Ec =   287.00 T/cm^2
 Creep factor ................................. K  =     2.00
 Ieffective/Igross...(due to cracking)......... K  =     1.00

 Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
 Values in parentheses are (span/max deflection) ratios

        <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
 SPAN     DL      DL+PT    DL+PT+CREEP         LL        DL+PT+LL+CREEP
 -1--------2--------3-----------4---------------5---------------6------
  1        .6       .3        .8(  886)       .2( 4139)       1.0(  730)
  2        .4       .2        .7( 1166)       .1( 5845)        .8(  972)
```

```
-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:              Nov 12,2020   At Time: 13:42
PROJECT FILE:                                                        FL3-CG


P R O J E C T   T I T L E:
Government Complex
FL3-CG

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................       .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
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 Max spacing between strands (factor of slab depth)        8.00
 Tendon profile type and support widths............   (see section 9)

 ANALYSIS OPTIONS USED:
 Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
 Moments REDUCED to face of support ...............        YES


 2 - I N P U T   G E O M E T R Y
 ==============================================================================

                 2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
 ------------------------------------------------------------------------------
 S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
 P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 A  P  R| LENGTH| WIDTH   DEPTH|  width thick.| width thick.|HEIGHT| left right
 N  E  M|   m    |   cm      cm |    cm     cm |   cm     cm |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
 1  U  1    8.40 800.00   23.00                                .00   .50   .50
 2  U  1    8.40 800.00   23.00                                .00   .50   .50
 3  U  1    8.40 800.00   23.00                                .00   .50   .50
 C  U  1    2.80 800.00   23.00                                .00   .50   .50
 ------------------------------------------------------------------------------
 LEGEND:
 1 - SPAN                                   3 - FORM
       C = Cantilever                             1 = Rectangular section
 2 - TYPE                                         2 = T or Inverted L section
       U = Uniform; prismatic                     3 = I section
       N = Nonuniform section                     4 = Extended T or L section
                                                  7 = Joist
                                                  8 = Waffle
                                             11 - Top surface to reference line


    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

        SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
         WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
 JOINT    cm        m       cm      cm              m       cm      cm
 --1-------2---------3-------4-------5-----6---------7-------8-------9----10---
    1     80.00      4.30  100.00   80.00  (1)      3.60  100.00   80.00  (1)
    2     80.00      4.30  100.00   80.00  (1)      3.60  100.00   80.00  (1)
    3     80.00      4.30  100.00   80.00  (1)      3.60  100.00   80.00  (1)
    4     80.00      4.30  100.00   80.00  (1)      3.60  100.00   80.00  (1)

 *THE COLUMN BOUNDARY CONDITION CODES (CBC)
 Fixed at both ends ...(STANDARD) ............................ = 1
 Hinged at near end, fixed at far end ........................ = 2
```

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 Fixed at near end, hinged at far end ......................... = 3
 Fixed at near end, roller with rotational fixity at far end .. = 4


3 - I N P U T   A P P L I E D   L O A D I N G
===========================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                    Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE     T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------

 1     L      U        .300      .00     8.40                          2.400
 1     D      U        .370      .00     8.40                          2.960
 1     SW     U                  .00     8.40                          4.416

 2     L      U        .300      .00     8.40                          2.400
 2     D      U        .370      .00     8.40                          2.960
 2     SW     U                  .00     8.40                          4.416

 3     L      U        .300      .00     8.40                          2.400
 3     D      U        .370      .00     8.40                          2.960
 3     SW     U                  .00     8.40                          4.416

CANT   D      U        .370      .00     2.80                          2.960
CANT   D      U        .370      .00     2.80                          2.960
CANT   SW     U                  .00     2.80                          4.416

 NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
===========================================================================

                    UNIFORM
                    ( T/m^2),    ( CON. or PART. )    ( M O M E N T )
SPAN  CLASS  TYPE   LINE( T/m)   (  T@m or  m-m  )    (  T-m  @  m  )
-1-----2------3---------4------------5-------6-----------7-------8------------

 1     L      U        .300
 1     D      U        .370
 2     L      U        .300
 2     D      U        .370
```

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  3     L      U          .300
  3     D      U          .370
 CANT   D      U          .370
 CANT   D      U          .370
  NOTE: SELFWEIGHT INCLUSION REQUIRED
        LIVE LOADING is SKIPPED with a skip factor of     .75


4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
==============================================================================

4.1   For Uniform Spans and Cantilevers only

SPAN          AREA              I               Yb              Yt
              cm^2             cm^4             cm              cm
-1-------------2----------------3---------------4-------------5-----
  1          18400.00        .8111E+06        11.50           11.50
  2          18400.00        .8111E+06        11.50           11.50
  3          18400.00        .8111E+06        11.50           11.50
 CANT.       18400.00        .8111E+06        11.50           11.50

Note:
  --- = Span/Cantilever is Nonuniform, see block 4.2


5 -  D E A D   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
==============================================================================

       < 5.1  S P A N   M O M E N T S   (Tm)  >    < 5.2 SPAN SHEARS  (T)  >
 SPAN      M(l)*        Midspan          M(r)*          SH(l)        SH(r)
--1---------2--------------3---------------4--------------5-----------6-------
  1       -29.97          25.72          -48.70         -28.75        33.21
  2       -44.96          21.18          -42.79         -31.24        30.72
  3       -43.49          22.04          -42.55         -31.09        30.87
 CANT     -40.52         -----           -----          -28.94        -----

Note:
   * = Centerline moments


JOINT   < 5.3 REACTIONS (T)   >   <- 5.4 COLUMN MOMENTS  (Tm)   ->
--1---------------2----------------Lower columns----Upper columns-----
  1              28.75                -14.01           -15.96
  2              64.45                  1.75             1.99
  3              61.81                  -.33             -.38
  4              59.81                   .95             1.08
```

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6 - L I V E L O A D M O M E N T S, S H E A R S & R E A C T I O N S

<-- 6.1 L I V E L O A D SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right
1	-9.77	1.02	8.39	-.87	-15.78	-2.41	-9.36	10.80
2	-14.43	-1.75	6.80	-1.75	-14.43	-1.75	-10.08	10.08
3	-15.78	-2.41	8.39	-.87	-9.77	1.02	-10.80	9.36
CR	.00		-----		-----		.00	-----

Note:
* = Centerline moments

JOINT	<- 6.2 REACTIONS (T) -> max	min	<-------- 6.3 COLUMN MOMENTS (Tm) --------> <--- LOWER COLUMN ---> max	min	<--- UPPER COLUMN ---> max	min
1	9.96	-.60	.63	-5.20	.72	-5.93
2	21.60	9.96	4.57	-3.93	5.20	-4.48
3	21.60	9.96	3.93	-4.57	4.48	-5.20
4	9.96	-.60	5.20	-.63	5.93	-.72

Note: Block 6.1 through 6.3 values are maxima of all skipped loading cases

7 - M O M E N T S REDUCED TO FACE-OF-SUPPORT

7.1 R E D U C E D DEAD LOAD MOMENTS (Tm)

SPAN	<- left* ->	<- midspan ->	<- right* ->
1	-19.06	25.72	-36.00
2	-33.05	21.18	-31.09
3	-31.65	22.04	-30.79
CANT	-29.77	-----	-----

Note:
* = face-of-support

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7.2 R E D U C E D LIVE LOAD MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
1	-6.22	.84	8.39	-.87	-11.66	-2.25
2	-10.59	-1.75	6.80	-1.75	-10.59	-1.75

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  3        -11.66      -2.25        8.39       -.87       -6.22        .84
 CR           .00                  -----                  -----

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS   (Tm)
 ==============================================================================
 Maxima of dead load and live load span moments combined
 for serviceability checks    (  1.00DL +  1.00LL )

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min         max        min         max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1        -25.28     -18.22       34.11      24.85      -47.66     -38.25
  2        -43.64     -34.79       27.98      19.43      -41.68     -32.83
  3        -43.31     -33.90       30.43      21.17      -37.01     -29.95
 CR        -29.77                  -----                  -----

 Note:
    * = face-of-support


 9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
 ==============================================================================

 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon


 9.2      T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
 ----------1--------2----------3----------4----------5------
  1         1       .100       .500       .100       .000
  2         1       .100       .500       .100       .000
  3         1       .100       .500       .100       .000
 CANT       1       .100
```

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9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE

Tendon editing mode selected: TENDON SELECTION

SPAN	SELECTED VALUES FORCE (T/-)	DISTANCE OF CGS (cm) Left	Center	Right	CALCULATED VALUES P/A (Kg/cm^2)	Wbal (T/-)	Wbal (%DL)
1	260.269	-11.50	-17.40	-4.20	14.15	2.818	38
2	271.554	-4.20	-17.40	-4.20	14.76	4.064	55
3	262.573	-4.20	-17.40	-4.20	14.27	3.930	53
CANT	251.472	-4.20		-11.50	14.00	4.797	46

Approximate weight of strand ..... 495.9 Kg

9.35 - TENDON SELECTION DATA:

TYPE	SEL.	FORCE (T)	TENDON EXTENTS <1>	<2>	<3>	<C>
A	10	12.03	<===	=====	=====	===|
B	4	12.03	<===	=====	=====	===|
C	8	11.86	|===	=====	=====	===>

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	BASED ON STRESS CONDITIONS LEFT*	CENTER	RIGHT*	BASED ON MINIMUM P/A LEFT	CENTER	RIGHT
1	61.24	163.16	249.94	184.00	184.00	184.00
2	205.21	76.23	183.87	184.00	184.00	184.00
3	198.10	102.52	145.10	184.00	184.00	184.00
CANT	95.07	-----	-----	184.00	-----	-----

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2) (tension shown positive)

	LEFT * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	RIGHT * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	10.53	-----	-----	-38.18	27.35	-----	-----	-56.24
2	20.07	-----	-----	-49.09	15.85	-----	-----	-45.30
3	18.50	-----	-----	-47.68	12.15	-----	-----	-40.14
CR	8.82	-----	-----	-36.51	-----	-----	-----	-----

Note:
* = face-of-support

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C E N T E R

	TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	-----	-46.95	18.66	-----
2	-----	-33.82	4.31	-7.81
3	-----	-37.38	8.84	-4.29
CR	-----	-----	-----	-----

9.7 POST-TENSIONING B A L A N C E D M O M E N T S, SHEARS & REACTIONS

SPAN	<-- S P A N M O M E N T S (Tm) --> left*	midspan	right*	<-- SPAN SHEARS (T) --> SH(l)	SH(r)
1	8.10	-10.97	18.18	1.16	1.16
2	19.25	-14.54	20.11	-.11	-.11
3	19.97	-14.13	18.57	.10	.10
CANT	13.79	-----	-----	11.14	-----

Note:
* = face-of-support

-joint	<--REACTIONS (T)-->	<-- COLUMN MOMENTS (Tm) --> Lower columns	Upper columns
1	-1.162	4.330	4.932
2	1.276	.705	.803
3	-.216	-.078	-.089
4	.103	-.776	-.884

10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
1	-28.46	-16.46	54.66	38.91	-70.26	-54.26
2	-63.19	-48.15	43.07	28.54	-58.92	-43.88
3	-61.65	-45.65	47.21	31.46	-51.98	-39.98
CR	-41.68		-----		-----	

Note:
* = face-of-support

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10.2 SECONDARY MOMENTS (Tm)

SPAN	<-- left* -->	<- midspan ->	<-- right* -->
1	8.80	4.38	-.03
2	1.09	1.85	2.61
3	2.48	2.09	1.70

Note:
* = face-of-support

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JOINT	10.3 FACTORED REACTIONS (T) max	min	10.4 FACTORED COLUMN MOMENTS (Tm) <-- LOWER column --> max	min	<-- UPPER column --> max	min
1	56.03	38.07	-14.21	-24.13	-16.18	-27.49
2	128.23	108.43	10.92	-3.54	12.44	-4.03
3	123.04	103.24	6.15	-8.31	7.00	-9.46
4	100.78	82.82	9.40	-.53	10.70	-.60

11 - M I L D S T E E L

Support cut-off length for minimum steel(length/span) ... .17
Span cut-off length for minimum steel(length/span) ... .33
Top bar extension beyond where required ..... 30.00 cm
Bottom bar extension beyond where required ..... 30.00 cm

REINFORCEMENT based on NO REDISTRIBUTION of factored moments

11.1 TOTAL WEIGHT OF REBAR = 24.8 Kg AVERAGE = .1 Kg/m^2
TOTAL AREA COVERED = 224.00 m^2

11.2.1 S T E E L A T M I D - S P A N

SPAN	TOP As (cm^2)	DIFFERENT REBAR CRITERIA <---ULT-----TENS-------->			BOTTOM As (cm^2)	DIFFERENT REBAR CRITERIA <---ULT-----TENS-------->		
1	.0	(.0	.0	.0)	.0	(.0	.0	.0)
2	.0	(.0	.0	.0)	.0	(.0	.0	.0)
3	.0	(.0	.0	.0)	.0	(.0	.0	.0)

11.3.1 S T E E L A T S U P P O R T S

JOINT	TOP As (cm^2)	DIFFERENT REBAR CRITERIA <---ULT-----MIN--------->	BOTTOM As (cm^2)	DIFFERENT REBAR CRITERIA <---ULT-----MIN--------->

```
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--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1        .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2      12.7  (   12.7      .0      .0)         .0  (     .0      .0      .0)
  3        .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  4        .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-------------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
  1    1     T      4 #  5 x    144        8.0
  1    2     T      3 #  5 x    102        6.0
-------------------------------------------------------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.


11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
  1    |  1   RIGHT    |   4 #  5 x     72     |
  1    |  2   RIGHT    |   3 #  5 x     72     |
-------|---------------|-----------------------|
  2    |  1   LEFT     |   4 #  5 x     72     |
  2    |  2   LEFT     |   3 #  5 x     30     |
-------|---------------|-----------------------|


11.5.2     ARRANGEMENT OF BOTTOM BARS

-------|-------- BOTTOM STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|


12 -  P U N C H I N G   S H E A R   C H E C K
===============================================================================

LEGEND:
CONDITION... 1 = INTERIOR COLUMN
             2 = END COLUMN
             3 = CORNER COLUMN
             4 = EDGE COLUMN (PARALLEL TO SPAN)
             5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                 PERFORM SHEAR CHECK MANUALLY
             6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR
```

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CASE..... 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)

JNT	COND.	FACTORED ACTIONS shear T	moment T-m	<- PUNCHING SHEAR STRESSES IN Kg/cm^2 -> due to shear	due to moment	TOTAL	allow-able	STRESS RATIO	CASE
1	2	56.03	51.62	9.38	7.05	16.43	17.10	.96	1
2	1	128.23	23.36	14.65	2.87	17.52	18.00	.97	1
3	1	123.04	17.77	14.05	2.19	16.24	18.00	.90	1
4	1	100.78	20.10	11.51	2.47	13.98	17.88	.78	1

PUNCHING SHEAR CHECK SATISFACTORY
NO ADDITIONAL REBAR OR CHANGE IN SECTION IS NECESSARY

13 - MAXIMUM S P A N D E F L E C T I O N S

Concrete`s modulus of elasticity ..... Ec = 287.00 T/cm^2
Creep factor ..... K = 2.00
Ieffective/Igross...(due to cracking)..... K = 1.00

Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
Values in parentheses are (span/max deflection) ratios

SPAN	<.....DEFLECTION ARE ALL IN cm DL	DL+PT	DL+PT+CREEP	, DOWNWARD POSITIVE.....> LL	DL+PT+LL+CREEP
1	.6	.3	1.0(815)	.2(4579)	1.2(692)
2	.4	.1	.4(2310)	.1(6976)	.5(1735)
3	.4	.2	.5(1743)	.2(4582)	.7(1262)
CANR	.3	.2	.5(511)	-.1(2420)	.4(649)

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```
-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:              Nov 16,2020   At Time: 15:20
PROJECT FILE:                                                   FL5-C10--TOP


P R O J E C T   T I T L E:
Government Complex
FL5-C10--TOP

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS ............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top ...........................................       1.590
At Bottom ........................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................       .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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 Max spacing between strands (factor of slab depth)        8.00
 Tendon profile type and support widths............   (see section 9)

 ANALYSIS OPTIONS USED:
 Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
 Moments REDUCED to face of support ...............        YES


 2 - I N P U T   G E O M E T R Y
 ==============================================================================

                 2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
 ------------------------------------------------------------------------------
 S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
 P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 A  P  R| LENGTH| WIDTH   DEPTH| width thick.| width thick.|HEIGHT| left right
 N  E  M|   m   |   cm      cm  |   cm     cm |   cm     cm |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
 C  U  1    3.00 840.00   23.00                                .00   .50   .50
 1  U  1    8.00 840.00   23.00                                .00   .50   .50
 2  N  1    8.00 840.00   23.00                                .00   .50   .50
 C  N  1    4.45 840.00   35.00                                .00   .50   .50
 ------------------------------------------------------------------------------
 LEGEND:
 1 - SPAN                                   3 - FORM
       C = Cantilever                             1 = Rectangular section
 2 - TYPE                                         2 = T or Inverted L section
       U = Uniform; prismatic                     3 = I section
       N = Nonuniform section                     4 = Extended T or L section
                                                  7 = Joist
                                                  8 = Waffle
                                             11 - Top surface to reference line


                 2.1.2  DETAILED DATA FOR NONUNIFORM SPANS
 ------------------------------------------------------------------------------
 The following are geometry of nonuniform spans and/or cantilevers.
 Left distance is  from left support centerline to start of a span segment.


 ------------------------------------------------------------------------------
    F |        |               |     TOP      |BOTTOM/MIDDLE|       |
 S  O |  LEFT  |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 E  R |DISTANCE| WIDTH   DEPTH| width thick.| width thick.|HEIGHT| left right
 G  M |   m    |   cm      cm  |   cm     cm |   cm     cm |  cm  |
-1--2------4-------5-------6-------7------8------9------10----11-----12----13-
 SPAN: 2
 1  1       .00 840.00   23.00                                .00   .50   .50
 2  1       .50 840.00   23.00                                .00   .50   .50
 3  1      6.50 840.00   35.00                                .00   .50   .50
 4  1      7.50 840.00   35.00                                .00   .50   .50
```

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  CANTILEVER RIGHT
  1  1        .00 840.00   35.00                                  .00   .50   .50
  2  1       2.50 840.00   35.00                                  .00   .50   .50
  3  1       2.50 840.00   23.00                                  .00   .50   .50
 ------------------------------------------------------------------------------
```

```
    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

        SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
         WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
JOINT     cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)
   2    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)
   3    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ............................ = 1
Hinged at near end, fixed at far end ........................ = 2
Fixed at near end, hinged at far end ........................ = 3
Fixed at near end, roller with rotational fixity at far end .. = 4
```

```
3 - I N P U T   A P P L I E D   L O A D I N G
==============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                   Intensity  ( From ...  To )  ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE    T/m^2    (  m        m  )  ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------
CANT   L      U        .300      .00      3.00                          2.520
CANT   D      U        .370      .00      3.00                          3.108
CANT   SW     U                  .00      3.00                          4.637

 1     L      U        .300      .00      8.00                          2.520
 1     D      U        .370      .00      8.00                          3.108
 1     SW     U                  .00      8.00                          4.637

 2     L      U        .300      .00       .50                          2.520
 2     L      U        .300      .50      6.50                          2.520
```

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  2     L     U        .300     6.50     7.50                          2.520
  2     L     U        .300     7.50     8.00                          2.520
  2     D     U        .370      .00      .50                          3.108
  2     D     U        .370      .50     6.50                          3.108
  2     D     U        .370     6.50     7.50                          3.108
  2     D     U        .370     7.50     8.00                          3.108
  2     SW    P                 .00      .50                          4.637
  2     SW    P                 .50     6.50                          4.637
  2     SW    P                6.50     7.50                          7.056
  2     SW    P                7.50     8.00                          7.056

 CANT   L     U        .300      .00     2.50                          2.520
 CANT   L     U        .300     2.50     4.45                          2.520
 CANT   D     U        .370      .00     2.50                          3.108
 CANT   D     U        .370     2.50     4.45                          3.108
 CANT   SW    P                 .00     2.50                          7.056
 CANT   SW    P                2.50     4.45                          4.637

  NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


 3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
 ==============================================================================

                      UNIFORM
                      ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
 SPAN  CLASS  TYPE    LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
 -1-----2------3---------4------------5-------6-----------7-------8------------
 CANT   L     U        .300
 CANT   D     U        .370
  1     L     U        .300
  1     D     U        .370
  2     L     U        .300
  2     D     U        .370
 CANT   L     U        .300
 CANT   D     U        .370
  NOTE: SELFWEIGHT INCLUSION REQUIRED
        LIVE LOADING is SKIPPED with a skip factor of     .75


 4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
 ==============================================================================

 4.1   For Uniform Spans and Cantilevers only

 SPAN          AREA              I               Yb              Yt
               cm^2              cm^4            cm              cm
 -1-------------2----------------3---------------4-------------5-----
  CANT.       19320.00        .8517E+06        11.50           11.50
   1          19320.00        .8517E+06        11.50           11.50
   2             ---             ---            ---             ---
```

```
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  CANT.          ---              ---            ---            ---

 Note:
   --- = Span/Cantilever is Nonuniform, see block 4.2


 4.2 - Computed Section Properties for Segments of Nonprismatic Spans
 ------------------------------------------------------------------------------
 Section properties are listed for all segments of each span
 A= cross-sectional geometry      Yt= centroidal distance to top fiber
 I= gross moment of inertia       Yb= centroidal distance to bottom fiber

 SPAN          AREA              I                Yb             Yt
 (SEGMENT)     cm^2             cm^4              cm             cm
 ---------------2----------------3---------------4-------------5-----
 SPAN  2
   1          19320.00        .8517E+06         11.50          11.50
   2          19320.00        .8517E+06         11.50          11.50
   3          29400.00        .3001E+07         17.50          17.50
   4          29400.00        .3001E+07         17.50          17.50
 CANTILEVER RIGHT
   1          29400.00        .3001E+07         17.50          17.50
   2          29400.00        .3001E+07         17.50          17.50
   3          19320.00        .8517E+06         11.50          11.50


 5 -  D E A D   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ==============================================================================

       < 5.1  S P A N   M O M E N T S   (Tm)  >    < 5.2 SPAN SHEARS  (T)  >
  SPAN      M(l)*        Midspan          M(r)*          SH(l)        SH(r)
 --1---------2-------------3---------------4--------------5-----------6-------
  CANT      -----         -----           -34.85          -----        23.23
   1       -40.11         21.89           -40.02         -30.99        30.97
   2       -34.63         14.59           -62.84         -27.79        37.79
  CANT     -84.24         -----            -----         -40.51        -----

 Note:
    * = Centerline moments


 JOINT   < 5.3 REACTIONS (T)   >   <- 5.4 COLUMN MOMENTS  (Tm)   ->
 --1---------------2----------------Lower columns----Upper columns-----
   1              54.22                 -2.46            -2.80
   2              58.76                  2.52             2.87
   3              78.31                -10.14           -11.26


 6 -  L I V E   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ==============================================================================
```

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<-- 6.1 L I V E L O A D SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right
CL	-----		-----		-11.34		-----	7.56
1	-13.04	-1.74	7.11	-1.44	-13.05	-.72	-10.08	10.08
2	-11.35	-1.18	5.36	-1.75	-19.34	-1.99	-9.08	11.08
CR	-24.95		-----		-----		-11.21	-----

Note:
* = Centerline moments

<- 6.2 REACTIONS (T) -> <-------- 6.3 COLUMN MOMENTS (Tm) -------->

JOINT	max	min	<--- LOWER COLUMN ---> max	min	<--- UPPER COLUMN ---> max	min
1	18.14	7.66	4.22	-5.01	4.80	-5.71
2	20.80	8.11	4.45	-3.66	5.07	-4.17
3	23.07	10.14	7.91	-10.56	8.78	-11.73

Note: Block 6.1 through 6.3 values are maxima of all skipped loading cases

7 - M O M E N T S REDUCED TO FACE-OF-SUPPORT

7.1 R E D U C E D DEAD LOAD MOMENTS (Tm)

SPAN	<- left* ->	<- midspan ->	<- right* ->
CANT	-----	-----	-24.20
1	-25.59	21.89	-25.51
2	-21.70	14.59	-45.21
CANT	-65.26	-----	-----

Note:
* = face-of-support

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7.2 R E D U C E D LIVE LOAD MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
CL	-----		-----		-7.88	
1	-8.32	-1.70	7.11	-1.44	-8.32	-.79
2	-7.13	-1.24	5.36	-1.75	-14.12	-1.96
CR	-19.66		-----		-----	

Note:

```
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-------------------------------------------------------------------------------

   * = face-of-support


8 -   SUM OF DEAD AND LIVE MOMENTS   (Tm)
===============================================================================
Maxima of dead load and live load span moments combined
for serviceability checks    (  1.00DL +  1.00LL )

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
SPAN        max        min         max        min         max        min
-1----------2----------3-----------4----------5-----------6----------7-----
CL         -----                  -----                 -32.08
 1        -33.91     -27.29       29.00      20.45      -33.83     -26.30
 2        -28.83     -22.94       19.95      12.84      -59.33     -47.17
CR        -84.92                  -----                  -----

Note:
   * = face-of-support


9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
===============================================================================

9.1   PROFILE TYPES AND PARAMETERS
LEGEND:
  For Span:
         1 = reversed parabola
         2 = simple parabola with straight portion over support
         3 = harped tendon

  For Cantilever:
         1 = simple parabola
         2 = partial parabola
         3 = harped tendon


9.2      T E N D O N        P R O F I L E
         TYPE     X1/L       X2/L       X3/L       A/L
----------1--------2----------3----------4----------5------
CANT      1                              .000
 1        1        .100       .500       .100       .000
 2        2        .000       .500       .165       .000
CANT      2        .517


9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
===============================================================================
Tendon editing mode selected: TENDON SELECTION
```

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SPAN	FORCE (T/-)	DISTANCE OF CGS (cm) Left	Center	Right	P/A (Kg/cm^2)	Wbal (T/-)	Wbal (%DL)
CANT	195.855	-11.50		-4.20	10.35	3.245	42
1	204.877	-4.20	-17.40	-4.20	10.60	3.380	44
2	207.555	-4.20	-17.40	-4.20	10.74	4.268	52
CANT	290.887	-4.20		-11.50	9.89	4.440	49

Approximate weight of strand ..... 372.4 Kg

9.35 - TENDON SELECTION DATA:

TYPE	SEL.	FORCE (T)	TENDON EXTENTS <C>	<1>	<2>	<C>
A	17	11.94	==========			
C	9	10.63			=====	

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	BASED ON STRESS CONDITIONS LEFT*	CENTER	RIGHT*	BASED ON MINIMUM P/A LEFT	CENTER	RIGHT
CANT	-----	-----	112.07	-----	-----	193.20
1	113.07	76.45	106.98	193.20	193.20	193.20
2	72.37	.00	50.32	193.20	193.20	294.00
CANT	180.63	-----	-----	294.00	-----	-----

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2)(tension shown positive)

	LEFT * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	RIGHT * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
CL	-----	-----	-----	-----	19.41	-----	-----	-39.85
1	17.25	-----	-----	-38.07	14.77	-----	-----	-36.25
2	12.18	-----	-----	-34.01	5.81	-1.28	-----	-26.13
CR	16.79	-----	-----	-37.13	-----	-----	-----	-----

Note:
* = face-of-support

CENTER

TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C

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 -1-----------------------2--------3--------4--------5----------------------
 CL                      -----    -----    -----    -----
  1                      -----   -35.13    13.93    -----
  2                      -----   -22.68     1.19    -8.41
 CR                      -----    -----    -----    -----


 9.7   POST-TENSIONING   B A L A N C E D   M O M E N T S, SHEARS & REACTIONS

          <-- S P A N   M O M E N T S (Tm  ) -->     <-- SPAN SHEARS (T ) -->
  SPAN     left*          midspan        right*           SH(l)      SH(r)
 --1---------2--------------3--------------4---------------5----------6------
  CANT      -----          -----          10.13          -----       7.91
   1        13.42         -10.84          14.94           -.19       -.19
   2        11.72         -11.11          31.94            .53        .53
  CANT      38.69          -----          -----            .00      -----

 Note:
    * = face-of-support


           <--REACTIONS (T )-->      <--  COLUMN MOMENTS  (Tm  ) -->
 -joint------------2----------------Lower columns-----Upper columns-----
   1              .191                   .559              .637
   2             -.722                   .581              .662
   3              .530                  3.043             3.379


 10 - F A C T O R E D   M O M E N T S   &   R E A C T I O N S
 ==============================================================================
 Calculated as ( 1.40D + 1.70L + 1.00 secondary moment effects)

 10.1   FACTORED DESIGN MOMENTS  (Tm)

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN       max        min         max        min         max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
 CL        -----                  -----                 -47.27
  1       -49.06     -37.82       41.63      27.09      -53.00     -40.19
  2       -44.95     -34.94       25.23      13.14      -93.46     -72.78
 CR      -124.79                  -----                  -----

 Note:
    * = face-of-support


 10.2   SECONDARY MOMENTS  (Tm)
 SPAN    <-- left* -->   <- midspan  ->   <-- right* -->
 -1-----------2----------------3----------------4--------
  1            .91            -1.12            -3.14
```

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  2          -2.45            -4.30            -6.16

 Note:
    * = face-of-support


      10.3 FACTORED REACTIONS      10.4 FACTORED COLUMN MOMENTS   (Tm)
                (T)             <-- LOWER column -->   <-- UPPER column -->
 JOINT      max        min         max        min         max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1       106.94      89.12        4.28     -11.41        4.88     -12.99
  2       116.90      95.33       11.68      -2.11       13.30      -2.40
  3       149.38     127.40        2.29     -29.10        2.54     -32.33


 11 - M I L D   S T E E L
 ==============================================================================

 Support cut-off length for minimum steel(length/span) ...     .17
 Span    cut-off length for minimum steel(length/span) ...     .33
 Top     bar extension beyond where required .............  30.00 cm
 Bottom  bar extension beyond where required .............  30.00 cm


       REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
 ------------------------------------------------------------------------------
 11.1     TOTAL WEIGHT OF REBAR =        44.5  Kg     AVERAGE =       .2 Kg/m^2
          TOTAL AREA COVERED    =      196.98   m^2


 11.2.1     S T E E L   A T   M I D - S P A N
                    T O P                                  B O T T O M
          As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
  SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
 --1------2---------3-------4-------5-----------6---------7-------8-------9----
   1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
   2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)


 11.3.1     S T E E L   A T   S U P P O R T S
                    T O P                                  B O T T O M
          As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
 --1------2---------3-------4-------5-----------6---------7-------8-------9----
   1      4.2  (    4.2      .0      .0)         .0  (     .0      .0      .0)
   2      8.4  (    8.4      .0      .0)         .0  (     .0      .0      .0)
   3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

 11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

 -------------------------------------------------------
 SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
```

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 --1----2-----3------4----5-------6---------7----------
   0    1     T      2 #  5 x    120       4.0
   0    2     T      2 #  5 x     60       4.0
 -------------------------------------------------------
   1    3     T      5 #  5 x     60      10.0
 -------------------------------------------------------
 Notes:
 Bar location - T = Top, B = Bottom.
 NUM - Number of bars.
 For two-way systems a minimum of 4 bars is specified over the supports.
 Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
 positioning of bars.


 11.5.1     ARRANGEMENT OF TOP BARS

 -------|----------- TOP STEEL -----------------|
 SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
 --1----|--2------3-----|---4----5------6-------|
   0    |  1   RIGHT    |   2 #  5 x     90     |
   0    |  2   RIGHT    |   2 #  5 x     60     |
 -------|---------------|----------------------|
   1    |  1   LEFT     |   2 #  5 x     30     |
   1    |  3   RIGHT    |   5 #  5 x     30     |
   1    |  2   LEFT     |   2 #  5 x     30     |
 -------|---------------|----------------------|
   2    |  3   LEFT     |   3 #  5 x     30     |
 -------|---------------|----------------------|


 11.5.2     ARRANGEMENT OF BOTTOM BARS

 -------|-------- BOTTOM STEEL -----------------|
 SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
 --1----|--2------3-----|---4----5------6-------|


 12 -  P U N C H I N G   S H E A R   C H E C K
 ==============================================================================

 LEGEND:
 CONDITION... 1 = INTERIOR COLUMN
              2 = END COLUMN
              3 = CORNER COLUMN
              4 = EDGE COLUMN (PARALLEL TO SPAN)
              5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                  PERFORM SHEAR CHECK MANUALLY
              6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

 CASE........ 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
              2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)


            FACTORED ACTIONS   <- PUNCHING SHEAR STRESSES IN Kg/cm^2 ->
```

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                shear   moment    due to   due to            allow-   STRESS
 JNT  COND.       T      T-m      shear    moment    TOTAL     able    RATIO  CASE
 -1----2-------3-------4---------5---------6--------7---------8-------9-----10-
  1    1      106.94    24.40    12.22     3.06     15.27     16.94    .90   1
  2    1      116.90    24.98    13.35     3.13     16.49     16.98    .97   1
  3    1      149.38    61.43     9.60     3.87     13.47     17.70    .76   1


 PUNCHING SHEAR CHECK SATISFACTORY
 NO ADDITIONAL REBAR OR CHANGE IN SECTION IS NECESSARY


  13 - MAXIMUM  S P A N   D E F L E C T I O N S
 ===========================================================================

  Concrete`s modulus of elasticity ............... Ec =   287.00 T/cm^2
  Creep factor ................................... K  =     2.00
  Ieffective/Igross...(due to cracking)........... K  =     1.00

  Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
  Values in parentheses are (span/max deflection) ratios

         <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
 SPAN      DL       DL+PT    DL+PT+CREEP          LL        DL+PT+LL+CREEP
 -1--------2--------3-----------4---------------5---------------6------
 CANL      .3        .1        .4(  688)       .1( 3460)       .5(  574)
  1        .4        .2        .6( 1298)       .1( 6570)       .7( 1084)
  2        .2        .0        .1( 6561)       .1(12579)       .2( 4312)
 CANR      .6        .1        .3( 1728)       .2( 2529)       .4( 1027)
```

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-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:              Nov 13,2020   At Time: 14:17
PROJECT FILE:                                                        FL5-CE


P R O J E C T   T I T L E:
Data center
FL5-CE

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS ............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top ...........................................       1.590
At Bottom ........................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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 Max spacing between strands (factor of slab depth)       8.00
 Tendon profile type and support widths............  (see section 9)

 ANALYSIS OPTIONS USED:
 Structural system ....(using EQUIVALENT FRAME)....     TWO-WAY
 Moments REDUCED to face of support ...............       YES


 2 - I N P U T   G E O M E T R Y
 ==============================================================================

                 2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
 ------------------------------------------------------------------------------
 S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
 P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 A  P  R| LENGTH| WIDTH   DEPTH|  width thick.| width thick.|HEIGHT| left right
 N  E  M|   m   |   cm      cm  |   cm     cm  |  cm     cm  |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
 C  U  1    3.55 800.00   23.00                                .00   .50   .50
 1  U  1    8.40 800.00   23.00                                .00   .50   .50
 2  U  1    8.00 800.00   23.00                                .00   .50   .50
 ------------------------------------------------------------------------------
 LEGEND:
 1 - SPAN                                  3 - FORM
       C = Cantilever                            1 = Rectangular section
 2 - TYPE                                        2 = T or Inverted L section
       U = Uniform; prismatic                    3 = I section
       N = Nonuniform section                    4 = Extended T or L section
                                                 7 = Joist
                                                 8 = Waffle
                                            11 - Top surface to reference line


    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

        SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
         WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
 JOINT    cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1     80.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)
   2     80.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)
   3       .00      4.30     .00     .00  (2)       3.65     .00     .00  (2)

 *THE COLUMN BOUNDARY CONDITION CODES (CBC)
 Fixed at both ends ...(STANDARD) ............................ = 1
 Hinged at near end, fixed at far end ........................ = 2
 Fixed at near end, hinged at far end ........................ = 3
 Fixed at near end, roller with rotational fixity at far end .. = 4
```

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3 - I N P U T   A P P L I E D   L O A D I N G
==============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                     Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE      T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------
CANT   L      U         .300      .00      3.55                          2.400
CANT   D      U         .370      .00      3.55                          2.960
CANT   SW     U                   .00      3.55                          4.416

 1     L      U         .300      .00      8.40                          2.400
 1     D      U         .370      .00      8.40                          2.960
 1     SW     U                   .00      8.40                          4.416

 2     L      U         .300      .00      8.00                          2.400
 2     D      U         .370      .00      8.00                          2.960
 2     SW     U                   .00      8.00                          4.416


 NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
==============================================================================

                     UNIFORM
                     ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
SPAN  CLASS  TYPE    LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
-1-----2------3---------4------------5-------6-----------7-------8------------
CANT   L      U         .300
CANT   D      U         .370
 1     L      U         .300
 1     D      U         .370
 2     L      U         .300
 2     D      U         .370
 NOTE: SELFWEIGHT INCLUSION REQUIRED
       LIVE LOADING is SKIPPED with a skip factor of     .75
```

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4 - CALCULATED SECTION PROPERTIES

4.1 For Uniform Spans and Cantilevers only

SPAN	AREA cm^2	I cm^4	Yb cm	Yt cm
CANT.	18400.00	.8111E+06	11.50	11.50
1	18400.00	.8111E+06	11.50	11.50
2	18400.00	.8111E+06	11.50	11.50

Note:
--- = Span/Cantilever is Nonuniform, see block 4.2

5 - DEAD LOAD MOMENTS, SHEARS & REACTIONS

	< 5.1 SPAN MOMENTS (Tm) >			< 5.2 SPAN SHEARS (T) >	
SPAN	M(l)*	Midspan	M(r)*	SH(l)	SH(r)
CANT	-----	-----	-46.48	-----	26.18
1	-42.92	20.23	-46.73	-30.53	31.43
2	-55.63	31.19	.00	-36.46	22.55

Note:
* = Centerline moments

JOINT	< 5.3 REACTIONS (T) >	<- 5.4 COLUMN MOMENTS (Tm) ->	
		Lower columns	Upper columns
1	56.71	1.66	1.89
2	67.89	-4.16	-4.74
3	22.55	.00	.00

6 - LIVE LOAD MOMENTS, SHEARS & REACTIONS

<-- 6.1 LIVE LOAD SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

	<----- left* ----->		<--- midspan --->		<---- right* ----->		<--SHEAR FORCE-->	
SPAN	max	min	max	min	max	min	left	right
CL	-----		-----		-15.12		-----	8.52
1	-13.97	-2.22	7.09	-2.15	-15.21	-2.09	-9.93	10.23
2	-18.10	-2.16	10.15	-1.27	.00	.00	-11.86	7.34

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 Note:
    * = Centerline moments


       <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN --->  <--- UPPER COLUMN --->
 JOINT        max        min          max        min          max        min
 --1----------2---------3----------4---------5----------6---------7----
   1         19.21       8.54         5.69      -5.15         6.48      -5.86
   2         22.93       9.83         4.22      -5.58         4.81      -6.35
   3          7.76       -.42          .00        .00          .00        .00

 Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


 7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
 ===========================================================================

          7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

  SPAN        <- left* ->  <- midspan ->   <- right* ->
 --1--------------2------------3------------4-----------------------------
  CANT           -----        -----        -36.59
   1            -31.30       20.23        -34.75
   2            -41.64       31.19           .00

 Note:
    * = face-of-support


          7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min          max        min          max        min
 -1----------2---------3----------4---------5----------6----------7-----
 CL         -----                  -----                  -11.91
  1        -10.18      -2.21        7.09      -2.15       -11.31      -2.09
  2        -13.55      -2.06       10.15      -1.27          .00        .00

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
 ===========================================================================
 Maxima of dead load and live load span moments combined
 for serviceability checks    (  1.00DL +  1.00LL )

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min          max        min          max        min
 -1----------2---------3----------4---------5----------6----------7-----
```

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 CL        -----                  -----                  -48.50
  1       -41.48     -33.51      27.32      18.08      -46.06     -36.84
  2       -55.19     -43.69      41.34      29.92         .00        .00

 Note:
    * = face-of-support


 9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
 ==============================================================================

 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon


 9.2      T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
 ----------1--------2----------3----------4----------5------
 CANT      1                              .000
  1        1       .100       .500       .100       .000
  2        1       .100       .500       .100       .000


 9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
 ==============================================================================
 Tendon editing mode selected: TENDON SELECTION

          <--------  SELECTED VALUES  -------->   <--- CALCULATED VALUES --->
            FORCE   <- DISTANCE OF CGS (cm) ->       P/A        Wbal     Wbal
  SPAN      (T/-)     Left     Center     Right     (Kg/cm^2)    (T/-)    (%DL)
 --1----------2---------3--------4--------5-----------6----------7--------8--
  CANT    318.848   -11.50              -4.20        17.60      3.751      51
   1      327.937    -4.20   -10.40     -4.20        17.82      2.305      31
   2      333.627    -4.20   -17.40    -11.50        18.13      3.983      54

 Approximate weight of strand ..........................      439.7 Kg

 9.35 - TENDON SELECTION DATA:
```

```
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TYPE  SEL. FORCE  <------------------ TENDON EXTENTS ------------------------>
           (T )    <C>   <1>   <2>
--1----2-----3---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
  B   27   12.20    <==============|
```

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	<- BASED ON STRESS CONDITIONS -> LEFT*	CENTER	RIGHT*	<- BASED ON MINIMUM P/A -> LEFT	CENTER	RIGHT
CANT	-----	-----	286.92	-----	-----	184.00
1	258.63	112.68	311.33	184.00	184.00	184.00
2	318.51	212.85	.00	184.00	184.00	184.00

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2) (tension shown positive)

	L E F T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	R I G H T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
CL	-----	-----	-----	-----	24.95	-----	-----	-59.97
1	22.33	-----	-----	-57.62	26.94	-----	-----	-63.45
2	27.06	-----	-----	-63.60	-----	-17.88	-----	-17.88

Note:
* = face-of-support

C E N T E R

	TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
CL	-----	-----	-----	-----
1	-----	-48.23	12.58	-.52
2	-----	-49.63	13.37	-2.82

9.7 POST-TENSIONING B A L A N C E D M O M E N T S, SHEARS & REACTIONS

SPAN	<-- S P A N M O M E N T S (Tm) --> left*	midspan	right*	<-- SPAN SHEARS (T) --> SH(l)	SH(r)
CANT	-----	-----	18.55	-----	11.44
1	13.29	-5.87	14.18	-.07	-.07
2	23.22	-19.12	.00	.14	.14

Note:
* = face-of-support

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joint	<--REACTIONS (T)--> 2	<-- COLUMN MOMENTS (Tm) --> Lower columns	Upper columns
1	.066	-4.276	-4.870
2	-.207	4.825	5.496
3	.140	.000	.000

10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
CL	-----		-----		-71.47	
1	-70.27	-56.72	31.20	15.49	-77.07	-61.40
2	-80.26	-60.72	61.48	42.07	.00	.00

Note:
* = face-of-support

10.2 SECONDARY MOMENTS (Tm)

SPAN	<-- left* --> 2	<- midspan -> 3	<-- right* --> 4
1	-9.15	-9.17	-9.19
2	1.07	.56	.00

Note:
* = face-of-support

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JOINT	10.3 FACTORED REACTIONS (T) max	min	10.4 FACTORED COLUMN MOMENTS (Tm) <-- LOWER column --> max	min	<-- UPPER column --> max	min
1	112.12	93.98	7.72	-10.70	8.80	-12.19
2	133.82	111.56	6.18	-10.48	7.04	-11.94
3	44.90	30.99	.00	.00	.00	.00

11 - M I L D S T E E L

Support cut-off length for minimum steel(length/span) ... .17

```
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Span    cut-off length for minimum steel(length/span) ...     .33
Top     bar extension beyond where required .............  30.00 cm
Bottom  bar extension beyond where required .............  30.00 cm


      REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
-------------------------------------------------------------------------------
11.1     TOTAL WEIGHT OF REBAR =        40.0  Kg     AVERAGE =       .3 Kg/m^2
         TOTAL AREA COVERED    =      159.60   m^2


11.2.1     S T E E L    A T    M I D - S P A N
                   T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)


11.3.1     S T E E L    A T    S U P P O R T S
                   T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1      1.8  (    1.8      .0      .0)         .0  (     .0      .0      .0)
  2      9.1  (    9.1      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-------------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
  0    1     T      4 #  5 x     60        8.0
-------------------------------------------------------
  1    2     T      5 #  5 x    100       10.0
-------------------------------------------------------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.


11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
  0    |  1   RIGHT    |   4 #  5 x     60     |
-------|---------------|-----------------------|
  1    |  2   RIGHT    |   5 #  5 x    100     |
```

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-------|---------------|-----------------------|
  2    |  2   LEFT     |   5 #  5 x     70     |
-------|---------------|-----------------------|


11.5.2     ARRANGEMENT OF BOTTOM BARS

-------|-------- BOTTOM STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
```

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```
12 -  P U N C H I N G   S H E A R   C H E C K
===============================================================================

LEGEND:
CONDITION... 1 = INTERIOR COLUMN
             2 = END COLUMN
             3 = CORNER COLUMN
             4 = EDGE COLUMN (PARALLEL TO SPAN)
             5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                 PERFORM SHEAR CHECK MANUALLY
             6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

CASE........ 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
             2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)


           FACTORED ACTIONS   <- PUNCHING SHEAR STRESSES IN Kg/cm^2 ->
            shear   moment    due to   due to              allow-   STRESS
JNT  COND.    T      T-m      shear    moment    TOTAL      able    RATIO  CASE
-1----2-------3-------4---------5---------6--------7---------8-------9-----10-
 1    1     112.12    22.88    12.81     2.82     15.62     18.78    .83   1
 2    1     133.82    22.42    15.29     2.76     18.04     18.86    .96   1
 3    6    -------  -------   ------   ------    ------    ------   ----  --

PUNCHING SHEAR CHECK NOT CARRIED OUT FOR SUPPORT WITH CONDITIONS 5 OR 6


 13 - MAXIMUM  S P A N   D E F L E C T I O N S
===============================================================================

 Concrete`s modulus of elasticity ............. Ec =   287.00 T/cm^2
 Creep factor ................................. K  =     2.00
 Ieffective/Igross...(due to cracking)......... K  =     1.00

 Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
 Values in parentheses are (span/max deflection) ratios

        <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
SPAN     DL      DL+PT    DL+PT+CREEP          LL         DL+PT+LL+CREEP
-1--------2--------3-----------4---------------5---------------6------
CANL      .7       .2        .7(  521)       .2( 1582)       .9(  392)
```

```
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  1        .4        .3        .9(  961)        .1( 7346)       1.0(  850)
  2        .8        .3       1.0(  837)        .2( 3272)       1.2(  666)
```

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-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:              Nov 12,2020   At Time: 16:53
PROJECT FILE:                                                        FL4-C7


P R O J E C T   T I T L E:
Government Complex
FL4-C7

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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Max spacing between strands (factor of slab depth) 8.00
Tendon profile type and support widths..... (see section 9)

ANALYSIS OPTIONS USED:
Structural system ....(using EQUIVALENT FRAME).... TWO-WAY
Moments REDUCED to face of support ..... YES

2 - I N P U T G E O M E T R Y

2.1.1 PRINCIPAL SPAN DATA OF UNIFORM SPANS

SPAN	TYPE	FORM	LENGTH m	WIDTH cm	DEPTH cm	TOP FLANGE width cm	TOP FLANGE thick. cm	BOTTOM/MIDDLE FLANGE width cm	BOTTOM/MIDDLE FLANGE thick. cm	REF HEIGHT cm	MULTIPLIER left	MULTIPLIER right
1	U	1	7.50	800.00	30.00					.00	.50	.50
2	U	1	8.00	800.00	30.00					.00	.50	.50
3	U	1	4.00	800.00	30.00					.00	.50	.50

LEGEND:
1 - SPAN
C = Cantilever
2 - TYPE
U = Uniform; prismatic
N = Nonuniform section

3 - FORM
1 = Rectangular section
2 = T or Inverted L section
3 = I section
4 = Extended T or L section
7 = Joist
8 = Waffle
11 - Top surface to reference line

2.2 - S U P P O R T W I D T H A N D C O L U M N D A T A

JOINT	SUPPORT WIDTH cm	LOWER COLUMN LENGTH m	LOWER COLUMN B(DIA) cm	LOWER COLUMN D cm	LOWER COLUMN CBC*	UPPER COLUMN LENGTH m	UPPER COLUMN B(DIA) cm	UPPER COLUMN D cm	UPPER COLUMN CBC*
1	.00	4.30	.00	.00	(2)	3.60	.00	.00	(2)
2	100.00	4.30	80.00	100.00	(1)	3.60	80.00	100.00	(1)
3	100.00	4.30	80.00	100.00	(1)	3.60	80.00	100.00	(1)
4	100.00	4.30	80.00	100.00	(1)	3.60	80.00	100.00	(1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ..... = 1
Hinged at near end, fixed at far end ..... = 2
Fixed at near end, hinged at far end ..... = 3

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 Fixed at near end, roller with rotational fixity at far end .. = 4


3 - I N P U T   A P P L I E D   L O A D I N G
==============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                   Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE    T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------

 1     L      U       1.000      .00     7.50                          8.000
 1     D      U        .370      .00     7.50                          2.960
 1     SW     U                  .00     7.50                          5.760

 2     L      U       1.000      .00     8.00                          8.000
 2     D      U        .370      .00     8.00                          2.960
 2     SW     U                  .00     8.00                          5.760

 3     L      U       1.000      .00     4.00                          8.000
 3     D      U        .370      .00     4.00                          2.960
 3     SW     U                  .00     4.00                          5.760


 NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
==============================================================================

                   UNIFORM
                   ( T/m^2),    ( CON. or PART. )    ( M O M E N T )
SPAN  CLASS  TYPE  LINE( T/m)   (  T@m or  m-m  )    (  T-m  @  m  )
-1-----2------3---------4------------5-------6-----------7-------8------------

 1     L      U       1.000
 1     D      U        .370
 2     L      U       1.000
 2     D      U        .370
 3     L      U       1.000
 3     D      U        .370
 NOTE: SELFWEIGHT INCLUSION REQUIRED
       LIVE LOADING is SKIPPED with a skip factor of     .75
```

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4 - CALCULATED SECTION PROPERTIES

4.1 For Uniform Spans and Cantilevers only

SPAN	AREA cm^2	I cm^4	Yb cm	Yt cm
1	24000.00	.1800E+07	15.00	15.00
2	24000.00	.1800E+07	15.00	15.00
3	24000.00	.1800E+07	15.00	15.00

Note:
--- = Span/Cantilever is Nonuniform, see block 4.2

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5 - DEAD LOAD MOMENTS, SHEARS & REACTIONS

SPAN	< 5.1 SPAN MOMENTS (Tm) > M(l)*	Midspan	M(r)*	< 5.2 SPAN SHEARS (T) > SH(l)	SH(r)
1	.00	31.86	-58.91	-24.84	40.56
2	-52.54	24.10	-38.78	-36.60	33.16
3	-25.36	3.36	-2.80	-23.08	11.80

Note:
* = Centerline moments

JOINT	< 5.3 REACTIONS (T) >	<- 5.4 COLUMN MOMENTS (Tm) -> Lower columns	Upper columns
1	24.84	.00	.00
2	77.16	3.00	3.37
3	56.24	6.32	7.10
4	11.80	1.32	1.48

6 - LIVE LOAD MOMENTS, SHEARS & REACTIONS

<-- 6.1 LIVE LOAD SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right

```
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  1       .00       .00    29.23    -3.61    -54.05     -7.01   -22.79    37.21
  2    -48.20     -9.48    22.11    -3.55    -35.58      2.39   -33.58    30.42
  3    -23.27     -4.39     6.92    -4.61     -5.78      3.85   -21.18    12.35

 Note:
    * = Centerline moments


       <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN --->  <--- UPPER COLUMN --->
 JOINT        max        min          max        min          max        min
 --1-----------2----------3------------4----------5------------6----------7----
   1         24.08      -1.28          .00        .00          .00        .00
   2         71.27      32.40        14.98     -12.22        16.81     -13.72
   3         54.86      13.56        10.06      -4.26        11.29      -4.78
   4         16.46      -5.64         3.63      -2.42         4.07      -2.72

 Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


 7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
 ===========================================================================

          7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

  SPAN        <- left* ->  <- midspan ->   <- right* ->
 --1---------------2-------------3-------------4-------------------------------
   1               .00         31.86        -39.73
   2            -35.33         24.10        -23.29
   3            -14.91          3.36          2.01

 Note:
    * = face-of-support


          7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min          max        min          max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1           .00        .00        29.23      -3.61       -36.45      -6.54
  2        -32.41      -8.74        22.11      -3.55       -21.37       1.64
  3        -13.68        .69         6.92      -4.61         -.35       1.84

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
 ===========================================================================
 Maxima of dead load and live load span moments combined
```

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for serviceability checks (1.00DL + 1.00LL)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
1	.00	.00	61.09	28.25	-76.18	-46.27
2	-67.74	-44.07	46.21	20.55	-44.66	-21.65
3	-28.59	-14.22	10.27	-1.25	1.66	3.85

Note:
* = face-of-support

9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES

9.1 PROFILE TYPES AND PARAMETERS

LEGEND:

For Span:
1 = reversed parabola
2 = simple parabola with straight portion over support
3 = harped tendon

For Cantilever:
1 = simple parabola
2 = partial parabola
3 = harped tendon

9.2 TENDON PROFILE

	TYPE	X1/L	X2/L	X3/L	A/L
1	1	.100	.500	.100	.000
2	1	.100	.500	.100	.000
3	1	.100	.500	.100	.000

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9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE

Tendon editing mode selected: TENDON SELECTION

SPAN	<-------- SELECTED VALUES --------> FORCE (T/-)	<- DISTANCE OF CGS (cm) -> Left	Center	Right	<--- CALCULATED VALUES ---> P/A (Kg/cm^2)	Wbal (T/-)	Wbal (%DL)
1	329.148	-15.00	-24.40	-4.20	13.71	6.928	79
2	345.660	-4.20	-24.40	-4.20	14.40	8.728	100
3	319.932	-4.20	-16.40	-15.00	13.33	10.878	125

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Approximate weight of strand ..... 462.1 Kg

9.35 - TENDON SELECTION DATA:

TYPE	SEL.	FORCE (T)	<1>	<2>	<3>
C	29	11.55	==========	==========	========>

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	<- BASED ON STRESS CONDITIONS -> LEFT*	CENTER	RIGHT*	<- BASED ON MINIMUM P/A -> LEFT	CENTER	RIGHT
1	.00	193.13	244.15	240.00	240.00	240.00
2	197.30	78.59	61.30	240.00	240.00	240.00
3	.00	.00	.00	240.00	240.00	240.00

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2) (tension shown positive)

	L E F T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	R I G H T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	-----	-13.47	-----	-13.47	16.92	-8.00	-----	-45.15
2	9.86	-9.87	-----	-38.55	-----	-22.64	-----	-24.35
3	-----	-15.35	-----	-23.82	-----	-17.02	-----	-11.32

Note:
* = face-of-support

	C E N T E R TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	-----	-42.28	14.85	-12.52
2	-----	-28.78	-----	-21.41
3	-----	-15.52	-----	-20.75

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9.7 POST-TENSIONING B A L A N C E D M O M E N T S, SHEARS & REACTIONS

SPAN	<-- S P A N M O M E N T S (Tm) --> left*	midspan	right*	<-- SPAN SHEARS (T) --> SH(l)	SH(r)
1	.00	-26.81	38.93	-1.10	-1.10
2	38.70	-28.96	32.12	.94	.94

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3	16.32	-7.65	.66	-3.44	-3.44

Note:
* = face-of-support

joint	<--REACTIONS (T)--> 2	<-- COLUMN MOMENTS (Tm) --> Lower columns	Upper columns
1	1.102	.000	.000
2	-2.041	-.457	-.513
3	4.381	-4.634	-5.201
4	-3.442	-1.749	-1.963

10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
1	.00	.00	98.42	42.60	-109.87	-59.03
2	-97.73	-57.50	74.86	31.24	-68.69	-29.56
3	-52.47	-28.04	13.29	-6.30	4.20	7.94

Note:
* = face-of-support

10.2 SECONDARY MOMENTS (Tm)

SPAN	<-- left* -->	<- midspan ->	<-- right* -->
1	.00	4.13	7.71
2	6.82	3.54	.25
3	-8.34	-3.17	1.99

Note:
* = face-of-support

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JOINT	10.3 FACTORED REACTIONS (T) max	min	10.4 FACTORED COLUMN MOMENTS (Tm) <-- LOWER column --> max	min	<-- UPPER column --> max	min
1	76.81	33.70	.00	.00	.00	.00
2	227.14	161.06	29.21	-17.03	32.78	-19.12
3	176.38	106.17	21.32	-3.02	23.93	-3.39

```
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 4        41.06       3.49        6.27      -4.02        7.04       -4.51


11 - M I L D   S T E E L
==============================================================================

Support cut-off length for minimum steel(length/span) ...     .17
Span    cut-off length for minimum steel(length/span) ...     .33
Top     bar extension beyond where required .............  30.00 cm
Bottom  bar extension beyond where required .............  30.00 cm


      REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
------------------------------------------------------------------------------
11.1     TOTAL WEIGHT OF REBAR =        13.1  Kg     AVERAGE =       .1 Kg/m^2
         TOTAL AREA COVERED    =      156.00   m^2


11.2.1     S T E E L   A T   M I D - S P A N
                    T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)        2.6  (    2.6      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)


11.3.1     S T E E L   A T   S U P P O R T S
                    T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2      3.9  (    3.9      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  4       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-----------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
  1    1     T      4 #  5 x     60        8.0
  1    2     B      1 #  6 x    136        2.8
-----------------------------------------------------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.
```

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11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
  1    |  1   RIGHT    |   4 #  5 x     60     |
-------|---------------|-----------------------|

11.5.2     ARRANGEMENT OF BOTTOM BARS

-------|-------- BOTTOM STEEL ----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
  1    |  2   CENTER   |   1 #  6 x    135     |
-------|---------------|-----------------------|

12 -  P U N C H I N G   S H E A R   C H E C K
===============================================================================

LEGEND:
CONDITION... 1 = INTERIOR COLUMN
             2 = END COLUMN
             3 = CORNER COLUMN
             4 = EDGE COLUMN (PARALLEL TO SPAN)
             5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                 PERFORM SHEAR CHECK MANUALLY
             6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

CASE........ 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
             2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)
```

JNT	COND.	FACTORED ACTIONS shear T	moment T-m	<- PUNCHING SHEAR STRESSES IN Kg/cm^2 -> due to shear	due to moment	TOTAL	allow-able	STRESS RATIO	CASE
1	6	-------	-------	------	------	------	------	----	--
2	1	227.14	61.99	18.05	5.05	23.10	18.63	1.24	1
3	1	176.38	45.25	14.01	3.69	17.70	18.63	.95	1
4	2	41.06	13.31	4.57	.37	4.94	17.13	.29	1

PUNCHING SHEAR STRESS IN ONE OR MORE LOCATIONS EXCEEDS THE PERMISSIBLE VALUE. PROVIDE SHEAR REINFORCEMENT, OR ENLARGE THE SECTION RESISTING THE PUNCHING SHEAR

PUNCHING SHEAR CHECK NOT CARRIED OUT FOR SUPPORT WITH CONDITIONS 5 OR 6

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  13 - MAXIMUM  S P A N   D E F L E C T I O N S
 ==============================================================================

  Concrete`s modulus of elasticity ............. Ec =   287.00 T/cm^2
  Creep factor ................................. K  =     2.00
  Ieffective/Igross...(due to cracking)......... K  =     1.00

  Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
  Values in parentheses are (span/max deflection) ratios

         <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
SPAN      DL      DL+PT    DL+PT+CREEP          LL        DL+PT+LL+CREEP
-1--------2--------3-----------4---------------5---------------6------
 1        .3       .1        .2( 3172)       .3( 2706)       .5( 1460)
 2        .2       .0        .0(*****)       .2( 4557)       .2( 4745)
 3        .0       .0       -.1( 7043)       .0(60746)      -.1( 6311)
```

```
-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:              Nov 12,2020   At Time: 21:51
PROJECT FILE:                                                        FL4-C14


P R O J E C T   T I T L E:
Government Complex
FL4-C14

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top ...........................................       1.590
At Bottom ........................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................      BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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 Max spacing between strands (factor of slab depth)        8.00
 Tendon profile type and support widths............   (see section 9)

 ANALYSIS OPTIONS USED:
 Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
 Moments REDUCED to face of support ...............        YES


 2 - I N P U T   G E O M E T R Y
 ==============================================================================

                 2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
 ------------------------------------------------------------------------------
 S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
 P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 A  P  R| LENGTH| WIDTH   DEPTH| width thick.| width thick.|HEIGHT| left right
 N  E  M|   m   |   cm      cm  |   cm     cm |   cm     cm |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
 1  U  1    7.50 800.00   30.00                                .00   .50   .50
 2  N  1    8.00 800.00   30.00                                .00   .50   .50
 C  N  1    3.80 800.00   45.00                                .00   .50   .50
 ------------------------------------------------------------------------------
 LEGEND:
 1 - SPAN                                   3 - FORM
       C = Cantilever                             1 = Rectangular section
 2 - TYPE                                         2 = T or Inverted L section
       U = Uniform; prismatic                     3 = I section
       N = Nonuniform section                     4 = Extended T or L section
                                                  7 = Joist
                                                  8 = Waffle
                                             11 - Top surface to reference line


                 2.1.2  DETAILED DATA FOR NONUNIFORM SPANS
 ------------------------------------------------------------------------------
 The following are geometry of nonuniform spans and/or cantilevers.
 Left distance is  from left support centerline to start of a span segment.


 ------------------------------------------------------------------------------
    F |        |               |     TOP      |BOTTOM/MIDDLE|       |
 S  O |  LEFT  |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 E  R |DISTANCE| WIDTH   DEPTH| width thick.| width thick.|HEIGHT| left right
 G  M |   m    |   cm      cm  |   cm     cm |   cm     cm |  cm  |
-1--2------4-------5-------6-------7------8------9------10----11-----12----13-
 SPAN: 2
 1  1       .00 800.00   30.00                                .00   .50   .50
 2  1       .50 800.00   30.00                                .00   .50   .50
 3  1      6.50 800.00   45.00                                .00   .50   .50
 4  1      7.50 800.00   45.00                                .00   .50   .50
 CANTILEVER RIGHT
```

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 1  1        .00 800.00   45.00                                  .00   .50   .50
 2  1       2.50 800.00   45.00                                  .00   .50   .50
 3  1       2.50 800.00   30.00                                  .00   .50   .50
-------------------------------------------------------------------------------
```

```
   2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

       SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
        WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
JOINT    cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1       .00      4.30     .00     .00  (2)       3.60     .00     .00  (2)
   2    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)
   3    100.00      4.30   80.00  100.00  (1)       3.60   80.00  100.00  (1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ............................ = 1
Hinged at near end, fixed at far end ........................ = 2
Fixed at near end, hinged at far end ........................ = 3
Fixed at near end, roller with rotational fixity at far end .. = 4
```

```
3 - I N P U T   A P P L I E D   L O A D I N G
===============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                   Intensity  ( From ...  To )  ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE    T/m^2    (  m        m  )  ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------

 1     L      U       1.000      .00     7.50                          8.000
 1     D      U        .370      .00     7.50                          2.960
 1     SW     U                  .00     7.50                          5.760

 2     L      U       1.000      .00      .50                          8.000
 2     L      U       1.000      .50     6.50                          8.000
 2     L      U       1.000     6.50     7.50                          8.000
 2     L      U       1.000     7.50     8.00                          8.000
 2     D      U        .370      .00      .50                          2.960
 2     D      U        .370      .50     6.50                          2.960
```

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  2     D     U        .370     6.50     7.50                          2.960
  2     D     U        .370     7.50     8.00                          2.960
  2     SW    P                  .00      .50                          5.760
  2     SW    P                  .50     6.50                          5.760
  2     SW    P                 6.50     7.50                          8.640
  2     SW    P                 7.50     8.00                          8.640

 CANT   L     U       1.000      .00     2.50                          8.000
 CANT   L     U       1.000     2.50     3.80                          8.000
 CANT   D     U        .370      .00     2.50                          2.960
 CANT   D     U        .370     2.50     3.80                          2.960
 CANT   SW    P                  .00     2.50                          8.640
 CANT   SW    P                 2.50     3.80                          5.760

  NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


 3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
 ==============================================================================

                     UNIFORM
                     ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
 SPAN  CLASS  TYPE   LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
 -1-----2------3---------4------------5-------6-----------7-------8------------

  1     L     U       1.000
  1     D     U        .370
  2     L     U       1.000
  2     D     U        .370
 CANT   L     U       1.000
 CANT   D     U        .370
  NOTE: SELFWEIGHT INCLUSION REQUIRED
        LIVE LOADING is SKIPPED with a skip factor of     .75


 4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
 ==============================================================================

 4.1   For Uniform Spans and Cantilevers only

 SPAN          AREA              I              Yb             Yt
               cm^2             cm^4            cm             cm
 -1-------------2----------------3---------------4-------------5-----
   1          24000.00        .1800E+07        15.00          15.00
   2             ---             ---            ---            ---
  CANT.         ---             ---            ---            ---

 Note:
   --- = Span/Cantilever is Nonuniform, see block 4.2
```

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4.2 - Computed Section Properties for Segments of Nonprismatic Spans

Section properties are listed for all segments of each span
A= cross-sectional geometry Yt= centroidal distance to top fiber
I= gross moment of inertia Yb= centroidal distance to bottom fiber

SPAN (SEGMENT)	AREA cm^2	I cm^4	Yb cm	Yt cm
SPAN 2				
1	24000.00	.1800E+07	15.00	15.00
2	24000.00	.1800E+07	15.00	15.00
3	36000.00	.6075E+07	22.50	22.50
4	36000.00	.6075E+07	22.50	22.50
CANTILEVER RIGHT				
1	36000.00	.6075E+07	22.50	22.50
2	36000.00	.6075E+07	22.50	22.50
3	24000.00	.1800E+07	15.00	15.00

5 - D E A D L O A D M O M E N T S, S H E A R S & R E A C T I O N S

SPAN	< 5.1 S P A N M O M E N T S (Tm) > M(l)*	Midspan	M(r)*	< 5.2 SPAN SHEARS (T) > SH(l)	SH(r)
1	.00	32.96	-56.71	-25.14	40.26
2	-44.38	17.12	-64.14	-32.81	41.27
CANT	-71.96	-----	-----	-40.34	-----

Note:
* = Centerline moments

JOINT	< 5.3 REACTIONS (T) >	<- 5.4 COLUMN MOMENTS (Tm) -> Lower columns	Upper columns
1	25.14	.00	.00
2	73.08	5.81	6.52
3	81.60	-3.75	-4.07

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6 - L I V E L O A D M O M E N T S, S H E A R S & R E A C T I O N S

<-- 6.1 L I V E L O A D SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right
1	.00	.00	30.19	-3.20	-52.12	-5.39	-23.05	36.95
2	-41.07	-7.17	17.43	-5.45	-54.98	-3.72	-30.26	33.74

```
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 CR    -57.76              -----              -----              -30.40    -----

 Note:
    * = Centerline moments


      <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN --->  <--- UPPER COLUMN --->
 JOINT        max        min          max        min          max        min
 --1----------2----------3------------4----------5------------6----------7----
   1         24.19      -1.14          .00        .00          .00        .00
   2         69.66      28.37        16.04     -10.83        18.00     -12.15
   3         66.98      29.82        23.97     -25.30        26.05     -27.50

 Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


 7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
 ===========================================================================

          7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

  SPAN        <- left* ->  <- midspan ->   <- right* ->
 --1---------------2-------------3-------------4-------------------------
   1               .00         32.96        -37.66
   2            -29.06         17.12        -44.96
  CANT          -53.24         -----         -----

 Note:
    * = face-of-support


          7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN       max        min          max        min          max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1          .00        .00        30.19      -3.20       -34.64      -5.03
  2       -26.94      -6.96        17.43      -5.45       -39.11      -3.93
 CR       -43.56                   -----                   -----

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
 ===========================================================================
 Maxima of dead load and live load span moments combined
 for serviceability checks    (  1.00DL +  1.00LL )

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
```

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SPAN	max	min	max	min	max	min
1	.00	.00	63.15	29.76	-72.30	-42.69
2	-56.00	-36.02	34.55	11.67	-84.07	-48.90
CR	-96.80		-----		-----	

Note:
* = face-of-support

9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES

9.1 PROFILE TYPES AND PARAMETERS

LEGEND:

For Span:
1 = reversed parabola
2 = simple parabola with straight portion over support
3 = harped tendon

For Cantilever:
1 = simple parabola
2 = partial parabola
3 = harped tendon

9.2 TENDON PROFILE

	TYPE	X1/L	X2/L	X3/L	A/L
1	1	.100	.500	.100	.000
2	1	.100	.500	.100	.000
CANT	1	.100			

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9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE

Tendon editing mode selected: TENDON SELECTION

	<-------- SELECTED VALUES -------->				<--- CALCULATED VALUES --->		
	FORCE	<- DISTANCE OF CGS (cm) ->			P/A	Wbal	Wbal
SPAN	(T/-)	Left	Center	Right	(Kg/cm^2)	(T/-)	(%DL)
1	314.688	-15.00	-24.40	-4.20	13.11	6.624	76
2	434.505	-4.20	-10.40	-4.20	18.10	3.367	36
CANT	420.210	-4.20		-15.00	11.88	6.397	60

Approximate weight of strand ..... 521.4 Kg

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9.35 - TENDON SELECTION DATA:

TYPE	SEL.	FORCE (T)	<1>	<2>	<C>
A	26	12.03	==========	==========	==========
C	10	11.96		==========	==========

9.5 R E Q U I R E D MINIMUM P O S T - T E N S I O N I N G FORCES (T)

SPAN	<- BASED ON STRESS CONDITIONS -> LEFT*	CENTER	RIGHT*	<- BASED ON MINIMUM P/A -> LEFT	CENTER	RIGHT
1	.00	183.73	275.77	240.00	240.00	240.00
2	209.45	.00	20.59	240.00	240.00	360.00
CANT	70.62	-----	-----	360.00	-----	-----

Note:
* = face-of-support

9.6 S E R V I C E S T R E S S E S (Kg/cm^2) (tension shown positive)

	L E F T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C	R I G H T * TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	-----	-12.91	-----	-12.91	11.29	-13.38	-----	-48.13
2	11.16	-5.50	-----	-47.79	2.06	-10.97	-----	-25.97
CR	-----	-16.74	-----	-22.82	-----	-----	-----	-----

Note:
* = face-of-support

	C E N T E R TOP max-T	TOP max-C	BOTTOM max-T	BOTTOM max-C
1	-----	-39.66	13.44	-14.39
2	-----	-40.58	4.37	-14.70
CR	-----	-----	-----	-----

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9.7 POST-TENSIONING B A L A N C E D M O M E N T S, SHEARS & REACTIONS

SPAN	<-- S P A N M O M E N T S (Tm) --> left*	midspan	right*	<-- SPAN SHEARS (T) --> SH(l)	SH(r)
1	.00	-31.29	36.64	.46	.46
2	20.63	-7.59	46.23	.97	.97
CANT	66.82	-----	-----	20.45	-----

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Note:
* = face-of-support

joint	REACTIONS (T)	COLUMN MOMENTS (Tm) Lower columns	Upper columns
1	-.456	.000	.000
2	-.511	-9.557	-10.730
3	.967	14.220	15.460

10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	left* max	left* min	midspan max	midspan min	right* max	right* min
1	.00	.00	96.64	39.88	-113.16	-62.82
2	-108.91	-74.94	27.79	-11.10	-158.63	-98.83
CR	-148.59		-----		-----	

Note:
* = face-of-support

10.2 SECONDARY MOMENTS (Tm)

SPAN	left*	midspan	right*
1	.00	-.83	-1.55
2	-22.43	-25.81	-29.20

Note:
* = face-of-support

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JOINT	10.3 FACTORED REACTIONS (T) max	min	10.4 FACTORED COLUMN MOMENTS (Tm) LOWER column max	min	UPPER column max	min
1	75.86	32.81	.00	.00	.00	.00
2	220.22	150.03	25.84	-19.84	29.00	-22.26
3	229.07	165.90	49.72	-34.03	54.04	-36.99

11 - M I L D S T E E L

```
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===============================================================================

Support cut-off length for minimum steel(length/span) ...     .17
Span    cut-off length for minimum steel(length/span) ...     .33
Top     bar extension beyond where required .............  30.00 cm
Bottom  bar extension beyond where required .............  30.00 cm

      REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
-------------------------------------------------------------------------------
11.1     TOTAL WEIGHT OF REBAR =        36.1  Kg     AVERAGE =       .2 Kg/m^2
         TOTAL AREA COVERED    =      154.40   m^2

11.2.1     S T E E L    A T    M I D - S P A N
                    T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)       12.4  (   12.4      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.3.1     S T E E L    A T    S U P P O R T S
                    T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-------------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
  1    1     B      3 #  6 x    248        8.5
  1    2     B      2 #  6 x    172        5.7
-------------------------------------------------------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.

11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
```

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11.5.2 ARRANGEMENT OF BOTTOM BARS

SPAN	ID	LOCATION	NUM	BAR	LENGTH [cm]
		BOTTOM STEEL			
1	1	CENTER	3 #	6 x	247
1	2	CENTER	2 #	6 x	172

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12 - P U N C H I N G S H E A R C H E C K

LEGEND:
CONDITION... 1 = INTERIOR COLUMN
2 = END COLUMN
3 = CORNER COLUMN
4 = EDGE COLUMN (PARALLEL TO SPAN)
5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
PERFORM SHEAR CHECK MANUALLY
6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

CASE..... 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)

JNT	COND.	FACTORED ACTIONS shear T	FACTORED ACTIONS moment T-m	<- PUNCHING SHEAR STRESSES IN Kg/cm^2 -> due to shear	due to moment	TOTAL	allow-able	STRESS RATIO	CASE
1	6	-------	-------	------	------	------	------	----	--
2	1	220.22	54.84	17.50	4.47	21.97	19.58	1.12	1
3	1	229.07	103.77	10.36	4.21	14.57	19.58	.74	1

PUNCHING SHEAR STRESS IN ONE OR MORE LOCATIONS EXCEEDS THE PERMISSIBLE VALUE. PROVIDE SHEAR REINFORCEMENT, OR ENLARGE THE SECTION RESISTING THE PUNCHING SHEAR

PUNCHING SHEAR CHECK NOT CARRIED OUT FOR SUPPORT WITH CONDITIONS 5 OR 6

13 - MAXIMUM S P A N D E F L E C T I O N S

Concrete`s modulus of elasticity ..... Ec = 287.00 T/cm^2
Creep factor ..... K = 2.00
Ieffective/Igross...(due to cracking)..... K = 1.00

Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
Values in parentheses are (span/max deflection) ratios

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          <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
 SPAN      DL       DL+PT     DL+PT+CREEP          LL         DL+PT+LL+CREEP
 -1--------2--------3-----------4---------------5---------------6------
  1        .3        .0        .1( 9238)        .3( 2588)        .4( 2022)
  2        .1        .1        .4( 2032)        .1( 7973)        .5( 1619)
 CANR      .2       -.3       -.9(  410)        .1( 3256)       -.8(  470)
```

```
-----------------------------------------------------------------------------
|                          ADAPT CORPORATION                                |
|                   STRUCTURAL CONCRETE SOFTWARE SYSTEM                     |
|       1733 Woodside Road, Suite 220, Redwood City, California 94061       |
-----------------------------------------------------------------------------
|              ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN                 |
|              Version 7.10  AMERICAN (ACI 318-99/UBC-77)                   |
|          ADAPT CORPORATION - Structural Concrete Software System          |
|       1733 Woodside Road, Suite 220, Redwood City, California 94061       |
|                Phone: (650)306-2400,  Fax: (650)364-4678                  |
|     Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com      |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:                Nov 13,2020   At Time: 12:3
PROJECT FILE:                                                          FL4-CE


P R O J E C T   T I T L E:
Government Complex
FL4-CE

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................       .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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 Max spacing between strands (factor of slab depth)        8.00
 Tendon profile type and support widths............   (see section 9)

 ANALYSIS OPTIONS USED:
 Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
 Moments REDUCED to face of support ...............        YES


 2 - I N P U T   G E O M E T R Y
 ==============================================================================

                 2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
 ------------------------------------------------------------------------------
 S  T  F|        |               |     TOP      |BOTTOM/MIDDLE|       |
 P  Y  O|        |               |    FLANGE    |    FLANGE   |  REF  | MULTIPLIER
 A  P  R| LENGTH| WIDTH   DEPTH| width thick.| width thick.|HEIGHT| left right
 N  E  M|   m   |   cm      cm  |   cm     cm |   cm     cm |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
 C  U  1    3.55 800.00   30.00                                .00   .50   .50
 1  U  1    8.40 800.00   30.00                                .00   .50   .50
 2  U  1    8.00 800.00   30.00                                .00   .50   .50
 ------------------------------------------------------------------------------
 LEGEND:
 1 - SPAN                                  3 - FORM
       C = Cantilever                            1 = Rectangular section
 2 - TYPE                                        2 = T or Inverted L section
       U = Uniform; prismatic                    3 = I section
       N = Nonuniform section                    4 = Extended T or L section
                                                 7 = Joist
                                                 8 = Waffle
                                            11 - Top surface to reference line


    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

        SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
         WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
 JOINT    cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1     80.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)
   2     80.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)
   3       .00      4.30     .00     .00  (2)       3.60     .00     .00  (2)

 *THE COLUMN BOUNDARY CONDITION CODES (CBC)
 Fixed at both ends ...(STANDARD) ............................ = 1
 Hinged at near end, fixed at far end ........................ = 2
 Fixed at near end, hinged at far end ........................ = 3
 Fixed at near end, roller with rotational fixity at far end .. = 4
```

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 3 - I N P U T   A P P L I E D   L O A D I N G
 ==============================================================================

 <---CLASS--->                <--------------TYPE------------------->
 D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
 L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                              Li= LINE LOAD
 SW= SELF WEIGHT Computed from geometry input and treated as dead loading
     Unit selfweight  W = 2400.0 Kg/m^3

                     Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
 SPAN  CLASS  TYPE     T/m^2   (  m        m  ) ( T-m or T ...m )       T/m
 -1-----2------3--------4----------5--------6---------7-------8---------9------
 CANT   L      U        1.000      .00     3.55                          8.000
 CANT   D      U         .370      .00     3.55                          2.960
 CANT   SW     U                   .00     3.55                          5.760

  1     L      U        1.000      .00     8.40                          8.000
  1     D      U         .370      .00     8.40                          2.960
  1     SW     U                   .00     8.40                          5.760

  2     L      U        1.000      .00     8.00                          8.000
  2     D      U         .370      .00     8.00                          2.960
  2     SW     U                   .00     8.00                          5.760


  NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


 3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
 ==============================================================================

                      UNIFORM
                      ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
 SPAN  CLASS  TYPE    LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
 -1-----2------3---------4------------5-------6-----------7-------8------------
 CANT   L      U        1.000
 CANT   D      U         .370
  1     L      U        1.000
  1     D      U         .370
  2     L      U        1.000
  2     D      U         .370
  NOTE: SELFWEIGHT INCLUSION REQUIRED
        LIVE LOADING is SKIPPED with a skip factor of     .75
```

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4 - CALCULATED SECTION PROPERTIES

4.1 For Uniform Spans and Cantilevers only

SPAN	AREA cm^2	I cm^4	Yb cm	Yt cm
CANT.	24000.00	.1800E+07	15.00	15.00
1	24000.00	.1800E+07	15.00	15.00
2	24000.00	.1800E+07	15.00	15.00

Note:
--- = Span/Cantilever is Nonuniform, see block 4.2

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5 - DEAD LOAD MOMENTS, SHEARS & REACTIONS

SPAN	< 5.1 SPAN MOMENTS (Tm) > M(l)*	Midspan	M(r)*	< 5.2 SPAN SHEARS (T) > SH(l)	SH(r)
CANT	-----	-----	-54.95	-----	30.96
1	-50.81	23.72	-55.58	-36.06	37.19
2	-65.39	37.06	.00	-43.05	26.71

Note:
* = Centerline moments

JOINT	< 5.3 REACTIONS (T) >	<- 5.4 COLUMN MOMENTS (Tm) -> Lower columns	Upper columns
1	67.01	1.95	2.19
2	80.25	-4.62	-5.19
3	26.71	.00	.00

6 - LIVE LOAD MOMENTS, SHEARS & REACTIONS

<-- 6.1 LIVE LOAD SPAN MOMENTS (Tm) and SHEAR FORCES (T) -->

SPAN	<----- left* -----> max	min	<--- midspan ---> max	min	<---- right* -----> max	min	<--SHEAR FORCE--> left	right
CL	-----		-----		-50.41		-----	28.40
1	-46.61	-8.53	24.34	-8.03	-50.99	-7.52	-33.08	34.12
2	-59.99	-7.87	34.00	-4.70	.00	.00	-39.50	24.50

```
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 Note:
    * = Centerline moments


       <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN --->  <--- UPPER COLUMN --->
 JOINT        max        min          max        min          max        min
 --1----------2----------3------------4----------5------------6----------7----
   1         64.17      28.56        18.39     -16.60        20.64     -18.64
   2         76.73      32.74        13.40     -17.64        15.04     -19.80
   3         26.07      -1.57          .00        .00          .00        .00

 Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


 7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
 ==============================================================================

           7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

  SPAN        <- left* ->  <- midspan ->   <- right* ->
 --1---------------2-------------3-------------4--------------------------------
  CANT           -----        -----        -43.26
   1           -37.08        23.72        -41.40
   2           -48.87        37.06           .00

 Note:
    * = face-of-support


           7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min          max        min          max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
 CL         -----                   -----                  -39.69
  1        -34.02      -8.48        24.34      -8.02       -37.98      -7.57
  2        -44.83      -7.47        34.00      -4.70          .00        .00

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
 ==============================================================================
 Maxima of dead load and live load span moments combined
 for serviceability checks    (  1.00DL +  1.00LL )

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max        min          max        min          max        min
 -1----------2----------3-----------4----------5-----------6----------7-----
```

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 CL        -----                  -----                  -82.95
  1       -71.10     -45.56      48.06      15.69      -79.38     -48.97
  2       -93.70     -56.34      71.06      32.36         .00        .00

 Note:
    * = face-of-support


 9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
 ==============================================================================

 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon


 9.2      T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
 ----------1--------2----------3----------4----------5------
 CANT      1                               .100
  1        1       .100       .500       .100       .000
  2        1       .100       .500       .100       .000


 9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
 ==============================================================================
 Tendon editing mode selected: TENDON SELECTION

          <--------  SELECTED VALUES  -------->   <--- CALCULATED VALUES --->
            FORCE   <- DISTANCE OF CGS (cm) ->       P/A        Wbal     Wbal
  SPAN      (T/-)     Left     Center     Right     (Kg/cm^2)    (T/-)    (%DL)
 --1----------2---------3--------4--------5-----------6----------7--------8--
  CANT    358.180   -15.00              -4.20        15.24      6.269      72
   1      374.486    -4.20   -15.40     -4.20        15.60      4.755      55
   2      369.405    -4.20   -24.40    -15.00        15.39      6.834      78

 Approximate weight of strand ..........................      504.8 Kg

 9.35 - TENDON SELECTION DATA:
```

```
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 TYPE  SEL. FORCE  <------------------ TENDON EXTENTS ------------------------>
            (T )    <C>   <1>   <2>
 --1----2-----3---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
   B   31   11.95    <==============|


 9.5   R E Q U I R E D  MINIMUM  P O S T - T E N S I O N I N G  FORCES (T   )

          <- BASED ON STRESS CONDITIONS ->      <-  BASED ON MINIMUM P/A  ->
  SPAN        LEFT*     CENTER      RIGHT*          LEFT     CENTER     RIGHT
 --1----------2----------3----------4---------------5---------6---------7----
  CANT       -----      -----      348.08          -----     -----    240.00
   1        295.39     144.98      353.75         240.00    240.00    240.00
   2        373.30     255.01         .00         240.00    240.00    240.00

 Note:
    * = face-of-support


 9.6   S E R V I C E   S T R E S S E S   (Kg/cm^2)(tension shown positive)

                 L E F T *                              R I G H T *
            TOP                BOTTOM                TOP                BOTTOM
       max-T    max-C    max-T    max-C       max-T    max-C    max-T    max-C
 -1------2--------3--------4--------5----------6--------7--------8--------9--
 CL    -----    -----    -----    -----       28.33    -4.74    -----   -58.38
  1    22.60    -----    -----   -53.18       26.91    -----    -----   -58.69
  2    28.56    -2.57    -----   -60.29       -----   -15.22    -----   -15.22

 Note:
    * = face-of-support


                                  C E N T E R
                              TOP                BOTTOM
                          max-T    max-C     max-T    max-C
 -1-----------------------2--------3--------4--------5----------------------
 CL                       -----    -----     -----    -----
  1                       -----   -44.64     13.43   -13.54
  2                       -----   -47.31     16.52   -15.73


 9.7   POST-TENSIONING   B A L A N C E D   M O M E N T S, SHEARS & REACTIONS

          <-- S P A N   M O M E N T S (Tm  ) -->     <-- SPAN SHEARS (T ) -->
  SPAN     left*          midspan          right*          SH(l)      SH(r)
 --1---------2--------------3--------------4---------------5----------6------
  CANT      -----          -----           30.92          -----      18.59
   1        25.63         -13.21           28.02           -.31       -.31
   2        40.39         -32.77             .00            .49        .49

 Note:
    * = face-of-support
```

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joint	<--REACTIONS (T)--> 2	<-- COLUMN MOMENTS (Tm) --> Lower columns	Upper columns
1	.315	-5.257	-5.900
2	-.803	6.738	7.563
3	.488	.000	.000

10 - F A C T O R E D M O M E N T S & R E A C T I O N S

Calculated as (1.40D + 1.70L + 1.00 secondary moment effects)

10.1 FACTORED DESIGN MOMENTS (Tm)

SPAN	<----- left* ------> max	min	<---- midspan ----> max	min	<----- right* -----> max	min
CL	-----		-----		-128.04	
1	-120.87	-77.45	63.81	8.78	-132.96	-81.26
2	-140.92	-77.41	111.65	45.85	.00	.00

Note:
* = face-of-support

10.2 SECONDARY MOMENTS (Tm)

SPAN	<-- left* -->	<- midspan ->	<-- right* -->
1	-11.12	-10.78	-10.43
2	3.71	1.95	.00

Note:
* = face-of-support

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JOINT	10.3 FACTORED REACTIONS (T) max	min	10.4 FACTORED COLUMN MOMENTS (Tm) <-- LOWER column --> max	min	<-- UPPER column --> max	min
1	203.22	142.68	28.74	-30.75	32.25	-34.52
2	241.99	167.20	23.05	-29.72	25.87	-33.36
3	82.20	35.22	.00	.00	.00	.00

11 - M I L D S T E E L

Support cut-off length for minimum steel(length/span) ... .17

```
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Span    cut-off length for minimum steel(length/span) ...     .33
Top     bar extension beyond where required .............  30.00 cm
Bottom  bar extension beyond where required .............  30.00 cm


      REINFORCEMENT based on    NO   REDISTRIBUTION  of factored moments
-------------------------------------------------------------------------------
11.1     TOTAL WEIGHT OF REBAR =       104.7  Kg     AVERAGE =       .7 Kg/m^2
         TOTAL AREA COVERED    =      159.60   m^2


11.2.1     S T E E L    A T    M I D - S P A N
                   T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
 SPAN  (cm^2) <---ULT-----TENS-------->      (cm^2) <---ULT-----TENS-------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)
  2       .0  (     .0      .0      .0)       11.8  (   11.8      .0      .0)


11.3.1     S T E E L    A T    S U P P O R T S
                   T O P                                   B O T T O M
         As    DIFFERENT REBAR CRITERIA        As    DIFFERENT REBAR CRITERIA
JOINT  (cm^2) <---ULT-----MIN--------->      (cm^2) <---ULT-----MIN--------->
--1------2---------3-------4-------5-----------6---------7-------8-------9----
  1      6.4  (    6.4      .0      .0)         .0  (     .0      .0      .0)
  2     25.4  (   25.4      .0      .0)         .0  (     .0      .0      .0)
  3       .0  (     .0      .0      .0)         .0  (     .0      .0      .0)

11.2.2 & 11.3.2     LISTING OF THE ENTIRE PROVIDED REBAR

-------------------------------------------------------
SPAN  ID LOCATION  NUM  BAR  LENGTH [cm] AREA [cm^2]
--1----2-----3------4----5-------6---------7----------
  0    1     T      4 #  5 x     60        8.0
-------------------------------------------------------
  1    2     T      7 #  5 x    142       14.0
  1    3     T      6 #  5 x    100       12.0
-------------------------------------------------------
  2    4     B      3 #  6 x    220        8.5
  2    5     B      2 #  6 x    180        5.7
-------------------------------------------------------
Notes:
Bar location - T = Top, B = Bottom.
NUM - Number of bars.
For two-way systems a minimum of 4 bars is specified over the supports.
Refer to tables 11.5.1,11.5.2 and PTsum graphical display for
positioning of bars.


11.5.1     ARRANGEMENT OF TOP BARS

-------|----------- TOP STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
```

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--1----|--2------3-----|---4----5------6-------|
  0    |  1   RIGHT    |   4 #  5 x     60     |
-------|---------------|-----------------------|
  1    |  2   RIGHT    |   7 #  5 x     72     |
  1    |  3   RIGHT    |   6 #  5 x    100     |
-------|---------------|-----------------------|
  2    |  2   LEFT     |   7 #  5 x     70     |
  2    |  3   LEFT     |   6 #  5 x     70     |
-------|---------------|-----------------------|

11.5.2     ARRANGEMENT OF BOTTOM BARS

-------|-------- BOTTOM STEEL -----------------|
SPAN   | ID   LOCATION | NUM  BAR   LENGTH [cm]|
--1----|--2------3-----|---4----5------6-------|
  2    |  4   CENTER   |   3 #  6 x    220     |
  2    |  5   CENTER   |   2 #  6 x    180     |
-------|---------------|-----------------------|

12 -  P U N C H I N G   S H E A R   C H E C K
===============================================================================

LEGEND:
CONDITION... 1 = INTERIOR COLUMN
             2 = END COLUMN
             3 = CORNER COLUMN
             4 = EDGE COLUMN (PARALLEL TO SPAN)
             5 = EDGE BEAM, WALL, OR OTHER NON-CONFORMING GEOMETRY
                 PERFORM SHEAR CHECK MANUALLY
             6 = STRIP TOO NARROW TO DEVELOP PUNCHING SHEAR

CASE........ 1 = STRESS WITHIN SECTION #1 GOVERNS (COL.CAP OR SLAB)
             2 = STRESS WITHIN SECTION #2 GOVERNS (DROP PANEL OR SLAB)


           FACTORED ACTIONS   <- PUNCHING SHEAR STRESSES IN Kg/cm^2 ->
            shear   moment    due to   due to              allow-   STRESS
JNT  COND.    T      T-m      shear    moment    TOTAL      able    RATIO  CASE
-1----2-------3-------4---------5---------6--------7---------8-------9-----10-
 1    1     203.22    65.27    16.15     5.23     21.37     18.94   1.13   1
 2    1     241.99    63.08    19.23     5.05     24.28     18.94   1.28   1
 3    6    -------  -------   ------   ------    ------    ------   ----  --


PUNCHING SHEAR STRESS IN ONE OR MORE LOCATIONS EXCEEDS THE PERMISSIBLE
VALUE. PROVIDE SHEAR REINFORCEMENT, OR ENLARGE THE SECTION RESISTING THE
PUNCHING SHEAR

PUNCHING SHEAR CHECK NOT CARRIED OUT FOR SUPPORT WITH CONDITIONS 5 OR 6
```

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 13 - MAXIMUM  S P A N   D E F L E C T I O N S
 ==============================================================================

 Concrete`s modulus of elasticity ............. Ec =   287.00 T/cm^2
 Creep factor ................................. K  =     2.00
 Ieffective/Igross...(due to cracking)......... K  =     1.00

 Where stresses exceed 1.616(fc`)^1/2 cracking of section is allowed for.
 Values in parentheses are (span/max deflection) ratios

        <.......DEFLECTION ARE ALL IN  cm   , DOWNWARD POSITIVE.......>
SPAN     DL      DL+PT    DL+PT+CREEP         LL        DL+PT+LL+CREEP
-1--------2--------3-----------4---------------5---------------6------
CANL      .4       .0        .1( 3529)       .3( 1041)       .4(  803)
 1        .2       .1        .3( 2489)       .2( 4980)       .5( 1659)
 2        .4       .1        .2( 3929)       .4( 2163)       .6( 1395)
```

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-----------------------------------------------------------------------------
|                            ADAPT CORPORATION                              |
|                     STRUCTURAL CONCRETE SOFTWARE SYSTEM                   |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
-----------------------------------------------------------------------------
|                ADAPT-PT FOR POST-TENSIONED BEAM/SLAB DESIGN               |
|                Version 7.10  AMERICAN (ACI 318-99/UBC-77)                 |
|           ADAPT CORPORATION - Structural Concrete Software System         |
|        1733 Woodside Road, Suite 220, Redwood City, California 94061      |
|                 Phone: (650)306-2400,  Fax: (650)364-4678                 |
|      Email: Support@AdaptSoft.com, Web site: http://www.AdaptSoft.com     |
-----------------------------------------------------------------------------
DATE AND TIME OF PROGRAM EXECUTION:                Nov 13,2020   At Time: 8:35
PROJECT FILE:                                                      FL4-CD--8-9


P R O J E C T   T I T L E:
Government Complex
FL4-CD--8-9

1 - USER SPECIFIED   G E N E R A L   D E S I G N   P A R A M E T E R S
==============================================================================

CONCRETE:
STRENGTH at 28 days, for BEAMS/SLABS .............     350.00 Kg/cm^2
                     for COLUMNS ................     350.00 Kg/cm^2

MODULUS OF ELASTICITY for BEAMS/SLABS ............     287.00 T/cm^2
                      for COLUMNS ................     287.00 T/cm^2

CREEP factor for deflections for BEAMS/SLABS .....       2.00
CONCRETE WEIGHT ..................................      NORMAL

SELF WEIGHT ......................................    2400.00 Kg/m^3


TENSION STRESS limits (multiple of (f'c)1/2)
At Top  ..........................................       1.590
At Bottom  .......................................       1.590

COMPRESSION STRESS limits (multiple of (f'c))
At all locations .................................        .450

REINFORCEMENT:
YIELD Strength ...................................       4.00 T/cm^2
Minimum Cover at TOP .............................       1.50 cm
Minimum Cover at BOTTOM ..........................       1.50 cm

POST-TENSIONING:
SYSTEM ...........................................       BONDED
Ultimate strength of strand ......................      19.00 T/cm^2
Average effective stress in strand (final) .......      10.80 T/cm^2
Strand area.......................................        .990 cm^2
Min CGS of tendon from TOP........................       4.20 cm
Min CGS of tendon from BOTTOM for INTERIOR spans..       5.60 cm
Min CGS of tendon from BOTTOM for EXTERIOR spans..       5.60 cm
Min average precompression .......................      10.00 Kg/cm^2
```

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Max spacing between strands (factor of slab depth)        8.00
Tendon profile type and support widths............   (see section 9)

ANALYSIS OPTIONS USED:
Structural system ....(using EQUIVALENT FRAME)....      TWO-WAY
Moments REDUCED to face of support ...............        YES


2 - I N P U T   G E O M E T R Y
===============================================================================

                2.1.1  PRINCIPAL SPAN DATA OF UNIFORM SPANS
-------------------------------------------------------------------------------
S  T  F|       |              |     TOP      |BOTTOM/MIDDLE|      |
P  Y  O|       |              |    FLANGE    |    FLANGE   |  REF | MULTIPLIER
A  P  R| LENGTH| WIDTH   DEPTH| width thick. | width thick.|HEIGHT| left right
N  E  M|   m   |   cm      cm |   cm     cm  |   cm     cm |  cm  |
-1--2--3----4-------5-------6-------7------8------9------10----11-----12----13-
1  U  1    8.00 800.00   30.00                                .00   .50   .50
C  U  1    2.80 800.00   30.00                                .00   .50   .50
-------------------------------------------------------------------------------
LEGEND:
1 - SPAN                                  3 - FORM
      C = Cantilever                            1 = Rectangular section
2 - TYPE                                        2 = T or Inverted L section
      U = Uniform; prismatic                    3 = I section
      N = Nonuniform section                    4 = Extended T or L section
                                                7 = Joist
                                                8 = Waffle
                                           11 - Top surface to reference line


    2.2 - S U P P O R T   W I D T H   A N D   C O L U M N   D A T A

       SUPPORT   <------- LOWER COLUMN ------>   <------ UPPER COLUMN ------>
        WIDTH    LENGTH   B(DIA)    D    CBC*    LENGTH   B(DIA)    D   CBC*
JOINT    cm        m       cm      cm              m       cm      cm
--1-------2---------3-------4-------5-----6---------7-------8-------9----10---
   1       .00      4.30     .00     .00  (2)       3.60     .00     .00  (2)
   2     80.00      4.30  100.00   80.00  (1)       3.60  100.00   80.00  (1)

*THE COLUMN BOUNDARY CONDITION CODES (CBC)
Fixed at both ends ...(STANDARD) ............................ = 1
Hinged at near end, fixed at far end ........................ = 2
Fixed at near end, hinged at far end ........................ = 3
Fixed at near end, roller with rotational fixity at far end .. = 4
```

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3 - I N P U T   A P P L I E D   L O A D I N G
==============================================================================

<---CLASS--->                <--------------TYPE------------------->
D = DEAD LOAD                U = UNIFORM          P = PARTIAL UNIFORM
L = LIVE LOAD                C = CONCENTRATED     M = APPLIED MOMENT
                             Li= LINE LOAD
SW= SELF WEIGHT Computed from geometry input and treated as dead loading
    Unit selfweight  W = 2400.0 Kg/m^3

                    Intensity  ( From ...  To ) ( M   or C ...At) Total on Trib
SPAN  CLASS  TYPE     T/m^2    (  m        m  ) ( T-m or T ...m )       T/m
-1-----2------3--------4----------5--------6---------7-------8---------9------

 1     L      U        1.000      .00     8.00                          8.000
 1     D      U         .370      .00     8.00                          2.960
 1     SW     U                   .00     8.00                          5.760

CANT   L      U        1.000      .00     2.80                          8.000
CANT   D      U         .370      .00     2.80                          2.960
CANT   SW     U                   .00     2.80                          5.760

 NOTE: LIVE LOADING is SKIPPED with a skip factor of     .75


3.1 - LOADING AS APPEARS IN USER`S INPUT SCREEN PRIOR TO PROCESSING
==============================================================================

                    UNIFORM
                    ( T/m^2),     ( CON. or PART. )     ( M O M E N T )
SPAN  CLASS  TYPE   LINE( T/m)    (  T@m or  m-m  )     (  T-m  @  m  )
-1-----2------3---------4------------5-------6-----------7-------8------------

 1     L      U        1.000
 1     D      U         .370
CANT   L      U        1.000
CANT   D      U         .370
 NOTE: SELFWEIGHT INCLUSION REQUIRED
       LIVE LOADING is SKIPPED with a skip factor of     .75


4 - C A L C U L A T E D   S E C T I O N   P R O P E R T I E S
==============================================================================

4.1   For Uniform Spans and Cantilevers only

SPAN          AREA              I              Yb             Yt
```

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                cm^2             cm^4              cm              cm
 -1-------------2----------------3---------------4-------------5-----
   1          24000.00         .1800E+07         15.00           15.00
  CANT.       24000.00         .1800E+07         15.00           15.00

 Note:
   --- = Span/Cantilever is Nonuniform, see block 4.2


 5 -  D E A D   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ===========================================================================

       < 5.1  S P A N   M O M E N T S   (Tm)  >    < 5.2 SPAN SHEARS  (T)  >
  SPAN      M(l)*        Midspan          M(r)*         SH(l)        SH(r)
 --1---------2--------------3---------------4--------------5-----------6-------
   1          .00          40.34          -58.85         -27.52       42.24
  CANT     -34.18          -----           -----         -24.42       -----

 Note:
    * = Centerline moments


 JOINT   < 5.3 REACTIONS (T)   >   <- 5.4 COLUMN MOMENTS  (Tm)   ->
 --1---------------2---------------Lower columns----Upper columns-----
   1              27.52                  .00              .00
   2              66.65                11.62            13.04


 6 -  L I V E   L O A D   M O M E N T S,   S H E A R S  &  R E A C T I O N S
 ===========================================================================

     <-- 6.1  L I V E   L O A D  SPAN MOMENTS  (Tm)  and SHEAR FORCES (T)  -->

    <----- left* -----> <--- midspan ---> <---- right* -----> <--SHEAR FORCE-->
 SPAN    max       min      max      min       max       min      left    right
 -1-------2---------3--------4--------5---------6---------7--------8--------9--
  1        .00       .00    37.01    -3.60    -53.99     -7.20   -25.25    38.75
 CR     -31.36              -----              -----             -22.40    -----

 Note:
    * = Centerline moments


       <- 6.2 REACTIONS (T)  -> <-------- 6.3  COLUMN MOMENTS  (Tm)  -------->
                                <--- LOWER COLUMN ---> <--- UPPER COLUMN --->
 JOINT        max        min          max        min          max        min
 --1----------2----------3------------4----------5------------6----------7----
   1         26.45      -1.20          .00        .00          .00        .00
   2         61.15      23.60        20.92     -10.26        23.48     -11.51
```

```
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 ------------------------------------------------------------------------------

 Note:  Block 6.1 through 6.3 values are maxima of all skipped loading cases


 7 -    M O M E N T S   REDUCED TO FACE-OF-SUPPORT
 ==============================================================================

          7.1  R E D U C E D   DEAD LOAD MOMENTS  (Tm)

  SPAN        <- left* ->  <- midspan ->   <- right* ->
 --1---------------2-------------3-------------4-------------------------------
   1                .00         40.34        -42.65
  CANT          -25.11          -----         -----

 Note:
    * = face-of-support


          7.2  R E D U C E D   LIVE LOAD MOMENTS  (Tm)

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max         min          max         min          max         min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1           .00         .00        37.01       -3.60       -39.13       -6.84
 CR        -23.04                    -----                    -----

 Note:
    * = face-of-support


 8 -   SUM OF DEAD AND LIVE MOMENTS  (Tm)
 ==============================================================================
 Maxima of dead load and live load span moments combined
 for serviceability checks    (  1.00DL +  1.00LL )

       <----- left* ------>   <---- midspan  ---->   <----- right* ----->
 SPAN        max         min          max         min          max         min
 -1----------2----------3-----------4----------5-----------6----------7-----
  1           .00         .00        77.35       36.74       -81.78      -49.49
 CR        -48.15                    -----                    -----

 Note:
    * = face-of-support


 9 - SELECTED POST-TENSIONING FORCES AND TENDON PROFILES
 ==============================================================================

 9.1   PROFILE TYPES AND PARAMETERS
 LEGEND:
```

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 ------------------------------------------------------------------------------

   For Span:
          1 = reversed parabola
          2 = simple parabola with straight portion over support
          3 = harped tendon

   For Cantilever:
          1 = simple parabola
          2 = partial parabola
          3 = harped tendon

9.2       T E N D O N        P R O F I L E
          TYPE     X1/L       X2/L       X3/L       A/L
----------1--------2----------3----------4----------5------
 1         1       .100       .500       .100       .000
CANT       1       .100
```

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```
9.3 - SELECTED POST-TENSIONING FORCES AND TENDON DRAPE
==============================================================================
Tendon editing mode selected: TENDON SELECTION

          <--------  SELECTED VALUES  -------->   <--- CALCULATED VALUES --->
            FORCE   <- DISTANCE OF CGS (cm) ->       P/A        Wbal    Wbal
 SPAN       (T/-)     Left     Center    Right     (Kg/cm^2)    (T/-)   (%DL)
--1----------2---------3--------4--------5-----------6----------7--------8--
  1       375.522   -15.00   -24.40    -4.20        15.65      6.947      80
 CANT     374.332    -4.20            -15.00        15.48     10.238     117

Approximate weight of strand ..........................      293.5 Kg

9.35 - TENDON SELECTION DATA:

TYPE  SEL. FORCE  <------------------ TENDON EXTENTS ------------------------>
           (T )          <1>   <C>
--1----2-----3---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
  B   16   11.79       <===========|
  C   16   11.64       |===========>

9.5   R E Q U I R E D  MINIMUM  P O S T - T E N S I O N I N G  FORCES (T   )

          <- BASED ON STRESS CONDITIONS ->      <-  BASED ON MINIMUM P/A  ->
 SPAN       LEFT*    CENTER      RIGHT*           LEFT    CENTER     RIGHT
--1----------2----------3----------4---------------5---------6---------7----
  1          .00     309.50     275.82          240.00    240.00    240.00
 CANT      96.13      -----      -----          240.00     -----     -----

Note:
   * = face-of-support
```

```
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-------------------------------------------------------------------------------


9.6   S E R V I C E   S T R E S S E S   (Kg/cm^2)(tension shown positive)

                L E F T *                                R I G H T *
           TOP                BOTTOM                TOP                BOTTOM
      max-T    max-C    max-T    max-C       max-T    max-C    max-T    max-C
-1------2--------3--------4--------5----------6--------7--------8--------9--
 1    -----   -15.66    -----   -15.66       16.42   -10.49    -----   -47.38
CR      .16   -19.04    -----   -31.01       -----    -----    -----    -----

Note:
   * = face-of-support


                                C E N T E R
                           TOP                BOTTOM
                       max-T    max-C    max-T    max-C
-1-----------------------2--------3--------4--------5---------------------
 1                     -----   -53.64    22.34   -11.49
CR                     -----    -----    -----    -----


9.7   POST-TENSIONING   B A L A N C E D   M O M E N T S, SHEARS & REACTIONS

         <-- S P A N   M O M E N T S (Tm  ) -->     <-- SPAN SHEARS (T ) -->
 SPAN     left*          midspan        right*           SH(l)      SH(r)
--1---------2--------------3--------------4---------------5----------6------
  1          .00         -31.76          43.50            -.89       -.89
 CANT      29.45          -----           -----           24.14      -----

Note:
   * = face-of-support


         <--REACTIONS (T )-->      <--  COLUMN MOMENTS  (Tm  ) -->
-joint------------2-----------------Lower columns-----Upper columns-----
  1              .886                   .000              .000
  2             -.886                 -3.740            -4.197


10 - F A C T O R E D   M O M E N T S   &   R E A C T I O N S
===============================================================================
Calculated as ( 1.40D + 1.70L + 1.00 secondary moment effects)

10.1   FACTORED DESIGN MOMENTS   (Tm)

      <----- left* ------>   <---- midspan  ---->   <----- right* ----->
SPAN        max         min          max         min          max         min
-1----------2----------3-----------4----------5-----------6----------7-----
```