รายการคำนวนงานวิศวกรรมโครงสร้าง

REVISION 0

OWNER

มหาวิทยาลัยศรีนครินทรวิโรฒ

SRINAKHARINWIROT UNIVERSITY

STRUCTURAL ENGINEER

นายทนงชัย พรหมมา สย 8732

December 17, 2025

สำเนาใบประกอบวิชาชีพวิศวกรรม

นาย ทนงชัย พรหมมา เลขทะเบียน สย.8732

ใช้สำหรับรับรองเป็นวิศวกรผู้ออกแบบงานวิศวกรรมโครงสร้าง

โครงการจ้างออกแบบปรับปรุง พื้นที่สำนักงานภายในมหาวิทยาลัย จำนวน 1 งาน ส่วนพัฒนากายภาพ

สำนักงานอธิการบดี มหาวิทยาลัยศรีนครินทรวิโรฒ ถนนสุขุมวิท แขวงคลองเตยเหนือ

เขตวัฒนา กรุงเทพมหานคร เท่านั้น

DESIGN CODES AND STANDARDS

Reinforced concrete design (USD Method)	ACI318-05
Steel design (ASD Method)	AISC/ASD
Wind load design	พระราชบัญญัติควบคุมอาคาร พศ.2522

DESIGN METHOD

Reinforced concrete structure design (USD Method)	
- Structure analysis by	ETAB
- Structure design by	ETAB & Spreedsheet (Excel)
Steel design (ASD Method)	
- Structure analysis by	STAAD.Pro
- Structure design by	STAAD.Pro
Foundation design	
- Structure analysis by	Spreedsheet (Excel)
- Structure design by	Spreedsheet (Excel)
Pile design	
- Structure design by	Supplier
- Load capacity by	Civil &Structural Design Requirement

MATERIALS CODES AND STANDARDS

Reinforced concrete structure		
- Concrete strength	EIT 1014-46 or ASTM C39 or equivalent	
- Cement (portland type 1)	TIS.15 or ASTM C150 or equivalent	
- Reinforcing steel (round bar)	TIS.20 or ASTM A615 or equivalent	
- Reinforcing steel (deformed bar)	TIS.24 or ASTM A615 or equivalent	
- Concrete covering		
Concrete exposed to underground	75	mm.
Concrete formed but exposed to underground	50	mm.
Columns	40	mm.
Beams	40	mm.
Slabs	30	mm.
Stairs	30	mm.
Steel structure		
- Structure steel & steel plate (SS400)	TIS 1227or JIS G3101 or equivalent	
- Bolt	ASTM A325 ,IS0 grade 8.8 or equivalent	
- Nut	ASTM A325 ,IS0 grade 8.8 or equivalent	
- Anchor bolt	ASTM A36 ,IS0 grade 4.6 or equivalent	
- Expansion bolt	ASTM A36 ,IS0 grade 4.6 or equivalent	
- Welding (electrode E70)	AWS	
- Hot-dip galvanized coating (member & plate)	ASTM A123	
- Hot-dip galvanized coating (bolt & nut)	ASTM A153	

เงื่อนไขน้ำหนักในการออกแบบ (DESIGN CRITERIA LOAD)

น้ำหนักคงที่

คอนกรีตเสริมเหล็ก		2,400	กก/ลบ.ม
กำแพงก่ออิฐชั้นเดียว		180	กก/ตรม.
กำแพงก่ออิฐสองชั้น		350	กก/ตรม.
Floor Finishing, Screed		120	กก/ตรม.
Light Partition		100	กก/ตรม.
ฝ้า พร้อมโครงคร่าว		25	กก/ตรม.
หลังคา Metal sheet		10	กก/ตรม.

น้ำหนักจร

พื้นที่อาคาร,พื้นที่การสอน		300	กก/ตรม.
หลังคา		50	กก/ตรม.

แรงลม

ความสูงอาคาร	H =< 10 m.	60	กก/ตรม.
	10 < H =< 20 m.	80	กก/ตรม.
	20 < H =< 40 m.	120	กก/ตรม.
	40 < H =< 80 m.	160	กก/ตรม.
	H > 80 m.	200	กก/ตรม.

คุณสมบัติวัสดุ

Concrete Properties

fc'	=	240	ksc.

Rebar Properties

SD-40; DEFORM BAR : fy	=	4,000	ksc.
SR-24; ROUND BAR : fy	=	2,400	ksc.
Modulus of elasticity of rolled steel, Es		2,040,000	ksc.
Yield strength of steel plate (SS400), fy		2,400.0	ksc.
Tensile strength of steel plate (SS400), fu		4,000	ksc.
Yield strength of structural bolt (ASTM A325), fy		6,752.0	ksc.
Tensile strength of structural bolt (ASTM A325), fu		8,440	ksc.
Allowable tensile strength of structural bolt (ASTM A325), [0.33*fu] ft		2,785.2	ksc.
Allowable shear strength of structural bolt (ASTM A325), [0.17*fu] fv		1,435	ksc.

วิเคราะห์โครงสร้าง

STRUCTURAL ANALYSIS

Job Information

	Engineer	Checked	Approved
Name:	TC	TC	TC
Date:	21-Nov-25		

Structure Type	SPACE FRAME

Number of Nodes	434	Highest Node	479
Number of Elements	722	Highest Beam	804

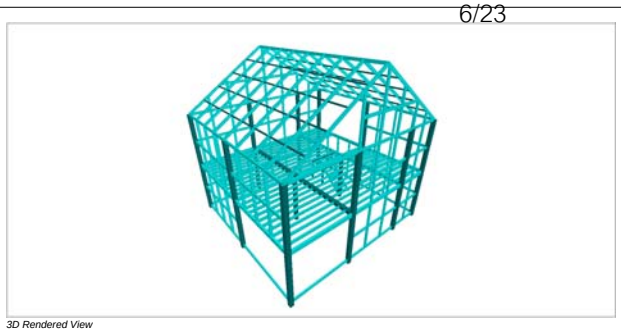
Number of Basic Load Cases	7
Number of Combination Load Cases	16

Included in this printout are data for:

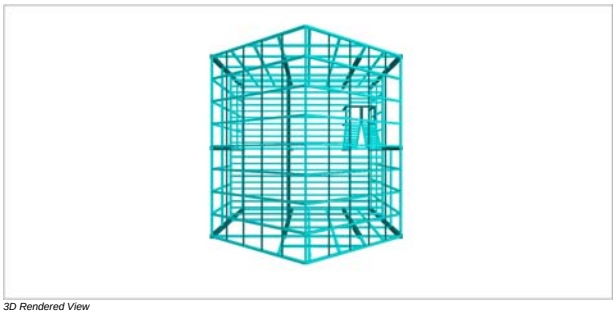
Group	G1: _PASS

Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	DL
Primary	2	SDL
Primary	3	LL
Primary	4	WX
Primary	5	WZ
Primary	6	WX2
Primary	7	WZ2
Combination	8	COMB - 1 DEAD + 1 DEAD
Combination	9	COMB - 1 DEAD + 1 DEAD + 1 LIVE
Combination	10	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE
Combination	11	COMB - 1 DEAD + 1 DEAD + 1 WIND (1)
Combination	12	COMB - 1 DEAD + 1 DEAD + 1 WIND (2)
Combination	13	COMB - 1 DEAD + 1 DEAD + 1 WIND (3)
Combination	14	COMB - 1 DEAD + 1 DEAD + 1 WIND (4)
Combination	15	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +
Combination	16	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +
Combination	17	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +
Combination	18	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +
Combination	19	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND
Combination	20	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND
Combination	21	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND
Combination	22	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND
Combination	23	COMB - 0.6 DEAD + 0.6 DEAD



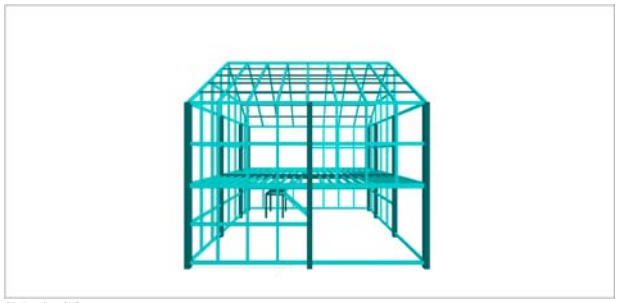
3D Rendered View



3D Rendered View

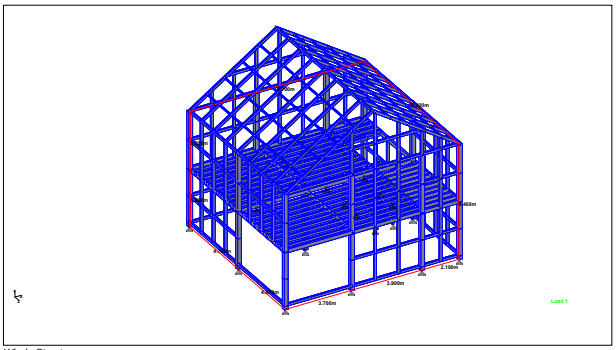
3D Rendered View

3D Rendered View

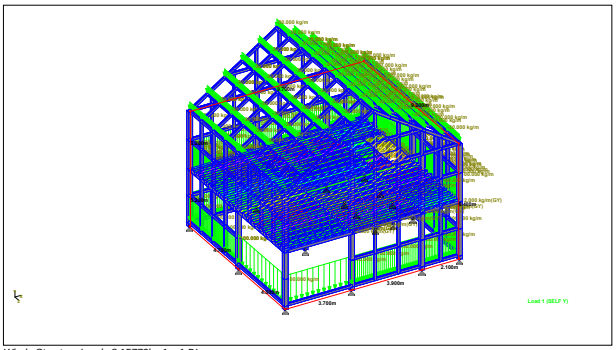


3D Rendered View

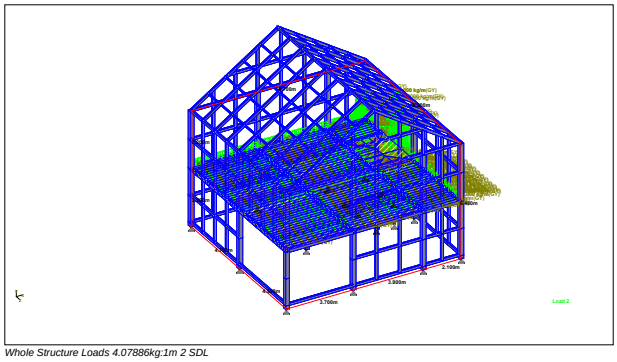
3D Rendered View



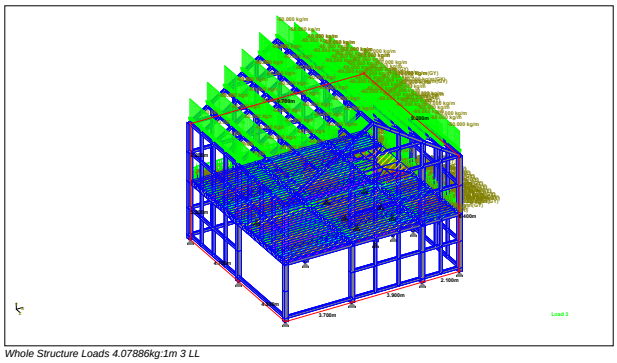
Whole Structure



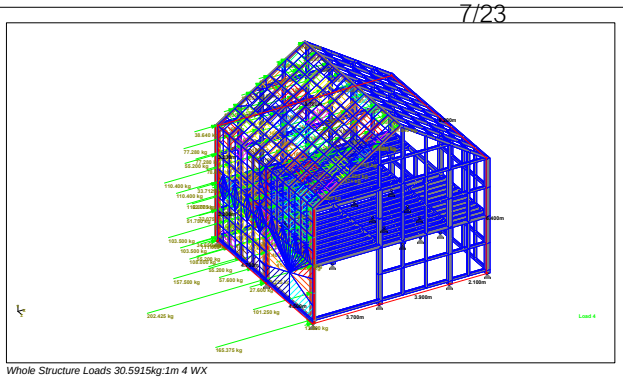
Whole Structure Loads 8.15773kg:1m 1 DL



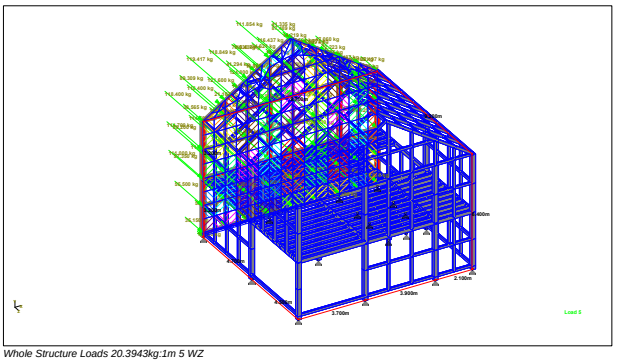
Whole Structure Loads 4.07886kg:1m 2 SDL



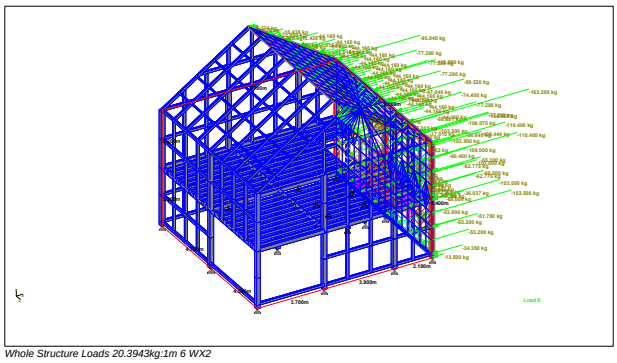
Whole Structure Loads 4.07886kg:1m 3 LL



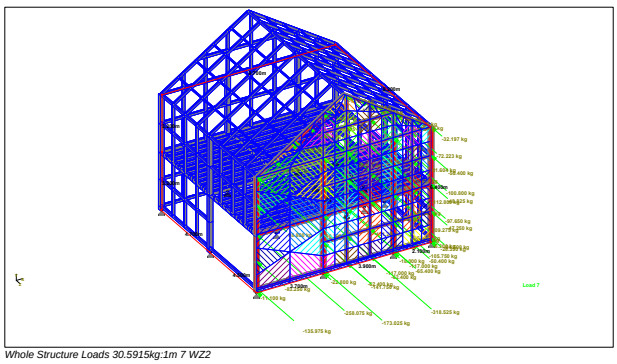
Whole Structure Loads 30.5915kg:1m 4 WX



Whole Structure Loads 20.3943kg:1m 5 WZ



Whole Structure Loads 20.3943kg:1m 6 WX2



Whole Structure Loads 30.5915kg:1m 7 WZ2

Nodes

Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000
5	0.000	0.000	4.700
6	0.000	0.000	9.200
7	0.000	0.200	0.000
8	0.000	0.200	1.150
9	0.000	0.200	2.300
10	0.000	0.200	3.450
11	0.000	0.200	4.700
12	0.000	0.200	9.200
13	0.000	1.700	0.000
14	0.000	1.700	1.150
15	0.000	1.700	2.300
16	0.000	1.700	3.450
17	0.000	1.700	4.700
18	0.000	1.700	9.200
19	0.000	3.200	0.000
20	0.000	3.200	0.575
21	0.000	3.200	1.150
22	0.000	3.200	1.725
23	0.000	3.200	2.300
24	0.000	3.200	2.875
25	0.000	3.200	3.450
26	0.000	3.200	4.050
27	0.000	3.200	4.600
28	0.000	3.200	4.700
29	0.000	3.200	5.175
30	0.000	3.200	5.750
31	0.000	3.200	6.325
32	0.000	3.200	6.900
33	0.000	3.200	7.475
34	0.000	3.200	8.050
35	0.000	3.200	8.625
36	0.000	3.200	9.200
37	0.000	4.800	0.000
38	0.000	4.800	1.150
39	0.000	4.800	2.300
40	0.000	4.800	3.450
41	0.000	4.800	4.600
42	0.000	4.800	4.700
43	0.000	4.800	5.750
44	0.000	4.800	6.900
45	0.000	4.800	8.050
46	0.000	4.800	9.200
47	0.000	6.400	0.000
48	0.000	6.400	1.150
49	0.000	6.400	2.300
50	0.000	6.400	3.450
51	0.000	6.400	4.600
52	0.000	6.400	4.700
53	0.000	6.400	5.750
54	0.000	6.400	6.900
55	0.000	6.400	8.050
56	0.000	6.400	9.200
57	0.970	7.040	0.000
58	0.970	7.040	1.150
59	0.970	7.040	2.300
60	0.970	7.040	3.450
61	0.970	7.040	4.600

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
62	0.970	7.040	5.750
63	0.970	7.040	6.900
64	0.970	7.040	8.050
65	0.970	7.040	9.200
67	1.233	0.200	0.000
68	1.233	1.700	0.000
69	1.233	3.200	0.000
70	1.233	4.800	0.000
71	1.233	6.400	0.000
72	1.233	7.214	0.000
73	1.940	7.680	0.000
74	1.940	7.680	1.150
75	1.940	7.680	2.300
76	1.940	7.680	3.450
77	1.940	7.680	4.600
78	1.940	7.680	5.750
79	1.940	7.680	6.900
80	1.940	7.680	8.050
81	1.940	7.680	9.200
83	2.467	0.200	0.000
84	2.467	1.700	0.000
85	2.467	3.200	0.000
86	2.467	4.800	0.000
87	2.467	6.400	0.000
88	2.467	8.027	0.000
89	2.910	8.320	0.000
90	2.910	8.320	1.150
91	2.910	8.320	2.300
92	2.910	8.320	3.450
93	2.910	8.320	4.600
94	2.910	8.320	5.750
95	2.910	8.320	6.900
96	2.910	8.320	8.050
97	2.910	8.320	9.200
98	3.700	0.000	0.000
99	3.700	0.000	4.700
100	3.700	0.000	9.200
101	3.700	0.200	0.000
102	3.700	0.200	9.200
103	3.700	1.700	0.000
104	3.700	1.700	9.200
105	3.700	3.200	0.000
106	3.700	3.200	0.575
107	3.700	3.200	1.150
108	3.700	3.200	1.725
109	3.700	3.200	2.300
110	3.700	3.200	2.875
111	3.700	3.200	3.450
112	3.700	3.200	4.050
113	3.700	3.200	4.700
114	3.700	3.200	5.175
115	3.700	3.200	5.750
116	3.700	3.200	6.325
117	3.700	3.200	6.900
118	3.700	3.200	7.475
119	3.700	3.200	8.050
120	3.700	3.200	8.625
121	3.700	3.200	9.200

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
122	3.700	4.800	0.000
123	3.700	4.800	9.200
124	3.700	6.400	0.000
125	3.700	6.400	9.200
126	3.700	8.841	0.000
127	3.700	8.841	9.200
128	3.880	8.960	0.000
129	3.880	8.960	1.150
130	3.880	8.960	2.300
131	3.880	8.960	3.450
132	3.880	8.960	4.600
133	3.880	8.960	5.750
134	3.880	8.960	6.900
135	3.880	8.960	8.050
136	3.880	8.960	9.200
137	4.850	9.600	0.000
138	4.850	9.600	1.150
139	4.850	9.600	2.300
140	4.850	9.600	3.450
141	4.850	9.600	4.600
142	4.850	9.600	5.750
143	4.850	9.600	6.900
144	4.850	9.600	8.050
145	4.850	9.600	9.200
148	5.000	0.200	0.000
149	5.000	0.200	9.200
150	5.000	1.700	0.000
151	5.000	1.700	9.200
152	5.000	3.200	0.000
153	5.000	3.200	9.200
154	5.000	4.800	0.000
155	5.000	4.800	9.200
156	5.000	6.400	0.000
157	5.000	6.400	9.200
158	5.000	9.501	0.000
159	5.000	9.501	9.200
160	5.820	8.960	0.000
161	5.820	8.960	1.150
162	5.820	8.960	2.300
163	5.820	8.960	3.450
164	5.820	8.960	4.600
165	5.820	8.960	5.750
166	5.820	8.960	6.900
167	5.820	8.960	8.050
168	5.820	8.960	9.200
171	6.300	0.200	0.000
172	6.300	0.200	9.200
173	6.300	1.700	0.000
174	6.300	1.700	9.200
175	6.300	3.200	0.000
176	6.300	3.200	9.200
177	6.300	4.800	0.000
178	6.300	4.800	9.200
179	6.300	6.400	0.000
180	6.300	6.400	9.200
181	6.300	8.643	0.000
182	6.300	8.643	9.200
183	6.790	8.320	0.000

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
184	6.790	8.320	1.150
185	6.790	8.320	2.300
186	6.790	8.320	3.450
187	6.790	8.320	4.600
188	6.790	8.320	5.750
189	6.790	8.320	6.900
190	6.790	8.320	8.050
191	6.790	8.320	9.200
192	7.600	0.000	0.000
193	7.600	0.000	1.725
194	7.600	0.000	2.875
195	7.600	0.000	4.700
196	7.600	0.000	9.200
197	7.600	0.160	4.517
198	7.600	0.200	0.000
199	7.600	0.200	9.200
200	7.600	0.320	4.335
201	7.600	0.480	4.153
202	7.600	0.640	3.970
203	7.600	0.800	3.787
204	7.600	0.960	3.605
205	7.600	1.120	3.422
206	7.600	1.280	3.240
207	7.600	1.440	3.057
208	7.600	1.600	1.725
209	7.600	1.600	2.875
210	7.600	1.700	0.000
211	7.600	1.700	9.200
212	7.600	3.200	0.000
213	7.600	3.200	0.575
214	7.600	3.200	1.150
215	7.600	3.200	1.725
216	7.600	3.200	2.300
217	7.600	3.200	2.875
218	7.600	3.200	3.450
219	7.600	3.200	4.050
220	7.600	3.200	4.700
221	7.600	3.200	5.175
222	7.600	3.200	5.750
223	7.600	3.200	6.325
224	7.600	3.200	6.900
225	7.600	3.200	7.475
226	7.600	3.200	8.050
227	7.600	3.200	8.625
228	7.600	3.200	9.200
229	7.600	4.800	0.000
230	7.600	4.800	9.200
231	7.600	6.400	0.000
232	7.600	6.400	9.200
233	7.600	7.786	0.000
234	7.600	7.786	9.200
235	7.760	7.680	0.000
236	7.760	7.680	1.150
237	7.760	7.680	2.300
238	7.760	7.680	3.450
239	7.760	7.680	4.600
240	7.760	7.680	5.750
241	7.760	7.680	6.900

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
242	7.760	7.680	8.050
243	7.760	7.680	9.200
244	8.020	3.200	1.725
245	8.440	3.200	1.725
246	8.600	0.000	4.700
247	8.600	0.160	4.517
248	8.600	0.320	4.335
249	8.600	0.480	4.153
250	8.600	0.640	3.970
251	8.600	0.800	3.787
252	8.600	0.960	3.605
253	8.600	1.120	3.422
254	8.600	1.280	3.240
255	8.600	1.440	3.057
256	8.650	0.000	0.000
258	8.650	0.200	0.000
259	8.650	0.200	9.200
260	8.650	1.600	1.725
261	8.650	1.600	2.875
262	8.650	1.700	0.000
263	8.650	1.700	9.200
264	8.650	3.200	0.000
265	8.650	3.200	9.200
266	8.650	4.800	0.000
267	8.650	4.800	9.200
268	8.650	6.400	0.000
269	8.650	6.400	9.200
270	8.650	7.093	0.000
271	8.650	7.093	9.200
272	8.700	1.600	1.725
273	8.700	1.600	2.875
274	8.700	1.760	3.057
275	8.700	1.920	3.240
276	8.700	2.080	3.422
277	8.700	2.240	3.605
278	8.700	2.400	3.787
279	8.700	2.560	3.970
280	8.700	2.720	4.153
281	8.700	2.880	4.335
282	8.700	3.040	4.517
283	8.700	3.200	4.700
284	8.730	7.040	0.000
285	8.730	7.040	1.150
286	8.730	7.040	2.300
287	8.730	7.040	3.450
288	8.730	7.040	4.600
289	8.730	7.040	5.750
290	8.730	7.040	6.900
291	8.730	7.040	8.050
292	8.730	7.040	9.200
293	8.860	3.200	1.725
294	9.280	3.200	1.725
295	9.600	0.000	1.725
296	9.600	0.000	2.875
297	9.600	1.600	1.725
298	9.600	1.600	2.875
299	9.600	1.760	3.057
300	9.600	1.920	3.240

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
301	9.600	2.080	3.422
302	9.600	2.240	3.605
303	9.600	2.400	3.787
304	9.600	2.560	3.970
305	9.600	2.720	4.153
306	9.600	2.880	4.335
307	9.600	3.040	4.517
308	9.600	3.200	4.700
309	9.700	0.000	0.000
313	9.700	0.000	4.700
317	9.700	0.000	9.200
318	9.700	0.200	0.000
319	9.700	0.200	1.150
320	9.700	0.200	2.300
321	9.700	0.200	3.450
322	9.700	0.200	4.700
323	9.700	0.200	5.750
324	9.700	0.200	6.900
325	9.700	0.200	8.050
326	9.700	0.200	9.200
327	9.700	1.700	0.000
328	9.700	1.700	1.150
329	9.700	1.700	2.300
330	9.700	1.700	3.450
331	9.700	1.700	4.700
332	9.700	1.700	5.750
333	9.700	1.700	6.900
334	9.700	1.700	8.050
335	9.700	1.700	9.200
336	9.700	3.200	0.000
337	9.700	3.200	0.575
338	9.700	3.200	1.150
339	9.700	3.200	1.725
340	9.700	3.200	2.300
341	9.700	3.200	3.450
342	9.700	3.200	4.600
343	9.700	3.200	4.700
344	9.700	3.200	5.175
345	9.700	3.200	5.750
346	9.700	3.200	6.325
347	9.700	3.200	6.900
348	9.700	3.200	7.475
349	9.700	3.200	8.050
350	9.700	3.200	8.625
351	9.700	3.200	9.200
352	9.700	4.800	0.000
354	9.700	4.800	4.700
355	9.700	4.800	5.750
356	9.700	4.800	6.900
357	9.700	4.800	8.050
358	9.700	4.800	9.200
359	9.700	6.400	0.000
360	9.700	6.400	1.150
361	9.700	6.400	2.300
362	9.700	6.400	3.450
363	9.700	6.400	4.600
364	9.700	6.400	4.700
365	9.700	6.400	5.750

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
366	9.700	6.400	6.900
367	9.700	6.400	8.050
368	9.700	6.400	9.200
370	3.700	7.786	0.000
371	5.000	7.786	0.000
372	6.300	7.786	0.000
373	2.100	7.786	0.000
374	2.467	7.786	0.000
375	3.700	7.786	9.200
376	5.000	7.786	9.200
377	6.300	7.786	9.200
378	2.100	7.786	9.200
379	0.000	3.200	8.800
380	3.700	3.200	8.800
383	7.600	3.200	8.800
385	9.700	3.200	8.800
386	0.000	3.200	8.400
387	3.700	3.200	8.400
390	7.600	3.200	8.400
392	9.700	3.200	8.400
393	0.000	3.200	8.000
394	3.700	3.200	8.000
397	7.600	3.200	8.000
399	9.700	3.200	8.000
400	0.000	3.200	7.600
401	3.700	3.200	7.600
404	7.600	3.200	7.600
406	9.700	3.200	7.600
407	0.000	3.200	7.200
408	3.700	3.200	7.200
411	7.600	3.200	7.200
413	9.700	3.200	7.200
414	0.000	3.200	6.800
415	3.700	3.200	6.800
418	7.600	3.200	6.800
420	9.700	3.200	6.800
421	0.000	3.200	6.400
422	3.700	3.200	6.400
425	7.600	3.200	6.400
427	9.700	3.200	6.400
428	0.000	3.200	6.000
429	3.700	3.200	6.000
432	7.600	3.200	6.000
434	9.700	3.200	6.000
435	0.000	3.200	5.600
436	3.700	3.200	5.600
439	7.600	3.200	5.600
441	9.700	3.200	5.600
442	0.000	3.200	5.200
443	3.700	3.200	5.200
444	7.600	3.200	5.200
445	9.700	3.200	5.200
446	0.000	3.200	4.300
447	3.700	3.200	4.300
448	7.600	3.200	4.300
449	0.000	3.200	3.900
450	3.700	3.200	3.900
451	7.600	3.200	3.900

Nodes Cont...

Node	X (m)	Y (m)	Z (m)
452	0.000	3.200	3.500
453	3.700	3.200	3.500
454	7.600	3.200	3.500
455	0.000	3.200	3.100
456	3.700	3.200	3.100
457	7.600	3.200	3.100
458	0.000	3.200	2.700
459	3.700	3.200	2.700
460	7.600	3.200	2.700
461	0.000	3.200	1.900
462	3.700	3.200	1.900
463	7.600	3.200	1.900
464	0.000	3.200	1.500
465	3.700	3.200	1.500
466	7.600	3.200	1.500
467	0.000	3.200	1.100
468	3.700	3.200	1.100
469	7.600	3.200	1.100
470	0.000	3.200	0.700
471	3.700	3.200	0.700
472	7.600	3.200	0.700
473	0.000	3.200	0.300
474	3.700	3.200	0.300
475	7.600	3.200	0.300
476	9.700	3.200	1.500
477	9.700	3.200	1.100
478	9.700	3.200	0.700
479	9.700	3.200	0.300

Beams

Beam	Node A	Node B	Length (m)	Property	β (degrees)
1	1	7	0.200	1	0
5	5	11	0.200	1	0
6	6	12	0.200	1	0
7	8	7	1.150	3	0
8	9	8	1.150	3	0
9	10	9	1.150	3	0
10	11	10	1.250	3	0
11	11	12	4.500	3	0
12	7	13	1.500	1	0
13	8	14	1.500	3	0
14	9	15	1.500	3	0
15	10	16	1.500	3	0
16	11	17	1.500	1	0
17	12	18	1.500	1	0
18	14	13	1.150	3	0
19	15	14	1.150	3	0
20	16	15	1.150	3	0
21	17	16	1.250	3	0
22	19	13	1.500	1	0
23	21	14	1.500	3	0
24	23	15	1.500	3	0
25	25	16	1.500	3	0
26	28	17	1.500	1	0
27	36	18	1.500	1	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
28	20	473	0.275	2	0
29	21	467	0.050	2	0
30	22	464	0.225	2	0
31	23	461	0.400	2	0
32	24	458	0.175	2	0
33	25	455	0.350	2	0
34	26	449	0.150	2	0
35	27	446	0.300	2	0
36	28	27	0.100	2	0
37	29	28	0.475	2	0
38	30	435	0.150	2	0
39	31	428	0.325	2	0
40	32	414	0.100	2	0
41	33	407	0.275	2	0
42	34	393	0.050	2	0
43	35	386	0.225	2	0
44	36	379	0.400	2	0
45	19	37	1.600	1	0
46	21	38	1.600	3	0
47	23	39	1.600	3	0
48	25	40	1.600	3	0
49	28	42	1.600	1	0
50	30	43	1.600	3	0
51	32	44	1.600	3	0
52	34	45	1.600	3	0
53	36	46	1.600	1	0
54	37	38	1.150	3	0
55	38	39	1.150	3	0
56	39	40	1.150	3	0
57	40	41	1.150	3	0
58	41	42	0.100	3	0
59	42	43	1.050	3	0
60	43	44	1.150	3	0
61	44	45	1.150	3	0
62	45	46	1.150	3	0
63	37	47	1.600	1	0
64	48	38	1.600	3	0
65	49	39	1.600	3	0
66	50	40	1.600	3	0
67	52	42	1.600	1	0
68	53	43	1.600	3	0
69	54	44	1.600	3	0
70	55	45	1.600	3	0
71	46	56	1.600	1	0
72	48	47	1.150	3	0
73	49	48	1.150	3	0
74	50	49	1.150	3	0
75	51	50	1.150	3	0
76	52	51	0.100	3	0
77	53	52	1.050	3	0
78	54	53	1.150	3	0
79	55	54	1.150	3	0
80	56	55	1.150	3	0
81	47	57	1.162	3	0
82	48	58	1.162	3	0
83	49	59	1.162	3	0
84	50	60	1.162	3	0
85	51	61	1.162	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
86	53	62	1.162	3	0
87	54	63	1.162	3	0
88	55	64	1.162	3	0
89	56	65	1.162	3	0
90	7	67	1.233	3	0
91	13	68	1.233	3	0
92	19	69	1.233	2	0
93	37	70	1.233	3	0
94	47	71	1.233	3	0
95	58	57	1.150	4	0
96	58	59	1.150	4	0
97	59	60	1.150	4	0
98	60	61	1.150	4	0
99	61	62	1.150	4	0
100	62	63	1.150	4	0
101	63	64	1.150	4	0
102	64	65	1.150	4	0
103	57	72	0.315	3	0
105	67	68	1.500	3	0
106	69	68	1.500	3	0
107	69	70	1.600	3	0
108	71	70	1.600	3	0
109	71	72	0.814	3	0
110	58	74	1.162	3	0
111	59	75	1.162	3	0
112	60	76	1.162	3	0
113	61	77	1.162	3	0
114	62	78	1.162	3	0
115	63	79	1.162	3	0
116	64	80	1.162	3	0
117	65	81	1.162	3	0
118	72	73	0.847	3	0
119	67	83	1.233	3	0
120	12	102	3.700	3	0
121	68	84	1.233	3	0
122	69	85	1.233	2	0
130	28	113	3.700	2	0
138	121	36	3.700	2	0
139	70	86	1.233	3	0
140	71	87	1.233	3	0
141	125	56	3.700	3	0
142	74	73	1.150	4	0
143	74	75	1.150	4	0
144	75	76	1.150	4	0
145	76	77	1.150	4	0
146	77	78	1.150	4	0
147	78	79	1.150	4	0
148	79	80	1.150	4	0
149	80	81	1.150	4	0
150	73	88	0.631	3	0
151	74	90	1.162	3	0
152	75	91	1.162	3	0
153	76	92	1.162	3	0
154	77	93	1.162	3	0
155	78	94	1.162	3	0
156	79	95	1.162	3	0
157	80	96	1.162	3	0
158	81	378	0.192	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
160	83	84	1.500	3	0
161	85	84	1.500	3	0
162	85	86	1.600	3	0
163	87	86	1.600	3	0
164	87	88	1.627	3	0
165	88	89	0.531	3	0
166	90	89	1.150	4	0
167	90	91	1.150	4	0
168	91	92	1.150	4	0
169	92	93	1.150	4	0
170	93	94	1.150	4	0
171	94	95	1.150	4	0
172	95	96	1.150	4	0
173	96	97	1.150	4	0
174	83	101	1.233	3	0
175	84	103	1.233	3	0
176	85	105	1.233	2	0
177	86	122	1.233	3	0
178	87	124	1.233	3	0
179	89	126	0.946	3	0
180	97	127	0.946	3	0
181	90	129	1.162	3	0
182	91	130	1.162	3	0
183	92	131	1.162	3	0
184	93	132	1.162	3	0
185	94	133	1.162	3	0
186	95	134	1.162	3	0
187	96	135	1.162	3	0
188	98	101	0.200	1	0
189	100	102	0.200	1	0
190	101	103	1.500	1	0
191	102	104	1.500	1	0
192	99	113	3.200	1	0
193	105	103	1.500	1	0
194	121	104	1.500	1	0
195	105	474	0.300	1	0
196	106	471	0.125	1	0
197	107	465	0.350	1	0
198	108	462	0.175	1	0
199	109	459	0.400	1	0
200	110	456	0.225	1	0
201	111	453	0.050	1	0
202	112	447	0.250	1	0
203	113	114	0.475	1	0
204	114	443	0.025	1	0
205	115	429	0.250	1	0
206	116	422	0.075	1	0
207	117	408	0.300	1	0
208	118	401	0.125	1	0
209	119	387	0.350	1	0
210	120	380	0.175	1	0
211	105	122	1.600	1	0
212	121	123	1.600	1	0
213	124	122	1.600	1	0
214	123	125	1.600	1	0
215	124	370	1.386	3	0
216	125	375	1.386	3	0
217	126	128	0.216	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
218	127	136	0.216	3	0
219	129	128	1.150	4	0
220	129	130	1.150	4	0
221	130	131	1.150	4	0
222	131	132	1.150	4	0
223	132	133	1.150	4	0
224	133	134	1.150	4	0
225	134	135	1.150	4	0
226	135	136	1.150	4	0
227	101	148	1.300	3	0
228	102	149	1.300	3	0
229	103	150	1.300	3	0
230	104	151	1.300	3	0
231	105	152	1.300	2	0
232	153	121	1.300	2	0
233	122	154	1.300	3	0
234	155	123	1.300	3	0
235	124	156	1.300	3	0
236	157	125	1.300	3	0
237	128	137	1.162	3	0
238	129	138	1.162	3	0
239	130	139	1.162	3	0
240	131	140	1.162	3	0
241	132	141	1.162	3	0
242	133	142	1.162	3	0
243	134	143	1.162	3	0
244	135	144	1.162	3	0
245	136	145	1.162	3	0
246	137	138	1.150	3	0
247	138	139	1.150	3	0
248	139	140	1.150	3	0
249	140	141	1.150	3	0
250	141	142	1.150	3	0
251	142	143	1.150	3	0
252	143	144	1.150	3	0
253	144	145	1.150	3	0
254	137	158	0.180	3	0
255	145	159	0.180	3	0
258	148	150	1.500	3	0
259	149	151	1.500	3	0
260	152	150	1.500	3	0
261	153	151	1.500	3	0
262	152	154	1.600	3	0
263	153	155	1.600	3	0
264	156	154	1.600	3	0
265	157	155	1.600	3	0
266	156	371	1.386	3	0
267	157	376	1.386	3	0
268	138	161	1.162	3	0
269	139	162	1.162	3	0
270	140	163	1.162	3	0
271	141	164	1.162	3	0
272	142	165	1.162	3	0
273	143	166	1.162	3	0
274	144	167	1.162	3	0
275	158	160	0.982	3	0
276	159	168	0.982	3	0
277	148	171	1.300	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
278	149	172	1.300	3	0
279	150	173	1.300	3	0
280	151	174	1.300	3	0
281	152	175	1.300	2	0
289	113	220	3.900	2	0
297	176	153	1.300	2	0
298	154	177	1.300	3	0
299	178	155	1.300	3	0
300	156	179	1.300	3	0
301	180	157	1.300	3	0
303	161	162	1.150	4	0
304	162	163	1.150	4	0
305	163	164	1.150	4	0
306	164	165	1.150	4	0
307	165	166	1.150	4	0
308	166	167	1.150	4	0
309	167	168	1.150	4	0
310	160	181	0.575	3	0
311	168	182	0.575	3	0
314	171	173	1.500	3	0
315	172	174	1.500	3	0
316	175	173	1.500	3	0
317	176	174	1.500	3	0
318	175	177	1.600	3	0
319	176	178	1.600	3	0
320	179	177	1.600	3	0
321	180	178	1.600	3	0
322	179	372	1.386	3	0
323	180	377	1.386	3	0
324	161	184	1.162	3	0
325	162	185	1.162	3	0
326	163	186	1.162	3	0
327	164	187	1.162	3	0
328	165	188	1.162	3	0
329	166	189	1.162	3	0
330	167	190	1.162	3	0
331	181	183	0.587	3	0
332	182	191	0.587	3	0
334	184	185	1.150	4	0
335	185	186	1.150	4	0
336	186	187	1.150	4	0
337	187	188	1.150	4	0
338	188	189	1.150	4	0
339	189	190	1.150	4	0
340	190	191	1.150	4	0
341	171	198	1.300	3	0
342	172	199	1.300	3	0
343	173	210	1.300	3	0
344	174	211	1.300	3	0
345	175	212	1.300	2	0
346	228	176	1.300	2	0
347	177	229	1.300	3	0
348	230	178	1.300	3	0
349	179	231	1.300	3	0
350	232	180	1.300	3	0
351	183	233	0.970	3	0
352	191	234	0.970	3	0
353	184	236	1.162	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
354	185	237	1.162	3	0
355	186	238	1.162	3	0
356	187	239	1.162	3	0
357	188	240	1.162	3	0
358	189	241	1.162	3	0
359	190	242	1.162	3	0
360	197	195	0.243	3	0
361	192	198	0.200	1	0
362	196	199	0.200	1	0
363	200	197	0.243	3	0
364	201	200	0.243	3	0
365	202	201	0.243	3	0
366	203	202	0.243	3	0
367	193	208	1.600	5	0
368	194	209	1.600	5	0
369	204	203	0.243	3	0
370	198	210	1.500	1	0
371	199	211	1.500	1	0
372	205	204	0.243	3	0
373	206	205	0.243	3	0
374	207	206	0.243	3	0
375	209	207	0.243	3	0
376	208	209	1.150	5	0
377	195	220	3.200	1	0
378	212	210	1.500	1	0
379	228	211	1.500	1	0
380	213	475	0.275	2	0
381	214	469	0.050	2	0
382	215	466	0.225	2	0
383	216	463	0.400	2	0
384	217	460	0.175	2	0
385	218	457	0.350	2	0
386	219	451	0.150	2	0
387	220	448	0.400	2	0
388	221	220	0.475	2	0
389	222	439	0.150	2	0
390	223	432	0.325	2	0
391	224	418	0.100	2	0
392	225	411	0.275	2	0
393	226	397	0.050	2	0
394	227	390	0.225	2	0
395	228	383	0.400	2	0
396	212	229	1.600	1	0
397	228	230	1.600	1	0
398	231	229	1.600	1	0
399	232	230	1.600	1	0
400	231	233	1.386	3	0
401	232	234	1.386	3	0
402	233	235	0.192	3	0
403	234	243	0.192	3	0
405	236	237	1.150	4	0
406	237	238	1.150	4	0
407	238	239	1.150	4	0
408	239	240	1.150	4	0
409	240	241	1.150	4	0
410	241	242	1.150	4	0
411	242	243	1.150	4	0
412	215	244	0.420	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
413	197	247	1.000	6	90
414	200	248	1.000	6	90
415	201	249	1.000	6	90
416	202	250	1.000	6	90
417	203	251	1.000	6	90
418	204	252	1.000	6	90
419	205	253	1.000	6	90
420	206	254	1.000	6	90
421	207	255	1.000	6	90
422	198	258	1.050	3	0
423	199	259	1.050	3	0
424	208	260	1.050	5	0
425	209	261	1.050	3	0
426	210	262	1.050	3	0
427	211	263	1.050	3	0
428	212	264	1.050	2	0
429	265	228	1.050	2	0
430	229	266	1.050	3	0
431	267	230	1.050	3	0
432	231	268	1.050	3	0
433	269	232	1.050	3	0
434	220	283	1.100	2	0
435	235	270	1.066	3	0
436	243	271	1.066	3	0
437	244	245	0.420	3	0
438	236	285	1.162	3	0
439	237	286	1.162	3	0
440	238	287	1.162	3	0
441	239	288	1.162	3	0
442	240	289	1.162	3	0
443	241	290	1.162	3	0
444	242	291	1.162	3	0
445	247	246	0.243	3	0
446	248	247	0.243	3	0
447	249	248	0.243	3	0
448	250	249	0.243	3	0
449	251	250	0.243	3	0
450	252	251	0.243	3	0
451	253	252	0.243	3	0
452	254	253	0.243	3	0
453	255	254	0.243	3	0
454	261	255	0.248	3	0
455	256	258	0.200	3	0
457	258	262	1.500	3	0
458	259	263	1.500	3	0
459	260	261	1.150	5	0
460	264	262	1.500	3	0
461	265	263	1.500	3	0
464	245	293	0.420	3	0
472	264	266	1.600	3	0
473	265	267	1.600	3	0
474	268	266	1.600	3	0
475	269	267	1.600	3	0
476	268	270	0.693	3	0
477	269	271	0.693	3	0
478	260	272	0.050	5	0
479	261	273	0.050	3	0
480	270	284	0.096	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
481	271	292	0.096	3	0
482	273	272	1.150	5	0
483	273	274	0.243	3	0
484	274	275	0.243	3	0
485	275	276	0.243	3	0
486	276	277	0.243	3	0
487	277	278	0.243	3	0
488	278	279	0.243	3	0
489	279	280	0.243	3	0
490	280	281	0.243	3	0
491	281	282	0.243	3	0
492	282	283	0.243	3	0
494	285	286	1.150	4	0
495	286	287	1.150	4	0
496	287	288	1.150	4	0
497	288	289	1.150	4	0
498	289	290	1.150	4	0
499	290	291	1.150	4	0
500	291	292	1.150	4	0
501	293	294	0.420	3	0
502	272	297	0.900	5	0
503	273	298	0.900	3	0
504	274	299	0.900	6	90
505	275	300	0.900	6	90
506	276	301	0.900	6	90
507	277	302	0.900	6	90
508	278	303	0.900	6	90
509	279	304	0.900	6	90
510	280	305	0.900	6	90
511	281	306	0.900	6	90
512	282	307	0.900	6	90
513	283	308	0.900	2	0
514	258	318	1.050	3	0
515	259	326	1.050	3	0
516	262	327	1.050	3	0
517	263	335	1.050	3	0
518	264	336	1.050	2	0
519	351	265	1.050	2	0
520	266	352	1.050	3	0
521	358	267	1.050	3	0
522	268	359	1.050	3	0
523	368	269	1.050	3	0
524	284	359	1.162	3	0
525	285	360	1.162	3	0
526	286	361	1.162	3	0
527	287	362	1.162	3	0
528	288	363	1.162	3	0
529	289	365	1.162	3	0
530	290	366	1.162	3	0
531	291	367	1.162	3	0
532	292	368	1.162	3	0
533	294	339	0.420	3	0
534	295	297	1.600	5	0
535	296	298	1.600	5	0
536	298	297	1.150	5	0
537	298	299	0.243	3	0
538	299	300	0.243	3	0
539	300	301	0.243	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
540	301	302	0.243	3	0
541	302	303	0.243	3	0
542	303	304	0.243	3	0
543	304	305	0.243	3	0
544	305	306	0.243	3	0
545	306	307	0.243	3	0
546	307	308	0.243	3	0
547	308	343	0.100	2	0
548	309	318	0.200	1	0
552	313	322	0.200	1	0
556	317	326	0.200	1	0
557	318	319	1.150	3	0
558	319	320	1.150	3	0
559	320	321	1.150	3	0
560	321	322	1.250	3	0
561	322	323	1.050	3	0
562	323	324	1.150	3	0
563	324	325	1.150	3	0
564	325	326	1.150	3	0
565	318	327	1.500	1	0
566	319	328	1.500	3	0
567	320	329	1.500	3	0
568	321	330	1.500	3	0
569	322	331	1.500	1	0
570	323	332	1.500	3	0
571	324	333	1.500	3	0
572	325	334	1.500	3	0
573	326	335	1.500	1	0
574	327	328	1.150	3	0
575	328	329	1.150	3	0
576	329	330	1.150	3	0
577	330	331	1.250	3	0
578	331	332	1.050	3	0
579	332	333	1.150	3	0
580	333	334	1.150	3	0
581	334	335	1.150	3	0
582	336	327	1.500	1	0
583	338	328	1.500	3	0
584	340	329	1.500	3	0
585	341	330	1.500	3	0
586	343	331	1.500	1	0
587	345	332	1.500	3	0
588	347	333	1.500	3	0
589	349	334	1.500	3	0
590	351	335	1.500	1	0
591	336	479	0.300	2	0
592	337	478	0.125	2	0
593	338	476	0.350	2	0
594	339	340	0.575	2	0
595	340	341	1.150	2	0
596	341	342	1.150	2	0
597	342	343	0.100	2	0
598	343	344	0.475	2	0
599	344	445	0.025	2	0
600	345	434	0.250	2	0
601	346	427	0.075	2	0
602	347	413	0.300	2	0
603	348	406	0.125	2	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
604	349	392	0.350	2	0
605	350	385	0.175	2	0
606	336	352	1.600	1	0
607	343	354	1.600	1	0
608	345	355	1.600	3	0
609	347	356	1.600	3	0
610	349	357	1.600	3	0
611	351	358	1.600	1	0
613	354	355	1.050	3	0
614	355	356	1.150	3	0
615	356	357	1.150	3	0
616	357	358	1.150	3	0
617	352	359	1.600	1	0
618	364	354	1.600	1	0
619	365	355	1.600	3	0
620	366	356	1.600	3	0
621	367	357	1.600	3	0
622	358	368	1.600	1	0
624	360	361	1.150	3	0
625	361	362	1.150	3	0
626	362	363	1.150	3	0
627	363	364	0.100	3	0
628	364	365	1.050	3	0
629	365	366	1.150	3	0
630	366	367	1.150	3	0
631	367	368	1.150	3	0
632	233	372	1.300	6	0
633	370	126	1.056	3	0
634	371	158	1.715	3	0
635	372	181	0.858	3	0
636	370	374	1.233	6	0
637	371	370	1.300	6	0
638	372	371	1.300	6	0
640	374	373	0.367	6	0
641	375	127	1.056	3	0
642	376	159	1.715	3	0
643	377	182	0.858	3	0
644	378	97	0.970	3	0
645	234	377	1.300	6	0
647	376	375	1.300	6	0
648	377	376	1.300	6	0
649	379	35	0.175	2	0
650	380	121	0.400	1	0
651	383	227	0.175	2	0
652	385	351	0.400	2	0
653	380	379	3.700	3	0
654	380	383	3.900	3	0
657	383	385	2.100	2	0
659	386	34	0.350	2	0
660	387	120	0.225	1	0
661	390	226	0.350	2	0
662	392	350	0.225	2	0
663	387	386	3.700	3	0
664	387	390	3.900	3	0
667	390	392	2.100	2	0
669	393	400	0.400	2	0
670	394	119	0.050	1	0
671	397	404	0.400	2	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
672	399	349	0.050	2	0
673	394	393	3.700	3	0
674	394	397	3.900	3	0
677	397	399	2.100	2	0
679	400	33	0.125	2	0
680	401	394	0.400	1	0
681	404	225	0.125	2	0
682	406	399	0.400	2	0
683	401	400	3.700	3	0
684	401	404	3.900	3	0
687	404	406	2.100	2	0
689	407	32	0.300	2	0
690	408	118	0.275	1	0
691	411	224	0.300	2	0
692	413	348	0.275	2	0
693	408	407	3.700	3	0
694	408	411	3.900	3	0
697	411	413	2.100	2	0
699	414	421	0.400	2	0
700	415	117	0.100	1	0
701	418	425	0.400	2	0
702	420	347	0.100	2	0
703	415	414	3.700	3	0
704	415	418	3.900	3	0
707	418	420	2.100	2	0
709	421	31	0.075	2	0
710	422	415	0.400	1	0
711	425	223	0.075	2	0
712	427	420	0.400	2	0
713	422	421	3.700	3	0
714	422	425	3.900	3	0
717	425	427	2.100	2	0
719	428	30	0.250	2	0
720	429	116	0.325	1	0
721	432	222	0.250	2	0
722	434	346	0.325	2	0
723	429	428	3.700	3	0
724	429	432	3.900	3	0
727	432	434	2.100	2	0
729	435	442	0.400	2	0
730	436	115	0.150	1	0
731	439	444	0.400	2	0
732	441	345	0.150	2	0
733	436	435	3.700	3	0
734	436	439	3.900	3	0
737	439	441	2.100	2	0
738	442	29	0.025	2	0
739	443	436	0.400	1	0
740	444	221	0.025	2	0
741	445	441	0.400	2	0
742	443	442	3.700	3	0
743	443	444	3.900	3	0
744	444	445	2.100	2	0
745	446	26	0.250	2	0
746	447	113	0.400	1	0
747	448	219	0.250	2	0
748	446	447	3.700	3	0
749	447	448	3.900	3	0

Beams Cont...

Beam	Node A	Node B	Length (m)	Property	β (degrees)
750	449	452	0.400	2	0
751	450	112	0.150	1	0
752	451	454	0.400	2	0
753	449	450	3.700	3	0
754	450	451	3.900	3	0
755	452	25	0.050	2	0
756	453	450	0.400	1	0
757	454	218	0.050	2	0
758	452	453	3.700	3	0
759	453	454	3.900	3	0
760	455	24	0.225	2	0
761	456	111	0.350	1	0
762	457	217	0.225	2	0
763	455	456	3.700	3	0
764	456	457	3.900	3	0
765	458	23	0.400	2	0
766	459	110	0.175	1	0
767	460	216	0.400	2	0
768	458	459	3.700	3	0
769	459	460	3.900	3	0
770	23	109	3.700	3	0
771	109	216	3.900	3	0
772	461	22	0.175	2	0
773	462	109	0.400	1	0
774	463	215	0.175	2	0
775	461	462	3.700	3	0
776	462	463	3.900	3	0
777	464	21	0.350	2	0
778	465	108	0.225	1	0
779	466	214	0.350	2	0
780	464	465	3.700	3	0
781	465	466	3.900	3	0
782	467	470	0.400	2	0
783	468	107	0.050	1	0
784	469	472	0.400	2	0
785	467	468	3.700	3	0
786	468	469	3.900	3	0
787	470	20	0.125	2	0
788	471	468	0.400	1	0
789	472	213	0.125	2	0
790	470	471	3.700	3	0
791	471	472	3.900	3	0
792	473	19	0.300	2	0
793	474	106	0.275	1	0
794	475	212	0.300	2	0
795	473	474	3.700	3	0
796	474	475	3.900	3	0
797	476	339	0.225	2	0
798	466	476	2.100	3	0
799	477	338	0.050	2	0
800	469	477	2.100	3	0
801	478	477	0.400	2	0
802	472	478	2.100	3	0
803	479	337	0.275	2	0
804	475	479	2.100	3	0

Section Properties

Prop	Section	Area (cm^2)	I_{yy} (cm^4)	I_{zz} (cm^4)	J (cm^4)	Material
1	TUB2002004.5	34.670	2.19E+3	2.19E+3	3.36E+3	STEEL
2	RHS200X100X4.5	25.670	455.000	1.33E+3	1.08E+3	STEEL
3	RHS125X75X3.2	12.130	117.000	257.000	252.824	STEEL
4	TUB50502.3	4.252	15.900	15.900	24.962	STEEL
5	TUB1001003.2	12.130	187.000	187.000	290.253	STEEL
6	RHS125X75X3.2	12.130	117.000	257.000	252.824	STEEL

Materials

Mat	Name	E (kN/mm^2)	ν	Density (kg/m^3)	α (/°C)
1	STEEL	205.000	0.300	7.83E+3	12E-6
2	STAINLESSSTEEL	197.930	0.300	7.83E+3	18E-6
3	ALUMINUM	68.948	0.330	2.71E+3	23E-6
4	CONCRETE	21.718	0.170	2.4E+3	10E-6

Supports

Node	X (kN/mm)	Y (kN/mm)	Z (kN/mm)	rX (kN·m/deg)	rY (kN·m/deg)	rZ (kN·m/deg)
1	Fixed	Fixed	Fixed	-	-	-
5	Fixed	Fixed	Fixed	-	-	-
6	Fixed	Fixed	Fixed	-	-	-
98	Fixed	Fixed	Fixed	-	-	-
99	Fixed	Fixed	Fixed	-	-	-
100	Fixed	Fixed	Fixed	-	-	-
192	Fixed	Fixed	Fixed	-	-	-
193	Fixed	Fixed	Fixed	-	-	-
194	Fixed	Fixed	Fixed	-	-	-
195	Fixed	Fixed	Fixed	-	-	-
196	Fixed	Fixed	Fixed	-	-	-
246	Fixed	Fixed	Fixed	-	-	-
295	Fixed	Fixed	Fixed	-	-	-
296	Fixed	Fixed	Fixed	-	-	-
309	Fixed	Fixed	Fixed	-	-	-
313	Fixed	Fixed	Fixed	-	-	-
317	Fixed	Fixed	Fixed	-	-	-

Releases

There is no data of this type.

Primary Load Cases

Number	Name	Type
1	DL	Dead
2	SDL	Dead
3	LL	Live
4	WX	Wind
5	WZ	Wind
6	WX2	Wind
7	WZ2	Wind

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
8	COMB - 1 DEAD + 1 DEAD	1	DL	1.00
		2	SDL	1.00
9	COMB - 1 DEAD + 1 DEAD + 1 LIVE	1	DL	1.00
		2	SDL	1.00
		3	LL	1.00
10	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE	1	DL	1.00
		2	SDL	1.00
		3	LL	0.75
11	COMB - 1 DEAD + 1 DEAD + 1 WIND (1)	1	DL	1.00
		2	SDL	1.00
		4	WX	1.00
12	COMB - 1 DEAD + 1 DEAD + 1 WIND (2)	1	DL	1.00
		2	SDL	1.00
		5	WZ	1.00
13	COMB - 1 DEAD + 1 DEAD + 1 WIND (3)	1	DL	1.00
		2	SDL	1.00
		6	WX2	1.00
14	COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	1	DL	1.00
		2	SDL	1.00
		7	WZ2	1.00
15	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +	1	DL	1.00
		2	SDL	1.00
		3	LL	0.75
		4	WX	0.75
16	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +	1	DL	1.00
		2	SDL	1.00
		3	LL	0.75
		5	WZ	0.75
17	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +	1	DL	1.00
		2	SDL	1.00
		3	LL	0.75
		6	WX2	0.75
18	COMB - 1 DEAD + 1 DEAD + 0.75 LIVE +	1	DL	1.00
		2	SDL	1.00
		3	LL	0.75
		7	WZ2	0.75
19	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND	1	DL	0.60
		2	SDL	0.60
		4	WX	1.00
20	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND	1	DL	0.60
		2	SDL	0.60
		5	WZ	1.00
21	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND	1	DL	0.60
		2	SDL	0.60
		6	WX2	1.00
22	COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND	1	DL	0.60
		2	SDL	0.60
		7	WZ2	1.00
23	COMB - 0.6 DEAD + 0.6 DEAD	1	DL	0.60
		2	SDL	0.60

Wind Load Definition : Type 1

Intensity (kg/cm^2)	Height (m)
0.006	0.000
0.006	10.000
0.008	20.000
0.012	40.000

1 DL : Beam Loads

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
7	UNI kg/m	GY	-100.000	-	-	-	-
8	UNI kg/m	GY	-100.000	-	-	-	-
9	UNI kg/m	GY	-100.000	-	-	-	-
10	UNI kg/m	GY	-100.000	-	-	-	-
11	UNI kg/m	GY	-100.000	-	-	-	-
28	UNI kg/m	GY	-100.000	-	-	-	-
29	UNI kg/m	GY	-100.000	-	-	-	-
30	UNI kg/m	GY	-100.000	-	-	-	-
31	UNI kg/m	GY	-100.000	-	-	-	-
32	UNI kg/m	GY	-100.000	-	-	-	-
33	UNI kg/m	GY	-100.000	-	-	-	-
34	UNI kg/m	GY	-100.000	-	-	-	-
35	UNI kg/m	GY	-100.000	-	-	-	-
36	UNI kg/m	GY	-100.000	-	-	-	-
37	UNI kg/m	GY	-100.000	-	-	-	-
38	UNI kg/m	GY	-100.000	-	-	-	-
39	UNI kg/m	GY	-100.000	-	-	-	-
40	UNI kg/m	GY	-100.000	-	-	-	-
41	UNI kg/m	GY	-100.000	-	-	-	-
42	UNI kg/m	GY	-100.000	-	-	-	-
43	UNI kg/m	GY	-100.000	-	-	-	-
44	UNI kg/m	GY	-100.000	-	-	-	-
72	UNI kg/m	GY	-30.000	-	-	-	-
73	UNI kg/m	GY	-30.000	-	-	-	-
74	UNI kg/m	GY	-30.000	-	-	-	-
75	UNI kg/m	GY	-30.000	-	-	-	-
76	UNI kg/m	GY	-30.000	-	-	-	-
77	UNI kg/m	GY	-30.000	-	-	-	-
78	UNI kg/m	GY	-30.000	-	-	-	-
79	UNI kg/m	GY	-30.000	-	-	-	-
80	UNI kg/m	GY	-30.000	-	-	-	-
90	UNI kg/m	GY	-100.000	-	-	-	-
92	UNI kg/m	GY	-100.000	-	-	-	-
95	UNI kg/m	GY	-30.000	-	-	-	-
96	UNI kg/m	GY	-30.000	-	-	-	-
97	UNI kg/m	GY	-30.000	-	-	-	-
98	UNI kg/m	GY	-30.000	-	-	-	-
99	UNI kg/m	GY	-30.000	-	-	-	-
100	UNI kg/m	GY	-30.000	-	-	-	-
101	UNI kg/m	GY	-30.000	-	-	-	-
102	UNI kg/m	GY	-30.000	-	-	-	-
119	UNI kg/m	GY	-100.000	-	-	-	-
120	UNI kg/m	GY	-100.000	-	-	-	-
122	UNI kg/m	GY	-100.000	-	-	-	-
138	UNI kg/m	GY	-100.000	-	-	-	-
142	UNI kg/m	GY	-30.000	-	-	-	-
143	UNI kg/m	GY	-30.000	-	-	-	-
144	UNI kg/m	GY	-30.000	-	-	-	-

1 DL : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
145	UNI kg/m	GY	-30.000	-	-	-	-
146	UNI kg/m	GY	-30.000	-	-	-	-
147	UNI kg/m	GY	-30.000	-	-	-	-
148	UNI kg/m	GY	-30.000	-	-	-	-
149	UNI kg/m	GY	-30.000	-	-	-	-
166	UNI kg/m	GY	-30.000	-	-	-	-
167	UNI kg/m	GY	-30.000	-	-	-	-
168	UNI kg/m	GY	-30.000	-	-	-	-
169	UNI kg/m	GY	-30.000	-	-	-	-
170	UNI kg/m	GY	-30.000	-	-	-	-
171	UNI kg/m	GY	-30.000	-	-	-	-
172	UNI kg/m	GY	-30.000	-	-	-	-
173	UNI kg/m	GY	-30.000	-	-	-	-
174	UNI kg/m	GY	-100.000	-	-	-	-
176	UNI kg/m	GY	-100.000	-	-	-	-
219	UNI kg/m	GY	-30.000	-	-	-	-
220	UNI kg/m	GY	-30.000	-	-	-	-
221	UNI kg/m	GY	-30.000	-	-	-	-
222	UNI kg/m	GY	-30.000	-	-	-	-
223	UNI kg/m	GY	-30.000	-	-	-	-
224	UNI kg/m	GY	-30.000	-	-	-	-
225	UNI kg/m	GY	-30.000	-	-	-	-
226	UNI kg/m	GY	-30.000	-	-	-	-
227	UNI kg/m	GY	-100.000	-	-	-	-
228	UNI kg/m	GY	-100.000	-	-	-	-
231	UNI kg/m	GY	-100.000	-	-	-	-
232	UNI kg/m	GY	-100.000	-	-	-	-
246	UNI kg/m	GY	-30.000	-	-	-	-
247	UNI kg/m	GY	-30.000	-	-	-	-
248	UNI kg/m	GY	-30.000	-	-	-	-
249	UNI kg/m	GY	-30.000	-	-	-	-
250	UNI kg/m	GY	-30.000	-	-	-	-
251	UNI kg/m	GY	-30.000	-	-	-	-
252	UNI kg/m	GY	-30.000	-	-	-	-
253	UNI kg/m	GY	-30.000	-	-	-	-
277	UNI kg/m	GY	-100.000	-	-	-	-
278	UNI kg/m	GY	-100.000	-	-	-	-
281	UNI kg/m	GY	-100.000	-	-	-	-
297	UNI kg/m	GY	-100.000	-	-	-	-
303	UNI kg/m	GY	-30.000	-	-	-	-
304	UNI kg/m	GY	-30.000	-	-	-	-
305	UNI kg/m	GY	-30.000	-	-	-	-
306	UNI kg/m	GY	-30.000	-	-	-	-
307	UNI kg/m	GY	-30.000	-	-	-	-
308	UNI kg/m	GY	-30.000	-	-	-	-
309	UNI kg/m	GY	-30.000	-	-	-	-
334	UNI kg/m	GY	-30.000	-	-	-	-
335	UNI kg/m	GY	-30.000	-	-	-	-
336	UNI kg/m	GY	-30.000	-	-	-	-
337	UNI kg/m	GY	-30.000	-	-	-	-
338	UNI kg/m	GY	-30.000	-	-	-	-
339	UNI kg/m	GY	-30.000	-	-	-	-
340	UNI kg/m	GY	-30.000	-	-	-	-
341	UNI kg/m	GY	-100.000	-	-	-	-
342	UNI kg/m	GY	-100.000	-	-	-	-
345	UNI kg/m	GY	-100.000	-	-	-	-
346	UNI kg/m	GY	-100.000	-	-	-	-
405	UNI kg/m	GY	-30.000	-	-	-	-

1 DL : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
406	UNI kg/m	GY	-30.000	-	-	-	-
407	UNI kg/m	GY	-30.000	-	-	-	-
408	UNI kg/m	GY	-30.000	-	-	-	-
409	UNI kg/m	GY	-30.000	-	-	-	-
410	UNI kg/m	GY	-30.000	-	-	-	-
411	UNI kg/m	GY	-30.000	-	-	-	-
422	UNI kg/m	GY	-100.000	-	-	-	-
423	UNI kg/m	GY	-100.000	-	-	-	-
428	UNI kg/m	GY	-100.000	-	-	-	-
429	UNI kg/m	GY	-100.000	-	-	-	-
494	UNI kg/m	GY	-30.000	-	-	-	-
495	UNI kg/m	GY	-30.000	-	-	-	-
496	UNI kg/m	GY	-30.000	-	-	-	-
497	UNI kg/m	GY	-30.000	-	-	-	-
498	UNI kg/m	GY	-30.000	-	-	-	-
499	UNI kg/m	GY	-30.000	-	-	-	-
500	UNI kg/m	GY	-30.000	-	-	-	-
514	UNI kg/m	GY	-100.000	-	-	-	-
515	UNI kg/m	GY	-100.000	-	-	-	-
518	UNI kg/m	GY	-100.000	-	-	-	-
519	UNI kg/m	GY	-100.000	-	-	-	-
557	UNI kg/m	GY	-100.000	-	-	-	-
558	UNI kg/m	GY	-100.000	-	-	-	-
559	UNI kg/m	GY	-100.000	-	-	-	-
560	UNI kg/m	GY	-100.000	-	-	-	-
561	UNI kg/m	GY	-100.000	-	-	-	-
562	UNI kg/m	GY	-100.000	-	-	-	-
563	UNI kg/m	GY	-100.000	-	-	-	-
564	UNI kg/m	GY	-100.000	-	-	-	-
591	UNI kg/m	GY	-100.000	-	-	-	-
592	UNI kg/m	GY	-100.000	-	-	-	-
593	UNI kg/m	GY	-100.000	-	-	-	-
594	UNI kg/m	GY	-100.000	-	-	-	-
595	UNI kg/m	GY	-100.000	-	-	-	-
596	UNI kg/m	GY	-100.000	-	-	-	-
597	UNI kg/m	GY	-100.000	-	-	-	-
598	UNI kg/m	GY	-100.000	-	-	-	-
599	UNI kg/m	GY	-100.000	-	-	-	-
600	UNI kg/m	GY	-100.000	-	-	-	-
601	UNI kg/m	GY	-100.000	-	-	-	-
602	UNI kg/m	GY	-100.000	-	-	-	-
603	UNI kg/m	GY	-100.000	-	-	-	-
604	UNI kg/m	GY	-100.000	-	-	-	-
605	UNI kg/m	GY	-100.000	-	-	-	-
624	UNI kg/m	GY	-30.000	-	-	-	-
625	UNI kg/m	GY	-30.000	-	-	-	-
626	UNI kg/m	GY	-30.000	-	-	-	-
627	UNI kg/m	GY	-30.000	-	-	-	-
628	UNI kg/m	GY	-30.000	-	-	-	-
629	UNI kg/m	GY	-30.000	-	-	-	-
630	UNI kg/m	GY	-30.000	-	-	-	-
631	UNI kg/m	GY	-30.000	-	-	-	-
649	UNI kg/m	GY	-100.000	-	-	-	-
652	UNI kg/m	GY	-100.000	-	-	-	-
659	UNI kg/m	GY	-100.000	-	-	-	-
662	UNI kg/m	GY	-100.000	-	-	-	-
669	UNI kg/m	GY	-100.000	-	-	-	-
672	UNI kg/m	GY	-100.000	-	-	-	-

1 DL : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
679	UNI kg/m	GY	-100.000	-	-	-	-
682	UNI kg/m	GY	-100.000	-	-	-	-
689	UNI kg/m	GY	-100.000	-	-	-	-
692	UNI kg/m	GY	-100.000	-	-	-	-
699	UNI kg/m	GY	-100.000	-	-	-	-
702	UNI kg/m	GY	-100.000	-	-	-	-
709	UNI kg/m	GY	-100.000	-	-	-	-
712	UNI kg/m	GY	-100.000	-	-	-	-
719	UNI kg/m	GY	-100.000	-	-	-	-
722	UNI kg/m	GY	-100.000	-	-	-	-
729	UNI kg/m	GY	-100.000	-	-	-	-
732	UNI kg/m	GY	-100.000	-	-	-	-
738	UNI kg/m	GY	-100.000	-	-	-	-
741	UNI kg/m	GY	-100.000	-	-	-	-
745	UNI kg/m	GY	-100.000	-	-	-	-
750	UNI kg/m	GY	-100.000	-	-	-	-
755	UNI kg/m	GY	-100.000	-	-	-	-
760	UNI kg/m	GY	-100.000	-	-	-	-
765	UNI kg/m	GY	-100.000	-	-	-	-
772	UNI kg/m	GY	-100.000	-	-	-	-
777	UNI kg/m	GY	-100.000	-	-	-	-
782	UNI kg/m	GY	-100.000	-	-	-	-
787	UNI kg/m	GY	-100.000	-	-	-	-
792	UNI kg/m	GY	-100.000	-	-	-	-
797	UNI kg/m	GY	-100.000	-	-	-	-
799	UNI kg/m	GY	-100.000	-	-	-	-
801	UNI kg/m	GY	-100.000	-	-	-	-
803	UNI kg/m	GY	-100.000	-	-	-	-

1 DL : One Way Loads

Load (kg/cm^2)	Min Ht. (m)	Max Ht. (m)	Min X (m)	Max X (m)	Min Y (m)	Max Y (m)
-0.006	3.200	3.200	-	-	-	-

1 DL : Selfweight

Direction	Factor	Assigned Geometry
Y	-1.000	ALL

2 SDL : Floor Loads

Load (kg/cm^2)	Min Ht. (m)	Max Ht. (m)	Min X (m)	Max X (m)	Min Y (m)	Max Y (m)
-0.006	3.200	3.200	-	-	-	-

3 LL : Beam Loads

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
72	UNI kg/m	GY	-60.000	-	-	-	-
73	UNI kg/m	GY	-60.000	-	-	-	-
74	UNI kg/m	GY	-60.000	-	-	-	-
75	UNI kg/m	GY	-60.000	-	-	-	-
76	UNI kg/m	GY	-60.000	-	-	-	-
77	UNI kg/m	GY	-60.000	-	-	-	-
78	UNI kg/m	GY	-60.000	-	-	-	-
79	UNI kg/m	GY	-60.000	-	-	-	-
80	UNI kg/m	GY	-60.000	-	-	-	-
95	UNI kg/m	GY	-60.000	-	-	-	-
96	UNI kg/m	GY	-60.000	-	-	-	-
97	UNI kg/m	GY	-60.000	-	-	-	-
98	UNI kg/m	GY	-60.000	-	-	-	-
99	UNI kg/m	GY	-60.000	-	-	-	-
100	UNI kg/m	GY	-60.000	-	-	-	-
101	UNI kg/m	GY	-60.000	-	-	-	-
102	UNI kg/m	GY	-60.000	-	-	-	-
142	UNI kg/m	GY	-60.000	-	-	-	-
143	UNI kg/m	GY	-60.000	-	-	-	-
144	UNI kg/m	GY	-60.000	-	-	-	-
145	UNI kg/m	GY	-60.000	-	-	-	-
146	UNI kg/m	GY	-60.000	-	-	-	-
147	UNI kg/m	GY	-60.000	-	-	-	-
148	UNI kg/m	GY	-60.000	-	-	-	-
149	UNI kg/m	GY	-60.000	-	-	-	-
166	UNI kg/m	GY	-60.000	-	-	-	-
167	UNI kg/m	GY	-60.000	-	-	-	-
168	UNI kg/m	GY	-60.000	-	-	-	-
169	UNI kg/m	GY	-60.000	-	-	-	-
170	UNI kg/m	GY	-60.000	-	-	-	-
171	UNI kg/m	GY	-60.000	-	-	-	-
172	UNI kg/m	GY	-60.000	-	-	-	-
173	UNI kg/m	GY	-60.000	-	-	-	-
219	UNI kg/m	GY	-60.000	-	-	-	-
220	UNI kg/m	GY	-60.000	-	-	-	-
221	UNI kg/m	GY	-60.000	-	-	-	-
222	UNI kg/m	GY	-60.000	-	-	-	-
223	UNI kg/m	GY	-60.000	-	-	-	-
224	UNI kg/m	GY	-60.000	-	-	-	-
225	UNI kg/m	GY	-60.000	-	-	-	-
226	UNI kg/m	GY	-60.000	-	-	-	-
246	UNI kg/m	GY	-60.000	-	-	-	-
247	UNI kg/m	GY	-60.000	-	-	-	-
248	UNI kg/m	GY	-60.000	-	-	-	-
249	UNI kg/m	GY	-60.000	-	-	-	-
250	UNI kg/m	GY	-60.000	-	-	-	-
251	UNI kg/m	GY	-60.000	-	-	-	-
252	UNI kg/m	GY	-60.000	-	-	-	-
253	UNI kg/m	GY	-60.000	-	-	-	-
303	UNI kg/m	GY	-60.000	-	-	-	-
304	UNI kg/m	GY	-60.000	-	-	-	-
305	UNI kg/m	GY	-60.000	-	-	-	-
306	UNI kg/m	GY	-60.000	-	-	-	-
307	UNI kg/m	GY	-60.000	-	-	-	-
308	UNI kg/m	GY	-60.000	-	-	-	-
309	UNI kg/m	GY	-60.000	-	-	-	-
334	UNI kg/m	GY	-60.000	-	-	-	-
335	UNI kg/m	GY	-60.000	-	-	-	-

3 LL : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (m)	Fb	Db	Ecc. (m)
336	UNI kg/m	GY	-60.000	-	-	-	-
337	UNI kg/m	GY	-60.000	-	-	-	-
338	UNI kg/m	GY	-60.000	-	-	-	-
339	UNI kg/m	GY	-60.000	-	-	-	-
340	UNI kg/m	GY	-60.000	-	-	-	-
405	UNI kg/m	GY	-60.000	-	-	-	-
406	UNI kg/m	GY	-60.000	-	-	-	-
407	UNI kg/m	GY	-60.000	-	-	-	-
408	UNI kg/m	GY	-60.000	-	-	-	-
409	UNI kg/m	GY	-60.000	-	-	-	-
410	UNI kg/m	GY	-60.000	-	-	-	-
411	UNI kg/m	GY	-60.000	-	-	-	-
494	UNI kg/m	GY	-60.000	-	-	-	-
495	UNI kg/m	GY	-60.000	-	-	-	-
496	UNI kg/m	GY	-60.000	-	-	-	-
497	UNI kg/m	GY	-60.000	-	-	-	-
498	UNI kg/m	GY	-60.000	-	-	-	-
499	UNI kg/m	GY	-60.000	-	-	-	-
500	UNI kg/m	GY	-60.000	-	-	-	-
624	UNI kg/m	GY	-60.000	-	-	-	-
625	UNI kg/m	GY	-60.000	-	-	-	-
626	UNI kg/m	GY	-60.000	-	-	-	-
627	UNI kg/m	GY	-60.000	-	-	-	-
628	UNI kg/m	GY	-60.000	-	-	-	-
629	UNI kg/m	GY	-60.000	-	-	-	-
630	UNI kg/m	GY	-60.000	-	-	-	-
631	UNI kg/m	GY	-60.000	-	-	-	-

3 LL : Floor Loads

Load (kg/cm^2)	Min Ht. (m)	Max Ht. (m)	Min X (m)	Max X (m)	Min Y (m)	Max Y (m)
-0.020	3.200	3.200	-	-	-	-

4 WX : Wind Loading

Direction	Type	Factor
X	1	1.000

5 WZ : Wind Loading

Direction	Type	Factor
Z	1	1.000

6 WX2 : Wind Loading

Direction	Type	Factor
X	1	-1.000

7 WZ2 : Wind Loading

Direction	Type	Factor
Z	1	-1.000

Node Displacement Summary

	Node	L/C	X (mm)	Y (mm)	Z (mm)	Resultant (mm)	rX (rad)	rY (rad)	rZ (rad)
Max X	363	15:COMB - 1 D	**14.851**	-0.366	-0.176	14.857	-0.001	-0.000	-0.001
Min X	239	6:WX2	**-14.666**	-2.287	0.261	14.846	0.000	-0.000	-0.001
Max Y	132	6:WX2	-11.481	**4.420**	-0.047	12.303	-0.000	-0.000	-0.000
Min Y	186	9:COMB - 1 DE	0.255	**-17.293**	0.397	17.300	-0.002	0.001	0.000
Max Z	156	12:COMB - 1 D	-0.186	-0.297	**16.436**	16.440	0.001	0.001	-0.000
Min Z	125	14:COMB - 1 D	-0.449	-0.104	**-17.488**	17.494	-0.003	0.001	-0.000
Max rX	236	17:COMB - 1 D	-6.466	-8.893	0.500	11.007	**0.007**	-0.004	0.001
Min rX	144	9:COMB - 1 DE	0.433	-5.978	0.338	6.003	**-0.005**	-0.000	0.000
Max rY	90	15:COMB - 1 D	7.358	-6.668	0.488	9.941	0.005	**0.003**	0.000
Min rY	236	17:COMB - 1 D	-6.466	-8.893	0.500	11.007	0.007	**-0.004**	0.001
Max rZ	288	17:COMB - 1 D	-4.532	-5.113	0.452	6.847	-0.002	0.001	**0.006**
Min rZ	61	15:COMB - 1 D	6.118	-4.631	0.456	7.687	-0.000	-0.000	**-0.006**
Max Rst	186	17:COMB - 1 D	-9.659	-15.430	0.482	**18.210**	-0.001	0.001	-0.001

Reaction Summary

			Horizontal	Vertical	Horizontal	Moment		
	Node	L/C	FX (kg)	FY (kg)	FZ (kg)	MX (kNm)	MY (kNm)	MZ (kNm)
Max FX	196	6:WX2	**833.182**	894.182	-34.364	0.000	0.000	0.000
Min FX	196	11:COMB - 1 D	**-800.170**	1.34E+3	-78.932	0.000	0.000	0.000
Max FY	99	9:COMB - 1 DE	36.678	**7.21E+3**	-31.226	0.000	0.000	0.000
Min FY	317	6:WX2	469.227	**-2.04E+3**	-8.745	0.000	0.000	0.000
Max FZ	5	14:COMB - 1 D	-36.489	3.13E+3	**804.988**	0.000	0.000	0.000
Min FZ	246	12:COMB - 1 D	53.476	616.900	**-807.473**	0.000	0.000	0.000
Max MX	1	1:DL	81.363	2.21E+3	150.478	**0.000**	0.000	0.000
Min MX	1	1:DL	81.363	2.21E+3	150.478	**0.000**	0.000	0.000
Max MY	1	1:DL	81.363	2.21E+3	150.478	0.000	**0.000**	0.000
Min MY	1	1:DL	81.363	2.21E+3	150.478	0.000	**0.000**	0.000
Max MZ	1	1:DL	81.363	2.21E+3	150.478	0.000	0.000	**0.000**
Min MZ	1	1:DL	81.363	2.21E+3	150.478	0.000	0.000	**0.000**

ออกแบบโครงสร้าง

SECTION DESIGN

Utilization Ratio

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
1	TUB2002004	TUB2002004	0.134	1.000	0.134	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
5	TUB2002004	TUB2002004	0.164	1.000	0.164	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
6	TUB2002004	TUB2002004	0.095	1.000	0.095	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
7	RHS125X75	RHS125X75	0.634	1.000	0.634	AISC- H1-3	18	12.130	257.000	117.000	257.569
8	RHS125X75	RHS125X75	0.230	1.000	0.230	AISC- H1-3	18	12.130	257.000	117.000	257.569
9	RHS125X75	RHS125X75	0.243	1.000	0.243	AISC- H1-3	16	12.130	257.000	117.000	257.569
10	RHS125X75	RHS125X75	0.642	1.000	0.642	AISC- H1-3	16	12.130	257.000	117.000	257.569
11	RHS125X75	RHS125X75	0.537	1.000	0.537	AISC- H1-3	14	12.130	257.000	117.000	257.569
12	TUB2002004	TUB2002004	0.172	1.000	0.172	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
13	RHS125X75	RHS125X75	0.478	1.000	0.478	AISC- H1-3	18	12.130	257.000	117.000	257.569
14	RHS125X75	RHS125X75	0.343	1.000	0.343	AISC- H2-1	14	12.130	257.000	117.000	257.569
15	RHS125X75	RHS125X75	0.476	1.000	0.476	AISC- H1-3	12	12.130	257.000	117.000	257.569
16	TUB2002004	TUB2002004	0.208	1.000	0.208	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
17	TUB2002004	TUB2002004	0.169	1.000	0.169	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
18	RHS125X75	RHS125X75	0.658	1.000	0.658	AISC- H2-1	18	12.130	257.000	117.000	257.569
19	RHS125X75	RHS125X75	0.346	1.000	0.346	AISC- H2-1	18	12.130	257.000	117.000	257.569
20	RHS125X75	RHS125X75	0.354	1.000	0.354	AISC- H2-1	16	12.130	257.000	117.000	257.569
21	RHS125X75	RHS125X75	0.632	1.000	0.632	AISC- H2-1	16	12.130	257.000	117.000	257.569
22	TUB2002004	TUB2002004	0.297	1.000	0.297	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
23	RHS125X75	RHS125X75	0.510	1.000	0.510	AISC- H1-3	18	12.130	257.000	117.000	257.569
24	RHS125X75	RHS125X75	0.322	1.000	0.322	AISC- H1-3	12	12.130	257.000	117.000	257.569
25	RHS125X75	RHS125X75	0.503	1.000	0.503	AISC- H1-3	16	12.130	257.000	117.000	257.569
26	TUB2002004	TUB2002004	0.296	1.000	0.296	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
27	TUB2002004	TUB2002004	0.287	1.000	0.287	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
28	RHS200X10	RHS200X10	0.285	1.000	0.285	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
29	RHS200X10	RHS200X10	0.122	1.000	0.122	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
30	RHS200X10	RHS200X10	0.164	1.000	0.164	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
31	RHS200X10	RHS200X10	0.225	1.000	0.225	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
32	RHS200X10	RHS200X10	0.198	1.000	0.198	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
33	RHS200X10	RHS200X10	0.160	1.000	0.160	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
34	RHS200X10	RHS200X10	0.163	1.000	0.163	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
35	RHS200X10	RHS200X10	0.504	1.000	0.504	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
36	RHS200X10	RHS200X10	0.572	1.000	0.572	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
37	RHS200X10	RHS200X10	0.601	1.000	0.601	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
38	RHS200X10	RHS200X10	0.124	1.000	0.124	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
39	RHS200X10	RHS200X10	0.205	1.000	0.205	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
40	RHS200X10	RHS200X10	0.269	1.000	0.269	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
41	RHS200X10	RHS200X10	0.257	1.000	0.257	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
42	RHS200X10	RHS200X10	0.127	1.000	0.127	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
43	RHS200X10	RHS200X10	0.165	1.000	0.165	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
44	RHS200X10	RHS200X10	0.509	1.000	0.509	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
45	TUB2002004	TUB2002004	0.203	1.000	0.203	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
46	RHS125X75	RHS125X75	0.512	1.000	0.512	AISC- H1-3	18	12.130	257.000	117.000	257.569
47	RHS125X75	RHS125X75	0.458	1.000	0.458	AISC- H1-3	16	12.130	257.000	117.000	257.569
48	RHS125X75	RHS125X75	0.652	1.000	0.652	AISC- H1-3	16	12.130	257.000	117.000	257.569
49	TUB2002004	TUB2002004	0.376	1.000	0.376	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
50	RHS125X75	RHS125X75	0.672	1.000	0.672	AISC- H1-3	18	12.130	257.000	117.000	257.569
51	RHS125X75	RHS125X75	0.476	1.000	0.476	AISC- H2-1	18	12.130	257.000	117.000	257.569
52	RHS125X75	RHS125X75	0.578	1.000	0.578	AISC- H1-3	16	12.130	257.000	117.000	257.569
53	TUB2002004	TUB2002004	0.262	1.000	0.262	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
54	RHS125X75	RHS125X75	0.471	1.000	0.471	AISC- H1-3	18	12.130	257.000	117.000	257.569
55	RHS125X75	RHS125X75	0.276	1.000	0.276	AISC- H1-3	18	12.130	257.000	117.000	257.569
56	RHS125X75	RHS125X75	0.263	1.000	0.263	AISC- H1-3	16	12.130	257.000	117.000	257.569
57	RHS125X75	RHS125X75	0.350	1.000	0.350	AISC- H1-3	16	12.130	257.000	117.000	257.569
58	RHS125X75	RHS125X75	0.402	1.000	0.402	AISC- H1-3	16	12.130	257.000	117.000	257.569
59	RHS125X75	RHS125X75	0.495	1.000	0.495	AISC- H1-3	18	12.130	257.000	117.000	257.569
60	RHS125X75	RHS125X75	0.308	1.000	0.308	AISC- H1-3	18	12.130	257.000	117.000	257.569
61	RHS125X75	RHS125X75	0.300	1.000	0.300	AISC- H1-3	16	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
62	RHS125X75	RHS125X75	0.562	1.000	0.562	AISC- H1-3	16	12.130	257.000	117.000	257.569
63	TUB2002004	TUB2002004	0.116	1.000	0.116	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
64	RHS125X75	RHS125X75	0.484	1.000	0.484	AISC- H1-3	18	12.130	257.000	117.000	257.569
65	RHS125X75	RHS125X75	0.432	1.000	0.432	AISC- H1-3	18	12.130	257.000	117.000	257.569
66	RHS125X75	RHS125X75	0.663	1.000	0.663	AISC- H1-3	9	12.130	257.000	117.000	257.569
67	TUB2002004	TUB2002004	0.177	1.000	0.177	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
68	RHS125X75	RHS125X75	0.689	1.000	0.689	AISC- H1-3	9	12.130	257.000	117.000	257.569
69	RHS125X75	RHS125X75	0.441	1.000	0.441	AISC- H1-3	18	12.130	257.000	117.000	257.569
70	RHS125X75	RHS125X75	0.533	1.000	0.533	AISC- H1-3	16	12.130	257.000	117.000	257.569
71	TUB2002004	TUB2002004	0.144	1.000	0.144	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
72	RHS125X75	RHS125X75	0.632	1.000	0.632	AISC- H1-3	17	12.130	257.000	117.000	257.569
73	RHS125X75	RHS125X75	0.326	1.000	0.326	AISC- H1-3	18	12.130	257.000	117.000	257.569
74	RHS125X75	RHS125X75	0.189	1.000	0.189	AISC- H1-3	15	12.130	257.000	117.000	257.569
75	RHS125X75	RHS125X75	0.396	1.000	0.396	AISC- H2-1	9	12.130	257.000	117.000	257.569
76	RHS125X75	RHS125X75	0.469	1.000	0.469	AISC- H2-1	16	12.130	257.000	117.000	257.569
77	RHS125X75	RHS125X75	0.491	1.000	0.491	AISC- H2-1	9	12.130	257.000	117.000	257.569
78	RHS125X75	RHS125X75	0.247	1.000	0.247	AISC- H1-3	18	12.130	257.000	117.000	257.569
79	RHS125X75	RHS125X75	0.370	1.000	0.370	AISC- H1-3	16	12.130	257.000	117.000	257.569
80	RHS125X75	RHS125X75	0.679	1.000	0.679	AISC- H1-3	16	12.130	257.000	117.000	257.569
81	RHS125X75	RHS125X75	0.244	1.000	0.244	AISC- H1-3	17	12.130	257.000	117.000	257.569
82	RHS125X75	RHS125X75	0.598	1.000	0.598	AISC- H1-3	17	12.130	257.000	117.000	257.569
83	RHS125X75	RHS125X75	0.569	1.000	0.569	AISC- H1-3	9	12.130	257.000	117.000	257.569
84	RHS125X75	RHS125X75	0.529	1.000	0.529	AISC- H1-3	9	12.130	257.000	117.000	257.569
85	RHS125X75	RHS125X75	0.720	1.000	0.720	AISC- H1-3	9	12.130	257.000	117.000	257.569
86	RHS125X75	RHS125X75	0.570	1.000	0.570	AISC- H1-3	9	12.130	257.000	117.000	257.569
87	RHS125X75	RHS125X75	0.591	1.000	0.591	AISC- H1-3	16	12.130	257.000	117.000	257.569
88	RHS125X75	RHS125X75	0.628	1.000	0.628	AISC- H1-3	17	12.130	257.000	117.000	257.569
89	RHS125X75	RHS125X75	0.346	1.000	0.346	AISC- H1-3	17	12.130	257.000	117.000	257.569
90	RHS125X75	RHS125X75	0.341	1.000	0.341	AISC- H1-3	13	12.130	257.000	117.000	257.569
91	RHS125X75	RHS125X75	0.324	1.000	0.324	AISC- H2-1	13	12.130	257.000	117.000	257.569
92	RHS200X10	RHS200X10	0.203	1.000	0.203	AISC- H1-3	13	25.670	1.33E+3	455.000	1.1E+3
93	RHS125X75	RHS125X75	0.270	1.000	0.270	AISC- H1-3	12	12.130	257.000	117.000	257.569
94	RHS125X75	RHS125X75	0.220	1.000	0.220	AISC- H2-1	17	12.130	257.000	117.000	257.569
95	TUB50502.3	TUB50502.3	0.731	1.000	0.731	AISC- H1-3	17	4.252	15.900	15.900	24.960
96	TUB50502.3	TUB50502.3	0.650	1.000	0.650	AISC- H1-3	17	4.252	15.900	15.900	24.960
97	TUB50502.3	TUB50502.3	0.427	1.000	0.427	AISC- H1-3	18	4.252	15.900	15.900	24.960
98	TUB50502.3	TUB50502.3	0.377	1.000	0.377	AISC- H1-3	16	4.252	15.900	15.900	24.960
99	TUB50502.3	TUB50502.3	0.378	1.000	0.378	AISC- H1-3	9	4.252	15.900	15.900	24.960
100	TUB50502.3	TUB50502.3	0.495	1.000	0.495	AISC- H1-3	16	4.252	15.900	15.900	24.960
101	TUB50502.3	TUB50502.3	0.726	1.000	0.726	AISC- H1-3	16	4.252	15.900	15.900	24.960
102	TUB50502.3	TUB50502.3	0.780	1.000	0.780	AISC- H1-3	16	4.252	15.900	15.900	24.960
103	RHS125X75	RHS125X75	0.102	1.000	0.102	AISC- H1-3	18	12.130	257.000	117.000	257.569
105	RHS125X75	RHS125X75	0.249	1.000	0.249	AISC- H2-1	13	12.130	257.000	117.000	257.569
106	RHS125X75	RHS125X75	0.224	1.000	0.224	AISC- H1-3	13	12.130	257.000	117.000	257.569
107	RHS125X75	RHS125X75	0.156	1.000	0.156	AISC- H1-3	13	12.130	257.000	117.000	257.569
108	RHS125X75	RHS125X75	0.143	1.000	0.143	AISC- H1-3	13	12.130	257.000	117.000	257.569
109	RHS125X75	RHS125X75	0.132	1.000	0.132	AISC- H1-3	12	12.130	257.000	117.000	257.569
110	RHS125X75	RHS125X75	0.183	1.000	0.183	AISC- H1-3	18	12.130	257.000	117.000	257.569
111	RHS125X75	RHS125X75	0.203	1.000	0.203	AISC- H1-3	15	12.130	257.000	117.000	257.569
112	RHS125X75	RHS125X75	0.224	1.000	0.224	AISC- H1-3	15	12.130	257.000	117.000	257.569
113	RHS125X75	RHS125X75	0.261	1.000	0.261	AISC- H1-3	15	12.130	257.000	117.000	257.569
114	RHS125X75	RHS125X75	0.233	1.000	0.233	AISC- H1-3	15	12.130	257.000	117.000	257.569
115	RHS125X75	RHS125X75	0.234	1.000	0.234	AISC- H1-3	16	12.130	257.000	117.000	257.569
116	RHS125X75	RHS125X75	0.244	1.000	0.244	AISC- H1-3	16	12.130	257.000	117.000	257.569
117	RHS125X75	RHS125X75	0.181	1.000	0.181	AISC- H1-3	16	12.130	257.000	117.000	257.569
118	RHS125X75	RHS125X75	0.122	1.000	0.122	AISC- H1-3	17	12.130	257.000	117.000	257.569
119	RHS125X75	RHS125X75	0.139	1.000	0.139	AISC- H1-3	4	12.130	257.000	117.000	257.569
120	RHS125X75	RHS125X75	0.400	1.000	0.400	AISC- H1-3	11	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
121	RHS125X75	RHS125X75	0.207	1.000	0.207	AISC- H2-1	11	12.130	257.000	117.000	257.569
122	RHS200X10	RHS200X10	0.125	1.000	0.125	AISC- H1-3	12	25.670	1.33E+3	455.000	1.1E+3
130	RHS200X10	RHS200X10	0.237	1.000	0.237	AISC- H2-1	17	25.670	1.33E+3	455.000	1.1E+3
138	RHS200X10	RHS200X10	0.222	1.000	0.222	AISC- H1-3	11	25.670	1.33E+3	455.000	1.1E+3
139	RHS125X75	RHS125X75	0.178	1.000	0.178	AISC- H1-3	11	12.130	257.000	117.000	257.569
140	RHS125X75	RHS125X75	0.158	1.000	0.158	AISC- H1-3	11	12.130	257.000	117.000	257.569
141	RHS125X75	RHS125X75	0.202	1.000	0.202	AISC- H1-3	4	12.130	257.000	117.000	257.569
142	TUB50502.3	TUB50502.3	0.756	1.000	0.756	AISC- H1-3	18	4.252	15.900	15.900	24.960
143	TUB50502.3	TUB50502.3	0.592	1.000	0.592	AISC- H1-3	18	4.252	15.900	15.900	24.960
144	TUB50502.3	TUB50502.3	0.384	1.000	0.384	AISC- H1-3	18	4.252	15.900	15.900	24.960
145	TUB50502.3	TUB50502.3	0.295	1.000	0.295	AISC- H1-3	12	4.252	15.900	15.900	24.960
146	TUB50502.3	TUB50502.3	0.287	1.000	0.287	AISC- H1-3	12	4.252	15.900	15.900	24.960
147	TUB50502.3	TUB50502.3	0.407	1.000	0.407	AISC- H1-3	16	4.252	15.900	15.900	24.960
148	TUB50502.3	TUB50502.3	0.616	1.000	0.616	AISC- H1-3	16	4.252	15.900	15.900	24.960
149	TUB50502.3	TUB50502.3	0.748	1.000	0.748	AISC- H1-3	16	4.252	15.900	15.900	24.960
150	RHS125X75	RHS125X75	0.132	1.000	0.132	AISC- H1-3	16	12.130	257.000	117.000	257.569
151	RHS125X75	RHS125X75	0.200	1.000	0.200	AISC- H1-3	18	12.130	257.000	117.000	257.569
152	RHS125X75	RHS125X75	0.233	1.000	0.233	AISC- H1-3	18	12.130	257.000	117.000	257.569
153	RHS125X75	RHS125X75	0.241	1.000	0.241	AISC- H1-3	15	12.130	257.000	117.000	257.569
154	RHS125X75	RHS125X75	0.285	1.000	0.285	AISC- H1-3	15	12.130	257.000	117.000	257.569
155	RHS125X75	RHS125X75	0.254	1.000	0.254	AISC- H1-3	15	12.130	257.000	117.000	257.569
156	RHS125X75	RHS125X75	0.253	1.000	0.253	AISC- H1-3	16	12.130	257.000	117.000	257.569
157	RHS125X75	RHS125X75	0.226	1.000	0.226	AISC- H1-3	16	12.130	257.000	117.000	257.569
158	RHS125X75	RHS125X75	0.155	1.000	0.155	AISC- H1-3	9	12.130	257.000	117.000	257.569
160	RHS125X75	RHS125X75	0.264	1.000	0.264	AISC- H1-3	11	12.130	257.000	117.000	257.569
161	RHS125X75	RHS125X75	0.237	1.000	0.237	AISC- H1-3	11	12.130	257.000	117.000	257.569
162	RHS125X75	RHS125X75	0.204	1.000	0.204	AISC- H1-3	11	12.130	257.000	117.000	257.569
163	RHS125X75	RHS125X75	0.157	1.000	0.157	AISC- H1-3	15	12.130	257.000	117.000	257.569
164	RHS125X75	RHS125X75	0.231	1.000	0.231	AISC- H1-3	12	12.130	257.000	117.000	257.569
165	RHS125X75	RHS125X75	0.125	1.000	0.125	AISC- H1-3	18	12.130	257.000	117.000	257.569
166	TUB50502.3	TUB50502.3	0.750	1.000	0.750	AISC- H1-3	18	4.252	15.900	15.900	24.960
167	TUB50502.3	TUB50502.3	0.581	1.000	0.581	AISC- H1-3	18	4.252	15.900	15.900	24.960
168	TUB50502.3	TUB50502.3	0.380	1.000	0.380	AISC- H1-3	18	4.252	15.900	15.900	24.960
169	TUB50502.3	TUB50502.3	0.243	1.000	0.243	AISC- H1-3	18	4.252	15.900	15.900	24.960
170	TUB50502.3	TUB50502.3	0.234	1.000	0.234	AISC- H1-3	16	4.252	15.900	15.900	24.960
171	TUB50502.3	TUB50502.3	0.358	1.000	0.358	AISC- H1-3	16	4.252	15.900	15.900	24.960
172	TUB50502.3	TUB50502.3	0.564	1.000	0.564	AISC- H1-3	16	4.252	15.900	15.900	24.960
173	TUB50502.3	TUB50502.3	0.698	1.000	0.698	AISC- H1-3	16	4.252	15.900	15.900	24.960
174	RHS125X75	RHS125X75	0.370	1.000	0.370	AISC- H1-3	11	12.130	257.000	117.000	257.569
175	RHS125X75	RHS125X75	0.303	1.000	0.303	AISC- H2-1	11	12.130	257.000	117.000	257.569
176	RHS200X10	RHS200X10	0.237	1.000	0.237	AISC- H2-1	11	25.670	1.33E+3	455.000	1.1E+3
177	RHS125X75	RHS125X75	0.259	1.000	0.259	AISC- H1-3	11	12.130	257.000	117.000	257.569
178	RHS125X75	RHS125X75	0.263	1.000	0.263	AISC- H2-1	15	12.130	257.000	117.000	257.569
179	RHS125X75	RHS125X75	0.198	1.000	0.198	AISC- H1-3	12	12.130	257.000	117.000	257.569
180	RHS125X75	RHS125X75	0.337	1.000	0.337	AISC- H1-3	18	12.130	257.000	117.000	257.569
181	RHS125X75	RHS125X75	0.185	1.000	0.185	AISC- H1-3	9	12.130	257.000	117.000	257.569
182	RHS125X75	RHS125X75	0.231	1.000	0.231	AISC- H1-3	9	12.130	257.000	117.000	257.569
183	RHS125X75	RHS125X75	0.234	1.000	0.234	AISC- H1-3	15	12.130	257.000	117.000	257.569
184	RHS125X75	RHS125X75	0.280	1.000	0.280	AISC- H1-3	15	12.130	257.000	117.000	257.569
185	RHS125X75	RHS125X75	0.251	1.000	0.251	AISC- H1-3	15	12.130	257.000	117.000	257.569
186	RHS125X75	RHS125X75	0.250	1.000	0.250	AISC- H1-3	9	12.130	257.000	117.000	257.569
187	RHS125X75	RHS125X75	0.213	1.000	0.213	AISC- H1-3	9	12.130	257.000	117.000	257.569
188	TUB2002004	TUB2002004	0.144	1.000	0.144	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
189	TUB2002004	TUB2002004	0.127	1.000	0.127	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
190	TUB2002004	TUB2002004	0.273	1.000	0.273	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
191	TUB2002004	TUB2002004	0.254	1.000	0.254	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
192	TUB2002004	TUB2002004	0.359	1.000	0.359	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
193	TUB2002004	TUB2002004	0.447	1.000	0.447	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
194	TUB2002004	TUB2002004	0.423	1.000	0.423	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
195	TUB2002004	TUB2002004	0.586	1.000	0.586	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
196	TUB2002004	TUB2002004	0.193	1.000	0.193	AISC- H1-3	5	34.670	2.19E+3	2.19E+3	3.36E+3
197	TUB2002004	TUB2002004	0.418	1.000	0.418	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
198	TUB2002004	TUB2002004	0.481	1.000	0.481	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
199	TUB2002004	TUB2002004	0.499	1.000	0.499	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
200	TUB2002004	TUB2002004	0.393	1.000	0.393	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
201	TUB2002004	TUB2002004	0.156	1.000	0.156	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
202	TUB2002004	TUB2002004	0.522	1.000	0.522	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
203	TUB2002004	TUB2002004	0.873	1.000	0.873	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
204	TUB2002004	TUB2002004	0.460	1.000	0.460	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
205	TUB2002004	TUB2002004	0.157	1.000	0.157	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
206	TUB2002004	TUB2002004	0.313	1.000	0.313	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
207	TUB2002004	TUB2002004	0.435	1.000	0.435	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
208	TUB2002004	TUB2002004	0.424	1.000	0.424	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
209	TUB2002004	TUB2002004	0.342	1.000	0.342	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
210	TUB2002004	TUB2002004	0.258	1.000	0.258	AISC- H1-3	7	34.670	2.19E+3	2.19E+3	3.36E+3
211	TUB2002004	TUB2002004	0.247	1.000	0.247	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
212	TUB2002004	TUB2002004	0.250	1.000	0.250	AISC- H1-3	7	34.670	2.19E+3	2.19E+3	3.36E+3
213	TUB2002004	TUB2002004	0.137	1.000	0.137	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
214	TUB2002004	TUB2002004	0.126	1.000	0.126	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
215	RHS125X75	RHS125X75	0.315	1.000	0.315	AISC- H1-3	16	12.130	257.000	117.000	257.569
216	RHS125X75	RHS125X75	0.434	1.000	0.434	AISC- H1-3	18	12.130	257.000	117.000	257.569
217	RHS125X75	RHS125X75	0.158	1.000	0.158	AISC- H1-3	18	12.130	257.000	117.000	257.569
218	RHS125X75	RHS125X75	0.201	1.000	0.201	AISC- H1-3	16	12.130	257.000	117.000	257.569
219	TUB50502.3	TUB50502.3	0.835	1.000	0.835	AISC- H2-1	17	4.252	15.900	15.900	24.960
220	TUB50502.3	TUB50502.3	0.676	1.000	0.676	AISC- H2-1	17	4.252	15.900	15.900	24.960
221	TUB50502.3	TUB50502.3	0.393	1.000	0.393	AISC- H2-1	17	4.252	15.900	15.900	24.960
222	TUB50502.3	TUB50502.3	0.195	1.000	0.195	AISC- H2-1	17	4.252	15.900	15.900	24.960
223	TUB50502.3	TUB50502.3	0.202	1.000	0.202	AISC- H2-1	17	4.252	15.900	15.900	24.960
224	TUB50502.3	TUB50502.3	0.356	1.000	0.356	AISC- H2-1	17	4.252	15.900	15.900	24.960
225	TUB50502.3	TUB50502.3	0.634	1.000	0.634	AISC- H2-1	17	4.252	15.900	15.900	24.960
226	TUB50502.3	TUB50502.3	0.817	1.000	0.817	AISC- H2-1	9	4.252	15.900	15.900	24.960
227	RHS125X75	RHS125X75	0.314	1.000	0.314	AISC- H1-3	13	12.130	257.000	117.000	257.569
228	RHS125X75	RHS125X75	0.397	1.000	0.397	AISC- H1-3	13	12.130	257.000	117.000	257.569
229	RHS125X75	RHS125X75	0.275	1.000	0.275	AISC- H2-1	13	12.130	257.000	117.000	257.569
230	RHS125X75	RHS125X75	0.361	1.000	0.361	AISC- H2-1	13	12.130	257.000	117.000	257.569
231	RHS200X10	RHS200X10	0.192	1.000	0.192	AISC- H1-3	13	25.670	1.33E+3	455.000	1.1E+3
232	RHS200X10	RHS200X10	0.220	1.000	0.220	AISC- H1-3	13	25.670	1.33E+3	455.000	1.1E+3
233	RHS125X75	RHS125X75	0.201	1.000	0.201	AISC- H1-3	13	12.130	257.000	117.000	257.569
234	RHS125X75	RHS125X75	0.234	1.000	0.234	AISC- H1-3	13	12.130	257.000	117.000	257.569
235	RHS125X75	RHS125X75	0.212	1.000	0.212	AISC- H2-1	17	12.130	257.000	117.000	257.569
236	RHS125X75	RHS125X75	0.225	1.000	0.225	AISC- H2-1	17	12.130	257.000	117.000	257.569
237	RHS125X75	RHS125X75	0.313	1.000	0.313	AISC- H1-3	9	12.130	257.000	117.000	257.569
238	RHS125X75	RHS125X75	0.595	1.000	0.595	AISC- H1-3	17	12.130	257.000	117.000	257.569
239	RHS125X75	RHS125X75	0.520	1.000	0.520	AISC- H1-3	17	12.130	257.000	117.000	257.569
240	RHS125X75	RHS125X75	0.305	1.000	0.305	AISC- H1-3	17	12.130	257.000	117.000	257.569
241	RHS125X75	RHS125X75	0.292	1.000	0.292	AISC- H1-3	15	12.130	257.000	117.000	257.569
242	RHS125X75	RHS125X75	0.295	1.000	0.295	AISC- H1-3	17	12.130	257.000	117.000	257.569
243	RHS125X75	RHS125X75	0.469	1.000	0.469	AISC- H1-3	17	12.130	257.000	117.000	257.569
244	RHS125X75	RHS125X75	0.561	1.000	0.561	AISC- H1-3	17	12.130	257.000	117.000	257.569
245	RHS125X75	RHS125X75	0.305	1.000	0.305	AISC- H1-3	9	12.130	257.000	117.000	257.569
246	RHS125X75	RHS125X75	0.555	1.000	0.555	AISC- H1-3	15	12.130	257.000	117.000	257.569
247	RHS125X75	RHS125X75	0.480	1.000	0.480	AISC- H1-3	9	12.130	257.000	117.000	257.569
248	RHS125X75	RHS125X75	0.300	1.000	0.300	AISC- H1-3	9	12.130	257.000	117.000	257.569
249	RHS125X75	RHS125X75	0.354	1.000	0.354	AISC- H1-3	9	12.130	257.000	117.000	257.569
250	RHS125X75	RHS125X75	0.148	1.000	0.148	AISC- H1-3	9	12.130	257.000	117.000	257.569
251	RHS125X75	RHS125X75	0.215	1.000	0.215	AISC- H1-3	9	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
252	RHS125X75	RHS125X75	0.317	1.000	0.317	AISC- H1-3	15	12.130	257.000	117.000	257.569
253	RHS125X75	RHS125X75	0.407	1.000	0.407	AISC- H1-3	18	12.130	257.000	117.000	257.569
254	RHS125X75	RHS125X75	0.536	1.000	0.536	AISC- H1-3	9	12.130	257.000	117.000	257.569
255	RHS125X75	RHS125X75	0.401	1.000	0.401	AISC- H1-3	9	12.130	257.000	117.000	257.569
258	RHS125X75	RHS125X75	0.251	1.000	0.251	AISC- H2-1	13	12.130	257.000	117.000	257.569
259	RHS125X75	RHS125X75	0.332	1.000	0.332	AISC- H1-3	13	12.130	257.000	117.000	257.569
260	RHS125X75	RHS125X75	0.225	1.000	0.225	AISC- H1-3	13	12.130	257.000	117.000	257.569
261	RHS125X75	RHS125X75	0.292	1.000	0.292	AISC- H1-3	13	12.130	257.000	117.000	257.569
262	RHS125X75	RHS125X75	0.168	1.000	0.168	AISC- H2-1	13	12.130	257.000	117.000	257.569
263	RHS125X75	RHS125X75	0.203	1.000	0.203	AISC- H1-3	13	12.130	257.000	117.000	257.569
264	RHS125X75	RHS125X75	0.144	1.000	0.144	AISC- H2-1	12	12.130	257.000	117.000	257.569
265	RHS125X75	RHS125X75	0.178	1.000	0.178	AISC- H2-1	11	12.130	257.000	117.000	257.569
266	RHS125X75	RHS125X75	0.187	1.000	0.187	AISC- H2-1	12	12.130	257.000	117.000	257.569
267	RHS125X75	RHS125X75	0.227	1.000	0.227	AISC- H2-1	14	12.130	257.000	117.000	257.569
268	RHS125X75	RHS125X75	0.719	1.000	0.719	AISC- H1-3	15	12.130	257.000	117.000	257.569
269	RHS125X75	RHS125X75	0.571	1.000	0.571	AISC- H1-3	15	12.130	257.000	117.000	257.569
270	RHS125X75	RHS125X75	0.375	1.000	0.375	AISC- H1-3	17	12.130	257.000	117.000	257.569
271	RHS125X75	RHS125X75	0.365	1.000	0.365	AISC- H1-3	17	12.130	257.000	117.000	257.569
272	RHS125X75	RHS125X75	0.326	1.000	0.326	AISC- H1-3	15	12.130	257.000	117.000	257.569
273	RHS125X75	RHS125X75	0.502	1.000	0.502	AISC- H1-3	15	12.130	257.000	117.000	257.569
274	RHS125X75	RHS125X75	0.587	1.000	0.587	AISC- H1-3	15	12.130	257.000	117.000	257.569
275	RHS125X75	RHS125X75	0.303	1.000	0.303	AISC- H1-3	9	12.130	257.000	117.000	257.569
276	RHS125X75	RHS125X75	0.225	1.000	0.225	AISC- H1-3	15	12.130	257.000	117.000	257.569
277	RHS125X75	RHS125X75	0.111	1.000	0.111	AISC- H1-3	11	12.130	257.000	117.000	257.569
278	RHS125X75	RHS125X75	0.146	1.000	0.146	AISC- H2-1	11	12.130	257.000	117.000	257.569
279	RHS125X75	RHS125X75	0.183	1.000	0.183	AISC- H1-3	13	12.130	257.000	117.000	257.569
280	RHS125X75	RHS125X75	0.245	1.000	0.245	AISC- H2-1	13	12.130	257.000	117.000	257.569
281	RHS200X10	RHS200X10	0.145	1.000	0.145	AISC- H1-3	12	25.670	1.33E+3	455.000	1.1E+3
289	RHS200X10	RHS200X10	0.144	1.000	0.144	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
297	RHS200X10	RHS200X10	0.152	1.000	0.152	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
298	RHS125X75	RHS125X75	0.134	1.000	0.134	AISC- H1-3	5	12.130	257.000	117.000	257.569
299	RHS125X75	RHS125X75	0.163	1.000	0.163	AISC- H1-3	13	12.130	257.000	117.000	257.569
300	RHS125X75	RHS125X75	0.139	1.000	0.139	AISC- H1-3	5	12.130	257.000	117.000	257.569
301	RHS125X75	RHS125X75	0.145	1.000	0.145	AISC- H1-3	7	12.130	257.000	117.000	257.569
303	TUB50502.3	TUB50502.3	0.881	1.000	0.881	AISC- H2-1	15	4.252	15.900	15.900	24.960
304	TUB50502.3	TUB50502.3	0.359	1.000	0.359	AISC- H2-1	15	4.252	15.900	15.900	24.960
305	TUB50502.3	TUB50502.3	0.414	1.000	0.414	AISC- H2-1	16	4.252	15.900	15.900	24.960
306	TUB50502.3	TUB50502.3	0.315	1.000	0.315	AISC- H2-1	16	4.252	15.900	15.900	24.960
307	TUB50502.3	TUB50502.3	0.448	1.000	0.448	AISC- H2-1	15	4.252	15.900	15.900	24.960
308	TUB50502.3	TUB50502.3	0.710	1.000	0.710	AISC- H2-1	15	4.252	15.900	15.900	24.960
309	TUB50502.3	TUB50502.3	0.816	1.000	0.816	AISC- H2-1	15	4.252	15.900	15.900	24.960
310	RHS125X75	RHS125X75	0.131	1.000	0.131	AISC- H1-3	18	12.130	257.000	117.000	257.569
311	RHS125X75	RHS125X75	0.118	1.000	0.118	AISC- H1-3	16	12.130	257.000	117.000	257.569
314	RHS125X75	RHS125X75	0.251	1.000	0.251	AISC- H2-1	11	12.130	257.000	117.000	257.569
315	RHS125X75	RHS125X75	0.318	1.000	0.318	AISC- H2-1	11	12.130	257.000	117.000	257.569
316	RHS125X75	RHS125X75	0.228	1.000	0.228	AISC- H1-3	11	12.130	257.000	117.000	257.569
317	RHS125X75	RHS125X75	0.283	1.000	0.283	AISC- H1-3	11	12.130	257.000	117.000	257.569
318	RHS125X75	RHS125X75	0.174	1.000	0.174	AISC- H1-3	15	12.130	257.000	117.000	257.569
319	RHS125X75	RHS125X75	0.203	1.000	0.203	AISC- H1-3	11	12.130	257.000	117.000	257.569
320	RHS125X75	RHS125X75	0.158	1.000	0.158	AISC- H1-3	15	12.130	257.000	117.000	257.569
321	RHS125X75	RHS125X75	0.183	1.000	0.183	AISC- H1-3	11	12.130	257.000	117.000	257.569
322	RHS125X75	RHS125X75	0.169	1.000	0.169	AISC- H1-3	12	12.130	257.000	117.000	257.569
323	RHS125X75	RHS125X75	0.182	1.000	0.182	AISC- H1-3	14	12.130	257.000	117.000	257.569
324	RHS125X75	RHS125X75	0.239	1.000	0.239	AISC- H1-3	9	12.130	257.000	117.000	257.569
325	RHS125X75	RHS125X75	0.278	1.000	0.278	AISC- H1-3	9	12.130	257.000	117.000	257.569
326	RHS125X75	RHS125X75	0.274	1.000	0.274	AISC- H1-3	17	12.130	257.000	117.000	257.569
327	RHS125X75	RHS125X75	0.334	1.000	0.334	AISC- H1-3	17	12.130	257.000	117.000	257.569
328	RHS125X75	RHS125X75	0.266	1.000	0.266	AISC- H1-3	17	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
329	RHS125X75	RHS125X75	0.252	1.000	0.252	AISC- H1-3	9	12.130	257.000	117.000	257.569
330	RHS125X75	RHS125X75	0.204	1.000	0.204	AISC- H1-3	9	12.130	257.000	117.000	257.569
331	RHS125X75	RHS125X75	0.140	1.000	0.140	AISC- H1-3	16	12.130	257.000	117.000	257.569
332	RHS125X75	RHS125X75	0.127	1.000	0.127	AISC- H1-3	18	12.130	257.000	117.000	257.569
334	TUB50502.3	TUB50502.3	0.759	1.000	0.759	AISC- H1-3	18	4.252	15.900	15.900	24.960
335	TUB50502.3	TUB50502.3	0.336	1.000	0.336	AISC- H1-3	18	4.252	15.900	15.900	24.960
336	TUB50502.3	TUB50502.3	0.452	1.000	0.452	AISC- H1-3	16	4.252	15.900	15.900	24.960
337	TUB50502.3	TUB50502.3	0.349	1.000	0.349	AISC- H1-3	16	4.252	15.900	15.900	24.960
338	TUB50502.3	TUB50502.3	0.444	1.000	0.444	AISC- H1-3	16	4.252	15.900	15.900	24.960
339	TUB50502.3	TUB50502.3	0.637	1.000	0.637	AISC- H1-3	16	4.252	15.900	15.900	24.960
340	TUB50502.3	TUB50502.3	0.802	1.000	0.802	AISC- H1-3	16	4.252	15.900	15.900	24.960
341	RHS125X75	RHS125X75	0.307	1.000	0.307	AISC- H1-3	11	12.130	257.000	117.000	257.569
342	RHS125X75	RHS125X75	0.364	1.000	0.364	AISC- H1-3	11	12.130	257.000	117.000	257.569
343	RHS125X75	RHS125X75	0.280	1.000	0.280	AISC- H2-1	11	12.130	257.000	117.000	257.569
344	RHS125X75	RHS125X75	0.345	1.000	0.345	AISC- H2-1	11	12.130	257.000	117.000	257.569
345	RHS200X10	RHS200X10	0.238	1.000	0.238	AISC- H1-3	12	25.670	1.33E+3	455.000	1.1E+3
346	RHS200X10	RHS200X10	0.234	1.000	0.234	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
347	RHS125X75	RHS125X75	0.256	1.000	0.256	AISC- H1-3	12	12.130	257.000	117.000	257.569
348	RHS125X75	RHS125X75	0.256	1.000	0.256	AISC- H1-3	14	12.130	257.000	117.000	257.569
349	RHS125X75	RHS125X75	0.205	1.000	0.205	AISC- H2-1	12	12.130	257.000	117.000	257.569
350	RHS125X75	RHS125X75	0.219	1.000	0.219	AISC- H2-1	14	12.130	257.000	117.000	257.569
351	RHS125X75	RHS125X75	0.153	1.000	0.153	AISC- H1-3	18	12.130	257.000	117.000	257.569
352	RHS125X75	RHS125X75	0.120	1.000	0.120	AISC- H1-3	16	12.130	257.000	117.000	257.569
353	RHS125X75	RHS125X75	0.269	1.000	0.269	AISC- H1-3	9	12.130	257.000	117.000	257.569
354	RHS125X75	RHS125X75	0.300	1.000	0.300	AISC- H1-3	9	12.130	257.000	117.000	257.569
355	RHS125X75	RHS125X75	0.296	1.000	0.296	AISC- H1-3	17	12.130	257.000	117.000	257.569
356	RHS125X75	RHS125X75	0.346	1.000	0.346	AISC- H1-3	17	12.130	257.000	117.000	257.569
357	RHS125X75	RHS125X75	0.265	1.000	0.265	AISC- H1-3	17	12.130	257.000	117.000	257.569
358	RHS125X75	RHS125X75	0.254	1.000	0.254	AISC- H1-3	16	12.130	257.000	117.000	257.569
359	RHS125X75	RHS125X75	0.220	1.000	0.220	AISC- H1-3	16	12.130	257.000	117.000	257.569
360	RHS125X75	RHS125X75	0.234	1.000	0.234	AISC- H1-3	13	12.130	257.000	117.000	257.569
361	TUB200200	TUB200200	0.121	1.000	0.121	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
362	TUB200200	TUB200200	0.134	1.000	0.134	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
363	RHS125X75	RHS125X75	0.149	1.000	0.149	AISC- H1-3	12	12.130	257.000	117.000	257.569
364	RHS125X75	RHS125X75	0.118	1.000	0.118	AISC- H1-3	12	12.130	257.000	117.000	257.569
365	RHS125X75	RHS125X75	0.101	1.000	0.101	AISC- H2-1	14	12.130	257.000	117.000	257.569
366	RHS125X75	RHS125X75	0.096	1.000	0.096	AISC- H1-3	13	12.130	257.000	117.000	257.569
367	TUB100100	TUB100100	0.150	1.000	0.150	AISC- H1-3	14	12.130	187.000	187.000	290.250
368	TUB100100	TUB100100	0.212	1.000	0.212	AISC- H1-3	14	12.130	187.000	187.000	290.250
369	RHS125X75	RHS125X75	0.092	1.000	0.092	AISC- H1-3	13	12.130	257.000	117.000	257.569
370	TUB200200	TUB200200	0.213	1.000	0.213	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
371	TUB200200	TUB200200	0.222	1.000	0.222	AISC- H1-3	17	34.670	2.19E+3	2.19E+3	3.36E+3
372	RHS125X75	RHS125X75	0.086	1.000	0.086	AISC- H2-1	13	12.130	257.000	117.000	257.569
373	RHS125X75	RHS125X75	0.088	1.000	0.088	AISC- H2-1	13	12.130	257.000	117.000	257.569
374	RHS125X75	RHS125X75	0.100	1.000	0.100	AISC- H1-3	11	12.130	257.000	117.000	257.569
375	RHS125X75	RHS125X75	0.159	1.000	0.159	AISC- H2-1	14	12.130	257.000	117.000	257.569
376	TUB100100	TUB100100	0.132	1.000	0.132	AISC- H2-1	13	12.130	187.000	187.000	290.250
377	TUB200200	TUB200200	0.259	1.000	0.259	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
378	TUB200200	TUB200200	0.356	1.000	0.356	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
379	TUB200200	TUB200200	0.349	1.000	0.349	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
380	RHS200X10	RHS200X10	0.393	1.000	0.393	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
381	RHS200X10	RHS200X10	0.267	1.000	0.267	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
382	RHS200X10	RHS200X10	0.401	1.000	0.401	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
383	RHS200X10	RHS200X10	0.439	1.000	0.439	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
384	RHS200X10	RHS200X10	0.391	1.000	0.391	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
385	RHS200X10	RHS200X10	0.279	1.000	0.279	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
386	RHS200X10	RHS200X10	0.315	1.000	0.315	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
387	RHS200X10	RHS200X10	0.867	1.000	0.867	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
388	RHS200X10	RHS200X10	0.848	1.000	0.848	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
389	RHS200X10	RHS200X10	0.120	1.000	0.120	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
390	RHS200X10	RHS200X10	0.286	1.000	0.286	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
391	RHS200X10	RHS200X10	0.371	1.000	0.371	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
392	RHS200X10	RHS200X10	0.393	1.000	0.393	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
393	RHS200X10	RHS200X10	0.312	1.000	0.312	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
394	RHS200X10	RHS200X10	0.200	1.000	0.200	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
395	RHS200X10	RHS200X10	0.630	1.000	0.630	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
396	TUB200200	TUB200200	0.254	1.000	0.254	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
397	TUB200200	TUB200200	0.230	1.000	0.230	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
398	TUB200200	TUB200200	0.124	1.000	0.124	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
399	TUB200200	TUB200200	0.124	1.000	0.124	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
400	RHS125X75	RHS125X75	0.282	1.000	0.282	AISC- H1-3	12	12.130	257.000	117.000	257.569
401	RHS125X75	RHS125X75	0.294	1.000	0.294	AISC- H1-3	14	12.130	257.000	117.000	257.569
402	RHS125X75	RHS125X75	0.168	1.000	0.168	AISC- H1-3	16	12.130	257.000	117.000	257.569
403	RHS125X75	RHS125X75	0.143	1.000	0.143	AISC- H1-3	18	12.130	257.000	117.000	257.569
405	TUB50502.3	TUB50502.3	0.813	1.000	0.813	AISC- H1-3	18	4.252	15.900	15.900	24.960
406	TUB50502.3	TUB50502.3	0.377	1.000	0.377	AISC- H1-3	18	4.252	15.900	15.900	24.960
407	TUB50502.3	TUB50502.3	0.561	1.000	0.561	AISC- H1-3	16	4.252	15.900	15.900	24.960
408	TUB50502.3	TUB50502.3	0.411	1.000	0.411	AISC- H1-3	16	4.252	15.900	15.900	24.960
409	TUB50502.3	TUB50502.3	0.502	1.000	0.502	AISC- H1-3	16	4.252	15.900	15.900	24.960
410	TUB50502.3	TUB50502.3	0.697	1.000	0.697	AISC- H1-3	16	4.252	15.900	15.900	24.960
411	TUB50502.3	TUB50502.3	0.897	1.000	0.897	AISC- H1-3	16	4.252	15.900	15.900	24.960
412	RHS125X75	RHS125X75	0.177	1.000	0.177	AISC- H2-1	16	12.130	257.000	117.000	257.569
413	RHS125X75	RHS125X75	0.271	1.000	0.271	AISC- H1-3	11	12.130	257.000	117.000	257.569
414	RHS125X75	RHS125X75	0.187	1.000	0.187	AISC- H2-1	6	12.130	257.000	117.000	257.569
415	RHS125X75	RHS125X75	0.164	1.000	0.164	AISC- H2-1	13	12.130	257.000	117.000	257.569
416	RHS125X75	RHS125X75	0.158	1.000	0.158	AISC- H2-1	13	12.130	257.000	117.000	257.569
417	RHS125X75	RHS125X75	0.156	1.000	0.156	AISC- H2-1	13	12.130	257.000	117.000	257.569
418	RHS125X75	RHS125X75	0.155	1.000	0.155	AISC- H2-1	13	12.130	257.000	117.000	257.569
419	RHS125X75	RHS125X75	0.153	1.000	0.153	AISC- H2-1	13	12.130	257.000	117.000	257.569
420	RHS125X75	RHS125X75	0.145	1.000	0.145	AISC- H1-3	13	12.130	257.000	117.000	257.569
421	RHS125X75	RHS125X75	0.117	1.000	0.117	AISC- H1-3	13	12.130	257.000	117.000	257.569
422	RHS125X75	RHS125X75	0.354	1.000	0.354	AISC- H1-3	13	12.130	257.000	117.000	257.569
423	RHS125X75	RHS125X75	0.438	1.000	0.438	AISC- H1-3	13	12.130	257.000	117.000	257.569
424	TUB100100	TUB100100	0.163	1.000	0.163	AISC- H2-1	13	12.130	187.000	187.000	290.250
425	RHS125X75	RHS125X75	0.377	1.000	0.377	AISC- H1-3	14	12.130	257.000	117.000	257.569
426	RHS125X75	RHS125X75	0.289	1.000	0.289	AISC- H1-3	6	12.130	257.000	117.000	257.569
427	RHS125X75	RHS125X75	0.381	1.000	0.381	AISC- H1-3	6	12.130	257.000	117.000	257.569
428	RHS200X10	RHS200X10	0.205	1.000	0.205	AISC- H2-1	13	25.670	1.33E+3	455.000	1.1E+3
429	RHS200X10	RHS200X10	0.256	1.000	0.256	AISC- H2-1	13	25.670	1.33E+3	455.000	1.1E+3
430	RHS125X75	RHS125X75	0.212	1.000	0.212	AISC- H1-3	13	12.130	257.000	117.000	257.569
431	RHS125X75	RHS125X75	0.268	1.000	0.268	AISC- H1-3	13	12.130	257.000	117.000	257.569
432	RHS125X75	RHS125X75	0.187	1.000	0.187	AISC- H2-1	15	12.130	257.000	117.000	257.569
433	RHS125X75	RHS125X75	0.198	1.000	0.198	AISC- H1-3	13	12.130	257.000	117.000	257.569
434	RHS200X10	RHS200X10	0.368	1.000	0.368	AISC- H2-1	13	25.670	1.33E+3	455.000	1.1E+3
435	RHS125X75	RHS125X75	0.128	1.000	0.128	AISC- H1-3	18	12.130	257.000	117.000	257.569
436	RHS125X75	RHS125X75	0.112	1.000	0.112	AISC- H1-3	15	12.130	257.000	117.000	257.569
437	RHS125X75	RHS125X75	0.071	1.000	0.071	AISC- H2-1	16	12.130	257.000	117.000	257.569
438	RHS125X75	RHS125X75	0.258	1.000	0.258	AISC- H1-3	18	12.130	257.000	117.000	257.569
439	RHS125X75	RHS125X75	0.299	1.000	0.299	AISC- H1-3	18	12.130	257.000	117.000	257.569
440	RHS125X75	RHS125X75	0.286	1.000	0.286	AISC- H1-3	17	12.130	257.000	117.000	257.569
441	RHS125X75	RHS125X75	0.323	1.000	0.323	AISC- H1-3	17	12.130	257.000	117.000	257.569
442	RHS125X75	RHS125X75	0.232	1.000	0.232	AISC- H1-3	17	12.130	257.000	117.000	257.569
443	RHS125X75	RHS125X75	0.224	1.000	0.224	AISC- H1-3	16	12.130	257.000	117.000	257.569
444	RHS125X75	RHS125X75	0.201	1.000	0.201	AISC- H1-3	16	12.130	257.000	117.000	257.569
445	RHS125X75	RHS125X75	0.260	1.000	0.260	AISC- H1-3	11	12.130	257.000	117.000	257.569
446	RHS125X75	RHS125X75	0.167	1.000	0.167	AISC- H1-3	11	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
447	RHS125X75	RHS125X75	0.134	1.000	0.134	AISC- H2-1	14	12.130	257.000	117.000	257.569
448	RHS125X75	RHS125X75	0.136	1.000	0.136	AISC- H2-1	14	12.130	257.000	117.000	257.569
449	RHS125X75	RHS125X75	0.134	1.000	0.134	AISC- H2-1	14	12.130	257.000	117.000	257.569
450	RHS125X75	RHS125X75	0.131	1.000	0.131	AISC- H2-1	14	12.130	257.000	117.000	257.569
451	RHS125X75	RHS125X75	0.128	1.000	0.128	AISC- H2-1	14	12.130	257.000	117.000	257.569
452	RHS125X75	RHS125X75	0.131	1.000	0.131	AISC- H1-3	5	12.130	257.000	117.000	257.569
453	RHS125X75	RHS125X75	0.187	1.000	0.187	AISC- H1-3	12	12.130	257.000	117.000	257.569
454	RHS125X75	RHS125X75	0.328	1.000	0.328	AISC- H1-3	12	12.130	257.000	117.000	257.569
455	RHS125X75	RHS125X75	0.000	1.000	0.000	AISC- H2-1	1	12.130	257.000	117.000	257.569
457	RHS125X75	RHS125X75	0.254	1.000	0.254	AISC- H2-1	11	12.130	257.000	117.000	257.569
458	RHS125X75	RHS125X75	0.343	1.000	0.343	AISC- H2-1	6	12.130	257.000	117.000	257.569
459	TUB100100	TUB100100	0.149	1.000	0.149	AISC- H1-3	12	12.130	187.000	187.000	290.250
460	RHS125X75	RHS125X75	0.213	1.000	0.213	AISC- H1-3	11	12.130	257.000	117.000	257.569
461	RHS125X75	RHS125X75	0.269	1.000	0.269	AISC- H1-3	11	12.130	257.000	117.000	257.569
464	RHS125X75	RHS125X75	0.037	1.000	0.037	AISC- H2-1	16	12.130	257.000	117.000	257.569
472	RHS125X75	RHS125X75	0.157	1.000	0.157	AISC- H1-3	13	12.130	257.000	117.000	257.569
473	RHS125X75	RHS125X75	0.193	1.000	0.193	AISC- H1-3	13	12.130	257.000	117.000	257.569
474	RHS125X75	RHS125X75	0.149	1.000	0.149	AISC- H1-3	6	12.130	257.000	117.000	257.569
475	RHS125X75	RHS125X75	0.183	1.000	0.183	AISC- H2-1	11	12.130	257.000	117.000	257.569
476	RHS125X75	RHS125X75	0.163	1.000	0.163	AISC- H1-3	17	12.130	257.000	117.000	257.569
477	RHS125X75	RHS125X75	0.130	1.000	0.130	AISC- H1-3	18	12.130	257.000	117.000	257.569
478	TUB100100	TUB100100	0.149	1.000	0.149	AISC- H1-3	14	12.130	187.000	187.000	290.250
479	RHS125X75	RHS125X75	0.541	1.000	0.541	AISC- H1-3	14	12.130	257.000	117.000	257.569
480	RHS125X75	RHS125X75	0.158	1.000	0.158	AISC- H1-3	15	12.130	257.000	117.000	257.569
481	RHS125X75	RHS125X75	0.134	1.000	0.134	AISC- H1-3	15	12.130	257.000	117.000	257.569
482	TUB100100	TUB100100	0.152	1.000	0.152	AISC- H2-1	12	12.130	187.000	187.000	290.250
483	RHS125X75	RHS125X75	0.335	1.000	0.335	AISC- H2-1	12	12.130	257.000	117.000	257.569
484	RHS125X75	RHS125X75	0.164	1.000	0.164	AISC- H1-3	7	12.130	257.000	117.000	257.569
485	RHS125X75	RHS125X75	0.121	1.000	0.121	AISC- H1-3	14	12.130	257.000	117.000	257.569
486	RHS125X75	RHS125X75	0.106	1.000	0.106	AISC- H1-3	14	12.130	257.000	117.000	257.569
487	RHS125X75	RHS125X75	0.097	1.000	0.097	AISC- H2-1	13	12.130	257.000	117.000	257.569
488	RHS125X75	RHS125X75	0.106	1.000	0.106	AISC- H2-1	13	12.130	257.000	117.000	257.569
489	RHS125X75	RHS125X75	0.115	1.000	0.115	AISC- H2-1	13	12.130	257.000	117.000	257.569
490	RHS125X75	RHS125X75	0.124	1.000	0.124	AISC- H2-1	13	12.130	257.000	117.000	257.569
491	RHS125X75	RHS125X75	0.159	1.000	0.159	AISC- H2-1	13	12.130	257.000	117.000	257.569
492	RHS125X75	RHS125X75	0.346	1.000	0.346	AISC- H1-3	11	12.130	257.000	117.000	257.569
494	TUB50502.3	TUB50502.3	0.952	1.000	0.952	AISC- H1-3	18	4.252	15.900	15.900	24.960
495	TUB50502.3	TUB50502.3	0.467	1.000	0.467	AISC- H1-3	18	4.252	15.900	15.900	24.960
496	TUB50502.3	TUB50502.3	0.689	1.000	0.689	AISC- H1-3	16	4.252	15.900	15.900	24.960
497	TUB50502.3	TUB50502.3	0.509	1.000	0.509	AISC- H1-3	9	4.252	15.900	15.900	24.960
498	TUB50502.3	TUB50502.3	0.571	1.000	0.571	AISC- H1-3	16	4.252	15.900	15.900	24.960
499	TUB50502.3	TUB50502.3	0.782	1.000	0.782	AISC- H1-3	16	4.252	15.900	15.900	24.960
500	TUB50502.3	TUB50502.3	0.863	1.000	0.863	AISC- H1-3	16	4.252	15.900	15.900	24.960
501	RHS125X75	RHS125X75	0.078	1.000	0.078	AISC- H1-3	15	12.130	257.000	117.000	257.569
502	TUB100100	TUB100100	0.150	1.000	0.150	AISC- H1-3	14	12.130	187.000	187.000	290.250
503	RHS125X75	RHS125X75	0.412	1.000	0.412	AISC- H2-1	14	12.130	257.000	117.000	257.569
504	RHS125X75	RHS125X75	0.129	1.000	0.129	AISC- H1-3	13	12.130	257.000	117.000	257.569
505	RHS125X75	RHS125X75	0.167	1.000	0.167	AISC- H1-3	13	12.130	257.000	117.000	257.569
506	RHS125X75	RHS125X75	0.177	1.000	0.177	AISC- H2-1	13	12.130	257.000	117.000	257.569
507	RHS125X75	RHS125X75	0.180	1.000	0.180	AISC- H2-1	13	12.130	257.000	117.000	257.569
508	RHS125X75	RHS125X75	0.181	1.000	0.181	AISC- H2-1	13	12.130	257.000	117.000	257.569
509	RHS125X75	RHS125X75	0.180	1.000	0.180	AISC- H2-1	13	12.130	257.000	117.000	257.569
510	RHS125X75	RHS125X75	0.177	1.000	0.177	AISC- H2-1	13	12.130	257.000	117.000	257.569
511	RHS125X75	RHS125X75	0.165	1.000	0.165	AISC- H2-1	13	12.130	257.000	117.000	257.569
512	RHS125X75	RHS125X75	0.128	1.000	0.128	AISC- H1-3	11	12.130	257.000	117.000	257.569
513	RHS200X10	RHS200X10	0.339	1.000	0.339	AISC- H2-1	15	25.670	1.33E+3	455.000	1.1E+3
514	RHS125X75	RHS125X75	0.350	1.000	0.350	AISC- H2-1	6	12.130	257.000	117.000	257.569
515	RHS125X75	RHS125X75	0.428	1.000	0.428	AISC- H2-1	6	12.130	257.000	117.000	257.569

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Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
516	RHS125X75	RHS125X75	0.347	1.000	0.347	AISC- H2-1	11	12.130	257.000	117.000	257.569
517	RHS125X75	RHS125X75	0.432	1.000	0.432	AISC- H2-1	11	12.130	257.000	117.000	257.569
518	RHS200X10	RHS200X10	0.211	1.000	0.211	AISC- H1-3	11	25.670	1.33E+3	455.000	1.1E+3
519	RHS200X10	RHS200X10	0.253	1.000	0.253	AISC- H1-3	11	25.670	1.33E+3	455.000	1.1E+3
520	RHS125X75	RHS125X75	0.218	1.000	0.218	AISC- H1-3	6	12.130	257.000	117.000	257.569
521	RHS125X75	RHS125X75	0.272	1.000	0.272	AISC- H1-3	6	12.130	257.000	117.000	257.569
522	RHS125X75	RHS125X75	0.263	1.000	0.263	AISC- H2-1	15	12.130	257.000	117.000	257.569
523	RHS125X75	RHS125X75	0.263	1.000	0.263	AISC- H2-1	15	12.130	257.000	117.000	257.569
524	RHS125X75	RHS125X75	0.294	1.000	0.294	AISC- H1-3	15	12.130	257.000	117.000	257.569
525	RHS125X75	RHS125X75	0.594	1.000	0.594	AISC- H1-3	15	12.130	257.000	117.000	257.569
526	RHS125X75	RHS125X75	0.361	1.000	0.361	AISC- H1-3	18	12.130	257.000	117.000	257.569
527	RHS125X75	RHS125X75	0.287	1.000	0.287	AISC- H1-3	16	12.130	257.000	117.000	257.569
528	RHS125X75	RHS125X75	0.903	1.000	0.903	AISC- H1-3	9	12.130	257.000	117.000	257.569
529	RHS125X75	RHS125X75	0.647	1.000	0.647	AISC- H1-3	9	12.130	257.000	117.000	257.569
530	RHS125X75	RHS125X75	0.639	1.000	0.639	AISC- H1-3	9	12.130	257.000	117.000	257.569
531	RHS125X75	RHS125X75	0.641	1.000	0.641	AISC- H1-3	15	12.130	257.000	117.000	257.569
532	RHS125X75	RHS125X75	0.288	1.000	0.288	AISC- H1-3	15	12.130	257.000	117.000	257.569
533	RHS125X75	RHS125X75	0.185	1.000	0.185	AISC- H2-1	16	12.130	257.000	117.000	257.569
534	TUB1001003	TUB1001003	0.168	1.000	0.168	AISC- H1-3	14	12.130	187.000	187.000	290.250
535	TUB1001003	TUB1001003	0.381	1.000	0.381	AISC- H1-3	14	12.130	187.000	187.000	290.250
536	TUB1001003	TUB1001003	0.145	1.000	0.145	AISC- H1-3	14	12.130	187.000	187.000	290.250
537	RHS125X75	RHS125X75	0.195	1.000	0.195	AISC- H1-3	14	12.130	257.000	117.000	257.569
538	RHS125X75	RHS125X75	0.114	1.000	0.114	AISC- H1-3	11	12.130	257.000	117.000	257.569
539	RHS125X75	RHS125X75	0.088	1.000	0.088	AISC- H1-3	11	12.130	257.000	117.000	257.569
540	RHS125X75	RHS125X75	0.091	1.000	0.091	AISC- H1-3	13	12.130	257.000	117.000	257.569
541	RHS125X75	RHS125X75	0.103	1.000	0.103	AISC- H1-3	13	12.130	257.000	117.000	257.569
542	RHS125X75	RHS125X75	0.112	1.000	0.112	AISC- H1-3	13	12.130	257.000	117.000	257.569
543	RHS125X75	RHS125X75	0.119	1.000	0.119	AISC- H1-3	13	12.130	257.000	117.000	257.569
544	RHS125X75	RHS125X75	0.128	1.000	0.128	AISC- H1-3	13	12.130	257.000	117.000	257.569
545	RHS125X75	RHS125X75	0.147	1.000	0.147	AISC- H1-3	13	12.130	257.000	117.000	257.569
546	RHS125X75	RHS125X75	0.212	1.000	0.212	AISC- H1-3	18	12.130	257.000	117.000	257.569
547	RHS200X10	RHS200X10	0.378	1.000	0.378	AISC- H2-1	15	25.670	1.33E+3	455.000	1.1E+3
548	TUB2002004	TUB2002004	0.110	1.000	0.110	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
552	TUB2002004	TUB2002004	0.130	1.000	0.130	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
556	TUB2002004	TUB2002004	0.124	1.000	0.124	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
557	RHS125X75	RHS125X75	0.374	1.000	0.374	AISC- H1-3	18	12.130	257.000	117.000	257.569
558	RHS125X75	RHS125X75	0.172	1.000	0.172	AISC- H1-3	13	12.130	257.000	117.000	257.569
559	RHS125X75	RHS125X75	0.196	1.000	0.196	AISC- H1-3	13	12.130	257.000	117.000	257.569
560	RHS125X75	RHS125X75	0.430	1.000	0.430	AISC- H1-3	13	12.130	257.000	117.000	257.569
561	RHS125X75	RHS125X75	0.429	1.000	0.429	AISC- H1-3	18	12.130	257.000	117.000	257.569
562	RHS125X75	RHS125X75	0.187	1.000	0.187	AISC- H1-3	17	12.130	257.000	117.000	257.569
563	RHS125X75	RHS125X75	0.190	1.000	0.190	AISC- H1-3	17	12.130	257.000	117.000	257.569
564	RHS125X75	RHS125X75	0.426	1.000	0.426	AISC- H1-3	16	12.130	257.000	117.000	257.569
565	TUB2002004	TUB2002004	0.150	1.000	0.150	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
566	RHS125X75	RHS125X75	0.276	1.000	0.276	AISC- H1-3	18	12.130	257.000	117.000	257.569
567	RHS125X75	RHS125X75	0.194	1.000	0.194	AISC- H2-1	14	12.130	257.000	117.000	257.569
568	RHS125X75	RHS125X75	0.276	1.000	0.276	AISC- H2-1	12	12.130	257.000	117.000	257.569
569	TUB2002004	TUB2002004	0.181	1.000	0.181	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
570	RHS125X75	RHS125X75	0.310	1.000	0.310	AISC- H1-3	18	12.130	257.000	117.000	257.569
571	RHS125X75	RHS125X75	0.198	1.000	0.198	AISC- H2-1	14	12.130	257.000	117.000	257.569
572	RHS125X75	RHS125X75	0.313	1.000	0.313	AISC- H1-3	16	12.130	257.000	117.000	257.569
573	TUB2002004	TUB2002004	0.171	1.000	0.171	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
574	RHS125X75	RHS125X75	0.403	1.000	0.403	AISC- H2-1	18	12.130	257.000	117.000	257.569
575	RHS125X75	RHS125X75	0.213	1.000	0.213	AISC- H2-1	18	12.130	257.000	117.000	257.569
576	RHS125X75	RHS125X75	0.239	1.000	0.239	AISC- H2-1	16	12.130	257.000	117.000	257.569
577	RHS125X75	RHS125X75	0.379	1.000	0.379	AISC- H2-1	16	12.130	257.000	117.000	257.569
578	RHS125X75	RHS125X75	0.457	1.000	0.457	AISC- H2-1	18	12.130	257.000	117.000	257.569
579	RHS125X75	RHS125X75	0.275	1.000	0.275	AISC- H2-1	18	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
580	RHS125X75	RHS125X75	0.254	1.000	0.254	AISC- H2-1	16	12.130	257.000	117.000	257.569
581	RHS125X75	RHS125X75	0.453	1.000	0.453	AISC- H2-1	16	12.130	257.000	117.000	257.569
582	TUB2002004	TUB2002004	0.222	1.000	0.222	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
583	RHS125X75	RHS125X75	0.353	1.000	0.353	AISC- H1-3	18	12.130	257.000	117.000	257.569
584	RHS125X75	RHS125X75	0.203	1.000	0.203	AISC- H1-3	12	12.130	257.000	117.000	257.569
585	RHS125X75	RHS125X75	0.274	1.000	0.274	AISC- H1-3	16	12.130	257.000	117.000	257.569
586	TUB2002004	TUB2002004	0.252	1.000	0.252	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
587	RHS125X75	RHS125X75	0.328	1.000	0.328	AISC- H1-3	18	12.130	257.000	117.000	257.569
588	RHS125X75	RHS125X75	0.223	1.000	0.223	AISC- H1-3	14	12.130	257.000	117.000	257.569
589	RHS125X75	RHS125X75	0.358	1.000	0.358	AISC- H1-3	16	12.130	257.000	117.000	257.569
590	TUB2002004	TUB2002004	0.240	1.000	0.240	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
591	RHS200X10	RHS200X10	0.325	1.000	0.325	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
592	RHS200X10	RHS200X10	0.120	1.000	0.120	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
593	RHS200X10	RHS200X10	0.148	1.000	0.148	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
594	RHS200X10	RHS200X10	0.151	1.000	0.151	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
595	RHS200X10	RHS200X10	0.153	1.000	0.153	AISC- H1-3	17	25.670	1.33E+3	455.000	1.1E+3
596	RHS200X10	RHS200X10	0.330	1.000	0.330	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
597	RHS200X10	RHS200X10	0.369	1.000	0.369	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
598	RHS200X10	RHS200X10	0.438	1.000	0.438	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
599	RHS200X10	RHS200X10	0.218	1.000	0.218	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
600	RHS200X10	RHS200X10	0.120	1.000	0.120	AISC- H2-1	12	25.670	1.33E+3	455.000	1.1E+3
601	RHS200X10	RHS200X10	0.151	1.000	0.151	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
602	RHS200X10	RHS200X10	0.194	1.000	0.194	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
603	RHS200X10	RHS200X10	0.167	1.000	0.167	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
604	RHS200X10	RHS200X10	0.125	1.000	0.125	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
605	RHS200X10	RHS200X10	0.196	1.000	0.196	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
606	TUB2002004	TUB2002004	0.180	1.000	0.180	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
607	TUB2002004	TUB2002004	0.421	1.000	0.421	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
608	RHS125X75	RHS125X75	0.598	1.000	0.598	AISC- H1-3	18	12.130	257.000	117.000	257.569
609	RHS125X75	RHS125X75	0.468	1.000	0.468	AISC- H1-3	18	12.130	257.000	117.000	257.569
610	RHS125X75	RHS125X75	0.474	1.000	0.474	AISC- H1-3	16	12.130	257.000	117.000	257.569
611	TUB2002004	TUB2002004	0.192	1.000	0.192	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
613	RHS125X75	RHS125X75	0.383	1.000	0.383	AISC- H1-3	18	12.130	257.000	117.000	257.569
614	RHS125X75	RHS125X75	0.262	1.000	0.262	AISC- H1-3	18	12.130	257.000	117.000	257.569
615	RHS125X75	RHS125X75	0.266	1.000	0.266	AISC- H1-3	16	12.130	257.000	117.000	257.569
616	RHS125X75	RHS125X75	0.498	1.000	0.498	AISC- H1-3	16	12.130	257.000	117.000	257.569
617	TUB2002004	TUB2002004	0.196	1.000	0.196	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
618	TUB2002004	TUB2002004	0.326	1.000	0.326	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
619	RHS125X75	RHS125X75	0.674	1.000	0.674	AISC- H1-3	18	12.130	257.000	117.000	257.569
620	RHS125X75	RHS125X75	0.474	1.000	0.474	AISC- H1-3	18	12.130	257.000	117.000	257.569
621	RHS125X75	RHS125X75	0.487	1.000	0.487	AISC- H1-3	16	12.130	257.000	117.000	257.569
622	TUB2002004	TUB2002004	0.108	1.000	0.108	AISC- H1-3	15	34.670	2.19E+3	2.19E+3	3.36E+3
624	RHS125X75	RHS125X75	0.531	1.000	0.531	AISC- H2-1	9	12.130	257.000	117.000	257.569
625	RHS125X75	RHS125X75	0.465	1.000	0.465	AISC- H1-3	17	12.130	257.000	117.000	257.569
626	RHS125X75	RHS125X75	0.651	1.000	0.651	AISC- H2-1	9	12.130	257.000	117.000	257.569
627	RHS125X75	RHS125X75	0.820	1.000	0.820	AISC- H2-1	9	12.130	257.000	117.000	257.569
628	RHS125X75	RHS125X75	0.520	1.000	0.520	AISC- H2-1	18	12.130	257.000	117.000	257.569
629	RHS125X75	RHS125X75	0.198	1.000	0.198	AISC- H2-1	18	12.130	257.000	117.000	257.569
630	RHS125X75	RHS125X75	0.352	1.000	0.352	AISC- H1-3	16	12.130	257.000	117.000	257.569
631	RHS125X75	RHS125X75	0.691	1.000	0.691	AISC- H1-3	16	12.130	257.000	117.000	257.569
632	RHS125X75	RHS125X75	0.104	1.000	0.104	AISC- H2-1	16	12.130	257.000	117.000	257.569
633	RHS125X75	RHS125X75	0.314	1.000	0.314	AISC- H1-3	16	12.130	257.000	117.000	257.569
634	RHS125X75	RHS125X75	0.343	1.000	0.343	AISC- H1-3	16	12.130	257.000	117.000	257.569
635	RHS125X75	RHS125X75	0.196	1.000	0.196	AISC- H1-3	16	12.130	257.000	117.000	257.569
636	RHS125X75	RHS125X75	0.018	1.000	0.018	AISC- H1-3	1	12.130	257.000	117.000	257.569
637	RHS125X75	RHS125X75	0.121	1.000	0.121	AISC- H2-1	12	12.130	257.000	117.000	257.569
638	RHS125X75	RHS125X75	0.137	1.000	0.137	AISC- H1-3	5	12.130	257.000	117.000	257.569
640	RHS125X75	RHS125X75	0.001	1.000	0.001	AISC- H1-3	1	12.130	257.000	117.000	257.569

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
641	RHS125X75	RHS125X75	0.417	1.000	0.417	AISC- H1-3	18	12.130	257.000	117.000	257.569
642	RHS125X75	RHS125X75	0.336	1.000	0.336	AISC- H2-1	18	12.130	257.000	117.000	257.569
643	RHS125X75	RHS125X75	0.185	1.000	0.185	AISC- H1-3	18	12.130	257.000	117.000	257.569
644	RHS125X75	RHS125X75	0.130	1.000	0.130	AISC- H1-3	9	12.130	257.000	117.000	257.569
645	RHS125X75	RHS125X75	0.097	1.000	0.097	AISC- H2-1	14	12.130	257.000	117.000	257.569
647	RHS125X75	RHS125X75	0.128	1.000	0.128	AISC- H1-3	14	12.130	257.000	117.000	257.569
648	RHS125X75	RHS125X75	0.146	1.000	0.146	AISC- H1-3	7	12.130	257.000	117.000	257.569
649	RHS200X10	RHS200X10	0.261	1.000	0.261	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
650	TUB2002004	TUB2002004	0.508	1.000	0.508	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
651	RHS200X10	RHS200X10	0.281	1.000	0.281	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
652	RHS200X10	RHS200X10	0.397	1.000	0.397	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
653	RHS125X75	RHS125X75	0.298	1.000	0.298	AISC- H1-3	15	12.130	257.000	117.000	257.569
654	RHS125X75	RHS125X75	0.290	1.000	0.290	AISC- H2-1	18	12.130	257.000	117.000	257.569
657	RHS200X10	RHS200X10	0.118	1.000	0.118	AISC- H1-3	17	25.670	1.33E+3	455.000	1.1E+3
659	RHS200X10	RHS200X10	0.146	1.000	0.146	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
660	TUB2002004	TUB2002004	0.242	1.000	0.242	AISC- H1-3	14	34.670	2.19E+3	2.19E+3	3.36E+3
661	RHS200X10	RHS200X10	0.286	1.000	0.286	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
662	RHS200X10	RHS200X10	0.126	1.000	0.126	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
663	RHS125X75	RHS125X75	0.292	1.000	0.292	AISC- H2-1	9	12.130	257.000	117.000	257.569
664	RHS125X75	RHS125X75	0.294	1.000	0.294	AISC- H2-1	9	12.130	257.000	117.000	257.569
667	RHS200X10	RHS200X10	0.098	1.000	0.098	AISC- H1-3	17	25.670	1.33E+3	455.000	1.1E+3
669	RHS200X10	RHS200X10	0.209	1.000	0.209	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
670	TUB2002004	TUB2002004	0.357	1.000	0.357	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
671	RHS200X10	RHS200X10	0.381	1.000	0.381	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
672	RHS200X10	RHS200X10	0.124	1.000	0.124	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
673	RHS125X75	RHS125X75	0.284	1.000	0.284	AISC- H2-1	9	12.130	257.000	117.000	257.569
674	RHS125X75	RHS125X75	0.301	1.000	0.301	AISC- H2-1	9	12.130	257.000	117.000	257.569
677	RHS200X10	RHS200X10	0.097	1.000	0.097	AISC- H2-1	15	25.670	1.33E+3	455.000	1.1E+3
679	RHS200X10	RHS200X10	0.225	1.000	0.225	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
680	TUB2002004	TUB2002004	0.421	1.000	0.421	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
681	RHS200X10	RHS200X10	0.361	1.000	0.361	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
682	RHS200X10	RHS200X10	0.162	1.000	0.162	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
683	RHS125X75	RHS125X75	0.292	1.000	0.292	AISC- H2-1	9	12.130	257.000	117.000	257.569
684	RHS125X75	RHS125X75	0.305	1.000	0.305	AISC- H2-1	9	12.130	257.000	117.000	257.569
687	RHS200X10	RHS200X10	0.074	1.000	0.074	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
689	RHS200X10	RHS200X10	0.256	1.000	0.256	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
690	TUB2002004	TUB2002004	0.434	1.000	0.434	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
691	RHS200X10	RHS200X10	0.389	1.000	0.389	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
692	RHS200X10	RHS200X10	0.184	1.000	0.184	AISC- H1-3	17	25.670	1.33E+3	455.000	1.1E+3
693	RHS125X75	RHS125X75	0.289	1.000	0.289	AISC- H2-1	9	12.130	257.000	117.000	257.569
694	RHS125X75	RHS125X75	0.308	1.000	0.308	AISC- H2-1	9	12.130	257.000	117.000	257.569
697	RHS200X10	RHS200X10	0.080	1.000	0.080	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
699	RHS200X10	RHS200X10	0.262	1.000	0.262	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
700	TUB2002004	TUB2002004	0.414	1.000	0.414	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
701	RHS200X10	RHS200X10	0.381	1.000	0.381	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
702	RHS200X10	RHS200X10	0.205	1.000	0.205	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
703	RHS125X75	RHS125X75	0.286	1.000	0.286	AISC- H2-1	9	12.130	257.000	117.000	257.569
704	RHS125X75	RHS125X75	0.310	1.000	0.310	AISC- H2-1	9	12.130	257.000	117.000	257.569
707	RHS200X10	RHS200X10	0.106	1.000	0.106	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
709	RHS200X10	RHS200X10	0.221	1.000	0.221	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
710	TUB2002004	TUB2002004	0.408	1.000	0.408	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
711	RHS200X10	RHS200X10	0.316	1.000	0.316	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
712	RHS200X10	RHS200X10	0.203	1.000	0.203	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
713	RHS125X75	RHS125X75	0.300	1.000	0.300	AISC- H2-1	9	12.130	257.000	117.000	257.569
714	RHS125X75	RHS125X75	0.304	1.000	0.304	AISC- H2-1	9	12.130	257.000	117.000	257.569
717	RHS200X10	RHS200X10	0.078	1.000	0.078	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
719	RHS200X10	RHS200X10	0.156	1.000	0.156	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
720	TUB2002004	TUB2002004	0.283	1.000	0.283	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
721	RHS200X10	RHS200X10	0.206	1.000	0.206	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
722	RHS200X10	RHS200X10	0.143	1.000	0.143	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
723	RHS125X75	RHS125X75	0.299	1.000	0.299	AISC- H2-1	9	12.130	257.000	117.000	257.569
724	RHS125X75	RHS125X75	0.299	1.000	0.299	AISC- H2-1	9	12.130	257.000	117.000	257.569
727	RHS200X10	RHS200X10	0.086	1.000	0.086	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
729	RHS200X10	RHS200X10	0.261	1.000	0.261	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
730	TUB2002004	TUB2002004	0.153	1.000	0.153	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
731	RHS200X10	RHS200X10	0.373	1.000	0.373	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
732	RHS200X10	RHS200X10	0.103	1.000	0.103	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
733	RHS125X75	RHS125X75	0.297	1.000	0.297	AISC- H2-1	9	12.130	257.000	117.000	257.569
734	RHS125X75	RHS125X75	0.292	1.000	0.292	AISC- H2-1	9	12.130	257.000	117.000	257.569
737	RHS200X10	RHS200X10	0.100	1.000	0.100	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
738	RHS200X10	RHS200X10	0.269	1.000	0.269	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
739	TUB2002004	TUB2002004	0.439	1.000	0.439	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
740	RHS200X10	RHS200X10	0.387	1.000	0.387	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
741	RHS200X10	RHS200X10	0.194	1.000	0.194	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
742	RHS125X75	RHS125X75	0.327	1.000	0.327	AISC- H2-1	9	12.130	257.000	117.000	257.569
743	RHS125X75	RHS125X75	0.320	1.000	0.320	AISC- H2-1	9	12.130	257.000	117.000	257.569
744	RHS200X10	RHS200X10	0.124	1.000	0.124	AISC- H2-1	18	25.670	1.33E+3	455.000	1.1E+3
745	RHS200X10	RHS200X10	0.302	1.000	0.302	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
746	TUB2002004	TUB2002004	0.914	1.000	0.914	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
747	RHS200X10	RHS200X10	0.506	1.000	0.506	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
748	RHS125X75	RHS125X75	0.305	1.000	0.305	AISC- H2-1	9	12.130	257.000	117.000	257.569
749	RHS125X75	RHS125X75	0.323	1.000	0.323	AISC- H2-1	18	12.130	257.000	117.000	257.569
750	RHS200X10	RHS200X10	0.139	1.000	0.139	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
751	TUB2002004	TUB2002004	0.331	1.000	0.331	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
752	RHS200X10	RHS200X10	0.215	1.000	0.215	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
753	RHS125X75	RHS125X75	0.312	1.000	0.312	AISC- H2-1	9	12.130	257.000	117.000	257.569
754	RHS125X75	RHS125X75	0.334	1.000	0.334	AISC- H2-1	9	12.130	257.000	117.000	257.569
755	RHS200X10	RHS200X10	0.160	1.000	0.160	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
756	TUB2002004	TUB2002004	0.221	1.000	0.221	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
757	RHS200X10	RHS200X10	0.125	1.000	0.125	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
758	RHS125X75	RHS125X75	0.291	1.000	0.291	AISC- H2-1	9	12.130	257.000	117.000	257.569
759	RHS125X75	RHS125X75	0.336	1.000	0.336	AISC- H2-1	9	12.130	257.000	117.000	257.569
760	RHS200X10	RHS200X10	0.176	1.000	0.176	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
761	TUB2002004	TUB2002004	0.325	1.000	0.325	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
762	RHS200X10	RHS200X10	0.345	1.000	0.345	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
763	RHS125X75	RHS125X75	0.291	1.000	0.291	AISC- H2-1	9	12.130	257.000	117.000	257.569
764	RHS125X75	RHS125X75	0.335	1.000	0.335	AISC- H2-1	18	12.130	257.000	117.000	257.569
765	RHS200X10	RHS200X10	0.228	1.000	0.228	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
766	TUB2002004	TUB2002004	0.448	1.000	0.448	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
767	RHS200X10	RHS200X10	0.438	1.000	0.438	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
768	RHS125X75	RHS125X75	0.284	1.000	0.284	AISC- H2-1	9	12.130	257.000	117.000	257.569
769	RHS125X75	RHS125X75	0.329	1.000	0.329	AISC- H2-1	18	12.130	257.000	117.000	257.569
770	RHS125X75	RHS125X75	0.265	1.000	0.265	AISC- H2-1	9	12.130	257.000	117.000	257.569
771	RHS125X75	RHS125X75	0.324	1.000	0.324	AISC- H2-1	9	12.130	257.000	117.000	257.569
772	RHS200X10	RHS200X10	0.188	1.000	0.188	AISC- H2-1	9	25.670	1.33E+3	455.000	1.1E+3
773	TUB2002004	TUB2002004	0.500	1.000	0.500	AISC- H1-3	9	34.670	2.19E+3	2.19E+3	3.36E+3
774	RHS200X10	RHS200X10	0.425	1.000	0.425	AISC- H1-3	9	25.670	1.33E+3	455.000	1.1E+3
775	RHS125X75	RHS125X75	0.283	1.000	0.283	AISC- H2-1	9	12.130	257.000	117.000	257.569
776	RHS125X75	RHS125X75	0.317	1.000	0.317	AISC- H2-1	9	12.130	257.000	117.000	257.569
777	RHS200X10	RHS200X10	0.153	1.000	0.153	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
778	TUB2002004	TUB2002004	0.443	1.000	0.443	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
779	RHS200X10	RHS200X10	0.391	1.000	0.391	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
780	RHS125X75	RHS125X75	0.287	1.000	0.287	AISC- H2-1	9	12.130	257.000	117.000	257.569
781	RHS125X75	RHS125X75	0.308	1.000	0.308	AISC- H2-1	9	12.130	257.000	117.000	257.569
782	RHS200X10	RHS200X10	0.120	1.000	0.120	AISC- H2-1	16	25.670	1.33E+3	455.000	1.1E+3
783	TUB2002004	TUB2002004	0.323	1.000	0.323	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3

Utilization Ratio Cont...

Beam	Analysis Property	Design Property	Actual Ratio	Allowable Ratio	Ratio (Act./Allow.)	Clause	L/C	Ax (cm^2)	Iz (cm^4)	Iy (cm^4)	Ix (cm^4)
784	RHS200X10	RHS200X10	0.279	1.000	0.279	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
785	RHS125X75	RHS125X75	0.283	1.000	0.283	AISC- H2-1	9	12.130	257.000	117.000	257.569
786	RHS125X75	RHS125X75	0.306	1.000	0.306	AISC- H2-1	9	12.130	257.000	117.000	257.569
787	RHS200X10	RHS200X10	0.146	1.000	0.146	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
788	TUB200200/	TUB200200/	0.312	1.000	0.312	AISC- H1-3	16	34.670	2.19E+3	2.19E+3	3.36E+3
789	RHS200X10	RHS200X10	0.179	1.000	0.179	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
790	RHS125X75	RHS125X75	0.302	1.000	0.302	AISC- H2-1	9	12.130	257.000	117.000	257.569
791	RHS125X75	RHS125X75	0.305	1.000	0.305	AISC- H2-1	16	12.130	257.000	117.000	257.569
792	RHS200X10	RHS200X10	0.462	1.000	0.462	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
793	TUB200200/	TUB200200/	0.343	1.000	0.343	AISC- H1-3	18	34.670	2.19E+3	2.19E+3	3.36E+3
794	RHS200X10	RHS200X10	0.676	1.000	0.676	AISC- H1-3	18	25.670	1.33E+3	455.000	1.1E+3
795	RHS125X75	RHS125X75	0.271	1.000	0.271	AISC- H2-1	9	12.130	257.000	117.000	257.569
796	RHS125X75	RHS125X75	0.272	1.000	0.272	AISC- H2-1	16	12.130	257.000	117.000	257.569
797	RHS200X10	RHS200X10	0.163	1.000	0.163	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
798	RHS125X75	RHS125X75	0.143	1.000	0.143	AISC- H2-1	16	12.130	257.000	117.000	257.569
799	RHS200X10	RHS200X10	0.098	1.000	0.098	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
800	RHS125X75	RHS125X75	0.172	1.000	0.172	AISC- H2-1	16	12.130	257.000	117.000	257.569
801	RHS200X10	RHS200X10	0.102	1.000	0.102	AISC- H1-3	16	25.670	1.33E+3	455.000	1.1E+3
802	RHS125X75	RHS125X75	0.182	1.000	0.182	AISC- H2-1	16	12.130	257.000	117.000	257.569
803	RHS200X10	RHS200X10	0.201	1.000	0.201	AISC- H1-3	14	25.670	1.33E+3	455.000	1.1E+3
804	RHS125X75	RHS125X75	0.172	1.000	0.172	AISC- H1-3	17	12.130	257.000	117.000	257.569

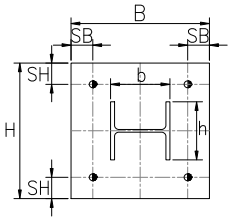
Failed Members

There is no data of this type.

PROJECT : โครงการจ้างออกแบบปรับปรุงพื้นที่สำนักงานภายในมหาวิทยาลัย จำนวน 1 งาน ส่วนพัฒนากายภาพ มหาวิทยาลัยศรีนครินทรวิโรฒ
TITLE : Base plate -01
DESIGN BY : Mr. Thanongchai Promma (สย.8732)

CALCULATION SHEET OF BASE PLATE AND ANCHOR BOLT
LRFD METHOD FOR STEEL STRUCTURE REFER TO ACI 318 APP.D STANDARD

1	**DESIGN CRITERIA**					
	Compressive strength of concrete,		fc'	=	23.5	MPa
	Modulus of elasticity of rolled steel,		Es	=	204000	MPa
	Yield strength of steel plate (SS400),		fy	=	245	MPa
	Tensile strength of steel plate (SS400),		fu	=	400	MPa
	Yield strength of anchor bolt >>>>	ASTM A325	fy	=	660	MPa
	Tensile strength of anchor bolt >>>>	ASTM A325	fu	=	830	MPa
	Allowable tensile strength of anchor bolt ,[0.33*fy]		ft	=	136	MPa
	Allowable shear strength of anchor bolt , [0.17*fy]		fv	=	70	MPa
	Electrode type				E70	
2	**SECTION PROPERTIES**					
	Base plate width,		B	=	40.00	cm.
	Base plate length,		H	=	40.00	cm.
	Base plate thick,		T	=	1.60	cm.
	Column width,		b	=	20.00	cm.
	Column length,		h	=	20.00	cm.
	Shear edge distance,		SB	=	5.00	cm.
	Shear edge distance,		SH	=	5.00	cm.
	Bolt size		M	=	16	mm.
	Embedment length		hef	=	15	cm.
	Hook distance		eh	=	-	cm.
	Amount of bolt			=	4	ea
	Anchor bolt type				Post-installed	
	Number of treads per mm.		nt	=	0.433	threads/mm
	Column type				[]-200x200x4.5	
	Column section modulus,		Sx	=	253.00	cm^3
	Column sectional area,		A	=	34.67	cm^2
	Column flange thick,		tf		0.45	cm.
3	**FACTORED LOAD FOR DESIGN**					
	3.1 Load case : maximum compression >>>>>>>>>>>>> 9 COMB - 1 DEAD + 1 DEAD + 1 LIVE					
	Factored compression force		Pu	=	64.64	kN.
	Factored horizontal force		Fux	=	0.52	kN.
	Factored horizontal force		Fuz	=	0.00	kN.
	Factored moment		Mux	=	0.00	kN.-m.
	Factored moment		Muz	=	-0.34	kN.-m.
	3.2 Load case : maximum moment >>>>>>>>>>>>>>>>> 21 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (3)					
	Factored tension force		Pu	=	8.286	kN.
	Factored horizontal force		Fux	=	-0.519	kN.
	Factored horizontal force		Fuz	=	-0.571	kN.
	Factored moment		Mux	=	0.07	kN.-m.
	Factored moment		Muz	=	-0.458	kN.-m.
	3.3 Load case : maximum horizontal force >>>>>>>>>>>> 11 COMB - 1 DEAD + 1 DEAD + 1 WIND (1)					
	Factored vertical force		Pu	=	13.101	kN.
	Factored horizontal force		Fux	=	7.847	kN.
	Factored horizontal force		Fuz	=	0	kN.
	Factored moment		Mux	=	0	kN.-m.
	Factored moment		Muz	=	-0.424	kN.-m.
4	**ANALYSIS RESULT**					
			V	=		
	4.1 Load case : maximum compression					
	Factored compressive stress at plate edge		σu	=	37.19	N./cm^2
	Factored tension force applied to bolt		Tu	=	-	N./bolt
	Factored shear force applied to bolt		Vu	=	131.00	N./bolt
	Factored moment at plate		Mu	=	743.73	N.-m.
	4.2 Load case : maximum moment					
	Factored compressive stress at plate edge		σu	=	1.54	N./cm^2
	Factored tension force applied to bolt		Tu	=	-	N./bolt
	Factored shear force applied to bolt		Vu	=	192.91	N./bolt
	Factored moment at plate		Mu	=	30.83	N.-m.
	4.3 Load case : maximum horizontal force					
	Factored compressive stress at plate edge		σu	=	4.21	N./cm^2
	Factored tension force applied to bolt		Tu	=	-	N./bolt
	Factored shear force applied to bolt		Vu	=	1,961.75	N./bolt
	Factored moment at plate		Mu	=	84.26	N.-m.
5	**CHECK ANCHOR BOLT**					
	Reduction factor for tension		ø	=	0.75	
	Reduction factor for shear		ø	=	0.65	
	5.1 Steel Strength of anchor bolt in tension					
	Anchor bolt effective area		Ase	=	2.01	cm^2
	Nominal strength of single anchor bolt in tension		øNsa	=	99,526	N. > Tu OK
	5.2 Concrte breakout stength of anchor in tension					



PROJECT : โครงการจ้างออกแบบปรับปรุงพื้นที่สำนักงานภายในมหาวิทยาลัย จำนวน 1 งาน ส่วนพัฒนากายภาพ มหาวิทยาลัยศรีนครินทรวิโรฒ
TITLE : Base plate -01
DESIGN BY : Mr. Thanongchai Promma (สย.8732)

CALCULATION SHEET OF BASE PLATE AND ANCHOR BOLT

LRFD METHOD FOR STEEL STRUCTURE REFER TO ACI 318 APP.D STANDARD

Project concrete failure area of a single anchor	Anco	=	1,600.00	cm^2		
Project concrete failure area of a single or group anchor	Anc	=	1,600.00	cm^2		
Eccentricity between load and base plate	eN	=	-	cm.		
Modification factor for anchor loaded eccentrically in tension	ψecN	=	1.00			
Minimum distance from CL of anchor to concrete edge	Ca,min	=	5.00	cm.		
Maximum distance from CL of anchor to concrete edge	Ca,max	=	5.00	cm.		
Modification factor for edge effect for anchor in tension	ψedN	=	0.77			
Modification factor for no crack concrete at service load	ψcN	=	1.40			
Critical edge distance	Cac	=	60.00	cm.		
Modification factor for post-installed anchor design for uncrack	ψcpN	=	0.38			
Anchor bolt type coefficient	kc	=	7.00			
Concrete breaking strength of single anchor bolt in tension	Nb	=	61,772	N.		
Nominal concrete breakout strength	øNcb	=	18,647	N./bolt	> Tu	OK
5.3 Pullout stength of anchor in tension						
Modification factor for pullout	ψcp	=	1.40			
Pullout strength of single anchor bolt in tension	Np	=	50,829	N.		
Nominal pullout strength	øNpn	=	53,371	N./bolt	> Tu	OK
5.4 Concrete side-face blowout strength of a head anchor in tension						
Nominal pullout strength	øNsb	=	118,598	N./bolt	> Tu	OK
5.5 Steel Strength of anchor bolt in shear						
Nominal strength of single anchor bolt in shear	øVsa	=	52,067	N./bolt	> Vu	OK
5.6 Concrte breakout stength of anchor in shear						
Project concrete failure area of a single anchor	Avco	=	187.50	cm^2		
Project concrete failure area of a single or group anchor	Avc	=	187.50	cm^2		
Eccentricity between load and base plate	ev	=	-	cm.		
Modification factor for anchor loaded eccentrically in shear	ψecV	=	1.00			
Modification factor for edge effect for anchor in shear	ψedV	=	0.90			
Modification factor for no crack concrete at service load	ψcV	=	1.00			
Load bearing lengthof the anchor in shear	ℓe	=	3.20	cm.		
Concrete breaking strength of single anchor bolt in shear	Vb	=	20,483	N.		
Nominal concrete breakout strength	øVcb	=	11,983	N./bolt	> Vu	OK
5.7 Interaction of tensile and shear forces						
Steel Strength of anchor bolt	Tu/øNsa+Vu/øVsa	=	0.04		< 1.2	OK
Concrte breakout stength of anchor	Tu/øNcb+Vu/øVcb	=	0.16		< 1.2	OK
6 CHECK PLATE THICKNESS						
Required thickness for bending	Treq	=	0.65	cm.		
Required thickness for block shear	Treq	=	0.01	cm.		
Selected thickness	T	=	1.60	cm.	> Treq	OK
7 CHECK WELDING BETWEEN COLUMN AND BASE PLATE						
Tensile strength	F_{EXX}	=	400	MPa		
Yield strength	Fy	=	245	MPa		
Allowable shear stress [0.30*F_{EXX}]	Fv	=	120	MPa		
Stress at column flange	σ	=	- 1,379	N./cm^2		
Tension force at column flange	F	=	- 12,414	N.		
Welding length for tension flange	ℓ	=	40	cm.		
Required welding size to resist tension	a_{req}	=	- 0.37	mm		
Minimum welding size due to plate thick	a_{min}	=	6	mm		
Maximum welding size due to plate thick	a_{max}	=	5	mm		
Selected welding size	a	=	6	mm		

FORCE AT BASE PLATE

				Vertical	Horizontal	Horizontal	Moment		
	L/C	Beam	Node	Fx kN	Fy kN	Fz kN	Mx kNm	My kNm	Mz kNm
Max Fx	9 COMB - 1 DEAD + 1 DEAD + 1 LIVE	5	5	64.643	0.524	0.000	0.000	0.000	-0.343
Min Fx	21 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (3	445	247	-9.301	0.122	0.000	-0.839	0.028	0.055
Max Fy	11 COMB - 1 DEAD + 1 DEAD + 1 WIND (1)	362	196	13.101	7.847	0.000	0.000	0.000	-0.424
Min Fy	21 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (3	362	196	22.128	-8.079	0.000	0.000	0.000	-10.685
Max Fz	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	5	5	30.709	0.358	0.000	0.000	0.000	-0.766
Min Fz	16 COMB - 1 DEAD + 1 DEAD + 0.75 LIVE + 0.	5	5	60.640	0.284	0.000	0.000	0.000	0.019
Max Mx	11 COMB - 1 DEAD + 1 DEAD + 1 WIND (1)	360	197	-7.693	0.191	0.586	0.829	0.009	-12.008
Min Mx	21 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (3	360	197	8.286	-0.519	-0.571	-0.807	0.070	-0.458
Max My	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	5	11	30.655	0.358	0.000	1.579	-0.072	0.019
Min My	16 COMB - 1 DEAD + 1 DEAD + 0.75 LIVE + 0.	5	11	60.586	0.284	0.000	-1.433	-0.057	0.055
Max Mz	21 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (3	362	199	22.096	-8.079	0.000	-0.175	1.616	0.172
Min Mz	11 COMB - 1 DEAD + 1 DEAD + 1 WIND (1)	362	199	13.047	7.847	0.000	-0.155	-1.569	-12.040

PROJECT : โครงการจ้างออกแบบปรับปรุงพื้นที่สำนักงานภายในมหาวิทยาลัย จำนวน 1 งาน ส่วนพัฒนากายภาพ มหาวิทยาลัยศรีนครินทรวิโรฒ
TITLE : Base plate -02
DESIGN BY : Mr. Thanongchai Promma (สย.8732)

CALCULATION SHEET OF BASE PLATE AND ANCHOR BOLT
LRFD METHOD FOR STEEL STRUCTURE REFER TO ACI 318 APP.D STANDARD

1 DESIGN CRITERIA						
Compressive strength of concrete,		fc'	=	23.5	MPa	
Modulus of elasticity of rolled steel,		Es	=	204000	MPa	
Yield strength of steel plate (SS400),		fy	=	245	MPa	
Tensile strength of steel plate (SS400),		fu	=	400	MPa	
Yield strength of anchor bolt >>>>	ASTM A325	fy	=	660	MPa	
Tensile strength of anchor bolt >>>>	ASTM A325	fu	=	830	MPa	
Allowable tensile strength of anchor bolt ,[0.33*fy]		ft	=	136	MPa	
Allowable shear strength of anchor bolt , [0.17*fy]		fv	=	70	MPa	
Electrode type				E70		
2 SECTION PROPERTIES						
Base plate width,		B	=	15.00	cm.	
Base plate length,		H	=	15.00	cm.	
Base plate thick,		T	=	1.00	cm.	
Column width,		b	=	7.50	cm.	
Column length,		h	=	7.50	cm.	
Shear edge distance,		SB	=	2.50	cm.	
Shear edge distance,		SH	=	2.50	cm.	
Bolt size		M	=	12	mm.	
Embedment length		hef	=	10	cm.	
Hook distance		eh	=	-	cm.	
Amount of bolt			=	4	ea	
Anchor bolt type				Post-installed		
Number of treads per mm.		nt	=	0.512	threads/mm	
Column type				[]-75x75x3.2		
Column section modulus,		Sx	=	20.10	cm^3	
Column sectional area,		A	=	8.93	cm^2	
Column flange thick,		tf		0.32	cm.	
3 FACTORED LOAD FOR DESIGN						
3.1 Load case : maximum compression >>>>>>>>>>>>>		14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)				
Factored compression force		Pu	=	8.15	kN.	
Factored horizontal force		Fux	=	0.56	kN.	
Factored horizontal force		Fuz	=	0.00	kN.	
Factored moment		Mux	=	0.00	kN.-m.	
Factored moment		Muz	=	-0.34	kN.-m.	
3.2 Load case : maximum moment >>>>>>>>>>>>>>>>>		13 COMB - 1 DEAD + 1 DEAD + 1 WIND (3)				
Factored tension force		Pu	=	4.763	kN.	
Factored horizontal force		Fux	=	-0.38	kN.	
Factored horizontal force		Fuz	=	0	kN.	
Factored moment		Mux	=	0	kN.-m.	
Factored moment		Muz	=	-0.458	kN.-m.	
3.3 Load case : maximum horizontal force >>>>>>>>>>>>		14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)				
Factored vertical force		Pu	=	8.146	kN.	
Factored horizontal force		Fux	=	0.557	kN.	
Factored horizontal force		Fuz	=	0	kN.	
Factored moment		Mux	=	0	kN.-m.	
Factored moment		Muz	=	-0.424	kN.-m.	
4 ANALYSIS RESULT						
		V	=			
4.1 Load case : maximum compression						
Factored compressive stress at plate edge		σu	=	- 24.77	N./cm^2	
Factored tension force applied to bolt		Tu	=	-	N./bolt	
Factored shear force applied to bolt		Vu	=	139.25	N./bolt	
Factored moment at plate		Mu	=	26.13	N.-m.	
4.2 Load case : maximum moment						
Factored compressive stress at plate edge		σu	=	- 60.25	N./cm^2	
Factored tension force applied to bolt		Tu	=	403.1	N./bolt	
Factored shear force applied to bolt		Vu	=	95.00	N./bolt	
Factored moment at plate		Mu	=	63.55	N.-m.	
4.3 Load case : maximum horizontal force						
Factored compressive stress at plate edge		σu	=	- 39.17	N./cm^2	
Factored tension force applied to bolt		Tu	=	-	N./bolt	
Factored shear force applied to bolt		Vu	=	139.25	N./bolt	
Factored moment at plate		Mu	=	41.32	N.-m.	
5 CHECK ANCHOR BOLT						
Reduction factor for tension		ø	=	0.75		
Reduction factor for shear		ø	=	0.65		
5.1 Steel Strength of anchor bolt in tension						
Anchor bolt effective area		Ase	=	1.13	cm^2	
Nominal strength of single anchor bolt in tension		øNsa	=	55,983	N.	> Tu OK
5.2 Concrte breakout stength of anchor in tension						

PROJECT : โครงการจ้างออกแบบปรับปรุงพื้นที่สำนักงานภายในมหาวิทยาลัย จำนวน 1 งาน ส่วนพัฒนากายภาพ มหาวิทยาลัยศรีนครินทรวิโรฒ
TITLE : Base plate -02
DESIGN BY : Mr. Thanongchai Promma (สย.8732)

CALCULATION SHEET OF BASE PLATE AND ANCHOR BOLT

LRFD METHOD FOR STEEL STRUCTURE REFER TO ACI 318 APP.D STANDARD

Project concrete failure area of a single anchor	Anco	=	225.00	cm^2		
Project concrete failure area of a single or group anchor	Anc	=	225.00	cm^2		
Eccentricity between load and base plate	eN	=	-	cm.		
Modification factor for anchor loaded eccentrically in tension	ψecN	=	1.00			
Minimum distance from CL of anchor to concrete edge	Ca,min	=	2.50	cm.		
Maximum distance from CL of anchor to concrete edge	Ca,max	=	2.50	cm.		
Modification factor for edge effect for anchor in tension	ψedN	=	0.75			
Modification factor for no crack concrete at service load	ψcN	=	1.40			
Critical edge distance	Cac	=	40.00	cm.		
Modification factor for post-installed anchor design for uncrack	ψcpN	=	0.38			
Anchor bolt type coefficient	kc	=	7.00			
Concrete breaking strength of single anchor bolt in tension	Nb	=	33,624	N.		
Nominal concrete breakout strength	øNcb	=	9,930	N./bolt	> Tu	OK
5.3 Pullout stength of anchor in tension						
Modification factor for pullout	ψcp	=	1.40			
Pullout strength of single anchor bolt in tension	Np	=	25,415	N.		
Nominal pullout strength	øNpn	=	26,685	N./bolt	> Tu	OK
5.4 Concrete side-face blowout strength of a head anchor in tension						
Nominal pullout strength	øNsb	=	41,931	N./bolt	> Tu	OK
5.5 Steel Strength of anchor bolt in shear						
Nominal strength of single anchor bolt in shear	øVsa	=	29,288	N./bolt	> Vu	OK
5.6 Concrte breakout stength of anchor in shear						
Project concrete failure area of a single anchor	Avco	=	62.50	cm^2		
Project concrete failure area of a single or group anchor	Avc	=	62.50	cm^2		
Eccentricity between load and base plate	ev	=	-	cm.		
Modification factor for anchor loaded eccentrically in shear	ψecV	=	1.00			
Modification factor for edge effect for anchor in shear	ψedV	=	0.90			
Modification factor for no crack concrete at service load	ψcV	=	1.00			
Load bearing lengthof the anchor in shear	ℓe	=	2.40	cm.		
Concrete breaking strength of single anchor bolt in shear	Vb	=	17,739	N.		
Nominal concrete breakout strength	øVcb	=	10,377	N./bolt	> Vu	OK
5.7 Interaction of tensile and shear forces						
Steel Strength of anchor bolt	Tu/øNsa+Vu/øVsa	=	0.01		< 1.2	OK
Concrte breakout stength of anchor	Tu/øNcb+Vu/øVcb	=	0.05		< 1.2	OK
6 CHECK PLATE THICKNESS						
Required thickness for bending	Treq	=	0.31	cm.		
Required thickness for block shear	Treq	=	0.00	cm.		
Selected thickness	T	=	1.00	cm.	> Treq	OK
7 CHECK WELDING BETWEEN COLUMN AND BASE PLATE						
Tensile strength	F_{EXX}	=	400	MPa		
Yield strength	Fy	=	245	MPa		
Allowable shear stress [0.30*F_{EXX}]	Fv	=	120	MPa		
Stress at column flange	σ	=	- 1,806	N./cm^2		
Tension force at column flange	F	=	- 4,335	N.		
Welding length for tension flange	ℓ	=	15	cm.		
Required welding size to resist tension	a_{req}	=	- 0.34	mm		
Minimum welding size due to plate thick	a_{min}	=	5	mm		
Maximum welding size due to plate thick	a_{max}	=	3	mm		
Selected welding size	a	=	6	mm		

FORCE AT BASE PLATE

				Vertical	Horizontal	Horizontal	Moment		
	L/C	Beam	Node	Fx kN	Fy kN	Fz kN	Mx kNm	My kNm	Mz kNm
Max Fx	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	535	296	8.146	0.557	0.000	0.000	0.000	-0.343
Min Fx	20 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (2	535	298	-6.781	-0.539	0.000	-1.035	0.862	0.055
Max Fy	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	535	296	8.146	0.557	0.000	0.000	0.000	-0.424
Min Fy	20 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (2	535	296	-6.692	-0.539	0.000	0.000	0.000	-10.685
Max Fz	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	535	296	8.146	0.557	0.000	0.000	0.000	-0.766
Min Fz	20 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (2	535	296	-6.692	-0.539	0.000	0.000	0.000	0.019
Max Mx	12 COMB - 1 DEAD + 1 DEAD + 1 WIND (2)	535	296	-6.329	-0.534	0.000	0.000	0.000	-12.008
Min Mx	13 COMB - 1 DEAD + 1 DEAD + 1 WIND (3)	368	194	4.763	-0.380	0.000	0.000	0.000	-0.458
Max My	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	535	298	7.997	0.557	0.000	1.140	-0.891	0.019
Min My	20 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (2	535	298	-6.781	-0.539	0.000	-1.035	0.862	0.055
Max Mz	20 COMB - 0.6 DEAD + 0.6 DEAD + 1 WIND (2	535	298	-6.781	-0.539	0.000	-1.035	0.862	0.172
Min Mz	14 COMB - 1 DEAD + 1 DEAD + 1 WIND (4)	535	298	7.997	0.557	0.000	1.140	-0.891	-12.040