

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

GOLD-FORMED METAL FRAMING

1. The engineering of all Cold-Formed Metal Framing, including their connections shall be the responsibility of the Contractor. Design and section properties shall be in accordance with AISI "Specification for the Design of Cold-Formed Steel Structural Members".

2. Shop drawings and sample calculations, signed and sealed by a registered engineer in the state of Pennsylvania shall be submitted for review.

3. Sizes indicated on the Contract Drawings are the minimum accepted sizes only, and the Contractor's use of them does not relieve him of the responsibility for their design.

4. All galvanized, painted or unpainted material shall conform to the following:
Studs and joists of 12, 14 and 16 gage: ASTM A 1003, Grade ST50H, Fy=50,000 PSI minimum.
Studs and joists of 18 and 20 gage, tracks, bridging, and accessories: ASTM A 1003, Grade ST33H, Fy=33,000 PSI minimum.

5. All exterior cold-formed metal walls galvanized material shall be formed from steel having a minimum G-10 galvanized coating conforming to ASTM A653. All interior load bearing walls galvanized material shall be formed from steel having a minimum G-60 galvanized coating conforming to ASTM A625. All painted material shall be primed with rust-inhibiting paint, meeting performance requirements of TT-P-636C.

6. Infill walls shall be detailed to accommodate primary frame live load deflection for 1/360 or 1" minimum or as indicated on the Contract Documents and Specifications, whichever is greater.

7. Shop drawings shall include, as a minimum, erection plans, elevations as required, erection details and general notes. Details should include dimensions, plate sizes, weld symbols, fastener size and type, etc.

8. Connections and fasteners to structural members are the responsibility of the cold-formed provider and contractor. Cold-Formed metal framing manufacturer and/or contractor shall provide and install all components not shown on the structural drawings required for the attachment of the cold-formed metal framing.

SHOP DRAWINGS/SUBMITTALS

1. Reproduction of Contract Documents will not be accepted as shop drawings.

2. Electronic copies of structural drawings will not be made available for Contractor's use in preparing shop drawings. In the event the Contractor obtains a courtesy electronic copy from any source, it shall be used for coordination purposes only. Electronic dimensions shall not be scaled. Any use of electronic dimensions not explicitly shown on the Construction documents for construction layout purposes is at the Contractor's sole risk.

3. Shop Drawings shall be submitted for architect/engineer review for the following items:
Concrete/Grout Design Mixes
Concrete/Masonry Reinforcing Steel
Concrete/Masonry Material Certifications
Structural Steel
Metal Deck
Cold-Formed Metal Framing
Connection Calculations
Shoring
Existing information required to be field verified by contractor
New sleeves and openings in existing slabs

Shop drawings for all elements noted above and shown on the Contract Documents shall be submitted for architect and engineer review. If the Contractor or Owner fails to submit shop drawings, the engineer will not be held responsible for the design of the project. The shop drawings shall indicate any deviations or omissions from the Contract Documents.

4. The contractor shall supply the engineer with checked shop drawings bearing the contractor's stamp of approval and signature. The review of shop drawings by the engineer is only for general compliance with the structural drawings and specifications. This review does not guarantee in any way that the shop drawings are correct, complete, nor does it infer that they supersede the Contract Documents.

5. The Contractor shall review and verify all dimensions and conditions shown on these drawings and report any discrepancies to the architect. Shop drawings are an aid for field placement, and are superseded by the structural drawings. It shall be the responsibility of the general contractor to make certain that all construction is in full agreement with the latest structural drawings.

6. Submittals requiring certification by a professional engineer shall be signed and sealed prior to submittal of the submission for review.

7. Any work fabricated or installed incorrectly due to the Contractor's lack of verification shall be corrected at the Contractor's expense.

8. Shop Drawings should include sufficient information to be utilized in the shop for accurate fabrication of materials and in the field for accurate installation of the work.

9. All shop drawings used for work shall bear the stamp of the Architect/Engineer and shall be marked "Approved", "Approved as Noted", or "Reviewed".

10. Contractor shall provide a proposed submittal schedule showing anticipated shop drawing submission dates a minimum of two (2) weeks prior to the first shop drawing submittal.

INSPECTION

1. An independent inspection agency shall be retained to inspect/monitor/test the following items per IBC 2009, and local code requirements:
Earthwork operations, including verification of bearing capacity
Cast-in-place Concrete
Reinforced Masonry
Structural Steel
Metal Deck
Cold-Formed Metal Framing

2. Testing and inspection reports shall be forwarded in a timely manner. Daily reports shall be forwarded each week and deficiency reports shall be forwarded within 24 hours for review. Testing and inspection agency shall issue a final letter of certification for each building component noted above.

3. The Engineer may periodically visit the site to observe the general progress of construction or to provide assistance resolving field conditions. Such visits to the site shall not be construed as meeting the project inspection requirements.

DESIGN CRITERIA

1. This building has been designed to conform to applicable provisions of the 2009 International Building Code, all applicable supplements, and all applicable local building codes and amendments.

A. Design Live Loads:
New Canopy = 20 psf
Existing Floor Framing (assumed for analysis purposes) = 100 psf
New loading dock slab = 250 psf

B. Design Dead Loads:
New canopy ballasted roof plus ceiling allowance = 31 psf
Typical existing floor (assumed) = 8 psf M/E/C
Perimeter wall allowance has been provided as required by architecture - loading varies.

C. Wind Loads:
Basic Wind Speed V = 90 mph
Exposure B
Importance Factor I = 1.15
Internal Pressure Coefficient GCPi = +/- 0.18 \K
\KComponents + Cladding Design Wind Pressures: Contractor may use table values shown below or may calculate actual values based on the specific geometry and conditions in accordance with applicable building codes and submit signed and sealed calculations for review. Values shown are for new work only.

Wall pressures New Canopy Roof Pressures

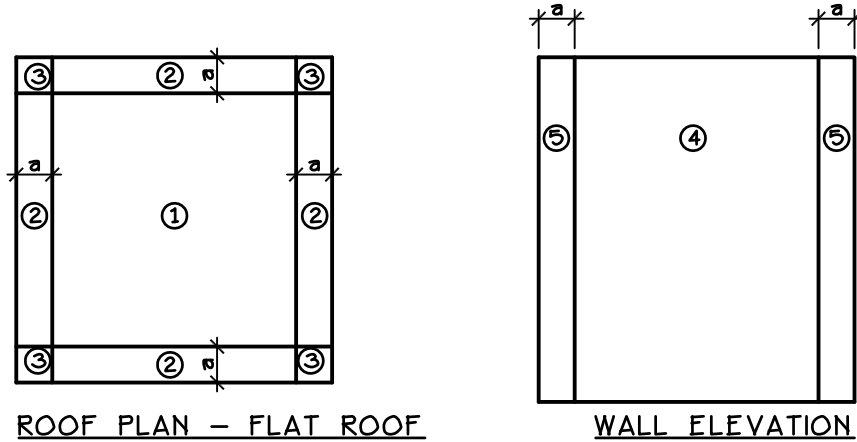
Zone	Pressure	Suction	Zone	Pressure	Suction
4 (Interior)	14 PSF	-15 PSF	1 (Interior)	4 PSF	-14 PSF
5 (Corner)	14 PSF	-18 PSF	2 (Edge)	4 PSF	-23 PSF
			3 (Corner)	4 PSF	-35 PSF

C+G pressure notes: "a" = 3'-0" feet = distance from corner or edge for which Zone 2, 3, and 5 values apply. Reference ASCE 7 and Figure A this sheet for more information.

D. Snow Load:
Ground Snow Load Pg = 30 psf
Snow Exposure Factor Ce = 1
Snow Importance Factor Is = 1.2
Thermal Factor Ct = 1.0
Flat Roof Snow Load Pf = 31 psf + unbalanced, drifting, and sliding snow where applicable

E. Seismic Loading
This building alteration is exempt from IBC sections 16.9 and 16.1 as it conforms to 3404.4 for lateral loads.

F. Special Loads:
I. Mechanical equipment live loads
Loads for mechanical equipment are based on assumed equipment as indicated on plan (including concrete pads where indicated). Any loads greater than those indicated shall be brought to the attention of the architect/engineer in writing prior to the fabrication of supporting structural members. Supporting members will need to be reviewed and possibly redesigned if loads exceed that shown.
II. Retaining Walls:
* Values are assumed only. Contractor shall retain geotechnical engineer to provide field verification of values listed prior to construction.
Equivalent At-Rest Earth Pressure = 65 psf
65 psf Equivalent Active Earth Pressure = 45 psf
Equivalent Passive Earth Pressure = 375 psf
Bulk Density (Wet) = 125 pcf
Angle of Internal Friction (Gate soils) = 30 degrees
Cohesion (Gate soils) = 0
Surcharge Loads = 250 psf
Percentage of Surcharge Loads to be applied horizontally to wall = 50%
III. Handrails: Reference IBC 1607.7
IV. Stairs: Live Load is 100 PSF or 300 pounds on a 4 square inch area, whichever produces the greatest stress



NOTES:

1. NOTATION:
a: 3'-0"

2. IF A PARAPET EQUAL TO OR HIGHER THAN 3'-0" IS PROVIDED AROUND THE PERIMETER OF THE ROOF WITH 7", THE NEGATIVE VALUES OF GCPi IN ZONE 3 SHALL BE TREATED AS THOSE FOR ZONE 2. THE POSITIVE VALUES OF GCPi IN ZONE 2 AND 4 SHALL BE TREATED AS THOSE FOR WALL ZONES 4 AND 5 RESPECTIVELY.

3. DIMENSIONS CALCULATED FROM THIS DIAGRAM ARE CODE REQUIRED MINIMUMS. HIGHER MINIMUM DIMENSIONS MAY BE REQUIRED AS NOTED ON THE CONTRACT DOCUMENTS.

4. DIAGRAMS ARE BASED ON ASCE/SEI 7-05 FIGURE 6-11B AND 6-11C FOR ENCLOSED/PARTIALLY ENCLOSED BUILDINGS WITH h < 60'-0".

FIGURE A. COMPONENTS AND CLADDING WIND ZONE DIAGRAM

CONCRETE EXPOSURE CATEGORIES				
ITEM	EXPOSURE CATEGORY AND CLASS - SEE NOTE 1.			
	F	S	P	C
INTERIOR CONCRETE, U.N.O.	FO	SO	PO	CO
ALL FOOTINGS	FO	SO	PO	CO
INTERIOR PIERS	FO	SO	PO	CO
EXTERIOR WALLS OR EXTERIOR PIERS	F2	SO	PO	C1
INTERIOR BASEMENT/RETAINING WALLS	F2	SO	P1	C1
EXTERIOR CONCRETE SLABS, TOPPING SLABS, RAMPS, STAIRS, AND STOOPS	F3	SO	P1	C2
NOTES:				
1. EXPOSURE CATEGORIES AND CLASSES REFERENCE TABLE 318-08 TABLE 4.2.1				

ABBREVIATION LIST

+ AND
@ AT
Ø DIAMETER
E PLATE
C CENTER LINE
A ABOVE, ANCHOR
A.B. ANCHOR BOLT
ADD'L ADDITIONAL
ARCH ARCHITECT, ARCHITECTURAL
B BELOW
B.E. BOTH ENDS
B.O. BOTTOM OF
B.S. BOTH SIDES
B/ BOTTOM OF
BLDG BUILDING
BM BEAM
BOTT BOTTOM OF
BP BASEPLATE, BEARING PLATE
BRG BEARING
C.E. CONTINUOUS END
C.I.P. CAST IN PLACE
CANT CANTILEVER
CJ CONSTRUCTION JOINT, CONTROL JOINT
CLR CLEAR
CMU CONCRETE MASONRY UNIT
COL COLUMN
CONC CONCRETE
CONN, CONNX CONNECTION
CONT CONTINUOUS
CVR COVER
DL DEAD LOAD
DN DOWN
E.E. EACH END
E.F. EACH FACE
E.O.D. EDGE OF DECK
E.O.S. EDGE OF SLAB, EDGE OF STEEL
E.S. EACH SIDE
EL, ELEV ELEVATION, ELEVATOR
EMBED EMBEDMENT
EQ EQUAL, EQUIVALENT
EX, EXIST EXISTING
EXT EXTERIOR
FNDN FOUNDATION
FTG FOOTING
GA GAUGE, GAGE
GALV GALVANIZED
GG GENERAL CONTRACTOR
I.F. INSIDE FACE
JT JOINT
KLF KIPS PER LINEAL FOOT
KSF KIPS PER SQUARE FOOT
KSI KIPS PER SQUARE INCH
L ANGLE
L.E. LEFT END
LL LIVE LOAD
LLS POUNDS
LL DOUBLE ANGLE
LLH LONG LEG HORIZONTAL
LLV LONG LEG VERTICAL
LSH LONG SIDE HORIZONTAL
LSV LONG SIDE VERTICAL
LWC LIGHT WEIGHT CONCRETE
M.E.P. MECHANICAL, ELECTRICAL, PLUMBING
M.O. MASONRY OPENING
M/E/C/L MECHANICAL, ELECTRICAL, CEILING, LIGHTING
MAX MAXIMUM
MECH MECHANICAL
MIN MINIMUM
MISC MISCELLANEOUS
MPH MILES PER HOUR
N.T.S. NOT TO SCALE
NO NUMBER
NWC NORMAL WEIGHT CONCRETE
O.C. ON CENTER

O.F. OUTSIDE FACE
OPNG OPENING
OPP OPPOSITE
PLF POUNDS PER LINEAL FOOT
PSF POUNDS PER SQUARE FOOT
PSI POUNDS PER SQUARE INCH
R.E. RIGHT END
REF REFERENCE
REINF REINFORCEMENT
REQ'D REQUIRED
REQMTS REQUIREMENTS
RET RETAINING
REV REVISION
S.O.G. SLAB ON GRADE
SM SIMILAR
SLH SHORT LEG HORIZONTAL
SLV SHORT LEG VERTICAL
SP SPACING
STD STANDARD
STL STEEL
STRUCT STRUCTURAL
T & B TOP AND BOTTOM
T.O. TOP OF
T/ TOP OF
TYP TYPICAL
UNO UNLESS NOTED OTHERWISE
V.I.F. VERIFY IN FIELD
VT VERTICAL TRUSS
W.W.R. WELDED WIRE REINFORCEMENT
W/ WITH
W/O WITHOUT
WF WIDE FLANGE
WP WORK POINT

		CONSULTANTS:				ARCHITECTS/ENGINEERS:		Drawing Title GENERAL NOTES		Project Title BUILDING 9 - SECOND FLOOR RENOVATION		Project Number 542-13-105		Office of Construction and Facilities Management			
								Approved: Project Director		Location: 1400 Blackhorse Hill Road Coatesville, PA 19320		Building Number 9					
										Date 05 / 12 / 14		Checked SLS		Drawing Number S002		Department of Veterans Affairs	
												Drawn MTH		Dwg. 22 of 125			
Revisions:		Date															

**FULLY SPRINKLERED
BID DOCUMENTS**