



# Lentile Construction Company

PO Box 758  
Dublin, GA 31040  
tel. 478.272.8351  
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May 11, 2018

To: Interested Bidders

Re: **Addendum #1, Dated May 11, 2018**  
**Appling County Middle School Phase II - HVAC Replacement - 2018**  
**for Appling County Board of Education**

In order for consideration, Lentile Construction Company (LCC) requires that all bidders acknowledge the addendum and clarification #1 herein and all future addenda on Section G - Bid Form of the Bid Documents for Appling County Middle School Phase II - HVAC Replacement - 2018 for Appling County Board of Education.

Please find herein specifications pertaining to for Appling County Middle School Phase II - HVAC Replacement - 2018 for Appling County Board of Education.



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**Appling County Middle School Phase II - HVAC Replacement - 2018**  
**for Appling County Board of Education**



**SP Design Group**  
ARCHITECTS AND ENGINEERS, INC.  
TRUTH • TRUST • VALUE

Date: May 11, 2018

RE: Appling County M.S. Renovations  
Phase 2 – HVAC Replacement  
Code 601-0195

**Addendum #1**

**PROJECT MANUAL:**

**Section #08 1416 – F**

Part 2 Products

2.1 Manufacturers

Acceptable Manufacturer: Add Graham as an approved manufacturer

**Section #08 7100 – Door Hardware**

**DRAWINGS:**

**Sheet # A3.2 Alternate**

1. All references to "30# Felt" should read "Ice and Water Shield"

**Sheet # S0.1 Alternate**

1. Add Sheet S0.1 in its entirety

**Sheets E1.1 , E1.2, E1.3 & E1.4**

At the following units, replace the existing duct mounted smoke detectors with new addressable devices complete. Install wiring for unit shut down and re-program the existing Fire Alarm system as required. If duct detector is not present, provide new wiring and device complete.

MUAU-1

FCU-53 (2 devices – supply and return)

FCU - 40

FCU - 41

FCU - 42

FCU – 43

FCU – 44

FCU - 47

FCU - 48

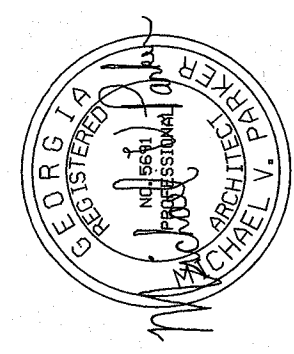
**ME.1 –Alternate**

Provide and install 10 Cat 6 data drops per classroom. Total drops = 40

These shall be field located in the space. Route to respective IDF data closets on each wing. Provide new 48 port cat 6 patch panel in each IDF rack.

**End of Addendum #1**

Page 2  
Addendum #1  
Appling County M. S. Renovations



NO.	REVISION

APPLING COUNTY M.S. RENOVATIONS  
PHASE 2 - HVAC REPLACEMENT  
BAXLEY, GEORGIA  
CODE 601-0195

PROJECT NO. 17408
SHEET TITLE
DATE 10 APRIL 2018
DRAWN BY
CHECKED BY
SHEET NUMBER <b>S0.1</b> ALTERNATE

**GENERAL:**  
METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS TO CONSTRUCT AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION. COMPLY WITH ALL FEDERAL (OSHA), STATE AND LOCAL LAWS WHICH PRESCRIBE SAFETY REQUIREMENTS FOR CONSTRUCTION PERFORMED.  
COORDINATE THESE DRAWINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS. IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ARCHITECT.  
ALL COLUMNS AND WALLS RELY UPON EXTERIOR WALLS AND COMPLETED FLOOR & ROOF FINISHES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTING FOUNDATIONS, COLUMNS AND WALLS SHALL BE TEMPORARILY BRACED UNTIL A FOREMENTIONED SYSTEM IS FULLY IN PLACE.  
ALL MATERIALS TESTING FOR FOUNDATIONS, CONCRETE, STEEL OR ANY OTHER MATERIAL USED SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY SELECTED AND PAID FOR BY THE OWNER.  
WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL SIMILAR OR LIKE CONDITIONS.  
FOR MISCELLANEOUS ITEMS SUCH AS INSERTS, SLEEVES, CURBS PADS, ETC., AFFECTING STRUCTURAL WORK BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL PLAN.

**METAL ROOF TRUSSES:**  
COORDINATE ALL NOTES BELOW WITH GENERAL NOTES  
METAL ROOF TRUSSES AT THE HIGH ROOFS SHALL BE DESIGNED BY THE TRUSS DESIGNER WORKING AS AN AGENT OF THE TRUSS MANUFACTURER. THE TRUSS DESIGNER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE TRUSSES. THE TRUSS DESIGNER SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN PERFORMANCE OF THE TRUSS DESIGN. TRUSSES SHALL BE DESIGNED TO BEAR ON THE EXISTING STRUCTURE PROVIDED BY THE METAL TRUSS DESIGNER.  
TRUSSES SHALL BE DESIGNED, MANUFACTURED, HANDLED, PLACED AND BRACED IN CONFORMANCE WITH ALL OF THE FOLLOWING:  
1) INTERNATIONAL BUILDING CODE, 2015 EDITION.  
2) COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI)  
3) WELDING: AWS D11-2012 STRUCTURAL WELDING CODE-STEEL BY AMERICAN WELDING SOCIETY (AWS)  
MTO4 ROOF TRUSSES SHALL BE DESIGNED FOR THESE FOLLOWING MINIMUM LOADS WHICH DO NOT INCLUDE THE WEIGHT OF THE TRUSS:  
TOP CHORD: DL = 10 PSF, LL = 20 PSF (MIN. ROOF LL)  
BOTTOM CHORD: DL = 10 PSF, LL = 10 PSF (UNHABITABLE ATTICS WITHOUT STORAGE)  
AND THE FOLLOWING MINIMUM WIND LOADS ACTING OUTWARD FROM THE ROOF SURFACE OVER ALL THE ROOF = -3.5 PSF; OVERHANGS, RIDGES, AND HIPPS = -20 PSF, AND CORNERS = -30 PSF (2x8 AREA)  
MTO5 TRUSS DESIGNER SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA AND THE LOADS AND TRUSS SUBMITTALS SHALL BE SEALED, SIGNED, AND DATED BY THE TRUSS DESIGNER.  
MTO6 TRUSSES SHALL BE SPACED AT 16" O.C. UNLESS NOTED OTHERWISE. TRUSS DESIGNER SHALL PROVIDE THE FOLLOWING INFORMATION TO THE ARCHITECT: TRUSS MANUFACTURER'S DESIGN WHERE REQUIRED FOR STRENGTH AND SERVICEABILITY, OPEN WEB ROOF TRUSSES SHALL BE DESIGNED FOR THE MINIMUM DESIGN LOADS SHOWN OR GREATER LOADS AS REQUIRED FOR CERTAIN ROOFS. TRUSSES SHALL NOT BE FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED.  
MTO7 TRUSS DESIGNER SHALL PROVIDE MAXIMUM DOWNWARD AND UPLIFT LOADS FROM ALL SUCH LOADS. TRUSS MANUFACTURER SHALL SUPPLY ALL THE SIMPSON STRONG-TIE ANCHORS AND BEARING PLATES BETWEEN TRUSSES AND SUPPORTING TRUSSES AND STRAPS HOLDING DOWN TRUSS GIRDERS AND JACK TRUSSES.  
MTO8 ALL TRUSS SHOP DRAWINGS AND FINAL INSTALLATION DRAWINGS SHALL INCLUDE THE JOB SITE SAFETY INFORMATION FOR HANDLING, INSTALLING, RESTRAINING AND BRACING OF METAL TRUSSES. THIS INFORMATION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS INCLUDING ALL TEMPORARY AND PERMANENT BRACING SPECIFICATIONS.

**MASONRY - CONCRETE MASONRY:**  
CONFORM TO ALL REQUIREMENTS OF:  
BUILDING CODE - INTERNATIONAL BUILDING CODE, 2012 EDITION, WITH GEORGIA AMENDMENTS (only if in GA).  
OCCUPANCY CATEGORY: III  
GRAVITY DESIGN DATA: LL = LIVE LOAD 200 PSF  
ROOF LIVE LOAD (MINIMUM) 20 PSF  
MTO3 STEEL REINFORCEMENT FOR VERTICAL REINFORCEMENT AND HORIZONTAL BOND BEAMS SHALL BE DEFORMED BARS AND SHALL CONFORM TO ASTM A615, GRADE 60 BARS. TRUSS MANUFACTURER SHALL PROVIDE THE TRUSS DESIGNER WITH ALL TRUSS CONNECTIONS. ALL BOND BEAMS UNLESS NOTED OTHERWISE SHALL BE IN ACCORDANCE WITH THE ACI DETAILING MANUAL (ACI 315). MINIMUM LAP SPLICE LENGTH SHALL BE AS FOLLOWS: #4 - 21", #5 - 26", #6 - 43", #7 - 60", #8 - 92"  
MTO4 UNLESS NOTED OTHERWISE, ALL BOND BEAMS SPANNING OPENINGS, PROVIDE REINFORCED LINTEL BEAMS ACCORDING TO THE ACI LINTEL SCHEDULE.  
ALL BOND BEAMS UNLESS NOTED OTHERWISE SHALL BE IN ACCORDANCE WITH THE ACI DETAILING MANUAL (ACI 315). MINIMUM LAP SPLICE LENGTH SHALL BE AS FOLLOWS: #4 - 21", #5 - 26", #6 - 43", #7 - 60", #8 - 92"  
MTO5 PROVIDE CONTROL JOINTS AT MAJOR CHANGES IN WALL HEIGHT, CHANGES IN WALL TYPE, AND CHANGES IN WALL FINISHES. CONTROL JOINT SPACING SHALL NOT EXCEED 50 FEET. BOND BEAM AND JOINT REINFORCEMENT SHALL BE DISCONTINUOUS AT CONTROL JOINTS.  
MTO6 TYPICAL VERTICAL WALL REINFORCEMENT:  
FOR INTERIOR LOAD BEARING WALLS: #5 @ 32"  
FOR EXTERIOR LOAD BEARING WALLS: #5 @ 32"  
EACH CELL CONTAINING VERTICAL REINFORCEMENT SHALL BE RESULTED FULL HEIGHT TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE STANDARD ACI HOOKS AT THE BOTTOM AND SHALL BE PLACED 3" CLEAR FROM THE BOTTOM. NUMBER OF TYPICAL VERTICAL REINFORCEMENT SHALL BE PLACED AT ENDS OF ALL WALLS, AT EACH SIDE OF ALL OPENINGS, AT EACH WALL CORNER AND AT A TRANSITION IN WALL HEIGHT OVER ALL WALL OPENINGS. PROVIDE CONTINUOUS BOND BEAMS AT THE TOP OF THE WALL, AT THE ROOF LINE, AT EACH FLOOR LEVEL AND AT COURSES WHERE ANCHOR BOLTS WILL BE PROVIDED FOR FLOOR FRAMING CONNECTIONS.  
MTO7 ANCHORS INTO CONCRETE MASONRY SHALL BE GALVANIZED POST-INSTALLED ANCHORS.

**DESIGN CRITERIA:**  
BUILDING CODE - INTERNATIONAL BUILDING CODE, 2012 EDITION, WITH GEORGIA AMENDMENTS (only if in GA).  
OCCUPANCY CATEGORY: III  
GRAVITY DESIGN DATA: LL = LIVE LOAD 200 PSF  
ROOF LIVE LOAD (MINIMUM) 20 PSF  
WIND DESIGN DATA (3 SEC GUST) = 100 MPH  
WIND IMPORTANCE FACTOR, I = 1.15  
WIND EXPOSURE C  
SEISMIC RESPONSE COEFFICIENT = 0.128  
INTERNAL PRESSURE COEFF = 0.18  
SEE CHART  
SEISMIC DESIGN DATA:  
SEISMIC IMPORTANCE FACTOR, I = 1.25  
MAPPED SPECTRAL RESPONSE ACCELERATIONS:  
S<sub>1</sub> = 0.26  
S<sub>2</sub> = 0.80  
SITE CLASS: D  
SPECTRAL RESPONSE COEFFICIENTS:  
S<sub>1</sub> = 0.22  
S<sub>2</sub> = 0.128  
SEISMIC DESIGN CATEGORY: C  
BASIC SEISMIC FORCE - RESISTING SYSTEM:  
INTERMEDIATE REINFORCED MASONRY SHEARWALLS (R=3.5, CS=0.08)  
WHERE RESPONSE MODIFICATION FACTORS(S)  
CS = SEISMIC RESPONSE COEFFICIENT(S)  
BASE SHEAR = 56.03 KIPS (CIVIL ROOM)  
EQUIVALENT LATERAL FORCE ANALYSIS PROCEDURE USED.  
ROOF SURFACE DESIGN DATA:  
GROUND SNOW LOAD, S<sub>G</sub> = 10 PSF

**FOUNDATION:**  
NET ALLOWABLE SOIL BEARING PRESSURE USED FOR DESIGN: 2000 PSF  
AT VARIOUS DEPTHS BELOW FINISHED GRADE. THIS BEARING PRESSURE SHALL BE FIELD VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER AND DOCUMENTED IN THE PROJECT GEOTECHNICAL REPORT.  
SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH SPECIFICATIONS.  
EXCAVATIONS FOR SPREAD FOOTINGS AND CONTINUOUS FOOTINGS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.  
TWO INCHES OF POROUS FILL SHALL BE PLACED ON TOP OF SUBGRADE AND SHALL BE COMPACTED TO A MINIMUM 95% RELATIVE COMPACTION. THE FILL SHALL BE PLACED ON TOP OF THE VAPOR RETARDER WHICH IS STABLE UNDER FOOT TRAFFIC. A VAPOR RETARDER SHALL BE PLACED ON THIS FILL AND THE SLAB SHALL BE PLACED ON TOP OF THE VAPOR RETARDER. SEE SPECIFICATION SECTION 07260 FOR VAPOR RETARDER.  
REINFORCED CONCRETE:  
CONFORM TO ALL REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08) BY THE AMERICAN CONCRETE INSTITUTE (ACI).  
CONCRETE SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATE CONFORMING TO ASTM MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI (SEE SPECIFICATIONS FOR AREAS WITH HIGHER REQUIRED STRENGTHS). FOR CONCRETE EXPOSED TO FREEZING AND THAWING OR BEING CHEMICALLY ENTRAINED EXTERIOR SLABS TOTAL AIR CONTENT SHALL BE 5.0% MINIMUM. CONCRETE SHALL BE CURED TO USE NORMAL WEIGHT CONCRETE FOR ALL CONCRETE UNO.  
CONCRETE REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60. BARS SHALL NOT BE WELDED OR HEATED UNLESS INDICATED ON THE CONTRACT DOCUMENTS. DETAILING OF REINFORCEMENT LENGTHS SHALL BE IN ACCORDANCE WITH ACI 318. PRIOR TO PLACING CONCRETE, ALL REINFORCING STEEL SHALL BE FREE OF RUST, SCALE, OR ANY FOREIGN MATERIAL.  
CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED ON THE SECTIONS AND DETAILS: SEE SECTION 7.7 OF ACI 318 FOR CONDITIONS NOT NOTED.  
CONCRETE CAST AGAINST EARTH OR WEATHER EXPOSED TO WEATHER: PROVIDE (1) #4 x 4'-0" AT RE-ENTRANT CORNERS AND AT EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE. SLABS ON-GRADE SHALL HAVE CONSTRUCTION JOINTS PLACED AS SOON AS POSSIBLE WITHOUT RAVELLING THE CONCRETE. AT CONSTRUCTION JOINTS OF SLABS SUPPORTING FOOT TRAFFIC ONLY, EXTEND THE WELDED WIRE FABRIC A MINIMUM OF 18" ON CENTER. A SLAB ON-GRADE CONSTRUCTION JOINTS VAPOR RETARDER SHALL BE PLACED ON TOP OF POROUS FILL LAYER ON TOP OF COMPACTED SUBGRADE. CONCRETE SLAB SHALL BE PLACED ON TOP OF VAPOR RETARDER.  
GROUT SPECIFIED FOR USE UNDER COLUMN BASE PLATES OR BEAM BEARING PLATES SHALL BE NON-SHRINKING GROUT CONFORM TO U.S. ARMY CORPS OF ENGINEERS SPECIFICATION ORD C-621 AND ASTM C-1107 (GRADE C). MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI.

**STEEL DECK:**  
STEEL ROOF DECK SHALL BE GALVANIZED INTERMEDIATE RIB TYPE F, 1.50 INCHES DEEP, 22 GAUGE (L5F22) WITH THE FOLLOWING MINIMUM PROPERTIES:  
S<sub>y</sub> = 0.113 IN<sup>2</sup>/FT., S<sub>x</sub> = 0.112 IN<sup>3</sup>/FT., S<sub>y</sub> = 0.121 IN<sup>3</sup>/FT.  
AS A MINIMUM, EDGE DECK SHALL BE WELDED TO ALL SUPPORTING AND EDGE MEMBERS WITH #10 TEK FASTENERS (5/8" PATTERN WITH 3 SIDLAP FASTENERS PER 5' SPAN), UNLESS NOTED OTHERWISE.  
STEEL STUDS:  
CONFORM TO ALL REQUIREMENTS OF:  
SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (MARCH 9, 2012) BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (AISC).  
WELDING: AWS D11-2012 STRUCTURAL WELDING CODE-STEEL BY AMERICAN WELDING SOCIETY (AWS)  
COLD-FORMED STEEL: NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI)

**ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY**  
MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL CONFORM TO AC308, PRE-APPROVED MECHANICAL ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771)  
(2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)  
ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308.  
(1) SIMPSON STRONG-TIE "SET-90" (ICC-ES ESR-2508)  
**MASONRY ANCHORS**  
ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY  
(1) MECHANICAL AND CONCRETE SCREW ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC108. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "WEDGE-ALL" (ICC-ES ESR-1396)  
(2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-1096)  
(2) ADHESIVE ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "ACRYLIC-TIE" (ICC-ES ESR-5791)  
(2) SIMPSON STRONG-TIE "ACRYLIC-TIE" (ICC-ES ESR-5791)  
ANCHORAGE TO HOLLOW CONCRETE MASONRY/UNREINFORCED CLAY BRICK MASONRY  
(1) SCREW ANCHORS FOR USE IN HOLLOW CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC106. PRE-APPROVED SCREW ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-1096)  
(2) ADHESIVE ANCHORS WITH SCREEN TUBES SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC106. PRE-APPROVED ADHESIVE ANCHORS WITH SCREEN TUBES INCLUDE:  
(1) SIMPSON STRONG-TIE "SET" (ICC-ES ESR-1772)  
(2) SIMPSON STRONG-TIE "ACRYLIC-TIE" (ICC-ES ESR-5791)  
(2) SIMPSON STRONG-TIE "ET" (ICC-ES ESR-4945)

**CONCRETE CAST AGAINST EARTH OR WEATHER EXPOSED TO WEATHER: PROVIDE (1) #4 x 4'-0" AT RE-ENTRANT CORNERS AND AT EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE. SLABS ON-GRADE SHALL HAVE CONSTRUCTION JOINTS PLACED AS SOON AS POSSIBLE WITHOUT RAVELLING THE CONCRETE. AT CONSTRUCTION JOINTS OF SLABS SUPPORTING FOOT TRAFFIC ONLY, EXTEND THE WELDED WIRE FABRIC A MINIMUM OF 18" ON CENTER. A SLAB ON-GRADE CONSTRUCTION JOINTS VAPOR RETARDER SHALL BE PLACED ON TOP OF POROUS FILL LAYER ON TOP OF COMPACTED SUBGRADE. CONCRETE SLAB SHALL BE PLACED ON TOP OF VAPOR RETARDER.**  
GROUT SPECIFIED FOR USE UNDER COLUMN BASE PLATES OR BEAM BEARING PLATES SHALL BE NON-SHRINKING GROUT CONFORM TO U.S. ARMY CORPS OF ENGINEERS SPECIFICATION ORD C-621 AND ASTM C-1107 (GRADE C). MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI.

**COMPONENTS AND CLADDING DESIGN WIND PRESSURES**

	A	B	C	D
1	10	15.6	-24.8	-24.1
2	20	14.2	-24.1	-23.2
3	50	12.4	-23.2	-22.5
4	100	11.0	-22.5	-21.8
5	15.6	-24.8	-24.1	-23.2
6	14.2	-24.1	-23.2	-22.5
7	12.4	-23.2	-22.5	-21.8
8	11.0	-22.5	-21.8	-21.1
9	10	-21.1	-20.4	-19.7
10	25.0	-26.0	-25.3	-24.6
11	24.4	-25.3	-24.6	-23.9
12	23.0	-24.6	-23.9	-23.2
13	20.2	-22.5	-21.8	-21.1
14	20.2	-22.5	-21.8	-21.1
15	20.2	-22.5	-21.8	-21.1
16	20.2	-22.5	-21.8	-21.1
17	20.2	-22.5	-21.8	-21.1
18	20.2	-22.5	-21.8	-21.1
19	20.2	-22.5	-21.8	-21.1
20	20.2	-22.5	-21.8	-21.1
21	20.2	-22.5	-21.8	-21.1
22	20.2	-22.5	-21.8	-21.1
23	20.2	-22.5	-21.8	-21.1
24	20.2	-22.5	-21.8	-21.1
25	20.2	-22.5	-21.8	-21.1
26	20.2	-22.5	-21.8	-21.1
27	20.2	-22.5	-21.8	-21.1
28	20.2	-22.5	-21.8	-21.1
29	20.2	-22.5	-21.8	-21.1
30	20.2	-22.5	-21.8	-21.1
31	20.2	-22.5	-21.8	-21.1
32	20.2	-22.5	-21.8	-21.1
33	20.2	-22.5	-21.8	-21.1
34	20.2	-22.5	-21.8	-21.1
35	20.2	-22.5	-21.8	-21.1
36	20.2	-22.5	-21.8	-21.1
37	20.2	-22.5	-21.8	-21.1
38	20.2	-22.5	-21.8	-21.1
39	20.2	-22.5	-21.8	-21.1
40	20.2	-22.5	-21.8	-21.1
41	20.2	-22.5	-21.8	-21.1
42	20.2	-22.5	-21.8	-21.1
43	20.2	-22.5	-21.8	-21.1
44	20.2	-22.5	-21.8	-21.1
45	20.2	-22.5	-21.8	-21.1
46	20.2	-22.5	-21.8	-21.1
47	20.2	-22.5	-21.8	-21.1
48	20.2	-22.5	-21.8	-21.1
49	20.2	-22.5	-21.8	-21.1
50	20.2	-22.5	-21.8	-21.1
51	20.2	-22.5	-21.8	-21.1
52	20.2	-22.5	-21.8	-21.1
53	20.2	-22.5	-21.8	-21.1
54	20.2	-22.5	-21.8	-21.1
55	20.2	-22.5	-21.8	-21.1
56	20.2	-22.5	-21.8	-21.1
57	20.2	-22.5	-21.8	-21.1
58	20.2	-22.5	-21.8	-21.1
59	20.2	-22.5	-21.8	-21.1
60	20.2	-22.5	-21.8	-21.1
61	20.2	-22.5	-21.8	-21.1
62	20.2	-22.5	-21.8	-21.1
63	20.2	-22.5	-21.8	-21.1
64	20.2	-22.5	-21.8	-21.1
65	20.2	-22.5	-21.8	-21.1
66	20.2	-22.5	-21.8	-21.1
67	20.2	-22.5	-21.8	-21.1
68	20.2	-22.5	-21.8	-21.1
69	20.2	-22.5	-21.8	-21.1
70	20.2	-22.5	-21.8	-21.1
71	20.2	-22.5	-21.8	-21.1
72	20.2	-22.5	-21.8	-21.1
73	20.2	-22.5	-21.8	-21.1
74	20.2	-22.5	-21.8	-21.1
75	20.2	-22.5	-21.8	-21.1
76	20.2	-22.5	-21.8	-21.1
77	20.2	-22.5	-21.8	-21.1
78	20.2	-22.5	-21.8	-21.1
79	20.2	-22.5	-21.8	-21.1
80	20.2	-22.5	-21.8	-21.1
81	20.2	-22.5	-21.8	-21.1
82	20.2	-22.5	-21.8	-21.1
83	20.2	-22.5	-21.8	-21.1
84	20.2	-22.5	-21.8	-21.1
85	20.2	-22.5	-21.8	-21.1
86	20.2	-22.5	-21.8	-21.1
87	20.2	-22.5	-21.8	-21.1
88	20.2	-22.5	-21.8	-21.1
89	20.2	-22.5	-21.8	-21.1
90	20.2	-22.5	-21.8	-21.1
91	20.2	-22.5	-21.8	-21.1
92	20.2	-22.5	-21.8	-21.1
93	20.2	-22.5	-21.8	-21.1
94	20.2	-22.5	-21.8	-21.1
95	20.2	-22.5	-21.8	-21.1
96	20.2	-22.5	-21.8	-21.1
97	20.2	-22.5	-21.8	-21.1
98	20.2	-22.5	-21.8	-21.1
99	20.2	-22.5	-21.8	-21.1
100	20.2	-22.5	-21.8	-21.1

**POST-INSTALLED ANCHORS**  
POST-INSTALLED ANCHOR IS AN ANCHOR INSTALLED IN HARDENED CONCRETE OR CONCRETE MASONRY.  
POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER OR ARCHITECT BEFORE ANY ANCHORS ARE INSTALLED. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. RECORD SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ARCHITECT AND ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARDS) AS SHOWN ON THE DRAWINGS. REFER TO THE MANUFACTURER'S PRODUCT LITERATURE FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.  
**CONCRETE ANCHORS**  
MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL CONFORM TO AC308, PRE-APPROVED MECHANICAL ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771)  
(2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)  
ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308.  
(1) SIMPSON STRONG-TIE "SET-90" (ICC-ES ESR-2508)  
**MASONRY ANCHORS**  
ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY  
(1) MECHANICAL AND CONCRETE SCREW ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC108. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:  
(1) SIMPSON STRONG-TIE "WEDGE-ALL" (ICC-ES ESR-1396)  
(2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-1096)  
(2) ADHESIVE ANCHORS WITH SCREEN TUBES SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC106. PRE-APPROVED ADHESIVE ANCHORS WITH SCREEN TUBES INCLUDE:  
(1) SIMPSON STRONG-TIE "SET" (ICC-ES ESR-1772)  
(2) SIMPSON STRONG-TIE "ACRYLIC-TIE" (ICC-ES ESR-5791)  
(2) SIMPSON STRONG-TIE "ET" (ICC-ES ESR-4945)

**STEEL STUDS:**  
CONFORM TO ALL REQUIREMENTS OF:  
SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (MARCH 9, 2012) BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (AISC).  
WELDING: AWS D11-2012 STRUCTURAL WELDING CODE-STEEL BY AMERICAN WELDING SOCIETY (AWS)  
COLD-FORMED STEEL: NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI)  
**CONCRETE CAST AGAINST EARTH OR WEATHER EXPOSED TO WEATHER: PROVIDE (1) #4 x 4'-0" AT RE-ENTRANT CORNERS AND AT EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE. SLABS ON-GRADE SHALL HAVE CONSTRUCTION JOINTS PLACED AS SOON AS POSSIBLE WITHOUT RAVELLING THE CONCRETE. AT CONSTRUCTION JOINTS OF SLABS SUPPORTING FOOT TRAFFIC ONLY, EXTEND THE WELDED WIRE FABRIC A MINIMUM OF 18" ON CENTER. A SLAB ON-GRADE CONSTRUCTION JOINTS VAPOR RETARDER SHALL BE PLACED ON TOP OF POROUS FILL LAYER ON TOP OF COMPACTED SUBGRADE. CONCRETE SLAB SHALL BE PLACED ON TOP OF VAPOR RETARDER.**  
GROUT SPECIFIED FOR USE UNDER COLUMN BASE PLATES OR BEAM BEARING PLATES SHALL BE NON-SHRINKING GROUT CONFORM TO U.S. ARMY CORPS OF ENGINEERS SPECIFICATION ORD C-621 AND ASTM C-1107 (GRADE C). MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI.

**CONCRETE CAST AGAINST EARTH OR WEATHER EXPOSED TO WEATHER: PROVIDE (1) #4 x 4'-0" AT RE-ENTRANT CORNERS AND AT EACH CORNER OF RECTANG**