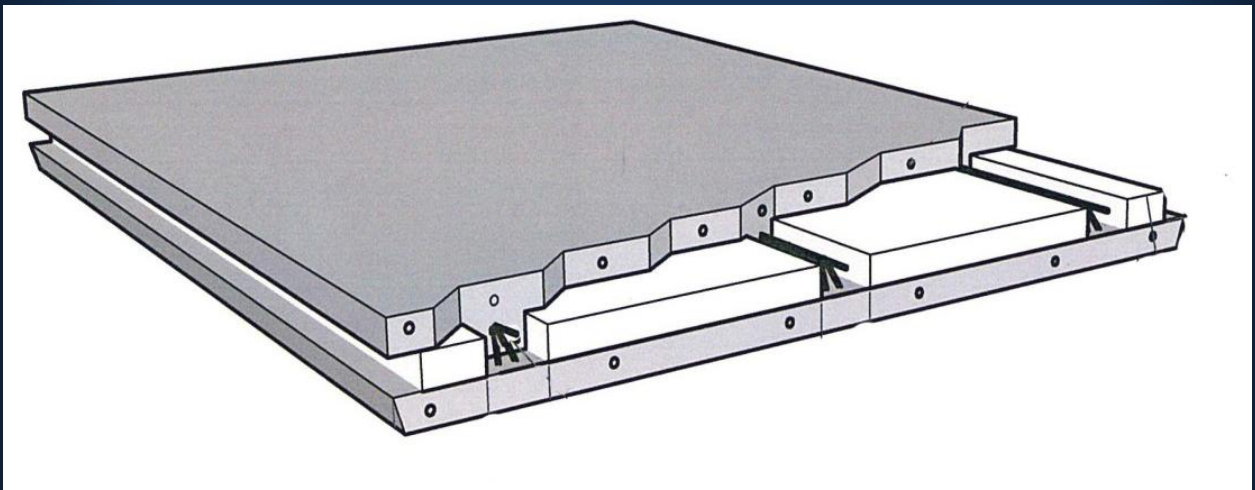
2017



APC / FILIGREE SYSTEM

AERIAL PRECAST CONCRETE & STRUCTURAL STEEL

3100 BURRIS RD, DAVIE, FL 33314
OFFICE: 954-321-0200
WWW.AERIALPRECASTCONCRETE.COM

SYSTEM OVERVIEW

- FILIGREE IS A 2 ¾" x 3" THICK PRECAST CONCRETE FORM, REINFORCED WITH LIGHTWEIGHT TRUSS, PRESTRESSED STRAND AND BOTTOM STEEL.

- THESE ELEMENTS ARE COMBINED IN THE FIELD WITH THE BALANCE OF TOP REINFORCEMENT AND SECONDARAY CONCRETE TOPPING.

- THIS METHOD OF CONSTRUCTION RESULTS IN A COMPOSITE SLAB IN WHICH BOTH LAYERS ACT TOGETHER AS A MONOLITHIC UNIT.

- FILIGREE IS ENGINEERED FOR ELEVATED FLOOR AND ROOF DECKS IN LOW, MEDIUM AND HIGH-RISE BUILDING.

- FILIGREE CAN BE USED IN WALL BEARING, COLUMN AND BEAM, TILT-UP AND FLAT PLATE CONSTRUCTION.

SYSTEM PROPERTIES

- POLYSTYRENE VOID MATERIAL INCORPORATED IN THE SLAB DURING THE MANUFACTURING PROCESS REDUCES SLAB WEIGHTS, SECONDARY CONCRETE POUR CAN ACHIEVE AN R-VALUE, WHICH VARIES BY SLAB DEPTH.

- COMPOSITE FILIGREE DECKS EIGHT INCHES OR GREATER HAVE A FIRE RESISTANCE RATINGS UP TO FOUR HOURS ESTABLISHED THROUGH A FULL SCALE FIRE RESISTANCE TEST BY UNDERWRITER LABORATORIES.

- FILIGREE EXCEEDS THE REQUIREMENTS OF SOUND RESISTANCE FOR RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL APPLICATIONS.

SYSTEM ADVANTAGES

- FILIGREE IS THE ONLY PRESTRESSED BUILDING SYSTEM USED IN SUCH A DIVERSE RANGE OF CONCRETE AND STEEL BUILDING APPLICATIONS.

- THE FILLIGREE SYSTEM IS EXTREMELY VERSATILE, SATISFYING MANY OF THE DEMANDING ARCHITECTURAL AND STRUCTURAL REQUIREMENTS WITHOUT COMPROMISING THE CONCEPTUAL DESIGN.

- VOIDED FILIGREE SLABS LOWER SHELL COST BY REDUCING THE CONCRETE POUR BY AS MUCH AS 65%, CONSEQUENTLY REDUCING FOUNDATION REQUIREMENTS.

- COMBINING BOTH PRESTRESSED AND BOTTOM STEEL IN THE FILIGREE SLAB REDUCES TOP STEEL REINFORCEMENT BY AS MUCH AS 50% OVER CONVENTIONALLY POURED DECKS.

- TIE-BEAMS, BOND-BEAM OR U-BLOCKS ARE NOT REQUIRED WITH THE FILIGREE SYSTEM.

- WITH A 95% REDUCTION OF FIELD FORMWORK AND THE USE OF RECYCLED CONTENT DURING MANUFACTURING, THE FILIGREE SYSTEM IS AN ENVIRONMENTALLY CONSCIOUS BUILDING SYSTEM, PROMOTING GREEN BUILDING.

- MANUFACTURING AND JOBSITE WASTE ARE MINIMAL AND CAN BE ELIMINATED DURING CONSTRUCTION.

- THE DENSE, SMOOTH FACTORY PRODUCED SURFACE PROVIDES A CEILLING READY FOR FINISHING. JOINTS MAYBE FINISHED WITH A LOW-COST NON-SHRINK JOINT COMPOUND IF DESIRED. A VARIETY OF CEILING FINISHES CAN BE APPLIED DIRECTLY TO THE FILIGREE SLAB.

SYSTEM QUALITY

- OUR ENGINEERING AND DRAFTING STAFF USE THE LATEST AUTOCAD TECHNOLOGY, COMBINED WITH QUALITY CONTROL OVERSIGHT TO ENSURE SUPERIOR PRODUCT QUALITY, MAINTAINING STRICT CONSTRUCTION TOLERANCES.

- THE DECK ITSELF IS MORE UNIFORM AND OF HIGHER QUALITY BECAUSE A LARGE PORTION OF IT IS PRODUCED UNDER CONTROLLED CONDITIONS BY CREWS WORKING IN AN OFFSITE FACILITY AWAY FROM THE INTERFERENCE OF OTHER TRADES.

- THERE IS NO DIFFERENTIAL CAMBER BETWEEN THE FILIGREE UNITS AS THERE IS IN OTHER SYSTEMS, ELIMINATING THE NEED FOR FLOATING AND GRINDING BETWEEN PRECAST UNITS. THE FINAL PRODUCT IS A COMBINATION OF THE MOST DESIRABLE PROPERTIES INHERENT TO POURED-IN-PLACE AND PRECAST CONSTRUCTION.

- THE DESIGN PROVIDES A STRONGER STRUCTURE BECAUSE THE DECKS, WALL CELLS, COLUMNS AND BEAM ARE POURED TOGETHER PRODUCING A MONOLITHIC STRUCTURE.

- FABRICATION IN CASTING BEDS GREATLY ENHANCES THE APPEARANCE OF THE FINISHED CONCRETE SLABS REDUCING THE AMOUNT OF FINISH WORK REQUIRED IN THE FIELD.

- ERECTION OF FILIGREE WILL COMPLY WITH STANDARDS AND BEST PRACTICES FOR PRECAST CONCRETE INSTALLATION.

RESOURCES AND CAPABILITIES

- ENGINEERING & DESIGN – ENGINEERING, DRAFTING AND CAD DIVISION PROVIDE VALUE ENGINEERING RECOMMENDATIONS TO MAXIMIZE FILIGREE'S COST SAVING BENEFITS.

- MANUFACTURING – 4 ACRES MANUFACTURING FACILITY WHICH IS GEOGRAPHICALLY POSITIONED TO SERVE THE FLORIDA MARKET. PRODUCTION RATES UP TO 1000 SQUARE FOOT PER DAY.

- INSTALATION – TRUCKING AND INSTALLATION DIVISIONS ARE DEDICATED TO MEET SCHEDULING DEMANDS BY CONTROLLING LOGISTICS. TYPICAL INSTALLATION RATES OF 10,000 – 12,000 SQUARE FEET PER DAY.

RESIDENTIAL APPLICATIONS	COMMERCIAL APPLICATIONS
CONDOMINUMS / APARTMENTS	PARKING GARAGES
TOWNHOMES	OFFICE BUILDINGS
SINGLE FAMILY HOMES	INSTITUTIONAL
MUITI-FAMILY UNITS	HOSPITALITY
MIXED-USED	RETAIL / WAREHOUSE / STORAGE

WEIGHT OF FILIGREE WIDESLAB PANELS

SLAB THICKNESS (INCHES)	COMPOSITE WEIGHT (LBS./ S.F.)
5" SOLID	62
6" SOLID	75
7" SOLID	87

APC / FILIGREE COMPOSITE FLOOR SYSTEM

APC | FILIGREE COMPOSITE FLOOR SYSTEM					
COMPOSITE SLAB WEIGHTS		Coverage	3.25		
Slab Depth	Void Thickness	Voided Area			
		50%	55%	60%	65%
inches	inches	p.s.f.	p.s.f.	p.s.f.	p.s.f.
7.00	1.50	75.00	74.10	73.20	72.30
7.50	2.00	78.00	76.80	75.60	74.40
8.00	2.50	81.00	82.81	78.00	76.50
8.50	3.00	84.00	82.20	80.40	78.60
9.00	3.50	87.00	84.90	82.80	80.70
9.50	4.00	90.00	87.60	85.20	82.80
10.00	4.50	93.00	90.30	87.60	84.90
10.50	5.00	96.00	93.00	90.00	87.00
11.00	5.50	99.00	95.70	92.40	89.10
11.50	6.00	102.00	98.40	94.80	91.20
12.00	6.50	105.00	101.10	97.20	93.30
12.50	7.00	108.00	103.80	99.60	95.40
13.00	7.50	111.00	106.50	102.00	97.50
13.50	8.00	114.00	109.20	104.40	99.60
14.00	8.50	117.00	111.90	106.80	101.70
14.50	9.00	120.00	114.60	109.20	103.80
15.00	9.50	123.00	117.30	111.60	105.90
15.50	10.00	126.00	120.00	114.00	108.00
16.00	10.50	129.00	122.70	116.40	110.10
16.50	11.00	132.00	125.40	118.80	112.20
17.00	11.50	135.00	128.10	121.20	114.30
17.50	12.00	138.00	130.80	123.60	116.40
18.00	12.50	141.00	133.50	126.00	118.50
18.50	13.00	144.00	136.20	128.40	120.60
19.00	13.50	147.00	138.90	130.80	122.70
19.50	14.00	150.00	141.60	133.20	124.80
20.00	14.50	153.00	144.30	135.60	126.90

SOLID		VOIDED	
SLAB THICKNESS	**COMBINED R-VALUE**	**VOID THICKNESS**	**COMBINED R-VALUE**
7”	1.69	2”	6.99
8”	1.77	3”	9.55
9”	1.86	4”	12.48
10”	1.94	5”	15.22
11”	2.00	6”	17.93
12”	2.09	7”	20.66

Span Table

Span Range	Composite Slab Thickness
feet	inches
up to 10' - 0"	4.00
up to 15' - 0"	5.00
up to 18' - 0"	6.00
up to 22' - 0"	7.00
up to 28' - 0"	8.00
up to 32' - 0"	9.00
up to 36' - 0"	10.00
up to 40' - 0"	12.00
up to 44' - 0"	14.00
up to 48' - 0"	16.00

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 8 IN. VOIDED

SIMPLE SPAN CONDITION

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

DESIGN LOADS

SLAB DEAD LOAD = 84.375 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
16.0	6.85	0.00	4	0.34	0.00	0.00	0.5	0.0	0.07	0.22
16.5	7.29	0.00	5	0.10	0.00	0.00	0.5	0.0	0.08	0.25
17.0	7.74	0.00	5	0.22	0.00	0.00	0.5	0.0	0.10	0.28
17.5	8.20	0.00	5	0.35	0.00	0.00	0.5	0.0	0.11	0.32
18	8.67	0.00	6	0.13	0.00	0.00	0.5	0.0	0.12	0.35
18.5	9.16	0.00	6	0.26	0.00	0.00	0.5	0.0	0.13	0.39
19.0	9.66	0.00	7	0.05	0.00	0.00	0.5	0.0	0.15	0.44
19.5	10.18	0.00	7	0.20	0.00	0.00	0.5	0.0	0.17	0.49
20.0	10.71	0.00	8	0.00	0.00	0.00	0.5	0.0	0.18	0.54
20.5	11.25	0.00	8	0.16	0.00	0.00	0.5	0.0	0.20	0.60
21.0	11.80	0.00	8	0.32	0.00	0.00	0.5	0.0	0.22	0.66
21.5	12.37	0.00	9	0.14	0.00	0.00	0.5	0.0	0.24	0.72
22.0	12.95	0.00	9	0.32	0.00	0.00	0.5	0.0	0.27	0.79
22.5	13.55	0.00	10	0.15	0.00	0.00	0.5	0.0	0.29	0.86
23.0	14.16	0.00	10	0.34	0.00	0.00	0.5	0.0	0.32	0.94
23.5	14.78	0.00	11	0.19	0.00	0.00	0.5	0.0	0.35	1.03
24.0	15.42	0.00	12	0.05	0.00	0.00	0.5	0.0	0.38	1.12
24.5	16.07	0.00	12	0.25	0.00	0.00	0.5	0.0	0.41	1.21
25.0	16.73	0.00	13	0.13	0.00	0.00	0.6	0.0	0.45	1.32
25.5	17.40	0.00	14	0.02	0.00	0.00	0.6	0.0	0.48	1.43
26.0	18.09	0.00	14	0.23	0.00	0.00	0.6	0.0	0.52	1.54
26.5	18.80	0.00	15	0.14	0.00	0.00	0.6	0.0	0.56	1.66
27.0	19.51	0.00	16	0.06	0.00	0.00	0.6	0.0	0.61	1.79
27.5	20.24	0.00	16	0.29	0.00	0.00	0.6	0.0	0.65	1.93
28.0	20.98	0.00	17	0.23	0.00	0.00	0.6	0.0	0.70	2.07
28.5	21.74	0.00	18	0.17	0.00	0.00	0.6	0.0	0.75	2.22
29.0	22.51	0.00	19	0.13	0.00	0.00	0.6	0.0	0.81	2.38
29.5	23.29	0.00	20	0.10	0.00	0.00	0.7	0.0	0.87	2.55
30.0	24.09	0.00	21	0.09	0.00	0.00	0.7	0.0	0.93	2.73

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 9 IN. VOIDED

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

SIMPLE SPAN CONDITION

DESIGN LOADS

SLAB DEAD LOAD = 90.625 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	LTV	IMM DL	DEFL SL
17.0	8.05	0.00	5	0.01	0.00	0.00	0.5	0.0	0.07	0.21
17.5	8.53	0.00	5	0.12	0.00	0.00	0.5	0.0	0.08	0.24
18.0	9.03	0.00	5	0.24	0.00	0.00	0.5	0.0	0.09	0.27
18.5	9.53	0.00	6	0.00	0.00	0.00	0.5	0.0	0.10	0.30
19.0	10.06	0.00	6	0.13	0.00	0.00	0.5	0.0	0.12	0.33
19.5	10.59	0.00	6	0.26	0.00	0.00	0.5	0.0	0.13	0.37
20.0	11.14	0.00	7	0.04	0.00	0.00	0.5	0.0	0.14	0.41
20.5	11.71	0.00	7	0.18	0.00	0.00	0.5	0.0	0.16	0.45
21.0	12.29	0.00	7	0.32	0.00	0.00	0.5	0.0	0.17	0.50
21.5	12.88	0.00	8	0.12	0.00	0.00	0.5	0.0	0.19	0.54
22.0	13.48	0.00	8	0.27	0.00	0.00	0.5	0.0	0.21	0.60
22.5	14.10	0.00	9	0.07	0.00	0.00	0.5	0.0	0.23	0.65
23.0	14.74	0.00	9	0.23	0.00	0.00	0.5	0.0	0.25	0.71
23.5	15.39	0.00	10	0.05	0.00	0.00	0.6	0.0	0.27	0.78
24.0	16.05	0.00	10	0.22	0.00	0.00	0.6	0.0	0.29	0.84
24.5	16.72	0.00	11	0.06	0.00	0.00	0.6	0.0	0.32	0.92
25.0	17.41	0.00	11	0.23	0.00	0.00	0.6	0.0	0.35	0.99
25.5	18.12	0.00	12	0.08	0.00	0.00	0.6	0.0	0.37	1.08
26.0	18.83	0.00	12	0.27	0.00	0.00	0.6	0.0	0.40	1.16
26.5	19.56	0.00	13	0.13	0.00	0.00	0.6	0.0	0.44	1.26
27.0	20.31	0.00	13	0.32	0.00	0.00	0.6	0.0	0.47	1.35
27.5	21.07	0.00	14	0.20	0.00	0.00	0.7	0.0	0.51	1.46
28.0	21.84	0.00	15	0.08	0.00	0.00	0.7	0.0	0.54	1.57
28.5	22.63	0.00	15	0.30	0.00	0.00	0.7	0.0	0.58	1.68
29.0	23.43	0.00	16	0.19	0.00	0.00	0.7	0.0	0.62	1.80
29.5	24.24	0.00	17	0.10	0.00	0.00	0.7	0.0	0.67	1.93
30.0	25.07	0.00	18	0.02	0.00	0.00	0.7	0.0	0.72	2.06
30.5	25.92	0.00	18	0.25	0.00	0.00	0.7	0.0	0.76	2.20

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 10 IN. VOIDED

SIMPLE SPAN CONDITION

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

DESIGN LOADS

SLAB DEAD LOAD = 96.875 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
20.0	11.58	0.00	6	0.17	0.00	0.00	0.5	0.0	0.11	0.32
20.5	12.17	0.00	6	0.29	0.00	0.00	0.5	0.0	0.12	0.35
21.0	12.77	0.00	7	0.06	0.00	0.00	0.5	0.0	0.14	0.39
21.5	13.38	0.00	7	0.20	0.00	0.00	0.5	0.0	0.15	0.43
22.0	14.01	0.00	7	0.33	0.00	0.00	0.6	0.0	0.17	0.47
22.5	14.66	0.00	8	0.12	0.00	0.00	0.6	0.0	0.18	0.51
23.0	15.32	0.00	8	0.26	0.00	0.00	0.6	0.0	0.20	0.56
23.5	15.99	0.00	9	0.06	0.00	0.00	0.6	0.0	0.22	0.61
24.0	16.68	0.00	9	0.21	0.00	0.00	0.6	0.0	0.23	0.66
24.5	17.38	0.00	10	0.01	0.00	0.00	0.6	0.0	0.25	0.72
25.0	18.10	0.00	10	0.17	0.00	0.00	0.6	0.0	0.28	0.78
25.5	18.83	0.00	10	0.34	0.00	0.00	0.7	0.0	0.30	0.84
26.0	19.57	0.00	11	0.16	0.00	0.00	0.7	0.0	0.32	0.91
26.5	20.33	0.00	11	0.33	0.00	0.00	0.7	0.0	0.35	0.99
27.0	21.11	0.00	12	0.17	0.00	0.00	0.7	0.0	0.38	1.06
27.5	21.90	0.00	13	0.01	0.00	0.00	0.7	0.0	0.40	1.14
28.0	22.70	0.00	13	0.19	0.00	0.00	0.7	0.0	0.43	1.23
28.5	23.52	0.00	14	0.05	0.00	0.00	0.7	0.0	0.47	1.32
29.0	24.35	0.00	14	0.24	0.00	0.00	0.7	0.0	0.50	1.41
29.5	25.20	0.00	15	0.11	0.00	0.00	0.8	0.0	0.54	1.51
30.0	26.06	0.00	15	0.31	0.00	0.00	0.8	0.0	0.57	1.62
30.5	26.93	0.00	16	0.19	0.00	0.00	0.8	0.0	0.61	1.73
31.0	27.82	0.00	17	0.08	0.00	0.00	0.8	0.0	0.65	1.85
31.5	28.73	0.00	17	0.30	0.00	0.00	0.8	0.0	0.70	1.97
32.0	29.65	0.00	18	0.20	0.00	0.00	0.8	0.0	0.74	2.10
32.5	30.58	0.00	19	0.11	0.00	0.00	0.8	0.0	0.79	2.23
33.0	31.53	0.00	20	0.03	0.00	0.00	0.9	0.0	0.84	2.37
33.5	32.49	0.00	20	0.27	0.00	0.00	0.9	0.0	0.89	2.52

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 11 IN. VOIDED

SIMPLE SPAN CONDITION

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

DESIGN LOADS

SLAB DEAD LOAD = 103.125 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
25.0	18.78	0.00	9	0.22	0.00	0.00	0.7	0.0	0.23	0.63
25.5	19.54	0.00	10	0.02	0.00	0.00	0.7	0.0	0.25	0.68
26.0	20.31	0.00	10	0.17	0.00	0.00	0.7	0.0	0.27	0.74
26.5	21.10	0.00	10	0.33	0.00	0.00	0.7	0.0	0.29	0.80
27.0	21.90	0.00	11	0.14	0.00	0.00	0.7	0.0	0.31	0.86
27.5	22.72	0.00	11	0.30	0.00	0.00	0.8	0.0	0.33	0.92
28.0	23.56	0.00	12	0.12	0.00	0.00	0.8	0.0	0.36	0.99
28.5	24.41	0.00	12	0.30	0.00	0.00	0.8	0.0	0.38	1.07
29.0	25.27	0.00	13	0.13	0.00	0.00	0.8	0.0	0.41	1.14
29.5	26.15	0.00	13	0.31	0.00	0.00	0.8	0.0	0.44	1.22
30.0	27.04	0.00	14	0.15	0.00	0.00	0.8	0.0	0.47	1.31
30.5	27.95	0.00	15	0.00	0.00	0.00	0.8	0.0	0.50	1.40
31.0	28.88	0.00	15	0.20	0.00	0.00	0.9	0.0	0.54	1.49
31.5	29.81	0.00	16	0.06	0.00	0.00	0.9	0.0	0.57	1.59
32.0	30.77	0.00	16	0.26	0.00	0.00	0.9	0.0	0.61	1.69
32.5	31.74	0.00	17	0.13	0.00	0.00	0.9	0.0	0.65	1.80
33.0	32.72	0.00	18	0.02	0.00	0.00	0.9	0.0	0.69	1.92
33.5	33.72	0.00	18	0.23	0.00	0.00	0.9	0.0	0.73	2.03
34.0	34.73	0.00	19	0.12	0.00	0.00	0.9	0.0	0.78	2.16
34.5	35.76	0.00	20	0.03	0.00	0.00	1.0	0.0	0.82	2.29
35.0	36.81	0.00	20	0.25	0.00	0.00	1.0	0.0	0.87	2.42
35.5	37.87	0.00	21	0.17	0.00	0.00	1.0	0.0	0.92	2.57
36.0	38.94	0.00	22	0.09	0.00	0.00	1.0	0.0	0.98	2.71
36.5	40.03	0.00	23	0.02	0.00	0.00	1.0	0.0	1.03	2.87
37.0	41.13	0.00	23	0.27	0.00	0.00	1.0	0.0	1.09	3.03
37.5	42.25	0.00	24	0.22	0.00	0.00	1.0	0.0	1.15	3.19
38.0	43.39	0.00	25	0.17	0.00	0.00	1.1	0.0	1.21	3.37
38.5	44.54	0.00	26	0.13	0.00	0.00	1.1	0.0	1.28	3.55

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 12 IN. VOIDED **SIMPLE SPAN CONDITION**

MATERIALS PROPERTIES **DESIGN LOADS**

FC TOPPING = 3000 PSI SLAB DEAD LOAD = 109.375 PSF

FC FILIGREE = 5000 PSI ADD. DEAD LOAD = 20 PSF

FPU = 270 KSI LIVE LOAD = 40 PSF

FY = 60 KSI VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB LTV	IMM DL	DEFL SL
25.0	19.46	0.00	8	0.33	0.00	0.00	0.7 0.0	0.19	0.52
25.5	20.25	0.00	9	0.12	0.00	0.00	0.8 0.0	0.21	0.57
26.0	21.05	0.00	9	0.26	0.00	0.00	0.8 0.0	0.22	0.61
26.5	21.87	0.00	10	0.05	0.00	0.00	0.8 0.0	0.24	0.66
27.0	22.70	0.00	10	0.20	0.00	0.00	0.8 0.0	0.26	0.71
27.5	23.55	0.00	10	0.35	0.00	0.00	0.8 0.0	0.28	0.76
28.0	24.41	0.00	11	0.15	0.00	0.00	0.8 0.0	0.30	0.82
28.5	25.29	0.00	11	0.31	0.00	0.00	0.8 0.0	0.32	0.88
29.0	26.19	0.00	12	0.12	0.00	0.00	0.9 0.0	0.35	0.95
29.5	27.10	0.00	12	0.29	0.00	0.00	0.9 0.0	0.37	1.01
30.0	28.03	0.00	13	0.11	0.00	0.00	0.9 0.0	0.40	1.08
30.5	28.97	0.00	13	0.28	0.00	0.00	0.9 0.0	0.42	1.16
31.0	29.93	0.00	14	0.12	0.00	0.00	0.9 0.0	0.45	1.23
31.5	30.90	0.00	14	0.30	0.00	0.00	0.9 0.0	0.48	1.32
32.0	31.89	0.00	15	0.14	0.00	0.00	1.0 0.0	0.51	1.40
32.5	32.89	0.00	15	0.33	0.00	0.00	1.0 0.0	0.55	1.49
33.0	33.91	0.00	16	0.18	0.00	0.00	1.0 0.0	0.58	1.59
33.5	34.95	0.00	17	0.04	0.00	0.00	1.0 0.0	0.62	1.68
34.0	36.00	0.00	17	0.24	0.00	0.00	1.0 0.0	0.65	1.79
34.5	37.07	0.00	18	0.11	0.00	0.00	1.0 0.0	0.69	1.89
35.0	38.15	0.00	18	0.32	0.00	0.00	1.0 0.0	0.73	2.01
35.5	39.24	0.00	19	0.20	0.00	0.00	1.1 0.0	0.78	2.12
36.0	40.36	0.00	20	0.09	0.00	0.00	1.1 0.0	0.82	2.25
36.5	41.49	0.00	20	0.31	0.00	0.00	1.1 0.0	0.87	2.37
37.0	42.63	0.00	21	0.21	0.00	0.00	1.1 0.0	0.92	2.51
37.5	43.79	0.00	22	.12	0.00	0.00	1.1 0.0	0.97	2.64
38.0	44.97	0.00	23	0.03	0.00	0.00	1.1 0.0	1.02	2.79
38.5	46.16	0.00	23	0.27	0.00	0.00	1.2 0.0	10.8	2.94

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 8 IN. VOIDED **END SPAN CONDITION**

MATERIALS PROPERTIES **DESIGN LOADS**

FC TOPPING = 3000 PSI SLAB DEAD LOAD = 84.375 PSF

FC FILIGREE = 5000 PSI ADD. DEAD LOAD = 20 PSF

FPU = 270 KSI LIVE LOAD = 40 PSF

FY = 60 KSI VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	LTV	IMM DL	DEFL SL
16.0	4.98	0.00	3	0.19	5.48	0.18	0.5	0.0	0.01	0.04
16.5	5.30	0.00	3	0.28	5.83	0.20	0.5	0.0	0.02	0.05
17.0	5.63	0.00	4	0.00	6.19	0.21	0.5	0.0	0.02	0.05
17.5	5.96	0.00	4	0.09	6.56	0.22	0.5	0.0	0.02	0.06
18.0	6.31	0.00	4	0.19	6.94	0.23	0.5	0.0	0.02	0.07
18.5	6.66	0.00	4	0.28	7.33	0.25	0.5	0.0	0.03	0.08
19.0	7.03	0.00	5	0.02	7.73	0.26	0.5	0.0	0.03	0.09
19.5	7.40	0.00	5	0.13	8.14	0.28	0.5	0.0	0.03	0.10
20.0	7.79	0.00	5	0.23	8.56	0.29	0.5	0.0	0.03	0.11
20.5	8.18	0.00	5	0.34	9.00	0.31	0.5	0.0	0.04	0.12
21.0	8.58	0.00	6	0.10	9.44	0.32	0.5	0.0	0.04	0.14
21.5	9.00	0.00	6	0.22	9.90	0.34	0.5	0.0	0.05	0.16
22.0	9.42	0.00	6	0.34	10.36	0.36	0.6	0.0	0.05	0.20
22.5	9.85	0.00	7	0.11	10.84	0.37	0.6	0.0	0.06	0.23
23.0	10.30	0.00	7	0.23	11.33	0.39	0.6	0.0	0.06	0.27
23.5	10.75	0.00	8	0.02	11.83	0.41	0.6	0.0	0.07	0.32
24.0	11.21	0.00	8	0.15	12.33	0.43	0.6	0.0	0.08	0.37
24.5	11.68	0.00	8	0.29	12.85	0.45	0.6	0.0	0.09	0.42
25.0	12.16	0.00	9	0.08	13.38	0.47	0.6	0.0	0.11	0.48
25.5	12.66	0.00	9	0.23	13.92	0.49	0.7	0.0	0.13	0.55
26.0	13.16	0.00	10	0.04	14.47	0.51	0.7	0.0	0.15	0.62
26.5	13.67	0.00	10	0.19	15.04	0.53	0.7	0.0	0.17	0.70
27.0	14.19	0.00	11	0.01	15.61	0.55	0.7	0.0	0.19	0.78
27.5	14.72	0.00	11	0.17	16.19	0.58	0.7	0.0	0.22	0.86
28.0	15.26	0.00	12	0.00	16.79	0.60	0.7	0.0	0.24	0.96
28.5	15.81	0.00	12	0.17	17.39	0.62	0.7	0.0	0.28	1.05
29.0	16.37	0.00	13	0.02	18.01	0.65	0.7	0.0	0.31	1.16
29.5	16.94	0.00	13	0.19	18.63	0.67	0.8	0.0	0.34	1.27
30.0	17.52	0.00	14	0.05	19.27	0.70	0.8	0.0	0.38	1.38

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 9 IN. VOIDED

END SPAN CONDITION

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

DESIGN LOADS

SLAB DEAD LOAD = 90.625 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
17.0	5.85	0.00	3	0.22	6.44	0.19	0.5	0.0	0.01	0.04
17.5	6.20	0.00	3	0.30	6.83	0.20	0.5	0.0	0.02	0.04
18.0	6.56	0.00	4	0.02	7.22	0.21	0.5	0.0	0.02	0.05
18.5	6.93	0.00	4	0.11	7.63	0.22	0.5	0.0	0.02	0.06
19.0	7.31	0.00	4	0.20	8.05	0.24	0.5	0.0	0.02	0.06
19.5	7.70	0.00	4	0.29	8.47	0.25	0.5	0.0	0.02	0.07
20.0	8.10	0.00	5	0.02	8.92	0.26	0.5	0.0	0.03	0.08
20.5	8.51	0.00	5	0.12	9.37	0.28	0.6	0.0	0.03	0.09
21.0	8.93	0.00	5	0.22	9.83	0.29	0.6	0.0	0.03	0.10
21.5	9.36	0.00	5	0.32	10.30	0.30	0.6	0.0	0.04	0.11
22.0	9.81	0.00	6	0.07	10.79	0.32	0.6	0.0	0.04	0.12
22.5	10.26	0.00	6	0.18	11.28	0.34	0.6	0.0	0.04	0.13
23.0	10.72	0.00	6	0.29	11.79	0.35	0.6	0.0	0.05	0.15
23.5	11.19	0.00	7	0.05	12.31	0.37	0.6	0.0	0.05	0.17
24.0	11.67	0.00	7	0.17	12.84	0.38	0.7	0.0	0.05	0.20
24.5	12.16	0.00	7	0.29	13.38	0.40	0.7	0.0	0.06	0.24
25.0	12.66	0.00	8	0.06	13.93	0.42	0.7	0.0	0.06	0.27
25.5	13.17	0.00	8	0.19	14.49	0.44	0.7	0.0	0.07	0.32
26.0	13.70	0.00	8	0.32	15.07	0.45	0.7	0.0	0.08	0.36
26.5	14.23	0.00	9	0.11	15.65	0.47	0.7	0.0	0.09	0.41
27.0	14.77	0.00	9	0.24	16.25	0.49	0.7	0.0	0.11	0.47
27.5	15.32	0.00	10	0.04	16.85	0.51	0.8	0.0	0.13	0.53
28.0	15.88	0.00	10	0.18	17.47	0.53	0.8	0.0	0.14	0.60
28.5	16.46	0.00	10	0.33	18.10	0.55	0.8	0.0	0.16	0.67
29.0	17.04	0.00	11	0.14	18.74	0.58	0.8	0.0	0.19	0.74
29.5	17.63	0.00	11	0.29	19.40	0.60	0.8	0.0	0.21	0.82
30.0	18.23	0.00	12	0.11	20.06	0.62	0.8	0.0	0.24	0.91
30.5	18.85	0.00	12	0.27	20.73	0.64	0.8	0.0	0.26	1.00

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 10 IN. VOIDED

END SPAN CONDITION

MATERIALS PROPERTIES

FC TOPPING = 3000 PSI

FC FILIGREE = 5000 PSI

FPU = 270 KSI

FY = 60 KSI

DESIGN LOADS

SLAB DEAD LOAD = 96.875 PSF

ADD. DEAD LOAD = 20 PSF

LIVE LOAD = 40 PSF

VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
20.0	8.42	0.00	4	0.23	9.27	0.24	0.6	0.0	0.02	0.06
20.5	8.85	0.00	4	0.32	9.73	0.25	0.6	0.0	0.02	0.06
21.0	9.29	0.00	5	0.04	10.21	0.27	0.6	0.0	0.03	0.07
21.5	9.73	0.00	5	0.14	10.71	0.28	0.6	0.0	0.03	0.08
22.0	10.19	0.00	5	0.23	11.21	0.29	0.6	0.0	0.03	0.09
22.5	10.66	0.00	5	0.33	11.73	0.31	0.7	0.0	0.03	0.10
23.0	11.14	0.00	6	0.07	12.25	0.32	0.7	0.0	0.04	0.11
23.5	11.63	0.00	6	0.18	12.79	0.34	0.7	0.0	0.04	0.12
24.0	12.13	0.00	6	0.28	13.34	0.35	0.7	0.0	0.04	0.13
24.5	12.64	0.00	7	0.03	13.90	0.37	0.7	0.0	0.05	0.14
25.0	13.16	0.00	7	0.15	14.48	0.38	0.7	0.0	0.05	0.16
25.5	13.69	0.00	7	0.26	15.06	0.40	0.8	0.0	0.05	0.18
26.0	14.23	0.00	8	0.02	15.66	0.41	0.8	0.0	0.06	0.21
26.5	14.79	0.00	8	0.14	16.27	0.43	0.8	0.0	0.06	0.25
27.0	15.35	0.00	8	0.27	16.89	0.45	0.8	0.0	0.07	0.28
27.5	15.92	0.00	9	0.04	17.52	0.47	0.8	0.0	0.07	0.33
28.0	16.51	0.00	9	0.17	18.16	0.48	0.8	0.0	0.09	0.37
28.5	17.10	0.00	9	0.30	18.81	0.50	0.9	0.0	0.10	0.42
29.0	17.71	0.00	10	0.09	19.48	0.52	0.9	0.0	0.11	0.47
29.5	18.32	0.00	10	0.23	20.16	0.54	0.9	0.0	0.13	0.53
30.0	18.95	0.00	11	0.02	20.85	0.56	0.9	0.0	0.15	0.59
30.5	19.59	0.00	11	0.16	21.55	0.58	0.9	0.0	0.17	0.66
31.0	20.23	0.00	11	0.31	22.26	0.60	0.9	0.0	0.19	0.73
31.5	20.89	0.00	12	0.12	22.98	0.62	0.9	0.0	0.21	0.81
32.0	21.56	0.00	12	0.27	23.72	0.64	1.0	0.0	0.24	0.89
32.5	22.24	0.00	13	0.09	24.47	0.67	1.0	0.0	0.26	0.97
33.0	22.93	0.00	13	0.25	25.22	0.69	1.0	0.0	0.29	1.06
33.5	23.63	0.00	14	0.07	25.99	0.71	1.0	0.0	0.32	1.15

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 11 IN. VOIDED **END SPAN CONDITION**

MATERIALS PROPERTIES **DESIGN LOADS**

FC TOPPING = 3000 PSI SLAB DEAD LOAD = 103.125 PSF

FC FILIGREE = 5000 PSI ADD. DEAD LOAD = 20 PSF

FPU = 270 KSI LIVE LOAD = 40 PSF

FY = 60 KSI VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB	S H E A R LTV	IMM DL	DEFL SL
25.0	13.66	0.00	6	0.30	15.02	0.35	0.8	0.0	0.04	0.12
25.5	14.21	0.00	7	0.04	15.63	0.37	0.8	0.0	0.04	0.13
26.0	14.77	0.00	7	0.15	16.25	0.38	0.8	0.0	0.05	0.14
26.5	15.34	0.00	7	0.26	16.88	0.40	0.8	0.0	0.05	0.16
27.0	15.93	0.00	8	0.02	17.52	0.41	0.9	0.0	0.06	0.17
27.5	16.52	0.00	8	0.13	18.18	0.43	0.9	0.0	0.06	0.20
28.0	17.13	0.00	8	0.25	18.85	0.45	0.9	0.0	0.06	0.23
28.5	17.75	0.00	9	0.02	19.52	0.46	0.9	0.0	0.07	0.26
29.0	18.38	0.00	9	0.14	20.22	0.48	0.9	0.0	0.07	0.30
29.5	19.02	0.00	9	0.27	20.92	0.50	0.9	0.0	0.08	0.34
30.0	19.67	0.00	10	0.04	21.63	0.52	1.0	0.0	0.09	0.39
30.5	20.33	0.00	10	0.17	22.36	0.54	1.0	0.0	0.11	0.43
31.0	21.00	0.00	10	0.31	23.10	0.55	1.0	0.0	0.12	0.49
31.5	21.68	0.00	11	0.09	23.85	0.57	1.0	0.0	0.14	0.54
32.0	22.37	0.00	11	0.23	24.61	0.59	1.0	0.0	0.15	0.60
32.5	23.08	0.00	12	0.03	25.39	0.61	1.0	0.0	0.17	0.67
33.0	23.79	0.00	12	0.17	26.18	0.63	1.1	0.0	0.19	0.73
33.5	24.52	0.00	12	0.32	26.98	0.65	1.1	0.0	0.22	0.81
34.0	25.26	0.00	13	0.13	27.79	0.68	1.1	0.0	0.24	0.88
34.5	26.01	0.00	13	0.28	28.61	0.70	1.1	0.0	0.27	0.96
35.0	26.77	0.00	14	0.10	29.45	0.72	1.1	0.0	0.29	1.05
35.5	27.54	0.00	14	0.26	30.29	0.74	1.1	0.0	0.32	1.14
36.0	28.32	0.00	15	0.08	31.15	0.76	1.2	0.0	0.35	1.23
36.5	29.11	0.00	15	0.25	32.02	0.79	1.2	0.0	0.39	1.33
37.0	29.91	0.00	16	0.08	32.91	0.81	1.2	0.0	0.42	1.43
37.5	30.73	0.00	16	0.25	33.80	0.84	1.2	0.0	0.46	1.54
38.0	31.55	0.00	17	0.09	34.71	0.86	1.2	0.0	0.50	1.65
38.5	32.39	0.00	17	0.27	35.63	0.89	1.2	0.0	0.54	1.76

APC/ FILIGREE WIDESLAB
ANALYSIS AND DESIGN CALCULATIONS

SLAB THICKNESS = 12 IN. VOIDED **END SPAN CONDITION**

MATERIALS PROPERTIES **DESIGN LOADS**

FC TOPPING = 3000 PSI SLAB DEAD LOAD = 109.375 PSF

FC FILIGREE = 5000 PSI ADD. DEAD LOAD = 20 PSF

FPU = 270 KSI LIVE LOAD = 40 PSF

FY = 60 KSI VOID COVER = 3.25 IN.

SPAN (FT)	MU+ (F-FT)	MUMIN (K-FT)	STRANDS	MILD STL (SQ. IN.)	MU- (K-FT)	NEG. STL (SQ. IN.)	S H E A R WEB LTV	IMM DL	DEFL SL
25.0	14.15	0.00	6	0.13	15.57	0.33	0.9 0.0	0.03	0.09
25.5	14.73	0.00	6	0.23	16.20	0.34	0.9 0.0	0.04	0.10
26.0	15.31	0.00	6	0.33	16.84	0.36	0.9 0.0	0.04	0.11
26.5	15.90	0.00	7	0.07	17.49	0.37	0.9 0.0	0.04	0.12
27.0	16.51	0.00	7	0.18	18.16	0.39	0.9 0.0	0.05	0.13
27.5	17.13	0.00	7	0.29	18.84	0.40	0.9 0.0	0.05	0.14
28.0	17.75	0.00	8	0.03	19.53	0.42	1.0 0.0	0.05	0.16
28.5	18.39	0.00	8	0.15	20.24	0.43	1.0 0.0	0.06	0.17
29.0	19.04	0.00	8	0.26	20.95	0.45	1.0 0.0	0.06	0.19
29.5	19.71	0.00	9	0.02	21.68	0.47	1.0 0.0	0.07	0.22
30.0	20.38	0.00	9	0.14	22.42	0.48	1.0 0.0	0.07	0.25
30.5	21.07	0.00	9	0.26	23.17	0.50	1.1 0.0	0.07	0.28
31.0	21.76	0.00	10	0.03	23.94	0.52	1.1 0.0	0.08	0.32
31.5	22.47	0.00	10	0.16	24.72	0.53	1.1 0.0	0.09	0.36
32.0	23.19	0.00	10	0.28	25.51	0.55	1.1 0.0	0.10	0.41
32.5	23.92	0.00	11	0.06	26.31	0.57	1.1 0.0	0.12	0.46
33.0	24.66	0.00	11	0.20	27.13	0.59	1.1 0.0	0.13	0.51
33.5	25.41	0.00	11	0.33	27.96	0.61	1.2 0.0	0.15	0.56
34.0	26.18	0.00	12	0.12	28.80	0.63	1.2 0.0	0.16	0.62
34.5	26.95	0.00	12	0.26	29.65	0.65	1.2 0.0	0.18	0.68
35.0	27.74	0.00	13	0.06	30.52	0.67	1.2 0.0	0.20	0.75
35.5	28.54	0.00	13	0.21	31.40	0.69	1.2 0.0	0.23	0.82
36.0	29.35	0.00	14	0.01	32.29	0.71	1.2 0.0	0.25	0.90
36.5	30.17	0.00	14	0.16	33.19	0.73	1.3 0.0	0.28	0.97
37.0	31.00	0.00	14	0.32	34.11	0.75	1.3 0.0	0.30	1.06
37.5	31.85	0.00	15	0.13	35.03	0.77	1.3 0.0	0.33	1.14
38.0	32.70	0.00	15	0.29	35.97	0.80	1.3 0.0	0.36	1.23
38.5	33.57	0.00	16	0.12	36.93	0.82	1.3 0.0	0.39	1.33