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Rapid-Lok

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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF FIRE TECHNOLOGY
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November 16, 2006

NSF-ISR
QUALITY SYSTEM REGISTERED TO ISO 9001:2000

Mr. Boyd Grayson
Meadow Burke Products
531 S U.S. Highway 301
Tampa, FL 33619

Subject: SwRI® Project No. 01.11812.01.212

Dear Mr. Grayson:

Enclosed please find two copies of the final report for the above-referenced project, along with video and photographic documentation. If you should have any questions or comments, or if I may be of further assistance, please do not hesitate to contact me by phone at (210) 522-3971, by fax at (210) 522-3377, or e-mail to Barry.Badders@swri.org.

Sincerely,

Barry Badders

Barry Badders, P.E.
Group Leader
Engineering and Research Section

BLB/lo
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Enc: 1) 2 Final Reports
2) 1 Photo CD

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FIRE PERFORMANCE EVALUATION OF RAPID-LOK CONNECTION PLATES UTILIZING THE STANDARD TIME-TEMPERATURE CURVE SPECIFIED IN ASTM E 119-00, *STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS*

FINAL REPORT
Consisting of 96 Pages

SwRI® Project No. 01.11812.01.212
Test Dates: May 5 – 6, 2004; September 28 – 30, 2005;
October 3, 2005; and August 2 - 17, 2006
Report Date: November 16, 2006

Prepared for:

Meadow Burke Products
513 S U.S. Highway 301
Tampa, FL 33619

Prepared by:

Barry Badders

Barry Badders, P.E.
Group Leader
Engineering and Research Section

Approved by:

Marc L. Janssens, Ph.D.
Director
Fire Technology Department

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ABSTRACT

Fire performance evaluations of Rapid-Lok Connection Plates were conducted by Southwest Research Institute's (SwRI) Fire Technology Department, located in San Antonio, TX, on August 2, 3, 4, 7, 8, and 17, 2006, for Meadow Burke Products, located in Tampa, Florida. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report. Testing was conducted utilizing the standard time-temperature curve specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*.

The Rapid-Lok assemblies were fire tested on a concrete slab or on a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. Each Rapid-Lok assembly was, at a minimum, fire tested under its rated load. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except six tests, which continued to 121, 160, 180 and 240 min without failure. Table i summarizes the assembly models tested and the results obtained during testing.

Table i. Summary of Test Results.

Test Date	Assembly	Applied Load (lb)	Failure (min:sec)
5/5/04	30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok	32,000	160:00*
5/6/04	30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok	32,000	87:15
9/28/05	20 Kip – 6" Model Rapid-Lok	22,000	71:30
9/28/05	15 Kip – 4" Model Rapid-Lok	16,500	85:45
9/29/05	20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok	22,000	89:15
9/29/05	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	22,000	114:15
9/30/05	20 Kip – 6" Concrete Corbel Model Rapid-Lok	22,000	121:00*
9/30/05	30 Kip – 8" Alt. Model Rapid-Lok	33,000	121:00*
10/3/05	40 Kip – 8.5" Concrete Corbel Model Rapid-Lok	44,000	121:00*
8/2/06	6 Kip – 4" Model Rapid-Lok	6,000	180:00*
8/3/06	20 Kip – 8" Model Rapid-Lok	20,000	91:30
8/3/06	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	20,000	112:40
8/4/06	40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok	40,000	71:00
8/4/06	40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok	40,000	102:00
8/7/06	30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok	40,000	240:00*
8/8/06	40 Kip – 8.5" Model Rapid-Lok	40,000	78:30
8/8/06	20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok	20,000	121:10
8/17/06	40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok	40,000	166:20

*Failure did not occur, testing terminated.

1.0 INTRODUCTION

This report describes fire performance evaluations of Rapid-Lok Connection Plates, manufactured by Meadow Burke Products, and includes a description of the test procedure followed, sample description, preparation details, and all test results obtained. The tests were performed utilizing the standard time-temperature curve as specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials,* at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas, on August 2, 3, 4, 7, 8, and 17, 2006. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report.

This report contains a description of the test procedure followed, assemblies tested, and the results obtained. The results presented in this report apply only to the assemblies tested, in the manner tested, and not to any similar assemblies or material combinations.

These test results should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions, and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment, which takes into account all the factors that are pertinent to an assessment of the fire hazard of a particular end-use.

2.0 TEST PROCEDURE

SwRI's small horizontal furnace is used to subject the specimens to the fire exposure conditions as specified in ASTM E 119.

The small horizontal furnace is equipped with four pre-mixed air/natural gas burners, one placed on each wall of the furnace. The burners are controlled by a variable ratio gas/air regulator. Regulated natural gas enters the furnace at the nozzle of each burner, and a constant supply of air is provided to the nozzle by a blower unit. The gaseous products of combustion exit the furnace through an exhaust duct and flow through an exhaust fan into the atmosphere.

The furnace exposure is described in Section 5 of ASTM E 119, and is used to regulate the furnace environment throughout the duration of the exposure period. Points on the standard time-temperature curve are shown in Table 1.

Table 1. Points on the Time-Temperature Curve.

TIME	TEMPERATURE
0 min	Ambient
5 min	1000°F
10 min	1300°F
30 min	1550°F
45 min	1638°F
60 min	1700°F
2 hrs	1850°F
3 hrs	1925°F
4 hrs	2000°F

The conduct of the fire test is controlled according to the standard time-temperature curve, as indicated by the average temperature obtained from the readings of three thermocouples (TCs) located below the furnace lid and 12 in. away from the specimen. The TCs are enclosed in protection tubes of such material and dimensions that the time constant of the TC assembly lies between 5.0 and 7.2 min, as required by the standard. One quick response TC, with a response time less than 20 sec, is also included in the furnace to aid the furnace operator in controlling the furnace temperature. The furnace temperature during a test is controlled such that the area under the time-temperature curve is within 10 percent of the corresponding area under the standard time-temperature curve for tests of 1 hr or less, 7.5 percent for those less than 2 hr, and 5 percent for those tests of 2 hr or more duration.

The pressure is controlled such that the furnace pressure is slightly negative at 12 in. below the top of the furnace. The pressure is monitored using a tube sensor pressure probe, and is measured with a bi-directional pressure transducer (Setra Systems, Inc., Model 264). The furnace pressure is controlled by adjusting the exhaust gas flows.

A load was applied to the Rapid-Lok connection plate assemblies during the fire exposure. Failure is defined as occurring when the assemblies can no longer support the applied load. The load applied was the assembly's rated load, as specified by Meadow Burke Products. The hydraulic pressure applied to the jack to achieve the desired load was determined by Equation 1.

$$Pressure\,(psi) = \frac{Desired\ Load\,(lb)}{Jack\ Cylinder\ Area\,(in.^2)} \qquad \textbf{Equation 1}$$

One TC was placed on each bearing plate to measure the thermal response of the steel, except for the tests conducted on May 5 and 6, 2004.

3.0 TEST SAMPLES

Test articles were received by SwRI on March 22, 2004, September 21, 2005, September 27, 2005, July 12, 2006, August 8 and 14, 2006, directly from Meadow Burke Products. The Rapid-Lok Connection Plate assemblies were identified as the following models:

- 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok
- 20 Kip – 6" Model Rapid-Lok
- 15 Kip – 4" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 20 Kip – 6" Concrete Corbel Model Rapid-Lok
- 30 Kip – 8" Alt. Model Rapid-Lok
- 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok
- 6 Kip – 4" Model Rapid-Lok
- 20 Kip – 8" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok
- 40 Kip – 8.5" Model Rapid-Lok
- 20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok

The assemblies were constructed of ASTM A 36 steel with a hot dipped galvanized finish, and consisted of an embed plate and a bearing plate. The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok, 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok, 20 Kip – 6" Modified Steel Corbel Model Rapid-Lok, and the 40 Kip – 8.5" Modified Steel Corbel Model Rapid-Lok excluded the galvanized coating. The backside of the bearing plate had 3/4-in. studs with 1-1/4-in. heads that were welded to the bearing plate for connection to the embed plate. The number of studs varied based on the assembly configuration and bearing capacity. Figure 1 illustrates the stud on the back of a bearing plate.

The embed plates were constructed of a 1/2-in. plate with keyways for receiving the bearing plate. Welded to the backside of the embed plate were 3/4-in. studs with 1-1/4-in. heads for anchoring the embed plate into poured concrete. The number and length of the anchors varied based on the size of the bearing plate used. Figure 1 illustrates the backside of an embed plate.

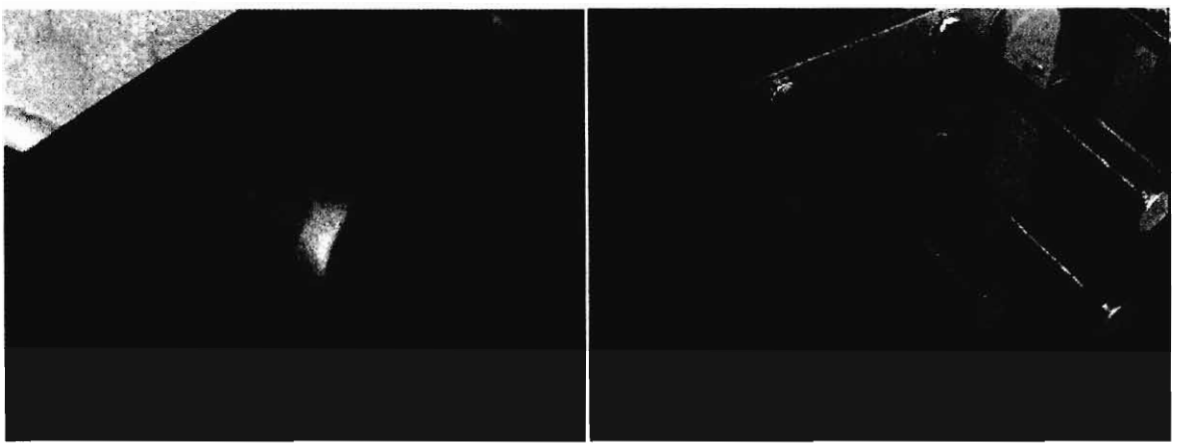

Figure 1. *Left* – Connecting Stud on Backside of Bearing Plate.
***Right* – Concrete Anchors and Keyways on Backside of Embed Plate.**

The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok Bearing Plate was constructed with a 10 × 7-1/2 × 3/8-in. plate welded together perpendicular to a 10 × 16 × 3/8-in. plate, and supported by a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was filled with mineral wool insulation, and the bottom closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok Bearing Plate was constructed the same as the filled model except the cavity created by the shaped piece was filled with insulation. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Model Rapid-Lok Bearing Plate was constructed with a 7-3/4-in. long 6 × 8 × 1/2-in. angle. A 5/8-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 15 Kip – 4" Model Rapid-Lok Bearing Plate was constructed with a 7-3/4-in. long 4 × 8 × 1/2-in. angle. A 3/8-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok Bearing Plate was constructed with a 10 × 8 × 3/8-in. plate welded together perpendicular to a 10 × 10 × 3/8-in. plate, and supported by a

shaped piece of 1/4-in. plate. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok Bearing Plate was constructed the same as the unfilled model except the cavity created by the shaped piece was filled with mineral wool insulation, and the bottom closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Concrete Corbel Model Rapid-Lok was constructed identical to the 20 Kip – 6" Model Rapid-Lok except the bottom was encased in concrete. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Model Rapid-Lok Bearing Plate was constructed with a 12-1/2-in. long 8 × 8 × 1/2-in. angle. Two 3/4-in. thick gussets were welded onto the angle for support, centered 4 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok was constructed identical to the 40 Kip – 8.5" Model Rapid-Lok, except the bottom was encased in concrete. The 40 Kip – 8.5" Model Rapid-Lok was constructed with a 12 × 8 × 1/2-in. plate welded perpendicular to a 11-1/2 × 12 × 1/2-in. plate. Two 1-in. thick gussets were welded onto the angle for support, centered 3-11/16 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 6 Kip – 4" Model Rapid-Lok Bearing Plate was constructed with a 6-in. long 4 × 8 × 3/4-in. angle. Two studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 8" Model Rapid-Lok was constructed with a 7-3/4-in. long 8 × 8 × 1/2-in. angle. A 1-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok was constructed with a 10 × 7-1/2 × 3/8-in. plate welded perpendicular to a 10 × 10 × 3/8-in. plate, and supported by a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was filled with mineral wool insulation, and the bottom was closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok was constructed with a 14-3/4 × 7-1/2 × 3/8-in. plate welded perpendicular to a 14-3/4 × 16 × 3/8-in. plate, and supported by

a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok was constructed the same as the 40 Kip - 8.5" Steel Corbel Unfilled Model Rapid-Lok, except the cavity created by the shaped piece was filled with mineral wool insulation, and the bottom was closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok was constructed with a 14-in. long 8 × 8 × 1/2-in. angle. Two 1-in. thick gussets were welded onto the angle for support, centered 4 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate. The bottom was encased in concrete.

The 40 Kip – 8.5" Model Rapid-Lok was constructed with a 12 × 8 × 1/2-in. plate welded perpendicular to a 11-1/2 × 12 × 1/2-in. plate. Two 1-in. thick gussets were welded onto the angle for support, centered 3-11/16 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Modified Steel Corbel Model Filled Rapid-Lok was constructed identical to the 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok, except the base plate was lowered by 1 in. and additional insulation was added.

The 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok was constructed identical to the 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok, except two gussets were added to provide additional support to the bearing plate. The gussets were 1-in. thick and welded onto the bearing plate for support, centered 6-7/8 in. from each end.

Fabrication drawings provided by Meadow Burke are located in Appendix A.

The assemblies fire tested on May 5 and 6, 2004, were on a concrete slab. The other assemblies were fire tested on a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. The columns were constructed with 4-ft long W10 × 26 beams. The embed plates were welded to the beams, and the space between the flanges was filled with concrete. Two beams were welded side by side for the wider 30 and 40 Kip models. The beams were further protected by two layers of 5/8-in. Type "X" gypsum.

A replicate Rapid-Lok assembly was welded to each end of the beam in opposing directions. A hydraulic jack was placed between the Rapid-Lok assemblies to apply the load. To keep the jack out of the furnace, 8 × 8-in. steel shims were placed between the jack and the assembly being tested. Appendix B illustrates a typical test setup.

4.0 TEST RESULTS

On May 5, 2004, without a representative from Meadow Burke Products present to witness, the 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok was tested. A 32,000-lb load was applied, data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok exhibited a 0.11-in. downward deflection at the conclusion of a 2-hr fire exposure. The test was allowed to continue for another 40 min. At the time the test was terminated, the sample deflection had reached 0.30 in. and was continuing to increase. Upon removal from the furnace, it was noted that ceramic fiber insulation applied to the slab, was in contact with the back plate of the connection. This insulation from the outside may have acted to keep the back plate a few degrees cooler than the main body of the anchor. Although it was felt that this insulation had little impact on the test, the insulation on the slab, near the test article, was removed for the 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok test.

On May 6, 2004, without a representative from Meadow Burke Products present to witness, the 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok was tested. A 32,000-lb load was applied, data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The test was conducted until failure occurred at 87 min, 15 sec, as defined by the assembly's inability to carry the imposed load. The failure mechanism was the studs welded on the back of the bearing plate sheared at a location flush with the bearing plate.

The tests were conducted on August 2, 3, 4, 7, 8, and 17, 2006, for the:

- 20 Kip – 6" Model Rapid-Lok,
- 15 Kip – 4" Model Rapid-Lok,
- 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok,
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok,
- 20 Kip – 6" Concrete Corbel Model Rapid-Lok
- 30 Kip – 8" Alt. Model Rapid-Lok and
- 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok

A representative from Meadow Burke Products was not present to witness the tests. The load was applied, TC and data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The fire tests were conducted for 2 hr or until failure occurred as defined by the assembly's inability to carry the imposed load. The failure mechanism was identical for all the assemblies that failed. The studs welded on the back of the bearing plate sheared at a location flush

with the bearing plate. The 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok did not fail during the 2-hr exposure.

The tests were conducted on August 2, 3, 4, 7, 8, and 17, 2006, for the:

- 6 Kip – 4" Model Rapid-Lok
- 20 Kip – 8" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok
- 40 Kip – 8.5" Model Rapid-Lok
- 20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok

A representative from Meadow Burke Products was not present to witness the tests. The load was applied, TC and data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except two tests. The 6 Kip – 4" Model Rapid-Lok test was terminated at 180 min, at which time failure had not occurred. The 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok test was terminated at 240 min , at which time failure had not occurred.

The failure mechanism for the 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok was the shaped 1/4-in. plate collapsing. The remaining failure mechanism was identical for all the assemblies that did not carry the load through the tests; the studs welded on the back of the bearing plate sheared at a location flush with the bearing plate.

The test results are summarized in Table 2.

Table 2. Summary of Test Results.

Test Date	Assembly	Applied Load (lb)	Failure (min:sec)
5/5/04	30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok	32,000	160:00*
5/6/04	30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok	32,000	87:15
9/28/05	20 Kip – 6" Model Rapid-Lok	22,000	71:30
9/28/05	15 Kip – 4" Model Rapid-Lok	16,500	85:45
9/29/05	20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok	22,000	89:15
9/29/05	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	22,000	114:15
9/30/05	20 Kip – 6" Concrete Corbel Model Rapid-Lok	22,000	121:00*
9/30/05	30 Kip – 8" Alt. Model Rapid-Lok	33,000	121:00*
10/3/05	40 Kip – 8.5" Concrete Corbel Model Rapid-Lok	44,000	121:00*
8/2/06	6 Kip – 4" Model Rapid-Lok	6,000	180:00*
8/3/06	20 Kip – 8" Model Rapid-Lok	20,000	91:30
8/3/06	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	20,000	112:40
8/4/06	40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok	40,000	71:00
8/4/06	40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok	40,000	102:00
8/7/06	30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok	40,000	240:00*
8/8/06	40 Kip – 8.5" Model Rapid-Lok	40,000	78:30
8/8/06	20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok	20,000	121:10
8/17/06	40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok	40,000	166:20

*Failure did not occur, testing terminated.

Photographic documentation of the Rapid-Lok Connection Plates and test setup prior to, during, and after the fire exposure is provided in Appendix C, except the tests conducted on May 2004, which are not available for inclusion in this report, but can be found in SwRI Report No. 01.10085.01.106a. Temperature data and load data obtained during testing are provided in Appendix D.

5.0 SUMMARY

Fire performance evaluations of Rapid-Lok Connection Plates were conducted by SwRI's Fire Technology Department, located in San Antonio, TX, on August 2, 3, 4, 7, 8, and 17, 2006, for Meadow Burke Products, located in Tampa, FL. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report. Testing was conducted utilizing the standard time-temperature curve specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*.

The Rapid-Lok assemblies were fire tested on a concrete slab or a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except six tests, which continued to 121, 160, 180 and 240 min without failure.

PROVIDENCE HEALTH & SERVICES OF OREGON

Doing Business As

PROVIDENCE HEALTH & SERVICES

POP II

PERMIT DOCUMENT SPECIFICATIONS

FOR

NORTH OFFICE BUILDING / PARKING STRUCTURE

November 2008

08-160853-MG

jrja
JON R. JURGENS & ASSOCIATES, INC.
ARCHITECTURE | PLANNING

SECTION 080000 A - DOOR / RELITE SCHEDULE

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
EP-1A	Stair 1	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C			X	3, 9, 13	
EP-2A	Stair 2	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C			X	3, 9, 13	
LL.01A	Mechanical Room	*	7'-0"	*	X		C L	GAL	J				2	CL	GAL	C	C			X		
LL.02A	I.S. Room	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.03A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.03B	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.04A	Elevator Control	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.05A	Water Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		3	HM	PTD	C	C			X		8
LL.06A	Lower Level Parking	21'-6"	*	2"	X		OH	PC	I		180-MIN		67	STL	GAL	C	C				4,7, 15	13
LL.06B	Lower Level Parking	21'-6"	*	2"	X		OH	PC	I		180-MIN		67	STL	GAL	C	C				4,7, 15	13
LL.07A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.07B	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.08A	Elevator Control	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.09A	Storage	6'-0"	7'-0"	*		X	HM	PTD	A		60-MIN		6	HM	PTD	C	C			X		
LL.10A	Electrical Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		7	HM	PTD	C	C			X	3, 9, 14	8
LL.11A	Emerg Electric Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		7	HM	PTD	C	C			X	3, 9, 14	8
100.01A	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; See also spec section 084229	13
100.01B	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; See also spec section 084229	13
100.01C	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; See also spec section 084229	13
100.02A	Lobby	6'-0"	9'-0"	*		X	AL	SF	D				9	AL	FF						6, 3	
100.02B	Lobby	6'-0"	9'-0"	*		X	AL	SF	D				9	AL	FF						6, 3	

RECEIVED
DOCUMENT SERVICES

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		Remarks		Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP				
100.02C	Lobby	7'-4"	8'-0"	*		X	HM		N				10		HM								1, 3, 4, 7		
100.04A	Security Office	*	*	*	X				C				11										2		
100.06A	Café	6'-0"	9'-0"	*		X	AL	FF	D				12		AL	FF	AL	AL					3, 6, 8, 9		
100.06B	Café	*	*	2"	X		DAES		B				67		HM	PTD				X	X				13
100.06C	Café	6'-0"	9'-0"	*		X	AL	FF	D				12		AL	FF	AL	AL					3, 6, 8, 9		
100.07A	Servery	*	*	*	X				A				13		HM	PTD							1, 3		
100.07B	Servery	*	*	2"	X		DAES		B				67		HM	PTD				X	X				13
100.07C	Servery	*	*	2"	X		DAES		B				67		HM	PTD				X	X				13
100.08A	Food Prep	*	*	*	X				B				14										1, 2		
100.10A	Housekeeping	*	*	*	X				A				15		HM	PTD									
100.13A	Non-Rated Corridor	4'-0"	*	*	x		TD	PTD	A				5A		HM	PTD							2, 4, 10, 12		13
100.14A	Women's Toilet	3'-6"	*	*	X				A				16								X		5		
100.15A	Men's Toilet	3'-6"	*	*	X				A				16								X		5		
100.16A	Housekeeping	*	*	*	X				A		60-MIN		17		HM	PTD					X				8
100.17A	Elevator Lobby	*	*	*	X				A				18		HM	PTD							1, 3		
100.19A	Small Conference	5'-0"	*	*	X				F				19										*Door Size 3'-0"		11
100.20A	Reflection	5'-0"	*	*	X				F				19										*Door Size 3'-0"		11
100.21A	Non-Rated Corridor	*	*	*	X				A				20										1, 3		
100.23A	Mother's	*	*	*	X				A				21										16		
100.24A	Toilet	*	*	*	X				A				21										16		
100.25A	Sick Room	*	*	*	X				A				21										16		
100.26A	Café Office	*	*	*	X				A				22												

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
100.27A	Training Office	*	*	*	X				A				22											
100.28A	Training Office	*	*	*	X				A				23											
100.29A	Non-Rated Corridor	4'-0"	*	*	x		TD	PTD	A				67		HM	PTD						2, 4, 10, 12		13
100.30A	Training Room	*	*	*	X				B				23											
100.30B	Training Room	29'-2"	10'-0"	4"	X		M	FW	K				5											
100.31A	Training Room	*	*	*	X				B				23											
100.33A	Conference Room	5'-0"	*	*	X				F				24									3, *Door Size 3'-0"		13
100.33B	Conference Room	32'-4"	9'-10"*	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY		13
100.34A	Conference Room	5'-0"	*	*	X				F				24									3, *Door Size 3'-0"		13
100.34B	Conference Room	32'-4"	9'-10"*	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY		13
100.35A	Conference Room	5'-0"	*	*	X				F				24									3, *Door Size 3'-0"		13
100.35B	Conference Room	6'-0"	9'-0"	*		X	AL	FF	D				12		AL	FF	AL	AL	AL			3, 6, 8, 9		8
100.36A	Conference Room	5'-0"	*	*	X				F				24									3, *Door Size 3'-0"		13
100.36B	Conference Room	32'-10"	9'-10"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY		13
100.36C	Conference Room	26'-2"	9'-10"	4"	X		M	FW	K				67									OP-1, * MFR TO VERIFY		13
100.36D	Conference Room	6'-0"	9'-0"			X	AL	FF	D				12		AL	FF	AL	AL	AL			3, 6, 8, 9		8
100.37A	Conference Room	5'-0"	*	*	X				F				24									3, *Door Size 3'-0"		13
100.37B	Conference Room	18'-7"*	9'-10"*	4"			M	FW	K				67									OP-1, * MFR TO VERIFY		13
100.38A	Conference Room	5'-0"	*	*	X		M		F				24									3, *Door Size 3'-0"		13
100.38B	Conference Room	32'-10"	9'-10"	4"	X		AL	FW	K				67									OP-2, * MFR TO VERIFY		13
100.38C	Conference Room	21'-0"	9'-10"	4"	X		M		K				67									OP-1, * MFR TO VERIFY		13
100.39A	Conference Gathering	6'-0"	9'-0"	*		X		FF	D				12				AL	AL	AL			3, 6, 8, 9		

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.41A	Electrical	*	7'-0"	*	X		HM	PTD	A		60-MIN		27	HM		C	C				3, 9	
100.41B	Electrical	*	*	*	X				A				28	HM							3	
100.42A	Chair Storage	6'-0"	*	*		X							29							X	1, 2, 14	
100.43A	Can Wash	*	7'-0"		X		HM	PTD	A				30	HM		C	C			X	14, 17	
100.44A	Relief Fan Room	*	7'-0"	*	X		HM	PTD	A				31	HM		C	C					13
100.44B	Relief Fan Room	10'-0"	10'-0"	2"	X		OH	PC	I				67									13
100.45A	Generator	*	7'-0"	*	X		HM	PTD	A		90-MIN		27	HM		C	C					11
100.46A	Loading Dock / Recycling / Compactor	11'-10"	7'-0"	2"	X		OH	PC	I				67								15	13
100.46B	Loading Dock / Recycling / Compactor	13'-6"	7'-0"	2"	X		OH	PC	I				67								15	13
100.46C	Loading Dock / Recycling / Compactor	11'-10"	7'-0"	2"	X		OH	PC	I				67								15	13
100.47A	Shipping & Receiving	6'-0"	7'-0"	*		X	HM		A				32	HM		C	C			X	2, 3	
100.47B	Shipping & Receiving	4'-0"	7'-0"	*	X		HM	PTD	A				33	HM	PTD	C	C			X	1, 9, 11	
100.50A	Dry Good Storage	3'-6"	7'-0"	*	X		HM	PTD	A				34	HM						X	2	
100.51A	Maintenance Storage	3'-6"	*	*	X				B				35							X		
100.51B	Maintenance Storage	3'-6"	7'-0"	*	X		HM	PTD	C				36	HM	PTD	C	C			X		
100.52A	Housekeeping	3'-6"	*	*	X				A				35	HM	PTD					X		
100.52B	Housekeeping	3'-6"	7'-0"	*	X				A				36	HM	PTD					X		
100.53A	Mail Room	3'-6"	*	*	X				B				35							X		
100.53B	Mail Room	3'-6"	7'-0"	*	X		HM	PTD	C				37	HM	PTD	C	C			X		
100.54A	Air Handler Room	6'-0"	*	*		X							38	HM	PTD	C	C					13
100.55A	Non-Rated Corridor	7'-4"	*	*		X	TD	PTD	A				5	HM	PTD						2, 4, 10, 12	13

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.56A	I.S. Room	*	*	*	X				A				17									
100.57A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
100.58A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
100.59A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
100.60A	Credit Union	6'-0"	9'-0"	*		X	AL	FF	D				12	AL	FF						3, 6, 8, 9	
100.60B	Credit Union	*	*	*		X			B				40								1, 3, 6, 9	
100.61A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.62A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.63A	Storage	*	*	*	X				A				41								2	
100.64A	Employment Center	6'-0"	9'-0"	*		X	AL	FF	D				12	AL	FF	AL	AL	AL			3, 6, 8, 9	
100.64B	Employment Center	*	*	*	X				B				14								1, 11	
100.65A	Toilet	*	*	*	X				A				21								16	
100.66A	Employment Services	*	9'-0"	X	X				B				42									
100.66B	Employment Services	*	9'-0"	X	X				B				44									
100.67A	Interview 1	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
100.68A	Interview 2	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
100.69A	Interview 3	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
100.70A	Interview 4	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
100.71A	Interview 5	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
100.73A	Women's Toilet	*	*	*	X				A				16							X	5	
100.76A	Men's Toilet Room	*	*	*	X				A				16							X	5	

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.79A	Non-Rated Corridor	6'-0"	7'-0"	*		X	AL	FF	D				46	CL	FF						1, 3, 6, 9, 12	
100.81AA	Vestibule	*	*	*	X				A		90-MIN		47	HM	PTD					X	5	
100.81AB	Vestibule	*	*	*	X				A		90-MIN		39	HM	PTD					X		11
100.82A	Employment Center	6'-0"	9'-0"	*		X		FF	D				48	HM	PTD						3, 9	13
100.82B	Employment Center	*	*	*	X		AL		B				49	AL							1, 8, 11	
100.83A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.84A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.85A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.86A	Storage	*	*	*	X				A				17									
100.87A	Printer Copier Break	*	*	*	X				B				43								1, 11	
100.88A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.89A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.90A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.91A	Confrence	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
EP-1B	Stair 1	3'-6"	*	*	X				B		90-MIN		50	HM	PTD						1, 3, 12	
EP-2B	Stair 2	3'-6"	*	*	X				B		90-MIN		50	HM	PTD						1, 3, 5, 12, 13	
EP-3A	Exit Passageway	6'-0"	9'-0"	*		X	AL	FF	D				46								1, 3, 6, 9, 12, 13	11
EP-3B	Elevator Lobby	6'-0"	7'-0"	*		X	TD	PTD	B		90-MIN		5	HM	PTD						1, 2, 4, 10, 12	13
200.01A	Work Room	*	*	*	X				B				19									
200.03A	I.S. Room	*	*	*	X				A				52									
200.04A	Storage	*	*	*	X				A				52									

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
200.05A	Electrical	*	*	*	X				A				52									
200.06A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.07A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.08A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.08B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
200.09A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.10A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
200.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
200.12A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.13A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.14A	Electrical	*	*	*	X				A				52									
200.15A	Storage	*	*	*	X				A				52									
200.16A	I.S. Room	*	*	*	X				A				52									
200.18A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.19A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.20A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
200.21A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.23A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.24A	Storage Supply	*	*	*	X				A				55									
200.25A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
200.26A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
200.27A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
200.29A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.30A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.31A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.32A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.33A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
200.34A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.35A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.36A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.38A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
200.39A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
200.40A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
200.41A	Storage Supply	*	*	*	X				A				55										
200.42A	Break Room	10'-8"	*	*	X		AL	FF	G				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
200.44A	Training Room	5'-0"	*	*	X				F				23									*Door Size 3'-0"	11
200.44B	Training Room	24'-8"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
200.45A	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11
200.46A	Open Office Space	5'-0"	*	*	X				F				23									2, 3, *Door Size 3'-0"	11
200.47A	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11
200.47B	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
200.48A	Open Office Space	5'-0"	*	*	X				F				56								2, 3, *Door Size 3'-0"	11
200.48B	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.48C	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.48D	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.85A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.86A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.87A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.88A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.89A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.90A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.91A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.92A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.93A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
EP-1C	Stair 1	3'-6"	*	*	X				A		90-MIN		57	HM	PTD						1, 2, 3, 4	
EP-2C	Stair 2	3'-6"	*	*	X				A		90-MIN		57	HM	PTD						1, 2, 3, 4	
300.01A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.02A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.03A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.04A	Storage Supply	*	*	*	X				A				55									
300.06A	I.S.	*	*	*	X				A				52									
300.07A	Storage	*	*	*	X				A				52									
300.08A	Electrical	*	*	*	X				A				52									

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order	
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP			
300.09A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.10A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.11A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11	
300.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13	
300.12A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11	
300.13A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11	
300.14A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11	
300.14B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13	
300.15A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.16A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.17A	Electrical	*	*	*	X				A				52											
300.18A	Storage Supply	*	*	*	X				A				52											
300.19A	I.S.	*	*	*	X				A				52											
300.21A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.22A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.23A	Break Room	12'-8"	*	*	X		AL	FF	H				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11	
300.24A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.25A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.26A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11	
300.27A	Storage Supply	*	*	*	X				A				55											
300.28A	Housekeeping	*	*	*	X				A				39		HM	PTD					X			
300.29A	Men's Toilet	3'-6"	*	*	X				A				16								X	5		

Doors															Frames								
		Size			Description										Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
300.30A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
300.32A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.33A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.34A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.35A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.36A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
300.37A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.38A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.39A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.41A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
300.42A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
300.43A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
300.44A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.45A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.46A	Break Room	12'-8"	*	*	X		AL	FF	H				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
EP-1D	Stair 1	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
EP-2D	Stair 2	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
400.01A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.02A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.03A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.04A	Storage Supply	*	*	*	X				A				55										
400.06A	I.S.	*	*	*	X				A				52										

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
400.07A	Storage	*	*	*	X				A				52									
400.08A	Electrical	*	*	*	X				A				52									
400.09A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.10A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
400.12A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.13A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
400.14A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.14B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
400.15A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.16A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.17A	Electrical	*	*	*	X				A				52									
400.18A	Storage Supply	*	*	*	X				A				52									
400.19A	I.S.	*	*	*	X				A				52									
400.21A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.23A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
400.24A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.25A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.26A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.27A	Storage Supply	*	*	*	X				A				55									
400.28A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
400.29A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
400.30A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
400.32A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.33A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.34A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.35A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.36A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
400.37A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.38A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.39A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.41A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
400.42A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
400.43A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
400.44A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.45A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.46A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
400.49A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.49B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.50A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.50B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.51A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.51B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.52A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
400.52B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.53A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.53B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.54A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.54B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.55A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.55B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.56A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.56B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.57A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.57B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.58A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.58B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.59A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.59B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.60A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.60B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
EP-1E	Stair 1	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
EP-2E	Stair 2	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
500.01A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.02A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.03A	Storage Supply	*	*	*	X				A				53									
500.05A	I.S.	*	*	*	X				A				52									
500.06A	Storage	*	*	*	X				A				52									

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
500.07A	Electrical	*	*	*	X				A				52									
500.08A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.09A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.10A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
500.10B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
500.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
500.12A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
500.13A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
500.13B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
500.14A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.15A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.16A	Electrical	*	*	*	X				A				52									
500.17A	Storage	*	*	*	X				A				52									
500.18A	I.S.	*	*	*	X				A				52									
500.20A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.21A	Break Room	8'-0"	*	*	X		AL	FF	G				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
500.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.23A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.24A	Storage Supply	*	*	*	X				A				55									
500.25A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
500.26A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
500.27A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
500.29A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.30A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
500.31A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		Remarks		Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP				
500.32A	Conference	5'-0"	*	*	X				F				45										*Door Size 3'-0"		11
500.33A	Storage / Work Room	5'-0"	*	*	X				F				19										*Door Size 3'-0"		11
500.34A	Conference	5'-0"	*	*	X				F				45										*Door Size 3'-0"		11
500.35A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.36A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.38A	Men's Toilet	3'-6"	*	*	X				A				16									X	5		
500.39A	Women's Toilet	3'-6"	*	*	X				A				16									X	5		
500.40A	Housekeeping	*	*	*	X				A				39		HM	PTD						X			
500.41A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.42A	Break Room	8'-0"	*	*	X		AL	FF	G				54		AL	FF	AL	AL					6, *Door Size 3'-0"		11
500.43A	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		
500.43B	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		
500.43C	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		11
500.44A	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		11
500.44B	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		
500.44C	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL				6		
500.45A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.45B	Office	5'-0"	2'-0"	*					L														RELITE ONLY		
500.46A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.46B	Office	5'-0"	2'-0"	*					L														RELITE ONLY		
500.47A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.47B	Office	5'-0"	2'-0"	*					L														RELITE ONLY		
500.48A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11
500.48B	Office	5'-0"	2'-0"	*					L														RELITE ONLY		
500.49A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"		11

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
500.49B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
EP-1F	Stair 1	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
EP-2F	Stair 2	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
600.01A	CONFERENCE	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.03A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.04A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				60	HM	PTD						1, 2, 3,9,12	
600.05A	I.S.	*	*	*	X				A				52									
600.06A	Storage	*	*	*	X				A				52									
600.07A	Electrical	*	*	*	X				A				52									
600.08A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.09A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.10A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.10B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
600.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.12A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
600.13A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.13B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
600.14A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.15A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.16A	Electrical	*	*	*	X				A				52									
600.17A	Storage	*	*	*	X				A				52									
600.18A	I.S.	*	*	*	X				A				52									

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
600.20A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.21A	Break Room	8'-0"	*	*	X		AL	FF	G				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
600.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.23A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.24A	Storage Supply	*	*	*	X				A				55									
600.25A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
600.26A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
600.27A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
600.29A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.30A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.31A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.32A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.33A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
600.34A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.35A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.36A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.38A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
600.39A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
600.40A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
600.41A	Storage Supply	*	*	*	X				A				55									
600.42A	Break Room	8'-0"	*	*	X		AL	FF	G				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
600.44A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
600.45A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.46A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.47A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.48A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.49A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.54A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.55A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.56A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.57A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.58A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.59A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.70A	Alcove	5'-0"	*	*	X				F				61								1, 3, 4, 7, *Door Size 3'-0"	11
600.70B	Alcove	3'-8"	*	*	X		AL	FF	D				59	AL	FF	AL	AL				6, 9	
600.71A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.72A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.74A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.74B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.75A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.75B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.76A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.76B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.77A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.77B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.78A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.78B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
600.79A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.79B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.81A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.82A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.83A	Office	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.84A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.85A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.86A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.87A	Open Office Space	5'-0"	*	*	X				F				42								*Door Size 3'-0"	11
600.88A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.89A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.90A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.91A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.92A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.93A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.95A	Office	5'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.95B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.96A	Office	5'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.96B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
600.97A	Office	5'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.97B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
EP-1G	Stair 1	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
EP-2G	Stair 2	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
700.01A	Penthouse	3'-6"	7'-0"	*	X		HM	PTD	A				62	HM	PTD	MP	MP	MP			24x18 louvers MECHANICAL	8
700.02A	Penthouse	3'-6"	7'-0"	*	X		HM	PTD	A				62	HM	PTD	MP	MP	MP			24x18 louvers MECHANICAL	8
EP-1	Stair 1	*	*	*	X				A		90-MIN		63	HM	PTD						2	8

Remarks

1. Card Reader
2. Punch Lock/Single point entry
3. Exit Device
4. Hold Open
5. Push / Pull with Closer
6. Alum Storefront
7. Remote Release
8. Auto Sliding Glass Door per Spec Sect. 84229
9. I.C. Core
10. Recessed Panic
11. Electronic Stike
12. Electronic Latch Retraction
13. Rated Glazing
14. 180° Swing
15. Motor Operated
16. Privacy Latch with Indicator
17. Louver
18. Store Room Lockset
19. Double Acting Hinges

Abbreviations:

AL	Aluminum	TM	Timely Pre-Finished	PL	Plastic Laminate	P	Pair	STL	Steel
FF	Factory Finish	PC	Powder Coated	GL	Glass	M	Multi-leaf	SSTL	Stainless Steel
HM	Hollow Metal	PTD	Painted	S	Single	ST	Stained	AC	Acrovyn
OH	Overhead Coiling	CL	Chainlink	TD	Total Door	FW	Fabric Wrap	C	Concrete/CMU or Brick
SG	Security Grille	GAL	Galvanized	MP	Metal Panel	DAES	Double Acting E2 Swing		
OP	Operable Partition								

Doors														Frames							Remarks	Field Order
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
SECTION 080001 PS - DOOR SCHEDULE																						
LT2.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT2.01B	Elevator Lobby	*	7'-0"	*	X		HM	PTD	B		90-MIN		3	HM	PTD	C	C				18	
LT2.02A	Storage	4'-0"	7'-0"	*	X		HM	PTD	A				36	HM	PTD	C	C				18	
LT1.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		65	HM	PTD	C	C				3 (needs ovrhd door stop)	
LT1.02A	Stair 3	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT1.03A	Mechanical	4'-0"	7'-0"	-	X		C L	GAL	J				64	CL	GAL	C	C					
LT1.04A	Elevator Lobby	11'-8"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	
LT1.05A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
LT1.06A	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
LT1.06B	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
T1.01A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	
T1.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T2.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T3.03A	Elevator Equipment	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C				17	
T3.04A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T4.02A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	
T5.01A	Elevator Lobby	11'-4"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	

Remarks

1. Card Reader
2. Punch Lock/Single point entry
3. Exit Device
4. Hold Open
5. Push / Pull with Closer
6. Alum Storefront
7. Remote Release
8. Auto Sliding Glass Door per Spec Sect. 84229
9. I.C. Core
10. Recessed Panic
11. Electronic Stike
12. Electronic Latch Retraction
13. Rated Glazing
14. 180° Swing
15. Motor Operated
16. Privacy Latch with Indicator
17. Louver
18. Store Room Lockset
19. Double Acting Hinges

Abbreviations:

AL	Aluminum	TM	Timely Pre-Finished	PL	Plastic Laminate	P	Pair	STL	Steel
FF	Factory Finish	PC	Powder Coated	GL	Glass	M	Multi-leaf	SSTL	Stainless Steel
HM	Hollow Metal	PTD	Painted	S	Single	ST	Stained	AC	Acrovyn
OH	Overhead Coiling	CL	Chainlink	TD	Total Door	FW	Fabric Wrap	C	Concrete/CMU or Brick
SG	Security Grille	GAL	Galvanized	MP	Metal Panel	DAES	Double Acting E2 Swing		
OP	Operable Partition								

SECTION 080000 A - DOOR / RELITE SCHEDULE

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
EP-1A	Stair 1	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C			X	3, 9, 13	
EP-2A	Stair 2	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C			X	3, 9, 13	
LL.01A	Mechanical Room	*	7'-0"	*	X		C L	GAL	J				2	CL	GAL	C	C			X		
LL.02A	I.S. Room	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.03A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.03B	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.04A	Elevator Control	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.05A	Water Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		3	HM	PTD	C	C			X		8
LL.06A	Lower Level Parking	21'-6"	*	2"	X		OH	PC	I		180-MIN		67	STL	GAL	C	C				4,7, 15	13
LL.06B	Lower Level Parking	21'-6"	*	2"	X		OH	PC	I		180-MIN		67	STL	GAL	C	C				4,7, 15	13
LL.07A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.07B	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				4	HM	PTD	C	C			X	1, 3, 9, 12	
LL.08A	Elevator Control	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C			X		
LL.09A	Storage	6'-0"	7'-0"	*		X	HM	PTD	A		60-MIN		6	HM	PTD	C	C			X		
LL.10A	Electrical Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		7	HM	PTD	C	C			X	3, 9, 14	8
LL.11A	Emerg Electric Room	*	7'-0"	*	X		HM	PTD	A		90-MIN		7	HM	PTD	C	C			X	3, 9, 14	8
100.01A	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; **See also spec section 084229**	13
100.01B	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; **See also spec section 084229**	13
100.01C	Vestibule	12'-0"	9'-0"	*		X	AL	SF	E				8	AL	FF						6, 8, *Clear Width 5'-10"; **See also spec section 084229**	13
100.02A	Lobby	6'-0"	9'-0"	*		X	AL	SF	D				9	AL	FF						6, 3	
100.02B	Lobby	6'-0"	9'-0"	*		X	AL	SF	D				9	AL	FF						6, 3	

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.02C	Lobby	7'-4"	8'-0"	*		X	HM		N				10	HM							1, 3, 4, 7	
100.04A	Security Office	*	*	*	X				C				11								2	
100.06A	Café	6'-0"	9'-0"	*		X	AL	FF	D				12	AL	FF	AL	AL				3, 6, 8, 9	
100.06B	Café	*	*	2"	X		DAES		B				67	HM	PTD				X	X		13
100.06C	Café	6'-0"	9'-0"	*		X	AL	FF	D				12	AL	FF	AL	AL				3, 6, 8, 9	
100.07A	Servery	*	*	*	X				A				13	HM	PTD						1, 3	
100.07B	Servery	*	*	2"	X		DAES		B				67	HM	PTD				X	X		13
100.07C	Servery	*	*	2"	X		DAES		B				67	HM	PTD				X	X		13
100.08A	Food Prep	*	*	*	X				B				14								1, 2	
100.10A	Housekeeping	*	*	*	X				A				15	HM	PTD							
100.13A	Non-Rated Corridor	4'-0"	*	*	x		TD	PTD	A				5A	HM	PTD						2, 4, 10, 12	13
100.14A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
100.15A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
100.16A	Housekeeping	*	*	*	X				A		60-MIN		17	HM	PTD					X		8
100.17A	Elevator Lobby	*	*	*	X				A				18	HM	PTD						1, 3	
100.19A	Small Conference	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
100.20A	Reflection	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
100.21A	Non-Rated Corridor	*	*	*	X				A				20								1, 3	
100.23A	Mother's	*	*	*	X				A				21								16	
100.24A	Toilet	*	*	*	X				A				21								16	
100.25A	Sick Room	*	*	*	X				A				21								16	
100.26A	Café Office	*	*	*	X				A				22									

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.27A	Training Office	*	*	*	X				A				22									
100.28A	Training Office	*	*	*	X				A				23									
100.29A	Non-Rated Corridor	4'-0"	*	*	x		TD	PTD	A				67	HM	PTD						2, 4, 10, 12	13
100.30A	Training Room	*	*	*	X				B				23									
100.30B	Training Room	29'-2"	10'-0"	4"	X		M	FW	K				5									
100.31A	Training Room	*	*	*	X				B				23									
100.33A	Conference Room	5'-0"	*	*	X				F				24								3, *Door Size 3'-0"	13
100.33B	Conference Room	32'-4"	9'-10"*	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
100.34A	Conference Room	5'-0"	*	*	X				F				24								3, *Door Size 3'-0"	13
100.34B	Conference Room	32'-4"	9'-10"*	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
100.35A	Conference Room	5'-0"	*	*	X				F				24								3, *Door Size 3'-0"	13
100.35B	Conference Room	6'-0"	9'-0"	*		X	AL	FF	D				12	AL	FF	AL	AL	AL			3, 6, 8, 9	8
100.36A	Conference Room	5'-0"	*	*	X				F				24								3, *Door Size 3'-0"	13
100.36B	Conference Room	32'-10"	9'-10"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
100.36C	Conference Room	26'-2"	9'-10"	4"	X		M	FW	K				67								OP-1, * MFR TO VERIFY	13
100.36D	Conference Room	6'-0"	9'-0"			X	AL	FF	D				12	AL	FF	AL	AL	AL			3, 6, 8, 9	8
100.37A	Conference Room	5'-0"	*	*	X				F				24								3, *Door Size 3'-0"	13
100.37B	Conference Room	18'-7"*	9'-10"*	4"			M	FW	K				67								OP-1, * MFR TO VERIFY	13
100.38A	Conference Room	5'-0"	*	*	X		M		F				24								3, *Door Size 3'-0"	13
100.38B	Conference Room	32'-10"	9'-10"	4"	X		AL	FW	K				67								OP-2, * MFR TO VERIFY	13
100.38C	Conference Room	21'-0"	9'-10"	4"	X		M		K				67								OP-1, * MFR TO VERIFY	13
100.39A	Conference Gathering	6'-0"	9'-0"	*		X		FF	D				12			AL	AL	AL			3, 6, 8, 9	

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.41A	Electrical	*	7'-0"	*	X		HM	PTD	A		60-MIN		27	HM		C	C				3, 9	
100.41B	Electrical	*	*	*	X				A				28	HM							3	
100.42A	Chair Storage	6'-0"	*	*		X							29							X	1, 2, 14	
100.43A	Can Wash	*	7'-0"		X		HM	PTD	A				30	HM		C	C			X	14, 17	
100.44A	Relief Fan Room	*	7'-0"	*	X		HM	PTD	A				31	HM		C	C					13
100.44B	Relief Fan Room	10'-0"	10'-0"	2"	X		OH	PC	I				67									13
100.45A	Generator	*	7'-0"	*	X		HM	PTD	A		90-MIN		27	HM		C	C					11
100.46A	Loading Dock / Recycling / Compactor	11'-10"	7'-0"	2"	X		OH	PC	I				67								15	13
100.46B	Loading Dock / Recycling / Compactor	13'-6"	7'-0"	2"	X		OH	PC	I				67								15	13
100.46C	Loading Dock / Recycling / Compactor	11'-10"	7'-0"	2"	X		OH	PC	I				67								15	13
100.47A	Shipping & Receiving	6'-0"	7'-0"	*		X	HM		A				32	HM		C	C			X	2, 3	
100.47B	Shipping & Receiving	4'-0"	7'-0"	*	X		HM	PTD	A				33	HM	PTD	C	C			X	1, 9, 11	
100.50A	Dry Good Storage	3'-6"	7'-0"	*	X		HM	PTD	A				34	HM						X	2	
100.51A	Maintenance Storage	3'-6"	*	*	X				B				35							X		
100.51B	Maintenance Storage	3'-6"	7'-0"	*	X		HM	PTD	C				36	HM	PTD	C	C			X		
100.52A	Housekeeping	3'-6"	*	*	X				A				35	HM	PTD					X		
100.52B	Housekeeping	3'-6"	7'-0"	*	X				A				36	HM	PTD					X		
100.53A	Mail Room	3'-6"	*	*	X				B				35							X		
100.53B	Mail Room	3'-6"	7'-0"	*	X		HM	PTD	C				37	HM	PTD	C	C			X		
100.54A	Air Handler Room	6'-0"	*	*		X							38	HM	PTD	C	C					13
100.55A	Non-Rated Corridor	7'-4"	*	*		X	TD	PTD	A				5	HM	PTD						2, 4, 10, 12	13

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order		
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP				
100.56A	I.S. Room	*	*	*	X				A				17												
100.57A	Women's Toilet	3'-6"	*	*	X				A				16								X	5			
100.58A	Housekeeping	*	*	*	X				A				39		HM	PTD					X				
100.59A	Men's Toilet	3'-6"	*	*	X				A				16								X	5			
100.60A	Credit Union	6'-0"	9'-0"	*		X	AL	FF	D				12		AL	FF						3, 6, 8, 9			
100.60B	Credit Union	*	*	*		X			B				40									1, 3, 6, 9			
100.61A	Office	5'-0"	*	*	X				F				22									*Door Size 3'-0"	11		
100.62A	Office	5'-0"	*	*	X				F				22									*Door Size 3'-0"	11		
100.63A	Storage	*	*	*	X				A				41									2			
100.64A	Employment Center	6'-0"	9'-0"	*		X	AL	FF	D				12		AL	FF	AL	AL	AL			3, 6, 8, 9			
100.64B	Employment Center	*	*	*	X				B				14									1, 11			
100.65A	Toilet	*	*	*	X				A				21									16			
100.66A	Employment Services	*	9'-0"	X	X				B				42												
100.66B	Employment Services	*	9'-0"	X	X				B				44												
100.67A	Interview 1	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11		
100.68A	Interview 2	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11		
100.69A	Interview 3	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11		
100.70A	Interview 4	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11		
100.71A	Interview 5	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11		
100.73A	Women's Toilet	*	*	*	X				A				16								X	5			
100.76A	Men's Toilet Room	*	*	*	X				A				16								X	5			

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
100.79A	Non-Rated Corridor	6'-0"	7'-0"	*		X	AL	FF	D				46	CL	FF						1, 3, 6, 9, 12	
100.81AA	Vestibule	*	*	*	X				A		90-MIN		47	HM	PTD					X	5	
100.81AB	Vestibule	*	*	*	X				A		90-MIN		39	HM	PTD					X		11
100.82A	Employment Center	6'-0"	9'-0"	*		X		FF	D				48	HM	PTD						3, 9	13
100.82B	Employment Center	*	*	*	X		AL		B				49	AL							1, 8, 11	
100.83A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.84A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.85A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.86A	Storage	*	*	*	X				A				17									
100.87A	Printer Copier Break	*	*	*	X				B				43								1, 11	
100.88A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.89A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.90A	Office	5'-0"	*	*	X				F				22								*Door Size 3'-0"	11
100.91A	Confrence	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
EP-1B	Stair 1	3'-6"	*	*	X				B		90-MIN		50	HM	PTD						1, 3, 12	
EP-2B	Stair 2	3'-6"	*	*	X				B		90-MIN		50	HM	PTD						1, 3, 5, 12, 13	
EP-3A	Exit Passageway	6'-0"	9'-0"	*		X	AL	FF	D				46								1, 3, 6, 9, 12, 13	11
EP-3B	Elevator Lobby	6'-0"	7'-0"	*		X	TD	PTD	B		90-MIN		5	HM	PTD						1, 2, 4, 10, 12	13
200.01A	Work Room	*	*	*	X				B				19									
200.03A	I.S. Room	*	*	*	X				A				52									
200.04A	Storage	*	*	*	X				A				52									

Doors														Frames										
		Size			Description									Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
200.05A	Electrical	*	*	*	X				A				52									
200.06A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.07A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.08A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.08B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
200.09A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.10A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
200.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
200.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
200.12A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.13A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.14A	Electrical	*	*	*	X				A				52									
200.15A	Storage	*	*	*	X				A				52									
200.16A	I.S. Room	*	*	*	X				A				52									
200.18A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.19A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.20A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
200.21A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.23A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.24A	Storage Supply	*	*	*	X				A				55									
200.25A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
200.26A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
200.27A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
200.29A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.30A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.31A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.32A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.33A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
200.34A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
200.35A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.36A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
200.38A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
200.39A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
200.40A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
200.41A	Storage Supply	*	*	*	X				A				55										
200.42A	Break Room	10'-8"	*	*	X		AL	FF	G				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
200.44A	Training Room	5'-0"	*	*	X				F				23									*Door Size 3'-0"	11
200.44B	Training Room	24'-8"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
200.45A	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11
200.46A	Open Office Space	5'-0"	*	*	X				F				23									2, 3, *Door Size 3'-0"	11
200.47A	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11
200.47B	Training Room	5'-0"	*	*	X				F				23									3, *Door Size 3'-0"	11

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
200.48A	Open Office Space	5'-0"	*	*	X				F				56								2, 3, *Door Size 3'-0"	11
200.48B	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.48C	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.48D	Open Office Space	5'-0"	*	*	X				F				23								3, *Door Size 3'-0"	11
200.85A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.86A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.87A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.88A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.89A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.90A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.91A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.92A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
200.93A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
EP-1C	Stair 1	3'-6"	*	*	X				A		90-MIN		57	HM	PTD						1, 2, 3, 4	
EP-2C	Stair 2	3'-6"	*	*	X				A		90-MIN		57	HM	PTD						1, 2, 3, 4	
300.01A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.02A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.03A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.04A	Storage Supply	*	*	*	X				A				55									
300.06A	I.S.	*	*	*	X				A				52									
300.07A	Storage	*	*	*	X				A				52									
300.08A	Electrical	*	*	*	X				A				52									

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
300.09A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.10A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
300.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
300.12A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
300.13A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
300.14A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
300.14B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
300.15A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.16A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.17A	Electrical	*	*	*	X				A				52									
300.18A	Storage Supply	*	*	*	X				A				52									
300.19A	I.S.	*	*	*	X				A				52									
300.21A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.23A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
300.24A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.25A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.26A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
300.27A	Storage Supply	*	*	*	X				A				55									
300.28A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
300.29A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	

Doors															Frames										
		Size			Description										Desc.		Details								
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
300.30A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
300.32A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.33A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.34A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.35A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.36A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
300.37A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
300.38A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.39A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.41A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
300.42A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
300.43A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
300.44A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.45A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
300.46A	Break Room	12'-8"	*	*	X		AL	FF	H				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
EP-1D	Stair 1	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
EP-2D	Stair 2	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
400.01A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.02A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.03A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.04A	Storage Supply	*	*	*	X				A				55										
400.06A	I.S.	*	*	*	X				A				52										

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
400.07A	Storage	*	*	*	X				A				52										
400.08A	Electrical	*	*	*	X				A				52										
400.09A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.10A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.11A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
400.11B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
400.12A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
400.13A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
400.14A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
400.14B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
400.15A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.16A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.17A	Electrical	*	*	*	X				A				52										
400.18A	Storage Supply	*	*	*	X				A				52										
400.19A	I.S.	*	*	*	X				A				52										
400.21A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.22A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.23A	Break Room	12'-8"	*	*	X		AL	FF	H				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
400.24A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.25A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.26A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.27A	Storage Supply	*	*	*	X				A				55										
400.28A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
400.29A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
400.30A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
400.32A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.33A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.34A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.35A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.36A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
400.37A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
400.38A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.39A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.41A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
400.42A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
400.43A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
400.44A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.45A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.46A	Break Room	12'-8"	*	*	X		AL	FF	H				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
400.49A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.49B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.50A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.50B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.51A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
400.51B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
400.52A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
400.52B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.53A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.53B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.54A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.54B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.55A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.55B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.56A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.56B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.57A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.57B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.58A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.58B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.59A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.59B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
400.60A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
400.60B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
EP-1E	Stair 1	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
EP-2E	Stair 2	3'-6"	*	*	X				A		90-MIN		58		HM	PTD						2	
500.01A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.02A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.03A	Storage Supply	*	*	*	X				A				53										
500.05A	I.S.	*	*	*	X				A				52										
500.06A	Storage	*	*	*	X				A				52										

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
500.07A	Electrical	*	*	*	X				A				52										
500.08A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.09A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.10A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
500.10B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
500.11A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
500.12A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
500.13A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
500.13B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67									OP-2, * MFR TO VERIFY	13
500.14A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.15A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.16A	Electrical	*	*	*	X				A				52										
500.17A	Storage	*	*	*	X				A				52										
500.18A	I.S.	*	*	*	X				A				52										
500.20A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.21A	Break Room	8'-0"	*	*	X		AL	FF	G				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
500.22A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.23A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.24A	Storage Supply	*	*	*	X				A				55										
500.25A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
500.26A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
500.27A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
500.29A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.30A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.31A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP		
500.32A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
500.33A	Storage / Work Room	5'-0"	*	*	X				F				19									*Door Size 3'-0"	11
500.34A	Conference	5'-0"	*	*	X				F				45									*Door Size 3'-0"	11
500.35A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.36A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.38A	Men's Toilet	3'-6"	*	*	X				A				16								X	5	
500.39A	Women's Toilet	3'-6"	*	*	X				A				16								X	5	
500.40A	Housekeeping	*	*	*	X				A				39		HM	PTD					X		
500.41A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.42A	Break Room	8'-0"	*	*	X		AL	FF	G				54		AL	FF	AL	AL				6, *Door Size 3'-0"	11
500.43A	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	
500.43B	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	
500.43C	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	11
500.44A	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	11
500.44B	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	
500.44C	Open Space	*	*	*	X		AL	FF	D				59		AL	FF	AL	AL	AL			6	
500.45A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.45B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
500.46A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.46B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
500.47A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.47B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
500.48A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11
500.48B	Office	5'-0"	2'-0"	*					L													RELITE ONLY	
500.49A	Office	5'-0"	*	*	X				F				53									*Door Size 3'-0"	11

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	**Remarks**	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
500.49B	Office	5'-0"	2'-0"	*					L												RELITE ONLY	
EP-1F	Stair 1	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
EP-2F	Stair 2	3'-6"	*	*	X				A		90-MIN		58	HM	PTD						2	
600.01A	CONFERENCE	9'-0"	*	*	X				M				53								*Door Size 3'-0"	11
600.03A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.04A	Elevator Lobby	6'-0"	7'-0"	*		X	HM	PTD	B				60	HM	PTD						1, 2, 3,9,12	
600.05A	I.S.	*	*	*	X				A				52									
600.06A	Storage	*	*	*	X				A				52									
600.07A	Electrical	*	*	*	X				A				52									
600.08A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.09A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.10A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.10B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
600.11A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.12A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
600.13A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.13B	Conference	17'-6"	9'-4"	4"	X		M	FW	K				67								OP-2, * MFR TO VERIFY	13
600.14A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.15A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.16A	Electrical	*	*	*	X				A				52									
600.17A	Storage	*	*	*	X				A				52									
600.18A	I.S.	*	*	*	X				A				52									

Doors														Frames									
		Size			Description									Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	**Remarks**	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
600.20A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.21A	Break Room	8'-0"	*	*	X		AL	FF	G				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
600.22A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.23A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.24A	Storage Supply	*	*	*	X				A				55									
600.25A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
600.26A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
600.27A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
600.29A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.30A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.31A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.32A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.33A	Storage / Work Room	5'-0"	*	*	X				F				19								*Door Size 3'-0"	11
600.34A	Conference	5'-0"	*	*	X				F				45								*Door Size 3'-0"	11
600.35A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.36A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11
600.38A	Men's Toilet	3'-6"	*	*	X				A				16							X	5	
600.39A	Women's Toilet	3'-6"	*	*	X				A				16							X	5	
600.40A	Housekeeping	*	*	*	X				A				39	HM	PTD					X		
600.41A	Storage Supply	*	*	*	X				A				55									
600.42A	Break Room	8'-0"	*	*	X		AL	FF	G				54	AL	FF	AL	AL				6, *Door Size 3'-0"	11
600.44A	Office	5'-0"	*	*	X				F				53								*Door Size 3'-0"	11

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP			
600.45A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.46A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.47A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.48A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.49A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.54A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.55A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.56A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.57A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.58A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.59A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.70A	Alcove	5'-0"	*	*	X				F				61										1, 3, 4, 7, *Door Size 3'-0"	11
600.70B	Alcove	3'-8"	*	*	X		AL	FF	D				59		AL	FF	AL	AL					6, 9	
600.71A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.72A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.74A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.74B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.75A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.75B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.76A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.76B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.77A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.77B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.78A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.78B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	

Doors															Frames									
		Size			Description										Desc.		Details							
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group		PRE-FINISHED U.O.N.	Factory Finish U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate		Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG			Mat.	Fin.	J	H	T	FG	DP			
600.79A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.79B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.81A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.82A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.83A	Office	9'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.84A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.85A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.86A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.87A	Open Office Space	5'-0"	*	*	X				F				42										*Door Size 3'-0"	11
600.88A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.89A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.90A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.91A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.92A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.93A	Office	5'-0"	*	*	X				F				53										*Door Size 3'-0"	11
600.95A	Office	5'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.95B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.96A	Office	5'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.96B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
600.97A	Office	5'-0"	*	*	X				M				53										*Door Size 3'-0"	11
600.97B	Office	5'-0"	2'-0"	*					L														RELITE ONLY	
EP-1G	Stair 1	3'-6"	*	*	X				A		90-MIN		58		HM	PTD							2	
EP-2G	Stair 2	3'-6"	*	*	X				A		90-MIN		58		HM	PTD							2	

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8'-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	**Remarks**	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
700.01A	Penthouse	3'-6"	7'-0"	*	X		HM	PTD	A				62	HM	PTD	MP	MP	MP			24x18 louvers MECHANICAL	8
700.02A	Penthouse	3'-6"	7'-0"	*	X		HM	PTD	A				62	HM	PTD	MP	MP	MP			24x18 louvers MECHANICAL	8
EP-1	Stair 1	*	*	*	X				A		90-MIN		63	HM	PTD						2	8

700.01B 3° 7° * X HM PTD A 90MIN 26 HM PTD

Remarks

1. Card Reader
2. Punch Lock/Single point entry
3. Exit Device
4. Hold Open
5. Push / Pull with Closer
6. Alum Storefront
7. Remote Release
8. Auto Sliding Glass Door per Spec Sect. 84229
9. I.C. Core
10. Recessed Panic
11. Electronic Stike
12. Electronic Latch Retraction
13. Rated Glazing
14. 180° Swing
15. Motor Operated
16. Privacy Latch with Indicator
17. Louver
18. Store Room Lockset
19. Double Acting Hinges

[redacted]

Abbreviations:

AL	Aluminum	TM	Timely Pre-Finished	PL	Plastic Laminate	P	Pair	STL	Steel
FF	Factory Finish	PC	Powder Coated	GL	Glass	M	Multi-leaf	SSTL	Stainless Steel
HM	Hollow Metal	PTD	Painted	S	Single	ST	Stained	AC	Acrovyn
OH	Overhead Coiling	CL	Chainlink	TD	Total Door	FW	Fabric Wrap	C	Concrete/CMU or Brick
SG	Security Grille	GAL	Galvanized	MP	Metal Panel	DAES	Double Acting E2 Swing		
OP	Operable Partition								

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Protector Plate	Remarks	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
SECTION 080001 PS - DOOR SCHEDULE																						
LT2.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT2.01B	Elevator Lobby	*	7'-0"	*	X		HM	PTD	B		90-MIN		3	HM	PTD	C	C				18	
LT2.02A	Storage	[illegible]	7'-0"	*	X		HM	PTD	A				36	HM	PTD	C	C				18	
LT1.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		65	HM	PTD	C	C				3 (needs ovrhd door stop)	
LT1.02A	Stair 3	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT1.03A	Mechanical	4'-0"	7'-0"	-	X		C L	GAL	J				64	CL	GAL	C	C					
LT1.04A	Elevator Lobby	11'-8"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	
LT1.05A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
LT1.06A	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
LT1.06B	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
T1.01A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	
T1.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T2.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T3.03A	Elevator Equipment	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C				17	
T3.04A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T4.02A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E					AL	FF	C	C				6, 8	
T5.01A	Elevator Lobby	11'-4"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8	

Remarks

1. Card Reader
2. Punch Lock/Single point entry
3. Exit Device
4. Hold Open
5. Push / Pull with Closer
6. Alum Storefront
7. Remote Release
8. Auto Sliding Glass Door per Spec Sect. 84229
9. I.C. Core
10. Recessed Panic
11. Electronic Stike
12. Electronic Latch Retraction
13. Rated Glazing
14. 180° Swing
15. Motor Operated
16. Privacy Latch with Indicator
17. Louver
18. Store Room Lockset
19. Double Acting Hinges

Abbreviations:

AL	Aluminum	TM	Timely Pre-Finished	PL	Plastic Laminate	P	Pair
FF	Factory Finish	PC	Powder Coated	GL	Glass	M	Multi-leaf
HM	Hollow Metal	PTD	Painted	S	Single	ST	Stained
OH	Overhead Coiling	CL	Chainlink	TD	Total Door	FW	Fabric Wrap
SG	Security Grille	GAL	Galvanized	MP	Metal Panel	DAES	Double Acting E2 Swing
OP	Operable Partition						

STL	Steel	C	Concrete/CMU
SSTL	Stainless Steel		Brick
AC	Acrovyn		

Doors														Frames								
		Size			Description									Desc.		Details						
Door No.	Room Name	3'-0" U.O.N.	8-0" U.O.N.	1-3/4" U.O.N.	Single	Pair	Wood U.O.N.	PLAM U.O.N.	Door Type		Fire Door & Frame Label	Door Edge Guard	Hardware Group	PRE-FINISHED U.O.N.	Factory Fininsh U.O.N.	Gyp. Board on Metal Studs U.O.N.	Gyp. Board on Metal Studs U.O.N.		Frame Guard	Door Protector Kick Plate	**Remarks**	Field Order
		W	H	T	S	P	Mat	Fin.	Type		L	DEG		Mat.	Fin.	J	H	T	FG	DP		
SECTION 080001 PS - DOOR SCHEDULE																						
LT2.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT2.01B	Elevator Lobby	*	7'-0"	*	X		HM	PTD	B		90-MIN		3	HM	PTD	C	C				18	
LT2.02A	Storage	4'-0"	7'-0"	*	X		HM	PTD	A				36	HM	PTD	C	C				18	
LT1.01A	Stair 4	*	7'-0"	*	X		HM	PTD	B		90-MIN		65	HM	PTD	C	C				3 (needs ovrhd door stop)	
LT1.02A	Stair 3	*	7'-0"	*	X		HM	PTD	B		90-MIN		1	HM	PTD	C	C				3	
LT1.03A	Mechanical	4'-0"	7'-0"	-	X		C L	GAL	J				64	CL	GAL	C	C					
LT1.04A	Elevator Lobby	11'-8"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8; **See also spec section 084229**	
LT1.05A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
LT1.06A	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
LT1.06B	Bicycle Parking	3'-9"	7'-0"	-	X		C L	GAL	J				66	CL	GAL	C	C				INCLUDE LOCK BOX	11
T1.01A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8; **See also spec section 084229**	
T1.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T2.03A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T3.03A	Elevator Equipment	*	7'-0"	*	X		HM	PTD	A		60-MIN		3	HM	PTD	C	C				17	
T3.04A	Fire Sprinkler Riser	*	7'-0"	*	X		HM						17	GAL							2x4-1/2" Frame, 18	
T4.02A	Elevator Lobby	11'-6"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8: **See also spec section 084229**	
T5.01A	Elevator Lobby	11'-4"	7'-6"	*		X	AL	FF	E				8	AL	FF	C	C				6, 8; **See also spec section 084229**	

Remarks

1. Card Reader
2. Punch Lock/Single point entry
3. Exit Device
4. Hold Open
5. Push / Pull with Closer
6. Alum Storefront
7. Remote Release
8. Auto Sliding Glass Door per Spec Sect. 84229
9. I.C. Core
10. Recessed Panic
11. Electronic Stike
12. Electronic Latch Retraction
13. Rated Glazing
14. 180° Swing
15. Motor Operated
16. Privacy Latch with Indicator
17. Louver
18. Store Room Lockset
19. Double Acting Hinges

Note

For Hardware Group 66 the door always open from egress side

Abbreviations:

AL	Aluminum	TM	Timely Pre-Finished	PL	Plastic Laminate	P	Pair	STL	Steel
FF	Factory Finish	PC	Powder Coated	GL	Glass	M	Multi-leaf	SSTL	Stainless Steel
HM	Hollow Metal	PTD	Painted	S	Single	ST	Stained	AC	Acrovyn
OH	Overhead Coiling	CL	Chainlink	TD	Total Door	FW	Fabric Wrap	C	Concrete/CMU or Brick
SG	Security Grille	GAL	Galvanized	MP	Metal Panel	DAES	Double Acting E2 Swing		
OP	Operable Partition								

DIVISION 8 – OPENINGS

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Shop Drawings.
B. Comply with NFPA 80 for fire-rated door assemblies. Provide assemblies identical to those tested per ASTM E 152, and labeled and listed by UL, Intertek Testing Services (ITS), or another testing and inspecting agency acceptable to authorities having jurisdiction
C. Comply with ANSI/SDI A250.8.
D. Fire-Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per NFPA 252 or UL 10C.

1. At stairs and exit passageways, provide doors that have a temperature rise rating of 450 deg F.

E. Smoke-Control Door Assemblies: Comply with UL 1784.
F. All components of a door assembly requiring the 'S' label shall bear an approved label showing the rating, followed by the letter 'S,' the name of the manufacturer and the identification of the service conducting the inspection of materials and workmanship at the factory during fabrication and assembly.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheets: ASTM A 1008/A 1008M, suitable for exposed applications.
B. Hot-Rolled Steel Sheets: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects.
C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, with G40 or A40 metallic coating.
D. Frame Anchors: ASTM A 591/A 591M, 4OZ coating designation; mill phosphatized.

1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.2 HOLLOW METAL DOORS AND FRAMES

A. Products:

1. Ceco, Republic, Steelcraft, Fleming, Curries or approved.

B. Doors: Complying with ANSI 250.8 for level and model and ANSI A250.4 for physical-endurance level indicated, 1-3/4 inches thick unless otherwise indicated.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

1. Interior Doors: Level 2 and Physical Performance Level B (Heavy Duty)], Model 1 (Full Flush).
2. Exterior Doors: Level 3 and Physical Performance Level A (Extra Heavy Duty), Model 1 (Full Flush), metallic-coated steel sheet faces.
   a. Thermal-Rated (Insulated) Doors: Where indicated, provide doors with thermal-resistance value (R-value) of not less than R-10 when tested according to ASTM C 1363.
3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as door face sheets.

C. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.

1. Steel Sheet Thickness for Interior Doors: 0.053 inch.
2. Steel Sheet Thickness for Exterior Doors: 0.067 inch.
3. Fabricate interior frames with mitered or coped and continuously welded corners.
4. Fabricate exterior frames from metallic-coated steel sheet, with mitered or coped and continuously welded corners.
5. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
6. Frame Anchors: Not less than 0.042 inch thick.

D. Glazing Stops: Nonremovable stops on outside of exterior doors and on secure side of interior doors; screw-applied, removable, glazing stops on inside, fabricated from same material as door face sheet in which they are installed.
E. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.
F. Grout Guards: Provide where mortar might obstruct hardware operation.
G. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series standards.
H. Reinforce doors and frames to receive surface-applied hardware.
I. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install hollow metal frames to comply with ANSI/SDI A250.11.
   1. Fire-Rated Frames: Install according to NFPA 80.
B. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11.
C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer. Use galvanizing repair paint for metallic coated surfaces.

END OF SECTION 081113

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 081213 - PREFINISHED STEEL DOOR and WINDOW FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-rated and fire rated, shop pre-finished, site assembled steel frames.

1.2 SUBMITTALS FOR REVIEW

A. Product Data: Indicate frame configuration and finishes.
B. Shop Drawings: Indicate frame elevations, reinforcement required, and spacing, location of embosses for hardware, and finish.
C. Submit all required LEED documentation for credits noted in paragraph 1.3 per the submittal requirements outlined in Section 018113. ***Materials and Resources credit 4 – Recycled Content [minimum recycled content 5% post-consumer and 5% pre-consumer].***
D. Samples: Submit five (5) standard frame samples, illustrating factory finished frame colors and surface texture.

1.3 REGULATORY REQUIREMENTS

A. Fire Rated Frame Construction: Conform to UL 10B and 10C.
B. Installed Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.

1.4 DELIVERY, STORAGE, AND PROTECTION

A. Accept frames on site in manufacturer's box packaging with identification labels intact. Inspect for damage.
B. Do not open individual boxes until installation is to begin.

1.5 PROJECT CONDITIONS

A. Verify actual measurements/openings by field measurement prior to fabrication.
B. Coordinate the work with frame opening construction, door and hardware installation.
C. Where required, sequence installation to ensure concealed electric wire connections are achieved in an orderly and expeditious manner.

PART 2 PRODUCTS

2.1 FRAME MANUFACTURERS

A. Timely Industries, A Division of SDS Industries, Inc.
10241 Norris Avenue, Pacoima, CA, 91331-2292

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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Phone toll free: 800-247-6242 or local at 818-492-3500; Fax: 818-492-3530.
Web site: www.timelyframes.com.

B. Frames: Provide all frames for project from same manufacturer.

2.2 FRAMES

A. Frame Material: Cold rolled steel, for interior frames.
B. Frame Throat Opening: to suit finished wall thickness.
C. Frame Profile: Non-rated and fire rated: "TA-28" Aluminum Casing.
D. Side Light Frames (if indicated): Aluminum Casing to match Door Frame.

2.3 ACCESSORIES

A. Reinforcement Bracket for Closer: Regular arm closer, Model TA-10.
B. Reinforcement Brackets for Rim Exit Device: Model TA-12
C. Reinforcement Brackets for Door Guards: Model TA-10
D. Silencers: Vinyl, clear stick-on type.
E. Glass Stops: Model TA-14 removable rolled steel, shape, butted ends, countersink style and screws.
F. Fasteners: Drywall type.

2.4 FABRICATION

A. Casing Clips: Fabricate frames with factory applied heated treated clips.
B. Fabricate frames with hinge reinforcement plates secured in place.
C. Attach fire rated label to each fire-rated frame.
D. Silencers: Provide three (3) single silencers for single doors on strike side.

2.5 FINISH

A. Frame Units: Prefininshed with factory applied impact resistant, polyester baked enamel finish.
B. Casing: Steel: Prefinished with factory applied impact resistant, polyester baked enamel finish.
C. Primer: Primer Electro Galvanized.
D. Colors: Alumatone (SC108).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install frames in accordance with manufacturer's requirements.
B. Install Prefinished frames near end of the project after completing wall painting and wall coverings.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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C. Install frames using Certified Installers.
D. Coordinate installation of glass and glazing in glazed units.
E. Coordinate installation of frames with installation of hardware.
F. Touch-up blemishes on finished frames.

END OF SECTION 081213

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Quality Standard: WDMA I.S.1-A.
B. Forest Certification: Provide doors produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
C. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per NFPA 252 or UL 10C.

1. At stairs and exit passageways, provide doors that have a temperature rise rating of 450 deg F.

1.2 SUBMITTALS

A. Product data. Unless otherwise indicated, submit the following for each type of product provided under work of this Section:
B. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.
C. Submit all required LEED documentation for credits noted in paragraph 1.3 per the submittal requirements outlined in Section 018113. ***Materials and Resources credit 4 – Recycled Content [minimum recycled content 5% post-consumer and 5% pre-consumer] and Materials and Resources credit 7 – Certified Wood.***

PART 2 - PRODUCTS

2.1 DOOR CONSTRUCTION, GENERAL

A. WDMA I.S.1-A Performance Grade:

1. Extra Heavy Duty unless otherwise indicated.

B. Particleboard-Core Doors: Provide blocking in particleboard cores or provide structural composite lumber cores instead of particleboard cores for doors with exit devices or protection plates.
C. Fire-Protection-Rated Doors: Provide core specified or mineral core as needed to provide fire-protection rating indicated. Provide the following for mineral-core doors:

1. Composite blocking where required to eliminate through-bolting hardware.
2. Laminated-edge construction.
3. Formed-steel edges and astragals for pairs of doors.

2.2 FLUSH WOOD DOORS

A. Plastic-Laminate-Faced Doors (All Interior Doors Unless Otherwise Noted):

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

1. Interior Solid-Core Doors: Custom grade, five-ply, particleboard cores.
2. Plastic-Laminate: Nevamar PL-1; WC5581T – Matte.

B. Doors for Opaque Finish:

1. Interior Solid-Core Doors: Custom grade, five-ply, particleboard cores.

a. Finish: Painted – color TBD.

2.3 LIGHT FRAMES

A. Light Frames: Factory-painted steel frames.

1. At fire-rated doors provide factory-painted steel frames approved for use in doors of fire-protection rating indicated.
2. Field paint frames at both rated and non-rated doors the same color as painted door frames.

2.4 FABRICATION AND FINISHING

A. Factory fit doors to suit frame-opening sizes indicated and to comply with clearances specified.
B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.
C. Cut and trim openings to comply with referenced standards.

1. Trim light openings with moldings indicated.
2. Factory install glazing in doors indicated to be factory finished.

2.5 ACCESSORIES

A. Adhesives for site installation and factory fabrication:

1. Toxicity/IEQ: Comply with applicable regulations regarding toxic and hazardous materials, GS-36 for Commercial Adhesive.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install doors to comply with manufacturer's written instructions, WDMA I.S.1-A and as indicated.

1. Install fire-rated doors to comply with NFPA 80.

B. Clearances: As follows, unless otherwise indicated:

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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1. 1/8 inch at heads, jambs, and between pairs of doors.
2. 1/8 inch from bottom of door to top of decorative floor finish or covering.
3. Comply with NFPA 80 for fire-rated doors.

C. Repair, refinish, or replace factory-finished doors damaged during installation, as directed by Architect.

END OF SECTION 081416

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 083000 - ELEVATOR DOOR SMOKE CONTAINMENT SYSTEM

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Smoke detector activated elevator door smoke containment screen and control system designed to provide a tight-fitting, smoke- and draft-control assembly.

B. Products Supplied But Not Installed Under This Section:

1. End-of-line diode (3.9V, 2W). Installed at smoke detector to monitor the circuit.

1.02 REFERENCES

A. ICC Evaluation Service report ESR-1136

B. NFPA Codes and Standards:

1. 70 – National Electrical Code.
2. 105 – Recommended Practice for the Installation of Smoke-Control Door Assemblies.
3. 72-2002 and 2007 – National Fire Alarm Code

C. UBC 1997 Standard 7.210 (Part II) Test Standard for Smoke and draft control assemblies of the International Conference of Building Officials.

D. UL Standards:
1. 268 – Smoke Detectors for Fire Protective Signaling Systems.
2. 508 – Industrial Control Equipment.
3. 864 – Control Units for Fire Protective Signaling Systems.
4. 1784 – Air Leakage Tests for Door Assemblies.

1.03 SUBMITTALS

A. Reference Section 01330–Submittal Procedures; submit following items:

1. Product Data.
2. Shop Drawings: Include door width and height, jamb width, jamb and head projection, screen width, mounting height, and housing width. Show and identify related work performed under other sections of the specifications.
3. Quality Assurance/Control Submittals:

a. Qualifications:

1) Proof of manufacturer qualifications.
2) Proof of Installer qualifications.

b. Certifications: Copy of specified items.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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c. Manufacturer's installation instructions and testing procedures

B. Closeout Submittals: Reference Section 01780–Closeout Submittals; submit following items:

1. Operation and Maintenance Manual
2. Manufacturer's Warranties

1.04 QUALITY ASSURANCE

A. Overall Standards:

1. Manufacturer shall maintain a quality control program in accordance with ICBO-ES Acceptance Criteria AC 77.

B. Qualifications:

1. Manufacturer Qualifications: Minimum seven years experience in producing smoke containment systems of the type specified.
2. Installer Qualifications: Factory trained by manufacturer.

C. Certifications:

1. Manufacturer's ICC Evaluation Service report ESR-1136.
2. Testing Laboratory Label.
3. UL Listing.

D. Pre-Installation Meeting:

1. Schedule and convene a pre-installation meeting prior to commencement of field operations with representatives of the following in attendance: Owner, Architect, General Contractor, smoke containment system sub-contractor and electrical sub-contractor.
2. Review substrate conditions, requirements of related work, installation instructions, storage and handling procedures, and protection measures.
3. Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions.

1.05 WARRANTY

A. Time Period: One year from Date of Substantial Completion.
B. Conditions: Manufacturer's standard warranty form.

1.06 OWNER'S INSTRUCTIONS

A. Maintenance and Testing:

1. Perform minimum semi-annual maintenance and testing on each smoke containment system as required by the manufacturer's warranty, code agency evaluation reports, and as required by local authority having jurisdiction.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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2. Retain permanent record of tests.

B. Future Painting: Paint elevator door frame and/or auxiliary rails in accordance with Operation and Maintenance Manual.
C. Required Replacement: Smoke containment screen requires replacement following exposure to temperatures exceeding 200 degrees.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Smoke Guard Corporation
287 Maple Grove
Boise, Idaho 83704

Tel: (800) 574-0330
Fax: (208) 639-7851
E-mail: info@smokeguard.com
Website:

http://www.smokeguard.com/

B. Model 400

2.02 PERFORMANCE REQUIREMENTS

A. Air Leakage: Not to exceed 3 cfm per sf of door opening at 0.1 in water pressure differential at ambient temperature and 400 degrees F tested per IBC 2000 714.2.3 or per 1997 UBC Vol. 3, Standard 7-2, Part II.

2.03 COMPONENTS

A. Screen:

1. Film: Minimum 1 mil thick transparent polyimide film reinforced with minimum 100 denier Nomex yarn at .25 in each way.
2. Magnetic Strips: Flexible multi-pole strips attached to longitudinal edges of film with low modulus silicone adhesive.

B. Housing: 20 gauge, powder coated, cold rolled steel container with dust cover and door with concealed hinges. Housings are 55, 64, or 73" in length plus 1-1/2 inches for a junction box on the left side.

C. Auxiliary Rails:

1. Material: 16 gage ASTM A 240/240M, Type 430, ferritic stainless steel.
2. Size: 2 inches wide and depth as required to project beyond face of elevator door frame.

D. Rewind Motor: NFPA 70, 90v DC.
E. Release Mechanism: Comply with UL Standard No. 864.
F. Screen Rewind Switch: Include switch to rewind screen into housing.

2.04 IDENTIFICATION

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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A. Label each smoke containment system with following information:

1. Manufacturer's name.
2. Maximum leakage rating at specified pressure and temperature conditions.
3. Label of quality control agency.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates upon which work will be installed.

1. Verify related work performed under other sections is complete and in accordance with Shop Drawings.
2. Verify wall surfaces and elevator door frames are acceptable for installation of smoke containment system components.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.02 INSTALLATION

A. Install smoke containment system components in accordance with manufacturer's installation instructions.

3.03 FIELD QUALITY CONTROL

A. Field Test: Follow manufacturer's cycle test procedures.

1. Notify Owner's Representative, local Fire Marshal, alarm sub-contractor and [elevator sub-contractor] [elevator service company] minimum one week in advance of scheduled testing.
2. Complete maintenance service record.

3.04 CLEANING

A. Reference Section 01740–Cleaning.

3.05 DEMONSTRATION

A. Demonstrate required testing and maintenance procedures to Owner's Representative.

END OF SECTION 083000

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.
B. Fire-Rated Access Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing per the following:

1. Vertical Access Doors: NFPA 252 or UL 10B.
2. Horizontal Access Doors and Frames: ASTM E 119 or UL 263.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Manufacturers: Bilco, Milcor, Casco, Larsen, or approved.
B. Steel Sheets: ASTM A 1008/A 1008M or ASTM A 591/A 591M.
C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, with A60 or G60 coating.
D. Stainless-Steel Sheets: ASTM A 666, Type 304, with No. 4 directional satin finish.

2.2 ACCESS DOORS AND PANELS

A. Flush Access Doors and Frames with Exposed Trim: Prime-painted steel units.
B. Fire-Rated, Insulated, Flush Access Doors and Frames with Exposed Trim: Prime-painted steel, self-latching units with automatic closer.
C. Locks: Flush to finished surface, screw driver operated (coordinate with owner).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in ceilings and walls as required to provide access to mechanical, plumbing or electrical devices.
B. Install access doors and panels accurately in position. Adjust hardware and door and panels for proper operation.
C. Install fire-rated access doors and panels according to NFPA 80.

END OF SECTION 083113

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 083323 - OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Structural Performance: Design and reinforce overhead coiling doors to withstand a 20 lbf/sq. ft. wind-loading pressure.

B. Submittals: Product Data and Shop Drawings.

C. Where fire doors are required, provide assemblies that comply with NFPA 80 that are identical to door and frame assemblies tested for fire-test-response characteristics per UL 10B, and that are labeled and listed for fire ratings indicated by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. For units exceeding sizes of tested assemblies, provide certification by testing and inspecting agency that doors comply with all requirements of tested assemblies, except for size.

PART 2 - PRODUCTS

2.1 OVERHEAD COILING DOORS

A. Products:

1. Exterior Security Door (@ Parking Garage Entries): Cornell Iron Works, Inc., ESG10 VISIONAIRE™ Straight Pattern Grille, motor operated with auto opener.
   a. Color to be selected from standard.
2. Interior Fire/Smoke Door (@ Parking Garage / Building Separation): Cornell Iron Works, Inc., ERD1 Fire/Smoke Door, motor operated with auto opener.
   a. At Shipping/Receiving: Without auto opener.
   b. Color to be selected from standard.
3. Exterior Dock Door: Cornell Iron Works, Inc., ESD20 Thermiser® Insulated Rolling Service Door, motor operated
   a. Color: Custom to match exterior window system.

B. Tracks, Supports, and Hardware: Manufacturer's standard.

C. Weatherseals: Provide replaceable weather stripping at bottom and at top of exterior doors.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports.

B. Install fire-rated doors to comply with NFPA 80.

C. Test and adjust controls and safeties.

END OF SECTION 083323

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 083510 - FOLDING DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submit Product Data, Shop Drawings, and material Samples.

PART 2 - PRODUCTS

2.1 FOLDING DOORS

A. Panel Folding Doors: Manufacturer's standard track and hardware.

1.	Manufacturer:	Modernfold, Inc.
2.	Product:	Acousti-Seal 931 and 932 operable wall, #17 bracket mount steel track, (switchable and curved track at 931), single and paired panels, 52 STC, jambs at both ends with door extending to back of stacking pocket and expandable closure.
3.	Panel Skin:	.05" MDF, single material or composite layers continuously bonded to the panel frame.
4.	Panel Finish:	Factory applied, class "A" rated material, "Inspiration" wall covering and upholstery fabric with surface treatment to resist stains. F-1. Refer to Interior Finish Legend for selection.
5.	Sound Seals:	Vertical: Interlocking steel sound seal between panels. Horizontal: 2" automatic operable bottom floor seal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation shall be by an authorized factory trained installer. Installation shall be in accordance with approved shop drawings and in accordance with ASTM E557 installation procedure.
B. The complete installation shall be provided in strict accordance with the drawings and manufacturer's standard printed specifications, instructions and recommendations.
C. Install track in one piece.
D. Install folding doors with minimum floor clearances of l/4 inch.

END OF SECTION 083510

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SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. For Glazed Aluminum Curtain Walls refer to Specification Section 084413 "Glazed Aluminum Curtain Walls."

B. Structural Performance: Provide systems, including anchorage, capable of withstanding loads indicated.

1. Main-Framing-Member Deflection: Limited to 1/175 of clear span or 3/4 inch, whichever is smaller (reference Detail 1 on Drawing Sheet S6.1).
2. Structural Testing: Systems tested according to ASTM E 330 at 150 percent of inward and outward wind-load design pressures do not evidence material failures, structural distress, deflection failures, or permanent deformation of main framing members exceeding 0.2 percent of clear span.

C. Air Infiltration: Limited to 0.06 cfm/sq. ft. of system surface area when tested according to ASTM E 283 at a static-air-pressure difference of 1.57 lbf/sq. ft.

D. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E 331 at minimum differential pressure of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft..

E. Average U-Factor: Not more than 0.69 Btu/sq. ft. x h x deg F per AAMA 1503.

F. Perform AAMA 503 site water test on freestanding on in-place mock-up.

1.2 SUBMITTALS

A. Product Data, Shop Drawings, and color Samples.

1. For entrance systems, include hardware schedule and locations.

PART 2 - PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

A. Manufacturer: Kawneer Company, Inc., or approved

1. Exterior Aluminum System (North, East and West Ribbon Windows): Trifab® VG 451T (thermal) storefront system, 2" x 4-1/2" nominal dimension; Type "A" Assembly, screw spline, fixed, front plane.

   a. HP Flashing: #451-HP-037
   b. Exterior Horizontal Cover Plate Extension (@ all exterior windows): #457-869 with #216-769 Pressure Plate, 2" x 4" profile.

2. Interior Aluminum System: Trifab VG 451 framing system, 2" x 4 ½", non-thermal, fixed, center plane.

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3. ***Note: Storefront supplier to provide sliding door assembly opening framing. Contractor to coordinate Sliding Aluminum-Framed Glass Doors and Aluminum Framed Entrances and Storefronts scope of work.***

B. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated; ASTM B 209 sheet; ASTM B 221 extrusions.
C. Glazing: Specified in Division 08 Section "Glazing."
D. Back Pan: To be installed at each floor line to accommodate fire safing material.
E. Deflection head receptor at locations noted.
F. Sealants and Joint Fillers: For joints at perimeter of systems as specified in Division 07 Section "Joint Sealants."
G. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
H. Doors: 1-3/4-inch-thick glazed doors with minimum 0.125-inch-thick, extruded tubular rail and stile members, mechanically fastened corners with reinforcing brackets that are deep penetration and fillet welded or that incorporate concealed tie-rods, snap-on extruded-aluminum glazing stops, and preformed gaskets.

1. Interior Doors: Provide ANSI/BHMA A156.16 silencers, three on strike jamb of single-door frames and two on head of double-door frames.

   a. Narrow Stile

2. Exterior Doors: Provide compression weather stripping at fixed stops. At other locations, provide sliding weather stripping retained in adjustable strip mortised into door edge.

   a. Narrow Stile
   b. Exterior Pull: Hiawatha #HG 121, Satin Stainless Steel-US32D, or approved.

3. Other Hardware: As required for a complete operable system. Coordinate with Specification Section 087100 "Door Hardware."

I. Fasteners and Accessories: Compatible with adjacent materials, corrosion-resistant, non-staining, and non-bleeding. Use concealed fasteners except for application of door hardware.
J. Fabrication: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

1. Door Framing: Reinforce to support imposed loads. Factory assemble door and frame units and factory install hardware to greatest extent possible. Reinforce door and frame units for hardware indicated. Cut, drill, and tap for factory-installed hardware before finishing components.

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K. Aluminum Finish: Comply with NAAMMs "Metal Finishes Manual for Architectural and Metal Products." Fluoropolymer, 3-coat metallic coating system, complying with AAMA 2604.

1. Color: Match Alcan Composites Titanium C3010-DXLE.
2. Clear Top Coat if required by manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Isolate metal surfaces in contact with incompatible materials, including wood, by painting contact surfaces with bituminous coating or primer, or by applying sealant or tape recommended by manufacturer.
B. Install components to provide a weatherproof system.
C. Install framing components true in alignment with established lines and grades to the following tolerances:

1. Variation from Plane: Limit to 1/8 inch in 12 feet; 1/4 inch over total length.
2. Alignment: For surfaces abutting in line, limit offset to 1/16 inch. For surfaces meeting at corners, limit offset to 1/32 inch.
3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

D. Install doors without warp or rack. Adjust doors and hardware to provide tight fit at contact points and smooth operation.

END OF SECTION 084113

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 084229 - SLIDING ALUMINUM-FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Performance Requirements:

1. Forced-Entry Resistance: Performance Grade 40 requirements when tested according to ASTM F 842.
2. Condensation-Resistance Factor: 40 per AAMA 1503.1.
3. Thermal Transmittance: Maximum U-factor according to AAMA 1503.1 and ASTM E 1423 of 0.50 Btu/sq. ft. x h x deg F.

B. Submittals: Product Data.

C. Quality Standard: Comply with AAMA/NWWDA 101/I.S.2.

[redacted]

1. **Doors shall be power operated and shall be capable of being operated manually in the event of power failure.**
2. **Doors shall be openable by a simple method from both sides without special knowledge or effort.**
3. **The force required to operate the door shall not exceed 30 pounds to set the door in motion and 15 pounds to close the door or open it to the minimum required width.**
4. **Door shall be openable with a force not to exceed 15 pounds when a force of 250 pounds is applied perpendicular to the door adjacent to the operating device.**
5. **Door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke detection in accordance with Section 715,4,7,3, shall be installed in accordance with NFPA 80 and shall comply with Section 715.**
6. **The door assembly shall have an integrated standby power supply.**
7. **The door assembly power supply shall be electrically supervised.**
8. **The door shall open to the minimum required width within 10 seconds after activation of the operating device.**

PART 2 - PRODUCTS

2.1 SLIDING ALUMINUM-FRAMED GLASS DOORS

A. Products:

1. Besam Unislide Automatic Sliding Door.

a. Lobby Sliding Door: UniSlide OC3-7 Narrow Stile, overhead-concealed, electro-mechanical, microprocessor-controlled sliding door operator, weatherstrip, emergency breakout, 2-point lock, concealed "UltraView" motion/presence sensor system, concealed 5-position switch & narrow stile.

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b. Note: Storefront supplier to provide sliding door assembly opening framing. Contractor to coordinate Sliding Aluminum-Framed Glass Doors and Aluminum Framed Entrances and Storefronts scope of work.

B. Concealed 5-Position switch to be installed remotely in jamb frame at 54" AFF. Confirm height with owner prior to shop drawing submittal.
C. Glaze exterior units with tinted, low-e coated, sealed insulating, safety glass complying with Division 08 Section "Glazing" and with testing requirements in 16 CFR 1201 for Category II materials.
D. Hardware: Manufacturer's standard, extruded-aluminum pull grips and outside keyed cylinder lock; locked and unlocked by key in outside cylinder or by inside thumb turn.
E. Aluminum Finish: Comply with NAAMMs "Metal Finishes Manual for Architectural and Metal Products." Fluoropolymer, 3-coat metallic coating system, complying with AAMA 2604.

1. Color: Match Alcan Composites Titanium C3010-DXLE.
2. Clear Top Coat if required by manufacturer

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set doors level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.
B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weathertight construction.
C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.
D. Clean aluminum surfaces and glass immediately after installing sliding aluminum-framed glass doors. Remove nonpermanent labels from glass surfaces.

END OF SECTION 084229

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 084413 - GLAZED ALUMINUM CURTAIN WALLS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Kawneer Architectural Aluminum Curtain Wall Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of curtain wall framing.

1. Types of Kawneer Aluminum Curtain Walls include:

a. 1600 Wall System® 2–1/2" x 6", outside glazed pressure plate format.

1) Sun Shade: Provide 1600 SunShade™ aluminum sunshade consisting of outriggers, louvers, and fascia anchored directly to the vertical curtain wall mullions where indicated on Glass Types drawing sheets.
2) Exterior Horizontal Cover Plate Extension: 2-1/2" x 4" extension to match #457-869 profile with associated pressure plate where indicated on Glass Types drawing sheets.

b. 1600 Wall System® 2–1/2" x 4-1/2" ***(custom profile)***, outside glazed pressure plate format.

1) Sun Shade: Provide 1600 SunShade™ aluminum sunshade consisting of outriggers, louvers, and fascia anchored directly to the vertical curtain wall mullions where indicated on Glass Types drawing sheets.
2) Exterior Horizontal Cover Plate Extension: 2-1/2" x 4" extension to match #457-869 profile with associated pressure plate where indicated on Glass Types drawing sheets.

B. Related Sections:

1. Section 084229 "Sliding Aluminum Framed Glass Doors"
2. Section 084113 "Aluminum-Framed Entrances and Storefronts"
3. Section 087100 "Door Hardware"
4. Section 088000 "Glazing"

1.02 SYSTEM DESCRIPTION

A. Curtain Wall System Performance Requirements:

1. Wind loads: Provide Curtain Wall system; include anchorage, capable of withstanding wind load design pressures of 23 psf, inward and 23 psf, outward away from building corners and 28 psf outward where system is within 10'-0" of building corner. The design pressures are based on the 2007 Oregon Structural Specialty Code.

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2. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft^2 at a static air pressure differential of 6.24 psf.
3. Water Resistance, (static): The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a static air pressure differential of 12 psf as defined in AAMA 501.
4. Water Resistance, (dynamic): The test specimen shall be tested in accordance with AAMA 501.1. There shall be no leakage at an air pressure differential of 12 psf as defined in AAMA 501.
5. Uniform Load: A static air design load of 40 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member at design load. At structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
6. Seismic: When tested to AAMA 501.4, system must meet story design displacement shown on structural General Notes sheet S1.0.
7. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than: 0.66 (clear).
8. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than 66_{frame} and 60_{glass} (clear), or Condensation Index (I): when tested to CSA-A440-00, the Condensation Index shall not be less than 68_{frame} and 54_{glass} (clear).
9. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than: 0.43 (low-e).
10. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than 71_{frame} and 71_{glass} (low-e).
11. Sound Transmission Loss: When tested to ASTM E90 and ASTM E1425, the Sound Transmission Class (STC) and Outdoor/Indoor Transmission Class (OITC) shall not be less than:

    STC 31 or OITC 26 based upon 1" insulating glass (1/4", 1/2" AS, 1/4"),
    STC 37 or OITC 30 based upon 1" laminated glass (1/4" laminated, 1/2" AS, 1/4" laminated).

1.03 SUBMITTALS

A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."
B. Quality Assurance/Control Submittals:

1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics.

1.04 WARRANTY

A. Project Warranty: Refer to "General Condition" for project warranty provisions.

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B. Manufacturer's Product Warranty: Submit, for Owner's acceptance, manufacturer's warranty for curtain wall system as follows:

1. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by Kawneer.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.
2. Manufacturer Qualifications: Manufacturer capable of providing structural calculations, applicable independent product test reports, installation instructions, a review of the application method, customer approval and periodic field service representation during construction.

B. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

1.06 DELIVERY, STORAGE, and HANDLING

A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
B. Packing, Shipping, Handling, and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
C. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle material and components to avoid damage. Protect curtain wall material against damage from elements, construction activities, and other hazards before, during and after curtain wall installation.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers:

1. Address: Kawneer Company, Inc.
555 Guthridge Court
Technology Park/Atlanta
Norcross, GA 30092
Telephone: (770) 449-5555
Fax: (770) 734-1560

2. Proprietary Product System: Kawneer Aluminum Curtain Wall

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a. Series: 1600 Wall System®
b. Finish/Color: (See 2.06 Finishes)

B. Substitutions:

1. General: Refer to Substitutions Section for procedures and submission requirements.

a. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
b. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid curtain wall installation and construction delays.

2. Substitution Documentation

a. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
b. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for curtain wall system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum curtain wall for a period of not less than ten (10) years.
c. Test Reports: Submit test reports verifying compliance with each test requirement for curtain wall required by the project.
d. Product Sample and Finish: Submit product sample, representative of curtain wall for the project, with specified finish and color.

3. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

2.02 MATERIALS

A. Aluminum (Curtain Wall and Components):

1. Material Standard: Extruded Aluminum, ASTM B 221, 6063-T6 alloy and temper.
2. Member Wall Thickness: Each framing member shall have a wall thickness sufficient to meet the specified structural requirements.
3. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of curtain wall members are nominal and in compliance with AA Aluminum Standards and Data.

2.03 ACCESSORIES

A. Fasteners: Where exposed, shall be Stainless Steel.
B. Gaskets: Glazing gaskets shall comply with ASTM C 864 and be extruded of a silicone compatible EPDM rubber that provides for silicone adhesion.
C. Perimeter Anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

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D. Thermal Barrier: Thermal separator shall be extruded of a silicone compatible elastomer that provides for silicone adhesion.
E. Back Pan: To be installed at each floor line to accommodate fire safing material.
F. Deflection head receptor at locations noted.
G. 1600 SunShade™: An aluminum sunshade (consisting of outriggers, louvers, and fascia) that is anchored directly to the vertical curtain wall mullions. ***Note: SunShade to be mounted with flat edge of outrigger up.***

1.	Outrigger:	Wedge
2.	Depth:	30"
3.	Length:	As indicated on drawings
4.	Louver:	Circular
5.	Fascia:	Angular
6.	Color (all components):	To Match Curtain Wall System

2.04 RELATED MATERIALS

A. Sealants: Refer to Joint Treatment (Sealants) Section.
B. Glass: Refer to Glass and Glazing Section.

2.05 FABRICATION

A. General:

1. Fabricate components per manufacturer's installation instructions and with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
2. Accurately fit and secure joints and corners. Make joints flush, hairline and weather-proof.
3. Prepare components to receive anchor devices. Fabricate anchors.
4. Arrange fasteners and attachments to conceal from view.

2.06 FINISHES

A. Aluminum Finish: Comply with NAAMMs "Metal Finishes Manual for Architectural and Metal Products." Fluoropolymer, 3-coat metallic coating system, complying with AAMA 2604.

1. Color: Match Alcan Composites Titanium C3010-DXLE.
2. Clear Top Coat if required by manufacturer.

2.07 SOURCE QUALITY CONTROL

A. Source Quality: Provide aluminum curtain walls specified herein from a single source.

1. Building Enclosure System: When aluminum curtain wall are part of a building enclosure system, including entrances, entrance hardware, windows, storefront framing

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and related products, provide building enclosure system products from a single source manufacturer.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive curtain wall system and sill plate is level in accordance with manufacturer's acceptable tolerances.

1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

3.02 INSTALLATION

A. General: Install curtain wall systems plumb, level, and true to line, without warp or rack of frames with manufacturer's prescribed tolerances and installation instructions. Provide support and anchor in place.

1. Dissimilar Materials: Provide separation of aluminum materials from sources of corrosion or electrolytic action contact points.
2. Glazing: Glass shall be outside glazed and held in place with extruded aluminum pressure plates anchored to the mullion using stainless steel fasteners spaced no greater than 9" on center.
3. Water Drainage: Each light of glass shall be compartmentalized using joint plugs and silicone sealant to divert water to the horizontal weep locations. Weep holes shall be located in the horizontal pressure plates and covers to divert water to the exterior of the building.

B. Related Products Installation Requirements:

1. Sealants (Perimeter): Refer to Joint Treatment (Sealants) Section.
2. Glass: Refer to Glass and Glazing Section.

    a. Reference: ANSI Z97.1, CPSC 16 CFR 1201 and GANA Glazing Manual

3.03 FIELD QUALITY CONTROL

A. Field Tests: Architect shall select curtain wall units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.

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1. Testing: Testing shall be performed per AAMA 503 by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements.

    a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft^2, which ever is greater.
    b. Water Infiltration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 8 psf.

B. Manufacturer's Field Services: Upon Owner's written request, provide periodic site visit by manufacturer's field service representative.

3.04 PROTECTION AND CLEANING

A. Protection: Protect installed product's finish surfaces from damage during construction. Protect aluminum curtain wall system from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants.

B. Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

END OF SECTION 084413

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 086340 – ALUMINUM FRAMED CANOPY SKYLIGHTS

PART 1 GENERAL

1.1 SUMMARY

A. The work of this section includes the aluminum canopy skylight frames, skylight glass with applied edge protection, flashings, expansion joints as required and as indicated on the drawings for a complete assembly; structural design of the skylight frames and glass, and acquisition of any special permits.

1.2 RELATED WORK

A. Structural steel supports are specified in Division 05.
B. Building reglets and counterflashings specified in Division 07.
C. Glass, glazing gaskets and accessories, and sealants are specified in Division 08. Sample requirements in the glass section apply to the skylight glass, and are part of the skylight work.

1.3 DESIGN REQUIREMENTS

A. Design loads are as determined by the project structural engineer in accordance with the applicable local codes. Accommodate snow and wind live loads, discontinuities, and dead loads. Coordinate the design of the skylights with the project structural engineer who will design the steel to withstand the skylight loads. Snow load is 25 pounds per square foot plus drifting as applicable for a total live load as indicated on the structural calculations.
B. Limit deflection of the skylight members to 1/180 of their length or limit deflection of the glass to 3/4 inch over one light, whichever is less.
C Design the fasteners for a 4 to 1 safety factor based on ultimate loading.
D. Design the skylight assembly to withstand temperature variations up to 120° F without over stressing the glazing, fasteners or framing.
E. Design the skylight so as to prevent excessive noise such as popping and creaking and wind harmonics.
F. Provide bearing and edge clearances as required to accommodate expansion and contraction of the glazing materials with edge clearance of 1/4-inch minimum to the nearest metal surface.
G. Design system to prevent glass sliding without reliance on friction or sealants.
H. All sealant joints are to be designed and engineered for the intended use, and approved by the sealant manufacturer.

1.4 SUBMITTALS

A. Make all submittals in accordance with Division I.
B. Shop drawings showing in detail all skylight members, connections to the building, interface with other materials and methods of construction for the architect's approval prior to fabrication.

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C. Calculations stamped by a registered structural engineer, licensed in the state of this project, showing the structural adequacy of the skylight members and glazing for all loads and with provisions for expansion and contraction.
D. Samples: One (1) 12 inch square sample of the specified glass with edge protection showing finish and sealant options and a minimum of 2 samples, 6 inches long, of a typical extruded exposed aluminum member with the specified finish.
E. Where structural silicone joints are required, report on sealant compatibility, approval of sealant joint design, and application procedures from the sealant manufacturer.
F. Maintenance manual for the skylights with a sequence of items, materials and methods used for proper cleaning and maintenance of the skylight framing, flashings and glass. Include a key plan for all glass, with sizes, make-up and source for future replacements.

1.5 QUALITY ASSURANCE

A. Engage the specified firm to manufacture and install the canopy skylights. This firm has ten years of successful fabrication and installation of work similar to this project.
B. Before start of skylight work, a pre-installation meeting will be attended by the architect and all related subcontractors to coordinate skylight installation, roof protection, fall protection, and work of adjacent trades.

1.6 WARRANTY

A. Submit all warranties in conformance with the General and Supplementary Conditions.
B. Extend the manufacturer's material and installation warranty four years for a total of five (5) years on all skylight components agreeing to repair or replace any part of the skylight that exhibits defects in workmanship or performance.
C. Extend the silicone manufacturer's warranty nine years for a total of ten years (10) years on weather seals and structural silicone.

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURERS

A. DeaMor Skylights Narrowline Canopy System. DeaMor specifications and details establish the level of quality required for this project.
B. Other Manufacturers: Submit a Substitution Requestf orm, complete with product literature including all applicable details and the following items for consideration. Requests for substitution on products for this section will not be considered without these items.

1. Product sample. Skylight samples submitted must be representative of the assemblies that are intended for use on this project. Glaze the system sample with 12 inch by 12-inch glass. Glass is not required to match the glass specified for the skylight, but it must show how it is retained in the frame and must show sealants applied as intended for use on the project.
2. Submit installer qualifications as specified in 3.1.A.
3. Submit 5 letters of recommendation from general contractors and architects from projects of similar size and scope in place for five years or longer.

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4. Letter approving the glazing details and structural glass design from the glass manufacturer.

2.2 METAL MATERIALS

A. Framing, perimeter angles and caps are to be extruded aluminum, alloy 6063 or 6061, temper T-5 or T-6, as recommended by manufacturer and required for design loading and required finishes. Tubular framing sections are to have a minimum thickness of 0.100 inch. Provide the profiles indicated or an equivalent design.
B. Sheet and plate aluminum is to be 5052 alloy for flashing, trim, closures and accessories, minimum .040 inch thick as required to maintain flatness. Provide structural aluminum plates as required by engineer.
C. Glazing cap fasteners are to be 1/4-inch non-magnetic stainless steel hex head screws, with neoprene sealer washers, at maximum of 10 inches on center.
D. Exterior fasteners are to be non-magnetic, 300 series, stainless steel, engineered as required.
E. Interior fasteners, not exposed to moisture, are to be zinc-plated steel.

2.3 GLASS AND GLAZING MATERIALS

A. Glass types are specified in Section 088000 and the following descriptions establish minimum standards. Overhead glazing must be sized to conform to loading and local code requirements.
B. Edge Protection: Provide aluminum flatbar, 1/2" by 1/8" thick, with an anodized finish, black or silver as selected. Adhere it to the edge of the laminated glass with Dow Corning 791 Silicone, gray or black as selected, to protect the interlayer from moisture.
C. Glazing gaskets are to be minimum 1/8 inch thick extruded Santoprene or silicone, as compatible with adjacent sealants. Mechanically interlock gaskets into the skylight glazing bars and caps so that the gaskets provide a setting surface and waterproof seal against both surfaces of the glass. Tape or butyl gaskets are not to be used for glazing.
D. Glass is to be blocked and mechanically retained in the system against sliding and uplift loads.

2.4 FABRICATION

A. Fabricate materials in the manufacturer's shop of the appropriate alloys for the specified finish.
B. Fabricate the glass supporting members with hairline joints and aligned to within 1/64 inch. Mock-up the skylight frames as required to determine dimensional accuracy and alignment.
C. Pre-tab and shop weld or solder the flashings prior to finishing.

2.5 ALUMINUM FINISH

A. After fabrication is complete, prepare aluminum as required for specified finish.
B. Paint Finish: Apply a standard 3-coat fluoropolymer metallic paint finish as selected by Architect. Application is to conform to the requirements of AAMA 2605.

1. Pretreat all components with a phosphate conversion coating.

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2. Apply primer as required by the manufacturer.
3. Apply a minimum 1.0 mil finish coat.

2.6 DISSIMILAR METAL PROTECTION

A. Shop apply 3-M "Scotchrap 50", 10 mil, black vinyl corrosion resistant tape to separate dissimilar metals. Locate so as to be concealed after installation.

2.7 SLIP JOINTS

A. Slip joint linings are to be made up with 3-M Scotch Ultra-High Molecular Weight (UHMW) polyethylene tape, with rubber adhesive one side. Provide thickness as required to allow free movement at the expansion joints and prevent noise due to thermal expansion.

PART 3 EXECUTION

3.1 INSTALLATION

A. Installation is to be performed by the manufacturer or an installer with a minimum of five years experience installing work of this nature who is acceptable to the manufacturer.
B. Inspect the installed substructure to verify that it is as designed and is satisfactory for the proper installation of the skylights. Do not proceed with installation until any discrepancies have been corrected.
C. Secure staging and provide protection as required to prevent scratching or gouging of the adjacent materials.
D. Install the frames and flashings in accordance with the approved shop drawings.
E. Install the skylights level, plumb and properly aligned with uniform joints and reveals. Remove and replace any components that may be defective or are damaged during installation.
F. Seal the skylight system with minimal sealants, using them only as engineered for exterior waterproofing at horizontal butt joints or for structural glass retention.
G. Leave the skylights free of all protective material, identification labels and excess sealant.
H. Clean the skylight within one week before final acceptance, in accordance with manufacturer's recommended methods.

END OF SECTION 086340

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SECTION 087100 - DOOR HARDWARE

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BDG
DOCUMENT SERVICES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submit hardware schedule.

B. For fire-rated openings provide hardware tested and listed by UL or FM (NFPA 80). On panic exit devices provide UL or FM label indicating "Fire Exit Hardware."

C. All components of a door assembly requiring the 'S' label shall bear an approved label showing the rating, followed by the letter 'S,' the name of the manufacturer and the identification of the service conducting the inspection of materials and workmanship at the factory during fabrication and assembly.

D. Provide a letter of certification for ***each*** 'S' label door assembly component stating that it complies with the requirements of Standard UL 10C for "Positive Pressure Fire Tests of Door Assemblies" and UBC 7-2 (1997).

PART 2 - PRODUCTS

2.1 HARDWARE

A. Door Hardware: As indicated in the Schedule at the end of this Section.

B. Finish: 626 (26D).

C. Manufacturers specified and approved.

Item	Manufacturers Specified	Manufacturers Approved
Butts	Ives (IVE)	McKinney, Bommer, Hager, Stanley
Continuous Hinges	Ives (IVE)	Select, Pemko
Locks	Schlage (SCH)	None- Owner Standard
Keypad Locks	Alarm Lock (ALA)	None- Owner Standard
Cylinders	Schlage Everest Primus (SCH)	None- Owner Standard
Exit Devices	Von Duprin (VON)	None- Owner Standard
Closers/Operators	LCN (LCN)	None- Owner Standard
Overhead Stops	Glynn Johnson (GLY)	Rixson
Stops	Ives (IVE)	Trimco
Magnetic Holders	LCN (LCN)	None
Flushbolts/Coordinators	Ives (IVE)	Trimco, DCI
Seals/Thresholds	National Guard (NGP)	Pemko, Zero

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D. Grandmaster key the locks to the Owner's existing system. Keying shall be based on a Schlage Everest Primus key system. Attend keying meeting with Owner and Hardware Supplier to determine specific keying requirements. Owner to provide system expansion requirements. A keying schedule shall be produced within 10 days of said meeting for Owner approval.

D. Equip locks with cylinders for interchangeable-core pin tumbler inserts. Furnish only temporary inserts for the construction period, and remove these when directed.

E. Key Material: Provide keys of nickel silver only.

F. Key Quantity: Furnish 3 change keys for each lock, 5 master keys for each master system, and 5 grandmaster keys for each grandmaster system.

2.2 HARDWARE FINISH SCHEDULE

HW SET: 01

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT HARDWARE	98L-F-BE 996L-BE-06	626	VON
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

PROVIDE THRESHOLD OR FLOORING TRANSITION STRIP IF COMBUSTIBLE FLOORING RUNS UNDER DOOR.

HW SET: 02

1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	PADLOCK	KS43G3200	452	SCH
			REMAINING HARDWARE BY DOOR MANUFACTURER		

HW SET: 03

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

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HW SET: 04

6	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
2	EA	POWER TRANSFER	EPT-10	689	VON
1	EA	DELAY PANIC HARDWARE	CX9847EO	626	VON
1	EA	DELAY PANIC HARDWARE	CX9847L-BE 996L-BE-06	626	VON
2	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
2	EA	MORTISE CYLINDER	20-771T	626	SCH
1	SET	ASTRAGAL	600A	AL	NGP
2	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP
2	EA	DOOR SWEEP	600A	AL	NGP
1	EA	THRESHOLD	513	AL	NGP
1	EA	POWER SUPPLY	PS873	GRY	VON
2	EA	DOOR POSITION SWITCH	679-05 HM		SCE
1	EA	MOTION SENSOR	SCAN II-W	WHT	SCE
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC. DELAYED EGRESS PANIC HARDWARE REQUIRES POWER SUPPLY, N.C. FIRE ALARM, DOOR POSITION SWITCH, MOTION SENSOR & CARD READER INPUT. POINT MOTION SENSOR STRAIGHT DOWN ON DOOR OPENING AT LOBBY SIDE TO GUARD AGAINST ACCIDENTAL UNLOCKING BY ANY MOVEMENT IN LOBBY AREA. DELAY TO TURN OFF AND LEVER UNLOCKS ON LOBBY SIDE WHEN SOMEONE APPROACHES DOORS ON LOBBY SIDE. CARD READER TO TURN OFF DELAY AND ALLOW ENTRY INTO LOBBY FROM GARAGE SIDE. FIRE ALARM ACTIVATION ALLOWS IMMEDIATE EGRESS INTO LOBBY FROM GARAGE.

HW SET: 05

2	EA	FULL HEIGHT HINGES	H-13	BLACK	TD
2	EA	FULL HEIGHT LATCH CHANNEL	L- 11	BLACK	
2	EA	OPERATING PULLS	M33	US28	
2	EA	EXIT DEVICE	PF200 (FLUSH PANIC)	630	
2	EA	CLOSER		ALUM	
2	EA	MAG HOLDER	TDH100/CH11	628	
2	EA	KICKPLATE	STD10"	630	
2	EA	POSITIVE PRESSURE LABEL	(INCLUDES SMOKE & DRAFT)		

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HW SET: 05A

1	EA	FULL HEIGHT HINGES	H-13	BLACK TD
1	EA	FULL HEIGHT LATCH CHANNEL	L- 11	BLACK
1	EA	FLUSH PANIC	PF-200	628
1	EA	LEVER	#60	630
1	EA	CLOSER		ALUM
1	EA	MAG HOLDER		628
1	EA	POSITIVE PRESSURE LABEL	(INCLUDES SMOKE & DRAFT)	

HW SET: 06

6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
1	EA	ASTRAGAL	PROVIDED BY DOOR MANUFACTURER	600	
2	EA	SURFACE CLOSER	4041	689	LCN
1	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD, JAMBS & ASTRAGAL)	BRN	NGP

HW SET: 07

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	LD98NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 08

2	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
2	EA	MORTISE CYLINDER	20-771T	626	SCH
			REMAINING HARDWARE BY DOOR MANUFACTURER		

HW SET: 09

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2	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	3547A-EO	626	VON
1	EA	PANIC HARDWARE	3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	OFFSET DOOR PULL	8190-18-O	630	IVE
2	EA	CUSH SHOE SUPPORT	4040-30	689	LCN
1	EA	SURFACE CLOSER	4041 CUSH	689	LCN
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		

PROVIDE CUSH TYPE CLOSER WHERE DOORS MEET BACK TO BACK. PROVIDE BLADE STOP SPACER IF NECESSARY.

HW SET: 10

8	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	PANIC HARDWARE	QEL9847EO	626	VON
1	EA	PANIC HARDWARE	QEL9847NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
2	EA	SURFACE CLOSER	4041 EDA	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
2	EA	WALL STOP & HOLDER	WS45	626	IVE
4	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 11

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	KEYPAD LOCK	DL2700-ICS	626	ALA
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR66	GRY	IVE

HW SET: 12

2	EA	CONTINUOUS HINGE	112HD	628	IVE

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1	EA	PANIC HARDWARE	3547A-EO	626	VON
1	EA	PANIC HARDWARE	3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	OFFSET DOOR PULL	8190-18-O	630	IVE
1	EA	AUTO. OPERATOR	2863 OP POS	628	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
2	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	ROCKER SWITCH	8310-806R		LCN
2	EA	ACTUATOR, JAMB MOUNT	8310-818T		LCN
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		

AUTO OPERATOR REQUIRES 110VAC. OPERATOR INCLUDES ENTIRE ALUMINUM HEADER ASSEMBLY. VERIFY ACTUATOR TYPES AND MOUNTING LOCATIONS WITH ARCHITECT.

HW SET: 13

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	LD98NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE 24VDC	630	VON
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

HW SET: 14

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ELECTRIC HINGE	5BB1 4.5 X 4.5 TW4	652	IVE
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	EU STOREROOM LOCK	ND80TDEU RHO	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	OVERHEAD STOP	900S	630	GLY
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

HW SET: 15

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE

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1	EA	CLASSROOM LOCK	ND70TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	OVERHEAD HOLDER	450F	630	GLY
4	EA	SILENCER	SR64	GRY	IVE

HW SET: 16

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8302-6 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 17

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR64	GRY	IVE

HW SET: 18

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	LD98NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE 24VDC	630	VON
1	EA	SURFACE CLOSER	4041 CUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

HW SET: 19

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	ND70TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 20

1	EA	POWER TRANSFER	EPT-2	689	VON

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1	EA	CONTINUOUS HINGE	112HD X EPT	628	IVE
1	EA	PANIC HARDWARE	EL35A-NL-OP	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	CUSH SHOE SUPPORT	4040-30	689	LCN
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	POWER SUPPLY	PS873-2	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 21

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY W/INDICATOR	L9496L 06A 09-900 XL12-196	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 22

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	ND50TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 23

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	98L 996L-06	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 24

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT	98L-F 996L-06	626	VON

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		HARDWARE			
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 25

2	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	3547A-EO	626	VON
1	EA	PANIC HARDWARE	3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	OFFSET DOOR PULL	8190-18-O	630	IVE
2	EA	CUSH SHOE SUPPORT	4040-30	689	LCN
2	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
2	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP

HW SET: 26

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 27

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT HARDWARE	98NL-F	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 28

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	LD98NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH

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1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	WEATHERSTRIP	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP

HW SET: 29

8	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB1 OR MB2	689	IVE
1	EA	DOOR EDGE	552	600	NGP
2	EA	SURFACE CLOSER	4041 EDA	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
2	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 30

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	ND70TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 31

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4021	689	LCN
1	EA	OVERHEAD STOP	100S	630	GLY
1	SET	SEALS	1038NA (HEAD & JAMBS)	AL	NGP
1	EA	DOOR BOTTOM	420NA	AL	NGP
1	EA	THRESHOLD	513	AL	NGP

HW SET: 32

2	EA	CONTINUOUS HINGE	700	630	IVE
1	EA	AUTO FLUSH BOLT	FB31T	630	IVE
1	EA	KEYPAD LOCK	DL2700-ICS	626	ALA

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1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	DELAYED CLOSER	4041 DEL	689	LCN
2	EA	KICK PLATE	8400 16" X 1" LDW	630	IVE
2	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 33

3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	LD98NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE 24VDC	630	VON
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 16" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	WEATHERSTRIP	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

HW SET: 34

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	KEYPAD LOCK	DL2700-ICS	626	ALA
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 35

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 36

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

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HW SET: 37

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	OVERHEAD STOP	100S	630	GLY
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET: 38

8	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
1	EA	DOOR EDGE	552	600	NGP
2	EA	SURFACE CLOSER	4041	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
1	SET	SEALS	1038NA (HEAD & JAMBS)	AL	NGP
1	SET	GASKETING	5050B (ASTRAGAL)	BRN	NGP
2	EA	DOOR BOTTOM	420NA	AL	NGP
1	EA	THRESHOLD	513	AL	NGP

HW SET: 39

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR64	GRY	IVE

HW SET: 40

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ELECTRIC HINGE	5BB1 4.5 X 4.5 TW4	652	IVE
1	EA	PANIC HARDWARE	98L E996L-06	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

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HW SET: 41

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	KEYPAD LOCK	DL2700-ICS	626	ALA
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 42

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	ND70TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 43

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ELECTRIC HINGE	5BB1 4.5 X 4.5 TW4	652	IVE
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	EU STOREROOM LOCK	ND80TDEU RHO	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

HW SET: 44

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	ND70TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 45

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

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HW SET: 46

2	EA	POWER TRANSFER	EPT-2	689	VON
2	EA	CONTINUOUS HINGE	112HD X EPT	628	IVE
1	EA	PANIC HARDWARE	QEL3547A-EO	626	VON
1	EA	PANIC HARDWARE	QEL3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	SURFACE CLOSER	4041 EDA	689	LCN
2	EA	WALL STOP	WS407CCV	630	IVE
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
2	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 47

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	ND10S RHO	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 48

2	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	3547A-EO	626	VON
1	EA	PANIC HARDWARE	3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	OFFSET DOOR PULL	8190-18-O	630	IVE
2	EA	SURFACE CLOSER	4041 EDA	689	LCN
2	EA	WALL STOP	WS407CCV	630	IVE
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		

HW SET: 49

1	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	CONTINUOUS	112HD X EPT	628	IVE

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		HINGE			
1	EA	PANIC HARDWARE	QEL35A-NL-OP	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	OFFSET DOOR PULL	8190-18-O	630	IVE
1	EA	AUTO. OPERATOR	2811 OP	628	LCN
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
2	EA	ACTUATOR, WALL MOUNT	8310-856		LCN
2	EA	ESCUTCHEON	8310-874	630	LCN
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.
HW SET: 50

4	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	FIRE EXIT HARDWARE	QEL98NL-F	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

PROVIDE THRESHOLD OR FLOORING TRANSITION STRIP IF COMBUSTIBLE FLOORING RUNS UNDER DOOR. POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 51

2	EA	POWER TRANSFER	EPT-2	689	VON
2	EA	CONTINUOUS HINGE	112HD X EPT	628	IVE
1	EA	PANIC HARDWARE	QEL3547A-EO	626	VON
1	EA	PANIC HARDWARE	QEL3547A-TL-LESS PULL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
2	EA	CUSH SHOE	4040-30	689	LCN

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		SUPPORT			
2	EA	SURFACE CLOSER	4041 SCUSH	689	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
2	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 52

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	OVERHEAD STOP	450S	630	GLY
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 53

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	OFFICE LOCK	ND50TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 54

1	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	PULL/PUSHBAR	9190-18-NO	630	IVE
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	WALL STOP	WS407CCV	630	IVE

HW SET: 55

4	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR66	GRY	IVE

HW SET: 56

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	98EO	626	VON
1	EA	KEYPAD TRIM	ETDL-O-S-V99	626	ALA

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1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	SOUND SEAL	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 57

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	PANIC HARDWARE	98L E996L-06- FAIL SAFE	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	MAGNETIC HOLD-OPEN	SEM 7850	AL	LCN
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	THRESHOLD	413	AL	NGP
1	EA	POWER SUPPLY	PS861-FR	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC, N.C FIRE ALARM AND CARD READER INPUT. LEVER ON STAIR SIDE TO UNLOCK ON FIRE ALARM ACTIVATION.

HW SET: 58

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	PANIC HARDWARE	98L E996L-06- FAIL SAFE	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	MAGNETIC HOLD-OPEN	SEM 7850	AL	LCN
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	POWER SUPPLY	PS861-FR	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC, N.C FIRE ALARM AND CARD READER INPUT. LEVER ON STAIR SIDE TO UNLOCK ON FIRE ALARM ACTIVATION.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

HW SET: 59

1	EA	CONTINUOUS HINGE	112HD	628	IVE
1	EA	NARROW LOCK	8556	626	ACC
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	MORTISE CYLINDER	20-771T	626	SCH
1	SET	LEVER TRIM	L9070P 06A LLL X LLL X LESS LOCK CASE	626	SCH
1	EA	CUSH SHOE SUPPORT	4040-30	689	LCN
1	EA	SURFACE CLOSER	4041 CUSH	689	LCN
1	SET	WEATHERSTRIP	PROVIDED BY DOOR MANUFACTURER		
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	950V	AL	NGP

INSTALL CYLINDER ON INSIDE. DECK SIDE MUST ALWAYS REMAIN UNLOCKED FOR EXITING FROM DECK.

HW SET: 60

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT-2	689	VON
1	EA	PANIC HARDWARE	QEL9847EO	626	VON
1	EA	PANIC HARDWARE	QEL9847NL	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
2	EA	SURFACE CLOSER	4041 EDA	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW	630	IVE
2	EA	WALL STOP	WS407CCV	630	IVE
4	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS873-2Q	GRY	VON
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

POWER SUPPLY REQUIRES 110VAC AND CARD READER INPUT.

HW SET: 61

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	ELECTRIC HINGE	5BB1 4.5 X 4.5 TW4	652	IVE
1	EA	PANIC HARDWARE	98L E996L-06	626	VON
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	RIM CYLINDER	20-757T	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	FLOOR STOP	FS436	626	IVE
3	EA	SILENCER	SR66	GRY	IVE

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1	EA	POWER SUPPLY	PS861-FR	GRY	VON
1	EA	PUSHBUTTON	621GID	630	SCE
1	SET	WIRING DIAGRAM	PROVIDE POINT TO POINT WIRING SCHEMATICS		
1	EA	CARD READER	PROVIDED BY OTHER SECTION		

LOCATE PUSHBUTTON RELEASE WHERE DIRECTED BY ARCHITECT.

HW SET: 62

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	OVERHEAD STOP	100S	630	GLY
1	SET	WEATHERSTRIP	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	AL	NGP
1	EA	THRESHOLD	653	AL	NGP

HW SET: 63

4	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	KEYPAD LOCK	DL2700-ICS	626	ALA
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 64

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626	SCH
1	EA	SURFACE CLOSER	4041	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	WALL STOP	WS407CCV	630	IVE
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

HW SET: 65

3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT HARDWARE	98L-F-BE 996L-BE-06	626	VON
1	EA	SURFACE CLOSER	4041 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA	OVERHEAD STOP	100S	630	GLY
1	SET	GASKETING	5050B (HEAD & JAMBS)	BRN	NGP

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PROVIDE THRESHOLD OR FLOORING TRANSITION STRIP IF COMBUSTIBLEFLOORING RUNS UNDER DOOR.

HW SET: 66

1	EA	KEYPAD LOCK	DL2700-ICS	626 ALA
1	EA	CORE ONLY	20-740-EVEREST PRIMUS	626 SCH
			REMAINING HARDWARE BY DOOR MANUFACTURER	

PROVIDE LOCK BOX ON CHAIN LINK GATE TO ACCEPT SPECIFIED LOCKSET.

HW SET: 67

ALL HARDWARE BY DOOR MANUFACTURER

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware in locations recommended by the Door and Hardware Institute, unless otherwise indicated.

END OF SECTION 087100

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 087160 - POWER DOOR OPERATORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, wiring diagrams and maintenance data.
B. Comply with BHMA A156.10, "Power Operated Pedestrian Door Standard."

PART 2 - PRODUCTS

2.1 DOOR CONSTRUCTION, GENERAL

A. Swinging Door Operator: Shall be Stanley Magic-Force™ Swinging Door Operator - Visible Application – Full Energy. The system shall consist of electro-mechanical swinging door operator and electrical controls, aluminum header, connecting hardware, actuating controls, guide rails, and on/off/hold open switch. All components shall be factory assembled, adjusted and tested.
B. Aluminum Extrusion Finish: To match storefront system.
C. Presence Sensor: The Bodyguard presence detector for automatic doors as manufactured by B.E.A. Inc.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install power door operators and controls. After use, readjust door operators and controls and lubricate hardware and moving parts. Securely anchor guide rails level and true to location.

END OF SECTION 087160

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and 12-inch-square samples of ***ALL*** insulating-glass units.
B. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated.
C. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.
D. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.

1. GANA Publications: GANA Laminated Division's "Laminated Glass Design Guide" and GANA's "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing"; and AAMA TIR-A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Sloped Glazing Guidelines."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."

E. Insulating-Glass Certification Program: Permanently marked with certification label of Insulating Glass Certification Council and Associated Laboratories, Inc.

PART 2 - PRODUCTS

2.1 GLASS

A. Float Glass: ASTM C 1036, Type I, Class 1 (clear), and Quality q3.
B. **(G4)** Heat-Treated Float Glass: ASTM C 1048, Condition A (uncoated), Type I, Class 1 (clear), Quality q3, Kind FT (fully tempered).
C. Coated Glass: ASTM C 1048, Condition C, Type I, Class 1 (clear) or 2 (tinted), Quality q3. Use sputter-coat process to coat glass to ASTM C 1376.
D. Wired Glass: ASTM C 1036, Type II, Class 1, Quality q8; Form 1 (polished) with m2 (square) mesh, 0.23-inch thick. ***NOTE: WIRE GLASS IS NOT TO BE USED IN FIRE RATED ASSEMBLIES.***
E. Fire Resistive Glazing Units: Proprietary product in the form of clear flat sheets of 3/16 inch nominal thickness, weighing 2.5 psf, permanently labeled with appropriate marks of testing and inspecting agency, acceptable to authorities having jurisdiction, showing product complies with fire-resistive installation indicated, and as follows:

1. Polished on both surfaces, transparent with visible light transmission of 76.9 percent.

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2. Product: Subject to compliance with requirements, provide the following product manufactured by Nippon Electric Glass Co., Ltd. and distributed by Technical Glass Products, or approved:

   a. Standard FireLite.

F. Mirror Glass: ASTM C 1036, Type 1, Class 1, Quality q1 or q2, silver coated per FS DDM411C, 0.23-inch thick, with edges rounded polished.

1. Safety Glass for Mirrors: Fully tempered.

G. **(G5)**: Art Glass - $80/SF Allowance.

2.2 FABRICATED GLASS PRODUCTS

A. Laminated Glass (Exterior Canopy Glazing): 9/16" tinted glass panel consisting of one (1) lite of ¼" PPG AZURIA SOLARCOOL (#2) heat-strengthened glass and one (1) lite of ¼" AZURIA heat-strengthened glass laminated to a .060" CLEAR polyvinyl butyryl lamina interlayer. Comply with ASTM C 1172.

B. Sealed Insulating-Glass Units (**G1 & G2**): Factory-assembled units complying with ASTM E 2190, with two 1/4-inch thick sheets of glass separated by a 1/2-inch dehydrated space filled with air.

1. Inboard Lite: SB-60(3)
2. Outboard Lite: PPG Caribia
3. Performance:

   a. Visible Light Transmission: 53%
   b. U-Value Winter: 0.29
   c. U-Value Summer: 0.28
   d. SHGC: 0.31
   e. Shading Coefficient: 0.35
   f. Outdoor Visible Light Reflectance: 52%
   g. Outdoor Appearance: Emerald green color, low-reflective glass.

C. Sealed Insulating-Glass Spandrel Units (**G3**): Factory-assembled units complying with ASTM E 2190, with two 1/4-inch thick sheets of glass separated by a 1/2-inch dehydrated space filled with air.

1. Spandrel Coating: Blue-green Insulating Spandrel HS/HS
2. Inboard Lite: SB-60(3)
3. Outboard Lite: PPG Caribia

PART 3 - EXECUTION

3.1 INSTALLATION

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A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual."
B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 088000

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 089000 - LOUVERS AND VENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Provide louvers complying with performance requirements indicated as demonstrated by testing according to AMCA 500-L.

B. Submittals: Product Data, Shop Drawings and Samples.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: ASTM B 221, Alloy 6063-T5 or T-52 for extrusions; ASTM B 209, Alloy 3003 or 5005 for sheet.

B. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 zinc coating.

C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.

D. Fasteners: Of same basic metal and alloy as fastened metal or 300 Series stainless steel.

2.2 LOUVERS

A. Basis of Design: The design for each louver is based on the product named. Comparable products, as determined by Architect, by one of the following manufacturers may be provided:

1. Ruskin EAL6811

B. Horizontal, Extruded-Aluminum, Acoustical Louvers:

1. Products:

   a. Ruskin, Airolite, or approved

2. Aluminum Thickness: 0.060 inch for blades and 0.080 inch for frames.
3. Free Area: 30% for 48-inch- wide by 48-inch- high louver.
4. Air Performance: Not more than 0.12-inch wg (25-Pa) static pressure drop at 1019 FPM free-area velocity.

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5. Wind-Driven Rain Performance: Not less than **99** percent effectiveness when subjected to a rain fall rate of **3 inches per hour and a wind speed of 29 mph** at a core area intake velocity of **500 fpm.**

2.3 LOUVER SCREENS

A. Provide screen at interior face of each exterior louver. Fabricate screen frames from same kind and form of metal as indicated for louver to which screens are attached.

1. Screening: Aluminum 3/4-inch- square mesh.

2.4 WALL VENTS (BRICK VENTS)

A. Extruded-aluminum wall vents 0.125 inch thick with aluminum insect screening on inside face of load-bearing construction.

B. Cast-aluminum wall vents with aluminum insect screening on inside face of load-bearing construction.

2.5 FINISHES

A. Aluminum Louvers: Baked-enamel finish, AA-C12C42R1x. Use thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603.

B. Aluminum Louvers: High-performance organic coating finish, AA-C12C42R1x. Use manufacturer's standard **3**-coat fluoropolymer system complying with AAMA 2605, with finish coats containing at least 70 percent polyvinylidene fluoride resin by weight.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible.

C. Protect metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

END OF SECTION 089000

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Refer to Interior Drawings for General Specifications for Finishes Not Listed

DIVISION 9 - FINISHES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

C. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

[redacted]

	Assembly		Wall types on drwgs	UL#
1	Stair enclosures and exit passageways	2 hrs	D, D2, F	U419, U491, or U906
2	Fire barrier	2 hrs	D, D2, F, G	U419, U491, or U906
3	Fire barrier	1 hr	C	U419
4	Shaft enclosures	2 hrs	E	U415 OR U438
5	Fire partitions	1 hr	C	U419
6	Fire partitions	30 mins	Not applicable	Not applicable

PART 2 - PRODUCTS

2.1 METAL FRAMING AND SUPPORTS

A. Steel Framing Members, General: ASTM C 754.

1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-metal thickness.
2. Protective Coating: manufacturer's standard corrosion-resistant zinc coating.

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B. Suspended Ceiling and Soffit Framing:

1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch diameter, or double strand of 0.0475-inch- diameter wire.
2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, and 0.162-inch diameter.
3. Carrying Channels: Cold-rolled steel, 0.0538 inch thick, 2 inches deep.
4. Furring Channels: 3/4-inch-deep, cold-rolled channels; 0.0538 inch, steel studs, 0.0179 inch thick, in depth indicated, steel, rigid hat-shaped channels, 7/8 inch deep, 0.0296 inch thick or resilient furring channels, 1/2 inch deep, with single or double-leg configuration.
5. Grid Suspension System for Interior Ceilings: Interlocking, direct-hung system.

C. Partition and Soffit Framing:

1. Studs and Runners: 22 gauge, 3-1/2" for interior walls, except where noted otherwise.
2. Rigid Hat-Shaped Furring Channels: In depth indicated and 0.0179-inch thick, unless otherwise indicated.
3. Attachment: Secured with screws spaced 24" O.C.
4. Furring Brackets: Adjustable serrated-arm type fabricated from corrosion-resistant steel sheet 0.0329-inch thick.
5. Resilient Furring Channels: 1/2-inch-deep, with single- or double-leg.
6. Z-Furring: Z-shaped members with face flange of 1-1/4 inch, wall-attachment flange of 7/8 inch, and in depth required by insulation.
7. Hot-dip galvanized coating complying with ASTM A 653, G40 for framing members attached to and within 10 feet of exterior walls.
8. Bracing: Bracing where permitted by the Architect to achieve greater wall heights to conform to the following:

   Conform to same requirements as studs and are subject to approval of Architect.
   Install at approximately 45 degrees with wall end secured to continuous horizontal channel and braced and secured to structure.
   Space braces at not less than 48" centers and on both sides of partition.
   At fire-rated partitions, enclose all bracing in gypsum board in sufficient thickness to equal the fire-resistance of the partition.

9. Multiple Studs: Provide double studs at all control joint locations and multiple studs at partial height glazed openings wider than 2'-0" which support transferred horizontal loads as follows:

Openings up to 4 feet:	Two 25 gauge studs.
Openings up to 8 feet:	Two 20 gauge studs.
Openings over 8 feet:	Two 18 gauge studs.
Doors:	Two 20 gauge studs.

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10. Ceiling Deflection Tracks:

    Flex Tracks: Secure to lower portion of track.
    Slip Tracks: No attachment permitted. Provide temporary strapping or other suitable device as required to maintain position and alignment of studs in slip track until board facing installed. Remove all temporary devices before completion of partition.

11. Add diagonal bracing above ceiling to structure so that the unbraced height of stud does not exceed 12 feet.
12. Install control joints according to ASTM C 840 and manufacturer's recommendations and in specific locations approved by Architect (30'-0" o.c. max).

    a. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.
    b. Where control joints are installed at door or window jambs, provide a vertical control joint on each side of framed opening.
    c. Provide approved fire-rated control joint construction at rated walls.

2.2 ACCESSORIES

A. General: Comply with referenced installation standards.

    1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Acoustical Sealant for Concealed Joints: Nonsag, latex sealant complying with ASTM C 834.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation and with United States Gypsum's "Gypsum Construction Handbook."

    1. Gypsum Plaster Assemblies: Also comply with ASTM C 841.
    2. Portland Cement Plaster Assemblies: Also comply with ASTM C 1063.
    3. Gypsum Veneer Plaster Assemblies: Also comply with ASTM C 844.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

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C. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.

1. Where studs are installed directly against exterior walls, install asphalt-felt or foam-gasket isolation strip between studs and wall.

D. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

END OF SECTION 092216

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

1.2 SUBMITTALS

A. Product Data.

1. Submit all required LEED documentation for credits noted in paragraph 1.3 per the submittal requirements outlined in Section 018113. ***Materials and Resources credit 4 – Recycled Content [minimum recycled content 5% post-consumer and 5% pre-consumer] and Indoor Environmental Quality Credit 4.1 Adhesives and Sealants.***

B. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.

PART 2 - PRODUCTS

2.1 PANEL PRODUCTS

A. General: Recycled Content: Minimum 5 percent post-consumer recycled content, or minimum 20 percent pre-consumer recycled content at contractor's option.

B. Provide in maximum lengths available to minimize end-to-end butt joints.

C. Structural Panels: Sure-board Series 200 Structural Panels, 5/8" Type X gypsum board w/metal structural backing as manufactured by Intermat. ICBO ER-5762.

Intermat, Inc.
2045 Pacentia Avenue
Costa Mesa, CA 92627

D. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Regular type and as indicated for ceilings, fire rated assemblies and other "non-standard" applications.

E. Exterior Gypsum Soffit Board: ASTM C 931/C 931M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges.

F. Water-Resistant Gypsum Backing Board (at wet locations to receive paint): ASTM C 630/C 630M or ASTM C 1396/C 1396M, in thickness indicated.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

G. Exterior Sheathing: Glass-Mat, Water-Resistant Gypsum Backing Board, ASTM C 1178, 5/8". "Dens-Glass Gold " manufactured by Georgia-Pacific Corporation
H. Cementitious Backer Units (at wall tile locations): ANSI A118.9.
I. Shaft Wall: Gypsum Liner Panels, 1" thick, 24" wide for use with Shaft Wall and Area Separation Wall framing components.

2.2 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.

1. Provide cornerbead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges. "J" Molding at gypsum board terminations and where indicated on drawings, extruded alloy 6063 T5, with chemical conversion coating as manufactured by Fry Reglet Corporation JDM-625, or approved.
3. Reveal molding where indicated on drawings, extruded alloy 6063 T5, with chemical conversion coating as manufactured by Fry Reglet Corporation DRM-25-25, or approved.
4. Install control joints according to ASTM C 840 and manufacturer's recommendations and in specific locations approved by Architect (30'-0" o.c. max). Drywall Control Joint where indicated on drawings, continuous compression seal, extruded alloy 6063 T5, with chemical conversion coating as manufactured by Fry Reglet Corporation DRM-50-50 2-PC, or approved

    a. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.
    b. Where control joints are installed at door or window jambs, provide a vertical control joint on each side of framed opening.
    c. Provide approved fire-rated control joint construction at rated walls

B. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.

    a. Toxicity/IEQ: Sheetrock Joint Tape. Paper; fiberglass joint tape not permitted.

2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds.

    a. Toxicity/IEQ: Lime compound. All purpose joint and texturing compound containing inert fillers and natural binders. Pre-mixed compounds shall be free of antifreeze, vinyl adhesives, preservatives, biocides and other slow releasing compounds.

3. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound or high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.

C. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.
D. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.

B. Install cementitious backer units to comply with ANSI A108.11.
C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.
D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.
F. Cementitious Backer Units: Finish according to manufacturer's written instructions.
G. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

END OF SECTION 092900

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 093013 - TILING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for tile and installation materials and Samples for tile.

B. Floor Tiles: **Static coefficient of friction not less than 0.6 for level surfaces, per ASTM C 1028.**

PART 2 - PRODUCTS

2.1 CERAMIC TILE

A. Ceramic tile that complies with Standard grade requirements in ANSI A137.1."Specifications for Ceramic Tile"

B. Floor Tile: Unglazed, impervious and cushion-edged porcelain tile.

Products: **CT-2 Crossville Inc.; EcoCycle.**

1) Surface: Slip resistant, with less than 0.6 wet and less than 0.65 dry.
2) Module Size: **12 by 12 inches.**
3) Color: **EC-114, Grand Canyon.**

2.2 INSTALLATION MATERIALS

A. VOC Limit for Adhesives and Fluid-Applied Waterproofing Membranes: 65 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Waterproofing Membranes for Thin-Set Installations: ANSI A118.10, **fabric-faced polymer sheet product.**

C. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1) Thin-Set Mortar Type: **Latex- portland cement.**

2) Grout Type: **Water-cleanable epoxy** unless otherwise indicated.

a. Product:

1) Mapei.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

3) Grout Color: **Color Sahara Beige # 11.**

4) Schlüter Strip **1.4 Schlüter-RENO-TK** to be used where ceramic tile meets RF-1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with tile installation standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1) For installations indicated below, follow procedures in ANSI's "Specifications for the Installation of Ceramic Tile" for providing 95 percent mortar coverage.

a. Tile floors in wet areas.
b. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
c. Tile floors composed of rib-backed tiles.

B. Comply with TCNA's "Handbook for Ceramic Tile Installation."

C. Maximum variation in concrete subfloor: 1.4 inch in 10'-0" from the required plane. Slope subfloor ¼" per foot to drain.

D. Movement Joints. Coordinate with Architectural Drawings.

E. Floor Tile Installation Method:
1. Over Concrete Subfloors: **TCNA F115-05 thin-set mortar bonded to concrete, with epoxy grout.**

F. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

G. Lay tile in grid patterns as per Finish Plans. Align joints where adjoining tiles on floor, base, walls, and trim are the same size.

H. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

I. Grouted joints to be consistent and 1/8" inch wide throughout.

J. Representative: United Tile, Portland OR. Andy Wiedemann 503-231-4959.

END OF SECTION 093013

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 093014 – QUARRY TILE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for tile and installation materials and Samples for tile.

B. Floor Tiles: **Static coefficient of friction not less than 0.6 for level surfaces, per ASTM C 1028.**

PART 2 - PRODUCTS

2.1 QUARRY TILE

A. Glazed Quarry Tile: **Flat, square-edged tile.**

Products: **CT-3 & CT-4. Quarry Tile Co; Natural Hues Collection. Eco-Body 21% recycled content.**

a. **CT-3: QH16, Field**
   1) Wearing Surface: **Nonabrasive**
   2) Facial Dimensions: **12 by 12 inches**
   3) Thickness: **5/16 inch**
   4) Color: **Mushroom**
   5) Finish: **Mat glaze**

b. **CT-4: QH24, Accent**
   1) Wearing Surface: **Nonabrasive**
   2) Facial Dimensions: **3 by 6 inches**
   3) Thickness: **5/16 inch**
   4) Color: **Ivory**
   5) Finish: **Mat glaze**

B. Quarry Tile Trim Units: Matching characteristics of and coordinated with sizes and coursing of adjoining flat tile.

a. **CT-3A - Custom**
   1) Color: **Mushroom**
   2) Facial Dimensions: **12 by 6 inches, one 12 inch side to be factory glazed. Per Daltile Rep: Hilary Noah, 503-236-4585.**

b. **CT-3B – Q36661P Cove**
   1) Color: **Mushroom**
   2) Facial Dimensions: **6 by 6 inches with flat top.**

c. **CT-4A - Custom**
   1) Color: **Ivory**
   2) Facial Dimensions: **3 by 6 inches, one 3 inch side to be factory glazed. Per Daltile Rep: Hilary Noah, 503-236-4585.**

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

C. Glazed Wall Tile Trim Units: **Miter tiles at corners.**

1. Accessories for Glazed Wall Tile: **None**

2.2 INSTALLATION MATERIALS

A. VOC Limit for Adhesives and Fluid-Applied Waterproofing Membranes: 65 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Backer Boards: cement boards of **Dens-Guard Tile Backer, by Georgia Pacific Co.**

C. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1. Thin-Set Mortar Type: **Latex- portland cement.**

2. Grout Type: **Water-cleanable epoxy** unless otherwise indicated.

a. Products:

1) TEC

3. Grout Color: **Light Smoke #915**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with tile installation standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1. For installations indicated below, follow procedures in ANSI's "Specifications for the Installation of Ceramic Tile" for providing 95 percent mortar coverage.

a. Tile floors in wet areas.
b. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
c. Tile floors composed of rib-backed tiles.

B. Comply with TCNA's "Handbook for Ceramic Tile Installation."

C. Maximum variation in the backing surface: ¼ inch in 10'-0" from the required plane.

D. Movement Joints. Coordinate with Architectural Drawings.

E. Wall Tile Installation Method:
1. Over Cementitious Backer Units: **TCNA assembly W244-05 thin-set mortar.**

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

F. At showers, and where indicated, provide cementitious backer units and treat joints to comply with ANSI A108.11.

G. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

H. Lay tile in grid pattern, unless otherwise indicated. Must align joints where adjoining tiles on floor, base, and walls.

I. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

J. Representative: Daltile, Hilary Noah, 503-236-4585.

K. www.quarrytile.com/naturalhues.

END OF SECTION 093014

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 093019 – CERAMIC TILING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for tile and installation materials and Samples for pavers, for base and for all Schlüter strips.

B. Floor Tiles: **Static coefficient of friction not less than 0.6 for level surfaces, per ASTM C 1028.**

PART 2 - PRODUCTS

2.1 CERAMIC TILE

A. Ceramic tile that complies with Standard grade requirements in ANSI A137.1, "Specifications for Ceramic Tile."

B. Paver Tile: **Glazed, impervious porcelain flat tile.**

Products: **CT-5, CT-5A, CT-6, & CT-6A. Floor Gres; Stonetech.**

a. **CT-5**
   1) Facial Dimensions: **24 by 48 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stongrey 5.0**

b. **CT-5A**
   1) Facial Dimensions: **15 by 32 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stongrey 5.0**

c. **CT-6**
   1) Facial Dimensions: **24 by 48 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stonblack 1.0**

d. **CT-6A**
   1) Facial Dimensions: **15 by 32 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stonblack 1.0**

C. Wall Base: **Glazed, impervious porcelain flat tile.**

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

Products: **CT-6B and 6C Floor Gres; Stonetech.**

a. **CT-6B**
   1) Facial Dimensions: **4 by 48 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stonblack 1.0**

b. **CT-6C**
   1) Facial Dimensions: **4 by 32 inches**
   2) Thickness: **11 millimeters**
   3) Color: **Stonblack 1.0**

2.3 INSTALLATION MATERIALS AND ACCESSORIES

D. VOC Limit for Adhesives and Fluid-Applied Waterproofing Membranes: 65 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Waterproofing Membranes for Thin-Set Installations: ANSI A118.10, **fabric-faced polymer sheet product**.

F. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1. Thin-Set Mortar Type: **Latex portland cement.**

2. Grout Type: **Water-cleanable epoxy**.

   a. Products:

      1) **Mapei**

3. Grout Color: **Gray 09. For use on Floor only.**

4. Grout Color: **Black 10. For use on Wall Base only.**

G. Schlüter Strips:

1. **1.4 Reno Schlüter-Reno-TK-ETK Stainless Steel** at all areas where ceramic paver meets dissimilar flooring material. Exception paver and walk off mat.

2. **1.6 Schlüter-Reno-DECO-E Stainless Steel** decorative insert within CT 5 and CT6 as per Tile Pattern Detail shown in ID drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with tile installation standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.

1. For installations indicated below, follow procedures in ANSI's "Specifications for the Installation of Ceramic Tile" for providing 95 percent mortar coverage.

a. Tile floors in wet areas.
b. Tile floors composed of tiles 8 by 8 inches (200 by 200 mm) or larger.
c. Tile floors composed of rib-backed tiles.

B. Comply with TCNA's "Handbook for Ceramic Tile Installation."

C. Maximum variation in concrete subfloor: 1.4 inch in 10'-0" from the required plane. Slope subfloor ¼" per foot to drain.

D. Movement Joints. Coordinate with Architectural Drawings.

E. Floor Tile Installation Method:
Over Concrete Subfloors: TCNA **F115-05 thin-set mortar bonded to concrete, with epoxy grout.**

F. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

G. Lay tile in grid patterns as per Finish Plans. Align joints where adjoining tiles on floor, base, walls, and trim are the same size.

H. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

I. Grouted joints to be consistent and 1/8" inch wide throughout for both floor tile and wall base.

J. Wall Base Installation Method: Install floor tile tight to the walls and install wall base on top of floor tiles.

K. Representative: United Tile, Portland OR. Andy Wiedemann 503-231-4959. www.floorgres.it

END OF SECTION 093019

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

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SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Surface-Burning Characteristics of Panels: ASTM E 1264, Class A materials, tested per ASTM E 84.

B. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

C. Seismic Standard: Per Northwest Wall & Ceiling Bureau document 401- Oregon.

1.2 SUBMITTALS

A. Product Data and material Samples.

1. Submit all required LEED documentation for credits noted in paragraph 1.3 per the submittal requirements outlined in Section 018113. ***Materials and Resources credit 4 – Recycled Content [minimum recycled content 5% post-consumer and 5% pre-consumer].***

B. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANELS

A. Products:

1. **(ACT-1)** Armstrong Dune Second Look II, 2712NF Tegular 24 x 48 x 3/4, or approved. Color: White.
2. **(ACT-2)** Armstrong Cortega Second Look II, 2767NF Tegular 24 x 48 x 3/4, or approved. Color: White.

   a. **(ACT-2a)** at Café. Color: Haze.

3. **(ACT-3)** Armstrong Woodworks Vector Perforated, 6809 24 x 24 x 3/4, or approved. Color: Maple.

4. **(ACT-4)** Armstrong Clean Room VL, 870 24 x 48 x 5/8, or approved. Color: White.

2.2 CEILING SUSPENSION SYSTEM

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

A. Acoustical Ceiling Grid System: Heavy Duty Prelude XL 15/16" Exposed Tee, or approved.

1. Color (Typical): White.
2. Color at ACT-2A: Haze.
3. Color at ACT-3: Platinum.

B. Attachment Devices: Comply with seismic design requirements.
C. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

1. Size: Comply with seismic design requirements.

D. Seismic Struts: Manufacturer's standard product designed to accommodate seismic forces.
E. Seismic Clips: Manufacturer's standard seismic clips designed to secure panels in place.
F. Hold-Down Clips: Manufacturer's standard product; spaced 24 inches o.c. on all cross tees.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Ceiling Suspension System Installation: Comply with ASTM C 636 and CISCA's "Ceiling Systems Handbook."

1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

B. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

END OF SECTION 095113

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 095120 – DRYWALL FURRING SYSTEM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submit Product Data and material Samples.
B. Where fire-resistance-rated assemblies are required, provide materials and construction identical to assemblies tested according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1.2.1 WARRANTY

A. Grid System: Submit a written warranty executed by the manufacturer, agreeing to repair or replacement of grid system that fails within the warranty period. Failures include, but are not limited to:

    1. Grid System: Rusting and manufacturers defects.

B. Warranty period for grid system is 10 years from date of Substantial Completion.
C. The warranty shall not deprive the Owner of other rights the owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Armstrong World Industries, Inc.

2.2 MATERIALS

A. Product: Armstrong World Industries, Drywall/Stucco Furring System, or approved.
B. Main Beam shall be heavy-duty, double-web steel construction (minimum .0179" prior to protective coating per ASTM C645), hot dipped glavanized (minimum G40 per ASTM C645), 1-1/2" web, rectangular top bulb and pre-finished 15/16" flange or 1-1/2" flange. Fire-rated main beam shall be formed to receive override cross tee.
C. Primary Furring Cross Tees shall be double-web steel construction (minimum .0179" prior to protective coating per ASTM C645), hot dipped galvanized (minimum .0179" prior to protective coating per ASTM C645), web height 1-1/2" with rectangular bulb and pre-finished 1-1/2" knurled flange.
D. Secondary Furring Cross Tees for fixtures shall be double-web steel construction (minimum .0179" prior to protective coating per ASTM C645), hot dipped galvanized (minimum .0179" prior to protective coating per ASTM C645), fire rated, web height 1-1/2" rectangular bulb and 15/16" flange.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

E. Hat Furring channel 48" x 1-3/8" x 7/8," hot-dipped galvanized steel (minimum .0179" prior to protective coating per ASTM C645); compatible with main beams.
F. Wall Molding shall be hot-dipped galvanized, hemmed angle molding, 1-1/4" height with 1-1/4" flange or unhemmed channel molding ¾" x 1-9/16" x 1-1/4."
G. Hanger wire shall be #12 gauge hanger wire, galvanized. Hanger wire pull out to exceed 500 lbs.
H. Screws meeting ASTM C1002 for wall board application shall be bugle head screws in accordance with thickness of material used.

2.3 STRUCTURAL CLASSIFICATION

A. All main beams shall conform to ASTM C635 heavy duty classification.

2.4 QUALITY CRITERIA

A. Deflection of fastening suspension system supporting light fixtures, ceiling grilles, access doors, verticals and horizontal loads shall have a maximum deflection of 1/360 of span.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install per ASTM C636.

B. Fasteners/upper attachment: attach #9 gauge hanger wire directly tied to structure, or with proper fasteners (such as galvanized steel clips) sized and attached to carry loading of 500 lbs. A tight pigtail knot for #9 gauge wire shall be used at all wire supporting locations; at top and bottom fastening condition per ASTM C636.
C. Use #12 gauge hanger wire at all perimeter locations.
D. Provide additional framing as necessary to frame openings for light fixtures, access doors, sprinkler systems, etc. Coordinate support framing with other trades. Install access doors where required.
E. Main beams shall be suspended from the overhead construction with #9 gauge hanger wire, spaced 36" O.C. along the length of the main beams for interior applications, and 24" O.C. for exterior or wind-load applications.
F. Install 36" cross tees, spaced 16" O.C. for interior applications or 24" cross tees, spaced 16" O.C. for exterior applications.
G. Install 3.4 lb. Galvanized 3/8" diamond mesh or flat ribbed lath with wafer head self-drilling screws to cross tees.
H. Install perimeter hot dipped galvanized channel molding at wall/ceiling junctures to support main runners and cross tees in an isolation manner. Use main runner on cross tee perimeters and channel molding on all main runner perimeters.

3.2 ISOLATION

A. Do not fasten main runners or cross tees to perimeter masonry or concrete construction. Allow clearance between such construction at the ends of main runners and cross tees.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

B. Channel molding is permitted when screws are attached to main runner flange for isolation.

3.3 EXPANSION JOINTS

A. Provide expansion joints where shown on drawings by using two main runners spaced apart with No.40 expansion joint by Extruded Aluminum Fry Reglet Corporation or approved.
B. Expansion joints are installed between two main runners to separate the "T" bar system. Fasten expansion joints to main runners using wafer head screws and/or #18 gauge wire in accordance with appropriate standards.

3.4 CONTROL JOINTS

A. At control joints, provide discontinuous laps over joints. Do not bridge joints.
B. Control joints are sized and installed in similar manner as the expansion joints with wafer head screws and/or #18 gauge wire; not to exceed 12' x 12' or 144 sq. ft.

3.5 EXTERIOR APPLICATIONS

A. Use Stiffing Brace as required by code in accordance with local code. Installed at each main runner cross tee intersection; 24 O.C. along main runner.
B. Install 15/16" main beam 24" O.C. for UL Uplift Class 90, withstands up to 90 psf of uplift pressure; maximum plenum depth not to exceed 20-3/4." Routs along main runner spaced 8" O.C. to receive cross tees at 8," 16" or 24" O.C.
C. Install 24" cross tees at 16" O.C. for UL Uplift Class 90.

END OF SECTION 095120

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 096513.13 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.
B. Extra Materials: None.

1.2 SUBMITTALS

A. Submit all required LEED documentation per Section 01 81 13 LEED Requirements for the following credits: Indoor Environmental Quality Credit 4.1 Adhesives and Sealants.

PART 2 - PRODUCTS

2.1 WALL BASE, RB-1

A. Products: **Roppe rubber base. Pinnacle Series. Color: 140 Fawn.**
B. Style: **Cove (with top-set toe) for resilient floors and straight for carpeted floors.**
C. Height: **4 inches.**
D. Lengths: **Coils in Manufacturer's standard lengths.**
E. Outside Corners: **Job formed.**
F. Inside Corners: **Job formed.**

2.2 RESILIENT ACCESSORIES

A. Products: Roppe Vinyl Moldings, Color 140 Fawn.
B. Reducer strips/carpet edgings for all resilient floor coverings (VCT, vinyl and rubber types) abutting carpet are to be **evaluated and submitted** by the flooring contractor according to each location.
C. Product Type suggestions only: Joiner for RF-7 and carpet tile: Roppe #177. Joiner for VCT-1 and carpet tile: Roppe #177.
D. Material: Vinyl.
E. Profile and Dimensions: As required.

2.3 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer for applications indicated.
B. Adhesives: Water-resistant type recommended by Manufacturer to suit products and substrate conditions.

PART 3 - EXECUTION

3.1 INSTALLATION

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
B. Adhesively install resilient wall base and accessories.
C. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.

D. Install reducer strips and joiners at edges of floor coverings that would otherwise be exposed.

Representative: T& A Supply Company, Inc. Portland OR. Mary Weis. 503-522-1156.

END OF SECTION 096513.13

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 096513.23 – RESILIENT STAIR TREAD AND RISERS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

B. Fire-Test Response: Resilient flooring has critical radiant flux classification of Class I, not less than 0.48 W/sq. cm per ASTM E 648.

C. Extra Materials: None.

PART 2 - PRODUCTS

2.1 RUBBER STAIR TREAD, RF-2

A. Products: **Roppe, #70-T Smooth Design, Square Nose; Color: #140 Fawn.**

B. Material thickness: **1/8" thick, Light Duty.**

C. Stair Tread Widths: **Reference Architectural Plans and verify in field prior to ordering.**

D. Abrasive strips color: **Teak Brown (-T), two strips each ¾" wide.**

E. Seaming Method: **Butting Joint specified at time of order. ROR435 and ROPECC standard.**

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer (Roppe) for applications indicated.

B. Adhesives: Water-resistant type recommended by Manufacturer to suit floor covering and substrate conditions indicated. ROP319 Stair Tread Adhesive, used in combination with ROPECC (Nose Filler) standard.

C. Butting Joint: Use ROP435 in combination with ROPECC.

D. Nosing: Use Roppe Four Inch Commercial Stair Nosing #1 for transition to CPT-1and cut if required to insure smooth and safe transition. Color: 140 Fawn. Nosing to have abrasive strip –T- Teak Brown.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners. Prepare and condition concrete according to Manufacturer's recommendations. (Roppe)

B. All stair treads to be stored flat to prevent any damage.

Representative: T& A Supply Company, Inc. Portland OR. Mary Weis. 503-522-1156.

END OF SECTION 096513

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 096516 - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

B. Fire-Test Response: Resilient flooring has critical radiant flux classification of Class I, not less than 0.48 W/sq. cm per ASTM E 648.

C. Extra Materials: None.

PART 2 - PRODUCTS

2.1 RUBBER STAIR TREAD, RF-2

A. Products: **Roppe, #70-T Smooth Design, Square Nose; Color: #140 Fawn.**

B. Material thickness: **1/8" thick, Light Duty.**

C. Stair Tread Widths: **Reference Architectural Plans and verify in field prior to ordering.**

D. Abrasive strips color: **Teak Brown (-T), two strips each ¾" wide.**

E. Seaming Method: **Butting Joint specified at time of order. ROR435 and ROPECC standard.**

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer (Roppe) for applications indicated.

B. Adhesives: Water-resistant type recommended by Manufacturer to suit floor covering and substrate conditions indicated. ROP319 Stair Tread Adhesive, used in combination with ROPECC (Nose Filler) standard.

C. Butting Joint: Use ROP435 in combination with ROPECC.

D. Nosing: Use Roppe Four Inch Commercial Stair Nosing #1 for transition to CPT-1and cut if required to insure smooth and safe transition. Color: 140 Fawn. Nosing to have abrasive strip –T- Teak Brown.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners. Prepare and condition concrete according to Manufacturer's recommendations. (Roppe)

B. All stair treads to be stored flat to prevent any damage.

Representative: T& A Supply Company, Inc. Portland OR. Mary Weis. 503-522-1156.

END OF SECTION 096516

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 096516A - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Seaming diagram and Samples of flooring, welding rods and base cap.

B. Fire-Test Response: **Resilient flooring has critical radiant flux classification of Class I, not less than 0.45 W/sq. cm per ASTM E 648.**

C. Extra Materials: **None**

PART 2 - PRODUCTS

2.1 SHEET VINYL FLOOR COVERING, HETEROGENEOUS RF-1

A. Products: **Mannington Commercial**
   1. Style: Primus, **Lacosta**
   2. Color: **ALL126 Taupestone**

B. Sheet Width: **12 feet. Thickness: .080 inches**

C. Integral Flash Cove Base: Cove floor coverings 6 inches up vertical surfaces. Support on cove strip and butt against cap strip. Minimize joints of metal edge by using 12 foot lengths as much as possible.

   1. Install metal corners and end stops.

D. Representative: Mannington Commercial Flooring. Pat Waege 503-504-0526. www.manningtoncommercial.com.

E. Representative: Roppe and Futura Metals. T& A Supply Company, Inc. Portland OR. Mary Weis. 503-522-1156.

2.2 **SHEET LINOLEUM FLOOR COVERING** See Finish Legend + Finish Plans for **RF-4, RF-5 and RF-6.**

A. Products:

Forbo; Marmoleum Dutch Designs, Twin Materials. Color: MO412 Claudy Jongstra: RF-4. (Field)

Forbo; Real Authentic, Color: 3077 Tan Pink: RF-5 (Accent)

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

Forbo: Real Authentic, Color: 3139 Lava: RF-6 (Accent)

B. Sheet Width: **6 feet 7 inches**

C. **Sheet Thickness: 2.5 mm (1/10 gauge)**

D. Seaming Method: Recess Scribe and Heat welded.

E. **Chalk contrasting color inserts on field color and obtain approval from Design Firm representative prior to proceeding with final cutting of shapes. Original CADD drawing will be provided to the General Contractor.**

F. Representative: Forbo Flooring Systems. Cherie McNabb. 800-342-0604 ext. 464. www.forboflooringNA.com

2.3 INSTALLATION ACCESSORIES FOR RF-1

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer for applications indicated.

B. Adhesives: **Water-resistant type recommended by Manufacturer to suit sheet vinyl floor covering and substrate conditions indicated.**
   1. Installation Adhesive porous substrate: **Mannington V-82, Full Spread**
   2. Installation adhesive non-porous substrate: **Mannington V-95, Full Spread**

C. Solid Heat-Welding Rods: **Mannington Commercial**

   1. Color: **Taupestone**

   2. Pattern #: **ALL126**

   3. Weld Rod #: **842381**

D. Cove-Base Accessories: **Use at all walls.**

   1. Manufacturer: **Futura Metals**

   2. Product: **Metal Square Edge Trim, available in 8 foot and 12 foot lengths.**

   3. Style: **901**

   4. Color: **Aluminum.**

E. Transition between dissimilar materials: **Subfloor Leveler Roppe, Type TP thermoplastic rubber #304 1/8 by 1/8 inches. Color 140 Fawn.**

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

F. Provide metal inside and outside corners and end stops provided or approved by floor covering Manufacturer.

2.4 INSTALLATION ACCESSORIES FOR RF-4, RF-5 & RF-6

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by Manufacturer to suit linoleum floor covering and substrate conditions indicated Adhesive L910 per Forbo.

C. Heat-Welding Bead: Solid-strand product of floor covering Manufacturer.

1. Color: MC 412, MC3077 and MC 3139 for RF-4, RF-5 and RF-6 accordingly.

D. Wall Base: **4 inch coved RB-1.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

B. Unroll sheet floor coverings and allow them to stabilize before cutting and fitting. Acclimate flooring before installation. Follow Manufacturer's instructions for storing and protecting flooring.

C. Examine subfloors and concrete prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges and other defects that might prevent adhesive bond or impair durability or appearance of the floor material.

D. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Filler recommended by the flooring Manufacturer.

E. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

F. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

G. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

H. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

I. Install flooring in strict accordance with the flooring Manufacturer's latest instructions.

J. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.

K. Install flooring with adhesives, tools, and procedures in strict accordance with the Manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

L. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.

M. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in substrates.

N. Seaming Method: **Heat welded.**

END OF SECTION 096516A

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

SECTION 096516B - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Seaming Diagram and Samples including thresholds.

B. Fire-Test Response: Resilient flooring has critical radiant flux classification of Class I, not less than 0.45 W/sq. cm per ASTM E 648.

C. Extra Materials: **None**

PART 2 - PRODUCTS

2.1 SHEET VINYL FLOOR COVERING, RF-3

A. Products: **Oscada Plastics, Inc. Protect-All. Color: Dark Grey Matte.**

B. Sheet Width: **60 inches x 96 inches**

C. Cove Base: **Oscoda Plastics cove base with inside and outside corners. (6inches x 8 feet)**

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring Manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by Manufacturer to suit sheet vinyl floor covering and substrate conditions indicated. **Oscada Plastics 2-part epoxy #139 Fast Set or #127 as best suits the conditions and per Manufacturer's instructions.**

C. Heat-Welding Bead: **Protect-All "V" shaped solid-strand product of floor covering Manufacturer.**

1. Color: **Dark Grey, match to the tiles.**

D. Integral-Flash-Cove-Base Accessories: **.05 inch x 2 inch x 8 feet cove cap provided and approved by floor covering Manufacturer.**

1. Provide stainless steel corner guards at outside corners (base). Provided and approved by floor covering Manufacturer.

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

E. Provide and install Stainless Steel thresholds at all doors and at dissimilar flooring materials.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

B. Acclimate sheet floor coverings and base three days and allow them to stabilize before cutting and fitting.

C. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.

D. Install smooth side of tiles up.

E. Seaming Method: **Heat welded.**

F. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in substrates.

G. Install stainless steel drain rings around all drains and other surface penetrations.

H. Integral Flash Cove Base: Support on cove strip and butt against aluminum cove base cap/Z-Bar. Heat weld all seams.

I. Install stainless steel corner guards as per Manufacturer's instructions.

J. Stainless steel transition strips as required for transition areas, termination points, and elongated trough drains.

K. Seal top of cove base, behind cove cap, around drain rings and under transition strips and at door jambs with Manufacturer's recommended Sealant.

L. Use of an authorized installation contractor is required by flooring Manufacturer.

Representative: Oscada Plastics, Inc. P.O.Box 189 Oscada MI. Darren Taylor 800-544-9538, ext 131. OR Jerry Lee, Technical Sales Manager. www.protect-allflooring.com

END OF SECTION 096516B

Notice of Extended Payment Provision: The Agreement will allow the Owner to make payment within thirty-five (35) days after the date an Application for Payment is received by the Owner.

Notice of Alternate Billing Cycle: The Agreement will allow the Owner to require the submission of Application for Payment in billing cycles other than 30-day cycles. The period covered by each Application for Payment will be one calendar month ending on the last day of the month. Applications for Payment for the Agreement will be submitted to Owner no later than the 5th day of each month.

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November 16, 2006

NSF-ISR
QUALITY SYSTEM REGISTERED TO ISO 9001:2000

Mr. Boyd Grayson
Meadow Burke Products
531 S U.S. Highway 301
Tampa, FL 33619

Subject: SwRI® Project No. 01.11812.01.212

Dear Mr. Grayson:

Enclosed please find two copies of the final report for the above-referenced project, along with video and photographic documentation. If you should have any questions or comments, or if I may be of further assistance, please do not hesitate to contact me by phone at (210) 522-3971, by fax at (210) 522-3377, or e-mail to Barry.Badders@swri.org.

Sincerely,

Barry Badders

Barry Badders, P.E.
Group Leader
Engineering and Research Section

BLB/lo
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Enc: 1) 2 Final Reports
2) 1 Photo CD

cc: Record Copy A – FTD (w/o enc. No. 2)
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NSF-ISR
QUALITY SYSTEM REGISTERED TO ISO 9001:2000

FIRE PERFORMANCE EVALUATION OF RAPID-LOK CONNECTION PLATES UTILIZING THE STANDARD TIME-TEMPERATURE CURVE SPECIFIED IN ASTM E 119-00, *STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS*

FINAL REPORT
Consisting of 96 Pages

SwRI® Project No. 01.11812.01.212
Test Dates: May 5 – 6, 2004; September 28 – 30, 2005;
October 3, 2005; and August 2 - 17, 2006
Report Date: November 16, 2006

Prepared for:

Meadow Burke Products
513 S U.S. Highway 301
Tampa, FL 33619

Prepared by:

Barry Badders

Barry Badders, P.E.
Group Leader
Engineering and Research Section

Approved by:

Marc L. Janssens, Ph.D.
Director
Fire Technology Department

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ABSTRACT

Fire performance evaluations of Rapid-Lok Connection Plates were conducted by Southwest Research Institute's (SwRI) Fire Technology Department, located in San Antonio, TX, on August 2, 3, 4, 7, 8, and 17, 2006, for Meadow Burke Products, located in Tampa, Florida. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report. Testing was conducted utilizing the standard time-temperature curve specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*.

The Rapid-Lok assemblies were fire tested on a concrete slab or on a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. Each Rapid-Lok assembly was, at a minimum, fire tested under its rated load. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except six tests, which continued to 121, 160, 180 and 240 min without failure. Table i summarizes the assembly models tested and the results obtained during testing.

Table i. Summary of Test Results.

Test Date	Assembly	Applied Load (lb)	Failure (min:sec)
5/5/04	30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok	32,000	160:00*
5/6/04	30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok	32,000	87:15
9/28/05	20 Kip – 6" Model Rapid-Lok	22,000	71:30
9/28/05	15 Kip – 4" Model Rapid-Lok	16,500	85:45
9/29/05	20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok	22,000	89:15
9/29/05	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	22,000	114:15
9/30/05	20 Kip – 6" Concrete Corbel Model Rapid-Lok	22,000	121:00*
9/30/05	30 Kip – 8" Alt. Model Rapid-Lok	33,000	121:00*
10/3/05	40 Kip – 8.5" Concrete Corbel Model Rapid-Lok	44,000	121:00*
8/2/06	6 Kip – 4" Model Rapid-Lok	6,000	180:00*
8/3/06	20 Kip – 8" Model Rapid-Lok	20,000	91:30
8/3/06	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	20,000	112:40
8/4/06	40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok	40,000	71:00
8/4/06	40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok	40,000	102:00
8/7/06	30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok	40,000	240:00*
8/8/06	40 Kip – 8.5" Model Rapid-Lok	40,000	78:30
8/8/06	20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok	20,000	121:10
8/17/06	40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok	40,000	166:20

*Failure did not occur, testing terminated.

1.0 INTRODUCTION

This report describes fire performance evaluations of Rapid-Lok Connection Plates, manufactured by Meadow Burke Products, and includes a description of the test procedure followed, sample description, preparation details, and all test results obtained. The tests were performed utilizing the standard time-temperature curve as specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials,* at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas, on August 2, 3, 4, 7, 8, and 17, 2006. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report.

This report contains a description of the test procedure followed, assemblies tested, and the results obtained. The results presented in this report apply only to the assemblies tested, in the manner tested, and not to any similar assemblies or material combinations.

These test results should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions, and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment, which takes into account all the factors that are pertinent to an assessment of the fire hazard of a particular end-use.

2.0 TEST PROCEDURE

SwRI's small horizontal furnace is used to subject the specimens to the fire exposure conditions as specified in ASTM E 119.

The small horizontal furnace is equipped with four pre-mixed air/natural gas burners, one placed on each wall of the furnace. The burners are controlled by a variable ratio gas/air regulator. Regulated natural gas enters the furnace at the nozzle of each burner, and a constant supply of air is provided to the nozzle by a blower unit. The gaseous products of combustion exit the furnace through an exhaust duct and flow through an exhaust fan into the atmosphere.

The furnace exposure is described in Section 5 of ASTM E 119, and is used to regulate the furnace environment throughout the duration of the exposure period. Points on the standard time-temperature curve are shown in Table 1.

Table 1. Points on the Time-Temperature Curve.

TIME	TEMPERATURE
0 min	Ambient
5 min	1000°F
10 min	1300°F
30 min	1550°F
45 min	1638°F
60 min	1700°F
2 hrs	1850°F
3 hrs	1925°F
4 hrs	2000°F

The conduct of the fire test is controlled according to the standard time-temperature curve, as indicated by the average temperature obtained from the readings of three thermocouples (TCs) located below the furnace lid and 12 in. away from the specimen. The TCs are enclosed in protection tubes of such material and dimensions that the time constant of the TC assembly lies between 5.0 and 7.2 min, as required by the standard. One quick response TC, with a response time less than 20 sec, is also included in the furnace to aid the furnace operator in controlling the furnace temperature. The furnace temperature during a test is controlled such that the area under the time-temperature curve is within 10 percent of the corresponding area under the standard time-temperature curve for tests of 1 hr or less, 7.5 percent for those less than 2 hr, and 5 percent for those tests of 2 hr or more duration.

The pressure is controlled such that the furnace pressure is slightly negative at 12 in. below the top of the furnace. The pressure is monitored using a tube sensor pressure probe, and is measured with a bi-directional pressure transducer (Setra Systems, Inc., Model 264). The furnace pressure is controlled by adjusting the exhaust gas flows.

A load was applied to the Rapid-Lok connection plate assemblies during the fire exposure. Failure is defined as occurring when the assemblies can no longer support the applied load. The load applied was the assembly's rated load, as specified by Meadow Burke Products. The hydraulic pressure applied to the jack to achieve the desired load was determined by Equation 1.

$$Pressure\,(psi) = \frac{Desired\ Load\,(lb)}{Jack\ Cylinder\ Area\,(in.^2)} \qquad \textbf{Equation 1}$$

One TC was placed on each bearing plate to measure the thermal response of the steel, except for the tests conducted on May 5 and 6, 2004.

3.0 TEST SAMPLES

Test articles were received by SwRI on March 22, 2004, September 21, 2005, September 27, 2005, July 12, 2006, August 8 and 14, 2006, directly from Meadow Burke Products. The Rapid-Lok Connection Plate assemblies were identified as the following models:

- 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok
- 20 Kip – 6" Model Rapid-Lok
- 15 Kip – 4" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 20 Kip – 6" Concrete Corbel Model Rapid-Lok
- 30 Kip – 8" Alt. Model Rapid-Lok
- 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok
- 6 Kip – 4" Model Rapid-Lok
- 20 Kip – 8" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok
- 40 Kip – 8.5" Model Rapid-Lok
- 20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok

The assemblies were constructed of ASTM A 36 steel with a hot dipped galvanized finish, and consisted of an embed plate and a bearing plate. The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok, 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok, 20 Kip – 6" Modified Steel Corbel Model Rapid-Lok, and the 40 Kip – 8.5" Modified Steel Corbel Model Rapid-Lok excluded the galvanized coating. The backside of the bearing plate had 3/4-in. studs with 1-1/4-in. heads that were welded to the bearing plate for connection to the embed plate. The number of studs varied based on the assembly configuration and bearing capacity. Figure 1 illustrates the stud on the back of a bearing plate.

The embed plates were constructed of a 1/2-in. plate with keyways for receiving the bearing plate. Welded to the backside of the embed plate were 3/4-in. studs with 1-1/4-in. heads for anchoring the embed plate into poured concrete. The number and length of the anchors varied based on the size of the bearing plate used. Figure 1 illustrates the backside of an embed plate.

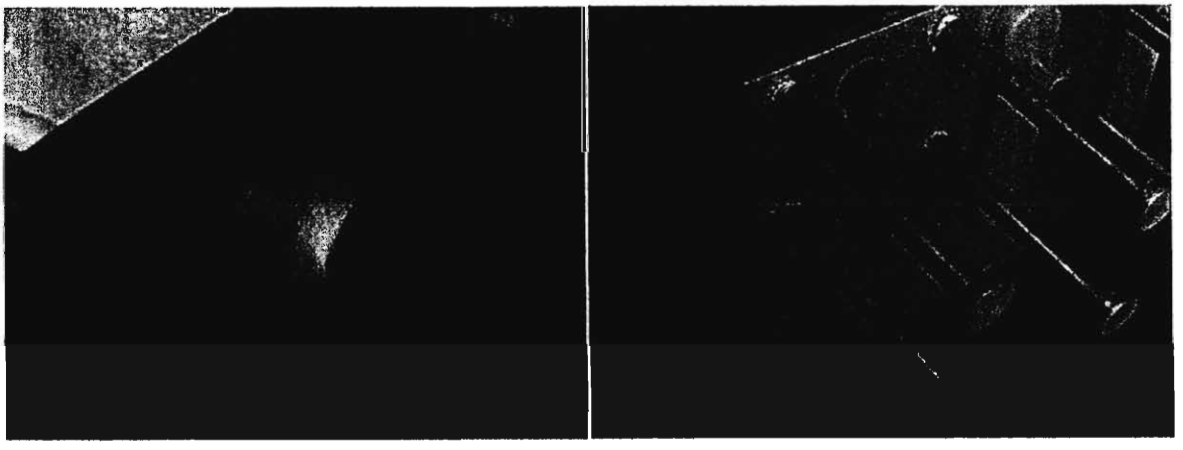

Figure 1. ***Left*** **– Connecting Stud on Backside of Bearing Plate.**
Right **– Concrete Anchors and Keyways on Backside of Embed Plate.**

The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok Bearing Plate was constructed with a 10 × 7-1/2 × 3/8-in. plate welded together perpendicular to a 10 × 16 × 3/8-in. plate, and supported by a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was filled with mineral wool insulation, and the bottom closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok Bearing Plate was constructed the same as the filled model except the cavity created by the shaped piece was filled with insulation. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Model Rapid-Lok Bearing Plate was constructed with a 7-3/4-in. long 6 × 8 × 1/2-in. angle. A 5/8-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 15 Kip – 4" Model Rapid-Lok Bearing Plate was constructed with a 7-3/4-in. long 4 × 8 × 1/2-in. angle. A 3/8-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok Bearing Plate was constructed with a 10 × 8 × 3/8-in. plate welded together perpendicular to a 10 × 10 × 3/8-in. plate, and supported by a

shaped piece of 1/4-in. plate. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok Bearing Plate was constructed the same as the unfilled model except the cavity created by the shaped piece was filled with mineral wool insulation, and the bottom closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Concrete Corbel Model Rapid-Lok was constructed identical to the 20 Kip – 6" Model Rapid-Lok except the bottom was encased in concrete. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Model Rapid-Lok Bearing Plate was constructed with a 12-1/2-in. long 8 × 8 × 1/2-in. angle. Two 3/4-in. thick gussets were welded onto the angle for support, centered 4 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok was constructed identical to the 40 Kip – 8.5" Model Rapid-Lok, except the bottom was encased in concrete. The 40 Kip – 8.5" Model Rapid-Lok was constructed with a 12 × 8 × 1/2-in. plate welded perpendicular to a 11-1/2 × 12 × 1/2-in. plate. Two 1-in. thick gussets were welded onto the angle for support, centered 3-11/16 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 6 Kip – 4" Model Rapid-Lok Bearing Plate was constructed with a 6-in. long 4 × 8 × 3/4-in. angle. Two studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 8" Model Rapid-Lok was constructed with a 7-3/4-in. long 8 × 8 × 1/2-in. angle. A 1-in. thick gusset was welded onto the angle for support. Four studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok was constructed with a 10 × 7-1/2 × 3/8-in. plate welded perpendicular to a 10 × 10 × 3/8-in. plate, and supported by a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was filled with mineral wool insulation, and the bottom was closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok was constructed with a 14-3/4 × 7-1/2 × 3/8-in. plate welded perpendicular to a 14-3/4 × 16 × 3/8-in. plate, and supported by

a shaped piece of 1/4-in. plate. The cavity created by the shaped piece was hollow, and the bottom was open. Four studs were welded to the bearing plate for connection to the embed plate.

The 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok was constructed the same as the 40 Kip - 8.5" Steel Corbel Unfilled Model Rapid-Lok, except the cavity created by the shaped piece was filled with mineral wool insulation, and the bottom was closed with a riveted plate. No information regarding the mineral wool, such as type, density, *etc.*, was provided. Four studs were welded to the bearing plate for connection to the embed plate.

The 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok was constructed with a 14-in. long 8 × 8 × 1/2-in. angle. Two 1-in. thick gussets were welded onto the angle for support, centered 4 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate. The bottom was encased in concrete.

The 40 Kip – 8.5" Model Rapid-Lok was constructed with a 12 × 8 × 1/2-in. plate welded perpendicular to a 11-1/2 × 12 × 1/2-in. plate. Two 1-in. thick gussets were welded onto the angle for support, centered 3-11/16 in. from each end. Six studs were welded to the bearing plate for connection to the embed plate.

The 20 Kip – 6" Modified Steel Corbel Model Filled Rapid-Lok was constructed identical to the 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok, except the base plate was lowered by 1 in. and additional insulation was added.

The 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok was constructed identical to the 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok, except two gussets were added to provide additional support to the bearing plate. The gussets were 1-in. thick and welded onto the bearing plate for support, centered 6-7/8 in. from each end.

Fabrication drawings provided by Meadow Burke are located in Appendix A.

The assemblies fire tested on May 5 and 6, 2004, were on a concrete slab. The other assemblies were fire tested on a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. The columns were constructed with 4-ft long W10 × 26 beams. The embed plates were welded to the beams, and the space between the flanges was filled with concrete. Two beams were welded side by side for the wider 30 and 40 Kip models. The beams were further protected by two layers of 5/8-in. Type "X" gypsum.

A replicate Rapid-Lok assembly was welded to each end of the beam in opposing directions. A hydraulic jack was placed between the Rapid-Lok assemblies to apply the load. To keep the jack out of the furnace, 8 × 8-in. steel shims were placed between the jack and the assembly being tested. Appendix B illustrates a typical test setup.

4.0 TEST RESULTS

On May 5, 2004, without a representative from Meadow Burke Products present to witness, the 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok was tested. A 32,000-lb load was applied, data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The 30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok exhibited a 0.11-in. downward deflection at the conclusion of a 2-hr fire exposure. The test was allowed to continue for another 40 min. At the time the test was terminated, the sample deflection had reached 0.30 in. and was continuing to increase. Upon removal from the furnace, it was noted that ceramic fiber insulation applied to the slab, was in contact with the back plate of the connection. This insulation from the outside may have acted to keep the back plate a few degrees cooler than the main body of the anchor. Although it was felt that this insulation had little impact on the test, the insulation on the slab, near the test article, was removed for the 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok test.

On May 6, 2004, without a representative from Meadow Burke Products present to witness, the 30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok was tested. A 32,000-lb load was applied, data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The test was conducted until failure occurred at 87 min, 15 sec, as defined by the assembly's inability to carry the imposed load. The failure mechanism was the studs welded on the back of the bearing plate sheared at a location flush with the bearing plate.

The tests were conducted on August 2, 3, 4, 7, 8, and 17, 2006, for the:

- 20 Kip – 6" Model Rapid-Lok,
- 15 Kip – 4" Model Rapid-Lok,
- 20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok,
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok,
- 20 Kip – 6" Concrete Corbel Model Rapid-Lok
- 30 Kip – 8" Alt. Model Rapid-Lok and
- 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok

A representative from Meadow Burke Products was not present to witness the tests. The load was applied, TC and data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. The fire tests were conducted for 2 hr or until failure occurred as defined by the assembly's inability to carry the imposed load. The failure mechanism was identical for all the assemblies that failed. The studs welded on the back of the bearing plate sheared at a location flush

with the bearing plate. The 40 Kip – 8.5" Concrete Corbel Model Rapid-Lok did not fail during the 2-hr exposure.

The tests were conducted on August 2, 3, 4, 7, 8, and 17, 2006, for the:

- 6 Kip – 4" Model Rapid-Lok
- 20 Kip – 8" Model Rapid-Lok
- 20 Kip – 6" Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok
- 40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok
- 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok
- 40 Kip – 8.5" Model Rapid-Lok
- 20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok
- 40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok

A representative from Meadow Burke Products was not present to witness the tests. The load was applied, TC and data acquisition connections were verified, and the furnace burners were ignited to begin the fire exposure. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except two tests. The 6 Kip – 4" Model Rapid-Lok test was terminated at 180 min, at which time failure had not occurred. The 30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok test was terminated at 240 min , at which time failure had not occurred.

The failure mechanism for the 40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok was the shaped 1/4-in. plate collapsing. The remaining failure mechanism was identical for all the assemblies that did not carry the load through the tests; the studs welded on the back of the bearing plate sheared at a location flush with the bearing plate.

The test results are summarized in Table 2.

Table 2. Summary of Test Results.

Test Date	Assembly	Applied Load (lb)	Failure (min:sec)
5/5/04	30 Kip – 8" Alt. Steel Corbel Filled Model Rapid-Lok	32,000	160:00*
5/6/04	30 Kip – 8" Alt. Steel Corbel Unfilled Model Rapid-Lok	32,000	87:15
9/28/05	20 Kip – 6" Model Rapid-Lok	22,000	71:30
9/28/05	15 Kip – 4" Model Rapid-Lok	16,500	85:45
9/29/05	20 Kip – 6" Steel Corbel Unfilled Model Rapid-Lok	22,000	89:15
9/29/05	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	22,000	114:15
9/30/05	20 Kip – 6" Concrete Corbel Model Rapid-Lok	22,000	121:00*
9/30/05	30 Kip – 8" Alt. Model Rapid-Lok	33,000	121:00*
10/3/05	40 Kip – 8.5" Concrete Corbel Model Rapid-Lok	44,000	121:00*
8/2/06	6 Kip – 4" Model Rapid-Lok	6,000	180:00*
8/3/06	20 Kip – 8" Model Rapid-Lok	20,000	91:30
8/3/06	20 Kip – 6" Steel Corbel Filled Model Rapid-Lok	20,000	112:40
8/4/06	40 Kip – 8.5" Steel Corbel Unfilled Model Rapid-Lok	40,000	71:00
8/4/06	40 Kip – 8.5" Steel Corbel Filled Model Rapid-Lok	40,000	102:00
8/7/06	30 Kip – 8" Alt. Concrete Corbel Model Rapid-Lok	40,000	240:00*
8/8/06	40 Kip – 8.5" Model Rapid-Lok	40,000	78:30
8/8/06	20 Kip – 6" Modified Steel Corbel Filled Model Rapid-Lok	20,000	121:10
8/17/06	40 Kip – 8.5" Modified Steel Corbel Filled Model Rapid-Lok	40,000	166:20

*Failure did not occur, testing terminated.

Photographic documentation of the Rapid-Lok Connection Plates and test setup prior to, during, and after the fire exposure is provided in Appendix C, except the tests conducted on May 2004, which are not available for inclusion in this report, but can be found in SwRI Report No. 01.10085.01.106a. Temperature data and load data obtained during testing are provided in Appendix D.

5.0 SUMMARY

Fire performance evaluations of Rapid-Lok Connection Plates were conducted by SwRI's Fire Technology Department, located in San Antonio, TX, on August 2, 3, 4, 7, 8, and 17, 2006, for Meadow Burke Products, located in Tampa, FL. Results from previous tests conducted on May 5 and 6, 2004, documented in SwRI Report No. 01.10085.01.106a, and tests conducted on September 28, 2005, through October 3, 2005, documented in SwRI Report No. 01.10933.01.721, are also included in this report. Testing was conducted utilizing the standard time-temperature curve specified in ASTM E 119, *Standard Test Methods for Fire Tests of Building Construction and Materials*.

The Rapid-Lok assemblies were fire tested on a concrete slab or a column designed to represent the thermal response characteristics of a semi-infinite concrete slab. Each fire test was conducted until failure occurred, as defined by the assembly's inability to carry the imposed load, except six tests, which continued to 121, 160, 180 and 240 min without failure.

City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandonline.com/bds

Deferred Submittal Requirements and Application

Applicants will provide:

- ☐ Three (3) sets of plans
- ☐ One (1) set of calculations
- ☐ Two (2) sets of product information
- ☐ Drawings and calculations must be stamped and signed by an Engineer registered in Oregon and approved by the Architect/Engineer of record for the building.
- ☐ A copy of this application
- ☒ One (1) copy of your main building permit approved plans (NOTE: Approved plans do not need to be submitted if your project has a process manager assigned) n/a
- ☐ Permit fee (paid at time of submittal)

Contractor submittal information:

Contact name Ann Young

Address 1345 NE 44th St.

City Portland State OR Zip Code 97213

Phone 503-546-2520 E-mail ann.young@jedunn.com

Value of deferred submittal 180,500.00 Issued main building permit # 2008-160853

Description/Scope of work BRB - Buckling Restraint Bracing - Parking Garage

Fees

Deferred submittal (DFS) fees are collected in addition to the standard building review fee paid on the main building permit. DFS fees cover the cost of the additional processing and review time associated with the design build element.

The DFS fee for processing and reviewing deferred plan submittals is 10 percent of the building permit fee calculated using the value of the particular deferred portion of the project.,

Minimum fee: Residential, one and two family dwelling ... $100 for DFS with valuation of less than or equal to $222,000

Commercial and all other projects ..... $250 for DFS with valuation of less than or equal to $680,000

The Bureau of Development Services (BDS) fee schedule is also available on the BDS web site at ***www.portlandonline.com/bds*** | select the Fees tab.

Helpful Information

Bureau of Development Services
1900 SW 4th Avenue, Portland, OR 97201

Submit your plans to:
Development Services Center (DSC), First Floor,
Monday through Friday, 7:30 am - 3:00 pm

Important Telephone Numbers

BDS main number	503-823-7300
DSC automated information line	503-823-731
Building code information	503-823-145
BDS 24 hour inspection request line	503-823-7000
Residential information for one and two family dwellings	503-823-7388
City of Portland TTY	503-823-6868

08-160853-DFS