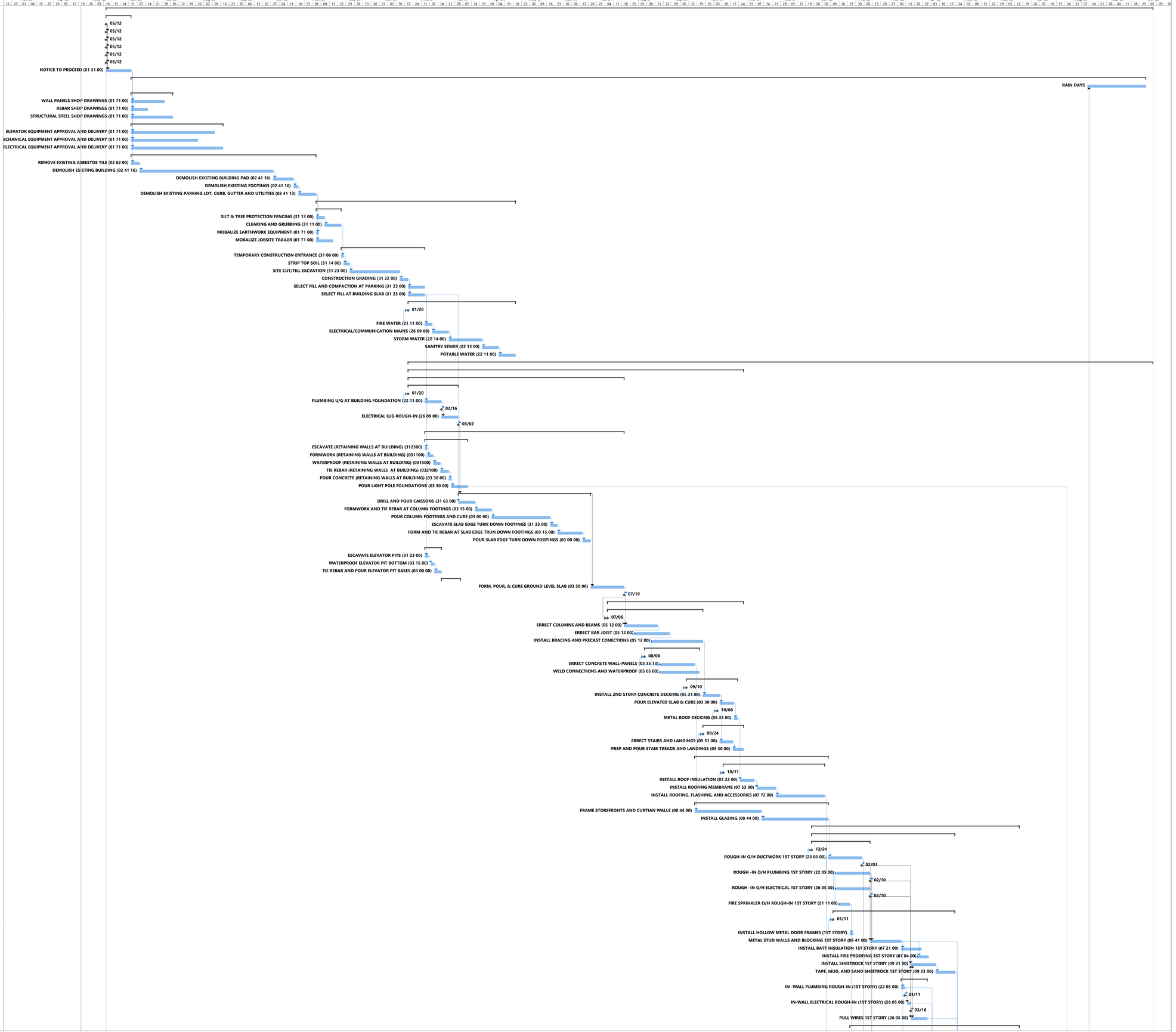
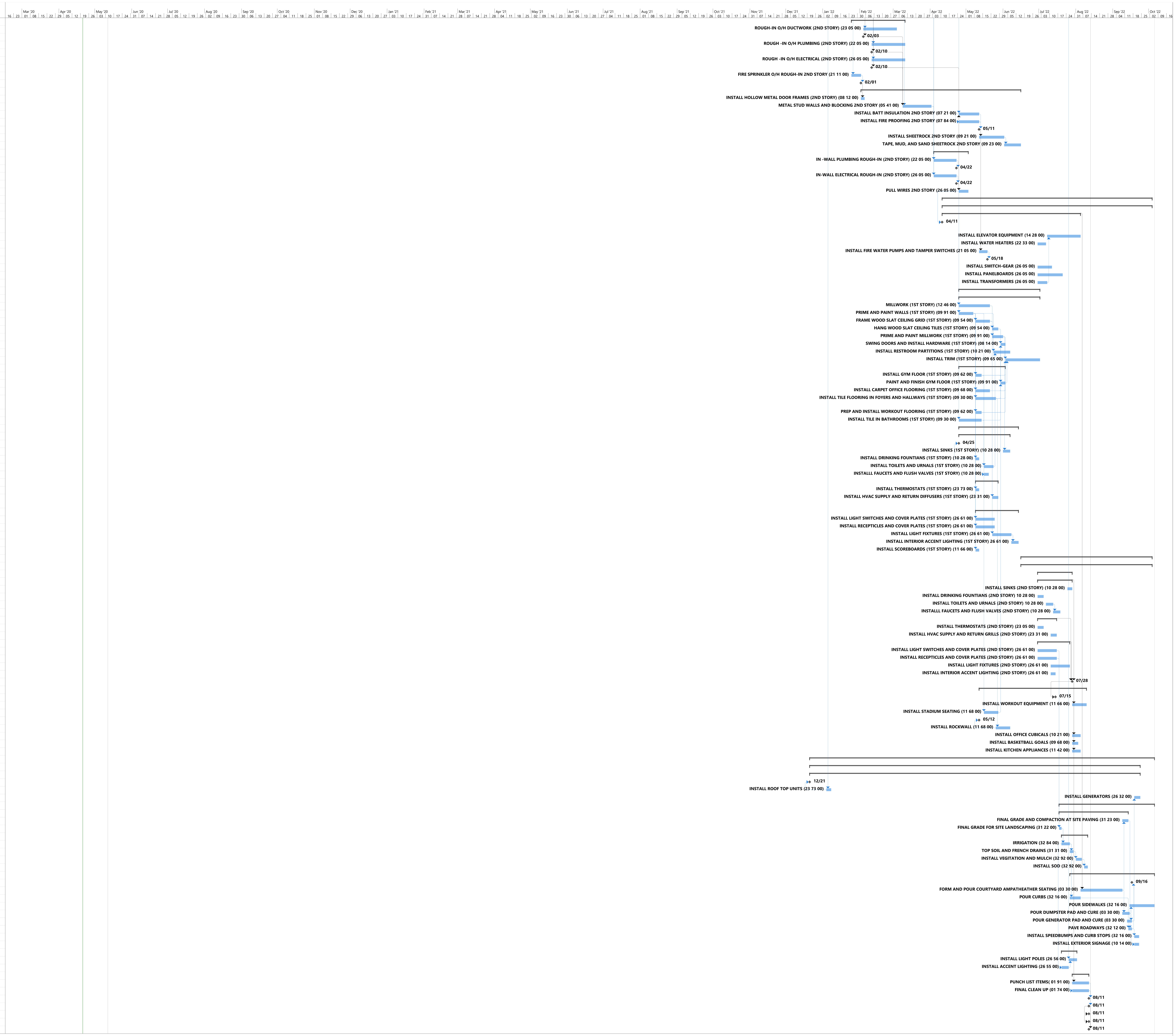
ID	WBS	Task Mode	Task Name	Duration	Start	Finish
1	**1**		**MCCARTHY (NEW CONSTRUCTION)**	**627 days**	**Tue 05/12/20**	**Wed 10/05/22**
2	**1.1**		**GENERAL REQUIREMENTS**	**15 days**	**Tue 05/12/20**	**Mon 06/01/20**
3	1.1.1		CONTRACT AWARD DATE (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
4	1.1.2		BONDING APPROVAL (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
5	1.1.3		FINANCIAL DATA APPROVAL (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
6	1.1.4		DEVELOP SAFETY PLAN & APPROVAL (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
7	1.1.5		SWPPP PLAN (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
8	1.1.6		PERMITTING (01 31 00)	0 days	Tue 05/12/20	Tue 05/12/20
9	1.1.7		NOTICE TO PROCEED (01 31 00)	15 days	Tue 05/12/20	Mon 06/01/20
10	**1.2**		**CRITICAL SUBMITTALS, LEAD TIMES, AND RAIN DELAYS**	**608 days**	**Tue 06/02/20**	**Thu 09/29/22**
11	1.2.1		RAIN DAYS	35 days	Fri 08/12/22	Thu 09/29/22
12	**1.2.2**		**CRITICAL SHOP DRAWINGS**	**25 days**	**Tue 06/02/20**	**Mon 07/06/20**
13	1.2.2.1		WALL PANELS SHOP DRAWINGS (01 71 00)	20 days	Tue 06/02/20	Mon 06/29/20
14	1.2.2.2		REBAR SHOP DRAWINGS (01 71 00)	10 days	Tue 06/02/20	Mon 06/15/20
15	1.2.2.3		STRUCTURAL STEEL SHOP DRAWINGS (01 71 00)	25 days	Tue 06/02/20	Mon 07/06/20
16	**1.2.3**		**CRITICAL LEAD TIMES**	**55 days**	**Tue 06/02/20**	**Mon 08/17/20**
17	1.2.3.1		ELEVATOR EQUIPMENT APPROVAL AND DELIVERY (01 71 00)	50 days	Tue 06/02/20	Mon 08/10/20
18	1.2.3.2		MECHANICAL EQUIPMENT APPROVAL AND DELIVERY (01 71 00)	40 days	Tue 06/02/20	Mon 07/27/20
19	1.2.3.3		ELECTRICAL EQUIPMENT APPROVAL AND DELIVERY (01 71 00)	55 days	Tue 06/02/20	Mon 08/17/20
20	**1.3**		**DEMO**	**111 days**	**Tue 06/02/20**	**Tue 11/03/20**
21	1.3.1		REMOVE EXISTING ASBESTOS TILE (02 82 00)	5 days	Tue 06/02/20	Mon 06/08/20
22	1.3.2		DEMOLISH ESISTING BUILDING (02 41 16)	80 days	Tue 06/09/20	Mon 09/28/20
23	1.3.3		DEMOLISH EXISTING BUILDING PAD (02 41 16)	13 days	Tue 09/29/20	Thu 10/15/20
24	1.3.4		DEMOLISH EXISTING FOOTINGS (02 41 16)	2 days	Fri 10/16/20	Mon 10/19/20
25	1.3.5		DEMOLISH EXISTING PARKING LOT, CURB, GUTTER AND UTILITIES (02 41 13)	11 days	Tue 10/20/20	Tue 11/03/20
26	**1.4**		**SITE-WORK**	**119 days**	**Wed 11/04/20**	**Mon 04/19/21**
27	**1.4.1**		**PRELIMINARY**	**15 days**	**Wed 11/04/20**	**Tue 11/24/20**
28	1.4.1.1		SILT & TREE PROTECTION FENCING (31 13 00)	5 days	Wed 11/04/20	Tue 11/10/20
29	1.4.1.2		CLEARING AND GRUBBING (31 11 00)	10 days	Wed 11/11/20	Tue 11/24/20
30	1.4.1.3		MOBALIZE EARTHWORK EQUIPMENT (01 71 00)	2 days	Wed 11/04/20	Thu 11/05/20
31	1.4.1.4		MOBALIZE JOBSITE TRAILER (01 71 00)	10 days	Wed 11/04/20	Tue 11/17/20
32	**1.4.2**		**SITE DIRTWORK**	**50 days**	**Wed 11/25/20**	**Tue 02/02/21**
33	1.4.2.1		TEMPORARY CONSTRUCTION ENTRANCE (31 06 00)	2 days	Wed 11/25/20	Thu 11/26/20
34	1.4.2.2		STRIP TOP SOIL (31 14 00)	3 days	Fri 11/27/20	Tue 12/01/20
35	1.4.2.3		SITE CUT/FILL EXCVATION (31 23 00)	30 days	Wed 12/02/20	Tue 01/12/21
36	1.4.2.4		CONSTRUCTION GRADING (31 22 00)	5 days	Wed 01/13/21	Tue 01/19/21
37	1.4.2.5		SELECT FILL AND COMPACTION AT PARKING (31 23 00)	10 days	Wed 01/20/21	Tue 02/02/21
38	1.4.2.6		SELECT FILL AT BUILDING SLAB (31 23 00)	10 days	Wed 01/20/21	Tue 02/02/21
39	**1.4.3**		**SITE UTILITIES**	**64 days**	**Wed 01/20/21**	**Mon 04/19/21**
40	1.4.3.1		STORM DRAINAGE COMPONETS, SANITARY SEWER, POTABLE WATER, ELECTRICAL CONDUIT, AND FIRE WATER MATERIALS ON SITE	0 days	Wed 01/20/21	Wed 01/20/21
41	1.4.3.2		FIRE WATER (21 11 00)	4 days	Wed 02/03/21	Mon 02/08/21
42	1.4.3.3		ELECTRICAL/COMMUNICATION MAINS (26 09 00)	10 days	Tue 02/09/21	Mon 02/22/21
43	1.4.3.4		STORM WATER (22 14 00)	20 days	Tue 02/23/21	Mon 03/22/21
44	1.4.3.5		SANITRY SEWER (22 13 00)	10 days	Tue 03/23/21	Mon 04/05/21
45	1.4.3.6		POTABLE WATER (22 11 00)	10 days	Tue 04/06/21	Mon 04/19/21
46	**1.5**		**BUILDING CONSTRUCTION**	**446 days**	**Wed 01/20/21**	**Wed 10/05/22**
47	**1.5.1**		**BUILDING STRUCTURE**	**201 days**	**Wed 01/20/21**	**Wed 10/27/21**
48	**1.5.1.1**		**FOUNDATIONS**	**129 days**	**Wed 01/20/21**	**Mon 07/19/21**
49	**1.5.1.1.1**		**MEP U/G AT BUILDING FOUNDATION**	**30 days**	**Wed 01/20/21**	**Tue 03/02/21**
50	1.5.1.1.1.1		REBAR AND FORMWORK ON SITE	0 days	Wed 01/20/21	Wed 01/20/21
51	1.5.1.1.1.2		PLUMBING U/G AT BUILDING FOUNDATION (22 11 00)	10 days	Wed 02/03/21	Tue 02/16/21
52	1.5.1.1.1.3		PLUMBING U/G AT BUILDING FOUNDATION INSPECTION (22 11 00)	0 days	Tue 02/16/21	Tue 02/16/21
53	1.5.1.1.1.4		ELECTRICAL U/G ROUGH-IN (26 09 00)	10 days	Wed 02/17/21	Tue 03/02/21
54	1.5.1.1.1.5		ELECTRICAL U/G AT BUILDING FOUNDATION INSPECTION (26 09 00)	0 days	Tue 03/02/21	Tue 03/02/21
55	**1.5.1.1.2**		**SLABS, FOUNDATIONS, AND PITS**	**119 days**	**Wed 02/03/21**	**Mon 07/19/21**
56	**1.5.1.1.2.1**		**RETAINING WALLS AT BUILDING**	**26 days**	**Wed 02/03/21**	**Wed 03/10/21**
57	1.5.1.1.2.1.1		ESCAVATE (RETAINING WALLS AT BUILDING) (312300)	2 days	Wed 02/03/21	Thu 02/04/21
58	1.5.1.1.2.1.2		FORMWORK (RETAINING WALLS AT BUILDING) (031100)	3 days	Fri 02/05/21	Tue 02/09/21
59	1.5.1.1.2.1.3		WATERPROOF (RETAINING WALLS AT BUILDING) (031500)	4 days	Wed 02/10/21	Mon 02/15/21
60	1.5.1.1.2.1.4		TIE REBAR (RETAINING WALLS AT BUILDING) (032100)	5 days	Tue 02/16/21	Mon 02/22/21
61	1.5.1.1.2.1.5		POUR CONCRETE (RETAINING WALLS AT BUILDING) (03 30 00)	2 days	Tue 02/23/21	Wed 02/24/21
62	1.5.1.1.2.1.6		POUR LIGHT POLE FOUNDATIONS (03 30 00)	10 days	Thu 02/25/21	Wed 03/10/21
63	**1.5.1.1.2.2**		**FOUNDATIONS (03 30 00)**	**79 days**	**Wed 03/03/21**	**Mon 06/21/21**
64	1.5.1.1.2.2.1		DRILL AND POUR CAISSONS (31 63 00)	10 days	Wed 03/03/21	Tue 03/16/21
65	1.5.1.1.2.2.2		FORMWORK AND TIE REBAR AT COLUMN FOOTINGS (03 15 00)	10 days	Wed 03/17/21	Tue 03/30/21
66	1.5.1.1.2.2.3		POUR COLUMN FOOTINGS AND CURE (03 00 00)	35 days	Wed 03/31/21	Tue 05/18/21
67	1.5.1.1.2.2.4		ESCAVATE SLAB EDGE TURN DOWN FOOTINGS (31 23 00)	4 days	Wed 05/19/21	Mon 05/24/21
68	1.5.1.1.2.2.5		FORM AND TIE REBAR AT SLAB EDGE TRUN DOWN FOOTINGS (03 15 00)	15 days	Tue 05/25/21	Mon 06/14/21
69	1.5.1.1.2.2.6		POUR SLAB EDGE TURN DOWN FOOTINGS (03 00 00)	5 days	Tue 06/15/21	Mon 06/21/21
70	**1.5.1.1.2.3**		**PIT BOTTOMS (03 30 00)**	**10 days**	**Wed 02/03/21**	**Tue 02/16/21**
71	1.5.1.1.2.3.1		ESCAVATE ELEVATOR PITS (31 23 00)	3 days	Wed 02/03/21	Fri 02/05/21
72	1.5.1.1.2.3.2		WATERPROOF ELEVATOR PIT BOTTOM (03 15 00)	3 days	Mon 02/08/21	Wed 02/10/21
73	1.5.1.1.2.3.3		TIE REBAR AND POUR ELEVATOR PIT BASES (03 00 00)	4 days	Thu 02/11/21	Tue 02/16/21
74	**1.5.1.1.2.4**		**PIT WALLS (03 30 00)**	**12 days**	**Wed 02/17/21**	**Thu 03/04/21**
78	1.5.1.1.2.5		FORM, POUR, & CURE GROUND LEVEL SLAB (03 30 00)	20 days	Tue 06/22/21	Mon 07/19/21
79	1.5.1.2		FOUNDATION AND U/G UTILITIES COMPLETE (03 30 00)	0 days	Mon 07/19/21	Mon 07/19/21
80	**1.5.1.3**		**BUILDING ERRECTION**	**82 days**	**Tue 07/06/21**	**Wed 10/27/21**
81	**1.5.1.3.1**		**STRUCTURAL STEEL**	**58 days**	**Tue 07/06/21**	**Thu 09/23/21**
82	1.5.1.3.1.1		STRUCTURAL STEEL ON SITE	0 days	Tue 07/06/21	Tue 07/06/21
83	1.5.1.3.1.2		ERRECT COLUMNS AND BEAMS (05 12 00)	20 days	Tue 07/20/21	Mon 08/16/21
84	1.5.1.3.1.3		ERRECT BAR JOIST (05 12 00)	20 days	Fri 07/30/21	Thu 08/26/21
85	1.5.1.3.1.4		INSTALL BRACING AND PRECAST CONECTIONS (05 12 00)	30 days	Fri 08/13/21	Thu 09/23/21
86	**1.5.1.3.2**		**Precast Wall Panels**	**32 days**	**Fri 08/06/21**	**Mon 09/20/21**
87	1.5.1.3.2.1		CONCRETE WALL PANELS ON SITE	0 days	Fri 08/06/21	Fri 08/06/21
88	1.5.1.3.2.2		ERRECT CONCRETE WALL-PANELS (03 35 13)	20 days	Fri 08/20/21	Thu 09/16/21
89	1.5.1.3.2.3		WELD CONNECTIONS AND WATERPROOF (05 05 00)	22 days	Fri 08/20/21	Mon 09/20/21
90	**1.5.1.3.3**		**DECKING**	**31 days**	**Fri 09/10/21**	**Fri 10/22/21**
91	1.5.1.3.3.1		CONCRETE DECKING ON SITE	0 days	Fri 09/10/21	Fri 09/10/21
92	1.5.1.3.3.2		INSTALL 2ND STORY CONCRETE DECKING (05 31 00)	10 days	Fri 09/24/21	Thu 10/07/21
93	1.5.1.3.3.3		POUR ELEVATED SLAB & CURE (03 30 00)	8 days	Fri 10/08/21	Tue 10/19/21
94	1.5.1.3.3.4		METAL ROOF DECKING ON SITE	0 days	Wed 10/06/21	Wed 10/06/21
95	1.5.1.3.3.5		METAL ROOF DECKING (05 31 00)	3 days	Wed 10/20/21	Fri 10/22/21
96	**1.5.1.3.4**		**STAIRS**	**24 days**	**Fri 09/24/21**	**Wed 10/27/21**
97	1.5.1.3.4.1		STAIRS ON SITE	0 days	Fri 09/24/21	Fri 09/24/21
98	1.5.1.3.4.2		ERRECT STAIRS AND LANDINGS (05 51 00)	7 days	Fri 10/08/21	Mon 10/18/21
99	1.5.1.3.4.3		PREP AND POUR STAIR TREADS AND LANDINGS (03 30 00)	7 days	Tue 10/19/21	Wed 10/27/21
100	**1.5.2**		**BUILDING DRY-IN**	**80 days**	**Fri 09/17/21**	**Thu 01/06/22**
101	**1.5.2.1**		**ROOF**	**61 days**	**Mon 10/11/21**	**Mon 01/03/22**
102	1.5.2.1.1		ROOF MATERIALS ON SITE (INSULATION,MEMBRANE,FLASHING)	0 days	Mon 10/11/21	Mon 10/11/21
103	1.5.2.1.2		INSTALL ROOF INSULATION (07 22 00)	10 days	Mon 10/25/21	Fri 11/05/21
104	1.5.2.1.3		INSTALL ROOFING MEMBRANE (07 53 00)	12 days	Mon 11/08/21	Tue 11/23/21
105	1.5.2.1.4		INSTALL ROOFING, FLASHING, AND ACCESSORIES (07 72 00)	29 days	Wed 11/24/21	Mon 01/03/22
106	**1.5.2.2**		**GLAZING**	**80 days**	**Fri 09/17/21**	**Thu 01/06/22**
107	1.5.2.2.1		FRAME STOREFRONTS AND CURTIAN WALLS (08 44 00)	40 days	Fri 09/17/21	Thu 11/11/21
108	1.5.2.2.2		INSTALL GLAZING (08 44 00)	40 days	Fri 11/12/21	Thu 01/06/22
109	**1.5.3**		**BUILDING INTERIOR**	**124 days**	**Fri 12/24/21**	**Wed 06/15/22**
110	**1.5.3.1**		**FIRST STORY**	**86 days**	**Fri 12/24/21**	**Fri 04/22/22**
111	**1.5.3.1.1**		**1ST STORY O/H MEP ROUGH IN**	**35 days**	**Fri 12/24/21**	**Thu 02/10/22**
112	1.5.3.1.1.1		DUCTWORK, AND PLUMBING, ELECTRICAL CONNEX ON SITE	0 days	Fri 12/24/21	Fri 12/24/21
113	1.5.3.1.1.2		ROUGH-IN O/H DUCTWORK 1ST STORY (23 05 00)	20 days	Fri 01/07/22	Thu 02/03/22
114	1.5.3.1.1.3		O/H MECHANICAL INSPECTION 1ST STORY (23 05 00)	0 days	Thu 02/03/22	Thu 02/03/22
115	1.5.3.1.1.4		ROUGH -IN O/H PLUMBING 1ST STORY (22 05 00)	20 days	Fri 01/14/22	Thu 02/10/22
116	1.5.3.1.1.5		O/H PLUMBING INSPECTION 1ST STORY (22 05 00)	0 days	Thu 02/10/22	Thu 02/10/22
117	1.5.3.1.1.6		ROUGH -IN O/H ELECTRICAL 1ST STORY (26 05 00)	20 days	Fri 01/14/22	Thu 02/10/22
118	1.5.3.1.1.7		O/H ELECTRICAL INSPECTION 1ST STORY (26 05 00)	0 days	Thu 02/10/22	Thu 02/10/22
119	1.5.3.1.1.8		FIRE SPRINKLER O/H ROUGH-IN 1ST STORY (21 11 00)	6 days	Mon 01/17/22	Mon 01/24/22
120	**1.5.3.1.2**		**STUD PARTITIONS 1ST STORY**	**74 days**	**Tue 01/11/22**	**Fri 04/22/22**
121	1.5.3.1.2.1		FRAMING CONTRACTOR TRAILER, METAL STUDS, HOLLOW METAL DOOR FRAMES AND SHEETROCK ON SITE	0 days	Tue 01/11/22	Tue 01/11/22
122	1.5.3.1.2.2		INSTALL HOLLOW METAL DOOR FRAMES (1ST STORY)	3 days	Tue 01/25/22	Thu 01/27/22
123	1.5.3.1.2.3		METAL STUD WALLS AND BLOCKING 1ST STORY (05 41 00)	18 days	Fri 02/11/22	Tue 03/08/22
124	1.5.3.1.2.4		INSTALL BATT INSULATION 1ST STORY (07 21 00)	13 days	Wed 03/09/22	Fri 03/25/22
125	1.5.3.1.2.5		INSTALL FIRE PROOFING 1ST STORY (07 84 00)	6 days	Thu 03/24/22	Thu 03/31/22
126	1.5.3.1.2.6		INSTALL SHEETROCK 1ST STORY (09 21 00)	15 days	Thu 03/17/22	Wed 04/06/22
127	1.5.3.1.2.7		TAPE, MUD, AND SAND SHEETROCK 1ST STORY (09 23 00)	12 days	Thu 04/07/22	Fri 04/22/22
128	**1.5.3.1.3**		**1ST STORY IN WALL ROUGH IN**	**16 days**	**Wed 03/09/22**	**Wed 03/30/22**
129	1.5.3.1.3.1		IN -WALL PLUMBING ROUGH-IN (1ST STORY) (22 05 00)	3 days	Wed 03/09/22	Fri 03/11/22
130	1.5.3.1.3.2		IN -WALL PLUMBING INSPECTION (1ST STORY) (22 05 00)	0 days	Fri 03/11/22	Fri 03/11/22
131	1.5.3.1.3.3		IN-WALL ELECTRICAL ROUGH-IN (1ST STORY) (26 05 00)	3 days	Mon 03/14/22	Wed 03/16/22
132	1.5.3.1.3.4		IN-WALL ELECTRICAL INSPECTION (1ST STORY) (26 05 00)	0 days	Wed 03/16/22	Wed 03/16/22
133	1.5.3.1.3.5		PULL WIRES 1ST STORY (26 05 00)	10 days	Thu 03/17/22	Wed 03/30/22
134	**1.5.3.2**		**SECOND STORY**	**102 days**	**Tue 01/25/22**	**Wed 06/15/22**



Project: MCCARTHY NEW CON
Date: Tue 04/21/20

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

ID	WBS	Task Mode	Task Name	Duration	Start	Finish
135	**1.5.3.2.1**		**2ND STORY O/H MEP ROUGH-IN**	**33 days**	**Tue 01/25/22**	**Thu 03/10/22**
136	1.5.3.2.1.1		ROUGH-IN O/H DUCTWORK (2ND STORY) (23 05 00)	20 days	Fri 02/04/22	Thu 03/03/22
137	1.5.3.2.1.2		O/H MECHANICAL INSPECTION (2ND STORY) (23 05 00)	0 days	Thu 02/03/22	Thu 02/03/22
138	1.5.3.2.1.3		ROUGH -IN O/H PLUMBING (2ND STORY) (22 05 00)	20 days	Fri 02/11/22	Thu 03/10/22
139	1.5.3.2.1.4		O/H PLUMBING INSPECTION (2ND STORY) (22 05 00)	0 days	Thu 02/10/22	Thu 02/10/22
140	1.5.3.2.1.5		ROUGH -IN O/H ELECTRICAL (2ND STORY) (26 05 00)	20 days	Fri 02/11/22	Thu 03/10/22
141	1.5.3.2.1.6		O/H ELECTRICAL INSPECTION (2ND STORY) (26 05 00)	0 days	Thu 02/10/22	Thu 02/10/22
142	1.5.3.2.1.7		FIRE SPRINKLER O/H ROUGH-IN 2ND STORY (21 11 00)	6 days	Tue 01/25/22	Tue 02/01/22
143	1.5.3.2.1.8		FIRE SPRINKLER TESTING/ INSPECTION 2ND STORY (21 05 00)	0 days	Tue 02/01/22	Tue 02/01/22
144	**1.5.3.2.2**		**STUD PARTITIONS 2ND STORY**	**96 days**	**Wed 02/02/22**	**Wed 06/15/22**
145	1.5.3.2.2.1		INSTALL HOLLOW METAL DOOR FRAMES (2ND STORY) (08 12 00)	3 days	Wed 02/02/22	Fri 02/04/22
146	1.5.3.2.2.2		METAL STUD WALLS AND BLOCKING 2ND STORY (05 41 00)	18 days	Wed 03/09/22	Fri 04/01/22
147	1.5.3.2.2.3		INSTALL BATT INSULATION 2ND STORY (07 21 00)	13 days	Mon 04/25/22	Wed 05/11/22
148	1.5.3.2.2.4		INSTALL FIRE PROOFING 2ND STORY (07 84 00)	13 days	Mon 04/25/22	Wed 05/11/22
149	1.5.3.2.2.5		FIRE MARSHALL INSPECTION	0 days	Wed 05/11/22	Wed 05/11/22
150	1.5.3.2.2.6		INSTALL SHEETROCK 2ND STORY (09 21 00)	15 days	Thu 05/12/22	Wed 06/01/22
151	1.5.3.2.2.7		TAPE, MUD, AND SAND SHEETROCK 2ND STORY (09 23 00)	10 days	Thu 06/02/22	Wed 06/15/22
152	**1.5.3.2.3**		**2ND STORY IN WALL ROUGH-IN**	**21 days**	**Mon 04/04/22**	**Mon 05/02/22**
153	1.5.3.2.3.1		IN -WALL PLUMBING ROUGH-IN (2ND STORY) (22 05 00)	15 days	Mon 04/04/22	Fri 04/22/22
154	1.5.3.2.3.2		IN -WALL PLUMBING INSPECTION (2ND STORY) (22 05 00)	0 days	Fri 04/22/22	Fri 04/22/22
155	1.5.3.2.3.3		IN-WALL ELECTRICAL ROUGH-IN (2ND STORY) (26 05 00)	15 days	Mon 04/04/22	Fri 04/22/22
156	1.5.3.2.3.4		IN-WALL ELECTRICAL INSPECTION (2ND STORY) (26 05 00)	0 days	Fri 04/22/22	Fri 04/22/22
157	1.5.3.2.3.5		PULL WIRES 2ND STORY (26 05 00)	6 days	Mon 04/25/22	Mon 05/02/22
158	**1.5.4**		**FINISH-OUT**	**126 days**	**Mon 04/11/22**	**Mon 10/03/22**
159	**1.5.4.1**		**INTERIOR FINISHES**	**126 days**	**Mon 04/11/22**	**Mon 10/03/22**
160	**1.5.4.1.1**		**INTERIOR EQUIPMENT (11 66 00)**	**84 days**	**Mon 04/11/22**	**Thu 08/04/22**
161	1.5.4.1.1.1		ELEVATOR EQUIPMENT, WATER HEATERS, FIRE PUMPS, SWITCH GEAR, AND PANELBOARDS ON SITE	0 days	Mon 04/11/22	Mon 04/11/22
162	1.5.4.1.1.2		INSTALL ELEVATOR EQUIPMENT (14 28 00)	20 days	Fri 07/08/22	Thu 08/04/22
163	1.5.4.1.1.3		INSTALL WATER HEATERS (22 33 00)	5 days	Thu 06/30/22	Wed 07/06/22
164	1.5.4.1.1.4		INSTALL FIRE WATER PUMPS AND TAMPER SWITCHES (21 05 00)	5 days	Thu 05/12/22	Wed 05/18/22
165	1.5.4.1.1.5		FIRE MARSHALL INSPECTION (FIRE SUPRESSION SYSTEM) 21 05 00)	0 days	Wed 05/18/22	Wed 05/18/22
166	1.5.4.1.1.6		INSTALL SWITCH-GEAR (26 05 00)	8 days	Thu 06/30/22	Mon 07/11/22
167	1.5.4.1.1.7		INSTALL PANELBOARDS (26 05 00)	15 days	Thu 06/30/22	Wed 07/20/22
168	1.5.4.1.1.8		INSTALL TRANSFORMERS (26 05 00)	6 days	Thu 06/30/22	Thu 07/07/22
169	**1.5.4.1.2**		**1ST STORY FINISHES**	**50 days**	**Mon 04/25/22**	**Fri 07/01/22**
170	**1.5.4.1.2.1**		**1ST STORY CEILING, WALL, AND FLOOR FINISHES**	**50 days**	**Mon 04/25/22**	**Fri 07/01/22**
171	1.5.4.1.2.1.1		MILLWORK (1ST STORY) (12 46 00)	20 days	Mon 04/25/22	Fri 05/20/22
172	1.5.4.1.2.1.2		PRIME AND PAINT WALLS (1ST STORY) (09 91 00)	10 days	Mon 04/25/22	Fri 05/06/22
173	1.5.4.1.2.1.3		FRAME WOOD SLAT CEILING GRID (1ST STORY) (09 54 00)	10 days	Mon 05/09/22	Fri 05/20/22
174	1.5.4.1.2.1.4		HANG WOOD SLAT CEILING TILES (1ST STORY) (09 54 00)	5 days	Mon 05/23/22	Fri 05/27/22
175	1.5.4.1.2.1.5		PRIME AND PAINT MILLWORK (1ST STORY) (09 91 00)	7 days	Mon 05/23/22	Tue 05/31/22
176	1.5.4.1.2.1.6		SWING DOORS AND INSTALL HARDWARE (1ST STORY) (08 14 00)	4 days	Mon 05/30/22	Thu 06/02/22
177	1.5.4.1.2.1.7		INSTALL RESTROOM PARTITIONS (1ST STORY) (10 21 00)	10 days	Tue 05/24/22	Mon 06/06/22
178	1.5.4.1.2.1.8		INSTALL TRIM (1ST STORY) (09 65 00)	21 days	Fri 06/03/22	Fri 07/01/22
179	**1.5.4.1.2.1.9**		**1ST STORY FLOORING**	**29 days**	**Mon 04/25/22**	**Thu 06/02/22**
180	1.5.4.1.2.1.9.1		INSTALL GYM FLOOR (1ST STORY) (09 62 00)	5 days	Mon 05/09/22	Fri 05/13/22
181	1.5.4.1.2.1.9.2		PAINT AND FINISH GYM FLOOR (1ST STORY) (09 91 00)	4 days	Mon 05/30/22	Thu 06/02/22
182	1.5.4.1.2.1.9.3		INSTALL CARPET OFFICE FLOORING (1ST STORY) (09 68 00)	10 days	Mon 05/09/22	Fri 05/20/22
183	1.5.4.1.2.1.9.4		INSTALL TILE FLOORING IN FOYERS AND HALLWAYS (1ST STORY) (09 30 00)	13 days	Mon 05/09/22	Wed 05/25/22
184	1.5.4.1.2.1.9.5		PREP AND INSTALL WORKOUT FLOORING (1ST STORY) (09 62 00)	5 days	Mon 05/09/22	Fri 05/13/22
185	1.5.4.1.2.1.9.6		INSTALL TILE IN BATHROOMS (1ST STORY) (09 30 00)	15 days	Mon 04/25/22	Fri 05/13/22
186	**1.5.4.1.2.2**		**1ST STORY MEP FIXTURES AND DEVICES (10 05 00)**	**36 days**	**Mon 04/25/22**	**Mon 06/13/22**
187	**1.5.4.1.2.2.1**		**PLUMBING FIXTURES AND DEVICES (1ST STORY)**	**31 days**	**Mon 04/25/22**	**Mon 06/06/22**
188	1.5.4.1.2.2.1.1		TOILET PARTITIONS, EXCESSORIES, AND DEVICES ARE ON SITE	0 days	Mon 04/25/22	Mon 04/25/22
189	1.5.4.1.2.2.1.2		INSTALL SINKS (1ST STORY) (10 28 00)	4 days	Wed 06/01/22	Mon 06/06/22
190	1.5.4.1.2.2.1.3		INSTALL DRINKING FOUNTIANS (1ST STORY) (10 28 00)	3 days	Mon 05/09/22	Wed 05/11/22
191	1.5.4.1.2.2.1.4		INSTALL TOILETS AND URNALS (1ST STORY) (10 28 00)	6 days	Mon 05/16/22	Mon 05/23/22
192	1.5.4.1.2.2.1.5		INSTALLL FAUCETS AND FLUSH VALVES (1ST STORY) (10 28 00)	4 days	Mon 05/16/22	Thu 05/19/22
193	**1.5.4.1.2.2.2**		**MECHANICAL FIXTURES AND DEVICES (1ST STORY)**	**15 days**	**Mon 05/09/22**	**Fri 05/27/22**
194	1.5.4.1.2.2.2.1		INSTALL THERMOSTATS (1ST STORY) (23 73 00)	3 days	Mon 05/09/22	Wed 05/11/22
195	1.5.4.1.2.2.2.2		INSTALL HVAC SUPPLY AND RETURN DIFFUSERS (1ST STORY) (23 31 00)	5 days	Mon 05/23/22	Fri 05/27/22
196	**1.5.4.1.2.2.3**		**ELECTRICAL FIXTURES AND DEVICES (1ST STORY)**	**26 days**	**Mon 05/09/22**	**Mon 06/13/22**
197	1.5.4.1.2.2.3.1		INSTALL LIGHT SWITCHES AND COVER PLATES (1ST STORY) (26 61 00)	12 days	Mon 05/09/22	Tue 05/24/22
198	1.5.4.1.2.2.3.2		INSTALL RECEPTICLES AND COVER PLATES (1ST STORY) (26 61 00)	12 days	Mon 05/09/22	Tue 05/24/22
199	1.5.4.1.2.2.3.3		INSTALL LIGHT FIXTURES (1ST STORY) (26 61 00)	12 days	Mon 05/23/22	Tue 06/07/22
200	1.5.4.1.2.2.3.4		INSTALL INTERIOR ACCENT LIGHTING (1ST STORY) 26 61 00)	4 days	Wed 06/08/22	Mon 06/13/22
201	1.5.4.1.2.2.3.5		INSTALL SCOREBOARDS (1ST STORY) (11 66 00)	3 days	Mon 05/09/22	Wed 05/11/22
202	**1.5.4.1.3**		**2ND STORY FINISHES**	**78 days**	**Thu 06/16/22**	**Mon 10/03/22**
203	**1.5.4.1.3.1**		**2ND STORY CEILING, WALL, AND FLOOR FINISHES**	**78 days**	**Thu 06/16/22**	**Mon 10/03/22**
217	**1.5.4.1.3.2**		**2ND STORY MEP FIXTURES AND DEVICES (10 05 00)**	**21 days**	**Thu 06/30/22**	**Thu 07/28/22**
218	**1.5.4.1.3.2.1**		**PLUMBING FIXTURES AND DEVICES (2ND STORY)**	**21 days**	**Thu 06/30/22**	**Thu 07/28/22**
219	1.5.4.1.3.2.1.1		INSTALL SINKS (2ND STORY) (10 28 00)	4 days	Mon 07/25/22	Thu 07/28/22
220	1.5.4.1.3.2.1.2		INSTALL DRINKING FOUNTIANS (2ND STORY) 10 28 00)	3 days	Thu 06/30/22	Mon 07/04/22
221	1.5.4.1.3.2.1.3		INSTALL TOILETS AND URNALS (2ND STORY) 10 28 00)	4 days	Thu 07/07/22	Tue 07/12/22
222	1.5.4.1.3.2.1.4		INSTALLL FAUCETS AND FLUSH VALVES (2ND STORY) (10 28 00)	4 days	Wed 07/13/22	Mon 07/18/22
223	**1.5.4.1.3.2.2**		**MECHANICAL FIXTURES AND DEVICES (2ND STORY)**	**12 days**	**Thu 06/30/22**	**Fri 07/15/22**
224	1.5.4.1.3.2.2.1		INSTALL THERMOSTATS (2ND STORY) (23 05 00)	3 days	Thu 06/30/22	Mon 07/04/22
225	1.5.4.1.3.2.2.2		INSTALL HVAC SUPPLY AND RETURN GRILLS (2ND STORY) (23 31 00)	5 days	Mon 07/11/22	Fri 07/15/22
226	**1.5.4.1.3.2.3**		**ELECTRICAL FIXTURES AND DEVICES (2ND STORY)**	**19 days**	**Thu 06/30/22**	**Tue 07/26/22**
227	1.5.4.1.3.2.3.1		INSTALL LIGHT SWITCHES AND COVER PLATES (2ND STORY) (26 61 00)	12 days	Thu 06/30/22	Fri 07/15/22
228	1.5.4.1.3.2.3.2		INSTALL RECEPTICLES AND COVER PLATES (2ND STORY) (26 61 00)	12 days	Thu 06/30/22	Fri 07/15/22
229	1.5.4.1.3.2.3.3		INSTALL LIGHT FIXTURES (2ND STORY) (26 61 00)	12 days	Mon 07/11/22	Tue 07/26/22
230	1.5.4.1.3.2.3.4		INSTALL INTERIOR ACCENT LIGHTING (2ND STORY) (26 61 00)	4 days	Mon 07/11/22	Thu 07/14/22
231	1.5.4.1.3.2.4		2ND STORY INTERIOR FINISHES COMPLETE	0 days	Thu 07/28/22	Thu 07/28/22
232	**1.5.4.1.4**		**FURNISHINGS**	**64 days**	**Thu 05/12/22**	**Tue 08/09/22**
233	1.5.4.1.4.1		FURNISHINGS ON SITE	0 days	Fri 07/15/22	Fri 07/15/22
234	1.5.4.1.4.2		INSTALL WORKOUT EQUIPMENT (11 66 00)	8 days	Fri 07/29/22	Tue 08/09/22
235	1.5.4.1.4.3		INSTALL STADIUM SEATING (11 68 00)	10 days	Mon 05/16/22	Fri 05/27/22
236	1.5.4.1.4.4		ROCKWALL ON SITE	0 days	Thu 05/12/22	Thu 05/12/22
237	1.5.4.1.4.5		INSTALL ROCKWALL (11 68 00)	8 days	Thu 05/26/22	Mon 06/06/22
238	1.5.4.1.4.6		INSTALL OFFICE CUBICALS (10 21 00)	5 days	Fri 07/29/22	Thu 08/04/22
239	1.5.4.1.4.7		INSTALL BASKETBALL GOALS (09 68 00)	3 days	Fri 07/29/22	Tue 08/02/22
240	1.5.4.1.4.8		INSTALL KITCHEN APPLIANCES (11 42 00)	5 days	Fri 07/29/22	Thu 08/04/22
241	**1.5.5**		**EXTERIOR FINISHES**	**207 days**	**Tue 12/21/21**	**Wed 10/05/22**
242	**1.5.5.1**		**MEP FINISHES (EXTERIOR)**	**199 days**	**Tue 12/21/21**	**Fri 09/23/22**
243	**1.5.5.1.1**		**EXTERIOR EQUIPMENT (11 66 00)**	**199 days**	**Tue 12/21/21**	**Fri 09/23/22**
244	1.5.5.1.1.1		GENERATORS AND RTU'S ON SITE	0 days	Tue 12/21/21	Tue 12/21/21
245	1.5.5.1.1.2		INSTALL ROOF TOP UNITS (23 73 00)	4 days	Tue 01/04/22	Fri 01/07/22
246	1.5.5.1.1.3		INSTALL GENERATORS (26 32 00)	5 days	Mon 09/19/22	Fri 09/23/22
247	**1.5.5.2**		**SITE FINISHES**	**58 days**	**Mon 07/18/22**	**Wed 10/05/22**
248	**1.5.5.2.1**		**FINAL SITE GRADING**	**42 days**	**Mon 07/18/22**	**Tue 09/13/22**
249	1.5.5.2.1.1		FINAL GRADE AND COMPACTION AT SITE PAVING (31 23 00)	3 days	Fri 09/09/22	Tue 09/13/22
250	1.5.5.2.1.2		FINAL GRADE FOR SITE LANDSCAPING (31 22 00)	2 days	Mon 07/18/22	Tue 07/19/22
251	**1.5.5.2.2**		**LANDSCAPING**	**16 days**	**Wed 07/20/22**	**Wed 08/10/22**
252	1.5.5.2.2.1		IRRIGATION (32 84 00)	5 days	Wed 07/20/22	Tue 07/26/22
253	1.5.5.2.2.2		TOP SOIL AND FRENCH DRAINS (31 31 00)	3 days	Wed 07/27/22	Fri 07/29/22
254	1.5.5.2.2.3		INSTALL VEGITATION AND MULCH (32 92 00)	5 days	Mon 08/01/22	Fri 08/05/22
255	1.5.5.2.2.4		INSTALL SOD (32 92 00)	3 days	Mon 08/08/22	Wed 08/10/22
256	**1.5.5.2.3**		**SITE CONCRETE AND PAVING**	**51 days**	**Wed 07/27/22**	**Wed 10/05/22**
257	1.5.5.2.3.1		LIGHT POLES, CURB STOPS, SPEEDBUMPS AND EXTERIOR SIGNAGE ON SITE	0 days	Fri 09/16/22	Fri 09/16/22
258	1.5.5.2.3.2		FORM AND POUR COURTYARD AMPATHEATHER SEATING (03 30 00)	25 days	Fri 08/05/22	Thu 09/08/22
259	1.5.5.2.3.3		POUR CURBS (32 16 00)	7 days	Wed 07/27/22	Thu 08/04/22
260	1.5.5.2.3.4		POUR SIDEWALKS (32 16 00)	15 days	Thu 09/15/22	Wed 10/05/22
261	1.5.5.2.3.5		POUR DUMPSTER PAD AND CURE (03 30 00)	4 days	Fri 09/09/22	Wed 09/14/22
262	1.5.5.2.3.6		POUR GENERATOR PAD AND CURE (03 30 00)	4 days	Tue 09/13/22	Fri 09/16/22
263	1.5.5.2.3.7		PAVE ROADWAYS (32 12 00)	3 days	Wed 09/14/22	Fri 09/16/22
264	1.5.5.2.3.8		INSTALL SPEEDBUMPS AND CURB STOPS (32 16 00)	4 days	Mon 09/19/22	Thu 09/22/22
265	1.5.5.2.3.9		INSTALL EXTERIOR SIGNAGE (10 14 00)	4 days	Mon 09/19/22	Thu 09/22/22
266	**1.5.5.2.4**		**SITE LIGHTING**	**9 days**	**Wed 07/20/22**	**Mon 08/01/22**
267	1.5.5.2.4.1		INSTALL LIGHT POLES (26 56 00)	5 days	Tue 07/26/22	Mon 08/01/22
268	1.5.5.2.4.2		INSTALL ACCENT LIGHTING (26 55 00)	4 days	Wed 07/20/22	Mon 07/25/22
269	**1.5.6**		**BUILDING CLOSE OUT**	**10 days**	**Fri 07/29/22**	**Thu 08/11/22**
270	1.5.6.1		PUNCH LIST ITEMS(01 91 00)	10 days	Fri 07/29/22	Thu 08/11/22
271	1.5.6.2		FINAL CLEAN UP (01 74 00)	10 days	Fri 07/29/22	Thu 08/11/22
272	1.5.6.3		REMOVE JOBSITE TRAILER, DUMPSTERS, AND CONEXS ROM SITE	0 days	Thu 08/11/22	Thu 08/11/22
273	1.5.6.4		FINAL INSPECTION (ELECTRICAL) (01 91 00)	0 days	Thu 08/11/22	Thu 08/11/22
274	1.5.6.5		FINAL INSPECTION (PLUMBING) (01 91 00)	0 days	Thu 08/11/22	Thu 08/11/22
275	1.5.6.6		FINAL INSPECTION (FIRE) (01 91 00)	0 days	Thu 08/11/22	Thu 08/11/22
276	1.5.6.7		CIRTIFICATE OF OCCUPANCY	0 days	Thu 08/11/22	Thu 08/11/22



Project: MCCARTHY NEW CON
Date: Tue 04/21/20

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

COST AND LABOR ESTIMATE

ITEM INFORMATION							BARE COST					JOB COST							JOB LABOR	
CSI NUMBER	EXT	NAME	CREW	DAILY OUTPUT	LABOR HOURS	UNIT	MATERIAL	LABOR	EQUIPMENT	TOTAL	TOTAL O & P	QUANTITY	UNIT	TOTAL MATERIAL COST	TOTAL LABOR COST	TOTAL EQUIPMENT COST	TOTAL JOB COST	TOTAL JOB O & P	DAYS PER TASK	LABOR HOURS PER TASK
01 00 00		**GENERAL REQUIREMENTS**																		
01 11 00		**SUMMARY OF WORK**																		
01 11 31.10	0010	ARCHITECTURAL FEES																		
	0060	FOR NEW CONSTRUCTION MINIMUM				PROJECT				4.90%	4.90%	30,427,908.33	PROJECT	$ -	$ -	$0.00	$ 1,490,967.51	$ 1,490,967.51	#DIV/0!	0.00
01 11 31.20	0010	CONSTRUCTION MANAGEMENT FEES																		
	0350	FOR WORK TO $50,000,000 JOB, MAXIMUM				PROJECT				4%	4%	30,427,908.33	PROJECT	$ -	$ -	$0.00	$ 1,217,116.33	$ 1,217,116.33	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	0020	EDUCATIONAL PLANNING CONSULTANT, MINIMUM				PROJECT				0.50%	0.50%	30,427,908.33	PROJECT	$ -	$ -	$0.00	$ 152,139.54	$ 152,139.54	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	0200	ELECTRICAL, MINIMUM				CONTRACT				4.10%	4.10%	2,155,732.50	CONTRAC	$ -	$ -	$0.00	$ 88,385.03	$ 88,385.03	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	0400	ELEVATOR & CONVEYING SYSTEMS, MINIMUM				CONTRACT				2.50%	2.50%	472,920.00	CONTRAC	$ -	$ -	$0.00	$ 11,823.00	$ 11,823.00	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	0600	FOOD SERVICE & KITCHEN EQUIPMENT, MINIMUM				CONTRACT				8%	8%	603,079.00	CONTRAC	$ -	$ -	$0.00	$ 48,246.32	$ 48,246.32	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	0800	LANSCAPING AND SITE DEVELOPMENT, MINIMUM				CONTRACT				2.50%	2.50%	2,769,472.18	CONTRAC	$ -	$ -	$0.00	$ 69,236.80	$ 69,236.80	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	1000	MECHANICAL (PLUMBING & HVAC), MINIMUM				CONTRACT				4.10%	4.10%	3,262,977.50	CONTRAC	$ -	$ -	$0.00	$ 133,782.08	$ 133,782.08	#DIV/0!	0.00
01 11 31.20	0010	ENGINEERING FEES																		
	1200	STRUCTURAL , MINIMUM				PROJECT				1%	1%	30,427,908.33	PROJECT	$ -	$ -	$0.00	$ 304,279.08	$ 304,279.08	#DIV/0!	0.00
01 11 31.75	0010	RENDERINGS																		
	0050	1 BUILDING, AVERAGE				EA	$3,175.00			$3,175.00	$3,500.00	1.00	EA	$ 3,175.00	$ -	$0.00	$ 3,175.00	$ 3,500.00	#DIV/0!	0.00
01 11 31.75	0010	RENDERINGS																		
	2000	ARIEL PERSPECTIVE, COLOR, 1 BUILDING, MINIMUM				EA	$3,075.00			$3,075.00	$3,375.00	1.00	EA	$ 3,075.00	$ -	$0.00	$ 3,075.00	$ 3,375.00	#DIV/0!	0.00
01 41 00		**REGULATORY REQUIREMENTS**																		
01 41 26.10	0010	PERMITS																		
	0020	RULE OF THUMB, MOST CITIES, MINIMUM				JOB				0.50%	0.50%	30,427,908.33	JOB	$ -	$ -	$0.00	$ 152,139.54	$ 152,139.54	#DIV/0!	0.00
01 56 00		**TEMPORARY BARRIERS AND ENCLOSURES**																		
01 56 26.50	0010	TEMPRARY FENCING																		
	0100	CHAIN LINK, 11 GA., 6' HIGH	2 CLAB	300.00	0.05	L.F.	$4.68	$2.19		$6.87	$8.45	3,000.00	L.F.	$ 14,040.00	$ 6,570.00	$0.00	$ 20,610.00	$ 25,350.00	10.00	159.00
01 58 00		**PROJECT IDENTIFICATION**																		
01 58 13.50	0010	SIGNS																		
	0020	HIGH INTENSITY REFLECTORIZED, NO POSTS, BUY				EA	$25.50			$25.50	$28.00	1.00	EA	$ 25.50	$ -	$0.00	$ 25.50	$ 28.00	#DIV/0!	0.00
01 74 00		**CLEANING AND WASTE MANAGEMENT**																		
01 74 13.20	0010	CLEANING UP																		
	0020	AFTER COMPLETION, ALLOW, MINIMUM				JOB				0.30%	0.30%	30,427,908.33	JOB	$ -	$ -	$0.00	$ 91,283.72	$ 91,283.72	#DIV/0!	0.00
													TOTALS	$ 20,315.50	$ 6,570.00	$ -	$ 3,786,284.47	$ 3,791,651.97	#DIV/0!	159.00
02 00 00		**EXISTING CONDITIONS**																		
02 41 00		**DEMOLITION**																		
02 41 13.17	0010	DEMOLISH, REMOVE PAVEMENT AND CURB																		
	5050	PAVEMENT REMOVAL, BITUMINOUS ROADS, 4" -6" THICK	B-38	420.00	0.10	S.Y.		$4.42	$2.67	$7.09	$9.60	4,444.44	S.Y.	$ -	$ 19,644.42	$18.93	$ 31,511.08	$ 42,666.62	10.58	422.22
02 41 16.13	0010	BUILDING DEMOLITION																		
	0011	NO FOUNDATION OR DUMP FEES, C.F. IS VOL. OF BUILDING STANDING																		
	0100	MIXTURE OF TYPES	B-8	20,100.00	0.00	C.F.		$0.15	$0.15	$0.30	$0.39	1,592,000.00	C.F.	$ -	$ 238,800.00	$0.05	$ 477,600.00	$ 620,880.00	79.20	4776.00
02 41 16.17	0010	BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS (SLAB)																		
	0200	FLOORS, CONCRETE SLAB ON GRADE																		
	0400	6" THICK, PLAIN CONCRETE	B-13L	4,000.00	0.00	S.F.		$0.23	$0.50	$0.73	$0.90	49,000.00	S.F.	$ -	$ 11,270.00	$0.37	$ 35,770.00	$ 44,100.00	12.25	196.00
02 41 16.17	0010	BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS (FOOTING)																		
	1000	FOOTINGS, CONCRETE, 1' THICK, 2' WIDE	B-13L	300.00	0.05	L.F.		$3.06	$6.65	$9.71	$11.90	400.05	L.F.	$ -	$ 1,224.14	$64.57	$ 3,884.46	$ 4,760.56	1.33	21.20
02 82 00		**ASBESTOS REMEDIATION**																		
02 82 13.43	0010	BULK ASBESTOS REMOVAL																		
	5100	REMOVE VAT AND MASTIC FROM FLOOR BY MACHINE	A-11	4,800.00	0.01	S.F.	$0.03	$0.77	$0.01	$0.81	$1.23	20,000.00	S.F.	$ 600.00	$ 15,400.00	$0.01	$ 16,200.00	$ 24,600.00	4.17	260.00
														$ 600.00	$ 286,338.57	$ 83.92	$ 564,965.54	$ 737,007.18	107.54	5675.42
03 00 00		**CONCRETE**																		
03 11 00		**CONCRETE FORMING**																		
03 11 13.40	0010	FORM IN PLACE, EQUIPMENT FOUNDATIONS																		
	0020	1 USE	C-2	160.00	0.30	SFCA	$2.99	$15.05		$18.04	$26.50	100.00	SFCA	$ 299.00	$ 1,505.00	$0.00	$ 1,804.00	$ 2,650.00	0.63	30.00
03 11 13.45	0010	FORM IN PLACE, FOOTINGS																		
	0020	CONTINUOUS WALL, PLYWOOD, 1 USE	C-1	375.00	0.09	SFCA	$7.00	$4.18		$11.18	$14.05	200.00	SFCA	$ 1,400.00	$ 836.00	$0.00	$ 2,236.00	$ 2,810.00	0.53	17.00
03 11 13.50	0010	FORM IN PLACE, GRADE BEAM																		
	0020	JOB-BUILT PLYWOOD, 1 USE	C-2	290.00	0.17	SFCA	$3.07	$8.30		$11.37	$15.95	5,000.00	SFCA	$ 15,350.00	$ 41,500.00	$0.00	$ 56,850.00	$ 79,750.00	17.24	830.00
03 11 13.65	0010	FORMS IN PLACE, SLAB ON GRADE																		
	3000	EDGE FORMS, WOOD, 4 USE, ON GRADE, TO 6" HIGH	C-1	275.00	0.12	L.F.	$0.31	$2.61		$2.92	$4.29	4,000.00	L.F.	$ 1,240.00	$ 10,440.00	$0.00	$ 11,680.00	$ 17,160.00	14.55	464.00
03 11 13.85	0010	FORMS IN PLACE, WALLS																		
	4200	BELOW GRADE, JOB-BUILT PLYWOOD, 1 USE	C-2	225.00	0.21	SFCA	$2.93	$10.70		$13.63	$19.40	30.00	SFCA	$ 87.90	$ 321.00	$0.00	$ 408.90	$ 582.00	0.13	6.39
03 15 00		**CONCRETE ACCESSORIES**																		
03 15 16.20	0010	CONTROL JOINTS, SAW CUT																		
	0180	SAWCUT JOINT RESERVOIR IN CURED CONCRETE																		
	0182	3/8" WIDE X 3/4" DEEP, WITH SINGLE SAW BLADE	C-27	1,000.00	0.02	L.F.	$0.05	$0.78	$0.11	$0.94	$1.34	6,000.00	L.F.	$ 300.00	$ 4,680.00	$0.10	$ 5,640.00	$ 8,040.00	6.00	96.00
03 15 16.30	0010	EXPANSION JOINT																		
	0700	KEYED, POLYURETHANE, POURED, 2 PART, 1/2" X 1"	1 CLAB	400.00	0.02	L.F.	$1.44	$0.82		$2.26	$2.83	2,000.00	L.F.	$ 2,880.00	$ 1,640.00	$0.00	$ 4,520.00	$ 5,660.00	5.00	40.00
03 15 19.05	0010	ANCHOR BOLT ACCESSORIES																		
	8500	ANCHOR BOLT SLEEVE, PLASTIC, 1-1/2" DIAMETER BOLTS	1 CARP	28.00	0.29	EA	$20.00	$14.75		$34.75	$44.50	1,000.00	EA	$ 20,000.00	$ 14,750.00	$0.00	$ 34,750.00	$ 44,500.00	35.71	286.00
03 15 19.10	0010	ANCHOR BOLTS																		
	0500	L-TYPE, INCL. HEX NUT & WASHER, 1-1/2" DIAMETER X 24" LONG	2 CARP	32.00	0.50	SET	$51.50	$26.00		$77.50	$95.50	1,000.00	SET	$ 51,500.00	$ 26,000.00	$0.00	$ 77,500.00	$ 95,500.00	31.25	500.00
03 21 00		**REINFORCEMENT BARS**																		

03 21 05.10	0010	REBAR ACCESSORIES																		
	1206	BEAM BOLSTERS (BB), LOWER, HIGH CHAIRS, INDIVIDUAL (HC), 3" HIGH, PLASTIC TIPPED LEGS				C	$68.00			$68.00	$75.00	1,000.00	C	$ 68,000.00	$ -	$0.00	$ 68,000.00	$ 75,000.00	#DIV/0!	0.00
03 21 11.60	0010	REINFORCING IN PLACE																		
	0100	BEAMS & GIRDERS, #3 TO #7	4 RODM	1.60	20.00	TON	$1,025.00	$1,100.00		$2,125.00	$2,775.00	15.00	TON	$ 15,375.00	$ 16,500.00	$0.00	$ 31,875.00	$ 41,625.00	9.38	300.00
03 21 11.60	0010	REINFORCING IN PLACE																		
	0400	ELEVATED SLABS, #4 TO #7	4 RODM	2.90	11.03	TON	$1,025.00	$605.00		$1,630.00	$2,050.00	40.00	TON	$ 41,000.00	$ 24,200.00	$0.00	$ 65,200.00	$ 82,000.00	13.79	441.36
03 21 11.60	0010	REINFORCING IN PLACE																		
	0500	FOOTINGS, #4 TO #7	4 RODM	2.10	15.24	TON	$1,025.00	$835.00		$1,860.00	$2,400.00	7.00	TON	$ 7,175.00	$ 5,845.00	$0.00	$ 13,020.00	$ 16,800.00	3.33	106.67
03 21 11.60	0010	REINFORCING IN PLACE																		
	0600	SLAB ON GRADE, #3 TO #7	4 RODM	2.30	13.91	TON	$1,025.00	$765.00		$1,790.00	$2,275.00	40.00	TON	$ 41,000.00	$ 30,600.00	$0.00	$ 71,600.00	$ 91,000.00	17.39	556.52
03 21 11 60	0010	REINFORCING IN PLACE																		
	0700	WALLS, #3 TO #7	4 RODM	3.00	10.67	TON	$1,025.00	$585.00		$1,610.00	$2,000.00	10.00	TON	$ 10,250.00	$ 5,850.00	$0.00	$ 16,100.00	$ 20,000.00	3.33	106.67
03 30 00		**CAST-IN-PLACE CONCRETE**																		
03 30 53.40	0010	CAST-IN PLACE																		
	0300	BEAMS (3500 PSI), 5 KIP/L.F., 25' SPAN	C-14A	18.55	10.78	C.Y.	$365.00	$555.00	$47.00	$967.00	$1,300.00	220.00	C.Y.	$ 80,300.00	$ 122,100.00	$45,449.00	$ 212,740.00	$ 286,000.00	11.86	2372.04
03 30 53.40	0010	CAST-IN PLACE																		
	3150	ELEVATED SLABS, FLAT PLATE, INCLUDING FINISH, REGULAR CONCRETE (4000 PSI), 4" SLAB	C-8	2,613.00	0.02	S.F.	$1.71	$0.98	$0.32	$3.01	$3.71	41,937.00	S.F.	$ 71,712.27	$ 41,098.26	$0.96	$ 126,230.37	$ 155,586.27	16.05	880.68
03 30 53.40	0010	CAST-IN PLACE																		
	3590	EQUIPMENT PAD (3000 PSI), 10' X 10' X 12" THICK	C-14H	5.00	9.60	EA	$665.00	$485.00	$5.30	$1,155.30	$1,475.00	1.00	EA	$ 665.00	$ 485.00	$6,123.09	$ 1,155.30	$ 1,475.00	0.20	9.60
03 30 53.40	0010	CAST-IN PLACE																		
	3825	FOOTINGS (3000 PSI), SPREAD 1 C.Y. TO 5 C.Y.	C-14C	43.00	2.61	C.Y.	$227.00	$128.00	$0.63	$355.63	$445.00	120.00	C.Y.	$ 27,240.00	$ 15,360.00	$224.05	$ 42,675.60	$ 53,400.00	2.79	312.60
03 30 53.40	0010	CAST-IN PLACE											0							
	4751	SLAB ON GRADE (3500 PSI), INCL. TROWELED FINISH, NOT INCL. FORMS																		
	4820	OR REINFORCING, OVER 10,000 S.F., 6" THICK	C-14F	3,350.00	0.02	S.F.	$2.37	$1.00	$0.01	$3.38	$4.11	48,857.00	S.F.	$ 115,791.09	$ 48,857.00	$0.03	$ 165,136.66	$ 200,802.27	14.58	1026.00
03 30 53.40	0010	CAST-IN PLACE																		
	6250	RETAINING WALLS (3000 PSI), GRAVITY, 10' HIGH	C-14D	125.00	1.60	C.Y.	$158.00	$82.00	$6.95	$246.95	$305.00	30.00	C.Y.	$ 4,740.00	$ 2,460.00	$1,716.30	$ 7,408.50	$ 9,150.00	0.24	48.00
03 30 53.40	0010	CAST-IN PLACE																		
	6800	STAIRS (3500 PSI), NOT INCLUDING SAFETY TREADS, FREE STANDING, 3' -6" WIDE	C-14H	83.00	0.58	LF NOSE	$6.25	$29.00	$0.32	$35.37	$51.50	1,170.00	LF NOSE	$ 7,312.50	$ 33,930.00	$11.32	$ 41,382.90	$ 60,255.00	14.10	676.26
03 30 53.40	0010	CAST-IN PLACE																		
	7000	STAIR LANDINGS, FREE STANDING	C-14H	200.00	0.24	S.F.	$5.00	$12.05	$0.13	$17.18	$24.00	167.50	S.F.	$ 837.50	$ 2,018.38	$2.23	$ 2,877.65	$ 4,020.00	0.84	40.20
03 35 00		**CONCRETE FINISHING**																		
03 35 43.10	0010	POLISHED CONCRETE FLOORS																		
	0600	POLISHING AND EDGING, DRY, INCLUDING DRY VAC PICK-UP AND HAND																		
	0605	SWEEPING BETWEEN GRIT CHANGES																		
	0610	800-GRIT DIAMOND/RESIN MATRIX	J-4A	2.80	11.43	M.S.F	$42.50	$515.00	$185.00	$742.50	$1,025.00	1,459.00	M.S.F	$ 62,007.50	$ 751,385.00	$137,362.50	$ 1,083,307.50	$ 1,495,475.00	521.07	16674.91
	0620	1500-GRIT DIAMOND/RESIN MATRIX	J-4A	2.80	11.43	M.S.F	$42.50	$515.00	$185.00	$742.50	$1,025.00	1,459.00	M.S.F	$ 62,007.50	$ 751,385.00	$137,362.50	$ 1,083,307.50	$ 1,495,475.00	521.07	16674.91
	0630	3000-GRIT DIAMOND/RESIN MATRIX	J-4A	2.80	11.43	M.S.F	$42.50	$515.00	$185.00	$742.50	$1,025.00	1,459.00	M.S.F	$ 62,007.50	$ 751,385.00	$137,362.50	$ 1,083,307.50	$ 1,495,475.00	521.07	16674.91
	0700	AUTO SCRUBBING AFTER FINAL POLISHING STEP	J-4B	16.00	0.50	M.S.F.		$20.50	$16.55	$37.05	$49.50	1,459.00	M.S.F.	$ -	$ 29,909.50	$613.18	$ 54,055.95	$ 72,220.50	91.19	729.50
03 45 00		**PRECAST ARCHITECTURAL CONCRETE**																		
03 45 13.50	0010	PRECAST WALL PANELS (BRICK)																		
	0050	UNINSULATED, SMOOTH GRAY																		
	0150	LOW RISE, 4' X 8' X 4" THICK	C-11	320.00	0.23	S.F.	$28.00	$12.50	$6.30	$46.80	$57.50	16,303.00	S.F.	$ 456,484.00	$ 203,787.50	$294.84	$ 762,980.40	$ 937,422.50	50.95	3668.18
	0800	INSULATED PANEL, 2" POLYSTYRENE, ADD				S.F.	$1.12			$1.12	$1.23	16,303.00	S.F.	$ 18,259.36	$ -	$0.00	$ 18,259.36	$ 20,052.69	#DIV/0!	0.00
	1350	BRICK FACED, MODULAR, RED, ADD				S.F.	$4.73			$4.73	$5.20	16,303.00	S.F.	$ 77,113.19	$ -	$0.00	$ 77,113.19	$ 84,775.60	#DIV/0!	0.00
03 45 13.50	0010	PRECAST WALL PANELS (NO BRICK)											0							
	0050	UNINSULATED, SMOOTH GRAY											0							
	0150	LOW RISE, 4' X 8' X 4" THICK	C-11	320.00	0.23	S.F.	$28.00	$12.50	$6.30	$46.80	$57.50	19,280.00	S.F.	$ 539,840.00	$ 241,000.00	$294.84	$ 902,304.00	$ 1,108,600.00	60.25	4338.00
	0800	INSULATED PANEL, 2" POLYSTYRENE, ADD				S.F.	$1.12			$1.12	$1.23	19,280.00	S.F.	$ 21,593.60	$ -	$0.00	$ 21,593.60	$ 23,714.40	#DIV/0!	0.00
03 62 00		**NON-SHRINK GROUTING**																		
03 62 13.50	0010	GROUT, NON-METALLIC NON-SHRINK																		
	0300	NON-SHRINK , NON-METALLIC, 1" DEEP	1 CEFI	35.00	0.23	S.F.	$7.65	$11.20		$18.85	$25.00	14,084.00	S.F.	$ 107,742.60	$ 157,740.80	$0.00	$ 265,483.40	$ 352,100.00	402.40	3225.24
														$ 1,991,510.51	$ 3,337,568.44	$ 466,817.45	$ 6,412,503.28	$ 8,439,076.23	#DIV/0!	71131.62
04 00 00		**MASONRY**																		
04 22 00		**CONCRETE UNIT MASONRY**																		
04 22 10.34	0010	CONCRETE BLOCK, PARTITIONS																		
	4000	REGULAR BLOCK, TOOLED JOINTS, 2 SIDES, HOLLOW																		
	4200	NOT REINFORCED, 8" X 16" X 8" THICK	D-8	375.00	0.11	S.F.	$2.59	$4.99		$7.58	$10.45	2,514.00	S.F.	$ 6,511.26	$ 12,544.86	$0.00	$ 19,056.12	$ 26,271.30	6.70	269.00
														$ 6,511.26	$ 12,544.86	$ -	$ 19,056.12	$ 26,271.30	6.70	269.00
05 00 00		**METALS**																		
05 12 00		**STRUCTURAL STEEL FRAMING**																		
05 12 23.17	0010	COLUMNS, STRUCTURAL																		
	6900	W SHAPE, A992 STEEL, 2 TIER, W8 X 48	E-2	1,032.00	0.05	L.F.	$70.00	$3.01	$1.65	$74.66	$83.50	4,218.00	L.F.	$ 295,260.00	$ 12,696.18	$123.19	$ 314,915.88	$ 352,203.00	4.09	227.77
05 12 23.75	0010	STRUCTURAL STEEL MEMBERS																		
	3120	W16 X 50	E-2	800.00	0.07	L.F.	$72.50	$3.89	$2.12	$78.51	$88.50	1,700.00	L.F.	$ 123,250.00	$ 6,613.00	$166.44	$ 133,467.00	$ 150,450.00	2.13	119.00
05 21 00		**STEEL JOIST FRAMING**																		
05 21 19.10	0010	OPEN WEB JOISTS																		
	0720	K SERIES, 30' TO 50' SPANS, 30K12, 17.6 LB./L.F.	E-7	2,400.00	0.03	L.F.	$14.35	$1.86	$0.79	$17.00	$19.60	6,000.00	L.F.	$ 86,100.00	$ 11,160.00	$13.43	$ 102,000.00	$ 117,600.00	2.50	198.00
05 31 00		**STEEL DECKING**																		
05 31 33.50	0010	FORM DECKING																		
	0015	MADE FROM RECYCLED MATERIAL																		
	6800	SLAB FORM, STEEL, 22 GA., 2" DEEP, GALVANIZED	E-4	3,600.00	0.01	S.F.	$2.73	$0.50	$0.03	$3.26	$3.83	41,937.00	S.F.	$ 114,488.01	$ 20,968.50	$0.10	$ 136,714.62	$ 160,618.71	11.65	377.43
05 44 00		**COLD-FORMED METAL TRUSSES**																		
05 42 23.60	**0010**	**FRAMING, ROOF RAFTERS**																		
	2230	**12"DEEP**	**2 CARP**	**15.00**	**1.07**	**EA**		$55.00		$55.00	$83.50	400.00	EA	$ -	$ 22,000.00	$0.00	$ 22,000.00	$ 33,400.00	26.67	426.80
05 51 00		**METAL STAIRS**																		
05 51 13.50	0010	PAN STAIRS, SHOP FABRICATED, STEEL STRINGERS																		
	0200	METAL PAN TREAD FOR CONCRETE IN-FILL, PICKET RAIL 3' -6" WIDE	E-4	35.00	0.91	RISER	$615.00	$51.50	$2.73	$669.23	$765.00	78.00	RISER	$ 47,970.00	$ 4,017.00	$1,827.00	$ 52,199.94	$ 59,670.00	2.23	71.29
05 51 13.50	0010	PAN STAIRS, SHOP FABRICATED, STEEL STRINGERS																		
	1500	LANDING, STEEL PAN, CONVENTIONAL	E-4	160.00	0.20	S.F.	$82.00	$11.30	$0.60	$93.90	$109.00	167.50	S.F.	$ 13,735.00	$ 1,892.75	$56.34	$ 15,728.25	$ 18,257.50	1.05	33.50
05 52 00		**METAL RAILINGS**																		

05 52 13.50	0010	RAILING, PIPE																		
	0900	WALL RAIL, ALUM. PIPE, 1-1/4" DIAM., SATIN FINISH	E-4	213.00	0.15	L.F.	$25.00	$8.50	$0.45	$33.95	$41.50	475.00	L.F.	$ 11,875.00	$ 4,037.50	$15.28	$ 16,126.25	$ 19,712.50	2.23	71.25
	4100	FOR SLOPED RAILS FOR STAIRS, ADD				L.F.	$12.50	$2.55		$15.05	$16.50	475.00	L.F.	$ 5,937.50	$ 1,211.25	$0.00	$ 7,148.75	$ 7,837.50	#DIV/0!	0.00
														$ 698,615.51	$ 84,596.18	$ 2,201.77	$ 800,300.69	$ 919,749.21	#DIV/0!	1525.05
06 00 00		**WOOD, PLASTICS, AND COMPOSITS**																		
06 11 00		**WOOD FRAMING**																		
06 11 10.02	0010	BLOCKING																		
	2780	TO STEEL CONSTRUCTION, 2" X 8"	1 CARP	0.14	57.14	M.B.F.	$730.00	$1,975.00		$2,705.00	$3,775.00	3.00	M.B.F.	$ 2,190.00	$ 5,925.00	$0.00	$ 8,115.00	$ 11,325.00	21.43	171.43
06 16 43		**SHEATHING**																		
06 16 43.10	0010	GYPSUM SHEATHING																		
	0020	GYPSUM, WEATHERPROOF, 1/2" THICK	2 CARP	1,125.00	0.01	S.F.	$0.46	$0.73		$1.19	$1.62	2,000.00	S.F.	$ 920.00	$ 1,460.00	$0.00	$ 2,380.00	$ 3,240.00	1.78	28.00
														$ 3,110.00	$ 7,385.00	$ -	$ 10,495.00	$ 14,565.00	23.21	199.43
07 00 00		**THERMAL & MOISTURE PROTECTION**																		
07 11 00		**DAMPPROOFING**																		
07 11 13.10	0010	BITUMINOUS ASPHAULT COATING																		
	0030	BRUSHED ON, BELOW GRADE, 1 COAT	1 ROFC	665.00	0.01	S.F.	$0.23	$0.54		$0.77	$1.15	48,857.00	S.F.	$ 11,237.11	$ 26,382.78	$0.00	$ 37,619.89	$ 56,185.55	73.47	586.28
07 21 00		**THERMAL INSULATION**																		
07 21 16.20	0010	BLANKET INSULATION FOR WALLS																		
	0160	6" THICK, R19, 15" WIDE	1 CARP	1,350.00	0.01	S.F.	$0.43	$0.31		$0.74	$0.93	35,583.00	S.F.	$ 15,300.69	$ 11,030.73	$0.00	$ 26,331.42	$ 33,092.19	26.36	213.50
07 22 00		**ROOF AND DECK INSULATION**																		
07 22 16.10	0010	ROOF DECK INSULATION																		
	1968	60 PSI COMPRESSIVE STRENGTH, TAPERED FOR DRAINAGE	1 ROFC	1,820.00	0.00	B.F.	$1.01	$0.20		$1.21	$1.44	68,489.00	B.F.	$ 69,173.89	$ 13,697.80	$0.00	$ 82,871.69	$ 98,624.16	37.63	273.96
07 26 00		**VAPOR RETARDERS**																		
07 26 10.10	0010	VAPOR RETARDERS																		
	1800	REINF. WATERPROOF, 2 MIL POLYETHYLENE BACKING, 1 SIDE	1 CARP	37.00	0.22	SQ	$10.90	$11.15		$22.05	$29.00	684.89	SQ	$ 7,465.30	$ 7,636.52	$0.00	$ 15,101.82	$ 19,861.81	18.51	147.94
07 52 00		**MODIFIED BITUMINOUS MEMBRANE ROOFING**																		
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE																		
	0020	BASE SHEET #15 GLASS FIBER FELT, FULLY MOPPED TO DECK	1 ROFC	192.00	0.29	SQ	$21.50	$12.30	$2.67	$36.47	$47.50	384.89	SQ	$ 8,275.14	$ 4,734.15	$97.37	$ 14,036.94	$ 18,282.28	2.00	112.39
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE																		
	2100	APP MOD., SMOOTH SURF. CAP SHEET, POLY REINF., TORCHED, 160 MILS	G-5	2,100.00	0.02	S.F.	$0.80	$0.78	$0.09	$1.67	$2.27	68,489.00	S.F.	$ 54,791.20	$ 53,421.42	$0.15	$ 114,376.63	$ 155,470.03	32.61	1301.29
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE																		
	2450	SEAM HEAT WELDING	1 ROFC	205.00	0.04	L.F.	$0.09	$1.76		$1.85	$3.03	2,054.67	L.F.	$ 184.92	$ 3,616.22	$0.00	$ 3,801.14	$ 6,225.65	10.02	80.13
07 65 00		**FLEXIBLE FLASHING**																		
07 65 10.10	0010	SHEET METAL FLASHING AND COUNTER FLASHING																		
	0011	INCLUDING UP TO 4 BENDS																		
	0020	ALUMINUM, MILL FINISH, .013" THICK	1 ROFC	145.00	0.06	S.F.	$0.86	$2.49		$3.35	$5.10	1,000.00	S.F.	$ 860.00	$ 2,490.00	$0.00	$ 3,350.00	$ 5,100.00	6.90	55.00
	0400	PAINTED FINISH, ADD				S.F.	$0.33			$0.33	$0.36	1,000.00	S.F.	$ 330.00	$ -	$0.00	$ 330.00	$ 360.00	#DIV/0!	0.00
07 71 00		**ROOF SPECIALTIES**																		
07 71 23.10	0010	DOWNSPOUTS																		
	0100	ALUMINUM, EMBOSSED, .020" THICK, 2" X 3", ENAMELED	1 SHEE	190.00	0.04	L.F.	$1.37	$2.57		$3.94	$5.40	1,000.00	L.F.	$ 1,370.00	$ 2,570.00	$0.00	$ 3,940.00	$ 5,400.00	5.26	42.00
07 71 43.10	0010	DRIP EDGE, RAKE EDGE, ICE BELTS																		
	0100	ALUMINUM, .016" THICK, 5" WIDE, WHITE FINISH	1 CARP	400.00	0.02	L.F.	$0.66	$1.03		$1.69	$2.29	1,000.00	L.F.	$ 660.00	$ 1,030.00	$0.00	$ 1,690.00	$ 2,290.00	2.50	20.00
07 72 00		**ROOF ACCESSORIES**																		
07 72 23.10	0010	ROOF VENTS																		
	0100	MUSHROOM SHAPE, FOR BUILT-UP ROOFS, PVC, 6" HIGH	1 ROFC	30.00	0.27	EA	$24.00	$12.00		$36.00	$46.50	20.00	EA	$ 480.00	$ 240.00	$0.00	$ 720.00	$ 930.00	0.67	5.34
07 72 33.10	0010	ROOF HATCHES																		
	0540	2'-6" X 3', GALVANIZED STEEL CURB AND COVER	G-3	10.00	3.20	EA	$630.00	$163.00		$793.00	$935.00	3.00	EA	$ 1,890.00	$ 489.00	$0.00	$ 2,379.00	$ 2,805.00	0.30	9.60
07 81 00		**APPLIED FIREPROOFING**																		
07 81 16.10	0010	SPRAYED CEMENTITIOUS FIREPROOFING																		
	0050	NOT INCLUDING CANVAS PROTECTION, NORMAL DENSITY																		
	0500	CORRUGATED OR FLUTED DECKS	G-2	1,250.00	0.02	S.F.	$0.87	$0.83	$0.10	$1.80	$2.32	68,489.00	S.F.	$ 59,585.43	$ 56,845.87	$0.18	$ 123,280.20	$ 158,894.48	54.79	1301.29
07 91 00		**PREFORMED JOINT SEALS**																		
07 9 23.10	0010	BACKER RODS																		
	0070	BACKER ROD, POLYETHYLENE, 3/4" DIAMETER	1 BRIC	4.60	1.74	C.L.F.	$6.95	$89.00		$95.95	$144.00	14,084.00	C.L.F.	$ 97,883.80	$ 1,253,476.00	$0.00	$ 1,351,359.80	$ 2,028,096.00	3061.74	24492.08
07 92 00		**JOINT SEALANTS**																		
07 92 13.20	0010	CAULKING AND SEALANT OPTIONS																		
	3800	POLYURETHANE, 1 OR 2 COMPONENT, BULK, IN PLACE, 3/4" X 3/8"	1 BRIC	272.00	0.03	L.F.	$0.82	$1.50		$2.32	$3.19	14,084.00	L.F.	$ 11,548.88	$ 21,126.00	$0.00	$ 32,674.88	$ 44,927.96	51.78	408.44
														$ 341,036.36	$ 1,458,786.49	$ 97.71	$ 1,813,863.41	$ 2,636,545.11	#DIV/0!	29049.23
08 00 00		**OPENINGS**																		
08 11 00		**METAL DOORS AND FRAME**																		
08 11 16.10	0010	ENTRANCE DOORS																		
	0011	INCLUDING STANDARD HARDWARE, CLEAR FINISH, NO GLASS																		
	0012	TOP AND BOTTOM OFFSET PIVOTS, 1/4" BEVELED GLASS STOPS, THRESHOLD																		
	0013	DEAD BOLT LOCK WITH INSIDE THUMB SCREW, STANDARD PUSH PULL																		
	0580	6'-0" X 7'-0" OPENING	2 SSWK	1.30	12.31	PR.	$1,525.00	$690.00		$2,215.00	$2,800.00	9.00	PR.	$ 13,725.00	$ 6,210.00	$0.00	$ 19,935.00	$ 25,200.00	6.92	110.77
	1600	CONCEALED PANIC DEVICE, ADD				LEAF	$1,000.00			$1,000.00	$1,100.00	18.00	LEAF	$ 18,000.00	$ -	$0.00	$ 18,000.00	$ 19,800.00	#DIV/0!	0.00
	1700	ELECTRIC STRIKE RELEASE, ADD				OPNG	$325.00			$325.00	$355.00	9.00	OPNG	$ 2,925.00	$ -	$0.00	$ 2,925.00	$ 3,195.00	#DIV/0!	0.00
	1900	CONCEALED CLOSER, ADD				LEAF	$535.00			$535.00	$590.00	18.00	LEAF	$ 9,630.00	$ -	$0.00	$ 9,630.00	$ 10,620.00	#DIV/0!	0.00
08 12 00		**METAL FRAMES**																		
08 12 13.13	0010	STANDARD HOLLOW METAL FRAMES																		
	0020	16 GA., UP TO 5-3/4" JAMB DEPTH																		
	0025	3'-0" X 6'-8" SINGLE	2 CARP	16.00	1.00	EA	$153.00	$51.50		$204.50	$246.00	2.00	EA	$ 306.00	$ 103.00	$0.00	$ 409.00	$ 492.00	0.13	2.00
08 13 00		**METAL DOORS**																		
08 13 13.13	0010	STANDARD HOLLOW METAL DOORS																		
	0015	FLUSH, FULL PANEL, HOLLOW CORE																		
	0017	WHEN NOTED DOORS ARE PREPARED BUT DO NOT INCLUDE GLASS OR LOUVERS																		

	0020	1-3/8" THICK, 20 GA., 2'-0" X 6'-8"	2 CARP	20.00	0.80	EA	$345.00	$41.50		$386.50	$445.00	2.00	EA	$ 690.00	$ 83.00	$0.00	$ 773.00	$ 890.00	0.10	1.60
	0140	FOR NARROW LITE, ADD				EA	$114.00			$114.00	$126.00	2.00	EA	$ 228.00	$ -	$0.00	$ 228.00	$ 252.00	#DIV/0!	0.00
08 13 13.15	0010	METAL FIRE DOORS																		
	0015	STEEL, FLUSH, "B" LABEL, 90 MINUTES																		
	0020	FULL PANEL, 20 GA., 2'-0" X 6'-8"	2 CARP	20.00	0.80	EA	$425.00	$41.50		$466.50	$535.00	6.00	EA	$ 2,550.00	$ 249.00	$0.00	$ 2,799.00	$ 3,210.00	0.30	4.80
08 14 00		**WOOD DOORS**																		
08 14 16.09	0010	SMOOTH WOOD DOORS																		
	0015	FLUSH, INTERIOR, HOLLOW CORE																		
	0320	WALNUT FACE, 1-3/8", 2'-0" X 6'-8"	2 CARP	17.00	0.94	PR	$198.00	$48.50		$246.50	$292.00	74.00	PR	$ 14,652.00	$ 3,589.00	$0.00	$ 18,241.00	$ 21,608.00	4.35	69.63
	5010	WOOD DOORS, FOR NARROW LITE, ADD				EA	$114.00			$114.00	$126.00	56.00	EA	$ 6,384.00	$ -	$0.00	$ 6,384.00	$ 7,056.00	#DIV/0!	0.00
08 44 00		**CURTAIN WALL AND GLAZED ASSEMBLIES**																		
08 44 13.10	0010	GLAZED CURTAIN WALLS																		
	0050	AVERAGE, SINGLE GLAZED	H-1	195.00	0.16	S.F.	$60.50	$8.65		$69.15	$80.00	25,000.00	S.F.	$ 1,512,500.00	$ 216,250.00	$0.00	$ 1,728,750.00	$ 2,000,000.00	128.21	4100.00
08 81 00		**GLASS GLAZING**																		
08 81 10.10	0010	VARIOUS TYPES AND THICKNESS OF FLOAT GLASS																		
	0800	1/4" THICK, TEMPERED, CLEAR	2 GLAZ	120.00	0.13	S.F.	$7.10	$6.60		$13.70	$17.80	280.00	S.F.	$ 1,988.00	$ 1,848.00	$0.00	$ 3,836.00	$ 4,984.00	2.33	37.24
08 81 17.10	0010	FIRE RESISTANT GLASS																		
	0020	FIRE GLASS MINIMUM	2 GLAZ	40.00	0.40	S.F.	$41.50	$19.85		$61.35	$76.00	30.00	S.F.	$ 1,245.00	$ 595.50	$0.00	$ 1,840.50	$ 2,280.00	0.75	12.00
08 81 30.10	0010	REDUCE HEAT TRANSFER GLASS																		
	2600	HEAT REFLECTIVE, FILM INSIDE, 1" THICK UNIT, TINTED	2 GLAZ	85.00	0.19	S.F.	$30.50	$9.35		$39.85	$47.50	25,000.00	S.F.	$ 762,500.00	$ 233,750.00	$0.00	$ 996,250.00	$ 1,187,500.00	294.12	4700.00
08 83 00		**MIRRORS**																		
08 83 13.10	0010	MIRRORS																		
	0200	OVER 5 S.F.	2 GLAZ	160.00	0.10	S.F.	$9.45	$4.97		$14.42	$17.90	2,359.00	S.F.	$ 22,292.55	$ 11,724.23	$0.00	$ 34,016.78	$ 42,226.10	14.74	235.90
														$ 2,369,615.55	$ 474,401.73	$ -	$ 2,844,017.28	$ 3,329,313.10	#DIV/0!	9273.95
09 00 00		**FINISHES**																		
09 21 00		**PLASTER AND GYPSUM BOARD ASSEMBLIES**																		
09 21 16.23	0010	GYPSUM BOARD ASSEMBLIES																		
	0040	2-HOUR ASSEMBLY WITH DOUBLE LAYER																		
	0065	5/8" F.R. GYP BD ON RM SIDE, 4" J-TRACK & C-H STUDS	2 CARP	220.00	0.07	S.F.	$3.14	$3.76		$6.90	$9.15	45,602.00	S.F.	$ 143,190.28	$ 171,463.52	$0.00	$ 314,653.80	$ 417,258.30	207.28	3328.95
09 21 16.33	0010	PARTITION WALL																		
	3200	5/8" INTERIOR GYPSUM BOARD, STANDARD, TAPE & FINISH 2 SIDES																		
	3800	INSTALLED ON AND INCLUDING METAL STUDS, NLB, 25 GA., 16" OC, 3-5/8" WIDE	2 CARP	340.00	0.05	S.F.	$1.10	$2.43		$3.60	$4.97	35,000.00	S.F.	$ 38,500.00	$ 85,050.00	$0.00	$ 126,000.00	$ 173,950.00	102.94	1645.00
09 21 16.33	0010	PARTITION WALL																		
	6400	FIRE RESISTANT, 2 LAYERS, 2 HR., ON METAL STUDS, NLB, 25 GA., 16" OC, 3-5/8" WIDE	2 CARP	245.00	0.07	S.F.	$1.94	$3.37		$5.31	$7.25	1,000.00	S.F.	$ 1,940.00	$ 3,370.00	$0.00	$ 5,310.00	$ 7,250.00	4.08	65.00
09 31 00		**THIN-SET TILING**																		
09 31 13.10	0010	THIN-SET CERAMIC TILE																		
	0020	BACKSPLASH, AVERAGE GRADE TILE	1 TILF	50.00	0.16	S.F.	$2.77	$7.65		$10.42	$14.35	60.00	S.F.	$ 166.20	$ 459.00	$0.00	$ 625.20	$ 861.00	1.20	9.60
09 31 13.10	0010	THIN-SET CERAMIC TILE																		
	3310	CERAMIC TILE, PORCELAIN TYPE, 1 COLOR, COLOR GROUP 2, 2" X 2" OR 2" X 1"	D-7	190.00	0.08	S.F.	$6.35	$3.60		$9.95	$12.30		S.F.							
09 54 00		**SPECIALTY CEILINGS**																		
09 54 26.10	0010	WOOD CEILINGS																		
	1000	4"-6" WOOD SLATS ON HEAVY DUTY 15/16" T-BAR GRID	2 CARP	250.00	0.06	S.F.	$26.00	$3.31		$29.31	$33.50	78,000.00	S.F.	$ 2,028,000.00	$ 258,180.00	$0.00	$ 2,286,180.00	$ 2,613,000.00	312.00	4992.00
09 64 00		**WOOD FLOORING**																		
09 64 66.10	0010	GYMNASIUM FLOORING																		
	0900	GYM FLOOR, IN MASTIC, OVER 2 PLY FELT #2 & BETTER 33/32" THICK MAPLE	1 CARP	98.00	0.08	S.F.	$7.00	$4.22		$11.22	$14.10	2,720.00	S.F.	$ 19,040.00	$ 11,478.40	$0.00	$ 30,518.40	$ 38,352.00	27.76	223.04
09 65 00		**RESILIENT FLOORING**																		
09 65 10.13	0010	RESILIANT BASE																		
	0700	1/8" VINYL BASE, 4" HIGH, STRAIGHT OR COVE, STANDARD COLORS	1 TILF	315.00	0.03	L.F.	$1.18	$1.22		$2.40	$3.09	5,000.00	L.F.	$ 5,900.00	$ 6,100.00	$0.00	$ 12,000.00	$ 15,450.00	15.87	125.00
09 65 10.13	0010	RESILIANT BASE																		
	0730	CORNERS, 4" HIGH	1 TILF	315.00	0.03	EA	$3.03	$1.22		$4.25	$5.10	200.00	EA	$ 606.00	$ 244.00	$0.00	$ 850.00	$ 1,020.00	0.63	5.00
09 65 13.23	0010	RESILIENT STAIR TREADS AND RISERS																		
	0400	RUBBER, MOLDED TREAD, 12" WIDE, 5/16" THICK, COLORS	1 TILF	115.00	0.07	L.F.	$15.10	$3.33		$18.43	$21.50	420.00	L.F.	$ 6,342.00	$ 1,398.60	$0.00	$ 7,740.60	$ 9,030.00	3.65	29.40
09 65 13.23	0010	RESILIENT STAIR TREADS AND RISERS																		
	1600	NOSINGS, 3" WIDE, 3/16" THICK, COLORS	1 TILF	140.00	0.06	L.F.	$6.30	$2.73		$9.03	$11.00	420.00	L.F.	$ 2,646.00	$ 1,146.60	$0.00	$ 3,792.60	$ 4,620.00	3.00	23.94
09 65 19.19	0010	VINYL COMPOSITION TILE FLOORING																		
	7050	VINYL COMPOSITION TILE, 12" X 12", 1/16" THICK EMBOSSED	1 TILF	500.00	0.02	S.F.	$1.22	$0.77		$3.44	$4.07	20,000.00	S.F.	$ 24,400.00	$ 15,400.00	$0.00	$ 68,800.00	$ 81,400.00	40.00	320.00
09 68 00		**CARPETING**																		
09 68 13.10	0010	CARPET TILE																		
	1100	TUFTED, 24" X 24", HARD BACK, 24 OZ. NYLON	1 TILF	80.00	0.10	S.Y.	$31.00	$4.79		$35.79	$41.50	11,300.00	S.Y.	$ 350,300.00	$ 54,127.00	$0.00	$ 404,427.00	$ 468,950.00	141.25	1130.00
09 84 00		**ACOUSTIC ROOM COMPONENTS**																		
09 84 13.10	0010	FIXED PANELS																		
	0100	FIBERGLASS OR MINERAL FILLER, NO BACKS, 2-1/4" THICK, MODULAR																		
	0200	SPACE UNITS, CEILING OR WALL HUNG, WHITE OR COLORED	1 CARP	100.00	0.08	S.F.	$9.40	$4.13		$13.53	$16.60	736.00	S.F.	$ 6,918.40	$ 3,039.68	$0.00	$ 9,958.08	$ 12,217.60	7.36	58.88
09 91 00		**PAINTING**																		
09 91 23.72	0010	WALLS AND CEILING, INTERIOR																		
	0100	CONCRETE, DRYWALL OR PLASTER, LATEX, PRIMER OR SEALER COAT																		
	0200	SMOOTH FINISH, SPRAY	1 PORD	2,750.00	0.00	S.F.	$0.06	$0.13		$0.19	$0.25	80,000.00	S.F.	$ 4,800.00	$ 10,400.00	$0.00	$ 15,200.00	$ 20,000.00	29.09	240.00
09 91 23.72	0010	WALLS AND CEILING, INTERIOR																		
	0800	PAINT 2 COATS, SMOOTH FINISH, SPAY	1 PORD	1,625.00	0.01	S.F.	$0.13	$0.21		$0.34	$0.47	80,000.00	S.F.	$ 10,400.00	$ 16,800.00	$0.00	$ 27,200.00	$ 37,600.00	49.23	400.00
														$ 2,643,148.88	$ 638,656.80	$ -	$ 3,313,255.68	$ 3,900,958.90	945.35	12595.81
10 00 00		**SPECIALTIES**																		
10 11 00		**VISUAL DISPLAY UNITS**																		
10 11 13.13	0010	FIXED CHALKBOARDS																		
	5400	LIQUID CHALK, WHITE PORCELAIN ENAMEL, WALL HUNG																		
	5420	DELUXE UNITS, ALUMINUM TRIM AND CHALKTROUGH																		
	5550	4' X 12'	2 CARP	12.00	1.33	EA	$630.00	$69.00		$699.00	$800.00	80.00	EA	$ 50,400.00	$ 5,520.00	$0.00	$ 55,920.00	$ 64,000.00	6.67	106.64
10 11 13.13	0010	FIXED CHAULKBOARDS																		

	6300	LIQUID CHALK, FELT TIP MARKERS				EA	$2.14			$2.14	$2.35	80.00	EA	$ 171.20	$ -	$0.00	$ 171.20	$ 188.00	#DIV/0!	0.00
10 11 13.13	0010	FIXED CHAULKBOARDS																		
	6500	LIQUID CHALK, ERASERS				EA	$2.42			$2.42	$2.66	80.00	EA	$ 193.60	$ -	$0.00	$ 193.60	$ 212.80	#DIV/0!	0.00
10 11 13.13	0010	FIXED CHAULKBOARDS																		
	6600	LIQUID CHALK, BOARD CLEANER, 8 OZ. BOTTLE				EA	$6.15			$6.15	$6.80	80.00	EA	$ 492.00	$ -	$0.00	$ 492.00	$ 544.00	#DIV/0!	0.00
10 13 00		**DIRECTORIES**																		
10 13 10.10	0010	BUILDING DIRECTORY BOARDS																		
	2500	BUILDING DIRECTORY, ALUM, BLACK FELT PANELS, 1 DOOR, 36" X 24"	2 CARP	3.50	4.57	EA	$390.00	$236.00		$626.00	$785.00	1.00	EA	$ 390.00	$ 236.00	$0.00	$ 626.00	$ 785.00	0.29	4.57
10 14 00		**SIGNAGE**																		
10 14 23.13	0010	ENGRAVED PANEL SIGNAGE, INTERIOR																		
	1050	FLEXIBLE DOOR SIGN, ADHESIVE BACK, W/ BRAILLE, 5/8" LETTERS, 6" X 6"	1 CLAB	32.00	0.25	EA	$48.50	$10.25		$58.75	$68.50	76.00	EA	$ 3,686.00	$ 779.00	$0.00	$ 4,465.00	$ 5,206.00	2.38	19.00
10 21 00		**COMPARTMENTS AND CUBICLES**																		
10 21 13.16	0010	PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS																		
	1610	FLOOR MOUNTED																		
	1800	PLASTIC LAMINATE ON PARTICLE BOARD	2 CARP	7.00	2.29	EA	$545.00	$118.00		$663.00	$780.00	60.00	EA	$ 32,700.00	$ 7,080.00	$0.00	$ 39,780.00	$ 46,800.00	8.57	137.16
	3400	FOR HANDCAP UNTIS, ADD					$325.00			$325.00	$360.00	60.00	EA	$ 19,500.00	$ -	$0.00	$ 19,500.00	$ 21,600.00	#DIV/0!	0.00
10 22 00		**PARTITIONS**																		
10 22 33.10	0010	PARTITIONS, ACCORDIAN FOLDING																		
	0100	VINYL COVERED, OVER 150 S.F., FRAME NOT INCLUDED																		
	0900	ACOUSTICAL, 3 LB./S.F., 17' MAXIMUM HEIGHT	2 CARP	100.00	0.16	S.F.	$28.00	$8.25		$36.25	$43.50	1,440.00	S.F.	$ 40,320.00	$ 11,880.00	$0.00	$ 52,200.00	$ 62,640.00	14.40	230.40
10 26 00		**WALL AND DOOR PROTECTION**																		
10 26 13.20	0010	CORNER PROTECTION																		
	0100	STAINLESS STEEL, 16 GA., ADHESIVE MOUNT, 3-1/2" LEG	1 CARP	80.00	0.10	L.F.	$25.00	$5.15		$30.15	$35.50	100.00	L.F.	$ 2,500.00	$ 515.00	$0.00	$ 3,015.00	$ 3,550.00	1.25	10.00
10 28 00		**TOILET, BATH, AND LAUNDRY ACCESSORIES**																		
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	0200	CURTAIN ROD, STAINLESS STEEL, 5' LONG, 1" DIAMETER	1 CARP	13.00	0.62	EA	$27.00	$32.00		$59.00	$78.00	10.00	EA	$ 270.00	$ 320.00	$0.00	$ 590.00	$ 780.00	0.77	6.15
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	0400	DIAPER CHANGING STATION, HOROZONTAL, WALL MOUNTED, PLASTIC	1 CARP	10.00	0.80	EA	$244.00	$41.50		$285.50	$330.00	6.00	EA	$ 1,464.00	$ 249.00	$0.00	$ 1,713.00	$ 1,980.00	0.60	4.80
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	0500	DISPENSER UNITS, COMBINED SOAP & TOWEL DISPENSERS																		
	0510	MIRROR AND SHELF, FLUSH MOUNTED	1 CARP	10.00	0.80	EA	$365.00	$41.50		$406.50	$470.00	12.00	EA	$ 4,380.00	$ 498.00	$0.00	$ 4,878.00	$ 5,640.00	1.20	9.60
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	0600	TOWEL DISPENSER AND WASTE RECEPTACLE,																		
	0610	18 GALLON CAPACITY	1 CARP	10.00	0.80	EA	$340.00	$41.50		$381.50	$440.00	6.00	EA	$ 2,040.00	$ 249.00	$0.00	$ 2,289.00	$ 2,640.00	0.60	4.80
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	1000	GRAB BAR, STRAIGHT, 1-1/4" DIAMETER, STAINLESS STEEL, 30" LONG	1 CARP	22.00	0.36	EA	$28.50	$18.80		$47.30	$59.50	30.00	EA	$ 855.00	$ 564.00	$0.00	$ 1,419.00	$ 1,785.00	1.36	10.92
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	2300	HAND DRYER, SURFACE MOUNTED, ELECTRIC, 115 VOLT, 20 AMP	1 CARP	4.00	2.00	EA	$480.00	$103.00		$583.00	$685.00	8.00	EA	$ 3,840.00	$ 824.00	$0.00	$ 4,664.00	$ 5,480.00	2.00	16.00
	3000	MIRROR, WITH STAINLESS STEEL 3/4" SQUARE FRAME																		
	3600	WITH 5" STAINLESS STEEL SHELF, 36" X 24"	1 CARP	15.00	0.53	EA	$242.00	$27.50		$269.50	$310.00	40.00	EA	$ 9,680.00	$ 1,100.00	$0.00	$ 10,780.00	$ 12,400.00	2.67	21.32
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	4200	NAPKIN/TAMPON DISPENSER, RECESSED	1 CARP	15.00	0.53	EA	$555.00	$27.50		$582.50	$650.00	3.00	EA	$ 1,665.00	$ 82.50	$0.00	$ 1,747.50	$ 1,950.00	0.20	1.60
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	4250	NAPKIN RECEPTACLE, RECESSED	1 CARP	6.50	1.23	EA	$171.00	$63.50		$234.50	$285.00	2.00	EA	$ 342.00	$ 127.00	$0.00	$ 469.00	$ 570.00	0.31	2.46
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	4300	ROBE HOOK, SINGLE, REGULAR	1 CARP	96.00	0.08	EA	$19.95	$4.30		$24.25	$28.50	40.00	EA	$ 798.00	$ 172.00	$0.00	$ 970.00	$ 1,140.00	0.42	3.32
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	4600	SOAP DISPENSER, CHROME, SURFACE MOUNTED, LIQUID	1 CARP	20.00	0.40	EA	$50.50	$20.50		$71.00	$87.00	20.00	EA	$ 1,010.00	$ 410.00	$0.00	$ 1,420.00	$ 1,740.00	1.00	8.00
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	6200	TOILET TISSUE DISPENSER, SURFACE MOUNTED, SS, DOUBLE ROLL	1 CARP	24.00	0.33	EA	$21.50	$17.20		$38.70	$50.00	60.00	EA	$ 1,290.00	$ 1,032.00	$0.00	$ 2,322.00	$ 3,000.00	2.50	19.98
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES																		
	6500	TOWEL BAR, STANLESS STEEL, 30" LONG	1 CARP	21.00	0.38	EA	$51.00	$19.70		$70.70	$86.00	30.00	EA	$ 1,530.00	$ 591.00	$0.00	$ 2,121.00	$ 2,580.00	1.43	11.43
10 28 19.10	0010	PARTITIONS, SHOWER																		
	5220	SHOWER SURROUND, 3 WALL, PVC, 32" X 32"	1 CARP	4.00	2.00	EA	$400.00	$103.00		$503.00	$595.00	30.00	EA	$ 12,000.00	$ 3,090.00	$0.00	$ 15,090.00	$ 17,850.00	7.50	60.00
10 43 00		**EMERGENCY AID SPECIALTIES**																		
10 43 13.05	0010	DEFRIBRILLATOR CABINETS																		
	0050	DEFIBRILLATOR CABINET, STAINLESS STEEL WITH STROBE & ALARM 12" X 27"	1 CARP	10.00	0.80	EA	$450.00	$41.50		$491.50	$560.00	2.00	EA	$ 900.00	$ 83.00	$0.00	$ 983.00	$ 1,120.00	0.20	1.60
	0100	AUTOMATIC EXTERNAL DEFIBRILLATOR	1 CARP	30.00	0.27	EA	$1,375.00	$13.75		$1,338.75	$1,550.00	2.00	EA	$ 2,750.00	$ 27.50	$0.00	$ 2,677.50	$ 3,100.00	0.07	0.53
10 44 00		**FIRE PROTECTION SPECIALTIES**																		
10 44 13.53	0010	FIRE EQUIPMENT CABINETS																		
	4000	HOSE RACK ASSY., 2-1/2" X 1-1/2" VALVE, 1OO' HOSE, 24" X 40" X 8"																		
	4100	ALUMINUM DOOR AND FRAME	Q-12	6.00	2.67	EA	$515.00	$148.00		$663.00	$785.00	10.00	EA	$ 5,150.00	$ 1,480.00	$0.00	$ 6,630.00	$ 7,850.00	1.67	26.67
10 44 16.13	0010	PORTABLE FIRE EXSTINGUISHERS																		
	2100	ABC ALL PURPOSE TYPE, PORTABLE, 20 LB.				EA	$85.00			$85.00	$93.50	30.00	EA	$ 2,550.00	$ -	$0.00	$ 2,550.00	$ 2,805.00	#DIV/0!	0.00
10 44 16.13	0010	PORTABLE FIRE EXSTINGUISHERS																		
	9400	INSTALLATION OF EXTINGUISHERS, 12 OR MORE, ON NAILABLE SURFACE	1 CARP	30.00	0.27	EA		$13.75		$13.75	$21.00	30.00	EA	$ -	$ 412.50	$0.00	$ 412.50	$ 630.00	1.00	8.01
10 51 00		**LOCKERS**																		
10 51 13.10	0010	LOCKERS STEEL																		
	0480	4-TIER 12" X 15" X 18"	1 SHEE	30.00	0.27	EA	$370.00	$16.25		$386.25	$430.00	40.00	EA	$ 14,800.00	$ 650.00	$0.00	$ 15,450.00	$ 17,200.00	1.33	10.68
10 55 00		**POSTAL SPECIALTIES**																		
10 55 23.10	0010	COMMERCIAL MAIL BOXES																		
	1800	LETTER COLLECTION BOX	1 CARP	6.00	1.33	EA	$720.00	$69.00		$789.00	$895.00	1.00	EA	$ 720.00	$ 69.00	$0.00	$ 789.00	$ 895.00	0.17	1.33
10 57 00		**WARDROBE AND CLOSET SPECIALTIES**																		
10 57 13.10	0010	COAT RACKS AND WARDROBES																		
	1650	WALL MOUNTED RACKS, 16 GA. STEEL FRAME, 22 GA. STEEL SHELVES																		
	1850	12" X 15" X 26", 6 HANGERS	1 CARP	32.00	0.21	EA	$142.00	$12.90		$154.90	$176.00	80.00	EA	$ 11,360.00	$ 1,032.00	$0.00	$ 12,392.00	$ 14,080.00	2.50	16.40
10 86 00		**SECURITY MIRRORS AND DEVICES**																		
10 86 20.10	0010	DOMES																		
	0100	CEILING MOUNTED, 10" DIAMETER	1 CARP	30.00	0.27	EA	$12.30	$13.75		$26.05	$34.50	10.00	EA	$ 123.00	$ 137.50	$0.00	$ 260.50	$ 345.00	0.33	2.67

														$ 229,869.80	$ 39,210.00	$ -	$ 268,979.80	$ 313,085.80	#DIV/0!	756.05
11 00 00		**EQUIPMENT**																			
11 21 00		**RETAIL AND SERVICE EQUIPMENT**																			
11 21 13.10	0010	CHECKOUT COUNTER																			
	1000	SCANNING SYSTEM, 2 LANES, W/REGISTERS, SCAN GUN & MEMORY	2 CLAB			SYSTEM	$17,300.00			$17,300.00	$19,000.00	1.00	SYSTEM	$ 17,300.00	$ -	$0.00	$ 17,300.00	$ 19,000.00	#DIV/0!	0.00
11 32 00		**UNIT KITCHEN**																			
11 32 13.10	0010	COMMERCIAL UNIT KITCHENS																			
	1500	COMBINATION RANGE, REFRIGERATOR AND SINK, 30" WIDE, MINIMUM	L-1	2.00	8.00	EA	$1,400.00	$495.00		$1,895.00	$2,275.00	2.00	EA	$ 2,800.00	$ 990.00	$0.00	$ 3,790.00	$ 4,550.00	1.00	16.00
11 41 00		**FOODSERVICE STORAGE EQUIPMENT**																			
11 41 13.20	0010	REFRIGERATED FOOD STORAGE EQUIPMENT																			
	8460	REFRIGERATED CABINETS, MOBILE				EA	$5,550.00			$5,550.00	$6,100.00	6.00	EA	$ 33,300.00	$ -	$0.00	$ 33,300.00	$ 36,600.00	#DIV/0!	0.00
11 44 00		**FOOD COOKING EQUIPMENT**																			
11 44 13.10	0010	COOKING EQUIPMENT																			
	0900	BAKE OVEN, ELECTRIC CONVECTION, SINGLE DECK	L-7	4.00	7.00	EA	$5,175.00	$350.00		$5,525.00	$6,225.00	2.00	EA	$ 10,350.00	$ 700.00	$0.00	$ 11,050.00	$ 12,450.00	0.50	14.00
11 44 13.10	0010	COOKING EQUIPMENT																			
	5300	GRIDDLE, SS, 24" PLATE, W/ 4" LEGS, ELEC, 208V, 3 PHASE, 3' LONG	Q-1	7.00	2.29	EA	$2,225.00	$130.00		$2,355.00	$2,650.00	2.00	EA	$ 4,450.00	$ 260.00	$0.00	$ 4,710.00	$ 5,300.00	0.29	4.57
11 44 13.10	0010	COOKING EQUIPMENT																			
	6200	ICED TEA BREWER	1-PLUM	3.44	2.33	EA	$675.00	$147.00		$822.00	$965.00	2.00	EA	$ 1,350.00	$ 294.00	$0.00	$ 1,644.00	$ 1,930.00	0.58	4.65
11 44 13.10	0010	COOKING EQUIPMENT																			
	6900	RANGE, RESTURANT TYPE, 6 BURNERS AND 1 STANDARD OVEN, 36" WIDE	Q-1	7.00	2.29	EA	$2,775.00	$130.00		$2,905.00	$3,250.00	2.00	EA	$ 5,550.00	$ 260.00	$0.00	$ 5,810.00	$ 6,500.00	0.29	4.57
11 44 13.10	0010	COOKING EQUIPMENT																			
	9150	TOASTER, CONVEYOR TYPE, 16-22 SLICES/MINUTE				EA	$1,250.00			$1,250.00	$1,375.00	2.00	EA	$ 2,500.00	$ -	$0.00	$ 2,500.00	$ 2,750.00	#DIV/0!	0.00
11 48 00		**FOODSERVICE CLEANING AND DISPOSAL EQUIPMENT**																			
11 48 13.10	0010	DISHWASHERS																			
	2700	DISHWASHER, COMMERCIAL, RACK TYPE																			
	2720	10 TO 12 RACKS/HOUR	Q-1	3.20	5.00	EA	$3,325.00	$284.00		$3,609.00	$4,075.00	2.00	EA	$ 6,650.00	$ 568.00	$0.00	$ 7,218.00	$ 8,150.00	0.63	10.00
11 48 13.10	0010	DISHWASHERS																			
	5200	GARBAGE DISPOSAL 1.5 HP, 100 GPH	L-1	4.80	3.33	EA	$1,800.00	$205.00		$2,005.00	$2,275.00	2.00	EA	$ 3,600.00	$ 410.00	$0.00	$ 4,010.00	$ 4,550.00	0.42	6.66
11 52 00		**AUDIO-VISUAL EQUIPMENT**																			
11 52 13.10	0010	PROJECTION SCREENS, WALL OR CEILING HUNG																			
	0400	ELECTRIC OPERATED, MATTE WHITE, 25 S.F., ECONOMY	2 CARP	5.00	3.20	EA	$1,150.00	$165.00		$1,315.00	$1,500.00	20.00	EA	$ 23,000.00	$ 3,300.00	$0.00	$ 26,300.00	$ 30,000.00	4.00	64.00
11 52 16.10	0010	MOVIE EQUIPMENT																			
	0800	LAMPHOUSES, INCL. RECTIFIERS, XENON, 1,000 WATT	1-ELEC	2.00	4.00	EA	$7,325.00	$240.00		$7,565.00	$8,425.00	20.00	EA	$ 146,500.00	$ 4,800.00	$0.00	$ 151,300.00	$ 168,500.00	10.00	80.00
11 66 00		**ATHELETIC EQUIPMENT**																			
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0020	ABDOMINAL RACK, 2 BOARD CAPACITY				EA	$515.00			$515.00	$570.00	1.00	EA	$ 515.00	$ -	$0.00	$ 515.00	$ 570.00	#DIV/0!	0.00
	0050	ABDOMINAL BOARD, UPHOLSTERED				EA	$760.00			$760.00	$835.00	1.00	EA	$ 760.00	$ -	$0.00	$ 760.00	$ 835.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0300	BICYCAL TRAINER, DELUXE, ELECTRIC				EA	$4,825.00			$4,825.00	$5,300.00	10.00	EA	$ 48,250.00	$ -	$0.00	$ 48,250.00	$ 53,000.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0450	BARBELL SET, CHROME PLATED STEEL, 200 LB.				EA	$765.00			$765.00	$840.00	1.00	EA	$ 765.00	$ -	$0.00	$ 765.00	$ 840.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0500	WEIGHT PLATES, CAST IRON, PER LB.				LB	$3.65			$3.65	$4.02	6,000.00	LB	$ 21,900.00	$ -	$0.00	$ 21,900.00	$ 24,120.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0520	STORAGE RACKS, 10 STATION				EA	$1,200.00			$1,200.00	$1,325.00	1.00	EA	$ 1,200.00	$ -	$0.00	$ 1,200.00	$ 1,325.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0600	CIRCUIT TRAINING APPARATUS, 12 MACHINES MINIMUM	2-CLAB	1.25	12.80	SET	$33,000.00	$525.00		$41,655.00	$46,100.00	1.00	SET	$ 33,000.00	$ 525.00	$0.00	$ 41,655.00	$ 46,100.00	0.80	12.80
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0820	DUMBELL SET, CAST IRON, WITH RACK AND 5 PAIR	2-CLAB			EA	$460.00			$460.00	$505.00	1.00	EA	$ 460.00	$ -	$0.00	$ 460.00	$ 505.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	0900	SQUAT RACKS	2-CLAB	5.00	3.20	EA	$910.00	$131.00		$1,041.00	$1,200.00	1.00	EA	$ 910.00	$ 131.00	$0.00	$ 1,041.00	$ 1,200.00	0.20	3.20
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	1200	MULTI-STATION GYM MACHINE, 5 STATION				EA	$5,050.00			$5,050.00	$5,575.00	1.00	EA	$ 5,050.00	$ -	$0.00	$ 5,050.00	$ 5,575.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	1280	ROWING MACHINE, HYDRAULIC				EA	$1,775.00			$1,775.00	$1,950.00	10.00	EA	$ 17,750.00	$ -	$0.00	$ 17,750.00	$ 19,500.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	1320	TREADMILL, MOTORIZED				EA	$3,525.00			$3,525.00	$3,875.00	10.00	EA	$ 35,250.00	$ -	$0.00	$ 35,250.00	$ 38,750.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	1420	TREATMENT/MASSAGE TABLES, DELUXE, WITH ACCESSORIES				EA	$780.00			$780.00	$860.00	3.00	EA	$ 2,340.00	$ -	$0.00	$ 2,340.00	$ 2,580.00	#DIV/0!	0.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4180	CHINNING BAR, ADJUSTABLE, WALL MOUNTED	1 CARP	5.00	1.60	EA	$221.00	$82.50		$303.50	$370.00	1.00	EA	$ 221.00	$ 82.50	$0.00	$ 303.50	$ 370.00	0.20	1.60
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4200	EXERCISE LADDER, 16' X 1' -7", SUSPENDED	L-2	3.00	5.33	EA	$1,425.00	$241.00		$1,666.00	$1,950.00	1.00	EA	$ 1,425.00	$ 241.00	$0.00	$ 1,666.00	$ 1,950.00	0.33	5.33
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4210	HIGH BAR, FLOOR PLATE ATTACHED	1 CARP	4.00	2.00	EA	$2,575.00	$103.00		$2,678.00	$3,000.00	1.00	EA	$ 2,575.00	$ 103.00	$0.00	$ 2,678.00	$ 3,000.00	0.25	2.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4270	UNEVEN PARRALLEL BARS, ADJUSTABLE	1 CARP	4.00	2.00	EA	$3,825.00	$103.00		$3,928.00	$4,375.00	1.00	EA	$ 3,825.00	$ 103.00	$0.00	$ 3,928.00	$ 4,375.00	0.25	2.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4300	ROPE, CEILING MOUNTED, 18' LONG	1 CARP	3.66	2.19	EA	$207.00	$113.00		$320.00	$400.00	1.00	EA	$ 207.00	$ 113.00	$0.00	$ 320.00	$ 400.00	0.27	2.19
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4330	SIDE HORSES, VAULTING	1 CARP	5.00	1.60	EA	$1,500.00	$82.50		$1,582.50	$1,775.00	1.00	EA	$ 1,500.00	$ 82.50	$0.00	$ 1,582.50	$ 1,775.00	0.20	1.60
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	4360	TREADMILL, MOTORIZED, DELUXE, TRAINING TYPE	1 CARP	5.00	1.60	EA	$3,950.00	$82.50		$4,032.50	$4,475.00	10.00	EA	$ 39,500.00	$ 825.00	$0.00	$ 40,325.00	$ 44,750.00	2.00	16.00
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT																			
	439	WEIGHT LIFTING MULTI-STATION, MINIMUM	2 CLAB	1.00	16.00	EA	$300.00	$655.00		$955.00	$1,325.00	1.00	EA	$ 300.00	$ 655.00	$0.00	$ 955.00	$ 1,325.00	1.00	16.00
11 66 23.13	0010	BASKETBALL EQUIPMENT																			
	1000	BACKSTOPS, WALL MTD., 6' EXTENDED, FIXED, MINIMUM	L-2	1.00	16.00	EA	$1,625.00	$725.00		$2,350.00	$2,875.00	2.00	EA	$ 3,250.00	$ 1,450.00	$0.00	$ 4,700.00	$ 5,750.00	2.00	32.00
11 66 23.13	0010	BASKETBALL EQUIPMENT																			

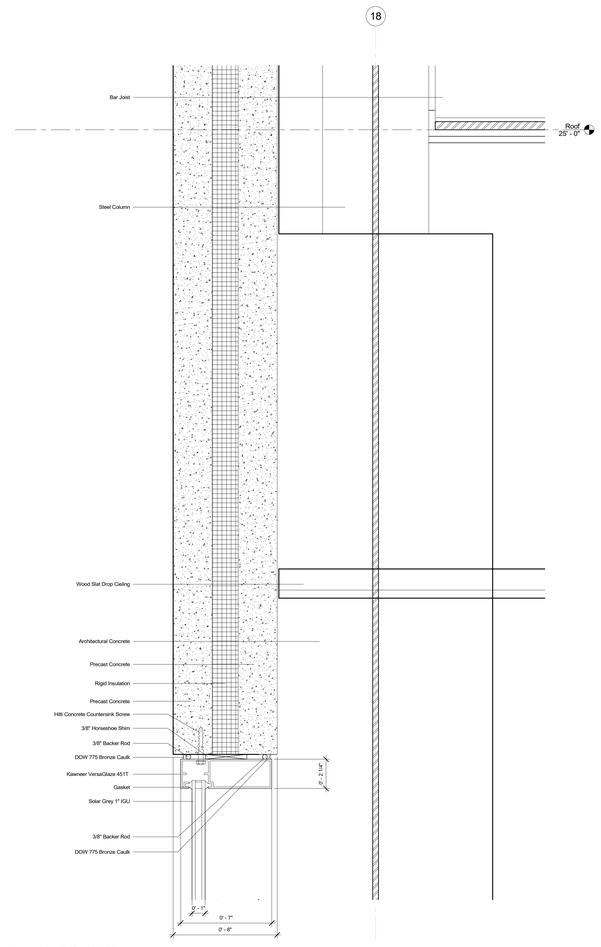
	5800	WALL PADS, 1-1/2" THICK, STANDARD (NOT FIRE RATED)	2 CARP	640.00	0.03	S.F.	$6.40	$1.29		$7.69	$8.95	20.00	S.F.	$ 128.00	$ 25.80	$0.00	$ 153.80	$ 179.00	0.03	0.50
11 66 23.47	0010	GYM MATS																		
	5500	2" THICK, NAUGAHYDE COVERED				S.F.	$5.25			$5.25	$5.75	4,000.00	S.F.	$ 21,000.00	$ -	$0.00	$ 21,000.00	$ 23,000.00	#DIV/0!	0.00
11 66 43.10	0010	SCOREBOARDS																		
	7500	BASKETBALL (ONE SIDE), MINUMUM	R-3	0.25	80.00	EA	$9,375.00	$4,775.00	$520.00	$14,670.00	$18,000.00	1.00	EA	$ 9,375.00	$ 4,775.00	$520.00	$ 14,670.00	$ 18,000.00	4.00	80.00
11 68 00		**PLAY FIELD EQUIPMENT AND STRUCTURES**																		
11 68 33.13	0010	FOOTBALL FEILD EQUIPMENT																		
	0500	SOCCER, REGULATION	B-1	2.00	12.00	PR	$2,050.00	$500.00		$2,550.00	$3,025.00	1.00	PR	$ 2,050.00	$ 500.00	$0.00	$ 2,550.00	$ 3,025.00	0.50	12.00
														$ 510,856.00	$ 21,193.80	$520.00	$ 540,699.80	$ 603,079.00	#DIV/0!	391.68
12 00 00		**FURNISHINGS**																		
12 21 00		**WINDOW BLINDS**																		
12 21 13.33	0010	VINYL HORIZONTAL LOUVER BLINDS																		
	1300	2" FAUX WOOD, 72" WIDE, 72" WIDE	1 CARP	25.00	0.32	EA	$128.00	$16.55		$144.55	$166.00	80.00	EA	$ 10,240.00	$ 1,324.00	$0.00	$ 11,564.00	$ 13,280.00	3.20	25.60
12 32 00		**MANUFACTURED WOOD CASEWORK**																		
12 32 23.10	0010	MANUFACTURED WOOD CASEWORK, STOCK UNTIS																		
	0700	KITCHEN BASE CABINETS, HARDWOOD, NOT INCL. COUNTER TOPS																		
	0710	24" DEEP, 35" HIGH, PREFINISHED																		
	0880	ONE TOP DRAWER, ONE DOOR BELOW, 24" WIDE	2 CARP	22.30	0.72	EA	$435.00	$37.00		$472.00	$535.00	24.00	EA	$ 10,440.00	$ 888.00	$0.00	$ 11,328.00	$ 12,840.00	1.08	17.21
12 32 23.10	0010	MANUFACTURED WOOD CASEWORK, STOCK UNTIS																		
	4000	KITCHEN WALL CABINETS, HARDWOOD, 12" DEEP WITH TWO DOORS																		
	5300	TWO DOORS, 48" WIDE	2 CARP	18.40	0.87	EA	$590.00	$45.00		$635.00	$720.00	24.00	EA	$ 14,160.00	$ 1,080.00	$0.00	$ 15,240.00	$ 17,280.00	1.30	20.88
12 36 00		**COUTERTOPS**																		
12 36 16.10	0010	METAL COUNTERTOPS																		
	3210	STAINLESS STEEL	1 CARP	12.00	0.67	L.F.	$365.00	$34.50		$399.50	$450.00	20.00	L.F.	$ 7,300.00	$ 690.00	$0.00	$ 7,990.00	$ 9,000.00	1.67	13.34
12 36 40.10	0010	NATURAL STONE COUNTERTOPS																		
	2800	GRANITE, AVERAGE, 1-1/4" THICK, 24" WIDE, NO SPLASH	1 BRICK	13.01	0.62	L.F.	$174.00	$31.50		$205.50	$240.00	60.00	L.F.	$ 10,440.00	$ 1,890.00	$0.00	$ 12,330.00	$ 14,400.00	4.61	36.90
12 46 00		**FURNISHING ACCESSORIES**																		
12 46 19.50	0010	WALL CLOCKS																		
	0080	12" DIAMETER, SINGLE FACE	1 ELEC	8.00	1.00	EA	$89.00	$60.00		$149.00	$187.00	200.00	EA	$ 17,800.00	$ 12,000.00	$0.00	$ 29,800.00	$ 37,400.00	25.00	200.00
12 46 33.13	0010	TRASH RECEPTACLES																		
	5520	PLASTIC, WITH LID, 35 GAL.	1 CLAD	60.00	0.13	EA	$194.00	$5.45		$199.45	$221.00	200.00	EA	$ 38,800.00	$ 1,090.00	$0.00	$ 39,890.00	$ 44,200.00	3.33	26.60
12 48 00		**RUGS AND MATS**																		
12 48 13.13	0010	ENTRANCE FLOOR MATS																		
	0020	RECESSED, BLACK RUBBER, 3/8" THICK, SOLID	1 CLAB	155.00	0.05	S.F.	$27.00	$2.12		$29.12	$32.50	120.00	S.F.	$ 3,240.00	$ 254.40	$0.00	$ 3,494.40	$ 3,900.00	0.77	6.24
12 51 00		**OFFICE FURNITURE**																		
12 51 16.16	0010	WOOD CASE GOODS																		
	0150	DESK, 29" HIGH, DOUBLE PEDESTAL, 30" X 60"																		
	0160	WOOD, MINIMUM				EA	$730.00			$730.00	$805.00	42.00	EA	$ 30,660.00	$ -	$0.00	$ 30,660.00	$ 33,810.00	#DIV/0!	0.00
12 51 23.33	0010	CONFERENCE TABLES																		
	6720	RECTANGLE, 96" X 42", MINIMUM				EA	$1,425.00			$1,425.00	$1,575.00	4.00	EA	$ 5,700.00	$ -	$0.00	$ 5,700.00	$ 6,300.00	#DIV/0!	0.00
12 52 00		**SEATING**																		
12 52 23.13	0010	OFFICE CHAIRS																		
	2000	STANDARD OFFICE CHAIR, EXECUTIVE, MINIMUM				EA	$283.00			$283.00	$310.00	200.00	EA	$ 56,600.00	$ -	$0.00	$ 56,600.00	$ 62,000.00	#DIV/0!	0.00
12 56 00		**INSTITUTIONAL FURNITURE**																		
12 56 33.10	0010	FURNITURE SCHOOL																		
	0500	CLASSROOM, MOVABLE CHAIR & DESK TYPE, MINIMUM				SET				$73.50	$81.00	75.00	SET	$ -	$ -	$0.00	$ 5,512.50	$ 6,075.00	#DIV/0!	0.00
12 63 00		**STADIUM AND ARENA SEATING**																		
12 63 13.13	0010	BLEACHERS																		
	3000	TELESCOPING, MANUAL TO 15 TIER, MINIMUM	F-5	65.00	0.49	SEAT	$118.00	$25.50		$143.50	$169.00	100.00	SEAT	$ 11,800.00	$ 2,550.00	$0.00	$ 14,350.00	$ 16,900.00	1.54	49.20
12 93 00		**INTERIOR PUBLIC SPACE FURNISHINGS**											0							
12 93 13.10	0010	BICYCLE RACKS																		
	0060	S CURVE, 1-7/8" OD STL. PIPE, 11 GA., GALV, 7 BIKE CAP	2 CLAB	9.00	1.78	EA	$201.00	$73.00		$274.00	$330.00	6.00	EA	$ 1,206.00	$ 438.00	$0.00	$ 1,644.00	$ 1,980.00	0.67	10.67
12 93 13.10	0010	BICYCLE RACKS																		
	0060	S CURVE, 1-7/8" OD STL. PIPE, 11 GA., GALV, 9 BIKE CAP	2 CLAB	8.00	2.00	EA	$315.00	$82.00		$397.00	$470.00	6.00	EA	$ 1,890.00	$ 492.00	$0.00	$ 2,382.00	$ 2,820.00	0.75	12.00
12 93 23.10	0010	TRASH RECEPTACLES																		
	0510	RECYCLED PLASTIC, VAR COLORS, ROUND, 32 GAL., 31" X 32"	2 CLAB	5.00	3.20	EA	$765.00	$131.00		$896.00	$1,050.00	10.00	EA	$ 7,650.00	$ 1,310.00	$0.00	$ 8,960.00	$ 10,500.00	2.00	32.00
12 93 23.20	0010	TRASH CLOSURE																		
	0020	STEEL WITH PULLOVER COVER, 2'-3" WIDE, 4'-7" HIGH, 6'-2" LONG	2 CLAB	5.00	3.20	EA	$2,125.00	$131.00		$2,256.00	$2,550.00	10.00	EA	$ 21,250.00	$ 1,310.00	$0.00	$ 22,560.00	$ 25,500.00	2.00	32.00
														$ 249,176.00	$ 25,316.40	$ -	$ 280,004.90	$ 318,185.00	#DIV/0!	482.64
13 00 00		**SPECIAL CONSTRUCTION**																		
14 00 00		**CONVEYING EQUIPMENT**																		
14 21 00		**ELECTRIC TRACTION ELEVATORS**																		
14 21 23.10	0010	ELECTRIC TRACTION PASSENGER ELEVATORS AND OPTIONS																		
	1625	ELECTRIC PASS., BASE UNIT, 2000LB., 200 FPM., 4 STOP, STD FINISH	2 ELEV	0.05	320.00	EA	$105,000.00	$26,900.00		$131,900.00	$155,500.00	2.00	EA	$ 210,000.00	$ 53,800.00	$0.00	$ 263,800.00	$ 311,000.00	40.00	640.00
14 27 00		**CUSTOM ELEVATOR CABS AND DOORS**																		
14 27 13.10	0010	CAB FINISHES																		
	3375	ALUMINUM EGGCRATE CEILING				EA	$710.00			$710.00	$780.00	2.00	EA	$ 1,420.00	$ -	$0.00	$ 1,420.00	$ 1,560.00		0.00
14 27 13.10	0010	CAB FINISHES																		
	3400	STAINLESS STEEL DOORS				EA	$4,125.00			$4,125.00	$4,550.00	2.00	EA	$ 8,250.00	$ -	$0.00	$ 8,250.00	$ 9,100.00		0.00
14 27 13.10	0010	CAB FINISHES																		
	3450	EPOXY FLOORING				EA	$475.00			$475.00	$520.00	2.00	EA	$ 950.00	$ -	$0.00	$ 950.00	$ 1,040.00		0.00
14 27 13.10	0010	CAB FINISHES																		
	3550	STAINLESS STEEL WALLS				EA	$4,150.00			$4,150.00	$4,550.00	2.00	EA	$ 8,300.00	$ -	$0.00	$ 8,300.00	$ 9,100.00		0.00
14 27 13.10	0010	CAB FINISHES																		
	3575	STAINLESS STEEL RETURN AT DOORS				EA	$1,200.00			$1,200.00	$1,325.00	2.00	EA	$ 2,400.00	$ -	$0.00	$ 2,400.00	$ 2,650.00		0.00

14 28 00		**ELEVATOR EQUIPMENT AND CONTROLS**																		
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3125	INTERCOM SERVICE	2 ELEV	3.00	5.33	EA	$560.00	$450.00	$1,010.00	$1,275.00	2.00	EA	$ 1,120.00	$ 900.00	$0.00	$ 2,020.00	$ 2,550.00	0.67	10.67
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3175	CENTER OPENING 1 SPEED DOORS	2 ELEV	2.00	8.00	EA	$2,075.00	$670.00	$2,745.00	$3,300.00	2.00	EA	$ 4,150.00	$ 1,340.00	$0.00	$ 5,490.00	$ 6,600.00	1.00	16.00
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3275	AUTOMATIC EMERGENCY POWER SWITCHING	2 ELEV	0.66	24.24	EA	$1,275.00	$2,025.00	$3,300.00	$4,425.00	2.00	EA	$ 2,550.00	$ 4,050.00	$0.00	$ 6,600.00	$ 8,850.00	3.03	48.48
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3300	MANUAL EMERGENCY POWER SWITCHING	2 ELEV	8.00	2.00	EA	$535.00	$168.00	$703.00	$840.00	2.00	EA	$ 1,070.00	$ 336.00	$0.00	$ 1,406.00	$ 1,680.00	0.25	4.00
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3625	HALL FINISHES, STAINLESS STEEL DOORS	2 ELEV			EA	$1,475.00		$1,475.00	$1,625.00	2.00	EA	$ 2,950.00	$ -	$0.00	$ 2,950.00	$ 3,250.00		0.00
	3650	STAINLESS STEEL FRAMES	2 ELEV			EA	$1,550.00		$1,550.00	$1,700.00	2.00	EA	$ 3,100.00	$ -	$0.00	$ 3,100.00	$ 3,400.00		0.00
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3675	12 MONTH MAINTENANCE CONTRACT							$3,750.00	$4,125.00	2.00	EA	$ -	$ -	$0.00	$ 7,500.00	$ 8,250.00		0.00
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3700	SIGNAL DEVICES, HALL LANTERNS	2 ELEV	8.00	2.00	EA	$540.00	$168.00	$708.00	$845.00	2.00	EA	$ 1,080.00	$ 336.00	$0.00	$ 1,416.00	$ 1,690.00	0.25	4.00
	3725	POSITION INDICATORS	2 ELEV	9.40	1.70	EA	$350.00	$143.00	$493.00	$600.00	2.00	EA	$ 700.00	$ 286.00	$0.00	$ 986.00	$ 1,200.00	0.21	3.40
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS																		
	3800	VARIABLE VOLTAGE, O.H. GEARLESS MACHINE, MIN.	2 ELEV	0.16	100.00	EA	$34,400.00	$8,400.00	$42,800.00	$50,500.00	2.00	EA	$ 68,800.00	$ 16,800.00	$0.00	$ 85,600.00	$ 101,000.00	12.50	200.00
													$ 316,840.00	$ 77,848.00	$ -	$ 402,188.00	$ 472,920.00	57.91	926.55
21 00 00		**FIRE SUPPRESSION**																		
50 17 10	0200	(HPW) & (CRC):				S.F.	$20.50		$20.50	$20.50	10,175	S.F.	$ 208,587.50	$ -	$0.00	$ 208,587.50	$ 208,587.50	#DIV/0!	0.00
50 17 14	0200	Counseling Services:				S.F.	$15.40		$15.40	$15.40	3,790	S.F.	$ 58,366.00	$ -	$0.00	$ 58,366.00	$ 58,366.00	#DIV/0!	0.00
50 17 20	0200	University Recreation UREC:				S.F.	$24.50		$24.50	$24.50	36,530	S.F.	$ 894,985.00	$ -	$0.00	$ 894,985.00	$ 894,985.00	#DIV/0!	0.00
50 17 24	0200	All Departments:				S.F.	$15.10		$15.10	$15.10	6,890	S.F.	$ 104,039.00	$ -	$0.00	$ 104,039.00	$ 104,039.00	#DIV/0!	0.00
													$ 1,265,977.50	$ -	$ -	$ 1,265,977.50	$ 1,265,977.50	#DIV/0!	0.00
22 00 00		**PLUMBING**																		
50 17 10	0200	(HPW) & (CRC):				S.F.	$20.50		$20.50	$20.50	10,175	S.F.	$ 208,587.50	$ -	$0.00	$ 208,587.50	$ 208,587.50	#DIV/0!	0.00
50 17 14	0200	Counseling Services:				S.F.	$15.40		$15.40	$15.40	3,790	S.F.	$ 58,366.00	$ -	$0.00	$ 58,366.00	$ 58,366.00	#DIV/0!	0.00
50 17 20	0200	University Recreation UREC:				S.F.	$24.50		$24.50	$24.50	36,530	S.F.	$ 894,985.00	$ -	$0.00	$ 894,985.00	$ 894,985.00	#DIV/0!	0.00
50 17 24	0200	All Departments:				S.F.	$15.10		$15.10	$15.10	6,890	S.F.	$ 104,039.00	$ -	$0.00	$ 104,039.00	$ 104,039.00	#DIV/0!	0.00
													$ 1,265,977.50	$ -	$ -	$ 1,265,977.50	$ 1,265,977.50	#DIV/0!	0.00
23 00 00		**HEATING, VENTILATION, & AIR CONDITIONING**																		
50 17 10	0300	(HPW) & (CRC):				S.F.	$45.00		$45.00	$45.00	10,175	S.F.	$ 457,875.00	$ -	$0.00	$ 457,875.00	$ 457,875.00	#DIV/0!	0.00
15 17 14	0300	Counseling Services:				S.F.	$25.50		$25.50	$25.50	3,790	S.F.	$ 96,645.00	$ -	$0.00	$ 96,645.00	$ 96,645.00	#DIV/0!	0.00
50 17 20	0300	University Recreation UREC:				S.F.	$31.00		$31.00	$31.00	36,530	S.F.	$ 1,132,430.00	$ -	$0.00	$ 1,132,430.00	$ 1,132,430.00	#DIV/0!	0.00
50 17 24	0300	All Departments:				S.F.	$45.00		$45.00	$45.00	6,890	S.F.	$ 310,050.00	$ -	$0.00	$ 310,050.00	$ 310,050.00	#DIV/0!	0.00
													$ 1,997,000.00	$ -	$ -	$ 1,997,000.00	$ 1,997,000.00	#DIV/0!	0.00
26 00 00		**ELECTRICAL**																		
50 17 10	0400	(HPW) & (CRC):				S.F.	$36.50		$36.50	$36.50	10,175	S.F.	$ 371,387.50	$ -	$0.00	$ 371,387.50	$ 371,387.50	#DIV/0!	0.00
50 17 14	0400	Counseling Services:				S.F.	$34.00		$34.00	$34.00	3,790	S.F.	$ 128,860.00	$ -	$0.00	$ 128,860.00	$ 128,860.00	#DIV/0!	0.00
50 17 20	0400	University Recreation UREC:				S.F.	$39.00		$39.00	$39.00	36,530	S.F.	$ 1,424,670.00	$ -	$0.00	$ 1,424,670.00	$ 1,424,670.00	#DIV/0!	0.00
50 17 24	0400	All Departments:				S.F.	$33.50		$33.50	$33.50	6,890	S.F.	$ 230,815.00	$ -	$0.00	$ 230,815.00	$ 230,815.00	#DIV/0!	0.00
													$ 2,155,732.50	$ -	$ -	$ 2,155,732.50	$ 2,155,732.50	#DIV/0!	0.00
27 00 00		**COMMUNICATIONS**																		
31 00 00		**EARTHWORK**																		
31 14 00		**EARTH STRIPPING AND STOCKPILING**																		
31 14 13.23	0010	TOPSOIL STRIPPING AND STOCKPILING																		
	0020	200 HP DOZER, IDEAL CONDITIONS	B-10B	2,300.00	0.01	C.Y.		$0.26	$0.56	$0.82	$1.02	10,000.00	C.Y.	$ -	$ 2,600.00	$5,600.00	$ 8,200.00	$ 10,200.00	4.35	50.00
31 22 00		**GRADING**																		
31 22 13.20	0010	ROUGH GRADING SITES																		
	0130	1,100-3,000 S.F., SKID STEER & LABOR	B-62	1.50	16.00	EA		$715.00	$116.00	$831.00	$1,200.00	600.00	EA	$ -	$ 429,000.00	$69,600.00	$ 498,600.00	$ 720,000.00	400.00	9600.00
31 22 16.10	0010	FINISH GRADING																		
	0100	FINISH GRADING AREA TO BE PAVED WITH GRADER, LARGE AREA	B-11L	2,000.00	0.01	S.Y.		$0.38	$0.33	$0.71	$0.94	30,000.00	S.Y.	$ -	$ 11,400.00	$9,900.00	$ 21,300.00	$ 28,200.00	15.00	240.00
31 23 00		**EXCAVATION AND FILL**																		
31 23 16.13	0010	EXCAVATING, TRENCH																		
	0011	OR CONTINUOUS FOOTING																		
	0020	COMMON EARTH WITH NO SHEETING OR DEWATERING INCLUDED																		
	0050	1' TO 4' DEEP, 3/8 C.Y. EXCAVATOR	B-11C	150.00	0.11	B.C.Y.		$5.15	$2.13	$7.28	$10.05	1,300.00	B.C.Y.	$ -	$ 6,695.00	$2,769.00	$ 9,464.00	$ 13,065.00	8.67	139.10
31 23 23.13	0010	BACKFILL																		
	0015	BY HAND, NO COMPACTION, LIGHT SOIL	1 CLAB	14.00	0.57	L.C.Y		$23.50		$23.50	$35.50	400.00	L.C.Y.	$ -	$ 9,400.00	$0.00	$ 9,400.00	$ 14,200.00	28.57	228.40
31 62 00		**DRIVEN PILES**																		
31 62 13.23	0010	PRESTRESSED CONCRETE PILES																		
	0020	UNLESS SPECIFIED OTHERWISE, NOT INCL. PILE CAPS OR MOBILIZATION																		
	2200	PRECAST, PRESTRESSED, 50' LONG, CYLINDER, 12" DIAM., 2-3/8" WALL	B-19	720.00	0.09	V.L.F.	$27.50	$4.74	$2.71	$34.95	$40.50	30,000.00	V.L.F.	$ 825,000.00	$ 142,200.00	$81,300.00	$ 1,048,500.00	$ 1,215,000.00	41.67	2670.00
													$ 825,000.00	$ 601,295.00	$ 169,169.00	$ 1,595,464.00	$ 2,000,665.00	498.25	12927.50
32 00 00		**EXTERIOR IMPROVEMENTS**																		
32 16 00		CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS																		
32 16 13.13	0010	CAST-IN-PLACE CONCRETE CURBS AND GUTTERS																		
	0290	FORMS ONLY, NO CONCRETE																		
	0300	CONCRETE, WOOD FORMS, 6" X 18", STRAIGHT	C-2	500.00	0.10	L.F.	$3.00	$4.82		$7.82	$10.60	3,000.00		$ 9,000.00	$ 14,460.00	$0.00	$ 23,460.00	$ 31,800.00	6.00	288.00

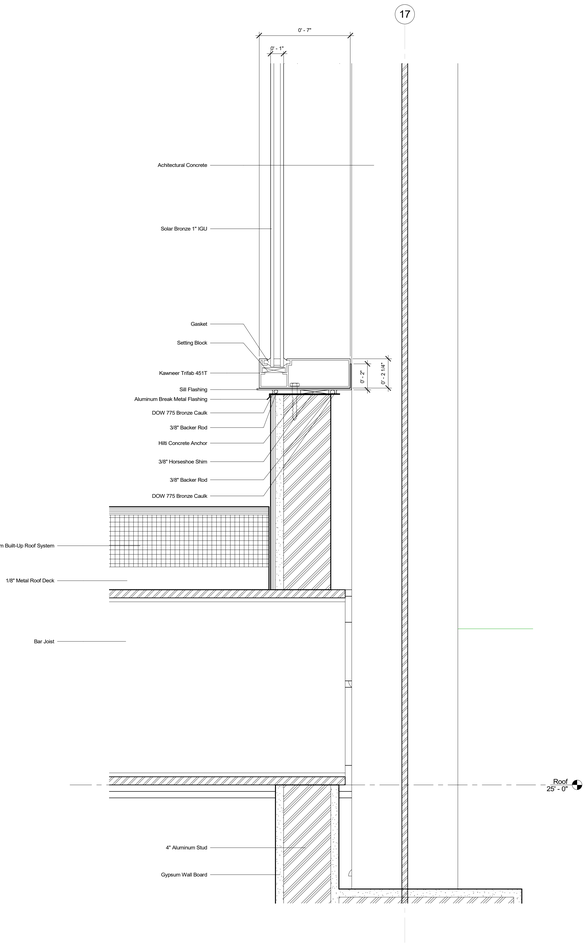
	TOTALS BEFORE OVER HEAD AND PROFIT																				
													$ 16,879,577.37	$ 7,079,601.26	$ 638,889.85	$ 25,573,941.00	$ 30,427,908.33	#DIV/0!	145491.91
	TOTAL JOB COST											Square Footage									
													$ 16,899,892.87	$ 7,086,171.26	$ 638,889.85	$ 29,360,225.47	$ 34,219,560.30	#DIV/0!	145650.91
	SQUARE FOOT COSTS																				
												88,000	$ 192.04	$ 80.52	$ 7.26	$ 333.64	$ 388.86		

COST ESTIMATE FOR BALLPARK PRICE (PAGES 892-894)								
INFORMATION			HIGH COST		MEDIUM COST		LOW COST	
DEPARTMENT	CSI NUMBER (50 17 00)	TOT. AREA S.F.	COST /S.F	TOTAL COST	COST /S.F	TOTAL COST	COST /S.F	TOTAL COST
(HPW) & (CRC):	100500	10,175	286	2910050	213	2167275	163	1658525
Counseling Services:	140500	3,790	285	1080150	195	739050	154	583660
University Recreation UREC:	200500	36,530	435	15890550	287	10484110	192	7013760
All Departments:	240500	6,890	370	2549300	278	1915420	201	1384890
				22,430,050.00		15,305,855.00		10,640,835.00

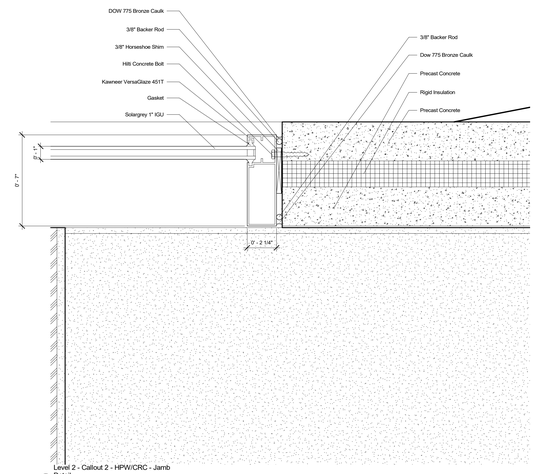
Material	Low	Medium	High
Structure	Steel $16- $20 sq ft	Precast Concrete $30- $35 sq ft	Cast-In Place Concrete $40- $50 sq ft
Cladding	Brick $6- $10.50	Smooth Precast 46 sq ft	Brick Precast $51 sq ft
Curtain Wall	Non-thermally Broken $175 sq ft	Thermally Broken $250 sq ft	Thermally Broken w/ IGU $300 sq ft
Roofing	EPDM $2.50- $5 sq ft	Asphalt $4- $6 sq ft	TPO $7- $9 sq ft
Insulation	Batt Insulation $0.12- $0.16 sq ft	Spray foam Insulation $1- $1.20 sq ft	Exterior Ridgid Insulation $1.73- $2.40 sq ft
Flooring	Vinyl Commercial Tile $0.99 sq ft	Concrete $2- $6 sq ft	Hardwood $6- $22 sq ft
Doors	Solid Core Wood Doors $100- $200	Hollow Metal Door $200- $700	Aliminum Glazed Door $900- $2,100



1 HPW Wall Section - Head Detail
1" = 0'-3"



3 HPW Wall Section - Sill Detail
1 : 3



2 Level 2 - Callout 2 - HPW/CRC - Jamb Detail
1" = 0'-3"

MISSISSIPPI STATE UNIVERSITY

No.	Description	Date

Group 16

AS_4.0

Head, Seal, and Jam Details

A147

Scale

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Materials Lists

Material Options and Selections
Images of Materials
Product Data Sheets

Group 16
Architecture Studio III-B

Table of Contents

Precast Panel Thin Brick

Manufacturer: General Shale

ID: Transtation

Location: All Exterior Cladding

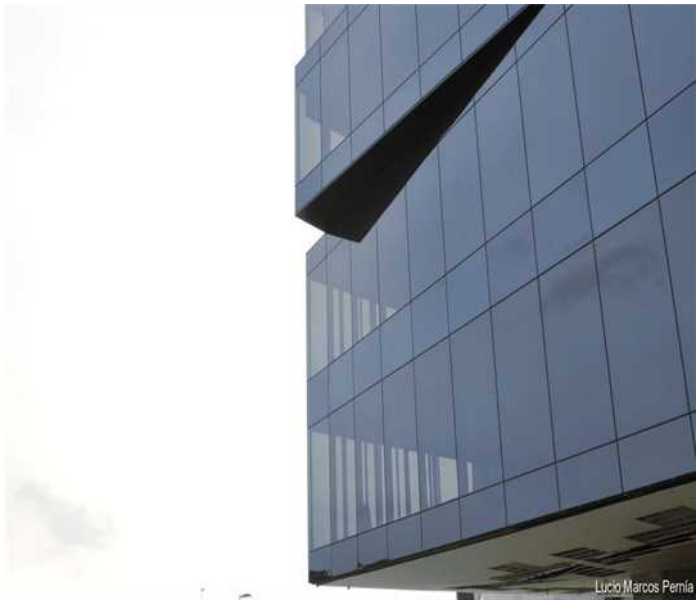
Storefront/CurtainWall

Manufacturer: Kawneer

ID: #40 Dark Bronze

Location: All Exterior Glazing Framing

Glazing



Manufacturer: Vitro Glass

ID: Optigray + Solarban 70 (3) Clear

Location: All Exterior Glazing

Flooring (Common)

Manufacturer: Armstrong

ID: Raffia Stream (Blizzard)

Location: Hallways

Flooring (Gym)

Manufacturer: SnapSports

ID: Classic XL

Location: Gym Floor

Flooring (Office)

Manufacturer: Interface

ID: Bitrate Dark Aqua 106303

Location: Offices

Flooring (Bathroom)

Manufacturer: Emser

ID: Facade

Location: Bathrooms

Ceiling (Common)

Manufacturer: Woodworks

ID: Linear Veneered Panels

Location:All Ceilings Except Gym Area

Millwork

Manufacturer: Advanced Cabinet

ID: Custom

Location: Kitchens/Lockerrooms

Wall Covering (Common)

SW 7104
Cotton White
View Details

Manufacturer: Sherwin Williams

ID: SW7104

Location: Hallways

Wall Covering (Office)

SW 7063
Nebulous White
View Details

Manufacturer: Sherwin Williams

ID: SW7063

Location: Offices

Wall Covering (Bathroom)

SW 7757
High Reflective White
View Details

Manufacturer: Sherwin Williams

ID: SW7757

Location: Bathrooms

Wall Covering (Gym)

Manufacturer: Sherwin Williams

ID: SW7757

Location: Gyms

Trim

Manufacturer: Flexco Floors

ID: Cove 4 1/2" 023 Pebble

Location: Perimeter of All Walls

Doors (Exterior)

Manufacturer: Kawneer

ID: #40 Dark Bronze

Location: Exterior Doors

Doors (Interior)

Manufacturer: Oregon Door

ID: Mahogany-Auburn

Location: Interior Doors

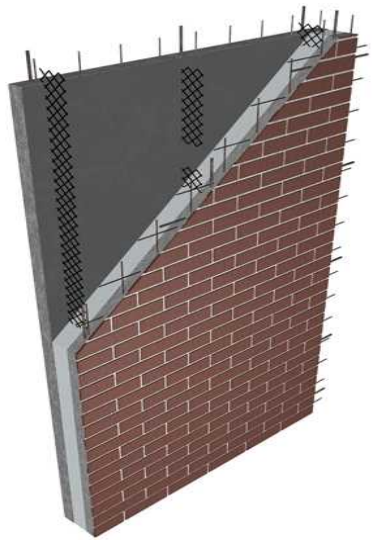
Countertops
Manufacturer: Formica
ID: 7223 New White
Location: Bathrooms/Kitchens

Bathroom Partitions

Manufacturer: Fast Partitions
ID: 510 Black
Location: Toilets

Material Category: Exterior Cladding

Final Product Choice: Precast Sandwich Panels With Thin Brick



Type of Material: Concrete/Thin Brick

Manufacturer: Lee's Precast Concrete Inc./ General Shale

Product Identification: 6060011328

Quantity in Job: 35,583 SQ FT

Price Per Square Foot: $51

Total Price For Job: $1,814,733

Description of Product: 6" Thick precast panel with 2" of rigid insulation set inside. The exterior face has General Shale thin brick set in as a visual cladding.

Reason For Selection: The desired look of the building is brick which is why we went with thin brick. The ease and speed of precast wall sections persuaded us to make this selection

Secondary Product Choice A: Traditional Brick

Type of Material: Brick

Manufacturer: General Shale

Product Identification: "Burlington Modular"

Quantity in Job: 35,583 SQ FT

Price Per Square Foot: $6-$10.50

Total Price For Job: $213,498-$373,621.50

Secondary Product Choice B: Smooth Precast Sandwich Panels

Type of Material: Concrete

Manufacturer: USG Structural Solutions

Product Identification: Concrete Foundation Wall XD

Quantity in Job: 35,583 SQ FT

Price Per Square Foot: $46

Total Price For Job: $1,636,818

PRODUCT DESCRIPTION

BASIC USE Thin clay brick units units for use in adhered masonry construction for both interior and exterior applications.

For residential, commercial and institutional applications.

COMPOSITION AND MATERIAL Thin brick units are manufactured from clay, shale or similar naturally occurring earthy substances and subjected to a heat treatment at elevated temperatures (firing), creating a bond between the particulate constituents resulting in a severe-weathering brick with one or more finished faces. Custom shapes and sizes are available. The units are saw cut to approximately 1/2" thickness after firing.

SHAPES AND SIZES Thin brick units are available in a modular face size of 2-1/4" (height) x 7-5/8" (length). Thin stone units size varies by stone type. Weight of all thin brick products does not exceed 15 psf.

Thin brick units are available in standard stretcher (flat) and as cut corner shapes.

TOLERANCES Thin brick is manufactured to meet the tolerances of ASTM C 1088 TBX, TBS, and TBA as applicable.

Thin brick are inspected to be sound and free of cracks, blemishes or other defects that would either affect the serviceability or strength of the unit, or become exposed once installed and visible when viewed from a distance of not less than 20 ft. under diffused light.

LIMITATIONS Manufactured masonry products are generally intended for above grade installations. Manufactured masonry units, regardless of their composition, are inherently absorptive, and as such, are not intended for use below grade. Units installed below grade will wick moisture from the soil that is in contact with the masonry units effectively creating a condition known as "rising damp" in the masonry veneer.

Standard brick units are not intended to be used as pavers. General Shale offers paving brick in a variety of colors for light traffic paving installations.

In colder climates, masonry walls at grade may also become exposed to de-icing compounds. As with other types of manufactured masonry units, clay brick masonry units should not be installed where they will be directly exposed to de-icing compounds used to melt snow and ice from pavements. For further information with regard to installing masonry at or below grade refer to the "At Grade Design Ideas" brochure.

The function of caps and copings is to prevent moisture from entering the building envelope through the top of the wall. As most manufactured masonry units are produced in relatively short lengths, if they are used as a cap or coping material more mortar joints are required. These horizontal mortar joints are the most likely entry point for moisture to infiltrate the building envelope. As such, it is generally recommended within the industry to install proper flashings below all caps and copings or to use longer components such as quarried stone or metal parapet caps to reduce the number of joints thereby limiting the areas that may allow moisture infiltration of the building envelope.

COLORS AND FINSHES Colors for each of the thin brick and thin rock products are available from your sales representative.

Colors vary by plant location.

As a manufactured material, General Shale products are monitored for color consistency. Slight variations between batches may occur and it is recommended that the installer mix units from different skids during installation.

Consultants should review samples prior to selecting a particular color and finish.

TECHNICAL DATA

APPLICABLE STANDARDS Required properties for thin brick units are described in ASTM C 1088 Standard Specification for Thin Veneer Brick Units Made From Clay or Shale.

These standards classify clay and shale products as either moderate-weathering or severe-weathering depending on the material's tested physical properties of compressive strength and 24-hour absorption.

General Shale Brick products meet and exceed the requirements necessary to comply with the severe-weathering classification. They have been extensively tested using standardized test methods found in ASTM C 67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile. Test reports are available upon request.

INSTALLATION

DELIVERY - General Shale brick products are delivered to the site in protective packaging.

HANDLING - Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.

STORAGE - Store General Shale brick products in a manner designed to prevent damage and staining of units. Stack units on timbers or platforms at least 3" above grade. Place polyethylene or other plastic film between wood and other finished surfaces of units when stored for extended periods of time.

Stored units should be covered if exposed to extreme weather conditions.

INSTALLATION Construct adhered masonry veneer in accordance with ACI 530-05/ASCE 5-05/TMS 402-05, Building Code Requirements for Masonry Structures in the United States, and any local requirements stipulated by the authorities having jurisdiction.

For additional installation information refer to the following to the following General Shale Installation Guides:

- Tech Bulletin: Thin Veneer Installation Guide – Exterior Commercial
- Tech Bulletin: Exterior Framed Installation Guide Using The Laticrete® MVIS™ System

General Shale brick products must be connected to a structural substrate with an approved masonry connection system, designed by the consultant for each specific installation.

AVAILABILITY AND COST

AVAILABITY General Shale products are available throughout the continental United States, as full-bed masonry units.

Availability and various product details (colors, textures etc.) may vary by location. Please consult with your General Shale sales representative.

Delivery times for orders will vary based on the complexity of what is required.

General Shale cannot be responsible for delays due to fire, acts of God, or any other cause beyond its control or which could not be reasonably foreseen.

Contact General Shale for a list of dealers in your area.

COST Quoted on a project basis for job-specific manufacturing to project requirements.

MAINTENANCE

General Shale brick products should have excess mortar removed from their faces by brushing as they are placed within the wall at the point of tooling.

Clean General Shale Brick products in accordance with the cleaning guidelines in General Shale Technical Bulletin Brick Cleaning Information. Various masonry detergents and cleaning systems can change the color of masonry products. Acid-based cleaning agents will darken the color of the masonry units.

Always pre-test cleaning agents and methods on the job-site mock-up panel or a small inconspicuous area of the wall. The Consultant and/or Owner should approve the test area prior to the start of full-scale cleaning operations.

General Shale does not recommend the application of water repellent or graffiti-proofing sealers to its masonry products.

TECHNICAL SERVICES

General Shale offers consultation services to assist with design, detailing and specification questions and with pricing. Enquiries are attended to promptly and without obligation.

RELATED REFERENCES

General Shale distributes an integrated technical information system, comprised of the following components:

- Sample detail drawings which are available in .pdf format.
- General Shale Technical Bulletins which are available in .pdf format.
- Architectural Catalog Shape drawings.
- BIA Technical Notes and NCMA Tek Notes.

All of these technical resources are available to be downloaded from the General Shale web site at www.GeneralShale.com.

General Shale also makes available samples for color and finish, coursing charts, and copies of test reports upon request.

General Shale

DATA SHEET | Clay Facing Bricks

Cleveland County, NC Mfg. Plant
04 21 00-US 11/16

PRODUCT DESCRIPTION

BASIC USE A clay facing brick unit used in masonry construction for both interior and exterior applications.

For residential, commercial and institutional applications.

COMPOSITION AND MATERIAL Brick are manufactured from clay, shale or similar naturally occurring earthy substances and subjected to a heat treatment at elevated temperatures (firing) creating a bond between the particulate constituents resulting in a severe-weathering brick with one or more finished faces. Custom shapes and sizes are available.

SHAPES AND SIZES General Shale brick products are available in a variety of standard sizes.

	Height	Length	Bed
Modular	2-1/4"	7-5/8"	3-5/8"
Norman	2-1/4"	11-5/8"	3-5/8"
Closure	3-5/8"	7-5/8"	3-5/8"
Utility	3-5/8"	11-5/8"	3-5/8"
Monarch	3-5/8"	15-5/8"	3-5/8"
Engineer	2-3/4"	7-5/8"	3-5/8"

General Shale produces many architectural shapes to work with most brick sizes, and can also produce custom brick shapes and arches.

TOLERANCES Cleveland County Plant brick is manufactured to meet the FBX, FBS or FBA tolerances of ASTM C216.

General Shale bricks are inspected to be sound and free of cracks, blemishes or other defects that would either affect the serviceability or strength of the unit, or become exposed once installed and visible when viewed from a distance of not less than 20 ft. under diffused light.

LIMITATIONS Manufactured masonry products are generally intended for above grade installations. Manufactured masonry units, regardless of their composition, are inherently absorptive, and as such, are not intended for use below grade. Units installed below grade will wick moisture from the soil that is in contact with the masonry units effectively creating a condition known as "rising damp" in the masonry veneer.

Standard brick units are not intended to be used as pavers. General Shale offers paving brick in a variety of colors for light traffic paving installations.
In colder climates, masonry walls at grade may also become exposed to de-icing compounds. As with other types of manufactured masonry units, clay brick masonry units should not be installed where they will be directly exposed to de-icing compounds used to melt snow and ice from pavements.

The function of caps and copings is to prevent moisture from entering the building envelope through the top of the wall. As most manufactured masonry units are produced in relatively short lengths, if they are used as a cap or coping material more mortar joints are required. These horizontal mortar joints are the most likely entry point for moisture to infiltrate the building envelope. As such, it is generally recommended within the industry to install proper flashings below all caps and copings or to use longer components such as quarried stone or metal parapet caps to reduce the number of joints thereby limiting the areas that may allow moisture infiltration of the building envelope.

COLORS AND FINSHES
The Cleveland County Plant produces brick in a wide spectrum of through the body colors and a variety of textures, including velour, smooth and rockface.

As a manufactured material, General Shale brick products are monitored for color consistency. Slight variations between batches may occur and it is recommended that the installer mix units from different skids during installation. Consultants should review samples prior to selecting a particular color and finish.

TECHNICAL DATA

APPLICABLE STANDARDS Required properties for clay or shale brick units are described in ASTM C 216, Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).

These standards classify clay and shale products as either moderate-weathering or severe-weathering depending on the material's tested physical properties of compressive strength and 24-hour absorption.

General Shale brick products meet and exceed the requirements necessary to comply with the severe-weathering classification. They have been extensively tested using standardized test methods found in ASTM C 67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile. Test reports are available upon request.

INSTALLATION

HANDLING - Lift skids with proper and sufficiently long slings or forks with protection to prevent damage to units. Protect edges and corners.

STORAGE - Store General Shale products in a manner designed to prevent damage and staining of units. Stack units on timbers or platforms at least 3" above grade. Place polyethylene or other plastic film between wood and other finished surfaces of units when stored for extended periods of time.

Stored units should be covered if exposed to extreme weather conditions.

Do not use de-icing compounds to remove ice from masonry surfaces.

PREPARATORY WORK It may be advantageous under hot, dry weather or windy conditions to adjust mortar proportions or take further precautions to insure good bond between mortar and masonry units. For additional information refer to ASTM C 270 Standard Specification for Mortar for Unit Masonry.

For additional information when constructing in cold weather refer to General Shale technical bulletins titled Cold Weather Recommendations and Cold Weather Admixtures.

INSTALLATION General Shale brick products must be installed using approved materials and techniques for each specific installation.

Construct masonry veneer with an adequate number of elastic movement joints, properly located to accommodate differential movement.

Construct masonry veneer in accordance with ACI 530-05/ASCE 5-05/TMS 402-05, Building Code Requirements for Masonry Structures in the United States, and any local requirements stipulated by the authorities having jurisdiction.

Mortar joints between bricks in any direction should be nominally 3/8" thick.

Mortar for unit masonry veneer should be a type N masonry cement mix proportioned to a 1 : 2-1/4 – 3 ratio. This ratio refers to:

1 part Type N masonry cement (ASTM C270 Table 1)
- 2-1/4 – 3 parts masonry sand (ASTM C 144)

When properly combined with the appropriate quantity of water, it will produce a general-purpose mortar, exhibiting good workability and board life in its plastic state, and good durability and flexibility in its hardened state; and conforming to ASTM C 270-05a; Standard Specification for Mortar for Unit Masonry.

General Shale recommends constructing masonry veneer with proper drainage mechanisms, including clear draining air spaces, through wall flashing membranes and weep hole vents. The air spaces must be at least 1" wide, and kept clear of debris, protrusions, mortar fins and droppings. Weep hole vents should be installed at the same level as through wall flashing membranes and spaced not more than 24" on centre horizontally.

General Shale brick products must be connected to a structural substrate with an approved masonry connection system, designed by the consultant for each specific installation.

AVAILABILITY AND COST

AVAILABITY General Shale brick products are available throughout the continental United States, as full-bed masonry units.

Availability and various product details (colors, textures etc.) may vary by location. Please consult with your General Shale sales representative.

Delivery times for orders will vary based on the complexity of what is required. General Shale cannot be responsible for delays due to fire, acts of God, or any other cause beyond its control or which could not be reasonably foreseen.

Contact General Shale for a list of dealers in your area.

COST Quoted on a project basis for job-specific manufacturing to project requirements.

MAINTENANCE

General Shale brick products should have excess mortar removed from their faces by brushing as they are placed within the wall at the point of tooling.

Clean General Shale brick products in accordance with the cleaning guidelines in General Shale Technical Bulletin Brick Cleaning Information. Various masonry detergents and cleaning systems can change the color of masonry products. Acid-based cleaning agents will darken the color of the masonry units.

Always pre-test cleaning agents and methods on the job-site mock-up panel or a small inconspicuous area of the wall. The Consultant and/or Owner should approve the test area prior to the start of full-scale cleaning operations.

General Shale does not recommend the application of water repellent or graffiti-proofing sealers to its masonry products.

TECHNICAL SERVICES

General Shale offers consultation services to assist with design, detailing and specification questions and with pricing. Enquiries are attended to promptly and without obligation.

RELATED REFERENCES

General Shale distributes an integrated technical information system, comprised of the following components:

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General Shale also makes available samples for color and finish, coursing charts, and copies of test reports upon request.

USG Structural Solutions

SUBMITTAL SHEET

USG STRUCTURAL PANELS

CONCRETE FOUNDATION WALL
CONCRETE FOUNDATION WALL XD

Concrete foundation panels that can be fastened to steel or wood studs to replace concrete block, poured-in-place concrete or existing deteriorated plywood as a residential foundation wall.

- No form work, no pouring, no setting, no curing
- Nonrotting, termite-, mold- and moisture-resistant
- Strong, durable concrete panel
- Dimensionally stable, panel will not buckle or warp like wood sheathing
- Installs like wood sheathing; circular saw for cutting, screws for fastening
- Noncombustible—meets the criteria of active ASTM standard E136 and CAN S114
- Designed for full-height basements
- Made in the USA

DESCRIPTION

USG Structural Panel Concrete Foundation Wall and USG Structural Panel Concrete Foundation Wall XD are mechanically fastened to cold-formed-steel- or wood-studs to form the structural foundation wall system in the construction of light-framed buildings up to three stories tall. The Concrete Foundation Wall system can be designed to support backfill loads exceeding 2,000psf (ultimate) as well as carry shear and gravity loads. Combined with a waterproof membrane and footing drainage system, the USG Structural Panel Concrete Foundation Wall and USG Structural Panel Concrete Foundation Wall XD create a strong, fast and dry foundation wall system. Insulation, mechanical and electrical services can be installed in the stud wall cavity, just like a regular light-framed building stud wall; no strapping or furring needed; and then USG Sheetrock® Brand Gypsum Panels fastened to the other side of the studs to complete the wall construction.

USG Structural Panel Concrete Foundation Wall can bear an ultimate uniform load of 2,083psf (99.7kPa) when stud framing is spaced 12" (305 mm) o.c. Shear wall design ratings of up to 1,726plf (25.2kNm) allow this panel to be used as a shear wall in the structural design of the building.

When applied over steel framing, with insulation in the stud wall cavity and 5/8" USG Sheetrock® Brand Firecode® Core Gypsum Panels fastened on the interior side of the studs, the foundation assembly is rated as a one-hour fire wall. This may be necessary in many urban jurisdictions, where buildings are closely spaced and part of the foundation wall rises above grade.

USG Structural Panel Concrete Foundation Wall panels have a linear variation with change in moisture content of less than 0.10%. This means that the panels will not buckle or warp like wood sheathing. There is no need to gap concrete foundation wall panels

Cutting the Concrete Foundation Wall panels requires an ordinary carbide-tipped saw blade and a circular saw equipped with dust collection or suppression to control airborne dust. Fastening is also conventional, using a screw gun and self-drilling No. 8-gauge screws. Because these panels are so durable, they may be installed in most weather conditions including mild precipitation (rain or snow) and temperatures from 0°F to 125°F (-18°C to 52°C).

LIMITATION

The Concrete Foundation Wall panels must be installed vertically with the long direction parallel to studs and square edges butting up against each other. Adjacent edges must bear a minimum of 3/4" (19mm) on stud flange. Panels must not be gapped. Panels must span a minimum of four stud supports (three-span condition). If not, an additional stud must be added to ensure all panels have a three-span condition. Panels must be single, full-height panels (up to 8' high) and span from the footing to the top of the foundation wall. **Panels must never be cut into multiple sections.** Where the foundation wall depth exceeds panel length (taller than 8' (2440mm), a full length panel of **Concrete Foundation Wall XD** shall be installed on the bottom part of the wall; a cut panel piece shall be installed for the remaining wall height, with a cut panel fully blocked. **A qualified architect or engineer should review and approve calculations, framing and spacing for all projects.**

USG
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LIMITATION CONT.

A waterproofing membrane system shall be installed in accordance with the manufacturer's installation instructions, along with a properly designed drainage system, all as required by applicable codes. Concrete Foundation Wall panels must be protected from construction moisture, damage and impact during and after installation.

INSTALLATION

To perform in the expected manner, USG Structural Panel Concrete Foundation Walls must be installed according to USG specifications, using only the listed materials and components. See Code Report PER-15092 (available at www.PER15092.com), section on "*General Product Installation*" for more information.

As with all types of construction, appropriate safety procedures must be followed to protect installers from personal injuries resulting from lifting incorrectly, falling, and eye, hand and lung irritation from dust.

Care must be taken when placing pallets of USG Structural Panel Concrete Foundation Wall on level ground or floor framing. A pallet of USG Structural Panel Concrete Foundation Wall, 20 sheets, 3/4" x 4' x 8' (19 mm x 1,220 mm x 2,440 mm) weighs approximately 3,400 lbs. (1,542kg). Do not exceed slab floor limits when loading pallets or panels on the ground, open framing or freshly poured floors.

The steel or wood stud framing must be designed to meet the strength and deflection criteria specified in the contract documents. The attachment stud or bearing edge must be a minimum 1-1/2" (38.1 mm) wide with at least 3/4" (19 mm) of each panel bearing on the supporting flange. Metal framing must be a minimum 54 mils (0.0538 inch or 1.37 mm) base metal thickness (16 gauge) and a minimum G60 galvanized coating and spaced no greater than 16" (458 mm) o.c. Use of an alternate, weaker stud gauge or larger stud spacing must be pre-approved by a design professional. For walls less than 8 feet tall, consult a design professional for the proper framing design. Follow the contract documents and the steel framing manufacturer's recommendations for the proper installation and bracing of the framing.

RECOMMENDED FASTENERS

Refer to *USG Structural Recommended Fasteners (SCP95)* for specific fastener recommendations for the various types of framing used for installing USG Structural Panel Concrete Foundation Wall. The recommended fasteners meet several criteria to insure they have adequate pull-out, pull-through, and slip performance. These fasteners also meet or exceed 1000 hours corrosion resistance requirement when tested in accordance with ASTM B117. High corrosion resistance is critical because of the panel pH level. When coupled with any moisture exposure, including high humidity, this elevated pH may deteriorate a non-corrosion resistant fastener.

General Note: In accordance with PER-15092, the minimum screw pattern is 6 in. (153 mm) o.c. along the perimeter of the panels and 12 in. (305 mm) o.c. in the field of the panels. Do not use a larger size screw unless specified by the structural engineer.

A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.

BACKFILL MATERIAL AND BACKFILLING PROTECTION

It is recommended that granular drainage material be used as backfill so that the backfill may be drained free of standing moisture, all as per applicable codes. All backfill material placed within 24 inches (610 mm) of the foundation wall shall be free of deleterious debris, frozen clumps, and boulders larger than 6 inches (152 mm).

Heavy loads shall be kept a safe distance away from the foundation wall system during backfilling. As a guide, heavy equipment should be placed a distance away from the foundation trench equal to the depth of the trench. Extreme caution should be maintained while backfilling the area around the Concrete Foundation Wall panels. Backfilled material shall be placed in uniform lifts of no more than 24 inches (610 mm) around the foundation wall and shall be hand compacted. The soil shall not be mechanically compacted.

APPLICATION

Cut panels to size with a circular saw equipped with carbide-tipped blade and a dry dust collection device or a water-dispensing device that controls the amount of airborne dust. Wear safety glasses and a NIOSH-approved N95 dust mask when cutting this panel. Dispose of collected dust in a safe manner and in compliance with local, state and federal ordinances.

Install concrete foundation wall panels with the long edges parallel to the framing and in the upright, vertical orientation (do not place foundation panels in the horizontal orientation). **Apply the panel with the print markings facing inward toward the stud framing.** Fasten each panel after it has been placed following the fastening schedule listed in the contract documents. Install panels so that edges fall over the center of the stud framing members. **Adjacent panels should be free of debris and fitted tightly without any gapping**. For all panels less than 24" (610 mm) wide, all edges must be supported by blocking.

Blocking must be cold-formed from steel complying with AISI-General, with a minimum 54 mils (0.0538 inch or 1.37 mm) base metal thickness (16 gauge) and a minimum G60 galvanized coating. The attachment flange or bearing edge must be at least 1-5/8" (41 mm) wide and at least 3/4" (19 mm) of the panel must bear on the supporting flange or edge. **Concrete Foundation Wall panels must be full height panels and span a minimum of four stud supports (three-span condition). If not, an additional stud must be added to ensure all panels have a three-span condition.**

Care must be taken to avoid accumulation of snow and/or ice against installed panels. Brooms should be used for snow removal whenever possible. Excessive shoveling or scraping may damage installed panel surface. Refer to Storage and Maintenance sections of this data sheet to ensure proper product and site care application.

PRODUCT DATA

Sizes and Packaging: 3/4" x 4' x 8' (19 mm x 1,220 mm x 2,440 mm) panels. Each panel weighs approximately 170 lbs. (77kg) and is intended to be handled by two people. USG Structural Panel Concrete Foundation Walls are packaged in 20 piece units.

Availability: USG Structural Panel Concrete Foundation Walls are sold through any USG distributor. Email usgstructural@usg.com for information on availability and a dealer in your area.

Storage: USG Structural Panel Concrete Foundation Walls are shipped in 20 piece units. Panels should be stored in a horizontal position and uniformly supported. Panels must be covered when stored in unprotected areas.

Excessive moisture and freezing temperatures may result in panels sticking together within the units. Therefore, care should be taken to ensure units of USG Structural Panel Concrete Foundation Walls are not exposed to excessive moisture, ice and snow. In the event that panels do become frozen together within a unit, the unit needs to be brought to a temperature above 32°F (0°C) to allow the ice to melt naturally. Salt, fertilizer or other de-icing agents should not be used at any time. Covering the units completely with tarps or similar coverings is an easy way to avoid panels freezing together.

Maintenance: USG Structural Panel Concrete Foundation Walls do not require any regular maintenance except to repair damaged covering foundation membranes and repair damage from abuse. Any cracked or broken panels should be replaced with sound USG Structural Panel Concrete Foundation Walls that are secured following the fastening schedule prescribed in the original installation documents. The replacement panel must be a single, full-height panel extend from the footing to the top of the foundation wall. The panel must span a minimum of four stud supports (three-span support condition), if not, an extra stud must installed inside the cavity to ensure a three-span condition. **Panels must never be cut into multiple sections.**

TEST DATA

Physical and Mechanical Properties	Test Standard	Approximate Values Standard (Metric)
Fastener lateral resistance[a]	ASTM D1761, Sec. 10.2	> 210 lbf (0.93 kN) dry > 160 lbf (0.71 kN) wet
Density[b]	ASTM C1185	75 lb./ft³ (1,201 kg/m³)
Weight at 3/4" (19 mm) thickness	ASTM D1037	5.3 lb./ft² (26 kg/m²)
pH value	ASTM D1293	10.5
Linear variation with change in moisture (25% to 90% relative humidity)	ASTM C1185, Sec. 8	<0.10 %
Thickness swell	ASTM D1037, B	max. 3.0 %
Freeze / thaw resistance	ASTM C1185	Passed (50 cycles)
Mold resistance	ASTM D3273 ASTM G21	10 0
Water absorption[c]	ASTM C1185, Sec. 5.2.3.1	<15.0 %
Noncombustibility	ASTM E136 (unmodified) CAN/ULC-S114	Passed Passed
Surface-burning characteristics (flame spread/smoke developed)	ASTM E84 CAN/ULC-S102	0/0
Long-term durability	ASTM C1185, Sec. 13	min. 75% retention of physical properties
Water durability	ASTM C1185, Sec. 5	min. 70% retention of physical properties
Termite resistance	AWPA Standard E1-13	9.8
Low VOC emissions	CDPH/EHLB/Standard Method V1.1-2010[d]	Compliant

(a) Fastener lateral resistance measured with #8, 1-5/8" (41 mm) Flat Wafer head, Winged, Drill Point screw.
(b) Density measured at equilibrium conditioning per Section 5.2.3.1., 28 days after manufacturing.
(c) Absorption measured from equilibrium conditioning followed by immersion in water for 48 hours.
(d) Reference Standard: California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010 (Emission testing method for CA Specification 01350).

SYSTEM PERFORMANCE

Description	Reference
Code Reports	PER-15092[b]
UL 1-, 2-, 3-Hour Fire Resistance Designs[a]	V465, V471

(a) For the most up-to-date UL/ULC Designations, visit usg.com/structural
(b) For the most up-to-date Product Evaluation Report, visit PER15092.com

UNIFORM LOAD TABLE

The following table represents the ultimate uniform load-bearing capacity of USG Structural Panel Concrete Foundation Wall. For the most up-to-date load tables, see the Progressive Engineering Inc. Product Evaluation Report PER-15092. For technical questions, email usgstructural@usg.com. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

Ultimate Uniform Load for USG Structural Panel	Concrete Foundation Wall		Concrete Foundation Wall XD	
Joist Spacing - inches (millimeters)	12" (305 mm)	16" (406 mm)	12" (305 mm)	16" (406 mm)
Capacity - psf (kPa)	1,500 psf (71.8 kPa)	844 psf (40.4 kPa)	2,083 psf (99.7 kPa)	1,172 psf (56.1 kPa)

For SI: 1 inch = 25.4mm, 1 psf = 47.88 Pa.

(1) **Ultimate Load Values have no safety factor included.**
(2) Three framing spans minimum per panel piece.
(3) Ultimate Uniform Load Table for general reference only.
For complete load capacities, consult Progressive Engineering Inc. Product Evaluation Report PER-15092.

SHEAR-WALL LOAD TABLE

The following table represents the shear-load capacity of USG Structural Panel Concrete Foundation Wall. For the most up-to-date load tables, see the Progressive Engineering Inc. Product Evaluation Report PER- 15092. For technical questions, email usgstructural@usg.com. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

Panel Sheathing	Panel Orientation	Joints Strapping	Stud Spacing[a]	Fastener Spacing		Ultimate Load[a]
				Perimeter	Field	
Single Side	Vertical	no	16 in. (406.4 mm)	8 in. (203.2 mm)	12 in. (304.8 mm)	914 plf (13.3 kN/m)
				6 in. (152.4 mm)	12 in. (304.8 mm)	1320 plf (19.3kN/m)
				4 in. (101.6 mm)	12 in. (304.8 mm)	1,726 plf (25.2 kN/m)

For SI: 1 inch = 25.4 mm, 1 plf = 14.59 N/m

(a) **Values are Ultimate Load, no safety factor included.**
(b) Stud description: 3-5/8 in. (92.1 mm) deep, with a minimum 54 mils (0.0538 inch or 1.37 mm) base metal thickness (16 gauge) and a minimum G60 galvanized coating Steel Stud.
(c) For the most up-to-date Product Evaluation Report, visit PER15092.com

SUBMITTAL APPROVALS

Job Name	
Contractor	Date

PRODUCT INFORMATION
See usg.com for the most up-to-date product information.

DANGER
Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause cancer by inhalation of respirable crystalline silica. Do not handle until all safety precautions have been read and understood. Avoid breathing dust. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. Wear protective gloves/protective clothing/eye protection. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. If skin irritation or rash occurs, or otherwise exposed or concerned: Get medical attention. Store locked up. Dispose of in accordance with local, state, and federal regulations. For more information call Product Safety: 800 507-8899 or see the SDS at usg.com.
KEEP OUT OF REACH OF CHILDREN.

NOTICE
We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by applications of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within 30 days from date it was or reasonably should have been discovered.

SAFETY FIRST!
Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

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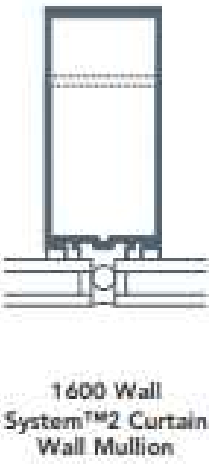
Material Category: Curtain Wall

Final Product Choice: 10" Curtain Wall



1600 Wall System™2 Curtain Wall Mullion

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: 1600 System 2

Quantity in Job: 25,000 SQ FT

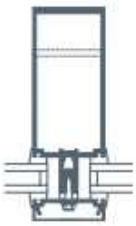
Price Per Square Foot: $80

Total Price For Job: $2,000,000

Description of Product: 10" Curtain wall system that is able to span larger distances and is thermally broken with a standard thermal gasket

Reason For Selection: This system allows us to make the spans required in our building without over engineering the thermal transference in the system

Secondary Product Choice A: 6" Curtain Wall



1600 Wall System™1 Curtain Wall Mullion

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: 1600 System 1

Quantity in Job: 25,000 SQ FT

Price Per Square Foot: $60

Total Price For Job: $1,500,000

Secondary Product Choice B: 10" Ultra Thermal Curtain Wall

1620UT Curtain Wall

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: 1620UT SSG

Quantity in Job: 25,000 SQ FT

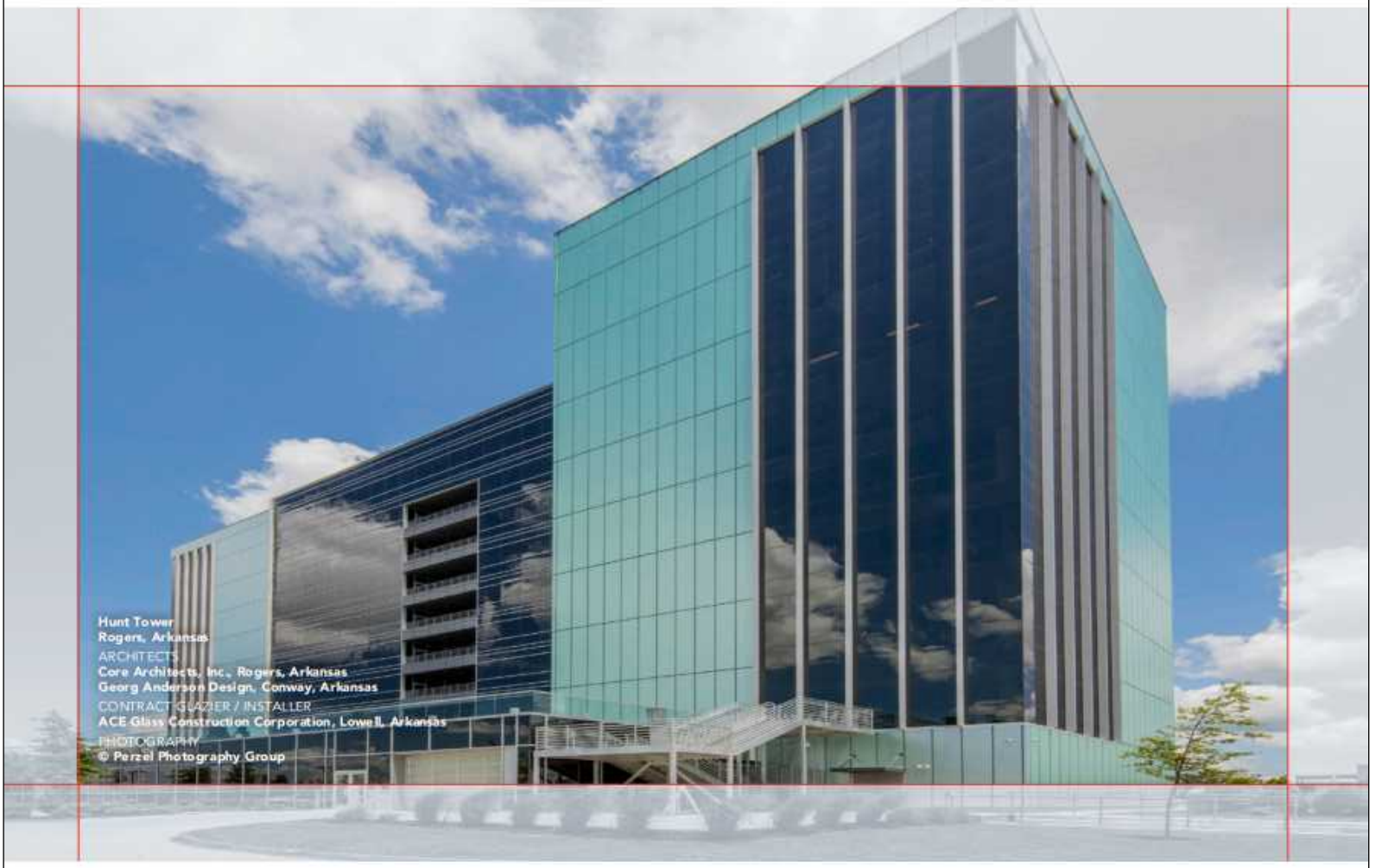
Price Per Square Foot: $100

Total Price For Job: $2,500,000

1600 WALL SYSTEM™1 / SYSTEM™2 CURTAIN WALL

KAWNEER

Imposing Statements – Used Together or Independently



Building on the proven success of Kawneer's 1600 Wall System™ that set the standard for curtain wall engineering, 1600 Wall System™1 Curtain Wall and 1600 Wall System™2 Curtain Wall provide reliability with versatile features. Both are stick-fabricated, pressure glazed curtain walls for low- to mid-rise applications and are designed to be used independently or as an integrated system to provide visual impact for almost any type of building.

- 1600 Wall System1 is an outside glazed, captured curtain wall
- 1600 Wall System2 is a Structural Silicone Glazed (SSG) curtain wall

AESTHETICS

Even the smallest details of 1600 System™1/1600 Wall System™2 Curtain Wall reflect the aesthetics and reliability that derive from Kawneer's precise engineering and experience. The joinery for both systems is accomplished with concealed fasteners to create unbroken lines and a monolithic appearance. When using optional, open-back horizontal mullions, the fillers snap at the edge, producing an uninterrupted sightline.

PERFORMANCE

Key aspects of 1600 System™1 Curtain Wall and 1600 Wall System™2 Curtain Wall are enhanced for higher performance. Pressure equalization has been designed into the system, and all components are silicone compatible to provide superior longevity. For installations where severe weather conditions are prevalent, 1600 Wall System1 has been large missile hurricane impact and cycle tested. Proven through years of high performance, both systems are tested according to industry standards:

PERFORMANCE TEST STANDARDS

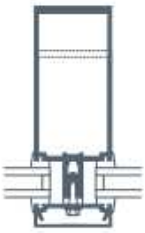
Air Performance	ASTM E283
Static Water Penetration	ASTM E331
Dynamic Water Penetration	AAMA 501.1
Structural Performance	ASTM E330
U-factor, CRF	AAMA 1503.1
Sound Transmission	ASTM E90-90
Seismic Performance	AAMA 501.4

FOR THE FINISHING TOUCH

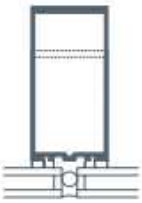
Architectural Class I anodized aluminum finishes are available in clear and Permanodic™ color choices.

Painted finishes, including fluoropolymer, that meet AAMA 2605 are offered in many standard choices and an unlimited number of specially designed colors.

Solvent-free powder coatings add the green element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.



1600 Wall System™1 Curtain Wall Mullion



1600 Wall System™2 Curtain Wall Mullion

1600 Wall System™1 / 1600 Wall System™2 Curtain Wall for:

- **Reliability**
- **Performance**
- **Versatility**
- **A smooth, monolithic appearance**
- **Uninterrupted sightlines**

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1600 WALL SYSTEM™1 / SYSTEM™2 CURTAIN WALL

Imposing Statements – Used Together or Independently

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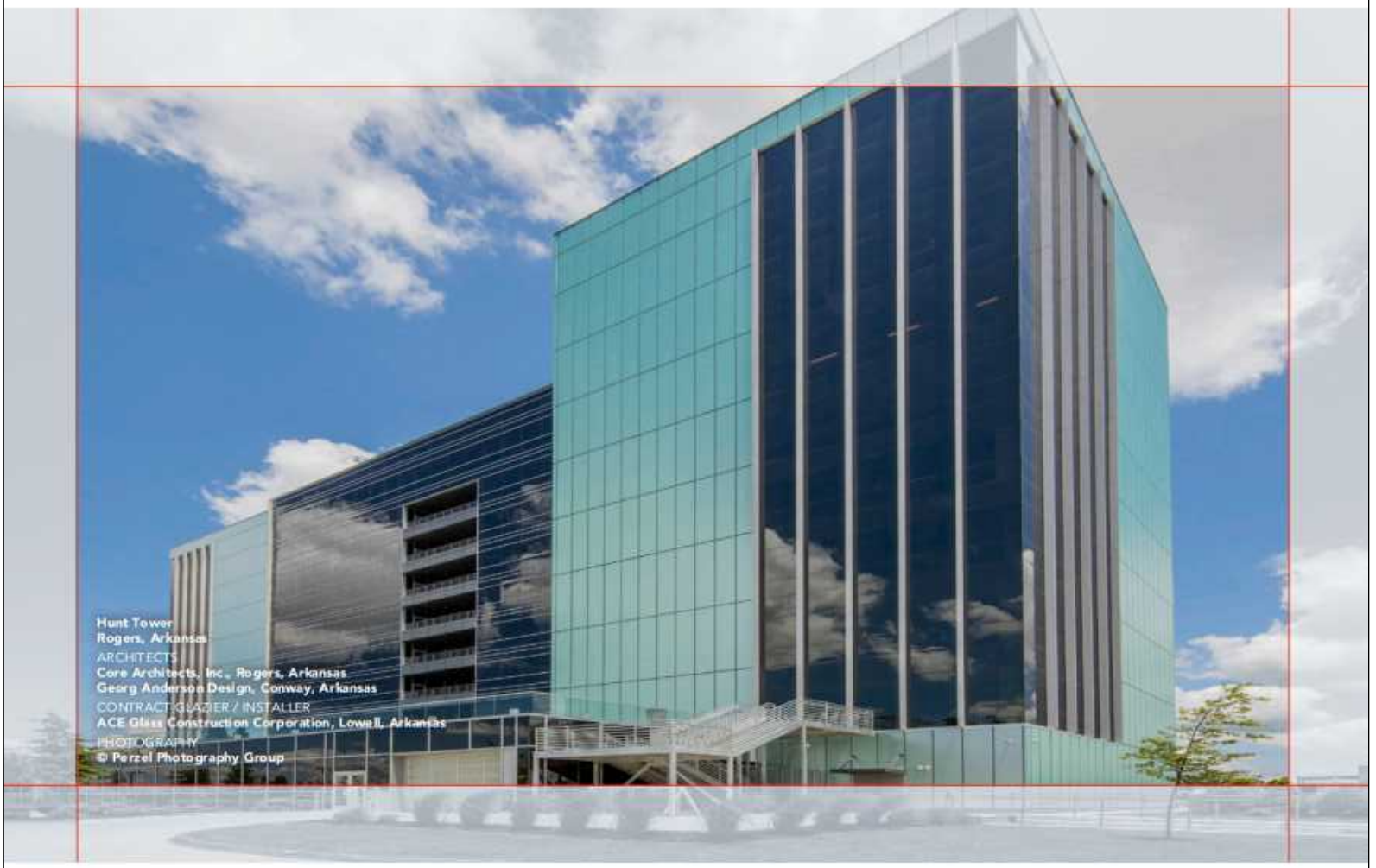

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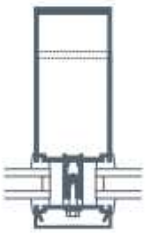
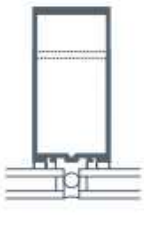


1600 Wall System™1 Curtain Wall Mullion



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- **A smooth, monolithic appearance**
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1620UT/1620UT SSG CURTAIN WALL SYSTEM

Ultra thermal performance with a slim sightline.

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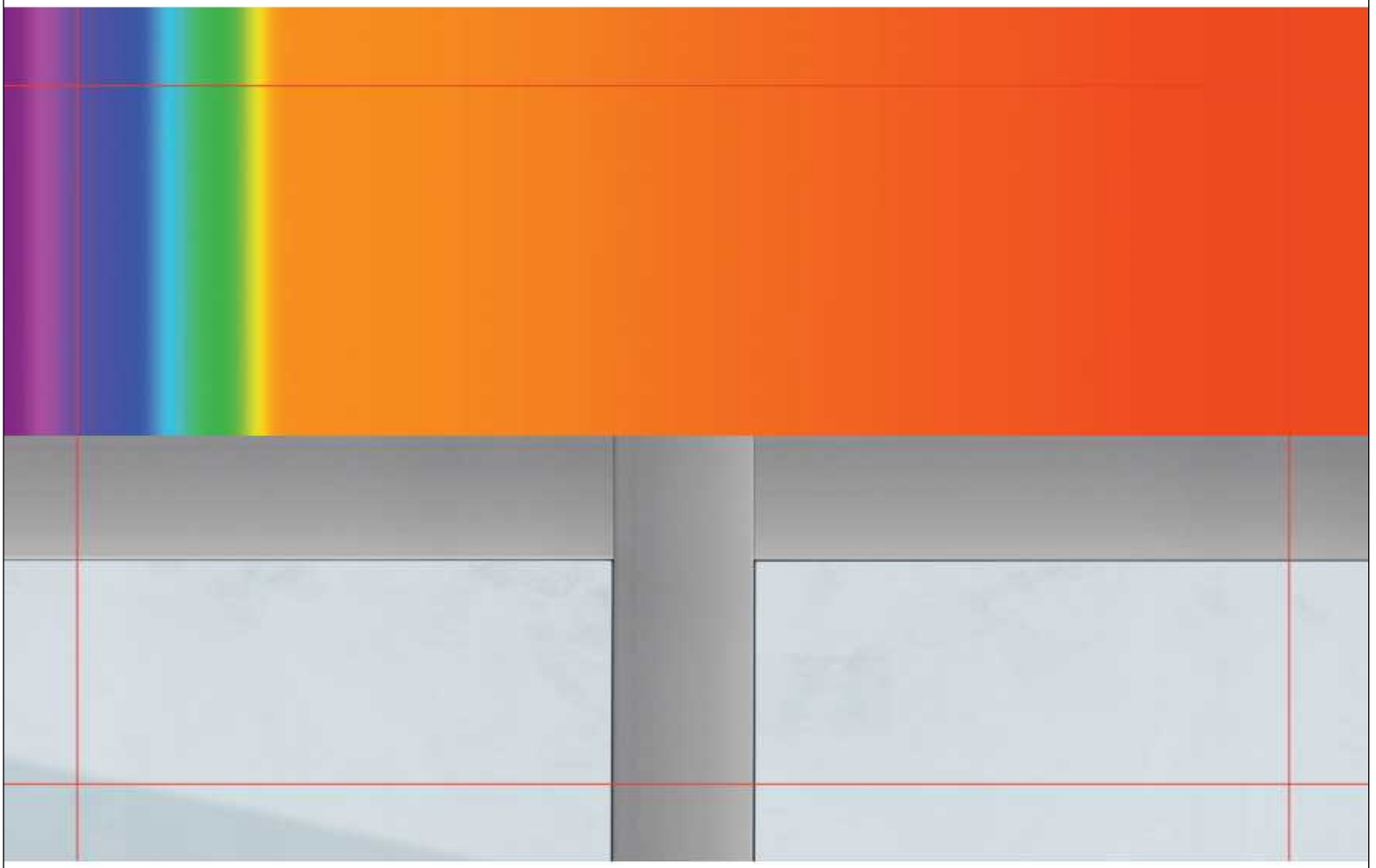


Merging a slim, sleek sightline with advanced thermal performance, the 1620UT/1620UT SSG Curtain Wall System combines the best of both worlds. Built on the success of the 1600UT Curtain Wall platform and a narrow 2" (50.8 mm) sightline, the system delivers high thermal performance, versatility and reliability, making it an excellent choice for low- to mid-rise applications in climates where high thermal performing façades are needed.

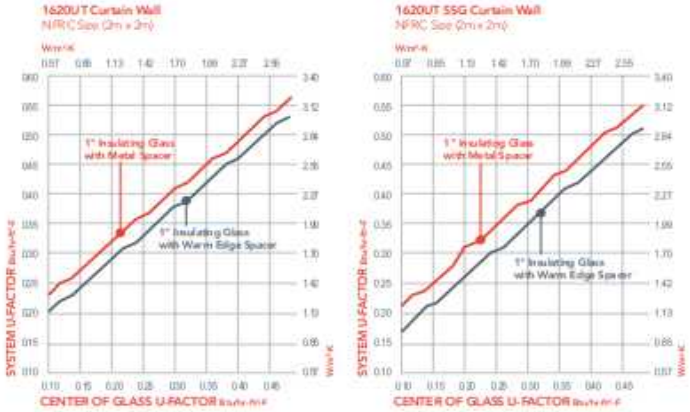
The 1620UT/1620UT SSG Curtain Wall System features an engineered polymer thermal separator and accommodates 1" insulating glass. The curtain wall integrates seamlessly with other high thermal performing windows and doors from Kawneer to create a complete, advanced, thermally efficient solution for commercial buildings.

Tested to US and Canadian standards and featuring a slimmed-down sightline, the 1620UT/1620UT SSG Curtain Wall System allows occupants to see more and stay comfortable.

Exceeding building code thermal transmittance energy requirements for North America is not an issue with system U-factors ranging from 0.30-0.32 when using glass with a 0.24 CoG value. Test results exceeded the normal; water infiltration was tested up to 20 psf pressure, and a 42 psf design load was achieved.

U-FACTOR*

Multiple thermal performance levels can be achieved with different infill types and system selections.



*U-factor values are simulated using NFRC sizes and procedures. This chart is for general illustration purposes only. Please refer to thermal charts in the Kawneer architectural detail manual on Kawneer.com for additional information.

CONDENSATION RESISTANCE

1620UT Curtain Wall not only enhances thermal performance, but also provides best-in-class condensation resistance.

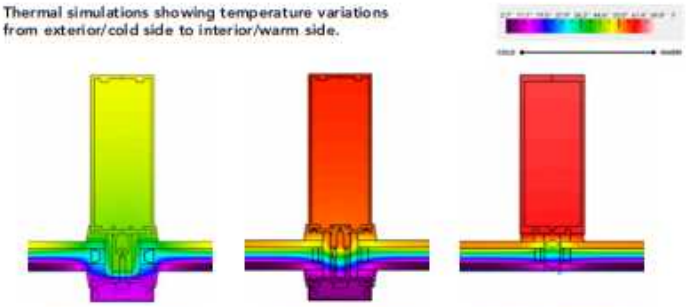
	PRESSURE PLATE TYPE	CRF (AAMA 1503) FRAME	CRF (AAMA 1503) GLASS	I – TEMPERATURE INDEX (CSA A440.2) FRAME	I – TEMPERATURE INDEX (CSA A440.2) GLASS
1620UT Curtain Wall 1" Double Glazed Infill	Aluminum	77	71	69	65
1620UT SSG Curtain Wall 1" Double Glazed Infill	Aluminum	81	73	75	67

TEST STANDARDS

The 1620UT/1620UT SSG Curtain Wall System has been rigorously tested against the following US and Canadian performance standards:

Air Infiltration	ASTM E283; NFRC 400; TAS 202
Water	ASTM E547, E331; TAS 202
Severe Wind-Driven Rain, Level 10	AMA 520
Structural – Uniform Wind Load	ASTM E330; TAS 202
Thermal Transmittance – U-Factor	AAMA 1503, 507; NFRC 100
Condensation Resistance (CRF, I, CR)	AAMA 1503; CSA A440.2; NFRC 500
Overall Solar Heat Gain (SHGC, VT)	AAMA 507; NFRC 200
Acoustical (STC & OITC)	ASTM E90, E1425; AAMA 1801

Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.

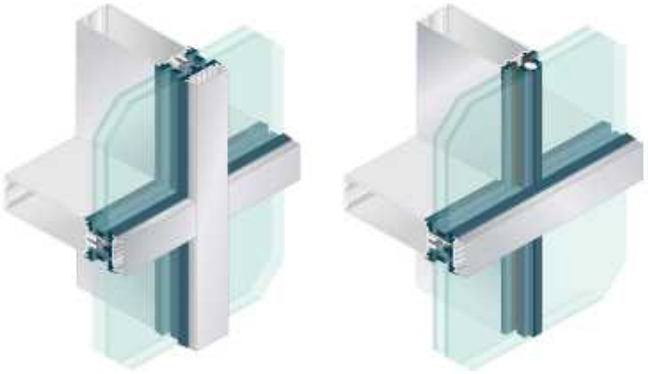


1620 Curtain Wall 1" Insulating Glass | 1620UT Curtain Wall 1" Insulating Glass | 1620UT SSG Curtain Wall 1" Insulating Glass

AESTHETICS

The 1620UT Curtain Wall System offers a traditional captured look or a two-sided vertical SSG mullion solution that permits greater uninterrupted sightlines while providing enhanced thermal performance. To create flush and unbroken sightlines, both systems use concealed fasteners in their joinery construction.

Mullion depth options provide both aesthetic design and structural range flexibility. Choices of 90° and 135° are available for corner mullion conditions.



1620UT Curtain Wall | 1620UT SSG Curtain Wall

FABRICATION AND INSTALLATION

Installation time and effort are minimized in a number of ways:

- Installers can leverage their knowledge of fabrication and installation methods for the 1600 Curtain Wall platform.
- Straight cuts without notching simplify fabrication.
- A pre-engineered rain screen pressure-equalized (RSPE) back pan option is available that uses easy-to-install spandrel adapters.

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Material Category: StoreFront

Final Product Choice: 4 1/2" Thermally Broken Storefront

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: Trifab VersaGlaze 451T

Quantity in Job: 5,000 SQ FT

Price Per Square Foot: $30

Total Price For Job: $150,000

Description of Product: 4 1/2" Storefront with a Thermal Break

Reason For Selection: This is the best option for us because we are not spanning any long distances with our storefront but we gain and thermal barrier with the thermal break.

Secondary Product Choice A: 4 1/2" Non-Thermally Broken Storefront

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: Trifab VersaGlaze 450

Quantity in Job: 5,000 SQ FT

Price Per Square Foot: $20

Total Price For Job: $100,000

Secondary Product Choice B: 6" Thermally Broken Storefront

Type of Material: Aluminum

Manufacturer: Kawneer

Product Number: Trifab VersaGlaze 601T

Quantity in Job: 5,000 SQ FT

Price Per Square Foot: $40

Total Price For Job: $200,000

TRIFAB™ VG (VERSAGLAZE™)
TRIFAB™ VG 450, 451 & 451T (THERMAL) FRAMING SYSTEMS &
TRIFAB™ 451UT (ULTRA THERMAL) FRAMING SYSTEM

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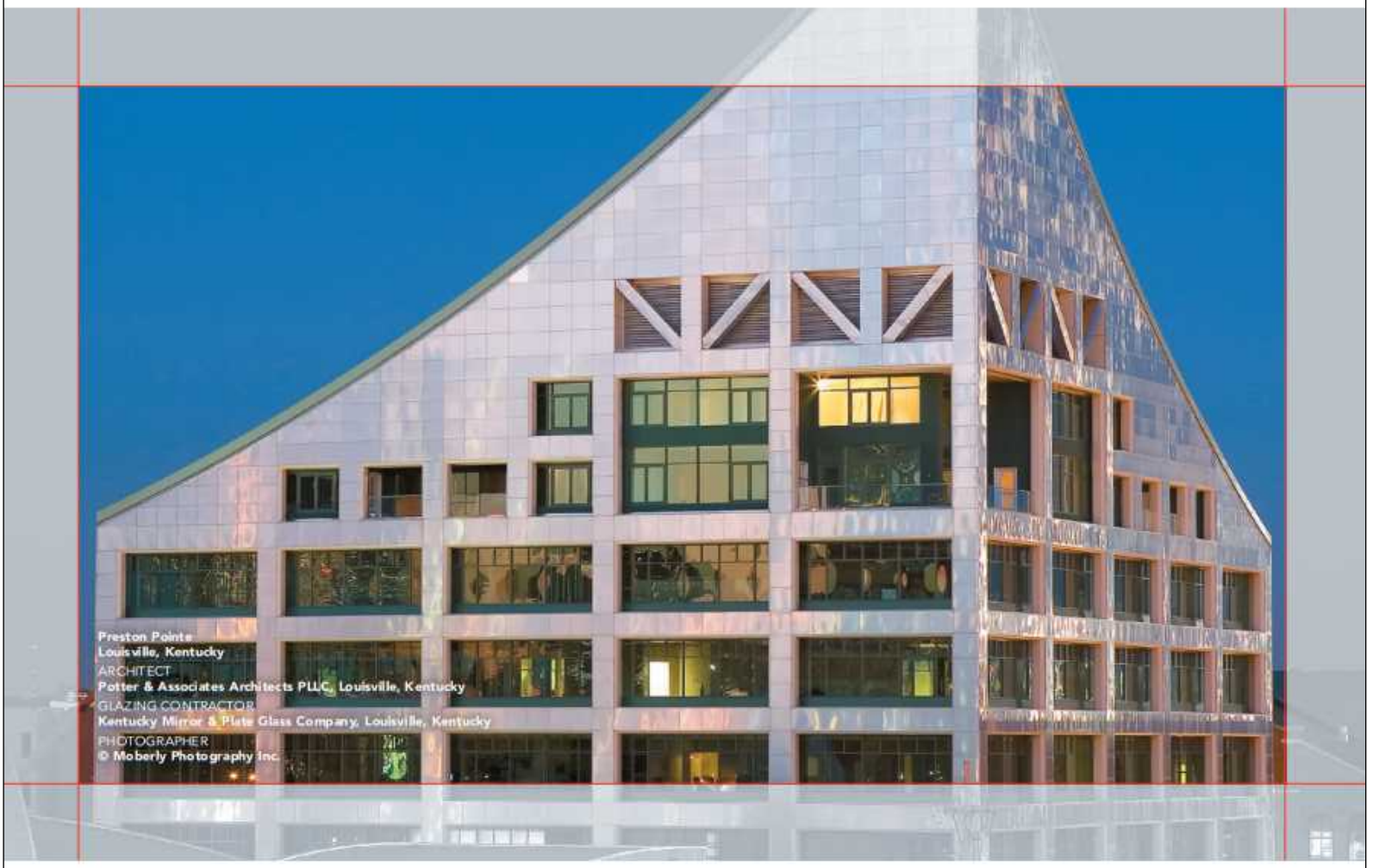
Design + Performance Versatility with Unmatched Fabrication Flexibility



Trifab™ VersaGlaze™ is built on the proven and successful Trifab™ platform – with all the versatility its name implies. There are enough framing system choices, fabrication methods, design options and performance levels to please the most discerning building owner, architect and installer. The Trifab™ VersaGlaze™ family's newest addition, the Trifab™ 451UT (Ultra Thermal) Framing System, is designed for the most demanding thermal performance and employs a dual Isolock™ thermal break.

AESTHETICS

Trifab™ VersaGlaze™ Framing Systems offer designers a choice of front-, center-, back- or multi-plane glass applications. Structural silicone glazing (SSG) and weatherseal glazing options further expand designers' choices, allowing for a greater range of design possibilities for specific project requirements and architectural styles. All systems have a 4-1/2" frame depth; Trifab™ VersaGlaze™ 450 has 1-3/4" sightlines, while Trifab™ VersaGlaze™ 451/451T and Trifab™ 451UT have 2" sightlines.

With seamless incorporation of Kawneer entrances or windows, including GLASSvent™ visually frameless ventilators, Trifab™ VersaGlaze™ can be used on almost any project. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing a full range of proven, and tested, quality products for the owner, architect and installer from a single-source supplier.

ECONOMY

Trifab™ VersaGlaze™ 450/451/451T Framing Systems offer four fabrication choices to suit your project (Trifab™ 451UT is available as screw spline fabrication only):

- **Screw Spline** – for economical continuous runs utilizing two-piece vertical members that provide the option to pre-assemble units with controlled shop labor costs and smaller field crews for handling and installation.
- **Shear Block** – for punched openings or continuous runs using tubular moldings with shear block clips that provide tight joints for transporting large pre-assembled multi-lite units.
- **Stick** – for fast, easy field fabrication. Field measurements and material cuts can be done when metal is on the jobsite.
- **Type B** – Same fabrication benefits as shear block except the head and sill run through.

Brighton Landing
Cambridge, Massachusetts
ARCHITECT
ADD Inc., Cambridge, Massachusetts
GLAZING CONTRACTOR
Ipswich Bay Glass Company, Inc., Rowley, Massachusetts
PHOTOGRAPHER
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All systems can be flush glazed from either the inside or outside. The weatherseal option provides an alternative to SSG vertical mullions for Trifab™ VersaGlaze™ 450/451/451T. This ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on the building exterior without the added labor of scaffolding or swing stages. Additionally, high-performance flashing options are engineered to eliminate perimeter sill fasteners and associated blind seals.

FOR THE FINISHING TOUCH

Architectural Class I anodized aluminum and painted finishes in fluoropolymer (AAMA 2605) and solvent-free powder coatings (AAMA 2604) offer a variety of color choices.

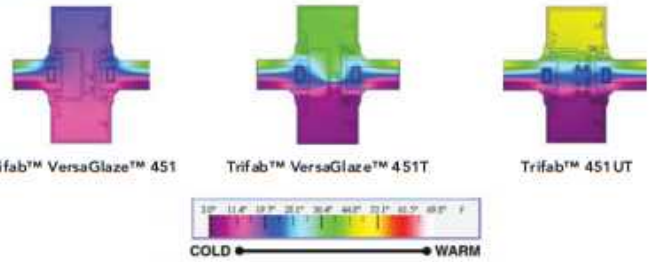
PERFORMANCE

Kawneer's Isolock™ thermal break technology creates a composite section, prevents dry shrinkage and is available on Trifab™ VersaGlaze™ 451T. For even greater thermal performance, a dual Isolock™ thermal break is used on Trifab™ 451UT.

Trifab™ 451UT uses a dual Isolock™ thermal break (right) and features a new high-performance sill design, which incorporates a screw-applied end dam (left), ensuring positive engagement and tight joints between the sill flashing and end dam.

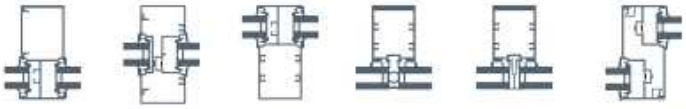
U-factor, CRF values and STC ratings for Trifab™ VersaGlaze™ vary depending upon the glass plane application. Project-specific U-factors can be determined for each individual project. (See the Kawneer Architectural Manual or Kawneer.com for additional information.)

Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.



PERFORMANCE TEST STANDARDS

Air Infiltration	ASTM E283
Water	AAMA 501, ASTM E331
Structural	ASTM E330
Thermal	AAMA 1503
Thermal Break	AAMA 505, AAMA TIR-A8
Acoustical	AAMA 1801, ASTM E1425



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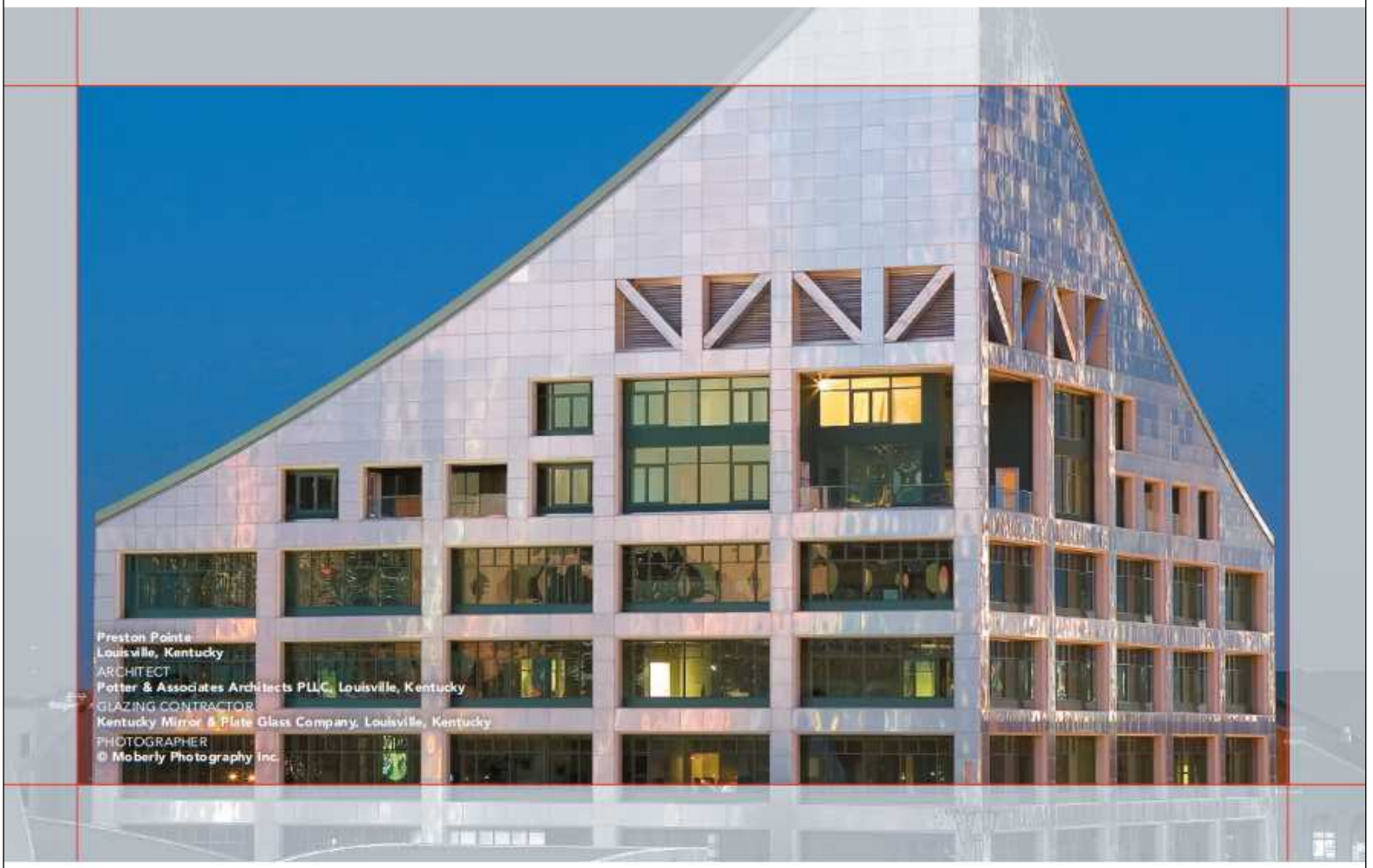

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Architectural Class I anodized aluminum and painted finishes in fluoropolymer (AAMA 2605) and solvent-free powder coatings (AAMA 2604) offer a variety of color choices.

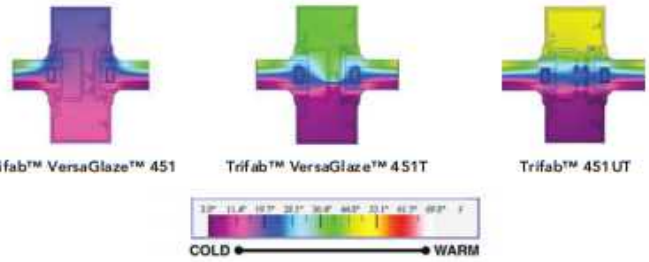
PERFORMANCE

Kawneer's Isolock™ thermal break technology creates a composite section, prevents dry shrinkage and is available on Trifab™ VersaGlaze™ 451T. For even greater thermal performance, a dual Isolock™ thermal break is used on Trifab™ 451UT.

Trifab™ 451UT uses a dual Isolock™ thermal break (right) and features a new high-performance sill design, which incorporates a screw-applied end dam (left), ensuring positive engagement and tight joints between the sill flashing and end dam.

U-factor, CRF values and STC ratings for Trifab™ VersaGlaze™ vary depending upon the glass plane application. Project-specific U-factors can be determined for each individual project. (See the Kawneer Architectural Manual or Kawneer.com for additional information.)

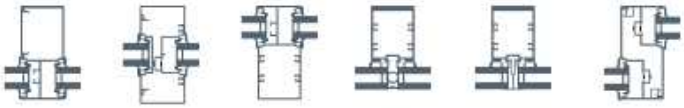
Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.



Trifab™ VersaGlaze™ 451 | Trifab™ VersaGlaze™ 451T | Trifab™ 451UT

PERFORMANCE TEST STANDARDS

Air Infiltration	ASTM E283
Water	AAMA 501, ASTM E331
Structural	ASTM E330
Thermal	AAMA 1503
Thermal Break	AAMA 505, AAMA TIR-A8
Acoustical	AAMA 1801, ASTM E1425



Front | Center | Back | SSG | Weatherseal | Multi-Plane

Kawneer Company, Inc.
Technology Park / Atlanta
555 Guthridge Court
Norcross, GA 30092
770.449.5555
kawneer.com

KAWNEER

ARCHITECTURAL SYSTEMS | ENTRANCES + FRAMING | CURTAIN WALLS | WINDOWS

TRIFAB™ 601/601T/601UT FRAMING SYSTEM

KAWNEER

Larger, More Versatile Span Delivers More Thermal Options and More Design Choices

Designed to add increased thermal performance and value, Kawneer's new addition to the company's trusted Trifab™ platform gives you more. More flexibility. More thermal options. More design choices. Flexible enough for a wide range of building projects, the Trifab™ 601/601T/601UT Framing System has a 6" depth, which accommodates higher spans than conventional 4-1/2" storefront framing systems. The new 3-in-1 series includes the non-thermal Trifab™ 601, the single thermal break Trifab™ 601T and the dual thermal break Trifab™ 601UT. The greater system depth combined with three thermal performance options make this one of the most versatile framing systems available.

PERFORMANCE

The Trifab™ 601/601T/601UT Framing System leverages Kawneer's exclusive dual IsoLock™ lanced pour-and-debridge technology to provide three levels of thermal performance – non-thermal, single thermal break and dual thermal break. By combining the greater 6" depth with superior thermal performance and versatility, Kawneer is able to bridge the gap between traditional framing systems and low-rise curtain walls.

The Trifab™ 601/601T/601UT Framing System is perfect for projects where an economical alternative to a low-rise curtain wall is desired. These systems meet the same high standards for air and water infiltration and thermal performance that are traditionally found in Kawneer products. The Trifab™ 601/601T/601UT Framing System also has a high-performance sill design. The sill attaches to the sill flashing by way of a raceway and eliminates the troublesome blind seal method used on many flashing systems. The sill also includes a screw-applied end dam, which ensures positive and tight joints between the sill flashing and end dam.

Trifab™ 601 Trifab™ 601T Trifab™ 601UT

Thermal simulations showing temperature variations from exterior/cold side to interior/ warm side.

PERFORMANCE TEST STANDARDS

Air Performance	ASTM E283
Water Performance	ASTM E331
Uniform Static Structural	ASTM E330
Sound Transmission Class (STC)	AAMA 1801 and in accordance with ASTM E1425
Condensation Resistance (CRF)	AAMA 1503 and CAN/CSA-A440
Thermal Transmittance (U-Value)	AAMA 1503.1
U-Value Simulations for Other Glazing Options	AAMA 507, NFRC 100, NFRS 200, NFRC 500 and CAN/CSA-A440.2

FABRICATION AND INSTALLATION

The Trifab™ 601/601T/601UT Framing System employs screw spline joinery construction for efficient fabrication and installation. This construction method provides quality joinery and allows for shop-controlled fabrication and assembly, which results in smaller field crews and less installation time. The framing can be specified for glazing from either the inside or outside. Inside glazing can help reduce field labor costs by eliminating the need for exterior scaffolding or swing stages for installation on floors above the ground level. In addition, the frames have a two-piece receptor option that easily accommodates attachment of air-barrier systems.

AESTHETICS AND VERSATILITY

The Trifab™ 601/601T/601UT Framing System is designed with cost and flexibility in mind. With a 2" x 6" frame profile, the sightline is consistent with current framing systems and the glass pockets are aligned to the 4-1/2"-deep center set Trifab™ framing systems. This allows for a shallow horizontal member that not only lowers overall metal costs, but also provides flexibility to accommodate interior finishes, such as blinds, that can span the full uninterrupted elevation height. The flexibility of the 3-in-1 series provides a pre-designed solution for non-thermal as well as thermal entrances. Framing options include non-thermal and thermally broken door framing members to accommodate 1-3/4"-deep and 2-1/4"-deep entrance doors, an expansion mullion and a two-piece head and jamb receptor. The 6" depth accommodates higher spans than conventional 4-1/2" storefront framing systems, and an optional 2-1/4" wide vertical mullion allows for internal steel reinforcement for projects with greater structural performance requirements.

FOR THE FINISHING TOUCH

Architectural Class I anodized aluminum finishes are available in clear and Permanodic™ color choices.

Painted finishes, including fluoropolymer, that meet AAMA 2605 are offered in many standard choices and an unlimited number of specially designed colors.

Solvent-free powder coatings add the green element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.

Kawneer Company, Inc. Technology Park / Atlanta 555 Guthridge Court Norcross, GA 30092 770.449.5555 kawneer.com

KAWNEER

ARCHITECTURAL SYSTEMS | ENTRANCES + FRAMING | CURTAIN WALLS | WINDOWS

Material Category: Glazing

Final Product Choice: 1" Tinted IGU

Type of Material: Glass

Manufacturer: VitroGlass

Product Identification: Solarban 60

Quantity in Job: 25,000 SQ FT

Price Per Square Foot: $13

Total Price For Job: $325,000

Description of Product: 1" IGU made up of a 1/4" clear tempered piece a 1/2" mill spacer and a 1/4" tinted and coated tempered piece.

Reason For Selection: This material gives us the insulative and reflective quality used commonly in our region at a price that can't be competed with.

Secondary Product Choice A: 1/4" Clear Tempered

Type of Material: Glass

Manufacturer: VitroGlass

Product Identification: Sapphire Glass

Quantity in Job: 25,000 SQ FT

Price Per Square Foot: $9

Total Price For Job: $225,000

Secondary Product Choice B: 1" Tinted R100 IGU

Type of Material: Glass

Manufacturer: VitroGlass

Product Number: Solarban R100

Quantity in Job: 25,000 SQ FT

Price Per Square Foot: $18

Total Price For Job: $450,000

Vitro Architectural Glass

Product Data Sheet

SOLARBAN® 60
Solar Control Low-E Glass

Aesthetic Description

Solarban® 60 solar control, low-e glass by Vitro Architectural Glass (formerly PPG Glass) was engineered to control solar heat gain, which is essential to minimizing cooling costs. In a standard one-inch insulating glass unit (IGU), *Solarban*® 60 glass offers an exterior appearance similar to clear, uncoated glass.

With a very good Solar Heat Gain Coefficient (SHGC) of 0.39, *Solarban*® 60 glass blocks 66 percent of the total solar energy while allowing 70 percent of the visible light to pass through. This combination produces an excellent Light to Solar Gain (LSG) ratio of 1.79, along with exceptional insulating performance, as evidenced by its 0.29 winter nighttime U-value.

Aesthetic Options

Solarban® 60 glass can be coated on *Starphire*® glass and paired with *Starphire*® glass to produce an IGU with exceptional clarity and solar control characteristics. For even more color and performance options, it can be coated on the second (#2) surface of nearly all Vitro's wide range of tinted glasses. It also can be combined in an IGU with any Vitro tinted glass, *Solarcool*® reflective glass or *Vistacool*® subtly reflective, color-enhanced glass (see performance data on back page).

Prudential Center

Location: Newark, NJ | Product: *Solarban*® 60 Glass | Architect: Morris Adjmi Architects | Glass Contractor: Josloff Glass | Glass Fabricator: J.E. Berkowitz, LP

Supporting Sustainable Design

Vitro Architectural Glass provides abundant opportunities for architects and building owners to realize their sustainability objectives.

Energy Use & Operating Cost Reduction: An energy modeling study conducted by an independent energy design and consulting firm showed that a building can potentially save millions of dollars over its lifetime with *Solarban*® 60 glass instead of less advanced glasses. The study showed that by substituting *Solarban*® 60 glass instead of dual-pane tinted glass, a typical glass-walled, eight-story office building in Boston could lower its initial HVAC investment by nearly $350,000 and its annual energy costs by more than $80,000. Carbon emissions from the same building also were reduced by more than 300 tons per year.

Sustainability Documentation: Vitro Architectural Glass is the first U.S. float glass manufacturer to have its entire selection of products recognized by the *Cradle to Cradle Certified™* program, and the first in North America to publish third-party verified EPDs for its Flat Glass and Processed Glass products.

For additional credit opportunities and supporting documentation, visit **vitroglazings.com/LEED**

LEED Credit Opportunities

Possible Points	LEED Credit	*Solarban*® 60 Feature	Path/Option Satisfied
18	**Energy & Atmosphere (EA)** Optimize Energy Performance	Excellent SHGC, U-value and Tvis performance	Whole Building Energy Simulation (Option 1) or Prescriptive Compliance: ASHRAE Advanced Energy Design Guide (Option 2)
5	**Innovation (IN)** Innovation in Design	Exceeds minimum performance mandated by local energy codes	Innovation (Option 1), Pilot (Option 2) and Exemplary Performance (Option 3)
3	**Indoor Environmental Equality (EQ)** Daylight	Exhibits high light transmission	Simulation: Spatial Daylight Autonomy and Annual Sunlight Exposure (Option 1), Simulation: Illuminance Calculations (Option 2) or Measurement (Option 3)

Solarban® 60 Glass

Fabrication and Availability

Solarban® 60 glass is available exclusively through the *Vitro Certified*™ Network. *Vitro Certified*™ Fabricators can meet tight construction deadlines and accelerate the delivery of replacement glass before, during and after construction. *Solarban*® 60 glass is manufactured using the sputter-coating process and is available for annealed, laminated, heat-strengthened and tempered applications.

Request Samples

To obtain samples of any Vitro Glass product, call **1-855-VTRO-GLS (877-6457)** or visit **samples.vitroglazings.com.**

Insulating Glass Unit Performance Comparisons | 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites

Glass Type: Outdoor Lite: Coating if Any (Surface) Glass + Indoor Lite: Coating if Any (Surface) Glass	Visible Light Transmittance (VLT)	Visible Light Reflectance		(BTU/hr°ft²°F) NFRC U-Value		Solar Heat Gain Coefficient (SHGC)	Light to Solar Gain (LSG)
		Exterior %	Interior %	Winter Nighttime	Winter Argon		
***Solarban*® 60 Solar Control Low-E Glass**							
Solarban® 60 (2) Clear + Clear	70	11	12	0.29	0.24	0.39	1.79
Solarban® 60 (2) *Starphire*® + *Starphire*®	74	11	12	0.29	0.24	0.41	1.80
Solarban® 60 (2) *Solexia*® + Clear	61	9	12	0.29	0.24	0.32	1.91
Solarban® 60 (2) *Atlantica*® + Clear	53	8	11	0.29	0.24	0.27	1.96
Solarban® 60 (2) *Azuria*® + Clear	54	8	11	0.29	0.24	0.28	1.93
Solarban® 60 (2) *Solarblue*® + Clear	45	7	11	0.29	0.24	0.28	1.61
Solarban® 60 (2) *Pacifica*® + Clear	34	6	10	0.29	0.24	0.22	1.55
Solarban® 60 (2) *Solarbronze*® + Clear	42	7	11	0.29	0.24	0.28	1.50
Solarban® 60 (2) *Optigray*® + Clear	50	8	11	0.29	0.24	0.30	1.67
Solarban® 60 (2) *Solargray*® + Clear	35	6	10	0.29	0.24	0.25	1.40
Solexia® + *Solarban*® 60 (3) Clear	61	10	10	0.29	0.24	0.37	1.65
Atlantica® + *Solarban*® 60 (3) Clear	53	9	10	0.29	0.24	0.31	1.71
Azuria® + *Solarban*® 60 (3) Clear	54	9	10	0.29	0.24	0.31	1.74
Solarblue® + *Solarban*® 60 (3) Clear	45	7	9	0.29	0.24	0.33	1.36
Pacifica® + *Solarban*® 60 (3) Clear	34	6	9	0.29	0.24	0.25	1.36
Solarbronze® + *Solarban*® 60 (3) Clear	42	7	9	0.29	0.24	0.32	1.31
Optigray® + *Solarban*® 60 (3) Clear	50	8	9	0.29	0.24	0.35	1.43
Solargray® + *Solarban*® 60 (3) Clear	35	7	9	0.29	0.24	0.29	1.21
GraylitE II + *Solarban*® 60 (3) Clear	7	4	8	0.29	0.24	0.13	0.54
Vistacool*® and *Solarcool*® with *Solarban*® 60 Solar Control Low-E (3)							
Vistacool® (2) *Azuria*® + *Solarban*® 60 (3) Clear	42	20	24	0.29	0.24	0.26	1.62
Vistacool® (2) *Pacifica*® + *Solarban*® 60 (3) Clear	26	11	23	0.29	0.24	0.21	1.24
Solarcool® (2) *Solexia*® + *Solarban*® 60 (3) Clear	24	24	29	0.29	0.24	0.19	1.26
Solarcool® (2) *Azuria*® + *Solarban*® 60 (3) Clear	21	19	29	0.29	0.24	0.17	1.24
Solarcool® (2) *Solarblue*® + *Solarban*® 60 (3) Clear	17	14	29	0.29	0.24	0.18	0.94
Solarcool® (2) *Pacifica*® + *Solarban*® 60 (3) Clear	13	10	29	0.29	0.24	0.15	0.87
Solarcool® (2) *Solarbronze*® + *Solarban*® 60 (3) Clear	17	14	29	0.29	0.24	0.18	0.94
Solarcool® (2) *Solargray*® + *Solarban*® 60 (3) Clear	14	11	29	0.29	0.24	0.17	0.82

* Data based on using *Starphire*® glass for both interior and exterior lites.

All performance data calculated using LBNL Window 7.3 software and represents center of glass performance data. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit www.ppgideascapes.com or request our Architectural Glass Catalog.

For more information about *Solarban*® 60 low-e glass and other *Cradle to Cradle Certified*™ architectural glasses by Vitro Glass, visit **vitroglazings.com**, or call **1-855-VTRO-GLS (887-6457).**

CERTIFIED cradle to cradle

Vitro Architectural Glass

Starphire® Technical Product Data

Vitro

PRODUCT DESCRIPTION

Starphire® glass by Vitro Architectural Glass is a ultra-clear soda-lime float glass product. Its high visible light transmittance (>91% at 6 mm) and its brilliant azure edge are two characteristics unique to Starphire® glass. This glass is a low iron composition with mechanical and physical properties similar to ordinary clear soda-lime float glass

APPROXIMATE WEIGHTS

Per m²		Per ft²	
thickness	weight	thickness	weight
3.0 mm	8.2 kg	1/8	1.5 lbs
4.0 mm	9.9 kg	5/32	2.0 lbs
5.0 mm	11.9 kg	3/16	2.4 lbs
6.0 mm	14.2 kg	1/4	2.9 lbs
8.0 mm	19.8 kg	5/16	4.1 lbs
10.0 mm	23.8 kg	3/8	4.9 lbs
12.0 mm	31.8 kg	1/2	6.5 lbs
16.0 mm	41.0 kg	5/8	8.0 lbs
19.0 mm	50.9 kg	3/4	10.0 lbs

COLOR

	3.2mm	6.0mm
Transmitted Color: D65, 10° L*	92.0	96.5
a*	-0.4	-0.2
b*	2.1	0.1
Hue Angle (°)	101	155
Dominant wavelength: C, 2°	573 nm	502 nm

CHEMICAL COMPOSITION

SiO_2	73%
Na_2O	14%
CaO	10%
MgO and Trace elements	3%

MECHANICAL PROPERTIES

Knoop Hardness Number (indentation hardness) indenter load--500 gm	470 kgf/mm²	
Poisson's Ratio	0.22	
Modulus of Elasticity (Young's)	73.1 GPa	10,600,000 psi
Tensile Strength (Determined as Modulus of Rupture, ultimate)	41.4 MPa	6,000 psi
Density at 21°C (70°F)	2.50 g/cm³	156 lb/ft³

THERMAL PROPERTIES

Hemispherical Emissivity at -18 to 66 °C (0 to 150°F)) glass / coating	0.84 / 0.14	
Expansion Coefficient (linear) 20 to 300°C (68 to 572°F)	8.7*10⁻⁶/ °C	4.9*10⁻⁶/ °F
Specific heat at 0 to 100°C (32 to 212°F)	858 J/kg-K	0.205 BTU/lb-°F
Thermal Conductivity (k) at 50°C (122°F)	1.00 W/m-K	0.58 Btu/hr-ft-°F
Softening Point	721°C	1329°F
Annealing Point	545°C	1014°F
Strain Point	509°C	949°F

SUSTAINABILITY

To provide architects with the assurance and documentation they need to meet and verify their sustainability goals, Vitro Architectural Glass participates in a range of programs and initiatives. Resources available include, but are not limited to:

- Type III Environmental Product Declarations
- *Cradle to Cradle Certified*™ Bronze with associated Gold Material Health Certificate
- *LEED*® and Living Building Challenge documentation
- Material Ingredient Disclosure and Safety Data Sheets
- Annual Corporate Sustainability Report

Further information is available through VitroGlazings.com or by calling 855-887-6457 (VTRO GLS)

SOLAR PERFORMANCE VALUES [1]

Glass Thickness		Transmittance				Reflactance	
inches	mm	Ultra-violet (%)	Visible (%)	Infrared (%)	Total Solar (%)	Visible (%)	Total Solar (%)
1/8	3.2	89	91	89	90	8	8
5/32	4.0	88	91	89	90	8	8
3/16	5.0	88	91	88	90	8	8
1/4	6.0	87	91	87	89	8	8
5/16	8.0	86	91	86	88	8	8
3/8	10.0	85	91	84	87	8	8
1/2	12.0	83	90	82	86	8	8
5/8	16.0	81	90	80	84	8	8
3/4	19.0	80	90	78	83	8	7

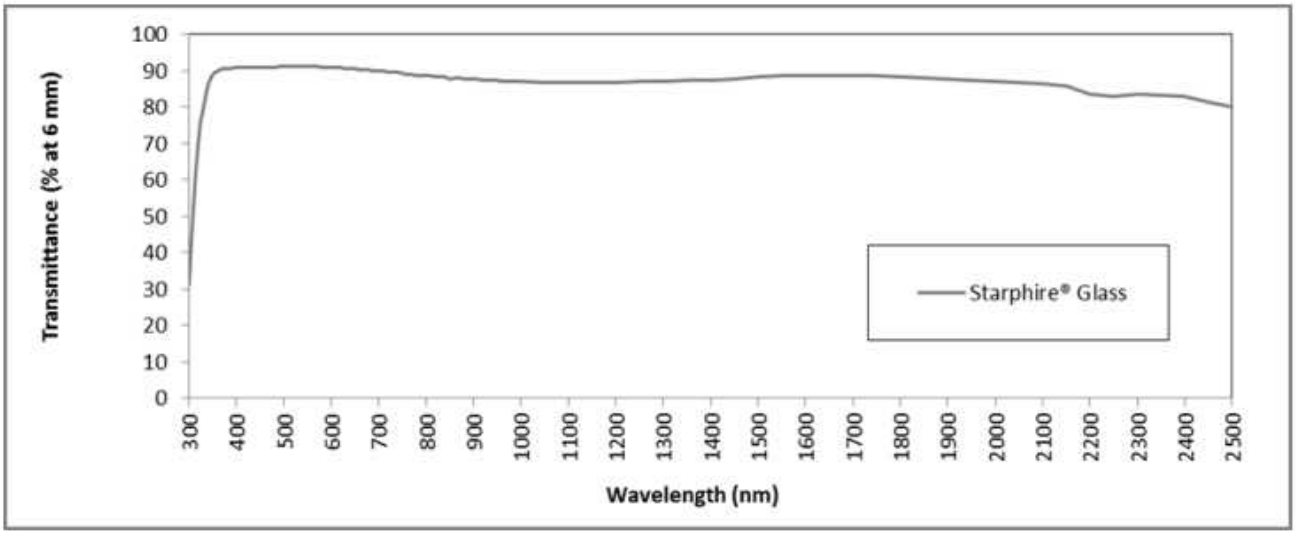
[1] Figures may vary due to manufacturing tolerances. All tabulated solar performance data are based on the methodology prescribed in ISO 9050, 2003 except Infrared, which is based on the solar irradiance data prescribed by ISO 9050, 2003 from 780 to2500 nm. Slight changes in transmitted optical properties may occur on exposure to sunlight.

Starphire® Technical Product Data

Vitro

Transmittance (% at 6 mm/0.223")

Wavelength (nm)	Starphire® Glass %T	Wavelength (nm)	Starphire® Glass %T	Wavelength (nm)	Starphire® Glass %T	Wavelength (nm)	Starphire® Glass %T	Wavelength (nm)	Starphire® Glass %T
300	31.4	430	90.9	660	90.4	890	87.8	1600	88.8
305	42.8	440	90.9	670	90.3	900	87.7	1650	88.9
310	53.1	450	90.9	680	90.2	910	87.6	1700	88.8
315	62.2	460	91.0	690	90.1	920	87.5	1750	88.6
320	69.9	470	91.0	700	89.9	930	87.5	1800	88.3
325	75.9	480	91.1	710	89.9	940	87.4	1850	88.0
330	80.6	490	91.1	720	89.7	950	87.3	1900	87.7
335	84.0	500	91.2	730	89.6	960	87.3	1950	87.5
340	86.4	510	91.2	740	89.5	970	87.2	2000	87.1
345	88.0	520	91.2	750	89.3	980	87.2	2050	86.8
350	89.0	530	91.2	760	89.2	990	87.1	2100	86.5
355	89.7	540	91.2	770	89.1	1000	87.1	2150	85.8
360	90.1	550	91.2	780	88.9	1050	86.9	2200	83.7
365	90.4	560	91.2	790	88.8	1100	86.8	2250	83.0
370	90.5	570	91.2	800	88.7	1150	86.8	2300	83.6
375	90.6	580	91.1	810	88.6	1200	86.9	2350	83.5
380	90.6	590	91.0	820	88.4	1250	87.0	2400	83.0
385	90.7	600	91.0	830	88.4	1300	87.2	2450	81.3
390	90.8	610	90.9	840	88.3	1350	87.4	2500	80.1
395	90.8	620	90.8	850	87.9	1400	87.4		
400	90.8	630	90.7	860	88.0	1450	87.8		
410	90.8	640	90.6	870	88.0	1500	88.3		
420	90.8	650	90.5	880	87.9	1550	88.6		



ADDITIONAL INFORMATION/DOCUMENTS

The following documents can be referenced for additional information regarding Starphire® glass;

Starphire® Performance Data, Starphire® Edge Color Brochure, Vitro Float Glass Warranty, Vitro Float Glass SDS, C2C Material Health Certificate, Vitro Float Glass EPD

Vitro Architectural Glass

Product Data Sheet

SOLARBAN® R100
Solar Control Low-E Glass

For decades, architects have relied on the ever-expanding *Solarban*® family of solar control, low-e glasses by Vitro Architectural Glass (formerly PPG Glass) to meet their design and performance needs. *Solarban*® R100 glass's neutral-reflective appearance makes it among the most versatile options in this collection of high-performance architectural glasses.

Aesthetic Description
Solarban® R100 glass is a neutral-reflective, low-e glass that provides significant improvements in solar performance compared to competing products in the same architectural glass category.

Because *Solarban*® R100 glass uniquely balances reflectivity and color-neutrality, it can function both as a privacy glass and as a material that harmonizes with spandrels and other building materials.

Inside the building, *Solarban*® R100 glass has reflectance of just 14 percent and transmits a pleasant cool blue-gray appearance that reduces glare without creating an obtrusive reflected color for building occupants.

Outside, *Solarban*® R100 glass has exterior reflectance of 32 percent that combines with the neutral aesthetic to deliver a clean, crisp exterior for any building project.

Performance Options
Solarban® R100 glass has an excellent Solar Heat Gain Coefficient (SHGC) of 0.23 and a Visible Light Transmittance (VLT) of 42 percent. The resulting Light to Solar Gain (LSG) ratio of 1.83 is up to 29 percent better than competitive reflective, low-e glasses, making *Solarban*® R100 glass one of the best-performing architectural glass products on the market.

Because of its color-neutral appearance, *Solarban*® R100 glass can be applied to Vitro's wide range of tinted glasses. When used on the second surface in one-inch insulating glass units, these tints combine with *Solarban*® R100 glass to achieve LSG ratios of up to 1.71, while providing an exceptional array of aesthetic options.

Fabrication and Availability
Solarban® R100 glass is available through the *Vitro Certified*™ Network. *Vitro Certified*™ Fabricators can meet tight construction deadlines and accelerate the delivery of replacement glass before, during and after construction. *Solarban*® R100 glass is manufactured using the sputter-coating process and is available for laminated, heat-strengthened and tempered applications.

Request Samples
To obtain samples of any Vitro Glass product, visit **samples.vitroglazings.com** or call **1-855-VTRO-GLS (877-6457)**.

The HCA office building in Nashville, Tenn., features *Solarban*® R100 Glass by Vitro Architectural Glass.

The Daimler Trucks North American Headquarters in Portland, Ore., features *Solarban*® R100 Glass with *Solarban*® Glass by Vitro Architectural Glass.

Supporting Sustainable Design

Vitro Architectural Glass provides abundant opportunities for architects and building owners to realize their sustainability objectives.

Energy Use & Operating Cost Reduction: High-performance glasses by Vitro are engineered to facilitate downsized mechanical equipment costs, leading to reduced long-term energy costs. Visit **tools.vitroglazings.com** for glass comparison and configuration tools for analyzing glass products.

Sustainability Documentation: Vitro Architectural Glass is the first U.S. float glass manufacturer to have its entire selection of products recognized by the *Cradle to Cradle Certified*™ program, and the first in North America to publish third-party verified EPDs for its Flat Glass and Processed Glass products.

For additional credit opportunities and supporting documentation, visit **vitroglazings.com/LEED**

LEED Credit Opportunities

Possible Points	LEED Credit	*Solarban*® R100 Feature	Path/Option Satisfied
18	**Energy & Atmosphere (EA)** Optimize Energy Performance	Excellent SHGC, U-value and Tvis performance	Whole Building Energy Simulation (Option 1) or Prescriptive Compliance: ASHRAE Advanced Energy Design Guide (Option 2)
5	**Innovation (IN)** Innovation in Design	Exceeds minimum performance mandated by local energy codes	Innovation (Option 1), Pilot (Option 2) and Exemplary Performance (Option 3)
3	**Indoor Environmental Equality (EQ)** Daylight	Exhibits high light transmission	Simulation: Spatial Daylight Autonomy and Annual Sunlight Exposure (Option 1), Simulation: Illuminance Calculations (Option 2) or Measurement (Option 3)

Insulating Glass Unit Performance Comparisons | 1-inch (25mm) units with 1/2-inch (13mm) airspace and two 1/4-inch (6mm) lites

Glass Type	Visible Light Transmittance (VLT)	Visible Light Reflectance		(BTU/hr°ft²°F) NFRC U-Value		Solar Heat Gain Coefficient (SHGC)	Light to Solar Gain (LSG)
		Exterior %	Interior %	Winter Nighttime	Winter Argon		
***Solarban*® R100 Solar Control Low-E Glass**							
Solarban® R100 (2) Clear + Clear	42	32	14	0.29	0.25	0.23	1.83
Solarban® R100 (2) *Acuity*™ + *Acuity*™	43	33	13	0.29	0.25	0.23	1.87
Solarban® R100 (2) *Starphire*® + *Starphire*®	44	33	14	0.29	0.25	0.23	1.91
Solarban® R100 (2) *Solexia*® + Clear	36	25	13	0.29	0.25	0.21	1.71
Solarban® R100 (2) *Atlantica*® + Clear	32	20	13	0.29	0.25	0.19	1.68
Solarban® R100 (2) *Azuria*® + Clear	32	21	13	0.29	0.25	0.19	1.68
Solarban® R100 (2) *Optiblue*® + Clear	30	19	13	0.29	0.24	0.20	1.50
Solarban® R100 (2) *Solarblue*® + Clear	26	15	13	0.29	0.25	0.19	1.37
Solarban® R100 (2) *Pacifica*® + Clear	20	11	13	0.29	0.25	0.16	1.25
Solarban® R100 (2) *Solarbronze*® + Clear	25	15	13	0.29	0.25	0.18	1.39
Solarban® R100 (2) *Optigray*® + Clear	29	18	13	0.29	0.25	0.20	1.45
Solarban® R100 (2) *Solargray*® + Clear	21	12	13	0.29	0.25	0.17	1.24

All performance data calculated using LBNL Window 7.3 software and represents center of glass performance data. For detailed information on the methodologies used to calculate the aesthetic and performance values in this table, please visit vitroglazings.com or request our Architectural Glass Catalog.

For more information about *Solarban*® low-e glass and other *Cradle to Cradle Certified*™ architectural glasses by Vitro Glass, visit **vitroglazings.com**, or call **1-855-VTRO-GLS (887-6457).**

Vitro® Architectural Glass

Material Category: Roofing

Final Product Choice: Built-up Bituminous

Type of Material: Roofing Membrane

Manufacturer: Firestone

Product Number: APP 160 Cool

Quantity in Job: 68,500 SQ FT

Price Per Square Foot: $4-$5

Total Price For Job: $274,000-$342,500

Description of Product: Layer of Aspault melted down with a layer of gravel to protect it

Reason For Selection: The layer of gravel protect the membrane from contact and UV rays which allows it to last longer than other products.

Secondary Product Choice A: TPO

Type of Material: Roofing Membrane

Manufacturer: Firestone

Product Number: UltraPly TPO SA

Quantity in Job: 68,500 SQ FT

Price Per Square Foot: $7-$9

Total Price For Job: $479,500-$616,500

Secondary Product Choice B: EPDM

Type of Material: Roofing Membrane

Manufacturer: Firestone

Product Number: Rubberguard Ecowhite Platinum EPDM PT Membrane

Quantity in Job: 68,500 SQ FT

Price Per Square Foot: $2.50-$5

Total Price For Job: $171,250-$342,500

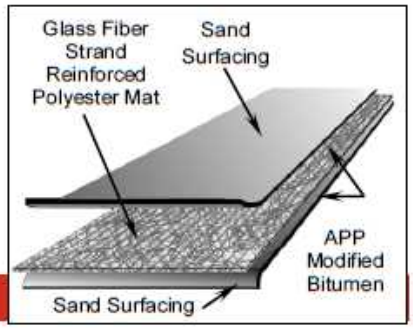
Firestone
Firestone Building Products

TECHNICAL INFORMATION SHEET

APP 160 Cool

Item Description
1 Roll (1 Square)

Item Number
W70PTT1600



Meets or exceeds performance requirements of ASTM D 6222, Type I, Grade S

Product Information

Description:

Firestone APP 160 Cool is a smooth-surfaced APP modified bitumen roofing membrane designed to be installed with Firestone All-Purpose MB Cold Adhesive. It consists of select asphalt, modified with atactic polypropylene, and strengthened with a fiber glass reinforced polyester non-woven mat [190 g/m² (3.9 lb/100 ft²)] made with 100% recycled PET fibers. The combination results in a flexible and durable material that exceeds the performance requirements of ASTM D 6222 Type I, Grade S. APP 160 Cool is a membrane that is strong and stable, and resistant to natural forces and other factors on the roof-top. It is ideal for both new construction and re-roofing applications as a base ply, cap sheet, or as a flashing sheet in single or multi-ply APP applications.

Product Packaging

Roll Width:	3' 3" (1 m)	Pallet Size:	48" x 39" (1.2 m x 1 m)
Roll Length:	32' 10" (10 m)	Rolls Per Pallet:	20
Net Coverage:	98 ft² (9.1 m²)	Weight per Pallet:	2,010 lb (914 kg)
Roll Weight:	98 lb (45 kg)		

Method of Application:

1. APP 160 Cool must be fully adhered with Firestone Multi-Purpose MB Cold Adhesive to an appropriate substrate.
2. Please see Firestone Asphalt Roofing Systems Guide for Applicators and Designers at www.firestonebpco.com for detailed application information.

Acceptable Immediate Substrates for Cold Adhesive Application:

- Structural Concrete (must be clean, dry, properly cured, and primed with ASTM D-41 primer).
- Existing Smooth Surface BUR or APP Modified Bitumen (must be clean, smooth and primed with ASTM D-41 primer).
- DensDeck® Prime, SECUROCK® Gypsum Fiber.
- Firestone ISO 95+™ GL Insulation, ISOGARD HD Composite, ISOGARD HD Cover Board, and RESISTA™ Insulation.

NOTE: Please consult the Firestone Asphalt Roofing Systems Guide for Applicators and Designers and QuickSpecs online at www.firestonebpco.com to review specific information regarding the type of deck and insulation in use.

Storage:

- All material should be stored out of the weather in a clean, dry area in its original unopened packaging at a minimum of 50 °F (10 °C) and a maximum of 100 °F (38 °C) so that it will be 50 °F (10 °C) or above at the time of application.
- Do not stack Firestone APP 160 Cool membrane more than two (2) pallets high.
- If the material must be stored temporarily on the roof before application, it must be elevated from the roof surface on a pallet, stored on end, and covered from the weather with a light colored opaque tarp in a neat, safe manner that does not exceed the allowable load limit of the storage area.

Firestone
Firestone Building Products

TECHNICAL INFORMATION SHEET

APP 160 Cool

Precautions:

- For safety information, refer to the Safety Data Sheet (SDS) for APP Membranes and Flashing.
- Take care when transporting and handling Firestone Modified Bitumen rolls to avoid punctures and other types of physical damage.
- Isolate waste products, petroleum products, grease, oil (mineral and vegetable) and animal fats from all Firestone Modified Bitumen membranes.

LEED® Information:

Post Consumer Recycled Content: 8%
Post Industrial Recycled Content: 0%
Manufacturing Location: Beech Grove, IN
*NOTE: LEED® is a registered trademark of the U.S. Green Building Council.

MIAMI-DADE COUNTY APPROVED
FM APPROVED
ETL US Intertek
CLASSIFIED C UL US

Typical Properties
(Meets ASTM D 6222, Type I, Grade S)

Property	ASTM Standard	Performance Minimum	Typical Performance
Product Thickness:	D 5147	140 mil (3.5 mm)	155 mil (3.9 mm)
Net Mass:	D 146	70 lb/100 ft² (3,418 g/m²)	104 lb/100 ft² (5,078 g/m²)
Bottom Side Coating:	D 5147	30 mil (0.76 mm)	47 mil (1.20 mm)
Peak Load at 73 °F (23 °C):	D 5147	50 lbf/in, MD (8.8 kN/m, MD)	55 lbf/in, MD (9.6 kN/m, MD)
		50 lbf/in, XMD (8.8 kN/m, XMD)	55 lbf/in, XMD (9.6 kN/m, XMD)
Elongation at Peak Load at 73 °F (23 °C):	D 5147	23%, MD	30%, MD
		23%, XMD	30%, XMD
Peak Load at 0 °F (-18 °C):	D 5147	60 lbf/in, MD (10.5 kN/m, MD)	65 lbf/in, MD (11.4 kN/m, MD)
		60 lbf/in, XMD (10.5 kN/m, XMD)	65 lbf/in, XMD (11.4 kN/m, XMD)
Elongation at Peak Load at 0 °F (-18 °C):	D 5147	10%, MD	15%, MD
		10%, XMD	15%, XMD
Ultimate Elongation at 5% of Peak Load 73 °F (23 °C):	D 5147	30%, MD	40%, MD
		30%, XMD	40%, XMD
Tear Strength at 73 °F (23 °C):	D 5147, D 4073	70 lbf, MD (311 N, MD)	75 lbf, MD (334 N, MD)
		70 lbf, XMD (311 N, XMD)	75 lbf, XMD (334 N, XMD)
Low Temperature Flexibility:	D 5147	32 °F (0 °C)	32 °F (0 °C)
Dimensional Stability:	D 5147, D 1204	1% Change, MD	0.2% Change, MD
		1% Change, XMD	0.2% Change, XMD
Compound Stability:	D 5147	230 °F (110 °C)	270 °F (132 °C)
Water Absorption:	D 5147, D 95	3.2%	0%
Moisture Content:	D 5147, D 95	1%	0%
Low Temperature Unrolling:	D 5636	41 °F (5 °C)	0 °F (-18 °C)

Please contact Firestone Technical Services Department at 1-800-428-4511 for further information.

This sheet is meant to highlight Firestone products and specifications and is subject to change without notice. Firestone takes responsibility for furnishing quality materials which meet published Firestone product specifications or other technical documents, subject to normal roof manufacturing tolerances. Neither Firestone nor its representatives practice architecture. Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any structure. Firestone accepts no liability for structural failure or resultant damages. Consult a competent structural engineer prior to installation if the structural soundness or structural ability to properly support a planned installation is in question. No Firestone representative is authorized to vary this disclaimer.

Firestone
Firestone Building Products

TECHNICAL INFORMATION SHEET

UltraPly™ TPO SA

Item Description	Item Number
.060" x 10' x 100' (1.5 mm x 3.05 m x 30.5 m) White	W56TSA3699
.060" x 10' x 100' (1.5 mm x 3.05 m x 30.5 m) Tan	W56TSAT699
.060" x 10' x 100' (1.5 mm x 3.05 m x 30.5 m) Gray	W56TSAG699

Product Information

Description:

UltraPly TPO SA with Secure Bond™ Technology is a heat weldable, flexible thermoplastic polyolefin (TPO) membrane with a factory applied pressure sensitive adhesive. Designed to be the next generation in fully adhered roof system application, Firestone's Secure Bond Technology helps ensure uniform adhesion across the entire membrane, creating a powerful bond. This advanced technology not only improves installation speed over traditional adhered application, but also widens the weather window with the ability to install down to 20 °F (-7 °C). With no VOC's, UltraPly TPO SA with Secure Bond Technology is an excellent solution for all your roofing needs. UltraPly TPO SA membrane meets or exceeds all the requirements for ASTM D6878-03. The membrane is reinforced with a 9 x 9, 1,000 denier polyester weft-inserted fabric. UltraPly TPO SA membrane is self-adhering. No primers or adhesives are required on horizontal surfaces, thus eliminating Volatile Organic Compounds (VOCs).

Membrane Preparation:

1. Substrates must be clean, dry and free of foreign material such as grease and any debris which could inhibit adhesion. This may require cleaning with a broom or blower.
2. Fasten insulation per current Firestone technical specifications to provide a proper substrate.
3. Install UltraPly TPO SA membrane only when ambient and substrate temperatures exceed 20 °F (-7 °C) and rising. Do not install UltraPly TPO SA below this minimum temperature.
4. Apply Single-Ply QuickPrime Primer or Single-Ply LVOC Primer to vertical surfaces before installing flashing membrane.
5. Unroll and position the membrane over the substrate to achieve the desired alignment and overlaps. Allow membrane to relax before positioning and adhering. **NOTE: Once membrane has fully relaxed, follow application methods below to adhere the membrane to the approved substrate.**

Method of Application:

Field Membrane Application (Steps 1-5):

1. Once the membrane has relaxed in place a minimum of 30 minutes (longer in colder weather), and the seam positions are aligned, carefully fold the sheet back approximately 10' (3.05 m) from one end to expose the release liner without disturbing the original position of the membrane. **NOTE: Fold the membrane back from the end, not from the side.**
2. Starting from the center split of the exposed release liner, remove the liner at a 45° angle from the center of the sheet back beyond the membrane edge. Be sure to pull enough of the release liner to hold below the membrane. Remove at least 5' (1.5 m) of release liner from one end of the sheet and adhere it to the substrate. The removed liner should extend at a 45° angle beyond the edges of the membrane.
3. Keeping the membrane flat and secured, and the seam overlap aligned, continue removing the release liner at a 45° angle along the entire length of the sheet; up to 100' (30.5 m). Pulling the release liner at a higher angle can cause the sheet to move and may trap air. The two halves of the release liner should be pulled out at the same time by two people. Keep the release liner as close to the roof surface as possible during removal. **NOTE: Removal of the liner and any handling of the exposed SA adhesive should be completed by two persons minimum.**

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Firestone Building Products

TECHNICAL INFORMATION SHEET

UltraPly™ TPO SA

Field Membrane Application (Steps 1-5) Continued:

4. To initiate adhesion, use a stiff bristled broom and apply downward pressure across the installed membrane. Broom the membrane from the center of the sheet working toward the edge.
5. Roll the installed membrane with a weighted roller (5 lb per lineal inch) across the width of the sheet to ensure full contact with the substrate. **NOTE: Do not roll membrane in place with a weighted roller if installed over ISOGARD™ HD or Resista / ISOGARD CG.**

Roof Edge (Gravel Stop, Gutter Edge) Membrane Application (Steps 1-6):

1. Once the membrane has relaxed in place a minimum of 30 minutes (longer in colder weather), and it is positioned correctly along the roof edge, carefully fold the sheet back approximately 10' (3.05 m) from one end to expose the release liner without disturbing the original position of the membrane. **NOTE: Fold the membrane back from the end, not from the side.**
2. Starting with the outside (roof edge) portion of the release liner, carefully pull it beneath the membrane, toward the field of the roof at a 45° angle to expose the SA adhesive without disturbing the original position of the membrane. Next, pull the inside portion of the release liner beneath the membrane. Maintain a 12" (305 mm) wide minimum separation between the two sections of liner. Back-roll the 10' (3.05 m) exposed SA section into position onto the substrate without trapping any air beneath the sheet. **NOTE: Removal of the liner and any handling of the exposed SA adhesive should be completed by two persons minimum.**
3. Keeping the release liner as close to the roof surface as possible and maintaining a 10' (3.05 m) minimum space between the two liner halves, pull both halves of the liner at a 45° angle along the length of the roof edge. Pulling the release liner at a higher angle can cause the sheet to move and may trap air.
4. To initiate adhesion, use a stiff bristled broom and apply downward pressure across the installed membrane. Broom the membrane from the center of the sheet working toward the edge.
5. Roll the installed membrane with a weighted roller (5 lb per lineal inch) across the width of the sheet to ensure full contact with the substrate. **NOTE: Do not roll membrane in place with a weighted roller if installed over ISOGARD HD or Resista / ISOGARD CG.**

Seaming:

1. Follow current Firestone technical specifications for heat welding TPO membrane.
2. Side Laps are to be heat-welded. Each membrane panel has a 2" (51 mm) uncoated selvedge edge. Overlap side laps and heat weld the 2" (51 mm) uncoated area to create a minimum 1½" (38 mm) robotic welded seam.
3. End Laps – Because the pressure sensitive adhesive extends the entire length of the roll, all adjoining rolls must be stripped in. Butt end laps together, or prime lap area of bottom sheet and create a 3" (76 mm) overlap, then strip in the end lap with a minimum 8" (203 mm) wide UltraPly TPO membrane cover strip, centered on the end lap and heat-welded along all edges. (Do not allow primer to contaminate the area to be heat welded.)
4. Detailing – Install approved t-joint patches and apply UltraPly TPO Cut Edge Sealant as required by UltraPly TPO general specification.

Storage:

- Warehouse membrane in a clean dry location.
- Membrane stored on jobsite must be kept dry.
- Material must be a minimum of 20 °F (-7 °C) prior to installation.
- Store away from sources of physical damage.
- Make certain the structural decking will support the loads incurred by material when stored on rooftop. The deck load limitations should be specified by the project designer.
- Store away from ignition sources.

Shelf Life:

18 Months when stored between 60 °F (16 °C) and 80 °F (27 °C) out of direct sunlight

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TECHNICAL INFORMATION SHEET

RubberGard™ EcoWhite™ Platinum™ EPDM PT Membrane

Item Description	Item Number
10' x 100' x 3" (3 m x 30.5 m x 76 mm)	W56BLT91010
10' x 100' x 6" (3 m x 30.5 m x 152 mm)	W56BLT910106

Product Information

Description:

Firestone RubberGard EcoWhite Platinum PT is non-reinforced white EPDM membrane, no-fold panel with 3" (76 mm) or 6" (152 mm) wide QuickSeam™ tape factory laminated continuously along lengthwise edge of the panel. The factory-applied tape assists and accelerates field installation of EcoWhite membrane in fully adhered applications.

Preparation of Substrate:

1. Substrates must be clean, dry, smooth, and free of sharp edges, fins, loose or foreign materials, oil, grease, and other materials that may damage the membrane.
2. All roughened surfaces that can damage the membrane shall be repaired as specified to offer a smooth substrate.
3. All surface voids greater than ¼" (6.3 mm) wide shall be properly filled with an acceptable fill material.

Method of Application:

1. Prepare the substrate to receive the EcoWhite Platinum PT membrane per current Firestone Building Products specifications.
2. Unroll and position the EcoWhite Platinum PT membrane so field seams form in shingle fashion, not "bucking" water, with finished lap edges facing down slope. Allow EcoWhite Platinum PT membrane to relax. EcoWhite Platinum PT used in adhered systems should be fully adhered prior to making field seams.
3. After membrane has bonded, fold back the top portion of the field seam exposing the bottom surface of the field seam. Prime the membrane field seam area to receive tape with an acceptable Firestone Single Ply Primer utilizing QuickScrubber™ or QuickScrubber Plus pad and handle using a minimum of four back and forth motions with heavy pressure. Extra scrubbing should be done at factory seams (including parallel scrubbing at factory seams) and areas of heavy dusting agent build up. Allow primer to dry completely. When primer is ready to receive tape, position the top portion of the field seam (with pre-applied tape and release liner in place) over the primed area. Remove the release liner from the pre-applied tape, pulling the liner at about the same level as the seam so all seam elements mate evenly. Roll the freshly mated field seam using QuickRoller™ or 1½" (38 mm) wide silicone hand roller to promote and ensure proper adhesion.
4. Field seams along the panel widths, and cut/trimmed membrane edges, shall be completed per current specifications and details using QuickSeam Tape. Cut edges shall receive Firestone Seam Edge Treatment per current specifications and details.

Storage:

- Store away from sources of punctures and physical damage.
- Assure that structural decking will support the loads incurred by material when stored on rooftop. The deck load limitations should be specified by the project designer.
- Store away from ignition sources as membrane will burn when exposed to open flame.
- EcoWhite Platinum PT membrane should be installed within one year after production. If the tape release liner can be removed, even after one year, the membrane can still be installed. Store in original unopened packaging indoors at 60 °F to 80 °F (16 °C to 27 °C). Protect the membrane and tape from physical damage.

Firestone
Firestone Building Products

TECHNICAL INFORMATION SHEET

RubberGard™ EcoWhite™ Platinum™ EPDM PT Membrane

Precautions:

- Take care when moving, transporting, handling, etc. to avoid sources of punctures and physical damage.
- Isolate waste products, such as petroleum products, greases, oils (mineral and vegetable) and animal fats from the RubberGard membrane.
- Refer to Safety Data Sheets (SDS) for safety information.

Packaging

Property	Widths	Lengths
EcoWhite Platinum EPDM PT	10' (3.05 m)	100' (30.5 m)
EcoWhite Platinum PT is folded once, and then wound one panel per core, with the tape portion facing out. Unrolling the EcoWhite Platinum PT panel results in the tape portion facing down. Outer protective wrapping of EcoWhite Platinum PT indicates the unrolling direction, as well as the location of the pre-applied tape on the EcoWhite Platinum PT membrane.		

LEED® Information:

Post-Consumer Recycled Content: 0%
Post Industrial Recycled Content: 0%
Manufacturing Location: Prescott, AR
*NOTE: LEED® is a registered trademark of the U.S. Green Building Council.

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CRRC COOL ROOF RATING COUNCIL ®

	Initial	Weathered
Solar Reflectance	0.80	0.72
Thermal Emittance	0.84	0.86
Rated Product ID Number		0027
Licensed Seller ID Number		0608
Classification		Production Line

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.

Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.

Compliance:	Test Method	Result
Solar Reflectance**	ASTM E903	0.83
Thermal Emittance**	ASTM E408	0.92
Solar Reflectance Index (SRI)***	ASTM E1980	105

**Values were obtained from independent testing by Atlas Material Testing DSET Laboratories

***SRI was calculated using the SRI calculator from the USGBC

ENERGY STAR

ENERGY STAR is only valid in the United States

30 Years

Material Category: Insulation

Final Product Choice: Exterior Rigid insulation

Type of Material: Polyisocyanurate Foam

Manufacturer: RMax

Product Number: DuraSheath

Quantity in Job: 35,500 SQ FT

Price Per Square Foot: $1.73-$2.40

Total Price For Job: $61,415-$85,200

Description of Product: Rigid Foam usually on the exterior of the building

Reason For Selection: The exterior foam creates a complete envelope around the building which helps prevent thermal bridging through the structure.

Secondary Product Choice A: Batt Insulation

Type of Material: Fiberglass

Manufacturer: Owens Corning

Product Number: EcoTouch Pink

Quantity in Job: 35,500 SQ FT

Price Per Square Foot: $0.12-$0.16

Total Price For Job: $4,260-$5,680

Secondary Product Choice B: Spray Foam Insulation

Type of Material: Polyurethane

Manufacturer: Lapolla

Product Number: Foam-Lok X

Quantity in Job: 35,500 SQ FT

Price Per Square Foot: $1-$1.20

Total Price For Job: $35,500-$42,600

Durasheath®

Insulation for the Building Envelope

PRODUCT DESCRIPTION

Rmax Durasheath® is an energy-efficient thermal insulation board composed of a closed-cell polyisocyanurate (polyiso) foam core bonded to inorganic polymer coated glass fiber mat facers on each side.

COMPLIANCES *(For approved assemblies, requirements and limitations, refer to Third Party Evaluation Reports)*

- ASTM C1289 Type II, Class 2
- ASHRAE 90.1
- International Building Code (IBC) Section 2603, Foam Plastic
- CA Insulation Directory
- Tested per NFPA 286 (ICC-ES AC12 Appendix B)
- Tested per NFPA 285 to comply with IBC Section 2603.5.5[1]
- Class A Flame Spread and Smoke Developed Indicies per IBC Chapter 8, *Interior Finishes* (1" min.)
- 1, 2, 3 or 4 hour Fire Rated Assemblies as shown in the UL Fire Resistance Directory.

[1]For approved assemblies, requirements and limitations, refer to Rmax NFPA 285 Assembly Guide

APPLICATIONS

Stud walls; cavity walls; masonry walls; exterior stucco; re-siding; vaulted ceilings; attics and crawl spaces; limited roofing applications.

THERMAL PROPERTIES / PRODUCT DATA

"R" means resistance to heat flow. The higher the R-value, the greater the insulating power.

Nominal Thickness	Thermal R-Value[1]
Inches	°F•sqft•hr/Btu
0.50	3.0
0.75	4.5
1.00	6.0
1.10	6.6
1.25	7.5
1.30	7.8
1.50	9.1
1.60	9.7
1.90	11.5
2.00	12.1
2.20	13.4
2.50	15.3
3.00	18.5
3.20	19.8
3.50	21.8
4.00	25.0
4.50	28.3

[1]Thermal values are determined by using ASTM C518 test method at 75°F mean temperature on material conditioned according to PIMA Technical Bulletin No. 101.
[2]Durasheath® is shipped in bundles that are approximately 48" high and wrapped in plastic for easy handling.

Visit www.rmax.com for a complete list of thicknesses and packaging information.

TYPICAL PHYSICAL PROPERTIES

Physical properties shown are based on data obtained under controlled conditions and are subject to normal manufacturing tolerances.

Property	Test Method	Results
Density, Overall, Nominal	ASTM D1622	2.0 pcf
Compressive Strength	ASTM D1621	20 psi[1]
Flame Spread, Core[2]	ASTM E84	≥1" 25 or Less <1" 75 or Less
Smoke Developed, Core[2]	ASTM E84	< 450
Air Permeance	ASTM E2178	<0.2 L / (s.m²)
Water Vapor Permeance	ASTM E96	< 1.5 perm
Water Absorption	ASTM C209	< 1% Vol.
Dimensional Stability Length and Width	ASTM D2126	< 2% Linear Change
Mold Resistance	ASTM D3273	10, no defacement
Service Temperatures		250°F max

[1]Less than 1" is standard at 16 psi.
[2]Flame spread and smoke numbers are shown for comparison purposes only and are not intended to represent the performance of Durasheath® and related components under actual fire conditions.

APPLICATION / INSTALLATION

General – Durasheath® shall be installed vertically or horizontally with all edges tightly butted. Vertical joints must be backed by framing or structural sheathing. Taping the joints is acceptable, although not required.

Securement – Rmax recommends a minimum of eight fasteners per 4'x8' board. Additional fasteners may be required in locations expected to experience additional loading (heavy wind drafts/gusts, accelerated wear and tear, etc.) prior to attachment of covering material (cladding, furring, thermal barrier, etc.) or when not being covered. Exact number of fasteners also depends on the type being used and the capacity, consult fastener manufacturer. Fasten to wood framing using roofing nails, bugle head screws, cap nails, or staples. The fasteners shall be long enough to penetrate wood framing a minimum of 1". Fasten to metal framing using self-taping screws and plastic washers. The fasteners shall be long enough to penetrate metal framing a minimum of four threads. Secure to concrete surfaces using plastic masonry fasteners with washer or a quality grade construction adhesive. Rodenhouse fasteners, sold by Rmax, are a great option for fastening Durasheath® to wood, steel and concrete substrates. Refer to the Rmax/Rodenhouse Fastener List and Installation Guide for more details.

LIMITATIONS

Durasheath® is not recommended, nor warranted, for use as a commercial roof insulation directly under membrane systems. Consult Rmax Sales for suitable commercial roof insulation products.
Durasheath® is not a structural panel. It must not be used as a nailing base for any other building products. Furthermore, stud walls insulated with Durasheath® must be properly braced for lateral loads according to the requirements of local Building Codes.

WARNING

Installations utilizing Durasheath® must be fully protected on the inhabited side of the building by a thermal barrier such as a minimum of 1/2" gypsum wallboard, or equivalent.

Consult local Building Codes and insurance authorities regarding special applications or details required when using Durasheath® as an exposed product. The code also has provisions regarding vapor retarders, type and location, based on the assembly, climate zone and the amount of continuous insulation. It is up to the design professional to specify an assembly that will perform adequately and meet these requirements.

Per the IBC and IRC, a WRB is required behind the exterior wall veneer.

WARRANTY

See Rmax "Sales Policy" and applicable warranties for terms and conditions. Rmax does not assume any responsibility or liability for the performance of any products other than those manufactured by Rmax.
NOTE: All Rmax products must be tarped, placed on skids and kept dry before and throughout construction.

Rmax Sales Offices and Plant Locations

Central:
13524 Welch Road
Dallas, Texas 75244

Phone: 972-387-4500
Fax: 972-387-4673
Toll Free: 1-800-527-0890

East:
1649 South Batesville Road
Greer, South Carolina 29650

Phone: 864-297-1382
Fax: 864-234-7548
Toll Free: 1-800-845-4455

West:
210 Lyon Drive
Fernley, Nevada 89408

Phone: 775-575-4849
Fax: 775-575-5035
Toll Free: 1-800-762-9462

E-mail us at rmax@rmax.com or visit our website www.rmax.com

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Proudly Made and Engineered in the U.S.A.

PIMA polyisocyanurate insulating manufacturers association

ECOTOUCH® PINK® FIBERGLAS™ INSULATION

Description

Owens Corning® EcoTouch® PINK® Fiberglas™ Insulation with PureFiber® Technology is a preformed, flexible blanket insulation. It is produced in R-values from 11 to 49, with thicknesses ranging from 31/2 inches to 14 inches. It is available unfaced, or faced with either a kraft or foil vapor retarder.

Features

- Excellent thermal control
- Effective acoustical control
- Long term performance and will not settle nor slump within wall cavities
- With less dust than other fiberglass products, EcoTouch® PINK® Fiberglas™ insulation has excellent stiffness and recovery characteristics[1]
- Compression packaging from Owens Corning speeds job site handling and installation

1. According to 2010 clinical trial conducted in Toronto, Canada by Ducker Worldwide on behalf of Owens Corning Insulation Systems, LLC.

Applications

- Wood-framed wall, floor and roof/ceiling cavity wall assemblies
- Metal-framed wall and floor cavity wall assemblies
- Furring strips installed on the interior surface of basement walls
- Interior surfaces of basement and unvented crawl space foundation walls

Standards, Codes Compliance

- Manufactured in compliance with ASTM C 665
- Federal Specification HH-I-521F has been canceled and is replaced by ASTM C 665
- Classified non-combustible when tested in accordance with ASTM E 136
- Unfaced EcoTouch® PINK® Fiberglas™ insulation is acceptable for use in ICC building construction types I through V; kraft and foil faced EcoTouch® PINK® Fiberglas™ insulation are acceptable for use in ICC building construction types III, IV and V
- Certified to meet California Code of Regulations, Title 24, Chapter 12-13, Article 3, "Standards for Insulating Material"

Physical Properties

PROPERTY (UNIT)	TEST	VALUE
Thermal Resistance	ASTM C518	See "Availability" table for R-values
Surface Burning Characteristics[2] (flame spread / smoke developed) Unfaced Kraft faced Foil faced	ASTM E 84 / UL 723	 25 / 50 NR / NR 75 / 150
Critical Radiant Flux (W/cm²)	ASTM E970	>0.12
Water Vapor Permeance (perms) Kraft faced Foil faced	ASTM E96	 1.0 0.5
Water Vapor Sorption (by weight)	ASTM C1104	<5%
Odor Emission	ASTM C1304	Pass
Corrosion Resistance	ASTM C665, part 13.8	Pass
Fungi Resistance	ASTM C1338	Pass

2. The surface burning characteristics of EcoTouch® Insulation were derived from products tested in accordance with ASTM E84. This standard is used solely to measure and describe properties of products in response to heat and flame under controlled laboratory conditions, and should not be used to describe or approve the fire hazard of materials under actual fire conditions. However, the results of these tests may be used as elements of a fire risk assessment that takes into account all of the factors pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest five rating.

Availability

	WIDTH			LENGTH		THICKNESS	R-VALUE
Metal Frame Construction	16" (406mm)		24" (609mm)	48" (1,219mm)	96" (2,438mm)	3 1/2" (89mm)	11
	16" (406mm)		24" (609mm)	48" (1,219mm)	96" (2,438mm)	3 1/2" (89mm)	13
	16" (406mm)		24" (609mm)		96" (2,438mm)	3 1/2" (89mm)	15
	16" (406mm)		24" (609mm)		96" (2,438mm)	6" (152mm)	21
Wood Frame Construction Walls	11" (406mm)			93" (2,362mm)	105" (2,667mm)	3 1/2" (89mm)	11
	11" (406mm)			93" (2,362mm)		3 1/2" (89mm)	13
	11" (406mm)				105" (2,667mm)	3 1/2" (89mm)	15
	11" (406mm)			93" (2,362mm)		6 1/4" (159mm)	19*
	12" (406mm)			48" (1,219mm)		9 1/2" (241mm)	30
	15" (381mm)		23" (584mm)	48" (1,219mm)	93" (2,362mm)	3 1/2" (89mm)	11
	15" (381mm)		23" (584mm)	48" (1,219mm)	93" (2,362mm)	3 1/2" (89mm)	13
	15" (381mm)		23" (584mm)		93" (2,362mm)	3 1/2" (89mm)	15
	15" (381mm)	19 1/4"	23" (584mm)	48" (1,219mm)	93" (2,362mm)	6 1/4" (159mm)	19*
	15" (381mm)		23" (584mm)		93" (2,362mm)	5 1/2" (139mm)	20
	15" (381mm)		23" (584mm)		93" (2,362mm)	5 1/2" (139mm)	21
	15" (381mm)		23" (584mm)		105" (2,667mm)	5 1/2" (139mm)	21
	23" (381mm)		23" (584mm)		93" (2,362mm)	5 1/2" (139mm)	21
Floor/ Ceiling	15" (381mm)	19 1/4"	23" (584mm)	48" (1,219mm)	93" (2,362mm)	6 1/4" (159mm)	19
	15" (381mm)		23" (584mm)	48" (1,219mm)		6 3/4" (171mm)	22
	15" (381mm)		23" (584mm)	48" (1,219mm)		8" (203mm)	25
	15 1/2" (394mm)		23 3/4" (603mm)	48" (1,219mm)		8 1/4" (209mm)	30C
	16" (406mm)	19 1/4"	24" (609mm)	48" (1,219mm)		9 1/2" (241mm)	30
	15 1/2" (394mm)		23 3/4" (603mm)	48" (1,219mm)		10 1/4" (260mm)	38C
	16" (406mm)		24" (609mm)	48" (1,219mm)		12" (305mm)	38
	16" (406mm)		24" (609mm)	48" (1,219mm)		14" (356mm)	49

*Delivers R18 value when installed in 5.5" deep cavity.

Design Considerations

- For optimum insulation performance the building thermal barrier (insulation) should be in continual alignment with the building air barrier. In framed cavities, the product thickness should match the depth of the framing members.
- Follow the local, applicable building code(s) to determine the need for and placement of a vapor retarder.
- Do not install insulation on top, or within 3 inches of a recessed light fixture unless the fixture is labeled as "insulation contact" (IC) rated.
- Kraft and standard foil facings will burn and cannot be left exposed. Install facings in substantial contact with the assembly finish material. Protect from open flame or other heat source.

Installation

See Owens Corning publication "Installation Guide for Light Density Insulation" (Pub. No. 10017858) for more information.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at www.owenscorning.com.

Certifications and Sustainable Features

- Certified by SCS Global Services to contain an average of 65% with minimum 47% post-consumer and balance 18% pre-consumer recycled glass content
- GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. GREENGUARD validated to be Formaldehyde free. For more information, visit ul.com/gg
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Gold Material Health Certificate from Cradle to Cradle Products Innovation Institute*

Notes

Fiberglass products may cause temporary skin and mucous membranes itching due to the mechanical abrasion effects of fibers, a condition which is completely reversible. Owens Corning does not recommend the use of unfaced EcoTouch® PINK® Fiberglas® Insulation in exposed applications where it will be subject to routine human contact due to this potential temporary irritation. For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via http://sds.owenscorning.com.

ENERGY STAR PARTNER

CERTIFIED

GREENGUARD

CERTIFIED RECYCLED CONTENT

*Unfaced EcoTouch® insulation only.

Disclaimer of Liability

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FOAM-LOK™ X

FOAM-LOK™ SPRAY FOAM INSULATION

High Yield CC Spray Foam
ICC ESR-XXXX

Product Use and Design

FOAM-LOK™ X is a Closed-Cell spray applied foam that has exceptional yield resulting in outstanding job site productivity. When installed following application guidelines it adheres tenaciously to framing members and substrates. **FOAM-LOK™ X** spray foam provides superior energy economy and durability while significantly reducing unmanaged moisture gain and air infiltration.

As a component of a "systems approach" to proper building envelope construction, **FOAM-LOK™ X Closed-Cell** spray foam provides exceptional performance in minimizing heat transfer, moisture gain, air leakage, and improving racking strength. It delivers high R-value and Class II vapor permeance required in certain climate zones.

TYPE: I, II, III, IV and V (A&B) Construction

Recommended Product Applications

- **Wall Cavities**
- **Under Floor Slabs**
- **Floor Assemblies**
- **Attics (vented and unvented)**
- **Crawl Spaces (vented and unvented)**
- **Foundation Walls (interior or exterior)**
- **Exterior Walls (as continuous insulation)**

Recommended Processing Parameters

Recommended Processing Parameters	
Equipment Dynamic Pressure	1,000 - 1,300 psi
Ambient Temperature	23 - 122°F (-5- 50°C)
Preheat Temperature	105- 115°F (52 - 57°C)
Hose Heat Temperature	110 - 120°F (43- 48°C)
Drum Storage Temperature	60 - 85°F (15 - 30°C)
Shelf Life:	6 months when stored properly.

Optimum hose pressure and temperature may vary as a function of the type of equipment, ambient and substrate conditions, and the specific application. It is the responsibility of the applicator to properly interpret equipment technical literature, particularly information that relates acceptable combinations of gun chamber size, proportioner output, and material pressures.

- 2:1 transfer pumps are recommended for material transfer from container to the proportioner.
- CAUTION: Extreme care must be taken when removing and reinstalling drum transfer pumps so as NOT to reverse the "A" and "B" components.
- Do not circulate or mix other suppliers' "A" or "B" component into **FOAM-LOK™** containers.
- The plural component proportioner must be capable of supplying each component within ± 2% of the desired 1:1 mixing ratio by volume.

Physical Properties

Properties	Test Method/ Requirements	Value
Aged "R" Value/K-Factor	ASTM C518	R-6.7 @ 1"
Compressive Strength	ASTM D1621	29 psi (197 kPa)
Core Density	ASTM D1622	1.5lbs./ft3
Air Leakage	ASTM 2178	< 0.02L/s/M2 at 1.0 inches
Closed-Cell Content	ASTM D2856	> 98%
Tensile Strength	ASTM D1623	37 psi (254 kPa)
Water Vapor Transmission	ASTM E96	.77 perms @ 2.25" (1 perm at 1.75" calculated
Water Resistance Barrier	ICC-ES AC71	1.0"
Dimensional Stability 7 days at 158°F, 97% RH	ASTM D2126	3.0%
Fungus Testing	ASTM C 1338	No Growth

*For specific construction requirement of ASTM E119 and NFPA 285 testing please contact Icynene-Lapolla Technical Group or your sales representative.

FOAM-LOK™ X meets **ASTM C1029 Type II** classification.

Credentials/Certifications

- **ICC ESR-XXXX**

FOAM-LOK™ X is a Class A formulation per ASTM E84 testing.

Flame Spread	<20
Smoke Development	<400

*Diversified Testing Modified NFPA 286 PER AC 377 Appendix X	
Location	**SPF Thickness***
Wall	6 inches
Ceilings	6 inches

- No Ignition Barrier Required

Room Corner Fire Testing*
With 1/2" Thermal Barrier (Sheetrock)

*NFPA 286	
Location	**SPF Thickness***
Wall	Not Limited
Ceilings	Not Limited

FOAM-LOK™ X must be covered with 1/2" of gypsum board, or DC-315, No-Burn Plus ThB, Flame Seal or Fireshell F10E intumescent paint coating at approved thickness or approved thermal barrier.

Ventilation Rate (Air Changes Per Hour)	Re-Entry Period For: Sprayers, Helpers, Informed Trade Workers & Contractors	Re-Occupancy Period For All Others
At 40.0 ACH	2 Hours	4 Hours

FOAM-LOK™ X

High Yield CC Spray Foam

ICC ESR-XXXX
Rev. Date 10/01/2019

FOAM-LOK™
SPRAY FOAM INSULATION

***THIS FOAM MUST NOT BE APPLIED IN EXCESS OF 2.0 INCHES PER APPLICATION. APPLICATORS MUST WAIT A MINIMUM OF 10 MINUTES BETWEEN 1ST AND 2ND PASS. FOR MORE THAN TWO PASSES, THE FOAM SHOULD BE ALLOWED TO COOL FOR 20 TO 30 MINUTES OR UNTIL THE SURFACE TEMPERATURE HAS RETURNED TO AMBIENT BEFORE ADDITIONAL APPLICATIONS OF FOAM ARE ATTEMPTED. FOAM APPLIED IN EXCESS OF 2.0 INCHES OR WITHOUT ALLOWING FOR COOLING MAY RESULT IN, BUT IS NOT LIMITED TO EXCESS HEAT BUILD-UP AND RESULT IN FIRE OR THE GENERATION OF OFFENSIVE ODORS THAT MAY NOT DISSIPATE WITH TIME.**

Thermal Barrier

IRC and IBC codes require that SPF be separated from the interior of a building by an approved fifteen (15) minute thermal barrier, such as 1/2" gypsum wall board or equivalent, installed per manufacturer's instructions and corresponding code requirements. There are exceptions to the thermal barrier requirement: (1) Code authorities may approve coverings based on fire tests specific to the SPF application. For example, covering systems that successfully pass large scale tests may be approved by code authorities in lieu of a thermal barrier; (2) SPF protected by 1" thick masonry does not need a thermal barrier. Certain materials that offer protection from ignition, called "ignition barriers," may not be considered as thermal barrier alternatives unless they comply with NFPA 286 or other full-scale burn tests. Applicators should request test data and code body approvals or other written indications of acceptability under the code to be sure that the product selected offers code-compliant protection.

Vapor Retarder

FOAM-LOK™ X qualifies as a vapor retarder as defined by the International Code Council and ASHRAE (class II) at a minimum thickness of 1 3/4 inches. Building construction types with a persistent, high moisture drive require additional moisture remediation, as local building codes dictate. This is including climate zones 5 and higher in the U.S., as defined in the 2015 IECC, Table R301.1.

Safety and Handling

Respiratory protection is MANDATORY! Lapolla requires that supplied air and a full face mask be used during the application of any spray applied foam system. Contact Lapolla Industries for a copy of the Model Respiratory Protection Program developed by CPI or visit their web site at www. polyurethane.org. Persons with known respiratory allergies should avoid exposure to the "A" component. The "A" component contains reactive isocyanate groups while the "B" component contains amine and/or catalysts with blowing agents. Both materials must be handled and used with adequate ventilation. The vapors must not exceed the TLV (0.02 parts per million) for isocyanates. Avoid breathing vapors. Wear a NIOSH approved respirator. If inhalation of vapors occur, remove victim from contaminated area and administer oxygen if breathing is difficult. Call a physician immediately. Avoid contact with skin, eyes, and clothing. Open containers carefully, allowing any pressure to be relieved slowly and safely. Wear chemical safety goggles and rubber gloves when handling or working with these materials. In case of eye contact, immediately flush with large amounts of water for at least fifteen minutes. Consult a physician immediately. In case of skin contact, wash area with soap and water. Wash clothes before reuse.

Applicators should ensure the safety of the jobsite and construction personnel by posting appropriate signs warning that all "hot work" such as welding, soldering, and cutting with torches should take place no less than 35 feet from any exposed foam. If "hot work" must be performed all spray polyurethane foam should be covered with an appropriate fire or welder's blanket, and a fire watch should be provided.

In Case of Spills or Leaks

- Utilize appropriate personal protective equipment
- Ventilate area to remove vapors
- Contain and cover spilled material with a loose, absorbent material such as oil-dry, vermiculite, sawdust or Fuller's earth
- Shovel absorbent waste material into proper waste containers
- Wash the contaminated areas thoroughly with hot, soapy water
- Report sizeable spills to proper environmental agencies

In Case of Fire

Extinguishing Media: Dry chemical extinguishers such as mono ammonium phosphate, potassium sulfate, and potassium chloride. Additionally, carbon dioxide, high expansion (proteinic) chemical foam, or water spray for large fires.

Positive pressure ventilation of the work area is recommended to minimize the accumulation of vapors in the work area during the application. Improper application techniques of this foam system must be avoided. This includes excessive thickness, off ratio material, and spraying into rising foam. The potential results of improperly applied materials may include but is not limited to excessive heat build-up, and may result in a fire or offensive odors which may not dissipate with time and/or poor product performance due to improper density of the applied material. Large masses of sprayed materials should be avoided. When large masses are generated they should be removed from the area, cut into small pieces and allowed to cool before disposal. Failure to follow this recommendation may result in a fire. It is recommended that a fire extinguisher be located in an easily accessible portion of the work area.

DISCLAIMER

The data presented herein is not intended for use by non-professional applicators, or those persons who do not purchase or utilize this product in the normal course of their business. The potential user must perform any pertinent tests in order to determine the product's performance and suitability in the intended application, since final determination of fitness of the product for any particular use is the responsibility of the buyer.

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Material Category: Flooring

Final Product Choice: Vinyl Commercial Tile

Type of Material: Vinyl

Manufacturer: Armstrong Flooring

Product Number: Standard Excelon Imperial Texture I

Quantity in Job: 80,000 SQ FT

Price Per Square Foot: $0.99

Total Price For Job: $79,200

Description of Product: 1' x 1' Composite commercial tile

Reason For Selection: The price and durability were what our particular project needed. These tiles are pretty cheap and last a long tile when properly cared for.

Secondary Product Choice A: Polished Concrete

Type of Material: Concrete

Manufacturer: Rapidset

Product Number: TRU PC Polished Concrete

Quantity in Job: 80,000 SQ FT

Price Per Square Foot: $2-$6

Total Price For Job: $160,000-$480,000

Secondary Product Choice B: Hardwood

Type of Material: Wood

Manufacturer: Bisazza

Product Number: Wood Floor

Quantity in Job: 80,000 SQ FT

Price Per Square Foot: $6-$22

Total Price For Job: $480,000-$1,760,000

Inspiring Great Spaces®

Armstrong FLOORING

PRODUCT SPEC PAGE

STANDARD EXCELON® Imperial® Texture | MultiColor™

Vinyl Composition Tile (VCT)

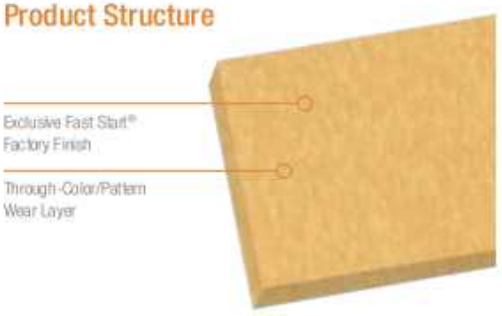
Product Information

Construction	Product Line	International Product Specifications	Overall Thickness Wear Layer Thickness	Factory Finish	Installation	Maintenance Options
Vinyl Composition Tile	Imperial Texture MultiColor	ASTM F1066 - Class 2 Through Pattern ISO 10595 Type II	1/8 in. (3.2 mm)	Fast Start®	Full Spread Adhesives S-515, S-525, S-700, S-750 & S-240, Flip® Spray Adhesive	Polish

Packaging

Tile Size	Tile per Carton/Coverage	Shipping Weight per Carton
12 in. x 12 in. (305 mm x 305 mm)	45 - 45 ft² (4.18 m²)	Approx. 63 lbs. /carton (28.6 kg)

Product Structure



Testing

	Performance	Test Method	Requirement	Performance vs. Requirement
ASTM F 1066	Thickness	ASTM F 386	Nominal ± 0.005 in.	Meets
	Size	ASTM F 2055	± 0.016 in. per linear foot	Meets
	Squareness	ASTM F 2055	0.010 in. max	Meets
	Indentation – One Minute	ASTM F 1914	≥ 0.006 in. to ≤ 0.015 in.	Meets
	Indentation @ 115°F	ASTM F 1914	< 0.032 in.	Meets
	Impact	ASTM F 1265	No cracks beyond limit	Meets
	Deflection	ASTM F 1304	1.0 in. minimum	Meets
	Dimensional Stability	ASTM F 2199	≤ 0.024 in. per linear foot	Meets
	Chemical Resistance	ASTM F 925	No more than slight change in surface dulling, attack or staining	Meets
	Resistance to Heat	ASTM F 1514	ΔE not greater than 8.0	Meets
Additional	Static Load Resistance	ASTM F 970	≤ 0.005 in.	125 psi
	Fire Test Data – Flame Spread	ASTM E 648	0.45 W/cm² or more Class I	Meets
	Fire Test Data – Smoke Evolution	ASTM E 662	450 or less	Meets
	Fire Test Data – Canada	CAN\ULC S102.2	Use dependent	Flame Spread - 0 Smoke Developed - 30

Inspiring Great Spaces®

Armstrong FLOORING

PRODUCT SPEC PAGE

STANDARD EXCELON® Imperial® Texture | MultiColor™

Vinyl Composition Tile (VCT)

Maritime Usage

IMO Resolution A653 (16) Surface Flammability: IMO MSC 61(67) Annex 1 Part 5 and Annex 2 Smoke and Toxicity IMO MSC 61(67) Annex 1 Part 2 and Annex 2	 Passes Passes
Safety Of Life at Sea (SOLAS)	Compliant
United States Coast Guard	Approved

Sustainability

Certification Attribute	Standard	3rd party Certification/Certifier
Low-Emitting Material	CDPH v1.1 (2017) a.k.a CHPS 01350	FloorScore/SCS
Environmental Product Declaration (EPD)	ISO 14025	Yes/ASTM International
Plant Quality	ISO 9001	Yes/SAI Global

Performance	Standard	Requirement	Performance vs. Requirements
TVOC Range	CDPH v1.1 (2017) a.k.a CHPS 01350	<0.5 mg/m²	Meets
Low Emitting Adhesives S-515 S-525 S-700 S-750 S-240 Flip® Spray Adhesive*	SCAQMD Rule #1168	Less than 50 g/L	S-515 Exceeds – 0 g/L S-525 Exceeds – 16 g/L S-700 Exceeds – 0 g/L S-750 Exceeds – 5 g/L S-240 Exceeds – 10 g/L Flip® Exceeds – 0 g/L
Material Ingredients (Option 1)	LEED v4	Content disclosure to 1000 ppm	Meets (See Armstrong Product Declaration)
Recycled Content	ISO 14021	Contains recycled content	Meets - 18% Pre-Consumer

* Flip® Spray Adhesive is Cradle to Cradle Silver certified.

Limited Warranty

5-year Commercial Warranty when installed in accordance with Armstrong's Guaranteed Installation Systems manual, F-5061.

Links

Installation Instructions	www.ArmstrongFlooring.com/flooring-downloads
Maintenance Information	www.ArmstrongFlooring.com/flooring-downloads
View the Full Line	www.Armstrong.com/commflooringna/products/vct
Product Transparency	www.ArmstrongFlooring.com/transparency
Email Techline	www.ArmstrongFlooring.com/flooring-techline
Visit Floor Expert	www.floorexpert.com

TRU® PC POLISHED CONCRETE

High Performance, Self-Leveling Topping

PRODUCT DATASHEET

DESCRIPTION: Rapid Set® TRU® PC POLISHED CONCRETE is an advanced, professional grade, hydraulic cement-based, self-leveling topping. It can be ground and polished to expose the aggregate and simulate the appearance of polished concrete. TRU PC levels rapidly, maintains workability for up to 20 minutes, produces a dense surface, and has high bond strength. TRU PC is ready for foot traffic in 2 to 3 hours. As an interior and exterior product, TRU PC is durable in wet or dry conditions.

USES: Use TRU PC for polished concrete floors in schools, airports, warehouses, retail, restaurants, lobbies, and more.

ENVIRONMENTAL ADVANTAGES: Use TRU PC to reduce your carbon footprint and lower your environmental impact. Production of Rapid Set cement emits far less CO_2 than portland cement. Contact your representative for LEED values and environmental information.

APPLICATION: Use TRU PC when a high quality, fast, polishable concrete topping is required. TRU PC is ideal for projects that need long flow life and working time while achieving high early strength. TRU PC cures to a gray color with the appearance of concrete. Protective coatings, sealers or epoxies can be applied per the manufacturer's recommendations after 12 hours.

SURFACE PREPARATION: Substrate must be clean, sound concrete that is free of gypsum compounds and all materials that may inhibit bond such as: oil, curing compound, dust, mastic, bond breakers, and other surface contaminants. Mechanical methods of surface preparation such as shot blasting are preferred. Surface shall be ICRI CSP 3 to 5. Acid etching the substrate is not recommended. Surface must be dry and be properly primed. Surface and ambient temperatures must be between 50°F to 90°F (10°C to 32°C).

PRIMING: Use Rapid Set® TXP™ or Rapid Set® TXP™ Fast epoxy primers with sand broadcast to refusal. Follow all product specifications and instructions.

MIXING: For each bag of TRU PC use 3.75 to 4.0 quarts (3.5 L to 3.8 L) of potable water. For polished floors, use less water to achieve maximum aggregate exposure with minimal grinding. Start with 3.75 quarts (3.5 L) per bag. Add the measured amount of water to the mixing container. While the mixer is running, add TRU PC. Additional water may be added if necessary. **Do not exceed 4.25 quarts (4.0 L) per bag.**

Multi-bag batches produce more uniform results. For 5-bag batches, use 18.75 quarts (17.7 L) of water in the appropriate sized batch mixer. Mix using a helix style mixing paddle. After the final bag is added to the batch, mix an additional 2 to 3 minutes until the mixture is lump-free. If additional flow is required, add 0.5 quart (0.5 L) increments of water and check the flow. Do not exceed 21.25 quarts (20.1 L) per 5 bags. Avoid mixers that entrap large amounts of air. Mixed TRU PC should be placed within 20 minutes. Maintain material temperature between 60°F (16°C) and 80°F (27°C).

PLACEMENT: Arrange work area to permit continuous placement without cold joints. Place the TRU PC onto the prepared and primed substrate with a minimum thickness of 3/8" (10 mm). For floors subjected to high-load, rubber-wheeled traffic, TRU PC must be applied at a minimum thickness of 1/2" (13 mm). All existing joints and moving cracks must be honored up through the topping. TRU PC will flow and level out within its 15 minute flow life. Use a gauge rake to coax the material into place as required. Immediately after placement, use a Rapid Set® TRU PC Spiked Roller to remove any entrapped air. A smoother may be used on the surface.

OVERVIEW

Highlights:

- Polished Concrete Appearance: A high-flow topping that simulates polished concrete
- Outstanding Clarity & Gloss: Highly polishable due to low polymer content and high density
- Fast Track: Foot traffic in 2 to 3 hours, grind wet or dry in 24 hours, apply coatings in 12 hours
- High Strength: 5000 psi (34.5 Mpa) in 24 hours, 7000 psi (48.3 Mpa) in 28 days
- Interior/Exterior: Durable in dry and wet areas

Tested in accordance with:

ASTM C1708

MasterFormat® 2016

03 01 50	Maintenance of Cast Decks and Underlayment
03 53 19	Concrete Overlayment
03 54 16	Hydraulic Cement Underlayment

Manufacturer:

CTS Cement Manufacturing Corp.
12442 Knott St.
Garden Grove, CA 92841
Tel: 800-929-3030 | Fax: 714-379-8270
Web: www.CTScement.com
E-mail: info@CTScement.com

TRU® PC POLISHED CONCRETE High Performance, Self-Leveling Topping

CURING: No wet curing is required under normal conditions at 70°F (21°C). If used in exterior applications, apply a fine water mist to the newly hardened surface of Rapid Set® TRU PC POLISHED CONCRETE as soon as it can be done without marring the surface, and continue until one hour after final set. Avoid excessively dry, windy, hot or sunny conditions.

POLISHING: TRU PC may be polished after 24 hours at normal conditions. TRU PC grinds and polishes much like concrete and can achieve a very high gloss and Distinctness-of-Image (DOI) due to its high density and low polymer content. Polishing any topping requires a high degree of experience and craftsmanship. Contact CTS Cement for a list of approved installers.

COLD WEATHER: Environmental and material temperatures below 70°F (21°C) may delay setting time and reduce the rate of strength gain. Lower temperatures will have a more pronounced effect. Thinner sections will be more significantly affected. To compensate for cold temperatures, keep material warm, use heated mix water, and follow ACI 306 Procedures for Cold Weather Concreting.

WARM WEATHER: Environmental and material temperatures above 70°F (21°C) may speed setting time and increase the rate of strength gain. Higher temperatures will have a more pronounced effect. To compensate for warm temperatures, keep material cool, use chilled mix water, and follow ACI 305 Procedures for Hot Weather Concreting.

YIELD & PACKAGING: TRU PC is available in 60-lb (27.2-kg) polyethylene-lined bags. Yield is 0.5 ft^3 (0.01 m^3) per 60-lb (27.2-kg) bag. Coverage is approximately 16 ft^2 (1.5 m^2) at 3/8" (10 mm) thickness or 12 ft^2 (1.1 m^2) at 1/2" (13 mm) thickness for flat surfaces.

SHELF LIFE: TRU PC has a shelf life of 12 months when stored properly in a dry location, protected from moisture, out of direct sunlight, and in an undamaged package.

USER RESPONSIBILITY: TRUPC is a rigid, non-structural topping. It is not possible to predict the appearance of micro-cracking in a non-structural topping and such overlayments may not be capable of restraining movement from the substrate. Reflective cracks may appear due to vibration, substrate flexure or existing joints and cracks. TRU PC is designed as a wear surface for foot traffic, forklift traffic or other rubber-wheeled traffic. The result of highly localized imposed loads, such as steel or hard-plastic wheeled traffic, heavy metal equipment, or pallets with protruding nails, may cause abrasion or gouging to the flooring surfaces. TRU PC is designed to have a non-uniform appearance and optical variations to the finished floor should be expected. TRU PC is not recommended in locations subjected to freezing temperatures or where deicing salts will be used.

Before using CTS products, read current technical data sheets, bulletins, product labels and safety data sheets at www.CTScement.com. It is the user's responsibility to review instructions and warnings for any CTS products prior to use.

WARNING: DO NOT BREATHE DUST. AVOID CONTACT WITH SKIN AND EYES. Use material in well-ventilated areas only. Exposure to cement dust may irritate eyes, nose, throat, and the upper respiratory system/lungs. Silica exposure by inhalation may result in the development of lung injuries and pulmonary diseases, including silicosis and lung cancer. Seek medical treatment if you experience difficulty breathing while using this product. The use of a NIOSH/MSHA-approved respirator (P-, N- or R-95) is recommended to minimize inhalation of cement dust. Eat and drink only in dust-free areas to avoid ingesting cement dust. Skin contact with dry material or wet mixtures may result in bodily injury ranging from moderate irritation and thickening/cracking of skin to severe skin damage from chemical burns. If irritation or burning occurs, seek medical treatment. Protect eyes with goggles or safety glasses with side shields. Cover skin with protective clothing. Use chemical resistant gloves and waterproof boots. In case of skin contact with cement dust, immediately wash off dust with soap and water to avoid skin damage. In case of skin contact with wet concrete, wash exposed skin areas with cold running water as soon as possible. In case of eye contact with cement dust, flush immediately and repeatedly with clean water, and consult a physician. If wet concrete splashes into eyes, rinse eyes with clean water for at least 15 minutes and go to the hospital for further treatment.

Please refer to the SDS and www.CTScement.com for additional safety information regarding this material.

LIMITED WARRANTY: CTS CEMENT MANUFACTURING CORP. (CTS) warrants its materials to be of good quality and, at its option, will replace or refund the purchase price of any material proven to be defective within one (1) year from date of purchase. The above remedies shall be the limit of CTS's responsibility. Except for the foregoing, all warranties expressed or implied, including merchantability and fitness for a particular purpose, are excluded. CTS shall not be liable for any consequential, incidental, or special damages arising directly or indirectly from the use of the materials.

⚠ **WARNING**
CANCER and REPRODUCTIVE HARM - www.P65Warnings.ca.gov

TYPICAL PHYSICAL DATA

Working time	20 minutes
Flow life	15 minutes

Compressive Strength, ASTM C109*	
4 hours	2800 psi (19.3 MPa)
24 hours	5000 psi (34.5 MPa)
28 days	7000 psi (48.3 MPa)

*Data obtained at 70°F (21°C)

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BISAZZA

WOOD
WOODEN FLOOR PRODUCT DATA SHEET

APPLICATIONS - Wood is intended for indoor floors. It can be laid in highly frequented residential settings, including the kitchen and bathroom, as well as in commercial areas with light traffic, such as private offices, shops, hotels (excluding the lobby area) and restaurants. We advise against using it in places where heavy loads transit.

ORIGIN OF WOOD SPECIES - Limitations and rules of the European Regulation 995/2010 (Timber Regulation) are respected.

GLUES - Double layer structure bonding glues are used in accordance with Italian Ministerial Decree 10/10/2008. Formaldehyde emissions are below the legal limit. Evidence is given in the CE marking and the DoP. The glue used is Class D4 vinyl adhesive.

STRUCTURE - The flooring is composed of a 4 mm-thick top layer of European oak (quercus petraea) mounted on phenolic birch plywood backing with a nominal thickness of 11 mm. Outlined with a groove joint on each side. Please note that the top layer thickness refers to the smooth material, before it undergoes any surface treatment.

SURFACE TREATMENTS - Surface treatments involve abrasion or consumption of the top layer, in order to create special aesthetic finishes. These processes necessarily cause a reduction in the thickness of the top layer compared to what is marked on the technical data sheet.
The Wood finish is brushed. Painting: the paint cycle used is formulated for the settings specified in the paragraph entitled "APPLICATIONS". All the shades are protected by a UV filter against the effects of sunlight.

APPEARANCE CLASSES FOR WOOD - Wood identifies the Appearance classes according to UNI EN 13489. As for square tiles, Appearance class matches the circle class. For hexagonal, left hand block, right hand block and plank 60 tiles, the Appearance class matches the triangle. The above-mentioned UNI EN 13489 standard contains a list of "typical installation types and geometry". Square or hexagonal wood tiles will follow the same examples, despite having a size that is not mentioned.

SHADES - Double layer wood timber floors have the same features as solid wood. The raw material keeps living even after treatments, adapting to external conditions. All natural wood, as a result of ageing and oxidation caused by light, undergoes a change in shade that stabilises only after several months or a few years. Areas covered by carpets or furniture are less subject to oxidation, so there may be differences between covered and uncovered areas.

USES - Optimal conditions for Wood timber floors are a temperature of between 16 and 23°C and relative humidity of between 45 and 65%. It is therefore advisable to keep the wooden floor under these conditions; changing conditions and keeping the wooden floor in excessively dry or damp climate may cause problems unrelated to production deficiencies. It is not advisable to place heavy objects over small areas of the floor. It is also advisable not to cover the floor with carpets or any permanent floor coverings for the first six months after installation. To prevent fading, especially in areas exposed to intense and prolonged exposure to sunlight, it is advisable to use curtains or films with a UV filter to apply to the windows.

STORAGE - Wood timber flooring must be stored in covered, dry and heated place at a temperature of between 16 and 23°C and an environmental humidity of between 45 and 65%. Different conditions may damage the product. Cartons must be kept over a wooden pallet, raised above the ground.

LAYING - Product only suitable for laying with glue, by professional fitters. Follow the instructions on the "installation sheet" attached to the shipping pallet.

DISPOSAL - When discarded, the floor must not be released in the environment, but given to public waste disposal systems.

UNDERFLOOR HEATING SYSTEM - Wood timber flooring can be laid over underfloor heating systems, provided the system conditions envisage it and provided they conform to the relevant regulations. The temperature of water flowing inside the pipes must not exceed 28°C. Before laying the wooden floor, the system must be tested and documented in a report which must be handed over to the Site Manager and to the fitter. The yield can be calculated using conductivity coefficients contained in the DoP.

FLOOR CLEANING AND MAINTENANCE - The floor is supplied brushed and painted. Follow the instructions on the "maintenance sheet" attached to the shipping pallet.

TECHNICAL DATA

	SQUARE	***HEXAGON***	***RIGHT HAND BLOCK / LEFT HAND BLOCK***	***PLANK 60***
dimensions	202x202 mm	202x233 mm	101x292 mm	101x606 mm
thickness	4 mm surface layer + 11 mm backing	4 mm surface layer + 11 mm backing	4 mm surface layer + 11 mm backing	4 mm surface layer + 11 mm backing
packages	pieces: 12 area: 0,486 sqm weight: 5,2 kg	pieces: 12 area: 0,420 sqm weight: 4,6 kg	pieces: 12 area: 0,282 sqm weight: 3,0 kg	pieces: 12 area: 0.612 sqm weight: 6,2 kg
	pieces: 6 area: 0,243 sqm weight: 2,7 kg	pieces: 6 area: 0,210 sqm weight: 2,3 kg		
	pieces: 2 area: 0,081 sqm weight: 1,0 kg	pieces: 2 area: 0,070 sqm weight: 0,9 kg		

DOP - DECLARATION OF PERFORMANCE - European Regulation no. 305/2011 (CTR) – declarations are attached to the package and/or the invoice

Material Category: Ceiling

Final Product Choice: Wood Slat Drop Ceiling

Type of Material: Wood

Manufacturer: WoodWorks

Product Identification: Linear Veneered Panels

Quantity in Job: 78,000 SQ FT

Price Per Square Foot: $33.50

Total Price For Job: $2,613,000

Description of Product: Wood Slats hung from the actual ceiling on a track system

Reason For Selection: We selected this ceiling as the architectural appeal made it worth the extra cost

Secondary Product Choice A: Acoustic Ceiling Tiles

Type of Material: Fiberglass

Manufacturer: Armstrong Ceilings

Product Identification: Canyon

Quantity in Job: 78,000 SQ FT

Price Per Square Foot: $2-5

Total Price For Job: $156,000-$390,000

Secondary Product Choice B: Exposed Structure with Paint

Type of Material: Paint

Manufacturer: Sherman Williams

Product Number: GL0037009-14

Quantity in Job: 78,000 SQ FT

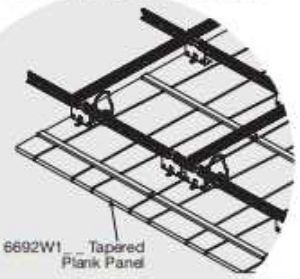
Price Per Square Foot: $1.50

Total Price For Job: $117,000

WOODWORKS® Linear
Veneered Panels


WoodWorks® Linear Veneered panels

CAD/Revit® drawings at:
armstrongceilings.com



plus capabilities to do more

armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

These unique tapered or traditional wood panels offer a variety of linear looks.

KEY SELECTION ATTRIBUTES

Veneered Panels

- Integrate linear lights seamlessly with the Integrated Light Connection Clip and lights from Backlight® srl and XAL®
- Panels in nominal 4" or 6" widths
- Create continuous looks and clouds with veneer-wrapped and painted aluminum trim
- Hook-on panels (for standard 15/16" suspension system) provide safe and secure downward accessibility
- Complete standard system from one manufacturer (suspension system/ panels/trim)
- Factory-edge banded for superior quality
- 100% Biobased content
- BioAcoustic™ infill available for increased acoustical performance

VENEERS Due to printing limitations, shade may vary from actual product.

Natural Variations™
(Real Wood Veneers)

Constants™
(Real Wood Veneers)

Bamboo*

* Veneer is rapidly renewable. Bamboo is a grass that only requires 3-7 years for maturity and does not have to be replanted after each harvest.

Now, Lighting Integration Made Easy

WoodWorks® Linear Veneered panels in Maple with 5-1/4" x 95" linear light fixture. See page 248A for lighting integration details.

WOODWORKS® Linear
Veneered Panels

USDA CERTIFIED BIOBASED PRODUCT

FSC

UP TO 75% RECYCLED CONTENT

For LEED contribution contact TechLine

LEED®: energy management; construction waste mgmt.; regional materials ✓; design for flexibility ✓; EPD; recyclable/ extended producer resp. ✓; biobased materials ✓; FSC (for wood) ✓; recycled content; sourcing of raw materials; material ingredient reporting; low emitting/ materials; lighting quality; acoustics

▲ LOCATION DEPENDENT ▲ WITH INFILL PANEL

VISUAL SELECTION

Edge Profile	Item No. ◆	Description	Dimensions Nominal W x L x H (Inches) Custom Sizes Available
FSC®-certified WOODWORKS® Linear Veneered Panels			
3/4" Reveal	**6690W1** _ _ _	Nominal 4" wide planks	24 x 96 x 3/4"
1/4" Reveal	**6691W1** _ _ _	Nominal 6" wide planks	24 x 96 x 3/4"
1/4" Reveal	**6692W1** _ _ _	Tapered planks	24 x 96 x 3/4"

◆ When specifying or ordering, include the appropriate 3-letter color suffixes.
NOTE: Veneers and sizes available as special order; call TechLine at 1 877 276-7876.

PERFORMANCE

Fire Rating	Acoustics NRC*
Class A	0.45
Class A	0.20
Class A	0.20

* NRC achieved with BioAcoustic™ infill (item 6657).

EXAMPLE: **6690W1 NLC**
- 6690W1: Panel Dimension/Type: 2' x 8' Nominal 4" wide planks
- NLC: Finish: Natural Variations™ Light Cherry

ACCESSORIES

Item No. ◆	Description	Dimensions Nominal (Inches)	Color	Pieces/ Carton
6603W1_ _ _	WoodWorks Concealed Trim**	6" x 120"	Standard Veneers and Black (BL)	6
8200T10	Fiberglass Infill Panel	24 x 24 x 1"	Black	12
5479	BioAcoustic™ Infill Panel	24 x 24 x 5/8"	Beige	12
5823	BioAcoustic Infill Panel	24 x 24 x 5/8"	Black (Matte)	12
6408_ _ _	Edge Banding	300" x 3/4"	Standard Veneers (see pg 221)	1
7239	Adjustable Trim Clip	—	—	50

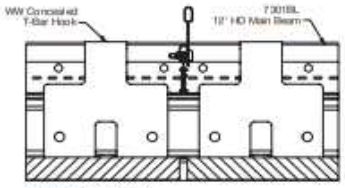
◆ When specifying or ordering, include the 3-letter color suffix that coordinates with your WoodWorks ceiling (e.g., 6408 N M P)
** Trim cartons include FXTBC Clips and FX4SPLICE Splice Plates.
NOTE: Adjustable Trim Clip – for use with black Axiom® trim

SUSPENSION SYSTEMS

When ordering suspension system materials, please note that this product requires Prelude® 15/16" Heavy-duty (HD) main beams and 2' cross tees that are full height (1-11/16"). Both suspension system components should be specified in Tech Black (BL).

Item Number	Description	Dimensions (Inches)	Pieces/Carton
5986	T-Bar Hook†	Nominal 4 x 2 x 3"	50
7123	Wood Screws	5/8"	300/Pkg
6091	Safety Cable	24" x 3/32"	50 (2 required per panel)
SH12	Support Hanger	144" x 2"	12

† For 24" x 96" panel, install eight hooks. NOTE: Three screws per hook.
NOTE: Refer to installation instructions at armstrongceilings.com/installation for a better understanding of suspension system requirements.



Installation Detail

PHYSICAL DATA

Material
FSC®-certified fire-retardant particle board with face-cut veneers (RA-COC-003601). For more information about FSC®-certified products, or to view our FSC® certification letter, visit armstrongceilings.com/woodworksfsc

Surface Finish
Clear or tinted semi-gloss coating

Fire Performance
ASTM E84 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.
CAN/ULC S102 surface burning characteristics. Flame Spread Rating 25 or less. Smoke Developed Classification 50 or less.

ASTM E1264 Classification
Composite – Fire Class A

Application Considerations
Variation among panels may occur due to the natural characteristics of the wood and grain.
Use of large wood panels may result in deflection up to 1/8" and cause alignment inconsistency due to size and ambient conditions.
It is very important that WoodWorks® panels are climatized prior to installation. Relative humidity between 25% and 55%, and temperatures between 50°F and 86°F, must be maintained throughout the life of the product.

Design Considerations
Cloud installations with total panel width less than 6" wide are not recommended.
Cloud installations must be at least two panels in length so that the short ends of panels interfacing with the trim can be installed with the open side of the hooks facing the perimeter. See installation instructions for details.

Specification Consideration
Attention: For FSC®-certified wood products to maintain their CoC certification, products must be sold to a CoC-certified distributor or directly to the installing contractor. Failure to do so breaks the CoC.

Seismic Restraint
WoodWorks® Linear panels have been engineered, tested, and approved for application in all seismic areas when installed per Armstrong Ceilings installation instructions.

Warranty
Details at armstrongceilings.com

Weight
6690, 6691, 6692 – 2.75 lbs/SF; bulk-packaged per order. Suspension system, hardware, and accessories ordered separately.

LIGHTING SOLUTIONS

WOODWORKS® Linear

Veneered Panels

WoodWorks® Linear Veneered panels in Maple with 5-1/4" x 95" linear light fixture

Seamlessly integrate linear light fixtures from Backlight® srl and XAL® with standard or made-to-order WoodWorks® Linear Veneered panels using Integrated Light Connection Clips that suspend lights directly from the suspension system. This eliminates the need for independent support of the fixture or modification of the suspension system.

KEY SELECTION ATTRIBUTES

- Engineered and tested clip and suspension system seamlessly integrate lighting with grid
- Low-profile, pre-engineered light fixture in coordinating 3-1/4" and 5-1/4" widths from Backlight srl and XAL for a flush, sleek visual
- Approved for use in all seismic categories

DESIGN CONSIDERATIONS

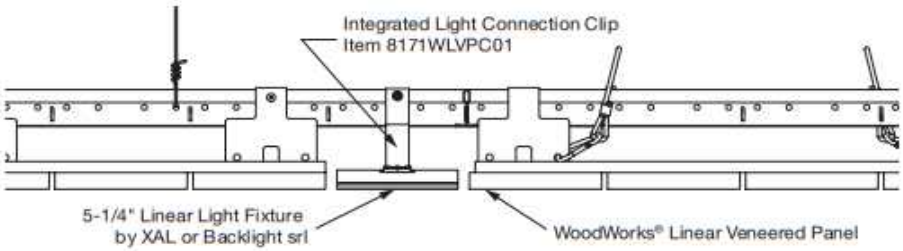
- Length of lights are designed to coordinate with the length of panels
- Lights must run parallel with panel direction and are not for use in perimeter panels
- Reveal between light and panels will coordinate with the reveal from panel to panel
- Coordination between ceiling contractor and electrician is required for installation
- Lighting integration not compatible with tapered panels (Item 6692W1)

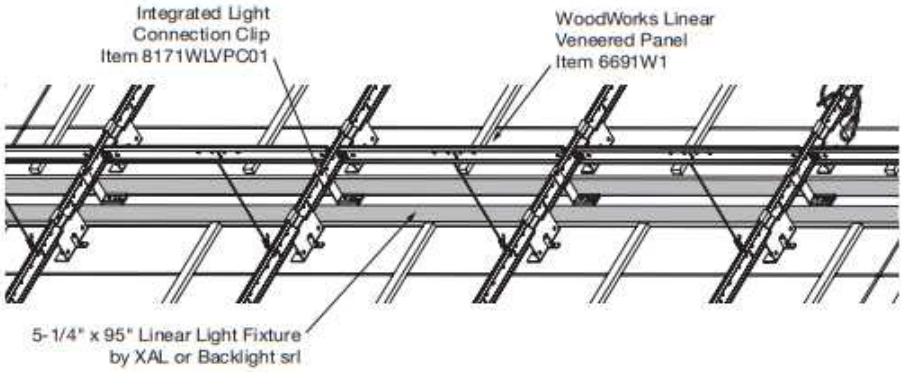
VISUAL SELECTION

Clip Item No.	Description	Coordinating WoodWorks® Linear Veneered Panel Item No.	Panel Field Modification Required*	Compatible Partner Light Fixture Dimensions W x L (Inches)	Clips Required per Light Fixture
WOODWORKS® Linear Veneered Panels					
8171WLVPC01	Integrated Light Connection Clip	6690W1 6691W1	Remove 1 plank Remove 1 plank	3-1/4" x 95.25" 5-1/4" x 95.75"	4 4

* Made-to-order panels that eliminate the need for field modification of standard panels are available via ASQuote@armstrongceilings.com
NOTE: Item 8171WLVPC01 is packaged 12 pcs/ctn

INSTALLATION DETAILS





LIGHTING FIXTURES

Compatible with Backlight® srl CHIARO light fixture and XAL® PANO Low-Profile Linear Plank light fixture

BACKLIGHT

XAL

For detailed lighting information, contact your local Backlight® srl or XAL® representative.

Armstrong CEILING & WALL SOLUTIONS

WOODWORKS®

CANYON®

Square Lay-in & Tegular
smooth texture

TOTAL ACOUSTICS®
Sound Absorption (NRC) + Sound Blocking (CAC)

SUSTAIN®
High Performance Sustainable Ceiling Systems

Canyon® Square Lay-in panels with Prelude® XL® 15/16" suspension system (Pgs. 458-459)

Smooth finish, mineral fiber ceiling panel with Total Acoustics® performance.

KEY SELECTION ATTRIBUTES

- Get total noise control and floor plan versatility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics Performance
- Canyon® panels are part of the Sustain® portfolio, and meet the most stringent sustainability compliance standards today
- Smooth, White surface
- Good combination of acoustical performance; NRC (0.60) and CAC (35)
- 30-Year Limited System Warranty against visible sag, mold, and mildew

COLORS

White (WH)

DETAILS (Other Suspension Systems compatible. Refer to listing on page 283.)

1. Canyon® Square Lay-in
2. Canyon® Square Lay-in with Prelude® XL® 15/16" suspension system

GREENGUARD Gold Certified (details below)

Declare™ Living Building Challenge Compliant

SUSTAIN® High Performance Sustainable Ceiling Systems

44% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management ✓, construction waste mgmt ✓, regional materials ✓, design for flexibility ✓, EPD ✓, recyclable/extended producer resp. ✓, biobased materials, recycled content ✓, sourcing of raw materials ✓, material ingredient reporting ✓, low emitting materials ✓, lighting quality ✓, acoustics ✓

▲ LOCATION DEPENDENT

CANYON®

Square Lay-in & Tegular
smooth texture

VISUAL SELECTION

PERFORMANCE SELECTION
Dots represent high level of performance. $$$$

Edge Profile	Suspension Detail Dwg. Pgs. 474-478	Item No.	Dimensions (Inches)		UL Classified Acoustics NRC	+ CAC	= NRC + CAC	Total Acoustics[1]	Fire Performance	Light Reflect	Mold & Mildew Protection Bio Block	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Durability	Recycled Content	Recycle Program	30-Yr Warranty
CANYON® Square Lay-in & Tegular																	
15/16" Square Lay-in	1	**1490**	24 x 24 x 5/8"	□	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•
	1	**1491**	24 x 48 x 5/8"	▭	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•
15/16" Beveled Tegular	15	**1492**	24 x 24 x 5/8"	□	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•
	15	**1493**	24 x 48 x 5/8"	▭	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•
9/16" Beveled Tegular	44, 48, 29, 52, 56	**1494**	24 x 24 x 5/8"	□	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•
	44, 48, 29, 52, 56	**1495**	24 x 48 x 5/8"	▭	0.60	35 •		GOOD	Class A	0.80	•	•	•	Std	Std	•	•

CANYON® Size Capabilities		Width	Length
15/16" Square Lay-in 15/16" & 9/16" Beveled Tegular	Made-to-Order Sizes (4-6 Wks)	5/8" Thick 12" - 24"	18" - 72"

					N/A	N/A	–	Class A	0.80	•	•	•	Std	Std	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)

SUSPENSION SYSTEMS

15/16" Prelude® XL®

9/16" Silhouette® XL® 1/4" Reveal; Silhouette XL 1/8" Reveal; Suprafine®; Interlude® XL® HRC; Sonata® XL®

PHYSICAL DATA

Material
Mineral fiber with acoustically transparent membrane

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled).

ASTM E1264 Classification
Type IV, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

VOC Emissions
GREENGUARD Gold Certified
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

GREENGUARD GOLD

Acoustical Performance
CAC testing conducted on Silhouette® suspension system

Insulation Value
R Factor – 1.5 (BTU units)
R Factor – 0.26 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
0.76 lbs/SF; 64 SF/ctn

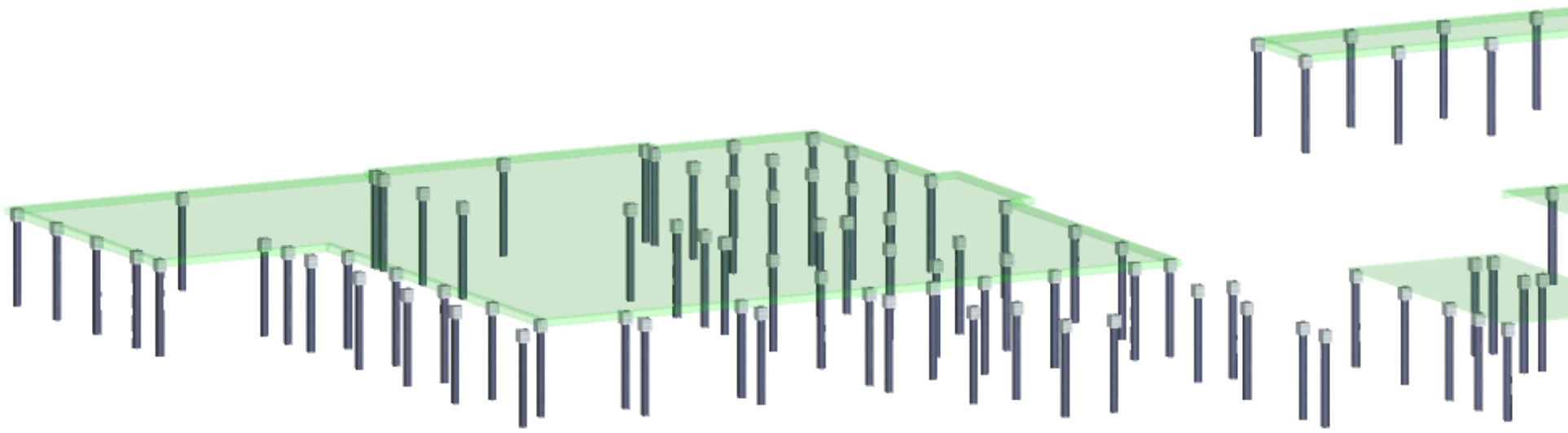
Minimum Order Quantity
1 carton, excludes made-to-order panels

TechLine / 1 877 276-7876
armstrongceilings.com/commercial
(search: canyon)
BPCS-4912-718

Armstrong CEILING & WALL SOLUTIONS

STRUCTURAL FOUNDATION PH

DATE: 05-24-2021

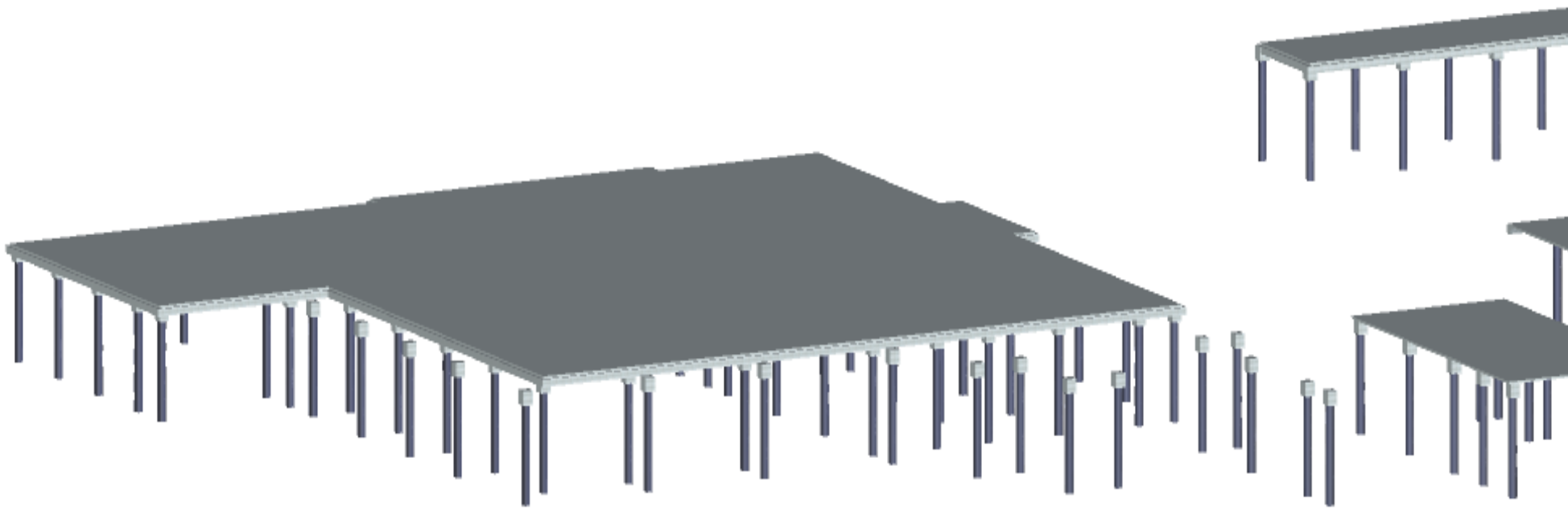


TASK COMPLETED:

WBS	Task Mode	Task Name	Duration	Start	Finish
1.3		DEMO	111 days	Tue 06/02/20	Tue 11/03/20
1.4		SITE-WORK	119 days	Wed 11/04/20	Mon 04/19/21
1.4.1		PRELIMINARY	15 days	Wed 11/04/20	Tue 11/24/20
1.4.2		SITE DIRTWORK	50 days	Wed 11/25/20	Tue 02/02/21
1.4.3		SITE UTILITIES	64 days	Wed 01/20/21	Mon 04/19/21
1.5		BUILDING CONSTRUCTION	446 days	Wed 01/20/21	Wed 10/05/22
1.5.1		BUILDING STRUCTURE	201 days	Wed 01/20/21	Wed 10/27/21
1.5.1.1		FOUNDATIONS	129 days	Wed 01/20/21	Mon 07/19/21
1.5.1.1.1		MEP U/G AT BUILDING FOUNDATION	30 days	Wed 01/20/21	Tue 03/02/21
1.5.1.1.1.1		REBAR AND FORMWORK ON SITE	0 days	Wed 01/20/21	Wed 01/20/21
1.5.1.1.1.2		PLUMBING U/G AT BUILDING FOUNDATION (22 11 00)	10 days	Wed 02/03/21	Tue 02/16/21

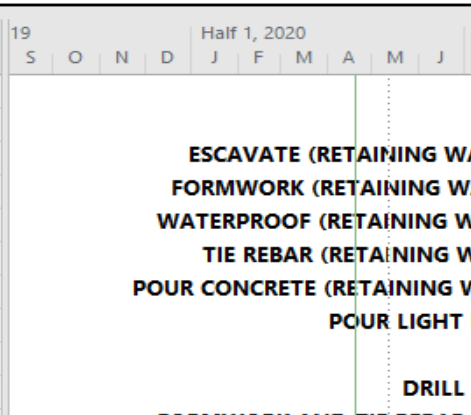
GROUND LEVEL SLABS PHAS

DATE: 07-19-2021



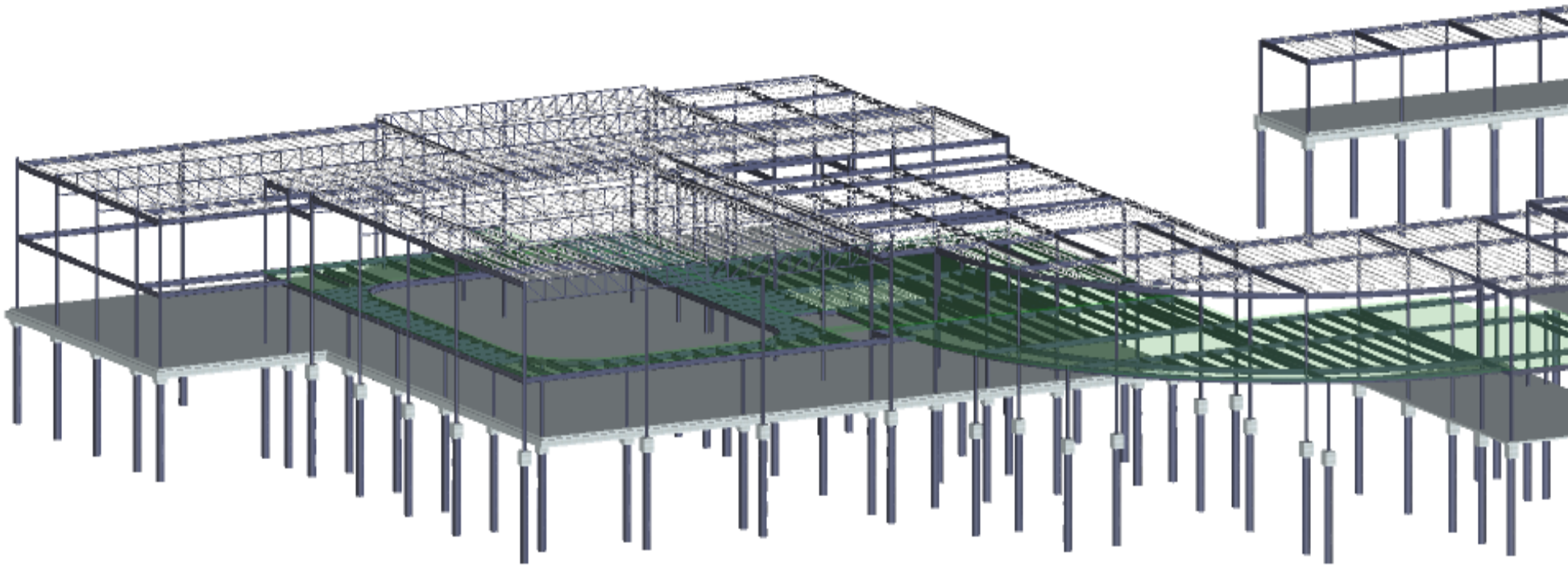
TASK COMPLETED:

Task Name	Duration	Start	Finish
SLABS, FOUNDATIONS, AND PITS	**119 days**	**Wed 02/03/21**	**Mon 07/19/21**
RETAINING WALLS AT BUILDING	**26 days**	**Wed 02/03/21**	**Wed 03/10/21**
ESCAVATE (RETAINING WALLS AT BUILDING) (312300)	2 days	Wed 02/03/21	Thu 02/04/21
FORMWORK (RETAINING WALLS AT BUILDING) (031100)	3 days	Fri 02/05/21	Tue 02/09/21
WATERPROOF (RETAINING WALLS AT BUILDING) (031500)	4 days	Wed 02/10/21	Mon 02/15/21
TIE REBAR (RETAINING WALLS AT BUILDING) (032100)	5 days	Tue 02/16/21	Mon 02/22/21
POUR CONCRETE (RETAINING WALLS AT BUILDING) (03 30 00)	2 days	Tue 02/23/21	Wed 02/24/21
POUR LIGHT POLE FOUNDATIONS (03 30 00)	10 days	Thu 02/25/21	Wed 03/10/21
FOUNDATIONS (03 30 00)	**79 days**	**Wed 03/03/21**	**Mon 06/21/21**
DRILL AND POUR CAISSONS (31 63 00)	10 days	Wed 03/03/21	Tue 03/16/21



STRUCTURAL STEEL PHASI

DATE:09-23-2021



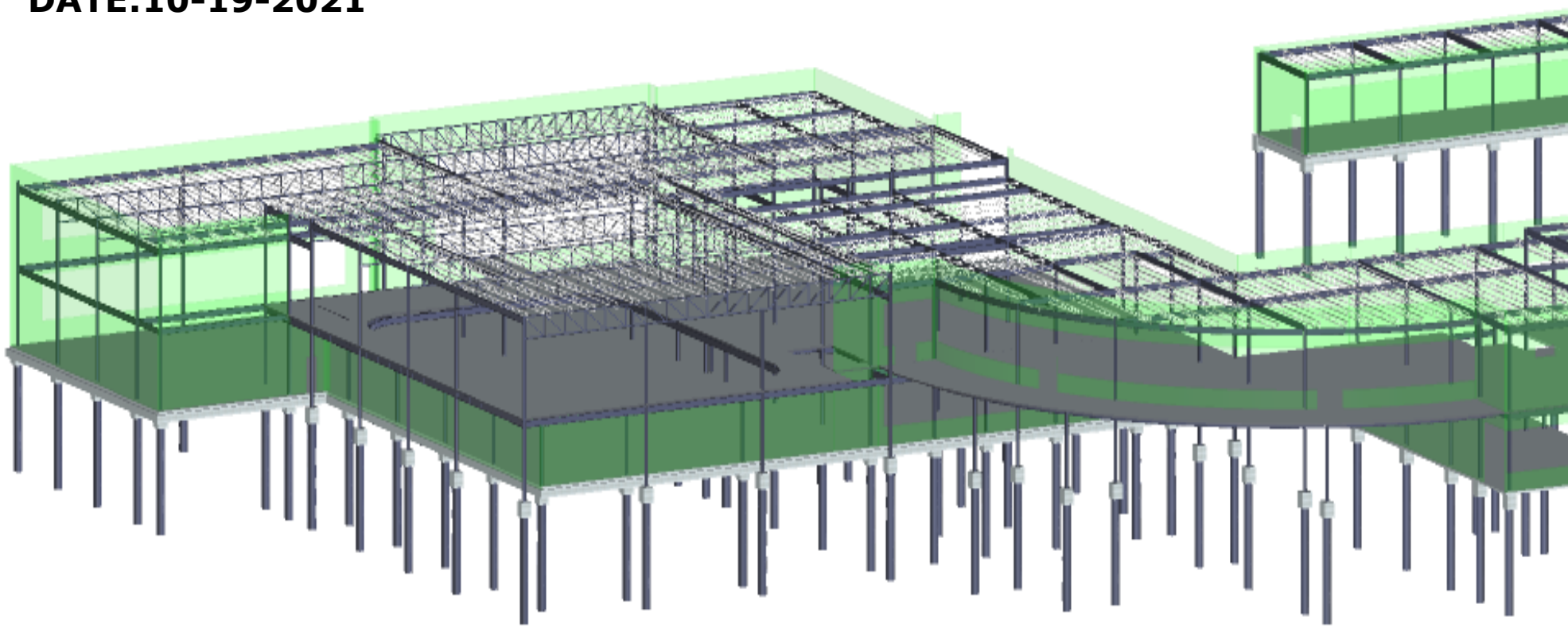
TASK COMPLETED:

Task Name	Duration	Start	Finish
BUILDING ERRECTION	82 days	Tue 07/06/21	Wed 10/27/21
STRUCTURAL STEEL	58 days	Tue 07/06/21	Thu 09/23/21
STRUCTURAL STEEL ON SITE	0 days	Tue 07/06/21	Tue 07/06/21
ERRECT COLUMNS AND BEAMS (05.12.00)	20 days	Tue 07/20/21	Mon 08/16/21

19 Half 1, 2020
S O N D J F M A

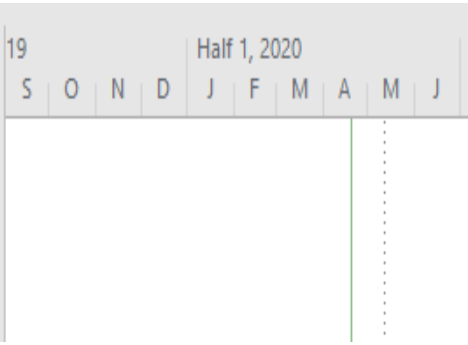
ELEVATED SLAB PHASE

DATE:10-19-2021



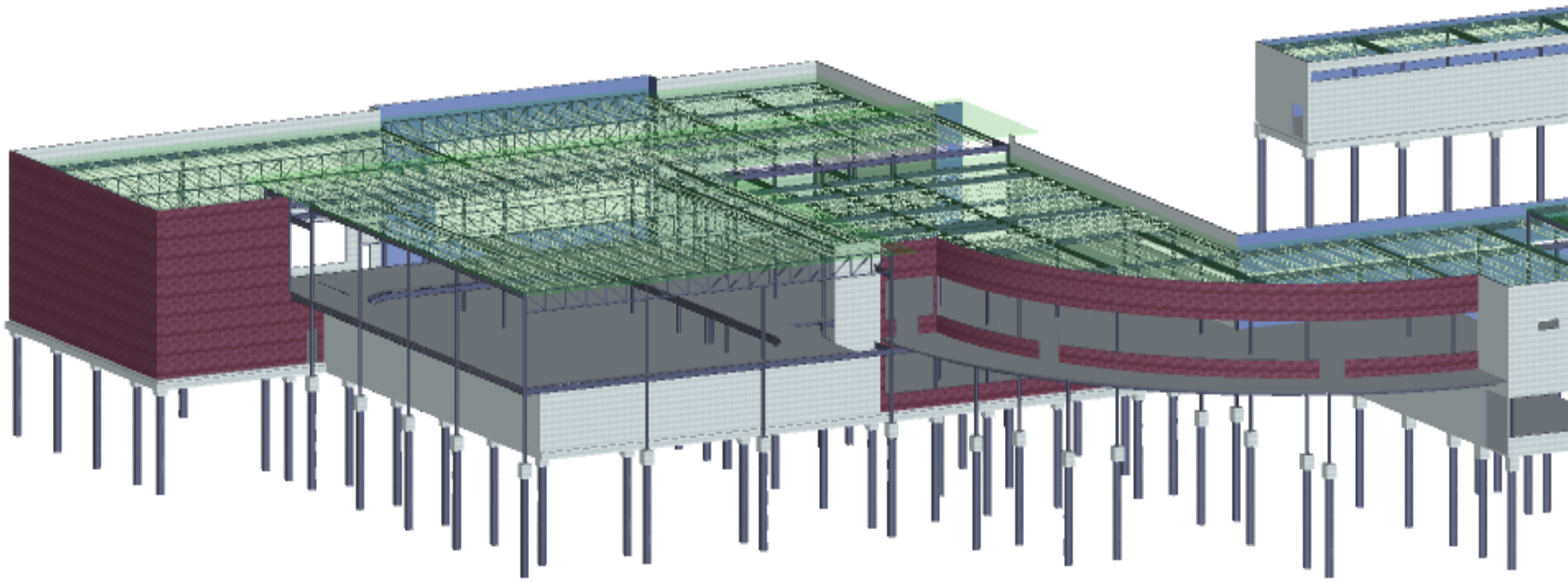
TASK COMPLETED:

Task Name	Duration	Start	Finish
DECKING	**31 days**	**Fri 09/10/21**	**Fri 10/22/21**
CONCRETE DECKING ON SITE	0 days	Fri 09/10/21	Fri 09/10/21
INSTALL 2ND STORY CONCRETE DECKING (05 31 00)	10 days	Fri 09/24/21	Thu 10/07/21
POUR ELEVATED SLAB & CURE (03 30 00)	8 days	Fri 10/08/21	Tue 10/19/21



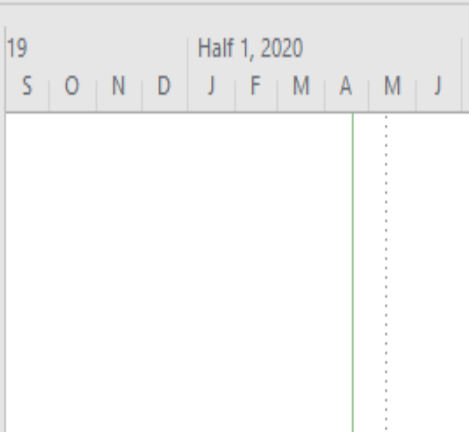
PRECAST PANEL PHASE

DATE: 9-20-2021



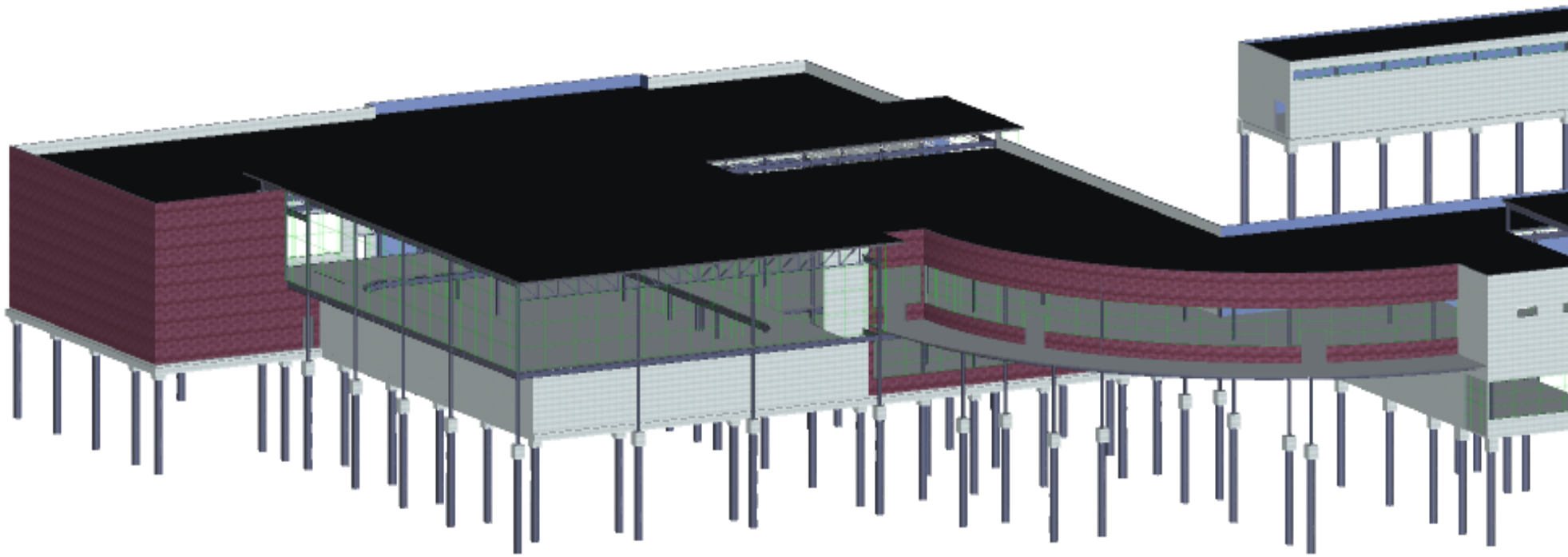
TASK COMPLETED:

Task Name	Duration	Start	Finish
BUILDING ERRECTION	**82 days**	**Tue 07/06/21**	**Wed 10/27/21**
STRUCTURAL STEEL	**58 days**	**Tue 07/06/21**	**Thu 09/23/21**
Precast Wall Panels	**32 days**	**Fri 08/06/21**	**Mon 09/20/21**
CONCRETE WALL PANELS ON SITE	0 days	Fri 08/06/21	Fri 08/06/21
ERRECT CONCRETE WALL-PANELS (03 35 13)	20 days	Fri 08/20/21	Thu 09/16/21
WELD CONNECTIONS AND WATERPROOF (05 05 00)	22 days	Fri 08/20/21	Mon 09/20/21



ROOF PHASE

DATE: 11-23-2021



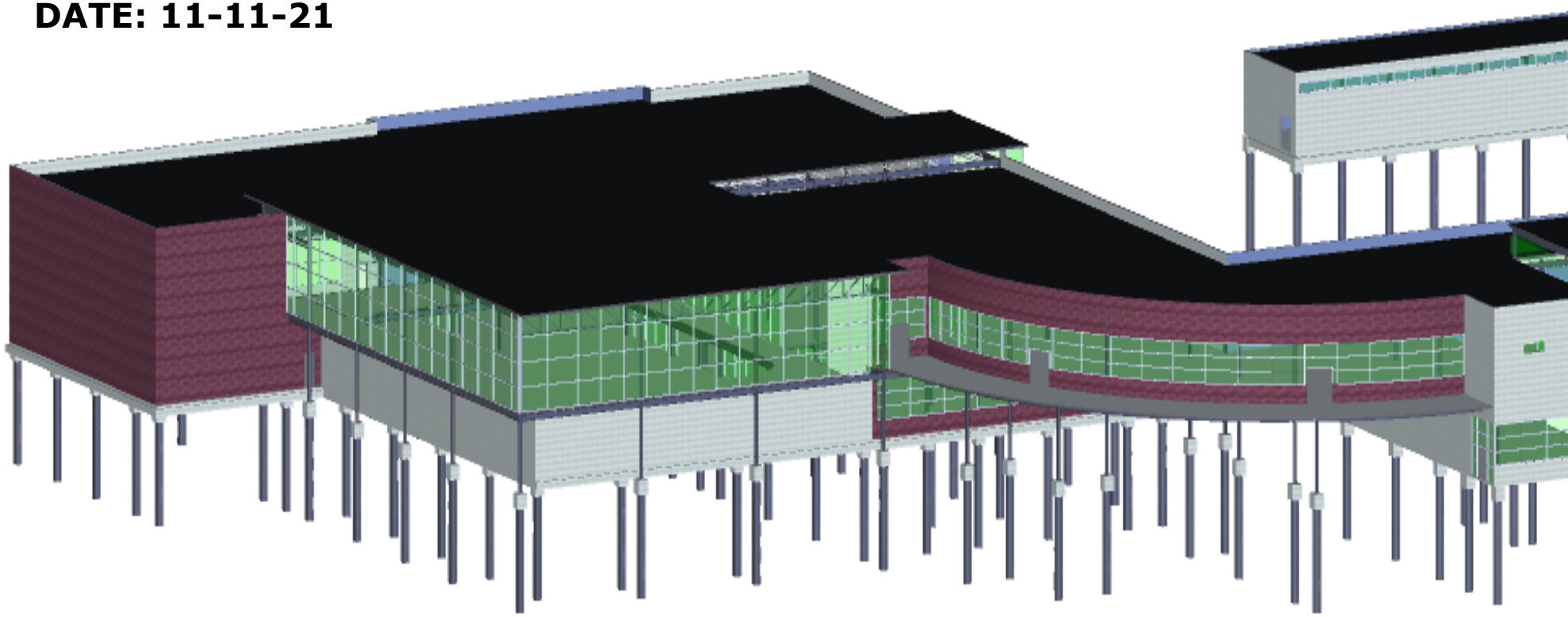
TASK COMPLETED:

Task Name	Duration	Start	Finish
BUILDING DRY-IN	**80 days**	**Fri 09/17/21**	**Thu 01/06/22**
ROOF	**61 days**	**Mon 10/11/21**	**Mon 01/03/22**
ROOF MATERIALS ON SITE (INSULATION,MEMBRANE,FLASHING)	0 days	Mon 10/11/21	Mon 10/11/21
INSTALL ROOF INSULATION (07 22 00)	10 days	Mon 10/25/21	Fri 11/05/21
INSTALL ROOFING MEMBRANE (07 53 00)	12 days	Mon 11/08/21	Tue 11/23/21

19 Half 1, 2020
S O N D J F M A M

STORE FRONT AND CURTIAN-WALL FRA

DATE: 11-11-21



TASK COMPLETED:

Task Name	Duration	Start	Finish	Predecessors
GLAZING	**80 days**	**Fri 09/17/21**	**Thu 01/06/22**	
FRAME STOREFRONTS AND CURTIAN WALLS (08 44 00)	40 days	Fri 09/17/21	Thu 11/11/21	88
INSTALL GLAZING (08 44 00)	40 days	Fri 11/12/21	Thu 01/06/22	107

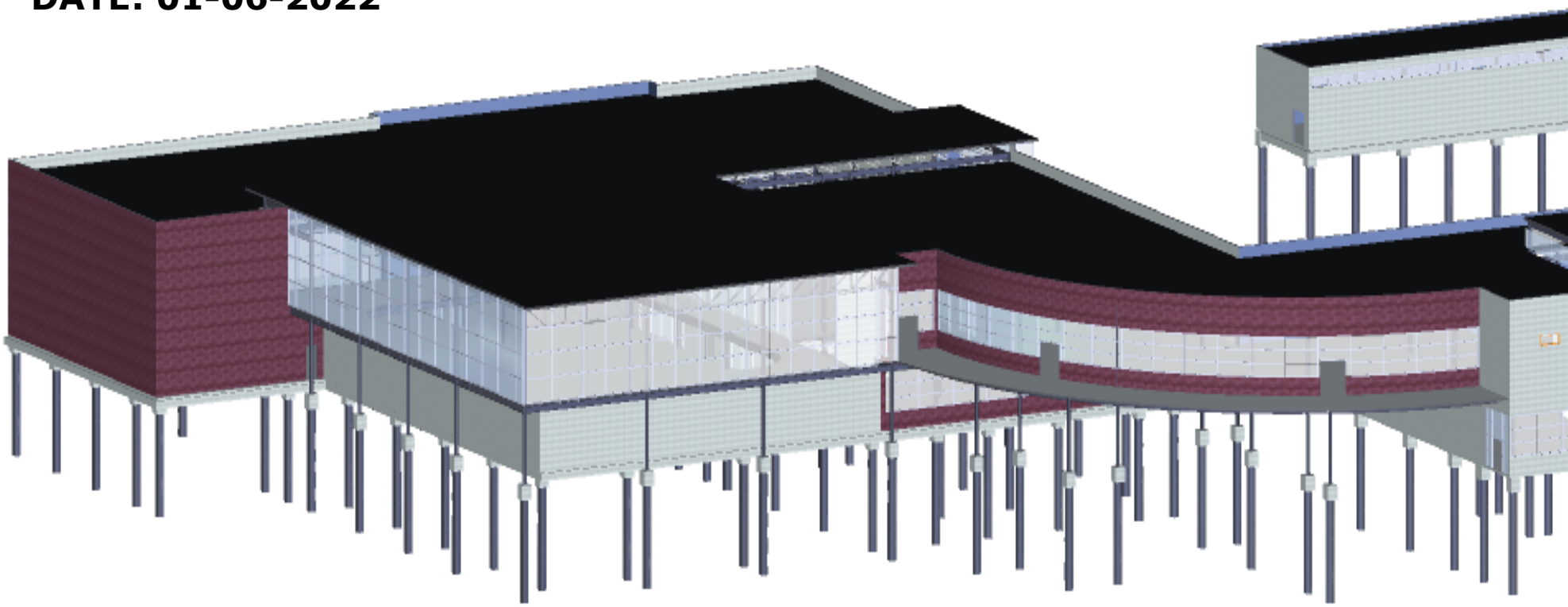
Half 2, 2020

J J A S O

FRAME STORE

GLAZING PHASE

DATE: 01-06-2022



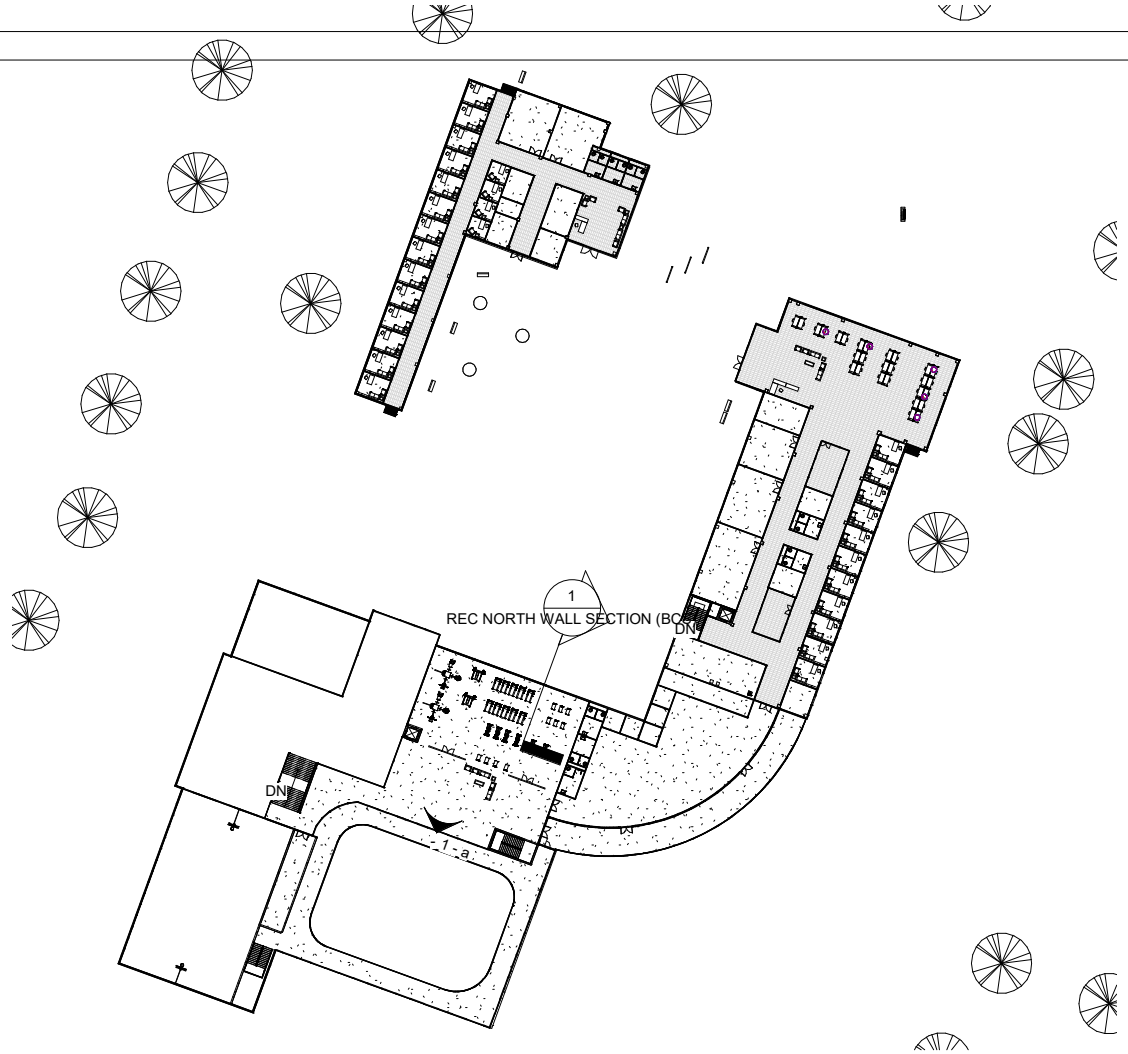
TASK COMPLETED:

Task Name	Duration	Start	Finish	Predecessors
GLAZING	80 days	Fri 09/17/21	Thu 01/06/22	
FRAME STOREFRONTS AND CURTIAN WALLS (08 44 00)	40 days	Fri 09/17/21	Thu 11/11/21	88
INSTALL GLAZING (08 44 00)	40 days	Fri 11/12/21	Thu 01/06/22	107

Half 2, 2020

J J A S O

FRAME STORE



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1" = 60'-0"

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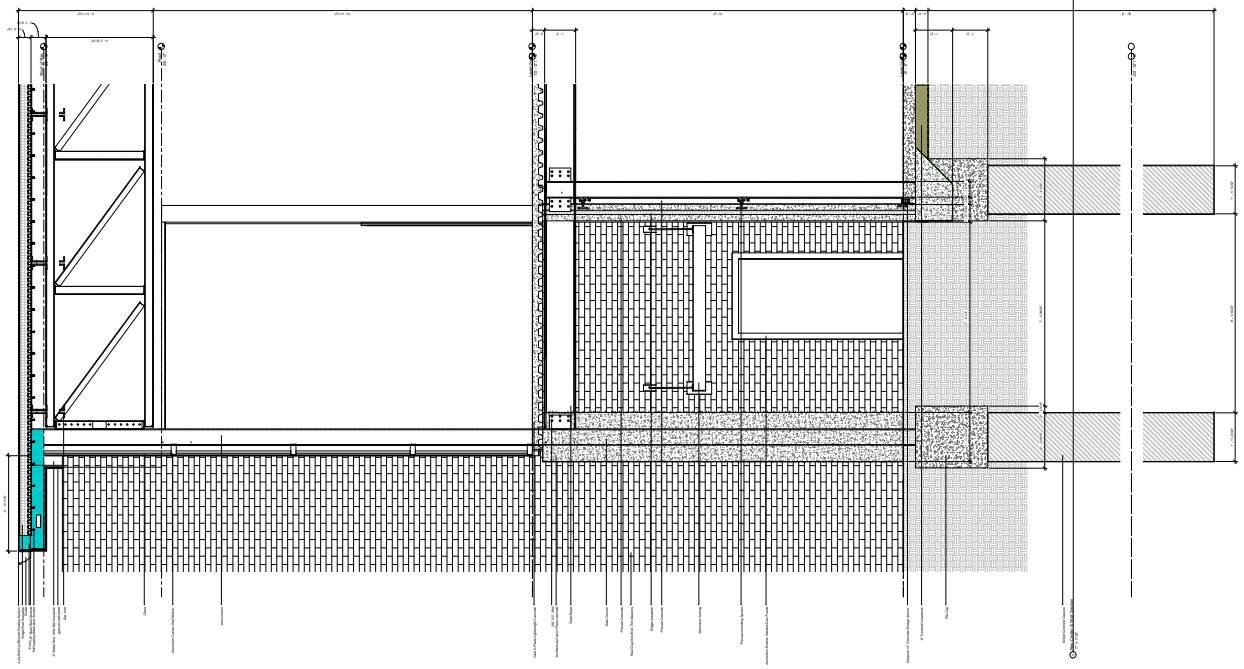
Group 16
AS_4.0

No.	Description	Date

BCS SECTION CUT PLAN

Project number	Project Number	A145
Date	Issue Date	
Drawn by	Author	
Checked by	Checker	Scale 1" = 60'-0"

04/21/2020 8:28:38 PM



MISSISSIPPI STATE UNIVERSITY

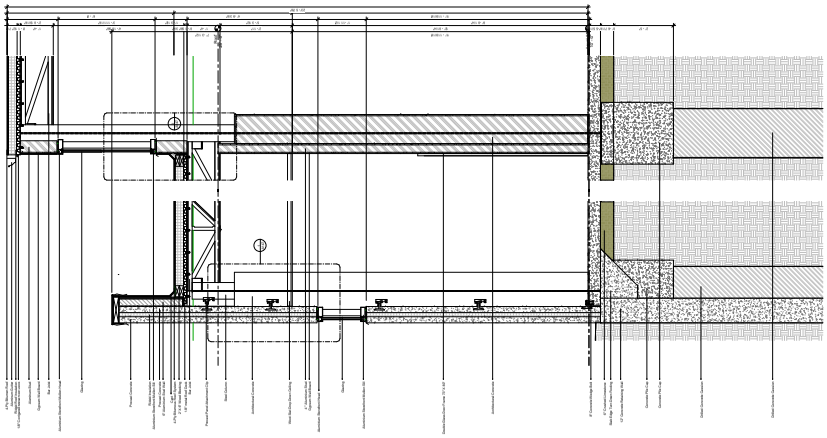
No.	Description	Date

Group 16

AS_4.0

REC SOUTH WALL SECTION (BCS)

A146



MISSISSIPPI STATE UNIVERSITY

No.	Description	Date

Group 16

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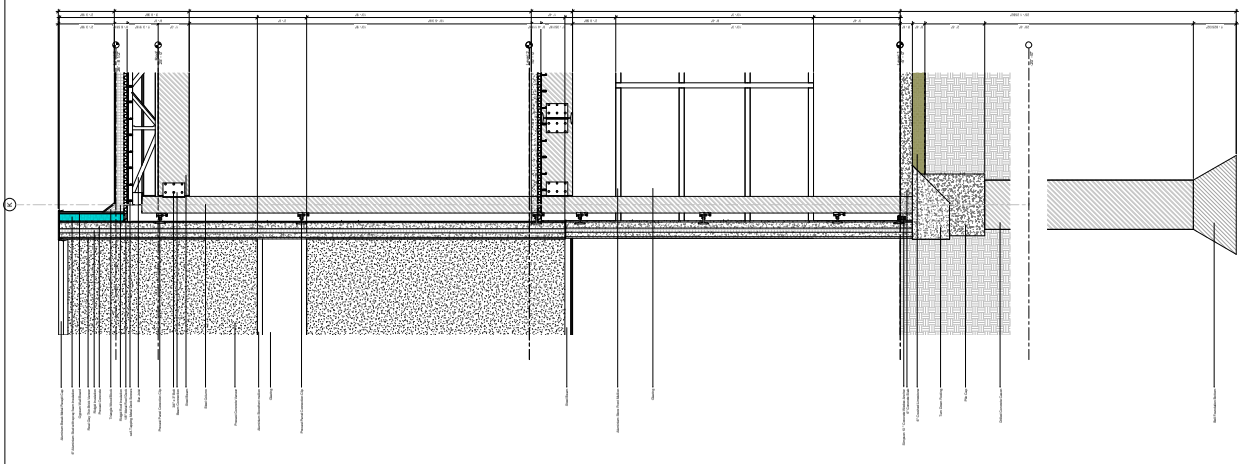
wall section #1 (final)

~~WALL SECTION~~ (BCS)



MISSISSIPPI STATE UNIVERSITY

No.	Description	Date

Group 16

AS_4.0

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SECTION 20 ''FINAL'' ~~WALL~~ ~~SECTION~~ (BCS)

McCarthy Gym New Construction

Master Spec Outline

Group 16

01 00 00		**GENERAL REQUIREMENTS**
01 11 00		**SUMMARY OF WORK**
01 11 31.10	0010	ARCHITECTURAL FEES
	0060	FOR NEW CONSTRUCTION MINIMUM
01 11 31.20	0010	CONSTRUCTION MANAGEMENT FEES
	0350	FOR WORK TO $50,000,000 JOB, MAXIMUM
01 11 31.20	0010	ENGINEERING FEES
	0020	EDUCATIONAL PLANNING CONSULTANT, MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	0200	ELECTRICAL, MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	0400	ELEVATOR & CONVEYING SYSTEMS, MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	0600	FOOD SERVICE & KITCHEN EQUIPMENT, MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	0800	LANSCAPING AND SITE DEVELOPMENT, MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	1000	MECHANICAL (PLUMBING & HVAC), MINIMUM
01 11 31.20	0010	ENGINEERING FEES
	1200	STRUCTURAL , MINIMUM
01 11 31.75	0010	RENDERINGS
	0050	1 BUILDING, AVERAGE
01 11 31.75	0010	RENDERINGS
	2000	ARIEL PERSPECTIVE, COLOR, 1 BUILDING, MINIMUM

01 41 00		**REGULATORY REQUIREMENTS**
01 41 26.10	0010	PERMITS
	0020	RULE OF THUMB, MOST CITIES, MINIMUM
01 56 00		**TEMPORARY BARRIERS AND ENCLOSURES**
01 56 26.50	0010	TEMPRARY FENCING
	0100	CHAIN LINK, 11 GA., 6' HIGH
01 58 00		**PROJECT IDENTIFICATION**
01 58 13.50	0010	SIGNS
	0020	HIGH INTENSITY REFLECTORIZED, NO POSTS, BUY
01 74 00		**CLEANING AND WASTE MANAGEMENT**
01 74 13.20	0010	CLEANING UP
	0020	AFTER COMPLETION, ALLOW, MINIMUM
02 00 00		**EXISTING CONDITIONS**
02 41 00		**DEMOLITION**
02 41 13.17	0010	DEMOLISH, REMOVE PAVEMENT AND CURB
	5050	PAVEMENT REMOVAL, BITUMINOUS ROADS, 4" -6" THICK
02 41 16.13	0010	BUILDING DEMOLITION
	0011	NO FOUNDATION OR DUMP FEES, C.F. IS VOL. OF BUILDING STANDING
	0100	MIXTURE OF TYPES
02 41 16.17	0010	BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS (SLAB)
	0200	FLOORS, CONCRETE SLAB ON GRADE
	0400	6" THICK, PLAIN CONCRETE
02 41 16.17	0010	BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS (FOOTING)
	1000	FOOTINGS, CONCRETE, 1' THICK, 2' WIDE
02 82 00		**ASBESTOS REMEDIATION**
02 82 13.43	0010	BULK ASBESTOS REMOVAL
	5100	REMOVE VAT AND MASTIC FROM FLOOR BY MACHINE
03 00 00		**CONCRETE**

03 11 00		**CONCRETE FORMING**
03 11 13.40	0010	FORM IN PLACE, EQUIPMENT FOUNDATIONS
	0020	1 USE
03 11 13.45	0010	FORM IN PLACE, FOOTINGS
	0020	CONTINUOUS WALL, PLYWOOD, 1 USE
03 11 13.50	0010	FORM IN PLACE, GRADE BEAM
	0020	JOB-BUILT PLYWOOD, 1 USE
03 11 13.65	0010	FORMS IN PLACE, SLAB ON GRADE
	3000	EDGE FORMS, WOOD, 4 USE, ON GRADE, TO 6" HIGH
03 11 13.85	0010	FORMS IN PLACE, WALLS
	4200	BELOW GRADE, JOB-BUILT PLYWOOD, 1 USE
03 15 00		**CONCRETE ACCESSORIES**
03 15 16.20	0010	CONTROL JOINTS, SAW CUT
	0180	SAWCUT JOINT RESERVOIR IN CURED CONCRETE
	0182	3/8" WIDE X 3/4" DEEP, WITH SINGLE SAW BLADE
03 15 16.30	0010	EXPANSION JOINT
	0700	KEYED, POLYURETHANE, POURED, 2 PART, 1/2" X 1"
03 15 19.05	0010	ANCHOR BOLT ACCESSORIES
	8500	ANCHOR BOLT SLEEVE, PLASTIC, 1-1/2" DIAMETER BOLTS
03 15 19.10	0010	ANCHOR BOLTS
	0500	L-TYPE, INCL. HEX NUT & WASHER, 1-1/2" DIAMETER X 24" LONG
03 21 00		**REINFORCEMENT BARS**
03 21 05.10	0010	REBAR ACCESSORIES
	1206	BEAM BOLSTERS (BB), LOWER, HIGH CHAIRS, INDIVIDUAL (HC), 3" HIGH, PLASTIC TIPPED LEGS
03 21 11.60	0010	REINFORCING IN PLACE
	0100	BEAMS & GIRDERS, #3 TO #7
03 21 11.60	0010	REINFORCING IN PLACE
	0400	ELEVATED SLABS, #4 TO #7

03 21 11.60	0010	REINFORCING IN PLACE
	0500	FOOTINGS, #4 TO #7
03 21 11.60	0010	REINFORCING IN PLACE
	0600	SLAB ON GRADE, #3 TO #7
03 21 11 60	0010	REINFORCING IN PLACE
	0700	WALLS, #3 TO #7
03 30 00		**CAST-IN-PLACE CONCRETE**
03 30 53.40	0010	CAST-IN PLACE
	0300	BEAMS (3500 PSI), 5 KIP/L.F., 25' SPAN
03 30 53.40	0010	CAST-IN PLACE
	3150	ELEVATED SLABS, FLAT PLATE, INCLUDING FINISH, REGULAR CONCRETE (4000 PSI), 4" SLAB
03 30 53.40	0010	CAST-IN PLACE
	3590	EQUIPMENT PAD (3000 PSI), 10' X 10' X 12" THICK
03 30 53.40	0010	CAST-IN PLACE
	3825	FOOTINGS (3000 PSI), SPREAD 1 C.Y. TO 5 C.Y.
03 30 53.40	0010	CAST-IN PLACE
	4751	SLAB ON GRADE (3500 PSI), INCL. TROWELED FINISH, NOT INCL. FORMS
	4820	OR REINFORCING, OVER 10,000 S.F., 6" THICK
03 30 53.40	0010	CAST-IN PLACE
	6250	RETAINING WALLS (3000 PSI), GRAVITY, 10' HIGH
03 30 53.40	0010	CAST-IN PLACE
	6800	STAIRS (3500 PSI), NOT INCLUDING SAFETY TREADS, FREE STANDING, 3' -6" WIDE
03 30 53.40	0010	CAST-IN PLACE
	7000	STAIR LANDINGS, FREE STANDING
03 35 00		**CONCRETE FINISHING**
03 35 43.10	0010	POLISHED CONCRETE FLOORS
	0600	POLISHING AND EDGING, DRY, INCLUDING DRY VAC PICK-UP AND HAND

	0605	SWEEPING BETWEEN GRIT CHANGES
	0610	800-GRIT DIAMOND/RESIN MATRIX
	0620	1500-GRIT DIAMOND/RESIN MATRIX
	0630	3000-GRIT DIAMOND/RESIN MATRIX
	0700	AUTO SCRUBBING AFTER FINAL POLISHING STEP
03 45 00		**PRECAST ARCHITECTURAL CONCRETE**
03 45 13.50	0010	PRECAST WALL PANELS (BRICK)
	0050	UNINSULATED, SMOOTH GRAY
	0150	LOW RISE, 4' X 8' X 4" THICK
	0800	INSULATED PANEL, 2" POLYSTYRENE, ADD
	1350	BRICK FACED, MODULAR, RED, ADD
03 45 13.50	0010	PRECAST WALL PANELS (NO BRICK)
	0050	UNINSULATED, SMOOTH GRAY
	0150	LOW RISE, 4' X 8' X 4" THICK
	0800	INSULATED PANEL, 2" POLYSTYRENE, ADD
03 62 00		**NON-SHRINK GROUTING**
03 62 13.50	0010	GROUT, NON-METALLIC NON-SHRINK
	0300	NON-SHRINK , NON-METALLIC, 1" DEEP
04 00 00		**MASONRY**
04 22 00		**CONCRETE UNIT MASONRY**
04 22 10.34	0010	CONCRETE BLOCK, PARTITIONS
	4000	REGULAR BLOCK, TOOLED JOINTS, 2 SIDES, HOLLOW
	4200	NOT REINFORCED, 8" X 16" X 8" THICK
05 00 00		**METALS**
05 12 00		**STRUCTURAL STEEL FRAMING**
05 12 23.17	0010	COLUMNS, STRUCTURAL
	6900	W SHAPE, A992 STEEL, 2 TIER, W8 X 48
05 12 23.75	0010	STRUCTURAL STEEL MEMBERS

	3120	W16 X 50
05 21 00		**STEEL JOIST FRAMING**
05 21 19.10	0010	OPEN WEB JOISTS
	0720	K SERIES, 30' TO 50' SPANS, 30K12, 17.6 LB./L.F.
05 31 00		**STEEL DECKING**
05 31 33.50	0010	FORM DECKING
	0015	MADE FROM RECYCLED MATERIAL
	6800	SLAB FORM, STEEL, 22 GA., 2" DEEP, GALVANIZED
05 44 00		**COLD-FORMED METAL TRUSSES**
05 42 23.60	**0010**	**FRAMING, ROOF RAFTERS**
	2230	**12"DEEP**
05 51 00		**METAL STAIRS**
05 51 13.50	0010	PAN STAIRS, SHOP FABRICATED, STEEL STRINGERS
	0200	METAL PAN TREAD FOR CONCRETE IN-FILL, PICKET RAIL 3' -6" WIDE
05 51 13.50	0010	PAN STAIRS, SHOP FABRICATED, STEEL STRINGERS
	1500	LANDING, STEEL PAN, CONVENTIONAL
05 52 00		**METAL RAILINGS**
05 52 13.50	0010	RAILING, PIPE
	0900	WALL RAIL, ALUM. PIPE, 1-1/4" DIAM., SATIN FINISH
	4100	FOR SLOPED RAILS FOR STAIRS, ADD
06 00 00		**WOOD, PLASTICS, AND COMPOSITS**
06 11 00		**WOOD FRAMING**
06 11 10.02	0010	BLOCKING
	2780	TO STEEL CONSTRUCTION, 2" X 8"
06 16 43		**SHEATHING**
06 16 43.10	0010	GYPSUM SHEATHING
	0020	GYPSUM, WEATHERPROOF, 1/2" THICK
07 00 00		**THERMAL & MOISTURE PROTECTION**

07 11 00		**DAMPPROOFING**
07 11 13.10	0010	BITUMINOUS ASPHAULT COATING
	0030	BRUSHED ON, BELOW GRADE, 1 COAT
07 21 00		**THERMAL INSULATION**
07 21 16.20	0010	BLANKET INSULATION FOR WALLS
	0160	6" THICK, R19, 15" WIDE
07 22 00		**ROOF AND DECK INSULATION**
07 22 16.10	0010	ROOF DECK INSULATION
	1968	60 PSI COMPRESSIVE STRENGTH, TAPERED FOR DRAINAGE
07 26 00		**VAPOR RETARDERS**
07 26 10.10	0010	VAPOR RETARDERS
	1800	REINF. WATERPROOF, 2 MIL POLYETHYLENE BACKING, 1 SIDE
07 52 00		**MODIFIED BITUMINOUS MEMBRANE ROOFING**
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE
	0020	BASE SHEET #15 GLASS FIBER FELT, FULLY MOPPED TO DECK
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE
	2100	APP MOD., SMOOTH SURF. CAP SHEET, POLY REINF., TORCHED, 160 MILS
07 52 13.10	0010	APP MODIFIED BITUMINOUS MEMBRANE
	2450	SEAM HEAT WELDING
07 65 00		**FLEXIBLE FLASHING**
07 65 10.10	0010	SHEET METAL FLASHING AND COUNTER FLASHING
	0011	INCLUDING UP TO 4 BENDS
	0020	ALUMINUM, MILL FINISH, .013" THICK
	0400	PAINTED FINISH, ADD
07 71 00		**ROOF SPECIALTIES**
07 71 23.10	0010	DOWNSPOUTS
	0100	ALUMINUM, EMBOSSED, .020" THICK, 2" X 3", ENAMELED
07 71 43.10	0010	DRIP EDGE, RAKE EDGE, ICE BELTS

	0100	ALUMINUM, .016" THICK, 5" WIDE, WHITE FINISH
07 72 00		**ROOF ACCESSORIES**
07 72 23.10	0010	ROOF VENTS
	0100	MUSHROOM SHAPE, FOR BUILT-UP ROOFS, PVC, 6" HIGH
07 72 33.10	0010	ROOF HATCHES
	0540	2'-6" X 3', GALVANIZED STEEL CURB AND COVER
07 81 00		**APPLIED FIREPROOFING**
07 81 16.10	0010	SPRAYED CEMENTITIOUS FIREPROOFFING
	0050	NOT INCLUDING CANVAS PROTECTION, NORMAL DENSITY
	0500	CORRUGATED OR FLUTED DECKS
07 91 00		**PREFORMED JOINT SEALS**
07 9 23.10	0010	BACKER RODS
	0070	BACKER ROD, POLYETHYLENE, 3/4" DIAMETER
07 92 00		**JOINT SEALANTS**
07 92 13.20	0010	CAULKING AND SEALANT OPTIONS
	3800	POLYURETHANE, 1 OR 2 COMPONENT, BULK, IN PLACE, 3/4" X 3/8"
08 00 00		**OPENINGS**
08 11 00		**METAL DOORS AND FRAME**
08 11 16.10	0010	ENTRANCE DOORS
	0011	INCLUDING STANDARD HARDWARE, CLEAR FINISH, NO GLASS
	0012	TOP AND BOTTOM OFFSET PIVOTS, 1/4" BEVELED GLASS STOPS, THRESHOLD
	0013	DEAD BOLT LOCK WITH INSIDE THUMB SCREW, STANDARD PUSH PULL
	0580	6'-0" X 7'-0" OPENING
	1600	CONCEALED PANIC DEVICE, ADD
	1700	ELECTRIC STRIKE RELEASE, ADD
	1900	CONCEALED CLOSER, ADD
08 12 00		**METAL FRAMES**
08 12 13.13	0010	STANDARD HOLLOW METAL FRAMES

	0020	16 GA., UP TO 5-3/4" JAMB DEPTH
	0025	3'-0" X 6'-8" SINGLE
08 13 00		**METAL DOORS**
08 13 13.13	0010	STANDARD HOLLOW METAL DOORS
	0015	FLUSH, FULL PANEL, HOLLOW CORE
	0017	WHEN NOTED DOORS ARE PREPARED BUT DO NOT INCLUDE GLASS OR LOUVERS
	0020	1-3/8" THICK, 20 GA., 2'-0" X 6'-8"
	0140	FOR NARROW LITE, ADD
08 13 13.15	0010	METAL FIRE DOORS
	0015	STEEL, FLUSH, "B" LABEL, 90 MINUTES
	0020	FULL PANEL, 20 GA., 2'-0" X 6'-8"
08 14 00		**WOOD DOORS**
08 14 16.09	0010	SMOOTH WOOD DOORS
	0015	FLUSH, INTERIOR, HOLLOW CORE
	0320	WALNUT FACE, 1-3/8", 2'-0" X 6'-8"
	5010	WOOD DOORS, FOR NARROW LITE, ADD
08 44 00		**CURTAIN WALL AND GLAZED ASSEMBLIES**
08 44 13.10	0010	GLAZED CURTAIN WALLS
	0050	AVERAGE, SINGLE GLAZED
08 81 00		**GLASS GLAZING**
08 81 10.10	0010	VARIOUS TYPES AND THICKNESS OF FLOAT GLASS
	0800	1/4" THICK, TEMPERED, CLEAR
08 81 17.10	0010	FIRE RESISTANT GLASS
	0020	FIRE GLASS MINIMUM
08 81 30.10	0010	REDUCE HEAT TRANSFER GLASS
	2600	HEAT REFLECTIVE, FILM INSIDE, 1" THICK UNIT, TINTED
08 83 00		**MIRRORS**
08 83 13.10	0010	MIRRORS

	0200	OVER 5 S.F.
09 00 00		**FINISHES**
09 21 00		**PLASTER AND GYPSUM BOARD ASSEMBLIES**
09 21 16.23	0010	GYPSUM BOARD ASSEMBLIES
	0040	2-HOUR ASSEMBLY WITH DOUBLE LAYER
	0065	5/8" F.R. GYP BD ON RM SIDE, 4" J-TRACK & C-H STUDS
09 21 16.33	0010	PARTITION WALL
	3200	5/8" INTERIOR GYPSUM BOARD, STANDARD, TAPE & FINISH 2 SIDES
	3800	INSTALLED ON AND INCLUDING METAL STUDS, NLB, 25 GA., 16" OC, 3-5/8" WIDE
09 21 16.33	0010	PARTITION WALL
	6400	FIRE RESISTANT, 2 LAYERS, 2 HR., ON METAL STUDS, NLB, 25 GA., 16" OC, 3-5/8" WIDE
09 31 00		**THIN-SET TILING**
09 31 13.10	0010	THIN-SET CERAMIC TILE
	0020	BACKSPLASH, AVERAGE GRADE TILE
09 31 13.10	0010	THIN-SET CERAMIC TILE
	3310	CERAMIC TILE, PORCELAIN TYPE, 1 COLOR, COLOR GROUP 2, 2" X 2" OR 2" X 1"
09 54 00		**SPECIALTY CEILINGS**
09 54 26.10	0010	WOOD CEILINGS
	1000	4"-6" WOOD SLATS ON HEAVY DUTY 15/16" T-BAR GRID
09 64 00		**WOOD FLOORING**
09 64 66.10	0010	GYMNASIUM FLOORING
	0900	GYM FLOOR, IN MASTIC, OVER 2 PLY FELT #2 & BETTER 33/32" THICK MAPLE
09 65 00		**RESILIENT FLOORING**
09 65 10.13	0010	RESILIANT BASE
	0700	1/8" VINYL BASE, 4" HIGH, STRAIGHT OR COVE, STANDARD COLORS
09 65 10.13	0010	RESILIANT BASE

	0730	CORNERS, 4" HIGH
09 65 13.23	0010	RESILIENT STAIR TREADS AND RISERS
	0400	RUBBER, MOLDED TREAD, 12" WIDE, 5/16" THICK, COLORS
09 65 13.23	0010	RESILIENT STAIR TREADS AND RISERS
	1600	NOSINGS, 3" WIDE, 3/16" THICK, COLORS
09 65 19.19	0010	VINYL COMPOSITION TILE FLOORING
	7050	VINYL COMPOSITION TILE, 12" X 12", 1/16" THICK EMBOSSED
09 68 00		**CARPETING**
09 68 13.10	0010	CARPET TILE
	1100	TUFTED, 24" X 24", HARD BACK, 24 OZ. NYLON
09 84 00		**ACOUSTIC ROOM COMPONENTS**
09 84 13.10	0010	FIXED PANELS
	0100	FIBERGLASS OR MINERAL FILLER, NO BACKS, 2-1/4" THICK, MODULAR
	0200	SPACE UNITS, CEILING OR WALL HUNG, WHITE OR COLORED
09 91 00		**PAINTING**
09 91 23.72	0010	WALLS AND CEILING, INTERIOR
	0100	CONCRETE, DRYWALL OR PLASTER, LATEX, PRIMER OR SEALER COAT
	0200	SMOOTH FINISH, SPRAY
09 91 23.72	0010	WALLS AND CEILING, INTERIOR
	0800	PAINT 2 COATS, SMOOTH FINISH, SPAY
10 00 00		**SPECIALTIES**
10 11 00		**VISUAL DISPLAY UNITS**
10 11 13.13	0010	FIXED CHALKBOARDS
	5400	LIQUID CHALK, WHITE PORCELAIN ENAMEL, WALL HUNG
	5420	DELUXE UNITS, ALUMINUM TRIM AND CHALKTROUGH
	5550	4' X 12'
10 11 13.13	0010	FIXED CHAULKBOARDS
	6300	LIQUID CHALK, FELT TIP MARKERS

10 11 13.13	0010	FIXED CHAULKBOARDS
	6500	LIQUID CHALK, ERASERS
10 11 13.13	0010	FIXED CHAULKBOARDS
	6600	LIQUID CHALK, BOARD CLEANER, 8 OZ. BOTTLE
10 13 00		**DIRECTORIES**
10 13 10.10	0010	BUILDING DIRECTORY BOARDS
	2500	BUILDING DIRECTORY, ALUM, BLACK FELT PANELS, 1 DOOR, 36" X 24"
10 14 00		**SIGNAGE**
10 14 23.13	0010	ENGRAVED PANEL SIGNAGE, INTERIOR
	1050	FLEXIBLE DOOR SIGN, ADHESIVE BACK, W/ BRAILLE, 5/8" LETTERS, 6" X 6"
10 21 00		**COMPARTMENTS AND CUBICLES**
10 21 13.16	0010	PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS
	1610	FLOOR MOUNTED
	1800	PLASTIC LAMINATE ON PARTICLE BOARD
	3400	FOR HANDCAP UNTIS, ADD
10 22 00		**PARTITIONS**
10 22 33.10	0010	PARTITIONS, ACCORDIAN FOLDING
	0100	VINYL COVERED, OVER 150 S.F., FRAME NOT INCLUDED
	0900	ACOUSTICAL, 3 LB./S.F., 17' MAXIMUM HEIGHT
10 26 00		**WALL AND DOOR PROTECTION**
10 26 13.20	0010	CORNER PROTECTION
	0100	STAINLESS STEEL, 16 GA., ADHESIVE MOUNT, 3-1/2" LEG
10 28 00		**TOILET, BATH, AND LAUNDRY ACCESSORIES**
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	0200	CURTAIN ROD, STAINLESS STEEL, 5' LONG, 1" DIAMETER
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	0400	DIAPER CHANGING STATION, HOROZONTAL, WALL MOUNTED, PLASTIC
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES

	0500	DISPENSER UNITS, COMBINED SOAP & TOWEL DISPENSERS
	0510	MIRROR AND SHELF, FLUSH MOUNTED
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	0600	TOWEL DISPENSER AND WASTE RECEPTACLE,
	0610	18 GALLON CAPACITY
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	1000	GRAB BAR, STRAIGHT, 1-1/4" DIAMETER, STAINLESS STEEL, 30" LONG
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	2300	HAND DRYER, SURFACE MOUNTED, ELECTRIC, 115 VOLT, 20 AMP
	3000	MIRROR, WITH STAINLESS STEEL 3/4" SQUARE FRAME
	3600	WITH 5" STAINLESS STEEL SHELF, 36" X 24"
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	4200	NAPKIN/TAMPON DISPENSER, RECESSED
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	4250	NAPKIN RECEPTACLE, RECESSED
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	4300	ROBE HOOK, SINGLE, REGULAR
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	4600	SOAP DISPENSER, CHROME, SURFACE MOUNTED, LIQUID
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	6200	TOILET TISSUE DISPENSER, SURFACE MOUNTED, SS, DOUBLE ROLL
10 28 13.13	0010	COMMERCIAL TOILET ACCESSORIES
	6500	TOWEL BAR, STANLESS STEEL, 30" LONG
10 28 19.10	0010	PARTITIONS, SHOWER
	5220	SHOWER SURROUND, 3 WALL, PVC, 32" X 32"
10 43 00		**EMERGENCY AID SPECIALTIES**
10 43 13.05	0010	DEFRIBRILLATOR CABINETS
	0050	DEFIBRILLATOR CABINET, STAINLESS STEEL WITH STROBE & ALARM 12" X 27"

	0100	AUTOMATIC EXTERNAL DEFIBRILLATOR
10 44 00		**FIRE PROTECTION SPECIALTIES**
10 44 13.53	0010	FIRE EQUIPMENT CABINETS
	4000	HOSE RACK ASSY., 2-1/2" X 1-1/2" VALVE, 1OO' HOSE, 24" X 40" X 8"
	4100	ALUMINUM DOOR AND FRAME
10 44 16.13	0010	PORTABLE FIRE EXSTINGUISHERS
	2100	ABC ALL PURPOSE TYPE, PORTABLE, 20 LB.
10 44 16.13	0010	PORTABLE FIRE EXSTINGUISHERS
	9400	INSTALLATION OF EXTINGUISHERS, 12 OR MORE, ON NAILABLE SURFACE
10 51 00		**LOCKERS**
10 51 13.10	0010	LOCKERS STEEL
	0480	4-TIER 12" X 15" X 18"
10 55 00		**POSTAL SPECIALTIES**
10 55 23.10	0010	COMMERCIAL MAIL BOXES
	1800	LETTER COLLECTION BOX
10 57 00		**WARDROBE AND CLOSET SPECIALTIES**
10 57 13.10	0010	COAT RACKS AND WARDROBES
	1650	WALL MOUNTED RACKS, 16 GA. STEEL FRAME, 22 GA. STEEL SHELVES
	1850	12" X 15" X 26", 6 HANGERS
10 86 00		**SECURITY MIRRORS AND DEVICES**
10 86 20.10	0010	DOMES
	0100	CEILING MOUNTED, 10" DIAMETER
11 00 00		**EQUIPMENT**
11 21 00		**RETAIL AND SERVICE EQUIPMENT**
11 21 13.10	0010	CHECKOUT COUNTER
	1000	SCANNING SYSTEM, 2 LANES, W/REGISTERS, SCAN GUN & MEMORY
11 32 00		**UNIT KITCHEN**
11 32 13.10	0010	COMMERCIAL UNIT KITCHENS

	1500	COMBINATION RANGE, REFRIGERATOR AND SINK, 30" WIDE, MINIMUM
11 41 00		**FOODSERVICE STORAGE EQUIPMENT**
11 41 13.20	0010	REFRIGERATED FOOD STORAGE EQUIPMENT
	8460	REFRIGERATED CABINETS, MOBILE
11 44 00		**FOOD COOKING EQUIPMENT**
11 44 13.10	0010	COOKING EQUIPMENT
	0900	BAKE OVEN, ELECTRIC CONVECTION, SINGLE DECK
11 44 13.10	0010	COOKING EQUIPMENT
	5300	GRIDDLE, SS, 24" PLATE, W/ 4" LEGS, ELEC, 208V, 3 PHASE, 3' LONG
11 44 13.10	0010	COOKING EQUIPMENT
	6200	ICED TEA BREWER
11 44 13.10	0010	COOKING EQUIPMENT
	6900	RANGE, RESTURANT TYPE, 6 BURNERS AND 1 STANDARD OVEN, 36" WIDE
11 44 13.10	0010	COOKING EQUIPMENT
	9150	TOASTER, CONVEYOR TYPE, 16-22 SLICES/MINUTE
11 48 00		**FOODSERVICE CLEANING AND DISPOSAL EQUIPMENT**
11 48 13.10	0010	DISHWASHERS
	2700	DISHWASHER, COMMERCIAL, RACK TYPE
	2720	10 TO 12 RACKS/HOUR
11 48 13.10	0010	DISHWASHERS
	5200	GARBAGE DISPOSAL 1.5 HP, 100 GPH
11 52 00		**AUDIO-VISUAL EQUIPMENT**
11 52 13.10	0010	PROJECTION SCREENS, WALL OR CEILING HUNG
	0400	ELECTRIC OPERATED, MATTE WHITE, 25 S.F., ECONOMY
11 52 16.10	0010	MOVIE EQUIPMENT
	0800	LAMPHOUSES, INCL. RECTIFIERS, XENON, 1,000 WATT
11 66 00		**ATHELETIC EQUIPMENT**
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT

	0020	ABDOMINAL RACK, 2 BOARD CAPACITY
	0050	ABDOMINAL BOARD, UPHOLSTERED
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0300	BICYCAL TRAINER, DELUXE, ELECTRIC
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0450	BARBELL SET, CHROME PLATED STEEL, 200 LB.
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0500	WEIGHT PLATES, CAST IRON, PER LB.
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0520	STORAGE RACKS, 10 STATION
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0600	CIRCUIT TRAINING APPARATUS, 12 MACHINES MINIMUM
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0820	DUMBELL SET, CAST IRON, WITH RACK AND 5 PAIR
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	0900	SQUAT RACKS
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	1200	MULTI-STATION GYM MACHINE, 5 STATION
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	1280	ROWING MACHINE, HYDRAULIC
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	1320	TREADMILL, MOTORIZED
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	1420	TREATMENT/MASSAGE TABLES, DELUXE, WITH ACCESSORIES
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4180	CHINNING BAR, ADJUSTABLE, WALL MOUNTED
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4200	EXERCISE LADDER, 16' X 1' -7", SUSPENDED

11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4210	HIGH BAR, FLOOR PLATE ATTACHED
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4270	UNEVEN PARRALLEL BARS, ADJUSTABLE
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4300	ROPE, CEILING MOUNTED, 18' LONG
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4330	SIDE HORSES, VAULTING
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	4360	TREADMILL, MOTORIZED, DELUXE, TRAINING TYPE
11 66 13.10	0010	PHYSICAL TRAING EQUIPMENT
	439	WEIGHT LIFTING MULTI-STATION, MINIMUM
11 66 23.13	0010	BASKETBALL EQUIPMENT
	1000	BACKSTOPS, WALL MTD., 6' EXTENDED, FIXED, MINIMUM
11 66 23.13	0010	BASKETBALL EQUIPMENT
	5800	WALL PADS, 1-1/2" THICK, STANDARD (NOT FIRE RATED)
11 66 23.47	0010	GYM MATS
	5500	2" THICK, NAUGAHYDE COVERED
11 66 43.10	0010	SCOREBOARDS
	7500	BASKETBALL (ONE SIDE), MINUMUM
11 68 00		**PLAY FIELD EQUIPMENT AND STRUCTURES**
11 68 33.13	0010	FOOTBALL FEILD EQUIPMENT
	0500	SOCCER, REGULATION
12 00 00		**FURNISHINGS**
12 21 00		**WINDOW BLINDS**
12 21 13.33	0010	VINYL HORIZONTAL LOUVER BLINDS
	1300	2" FAUX WOOD, 72" WIDE, 72" WIDE
12 32 00		**MANUFACTURED WOOD CASEWORK**

12 32 23.10	0010	MANUFACTURED WOOD CASEWORK, STOCK UNTIS
	0700	KITCHEN BASE CABINETS, HARDWOOD, NOT INCL. COUNTER TOPS
	0710	24" DEEP, 35" HIGH, PREFINISHED
	0880	ONE TOP DRAWER, ONE DOOR BELOW, 24" WIDE
12 32 23.10	0010	MANUFACTURED WOOD CASEWORK, STOCK UNTIS
	4000	KITCHEN WALL CABINETS, HARDWOOD, 12" DEEP WITH TWO DOORS
	5300	TWO DOORS, 48" WIDE
12 36 00		**COUTERTOPS**
12 36 16.10	0010	METAL COUNTERTOPS
	3210	STAINLESS STEEL
12 36 40.10	0010	NATURAL STONE COUNTERTOPS
	2800	GRANITE, AVERAGE, 1-1/4" THICK, 24" WIDE, NO SPLASH
12 46 00		**FURNISHING ACCESSORIES**
12 46 19.50	0010	WALL CLOCKS
	0080	12" DIAMETER, SINGLE FACE
12 46 33.13	0010	TRASH RECEPTACLES
	5520	PLASTIC, WITH LID, 35 GAL.
12 48 00		**RUGS AND MATS**
12 48 13.13	0010	ENTRANCE FLOOR MATS
	0020	RECESSED, BLACK RUBBER, 3/8" THICK, SOLID
12 51 00		**OFFICE FURNITURE**
12 51 16.16	0010	WOOD CASE GOODS
	0150	DESK, 29" HIGH, DOUBLE PEDESTAL, 30" X 60"
	0160	WOOD, MINIMUM
12 51 23.33	0010	CONFERENCE TABLES
	6720	RECTANGLE, 96" X 42", MINIMUM
12 52 00		**SEATING**
12 52 23.13	0010	OFFICE CHAIRS

	2000	STANDARD OFFICE CHAIR, EXECUTIVE, MINIMUM
12 56 00		**INSTITUTIONAL FURNITURE**
12 56 33.10	0010	FURNITURE SCHOOL
	0500	CLASSROOM, MOVABLE CHAIR & DESK TYPE, MINIMUM
12 63 00		**STADIUM AND ARENA SEATING**
12 63 13.13	0010	BLEACHERS
	3000	TELESCOPING, MANUAL TO 15 TIER, MINIMUM
12 93 00		**INTERIOR PUBLIC SPACE FURNISHINGS**
12 93 13.10	0010	BICYCLE RACKS
	0060	S CURVE, 1-7/8" OD STL. PIPE, 11 GA., GALV, 7 BIKE CAP
12 93 13.10	0010	BICYCLE RACKS
	0060	S CURVE, 1-7/8" OD STL. PIPE, 11 GA., GALV, 9 BIKE CAP
12 93 23.10	0010	TRASH RECEPTACLES
	0510	RECYCLED PLASTIC, VAR COLORS, ROUND, 32 GAL., 31" X 32"
12 93 23.20	0010	TRASH CLOSURE
	0020	STEEL WITH PULLOVER COVER, 2'-3" WIDE, 4'-7" HIGH, 6'-2" LONG
13 00 00		**SPECIAL CONSTRUCTION**
14 00 00		**CONVEYING EQUIPMENT**
14 21 00		**ELECTRIC TRACTION ELEVATORS**
14 21 23.10	0010	ELECTRIC TRACTION PASSENGER ELEVATORS AND OPTIONS
	1625	ELECTRIC PASS., BASE UNIT, 2000LB., 200 FPM., 4 STOP, STD FINISH
14 27 00		**CUSTOM ELEVATOR CABS AND DOORS**
14 27 13.10	0010	CAB FINISHES
	3375	ALUMINUM EGGCRATE CEILING
14 27 13.10	0010	CAB FINISHES
	3400	STAINLESS STEEL DOORS
14 27 13.10	0010	CAB FINISHES
	3450	EPOXY FLOORING

14 27 13.10	0010	CAB FINISHES
	3550	STAINLESS STEEL WALLS
14 27 13.10	0010	CAB FINISHES
	3575	STAINLESS STEEL RETURN AT DOORS
14 28 00		**ELEVATOR EQUIPMENT AND CONTROLS**
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3125	INTERCOM SERVICE
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3175	CENTER OPENING 1 SPEED DOORS
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3275	AUTOMATIC EMERGENCY POWER SWITCHING
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3300	MANUAL EMERGENCY POWER SWITCHING
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3625	HALL FINISHES, STAINLESS STEEL DOORS
	3650	STAINLESS STEEL FRAMES
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3675	12 MONTH MAINTENANCE CONTRACT
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3700	SIGNAL DEVICES, HALL LANTERNS
	3725	POSITION INDICATORS
14 28 10.10	0010	ELEVATOR CONTROLS AND DOORS
	3800	VARIABLE VOLTAGE, O.H. GEARLESS MACHINE, MIN.
21 00 00		**FIRE SUPPRESSION**
50 17 10	0200	(HPW) & (CRC):
50 17 14	0200	Counseling Services:
50 17 20	0200	University Recreation UREC:
50 17 24	0200	All Departments:

22 00 00		**PLUMBING**
50 17 10	0200	(HPW) & (CRC):
50 17 14	0200	Counseling Services:
50 17 20	0200	University Recreation UREC:
50 17 24	0200	All Departments:
23 00 00		**HEATING, VENTILATION, & AIR CONDITIONING**
50 17 10	0300	(HPW) & (CRC):
15 17 14	0300	Counseling Services:
50 17 20	0300	University Recreation UREC:
50 17 24	0300	All Departments:
26 00 00		**ELECTRICAL**
50 17 10	0400	(HPW) & (CRC):
50 17 14	0400	Counseling Services:
50 17 20	0400	University Recreation UREC:
50 17 24	0400	All Departments:
27 00 00		**COMMUNICATIONS**
31 00 00		**EARTHWORK**
31 14 00		**EARTH STRIPPING AND STOCKPILING**
31 14 13.23	0010	TOPSOIL STRIPPING AND STOCKPILING
	0020	200 HP DOZER, IDEAL CONDITIONS
31 22 00		**GRADING**
31 22 13.20	0010	ROUGH GRADING SITES
	0130	1,100-3,000 S.F., SKID STEER & LABOR
31 22 16.10	0010	FINISH GRADING
	0100	FINISH GRADING AREA TO BE PAVED WITH GRADER, LARGE AREA
31 23 00		**EXCAVATION AND FILL**
31 23 16.13	0010	EXCAVATING, TRENCH
	0011	OR CONTINUOUS FOOTING

	0020	COMMON EARTH WITH NO SHEETING OR DEWATERING INCLUDED
	0050	1' TO 4' DEEP, 3/8 C.Y. EXCAVATOR
31 23 23.13	0010	BACKFILL
	0015	BY HAND, NO COMPACTION, LIGHT SOIL
31 62 00		**DRIVEN PILES**
31 62 13.23	0010	PRESTRESSED CONCRETE PILES
	0020	UNLESS SPECIFIED OTHERWISE, NOT INCL. PILE CAPS OR MOBILIZATION
	2200	PRECAST, PRESTRESSED, 50' LONG, CYLINDER, 12" DIAM., 2-3/8" WALL
32 00 00		**EXTERIOR IMPROVEMENTS**
32 16 00		CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS
32 16 13.13	0010	CAST-IN-PLACE CONCRETE CURBS AND GUTTERS
	0290	FORMS ONLY, NO CONCRETE
	0300	CONCRETE, WOOD FORMS, 6" X 18", STRAIGHT

Demolition Plan

(Week 1-Week 22)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman (when needed)
- Office Parking

00 ft 250 ft 500 ft 750 ft

N

Existing Building
(to be demolished)

Sitework Plan

(Week 22-Week 46)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Crane
- Temporary Utilities
- Dumpsters
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman

00 ft 250 ft 500 ft 750 ft

N

Concrete Plan

(Week 46-Week 64)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Pump Truck
- Temporary Utilities
- Dumpsters
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman

00 ft 250 ft 500 ft 750 ft

N

1

2

3

New Building Footprint

Steel Erection Plan

(Week 64-Week 76)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Crane
- Temporary Utilities
- Dumpsters
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman

00 ft 250 ft 500 ft 750 ft

N

1

2

3

New Building Footprint

Exterior Cladding Plan

(Week 76-Week 82)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Crane
- Temporary Utilities
- Dumpsters
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman

00 ft 250 ft 500 ft 750 ft

N

1

2

3

New Building Footprint

Interior and MEP Plan

(Week 82-Week 107)

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Crane
- Temporary Utilities
- Dumpsters
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman

00 ft 250 ft 500 ft 750 ft

N

New Building Footprint

Off Site Laydown Plan

Key

- Construction Fence
- Construction Trailer
- Equipment Storage
- Laydown Space
- Employee Parking
- Construction Traffic
- Pedestrian Traffic
- Construction Gate
- Flagman (when needed)
- Office Parking

00 ft 250 ft 500 ft 750 ft

N

Erosion Plan

Key

Construction Fence	
Hay Bales	
Slope of the Ground	
Silt Fencing	
Storm Water Drain	

00 ft 250 ft 500 ft 750 ft

N