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*************************************************
*                                               *
*           STAAD.Pro V8i SELECTseries5          *
*           Version  20.07.10.64                *
*           Proprietary Program of              *
*           Bentley Systems, Inc.               *
*           Date=    DEC 17, 2014               *
*           Time=     8:44:17                   *
*                                               *
*      USER ID:                                 *
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     1. STAAD SPACE DXF IMPORT OF MODELO PENITENCIARIA 1.DXF
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     3. ENGINEER DATE 16-DEC-14
     4. JOB NAME CENTRO DE FORMACION JUVENIL PARA EL SPRA
     5. JOB COMMENT EDIFICACION DE DOS PISO, CUBIERTA EN METALDECK
     6. ENGINEER NAME EMEL MULET
     7. END JOB INFORMATION
     8. INPUT WIDTH 79
     9. UNIT METER KN
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    13. 7 17.6201 3.4 4.38; 8 17.6201 3.4 11.2999; 9 4.62012 3.4 11.2999
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    19. 25 15.76 3.4 11.2999; 26 5.4502 3.4 -0.910034; 27 5.4502 3.4 11.2999
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229. 561 349 213; 562 212 349; 563 222 134; 564 350 222; 565 215 350; 566 351 215
230. 567 216 351; 568 352 216; 569 217 352; 570 166 126; 571 353 166; 572 223 353
231. 573 354 223; 574 224 354; 575 355 224; 576 225 355; 577 356 225; 578 226 356
232. 579 232 137; 580 357 232; 581 231 357; 582 358 231; 583 228 358; 584 359 228
233. 585 227 359; 586 233 139; 587 360 233; 588 230 360; 589 361 230; 590 229 361
234. 591 221 141; 592 362 221; 593 220 362; 594 363 220; 595 219 363; 596 364 219
235. 597 218 364; 598 352 143; 599 365 352; 600 349 365; 601 354 145; 602 366 354
236. 603 364 366; 604 333 147; 605 360 333; 606 367 360; 607 357 367; 608 362 149
237. 609 368 362; 610 350 368; 611 345 151; 612 369 345; 613 341 369; 614 365 341
238. 615 338 365; 616 346 153; 617 368 346; 618 344 368; 619 370 344; 620 371 155
239. 621 340 371; 622 366 340; 623 337 366; 624 372 157; 625 343 372; 626 373 343
240. 627 347 373; 628 339 159; 629 367 339; 630 336 367; 631 374 336; 632 342 374
241. 633 353 161; 634 371 353; 635 363 371; 636 370 363; 637 351 370; 638 369 351
242. 639 348 369; 640 332 163; 641 361 332; 642 374 361; 643 358 374; 644 372 358
243. 645 355 372; 646 359 165; 647 373 359; 648 356 373; 649 219 375; 650 220 376
244. 651 228 377; 652 231 378; 653 377 378; 668 391 392; 669 375 391; 671 376 392
245. 672 393 394; 673 376 393; 675 375 394; 676 395 397; 677 378 395; 679 378 396
246. 681 377 397; 682 398 396; 683 377 398; 684 375 376
247. DEFINE MATERIAL START
248. ISOTROPIC CONCRETE
249. E 1.7872E+007
250. POISSON 0.17
251. DENSITY 23.5616
252. ALPHA 1E-005
253. DAMP 0.05
254. TYPE CONCRETE
255. STRENGTH FCU 21000
256. END DEFINE MATERIAL
257. MEMBER PROPERTY AMERICAN
258. 110 TO 112 129 130 135 649 PRIS YD 0.4
259. 100 TO 109 113 TO 128 131 TO 134 136 TO 145 650 TO 652 PRIS YD 0.4 ZD 0.4
260. 18 TO 29 213 TO 330 653 669 671 673 675 677 679 681 683 684 PRIS YD 0.4 ZD 0.3
261. 1 TO 17 30 TO 57 146 TO 212 331 TO 463 PRIS YD 0.4 ZD 0.12
262. 91 TO 95 611 TO 632 PRIS YD 0.3 ZD 0.2

```
263. 58 TO 74 87 TO 90 96 TO 99 464 TO 510 598 TO 610 633 TO 648 668 672 676 -
264. 682 PRIS YD 0.3 ZD 0.12
265. MEMBER PROPERTY AMERICAN
266. 75 TO 86 511 TO 597 PRIS YD 0.3 ZD 0.3
267. CONSTANTS
268. MATERIAL CONCRETE ALL
269. SUPPORTS
270. 168 170 172 174 176 178 180 182 184 186 188 190 192 193 195 197 199 201 203 -
271. 205 207 209 211 FIXED
272. DEFINE COLOMBIAN ACCIDENTAL LOAD
273. ZONE 0.2 I 1 S 1.5
274. SELFWEIGHT 1
275. FLOOR WEIGHT
**NOTE** about Floor/OneWay Loads/Weights.
  Please note that depending on the shape of the floor you may
  have to break up the FLOOR/ONEWAY LOAD into multiple commands.
  For details please refer to Technical Reference Manual
  Section 5.32.4.2 Note d and/or "5.32.4.3 Note f.

276. YRANGE 0 3.4 FLOAD 5.35
277. YRANGE 7 7.8 FLOAD 6.7
278. ONEWAY LOAD
279. YRANGE 6 6.2 ONE 4.32 TOWARDS 506
280. MEMBER WEIGHT
281. 1 3 5 9 11 12 14 21 24 TO 28 146 TO 149 153 TO 156 160 TO 163 177 TO 180 188 -
282. 189 TO 192 196 TO 199 217 TO 219 243 TO 245 249 TO 252 256 TO 259 263 TO 265 -
283. 274 TO 284 288 TO 290 298 TO 307 311 TO 324 UNI 6.4
284. 668 669 671 TO 673 675 TO 677 679 681 TO 683 UNI 3.5
285. LOAD 1 SISMO X
286. COLOMBIAN LOAD X 1 ACC 1
287. LOAD 2 SISMO Z
288. COLOMBIAN LOAD Z 1 ACC 1
289. LOAD 3 CV
290. FLOOR LOAD
291. YRANGE 0 3.4 FLOAD -2 GY
292. ONEWAY LOAD
293. YRANGE 6 6.2 ONE -0.5 GY TOWARDS 506
294. FLOOR LOAD
295. YRANGE 7 7.8 FLOAD -11.5 GY
296. LOAD 4 CM
297. FLOOR LOAD
```

```
298. YRANGE 0 3.4 FLOAD -5.35 GY
299. YRANGE 7 7.8 FLOAD -6.7 GY
300. ONEWAY LOAD
301. YRANGE 6 6.2 ONE -4.32 GY TOWARDS 506
302. MEMBER LOAD
303. 1 3 5 9 11 12 14 21 24 TO 28 146 TO 149 153 TO 156 160 TO 163 177 TO 180 188 -
304. 189 TO 192 196 TO 199 217 TO 219 243 TO 245 249 TO 252 256 TO 259 263 TO 265 -
305. 274 TO 284 288 TO 290 298 TO 307 311 TO 324 UNI GY -6.4
306. 668 669 671 TO 673 675 TO 677 679 681 TO 683 UNI GY -3.5
307. *COEFICIENTE DE CAPACIDAD DE DISIPACION DE ENERGIA R=        4.5
308. *COMBINACIONES PARA DISEÑO DE LA ESTRUCTURA Y SUPERESTRUCTURA
309. *COMBINACIONES PARA DISEÑO DE VIGAS Y COLUMNAS
310. LOAD COMB 5 1.2 CM + 1.600 CV
311. 4 1.2 3 1.6
312. LOAD COMB 6 1.2 CM + CV + (SX/R + 0,30 SZ/R)
313. 4 1.2 3 1.0 1 0.222 2 0.067
314. LOAD COMB 7 1.2 CM + CV - (SX/R - 0,30 SZ/R)
315. 4 1.2 3 1.0 1 -0.222 2 0.067
316. LOAD COMB 8 1.2 CM + CV + (SX/R - 0,30 SZ/R)
317. 4 1.2 3 1.0 1 0.222 2 -0.067
318. LOAD COMB 9 1.2 CM + CV - (SX/R + 0,30 SZ/R)
319. 4 1.2 3 1.0 1 -0.222 2 -0.067
320. LOAD COMB 10 1.2 CM + CV + (0.3 SX/R + SZ/R)
321. 4 1.2 3 1.0 1 0.067 2 0.222
322. LOAD COMB 11 1.2 CM + CV - (0.3 SX/R - SZ/R)
323. 4 1.2 3 1.0 1 -0.067 2 0.222
324. LOAD COMB 12 1.2 CM + CV + (0.3 SX/R - SZ/R)
325. 4 1.2 3 1.0 1 0.067 2 -0.222
326. LOAD COMB 13 1.2 CM + CV - (0.3 SX/R + SZ/R)
327. 4 1.2 3 1.0 1 -0.067 2 -0.222
328. LOAD COMB 14 0.9 CM + (SX/R + 0,30 SZ/R)
329. 4 0.9 1 0.222 2 0.067
330. LOAD COMB 15 0.9 CM - (SX/R - 0,30 SZ/R)
331. 4 0.9 1 -0.222 2 0.067
332. LOAD COMB 16 0.9 CM + (SX/R - 0,30 SZ/R)
333. 4 0.9 1 0.222 2 -0.067
334. LOAD COMB 17 0.9 CM - (SX/R + 0,30 SZ/R)
335. 4 0.9 1 -0.222 2 -0.067
336. LOAD COMB 18 0.9 CM + (0.3 SX/R + SZ/R)
337. 4 0.9 1 0.067 2 0.222
338. LOAD COMB 19 0.9 CM - (0.3 SX/R - SZ/R)
339. 4 0.9 1 -0.067 2 0.222
340. LOAD COMB 20 0.9 CM + (0.3 SX/R - SZ/R)
341. 4 0.9 1 0.067 2 -0.222
342. LOAD COMB 21 0.9 CM - (0.3 SX/R + SZ/R)
343. 4 0.9 1 -0.067 2 -0.222
344. *COMBINACIONES PARA DISEÑO DE CIMENTACION
345. *COMBINACIONES DE SERVICIO
346. LOAD COMB 22 CM + CV
347. 4 1.0 3 1.0
```

```
348. LOAD COMB 23 CM + 0,75 CV + 0.75 (0.7)(SX + 0,3 SZ)/R
349. 4 1.0 3 0.75 1 0.117 2 0.035
350. LOAD COMB 24 CM + 0,75 CV - 0.75 (0.7)(SX - 0,3 SZ)/R
351. 4 1.0 3 0.75 1 -0.117 2 0.035
352. LOAD COMB 25 CM + 0,75 CV + 0.75 (0.7)(SX - 0,3 SZ)/R
353. 4 1.0 3 0.75 1 0.117 2 -0.035
354. LOAD COMB 26 CM + 0,75 CV - 0.75 (0.7)(SX + 0,3 SZ)/R
355. 4 1.0 3 0.75 1 -0.117 2 -0.035
356. LOAD COMB 27 CM + 0,75 CV + 0.75 (0.7)(0,3 SX + SZ)/R
357. 4 1.0 3 0.75 1 0.035 2 0.13
358. LOAD COMB 28 CM + 0,75 CV - 0.75 (0.7)(0.3 SX - SZ)/R
359. 4 1.0 3 0.75 1 -0.035 2 0.117
360. LOAD COMB 29 CM + 0,75 CV + 0.75 (0.7)(0.3 SX - SZ)/R
361. 4 1.0 3 0.75 1 0.035 2 -0.117
362. LOAD COMB 30 CM + 0,75 CV - 0.75 (0.7)(0.3 SX + SZ)/R
363. 4 1.0 3 0.75 1 -0.035 2 -0.117
364. LOAD COMB 31 0.6 CM + 0.700 ( SX + 0.3 SZ)/R
365. 4 0.6 1 0.156 2 0.047
366. LOAD COMB 32 0.6 CM - 0.700 ( SX - 0.3 SZ)/R
367. 4 0.6 1 -0.156 2 0.047
368. LOAD COMB 33 0.6 CM + 0.700 ( SX - 0.3 SZ)/R
369. 4 0.6 1 0.156 2 -0.047
370. LOAD COMB 34 0.6 CM - 0.700 ( SX + 0.3 SZ)/R
371. 4 0.6 1 -0.156 2 -0.047
372. LOAD COMB 35 0.6 CM + 0.700 ( 0.3 SX + SZ)/R
373. 4 0.6 1 0.047 2 0.156
374. LOAD COMB 36 0.6 CM - 0.700 ( 0.3 SX - SZ)/R
375. 4 0.6 1 -0.047 2 0.156
376. LOAD COMB 37 0.6 CM - 0.700 ( 0.3 SX + SZ)/R
377. 4 0.6 1 -0.047 2 -0.156
378. LOAD COMB 38 0.6 CM + 0.700 ( 0.3 SX - SZ)/R
379. 4 0.6 1 0.047 2 -0.156
380. PERFORM ANALYSIS
```

P R O B L E M S T A T I S T I C S

NUMBER OF JOINTS	**386**	**NUMBER OF MEMBERS**	**666**
NUMBER OF PLATES	**0**	**NUMBER OF SOLIDS**	**0**
NUMBER OF SURFACES	**0**	**NUMBER OF SUPPORTS**	**23**

SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

ORIGINAL/FINAL BAND-WIDTH= 300/ 31/ 186 DOF
TOTAL PRIMARY LOAD CASES = 4, TOTAL DEGREES OF FREEDOM = 2178
TOTAL LOAD COMBINATION CASES = 34 SO FAR.
SIZE OF STIFFNESS MATRIX = 406 DOUBLE KILO-WORDS
REQRD/AVAIL. DISK SPACE = 17.5/ 285127.2 MB

**WARNING: IF THIS UBC/IBC ANALYSIS HAS TENSION/COMPRESSION
OR REPEAT LOAD OR RE-ANALYSIS OR SELECT OPTIMIZE, THEN EACH
UBC/IBC CASE SHOULD BE FOLLOWED BY PERFORM ANALYSIS _CHANGE.

```
************************************************************
*                                                          *
*  COLOMBIAN SEISMIC LOAD :                                *
*                                                          *
*  TIME PERIODS FOR X DIRECTION:                           *
*   Ta =  0.341 Tb =  0.529 Tuser = 0.000                  *
*   TIME PERIOD USED (T)       =  0.341                    *
*  LOAD FACTOR                 =  1.000                    *
*  DESIGN BASE SHEAR =  0.500 X    7755.58 =    3877.79  KN  *
*                                                          *
************************************************************
```

```
************************************************************
*                                                          *
*  COLOMBIAN SEISMIC LOAD :                                *
*                                                          *
*  TIME PERIODS FOR Z DIRECTION:                           *
*   Ta =  0.341 Tb =  0.539 Tuser = 0.000                  *
*   TIME PERIOD USED (T)       =  0.341                    *
*  LOAD FACTOR                 =  1.000                    *
*  DESIGN BASE SHEAR =  0.500 X    7755.58 =    3877.79  KN  *
*                                                          *
************************************************************
```

```
381. DEFINE ENVELOPE
382. 5 TO 21 ENVELOPE 1 TYPE STRENGTH
383. END DEFINE ENVELOPE
384. LOAD LIST 1 2
385. PRINT STORY DRIFT 0.010000
```

STORY	HEIGHT (METE)	LOAD	AVG. DISP(CM) X	AVG. DISP(CM) Z	DRIFT(CM) X	DRIFT(CM) Z	RATIO	STATUS
BASE=	0.00					ALLOW. DRIFT = L / 100		
1	0.00	1	0.0000	0.0000	0.0000	0.0000	L /999999	PASS
		2	0.0000	0.0000	0.0000	0.0000	L /999999	PASS
2	3.40	1	2.6474	0.0058	2.6474	0.0058	L / 128	PASS
		2	-0.0003	2.7179	0.0003	2.7179	L / 125	PASS
3	6.20	1	4.7162	0.0132	2.0688	0.0074	L / 135	PASS
		2	-0.0101	4.9694	0.0097	2.2515	L / 124	PASS
4	7.80	1	6.0861	0.0203	1.3699	0.0071	L / 117	PASS
		2	-0.1290	6.4686	0.1189	1.4992	L / 107	PASS

```
386. LOAD LIST 5 TO 21
387. START CONCRETE DESIGN
388. CODE ACI
389. CLB 0.04 MEMB 100 TO 145 649 TO 652
390. CLS 0.04 MEMB 100 TO 145 649 TO 652
391. CLT 0.04 MEMB 100 TO 145 649 TO 652
392. FC 21000 MEMB 100 TO 145 649 TO 652
393. FYMAIN 420000 MEMB 100 TO 145 649 TO 652
394. FYSEC 420000 MEMB 100 TO 145 649 TO 652
395. DESIGN COLUMN 100 TO 145 649 TO 652
```

==========

COLUMN NO. 100 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1692.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 12 MM	1.131	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 101 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2192.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 102 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1692.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 12 MM	1.131	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 103 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1817.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 104 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1942.4 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	17	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 105 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1817.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI

4 - 25 MM 1.227 17 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 106 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1692.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 12 MM	1.131	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 107 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	14	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 108 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2316.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 16 MM	1.508	19	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 109 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	19	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 110 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 111 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 112 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 113 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	10	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 114 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	15	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 115 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2566.4 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
24 - 12 MM	1.696	15	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 116 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1817.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	15	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)

TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 117 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1817.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	21	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 118 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1942.4 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	21	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 119 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI

20 - 12 MM 1.414 13 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 120 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1692.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 12 MM	1.131	18	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 121 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1817.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	18	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 122 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 1942.4 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 25 MM	1.227	21	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 123 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 124 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 125 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 126 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 127 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 128 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 129 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 130 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 131 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 132 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 133 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 134 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 135 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1256.6 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.080	5	END	0.650

(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 136 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 137 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 138 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 139 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 140 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 141 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 142 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 143 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 144 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 145 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 1600.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.005	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 649 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, CIRC SIZE 400.0 MMS DIAMETER TIED
AREA OF STEEL REQUIRED = 2505.7 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI

13 - 16 MM 2.080 7 END 0.650
(EQUALLY SPACED)
TIE BAR NUMBER 12 SPACING 256.00 MM

==========

COLUMN NO. 650 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2067.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	6	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 651 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2192.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM	1.414	7	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

==========

COLUMN NO. 652 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 400.0 X 400.0 MMS, TIED
AREA OF STEEL REQUIRED = 2192.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI

---

20 - 12 MM 1.414 6 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 192.00 MM

**********END OF COLUMN DESIGN RESULTS**********

```
396. CLB 0.04 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
397. 318 TO 320 322 TO 324 328 TO 330
398. CLS 0.04 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
399. 318 TO 320 322 TO 324 328 TO 330
400. CLT 0.04 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
401. 318 TO 320 322 TO 324 328 TO 330
402. FC 21000 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
403. 318 TO 320 322 TO 324 328 TO 330
404. FYMAIN 420000 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
405. 318 TO 320 322 TO 324 328 TO 330
406. FYSEC 420000 MEMB 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 318 -
407. 319 TO 320 322 TO 324 328 TO 330
408. DESIGN BEAM 228 TO 230 242 TO 245 260 TO 262 305 TO 307 311 TO 313 -
409. 318 TO 320 322 TO 324 328 TO 330
```

BEAM NO. 228 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

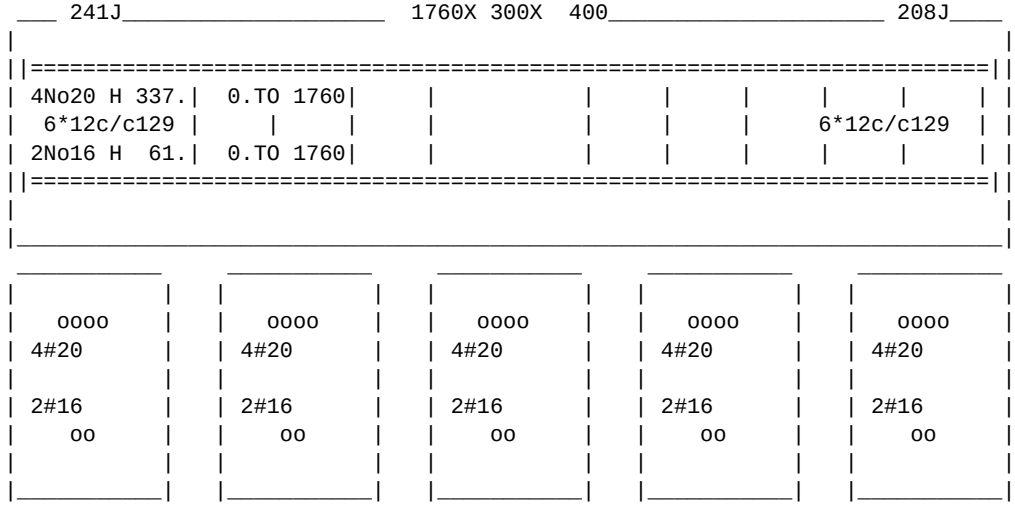
LEN - 1760. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 16MM	0.	1760.	YES	YES
2	337.	4 - 20MM	0.	1760.	YES	YES

B E A M N O. 228 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 59.13 KNS Vc= 76.17 KNS Vs= 2.68 KNS
Tu= 8.69 KN-MET Tc= 2.9 KN-MET Ts= 11.6 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.62 SQ.CM.

AT END SUPPORT - Vu= 69.94 KNS Vc= 76.17 KNS Vs= 17.08 KNS
Tu= 8.69 KN-MET Tc= 2.9 KN-MET Ts= 11.6 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.62 SQ.CM.



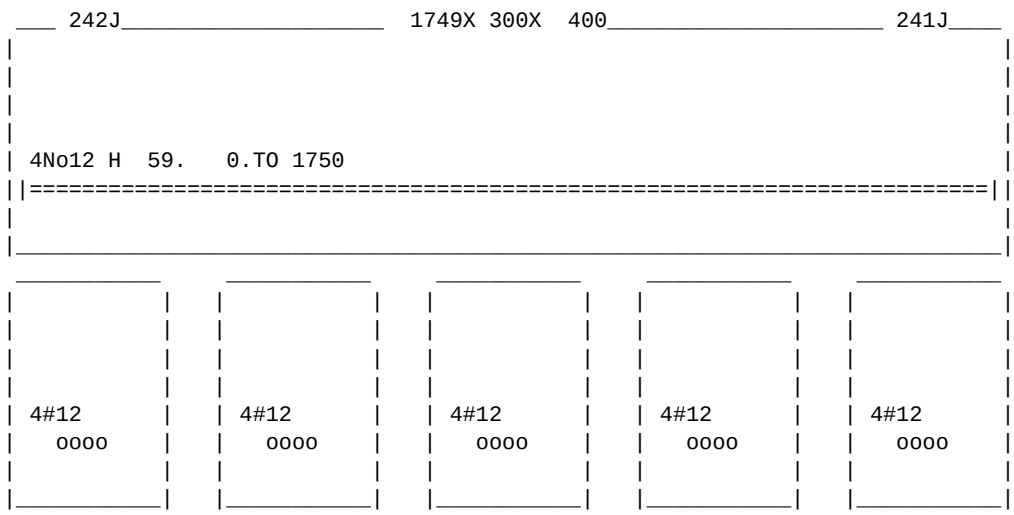
BEAM NO. 229 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1750. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 12MM	0.	1750.	YES	YES

B E A M N O. 229 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 4.04 KNS Vc= 76.10 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 8.14 KNS Vc= 76.10 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 230 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

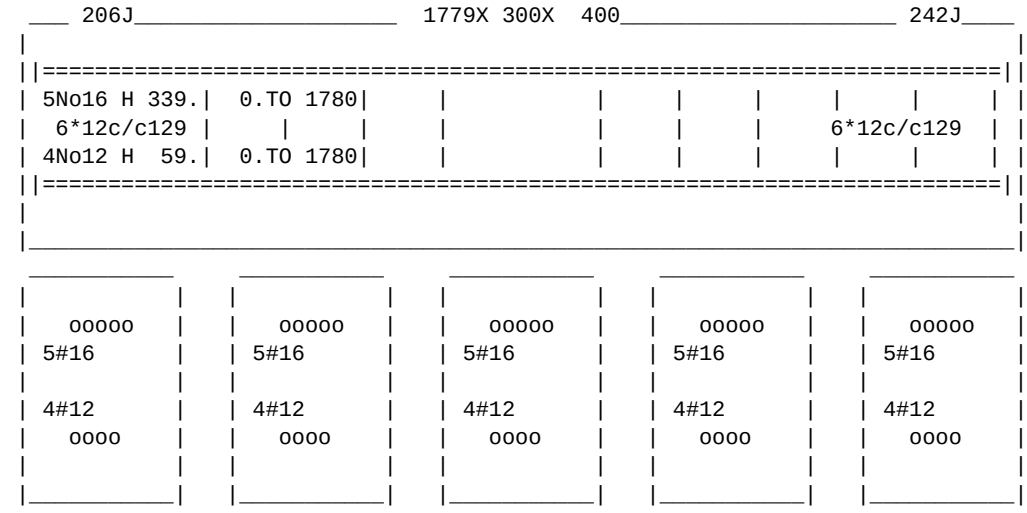
LEN - 1780. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 12MM	0.	1780.	YES	YES
2	339.	5 - 16MM	0.	1780.	YES	YES

B E A M N O. 230 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 64.11 KNS Vc= 77.31 KNS Vs= 8.17 KNS
Tu= 4.79 KN-MET Tc= 2.9 KN-MET Ts= 6.4 KN-MET LOAD 8
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 555. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.44 SQ.CM.

AT END SUPPORT - Vu= 41.25 KNS Vc= 76.08 KNS Vs= 0.00 KNS
Tu= 5.19 KN-MET Tc= 2.8 KN-MET Ts= 6.9 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 555. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.56 SQ.CM.



BEAM NO. 242 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

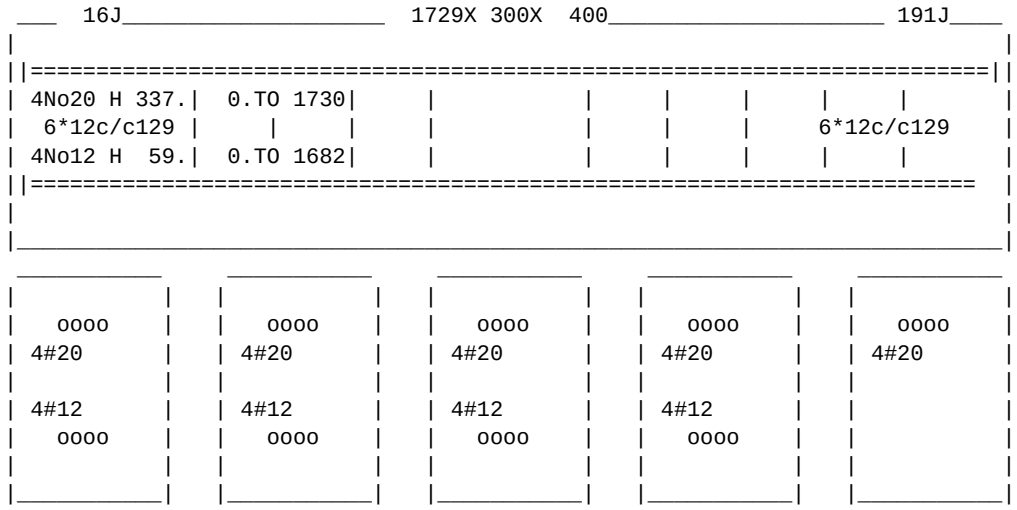
LEN - 1730. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 12MM	0.	1682.	YES	NO
2	337.	4 - 20MM	0.	1730.	YES	YES

B E A M N O. 242 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 70.37 KNS Vc= 76.01 KNS Vs= 17.82 KNS
Tu= 10.72 KN-MET Tc= 2.8 KN-MET Ts= 14.3 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 530. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.23 SQ.CM.

AT END SUPPORT - Vu= 80.88 KNS Vc= 76.01 KNS Vs= 31.82 KNS
Tu= 10.72 KN-MET Tc= 2.8 KN-MET Ts= 14.3 KN-MET LOAD 6
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 530. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.23 SQ.CM.



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BEAM NO. 243 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

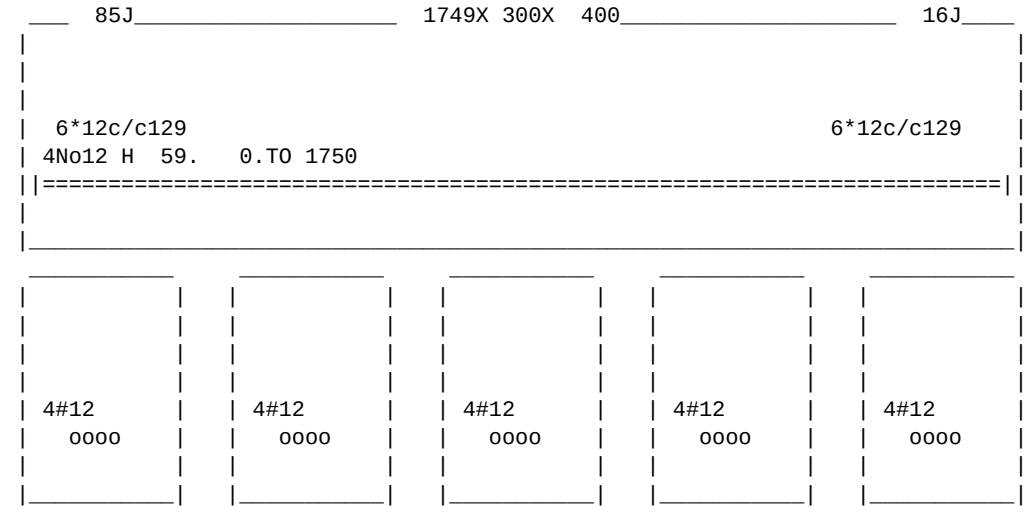
LEN - 1750. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	4 - 12MM	0.	1750.	YES	YES

B E A M N O. 243 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 33.31 KNS Vc= 77.37 KNS Vs= 0.00 KNS
Tu= 7.14 KN-MET Tc= 3.0 KN-MET Ts= 9.5 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 540. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.15 SQ.CM.

AT END SUPPORT - Vu= 11.96 KNS Vc= 74.79 KNS Vs= 0.00 KNS
Tu= 7.14 KN-MET Tc= 3.0 KN-MET Ts= 9.5 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 540. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.15 SQ.CM.



BEAM NO. 244 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

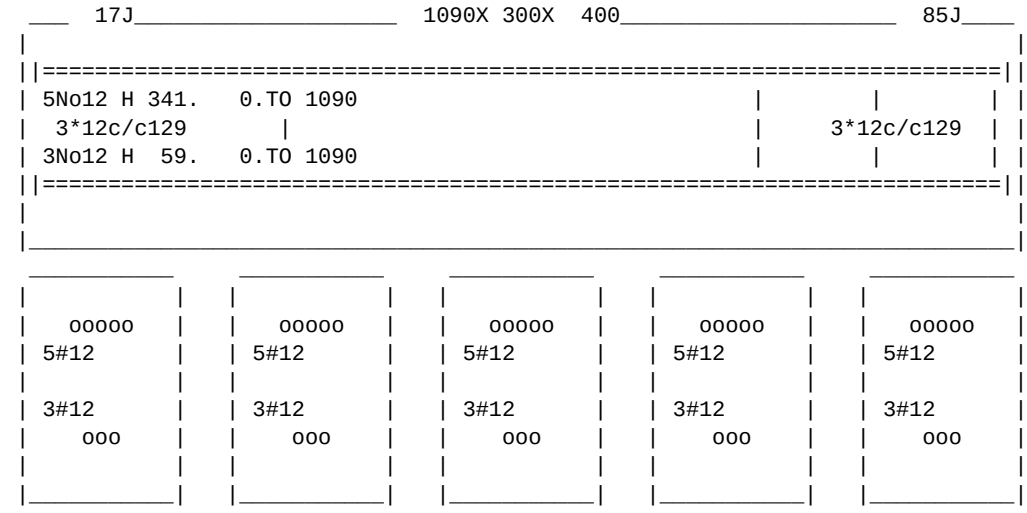
LEN - 1090. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1090.	YES	YES
2	341.	5 - 12MM	0.	1090.	YES	YES

B E A M N O. 244 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 58.99 KNS Vc= 76.87 KNS Vs= 1.78 KNS
Tu= 9.53 KN-MET Tc= 2.9 KN-MET Ts= 12.7 KN-MET LOAD 9
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 210. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.87 SQ.CM.

AT END SUPPORT - Vu= 52.35 KNS Vc= 76.87 KNS Vs= 0.00 KNS
Tu= 9.53 KN-MET Tc= 2.9 KN-MET Ts= 12.7 KN-MET LOAD 9
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 210. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.87 SQ.CM.



BEAM NO. 245 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

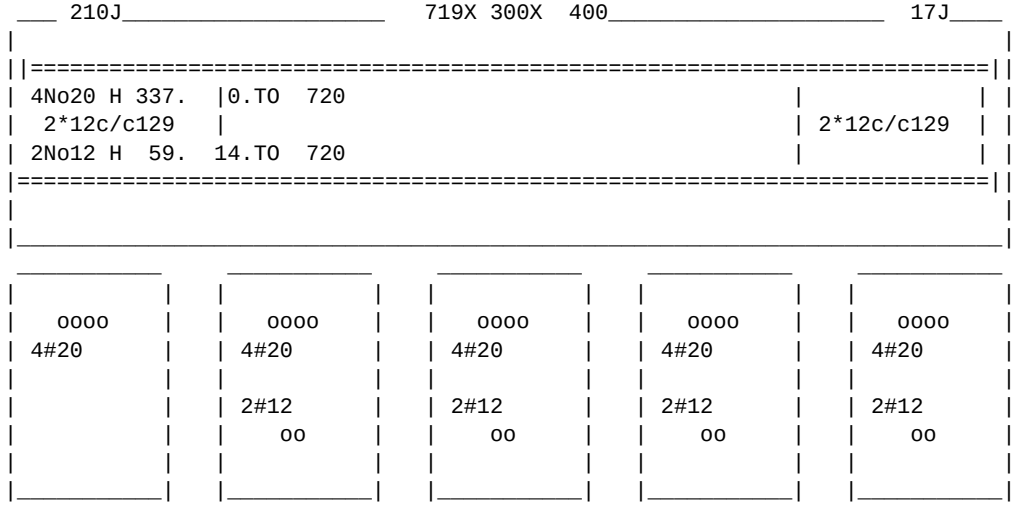
LEN - 720. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	14.	720.	NO	YES
2	337.	4 - 20MM	0.	720.	YES	YES

B E A M N O. 245 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 84.55 KNS Vc= 77.45 KNS Vs= 35.28 KNS
Tu= 14.20 KN-MET Tc= 2.9 KN-MET Ts= 18.9 KN-MET LOAD 8
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 25. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.27 SQ.CM.

AT END SUPPORT - Vu= 83.82 KNS Vc= 77.45 KNS Vs= 34.31 KNS
Tu= 14.20 KN-MET Tc= 2.9 KN-MET Ts= 18.9 KN-MET LOAD 8
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 25. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.27 SQ.CM.



BEAM NO. 260 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

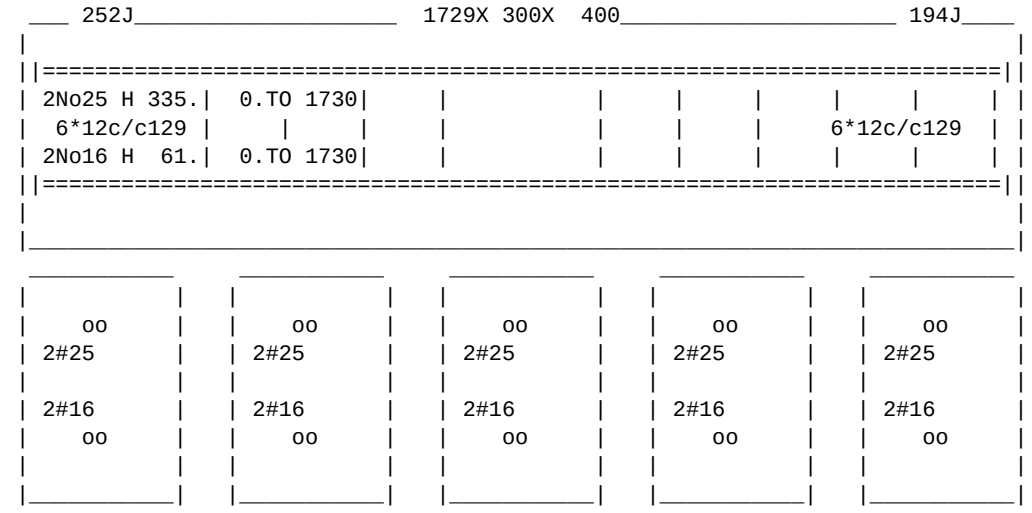
LEN - 1730. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 16MM	0.	1730.	YES	YES
2	335.	2 - 25MM	0.	1730.	YES	YES

B E A M N O. 260 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 47.30 KNS Vc= 75.03 KNS Vs= 0.00 KNS
Tu= 11.19 KN-MET Tc= 2.8 KN-MET Ts= 14.9 KN-MET LOAD 9
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 530. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.37 SQ.CM.

AT END SUPPORT - Vu= 68.98 KNS Vc= 76.46 KNS Vs= 15.51 KNS
Tu= 10.95 KN-MET Tc= 2.9 KN-MET Ts= 14.6 KN-MET LOAD 7
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 530. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.29 SQ.CM.



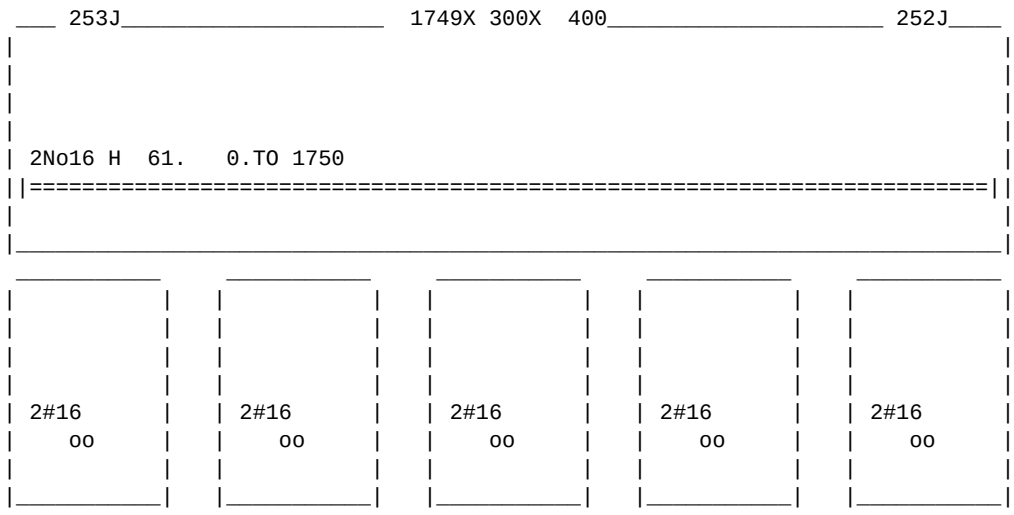
BEAM NO. 261 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1750. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 16MM	0.	1750.	YES	YES

B E A M N O. 261 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 5.89 KNS Vc= 74.76 KNS Vs= 0.00 KNS
Tu= 0.30 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 6.35 KNS Vc= 74.76 KNS Vs= 0.00 KNS
Tu= 0.30 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 262 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

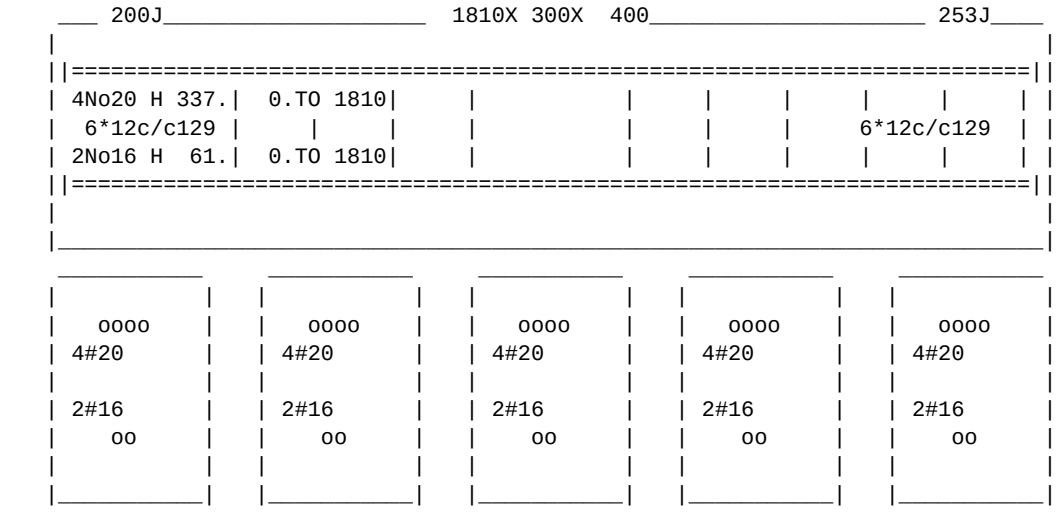
LEN - 1810. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 16MM	0.	1810.	YES	YES
2	337.	4 - 20MM	0.	1810.	YES	YES

B E A M N O. 262 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 65.86 KNS Vc= 75.34 KNS Vs= 12.47 KNS
Tu= 9.11 KN-MET Tc= 2.8 KN-MET Ts= 12.2 KN-MET LOAD 9
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 570. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.74 SQ.CM.

AT END SUPPORT - Vu= 54.23 KNS Vc= 75.34 KNS Vs= 0.00 KNS
Tu= 9.11 KN-MET Tc= 2.8 KN-MET Ts= 12.2 KN-MET LOAD 9
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 570. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.74 SQ.CM.



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BEAM NO. 305 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

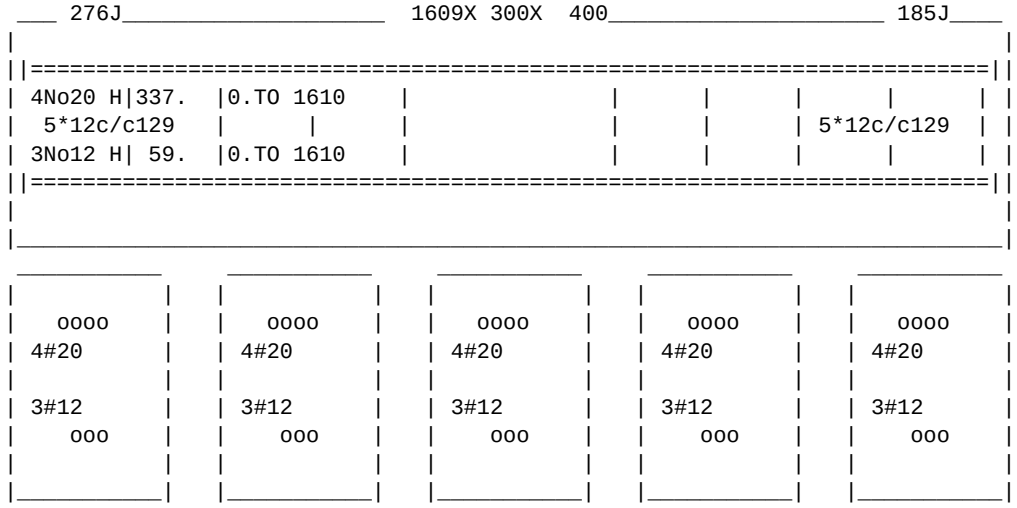
LEN - 1610. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1610.	YES	YES
2	337.	4 - 20MM	0.	1610.	YES	YES

B E A M N O. 305 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 63.73 KNS Vc= 76.83 KNS Vs= 8.15 KNS
Tu= 8.07 KN-MET Tc= 2.9 KN-MET Ts= 10.8 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 470. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.43 SQ.CM.

AT END SUPPORT - Vu= 78.77 KNS Vc= 76.83 KNS Vs= 28.20 KNS
Tu= 8.07 KN-MET Tc= 2.9 KN-MET Ts= 10.8 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 470. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.43 SQ.CM.



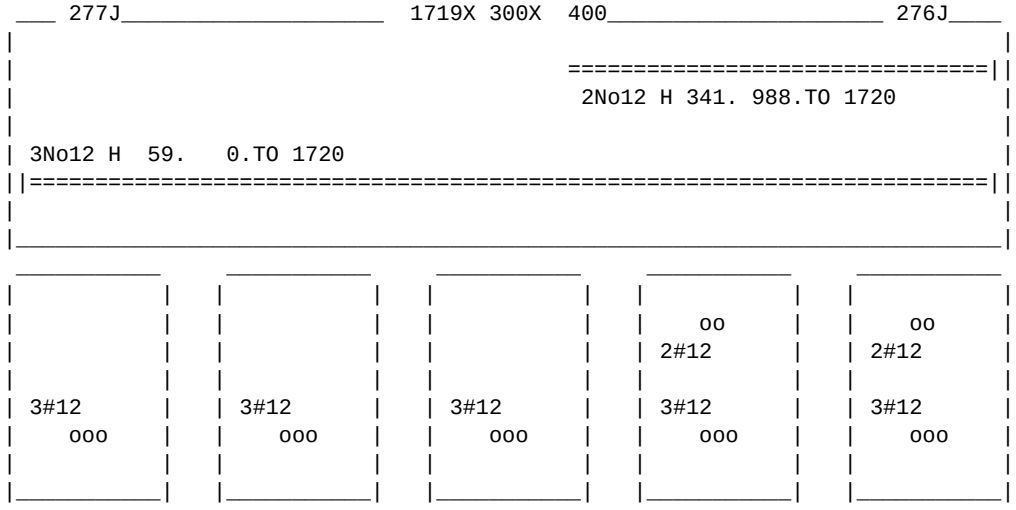
BEAM NO. 306 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1720. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1720.	YES	YES
2	341.	2 - 12MM	988.	1720.	NO	YES

B E A M N O. 306 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 4.32 KNS Vc= 76.20 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 13.96 KNS Vc= 76.20 KNS Vs= 0.00 KNS
Tu= 1.00 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 307 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

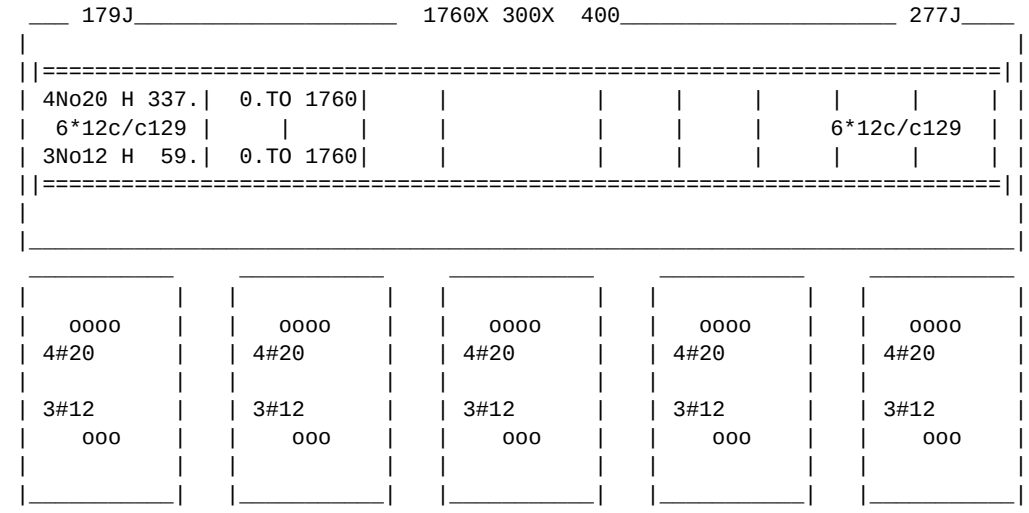
LEN - 1760. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1760.	YES	YES
2	337.	4 - 20MM	0.	1760.	YES	YES

B E A M N O. 307 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 71.05 KNS Vc= 76.44 KNS Vs= 18.30 KNS
Tu= 7.95 KN-MET Tc= 2.9 KN-MET Ts= 10.6 KN-MET LOAD 13
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.39 SQ.CM.

AT END SUPPORT - Vu= 53.25 KNS Vc= 76.44 KNS Vs= 0.00 KNS
Tu= 7.95 KN-MET Tc= 2.9 KN-MET Ts= 10.6 KN-MET LOAD 13
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.39 SQ.CM.



BEAM NO. 311 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

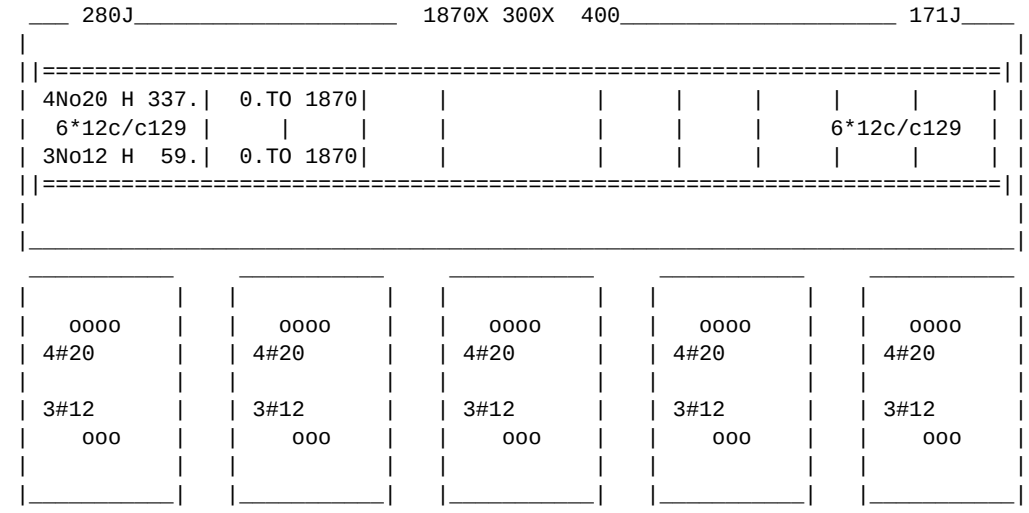
LEN - 1870. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1870.	YES	YES
2	337.	4 - 20MM	0.	1870.	YES	YES

B E A M N O. 311 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 32.69 KNS Vc= 75.91 KNS Vs= 0.00 KNS
Tu= 13.11 KN-MET Tc= 2.8 KN-MET Ts= 17.5 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 600. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.94 SQ.CM.

AT END SUPPORT - Vu= 66.98 KNS Vc= 75.99 KNS Vs= 13.32 KNS
Tu= 13.08 KN-MET Tc= 2.8 KN-MET Ts= 17.4 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 600. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.94 SQ.CM.



BEAM NO. 312 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

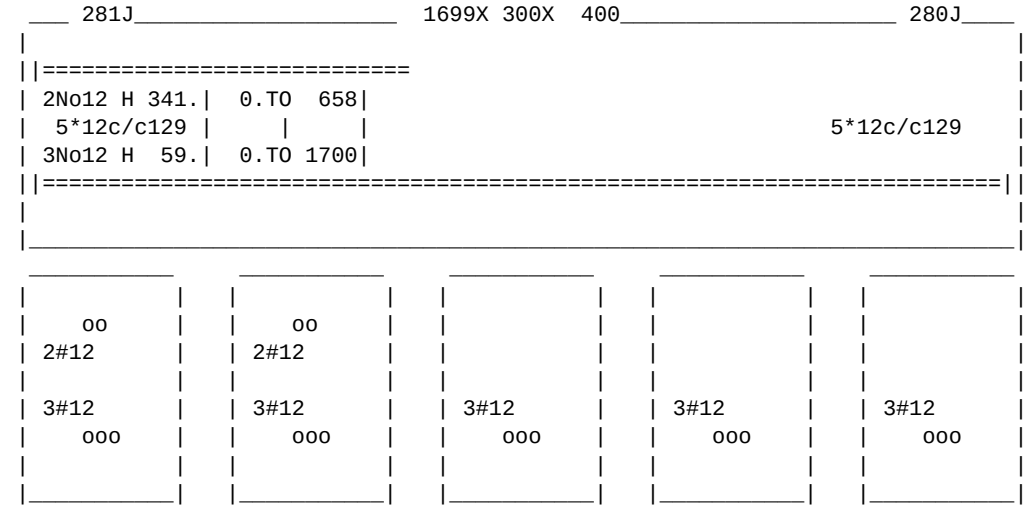
LEN - 1700. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1700.	YES	YES
2	341.	2 - 12MM	0.	658.	YES	NO

B E A M N O. 312 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 12.02 KNS Vc= 76.48 KNS Vs= 0.00 KNS
Tu= 3.16 KN-MET Tc= 2.9 KN-MET Ts= 4.2 KN-MET LOAD 5
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 515. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 0.95 SQ.CM.

AT END SUPPORT - Vu= 5.17 KNS Vc= 76.48 KNS Vs= 0.00 KNS
Tu= 3.16 KN-MET Tc= 2.9 KN-MET Ts= 4.2 KN-MET LOAD 5
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 515. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 0.95 SQ.CM.



BEAM NO. 313 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

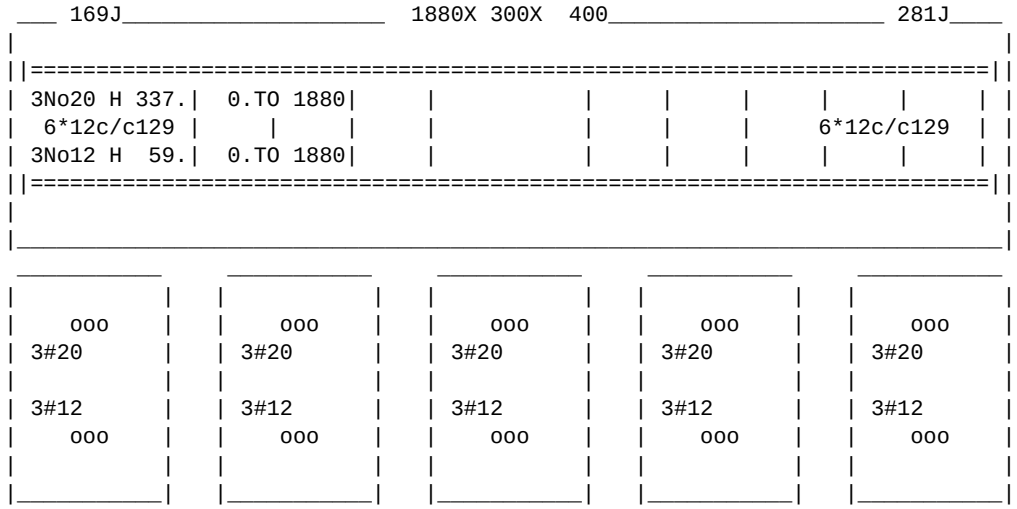
LEN - 1880. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1880.	YES	YES
2	337.	3 - 20MM	0.	1880.	YES	YES

B E A M N O. 313 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 50.15 KNS Vc= 75.85 KNS Vs= 0.00 KNS
Tu= 11.52 KN-MET Tc= 2.8 KN-MET Ts= 15.4 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 605. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.47 SQ.CM.

AT END SUPPORT - Vu= 30.83 KNS Vc= 75.85 KNS Vs= 0.00 KNS
Tu= 11.52 KN-MET Tc= 2.8 KN-MET Ts= 15.4 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 605. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.47 SQ.CM.



BEAM NO. 318 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

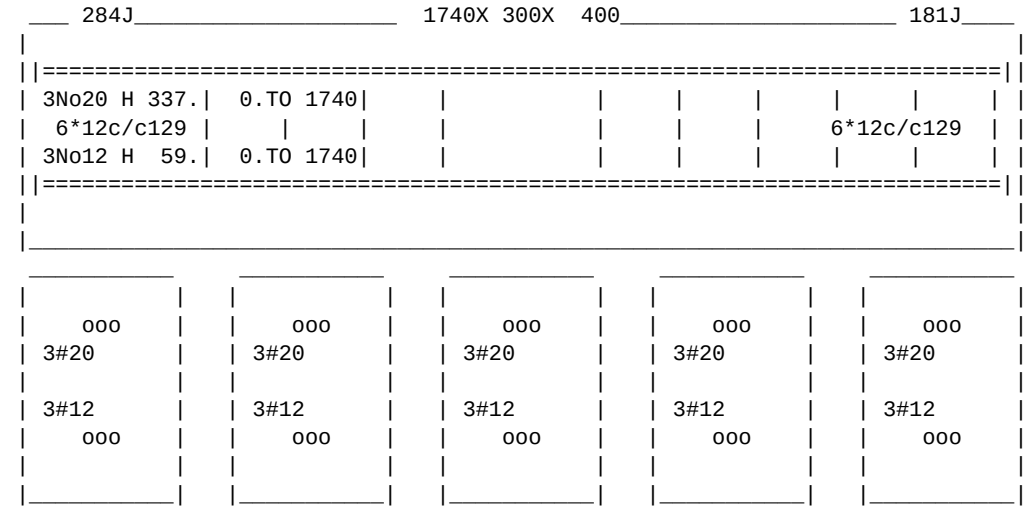
LEN - 1740. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1740.	YES	YES
2	337.	3 - 20MM	0.	1740.	YES	YES

B E A M N O. 318 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 43.71 KNS Vc= 76.64 KNS Vs= 0.00 KNS
Tu= 12.88 KN-MET Tc= 2.9 KN-MET Ts= 17.2 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 535. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.87 SQ.CM.

AT END SUPPORT - Vu= 60.48 KNS Vc= 76.64 KNS Vs= 4.01 KNS
Tu= 12.88 KN-MET Tc= 2.9 KN-MET Ts= 17.2 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 535. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.87 SQ.CM.



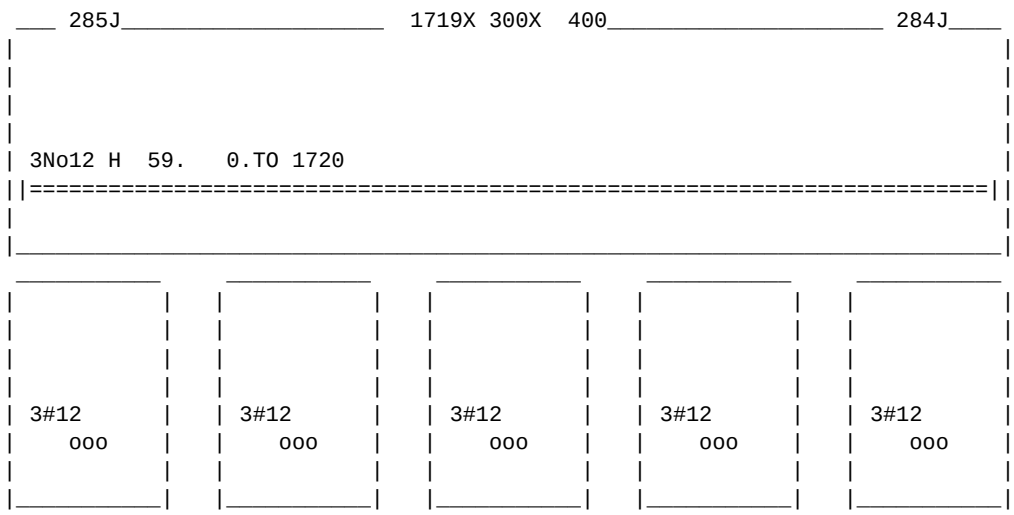
BEAM NO. 319 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1720. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1720.	YES	YES

B E A M N O. 319 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 4.77 KNS Vc= 76.35 KNS Vs= 0.00 KNS
Tu= 0.00 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 12.82 KNS Vc= 76.35 KNS Vs= 0.00 KNS
Tu= 0.00 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 320 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

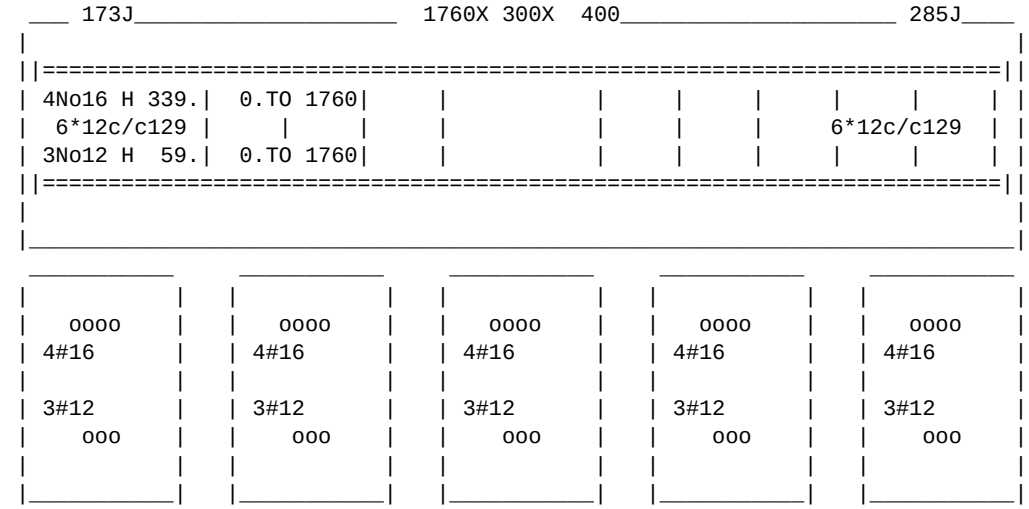
LEN - 1760. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1760.	YES	YES
2	339.	4 - 16MM	0.	1760.	YES	YES

B E A M N O. 320 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 47.64 KNS Vc= 76.48 KNS Vs= 0.00 KNS
Tu= 12.25 KN-MET Tc= 2.9 KN-MET Ts= 16.3 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.69 SQ.CM.

AT END SUPPORT - Vu= 30.66 KNS Vc= 76.48 KNS Vs= 0.00 KNS
Tu= 12.25 KN-MET Tc= 2.9 KN-MET Ts= 16.3 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 3.69 SQ.CM.



BEAM NO. 322 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

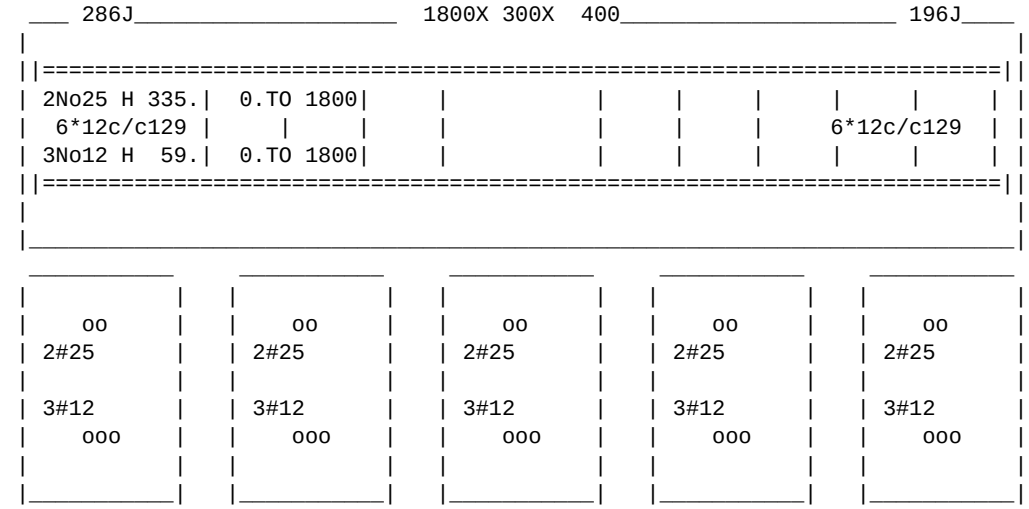
LEN - 1800. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1800.	YES	YES
2	335.	2 - 25MM	0.	1800.	YES	YES

B E A M N O. 322 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 31.19 KNS Vc= 75.69 KNS Vs= 0.00 KNS
Tu= 13.84 KN-MET Tc= 2.8 KN-MET Ts= 18.5 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 565. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.16 SQ.CM.

AT END SUPPORT - Vu= 48.99 KNS Vc= 75.69 KNS Vs= 0.00 KNS
Tu= 13.84 KN-MET Tc= 2.8 KN-MET Ts= 18.5 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 565. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.16 SQ.CM.



BEAM NO. 323 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

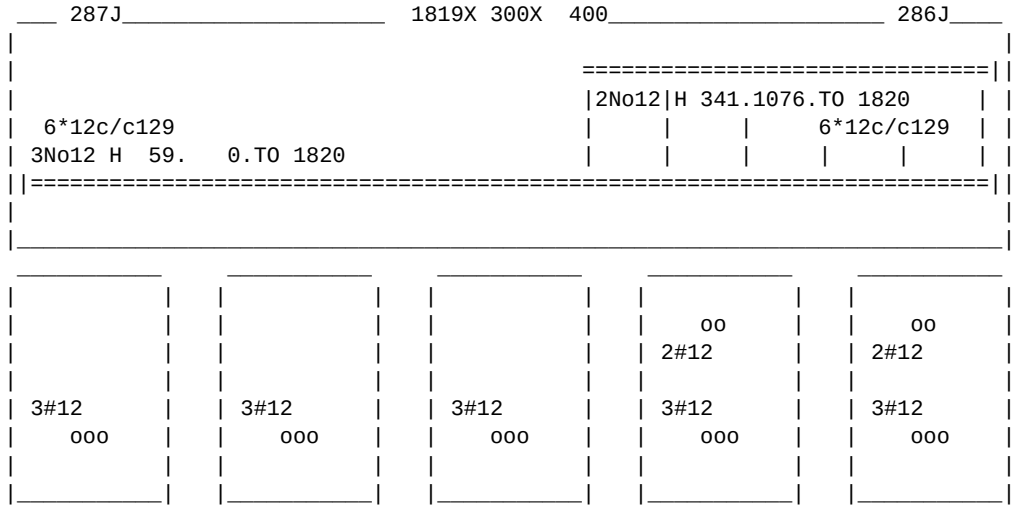
LEN - 1820. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1820.	YES	YES
2	341.	2 - 12MM	1076.	1820.	NO	YES

B E A M N O. 323 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 3.04 KNS Vc= 77.61 KNS Vs= 0.00 KNS
Tu= 3.28 KN-MET Tc= 2.9 KN-MET Ts= 4.4 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 575. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 0.99 SQ.CM.

AT END SUPPORT - Vu= 15.15 KNS Vc= 77.61 KNS Vs= 0.00 KNS
Tu= 3.28 KN-MET Tc= 2.9 KN-MET Ts= 4.4 KN-MET LOAD 12
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 575. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 0.99 SQ.CM.



BEAM NO. 324 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

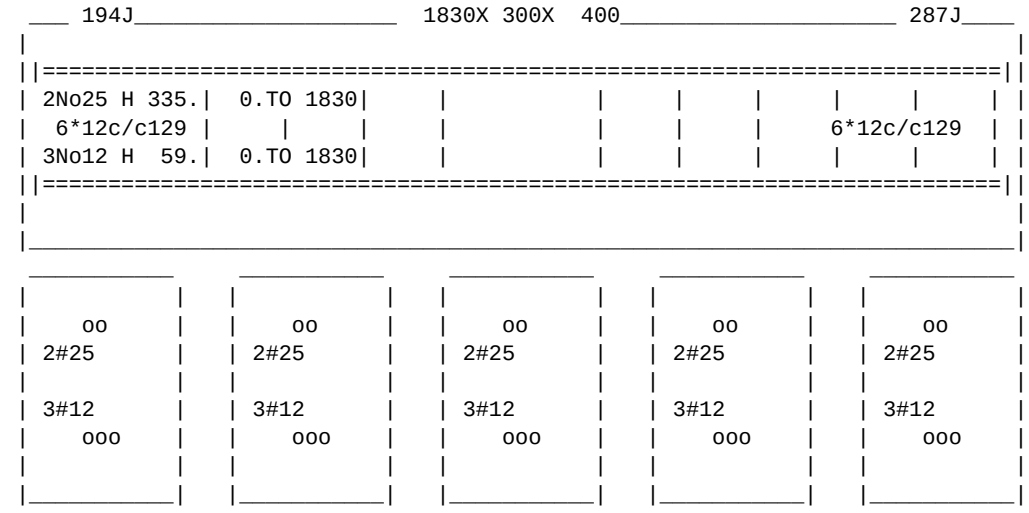
LEN - 1830. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1830.	YES	YES
2	335.	2 - 25MM	0.	1830.	YES	YES

B E A M N O. 324 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 60.04 KNS Vc= 76.33 KNS Vs= 3.72 KNS
Tu= 14.43 KN-MET Tc= 2.9 KN-MET Ts= 19.2 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 580. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.34 SQ.CM.

AT END SUPPORT - Vu= 41.66 KNS Vc= 76.33 KNS Vs= 0.00 KNS
Tu= 14.43 KN-MET Tc= 2.9 KN-MET Ts= 19.2 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 580. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.34 SQ.CM.



BEAM NO. 328 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

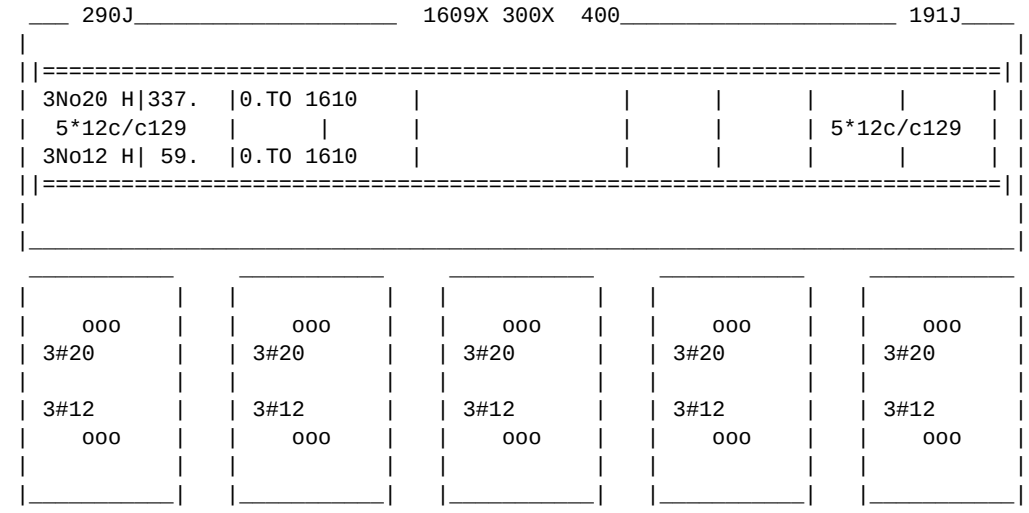
LEN - 1610. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1610.	YES	YES
2	337.	3 - 20MM	0.	1610.	YES	YES

B E A M N O. 328 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 45.07 KNS Vc= 75.37 KNS Vs= 0.00 KNS
Tu= 9.69 KN-MET Tc= 2.8 KN-MET Ts= 12.9 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 470. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.91 SQ.CM.

AT END SUPPORT - Vu= 64.91 KNS Vc= 75.95 KNS Vs= 10.60 KNS
Tu= 9.63 KN-MET Tc= 2.8 KN-MET Ts= 12.8 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 470. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.90 SQ.CM.



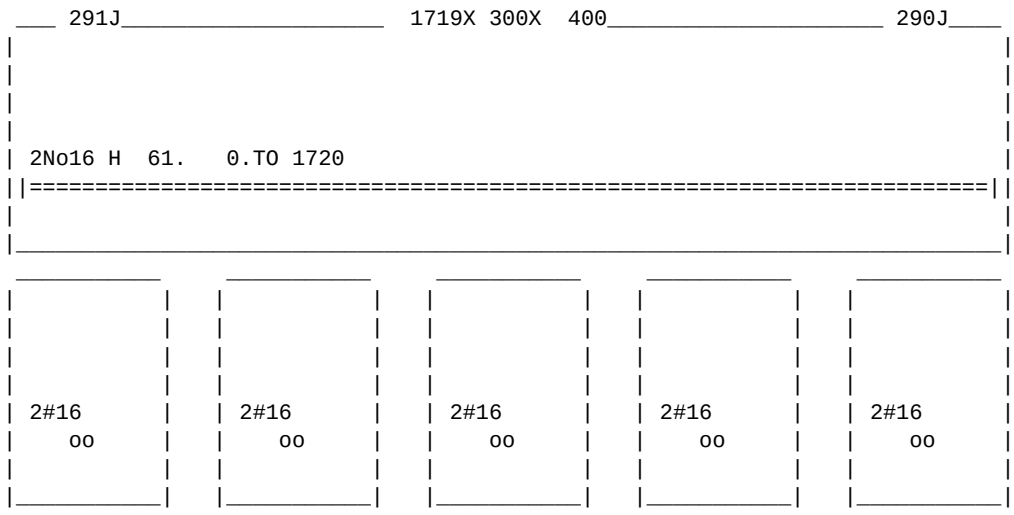
BEAM NO. 329 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1720. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	61.	2 - 16MM	0.	1720.	YES	YES

B E A M N O. 329 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 4.36 KNS Vc= 75.05 KNS Vs= 0.00 KNS
Tu= 0.37 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.
AT END SUPPORT - Vu= 7.34 KNS Vc= 75.05 KNS Vs= 0.00 KNS
Tu= 0.37 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5
STIRRUPS ARE NOT REQUIRED.



BEAM NO. 330 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

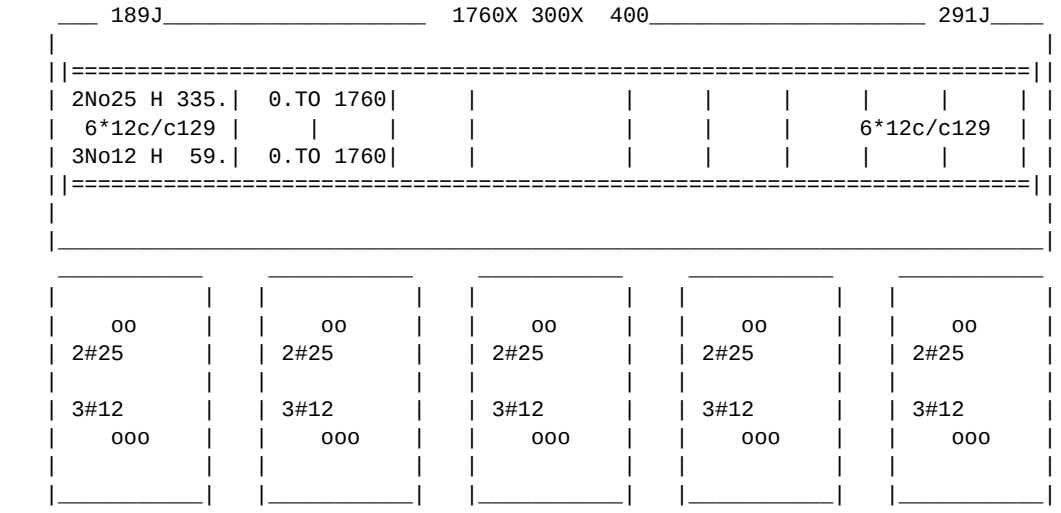
LEN - 1760. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	0.	1760.	YES	YES
2	335.	2 - 25MM	0.	1760.	YES	YES

B E A M N O. 330 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 64.28 KNS Vc= 75.95 KNS Vs= 9.76 KNS
Tu= 9.43 KN-MET Tc= 2.8 KN-MET Ts= 12.6 KN-MET LOAD 11
STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.84 SQ.CM.

AT END SUPPORT - Vu= 43.13 KNS Vc= 75.89 KNS Vs= 0.00 KNS
Tu= 9.84 KN-MET Tc= 2.8 KN-MET Ts= 13.1 KN-MET LOAD 10
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 545. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.96 SQ.CM.



**********END OF BEAM DESIGN**********

410. END CONCRETE DESIGN
411. FINISH

********** END OF THE STAAD.Pro RUN **********

**** DATE= DEC 17,2014 TIME= 8:44:45 ****