

ADDENDUM NO. 5

March 17, 2016

**Re: Sanford High School and Technical Center
12-067-00**

To: Bidders and All Others to Whom Bidding Documents have been issued.

All items in this Addendum shall supersede or clarify the Bidding Documents as originally issued. The cost of the Work of all trades affected by the changes in this Addendum shall be included in the Base Bid or Alternates, on the Proposal Form, as applicable. Failure to do so may subject the Bidder to disqualification. This Addendum forms a part of the Contract Documents. It supplements and/or modifies them as follows:

Item No. 5.1 Reference Division 00 and Division 1, Schedule & Addendum 2.1: Questions submitted to the Architect directly from one of the Pre-Approved General Contractors will be allowed until 03/23/2016, 5:00pm. The architect will review questions and may provide responses via addenda. Product Substitution requests will not be allowed during this period (the deadline for those remains as listed at 03/16/2016, 5:00pm).

Item No. 5.2 Reference Specification 08 63 00 Substitution Request Velux VMS Modular Structural Skylights systems manufactured by Velux America Inc shall not be an acceptable substitution for the specified single Slope metal Framed Skylight System. All other aspects of the specifications and drawings shall be met.

Item No. 5.3 Reference Drawing S2.2: Question: Drawing S2.2: Sections 7,7A & 8. What product is required for the bond breaker between the slabs and interior block walls?
Answer: See 03 30 00 2.04 Expansion Joint 2.04F.

Item No. 5.4 Reference Drawings A0.31 and A4.20 Refer to attached revised drawings for added masonry anchors notes.

Item No. 5.5 Owner's Consultants: Clarification: the Owner's consultants including but not limited to the Theater Equipment Consultant are subject to change via procurement methods used at a later date in this project.

Item No. 5.6 Reference Drawing A0.52/Specification 08 71 00 Question: Doors E142 & E143 are listed in the door schedule (A0.52) as aluminum but reference type 12 frames (A0.30) which are listed as hollow metal frames. Are these doors to be aluminum doors and frames that look like the type 12 frames?

Answer: Revise Door and Frame Schedule – Area E as follows:

Door E142 – Door Material (WD), Frame Material (HM), Hardware Set (No. 125)

Door E143 – Door Material (WD), Frame Material (HM), Hardware Set (No. 125)

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Item No. 5.7 Reference Drawing C-64 Question: Sheet C-64 contains a detail of a cast in place headwall for a twin 30" pipe crossing. The only location this applies is shown on sheet C-44. Can you please confirm this is the only location for precast headwalls?

Answer: This is correct

Item No. 5.8 Reference Specification 04 20 00, 2.06F Substitution Request: Mortar Maze Cell Vent systems meeting the specification manufactured by Advanced Building Product shall be an acceptable substitution for the specified Quadrovent masonry weeps. All other aspects of the specifications and drawings shall be met.

Item No. 5.9 Reference ES Drawings Question: Addendum 4 reissued several ES dwgs. The note directing us to provide a 1.5" spare was revised to provide a circuit to the message board sign in a 2" C on ES1.01-ES1.04. ES1.08 was not revised in the Addendum and still has a note calling for a 1.5" spare to the road. Please advise if we should still include this 1.5" spare from the E-wing electric room to the sign?

Answer: Note has been revised on Drawing ES1.08. See attached updated drawing.

Item No. 5.10 Reference Electrical Drawings Question: The E2.xx drawings have a duplex tagged IWB in classrooms and a general note to see T3.02 for details. T3.02-detail 13 shows a quad receptacle. Please advise if a duplex or quad is required?

Answer: Provide duplex as indicated on E2.XX drawings. Detail has been revised on Drawing T3.02. See attached updated drawing.

Item No. 5.11 Reference Drawing E2.16 Question: E2.16, note 4: Please provide more specific information such as riser or wiring diagram for the work that the EC needs to provide for the greenhouse?

Answer: There was no detailed electrical information furnished in the greenhouse specification, other than what is described on the electrical drawings. It is recommended that certain information given is used to make assumptions, and it is the EC responsibility to wire up the greenhouse system once it is in place.

Item No. 5.12 Reference Drawings A1.16 & A0.52, Specification 08 71 00 See attached sketch SKA-AD5.12A for adding a door and partition at the Culinary Arts program. Add partitions to enclose column. See attached sketch SKA-AD5.12B for revised ceilings adjacent to added door. In Specification 08 71 00, add the following hardware set 146. An additional transfer grill is required – mechanical drawing to be issued in Addendum 6.

HARDWARE SET NO. 146
FOR USE ON DOOR #(S)
D151B
EACH TO HAVE:

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6	EA	HW HINGE	5BB1HW 4.5 X 4.5	IVE
2	EA	PUSH PLATE	8200 8" X 16"	IVE
2	EA	PULL PLATE	8303 10" 6" X 16"	IVE
2	EA	SURFACE CLOSER	4050 HW/PA / HEDA AS REQ.	LCN
4	EA	KICK PLATE	8400 24"HIGH LDW	IVE

Item No. 5.13 Reference Drawings A0.50, A0.52/Specification 08 00 00 Question: Door 100B on sheet A0.50 is labelled as both OH2 and OH4. Please clarify.

Answer: Revise Door and Frame Schedule – Area A (Sheet A0.50) as follows:

Door C100B – Door Type (OH4)

Additional door, frame and hardware clarifications:

Revise Door and Frame Schedule – Area A (Sheet A0.50) as follows:

Door C101C – Door Type (OH1)

Revise Door and Frame Schedule – Area B (Sheet A0.51) as follows:

Door B105B – Door Material (WD), Frame Material (HM)

Door B054A – Door Type (F)

Revise Door and Frame Schedule – Area D (Sheet A0.52) as follows:

Door D154E – Door Type (OH4)

Door D158 – Door Type (FG2)

Doors E139A and E139B – Frame Type (C3)

Door E154 – Frame Type (C4)

Doors E225 and E227 – Frame Type (IS34)

Item No. 5.14 Reference Drawing A0.52/Specifications 08 00 00 Question: The door schedule on A0.52 calls for two overhead doors in the tractor instruction area. The floor plan on A1.16 shown one overhead door and one double door. Please verify the intent.

Answer: Revise Door and Frame Schedule – Area D (Sheet A0.52) as follows:

Door D150D – Door Type (OH3) – Overhead door to exterior

Door D150E – Door Type (F) – single door to exterior

Interior double doors in tractor area should be bid as scheduled.

Item No. 5.15 Reference Drawing A1.16/Specification 10 51 00 Question: Rooms D127 and D129 on sheet A1.16 show lockers. The enlarged plan on sheet A5.41 detail C does not show the lockers at all. Can you please confirm what type of locker is required in these rooms?

Answer: See attached revised A5.41 enlarged floor plan. Refer to Project Manual Section 10 51 00 – LOCKERS, PART 2 PRODUCTS, 2.02 LOCKER APPLICATIONS and Sheet A0.060 for locker types.

Item No. 5.16 Reference Drawing A5.20/Specification 10 51 00 Question: The Athletic, Team rooms, and faculty bathrooms on sheet A1.18 refer us to sheet A5.20 for the enlarged plan. However A5.20 does not show the lockers. Can you please provide additional information for us to get an accurate count of the required lockers?

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Answer: See attached revised Sheet A5.20 for locker types and quantities. Refer to Project Manual Section 10 51 00 – LOCKERS, PART 2 PRODUCTS, 2.02 LOCKER APPLICATIONS for additional information about locker types.

Item No. 5.17 Reference Drawing/Specification 10 51 00 Question: Could you please clarify if all of the phenolic lockers are recessed? Specification section 10 51 00 calls for them all to be recessed. Is that the intent?

Answer: Yes.

Item No. 5.18 Reference Drawing A5.20/Specification 08 80 00 Question: Rooms F132, F134, F142, and F144 have “?” next to the windows on sheet A5.20. Please clarify.

Answer: See attached revised Sheet A5.20 - notes next to windows to read, “08 80 00 - PLASTIC FILM POLARIZED”.

Item No. 5.19 Reference Addendum 4 and Filed Sub Bid Package F Question: Please clarify the intent of Addenda # 4, 4.32. Section 33 46 10 is clearly the responsibility of Sub Bid Package F. However this response seems to indicate the responsibility is now shifted to the GC.

Answer: Addendum 4.32 clarified that the Radon System 33 46 10 2 is the responsibility of the General Contractor and should be excluded from Filed Sub Bid Package F.

Item No. 5.20 Reference Drawing A0.60/Specification 06 20 00, 09 72 00, 10 11 00 Question: Please clarify whose scope the Tackpanels should be in. They are listed in 3 different sections on the drawings. A0.60 calls for “72s” under Div. 10 11 01, A6.03 (and numerous other Elev. Dwg.’s) Elev.B5 shows “72s – TWP-3”, Elev. F9 shows “72s – TWP-4”, Elev. H3 shows “72s – TWP-2” all under Div. 09 72 00, and A10.01 calls for TWP-1 thru TWP-4 all as “Div. 06 20 00 Tackable wall panel”.

Answer: All tack surfaces in metal frames should be carried under DIV 10 11 01 VISUAL DISPLAY BOARDS. Tack surfaces mounted directly to a wall surface should be carried under DIV 09 72 00 WALL COVERINGS. Tack surfaces incorporated into millwork should be carried under DIV 06 20 00 FINISH CARPENTRY & ARCHITECTURAL MILLWORK. Drawing clarifications below.

Revise Sheet A0.60 as follows:

Delete Accessory numbered 72-S.

Revise Accessory numbered 72-s to read 09 72 00 in lieu of 10 11 01.

Revise detail E11 Sheet A6.06 to read, “09 72 00 – TACKABLE WALL SURFACE (TWP-2)” in lieu of the reference to 10 11 01.

Revise TACKABLE WALL PANEL schedule title on Sheet A10.01 to include sections 09 72 00 and 10 11 01.

Item No. 5.21 Reference Drawing A0.60/Specification 10 11 01 Question: Drawing A0.60 has callout for 72-2 thru 72-12. Are these all premanufactured tack panels with frames?

Answer: Accessories 72-2 through 72-12 and 73-4 are described in DIV 10 11 01. See Item No. 5.20 for additional clarifications of tack surfaces.

Item No. 5.22 Reference Specification 13 34 12 Question: Is greenhouse misting irrigation system required? If so, what are the specifications? Is this to be provided by greenhouse subcontractor or GC?

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Answer: A greenhouse misting system is required by Specification Section 13 34 12 2.05H. In addition to the requirements listed within this specification, the misting system should provide complete coverage typical for a greenhouse along both sides of the greenhouse and down the center of the greenhouse at two heights (high hanging plants and table mounted plants) with misting heads at no greater than 16" o.c.. While these systems are typically provided by the Greenhouse manufacturer, who provides this for this project is up to the General Contractor, as it is not part of a Filed Sub-Bid Package.

Item No. 5.23 Reference Irrigation Systems Question: In regards to the irrigation systems, on plans, what DR rating and material designation do you require for HDPE piping?

Answer: Either DR 11 or DR 13.5 rating is acceptable.

Item No. 5.24 Reference Irrigation Systems Question: In regards to the irrigation systems, What method of pipe fusing is acceptable? Do you require trenching or pulling?

Answer: Butt fusion is preferred, however electro will be acceptable. Either trenching or pulling is acceptable.

Item No. 5.25 Reference Specification 32 84 00 Question: 328400 Part 3 Execution 3.2.G; How do you propose to drain the service line prior to the backflow preventer and water meter? Vacuum port or sump? Or do you require a heated enclosure?

Answer: Either is acceptable. The enclosure is not required to be heated.

Item No. 5.26 Reference Specification 32 84 00 Question: 328400 Part 2 Products 2.4; 1 and 2" control valves are specified, however plans show 1.5" and 3" control zone valves?

Answer: 1.5" and 3" control zones as per plan, disregard 1 and 2" control valves.

Item No. 5.27 Reference Specification 32 84 00 Question: 328400 Part 3 Execution 3.2.J.g; type of control wire do you require? If decoder wire, are spare wires still required?

Answer: If decoder wire is used, no spare is required. If single strand is used a spare will be required as noted.

Item No. 5.28 Reference Addendum 3 Question: Addendum 3 Item 3.13; states a backflow pad detail is provided on page 65, Page 65 is not present in the addendum.

Answer: A detail for the enclosure is provided on Civil Sheet 65. The concrete pad shall 6", F'c= 4,500 PSI concrete reinforced with fiber mesh at 3 lbs/cy.

Item No. 5.29 Reference Irrigation Systems Question: In regards to the irrigation systems, Is there any building at baseball and football suitable for controller mounting to avoid using pedestal?

Answer: There is not a building available for controller mounting at the softball and baseball field. Controls at the artificial turf field could be mounted at the field storage building.

Item No. 5.30 Reference Irrigation Systems Question: In regards to the irrigation systems, specifications detail one manufacturer, what other manufacturers are approved equals? Do you require the contractor's substitution request for approval?

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Answer: Alternate Manufacturers for the irrigation system in particular will be allowed post bid from the following manufacturers: Systems by Rainbird, Hunter, and Toro. The systems still must meet the specifications and the design intent to be acceptable. The contractor must provide a substitution request form for these systems, and a side-by-side comparison of the specified product versus the submitted product, during the submittal process. The Civil Engineer reserves the right to decline systems not meeting the designed/specified system requirements. Additional costs associated with system or component modifications and/or changes to adhere to the specified performance, quality, or design intent shall be included within the bid and shall not be an additional cost to the owner.

Item No. 5.31 Reference Specification 32 84 00 Question: 328400 Part 2 Products 2.1.2; specifications call for PVC pipe and fittings where plans show HDPE pipe and fittings? Which is preferred? If PVC, are thrust blocks and joint restraints required?

Answer: Refer to the irrigation details enclosed as part of this addendum

Item No. 5.32 Reference Specification 32 84 00 Question: 328400 Part 1 General 1.6.A.2; is the Certified Irrigation Contractor requirement?

Answer: Disregard the Certified Irrigation Contractor requirement.

Item No. 5.33 Reference Specification 32 84 00 Question: What type of swing joint is required for the Mirage 115 sprinkler?

Answer: Please refer to the irrigation details enclosed as part this addendum. PVC as shown in the detail or ductile iron is acceptable.

Item No. 5.34 Reference Specification 26 12 00 Question: Section 26 12 00 3.01 G 4 Specifies that MI Cable be installed for use with fire alarm communication circuits (both for panels and telephone) as well as specific notification circuits. Is it acceptable to use a 2hr UL listed type CI (circuit integrity) cable? See attached cuts. Must a 2hr rated cable be used if the installation method is inherently rates, such is conduit in concrete?

Answer: Alternate of Radix or Comtran only are acceptable solutions strictly following UL FHIT 28A and 40A installation requirements. Final acceptance shall be by AHJ for substitution.

Item No. 5.35 Reference Addendum #4/Specification 07 53 00 Question: Addenda #4, Section 07 53 00 1.09. They want a .060, 25 Year Total System Warranty with puncture coverage. The 25 year warranty requires the insulation to be 25 PSI, and the puncture coverage requires the membrane to be a .090. Do they still want the puncture coverage? If they want to keep the puncture coverage should it just be changed to a 30 Year warranty? The original spec had it as a 25 year .075 reinforced membrane which worked with the puncture coverage. There still would be a 25 PSI insulation requirement, but other than that it met Carlisle's Warranty Requirements

Answer: Delete Section 07 53 00 1.09 C requirement for accidental puncture warranty. Revise section 07 53 00 2.05 A.1 to Compressive Strength 25 psi.

Item No. 5.36 Reference Lighting Products Substitution Request: See attached package for Light Fixture Substitution requests submitted by Visible Light

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Answer: The submitted substitution request package is approved with the condition that the submitted alternate products match or exceed the performance, quality, and aesthetic of the specified fixtures. If the alternate product is submitted via shop drawings and submittal procedures outlined within the specifications, the submittals shall include a side-by-side comparison of the proposed fixture performance to the specified fixture's performance. The electrical engineer reserves the right to review and decline substituted fixtures that do not meet the specified performance, quality, and aesthetic. Additional costs associated with fixture modifications and/or changes to adhere to the specified performance, quality, or aesthetic shall be included within the bid and shall not be an additional cost to the owner.

Item No. 5.37 Reference Specification 22 13 01 Question: Spec section 221301 Check Valves which is part of filed sub bid F, please clarify sheet number that shows the location of check valves on this project?

Answer: Check valves are specified on the outlet pipes of CB-54 (Civil Sheet 37) and CB-16 (Civil Sheet 38).

Item No. 5.38 Reference Specification 21 32 50: REVISE Article 2.14.B to read as follows: "B. General two-cylinder, direct drive, 208V, magnetic starter, three-phase, oil-less, permanently lubricated bearings, pressure switch, ODP motor mounted on a 10-gallon horizontal ASME pressure tank. UL listed."

Item No. 5.39 Reference Drawing A1.19 and A6.53 Question: Refer to drawings A1.19 & A6.53. Not all of the walls for the weight room & wrestling room are shown on A6.53. Are all of the walls be padded?

Answer: The wall area along Column Line F-8 shall include wall pads similar to those shown on other elevations (8' tall wall pads except at window).

Item No. 5.40 Reference Specification 12 93 00 2.02B Question: Please confirm if section 12 93 00 part 2.02 B includes the site signage as shown on A8.50 – A8.51.

Answer: The site signs shown on A8.50 are the responsibility of the General Contractor but are not included in File Sub Bid Package F.

Item No. 5.41 Reference Drawing A1.21 Question: On the 2nd Floor of Areas A2 and C1 there is a wall running approximately along Column Line C-C. On A1.21, this wall is labeled as Wall Type S27 from Col Line D-E to C-11. From Col Line C-11 to Col Line C-7 (continued on A1.24) this wall is not labeled with a Wall Type. From the details provided for this wall, it appears to change from gypsum board to CMU and back several times. C8/A4.34 and J11/A4.23 show it as CMU. J2/A4.24 and D11/A4.37 show that it is gypsum board. Please clarify the Wall Type for this wall and where any changes in Wall Type occur.

Answer: See revised drawings A1.21 and A1.24 for clarifications. Note that the partition types in rooms C219 and C221 have changed.

Item No. 5.42 Reference Specification 12 34 00 AND 12 36 00 Substitution Request TMI Systems casework meeting the specification shall be an acceptable substitution for the specified Stevens Industries systems for Plastic Laminate Casework and counters. All other aspects of the specifications and drawings shall be met.

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Item No. 5.43 Reference Specification 21 01 00 Question: Regarding 21 01 00 Par 1.22.A.2, who is responsible to furnish and wire release detection devices to the pre-action sprinkler system control panels, Div 21 or Div 26?

Answer: Release detection devices associated with pre-action system are shown on the fire protection drawings and to be provided and installed by fire protection sub-contractor under Filed Sub Bid Package C. Devices to be wired by Division 26 shown on FA.XX drawings under Filed Sub Bid Package E.

Item No. 5.44 Reference Specification 21 32 50 Question: Regarding 21 32 50 Par 2.14, The specified air compressor associated with the dry pipe systems seems excessive for the smaller dry pipe systems (i.e. – Dry zone 4). Can another, smaller riser mount air compressor be added to the specs?

Answer: The fire protection design includes the installation of air tanks to serve the dry-pipe air compressors. The air tank will reduce the frequency of run times for the compressor which will be less disruptive to the students in the occupied areas. Provide as specified

Item No. 5.45 Reference Specifications Division 26 Question: Regarding air compressors associated with the dry pipe systems, the Electrical Power drawings do not indicate their presence. Please confirm that power to the air compressors are provided by Div 26.

Answer: Dry sprinkler compressors shall be 1 1/2HP (max) at 208VAC, 3-phase, and shall be connected to 20 amp, 3-pole circuit breakers in local standby panelboards – a total of six (6) compressors at five (5) locations. Drawings affected are revised. See attached updated drawings.

Item No. 5.46 Reference Specifications Division 21 and 26 Question: Regarding the dry pipe sprinkler system control risers, many if not any of the control risers are **not** indicated on the FA (fire alarm) drawings, please confirm that connection of the sprinkler system switches to House FACP are provided by Div 26.

Answer: PACP locations on fire alarm drawings indicate dry system locations. Div. 26 contractor (Filed Sub Bid Package E) is responsible to coordinate with Div. 21 contractor (Filed Sub Bid Package C) for all system connections. Provide all required monitor and control modules for a complete and operable system.

Item No. 5.47 Reference Drawing FP1.15 Question: Regarding drawing FP 1.15, there appears to be a zone of wet sprinkler piping being fed into Automotive Collision Rm C139 from the wet sprinkler main located out in the adjacent corridor. Rm C139 is part of the area designated as dry sprinkler system Zone 1 per the FP drawings, so it is unclear what this wet feed is for, can this be clarified?

Answer: As noted on drawing FP1.15 and on detail on drawing FP2.02, the wet sprinkler system shall serve the automotive spray booth. The dry system shall be used to protect Automotive Collision C139 and the spray booth exhaust.

Item No. 5.48 Reference Specification 10 14 26, 2.01D Substitution Request: signs manufactured by Watch Fire Time-o-Matic shall be an acceptable substitution for the specified Blinky Signs for exterior lighted LED sign. The Pixel Pitch shall be allowed to be 19MM, the Brightness shall be allowed to be 10000 nits. All other aspects of the specifications and drawings shall be met.

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Item No. 5.49 Reference Specification 10 14 26, 2.01C Substitution Request: Sand-Carved signs manufactured by Kenyetto Graphics Inc shall be an acceptable substitution for the HC300 ADA Systems manufactured by Best Sign Systems for interior room Signage. All other aspects of the specifications and drawings shall be met.

Item No. 5.50 Reference Specification 26 76 00 Substitution Request: Intercom Systems model CH1000 manufactured by Carehawk Shall Not Be an acceptable substitution for the specified Class Connection intercom.

Item No. 5.51 Reference Drawing E1.19 Question: E1.19, What is the fixture type in the wrestling room? G4 maybe? The (12) fixtures in Wrestling/Multi-purpose F126 are type G4 fixtures.

Item No. 5.52 Question: Under each type of CCTV camera, video specification, camera resolution indicated is "high". Can we get a numerical definition of high resolution?

Answer: "Provide 3 MP or greater camera for all camera types. 3 MP for each camera in a multi camera enclosure (180° & 360°)"

Item No. 5.53 Reference Specification 32 84 00 Question: The plans details show the use of HDPE pipe for both the pressure and non pressure lines for the irrigation system however the specs in section 32 84 00 / part 2 only mention specs for PVC sch 40/80 pipe and fittings? Is the system to be installed using HDPE with fused fittings? If so it would be DR11 with fused fittings?

Answer: Please refer to the irrigation details enclosed as part of this addendum. The main line pipe shall be HDPE pipe. Either DR 11 or DR 13.5 rating is acceptable.

Item No. 5.54 Reference Drawing C-65 Question: In reference to the back flow and meter enclosures: is there a specific brand or model#? Also the spec/detail calls for a heated enclosure – is the electrical contractor to supply power to these points

Answer: No specific model is required. The contractor is required to submit a shop drawing for approval. The enclosure does not need to be heated. Please refer to item 3.57 in Addendum 3.

Item No. 5.55 Reference Filed Sub Bid Package F Question: Please confirm that concrete pads for trash receptacles, benches and bike racks are to be included in Sub bid F.

Answer: Confirmed

Item No. 5.56 Reference Drawing C-7 and C-6. Please confirm that paving starts at 4+50 +/- and ends at the gate at 15+00 +/-.

Answer: This is correct.

Item No. 5.57 Reference Addenda 3.34, Specification 01 22 00 and 01 21 00 Question: RE: Addenda Item 3.34. It is still unclear to us if rock excavation is incidental or will be paid as a unit price and an add to the contract. Please confirm that all rock removal is an add to the contract or incidental.

Answer: The Rock Excavation is listed at a specific quantity under allowances section 01 21 00. The cost for this quantity shall be included within Filed Sub Bid Package F. The contractor shall then track this quantity during construction. If the

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quantity exported results in less than 5000 cu yards, the Unit price provided will be used to create a deduct change order to this quantity. Per Specification 01 22 00, the quantity exported shall not exceed 5000 cu yards. All additional ledge should be processed and re-used on site as part of the Filed Sub Bid Package F. See 01 21 00 and 01 22 00.

Item No. 5.58 Reference Specification 01 22 00 and 01 21 00 Question: How will trench/structural rock be paid for?
There is no unit price on the bid form.

Answer: The contractor shall provide a unit cost for trench/structural ledge as part of the 1.07 Schedule of Unit Prices, B. Item 2. If the quantity exported results in less than 5000 cu yards (open and trench), the Unit price provided will be used to create a deduct change order to this quantity. For purposes of the deduct, the quantity of ledge shall be assumed to be split equally (2,500 C.Y.'s each). Per Specification 01 22 00, the quantity exported shall not exceed 5000 cu yards. All additional ledge should be processed and re-used on site as part of the Filed Sub Bid Package F. See 01 21 00 and 01 22 00

Item No. 5.59 Reference Drawing C-70 Question: Field Cross Section on C-70, refers to 'TYPE B AGGREGATE,' is this MDOT 703.06-Base Course Crushed or 703.22 Type B Underdrain Backfill?

Answer: 4" minimum of compacted MDOT (703.06) Type "B" crushed aggregate base course shall be used.

Item No. 5.60 Reference Flagpole Question: Which section carries the flagpole?

Answer: See enclosed detail and cut sheet data

Item No. 5.61 Reference Addenda 2.1 Question: Can the deadline for questions be extended closer to the bid dates?

Answer: No

Item No. 5.62 Reference Civil Drawings Question: Is there a specification for the infield mix?

Answer: A detail is provided on Sheet C70.

Item No. 5.63 Reference Filed Sub Bid Package F Question: Please confirm backstops are to be carried in Subbid F.

Answer: Confirmed, carried by Filed Sub Bid Package F.

Item No. 5.64 Reference Civil Drawings Question: The only build up we can find only the bleachers is a 3" depth of 1 ½" stone on top of fabric. Is there a detail showing a different sectional thickness?

Answer: This is correct. There is no detail showing additional sectional thickness for stone on fabric. Fabric shall be Mirafi 140N or approved equal.

Item No. 5.65 Reference Drawing C-22 Question: Drawing C-22 @ IB-2 shows finish grade contours different than the note stating bottom of pond elevation 236. Which is correct?

Answer: The bottom shall gradually slope from elevation 238 near the forebay to elevation 236. On the southerly side of the basin, the slope shall gradually slope from elevation 241 to elevation 236.

Item No. 5.66 Reference A0.37 Question: Please verify the locations of the following exterior storefronts as called for on A0.37 but not located on the exterior elevations. S5, S8, S24, S25, S26A, and S30.

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Answer: Note that the plans are a secondary reference for the storefront and curtainwall types – see tags around perimeter of building.

S5 is at door #B147A on elevation F1/A2.07

S8 is shown on the elevations, A2.06.

S24 is called out on the elevations though slightly obscured, see also A1.16.

S26A is called out on the elevations though slightly obscured, see also A1.16.

S30 is a clerestory window in the main entry. It is elevated in interior section J1/A4.10 and in details J11/A3.31, J1/A3.10.

Item No. 5.67 Reference Specification 01 50 00 3.04F Question: Specification section 01 50 00 part 3.04 F and Note 17 on sheet C3 are contradicting. Please clarify who is responsible for temporary tree and plant protection.

Answer: Protection of existing trees shall be the responsibility of the Site Contractor under Filed Sub Bid Package F.

Item No. 5.68 Reference Drawing A0.60 Specification 01 60 00 Question: Specification section 01 60 00 part 3.02 C lists “soap dispensers – surface mounted” as owner furnished. Sheet A0.60 and A5.10 lists toilet paper dispensers, paper towel dispensers, and soap dispensers as owner furnished. Please clarify.

Answer: Section 01 60 00 3.02 C indicates the equipment listed “*shall include, but not be limited to:*”. Toilet Paper Dispensers, Paper Towel Dispensers, and Soap dispensers shall be owner furnished contractor installed.

Item No. 5.69 Reference Specification 01 60 00 Question: Specification section 01 60 00 part 3.02 C lists “interactive marker boards and projectors” as owner furnished. Sheet A0.60 does not call for the interactive boards to be owner furnished. Please clarify.

Answer: At all locations noted as 71-10i and 71-16i (Interactive White Board locations), the contractor shall install a Marker Board specified under 10 11 01 and shown on A0.60. The Owner is planning to install a wall mounted projector at these locations above each marker board. The projectors are Owner provided Owner installed. Where accessories numbered 71-10i and 71-16i are located on the drawings, contractor is to furnish and install a marker board as shown in the accessory schedule, provide power and data and conduits as shown on the electrical drawings, and also provide/install 2x10 wood blocking 16” long at 4’ from the end of the marker board (above the board) for the Owner’s projector. Coordinate location of the blocking with the Owner and the Architect prior to installation.

Item No. 5.70 Reference Specification 01 60 00 Question: Specification section 01 60 00 part 3.02 C lists “interior signage – Surface mounted” as owner furnished. Specification section 10 14 24 does not. Please clarify.

Answer: See Addenda 2, item 2.43. Signage as shown on the drawings and specified under section 10 14 24 and 10 14 26 shall be contractor supplied and installed.

Item No. 5.71 Reference Addenda 4.41 Question: there is no booth shown on A1.14 for Building Trades C127. There is a Shared Finishing Room C121, but this room is exposed roof construction (no booth). Where is the spray booth for Building Trades C127 located?

Answer: There is no planned building trades spray booth. Detail 1 on FP2.02 should be eliminated.

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Item No. 5.72 Reference Addenda 4.31 Clarification: The Seismic Site Class for this project is D. The Seismic Design Category for this project is C. These parameters are both identified on the project structural general notes, and the Seismic Site Class is indicated in the geotechnical report and matches the structural general notes.

Item No. 5.73 Reference Drawing A1.16, A1.18 Question: Lockers: Drawing A1.16, Locker Rooms D127 and D129: No legend. Please indicate which locker elevation. b. Drawing A1.18, Locker Rooms F131, F135, F141, F145, Team Rooms F136 and F146, and PE and Coaches Offices: Please specify which lockers are single versus double tier.

Answer: Refer to the attached revised A5.20 and A5.41 for enlarged locker room plans.

Item No. 5.74 Reference Specification 12 24 00 2.02 Question: Reference Spec section 12 24 00 – 2.02: Please clarify if manual sun shades require a head box. If these shades do not require side channels, then a bracket-supported fascia may be better suited for this application. Providing head box versus fascia results in a much greater cost.

Answer: Bracket Supported Fascia will be accepted at window locations where shades can be installed within the wall opening. At HM frames requiring the shade to be installed on the face of the wall, provide the head box.

Item No. 5.75 Reference Drawing F1/A7.01 Question: Reference Detail F1/A7.01: Does this detail apply to all lockers? Please clarify. Compare B6/A6.21, D12/A6.12 and J10/A6.12.

Answer: D12 and J10/A6.12 do not have lockers – that is an owner furnished sheet music storage system. F1/A7.01 does not apply to all lockers. The design intent is for this detail to occur at all corridor phenolic locker locations. The detail is called out on the elevations where it occurs.

Item No. 5.76 Reference Specification 12 36 00 2.01 Question: Reference Spec section 12 36 00 – 2.01: Thickness is specified at 1-5/16". Please compare this to detail B13/A7.01 where thickness is shown to be 1-1/2". Please clarify.

Answer: Drawing is correct at 1-1/2" for a typical counter condition.

Item No. 5.77 Reference Specification 12 34 00 Spec section 123400-9, 3.02D calls for scribing base cabinet toe kicks to the floors. Standard casework construction does not allow for scribing and would add more than 20% to field labor costs. A separate 1/4" thick Luan plywood could be separately attached and scribed in lieu of the integral cabinet bases/toe kicks scribed to the floors. Is scribing and oversized toe kick material going to be required or the option as noted above?

Answer: A separate 1/4" thick toe kick may be employed at uneven floors if needed. It should be further noted that the floors should generally be even within this project and that flooring base is planned to cover these conditions. The additional 1/4" thick plywood need not be installed if the flooring base does not require it for proper installation.

Item No. 5.78 Reference Specification 01 91 15 Spec section 01 91 15 Building Exterior Commissioning article 1.02.A.I indicates the commissioning authority is employed by the Owner however article 3.03.B calls for the envelope's installer to retain an independent third party testing agent to perform functional performances tests "unless specified otherwise." Are we correct in our interpretation of 1.02.A.I that the functional tests are to be performed by the Owner's commissioning authority?

Answer: Correct, the Owner's Commissioning Authority shall perform the tests. The General Contractor shall be responsible to pay for additional testing required by a failed test per specification section 01 91 15 3.07.

Addendum #5

Item No. 5.79 Reference Electrical Drawings: Question: There are several E2 dwgs that are showing Wiremold on the desks. The desks do not show up on the A-dwg floorplans or the A7.xx millwork details. Please confirm that the desks are fixed in place? Is the intent to feed power and communications into the end of the wiremold at the wall; please provide more detail?

Answer: The desks are Owner Furnished Equipment. Desk details have been revised for power and telecom drawings. See attached updated drawings.

Item No. 5.80 Reference Bid Proposal Forms Question: The revised bid proposal form for sub-bid package "F" contains alternate pricing for Items 1-5 and 12-14 which are not part of the package F subcontractor's scope. Should these be deleted from the package F proposal form? Note B: states "If left blank the assumed price will be \$0.00" Please clarify.

Answer: The form is correct. If the Filed Sub Bidder for Package F leaves any alternates blank, it will mean that the Owners election to take or decline the alternate does not affect cost/bid value.

Item No. 5.81 Reference Drawing E1.21: Question: E1.21, note 8: what is fixture "E" to be mounted in shaft? Dwgs show C3 in elev shaft.

Answer: Drawing note 8 should refer to fixture type C3. There is no type E fixture.

Item No. 5.82 Reference Drawing E1.24: Question: E1.24, Are the OCC sensors in C207, and C209 to have the "s" designation for stand-alone?

Answer: Yes, the occupancy sensors in rooms C207 and C209 are to have an "S" designation for stand-alone.

Item No. 5.83 Reference Drawing E1.18: Question: E1.18, Are the OCC sensors in F112 to have the "s" designation for stand-alone?

Answer: Yes, the occupancy sensors in room F112 are to have an "S" designation for stand-alone.

Item No. 5.84 Reference Drawing E1.12: Question: E1.12, note 13: Please provide more information and advise as to what the EC needs to include to satisfy this note?

Answer: The touchscreen panel location is noted on the drawing as an indicator that it will be used for lighting control of the Open-Stepped Presentation area. Architectural elevations and details will provide a location for this control station. The control panel will be utilized to control AV functions as well as lighting control for the space. Detail 2 (Wiring Diagram) on drawing E4.04 notes "PROVIDE ETHERNET CONNECTION FROM LIGHTING CONTROL PANEL LCP3 PROCESSOR (ELEC RM A193) TO AV PROCESSOR FOR COMMUNICATION TO AGORA STAIR TOUCHSCREEN CONTROL STATION (PROVIDED BY AV). COORDINATE WITH AVCONTRACTOR." The Electrical Contractor (Filed Sub Bid Package E) is to provide the Ethernet connection from the lighting processor to the AV processor in order that the space can be programmed via the touchscreen to control both the AV and lights in the space.

Item No. 5.85 Reference Specification 33 10 00 1.02 and 26 11 90: Question: Addendum 2 removed concrete for ductbank encasement and light pole base from the electrical scope. Addendum 3 Item 3.68 clarifies that generator and

Addendum #5

transformer pads are also not in the electrical scope. Addendum 4 Item 4.6 indicates transformer pads are by GC but did not answer the question on manholes. 331000-1.02 mentions electrical and telecom manholes. 261190 is a detailed spec on manholes. Please confirm which division is to furnish and which division is to install the 14 electrical/telecom manholes?

Answer: All the composite electrical and telecommunication handholes shall be provided under Filed Sub Bid Package E. The General Contractor shall be responsible for manholes specified in 26 11 90 and 33 10 00, while Filed Sub Bid Package E and Filed Sub Bid Package F shall exclude these manholes. Coordination will be required between the General Contractor and the Sub Contractors to provide and install these. .

Item No. 5.86 Reference Specification 01 23 00: Question: Addendum 4 revised the ES dwgs to include power and fiber to the messaging sign but there is no indication to deduct this work as part of Alternate 15. Please advise?

Answer: Alternate #15 shall deduct the signs as noted in the specification, however, the power and fiber shall remain part of the base scope for future installation of the signs, as noted in the specification.

Item No. 5.87 Reference Mechanical Drawings: See revised Mechanical Drawings: M1.10, M1.11, M1.15, M1.17, M1.20, M1.21, M1.27, M5.04, M2.20, M3.11, M5.02, M2.10. Replace Bid drawings with attached.

Item No. 5.88 Reference Electrical Drawings: See revised Electrical Drawings: E0.01, E0.03, E0.04, E0.07, E0.08, E0.11, E0.13, E0.16, E1.16, E1.18, E1.19, E1.21, E1.24, E2.12, E2.13, E2.14, E2.16, E2.17, E2.20, E2.26, ES1.08, T0.01, T1.13, T1.16, T1.17, T1.20, T1.26, T3.02. Replace Bid drawings with attached.

Item No. 5.89 Reference Drawings A4.33, A5.40 and A1.61, Specification 09 51 00 Refer to attached drawings for revised chase details and added eggcrate grilles related to coordination of the smoke evacuation system. Add Item J. to Section 09 51 00 2.04 ACCESSORIES as follows:

J. Eggcrate Grille: 2" x 2" x 1 ½" cells, 0.125" thick extruded aluminum, all welded construction with angle frame.

1. Size: 24 x 96 inches
2. Finish: Baked Enamel; color to be chosen by architect from manufacturer's full range.
1. Basis of Design; Ruskin EG100

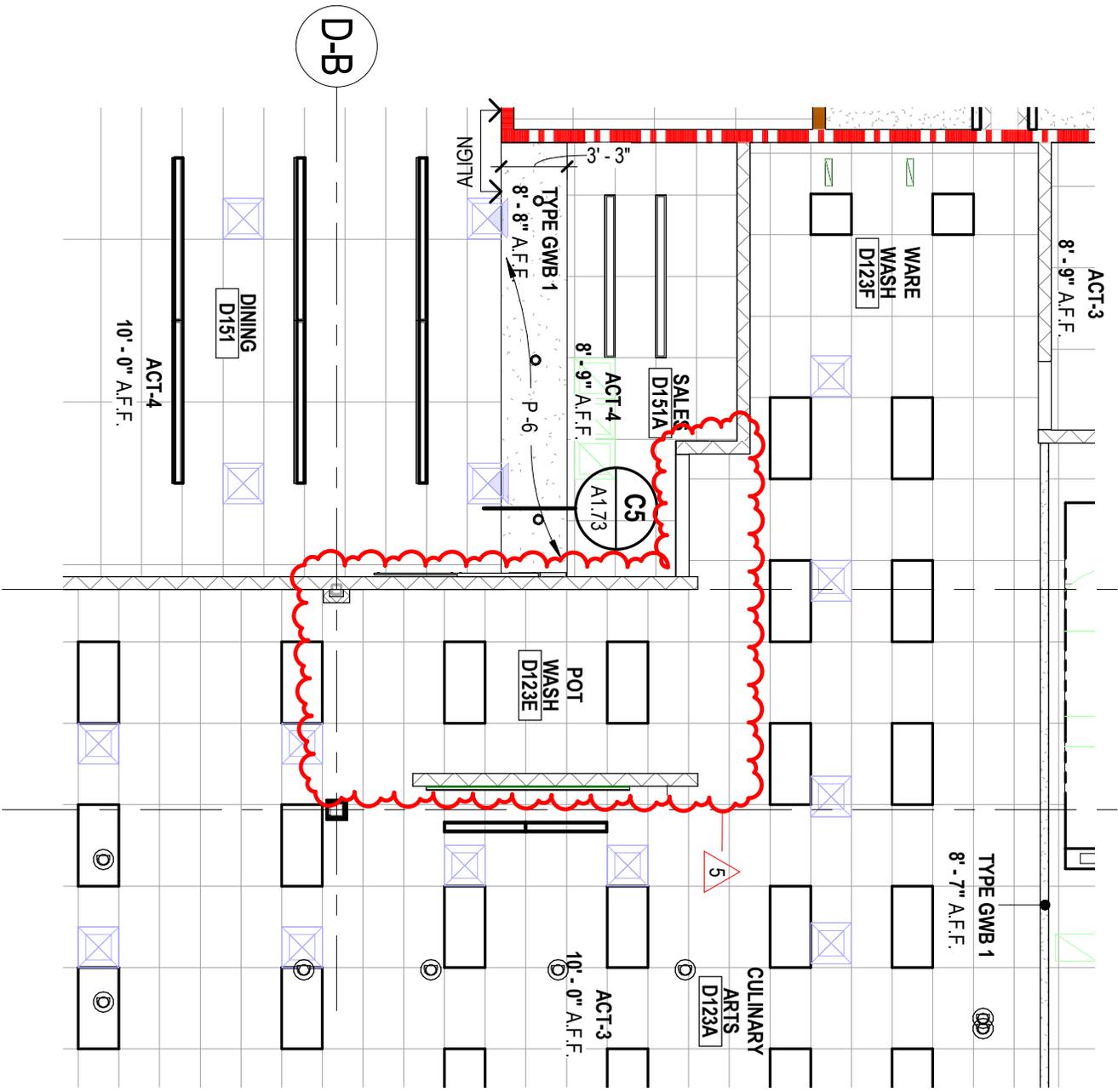
Item No. 5.90 Reference Specification 13 12 50 Substitution Request: Grand Stand Seating Systems manufacturer by Sturdisteel Company meeting the specifications and drawings shall be an acceptable substitution for the Grandstand Seating Systems manufactured by Dant Clayton. Reference 13 12 50 1.04 for clarifications on different foundation requirements from this manufacturer (if any). Reference drawings A8.05, A8.02, and A8.07 for dimensional requirements including location of accessible seating, ramp configuration, and heights. All other aspects of the specifications and drawings shall be met.

Item No. 5.91 Reference Specification 13 12 60 Substitution Request: Press Box Systems manufacturer by Sturdisteel Company meeting the specifications and drawings shall be an acceptable substitution for the Press Box Systems manufactured by Dant Clayton. Reference drawings A8.02, A8.03, A8.04, and A8.05 for dimensional requirements. The walls may employ 4"x4"x11 gauge square tubing and 4" x 1-5/8' x 14 gauge Steel C's at 24" o.c. The interior finish of walls may employ 5/8" vinyl surfaced gypsum panels. All other aspects of the specifications and drawings shall be met.

Addendum #5

Item No. 5.92 Reference Specification 13 12 55 Substitution Request: Heavy Duty Aluminum Framed Bleacher Systems manufacturer by Sturdisteel Company meeting the specifications and drawings shall be an acceptable substitution for the Heavy Duty Aluminum Framed Bleacher Systems manufactured by Dant Clayton. Reference Addendum 3 for this specification. Reference drawings A8.05, A8.02, and A8.07 for dimensional requirements including location of accessible seating, ramp configuration, and heights. Note that changes to the Concrete Pad or site work shown on the drawings that are caused by switching to this alternate manufacturer shall be included within the bid and shall not be an additional cost to the owner. All other aspects of the specifications and drawings shall be met

END OF ADDENDA #5



1
SKA-AD5.12B

CEILING AT CULINARY ARTS POT WASH D123E
1/8" = 1'-0"

DRAWING REFERENCE: A1.56

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REVISED CEILING AT D123E

PROJECT: Sanford School Department and State of Maine Department of Education
SANFORD HIGH SCHOOL and TECHNICAL CENTER

PR NO: 12-067-00 DATE: 03/17/16

SCALE: 1/8" = 1'-0"

SKA-AD5.12B



A

B

C

D

E

F

G

H

I

J

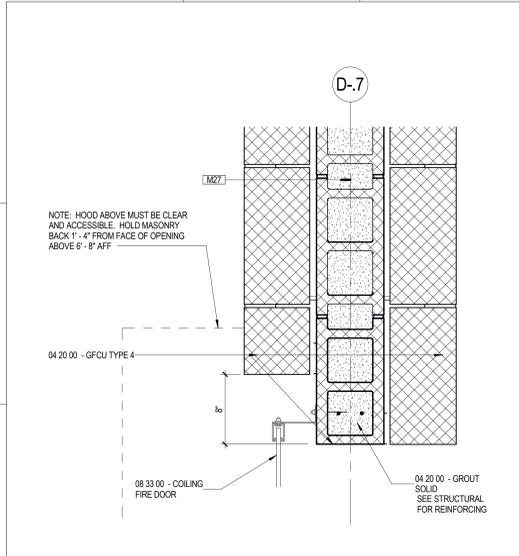
Sanford School Department and
State of Maine Department of
Education

**SANFORD HIGH
SCHOOL and
TECHNICAL CENTER**

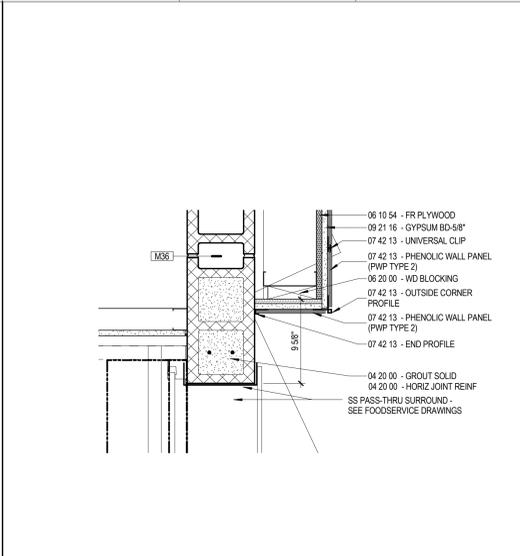
SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16

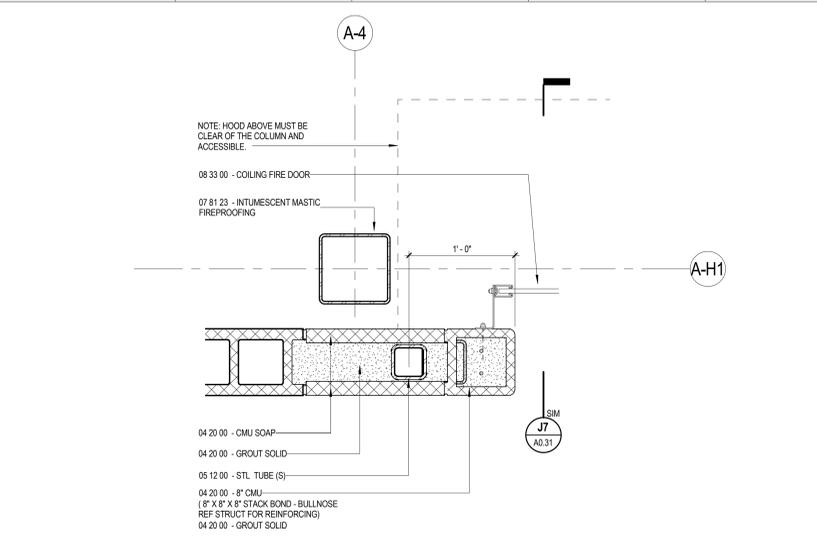
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DRAWN BY:	SRG
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	As indicated
A0.31	
Project Phase	
BID DOCUMENTS	
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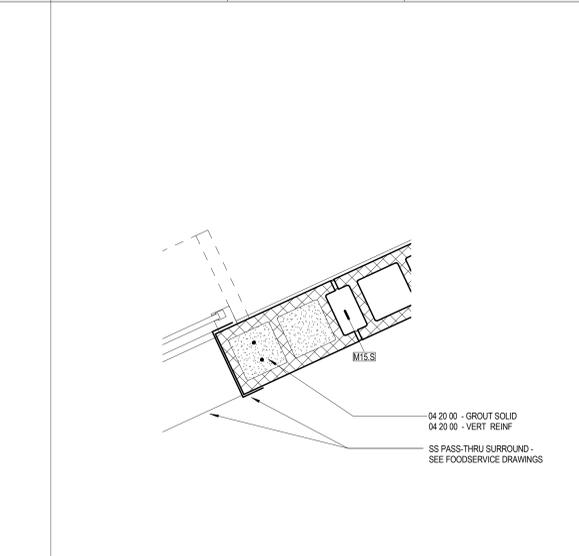
C1 GREENHOUSE OH DOOR JAMB
A0.31 1 1/2" = 1'-0"



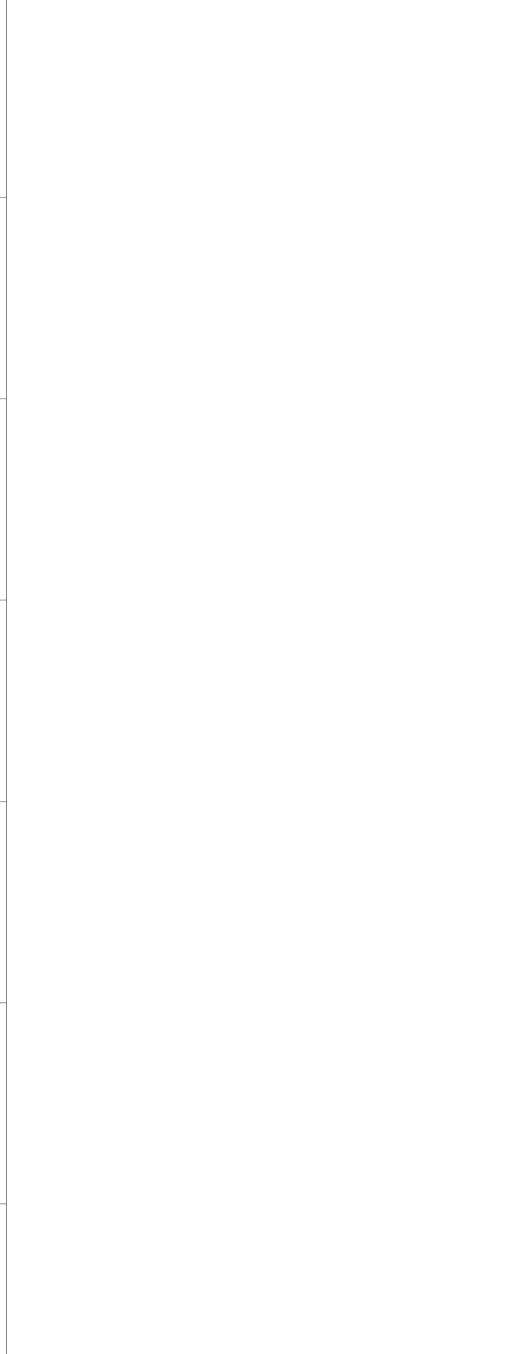
C4 JAMB DETAIL AT INTERIOR SECTION OF OVERHEAD DOOR AT 1 HR CMU RATED WALL
A0.31 1 1/2" = 1'-0"



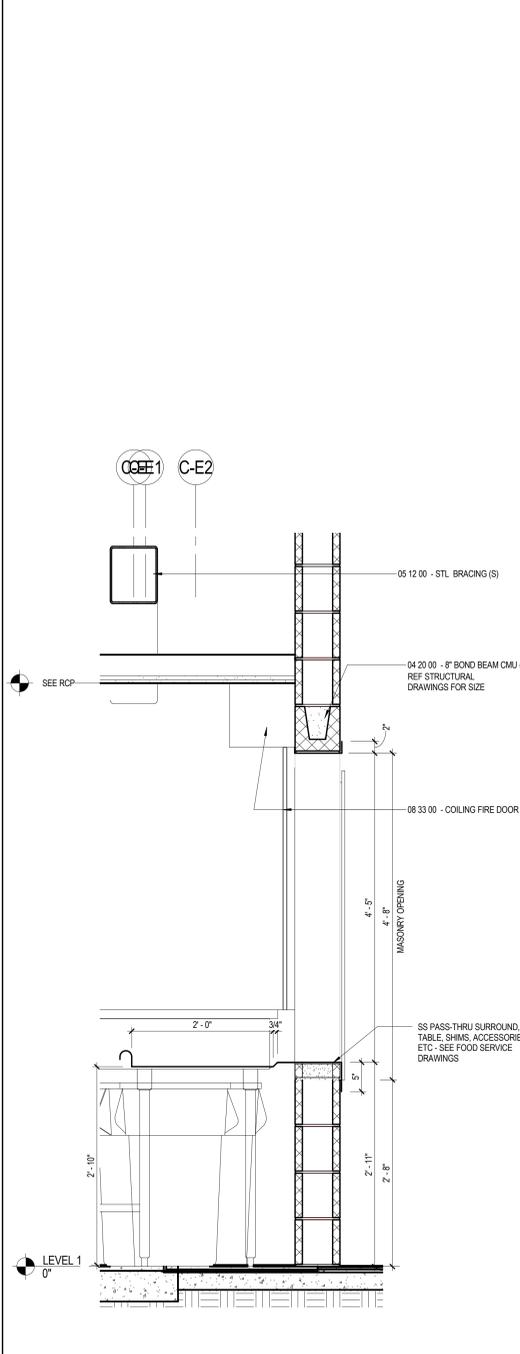
C7 JAMB DETAIL AT OVERHEAD COILING FIRE DOOR AT CAFETERIA SERVERY
A0.31 1 1/2" = 1'-0"



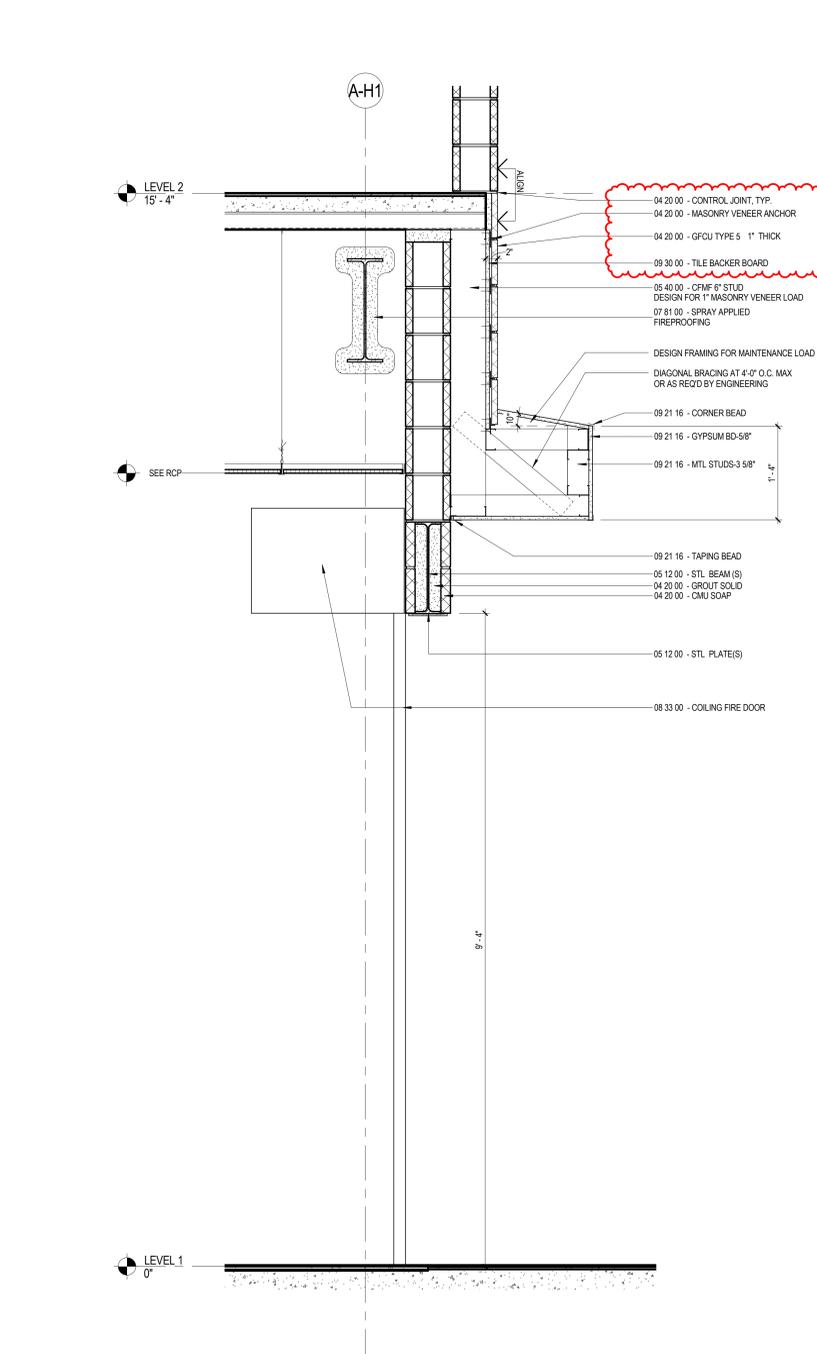
C12 JAMB AT COILING COUNTER DOOR
A0.31 1 1/2" = 1'-0"



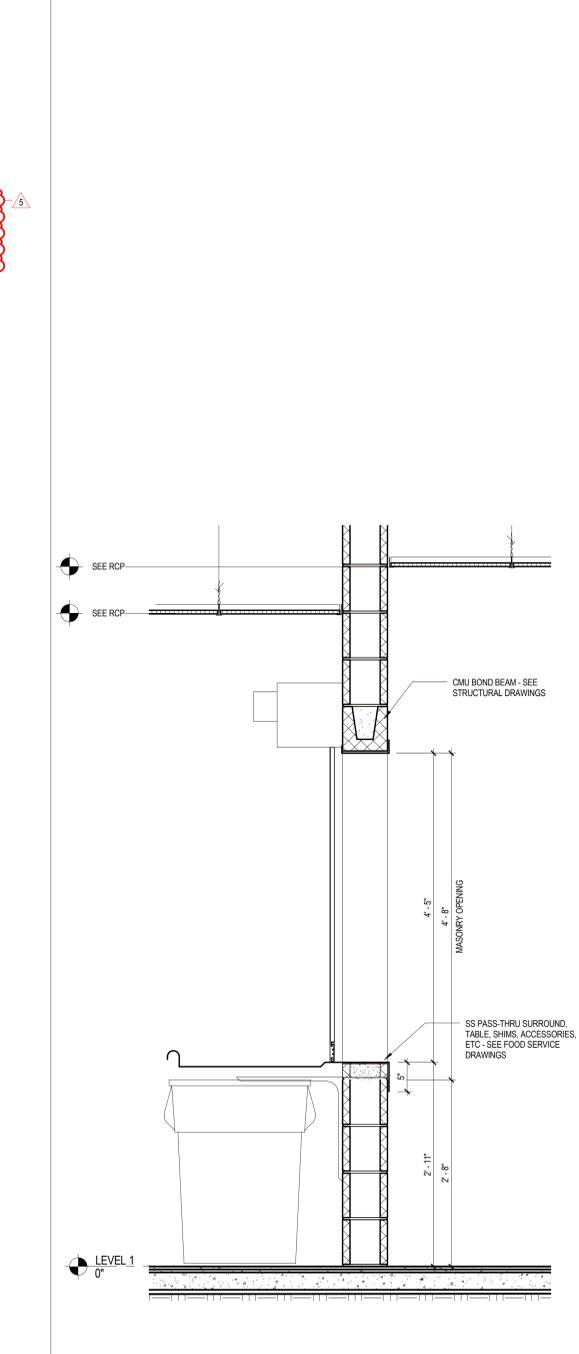
J4 INTERIOR SECTION DETAIL OF OVERHEAD DOOR HEAD AT 1 HR CMU RATED WALL
A0.31 1" = 1'-0"



J7 OVERHEAD COILING FIRE DOOR AT CAFETERIA SERVERY
A0.31 1" = 1'-0"



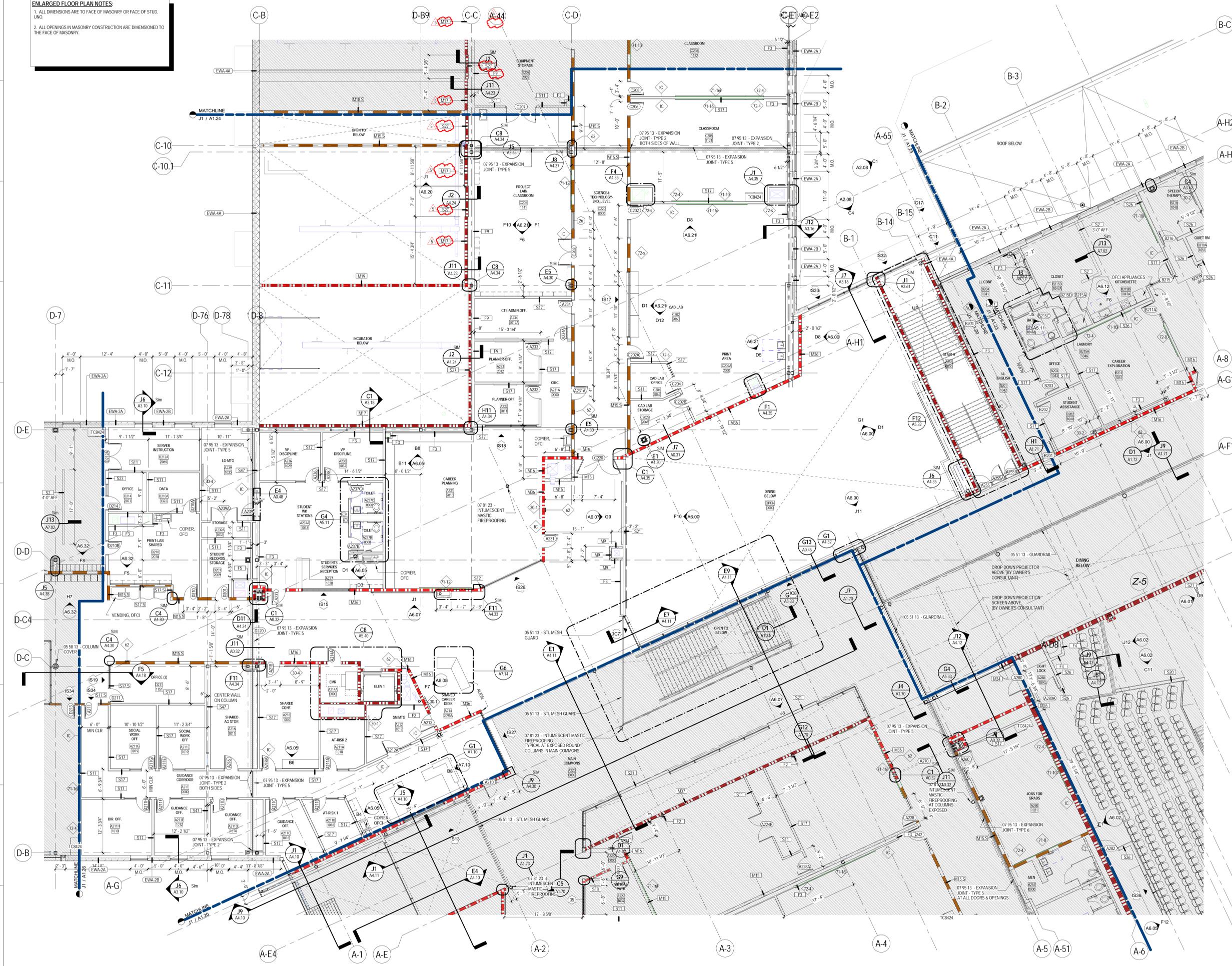
J12 INTERIOR SECTION DISH WINDOW COILING COUNTER FIRE DOOR
A0.31 1" = 1'-0"



J12 INTERIOR SECTION DISH WINDOW COILING COUNTER FIRE DOOR
A0.31 1" = 1'-0"

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ENLARGED FLOOR PLAN NOTES:
 1. ALL DIMENSIONS ARE TO FACE OF MASONRY OR FACE OF STUD. UNO.
 2. ALL OPENINGS IN MASONRY CONSTRUCTION ARE DIMENSIONED TO THE FACE OF MASONRY.



J1 LEVEL 2 - AREA A2
 A1.21 1/8" = 1'-0"

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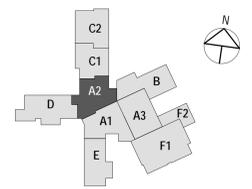


Sanford School Department and
 State of Maine Department of
 Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16

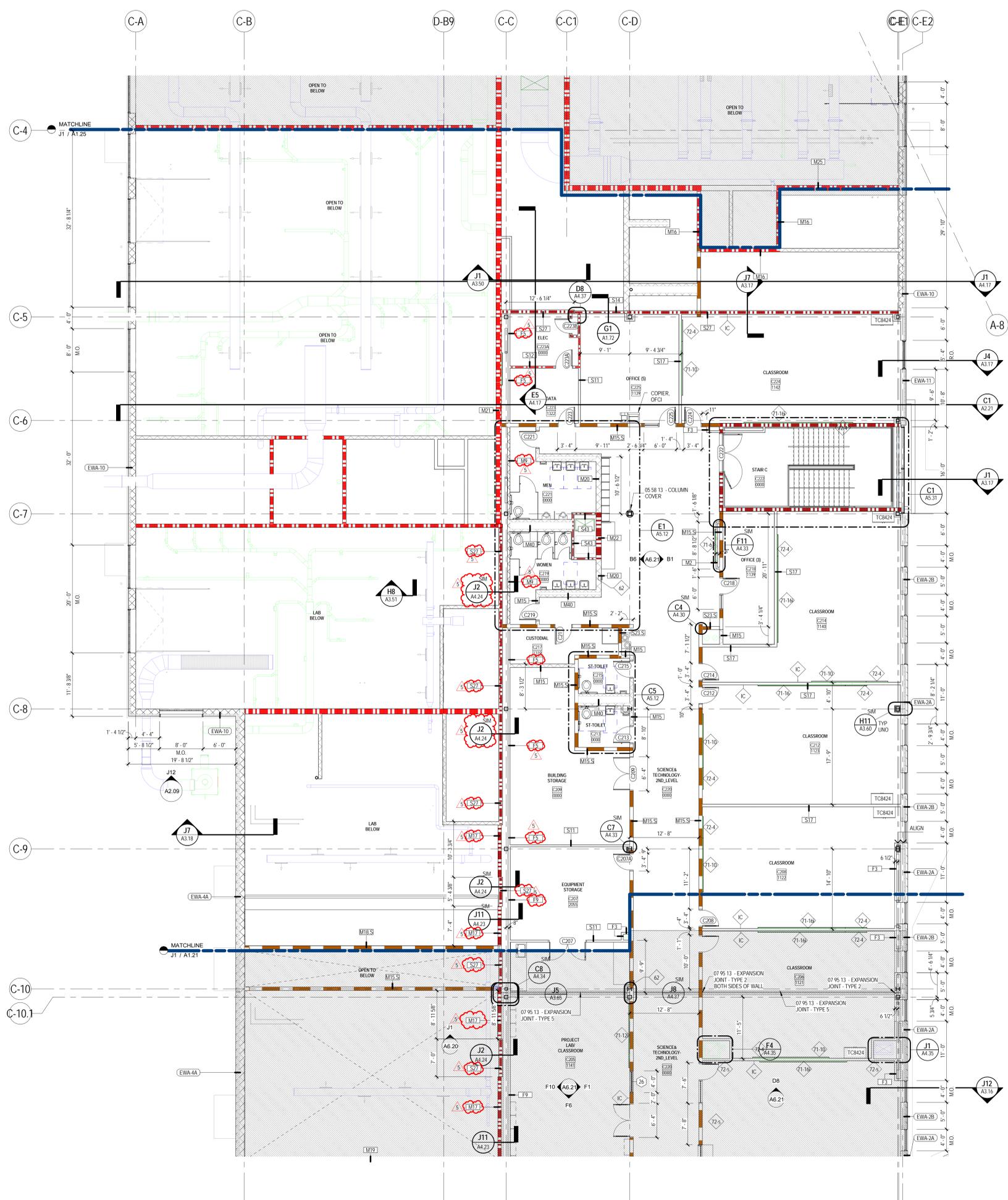


CONTENT:	
SECOND FLOOR PLAN - AREA A2	
DRAWN BY:	JMS
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	As Indicated
A1.21	
Project Phase	
BID DOCUMENTS	
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ENLARGED FLOOR PLAN NOTES:
1. ALL DIMENSIONS ARE TO FACE OF MASONRY OR FACE OF STUD.
UNO.
2. ALL OPENINGS IN MASONRY CONSTRUCTION ARE DIMENSIONED TO
THE FACE OF MASONRY.



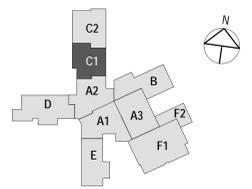
J1
A1.24
LEVEL 2 - AREA C1
1/8" = 1'-0"

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**SANFORD HIGH
SCHOOL and
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SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16



FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
SECOND FLOOR PLAN - AREA C1

DRAWN BY: JMS
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: As Indicated

A1.24

Project Phase
BID DOCUMENTS

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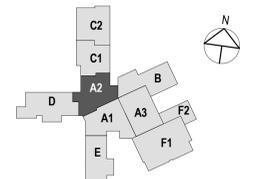


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Education

**SANFORD HIGH
SCHOOL and
TECHNICAL CENTER**

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16



CONTENT: SECOND FLOOR REFLECTED CEILING PLAN - AREA A2	
DRAWN BY:	KMM
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	As indicated
A1.61	
Project Phase	
BID DOCUMENTS	
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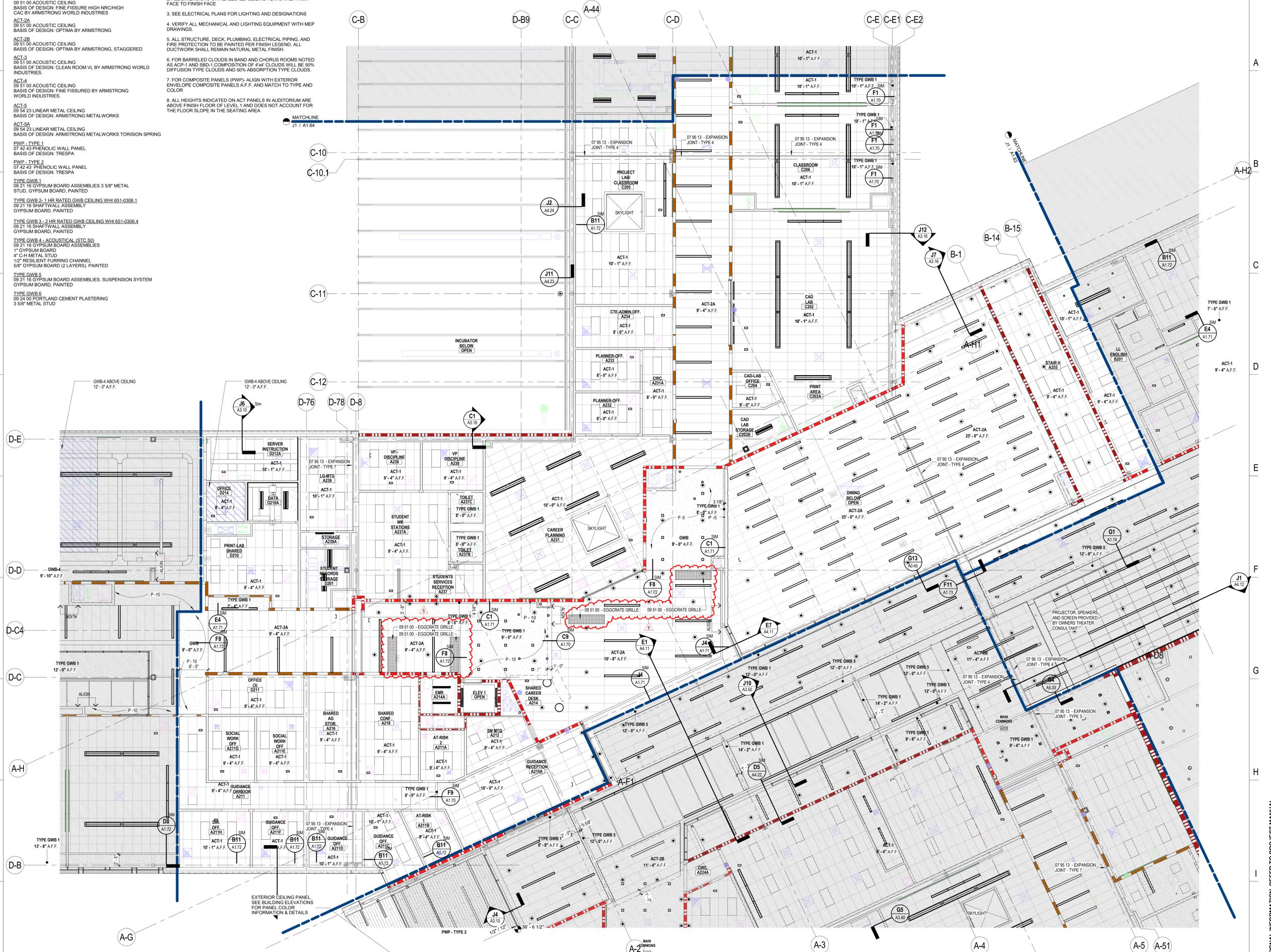
CEILING LEGEND

SEE SPECIFICATIONS FOR ALL CEILING TYPES

- ACT-1
09 51 00 ACOUSTIC CEILING
BASIS OF DESIGN: FINE FISSURE HIGH NRC/HIGH CAC BY ARMSTRONG WORLD INDUSTRIES
- ACT-2A
09 51 00 ACOUSTIC CEILING
BASIS OF DESIGN: OPTIMA BY ARMSTRONG
- ACT-2B
09 51 00 ACOUSTIC CEILING
BASIS OF DESIGN: OPTIMA BY ARMSTRONG, STAGGERED
- ACT-3
09 51 00 ACOUSTIC CEILING
BASIS OF DESIGN: CLEAN ROOM VL BY ARMSTRONG WORLD INDUSTRIES.
- ACT-4
09 51 00 ACOUSTIC CEILING
BASIS OF DESIGN: FINE FISSURE BY ARMSTRONG WORLD INDUSTRIES.
- ACT-5
09 54 23 LINEAR METAL CEILING
BASIS OF DESIGN: ARMSTRONG METALWORKS
- ACT-5A
09 54 23 LINEAR METAL CEILING
BASIS OF DESIGN: ARMSTRONG METALWORKS TORISION SPRING
- PWP - TYPE 1
07 42 43 PHENOLIC WALL PANEL
BASIS OF DESIGN: TRESPA
- PWP - TYPE 2
07 42 43 PHENOLIC WALL PANEL
BASIS OF DESIGN: TRESPA
- TYPE GWB 1
09 21 16 GYPSUM BOARD ASSEMBLIES 3 5/8" METAL STUD, GYPSUM BOARD, PAINTED
- TYPE GWB 2 - 1 HR RATED GWB CEILING WHI 651-0306.1
09 21 16 SHAFTHALL ASSEMBLY
GYPSUM BOARD, PAINTED
- TYPE GWB 3 - 2 HR RATED GWB CEILING WHI 651-0306.4
09 21 16 SHAFTHALL ASSEMBLY
GYPSUM BOARD, PAINTED
- TYPE GWB 4 - ACOUSTICAL (STC 50)
09 21 16 GYPSUM BOARD ASSEMBLIES
1" GYPSUM BOARD
4" C-H METAL STUD
1/2" RESILIENT FURRING CHANNEL
6/8" GYPSUM BOARD (2 LAYERS), PAINTED
- TYPE GWB 5
09 21 16 GYPSUM BOARD ASSEMBLIES, SUSPENSION SYSTEM
GYPSUM BOARD, PAINTED
- TYPE GWB 6
09 24 00 PORTLAND CEMENT PLASTERING
3 5/8" METAL STUD

GENERAL CEILING NOTES

1. ALL HEIGHTS INDICATED ARE ABOVE FINISH FLOOR (A.F.F.).
2. ALL DIMENSIONS ON REFLECTED CEILING PLANS ARE FINISH FACE TO FINISH FACE
3. SEE ELECTRICAL PLANS FOR LIGHTING AND DESIGNATIONS
4. VERIFY ALL MECHANICAL AND LIGHTING EQUIPMENT WITH MEP DRAWINGS.
5. ALL STRUCTURE, DECK, PLUMBING, ELECTRICAL PIPING, AND FIRE PROTECTION TO BE PAINTED PER FINISH LEGEND. ALL DUCTWORK SHALL REMAIN NATURAL METAL FINISH.
6. FOR BARRELED CLOUDS IN BAND AND CHORUS ROOMS NOTED AS ACP-1 AND SBD-1, COMPOSITION OF 4x4' CLOUDS WILL BE 50% DIFFUSION TYPE CLOUDS AND 50% ABSORPTION TYPE CLOUDS.
7. FOR COMPOSITE PANELS (PWP), ALIGN WITH EXTERIOR ENVELOPE COMPOSITE PANELS A.F.F. AND MATCH TO TYPE AND COLOR
8. ALL HEIGHTS INDICATED ON ACT PANELS IN AUDITORIUM ARE ABOVE FINISH FLOOR OF LEVEL 1 AND DOES NOT ACCOUNT FOR THE FLOOR SLOPE IN THE SEATING AREA



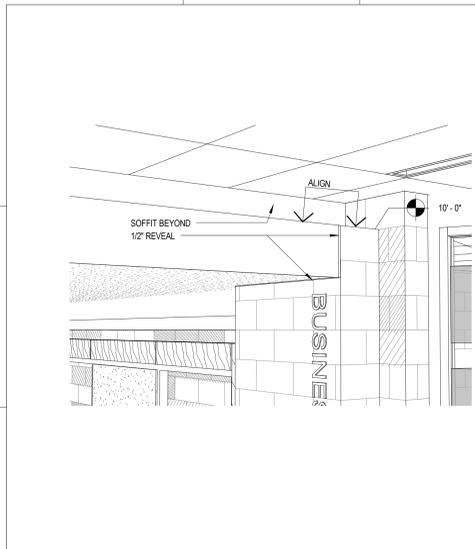
J1 LEVEL 2 RCP - AREA A2
A1.61 18" = 1'-0"

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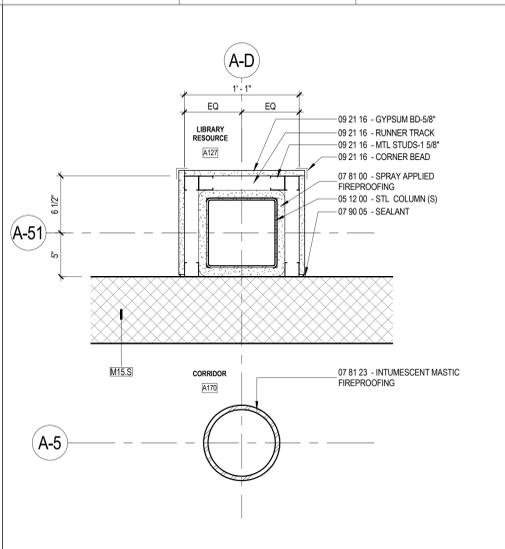


NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16

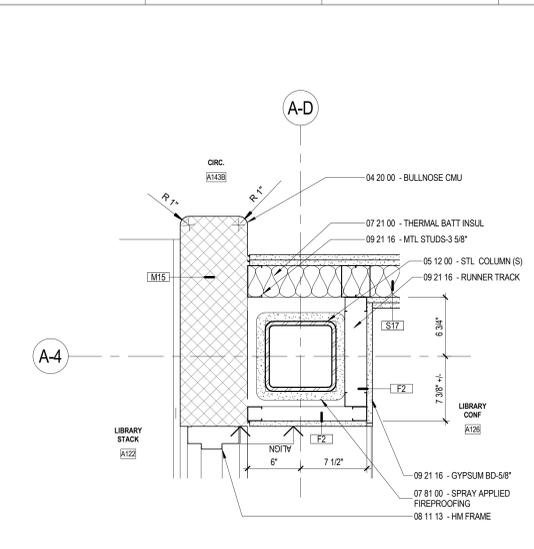
CONTENT:	
INTERIOR PLAN DETAILS - A WING	
DRAWN BY:	JMS/GR
PROJECT NO:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	As indicated
A4.33	
Project Phase	
BID DOCUMENTS	
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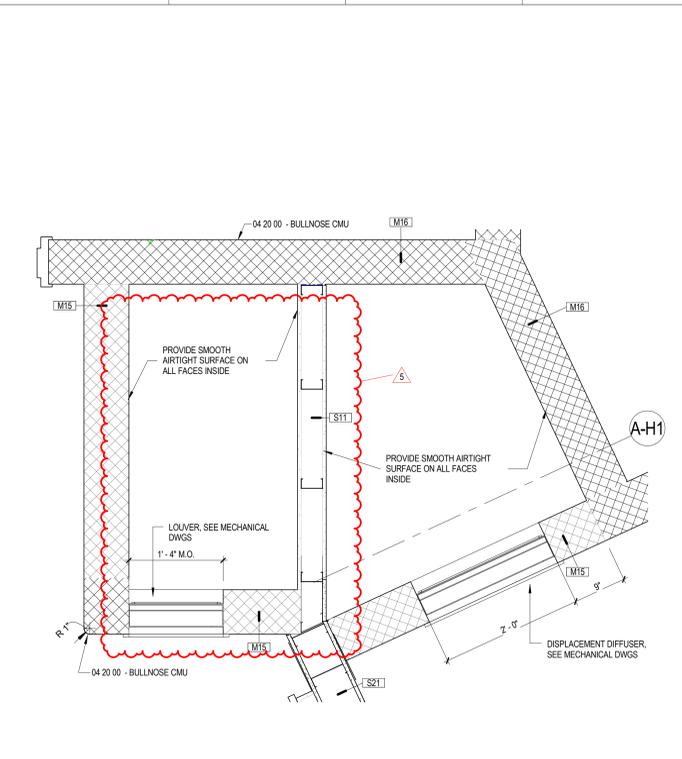
C1 TOP OF GATEWAY WALL
A4.33



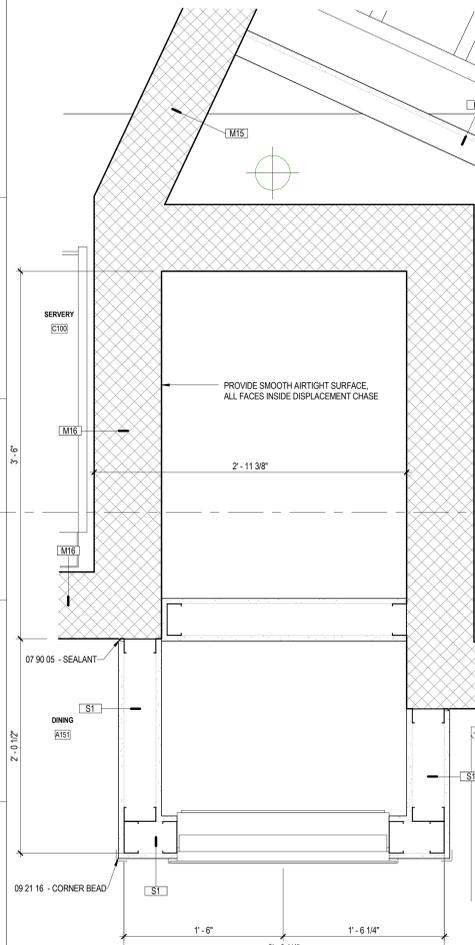
A-51 INTERIOR PLAN DETAIL - AREA A1 - LIBRARY RESOURCE A 127
A4.33 1 1/2" = 1'-0"



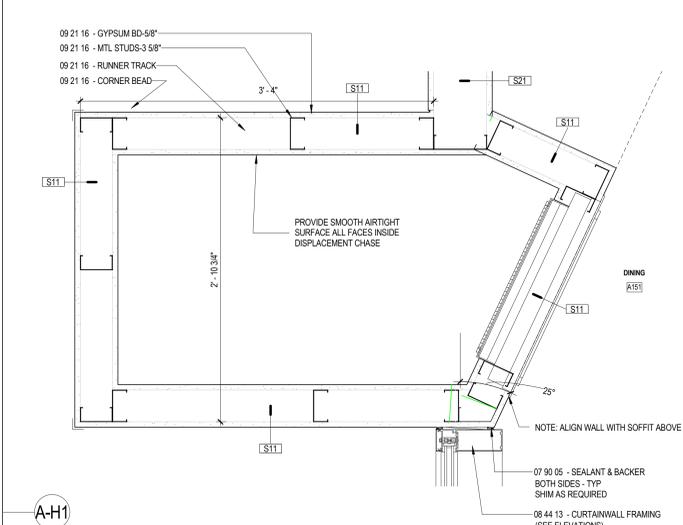
A-4 INTERIOR PLAN DETAIL - AREA A1 - LIBRARY CONFERENCE A 126
A4.33 1 1/2" = 1'-0"



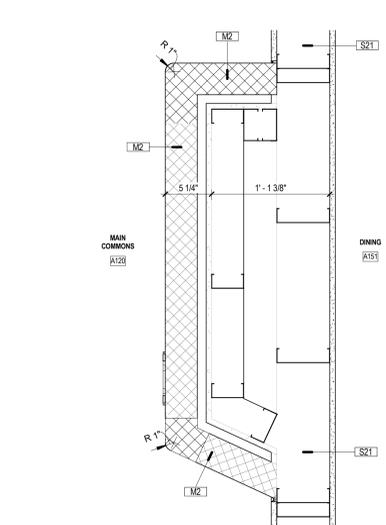
D11 CHASE at CW WING ENTRY - CORRIDOR C120
A4.33 1" = 1'-0"



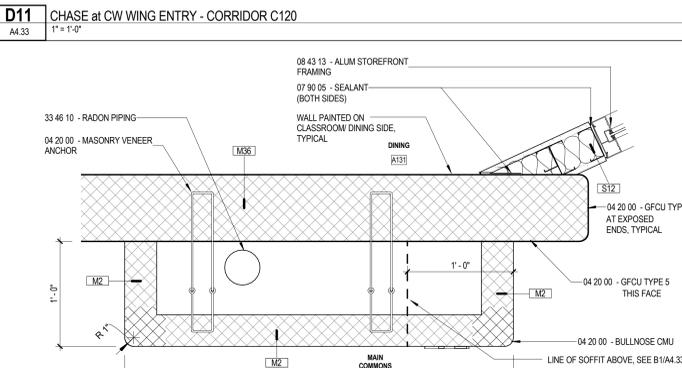
H1 INTERIOR PLAN DETAIL - AREA A2 - SERVERY CHASE
A4.33 1 1/2" = 1'-0"



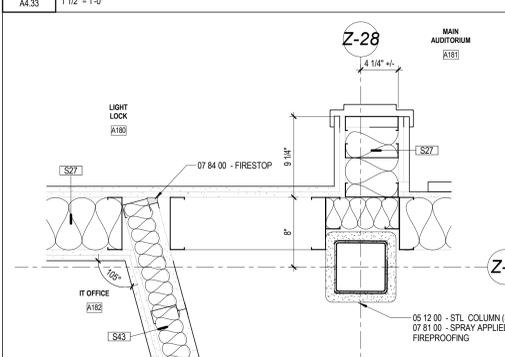
F4 INTERIOR PLAN DETAIL - AREA A2 - CORRIDOR A120
A4.33 1 1/2" = 1'-0"



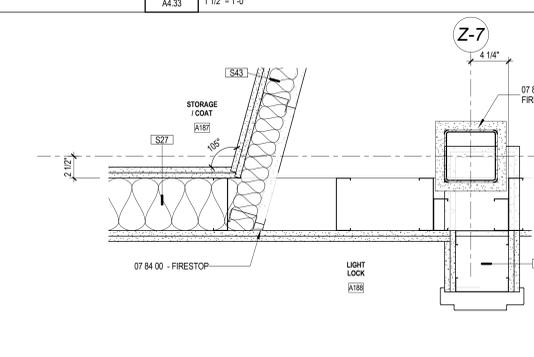
F8 INTERIOR PLAN DETAIL - AREA A2 - CORRIDOR A120
A4.33 1 1/2" = 1'-0"



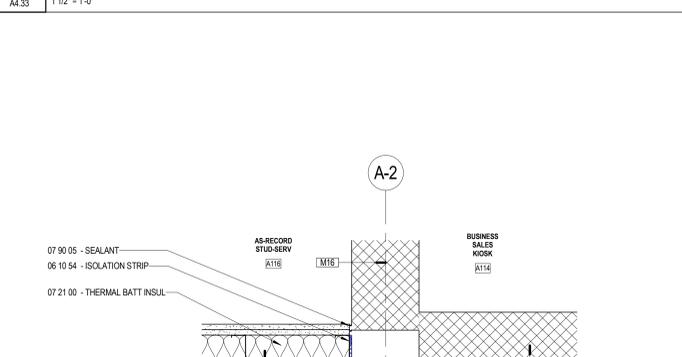
F11 INTERIOR PLAN DETAIL - AREA A2 - CORRIDOR A120
A4.33 1 1/2" = 1'-0"



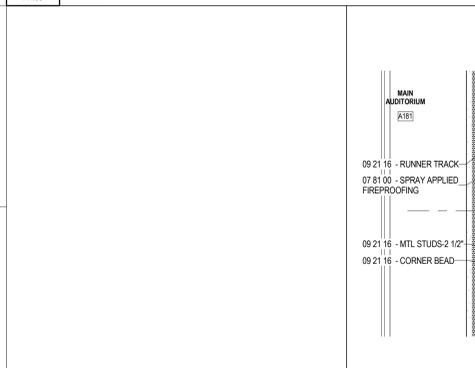
Z-28 INTERIOR PLAN DETAIL - AREA A3 - MAIN AUDITORIUM
A4.33 1 1/2" = 1'-0"



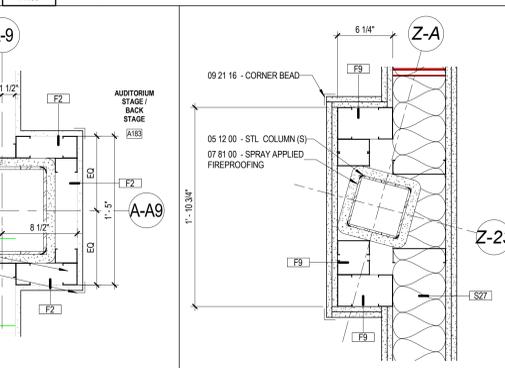
Z-7 INTERIOR PLAN DETAIL - AREA A3 - LIGHT LOCK
A4.33 1 1/2" = 1'-0"



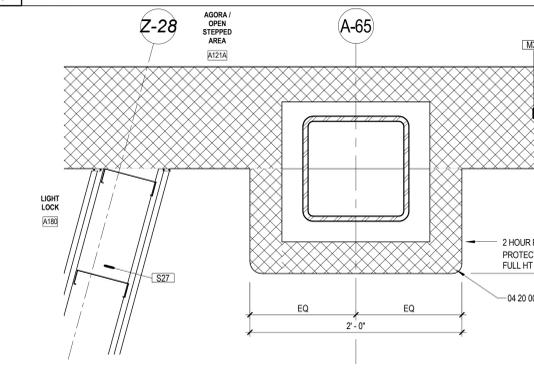
A-2 INTERIOR PLAN DETAIL - AREA A2 - BUSINESS SALES KIOSK
A4.33 1 1/2" = 1'-0"



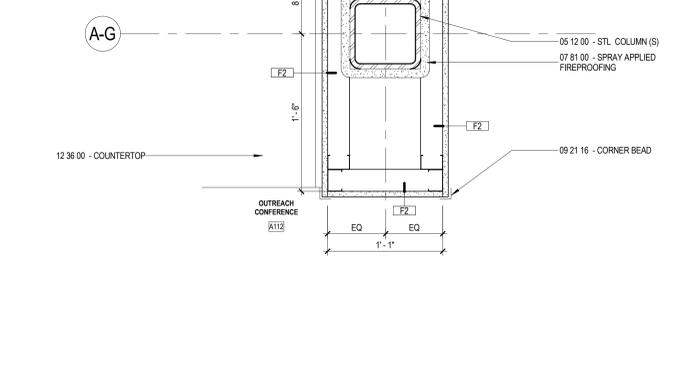
A-9 INTERIOR PLAN DETAIL - AREA A3 - MAIN AUDITORIUM
A4.33 1 1/2" = 1'-0"



J5 AUDITORIUM LIGHT LOCK
A4.33 1 1/2" = 1'-0"



Z-28 INTERIOR PLAN DETAIL - AREA A3 - MAIN AUDITORIUM
A4.33 1 1/2" = 1'-0"



A-G INTERIOR PLAN DETAIL - AREA A2 - OUTREACH CONFERENCE A112
A4.33 1 1/2" = 1'-0"

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Sanford School Department and
State of Maine Department of
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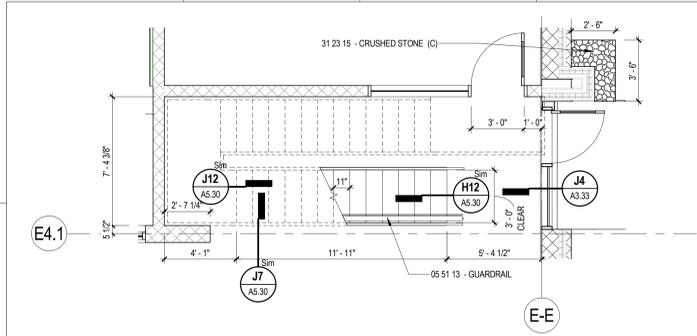
**SANFORD HIGH
SCHOOL and
TECHNICAL CENTER**

SANFORD, ME 04073

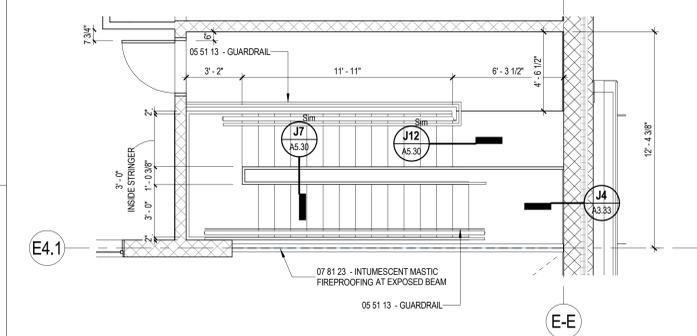
NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

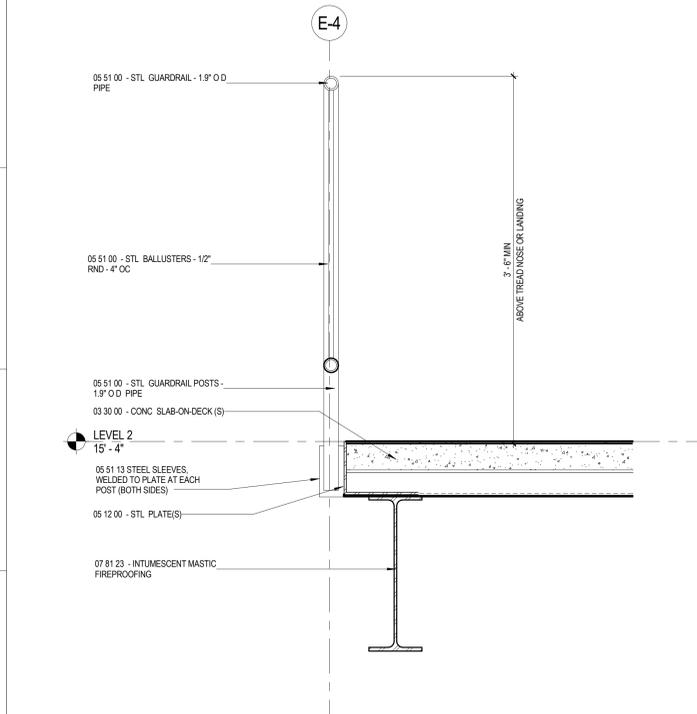
CONTENT: ELEVATOR PLANS AND SECTIONS	
DRAWN BY:	KRL
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	As indicated
A5.40	
Project Phase	
BID DOCUMENTS	
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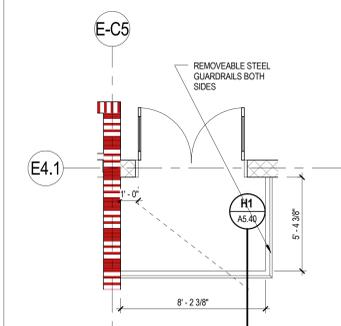
B1 TRAINING STAIR - FIRST FLOOR
A5.40
1/4" = 1'-0"



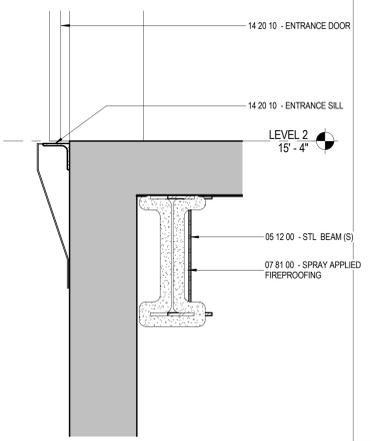
D1 TRAINING STAIR - SECOND FLOOR
A5.40
1/4" = 1'-0"



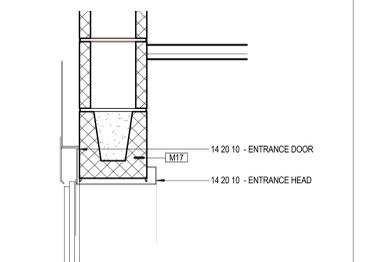
H1 Detail 7
A5.40
1 1/2" = 1'-0"



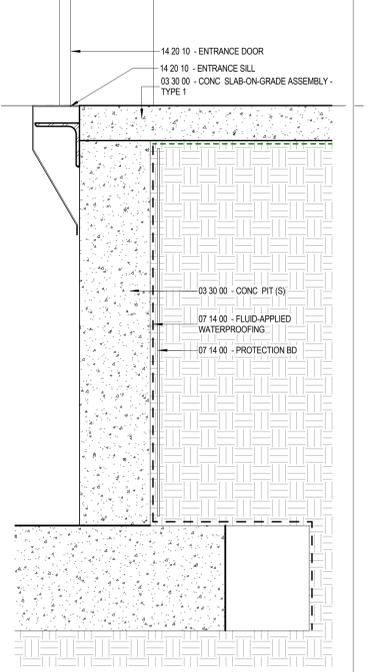
J3 FIRE SCIENCE BALCONY
A5.40
1/4" = 1'-0"



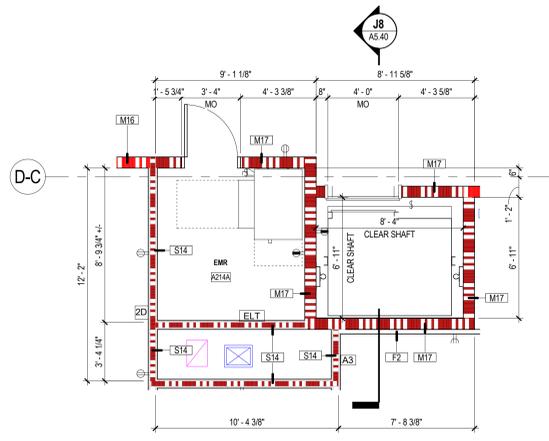
C5 ELEVATOR SILL DETAIL
A5.40
1 1/2" = 1'-0"



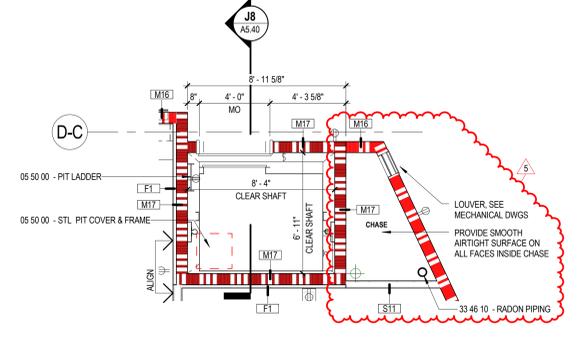
E5 ELEVATOR HEAD DETAIL
A5.40
1 1/2" = 1'-0"



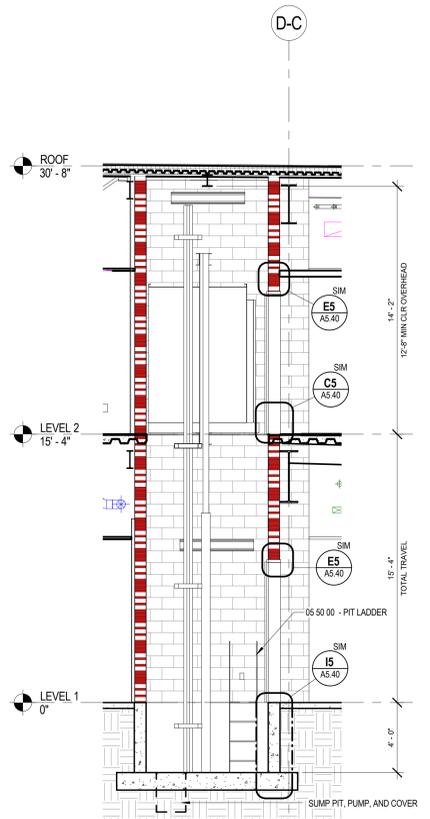
I5 ELEVATOR PIT DETAIL
A5.40
1 1/2" = 1'-0"



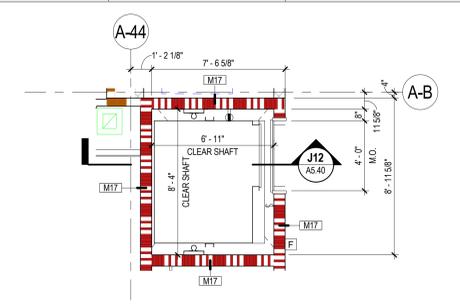
C8 LEVEL 2 - ELEVATOR 1
A5.40
3/4" = 1'-0"



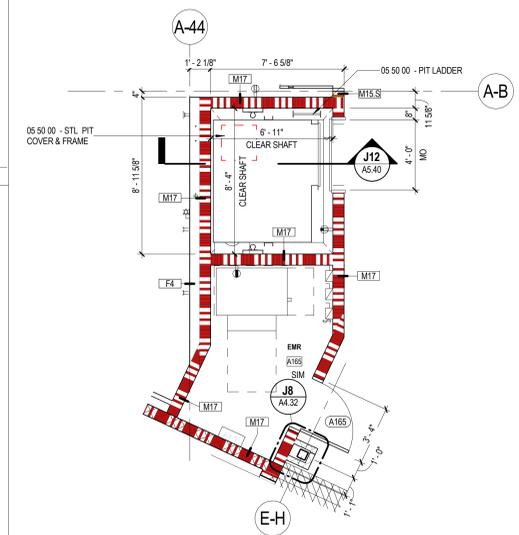
E8 LEVEL 1 - ELEVATOR 1
A5.40
1/4" = 1'-0"



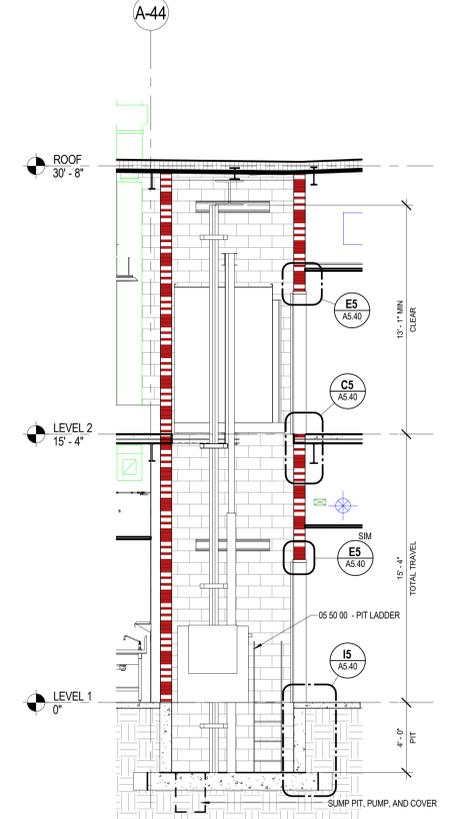
J8 ELEVATOR 1 SECTION
A5.40
1/4" = 1'-0"



B12 ELEVATOR 2 LEVEL 2
A5.40
1/4" = 1'-0"



E12 ELEVATOR 2 - LEVEL 1
A5.40
1/4" = 1'-0"



J12 ELEVATOR 2 SECTION
A5.40
1/4" = 1'-0"



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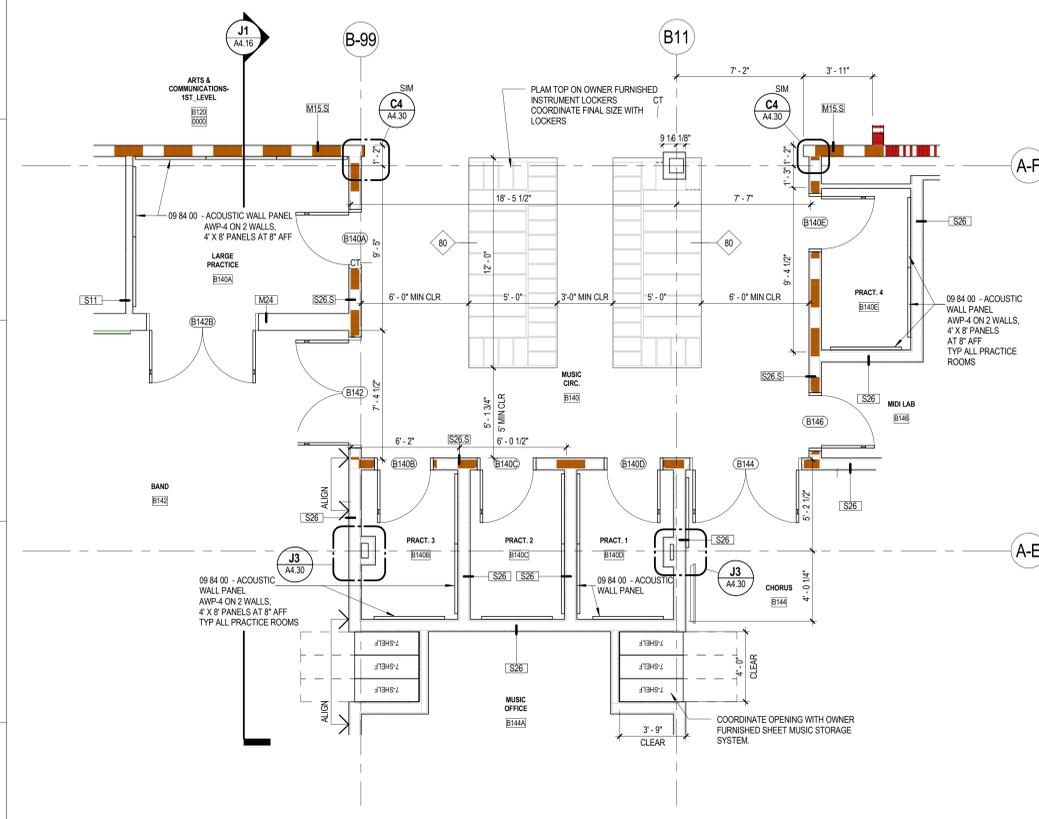
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SCHOOL and
TECHNICAL CENTER**

SANFORD, ME 04073

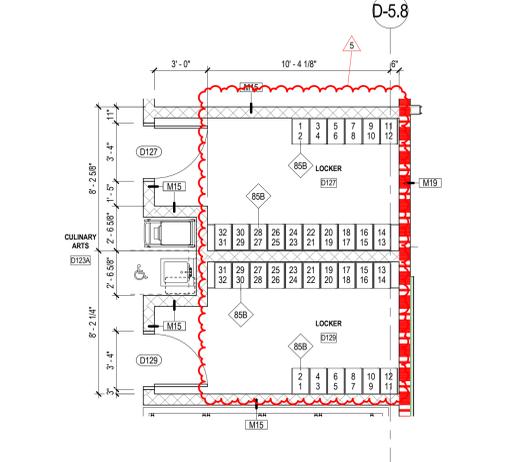
NO.	DESCRIPTION	DATE
5	Addendum 5	03/17/16

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

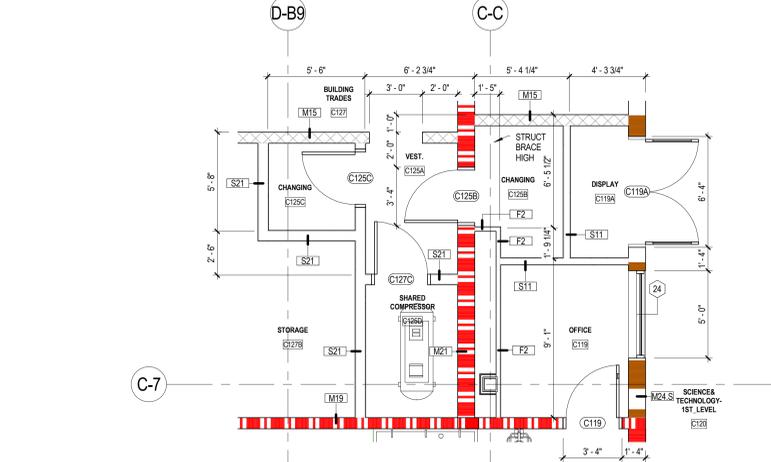
CONTENT:	ENLARGED PLANS
DRAWN BY:	JMS
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	1/4" = 1'-0"
A5.41	
Project Phase:	
BID DOCUMENTS	
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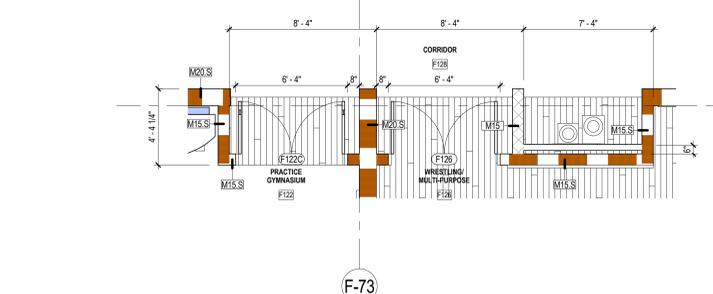
E1 ENLARGED PLAN AT PRACTICE ROOMS
A5.41 1/4" = 1'-0"



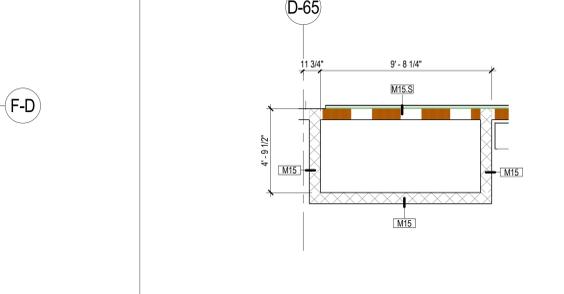
C7 LEVEL 1 - AREA D - CULINARY ARTS LOCKERS ENLARGED PLAN
A5.41 1/4" = 1'-0"



C10 LEVEL 1 - AREA C1 - BUILDING TRADES ENLARGED PLAN
A5.41 1/4" = 1'-0"



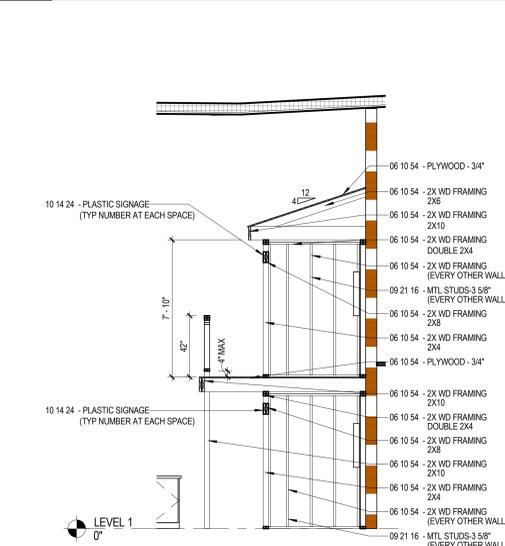
E7 LEVEL 1 - AREA F2 - GYM ENTRY ENLARGED PLAN
A5.41 1/4" = 1'-0"



E12 LEVEL 2 - D WING CHASE ENLARGED PLAN
A5.41 1/4" = 1'-0"



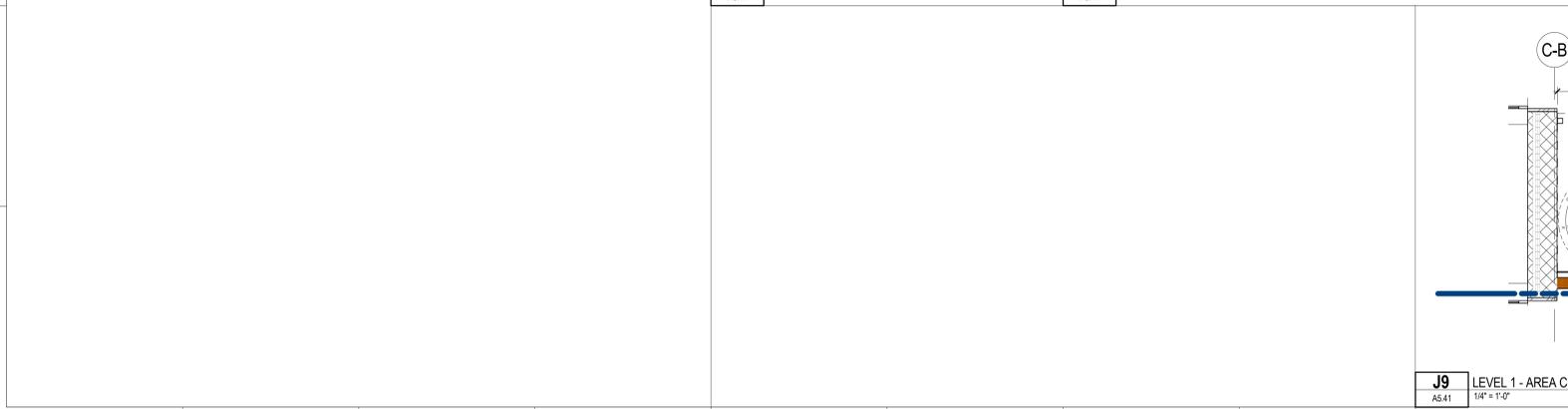
H5 LEVEL 2 - AREA D - EARTH SCIENCE ENLARGED PLAN
A5.41 1/4" = 1'-0"



H7 SECTION @ RESIDENTIAL WIRING SPACE
A5.41 1/4" = 1'-0"



H10 INT - RESIDENTIAL WIRING SPACES
A5.41



J9 LEVEL 1 - AREA C1 - RESIDENTIAL WIRING SPACE (SECOND FLOOR SIMILAR)
A5.41 1/4" = 1'-0"

LIGHTING LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for light fixture, night light, ceiling track lights, wall mounted emergency battery fixture, etc.

SWITCHING & WIRING LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for single pole switch, double switching, lighting control panel, etc.

DEMOLITION LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for existing equipment to be removed, relocated, or reused.

CCTV LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for head end equipment location, camera types, etc.

POWER LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for new/recessed surface mounted panelboards, transformers, receptacles, power poles, etc.

CONTROLS LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for gas shutoff, solenoid valve, frequency drive, temperature control, etc.

AUDIO VISUAL LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for audio visual rack, lighting dimmer rack, emergency relay panel, etc.

INTERCOM/MASTER CLOCK SYSTEM LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for intercom control panel, master clock control panel, local intercom system, etc.

MASS NOTIFICATION SYSTEM LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for notification alert beacon.

ACCESS CONTROL SYSTEM LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for master access control panel, door access sub panel, magnetic monitoring contact, etc.

SITE LEGEND

Table with 2 columns: Symbol and Description. Includes symbols for pole mounted fixture, post top fixture, bollard light fixture, etc.

ELEVATOR LOBBY COMMUNICATIONS SYSTEM

Table with 2 columns: Symbol and Description. Includes symbols for elevator lobby communications system - master box, call box.

ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Includes AF, AFG, AHU, C, CLG, CUH, DN, DWG, EC, EF, EHM, EMH, FB, FIBO, HOA, HP, LOR, MC, MCB, MD, MH, NTS, OD, OFCI, PC, PCH, RF, RTU, SF, SPCP, SIS, S.STL, THH, TMH, TYP, UCN, VP, WPCP, WG, WP, WUH, etc.

CIRCUIT BREAKER TYPES

Table with 2 columns: Abbreviation and Full Name. Includes AF, G, H, L, S.

ELECTRICAL TRADE NOTES

- 1 ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND THE CURRENT NATIONAL ELECTRICAL CODE (NEC) BY ELECTRICIANS LICENSED BY THE STATE IN WHICH THE WORK IS PERFORMED.
2 THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLING ANY CONDUIT AND/OR CABLE. IF ELECTRICAL REQUIREMENTS DIFFER FROM THOSE INDICATED, OR IF ADDITIONAL EQUIPMENT IS REQUIRED BY CODE, INFORM THE ENGINEER.
3 WIRING FOR ALL SINGLE PHASE CIRCUITS, 20A OR SMALLER, SHALL BE A MINIMUM OF 2#12⭉#120-3/4" C. FOR CIRCUIT LENGTHS UNDER 100FT AND 2#10#11081#120-3/4" C. FOR CIRCUIT LENGTHS 100FT AND OVER. UNLESS OTHERWISE NOTED, CIRCUITS FOR ISOLATED GROUND RECEPTACLES SHALL INCLUDE ADDITIONAL ISOLATED GROUND CONDUCTOR. CIRCUITS FOR DOUBLE SWITCHED LIGHT FIXTURES SHALL INCLUDE ADDITIONAL SWITCHED CONDUCTOR(S) AS REQUIRED. THE SHARING OF NEUTRAL CONDUCTORS IS NOT ALLOWED.
4 MOUNTING HEIGHTS GIVEN FOR ALL WIRING DEVICES (WALL SWITCHES, RECEPTACLES, ETC.), FIRE ALARM DEVICES, TELEPHONE EQUIPMENT, SPEAKERS AND LIGHT FIXTURES ARE TO THE CENTERLINE OF THE JUNCTION BOX USED TO MOUNT THE DEVICE, UNLESS OTHERWISE NOTED.
5 REMOVE AND DISPOSE OF EXISTING ELECTRICAL EQUIPMENT AND ASSOCIATED BOXES, CONDUIT AND WIRE WHERE INDICATED OR WHERE LOCATED ON OR WITHIN WALLS AND CEILING BEING DEMOLISHED OR ALTERED AS A RESULT OF THIS CONTRACT, UNLESS OTHERWISE INDICATED. IT IS NOT THE INTENT OF THESE DRAWINGS TO INDICATE ALL ELECTRICAL ITEMS TO BE REMOVED.
6 CIRCUIT WIRING INDICATED ON DRAWINGS IS SCHEMATIC IN NATURE AND SHALL NOT BE CONSIDERED TO BE POINT-TO-POINT, UNLESS OTHERWISE NOTED.
7 EXISTING ELECTRICALLY POWERED ITEMS THAT REMAIN SHALL BE RECIRCUITED, IF NECESSARY, TO ENSURE CONTINUED OPERATION.
8 COORDINATE FINAL LOCATIONS OF CEILING LIGHT FIXTURES AND OTHER EQUIPMENT WITH REFLECTED CEILING PLANS AND ALL OTHER TRADE DRAWINGS. ERROR TO INSTALLATION.
9 WHERE LONG CIRCUIT LENGTHS ARE REQUIRED, ENSURE LESS THAN 3% VOLTAGE DROP UNDER FULL LOAD. INCREASE WIRE SIZE ON CIRCUITS 100 FEET LONG AND ABOVE.
10 PROVIDE AND ENSURE FIREPROOFING OF ALL CONDUIT, CABLING AND ANY OTHER ELECTRICAL DEVICES THROUGH FIRE RATED ASSEMBLIES.
11 PROVIDE PULL STRINGS IN ALL CONDUIT SYSTEMS LEFT FOR USE BY OTHERS.
12 MOUNTING HEIGHT FOR ELECTRICAL DEVICES (RECEPTACLES, MULTICOMMUNICATIONS OUTLETS, ETC) LOCATED ON EXTERIOR WALLS ABOVE FINITUBE SHALL BE 4" FROM TOP OF FINITUBE ENCLOSURE TO CENTERLINE OF ELECTRICAL DEVICE.
13 PROVIDE EXPANSION FITTINGS IN CONDUIT RISERS FROM ALL EXTERIOR UNDERGROUND CONDUITS TO FIXED EQUIPMENT OR CONDUIT FITTINGS AND PROVIDE FLEXIBLE CONNECTIONS TO ANY EQUIPMENT SUBJECT TO SETTLEMENT OR FROST HEAVES.
14 WHERE DOUBLE SWITCHES ARE INDICATED, FIXTURES SHALL BE PROVIDED WITH MULTIPLE BALLASTS.
15 ALL BRANCH CIRCUIT HOMERUN WIRING (POWER AND LIGHTING) BACK TO PANELBOARDS (NOT IN THE SAME ROOM AS THE CIRCUIT) SHALL BE A MINIMUM OF #10 AWG CONDUCTOR.

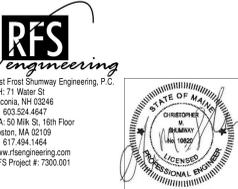
GENERAL NOTES

- THE FOLLOWING GENERAL NOTES APPLY TO ALL RIST-FROST-SHUMWAY ENGINEERING, P.C. DRAWINGS AND TRADES ASSOCIATED WITH THOSE DRAWINGS INVOLVED ON THIS PROJECT.
G-1 RIST-FROST-SHUMWAY ENGINEERING, P.C., WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH RESULT FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND/OR THE DESIGN INTENT THEY CONVEY OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF RIST-FROST-SHUMWAY ENGINEERING, P.C., WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
G-2 ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS INCLUDING, BUT NOT LIMITED TO: NFPA, IBC, UI, SMACNA, OSHA, AND NEC.
G-3 THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL PROTECT THE WORK SITE, SURROUNDING AREAS AND OCCUPANTS FROM DAMAGE AND INJURY.
G-4 THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONTRACT DOCUMENTS. ALL DRAWINGS OF ANY PARTICULAR TRADE SHALL BE USED IN CONJUNCTION WITH DRAWINGS OF ALL OTHER TRADES TO COORDINATE ALL CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED WORK. ANY PROPOSED CHANGES, VARIATIONS OR SUBSTITUTIONS MUST BE REVIEWED AND ACCEPTED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
G-5 ALL DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN INTENT AND EXTENT OF THE WORK. THEY SHALL BE CONSIDERED PARTLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGHING-IN MEASUREMENTS OR TO SERVE AS SHOP DRAWINGS.
G-6 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS (AS-BUILT OR OTHERWISE) BEFORE COMMENCING FABRICATION, AND/OR ORDERING MATERIALS.
G-7 DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE INDICATED.
G-8 INFORMATION ON THESE DRAWINGS PERTAINING TO AS-BUILT CONSTRUCTION AND OTHER EXISTING CONDITIONS HAS BEEN OBTAINED FROM OTHER DOCUMENTATION OR BY FIELD INVESTIGATION. (SEE GENERAL AND SUPPLEMENTAL CONDITIONS FOR LISTING). THIS INFORMATION IS PROVIDED FOR THE CONTRACTOR'S BENEFIT IN PERFORMANCE OF THE WORK.
G-9 IN THE EVENT THE CONTRACTOR ENCOUNTERS MATERIAL REASONABLY BELIEVED TO BE HAZARDOUS WHICH HAS NOT BEEN RENDERED HARMLESS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO THE OWNER AND ARCHITECT/ENGINEER IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED UNTIL WRITTEN VERIFICATION BY THE OWNER THAT THE MATERIAL HAS BEEN REMOVED OR OTHERWISE BEEN RENDERED HARMLESS.
G-10 ALL BRANCH CIRCUIT HOMERUN WIRING (POWER AND LIGHTING) BACK TO PANELBOARDS (NOT IN THE SAME ROOM AS THE CIRCUIT) SHALL BE A MINIMUM OF #10 AWG CONDUCTOR.

LAVALLEE BRENSINGER ARCHITECTS

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305 Commercial Street, Portland, ME 04101

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207.558.7200
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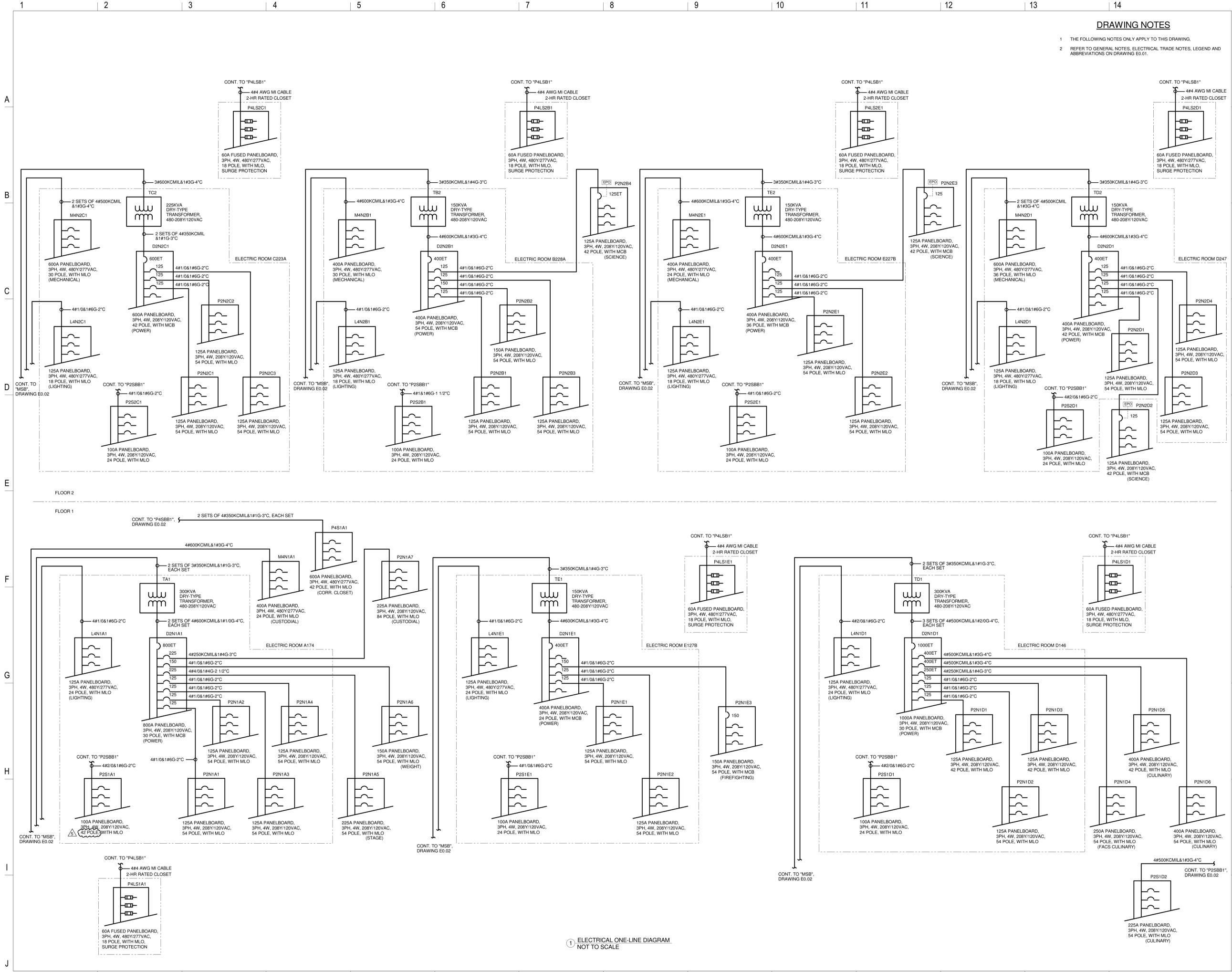
Sanford School Department and State of Maine Department of Education
SANFORD, ME 04073

SANFORD HIGH SCHOOL and TECHNICAL CENTER

Table with 3 columns: NO., DESCRIPTION, DATE. Includes addendum #5 dated 2016-03-17.

Table with 2 columns: NO. and DATE. Includes revision #1 dated 02/11/2016.

Project Information section including Project Name (E0.01), Bid Documents, and Project Phase.



DRAWING NOTES

- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.

LAVALLEE BRENSINGER ARCHITECTS
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 Riel Frost Shumway Engineering, P.C.
 NH: 71 Water St., Laconia, NH 03246
 P: 603.524.4847
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 P: 617.494.1464
 www.rfsengineering.com
 RFS Project #: 7300.001

Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17

CONTENT:
ELECTRICAL ONE-LINE DIAGRAM

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISED:

SCALE: AS NOTED

E0.03

Project Phase
BID DOCUMENTS

Project Name
 SANFORD HIGH SCHOOL and TECHNICAL CENTER

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1 ELECTRICAL ONE-LINE DIAGRAM
 NOT TO SCALE

ELECTRIC EQUIPMENT AND CONTROL SCHEDULE

EQUIPMENT	ITEM	NAME	ROOM	ROOM LOC	AMPS	HP	KW	PHASE	SYSTEM	VOLTS	PANEL OR CONTROL CENTER	CIRCUIT BREAKER	POWER WIRING FROM PANEL TO CONTROL UNIT AND FROM CONTROL UNIT TO EQUIPMENT			REF.	FUSED DISCONNECT SWITCH	CONTROL DEVICES
													PHASE	CONDUIT	CONDUIT			
													CONDUIT	CONDUIT	CONDUIT			
DHU-1A	DEHUMID. UNIT #1A	ROOFTOP - B		97.2				3	480	480	M4N2B1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-1B	DEHUMID. UNIT #1B	ROOFTOP - B		97.2				3	480	480	M4N2B1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-2	DEHUMID. UNIT #2	ROOFTOP - C1		75.2				3	480	480	M4N2C1	1503	480 AWG	186 AWG E.G.	1 1/2" C	A	PROVIDE WP	3
DHU-3	DEHUMID. UNIT #3	ROOFTOP - C1		142.2				3	480	480	M4N2C1	1503	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-4	DEHUMID. UNIT #4	ROOFTOP - C2		111.2				3	480	480	M4N2C1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-5	DEHUMID. UNIT #5	ROOFTOP - C2		111.2				3	480	480	M4N2C1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-6A	DEHUMID. UNIT #6A	ROOFTOP - A2		82.2				3	480	480	M4N2D1	1003	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-6B	DEHUMID. UNIT #6B	ROOFTOP - D		97.2				3	480	480	M4N2D1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-7	DEHUMID. UNIT #7	ROOFTOP - D		111.2				3	480	480	M4N2D1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-8	DEHUMID. UNIT #8	ROOFTOP - E		142.2				3	480	480	M4N2E1	1503	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-9	DEHUMID. UNIT #9	ROOFTOP - E		111.2				3	480	480	M4N2E1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-10	DEHUMID. UNIT #10	ROOFTOP - F1		97.2				3	480	480	M4N1A1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-11	DEHUMID. UNIT #11	ROOFTOP - F2		77.5				3	480	480	M4N1A1	1003	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
DHU-12	DEHUMID. UNIT #12	ROOFTOP - A1		111.2				3	480	480	P4S1A1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-1	AIR HANDLER #1	ROOFTOP - F1		128.48				3	480	480	P4S1A1	1503	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-2	AIR HANDLER #2	ROOFTOP - F1		64.47				3	480	480	M4N1A1	903	480 AWG	186 AWG E.G.	1 1/2" C	A	PROVIDE WP	3
AHU-3	AIR HANDLER #3	ROOFTOP - F1		128.48				3	480	480	P4S1A1	1503	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-4	AIR HANDLER #4	ROOFTOP - F2		75				3	480	480	P4S1A1	903	480 AWG	186 AWG E.G.	1 1/2" C	A	PROVIDE WP	3
AHU-5	AIR HANDLER #5	ROOFTOP - B		97.72				3	480	480	M4N2B1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-6	AIR HANDLER #6	ROOFTOP - A2		94.92				3	480	480	P4S1A1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-7	AIR HANDLER #7	ROOFTOP - A2		97.72				3	480	480	M4N2D1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-8	AIR HANDLER #8	ROOFTOP - D		94.92				3	480	480	M4N2D1	1103	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
AHU-9	AIR HANDLER #9	ROOFTOP - A1		106.47				3	480	480	M4N1A1	1253	480 AWG	186 AWG E.G.	2" C	A	PROVIDE WP	3
HWP-1	HOT WATER PUMP #1	MECH ROOM B057		25				3	480	480	P4S8B1	603	480 AWG	1810 AWG E.G.	1 1/4" C	-	-	2
HWP-2	HOT WATER PUMP #2	MECH ROOM B057		25				3	480	480	P4S8B1	603	480 AWG	1810 AWG E.G.	1 1/4" C	-	-	2
HWP-3	HOT WATER PUMP #3	MECH ROOM B057		34				3	480	480	P4S8B1	303	480 AWG	1812 AWG E.G.	3/4" C	-	-	2
HWP-4	HOT WATER PUMP #4	MECH ROOM B057		34				3	480	480	P4S8B1	303	480 AWG	1812 AWG E.G.	3/4" C	-	-	2
CP-1	CIRC PUMP #1	CORRIDOR F101 - 2ND FLOOR		3/4				3	480	480	P4S1A1	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
CP-2	CIRC PUMP #2	CORRIDOR F101 - 2ND FLOOR		1/3				1	120	120	P2S1A1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-3	CIRC PUMP #3	CIRCULATION F111 - 2ND FLOOR		3/4				3	480	480	P4S1A1	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
CP-4	CIRC PUMP #4	HEALTH LAB F123		1/3				1	120	120	P4S1A1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-5	CIRC PUMP #5	ARTS & COMMUNICATIONS B220		1/3				1	120	120	P4S1B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-6	CIRC PUMP #6	MAIN COMMONS A220		1/2				1	120	120	P4S1B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-7	CIRC PUMP #7	MAIN COMMONS A220		1/3				1	120	120	P4S2C1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-8	CIRC PUMP #8	EARTH SCIENCE CLASSROOM D237		1/2				1	120	120	P4S2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-9	CIRC PUMP #9	LEARNING CENTER A224		1/3				1	120	120	P4S2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
CP-10	CIRC PUMP #10	BUSINESS & MANAGEMENT D220		1/2				1	120	120	P2S2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	-	1
B-1	BOILER #1	MECH ROOM B057		7				3	208	208	P2S8B2	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
B-2	BOILER #2	MECH ROOM B057		7				3	208	208	P2S8B2	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
B-3	BOILER #3	MECH ROOM B057		7				3	208	208	P2S8B2	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
B-4	BOILER #4	MECH ROOM B057		7				3	208	208	P2S8B2	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
B-5	BOILER #5	MECH ROOM B057		7				3	208	208	P2S8B2	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
BCU-A100	BLOWER COIL UNIT A100	RECEPTION WAITING A101A		3/4				3	480	480	P4S8B1	203	480 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	2
CAF-1	COMBUSTION AIR FAN #1	ROOFTOP - B		1				3	480	480	P4S8B1	203	480 AWG	1810 AWG E.G.	3/4" C	-	-	2
SEF-1	ATRIUM SMOKE EXHAUST FAN #1	ROOFTOP - A2		30				3	480	480	P4S8B1	703	480 AWG MI CABLE	-	-	A	PROVIDE WP	3
SEF-2	ATRIUM SMOKE EXHAUST FAN #2	ROOFTOP - A2		30				3	480	480	P4S8B1	703	480 AWG MI CABLE	-	-	A	PROVIDE WP	3
SEF-3	ATRIUM SMOKE EXHAUST FAN #3	ROOFTOP - B		30				3	480	480	P4S8B1	703	480 AWG MI CABLE	-	-	A	PROVIDE WP	3
SSE-1	SMOKE EXHAUST MAKEUP #1	ROOFTOP - A2		2				3	480	480	P4S8B1	203	480 AWG MI CABLE	-	-	A	PROVIDE WP	3
SSE-2	SMOKE EXHAUST MAKEUP #2	ROOFTOP - A2		2				3	480	480	P4S8B1	203	480 AWG MI CABLE	-	-	A	PROVIDE WP	3
CEF-C110	FLUME HOOD FAN	ROOFTOP - C1		3/4				1	120	120	P2N2C2	251	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
CEF-C114	FLUME HOOD FAN	ROOFTOP - C1		3/4				1	120	120	P2N2C2	251	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
DEF-1	KITCHEN DISHWASHER EXHAUST FAN	ROOFTOP - A2		1/2				1	120	120	D2N2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
DEF-2	CULIN. DISHWASHER EXHAUST FAN	ROOFTOP - D		1/2				1	120	120	D2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-D132	ROOM D132 FAN	ROOFTOP - D		1/4				1	120	120	D2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-C104C	ROOM C104 FAN	ROOFTOP - A2		1/6				1	120	120	D2N2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-B148	ROOM B148 FAN	ROOFTOP - B		1/6				1	120	120	D2N2B1	251	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-B228A	ROOM B228 FAN	ROOFTOP - B		1/6				1	120	120	D2N2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-A193	ROOM A193 FAN	ROOFTOP - B		1/6				1	120	120	D2N2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-D146	ROOM D146 FAN	ROOFTOP - D		1/6				1	120	120	D2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-C223A	ROOM C223 FAN	ROOFTOP - C1		1/6				1	120	120	P2N2C2	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-D129	ROOM D129 FAN	ROOFTOP - D		1/4				1	120	120	D2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-D247	ROOM D247 FAN	ROOFTOP - D		1/6				1	120	120	D2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-E227B	ROOM E227 FAN	ROOFTOP - E		1/4				1	120	120	P2N2E1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-A174	ROOM A174 FAN	ROOFTOP - A1		1/6				1	120	120	D2N2B1	160	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-D150B	ROOM D150 FAN	ROOFTOP - A1		1/6				1	120	120	P2N1D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-A227	ROOM A227 FAN	ROOFTOP - A2		1/6				1	120	120	P2N2D1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-B054	ROOM B054 FAN	ELECTRICAL B054		1/4				1	120	120	M2N2B1	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-B054B	ROOM B054 FAN	ELECTRICAL B054		1/4		0.048		1	120	120	FED WITH EF-B054	-	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-C121	ROOM C121 FAN	ROOFTOP - C1		1/2				1	120	120	P2N2C2	201	2810 AWG	1810 AWG E.G.	3/4" C	-	FACTORY	1
EF-C134	ROOM C134 FAN	ROOFTOP - C																

DRAWING NOTES

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- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.

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Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
3	ADDENDUM #3	2016-03-04
5	ADDENDUM #5	2016-03-17

CONTENT:
 PANELBOARD SCHEDULES

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

SCALE: NO SCALE

E0.07

Project Phase
 BID DOCUMENTS
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PANELBOARD: P4S1A1															
BUS SIZE: 600 AMPS				MAIN: MLO				ELECTRONIC TRIP				NEUTRAL: 100%			
VOLTAGE: 480 Y/277V 3PH,4W				LOCATION: ELEC B054				MOUNTING: SURFACE				TVSS: NO			
SERVICE RATED: NO				ISOLATED GND BUS: NO				SHORT CIR. CURRENT RATING: 18000 AMPS				TVSS: YES			
DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY					
UNIT AHU-12	L1	L2	L3	1	2	150	L1	L2	L3	UNIT AHU-1					
UNIT AHU-3	121882	121882	121882	600ET	3	4	35605	35605	35605	UNIT AHU-4					
UNIT AHU-6	87606	87606	87606	400ET	15	16	26305	26305	26305	CIRC PUMP CP-1					
CIRC PUMP CP-3	160290	159034	157802	800ET	17	18	443	443	443	SPARE					
SPARE	28414	30757	26269	300ET	21	22	2990	3680	4036	SPARE					
LTG - GYM F122	30700	24770	26828	400ET	23	24	20	20	20	SPARE					
LTG - GYM F122	14414	12850	5103	125	39	40	20	20	20	SPARE					
LTG - GYM F122	86258	59647	50843	300ET	43	44	20	20	20	SPARE					
LTG - GYM F122				400ET	47	48	20	20	20	SPARE					
LTG - GYM F122				225ET	51	52	20	20	20	SPARE					
LTG - GYM F122				225ET	55	56	20	20	20	SPARE					
LTG - GYM F122				225ET	57	58	20	20	20	SPARE					
LTG - GYM F122				225ET	59	60	20	20	20	SPARE					
LTG - GYM F122				225ET	61	62	20	20	20	SPARE					
LTG - GYM F122				225ET	63	64	20	20	20	SPARE					
LTG - GYM F122				225ET	65	66	20	20	20	SPARE					
LTG - GYM F122				225ET	67	68	20	20	20	SPARE					
LTG - GYM F122				225ET	69	70	20	20	20	SPARE					
LTG - GYM F122				225ET	71	72	20	20	20	SPARE					
LTG - GYM F122				225ET	73	74	20	20	20	SPARE					
LTG - GYM F122				225ET	75	76	20	20	20	SPARE					
LTG - GYM F122				225ET	77	78	20	20	20	SPARE					
LTG - GYM F122				225ET	79	80	20	20	20	SPARE					
LTG - GYM F122				225ET	81	82	20	20	20	SPARE					
LTG - GYM F122				225ET	83	84	20	20	20	SPARE					
LTG - GYM F122				225ET	85	86	20	20	20	SPARE					
LTG - GYM F122				225ET	87	88	20	20	20	SPARE					
LTG - GYM F122				225ET	89	90	20	20	20	SPARE					
LTG - GYM F122				225ET	91	92	20	20	20	SPARE					
LTG - GYM F122				225ET	93	94	20	20	20	SPARE					
LTG - GYM F122				225ET	95	96	20	20	20	SPARE					
LTG - GYM F122				225ET	97	98	20	20	20	SPARE					
LTG - GYM F122				225ET	99	100	20	20	20	SPARE					
LTG - GYM F122				225ET	101	102	20	20	20	SPARE					
LTG - GYM F122				225ET	103	104	20	20	20	SPARE					
LTG - GYM F122				225ET	105	106	20	20	20	SPARE					
LTG - GYM F122				225ET	107	108	20	20	20	SPARE					
LTG - GYM F122				225ET	109	110	20	20	20	SPARE					
LTG - GYM F122				225ET	111	112	20	20	20	SPARE					
LTG - GYM F122				225ET	113	114	20	20	20	SPARE					
LTG - GYM F122				225ET	115	116	20	20	20	SPARE					
LTG - GYM F122				225ET	117	118	20	20	20	SPARE					
LTG - GYM F122				225ET	119	120	20	20	20	SPARE					
LTG - GYM F122				225ET	121	122	20	20	20	SPARE					
LTG - GYM F122				225ET	123	124	20	20	20	SPARE					
LTG - GYM F122				225ET	125	126	20	20	20	SPARE					
LTG - GYM F122				225ET	127	128	20	20	20	SPARE					
LTG - GYM F122				225ET	129	130	20	20	20	SPARE					
LTG - GYM F122				225ET	131	132	20	20	20	SPARE					
LTG - GYM F122				225ET	133	134	20	20	20	SPARE					
LTG - GYM F122				225ET	135	136	20	20	20	SPARE					
LTG - GYM F122				225ET	137	138	20	20	20	SPARE					
LTG - GYM F122				225ET	139	140	20	20	20	SPARE					
LTG - GYM F122				225ET	141	142	20	20	20	SPARE					
LTG - GYM F122				225ET	143	144	20	20	20	SPARE					
LTG - GYM F122				225ET	145	146	20	20	20	SPARE					
LTG - GYM F122				225ET	147	148	20	20	20	SPARE					
LTG - GYM F122				225ET	149	150	20	20	20	SPARE					
LTG - GYM F122				225ET	151	152	20	20	20	SPARE					
LTG - GYM F122				225ET	153	154	20	20	20	SPARE					
LTG - GYM F122				225ET	155	156	20	20	20	SPARE					
LTG - GYM F122				225ET	157	158	20	20	20	SPARE					
LTG - GYM F122				225ET	159	160	20	20	20	SPARE					
LTG - GYM F122				225ET	161	162	20	20	20	SPARE					
LTG - GYM F122				225ET	163	164	20	20	20	SPARE					
LTG - GYM F122				225ET	165	166	20	20	20	SPARE					
LTG - GYM F122				225ET	167	168	20	20	20	SPARE					
LTG - GYM F122				225ET	169	170	20	20	20	SPARE					
LTG - GYM F122				225ET	171	172	20	20	20	SPARE					
LTG - GYM F122				225ET	173	174	20	20	20	SPARE					
LTG - GYM F122				225ET	175	176	20	20	20	SPARE					
LTG - GYM F122				225ET	177	178	20	20	20	SPARE					
LTG - GYM F122				225ET	179	180	20	20	20	SPARE					
LTG - GYM F122				225ET	181	182	20	20	20	SPARE					
LTG - GYM F122				225ET	183	184	20	20	20	SPARE					
LTG - GYM F122				225ET	185	186	20	20	20	SPARE					
LTG - GYM F122				225ET	187	188	20	20	20	SPARE					
LTG - GYM F122				225ET	189	190	20	20	20	SPARE					
LTG - GYM F122				225ET	191	192	20	20	20	SPARE					
LTG - GYM F122				225ET	193	194	20	20	20	SPARE					
LTG - GYM F122				225ET	195	196	20	20	20	SPARE					
LTG - GYM F122				225ET	197	198	20	20	20	SPARE					
LTG - GYM F122				225ET	199	200	20	20	20	SPARE					
LTG - GYM F122				225ET	201	202	20	20	20	SPARE					
LTG - GYM F122				225ET	203	204	20	20	20	SPARE					
LTG - GYM F122				225ET	205	206	20	20	20	SPARE					
LTG - GYM F122				225ET	207	208	20	20	20	SPARE					
LTG - GYM F122				225ET	209	210	20	20	20	SPARE					
LTG - GYM F122				225ET	211	212	20	20	20	SPARE					
LTG - GYM F122				225ET	213	214	20	20	20	SPARE					
LTG - GYM F122				225ET	215	216	20	20	20	SPARE					
LTG - GYM F122				225ET	217	218	20	20	20	SPARE					
LTG - GYM F122				225ET	219	220	20	20	20	SPARE					
LTG - GYM F122				225ET	221	222	20	20	20	SPARE					
LTG - GYM F122				225ET	223	224	20	20	20	SPARE					
LTG - GYM F122				225ET	225	226	20	20	20	SPARE					
LTG - GYM F122				225ET	227	228	20	20	20	SPARE					
LTG - GYM F122				225ET	229	230	20	20	20	SPARE					
LTG - GYM F122				225ET	231	232	20	20	20	SPARE					
LTG - GYM F122				225ET	233	234	20	20	20	SPARE					
LTG - GYM F122				225ET	235	236	20	20	20	SPARE					
LTG - GYM F122				225ET	237	238	20	20	20	SPARE					
LTG - GYM F122				225ET	239	240	20	20	20	SPARE					
LTG - GYM F122				225ET	241	242	20	20	20	SPARE					
LTG - GYM F122				225ET	243	244	20	20	20	SPARE					
LTG - GYM F122				225ET	245	246	20	20	20	SPARE					
LTG - GYM F122				225ET	247	248	20	20	20	SPARE					
LTG - GYM F122				225ET	249	250	20	20	20	SPARE					
LTG - GYM F122				225ET	251	252	20	20	20	SPARE					
LTG - GYM F122				225ET	253	254	20	20	20	SPARE					
LTG - GYM F122				225ET	255	256	20	20							

DRAWING NOTES

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Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
3	ADDENDUM #3	2016-03-04
5	ADDENDUM #5	2016-03-17

CONTENT: PANELBOARD SCHEDULES

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISED:

SCALE: NO SCALE

E0.08

Project Phase: BID DOCUMENTS

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PANELBOARD: M2NB81

BUS SIZE: 150 AMPS
 VOLTAGE: 208 Y120V 3PH 4W
 MAIN: 150 AMP MCB
 NEUTRAL: 100%
 LOCATION: WELDING STORAGE C138D
 SURFACE MOUNTING: SURFACE
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 22000 AMPS

CTKT BKR AMPS: 1 2 3 4 5 6 7 8 9 10 11 12
 POLES: 1 2 3 4
 WATTS OF LOAD: L1 L2 L3

DIRECTORY	WATTS OF LOAD			CTKT BKR AMPS	POLES	CTKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
METAL SPINNING LATHE - C138	1400	1400	1400	20	1 2	20	1400	1400	1400	METAL SAW - C138
SPARE				20	3 4	20				HYDRAUL. METAL WORKER - C138
SPARE				20	5 6	20				SPARE
SPARE				20	7 8	20				RECEP - LOCKERS C138B
SPARE				20	9 10	20				RECEP - WELDING FAB C138
SPARE				20	11 12	20				RECEP - WELDING FAB C138
SPARE				20	13 14	20				RECEP - WELDING FAB C138
SPARE				20	15 16	20				RECEP - WELDING FAB C138
SPARE				20	17 18	20				RECEP - WELDING FAB C138
SPARE				20	19 20	20				RECEP - WELDING FAB C138
SPARE				20	21 22	20				RECEP - WELDING FAB C138
SPARE				20	23 24	20				RECEP - WELDING FAB C138
SPARE				20	25 26	20				RECEP - WELDING FAB C138
SPARE				20	27 28	20				RECEP - WELDING FAB C138
SPARE				20	29 30	20				RECEP - WELDING FAB C138
SPARE				20	31 32	20				RECEP - WELDING FAB C138
SPARE				20	33 34	20				RECEP - WELDING FAB C138
SPARE				20	35 36	20				RECEP - WELDING FAB C138
SPARE				20	37 38	20				RECEP - WELDING FAB C138
SPARE				20	39 40	20				RECEP - WELDING FAB C138
SPARE				20	41 42	20				RECEP - WELDING FAB C138
SPARE				20	43 44	20				RECEP - WELDING FAB C138
SPARE				20	45 46	20				RECEP - WELDING FAB C138
SPARE				20	47 48	20				RECEP - WELDING FAB C138
SPARE				20	49 50	20				RECEP - WELDING FAB C138
SPARE				20	51 52	20				RECEP - WELDING FAB C138
SPARE				20	53 54	20				RECEP - WELDING FAB C138
SPARE				20	55 56	20				RECEP - WELDING FAB C138
SPARE				20	57 58	20				RECEP - WELDING FAB C138
SPARE				20	59 60	20				RECEP - WELDING FAB C138
SPARE				20	61 62	20				RECEP - WELDING FAB C138
SPARE				20	63 64	20				RECEP - WELDING FAB C138
SPARE				20	65 66	20				RECEP - WELDING FAB C138
SPARE				20	67 68	20				RECEP - WELDING FAB C138
SPARE				20	69 70	20				RECEP - WELDING FAB C138
SPARE				20	71 72	20				RECEP - WELDING FAB C138
SPARE				20	73 74	20				RECEP - WELDING FAB C138
SPARE				20	75 76	20				RECEP - WELDING FAB C138
SPARE				20	77 78	20				RECEP - WELDING FAB C138
SPARE				20	79 80	20				RECEP - WELDING FAB C138
SPARE				20	81 82	20				RECEP - WELDING FAB C138
SPARE				20	83 84	20				RECEP - WELDING FAB C138
SPARE				20	85 86	20				RECEP - WELDING FAB C138
SPARE				20	87 88	20				RECEP - WELDING FAB C138
SPARE				20	89 90	20				RECEP - WELDING FAB C138
SPARE				20	91 92	20				RECEP - WELDING FAB C138
SPARE				20	93 94	20				RECEP - WELDING FAB C138
SPARE				20	95 96	20				RECEP - WELDING FAB C138
SPARE				20	97 98	20				RECEP - WELDING FAB C138
SPARE				20	99 100	20				RECEP - WELDING FAB C138
SPARE				20	101 102	20				RECEP - WELDING FAB C138
SPARE				20	103 104	20				RECEP - WELDING FAB C138
SPARE				20	105 106	20				RECEP - WELDING FAB C138
SPARE				20	107 108	20				RECEP - WELDING FAB C138
SPARE				20	109 110	20				RECEP - WELDING FAB C138
SPARE				20	111 112	20				RECEP - WELDING FAB C138
SPARE				20	113 114	20				RECEP - WELDING FAB C138
SPARE				20	115 116	20				RECEP - WELDING FAB C138
SPARE				20	117 118	20				RECEP - WELDING FAB C138
SPARE				20	119 120	20				RECEP - WELDING FAB C138
SPARE				20	121 122	20				RECEP - WELDING FAB C138
SPARE				20	123 124	20				RECEP - WELDING FAB C138
SPARE				20	125 126	20				RECEP - WELDING FAB C138
SPARE				20	127 128	20				RECEP - WELDING FAB C138
SPARE				20	129 130	20				RECEP - WELDING FAB C138
SPARE				20	131 132	20				RECEP - WELDING FAB C138
SPARE				20	133 134	20				RECEP - WELDING FAB C138
SPARE				20	135 136	20				RECEP - WELDING FAB C138
SPARE				20	137 138	20				RECEP - WELDING FAB C138
SPARE				20	139 140	20				RECEP - WELDING FAB C138
SPARE				20	141 142	20				RECEP - WELDING FAB C138
SPARE				20	143 144	20				RECEP - WELDING FAB C138
SPARE				20	145 146	20				RECEP - WELDING FAB C138
SPARE				20	147 148	20				RECEP - WELDING FAB C138
SPARE				20	149 150	20				RECEP - WELDING FAB C138
SPARE				20	151 152	20				RECEP - WELDING FAB C138
SPARE				20	153 154	20				RECEP - WELDING FAB C138
SPARE				20	155 156	20				RECEP - WELDING FAB C138
SPARE				20	157 158	20				RECEP - WELDING FAB C138
SPARE				20	159 160	20				RECEP - WELDING FAB C138
SPARE				20	161 162	20				RECEP - WELDING FAB C138
SPARE				20	163 164	20				RECEP - WELDING FAB C138
SPARE				20	165 166	20				RECEP - WELDING FAB C138
SPARE				20	167 168	20				RECEP - WELDING FAB C138
SPARE				20	169 170	20				RECEP - WELDING FAB C138
SPARE				20	171 172	20				RECEP - WELDING FAB C138
SPARE				20	173 174	20				RECEP - WELDING FAB C138
SPARE				20	175 176	20				RECEP - WELDING FAB C138
SPARE				20	177 178	20				RECEP - WELDING FAB C138
SPARE				20	179 180	20				RECEP - WELDING FAB C138
SPARE				20	181 182	20				RECEP - WELDING FAB C138
SPARE				20	183 184	20				RECEP - WELDING FAB C138
SPARE				20	185 186	20				RECEP - WELDING FAB C138
SPARE				20	187 188	20				RECEP - WELDING FAB C138
SPARE				20	189 190	20				RECEP - WELDING FAB C138
SPARE				20	191 192	20				RECEP - WELDING FAB C138
SPARE				20	193 194	20				RECEP - WELDING FAB C138
SPARE				20	195 196	20				RECEP - WELDING FAB C138
SPARE				20	197 198	20				RECEP - WELDING FAB C138
SPARE				20	199 200	20				RECEP - WELDING FAB C138
SPARE				20	201 202	20				RECEP - WELDING FAB C138
SPARE				20	203 204	20				RECEP - WELDING FAB C138
SPARE				20	205 206	20				RECEP - WELDING FAB C138
SPARE				20	207 208	20				RECEP - WELDING FAB C138
SPARE				20	209 210	20				RECEP - WELDING FAB C138
SPARE				20	211 212	20				RECEP - WELDING FAB C138
SPARE				20	213 214	20				RECEP - WELDING FAB C138
SPARE				20	215 216	20				RECEP - WELDING FAB C138
SPARE				20	217 218	20				RECEP - WELDING FAB C138
SPARE				20	219 220	20				RECEP - WELDING FAB C138
SPARE				20	221 222	20				RECEP - WELDING FAB C138
SPARE				20	223 224	20				RECEP - WELDING FAB C138
SPARE				20	225 226	20				RECEP - WELDING FAB C138
SPARE				20	227 228	20				RECEP - WELDING FAB C138
SPARE				20	229 230	20				RECEP - WELDING FAB C138
SPARE				20	231 232	20				RECEP - WELDING FAB C138
SPARE				20	233 234	20				RECEP - WELDING FAB C138
SPARE				20	235 236	20				RECEP - WELDING FAB C138

DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.

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PANELBOARD: P2N1A3
BUS SIZE: 125 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: ELEC A174
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1A4
BUS SIZE: 125 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: ELEC A174
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1A5
BUS SIZE: 225 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: AID, STAGE, BACK STAGE A183
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1A6
BUS SIZE: 150 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: WEIGHT ROOM F125
MOUNTING: RECESSED
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1A7
BUS SIZE: 225 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: CUSTODIAL F116
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: L4N1E1
BUS SIZE: 125 AMPS
VOLTAGE: 480 Y/277V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: ELEC E127B
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 18000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: D2N1E1
BUS SIZE: 400 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: 400 AMP MCB
NEUTRAL: 100%
LOCATION: ELEC E127B
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1E1
BUS SIZE: 125 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: ELEC E127B
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

PANELBOARD: P2N1E2
BUS SIZE: 125 AMPS
VOLTAGE: 208 Y/120V 3PH,4W
MAIN: MLO
NEUTRAL: 100%
LOCATION: ELEC E127B
MOUNTING: SURFACE
SHORT CIR. CURRENT RATING 22000 AMPS
TABLE: DIRECTORY, WATTS OF LOAD, CKT BKR AMPS, POLES, CKT BKR AMPS, WATTS OF LOAD, DIRECTORY

Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO. DESCRIPTION DATE
5 ADDENDUM #5 2016-03-17

CONTENT:
PANELBOARD SCHEDULES

DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISION:
SCALE: NO SCALE

E0.11

Project Documents
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FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

J

DRAWING NOTES

- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.

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Sanford School Department and
 State of Maine Department of
 Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
3	ADDENDUM #3	2016-03-04
5	ADDENDUM #5	2016-03-17

E0.13

CONTENT:
 PANELBOARD SCHEDULES

DRAWN BY: C. NEWELL
 PROJECT NO: 12-067-00
 DATE: 02/11/2016

REVISIONS:
 SCALE: NO SCALE

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

Project Phase
E0.13
 BIDD DOCUMENTS

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PANELBOARD: P2N2B2

BUS SIZE: 150 AMPS
 VOLTAGE: 208 Y/120V 3PH/4W
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 22000 AMPS

MAIN: MLO
 NEUTRAL: 100%
 LOCATION: ELEC B228A
 MOUNTING: SURFACE
 TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
RANGE RECEPT-KITCHENETTE	4000			50	1	2	30	3250		DRYER RECEPT - LAUNDRY B215A
WB RECEPT - JOB GRADS A260		4000		30	3	4	20		3250	720
RECEPT - JOB GRADS A260			300	20	5	8	20			RECEPT - JOB GRADS A260
RECEPT - TOILET A262			20	7	8	20		540		RECEPT - JOB GRADS A260
RECEPT - ED TECH OFFICE A268			540	20	9	10	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	11	12	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268	720			20	13	14	20		720	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			720	20	15	16	20		720	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			360	20	17	18	20		360	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			360	20	19	20	20		360	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	21	22	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			900	20	23	24	20		900	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			660	20	25	26	20		660	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	27	28	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	29	30	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			180	20	31	32	20		180	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			20	33	34	20		200		RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			360	20	35	36	20		360	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			720	20	37	38	20		720	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			1200	20	39	40	20		1200	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	41	42	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			840	20	43	44	20		840	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			540	20	45	46	20		540	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			400	20	47	48	20		400	RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			15	49	50	20		15		RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			15	51	52	20		15		RECEPT - ED TECH OFFICE A268
RECEPT - ED TECH OFFICE A268			15	53	54	20		15		RECEPT - ED TECH OFFICE A268
SUBTOTAL	10240	9520	3640					6750	9250	4820

NOTES:
 TOTAL WATTS L1: 16990
 TOTAL WATTS L2: 18770
 TOTAL WATTS L3: 9460
 TOTAL WATTS: 44220
 TOTAL AMPS @ 100%: 123 AMPS
 TOTAL AMPS @ 125%: 154 AMPS

C.B. TYPE: G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

TOTAL PANEL RECEPT LOAD = 20100 WATTS

PANELBOARD: P2N2B1

BUS SIZE: 125 AMPS
 VOLTAGE: 208 Y/120V 3PH/4W
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 22000 AMPS

MAIN: MLO
 NEUTRAL: 100%
 LOCATION: ELEC B228A
 MOUNTING: SURFACE
 TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
WB RECEPT - LEARNING CTR A224	300			20	1	2	540			RECEPT - LEARNING CTR A224
RECEPT - LEARNING CTR A224		720		20	3	4	20		360	RECEPT - LEARNING CTR A224
RECEPT - LEARNING A224			360	20	5	8	20		360	RECEPT - LEARNING A224
RECEPT - LEARNING A224			360	20	7	8	20		540	RECEPT - LEARNING A224
RECEPT - LEARNING A224			540	20	9	10	20		540	RECEPT - LEARNING A224
RECEPT - LEARNING A224			540	20	11	12	20		540	RECEPT - LEARNING A224
RECEPT - FACULTY TRAIN A228	300			20	13	14	20		720	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	15	16	20		360	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			360	20	17	18	20		360	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	19	20	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			1440	20	21	22	20		1440	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	23	24	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			720	20	25	26	20		720	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			300	20	27	28	20		300	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	29	30	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	31	32	20		720	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			720	20	33	34	20		360	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			360	20	35	36	20		360	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	37	38	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	39	40	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			300	20	41	42	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	43	44	20		840	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	45	46	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	47	48	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	49	50	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	51	52	20		540	RECEPT - FACULTY TRAIN A228
RECEPT - FACULTY TRAIN A228			540	20	53	54	20		540	RECEPT - FACULTY TRAIN A228
SUBTOTAL	3240	5640	2760					5160	3900	3240

NOTES:
 TOTAL WATTS L1: 8400
 TOTAL WATTS L2: 9600
 TOTAL WATTS L3: 6000
 TOTAL WATTS: 23940
 TOTAL AMPS @ 100%: 67 AMPS
 TOTAL AMPS @ 125%: 83 AMPS

C.B. TYPE: G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

TOTAL PANEL RECEPT LOAD = 18600 WATTS

PANELBOARD: D2N2B1

BUS SIZE: 400 AMPS
 VOLTAGE: 208 Y/120V 3PH/4W
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 22000 AMPS

MAIN: 400 AMP MCB
 NEUTRAL: 100%
 LOCATION: ELEC B228A
 MOUNTING: SURFACE
 TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
PANEL P2N2B1	8400	9540	6000	125	1	2	150ET	16990	18770	8460
PANEL P2N2B3	8940	12960	9660	125	9	10	22SET	3960	2620	2160
SPARE				50	15	16	20			
UNIT ACC-6	2392	2392		35	19	20	35	2392	2392	
UNIT ACC-3		1664	1664	20	23	24	20		1664	1664
UNIT ACC-5	1664	1664	1664	20	25	26	20	1664	1664	
UNIT ACC-10	1664	1664		20	29	30	20		1664	
SPARE				20	31	32	20		1664	
FAN EF-A193		528		20	33	34	20		528	
FAN REF-7		1176		20	41	42	20		696	
FAN EF-B149		1656		25	43	44	20		528	
FAN DEF-1		1176		20	45	46	20		528	
SPARE				20	47	48	20			
SPARE				20	49	50	20			
SPARE				20	51	52	20			
SPARE				20	53	54	20			
SUBTOTAL	24716	29924	20164					27198	28168	14944

NOTES:
 TOTAL WATTS L1: 51914
 TOTAL WATTS L2: 56600
 TOTAL WATTS L3: 34908
 TOTAL WATTS: 144812
 TOTAL AMPS @ 100%: 402 AMPS
 TOTAL AMPS @ 125%: 503 AMPS

C.B. TYPE: G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

TOTAL PANEL RECEPT LOAD = 0 WATTS

PANELBOARD: L4N1D1

BUS SIZE: 125 AMPS
 VOLTAGE: 480 Y/277V 3PH/4W
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 18000 AMPS

MAIN: MLO
 NEUTRAL: 100%
 LOCATION: ELEC D146
 MOUNTING: SURFACE
 TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
GREENHOUSE CONTROL POWER	12000	12000	12000	100	1	2	20	363		185
LTG - DATA D144	2043			20	7	8	20	2121		274
LTG - BUSINESS D128		3563		20	9	10	20		1361	
LTG - PATHWAY LIBRARY D120		740		20	11	12	20		1295	
LTG - STORAGE D133	3330			20	13	14	20	4013		
SPARE				20	15	16	20			
SPARE				20	17	18	20			
SPARE				20	19	20	20			
SPARE				20	21	22	20			
SPARE				20	23	24	20			
SUBTOTAL	17373	15583	12740					6487	1546	1569

NOTES:
 TOTAL WATTS L1: 23870
 TOTAL WATTS L2: 17109
 TOTAL WATTS L3: 14358
 TOTAL WATTS: 55288
 TOTAL AMPS @ 100%: 67 AMPS
 TOTAL AMPS @ 125%: 83 AMPS

C.B. TYPE: G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

TOTAL PANEL RECEPT LOAD = 0 WATTS

PANELBOARD: D2N1D1

BUS SIZE: 1000 AMPS
 VOLTAGE: 208 Y/120V 3PH/4W
 SERVICE RATED: NO
 ISOLATED GND BUS: NO
 SHORT CIR. CURRENT RATING: 22000 AMPS

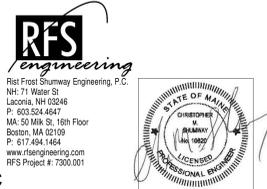
MAIN: 1000 AMP MCB
 NEUTRAL: 100%
 LOCATION: ELEC D146
 MOUNTING: SURFACE
 TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
PANEL P2N1D1	8602	7498	7944	125	1	2	5526	5888	6403	
PANEL P2N1D3	5480	6201	5220	125	9	10	31544	27354	26894	
PANEL P2N1D5	20902	19110		400ET	15	16	38482	37476		
SPARE			21337	20	17	18			37032	
SPARE				125	21	22	60			
SPARE				20	23	24				

DRAWING NOTES

- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.

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Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17

CONTENT: PANELBOARD SCHEDULES

DRAWN BY: C. NEWELL
 PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISION: NO SCALE

E0.16

Project Phase
BID DOCUMENTS
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PANELBOARD: P2S1C1
 BUS SIZE: 100 AMPS MAIN: MLO
 VOLTAGE: 208 Y120V 3PH 4W NEUTRAL: 100%
 SERVICE RATED: NO LOCATION: ELEC C114B
 ISOLATED GND BUS: NO MOUNTING: SURFACE
 SHORT CIR. CURRENT RATING: 22000 AMPS TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY	
	L1	L2	L3				L1	L2	L3		
DRY SPRINKLER COMPRESSOR	793	793	793	20	1	2	20	360	360	DRY SPRINKLER COMPRESSOR	
POWER PSS - SEC. ENTRY A178	300			20	3	4	20	360	360	QUAD RECP - DATA B132	
BAS PANEL - ELEC A174	300			20	7	8	20	1176	1176	QUAD RECP - DATA B132	
CIRC PUMP CP-2	864			20	9	10	20	600	600	CIRC PUMP CP-8	
HEATERS CUH-13 & 16				20	11	12	20	300	300	POWER PSS (2) - E110	
HEATERS CUH-14 & 15				20	13	14	20	864	864	BAS PANEL - ELEC A193	
HEATERS CUH-17, 18 & 22	1260			20	15	16	20	600	600	HEATER CUH-19	
JUNCTION - DAMPERS - A170	400			20	17	18	20	360	360	QUAD RECP - DATA B132	
QUAD RECP - RECEPTION A101	360			20	19	20	20	864	864	SPARE	
QUAD RECP - RECEPTION A101	360			20	21	22	20	864	864	SPARE	
POWER PSS - VESTIBULE F119A	600			20	23	24	20	360	360	SPARE	
SPARE				20	25	26	20	360	360	SPARE	
SPARE				20	27	28	20	400	400	SPARE	
SPARE				20	29	30	20	20	20	SPARE	
SPARE				20	31	32	20	20	20	SPARE	
SPARE				20	33	34	20	20	20	SPARE	
SPARE				20	35	36	20	20	20	SPARE	
SPARE				20	37	38	20	20	20	SPARE	
SPARE				20	39	40	20	20	20	SPARE	
SPARE				20	41	42	20	20	20	SPARE	
SUBTOTAL	4477	2933	3493					3824	3916	4272	SUBTOTAL

NOTES:
 TOTAL WATTS L1: 6301
 TOTAL WATTS L2: 6949
 TOTAL WATTS L3: 7765
 TOTAL WATTS: 22915
 TOTAL AMPS @ 100%: 64 AMPS
 TOTAL AMPS @ 125%: 80 AMPS
 C.B. TYPE
 S-SHUNT TRIP G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

PANELBOARD: P2S2B1
 BUS SIZE: 100 AMPS MAIN: MLO
 VOLTAGE: 208 Y120V 3PH 4W NEUTRAL: 100%
 SERVICE RATED: NO LOCATION: ELEC B228A
 ISOLATED GND BUS: NO MOUNTING: SURFACE
 SHORT CIR. CURRENT RATING: 22000 AMPS TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY	
	L1	L2	L3				L1	L2	L3		
DRY SPRINKLER COMPRESSOR	793	793	793	20	1	2	20	360	360	DRY SPRINKLER COMPRESSOR	
POWER PSS - SEC. ENTRY A178	300			20	3	4	20	360	360	QUAD RECP - DATA E127A	
BAS PANEL - ELEC A174	300			20	7	8	20	1176	1176	QUAD RECP - DATA E127A	
CIRC PUMP CP-2	864			20	9	10	20	600	600	CIRC PUMP CP-8	
HEATERS CUH-13 & 16				20	11	12	20	300	300	POWER PSS (4) - VEST D140A	
HEATERS CUH-14 & 15				20	13	14	20	864	864	BAS PANEL - ELEC D146	
HEATERS CUH-17, 18 & 22	1260			20	15	16	20	600	600	HEATER PUH-26	
JUNCTION - DAMPERS - A170	400			20	17	18	20	360	360	HEATER PUH-27	
QUAD RECP - RECEPTION A101	360			20	19	20	20	864	864	HEATER PUH-29	
QUAD RECP - RECEPTION A101	360			20	21	22	20	864	864	HEATER PUH-30	
POWER PSS - VESTIBULE F119A	600			20	23	24	20	360	360	HEATERS CUH-9 & 10	
SPARE				20	25	26	20	360	360	HEATER PUH-31	
SPARE				20	27	28	20	20	20	HEATERS PUH-32 & 33	
SPARE				20	29	30	20	20	20	QUAD RECP - DATA E127A	
SPARE				20	31	32	20	20	20	SPARE	
SPARE				20	33	34	20	20	20	SPARE	
SPARE				20	35	36	20	20	20	SPARE	
SPARE				20	37	38	20	20	20	SPARE	
SPARE				20	39	40	20	20	20	SPARE	
SPARE				20	41	42	20	20	20	SPARE	
SUBTOTAL	1673	1513	1909					1664	2364	1920	SUBTOTAL

NOTES:
 TOTAL WATTS L1: 3537
 TOTAL WATTS L2: 3977
 TOTAL WATTS L3: 3829
 TOTAL WATTS: 11243
 TOTAL AMPS @ 100%: 31 AMPS
 TOTAL AMPS @ 125%: 39 AMPS
 C.B. TYPE
 S-SHUNT TRIP G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

PANELBOARD: P2S2E1
 BUS SIZE: 100 AMPS MAIN: MLO
 VOLTAGE: 208 Y120V 3PH 4W NEUTRAL: 100%
 SERVICE RATED: NO LOCATION: ELEC E227B
 ISOLATED GND BUS: NO MOUNTING: SURFACE
 SHORT CIR. CURRENT RATING: 22000 AMPS TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY	
	L1	L2	L3				L1	L2	L3		
DRY SPRINKLER COMPRESSOR	793	793	793	20	1	2	20	360	360	DRY SPRINKLER COMPRESSOR	
POWER PSS - SEC. ENTRY A178	300			20	3	4	20	360	360	QUAD RECP - DATA E227A	
BAS PANEL - ELEC A174	300			20	7	8	20	1176	1176	QUAD RECP - DATA E227A	
CIRC PUMP CP-2	864			20	9	10	20	600	600	CIRC PUMP CP-8	
HEATERS CUH-13 & 16				20	11	12	20	300	300	POWER PSS (4) - VEST D140A	
HEATERS CUH-14 & 15				20	13	14	20	864	864	BAS PANEL - ELEC D247	
HEATERS CUH-17, 18 & 22	1260			20	15	16	20	600	600	HEATER PUH-30	
JUNCTION - DAMPERS - A170	400			20	17	18	20	360	360	HEATER PUH-31	
QUAD RECP - RECEPTION A101	360			20	19	20	20	864	864	HEATERS CUH-9 & 10	
QUAD RECP - RECEPTION A101	360			20	21	22	20	864	864	HEATER PUH-32	
POWER PSS - VESTIBULE F119A	600			20	23	24	20	360	360	HEATERS PUH-33 & 34	
SPARE				20	25	26	20	360	360	QUAD RECP - DATA E227A	
SPARE				20	27	28	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	29	30	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	31	32	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	33	34	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	35	36	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	37	38	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	39	40	20	20	20	QUAD RECP - DATA E227A	
SPARE				20	41	42	20	20	20	QUAD RECP - DATA E227A	
SUBTOTAL	660	1234	360					360	360	360	SUBTOTAL

NOTES:
 TOTAL WATTS L1: 1020
 TOTAL WATTS L2: 1684
 TOTAL WATTS L3: 720
 TOTAL WATTS: 3324
 TOTAL AMPS @ 100%: 9 AMPS
 TOTAL AMPS @ 125%: 12 AMPS
 C.B. TYPE
 S-SHUNT TRIP G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

PANELBOARD: P2S1B1
 BUS SIZE: 100 AMPS MAIN: MLO
 VOLTAGE: 208 Y120V 3PH 4W NEUTRAL: 100%
 SERVICE RATED: NO LOCATION: ELEC A193
 ISOLATED GND BUS: NO MOUNTING: SURFACE
 SHORT CIR. CURRENT RATING: 22000 AMPS TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY	
	L1	L2	L3				L1	L2	L3		
DRY SPRINKLER COMPRESSOR	793	793	793	20	1	2	20	360	360	QUAD RECP - DATA B132	
POWER PSS - SEC. ENTRY A178	300			20	3	4	20	360	360	QUAD RECP - DATA B132	
BAS PANEL - ELEC A174	300			20	7	8	20	1176	1176	QUAD RECP - DATA B132	
CIRC PUMP CP-2	864			20	9	10	20	600	600	CIRC PUMP CP-8	
HEATERS CUH-13 & 16				20	11	12	20	300	300	POWER PSS (2) - E110	
HEATERS CUH-14 & 15				20	13	14	20	864	864	BAS PANEL - ELEC A193	
HEATERS CUH-17, 18 & 22	1260			20	15	16	20	600	600	HEATER CUH-19	
JUNCTION - DAMPERS - A170	400			20	17	18	20	360	360	QUAD RECP - DATA B132	
QUAD RECP - RECEPTION A101	360			20	19	20	20	864	864	SPARE	
QUAD RECP - RECEPTION A101	360			20	21	22	20	864	864	SPARE	
POWER PSS - VESTIBULE F119A	600			20	23	24	20	360	360	SPARE	
SPARE				20	25	26	20	20	20	SPARE	
SPARE				20	27	28	20	20	20	SPARE	
SPARE				20	29	30	20	20	20	SPARE	
SPARE				20	31	32	20	20	20	SPARE	
SPARE				20	33	34	20	20	20	SPARE	
SPARE				20	35	36	20	20	20	SPARE	
SPARE				20	37	38	20	20	20	SPARE	
SPARE				20	39	40	20	20	20	SPARE	
SPARE				20	41	42	20	20	20	SPARE	
SUBTOTAL	2017	1553	1549					1956	1200	660	SUBTOTAL

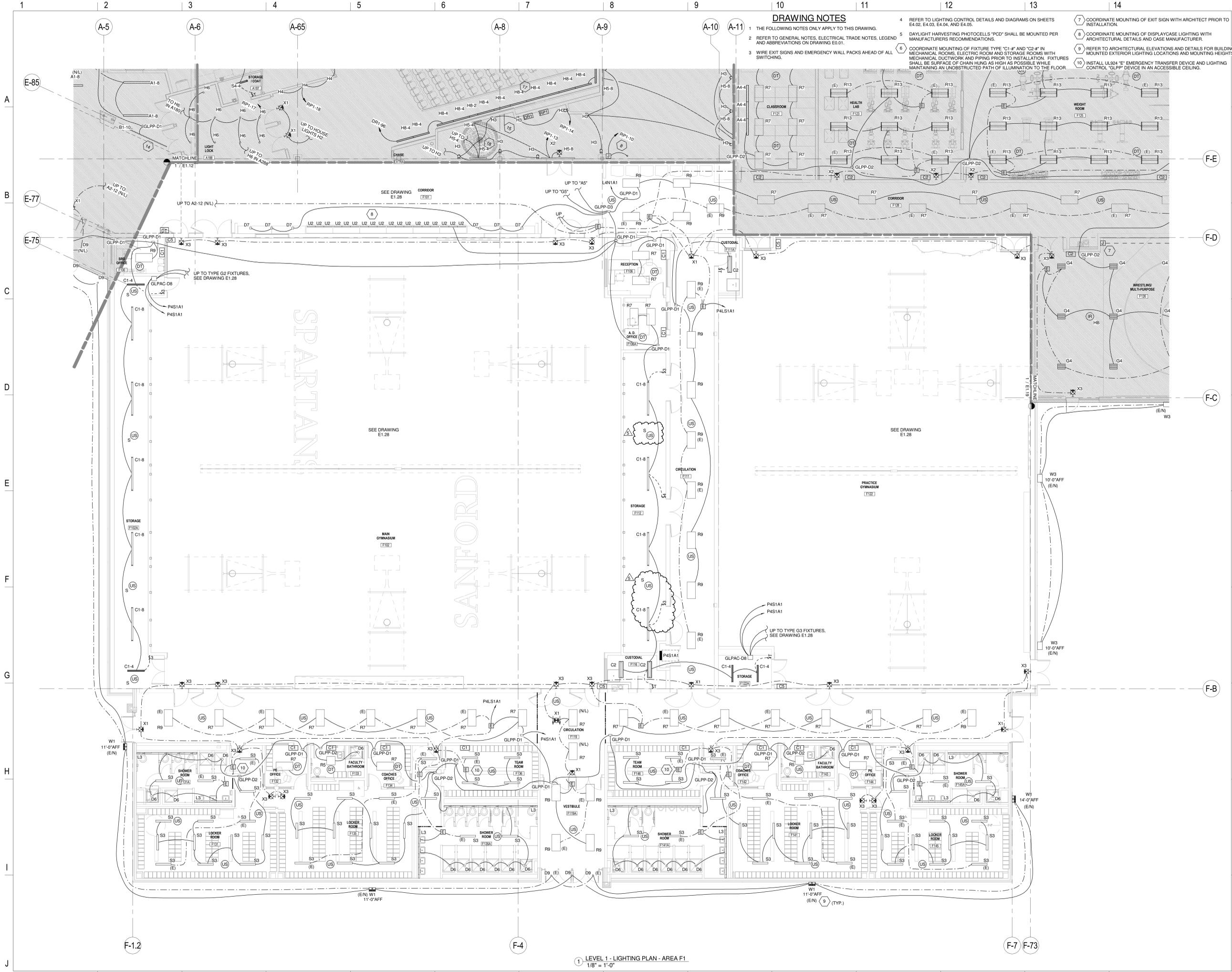
NOTES:
 TOTAL WATTS L1: 3973
 TOTAL WATTS L2: 2973
 TOTAL WATTS L3: 2209
 TOTAL WATTS: 9055
 TOTAL AMPS @ 100%: 25 AMPS
 TOTAL AMPS @ 125%: 31 AMPS
 C.B. TYPE
 S-SHUNT TRIP G-GFCI
 L-LOCK ON C.B. H-HACR C.B.
 AF-ARC FAULT

PANELBOARD: P2S1E1
 BUS SIZE: 100 AMPS MAIN: MLO
 VOLTAGE: 208 Y120V 3PH 4W NEUTRAL: 100%
 SERVICE RATED: NO LOCATION: ELEC E127B
 ISOLATED GND BUS: NO MOUNTING: SURFACE
 SHORT CIR. CURRENT RATING: 22000 AMPS TVSS: NO

DIRECTORY	WATTS OF LOAD			CKT BKR AMPS	POLES	CKT BKR AMPS	WATTS OF LOAD			DIRECTORY
	L1	L2	L3				L1	L2	L3	
DRY SPRINKLER COMPRESSOR	793	793	793	20	1	2	20	360	360	QUAD RECP - DATA E127A
POWER PSS - SEC. ENTRY A178	300			20	3	4	20	360	360	QUAD RECP - DATA E127A
BAS PANEL - ELEC A174	300			20	7	8	20	1176	1176	QUAD RECP - DATA E127A
CIRC PUMP CP-2	864			20	9	10	20	600	600	CIRC PUMP CP-8
HEATERS CUH-13 & 16				20	11	12	20	300	300	POWER PSS (4) - VEST D140A
HEATERS CUH-14 & 15				20	13	14	20	864	864	BAS PANEL - ELEC D146
HEATERS CUH-17, 18 & 22	1260			20	15	16	20			

DRAWING NOTES

- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- WIRE EXIT SIGNS AND EMERGENCY WALL PACKS AHEAD OF ALL SWITCHING.
- REFER TO LIGHTING CONTROL DETAILS AND DIAGRAMS ON SHEETS E4.02, E4.03, E4.04, AND E4.05.
- DAYLIGHT HARVESTING PHOTOCELLS "PCD" SHALL BE MOUNTED PER MANUFACTURERS RECOMMENDATIONS.
- COORDINATE MOUNTING OF FIXTURE TYPE "C1-4" AND "C2-4" IN MECHANICAL ROOMS, ELECTRIC ROOM AND STORAGE ROOMS WITH MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
- COORDINATE MOUNTING OF EXIT SIGN WITH ARCHITECT PRIOR TO INSTALLATION.
- COORDINATE MOUNTING OF DISPLAYCASE LIGHTING WITH ARCHITECTURAL DETAILS AND CASE MANUFACTURER.
- REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR BUILDING MOUNTED EXTERIOR LIGHTING LOCATIONS AND MOUNTING HEIGHTS.
- INSTALL UL924 "E" EMERGENCY TRANSFER DEVICE AND LIGHTING CONTROL "GLPP" DEVICE IN AN ACCESSIBLE CEILING.



1 LEVEL 1 - LIGHTING PLAN - AREA F1
1/8" = 1'-0"

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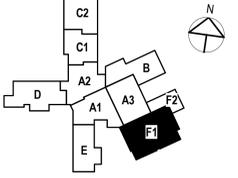
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 RFS Project #: 7300.001

Sanford School Department and
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SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
 FIRST FLOOR LIGHTING PLAN - AREA F1

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

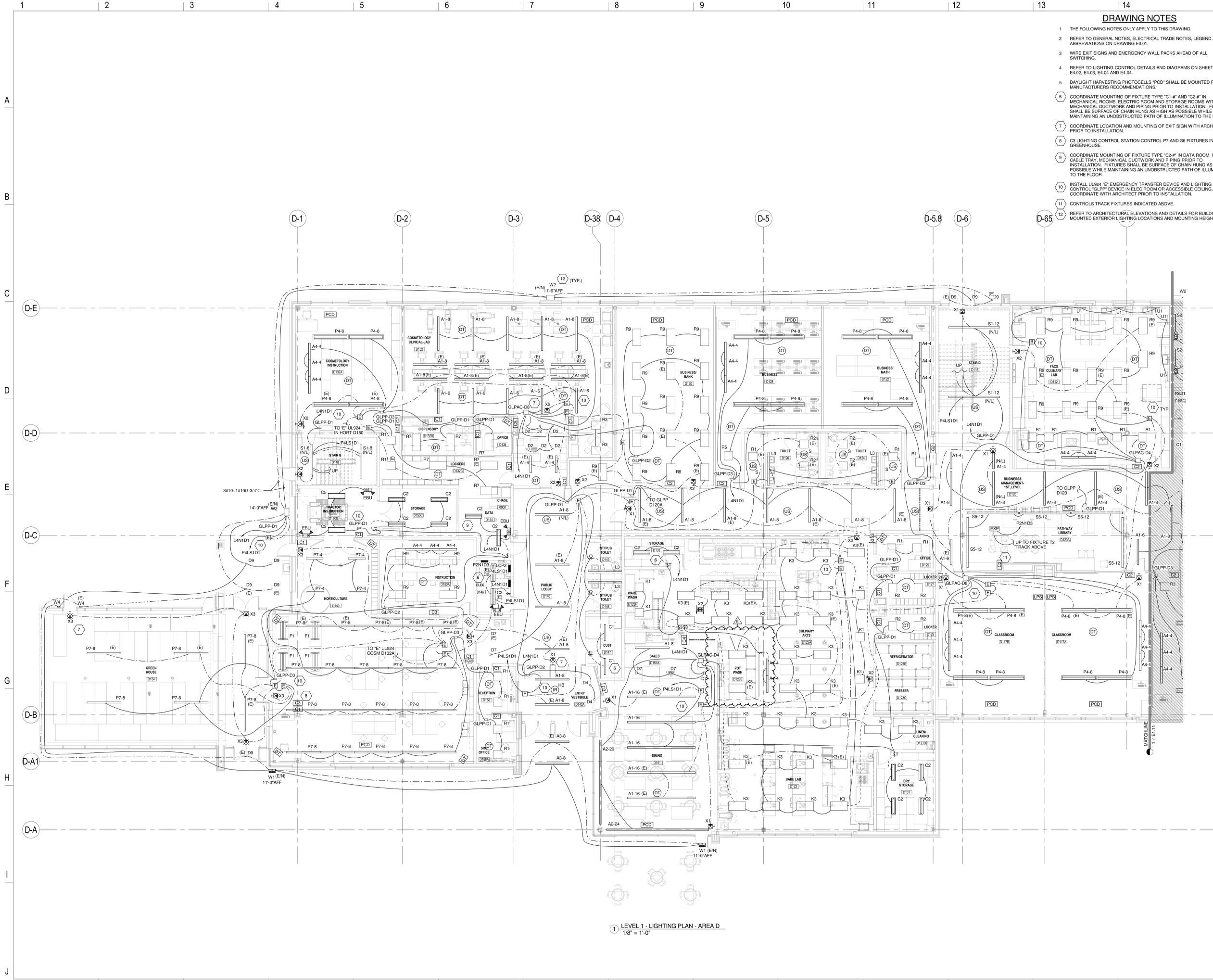
REVISED:

SCALE: 1/8" = 1'-0"

E1.18

Project Phase
 BID DOCUMENTS

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DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 WIRE EXIT SIGNS AND EMERGENCY WALL PACKS AHEAD OF ALL SWITCHING.
- 4 REFER TO LIGHTING CONTROL DETAILS AND DIAGRAMS ON SHEETS E4.02, E4.03, E4.04 AND E4.04.
- 5 DAYLIGHT HARVESTING PHOTOCELLS "PCD" SHALL BE MOUNTED PER MANUFACTURERS RECOMMENDATIONS.
- 6 COORDINATE MOUNTING OF FIXTURE TYPE "C1-4" AND "C2-4" IN MECHANICAL ROOMS, ELECTRIC ROOM AND STORAGE ROOMS WITH MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
- 7 COORDINATE LOCATION AND MOUNTING OF EXIT SIGN WITH ARCHITECT PRIOR TO INSTALLATION.
- 8 C3 LIGHTING CONTROL STATION CONTROL P7 AND S6 FIXTURES IN GREENHOUSE.
- 9 COORDINATE MOUNTING OF FIXTURE TYPE "C2-4" IN DATA ROOM, WITH CABLE TRAY, MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
- 10 INSTALL UL324 "E" EMERGENCY TRANSFER DEVICE AND LIGHTING CONTROL "GLPP" DEVICE IN ELEC ROOM OR ACCESSIBLE CEILING. COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
- 11 CONTROLS TRACK FIXTURES INDICATED ABOVE.
- 12 REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR BUILDING MOUNTED EXTERIOR LIGHTING LOCATIONS AND MOUNTING HEIGHTS.

1 LEVEL 1 - LIGHTING PLAN - AREA D
1/8" = 1'-0"

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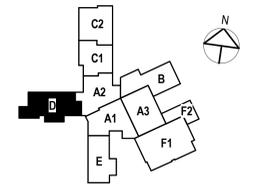
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P: 603.324.4541
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RFS Project #: 7300.001

Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
FIRST FLOOR LIGHTING PLAN - AREA D

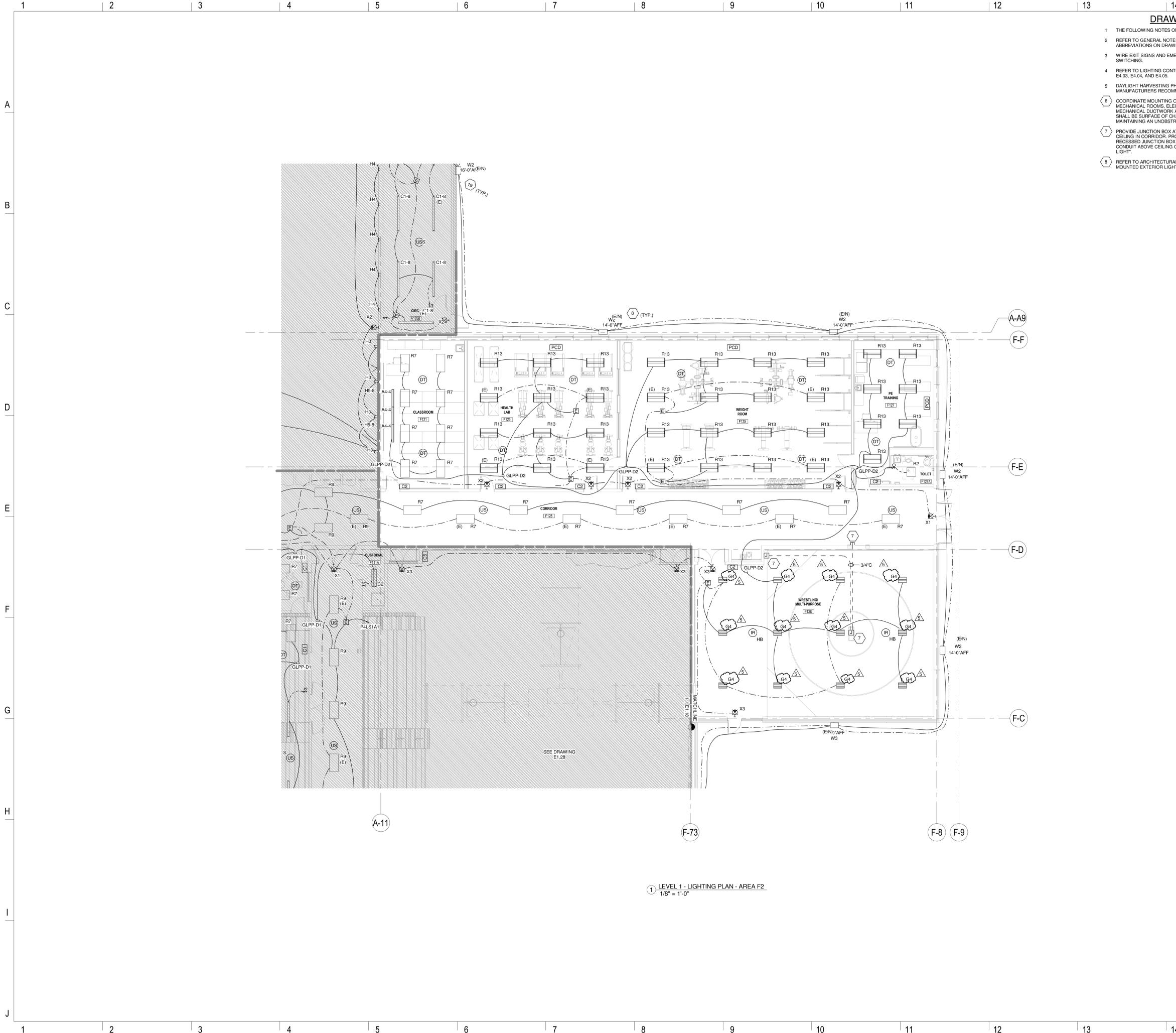
DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

E1.16

Project Phase
BID DOCUMENTS

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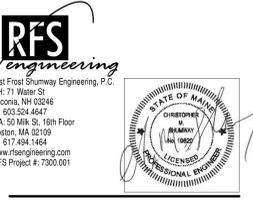


1 LEVEL 1 - LIGHTING PLAN - AREA F2
1/8" = 1'-0"

DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 WIRE EXIT SIGNS AND EMERGENCY WALL PACKS AHEAD OF ALL SWITCHING.
- 4 REFER TO LIGHTING CONTROL DETAILS AND DIAGRAMS ON SHEETS E4.02, E4.03, E4.04, AND E4.05.
- 5 REFER TO LIGHTING CONTROL DETAILS AND DIAGRAMS ON SHEETS E4.02, E4.03, E4.04, AND E4.05.
- 6 COORDINATE MOUNTING OF FIXTURE TYPE "C1-4" AND "C2-4" IN MECHANICAL ROOMS, ELECTRIC ROOM AND STORAGE ROOMS WITH MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
- 7 PROVIDE JUNCTION BOX AT CEILING WITH 3/4" OUT TO ACCESSIBLE CEILING IN CORRIDOR. PROVIDE 3/4" FROM JUNCTION BOX AT CEILING TO RECESSED JUNCTION BOX WITH BLANK COVERPLATE. GAP AND TAG CONDUIT ABOVE CEILING CORRIDOR "FUTURE WRESTLING ROOM SPOT LIGHT".
- 8 REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR BUILDING MOUNTED EXTERIOR LIGHTING LOCATIONS AND MOUNTING HEIGHTS.

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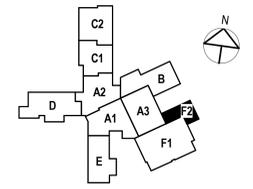


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SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
FIRST FLOOR LIGHTING PLAN - AREA F2

DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

E1.19

Project Phase
BID DOCUMENTS

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- ### DRAWING NOTES
- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
 - REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
 - WIRE EXIT SIGNS AND EMERGENCY WALL PACKS AHEAD OF ALL SWITCHING.
 - REFER TO LIGHTING CONTROL DETAILS AND DIAGRAMS ON SHEETS E4.02, E4.03, E4.04, AND E4.05.
 - DAYLIGHT HARVESTING PHOTOCELLS "PCD" SHALL BE MOUNTED PER MANUFACTURERS RECOMMENDATIONS.
 - COORDINATE MOUNTING OF FIXTURE TYPE "C1" AND "C2" IN MECHANICAL ROOMS, ELECTRIC ROOM AND STORAGE ROOMS WITH MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
 - COORDINATE MOUNTING OF EXIT SIGN WITH ARCHITECT PRIOR TO INSTALLATION.
 - NOT USED YET
 - COORDINATE MOUNTING OF FIXTURE TYPE "C2" IN DATA ROOM, WITH CABLE TRAY, MECHANICAL DUCTWORK AND PIPING PRIOR TO INSTALLATION. FIXTURES SHALL BE SURFACE OF CHAIN HUNG AS HIGH AS POSSIBLE WHILE MAINTAINING AN UNOBSTRUCTED PATH OF ILLUMINATION TO THE FLOOR.
 - INSTALL UL924 "E" EMERGENCY TRANSFER DEVICE AND LIGHTING CONTROL "GLPP" DEVICE IN AN ACCESSIBLE CEILING.

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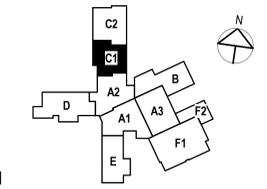
Ris Frost Shumway Engineering, P.C.
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Lisbon, NH 03046
P: 603.324.4541
MA: 50 Main St. 16th Floor
Boston, MA 02109
P: 617.494.1464
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RFS Project #: 7300.001

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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
SECOND FLOOR LIGHTING PLAN - AREA C1

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISED:

SCALE: 1/8" = 1'-0"

E1.24

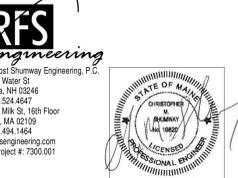
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1 LEVEL 2 - LIGHTING PLAN - AREA C1
1/8" = 1'-0"

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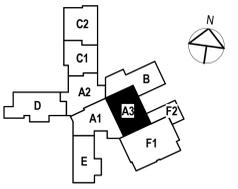


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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
FIRST FLOOR POWER PLAN - AREA A3

DRAWN BY:	C. NEWELL
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	1/8" = 1'-0"

E2.12
Bid Documents
Project Phase
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DRAWING NOTES

- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FA2.01.
- PROVIDE SIX (6) 120V CIRCUITS TO "PP" FROM PANEL INDICATED.
- PROVIDE FEED TO RP1 FROM FUSED DISCONNECT SWITCH T-DS ON WALL. FOR FURTHER INFORMATION, REFER TO ONE-LINE DIAGRAM.
- PROVIDE FEED TO DR1 FROM CIRCUIT BREAKER CB1 ON WALL. FOR FURTHER INFORMATION, REFER TO ONE-LINE DIAGRAM.
- PROVIDE 12" X 12" WIREWAY (6-FEET LONG, MIN.) MOUNTED BELOW THEATER EQUIPMENT AT THIS LOCATION FOR MANAGEMENT OF WIRING, BY OTHERS.
- FLOOR BOXES SHALL BE MOUNTED ON EACH STEP. REFER TO SECTION ON DRAWING E2.81 FOR MORE INFORMATION.
- REFER TO DRAWING TS.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- PROVIDE 20 AMP, 3-POLE CIRCUIT BREAKER (IN PANELBOARD INDICATED) AND #10S1100-3/4" CONDUIT FROM PANEL TO DRY SPRINKLER COMPRESSOR (DSC). PROVIDE COMBINATION STARTER FOR 1.12HP COMPRESSOR MOTOR AT THE UNIT.



1 LEVEL 1 - POWER PLAN - AREA A3
1/8" = 1'-0"

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DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FAZ.01.
- 4 PROVIDE FOUR (4) 120V CIRCUITS TO AVR7 FROM PANEL INDICATED.
- 5 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- 6 PROVIDE FEED TO RP2 FROM FUSED DISCONNECT SWITCH RP-DS ON WALL. FOR FURTHER INFORMATION, REFER TO ONE-LINE DIAGRAM.
- 7 CONTRACTOR SHALL UTILIZE CHASE IN WALL TO ROUTE ALL CONDUITS UNDERGROUND FROM MAIN SWITCHBOARD (IN BASEMENT) OVER AND UP TO CEILING SPACE IN THE FIRST AND SECOND FLOORS, AS REQUIRED.
- 8 CONTRACTOR SHALL PROVIDE 2#10x1#10G IN 3/4" CONDUIT FROM PANEL P2N1B2 TO JUNCTION BOX (120V) FOR CONNECTION OF DAMPERS (IN THIS VICINITY). CONNECT ALL SMOKE DAMPERS IN FIRST FLOOR AREAS A3 AND B ON ONE CIRCUIT. FOR LOCATION OF DAMPERS, REFER TO FIRE ALARM DRAWINGS.
- 9 PROVIDE COUNTER-TOP (RECESSED) DEVICE (CD) CUT INTO THE TOP SURFACE OF THE DESK. DEVICE IS FURNISHED WITH A 6-FOOT POWER CORD AND PLUG. POWER CONDUIT (3/4" RGS) SHALL BE RUN DOWN THE INSIDE OF AN ADJACENT WALL AND S1UB UP THROUGH THE FLOOR SLAB (OR FLOOR BELOW) INTO THE DESK CAVITY (ACCESSIBLE THROUGH FURNITURE ACCESS PANEL). PROVIDE DUPLEX RECEPTACLE INSIDE DESK SPACE FOR CONNECTION OF "CD" POWER CORD.
- 10 PROVIDE 20 AMP, 3-POLE CIRCUIT BREAKER (IN PANELBOARD INDICATED) AND 4#10x1#10G-3/4" CONDUIT FROM PANEL TO DRY SPRINKLER COMPRESSOR (DSC). PROVIDE COMBINATION STARTER FOR 1 1/2HP COMPRESSOR MOTOR AT THE UNIT.

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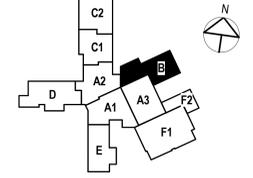
RFS engineering
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5	ADDENDUM #5	2016-03-17



CONTENT:
 FIRST FLOOR POWER PLAN - AREA B

DRAWN BY: C. NEWELL
 PROJECT NO: 12-067-00
 DATE: 02/11/2016
 REVISED:
 SCALE: 1/8" = 1'-0"

E2.13

Project Phase
 BID DOCUMENTS

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1 LEVEL 1 - POWER PLAN - AREA B
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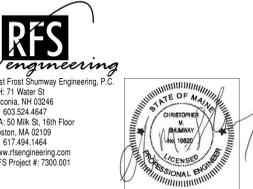
3/17/2016 11:52:17 AM C:\users\m680\appdata\local\temp\1616\FOR\MAT\7300\C-dwg\Bak-2016.rvt



DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FAZ.01.
- 4 SURFACE RACEWAY FOR TOOL CHARGING SHALL BE LOCATED INSIDE CABINET. COORDINATE EXACT MOUNTING REQUIREMENTS WITH THE FURNITURE.
- 5 PROVIDE CONDUIT STUBBED UP THROUGH THE SLAB INTO THE BOTTOM (INSIDE) THE BENCH TO A JUNCTION BOX. FEED FOUR (4) BENCH MOUNTED RECEPTACLES (FACTORY INSTALLED ON THE SIDES) FROM THIS JUNCTION BOX.
- 6 PROVIDE 3#10S1#10G 3/4" CONDUIT FROM DISCONNECT SWITCH TO PANEL.
- 7 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- 8 CONTRACTOR SHALL PROVIDE BUS DROP CABLE (12-4, W/GRD) WITH CORD CAP, AS REQUIRED, TO POWER WELDER. COORDINATE EXACT WIRE AND CAP IN THE FIELD WITH THE EQUIPMENT.
- 9 CONTRACTOR SHALL PROVIDE 4#6S1#10G IN 1" CONDUIT WITH WALL-MOUNTED RECEPTACLE. AS REQUIRED, TO POWER WELDER. COORDINATE EXACT CIRCUIT CONDUCTORS AND RECEPTACLE TYPE IN THE FIELD WITH THE EQUIPMENT.
- 10 CONTRACTOR SHALL PROVIDE 2#10S1#10G IN 3/4" CONDUIT FROM PANEL P2N1C2 TO JUNCTION BOX (120V) FOR CONNECTION OF DAMPERS (IN THIS VICINITY). CONNECT ALL SMOKE DAMPERS IN FIRST FLOOR AREAS A2, C1 AND C2 ON ONE CIRCUIT. FOR LOCATION OF DAMPERS, REFER TO FIRE ALARM DRAWINGS.
- 11 PROVIDE 20 AMP, 3-POLE CIRCUIT BREAKER (IN PANELBOARD INDICATED) AND 4#10S1#10G 3/4" CONDUIT FROM PANEL TO DRY SPRINKLER COMPRESSOR (DSC). PROVIDE COMBINATION STARTER FOR 1 1/2HP COMPRESSOR MOTOR AT THE UNIT.

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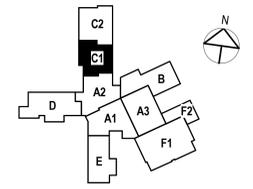


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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
 FIRST FLOOR POWER PLAN - AREA C1

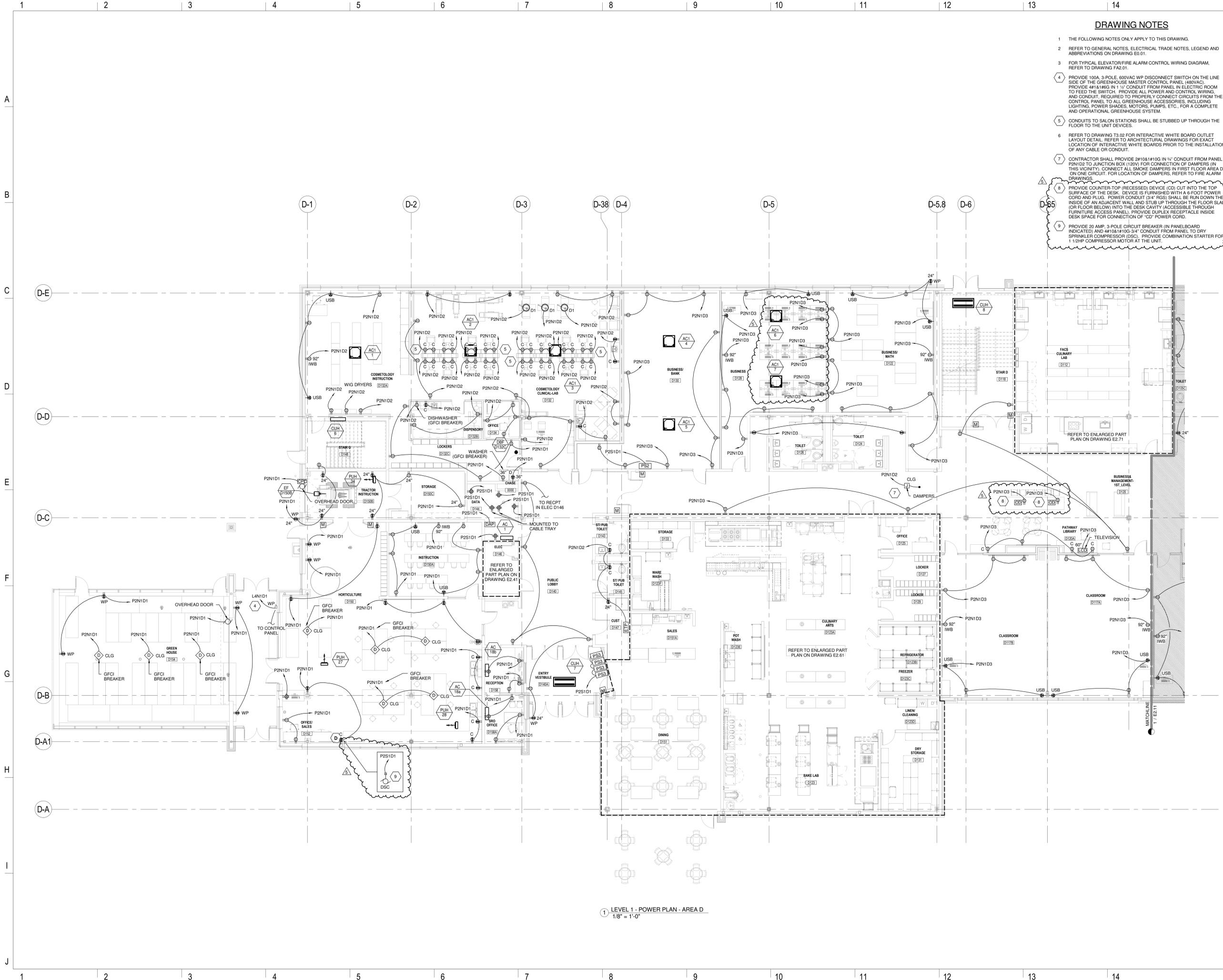
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PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	1/8" = 1'-0"

E2.14

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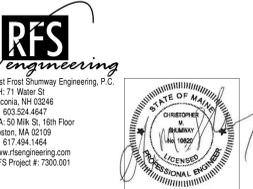
1 LEVEL 1 - POWER PLAN - AREA C1
 1/8" = 1'-0"

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- ### DRAWING NOTES
- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
 - REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
 - FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FA2.01.
 - PROVIDE 100A, 3-POLE, 600VAC WP DISCONNECT SWITCH ON THE LINE SIDE OF THE GREENHOUSE MASTER CONTROL PANEL (480VAC). PROVIDE #14 RIGID IN 1 1/2" CONDUIT FROM PANEL IN ELECTRIC ROOM TO FEED THE SWITCH. PROVIDE ALL POWER AND CONTROL WIRING, AND CONDUIT, REQUIRED TO PROPERLY CONNECT CIRCUITS FROM THE CONTROL PANEL TO ALL GREENHOUSE ACCESSORIES, INCLUDING LIGHTING, POWER SHADES, MOTORS, PUMPS, ETC., FOR A COMPLETE AND OPERATIONAL GREENHOUSE SYSTEM.
 - CONDUITS TO SALON STATIONS SHALL BE STUBBED UP THROUGH THE FLOOR TO THE UNIT DEVICES.
 - REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
 - CONTRACTOR SHALL PROVIDE 2#10x1#10G IN 3/4" CONDUIT FROM PANEL P2N1D2 TO JUNCTION BOX (J20V) FOR CONNECTION OF DAMPERS (IN THIS VICINITY). CONNECT ALL SMOKE DAMPERS IN FIRST FLOOR AREA D ON ONE CIRCUIT. FOR LOCATION OF DAMPERS, REFER TO FIRE ALARM DRAWINGS.
 - PROVIDE COUNTER TOP (RECESSED) DEVICE (CD) CUT INTO THE TOP SURFACE OF THE DESK. DEVICE IS FURNISHED WITH A FOOT POWER CORD AND PLUG. POWER CONDUIT (3/4" RGS) SHALL BE RUN DOWN THE INSIDE OF AN ADJACENT WALL AND STUB UP THROUGH THE FLOOR SLAB (OR FLOOR BELOW) INTO THE DESK CAVITY (ACCESSIBLE THROUGH FURNITURE ACCESS PANEL). PROVIDE DUPLEX RECEPTACLE INSIDE DESK SPACE FOR CONNECTION OF "CD" POWER CORD.
 - PROVIDE 20 AMP, 3-POLE CIRCUIT BREAKER (IN PANELBOARD INDICATED) AND #14 RIGID IN 3/4" CONDUIT FROM PANEL TO DRY SPRINKLER COMPRESSOR (DSC). PROVIDE COMBINATION STARTER FOR 1 1/2HP COMPRESSOR MOTOR AT THE UNIT.

1 LEVEL 1 - POWER PLAN - AREA D
1/8" = 1'-0"

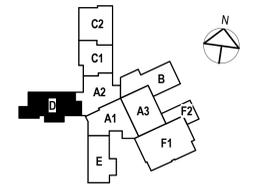


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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
FIRST FLOOR POWER PLAN - AREA D

DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

E2.16

Project Phase
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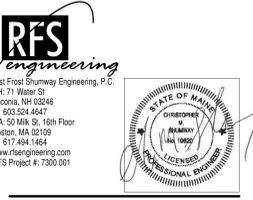
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- DRAWING NOTES**
(A-F1)
- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
 - REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
 - FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FAZ.01.
 - REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.

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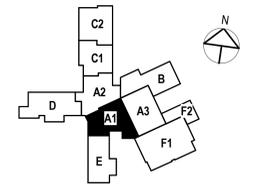


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5	ADDENDUM #5	2016-03-17



CONTENT:
SECOND FLOOR POWER PLAN - AREA A1

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

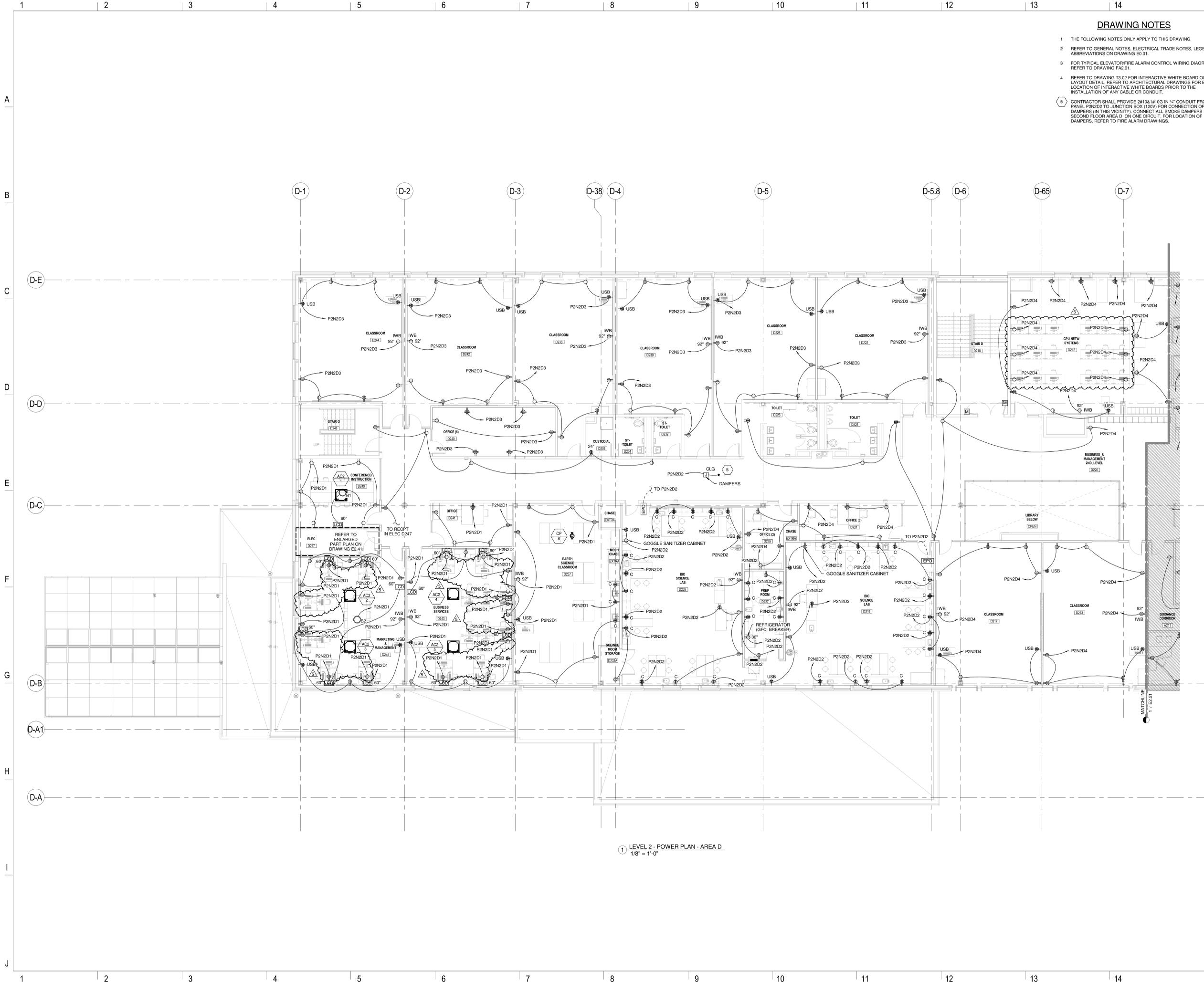
DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

E2.20

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1 LEVEL 2 - POWER PLAN - AREA A1
1/8" = 1'-0"



1 LEVEL 2 - POWER PLAN - AREA D
1/8" = 1'-0"

DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 FOR TYPICAL ELEVATOR/FIRE ALARM CONTROL WIRING DIAGRAM, REFER TO DRAWING FA2.01.
- 4 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- 5 CONTRACTOR SHALL PROVIDE 2#10x1#10 IN 3/4" CONDUIT FROM PANEL P2N2D2 TO JUNCTION BOX (120V) FOR CONNECTION OF DAMPERS (IN THIS VICINITY). CONNECT ALL SMOKE DAMPERS IN SECOND FLOOR AREA D ON ONE CIRCUIT. FOR LOCATION OF DAMPERS, REFER TO FIRE ALARM DRAWINGS.

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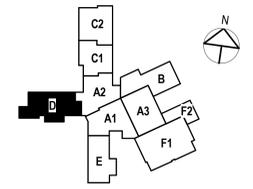
RFS engineering
Riel Frost Shumway Engineering, P.C.
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Laconia, NH 03246
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www.rfsengineering.com
RFS Project #: 7300.001

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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
SECOND FLOOR POWER PLAN - AREA D

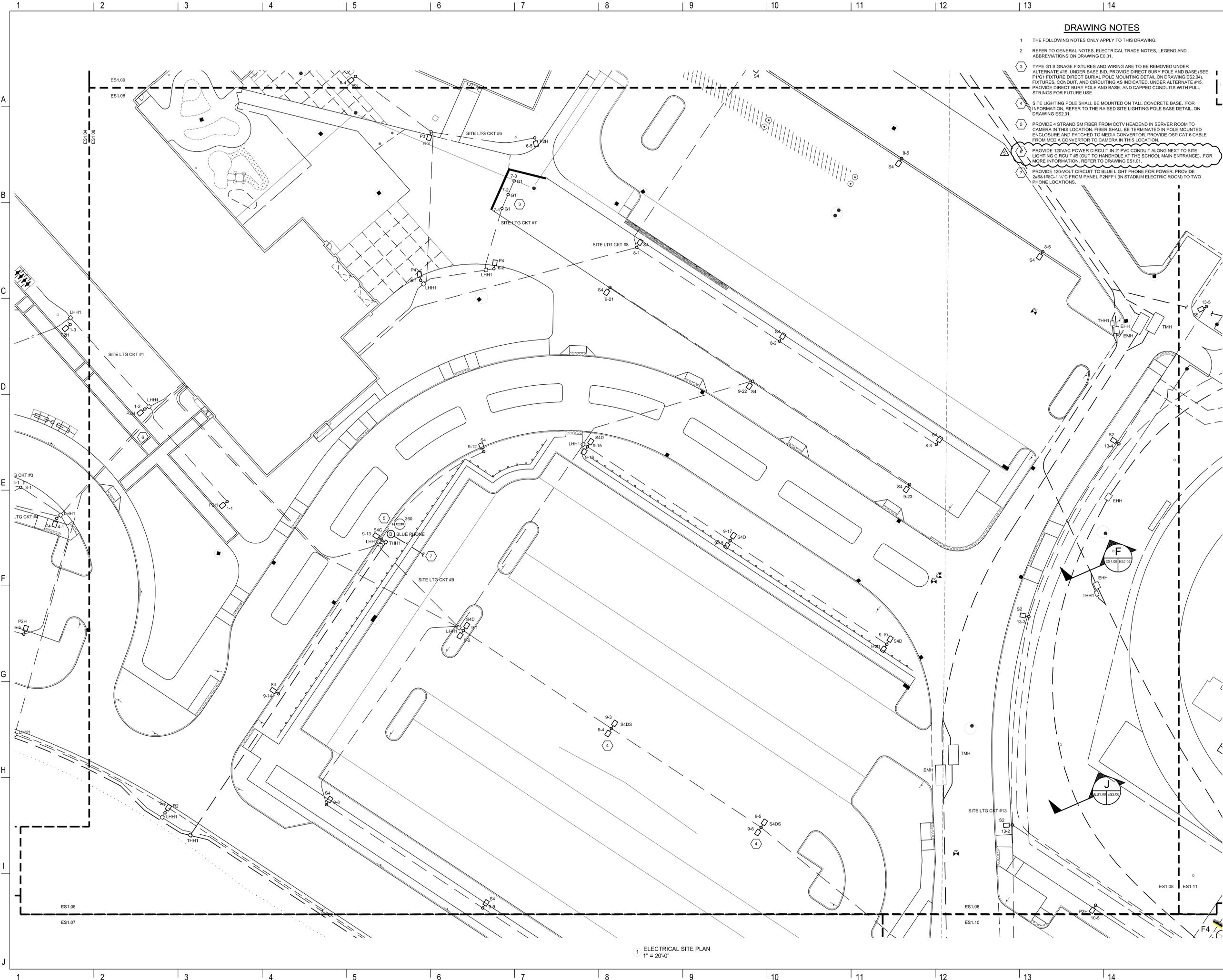
FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

DRAWN BY:	C. NEWELL
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	1/8" = 1'-0"

E2.26
Project Phase
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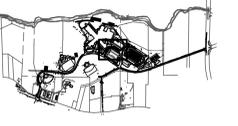


DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING E0.01.
- 3 TYPE G1 SIGNAGE FIXTURES AND WIRING ARE TO BE REMOVED UNDER ALTERNATE #15. UNDER BASE BID, PROVIDE DIRECT BURY POLE AND BASE (SEE F1/G1 FIXTURE DIRECT BURIAL POLE MOUNTING DETAIL ON DRAWING ES2.04). FIXTURES, CONDUIT, AND CIRCUITING AS INDICATED. UNDER ALTERNATE #15, PROVIDE DIRECT BURIAL POLE AND BASE, AND CAPPED CONDUITS WITH FULL STRINGS FOR FUTURE USE.
- 4 SITE LIGHTING POLE SHALL BE MOUNTED ON TALL CONCRETE BASE. FOR INFORMATION, REFER TO THE RAISED SITE LIGHTING POLE BASE DETAIL ON DRAWING ES2.01.
- 5 PROVIDE 4 STRAND SM FIBER FROM CCTV HEADEND IN SERVER ROOM TO CAMERA IN THIS LOCATION. FIBER SHALL BE TERMINATED IN POLE MOUNTED ENCLOSURE AND PATCHED TO MEDIA CONVERTOR. PROVIDE OSP CAT 6 CABLE FROM MEDIA CONVERTOR TO CAMERA IN THIS LOCATION.
- 6 PROVIDE 120VAC POWER CIRCUIT IN 2" PVC CONDUIT ALONG NEXT TO SITE LIGHTING CIRCUIT #6 (OUT TO HANDHOLE AT THE SCHOOL MAIN ENTRANCE). FOR MORE INFORMATION, REFER TO DRAWING ES1.01.
- 7 PROVIDE 120VOLT CIRCUIT TO BLUE LIGHT PHONE FOR POWER. PROVIDE 2#6&1#8G-1 1/2" C FROM PANEL P2#FF1 (IN STADIUM ELECTRIC ROOM) TO TWO PHONE LOCATIONS.

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SANFORD HIGH SCHOOL and TECHNICAL CENTER

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NO.	DESCRIPTION	DATE
3	ADDENDUM #3	2016-03-04
5	ADDENDUM #5	2016-03-17

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
 ELECTRICAL SITE PLAN

DRAWN BY: C. NEWELL

PROJECT NO: 12-067-00

DATE: 02/11/2016

REVISID:

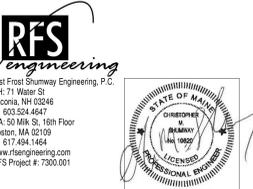
SCALE: AS NOTED

ES1.08

Project Phase
 BID DOCUMENTS

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1 ELECTRICAL SITE PLAN
 1" = 20'-0"



TELECOMMUNICATION SYSTEM LEGEND

- FT** TELEPHONE DATA CABLE OUTLET LOCATION
- FT/HD** TELEPHONE DATA CABLES
- FT/WD/C** MH=18" AFF. UON. DOUBLE GANG OUTLET BOX WITH 1" TO SPACE ABOVE ACCESSIBLE CEILING. PROVIDE SINGLE GANG PLASTER RING. # INDICATES TOTAL NUMBER OF JACKS AND CABLES REQUIRED. (F)=MOUNTING HEIGHT ABOVE FINISH FLOOR
- IWB** INTERACTIVE WHITE BOARD
- S** SECURITY CAMERA
- BAS** BUILDING AUTOMATION SYSTEM PANEL
- LCP** LIGHTING CONTROL PANEL
- FACP** FIRE ALARM CONTROL PANEL
- NAB** NOTIFICATION ANNUNCIATOR BEACON
- AV** AUDIO VISUAL
- OA** RECESSED FLOOR BOX WITH FLUSH COVER PLATE. ROUTE CONDUITS IN FLOOR SLAB. SUBSCRIPT DENOTES FLOOR BOX TYPE. REFER TO FLOOR BOX SCHEDULE
- OB** POKE THRU FLOOR BOX WITH FLUSH COVER PLATE. ROUTE CONDUITS IN ACCESSIBLE CEILING BELOW. SUBSCRIPT DENOTES FLOOR BOX TYPE. REFER TO FLOOR BOX SCHEDULE
- W** TWO SECTION SURFACE RACEWAY. # INDICATES RECEPTACLE LOCATION IN RACEWAY. UON
- W/** TELEPHONE DATA OUTLET LOCATION MOUNTED IN SURFACE RACEWAY OR POWERPOLE. # INDICATES TOTAL NO. OF JACKS AND CABLES REQUIRED. #T = TELEPHONE. #D = DATA
- 4"** 4" SQUARE RECESSED OUTLET BOX MOUNTED BEHIND SURFACE RACEWAY WITH TWO (2) 1" CONDUITS TO SPACE ABOVE ACCESSIBLE CEILING FOR DATA AND TELEPHONE AS INDICATED ON DRAWINGS
- W** TELEPHONE OUTLET LOCATION, MH=48" AFF. UON
- W** WALL MOUNTED
- S** BLUE LIGHT SECURITY PHONE
- C** COURTESY PHONE
- 2** FLOOR MOUNTED 2 POST EQUIPMENT RACK
- 4** FLOOR MOUNTED 4 POST EQUIPMENT RACK
- W** WALL MOUNTED EQUIPMENT RACK
- W/AV** PROVIDE TWO (2) CATEGORY 6A CABLE WITH 20' SERVICE COIL. TERMINATE IN FACED PLATES ABOVE CEILING FOR WIRELESS ACCESS POINT.
- WG** WIRE GUARD PROVIDED BY OWNER INSTALLED BY CONTRACTOR
- B** BASKET TYPE CABLE TRAY. SIZE INDICATED ON PLAN. SEE SPECIFICATION FOR TYPE
- TELCOM ROOM SERVING ZONE BOUNDARY LINE
- J** PROPOSED J-HOOK ROUTING (MAJOR RUNS) ADDITIONAL J-HOOKS REQUIRED FOR CABLES TO INDIVIDUAL JACKS
- CATV** CATV EQUIPMENT LOCATION
- TEL** TELEPHONE EQUIPMENT LOCATION
- TEL** PROVIDE DEDICATED TELEPHONE LINE FOR CONNECTION TO ELEVATOR CONTROLLER. COORDINATE WITH ELEVATOR CONTRACTOR FOR SLACK LENGTH TO ACCOMMODATE SYSTEM
- PLYWOOD** PLYWOOD BACKBOARD
- TMSB** TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
- TGSB** TELECOMMUNICATIONS GROUNDING BUSBAR
- XX** LCD DISPLAY LOCATION - XX INDICATES HEIGHT AFF. REFER TO WALL BOX SCHEDULE FOR MORE INFORMATION
- AV** AUDIO VISUAL INPUT LOCATION, MH = 18" AFF. UON. DOUBLE GANG OUTLET BOX 2.75" DEEP WITH 1-1/4" & 3/4" TO SPACE ABOVE CEILING AND BLANK THERMOPLASTIC COVERPLATE. PROVIDE SINGLE GANG PLASTER RING
- AV** PROJECTOR AUDIO VISUAL OUTLET MOUNTED ABOVE WHITE BOARD OR AT CEILING SEE PLANS FOR LOCATION. DOUBLE GANG BOX 2.75" DEEP WITH 1-1/4" CONDUIT AND 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING. PROVIDE DOUBLE GANG PLASTER RING
- AV** AUDIO VISUAL INPUT FOR LCD DISPLAY, MH = 18" AFF. UON. DOUBLE GANG OUTLET BOX 2.75" DEEP WITH 1-1/4" & 3/4" TO SPACE ABOVE CEILING AND BLANK THERMOPLASTIC COVERPLATE. PROVIDE SINGLE GANG PLASTER RING
- AV** COUNTER-TOP DEVICE

AUDIO VISUAL LEGEND

- AVR#** AUDIO VISUAL RACK ***
= REFER TO HIGH OUTPUT DRAWINGS FOR MORE INFORMATION
- LDI** LIGHTING DIMMER RACK ***
- ERP** EMERGENCY RELAY PANEL ***
- TP** THEATER PANEL ***
- TPP** THEATER PANEL ***
- FBR** AUDIO VISUAL FLOOR BOX ***
= REFER TO HIGH OUTPUT DRAWINGS FOR MORE INFORMATION
- *** = PROVIDED BY OTHERS, INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR

ABBREVIATIONS

- AFF** ABOVE FINISHED FLOOR
- AFG** ABOVE FINISHED GRADE
- AHU** AIR HANDLING UNIT *
- C** COUNTER HEIGHT
- CLG** CEILING MOUNTED
- CUH** CABINET UNIT HEATER *
- DN** DOWN
- DWG** DRAWING
- EC** ELECTRICAL CONTRACTOR
- EF** EXHAUST FAN *
- EHH** ELECTRICAL HANDHOLE
- EMH** ELECTRICAL HANDHOLE
- FB** FAN BOX *
- FIBO** FURNISHED AND INSTALLED BY OWNER/OTHERS
- HOA** HAND-OFF-AUTO SELECTOR SWITCH
- HP** HORSEPOWER
- LOR** LOCATED ON ROOF
- MC** MECHANICAL CONTRACTOR
- MCB** MAIN CIRCUIT BREAKER
- MD** MOTORIZED DOOR **
- MS** MOUNTING HEIGHT
- NH** NOT TO SCALE
- OD** OVERHEAD DOOR **
- OCFCI** OWNER FURNISHED CONTRACTOR INSTALLED
- PC** PLUMBING CONTRACTOR
- PUH** PROPELLER UNIT HEATER *
- RF** RETURN FAN *
- RTU** ROOF TOP UNIT *
- SF** SUPPLY FAN *
- SCP** SEWAGE PUMP CONTROL PANEL
- S/S** START/STOP PUSH BUTTONS
- S STL** STAINLESS STEEL
- THH** TELECOMMUNICATIONS HANDHOLE
- TMH** TELECOMMUNICATIONS MANHOLE
- TYP** TYPICAL
- UON** UNLESS OTHERWISE NOTED
- VP** VANDAL PROOF
- WPCP** WELL PUMP CONTROL PANEL
- WG** WIRE GUARD
- WP** WEATHER PROOF
- WUH** WALL MOUNTED UNIT HEATER *
- *** EQUIPMENT PROVIDED BY MECHANICAL TRADE. WIRED BY ELECTRICAL TRADE
- **** EQUIPMENT PROVIDED BY DOOR HARDWARE TRADE. WIRED BY ELECTRICAL TRADE

TELECOMMUNICATION TRADE NOTES

- 1 ALL TELECOMMUNICATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND STANDARDS, INCLUDING ALL ANSITIAEIA STANDARDS RELATED TO TELECOMMUNICATION CABLES SYSTEMS AND THE CURRENT NATIONAL ELECTRICAL CODE (NEC). ALL WORK SHALL BE PERFORMED BY CERTIFIED/REGISTERED TELECOMMUNICATION TECHNICIANS AND RELATED ELECTRICAL CODES SHALL BE PERFORMED BY ELECTRICIANS LICENSED BY THE STATE IN WHICH THE WORK IS PERFORMED.
- 2 THE TELECOMMUNICATION CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLING ANY CONDUIT AND/OR CABLE. IF TELECOMMUNICATION REQUIREMENTS DIFFER FROM THOSE INDICATED, OR IF ADDITIONAL EQUIPMENT IS REQUIRED BY CODE, INFORM THE ENGINEER.
- 3 ALL TELECOMMUNICATION HORIZONTAL CABLEING CIRCUITS FROM THE MDP/JDF TO THE WALL OUTLET SHALL BE A SINGLE HOMERUN WITH NO SPLICES. CABLEING LENGTH SHALL NOT EXCEED 395'(99M).
- 4 MOUNTING HEIGHTS GIVEN FOR ALL TELECOMMUNICATION DEVICES ARE TO THE CENTERLINE OF THE JUNCTION BOX USED TO MOUNT THE DEVICE, UNLESS OTHERWISE NOTED.
- 5 CABLEING INDICATED ON DRAWINGS IS SCHEMATIC IN NATURE AND SHALL NOT BE CONSIDERED TO BE POINT-TO-POINT, UNLESS OTHERWISE NOTED.
- 6 PROVIDE AND ENSURE PROPER FIREPROOFING OF ALL TELECOMMUNICATION CONDUITS AND CABLEING THROUGH FIRE RATED ASSEMBLIES.
- 7 PROVIDE PULL STRINGS IN ALL CONDUIT SYSTEMS LEFT FOR USE BY OTHERS.
- 8 MOUNTING HEIGHT FOR TELECOMMUNICATION DEVICES LOCATED ON EXTERIOR WALLS ABOVE FINITUBE SHALL BE 4" FROM TOP OF FINITUBE ENCLOSURE TO CENTERLINE OF TELECOMMUNICATION DEVICE.
- 9 ALL COMPONENTS SHOWN ON RISER, BUT NOT SHOWN ON PLANS OR SPEC OR VICE VERSA SHALL BE INCLUDED AS LISTED IN ALL DOCUMENTS.
- 10 CABLE ROUTING SHALL BE COORDINATED WITH OTHER TRADES. CABLES SHALL ALSO BE ACCESSIBLY ROUTED PARALLEL TO BUILDING COLUMN LINES, AND ALL BENDS SHALL BE 90 DEGREES AND MUST ADHERE TO CABLE BEND RADIUS LIMITATIONS, PER STANDARDS OUTLINED IN THE WRITTEN SPECIFICATION.
- 11 CONTRACTOR TO VERIFY ALL MEASUREMENTS PRIOR TO INSTALLATION OF NEW EQUIPMENT CABLEING.

GENERAL NOTES

- THE FOLLOWING GENERAL NOTES APPLY TO ALL RST-FROST-SHUMWAY ENGINEERING, P.C., DRAWINGS AND TRADES ASSOCIATED WITH THOSE DRAWINGS INVOLVED ON THIS PROJECT.
- G-1 RST-FROST-SHUMWAY ENGINEERING, P.C., WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF RST-FROST-SHUMWAY ENGINEERING, P.C., WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
 - G-2 ALL WORK SHALL CONFORM TO ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS INCLUDING, BUT NOT LIMITED TO: NFPA, IBC, U.L., SMARNA, CGMA, AND NEC.
 - G-3 THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL PROTECT THE WORK SITE, SURROUNDING AREAS AND OCCUPANTS FROM DAMAGE AND INJURY.
 - G-4 THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONTRACT DOCUMENTS. ALL DRAWINGS OF ANY PARTICULAR TRADE SHALL BE USED IN CONJUNCTION WITH DRAWINGS OF ALL OTHER TRADES TO COORDINATE ALL CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED WORK. ANY PROPOSED CHANGES, VARIATIONS OR SUBSTITUTIONS MUST BE REVIEWED AND ACCEPTED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
 - G-5 ALL DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN INTENT AND EXTENT OF THE WORK. THEY SHALL BE CONSIDERED PARTLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR RUGHING-IN MEASUREMENTS OR TO SERVE AS SHOP DRAWINGS.
 - G-6 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS (AS BUILT OR OTHERWISE) BEFORE COMMENCING FABRICATION, AND/OR ORDERING MATERIALS.
 - G-7 DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE INDICATED.
 - G-8 INFORMATION ON THESE DRAWINGS PERTAINING TO AS-BUILT CONSTRUCTION AND OTHER EXISTING CONDITIONS HAVE BEEN OBTAINED FROM OTHER DOCUMENTATION OR BY FIELD INVESTIGATION. (SEE GENERAL AND SUPPLEMENTAL CONDITIONS FOR LISTING). THIS INFORMATION IS PROVIDED FOR THE CONTRACTOR'S BENEFIT IN PERFORMANCE OF THE WORK.
 - G-9 IN THE EVENT THE CONTRACTOR ENCOUNTERS MATERIAL REASONABLY BELIEVED TO BE HAZARDOUS WHICH HAS NOT BEEN RENDERED HARMLESS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO THE OWNER AND ARCHITECT/ENGINEER IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED UNTIL WRITTEN VERIFICATION BY THE OWNER THAT THE MATERIAL HAS BEEN REMOVED OR OTHERWISE BEEN RENDERED HARMLESS.

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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
TELECOMMUNICATIONS SYMBOLS LEGEND AND TRADE NOTES

DRAWN BY: C. NEWELL
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: NO SCALE

T0.01

Project Phase
BID DOCUMENTS

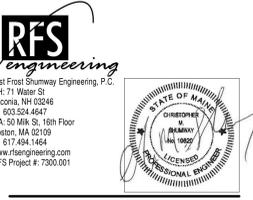
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- DRAWING NOTES**
- THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
 - REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING T0.1.
 - REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
 - PROVIDE PATCH CORDS FROM DATA JACK AT WALL, RUN THROUGH DESK WIRE MANAGEMENT, AND COIL UP AT EACH WORK STATION.
 - COUNTER-TOP (RECESSED) DEVICE (CD) IS CUT INTO THE TOP SURFACE OF THE DESK. TELECOM CONDUIT (1" RGS) SHALL BE RUN DOWN THE INSIDE OF AN ADJACENT WALL AND STUB UP THROUGH THE FLOOR SLAB (OR FLOOR BELOW) INTO THE DESK CAVITY (ACCESSIBLE THROUGH FURNITURE ACCESS PANEL) WITH A BUSHING. PROVIDE FOUR SINGLE DATA JACKS MOUNTED IN CD KNOCKOUTS. DATA CABLES SHALL BE RUN FROM CONDUIT UP INSIDE DESK SPACE AND TERMINATE AT THE FOUR DATA JACKS.

1 LEVEL 1 - TELECOMMUNICATIONS PLAN - AREA B
1/8" = 1'-0"

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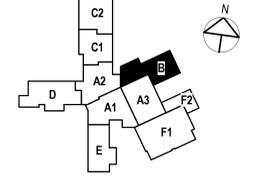


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5	ADDENDUM #5	2016-03-17



FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
FIRST FLOOR TELECOMMUNICATIONS PLAN - AREA B

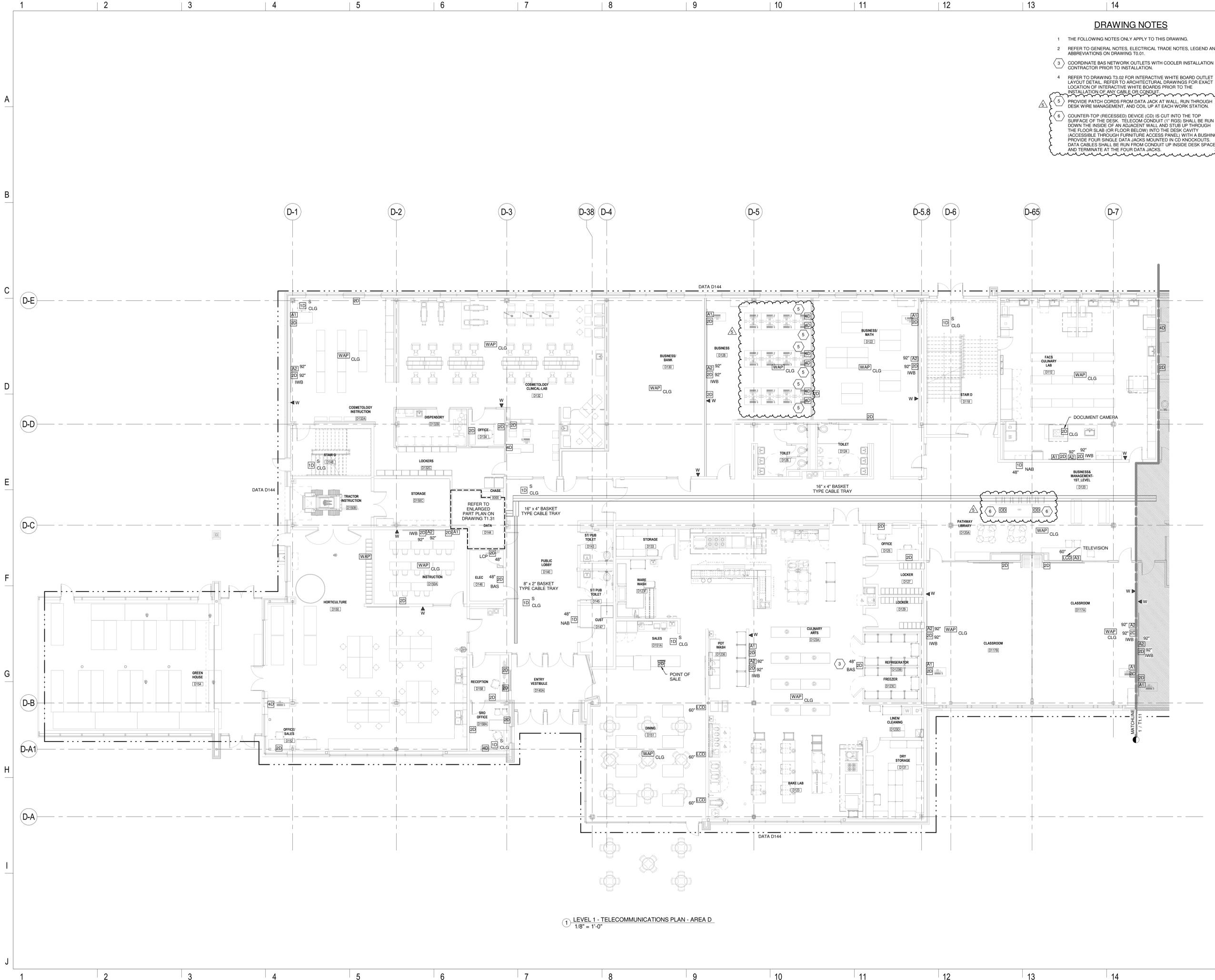
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PROJECT NO: 12-067-00
DATE: 02/11/2016
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SCALE: 1/8" = 1'-0"

T1.13

Project Phase
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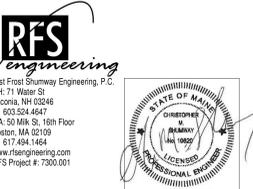
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DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING T0.1.
- 3 COORDINATE BAS NETWORK OUTLETS WITH COOLER INSTALLATION CONTRACTOR PRIOR TO INSTALLATION.
- 4 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- 5 PROVIDE PATCH CORDS FROM DATA JACK AT WALL, RUN THROUGH DESK WIRE MANAGEMENT, AND COIL UP AT EACH WORK STATION.
- 6 COUNTER-TOP (RECESSED) DEVICE (CD) IS CUT INTO THE TOP SURFACE OF THE DESK. TELECOM CONDUIT (1" RGS) SHALL BE RUN DOWN THE INSIDE OF AN ADJACENT WALL AND STUB UP THROUGH THE FLOOR SLAB (OR FLOOR BELOW) INTO THE DESK CAVITY (ACCESSIBLE THROUGH FURNITURE ACCESS PANEL) WITH A BUSHING. PROVIDE FOUR SINGLE DATA JACKS MOUNTED IN CD KNOCKOUTS. DATA CABLES SHALL BE RUN FROM CONDUIT UP INSIDE DESK SPACE AND TERMINATE AT THE FOUR DATA JACKS.

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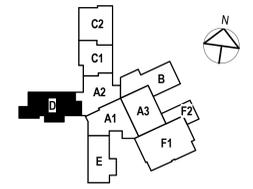


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SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
 FIRST FLOOR TELECOMMUNICATIONS PLAN - AREA D

DRAWN BY:	C. NEWELL
PROJECT NO.:	12-067-00
DATE:	02/11/2016
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SCALE:	1/8" = 1'-0"

T1.16

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DRAWING NOTES

- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
- 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING T0.1.
- 3 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
- 4 COUNTER-TOP (RECESSED) DEVICE (CD) IS CUT INTO THE TOP SURFACE OF THE DESK. TELECOM CONDUIT (1" RGS) SHALL BE RUN DOWN THE INSIDE OF AN ADJACENT WALL AND STUB UP THROUGH THE FLOOR SLAB (OR FLOOR BELOW) INTO THE DESK CAVITY (ACCESSIBLE THROUGH FURNITURE ACCESS PANEL) WITH A BUSHING. PROVIDE FOUR SINGLE DATA JACKS MOUNTED IN CD KNOCKOUTS. DATA CABLES SHALL BE RUN FROM CONDUIT UP INSIDE DESK SPACE AND TERMINATE AT THE FOUR DATA JACKS.

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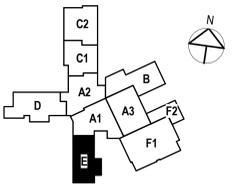
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NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



CONTENT:
 FIRST FLOOR TELECOMMUNICATIONS PLAN
 - AREA E

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

DRAWN BY: C. NEWELL
 PROJECT NO: 12-067-00
 DATE: 02/11/2016
 REVISED:
 SCALE: 1/8" = 1'-0"

T1.17

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1 LEVEL 1 - TELECOMMUNICATIONS PLAN - AREA E
 1/8" = 1'-0"

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DRAWING NOTES

1. THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
2. REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING T0.01.
3. REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
4. PROVIDE PATCH CORDS FROM DATA JACK AT WALL, RUN THROUGH DESK WIRE MANAGEMENT, AND COIL UP AT EACH WORK STATION.

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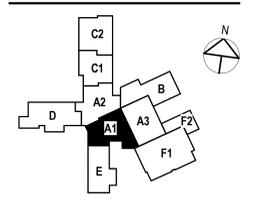
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5	ADDENDUM #5	2016-03-17



CONTENT:
 SECOND FLOOR TELECOMMUNICATIONS
 PLAN - AREA A1

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

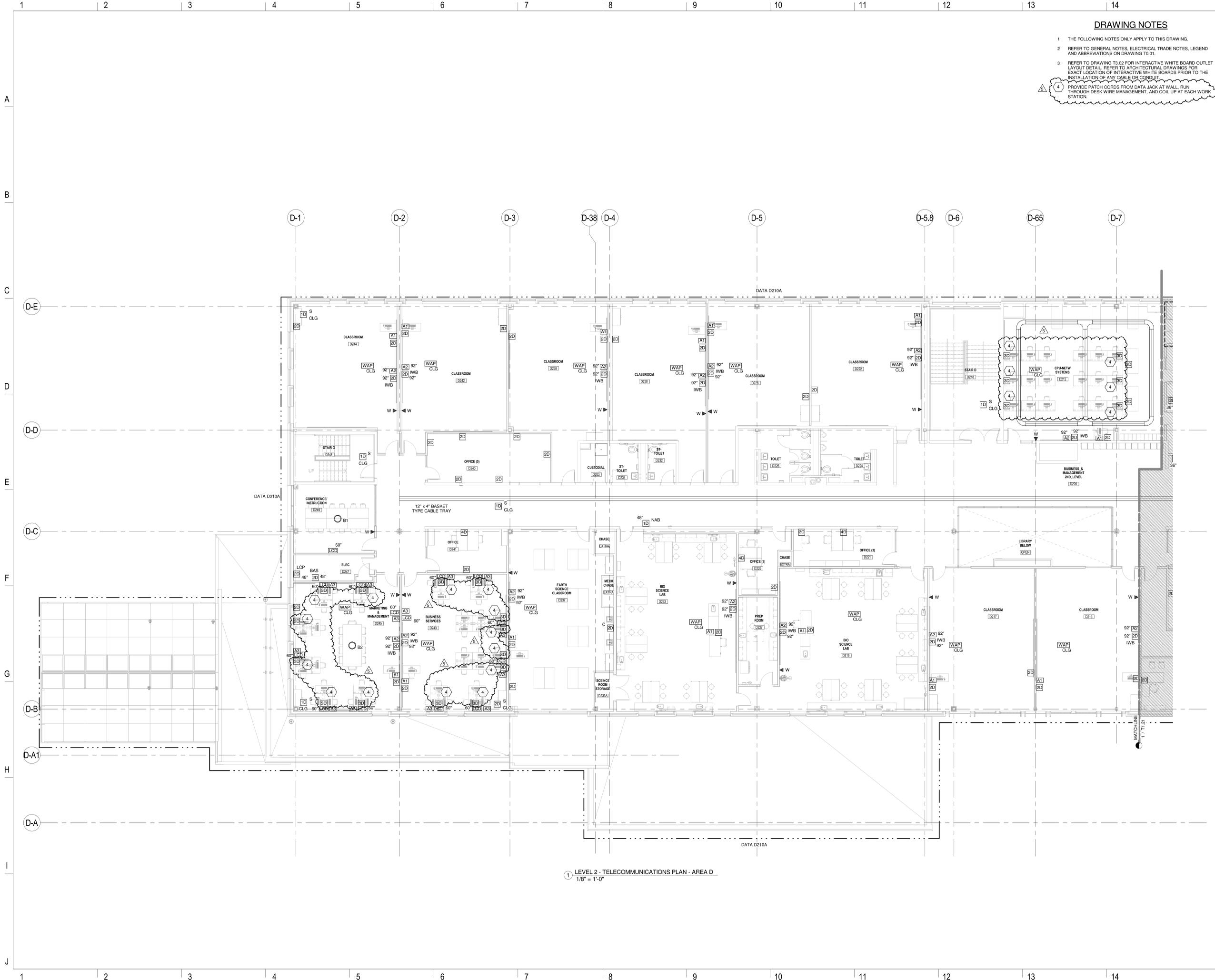
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T1.20

Project Phase
 BID DOCUMENTS

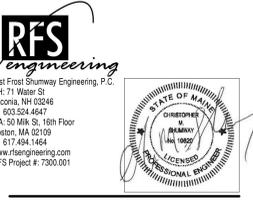
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LEVEL 2 - TELECOMMUNICATIONS PLAN - AREA A1
 1/8" = 1'-0"



- DRAWING NOTES**
- 1 THE FOLLOWING NOTES ONLY APPLY TO THIS DRAWING.
 - 2 REFER TO GENERAL NOTES, ELECTRICAL TRADE NOTES, LEGEND AND ABBREVIATIONS ON DRAWING T0.01.
 - 3 REFER TO DRAWING T3.02 FOR INTERACTIVE WHITE BOARD OUTLET LAYOUT DETAIL. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF INTERACTIVE WHITE BOARDS PRIOR TO THE INSTALLATION OF ANY CABLE OR CONDUIT.
 - 4 PROVIDE PATCH COORDS FROM DATA JACK AT WALL, RUN THROUGH DESK WIRE MANAGEMENT, AND COIL UP AT EACH WORK STATION.

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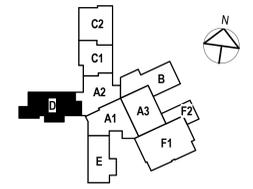


Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

NO.	DESCRIPTION	DATE
5	ADDENDUM #5	2016-03-17



1 LEVEL 2 - TELECOMMUNICATIONS PLAN - AREA D
 1/8" = 1'-0"

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

CONTENT:
 SECOND FLOOR TELECOMMUNICATIONS PLAN - AREA D

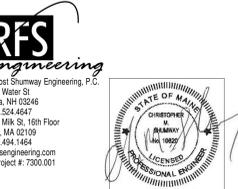
DRAWN BY: C. NEWELL
 PROJECT NO: 12-067-00
 DATE: 02/11/2016
 REVISED:
 SCALE: 1/8" = 1'-0"

T1.26

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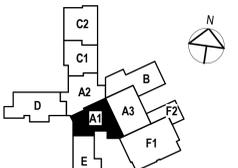


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CONTENT:
FIRST FLOOR - DUCTWORK PLAN - AREA A1

DRAWN BY:	S. DANBY
PROJECT NO.:	12-067-00
DATE:	02/11/2016
REVISED:	
SCALE:	1/8" = 1'-0"

M1.10
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DRAWING NOTES

- 1 PROVIDE AUTOMATIC LOW LEAKAGE CONTROL DAMPER INTERLOCKED WITH KEF-7. NORMALLY OPEN WHEN KEF-7 IS OFF AND NORMALLY CLOSED WHEN KEF-7 IS ON.
- 2 DUCT ROUTED THRU BEAM PENETRATION.

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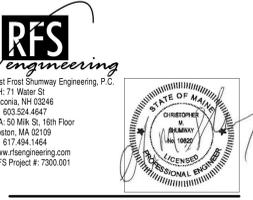


DRAWING NOTES

- 1 INSTALL SUPPLY REGISTER AT 0° ANGLE (PARALLEL TO FLOOR)
- 2 14"x14" DN INTO CAN WASH, OED W/WMS BALANCE TO 150 CFM
- 3 34"x20" DN FROM SECOND FLOOR. TERMINATE SUPPLY DUCT 8" ON FROM UNDER SIDE OF SECOND FLOOR SLAB OED. SEAL FLOOR PENETRATION AROUND DUCT AIR TIGHT WITH APPROPRIATE FIRE SEAL

1 FIRST FLOOR - DUCTWORK PLAN - AREA A2
1/8" = 1'-0"

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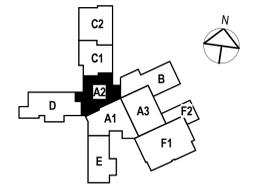


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CONTENT:
FIRST FLOOR - DUCTWORK PLAN - AREA A2

DRAWN BY: S. DANBY
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

M1.11

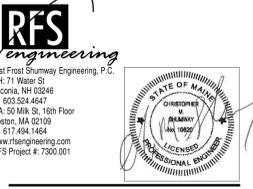
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DRAWING NOTES

- 1 PROVIDE DUCT CLEAN-OUTS SUITABLE FOR USE IN THE DUST COLLECTION SYSTEM EXHAUST DUCTWORK AT 90° CHANGES IN DIRECTION, AT APPROXIMATELY 20' INTERVALS IN STRAIGHT DUCT RUNS, AND AS INDICATED ON THE DRAWING. (TYPICAL)
- 2 DUST COLLECTION SYSTEM BLAST GATES/CONTROL DAMPERS ARE SHOWN IN HORIZONTAL DUCTWORK FOR SCHEMATIC PURPOSES. INSTALL BLAST GATES/CONTROL DAMPERS IN VERTICAL DUST COLLECTION DUCTWORK AND/OR AT TERMINAL CONNECTIONS TO EQUIPMENT WHEREVER POSSIBLE TO ALLOW FOR EASE OF OPERATION. (TYPICAL)
- 3 PRECISION MANUFACTURING DUST COLLECTOR DC-C134a CONTROL PANEL. COORDINATE EXACT LOCATION WITH ARCHITECT, CONSTRUCTION MANAGER, OWNER AND ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
- 4 WELDING FABRICATION DUST COLLECTOR DC-C138 CONTROL PANEL. COORDINATE EXACT LOCATION WITH ARCHITECT, CONSTRUCTION MANAGER, OWNER AND ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
- 5 CAPPED FOR FUTURE.
- 6 INSTALL SUPPLY REGISTER AT 0° ANGLE (PARALLEL TO FLOOR).
- 7 FIELD VERIFY ACTUAL WELDING FABRICATION ROOM C138 EQUIPMENT LOCATIONS AND TERMINAL CONNECTION REQUIREMENTS FOR DUST COLLECTION SYSTEM. ADJUST DUST COLLECTION DUCTWORK CONFIGURATION AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS AND EQUIPMENT MANUFACTURER'S REQUIREMENTS. FABRICATE AND INSTALL DUST COLLECTION SYSTEM TO ACCOMMODATE THE FOLLOWING SHOP EQUIPMENT SCHEDULE:
 - 1 CARBON ARC WELDING STATION, 400 CFM
 - 2 WELDING STATION, 400 CFM
 - 3 MIG STATION, 400 CFM
 - 4 PLASMA ARC CUTTER, 3200 CFM
 - 5 PEDESTAL GRINDER, 500 CFM/100CFM EACH CONNECTION
 - 6 DISC SANDER, 350 CFM
 - 7 WELDING EXTRACTION ARM, 400 CFM WALL MOUNTED EXTRACTION ARM (MODEL BASED ON AIRFLOW SYSTEMS - 4E02-WB-4) (TYP.2)
- 8 FIELD VERIFY ACTUAL PRECISION MANUFACTURING ROOM C134 EQUIPMENT LOCATIONS AND TERMINAL CONNECTION REQUIREMENTS FOR DUST COLLECTION SYSTEM. ADJUST DUST COLLECTION DUCTWORK CONFIGURATION AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS AND EQUIPMENT MANUFACTURER'S REQUIREMENTS. FABRICATE AND INSTALL DUST COLLECTION SYSTEM TO ACCOMMODATE THE FOLLOWING SHOP EQUIPMENT SCHEDULE:
 - 8 HORIZONTAL BAND SAW, 400 CFM
 - 9 PEDESTAL GRINDER, 450 CFM
 - 10 WELD STATION, 400 CFM (FUTURE)
 - 11 DISC SANDER, 350 CFM
 - 12 EXTRACTION ARM MOUNTED ON WALL (MODEL BASED ON AIRFLOW SYSTEMS - 6P02S) EXTRACTION ARM TO SERVE BOTH EOM MACHINE AND CYLINDRICAL GRINDER.
- 9 IN DUCT FIRE SUPPRESSION ASSEMBLY. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION. COORDINATE WITH SPRINKLER CONTRACTOR AND CONNECT INTO SPRINKLER SYSTEM AS REQUIRED.
- 10 IN DUCT SPARK DETECTION ASSEMBLY. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- 11 INTERLOCK PRECISION MGT. AUTOMATIC CONTROL RETURN DAMPER TO EF-C134(FURNACE HOOD EXHAUST) AND DC-134a DAMPER SHALL BE LOW LEAKAGE W/ AFMS/SIMILAR TO RUSKIN MODEL EAMS-060).
- 12 PROVIDE INLINE SPARK TRAP. MODEL BASED ON NORDFAB. INSTALL SPARK TRAP PER MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES.

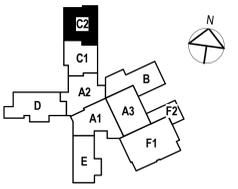


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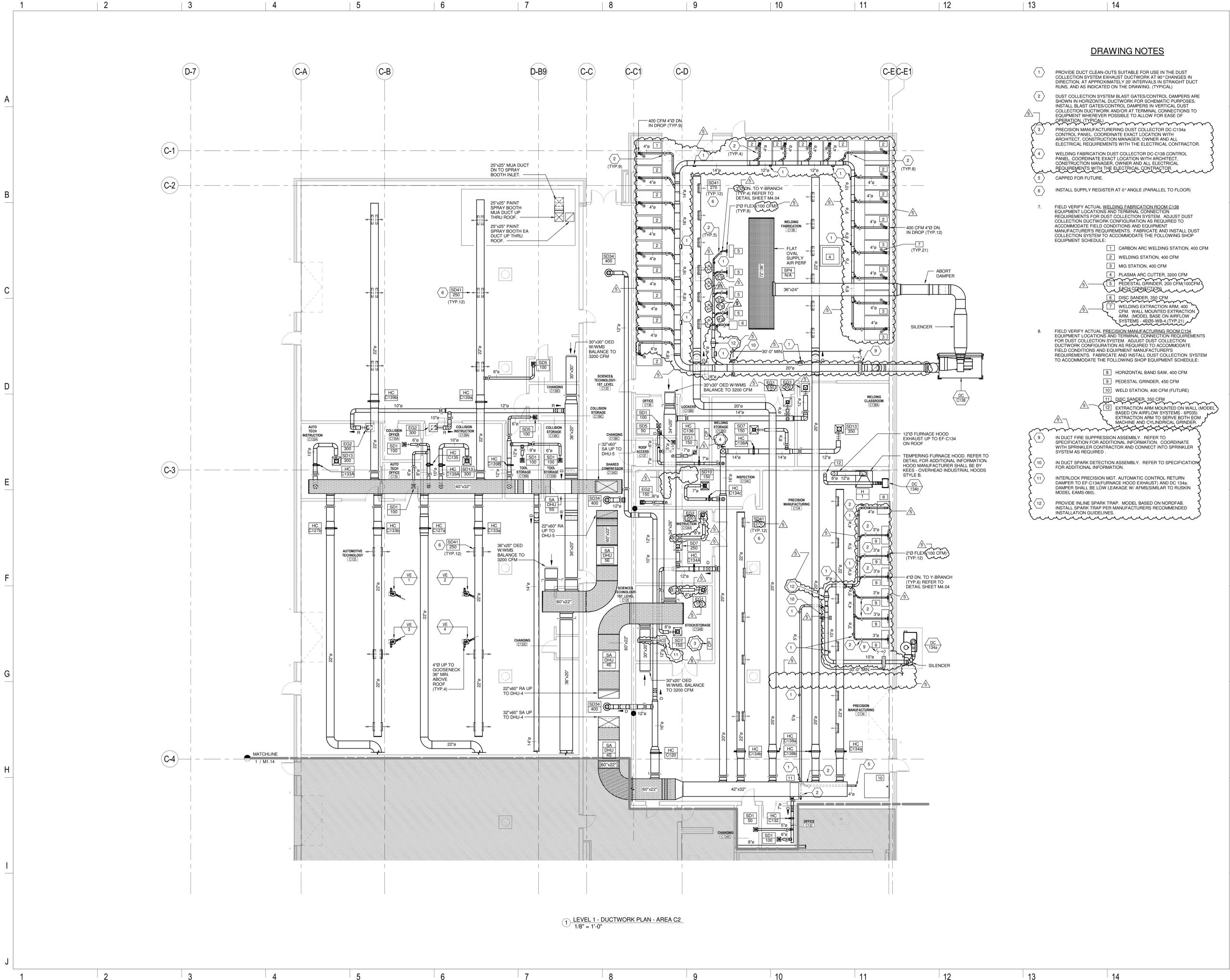


CONTENT:
FIRST FLOOR - DUCTWORK PLAN - AREA C2

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.
DRAWN BY: S. DANBY
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

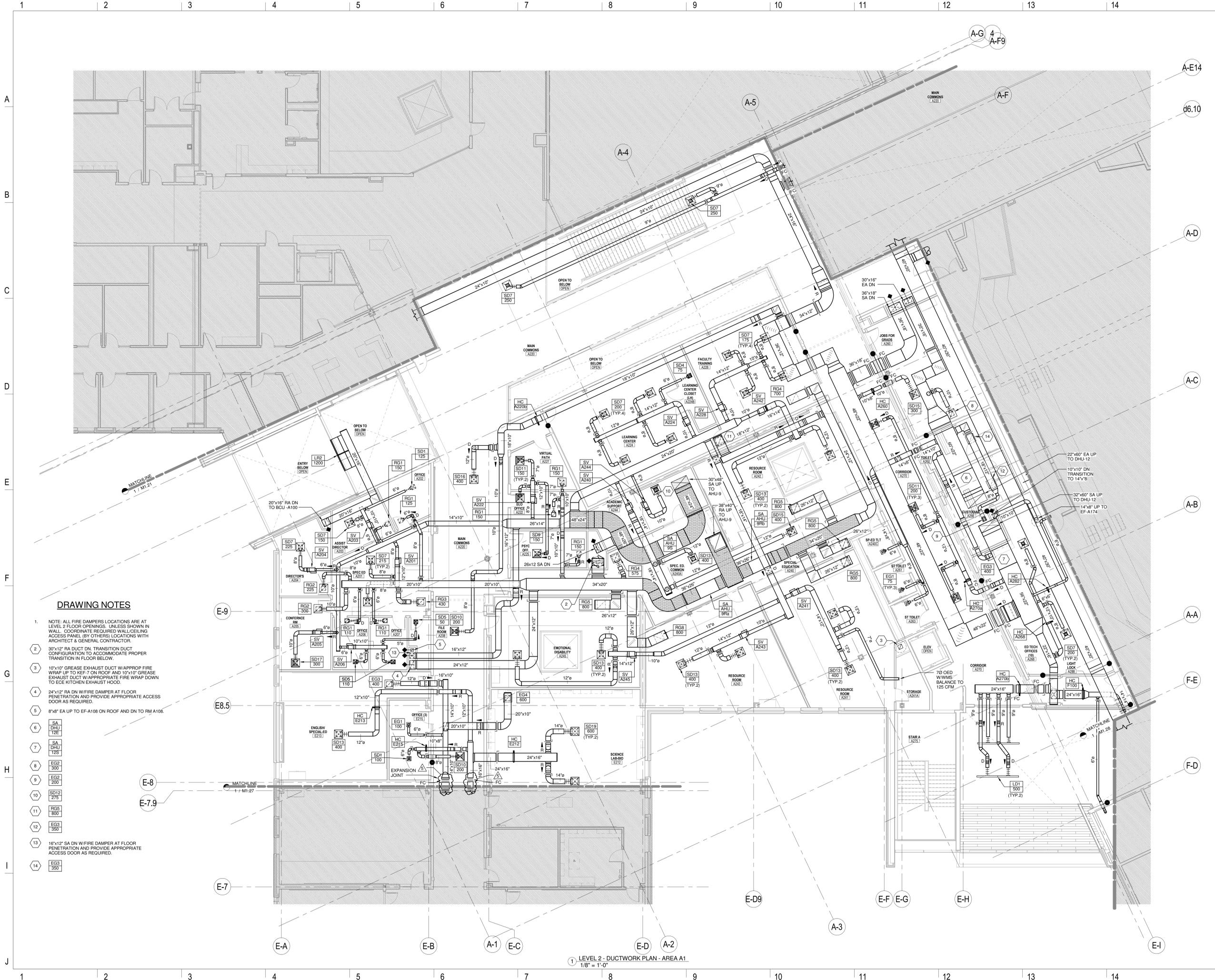
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LEVEL 1 - DUCTWORK PLAN - AREA C2
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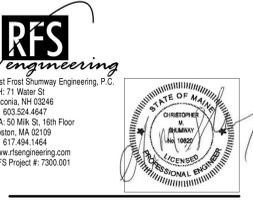


DRAWING NOTES

1. NOTE: ALL FIRE DAMPERS LOCATIONS ARE AT LEVEL 2 FLOOR OPENINGS. UNLESS SHOWN IN WALL, COORDINATE REQUIRED WALL/CEILING ACCESS PANEL (BY OTHERS) LOCATIONS WITH ARCHITECT & GENERAL CONTRACTOR.
2. 30"x12" RA DUCT DN, TRANSITION DUCT CONFIGURATION TO ACCOMMODATE PROPER TRANSITION IN FLOOR BELOW.
3. 10"x10" GREASE EXHAUST DUCT W/APPROP FIRE WRAP UP TO REF-7 ON ROOF AND 10"x10" GREASE EXHAUST DUCT W/APPROPRIATE FIRE WRAP DOWN TO ECE KITCHEN EXHAUST HOOD.
4. 24"x12" RA DN W/FIRE DAMPER AT FLOOR PENETRATION AND PROVIDE APPROPRIATE ACCESS DOOR AS REQUIRED.
5. 8"x8" EA UP TO EF-A108 ON ROOF AND DN TO RM A108.
6. SA DHU 12E
7. SA DHU 12S
8. EG2 300
9. EG2 200
10. SD12 275
11. RG5 800
12. EG3 350
13. 16"x12" SA DN W/FIRE DAMPER AT FLOOR PENETRATION AND PROVIDE APPROPRIATE ACCESS DOOR AS REQUIRED.
14. EG3 350

1 LEVEL 2 - DUCTWORK PLAN - AREA A1
1/8" = 1'-0"

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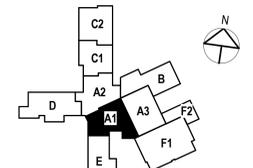


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CONTENT:
SECOND FLOOR - DUCTWORK PLAN - AREA
A1

DRAWN BY: S. DANBY
PROJECT NO: 12-067-00
DATE: 02/11/2016
REVISED:
SCALE: 1/8" = 1'-0"

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DRAWING NOTES:

1. NOTE: ALL FIRE DAMPERS LOCATIONS ARE AT LEVEL 2 FLOOR OPENINGS, UNLESS SHOWN IN WALL. COORDINATE REQUIRED WALL/CEILING ACCESS PANEL (BY OTHERS) LOCATIONS WITH ARCHITECT & GENERAL CONTRACTOR.
2. 48"x18" SA DUCT UP TO DHU-6A & 40"x18" SA DN TO LEVEL 1 WITH SOUND ATTENUATOR IN RISER.
3. 14"x14" GREASE DUCT DN TO FACS CULINARY LAB.
4. RG1 100
5. MOUNT EF-202A ABOVE CEILING.
6. CONNECT DUCT TO AC UNIT INTAKE CONNECTION. BALANCE TO 30 CFM.
7. 24"x12" EA DUCT DN WITH SOUND ATTENUATOR IN RISER.
8. PROVIDE VINYL SOUND LAGGING AROUND ALL DUCTWORK TO EXTENT SHOWN & UP TO AHU CONNECTION. REFER TO DUCTWORK INSULATION SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. 12"x24" EA UP TO DHU-6A ON ROOF.
10. SENSOR CONTROL TO EF-D220 ON ROOF.
11. 10"x10" UP TO EF-D220 ON ROOF.
12. 24"x10" DOWN FROM SMOKE EXHAUST FAN ON ROOF. CONNECT 24"x10" DUCT TO 24"W x96"L x 14"H PLENUM OVER TOP OF ARCHITECTURAL EGG CRATE IN CEILING TILE. COORDINATE EXACT LOCATION OF 24"x10" DUCTWORK DROP & CONNECTION TO PLENUM WITH STEEL & EGG CRATE LOCATIONS. PAINT INSIDE OF PLENUM FLAT BLACK. FULLY HANG/ SUPPORTS PLENUMS FROM STRUCTURE ABOVE.
13. 18"x10" DOWN FROM SMOKE EXHAUST FAN ON ROOF. CONNECT 18"x10" DUCT TO 24"W x96"L x 14"H PLENUM OVER TOP OF ARCHITECTURAL EGG CRATE IN CEILING TILE. CAREFULLY COORDINATE PLACEMENT OF PLENUMS OVER TOP OF EGG CRATE TILES IN THIS AREA TO ACCOMMODATE OTHER DUCTWORK SYSTEMS IN THIS AREA ASSOCIATE WITH AHU-7. COORDINATE EXACT LOCATION OF 18"x10" DUCTWORK DROP & CONNECTION TO PLENUM WITH ROOF STEEL & EGG CRATE CEILING TILE. PAINT INSIDE OF PLENUM FLAT BLACK. FULLY HANG/ SUPPORT PLENUMS FROM STRUCTURE ABOVE.



1 SECOND FLOOR - DUCTWORK PLAN - AREA A2
1/8" = 1'-0"

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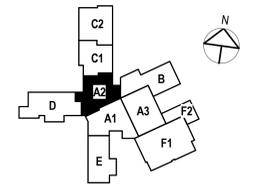
RFS Engineering
 Riel Frost Shumway Engineering, P.C.
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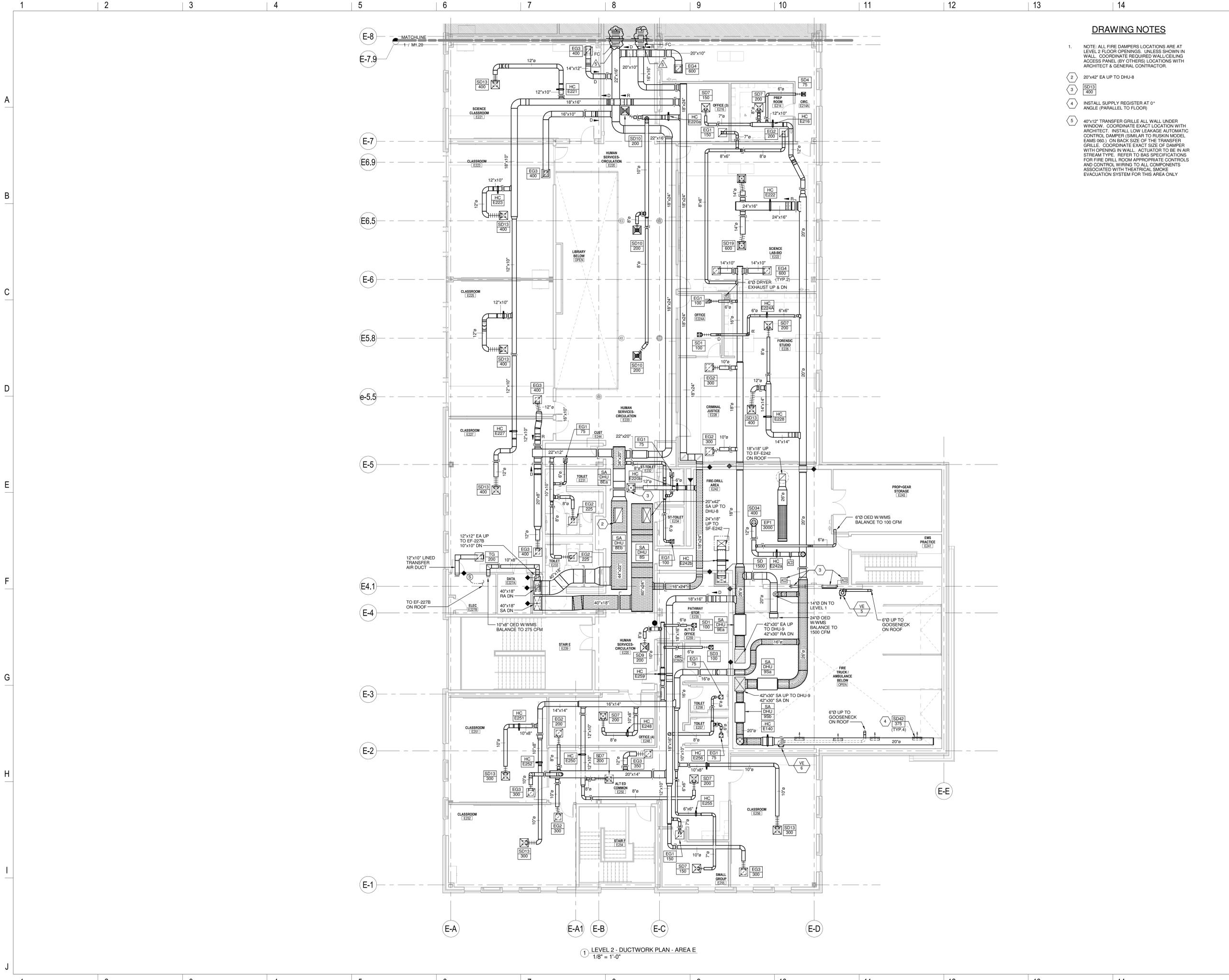
CONTENT:
SECOND FLOOR - DUCTWORK PLAN - AREA A2

DRAWN BY: S. DANBY
 PROJECT NO: 12-067-00
 DATE: 02/11/2016
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M1.21

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DRAWING NOTES

- NOTE: ALL FIRE DAMPERS LOCATIONS ARE AT LEVEL 2 FLOOR OPENINGS. UNLESS SHOWN IN WALL. COORDINATE REQUIRED WALL/CEILING ACCESS PANEL (BY OTHERS) LOCATIONS WITH ARCHITECT & GENERAL CONTRACTOR.
- 20"x42" EA UP TO DHU-8
- SD13 400
- INSTALL SUPPLY REGISTER AT 0° ANGLE (PARALLEL TO FLOOR)
- 40"x12" TRANSFER GRILLE ALL WALL UNDER WINDOW. COORDINATE EXACT LOCATION WITH ARCHITECT. INSTALL LOW LEAKAGE AUTOMATIC CONTROL DAMPER (SIMILAR TO RUSKIN MODEL EAMS 096.) ON BACK SIDE OF THE TRANSFER GRILLE. COORDINATE EXACT SIZE OF DAMPER WITH OPENING IN WALL. ACTUATOR TO BE IN AIR STREAM TYPE. REFER TO BAS SPECIFICATIONS FOR FIRE DRILL ROOM APPROPRIATE CONTROLS AND CONTROL WIRING TO ALL COMPONENTS ASSOCIATED WITH THEATRICAL SMOKE EVACUATION SYSTEM FOR THIS AREA ONLY

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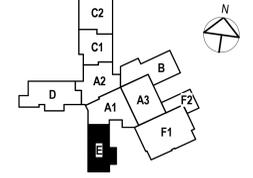
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CONTENT:
 SECOND FLOOR - DUCTWORK PLAN - AREA E

FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

DRAWN BY: S. DANBY
 PROJECT NO: 12-067-00
 DATE: 02/11/2016
 REVISED:
 SCALE: 1/8" = 1'-0"

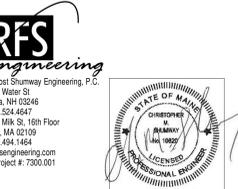
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1 LEVEL 2 - DUCTWORK PLAN - AREA E
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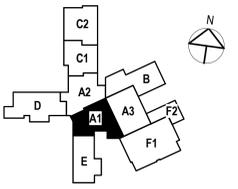


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CONTENT:
FIRST FLOOR - PIPING PLAN - AREA A1

DRAWN BY:	D. Elliott
PROJECT NO.:	12-067-00
DATE:	02/11/2016
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SCALE:	1/8" = 1'-0"

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1 LEVEL 1 - PIPING PLAN - AREA A1
1/8" = 1'-0"

- DRAWING NOTES**
1. PROVIDE THERMAL EXPANSION COMPENSATION (ANCHORS, GUIDES AND EXPANSION LOOPS WHERE REQUIRED. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
 2. ALL RUN-OUT HEATING HOT WATER PIPING TO MORE THAN 2 HEATING TERMINAL DEVICES SHALL HAVE ISOLATION VALVES ON BOTH SUPPLY AND RETURN AND A BALANCE VALVE ON THE RETURN SIDE.
 3. PROVIDE CO2 SENSORS IN ALL SPACES ASSOCIATED WITH MEETING ROOMS, CONFERENCE ROOMS, DINING SPACES, LIBRARY SPACES, ALL GYMS AND AUDITORIUM.
 4. REFER TO DUCTWORK DRAWINGS FOR SENSORS AND/OR THERMOSTATS NOT ASSOCIATED WITH HYDRONIC TERMINAL DEVICES.

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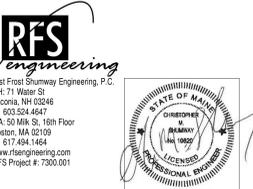


1 LEVEL 2 - PIPING PLAN - AREA A1
1/8" = 1'-0"

DRAWING NOTES

1. PROVIDE THERMAL EXPANSION COMPENSATION (ANCHORS, GUIDES AND EXPANSION LOOPS WHERE REQUIRED. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
2. ALL RUN-OUT HEATING HOT WATER PIPING TO MORE THAN 2 HEATING TERMINAL DEVICES SHALL HAVE ISOLATION VALVES ON BOTH SUPPLY AND RETURN AND A BALANCE VALVE ON THE RETURN SIDE.
3. PROVIDE CO2 SENSORS IN ALL SPACES ASSOCIATED WITH MEETING ROOMS, CONFERENCE ROOMS, DINING SPACES, LIBRARY SPACES, ALL GYMS AND AUDITORIUM.
4. REFER TO DUCTWORK DRAWINGS FOR SENSORS AND/OR THERMOSTATS NOT ASSOCIATED WITH HYDRONIC TERMINAL DEVICES.

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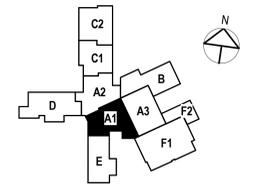


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5	ADDENDUM #5	2016-03-17



CONTENT:
SECOND FLOOR - PIPING PLAN - AREA A1

DRAWN BY:	D. Elliot
PROJECT NO.:	12-067-00
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REVISED:	
SCALE:	1/8" = 1'-0"

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MECHANICAL CABINET UNIT HEATER SCHEDULE - CUH. Table with columns: TAG, NUMBER, LOCATION, SERVES, CFM, EAT (F), MBH, GPM, WAX PD (FT WC), EWT (F), LWT (F), HEAT COIL KW, AMPS, VOLT, PH, WATTS, VOLT, PH, REMARKS.

- 1. SELECTION BASED ON VULCAN.
2. PROVIDE MANUAL RESET TOGGLE SWITCH STARTER W/ THERMAL OVERLOAD.
3. PROVIDE LIMITED ACCESS FASTENERS.
4. PROVIDE MANUFACTURERS WALL SEAL FOR RECESSED MOUNTING.
5. PROVIDE HIGH CAPACITY 2-ROW COIL.

MECHANICAL PROPELLER UNIT HEATER SCHEDULE - PUH. Table with columns: TAG, NUMBER, LOCATION, SERVES, TOTAL (CFM), EAT (F), MHT HGT (MAX), THROW (MAX), MBH, GPM, PD (FT WC), EWT (F), LWT (F), HP, VOLT, PHASE, REMARKS.

- 1. SELECTION BASED ON VULCAN.
2. PROVIDE MANUAL RESET TOGGLE SWITCH STARTER W/ THERMAL OVERLOAD.

MECHANICAL BLOWER COIL UNIT SCHEDULE - BCU. Table with columns: TAG, NUMBER, LOCATION, SERVES, TOTAL AIRFLOW (CFM), ESP IN WG, EAT (F), EWT (F), LWT (F), MBH, GPM, MAX PD (FT WC), HP (WATTS), VOLT, PHASE, REMARKS.

- 1. SELECTION BASED ON GREENECK.
2. PROVIDE INTEGRAL 'MINI ORANGE' CONDENSATE REMOVAL PUMP BY ASPEN PUMP.
3. PROVIDE DRAIN PAN OVERFLOW DETECTION THAT IS INTERLOCKED TO SHUT DOWN INDOOR AC UNIT UPON SENSING A FULL DRAIN PAN.

VRF OUTDOOR UNIT SCHEDULE - ACC. Table with columns: TAG, NUMBER, LOCATION, SERVES, AMBIENT AIR TEMP (F), REFRIGERANT TYPE, NOMINAL CAPACITY (Tons), NOMINAL HEATING CAPAC. (MBH), MCA, MOP, VOLT, PH, REMARKS.

VRF INDOOR FAN COIL UNIT SCHEDULE - AC. Table with columns: TAG, NUMBER, LOCATION, INLET SIZE, AIR FLOW (CFM), APD (W.G.), NOISE CRITERIA (NC), PIPING CONFIG., INDOOR AIR TEMP DB/WB (F), EAT (F), EWT (F), LWT (F), MBH, GPM, HP (WATTS), VOLT, PHASE, RATED AMPS, MOP, REMARKS.

MECHANICAL BLOWER COIL UNIT SCHEDULE - BCU. Table with columns: TAG, NUMBER, LOCATION, SERVES, TOTAL AIRFLOW (CFM), ESP IN WG, EAT (F), EWT (F), LWT (F), MBH, GPM, MAX PD (FT WC), HP (WATTS), VOLT, PHASE, REMARKS.

- 1. SELECTION BASED ON TRANE.

MECHANICAL VEHICLE EXHAUST SCHEDULE - VE. Table with columns: TAG, NUMBER, SERVES, LOCATION, CFM, DIA., LENGTH, HOSE, RETRACTION TYPE, HP, VOLT, PH, REMARKS.

- 1. SELECTION BASED ON MONOVENT.

MECHANICAL DUST COLLECTOR SCHEDULE - DC. Table with columns: TAG, NUMBER, SERVES, LOCATION, CEM, SP IN WC, FAN TYPE, DRIVE TYPE, HP, VOLT, PH, REMARKS.

- 1. SELECTION BASED ON AIRFLOW SYSTEMS.
2. SELECTION BASED ON AIRFLOW SYSTEMS.
3. WITH CARTRIDGE FILTERS, QUICK CAM CLAMPING SYSTEM, AUTOMATIC PULSE CLEANING SYSTEM, SURGE AIR TANK AND PHOTOELECTRIC GAUGE.
4. WITH BAG FILTERS AND AUTO SHAKING CLEANING SYSTEM.
5. WITH FRONT ACCESS DOORS, HOPPER, INLET TARGET PLATE, STAND, 50 GALLON DRUM KIT.
6. WITH SERVICE PLATFORM, LADDER, CAGE AND MATCHING FINISH PAINT.
7. WITH ROTARY AIRLOCK FOR COLLECTOR DISCHARGE AND MATCHING FINISH PAINT.
8. WITH FIRE KIT INCLUDING THERMAL PROBE AND FIRE (PROVISIONS ONLY FOR FUTURE).
9. WITH FRONT ACCESS DOORS, EXPLOSION RELIEF DOORS PER NFPA 68 AND MATCHING FINISH PAINT.
10. WITH SILENCER, BLOWBACK DAMPER, HIGH SPEED ADOPT DAMPER AND MATCHING FINISH PAINT.
11. WITH HANSENER MODEL AN104 SPARK DETECTION AND SUPPRESSION SYSTEM.
12. FAN TO INCLUDE TFFC MOTOR WITH WEATHERPROOF COVER, BELTS, OSHA GUARD, BASE SUPPORT AND MATCHING FINISH PAINT.
13. WITH NEMA 12 CONTROL PANEL FOR REMOTE MOUNTING INDOORS. INCLUDING SINGLE POINT POWER CONNECTION WITH ROTARY DISCONNECT SWITCH, MAGNETIC MOTOR STARTERS WITH SOFT START, THERMAL OVERLOADS, FUSES, STEPDOWN TRANSFORMER, ILLUMINATED ON/OFF BUTTONS, 3-POSITION SELECTOR SWITCH, AUXILIARY RELAYS, TIMERS AND CONTROLLER FOR PROGRAMMABLE MAGNEHELIC GAUGE AND FINISH PAINT.
14. WITH CARTRIDGE FILTERS, QUICK CAM CLAMPING SYSTEM AND AUTOMATIC PULSE CLEANING SYSTEM.
15. WITH SHORT HOPPER, STAND, CONNECTING HOSE WITH LID AND 20 GALLON PAIL, MAGNEHELIC GAUGE AND FINISH PAINT.
16. WITH 2-INCH IMPINGEMENT FILTER, 2-INCH ALUMINUM MESH FILTER, 85% MAIN FILTER AND MAGNEHELIC GAUGE.
17. WITH WALL MOUNTED HANGING BRACKETS, 3-INCH DEEP WELDED OIL SUMP, SIDE ACCESS DOOR, SILENCER AND FINISH PAINT.
18. WITH SINGLE POINT POWER CONNECTION, DISCONNECT SWITCH, MOTOR STARTER AND ON/OFF SWITCH.

MECHANICAL AIR FILTER FAN SCHEDULE - AFF. Table with columns: TAG, NUMBER, SERVES, LOCATION, CFM, DRIVE TYPE, PRE FILTERS, FILTER DATA, MAIN FILTERS, HP, VOLT, PH, REMARKS.

- 1. SELECTION BASED ON AIRFLOW SYSTEMS.
2. WITH DIRTY FILTER PRESSURE GAUGE KIT AND SILENCER.
3. WITH 2 SPEED MOTOR.

MECHANICAL FAN SCHEDULE - EF, KEF, DEF, CEF, SF. Table with columns: TAG, NUMBER, SERVES, LOCATION, CFM, ESP IN WC, FAN TYPE, DRIVE TYPE, RPM, HP, VOLT, PH, REMARKS.

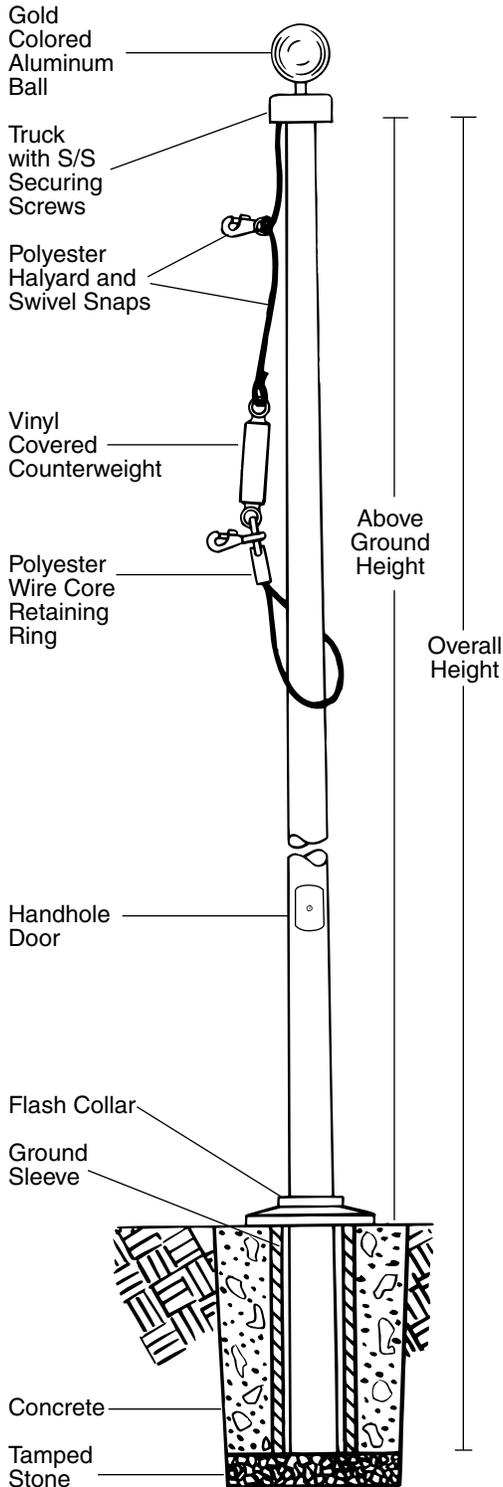
- 1. SELECTION BASED ON GREENECK.
2. MOTOR - VARI-GREEN EFC MOTOR W/MOUNTED POTENTIOMETER DIAL.
3. SWITCH - NEMA-1 TOGGLE SHIPPED WITH UNIT.
4. JUNCTION BOX MOUNTED AND WIRING.
5. ROOF CURB-GALV., GPI-30-G18, UNDER SIZED 1.5 IN. TOTAL CURB SILENT (ATTACHED).
6. DAMPER SHIPPED LOOSE, GRAVITY OPERATED, NOT COATED.
7. BIRDSCREEN- ALUMINUM.
8. TIE DOWN POINTS - SET OF 4 (ATTACHED), STANDARD FASTENERS.
9. SPARK & OSTRUCTION.
10. PAINTED STEEL HOUSING MATERIAL.
11. ALUMINUM WHEEL CONSTRUCTION, MILL FINISH.
12. ALUMINUM INLET CONE, MILL FINISH.
13. UL/CUL 705 LISTED - "POWER VENTILATORS".
14. ISOLATORS (OTY-4), RUBBER MOUNT FOR INDOOR/OUTDOOR USE, SINGLE DEFLECTION IN 25 IN.
15. EQUIPMENT SUPPORTS (QTY-2), GESS-35-4 G.
16. WEATHERHOOD.
17. COATED W/ PERMACTECTOR, CONCRETE GRAY-RAL 7023, STANDARD COATING ON ENTIRE FAN.
18. HINGED ACCESS DOOR.
19. THROUGH PIPE RAIN CONNECTION 1 IN. DIAMETER.
20. COMPANION FLANGE - INLET (INCLUDES INLET FLANGE).
21. OUTLET GUARD - PUNCHED.
22. OUTLET GUARD.
23. SHAFT SEAL W/RUB RING.
24. NEMA PREMIUM EFFICIENT MOTOR - MEETS NEMA TABLE 12-12.
25. MOTOR VFD RATED WITHOUT SHUNT GROUNDING PROTECTION.
26. AUTOMATIC BELT TENSIONER.
27. GRIP NOTCH BELTS.
28. SPARE BELT(S) - 2 SETS (ATTACHED).
29. UL/CUL 762 LISTED - "POWER VENTILATORS FOR REST. EXH. APPLIANCES".
30. SWITCH, NEMA-1 TOGGLE, SHIPPED WITH UNIT.
31. JUNCTION BOX MOUNTED & WIRING.
32. ROOF CURB-GALV., GPF-40-G24, UNDER SIZED 1.25 IN. TOTAL.
33. COATED WITH PERMACTECTOR, CONCRETE GRAY-RAL 7023, FAN AND ATTACHED ACCESSORIES.
34. WITH MINIMUM 1/2" AIR GAP.
35. MOTOR WITH CLASS B INSULATION.
36. WIND MONITORING SYSTEM, CURRENT SENSOR PACKAGE, 100 - 240 VAC, SHIPS LOOSE.
37. DIRECT MOUNT ISOLATORS, ISOLATOR SPRING, FREE STANDING, 1 INCH. BASE COATING - N/A.
38. HOUSINGS - WELDED SCROLL.
39. ACCESS DOOR - HINGED.
40. DRAIN CONNECTION - 1" PIPE THREAD W/PLUG.
41. SURE AIRE FLOW STATION (WITH ELECTRONICS), 100-240VAC.
42. INLET CONNECTION - PUNCHED WITH COMPANION FLANGE.
43. INLET CONNECTION - OUTLET FLANGE, PUNCHED.
44. MOTOR COVER, STEEL.
45. OUTLET GUARD - OUTLET GUARD, STEEL, COATED W/SAFETY YELLOW FINISH.
46. INLET GUARD - INLET GUARD, GALVANIZED.
47. UL LISTED FOR SMOKE EXHAUST (500F/4HR, 1000F/15 MIN).
48. DAMPER, OUTLET VOLUME, HCD-230, GALV. BLADE, OPPOSED, MANUAL QUADRANT, W/ MILL FINISH.
49. EXTENDED LUBE LINES - COPPER.
50. WEATHERHOOD - STEEL.
51. HEAT SILENCER.
52. SWITCH - NEMA-1 TOGGLE, FOR INDOOR USE ONLY, SHIP SEPARATE.
53. BEARINGS - L10 LIFE OF 80K HOURS.
54. HOUSING - PERMALOCK.
55. SURE AIRE FLOW STATION (WITH ELECTRONICS), 100F/4HR, 1000F/15 MIN).
56. DAMPER, OUTLET VOLUME, HCD-230, GALV. BLADE, OPPOSED, MANUAL QUADRANT, W/ MILL FINISH.
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292. SWITCH - NEMA-1 TOGGLE, FOR INDOOR USE ONLY, SHIP SEPARATE.
293. BEARINGS - L10 LIFE OF 80K HOURS.
294. HOUSING - PERMALOCK.
295. SURE AIRE FLOW STATION (WITH ELECTRONICS), 100F/4HR, 1000F/15 MIN).
296. DAMPER, OUTLET VOLUME, HCD-230, GALV. BLADE, OPPOSED, MANUAL QUADRANT, W/ MILL FINISH.
297. EXTENDED LUBE LINES - COPPER.
298. WEATHERHOOD - STEEL.
299. HEAT SILENCER.
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453. BEARINGS - L10 LIFE OF 80K HOURS.
454. HOUSING - PERMALOCK.
455. SURE AIRE FLOW STATION (WITH ELECTRONICS), 100F/4HR, 1000F/15 MIN).
456. DAMPER, OUTLET VOLUME, HCD-230, GALV. BLADE, OPPOSED, MANUAL QUADRANT,

GORHAM FLAG CENTER

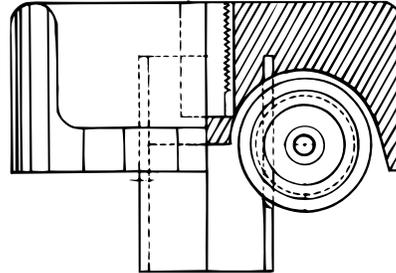
376 MAIN ST. GORHAM, ME 04038
TEL: 207-839-4675

WWW.GORHAMFLAG.COM
EMAIL: FLAGINFO@GORHAMFLAG.COM

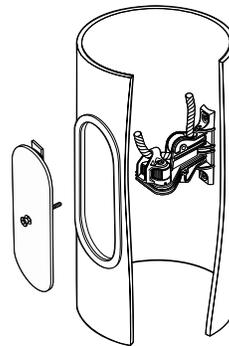
Fiberglass
Internal
Halyard
Flagpoles
20' - 40'



Fiberglass Stationary Internal Truck



Internal Cam Cleat and Handhole Door



Model Number	PLP 20 I	PLP 25 I	PLP 30 I	PLP 35 I	PLP 40 I*
Above Ground Height	20'	25'	30'	35'	39'
Overall Height	23'	28'	33'	39'	43'
Butt Diameter	5.75"	6"	6.75"	7"	7"
Top Diameter	3"	3"	3"	3"	3"
Pole Weight (lbs.)	36	59	77	115	115
Shipping Weight (lbs.)**	84	113	137	184	206
Ground Sleeve I.D.	8"	8"	8"	8"	8"
Ground Sleeve Length	3"	3'	3'	4'	4'
Ball Diameter	5"	5"	6"	6"	8"
Halyard	#10	#10	#10	#10	#10
Flash Collar	16"	16"	16"	16"	16"
Truck	F/G	F/G	F/G	F/G	F/G
Snaps	Brass Swivel				
Standard Flag	4x6	4x6	5x8	5x8	6x10

*This pole is equipped with a ground set extension which fits into the butt of the pole. The entire assembly then slides into the ground sleeve. Detailed instructions come with each pole.

**Shipping weight includes weight of packaging and fittings.

SPECIFICATIONS

Provide a Fiberglass Reinforced Plastic (FRP) Ground Set Flagpole Model # _____I as manufactured by PLP Composite Technologies, Inc., Fitzwilliam, NH 03447.

The flagpole shall have a mounting height of _____' and _____' below grade for an overall length of _____'.

The butt diameter shall be _____ inches and the top diameter _____ inches. The pole weight shall be approximately _____ lbs. with a total shipping weight of _____ lbs.

The flagpole shall be manufactured of fiberglass woven roving and polyester resin with 75% of the reinforcing fibers oriented in the axial plane for maximum stiffness and 25% in the radial plane for required hoop strength. Load calculations shall be based on AASHTO and NAAMM standards with the pole designed with a two to one safety factor for 125 m.p.h. winds, unflagged with a 1.3 gust factor.

The pole shall have an ENTASIS taper and shall be void of any vertical mold seams.

The pole shall be sanded smooth and coated with a high gloss Aliphatic Polyurea coating system based on Dual Cure chemistry, providing extended UV protection and weatherability.

The color of the flagpole shall be:

Standard white, bronze, black, or other, as specified _____. (Select one)

The flagpole shall be equipped with PLP standard fittings:

- A _____" gold anodized aluminum ball
- A single sheave internal fiberglass stationary truck with stainless steel securing screws
- #10 polyester halyard
- Polyester wire core retaining ring
- Vinyl covered counterweight
- Stainless steel and nylon internal cam cleat
- Handhole door with cylinder cam lock
- Brass swivel snaps with vinyl covers
- A 16" composite flash collar
- _____' x _____" composite ground sleeve

EXCEPTIONS: _____

PROJECT: _____

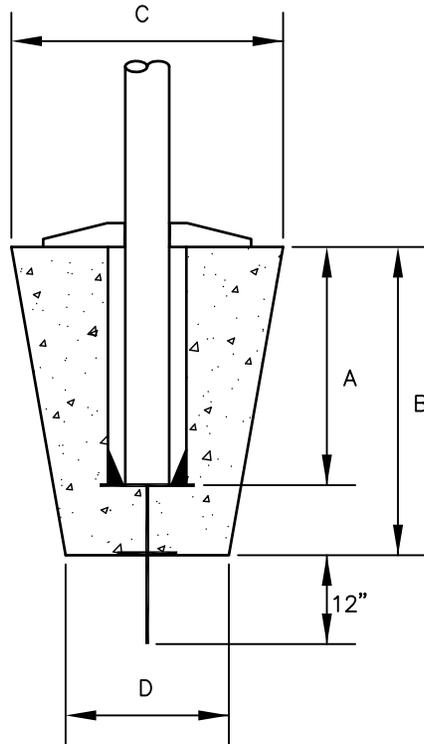
LOCATION: _____

DATE: _____

Gorham Flag Center

376 Main St. • Gorham, ME 04028 • Tel: 207-839-4675 • Fax: 207-839-3952

www.gorhamflag.com Email: flaginfo@gorhamflag.com



GROUNDSET FOUNDATION:

EXPOSED HEIGHT	A	B	C	D
35'-0"	3'-6"	4'-0"	36"	30"

GROUNDSET: OUT STANDARD FOUNDATION METHOD OFFERS THE MOST SUPPORT AND IS THE MOST ECONOMICAL FOUNDATION CHOICE.

1. FOUNDATION SIZE WILL VARY WITH SOIL CONDITIONS.
2. SUGGESTED DIMENSIONS.
3. "B" AND "C" DIMENSIONS BASED ON NAAMM RECOMMENDATION FOR GOOD, FIRM, DRY SOIL ONLY. METAL FLAGPOLE MANUAL (c. 1984).
4. HARDWOOD WEDGES MAY BE USED TO HELP ALIGN POLE.



WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd. Suite 1A South Portland, ME 04106 Tel. 207-200-2100
 250 Goddard Rd. Suite B Lewiston, ME 04240 Tel. 207-783-5656

FLAG POLE BASE DETAIL - ADDENDUM 5

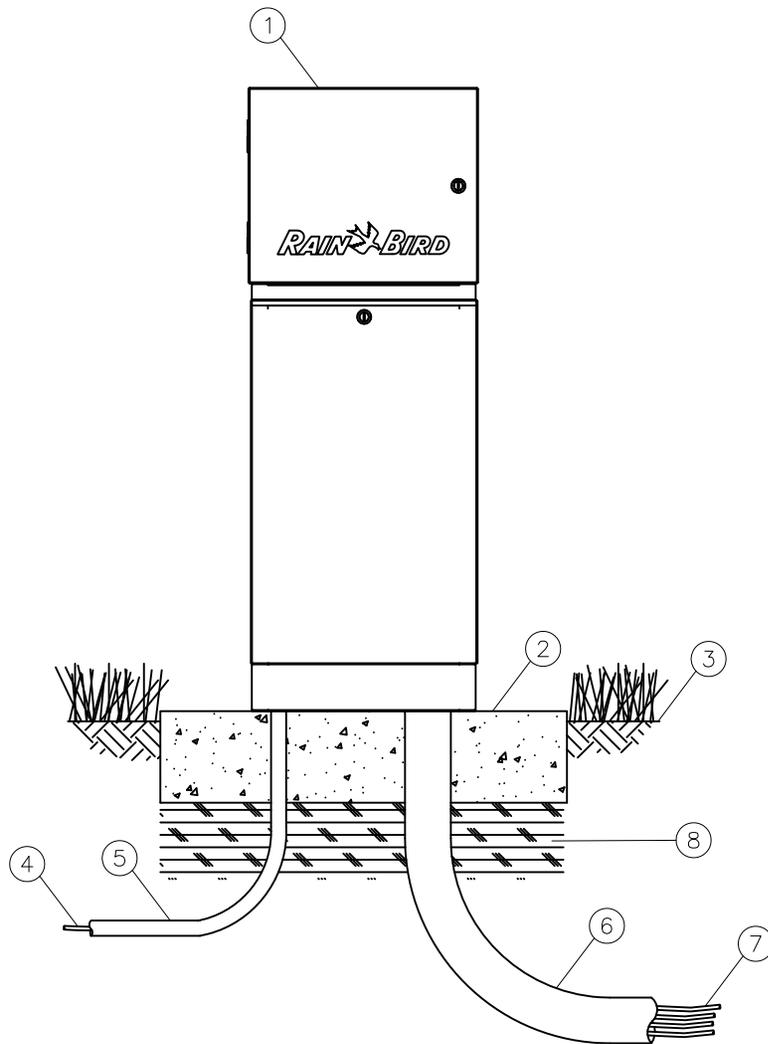
LOCATION:
 SANFORD HIGH SCHOOL & REGIONAL TECHNICAL CENTER
 ROUTE 109 & ROUTE 4, SANFORD, MAINE

FOR:
 SANFORD SCHOOL DEPARTMENT & STATE OF MAINE

SCALE: NTS

DATE: 03-17-16

SHEET:
 1 OF 1



- ① IRRIGATION CONTROLLER:
RAIN BIRD ESP-LXME CONTROLLER WITH LXMM
METAL CABINET AND LXMPED METAL PEDESTAL.
INSTALL CONTROLLER, CABINET AND PEDESTAL
PER MANUFACTURER'S RECOMMENDATIONS.
- ② CONCRETE PAD:
6-INCH MINIMUM THICKNESS
- ③ FINISH GRADE
- ④ POWER SUPPLY WIRE
- ⑤ 1-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP
ELL FOR POWER SUPPLY
- ⑥ 3-INCH SCH 40 PVC CONDUIT, FITTINGS AND SWEEP
ELL FOR STATION WIRES
- ⑦ WIRES TO REMOTE CONTROL VALVES
- ⑧ COMPACTED SUBGRADE

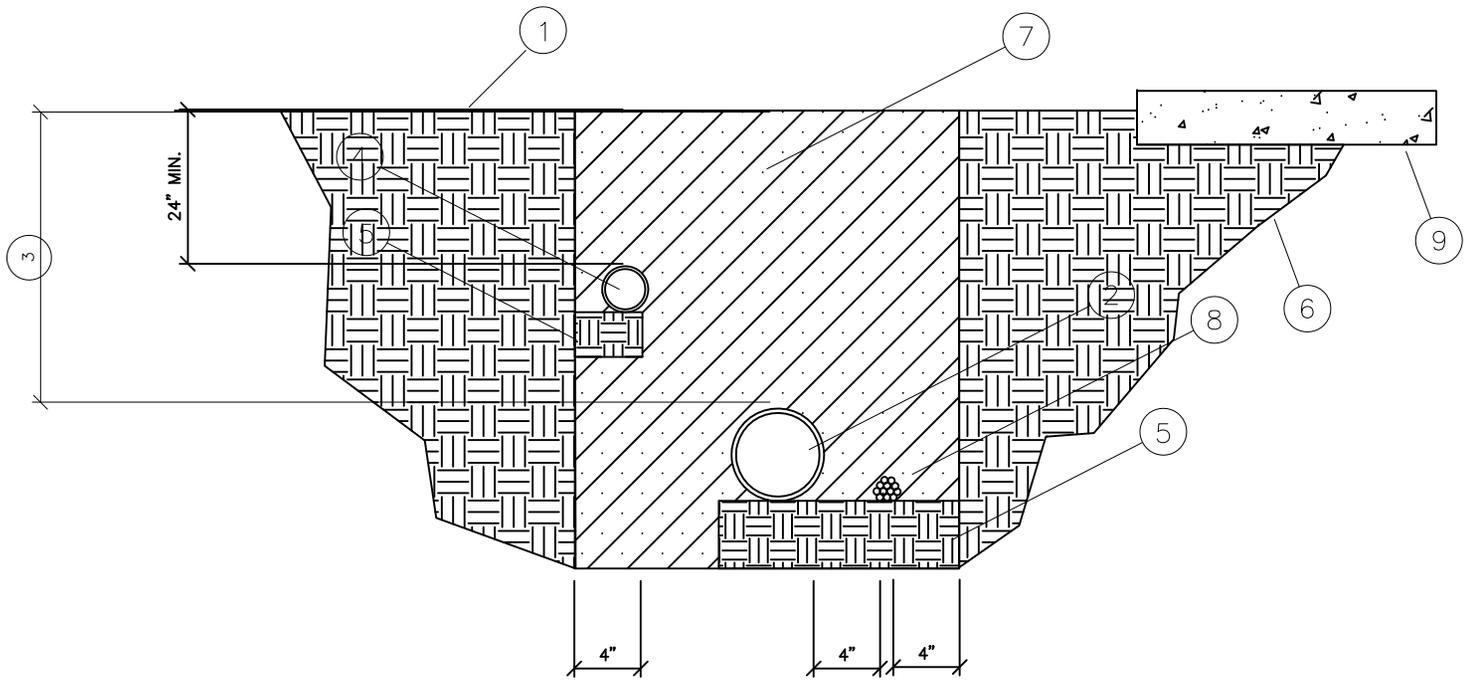
NOTES:

1. ESP-LXME CONTROLLER IS AVAILABLE IN 8- OR
12-STATION BASE MODELS. ADDITIONAL MODULES IN
4-, 8- AND 12-STATION VERSIONS MAY BE ADDED TO
BRING THE CONTROLLER UP TO 48 STATIONS MAXIMUM.
2. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH
MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT
THE BASE OF CONTROLLER AND TRANSITION LARGER
VALVE AND COMMON WIRES FROM FIELD TO 18 AWG
MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE
GROUND RESISTANCE OF 10 OHMS OR LESS.

C

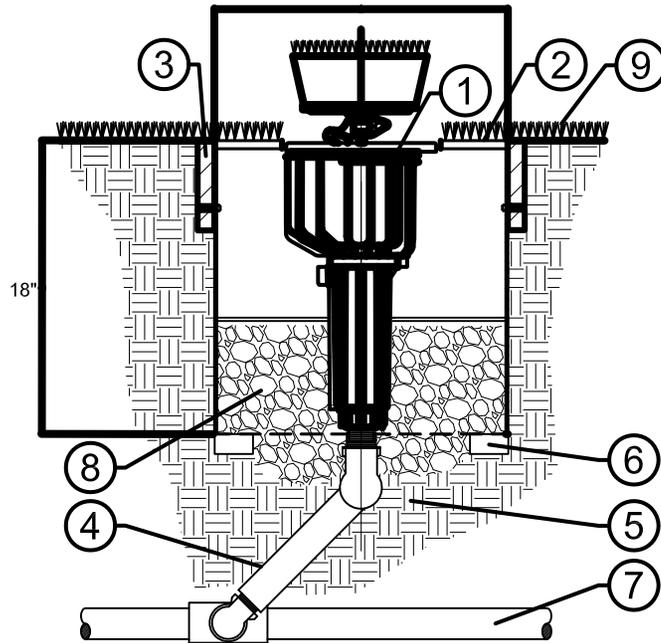
ESP-LXME CONTROLLER
N.T.S. IN METAL PEDESTAL

01-13-11

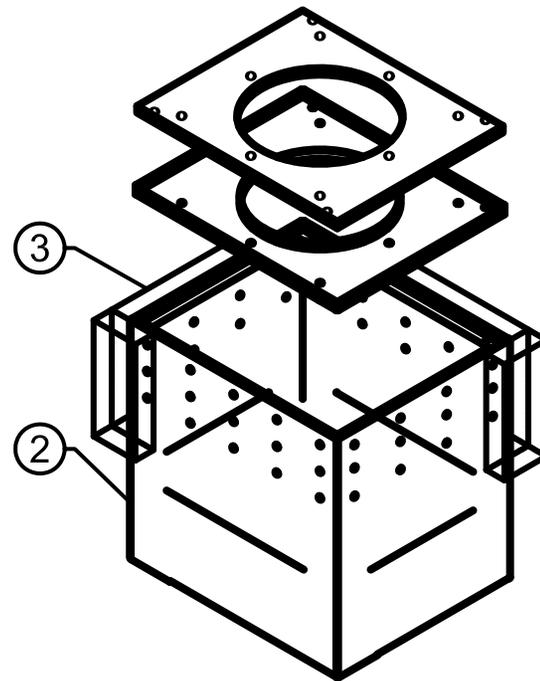


1. FINISH GRADE.
2. HDPE PRESSURE MAINLINE PIPING.
3. DEPTH OF MAINLINE PIPING @ 30" MINIMUM DEPTH, INCLUDING BELOW PAVEMENT.
4. HDPE NON-PRESSURE LATERAL PIPING.
5. PROVIDE 2" DEPTH OF CLEAN BACKFILL BELOW PIPING, TYPICAL.
6. NATIVE SOIL.
7. CLEAN COMPACTED BACKFILL.
8. CONTROL WIRES - BUNDLE AND TAPE EVERY 10' MINIMUM. INSTALL WIRING ADJACENT TO PRESSURE MAINLINE.
9. CURB, PAVING OR WALL, TYPICAL.

F TRENCHING/PIPE DEPTH DETAIL
 N.T.S.



SECTION ELEVATION:



CORNER ELEVATION:

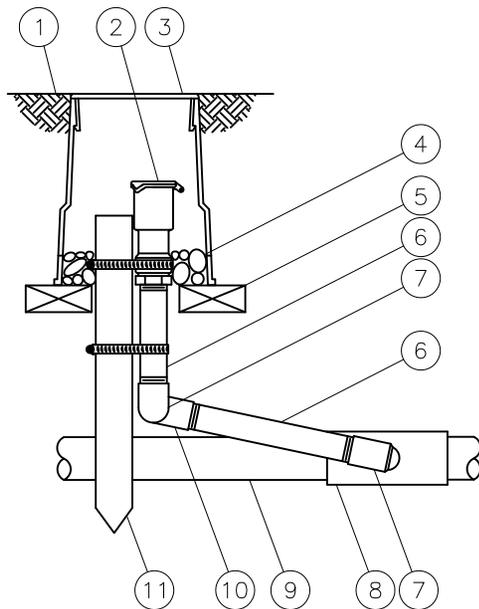
LEGEND:

- ① MIRAGE M-115 SERIES SPRINKLER - SEE SPRINKLER LEGEND FOR NOZZLE SIZE.
- ② MIRAGE STAINLESS STEEL VALVE BOX - MODEL # MSSB-125 W/ RECESSED STAINLESS STEEL LID AND 1/2" THICK HDPE INSERT FROM THE UNDERSIDE - 18"W X 15"L X 18"D - VALVE BOX HAS INTERNAL STAINLESS STEEL STABILIZER TO CENTER THE M-115 AND MAINTAIN VERTICALITY.
- ③ HDPE SIDE SUPPORTS - ADJUST FOR VARYING PILE HEIGHTS - SECURE TO ALL FOUR SIDES OF EACH VALVE BOX.
- ④ SWING JOINT ASSEMBLY - SCHEDULE 40 PVC - 1-1/2" X SPRINKLER INLET (MIPT OR MBSP) X 12-INCH LENGTH - MODEL #SJ-150B12.
- ⑤ COMPACTED SUB-BASE MATERIAL.
- ⑥ COMMON RED OR CONCRETE BRICK SUPPORT UNDER EACH CORNER OF BOX. TYPICAL.
- ⑦ HDPE IRRIGATION LATERAL LINE PIPING.
- ⑧ 3/4" WASHED GRAVEL BACKFILL - SET TO 6-INCHES BELOW BOX.
- ⑨ FINISH GRADE.

- NOTES: 1. IN GROUND ENCLOSURE TO WITHSTAND HEAVY TRAFFIC WITHOUT DEFLECTION.
 2. BOX BASE INCLUDES 2.5" RETURN FOR STABILITY WITHIN SOILS.
 3. ALL HARDWARE SHALL BE STAINLESS STEEL.

A

MIRAGE M-115 W/ PVC SWING JOINT - SYNTHETIC TURF



- ① FINISH GRADE/TOP OF MULCH
- ② QUICK-COUPLING VALVE:
RAIN BIRD MODEL 7
- ③ VALVE BOX WITH COVER:
RAIN BIRD VB-6RND
- ④ 3-INCH MINIMUM DEPTH OF
3/4-INCH WASHED GRAVEL
- ⑤ BRICK (1 OF 2)
- ⑥ PVC SCH 80 NIPPLE
(LENGTH AS REQUIRED)
- ⑦ SCH 40 STREET ELL
- ⑧ HDPE TEE OR ELL
- ⑨ HDPE MAINLINE PIPE
- ⑩ PVC SCH 40 ELL
- ⑪ 2" x 2" REDWOOD STAKE WITH
STAINLESS STEEL GEAR
CLAMPS OR EQUIVALENT
SUPPORT SYSTEM

NOTE:

FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO
NOMINAL QUICK COUPLING VALVE INLET SIZE.

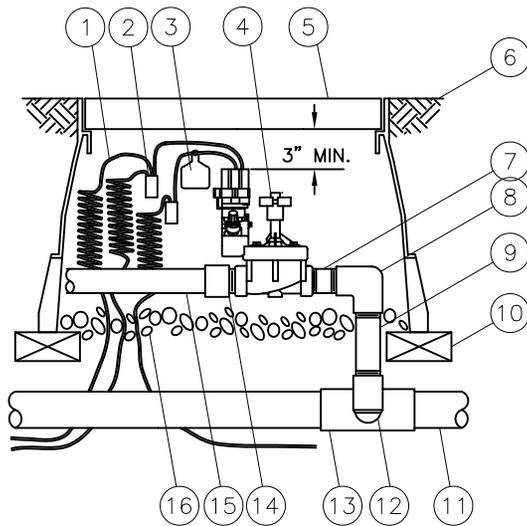


QUICK COUPLING VALVE

N.T.S.

MODEL 7

1-27-04



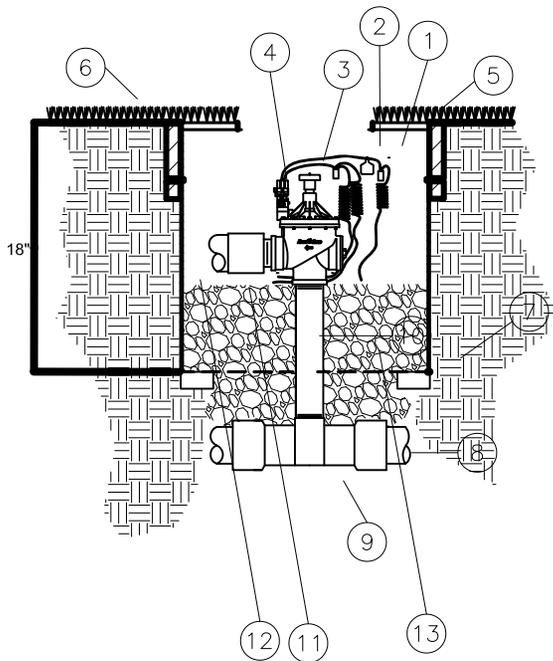
- ① 30-INCH LINEAR LENGTH OF WIRE, COILED
- ② WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
- ③ ID TAG: RAIN BIRD VID SERIES
- ④ REMOTE CONTROL VALVE: **RAIN BIRD PESB**
- ⑤ VALVE BOX WITH COVER: RAIN BIRD VB-STD
- ⑥ FINISH GRADE/TOP OF MULCH
- ⑦ PVC SCH 80 NIPPLE (CLOSE)
- ⑧ HDPE ELL
- ⑨ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑩ BRICK (1 OF 4)
- ⑪ HDPE MAINLINE PIPE
- ⑫ SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
- ⑬ HDPE TEE OR ELL
- ⑭ HDPE MALE ADAPTER
- ⑮ HDPE LATERAL PIPE
- ⑯ 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

E

ELECTRIC REMOTE-CONTROL VALVE - NATURAL TURF FIELD

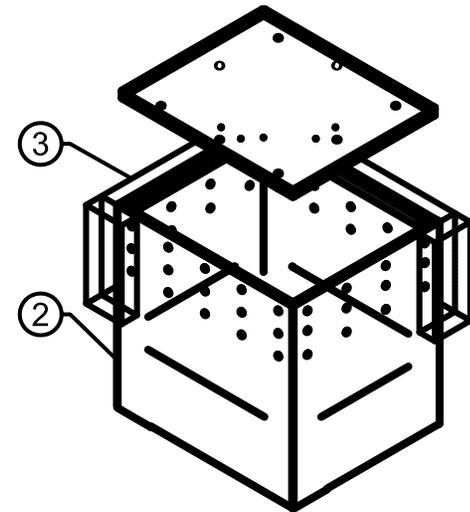
N.T.S.

1.5" RAINBIRD PEB SERIES



SECTION ELEVATION:

- ① 30-INCH LINEAR LENGTH OF WIRE, COILED
- ② WATERPROOF CONNECTION: RAIN BIRD SPLICE-1 (1 OF 2)
- ③ ID TAG: RAIN BIRD VID SERIES
- ④ REMOTE CONTROL VALVE: 3" RAIN BIRD 300-BPE
- ⑤ VALVE BOX WITH COVER: MIRAGE STAINLESS STEEL MODEL MSSB
- ⑥ SYNTHETIC TURF
- ⑦ BRICK (1 OF 4)
- ⑧ HDPE MAINLINE PIPE
- ⑨ HDPE SERVICE TEE
- ⑩ DUCTILE IRON NIPPLE (6-INCH LENGTH)
- ⑪ HDPE REDUCING MALE ADAPTER
- ⑫ HDPE LATERAL PIPE
- ⑬ 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL



CORNER ELEVATION:

B

ELECTRIC REMOTE-CONTROL VALVE - SYNTHETIC TURF FIELD

N.T.S.

3" 300BPE BOTTOM INLET

VISIBLE LIGHT

MANUFACTURERS' REPRESENTATIVE

March 14, 2016

Lance Whitehead, AIA
Lavallee Brensinger Architects
155 Dow Street, Suite 400
Manchester, NH 03101

Dear Lance,

Enclosed you will find my submission for prior approval on the lighting fixtures for the Sanford High School and Technical Center project. I have included a color coded version of the E4.01 Lighting Fixture Schedule to perhaps make it easier to view which lines I represent that are listed already. Green denotes fixture types that I represent (either first name listed or approved equivalent by), Yellow are types that I have included in this packet for prior approval, and Purple denotes a couple of "specialty" types that can be included as listed.

Thank you in advance for reviewing this submission, I can also provide you with an electronic, soft copy set if you prefer. Please do not hesitate to reach out with any questions you may have.

Best,

Stephen M. Barlock, LC



Vice President
Visible Light Incorporated

VISIBLE LIGHT

MANUFACTURERS' REPRESENTATIVE

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LIGHTING FIXTURE SCHEDULE

Table with columns: TYPE, DESCRIPTION, MANUFACTURER, QTY, LUMENS, VOLT, WATT, FEET, REMARKS, EQUIVALENT. Rows include various lighting fixtures like recessed linear LED, surface mount, and pendant lights.

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LAVALLEE BRENSINGER ARCHITECTS logo and contact information: Boston | Manchester | Portland, 155 Dow Street, Suite 400, Manchester, NH 03101.

R/S Engineering logo and contact information: 261 South Dunning Engineering, P.C., 141 7th Street S, Lowell, MA 01854.

Sanford School Department and State of Maine Department of Education

SANFORD HIGH SCHOOL and TECHNICAL CENTER

SANFORD, ME 04073

Table with columns: NO., DESCRIPTION, DATE. Row 1: NO. 1, DESCRIPTION, DATE.

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CONTRACT INFORMATION, REFER TO PROJECT MANUAL. Includes fields for CONTRACTOR, PROJECT NO., DATE, REVISIONS, and SCALE. Project No: 19-07-09, Date: 02/10/16, Scale: NO SCALE. E4.01

DATE: 02/10/16



LIGHTING SUBMITTALS FOR PRIOR APPROVAL

PROJECT: SANFORD HIGH SCHOOL & TECHNICAL CENTER

Prepared by: Kelly Beck
March 7, 2016

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

- Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.
 Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___
- Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A1</u>	
Manufacturer:	<u>A Light - G5</u>	<u>Lumenwerx VIA 5 LED</u>
Installer:	<u>TBA</u>	
History of proposed substitution: New product ___ 2-5 years old <input checked="" type="checkbox"/> 5-10 years old ___ > 10 years old ___		
Significant variations of proposed substitution from original product: <u>N/A</u>		

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

- Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.
 Original product \$ _____ per _____ Substitution \$ _____ per _____
 Savings to Owner for accepting substitution: N/A \$ _____
 Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

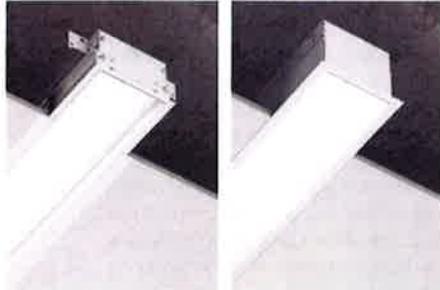
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA5RF HLO LED 90 1200 35 XFT UNV D 1 TG9 W	A1

VIA 5 LED

RECESSED



LUMENWERX
WWW.LUMENWERX.COM



Grid - regressed lens

Drywall - flush lens

DESCRIPTION

Via 5 is a high-output linear LED luminaire system for pendant, surface, recessed or in-wall installation, whether as discrete luminaires, continuous runs or patterns. Via 5 features multiple optical configurations, including wall wash and asymmetric and offers a wide range of electrical, control and trim options. See separate spec sheets for patterns and other available mountings.

PROJECT: _____

TYPE: _____

NOTES: _____



up to 104 lm/w performance

ORDER GUIDE

IC RATED

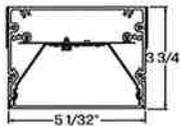
VIA5RF	HLO	LED	90	1200	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA5RF - via 5" recessed flush lens	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT	UNV	D	I	TC9	W
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LES - Lutron EcoSystem 5 OTH - other (consult factory)	I - 1 circuit + #EB - emergency battery pack (for min 4' fixture) + #EM - emergency light circuit + #NL - night light circuit + #COB/MR - COB/MR circuit + GTD - generator transfer device	TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify)	W - matte white CF# - custom finish specify RAL#

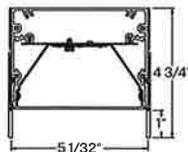
CONTROLS	LED DOWNLIGHT	COB CRI	COB LUMEN PACK.	COB COLOR TEMP.	COB DRIVER	OPTIONS
ONBOARD OMS - Motion Sensor & power pack ODS - Daylight Sensor & controller WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	#COB20 - COB 20° #COB30 - COB 30° #COB40 - COB 40° #MR16 - MR16 Minimum individual section with downlight 4'	80 - 80CRI 90 - 90CRI 97 - 97CRI (consult factory)	600 - 600lm 1200 - 1200lm 1800 - 1800lm	30 - 3000k 35 - 3500k 40 - 4000k	D - dimming 0-10V DA - Dali LHL# - Lutron Hi-Lume A LEH - Lutron EcoSystem H LES - Lutron EcoSystem 5 OTH - other (consult factory)	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

See page 2 for ordering code detailed information

CROSS SECTION



VIA5RF - flush



VIA5RR - regressed

OPTICS



HLO - High-efficiency Lambertian Optic

TECHZONE™ & USG Compatible with 6" ceiling

File Name: VIA5.RECESSED.SPEC

Page: 1 / 5

January 10, 2016



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LumenWerx ULC. reserves the right to change or modify product specifications without notification

Intertek

VIA 5 LED

RECESSED



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

PERFORMANCE PER 4' AT 4000K

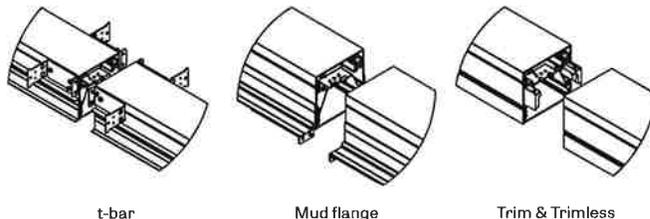
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	104
medium output	4000K	29	3000	103
high output	4000K	39	4000	102
ultra high output	4000K	49	4800	98

LUMINAIRE LENGTH

Via 5 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot, and continuous run lengths can be ordered in 2 inch increments.

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



t-bar

Mud flange

Trim & Trimless

ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

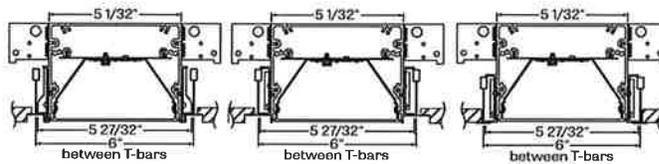
VIA 5 LED

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LUMENWERX
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MOUNTING OPTIONS

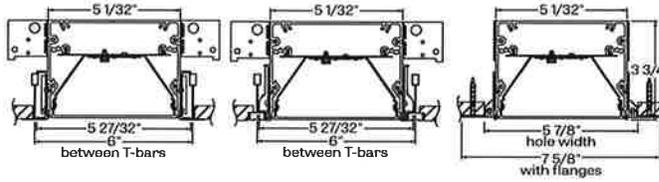
Recess mount into exposed or concealed T-Bar or Tegular grid ceiling, Via 5 is fully compatible with Armstrong Techzone™ & USG ceilings
Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



TG9 - tegular 9/16"

TG15 - tegular 15/16"

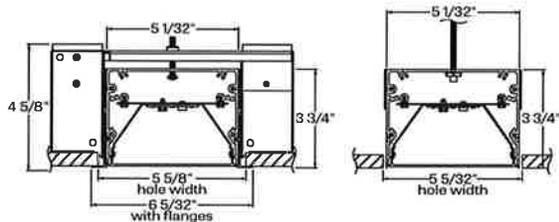
TB9 - t-bar 9/16"



TB15 - t-bar 15/16"

ST - screw slot t-bar

DMF - drywall mud flange



DTR - drywall trim

DTL - drywall trimless

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating.

Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration. Onboard options incorporate both the sensor and controller/powerpack. Onboard sensors, while inherently simpler, have limitations of control and coverage.

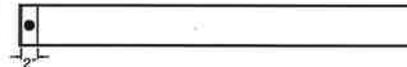
Onboard

Onboard Motion Sensor and power pack (OMS)

provide automatic on and automatic off control, using PIR detection. Sensor is designed to detect fine-motion when installed within 6' of occupants.

Onboard Daylight Sensor and controller (ODS)

provide input for 0-10V dimming drivers. Separate switched control of line input is required for on/off control.



Location of an Onboard sensor

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and Daylight Controller (LDC) provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

LIGHT SOURCE - COB

Fixtures with Chip On Board (COB) technology are able to provide a maximum output of 1800 lumens from a discrete 50mm aperture on 8 inch centers. Standard



Chip On Board (COB)

CRI is 80, for 90 and 97 CRI with elevated R9 values please consult factory. Standard 20, 30 and 40 degree beam angles are available, as are custom angles with prior factory approval. All our Chip-On-Board products have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 50,000 hours.

LIGHT SOURCE - MR16

Our MR16 option is a replaceable bulb solution which allows for up to a 50W halogen equivalent solution.

Submitted by:  VISIBLE LIGHT <small>MANUFACTURER REPRESENTATIVE</small>	Job Name:	Catalog Number:	Type:
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VIA 5 LED

RECESSED

LUMENWERX
WWW.LUMENWERX.COM

CONSTRUCTION

- Housing** - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content
- Interior brackets** - Die formed cold rolled sheet steel 18 gauge thick
- Joining system** - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge
- Reflectors** - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted
- Recessed flanges** - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
- Mud flange** - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
- Slip-through bracket** - Die Formed galvanized sheet 18 gauge
- End plate** - Die formed cold rolled sheet steel 18 gauge thick

WEIGHT

- Via 5 4ft - 11.78lbs - 5.35kg
- Via 5 8ft - 23.79lbs - 10.8kg
- Via 5 12ft - 35.24lbs - 16kg

CERTIFICATIONS

- ETL** - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.
- DLC** - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.
- Lighting facts** - testing products and reporting performance results according to industry standards.
- Chicago plenum** - City of Chicago Approved (CCEA)
- IC rated** - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A2</u>	
Manufacturer:	<u>A Light - G5</u>	<u>Lumenwerx VIA 5 LED</u>
Installer:	<u>TBA</u>	

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

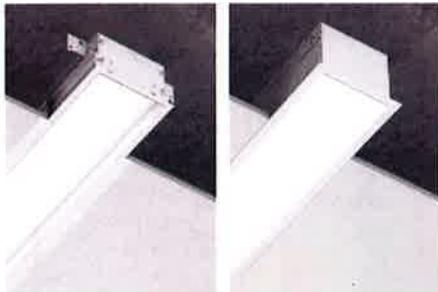
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA5RF HLO LED 90 1200 35 XFT UNV D 1 DTR W	A2

VIA 5 LED

RECESSED



LUMENWERX
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Grid - regressed lens

Drywall - flush lens

DESCRIPTION

Via 5 is a high-output linear LED luminaire system for pendant, surface, recessed or in-wall installation, whether as discrete luminaires, continuous runs or patterns. Via 5 features multiple optical configurations, including wall wash and asymmetric and offers a wide range of electrical, control and trim options. See separate spec sheets for patterns and other available mountings.

PROJECT: _____
TYPE: _____
NOTES: _____



up to 104 lm/w performance

ORDER GUIDE

IC RATED

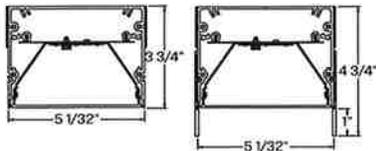
VIA5RF	HLO	LED	90	1200	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA5RF - via 5" recessed flush lens	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT	UNV	D	1	DTR	W
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit + EB - emergency battery pack (for min 4" fixture) + EM - emergency light circuit + NL - night light circuit + COB/MR - COB/MR circuit + GTD - generator transfer device	TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify)	W - matte white CF# - custom finish specify RAL#

CONTROLS	LED DOWNLIGHT	COB CRI	COB LUMEN PACK.	COB COLOR TEMP.	COB DRIVER	OPTIONS
ONBOARD OMS - Motion Sensor & power pack ODS - Daylight Sensor & controller WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	# COB20 - COB 20° # COB30 - COB 30° # COB40 - COB 40° # MR16 - MR16 Minimum individual section with downlight 4'	80 - 80CRI 90 - 90CRI 97 - 97CRI (consult factory)	600 - 600lm 1200 - 1200lm 1800 - 1800lm	30 - 3000k 35 - 3500k 40 - 4000k	D - dimming 0-10V DA - Dali LHL# - Lutron Hi-Lume A LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

See page 2 for ordering code detailed information

CROSS SECTION



VIA5RF - flush

VIA5RR - regressed

OPTICS



HLO - High-efficiency Lambertian Optic

TECHZONE™ & USG Compatible with 6" ceiling

File Name: VIA5.RECESSED.SPEC

Page: 1 / 5

January 10, 2016

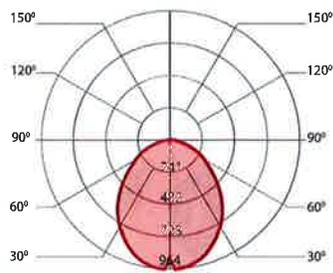


VIA 5 LED

RECESSED



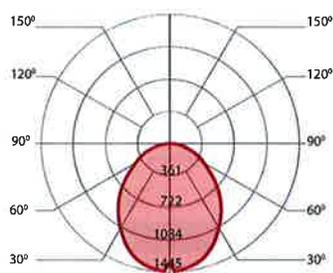
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	98
low output	3500K	20	2000	101
low output	4000K	19	2000	104

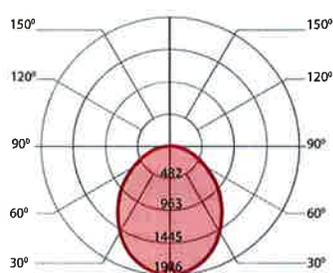
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	97
medium output	3500K	30	3000	100
medium output	4000K	29	3000	103

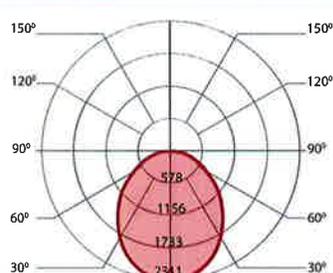
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	96
high output	3500K	40	4000	99
high output	4000K	39	4000	102

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	52	4800	92
ultra high output	3500K	51	4800	95
ultra high output	4000K	49	4800	98

VIA 5 LED

RECESSED



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

PERFORMANCE PER 4' AT 4000K

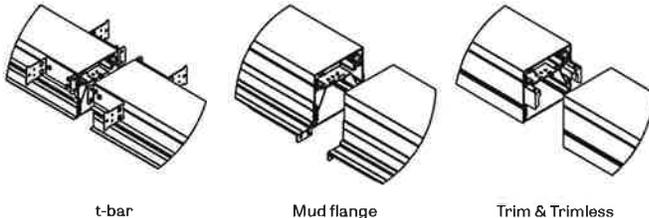
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	104
medium output	4000K	29	3000	103
high output	4000K	39	4000	102
ultra high output	4000K	49	4800	98

LUMINAIRE LENGTH

Via 5 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot, and continuous run lengths can be ordered in 2 inch increments.

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Joining system



t-bar

Mud flange

Trim & Trimless

ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

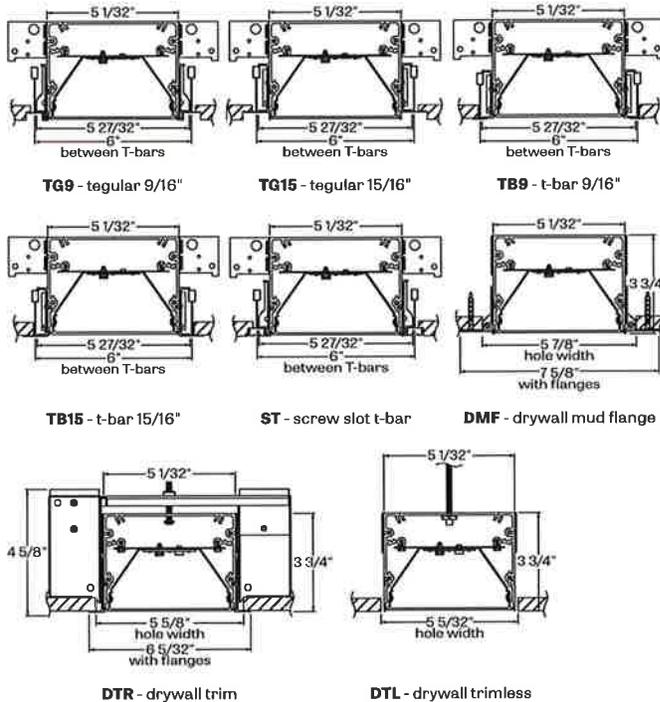
VIA 5 LED

RECESSED



MOUNTING OPTIONS

Recess mount into exposed or concealed T-Bar or Tegular grid ceiling, Via 5 is fully compatible with Armstrong Techzone™ & USG ceilings
 Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating.

Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration. Onboard options incorporate both the sensor and controller/powerpack. Onboard sensors, while inherently simpler, have limitations of control and coverage.

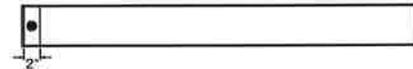
Onboard

Onboard Motion Sensor and power pack (OMS)

provide automatic on and automatic off control, using PIR detection. Sensor is designed to detect fine-motion when installed within 6' of occupants.

Onboard Daylight Sensor and controller (ODS)

provide input for 0-10V dimming drivers. Separate switched control of line input is required for on/off control.



Location of an Onboard sensor

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and Daylight Controller (LDC)

provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LMC or LDC. This option permits manual on/automatic off (vacancy) control.

LIGHT SOURCE - COB

Fixtures with Chip On Board (COB) technology are able to provide a maximum output of 1800 lumens from a discrete 50mm aperture on 8 inch centers. Standard CRI is 80, for 90 and 97 CRI with elevated R9 values please consult factory. Standard 20, 30 and 40 degree beam angles are available, as are custom angles with prior factory approval. All our Chip-On-Board products have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 50,000 hours.



Chip On Board (COB)

LIGHT SOURCE - MR16

Our MR16 option is a replaceable bulb solution which allows for up to a 50W halogen equivalent solution.



Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 5 LED

RECESSED

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CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content
Interior brackets - Die formed cold rolled sheet steel 18 gauge thick
Joining system - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge
Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted
Recessed flanges - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
Mud flange - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
Slip-through bracket - Die Formed galvanized sheet 18 gauge
End plate - Die formed cold rolled sheet steel 18 gauge thick

WEIGHT

Via 5 4ft - 11.78lbs - 5.35kg
 Via 5 8ft - 23.79lbs - 10.8kg
 Via 5 12ft - 35.24lbs - 16kg

CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.
DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.
Lighting facts - testing products and reporting performance results according to industry standards.
Chicago plenum - City of Chicago Approved (CCEA)
IC rated - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

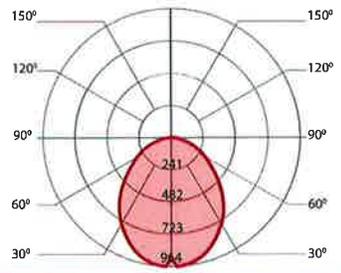


VIA 5 LED

RECESSED



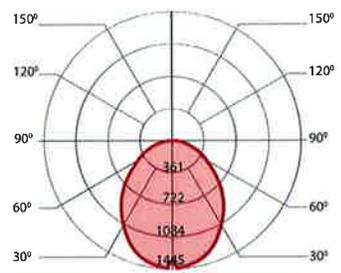
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	98
low output	3500K	20	2000	101
low output	4000K	19	2000	104

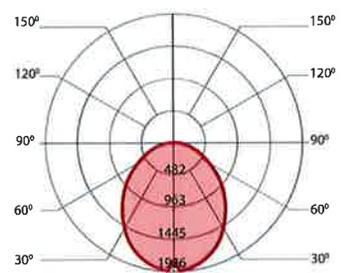
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	97
medium output	3500K	30	3000	100
medium output	4000K	29	3000	103

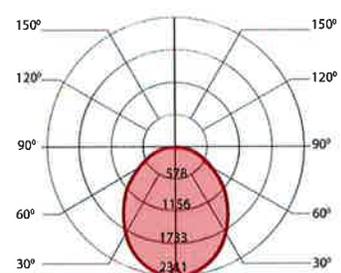
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	96
high output	3500K	40	4000	99
high output	4000K	39	4000	102

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	52	4800	92
ultra high output	3500K	51	4800	95
ultra high output	4000K	49	4800	98

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

- Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.
 Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___
- Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A3</u>	
Manufacturer:	<u>A Light - G5</u>	<u>Lumenwerx VIA 5 LED</u>
Installer:	<u>TBA</u>	

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___
 Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

- Unit costs, if applicable: State if cost is materials only ___ or materials installed ____.
 Original product \$ _____ per _____ Substitution \$ _____ per _____
 Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

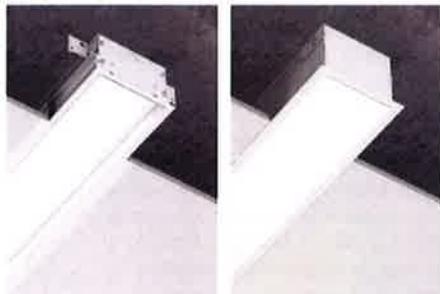
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA5RF HLO LED 90 1200 40 XFT UNV D 1 DTR W	A3

VIA 5 LED

RECESSED



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Grid - regressed lens

Drywall - flush lens

DESCRIPTION

Via 5 is a high-output linear LED luminaire system for pendant, surface, recessed or in-wall installation, whether as discrete luminaires, continuous runs or patterns.

Via 5 features multiple optical configurations, including wall wash and asymmetric and offers a wide range of electrical, control and trim options. See separate spec sheets for patterns and other available mountings.

PROJECT: _____

TYPE: _____

NOTES: _____



up to 104 lm/w performance

ORDER GUIDE

IC RATED

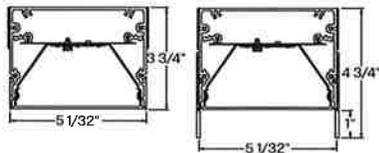
VIA5RF	HLO	LED	90	1200	40
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA5RF - via 5" recessed flush lens	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k
VIA5RR - via 5" recessed regressed lens					

XFT	UNV	D	1	DTR	W
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit +#EB - emergency battery pack (for min 4' fixture) +#EM - emergency light circuit +#NL - night light circuit +#COB/MR - COB/MR circuit +GTD - generator transfer device	TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify)	W - matte white CF# - custom finish specify RAL#

CONTROLS	LED DOWNLIGHT	COB CRI	COB LUMEN PACK.	COB COLOR TEMP.	COB DRIVER	OPTIONS
ONBOARD OMS - Motion Sensor & power pack ODS - Daylight Sensor & controller WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	#COB20 - COB 20° #COB30 - COB 30° #COB40 - COB 40° #MR16 - MR16 Minimum individual section with downlight 4'	80 - 80CRI 90 - 90CRI 97 - 97CRI (consult factory)	600 - 600lm 1200 - 1200lm 1800 - 1800lm	30 - 3000k 35 - 3500k 40 - 4000k	D - dimming 0-10V DA - Dali LHL# - Lutron Hi-Lume A LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Planum CU - custom

See page 2 for ordering code detailed information

CROSS SECTION



VIA5RF - flush

VIA5RR - regressed

OPTICS



HLO - High-efficiency Lambertian Optic

TECHZONE™ & USG Compatible with 6" ceiling

VIA 5 LED

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OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

PERFORMANCE PER 4' AT 4000K

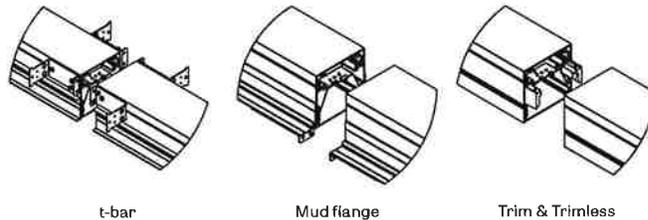
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	104
medium output	4000K	29	3000	103
high output	4000K	39	4000	102
ultra high output	4000K	49	4800	98

LUMINAIRE LENGTH

Via 5 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot, and continuous run lengths can be ordered in 2 inch increments.

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

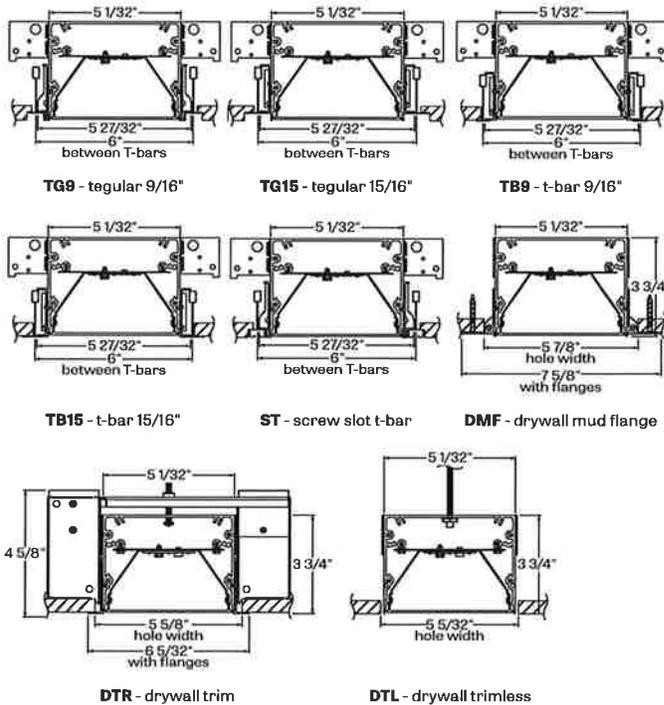
VIA 5 LED

RECESSED

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MOUNTING OPTIONS

Recess mount into exposed or concealed T-Bar or Tegular grid ceiling, Via 5 is fully compatible with Armstrong Techzone™ & USG ceilings
Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



FINISH

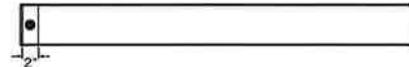
Interior - 95%, reflective matte powder coated white paint
Exterior - matte white or silver powder coating.
Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration. Onboard options incorporate both the sensor and controller/powerpack. Onboard sensors, while inherently simpler, have limitations of control and coverage.

Onboard

Onboard Motion Sensor and power pack (OMS) provide automatic on and automatic off control, using PIR detection. Sensor is designed to detect fine-motion when installed within 6' of occupants.
Onboard Daylight Sensor and controller (ODS) provide input for 0-10V dimming drivers. Separate switched control of line input is required for on/off control.



Location of an Onboard sensor

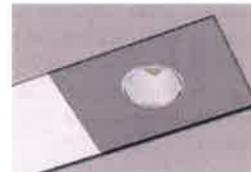
Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and Daylight Controller (LDC) provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

LIGHT SOURCE - COB

Fixtures with Chip On Board (COB) technology are able to provide a maximum output of 1800 lumens from a discrete 50mm aperture on 8 inch centers. Standard CRI is 80, for 90 and 97 CRI with elevated R9 values please consult factory. Standard 20, 30 and 40 degree beam angles are available, as are custom angles with prior factory approval. All our Chip-On-Board products have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 50,000 hours.



Chip On Board (COB)

LIGHT SOURCE - MR16

Our MR16 option is a replaceable bulb solution which allows for up to a 50W halogen equivalent solution.

Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 5 LED

RECESSED


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CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content
Interior brackets - Die formed cold rolled sheet steel 18 gauge thick
Joining system - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge
Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted
Recessed flanges - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
Mud flange - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
Slip-through bracket - Die Formed galvanized sheet 18 gauge
End plate - Die formed cold rolled sheet steel 18 gauge thick

WEIGHT

Via 5 4ft - 11.78lbs - 5.35kg
Via 5 8ft - 23.79lbs - 10.8kg
Via 5 12ft - 35.24lbs - 16kg

CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.
DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.
Lighting facts - testing products and reporting performance results according to industry standards.
Chicago plenum - City of Chicago Approved (CCEA)
IC rated - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.



Submitted by:

Job Name:

Catalog Number:

Type:

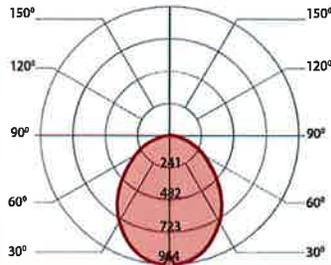


VIA 5 LED

RECESSED



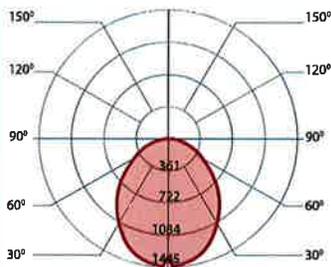
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	98
low output	3500K	20	2000	101
low output	4000K	19	2000	104

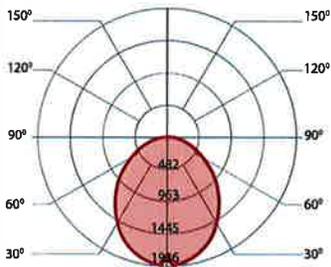
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	97
medium output	3500K	30	3000	100
medium output	4000K	29	3000	103

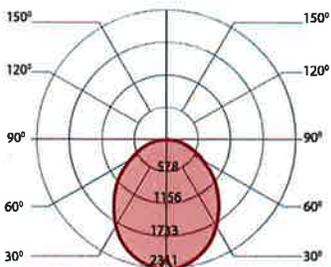
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	96
high output	3500K	40	4000	99
high output	4000K	39	4000	102

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	52	4800	92
ultra high output	3500K	51	4800	95
ultra high output	4000K	49	4800	98

File Name: VIA5.RECESSED.SPEC

Page: 5 / 5

January 10, 2016

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CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT PROPOSED SUBSTITUTION

Trade Name, Model: Type A4-4 _____

Manufacturer: H.E. Williams Forum Lighting Forecast 6 Series

Installer: TBA _____

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
None that we are personally aware of.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	SRT 46ASY FG 65LED SAT XFT UNV WH DIM	A4-4



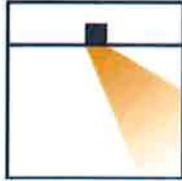
Forecast 6

JOB _____
TYPE _____

The Forecast series by FORUM is a line of hybrid steel housing/ aluminum trim rectilinear recessed luminaires.

Forecast 6ASY is a 6" wide housing with a 4 1/4" asymmetric aperture. Multiple ceiling configurations are available including various grid ceiling types as well as sheetrock applications.

Forecast 6ASY can be lamped with T5, T8, and LED.



RECESSED/
ASYMMETRIC

LED

T5
LAMPING

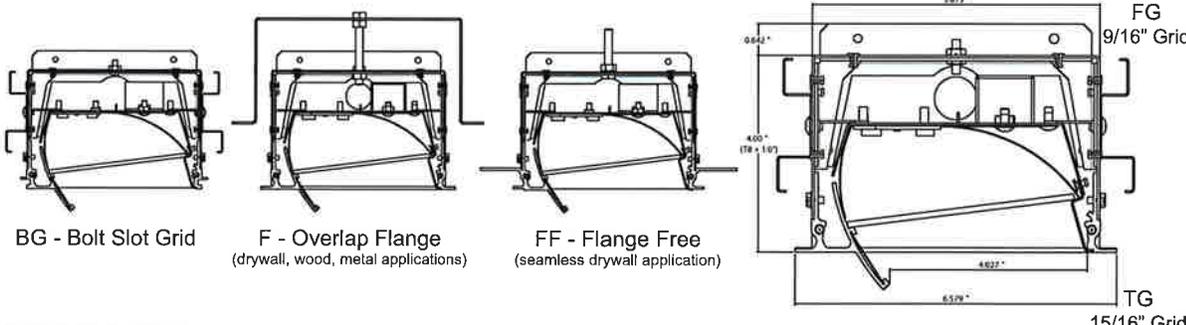
T8
LAMPING

ORDERING CODE

SRT-46ASY - FG - 65LED - SAT - XFT - UNV - WH - DIM

Series	Trim	LED Spec	Shielding	Length	Voltage	Finish	Option 1	Option 2
Forecast 4ASY 4"x6" recessed steel/aluminum hybrid with asymmetric aperture	FG = 9/16" grid TG = 15/16" grid BG = slot grid F = 1/2" flange FF = flange-free sheetrock	65LED30 65LED35 65LED40 65LED50 95LED30 95LED35 95LED40 95LED50 65LEDxx = 650lm/ft *Consult factory 95LEDxx = 950lm/ft for custom lumen xx30 = 3000k temp settings xx35 = 3500k temp xx40 = 4000k temp xx50 = 5000k temp	OP = Open SAT = Satin lens WOL = White Opal lens	2 = 2' 3 = 3' 4 = 4' 5 = 5' 6 = 6' 7 = 7' 8 = 8' XX = Specify run length in even foot increments	120V 277V UNV = Universal	WH = White AZ = Anodized Silver CC = Custom Color *	EC = Emergency Circuit EMLED = LED battery pk DIM = Dimming ** F = Fusing SW = Separate Switch OC = Occupancy Sensor MR = 37W MR16 Module *** P = Perimeter Mounting	

TECHNICAL DRAWINGS * Dimensions provided as general information. Please see shop drawings for specific rough in dimension



SPECIFICATION * Forum reserves the right to change this information at any time

HOUSING: 18 GA cold rolled steel in a pre-paint white finish. Built in individual pieces up to 8 ft in length. Sections can be joined to form continuous runs.

GEARTRAY / REFLECTOR: Integrated geartray and reflector made from 16 GA aluminum in a highly reflective pre-paint white finish. Fully wired unit remains completely accessible from below.

TRIM/FLANGE: Extruded Aluminum trim is run around all 4 sides of the fixture body. Provides a clean and precise finish and is available for a number of ceiling applications.

SHIELDING: Satin frosted and white opal lenses are available. They are of a lift-and-shift nature.

DRIVER: 0-10V DC dimming standard. 120V, 277V, and Universal Voltage available standard. 5 year warranty. Please consult factory for special driver requirements.

LISTING: All fixtures bare an AFL-CIO/IBEW union label and are UL listed for recessed dry location and insulation contact. For alternative location configurations, please consult factory.

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

- Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.
 Sample attached: Yes No To be sent if requested by Architect Yes No
- Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A5-4</u>	<u></u>
Manufacturer:	<u>H.E. Williams</u>	<u>Forum Lighting Forecast 6 Series</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product 2-5 years old 5-10 years old > 10 years old

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:
None that we are personally aware of.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

- Unit costs, if applicable: State if cost is materials only or materials installed .

Original product \$ per Substitution \$ per

Savings to Owner for accepting substitution: N/A \$

Proposed substitution changes Contract Time: No Yes Add/Deduct days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:  VISIBLELIGHT <small>MANUFACTURER REPRESENTATIVE</small>	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: SRT 46ASY F 65LED SAT XFT UNV WH DIM	Type: A5-4
--	--	--	----------------------



Forecast 6

JOB _____

TYPE _____



RECESSED/
ASYMMETRIC

LED

T5
LAMPING

T8
LAMPING

The Forecast series by FORUM is a line of hybrid steel housing/ aluminum trim rectilinear recessed luminaires.

Forecast 6ASY is a 6" wide housing with a 4 1/4" asymmetric aperture. Multiple ceiling configurations are available including various grid ceiling types as well as sheetrock applications.

Forecast 6ASY can be lamped with T5, T8, and LED.



ORDERING CODE

SRT-46ASY - F - 65LED - SAT - XFT - UNV - WH - DIM -

Series

Forecast4ASY
4"x6" recessed
steel/aluminum
hybrid with
asymmetric
aperture

Trim

FG = 9/16" grid
TG = 15/16" grid
BG = slot grid
F = 1/2" flange
FF = flange-free
sheetrock

LED Spec

65LED30
65LED35
65LED40
65LED50

95LED30
95LED35
95LED40
95LED50

65LEDxx = 650lm/ft *Consult factory
95LEDxx = 950lm/ft for custom lumen
xx30 = 3000k temp settings
xx35 = 3500k temp
xx40 = 4000k temp
xx50 = 5000k temp

Shielding

OP = Open
SAT = Satin lens
WOL = White Opal lens

Length

2 = 2'
3 = 3'
4 = 4'
5 = 5'
6 = 6'
7 = 7'
8 = 8'
XX = Specify
run length
in even
foot
increments

Voltage

120V
277V
UNV = Universal

Finish

WH = White
AZ = Anodized
Silver
CC = Custom
Color *

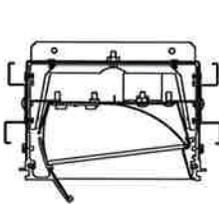
Option 1

EC = Emergency Circuit
EMLED = LED battery pk
DIM = Dimming **
F = Fusing
SW = Separate Switch
OC = Occupancy Sensor
MR = 37W MR16 Module ***
P = Perimeter Mounting

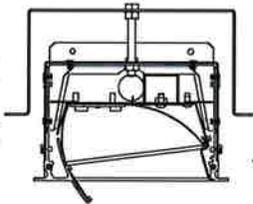
Option 2

TECHNICAL DRAWINGS

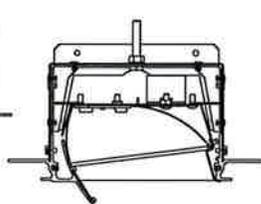
* Dimensions provided as general information. Please see shop drawings for specific rough in dimension



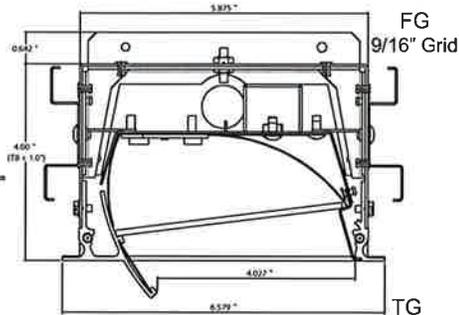
BG - Bolt Slot Grid



F - Overlap Flange
(drywall, wood, metal applications)



FF - Flange Free
(seamless drywall application)



FG
9/16" Grid

TG
15/16" Grid

SPECIFICATION

* Forum reserves the right to change this information at any time

HOUSING: 18 GA cold rolled steel in a pre-paint white finish. Built in individual pieces up to 8 ft in length. Sections can be joined to form continuous runs.

GEARTRAY / REFLECTOR: Integrated geartray and reflector made from 16 GA aluminum in a highly reflective pre-paint white finish. Fully wired unit remains completely accessible from below.

TRIM/FLANGE: Extruded Aluminum trim is run around all 4 sides of the fixture body. Provides a clean and precise finish and is available for a number of ceiling applications.

SHIELDING: Satin frosted and white opal lenses are available. They are of a lift-and-shift nature.

DRIVER: 0-10V DC dimming standard. 120V, 277V, and Universal Voltage available standard. 5 year warranty. Please consult factory for special driver requirements.

LISTING: All fixtures bare an AFL-CIO/BEW union label and are UL listed for recessed dry location and insulation contact. For alternative location configurations, please consult factory.

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A6</u>	
Manufacturer:	<u>A Light - G5</u>	<u>Lumenwerx VIA 5 LED</u>
Installer:	<u>TBA</u>	

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

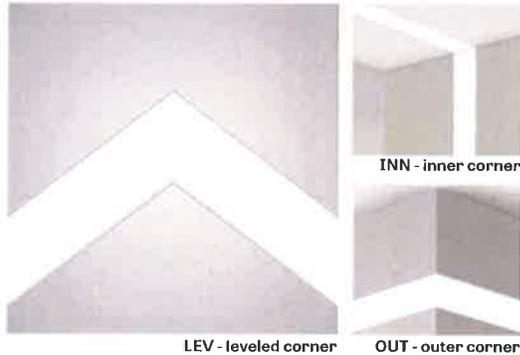
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA5RPAT HLO LED 90 1200 35 XFT	A6

VIA 5 - PATTERNS

RECESSED



LUMENWERX
WWW.LUMENWERX.COM



DESCRIPTION

At LumenWerx, we make it simple to design patterns customized for you. Whether surface, wall mount, pendant or recessed - or even a combination of different mounting types, we make it easy to achieve the results you're looking for. While our standard is a 90° corner, we can customize angles to suit your needs.

PROJECT: _____
 TYPE: _____
 NOTES: _____



up to 104 lm/w performance

IC RATED

ORDER GUIDE

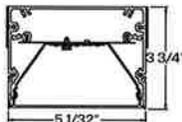
VIA5RPAT	HLO	LED	90	1200	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA5RPAT - via 5" recessed pattern	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT					
PATTERN LENGTH	CORNER TYPE	CORNERS DEGREE	VOLTAGE	DRIVER	ELECTRICAL
#FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12'	INN - inner corner OUT - outer corner LEV - leveled corner	90 - 90 degrees # - other degrees	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit +EB - emergency battery pack (for min 4' fixture) +EM - emergency light circuit +NL - night light circuit +GTD - generator transfer device

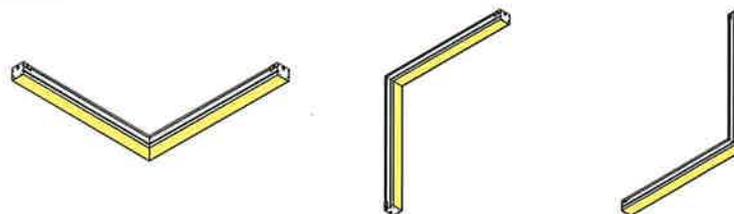
MOUNTING CEILING	MOUNTING WALL	FINISH	CONTROLS	OPTIONS
TG9 - tegular 9/16" TG15 - tagular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify) NA - not applicable	DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OTW - other wall NA - not applicable	W - matte white CF# - custom finish specify RAL#	WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

See page 2 for ordering code detailed information

CROSS SECTION



3D VIEW



VIA5RPAT - recessed

TECHZONE™ & USG Compatible

LEV - leveled corner

INN - inner corner

OUT - outer corner

File Name: VIA5.PAT.RECESSED.SPEC

Page: 1 / 6

February 16, 2016

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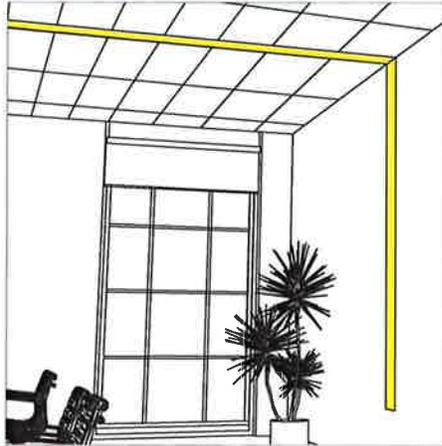


VIA 5 - PATTERNS

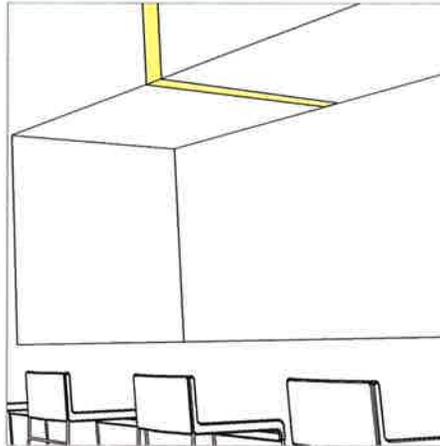
RECESSED

LUMENWERX
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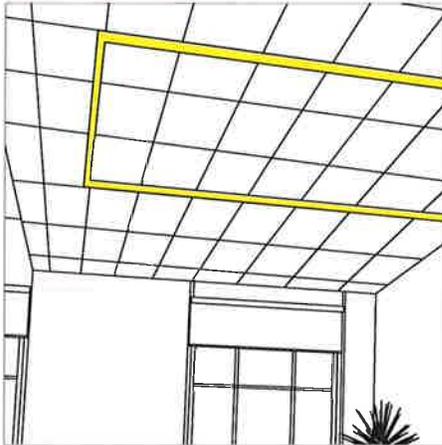
INNER CORNER - GRID TO DRYWALL



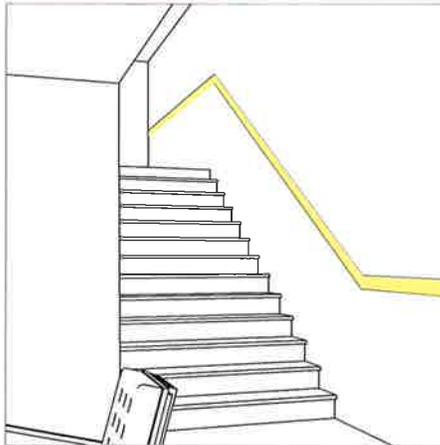
OUTER CORNER - DRYWALL



LEVELED CORNER - GRID



LEVELED CORNER - DRYWALL



HOW TO SPECIFY A PATTERN?

Please follow these steps when specifying in order to be as precise as possible.

- (1) We require a drawing illustrating the pattern you are trying to achieve - anything from a simple line drawing to elaborate architectural drawings will suffice.
- (2) Under **PATTERN LENGTH**, enter the overall length of your pattern - either in feet or inches.
- (3) Under **CORNER TYPE**, please enter the type (or types) of corner you require. If more than one type of corner is required, please separate types with a plus (+).
- (4) Under **CORNERS DEGREE**, please enter the angle in degrees of each corner required to complete your pattern (for example 90+90+90).

PATTERN LENGTH	CORNER TYPE	CORNERS DEGREE
#FT - nominal length in feet	INN - inner corner	90 - 90 degrees
#IN - length in inches	OUT - outer corner	# - other degrees
Continuous Run - for luminaires over 12'	LEV - leveled corner	

VIA 5 - PATTERNS

RECESSED



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

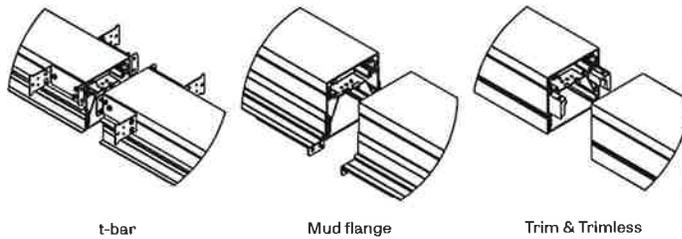
PERFORMANCE PER 4' AT 4000K

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	104
medium output	4000K	29	3000	103
high output	4000K	39	4000	102
ultra high output	4000K	49	4800	98

PATTERN LENGTH

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency >84%, PF >0.9, THD <20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

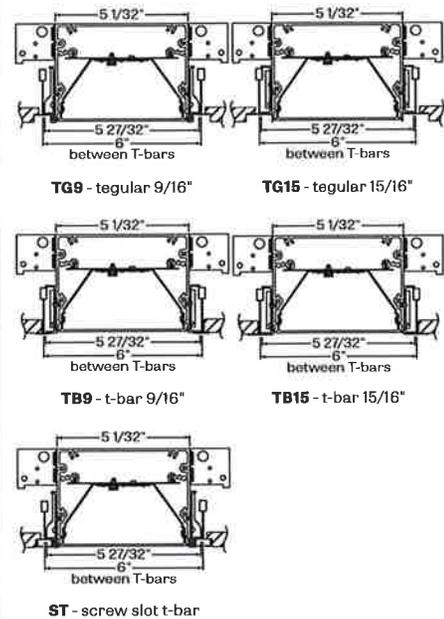
EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

MOUNTING OPTIONS

Mounting Ceiling

Recess mount into exposed or concealed T-Bar or Tegular grid ceiling, Via 5 is fully compatible with Armstrong Techzone™ & USG ceilings

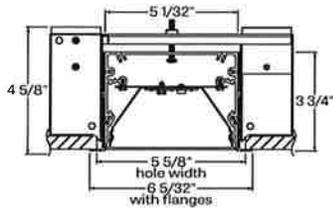


VIA 5 - PATTERNS

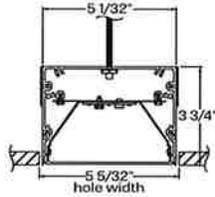
RECESSED



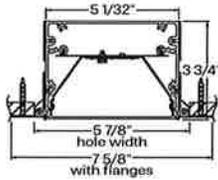
Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



DTR - drywall trim



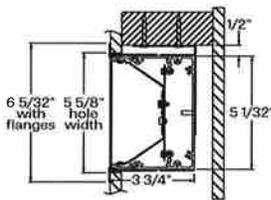
DTL - drywall trimless



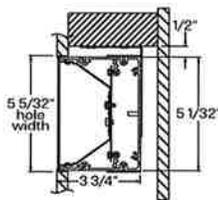
DMF - drywall mud flange

Mounting Wall

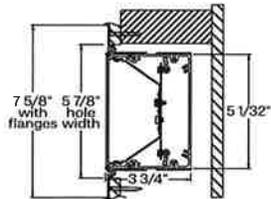
Recessed Wall Mounting for drywall is available with visible trim, mud flange, trim or trimless



DTR - drywall trim



DTL - drywall trimless



DMF - drywall mud flange

FINISH

Interior - 95%, reflective matte powder coated white paint
Exterior - matte white or silver powder coating.
 Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration.

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and Daylight Controller (LDC) provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Joining system - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

Recessed flanges - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content

Mud flange - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content

Slip-through bracket - Die Formed galvanized sheet 18 gauge

End plate - Die formed cold rolled sheet steel 18 gauge thick



Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 5 - PATTERNS

RECESSED



CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.

Lighting facts - testing products and reporting performance results according to industry standards.

Chicago plenum - City of Chicago Approved (CCEA)

IC rated - suitable for direct contact with insulation.

WARRANTY

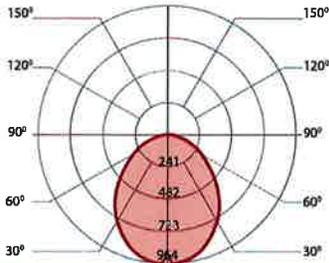
LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

VIA 5 - PATTERNS

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WWW.LUMENWERX.COM

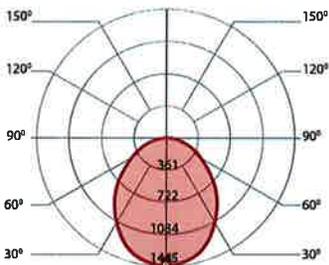
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	98
low output	3500K	20	2000	101
low output	4000K	19	2000	104

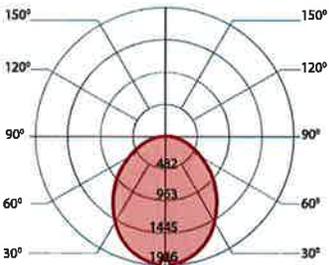
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	97
medium output	3500K	30	3000	100
medium output	4000K	29	3000	103

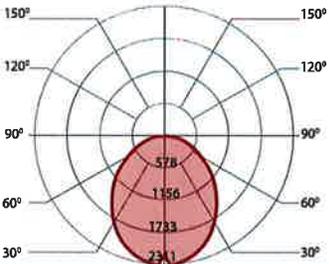
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	96
high output	3500K	40	4000	99
high output	4000K	39	4000	102

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	52	4800	92
ultra high output	3500K	51	4800	95
ultra high output	4000K	49	4800	98

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type A7</u>	
Manufacturer:	<u>A Light - G5</u>	<u>Lumenwerx VIA 5 LED</u>
Installer:	<u>TBA</u>	

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

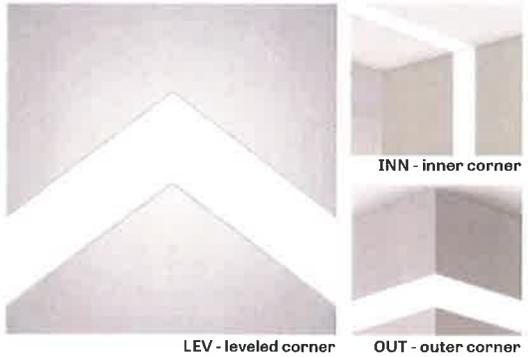
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA5RPAT HLO LED 90 1200 35 XFT	A7

VIA 5 - PATTERNS

RECESSED



LUMENWERX
WWW.LUMENWERX.COM



DESCRIPTION
At LumenWerx, we make it simple to design patterns customized for you. Whether surface, wall mount, pendant or recessed - or even a combination of different mounting types, we make it easy to achieve the results you're looking for. While our standard is a 90° corner, we can customize angles to suit your needs.

PROJECT: _____
TYPE: _____
NOTES: _____



up to 104 lm/w performance

ORDER GUIDE IC RATED

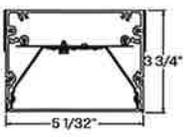
VIA5RPAT	HLO	LED	90	1200	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA5RPAT - via 5" recessed pattern	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT					
PATTERN LENGTH	CORNER TYPE	CORNERS DEGREE	VOLTAGE	DRIVER	ELECTRICAL
#FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12'	INN - inner corner OUT - outer corner LEV - leveled corner	90 - 90 degrees # - other degrees	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit +EB - emergency battery pack (for min 4' fixture) +EM - emergency light circuit +NL - night light circuit +GTD - generator transfer device

MOUNTING CEILING	MOUNTING WALL	FINISH	CONTROLS	OPTIONS
TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify) NA - not applicable	DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OTW - other wall NA - not applicable	W - matte white CF# - custom finish specify RAL #	WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

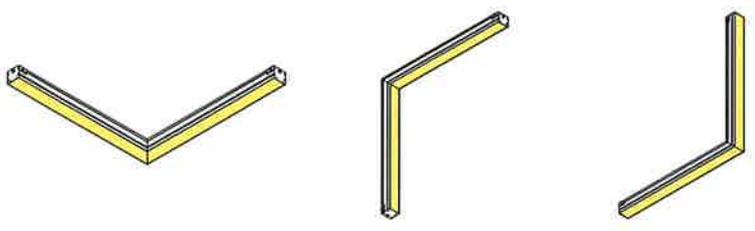
See page 2 for ordering code detailed information

CROSS SECTION



VIA5RPAT - recessed

3D VIEW



TECHZONE™ & USG Compatible

LEV - leveled corner

INN - inner corner

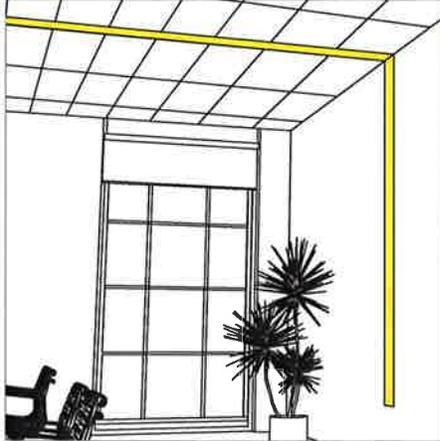
OUT - outer corner

VIA 5 - PATTERNS

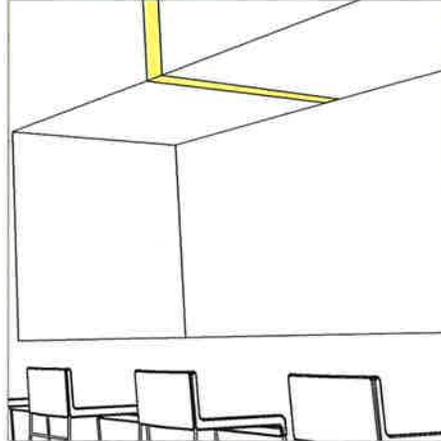
RECESSED

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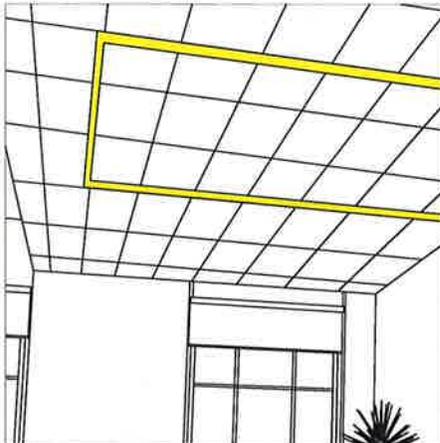
INNER CORNER - GRID TO DRYWALL



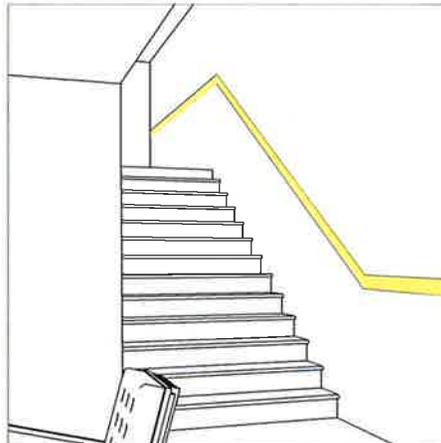
OUTER CORNER - DRYWALL



LEVELED CORNER - GRID



LEVELED CORNER - DRYWALL



HOW TO SPECIFY A PATTERN?

Please follow these steps when specifying in order to be as precise as possible.

- (1) We require a drawing illustrating the pattern you are trying to achieve - anything from a simple line drawing to elaborate architectural drawings will suffice.
- (2) Under **PATTERN LENGTH**, enter the overall length of your pattern - either in feet or inches.
- (3) Under **CORNER TYPE**, please enter the type (or types) of corner you require. If more than one type of corner is required, please separate types with a plus (+).
- (4) Under **CORNERS DEGREE**, please enter the angle in degrees of each corner required to complete your pattern (for example 90+90+90).

PATTERN LENGTH	CORNER TYPE	CORNERS DEGREE
#FT - nominal length in feet	INN - inner corner	90 - 90 degrees
#IN - length in inches	OUT - outer corner	# - other degrees
Continuous Run - for luminaires over 12'	LEV - leveled corner	



VIA 5 - PATTERNS

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OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

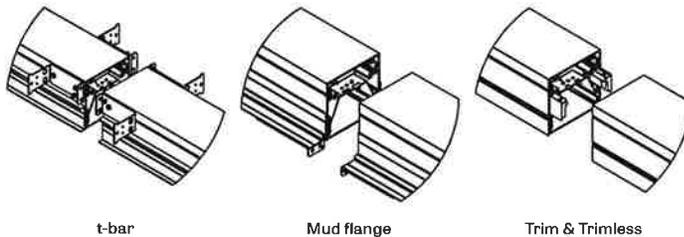
PERFORMANCE PER 4' AT 4000K

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	104
medium output	4000K	29	3000	103
high output	4000K	39	4000	102
ultra high output	4000K	49	4800	98

PATTERN LENGTH

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency >84%, PF >0.9, THD <20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

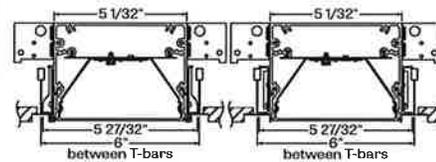
EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

MOUNTING OPTIONS

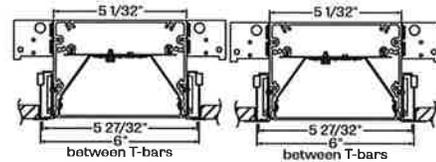
Mounting Ceiling

Recess mount into exposed or concealed T-Bar or Tegular grid ceiling. Via 5 is fully compatible with Armstrong Techzone™ & USG ceilings



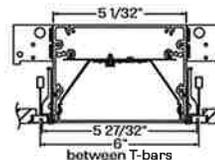
TG9 - tegular 9/16"

TG15 - tegular 15/16"



TB9 - t-bar 9/16"

TB15 - t-bar 15/16"



ST - screw slot t-bar

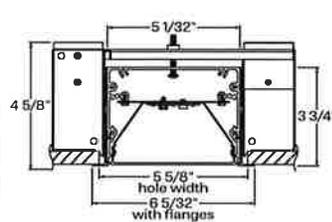
VIA 5 - PATTERNS

RECESSED

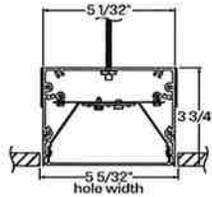


WWW.LUMENWERX.COM

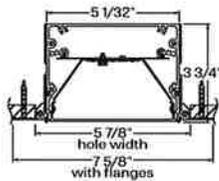
Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



DTR - drywall trim



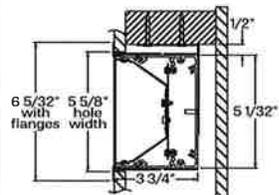
DTL - drywall trimless



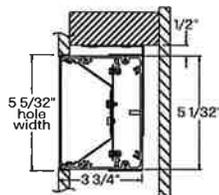
DMF - drywall mud flange

Mounting Wall

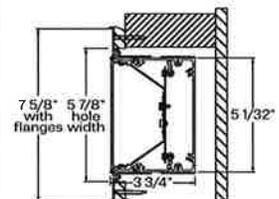
Recessed Wall Mounting for drywall is available with visible trim, mud flange, trim or trimless



DTR - drywall trim



DTL - drywall trimless



DMF - drywall mud flange

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating.

Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration.

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and Daylight Controller (LDC)

provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Joining system - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

Recessed flanges - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content

Mud flange - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content

Slip-through bracket - Die Formed galvanized sheet 18 gauge

End plate - Die formed cold rolled sheet steel 18 gauge thick

Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 5 - PATTERNS

RECESSED

LUMENWERX
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CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.

Lighting facts - testing products and reporting performance results according to industry standards.

Chicago plenum - City of Chicago Approved (CCEA)

IC rated - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

Submitted by:

Job Name:

Catalog Number:

Type:

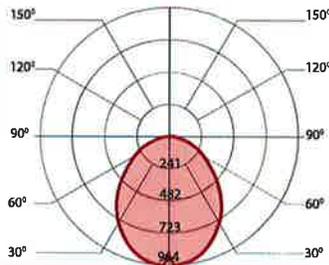


VIA 5 - PATTERNS

RECESSED



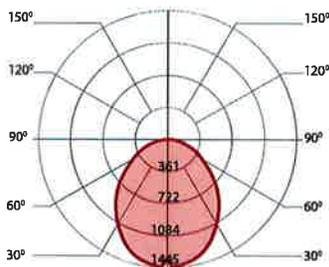
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	98
low output	3500K	20	2000	101
low output	4000K	19	2000	104

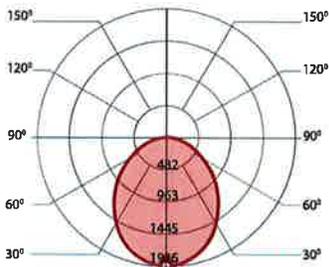
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	97
medium output	3500K	30	3000	100
medium output	4000K	29	3000	103

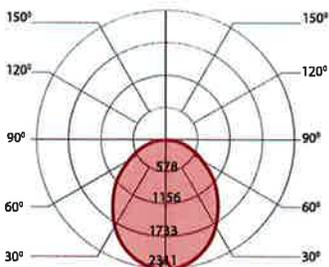
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	96
high output	3500K	40	4000	99
high output	4000K	39	4000	102

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	52	4800	92
ultra high output	3500K	51	4800	95
ultra high output	4000K	49	4800	98



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes__ No X To be sent if requested by Architect Yes X No __

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type B1</u>	<u></u>
Manufacturer:	<u>Axis Lighting SCR</u>	<u>Lumenwerx VIA 1.5 LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product __ 2-5 years old X 5-10 years old __ > 10 years old __

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only __ or materials installed __.

Original product \$ ____ per ____ Substitution \$ ____ per ____

Savings to Owner for accepting substitution: N/A \$ ____

Proposed substitution changes Contract Time: No X Yes __ Add/Deduct ____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

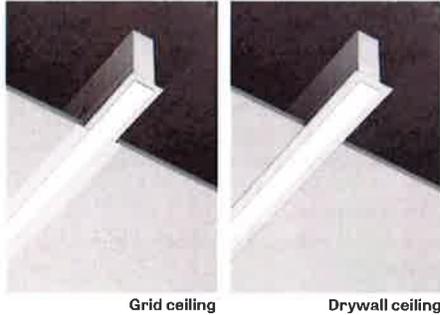
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA1.5R HLO LED 80 500 35 XFT UNV D DTR CC	B1

VIA 1.5 LED

RECESSED



LUMENWERX
WWW.LUMENWERX.COM



Grid ceiling

Drywall ceiling

DESCRIPTION

Via 1.5 is the elegant, ultra-compact and flexible linear LED luminaire system for pendant, surface, and recessed or in-wall installation, whether as discrete luminaires, continuous runs, or patterns. Via 1.5 features numerous optical configurations, which are difficult to achieve in such a compact luminaire. See separate spec sheets for patterns and other available mountings.

PROJECT: _____

TYPE: _____

NOTES: _____

ORDER GUIDE

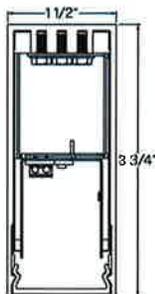
IC RATED

VIA1.5R	HLO	LED	80	500	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA1.5R - via 1.5" recessed	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI (consult factory)	400 - low output 400lm/ft 500 - med. output 500lm/ft 750 - high output 750lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT	UNV	D	
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires /EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit + #EB - emergency battery pack (for min 4' fixture) + #EM - emergency light circuit + #NL - night light circuit

DTR	CC		
MOUNTING	FINISH	CONTROLS	OPTIONS
TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTR - drywall trim DTL - drywall trimless DMF - drywall mud flange OHC - other ceiling (specify)	W - matte white CF# - custom finish specify RAL# CC - CUSTOM COLOR	WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

CROSS SECTION



VIA1.5R - recessed

OPTICS



HLO - High-efficiency Lambertian Optic

See page 2 for ordering code detailed information

VIA 1.5 LED

RECESSED



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

PERFORMANCE PER 4' AT 4000K

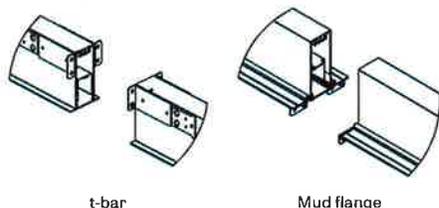
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	1600	83
medium output	4000K	24	2000	82
high output	4000K	37	3000	81

LUMINAIRE LENGTH

Via 1.5 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot.

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



ELECTRICAL

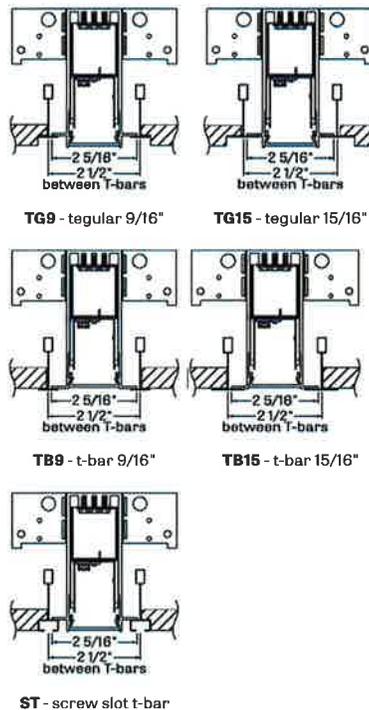
Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

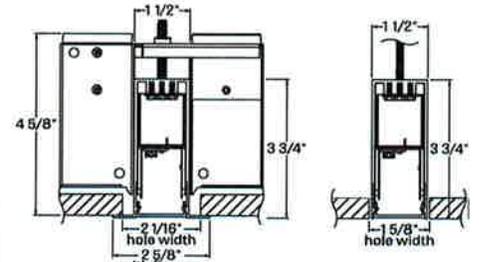
MOUNTING OPTIONS

Recess mount into exposed or concealed T-Bar or Tegular grid ceiling

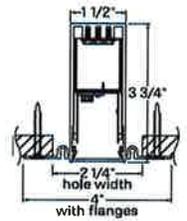


VIA 1.5 LED RECESSED 

Mounting for drywall ceilings are available with visible trim, mud flange trim or trimless



DTR - drywall trim DTL - drywall trimless



DMF - drywall mud flange

FINISH

Interior - 95%, reflective matte powder coated white paint
Exterior - matte white or silver powder coating.
 Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating occupancy and daylight controls into Via 1.5 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration.

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Lutron Motion Controller (LMC) and **Daylight Controller (LDC)** provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

CONSTRUCTION

- Housing** - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content
- Interior brackets** - Die formed cold rolled sheet steel 18 gauge thick
- Joining system** - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge
- Reflectors** - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted
- Mud flange** - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content
- Slip-through bracket** - Die Formed galvanized sheet 18 gauge
- End plate** - Die formed cold rolled sheet steel 18 gauge thick

WEIGHT

- Via 1.5 4ft - 7.16lbs - 3.25kg
- Via 1.5 8ft - 14.32lbs - 6.5kg
- Via 1.5 12ft - 21.48lbs - 9.75kg

CERTIFICATIONS

- ETL** - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.
- Chicago plenum** - City of Chicago Approved (CCEA)
- IC rated** - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

Submitted by:

Job Name:

Catalog Number:

Type:

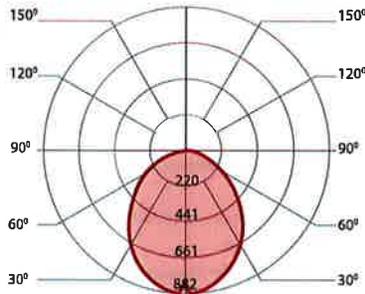


VIA 1.5 LED

RECESSED



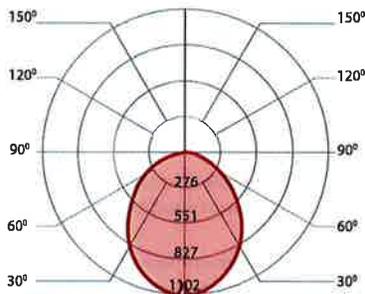
400 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	21	1600	78
low output	3500K	20	1600	80
low output	4000K	19	1600	83

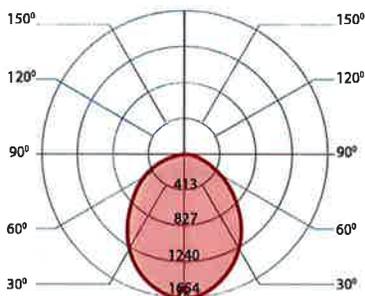
500 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	26	2000	77
medium output	3500K	25	2000	79
medium output	4000K	24	2000	82

750 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	39	3000	76
high output	3500K	38	3000	78
high output	4000K	37	3000	81



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type C4</u>	<u></u>
Manufacturer:	<u>Metalux VT</u>	<u>Industrial Lighting Products - Amazon LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:

Pinkerton Academy, Derry NH; Rhino Foods, Barre VT

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ ___

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct ___ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	WTZ8 88WLED UNIV 40 DIM	C4

PROJECT NAME:	
CHANG NUMBER:	FIGURE TYPE:
VOLTS/WATTS:	LAMPS/BOARD:



8FT WTZ AMAZON - 88W LED WET LOCATION

FEATURES

- 8 Foot Enclosure
- Suitable for Wall or Ceiling Mount
- Impact Resistant, Ribbed Acrylic Clear Lens (Std), Ribbed Acrylic Frosted (RAFL), Ribbed Polycarbonate (RPCL) Deep Clear Lens (DPCL) or Deep Frosted Lens (DPFL) Options
- Continuous Poured, Closed Cell Polyurethane Gasket
- Stainless Steel Mounting Brackets for Drill Free Mounting (Std)
- Polycarbonate Latches (Std), Stainless Steel (SS) Optional
- Tamper Proof Screws (TPS) Optional
- ETL Listed
- 5 Year Warranty
- Fiberglass Body Attributes
- -IP65, IP66 & IP67 (Dust Tight, Low Pressure Water Jets, High Pressure Water Jets, and Immerse 1M)
- -NEMA4 & NSF Rated Components, 5VA Flame Rating
- -UL Listed / Wet Location, (F1) Rated for Outdoor use
- DesignLights Consortium™ Premium Qualified Luminaire



LED SYSTEM

Calculated L70 (TM-21)	>100K
Delivered Lumens	10,260 lm
Total Input Watts	88 W
Luminaire Efficacy Rating (LER)	116 lm/W
Correlated Color Temperature (CCT)	5000 K
Color Rendering Index (CRI)	> 80
Max Ambient Temp	130° F
Min Ambient Temp	-40° F
Universal Driver	120-277 V

LED System data above based on WTZ8-88WLED-UNIV-50-RAFL

⁽¹⁾LED Lumen Maintenance Estimates based on TM-21 projections for the light source at 25°C ambient

⁽²⁾Max ambient temp applies to standard driver installed.

SUITABLE APPLICATIONS

- Parking Garage
- Food Processing and Preparation (SS Latches)
- Pool Areas (SS Latches)
- Car Washes (SS Latches)

ORDERING GUIDE:



WTZ8	88WLED	UNIV	40	DIM
------	--------	------	----	-----

Series	LED	Driver	Color	Options
--------	-----	--------	-------	---------

- | | | | | |
|--|---------------------------------|--|---|---|
| <input type="checkbox"/> WTZ8 Amazon 8ft | <input type="checkbox"/> 88WLED | <input type="checkbox"/> UNIV 120-277 Driver | <input type="checkbox"/> 35
<input type="checkbox"/> 40
<input type="checkbox"/> 50 | <input type="checkbox"/> RPCL Ribbed Polycarbonate Lens
<input type="checkbox"/> RAFL Ribbed Acrylic Frosted Lens (recommended)
<input type="checkbox"/> DPCL Deep Clear Lens
<input type="checkbox"/> DPFL Deep Frosted Lens
<input type="checkbox"/> CORDWx Wet Location Strain Relief Cord (x = ft)
<input type="checkbox"/> SD480 480V Step Down Transformer*
<input type="checkbox"/> FI/ILBCP05 5W LED Factory Installed Battery Backup
<input type="checkbox"/> FI/ILBCP07 7W LED Factory Installed Battery Backup
<input type="checkbox"/> FI/ILBCP10 10W LED Factory Installed Battery Backup
<input type="checkbox"/> FI/ILBCP12 12W LED Factory Installed Battery Backup
<input type="checkbox"/> SS Stainless Steel Latches
<input type="checkbox"/> TPS Tamper Proof Screws
<input type="checkbox"/> DIM 0-10V Dimmable Driver
<input type="checkbox"/> WLOS On/Off Wet Location Sensor Installed
<input type="checkbox"/> FIOS On/Off Occupancy Sensor Installed
<input type="checkbox"/> FIOSPC On/Off Occupancy Sensor w/ Photocell
<input type="checkbox"/> USBD User Select Bi-level Dim w/ Occ. Sensor
<input type="checkbox"/> BDxx Preset Bi-level Dim Sensor (xx=% eg. 20,30)
<input type="checkbox"/> BDxxPC Preset Bi-level Dim Sensor w/ Photocell
<input type="checkbox"/> DHPC Daylight Harvesting
<input type="checkbox"/> PCxxx Photocell (xxx = Voltage)
<input type="checkbox"/> AB/45DEG 45 degree angled surface/wall mount brackets, (2) per fixture |
|--|---------------------------------|--|---|---|

Does Not Qualify For DLC*

*Battery Backup Options See Field Installed LEDBB Sheet.

www.ilp-inc.com

Industrial Lighting Products

407-478-3759

Submitted by:

Job Name:

Catalog Number:

Type:



8FT WTZ AMAZON - 88W LED

WET LOCATION

	Wide (2 Light)	Nominal Length	Width	Length	Depth
Lineal Ribbed Diffuser		4'	6.40"	51.37"	4.25"
		8'	6.40"	99.50"	4.25"
Deep Clear Lens		4'	6.40"	51.37"	5.63"
		8'	6.40"	99.50"	5.63"

Lineal Ribbed Diffuser 4' and 8' Lengths



Deep Clear Lens 4' and 8' Lengths

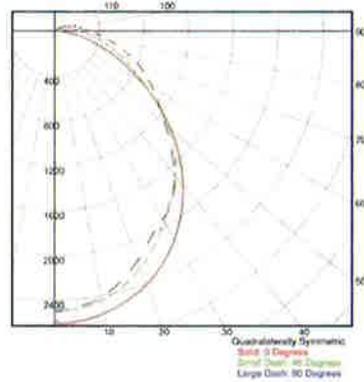


WTZ8-88WLED-UNIV-50-RAFL

SUMMARY DATA

HEMISPHERES TESTED:	BOTH
EFFICIENCY (Total):	100.0%
EFFICIENCY (Downlight):	95.1%
EFFICIENCY (Uplight):	4.9%
CIE CLASSIFICATION:	DIRECT
LUMENS/LAMP:	10012.29
NO. OF LAMPS:	1
LUMINOUS OPENING: RECTANGULAR:	
Width:	0.54 (Feet)
Length:	8.58
Height:	0.17
INPUT WATTS:	88.1

PLANE AND CONE DIAGRAM



MOUNTING OPTIONS

- SS Mounting Brackets for drill-free surface mounting (2 brackets standard)
- Fixture Mounting Box (FMB) - Includes rigid box to attach to the fixture, provides for single point mounting to accept a pendant, hook, or conduit hub (sold separately).



Drill-Free Stainless Steel Mounting Brackets (Std)



HOOK



FMB



AB/45DEG



HUB 3/4 CONDUIT
(Recommended 2 per unit)

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type C5</u>	
Manufacturer:	<u>Metalux VT</u>	<u>Industrial Lighting Products - Blizzard LED</u>
Installer:	<u>TBA</u>	

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:

Tributary Brewing Company, Kittery ME, McHenry Architecture, installed 4/14

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
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- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	BLEXT 140WLED UNIV 40 CAL DIM	C5

PROJECT NAME:	
CATALOG NUMBER:	FIXTURE TYPE:
VOLTS/WATTS:	LAMPS/BOARD:



BLIZZARD EXT FROSTED - 140W LED

WET LOCATION

FEATURES

- Effective Heat Management System (Std)
- Frosted Acrylic Lens (Std), Clear Acrylic Lens (CAL) or Clear Polycarbonate Lens (PCL) Available
- V-Hooks for Chain or Cable Hanging (Standard)
- Optional Rigid Mounting Beam (RMB) allows for: Secure Ceiling Mount or Dual Pendant Mount
- Marine Grade 316 Stainless Steel (Std) or Optional Secure Locking Plastic Latches/Hardware
- 5 Year Warranty
- Fiberglass Body Attributes
 - IP65, IP66 & IP67 (Dust Tight, Low Pressure Water Jets, High Pressure Water Jets, and Immerse 1M)
 - NEMA4 & NSF Rated Components, 5VA Flame Rating
- DesignLights Consortium® Qualified ⁽²⁾

REPLACES 250W MH



Shown with RMBSS Option

LED SYSTEM

Calculated L ₇₀ (TM-21)	>100K
Delivered Lumens	15,890 lm
Total Input Watts	139 W
Luminaire Efficacy Rating (LER)	114 lm/W
Correlated Color Temperature (CCT)	5000 K
Color Rendering Index (CRI)	> 80
Max Ambient Temp	130° F
Universal Driver	120-277 V

SUITABLE APPLICATIONS

- Coolers / Freezers
- Food Preparation
- High Bay / Low Bay
- Commercial or Industrial Building
- Warehouse, Distribution Center, or Manufacturing Plant

LED System data above based on BLEXT-140WLED-UNIV-50-FRAL

⁽¹⁾LED Lumen Maintenance Estimates based on TM-21 projections for the light source at 25°C ambient
⁽²⁾ Specific Configurations Listed on DLC

Ordering Guide

BLEXT	140WLED	UNIV	40	CAL DIM
-------	---------	------	----	---------

Series	LED	Driver	Color	Options
<input type="checkbox"/> BLEXT Blizzard EXT	<input type="checkbox"/> 140WLED 6x56 Board	<input type="checkbox"/> UNIV 120-277 Driver	<input type="checkbox"/> 40* <input type="checkbox"/> 50* *DLC Listed Config.	<input type="checkbox"/> CAL Clear Acrylic Lens <input type="checkbox"/> FRAL* Frosted Acrylic Lens <input type="checkbox"/> PCL Clear Polycarbonate Lens <input type="checkbox"/> DIM 0-10V Dimmable Driver <input type="checkbox"/> FIOS On/Off Occupancy Sensor Installed <input type="checkbox"/> FIOSPC On/Off Occupancy Sensor w/ Photocell <input type="checkbox"/> WLOS Wet Location Sensor Installed <input type="checkbox"/> USDC User Selectable Dimming Control <input type="checkbox"/> USBD User Select Bi-level Dim w/ Occ. Sensor <input type="checkbox"/> BDxx Preset Bi-level Dim Sensor (xx=1/2, 20,30) <input type="checkbox"/> BDxxPC Preset Bi-level Dim Sensor w/ Photocell <input type="checkbox"/> DHPC Daylight Harvesting <input type="checkbox"/> PCxxx Photocell (xxx = Voltage) <input type="checkbox"/> SD480** 480V Step Down Transformer <input type="checkbox"/> FI/ILBCP05 05W LED Factory Installed Battery Backup <input type="checkbox"/> FI/ILBCP07 07W LED Factory Installed Battery Backup <input type="checkbox"/> FI/ILBCP10 10W LED Factory Installed Battery Backup <input type="checkbox"/> FI/ILBCP12 12W LED Factory Installed Battery Backup <input type="checkbox"/> CLD For Below 0°C/32°F Environment <input type="checkbox"/> CORDWx Wet Location Strain Relief Cord (x = ft) <input type="checkbox"/> HB-XX-18Y-PADY -Toggle Cable System (XX = in) <input type="checkbox"/> RMBSS Rigid Mounting Beam (SS)

**All 347V applications please contact factory for pricing

*Battery Backup Options See Field Installed LED BB Sheet.

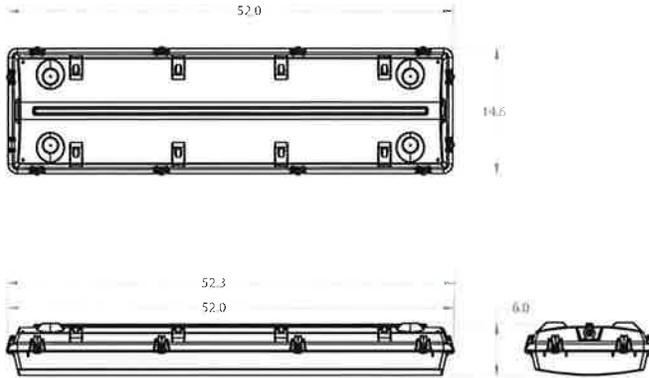
www.ilp-inc.com

Industrial Lighting Products

407-478-3759

BLIZZARD EXT FROSTED - 140W LED

WET LOCATION



MOUNTING OPTIONS

- V-Hooks (Std) for Dual Point Chain or Cable Hanging
- Optional Rigid Mounting Beam allows for:
 - Secure Ceiling Mount
 - Dual Pendant Mount (with 1/2" Conduit Hubs)
- HB-60-18Y-PAD - Y-Paddle Cables



Straps w/ V-Hook



Rigid Mounting Beam

HB-60-18Y-PAD



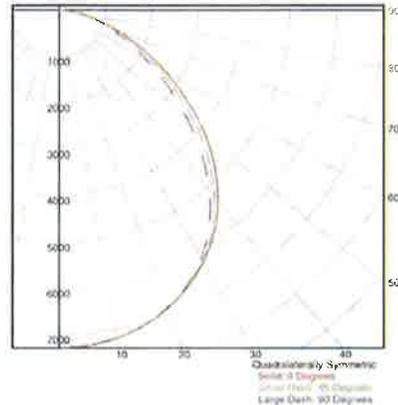
BLEXT-140WLED-UNIV-FRAL

LUMINAIRE OUTPUT = 15450.59 LM
119.9V 1.177A 139.9W PF=0.986

SUMMARY DATA

HEMISPHERES TESTED:	BOTH
EFFICIENCY (Total):	100.0%
EFFICIENCY (Downlight):	96.9%
EFFICIENCY (Uplight):	3.1%
CIE CLASSIFICATION:	DIRECT
SPACING CRITERION: (0-Deg):	1.27
SPACING CRITERION: (90-Deg):	1.25
LUMENS/LAMP:	15450.59
NO. OF LAMPS:	1
LUMINOUS OPENING: RECTANGULAR:	
Width:	1.08 (Feet)
Length:	4.21
Height:	0.21
INPUT WATTS:	139.367

PLANE AND CONE DIAGRAM



Photometric values based upon tests performed in compliance with LM-79, IES files can be downloaded at www.ilp-inc.com

Industrial Lighting Products

LED lighting facts[®]

A Page of the IES LM-80

Light Output (Lumens)	15690
Watts	139
Lumens per Watt (Efficacy)	114.32

Color Accuracy	80
Color Rendering Index (CRI)	

Light Color
Correlated Color Temperature (CCT)



2700K 3000K 5000K 8300K

All results are reported by IESNA LM-79-2009 approved facilities for the electrical and photometric testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product real world results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: I088432 (3/19/2013)
Model Number: BLEXT-140WLED (4x1x5.66) (18w)
Test Location: In-house

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type G1</u>	<u></u>
Manufacturer:	<u>Spec Grade HBX</u>	<u>Juno / Acculite - ALX Series</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:

Not currently aware of any

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ ___

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct ___ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
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- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	ALX A18 4K UN XX	G1

H1.7.10DLC

AccuLite

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

LED HIGHBAY LUMINAIRES

ALX SERIES

20,000 AND 25,000 LUMENS



PRODUCT DESCRIPTION

AccuLite® ALX Series fixtures are designed for commercial and industrial high bay and low bay applications. The LED light source provides instant On/Off which coupled with optional on board motion sensors can substantially reduce energy consumption. Multiple lumen packages help tailor a lighting job that matches what the space requires, providing great uniformity and energy savings. ALX Series high bays are backed by a 5 year limited warranty.

PRODUCT SPECIFICATIONS

Optics Aluminum and Acrylic reflector accessories produce uniform illumination with spacing criteria of 1.3 or 1.4
 • The Acrylic reflector produces up to 8% uplight to remove the "cave effect".

Construction The fixture body is made of cast aluminum to maximize heat dissipation and LED life • The reflector accessories can be made of spun Aluminum or virgin Acrylic in a translucent or clear configuration • A glass lens shields the LEDs from the environment with an IP65 dust and water tight enclosure (Fixture is damp location, LED compartment is IP65).

Electrical Equipped with a driver with universal 120-277VAC 50/60Hz input • Optional 347V and 480V input fixtures are also available • Standard fixture driver includes a 4kV surge suppressor • An optional 10,000 Amps surge suppressor is available for locations that require Line-Ground, Line-Neutral, and Neutral-Ground protection in accordance with IEEE/ANSI C62.41.2.

Thermal Management LED boards are in direct contact with the aluminum heat sink • The heat sink is finely machined to increase surface uniformity and maximize contact with the LEDs • The electronic drivers are exposed to the air, away from the LED light source • The standard fixture can operate in environments between 32°F and 122°F (0°C and 50°C). Fixtures with options and accessories may have reduced temperature ranges.

Mounting ALX series fixtures are supplied with a built in hook or a j-box with a ¾" NPT hub. • Fixtures with hook ("6HC" mounting suffix) are shipped with 6' cord for input power and for dimming leads • Some options may not be compatible with 6HC mounting • Ceiling mount option is also available.

Dimming Fixtures come standard with 0-10V dimming.

Occupancy Sensor ALX fixtures can be shipped with an optional programmable motion sensor that can be field programmed to operate the fixture for ON/OFF or High/Low. In the High/Low operation the motion sensor can be set to 10 different light levels. The sensor can also be programmed for the time it stays in ON or HIGH mode.

Wireless Controls AccuLite LED high bays can be ordered with a wireless controls ready option (suffix WCR). This option provides a fixture that is factory assembled with a wireless adapter compatible with Daintree Networks' Control Scope® system. When coupled with additional Daintree compatible sensors, timers, and software some of the key benefits of the Control Scope® system are:

- Enables powerful energy saving strategies like scheduling, occupancy, daylight harvesting, demand response, and load shedding
- Provides a reduced cost and reduced complexity solution, compared to traditional wired systems

Cat. No.:

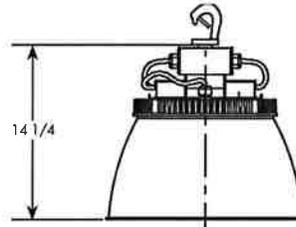
Shown with "PD" mounting option and reflector ALXLEDT16W



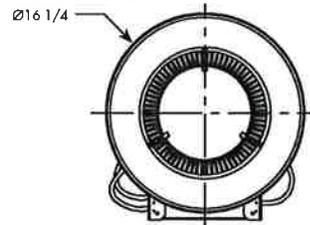
Shown with "6HC" mounting option and reflector ALXLEDA16



DIMENSIONS



Dimensions shown with accessory reflector installed, "PD" mounting option and HK75SSB hook accessory.



- Scalable from a single warehouse area to systems of thousands of fixtures across a distributed enterprise
- Uses a reliable, ZigBee® based mesh architecture with bi-directional control
- Provides real time energy usage information
- Enables energy management through a Web user interface that can be accessed from any remote location

Emergency Battery The ALX series luminaires can be equipped with an optional emergency battery that provides emergency illumination for 90 minutes in case of a power outage • The "EM" option can operate in ambient temperatures between 0°C and 30°C (32°F and 85°F)

• This option is only available for 120V or 277V AC • Initial delivered lumens in battery mode are approximately 1,400 lumens

Finish Dual tone silver/clear anodized finish is standard.

- Certifications** Meets UL1598/CSA C22.2 250 standards
- Suitable for damp locations • Assembled in the USA
 - Union made • Meets "Buy American Act" • 5 year limited warranty, when used in accordance with manufacturer specifications
 - DesignLights Consortium® qualified.

REV-2/16

Specifications subject to change without notice



H1.7.10DLC

LED INFORMATION

Fixture	Reflector	Delivered Lumens	Watts	Efficacy	Spacing Criteria
ALX-A24	ALXLEDF16S - Aluminum Specular	24,401	200	122	1.44:1
	ALXLEDF16D - Aluminum Diffused	23,934	200	120	1.36:1
	ALXLEDT16W - Acrylic Frosted	25,816	200	129	1.34:1
	ALXLEDA16 - Acrylic Clear	25,926	200	130	1.36:1
ALX-A18	ALXLEDF16S - Aluminum Specular	19,384	162	120	1.42:1
	ALXLEDF16D - Aluminum Diffused	19,013	162	117	1.36:1
	ALXLEDT16W - Acrylic Frosted	20,508	162	127	1.34:1
	ALXLEDA16 - Acrylic Clear	20,595	162	127	1.36:1

Test data is representative of the 4000K and 5000K CCT

ORDERING INSTRUCTIONS - Fixture light engine only, reflectors must be ordered separately

Series	Engine Code	CCT	Voltage	Mounting	Optics	Options
ALX	A18	4K	UN	XX		
ALX AccuLite Highbay	A24 25,000L A18 20,000L	4K 4000K 70CRI 5K 5000K 70CRI For other CCTs contact factory	UN 120-277V E12 ⁵ 120V E20 ⁵ 208V E24 ⁵ 240V E27 ⁵ 277V E34 347V E48 480V	6HC Standard hook and 6' cord PD Top j-box with 3/4" hub CE ⁴ Surface mounted to standard octagonal box XX- PLEASE ADVISE MOUNTING	Order separately	6C ³ 6' Cord for fixtures with "PD" mounting TLP ¹ Twist lock NEMA plug (must specify voltage) H Motion sensor option factory installed (high/low, or on/off field programming) EM ² Integral emergency battery, 1400 lumens WCR ² Wireless ready Daintree option DSP Surge suppressor 10,000A

¹ Available with 6HC mounting option only.

² Available in 120V through 277V. Not available with "CE" mounting configuration.

³ For fixtures with "PD" mounting option only. (Fixtures with "6HC" option come automatically with a 6' cord).

⁴ Surface mounted fixtures are designed for mounting to standard octagonal j-box and 4" square j-box. Available for 120-277V Only. Not available with "WCR" or "EM" options.

⁵ Specify for TLP option only.

REFLECTORS

Item Number	Description
ALXLEDF16D	16" Facetted Aluminum Reflector, Diffused
ALXLEDF16S	16" Facetted Aluminum Reflector, Specular
ALXLEDT16W	16" Frosted Acrylic Reflector
ALXLEDA16	16" Clear Acrylic Reflector

Note: Acrylic and polycarbonate reflectors are not recommended for oily or excessively dirty environments.



Submitted by:	Job Name:	Catalog Number:	Type:
			

H1.7.10DLC

WIRING AND MOUNTING ACCESSORIES

Item Number	Description
HK75SSB	Hook, 3/4" NPT male, attaches to fixture j-box hub (Fixture with "PD" mounting option only)
HF75SS	Female hook, attaches to 3/4" pendant pipe
HBPH120	Twist lock receptacle, hook, and junction box feed-through or pendant mount (3/4"), 120V
HBPH277	Twist lock receptacle, hook, and junction box feed-through or pendant mount (3/4"), 277V
HBPH347	Twist lock receptacle, hook, and junction box feed-through or pendant mount (3/4"), 347V
HBPH480	Twist lock receptacle, hook, and junction box feed-through or pendant mount (3/4"), 480V
HBBS10	10' safety cable. Use to provide extra attachment from fixture to support structure.
HBBS20	20' safety cable. Use to provide extra attachment from fixture to support structure.
H7512SR	12" hang straight pendant kit, includes swivel style j-box cover and 3/4" pipe - Use with "PD" mounting option.
H7524SR	24" hang straight pendant kit, includes swivel style j-box cover and 3/4" pipe - Use with "PD" mounting option.
H7536SR	36" hang straight pendant kit, includes swivel style j-box cover and 3/4" pipe - Use with "PD" mounting option.
ALXLEDOCCH	Occupancy sensor. High/Low or High/Low/Off field installed. Not compatible with WCR option.



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H1.7.10DLC

PROJECTED LUMEN MAINTENANCE PER TM21

Hours	25,000	50,000	75,000	100,000	125,000	150,000
Ambient						
0°C - 50°C (32°F - 122°F)	93%	88%	83%	78%	74%	70%

Values shown represent percent of lumens delivered at the specified hours of operation and ambient temperature compared to initial lumens delivered

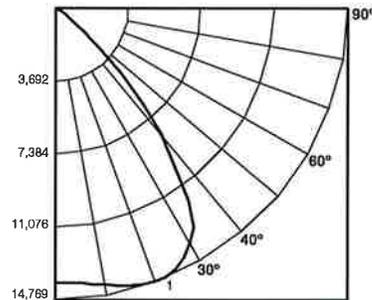
REPORTED L₇₀ HOURS PER TM21 CALCULATOR

Ambient Temperature	Reported L ₇₀ Hours
32°F (0°C) - 122°F (50°C)	>55,000

OPERATING TEMPERATURE RANGE

	Min	Max
Base Fixture (120-277V)	0°C (32°F)	50°C (122°F)
Base Fixture (347 or 480V)	0°C (32°F)	50°C (122°F)
Fixture with battery backup	0°C (32°F)	30°C (85°F)
Fixture with wireless controls	0°C (32°F)	50°C (122°F)

PHOTOMETRY

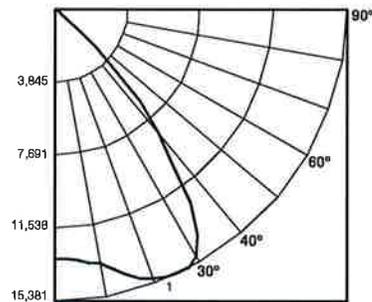


ZONAL LUMEN SUMMARY

ALX-A24-4K-UN with ALXLEDF16D reflector

	Zone	Lumens	%Fixture
	0-30	12,144	50.7
Downlight	0-40	19,280	80.6
	0-60	23,682	98.9
	0-90	23,911	99.9
Uplight	90-180	23	0.1
Total	0-180	23,934	100.0

Maximum Candela = 14768.6 Located At Horizontal Angle = 0, Vertical Angle = 20 #1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd)

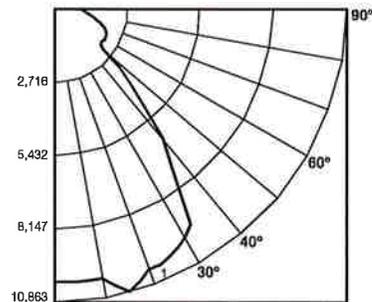


ZONAL LUMEN SUMMARY

ALX-A24-4K-UN with ALXLEDF16S reflector

	Zone	Lumens	%Fixture
	0-30	12,462	51.9
Downlight	0-40	20,026	83.4
	0-60	23,887	99.5
	0-90	23,975	99.9
Uplight	90-180	26	0.1
Total	0-180	24,001	100.0

Maximum Candela = 15381 Located At Horizontal Angle = 0, Vertical Angle = 27.5 #1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd)



ZONAL LUMEN SUMMARY

ALX-A24-4K-UN with ALXLEDT16W reflector

	Zone	Lumens	%Fixture
	0-30	8,673	33.5
Downlight	0-40	13,719	53.1
	0-60	18,881	73.1
	0-90	23,772	92.1
Uplight	90-180	2,044	7.9
Total	0-180	25,816	100.0

Maximum Candela = 10863 Located At Horizontal Angle = 0, Vertical Angle = 15 #1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd)



Submitted by:

Job Name:

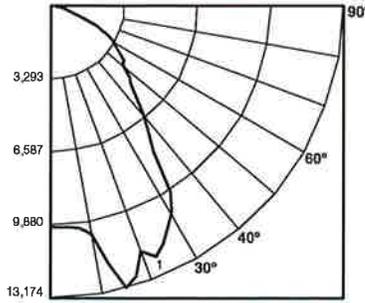
Catalog Number:

Type:



H1.7.10DLC

PHOTOMETRY



ZONAL LUMEN SUMMARY

ALX-A24-4K-UN with ALXLEDA16 reflector

	Zone	Lumens	%Fixture
Downlight	0-30	9,865	38.1
	0-40	15,108	58.3
	0-60	22,480	86.7
	0-90	25,230	97.3
Uplight	90-180	696	2.7
Total	0-180	25,926	100.0

Maximum Candela = 13173.7 Located At Horizontal Angle = 0, Vertical Angle = 15 #1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

DELIVERED UPLIGHT

Lens	Reflector	ALXLEDF16D	ALXLEDF16S	ALXLEDT16W	ALXLEDA16
	No bottom lens		0.1%	0.1%	7.9%

Uplight values expressed as % of total lumens delivered



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CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type H4</u>	<u></u>
Manufacturer:	<u>Bega LED</u>	<u>Juno Lighting LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:

Not currently aware of any

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ ___

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct ___ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	IC115LEDHSG/IC115LEDPM-4K/836WH OR BL	H4

G5.6.3

JUNO

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

IC LED OUTDOOR STEP LIGHT

LED IC115LEDHSG, IC115LEDPM



PRODUCT DESCRIPTION

The LED step light is rated for use in outdoor or indoor wall mount applications including concrete pour, brick masonry or drywall

- Recessed housing is IC rated and can be completely covered with insulation
- Back housing ships separately from power module for rough-in purposes
- Designed to provide 50,000 hours of life and is compatible with standard trims
- 5 year warranty on LED components.

ENVIRONMENTALLY FRIENDLY, ENERGY EFFICIENT

- No harmful ultraviolet or infrared wavelengths
- No lead or mercury
- Comparable light output to compact fluorescent step light

PRODUCT SPECIFICATIONS

Housing Die cast aluminum housing painted white for durability

- Gasket for water tight seal in wet locations
- Cover plate provided to protect housing interior during rough-in
- (2) 1/2" conduit compression fittings provided for wiring
- (1) conduit fitting plug included
- Two brackets supplied for nailing unit to studs.

Power Module LED light engine and driver mounted directly to metal tray assembly for ease of wiring and installation into housing after rough-in.

LED Light Engine: LED PCB utilizes 1 watt high lumen output LEDs binned to Energy Star standards • 3000K or 4100K color temperatures available.

LED Driver: Non-dimming driver accommodates input voltage of 120 volts AC at 50/60Hz • Power factor > 0.9 at 120V input

- Driver is thermally protected and has integral overload and short circuit protection
- Terminal connections provided as standard for easy removal.

Trims Available in textured white or black powder coat on cast aluminum • Fastens to housing with two allen head screws

- Opal diffuser supplied with all trims.

Life Rated for 50,000 hours at 70% lumen maintenance.

Labels UL listed for wet locations, concrete pour approved

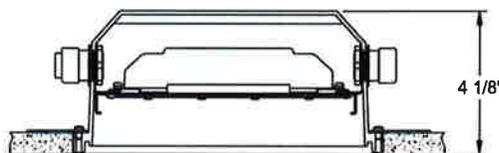
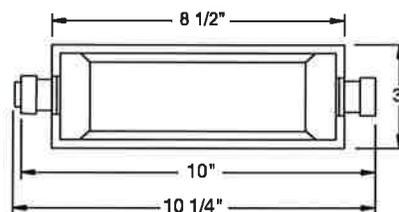
- UL and cUL Listed, RoHS compliant.

Testing All reports are based on published industry procedures; field performance may differ from laboratory performance.

Product specifications subject to change without notice.

DIMENSIONS

IC115LEDHSG



9" X 3" WALL OPENING

ELECTRICAL DATA

Input Voltage	120V
Input Power	6.4W
Input Current	0.06A
Frequency	50/60Hz
THD	< 10%
Minimum starting temp	-20°C (-4°F)

Submitted by:  VISIBLE LIGHT <small>MANUFACTURERS REPRESENTATIVE</small>	Job Name:	Catalog Number:	Type:
---	-----------	-----------------	-------

G5.6.3

IC LED OUTDOOR STEP LIGHT

LED IC115LEDHSG, IC115LEDPM

ORDERING INFORMATION: Housing, power module and trim each ordered separately.

Example: IC115LEDHSG	Example: IC115LEDPM-3K	Example: 835-WH																		
<p>Back Housing</p> <p>IC115LEDHSG</p> <p>IC115LEDHSG</p> 	<p>Power Module</p> <p>IC115LEDPM - <input type="text" value="4K"/></p> <p>IC115LEDPM</p> <p>3K 3000K 41K 4100K</p> 	<p>Trim/Description</p> <p>836 - (PLEASE CHOOSE WHITE OR BLACK)</p> <table border="0"> <tr> <td></td> <td>835-WH</td> <td>Full Opal Lens - White</td> </tr> <tr> <td></td> <td>835-BL</td> <td>Full Opal Lens - Black</td> </tr> <tr> <td></td> <td>836-WH</td> <td>Opal Lens with Grill - White</td> </tr> <tr> <td></td> <td>836-BL</td> <td>Opal Lens with Grill - Black</td> </tr> <tr> <td></td> <td>837-WH</td> <td>Opal lens with Angled Louvers - White</td> </tr> <tr> <td></td> <td>837-BL</td> <td>Opal lens with Angled Louvers - Black</td> </tr> </table> <p>Trim Size: 9 3/4" L x 3 5/8" H Trim Finish: WH - White, BL - Black.</p>		835-WH	Full Opal Lens - White		835-BL	Full Opal Lens - Black		836-WH	Opal Lens with Grill - White		836-BL	Opal Lens with Grill - Black		837-WH	Opal lens with Angled Louvers - White		837-BL	Opal lens with Angled Louvers - Black
	835-WH	Full Opal Lens - White																		
	835-BL	Full Opal Lens - Black																		
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	836-BL	Opal Lens with Grill - Black																		
	837-WH	Opal lens with Angled Louvers - White																		
	837-BL	Opal lens with Angled Louvers - Black																		



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CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type H7</u>	<u></u>
Manufacturer:	<u>Color Kinetics</u>	<u>Lumenpulse Lumenfacade</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:

TD Banknorth Garden, Boston, MA: Plymouth State University - Allwell Center

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ ___ per ___ Substitution \$ ___ per ___

Savings to Owner for accepting substitution: N/A \$ ___

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct ___ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURED PERFORMANCE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	LOGH VOLT XX RGBW WW DMX	H7

Specification Sheet

lumenfacade™

HORIZONTAL
COLOR CHANGING

Client _____ Project name _____

Order# _____ Type _____ Qty _____

FEATURES AND BENEFITS

Physical :

- low copper content extruded aluminum housing
- Available in 1', 2', 3' or 4' sections
- Electro-statically applied polyester powder coat finish
- Machined aluminum end caps and silicone gaskets
- Stainless steel hardware
- Clear tempered glass
- Asymmetric wallwash, 10° x 10°, 10° x 60°, 30° x 60° or 60° x 60° optics
- Right or left feeding side options available
- IP66
- IK07 rated (asymmetric wallwash lens is IK06 rated)
- Corrosion-resistant coating for hostile environments**
- Meets 3G ANSI C136.31 Vibration standard for bridge applications

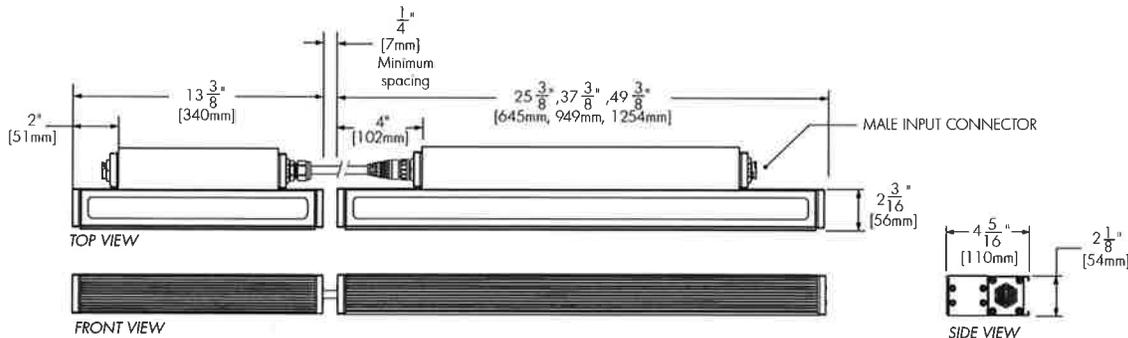


Performance :

- Minimum 1fc (10.7 lux) @ 102 feet (31.1m) distance (RGB full white, 4' unit, 10° x 60° optic)
- 2,041 delivered lumens and 10,415 candelas at nadir (RGB full white, 4' unit, 10° x 60° optic)
- Color mixing options: RGB (3 channels) or RGBW (4 channels)
- lumen maintenance 120,000 hrs (L70 @ 25°C)
- lumen measurements comply with LM - 79 - 08 standard
- Resolution per foot or per fixture (configured with lumenID V3 software & RDM)
- Operating temperatures: -25° C to 50° C [-13F to 122F]

Electrical :

- Line voltage luminaire for 100 to 277V
- Power and data in 1 cable (#16-5)
- Up to 78 feet with a single 120V power feed
- 17.25W/ft
- DMX/RDM enabled



* Asymmetric wallwash lens is IK06 rated.

** Use only when exposed to salt spray and harsh chemicals. This option is not required for normal outdoor exposure!

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5-year limited warranty.

01/SE/2015

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H3K 1G6

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and Conditions of Sales.

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lumenpulse reserves the right to make changes to this product at any time without prior notice and such modification shall be effective immediately.

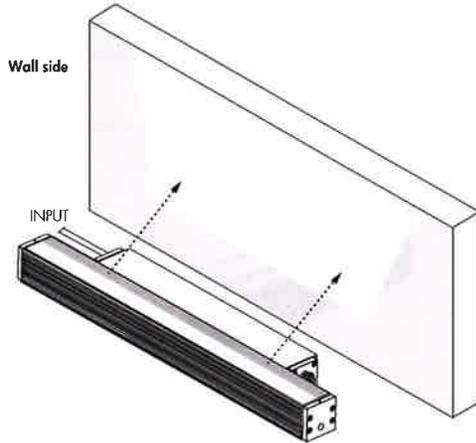


Specification Sheet

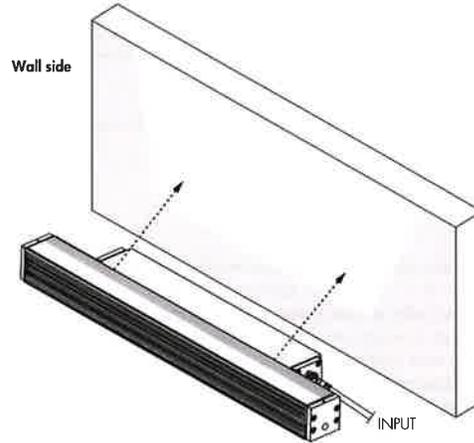
ASYMMETRIC WALLWASH OPTIC FEEDING SIDE DETAIL

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HORIZONTAL
COLOR CHANGING

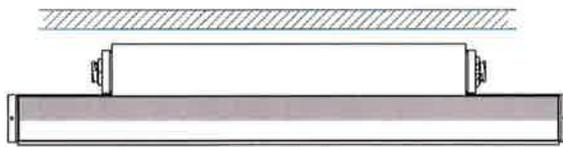


WW-LF
Asymmetric Wallwash Optic, Left Feed



WW-RF
Asymmetric Wallwash Optic, Right Feed

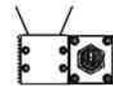
Always position frosted side toward the wall



TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW
(Fixture pointing upwards)

* Fixture's feeding side is based on upright installations. Feeding sides are reversed when fixture is used in a downlight application.

Recommended setback from wall is 1/10 of the wall height.

Example: 2ft setback for a 20ft wall.

Submitted by:

Job Name:

Catalog Number:

Type:

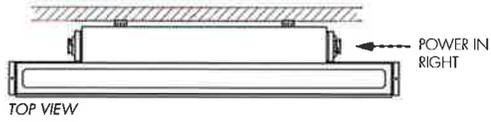


Specification Sheet

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HORIZONTAL
COLOR CHANGING

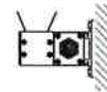
FEEDING SIDE



TOP VIEW



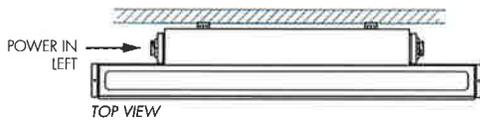
FRONT VIEW



RIGHT
(Fixture pointing upwards)

RF
Right Feeding side
fixed mounting shown

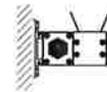
*Fixture's feeding side is based on upright installations. Feeding sides are reversed when fixture is used in a downlight application.



TOP VIEW



FRONT VIEW

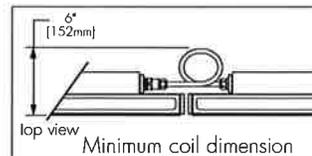
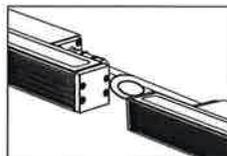


LEFT
(Fixture pointing upwards)

LF
Left Feeding side
fixed mounting shown

OPTION

ETE - End-to-end configuration,
no jumper cable needed.
16" cable included at input.



3/8

01/SE/2015
N.Kassabian - Rev.14

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www.lumenpulse.com

5-year limited warranty.

Consult www.lumenpulse.com
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lumenpulse reserves the right to make changes to this product at any time without prior notice and such modification shall be effective immediately.

Submitted by:

Job Name:

Catalog Number:

Type:

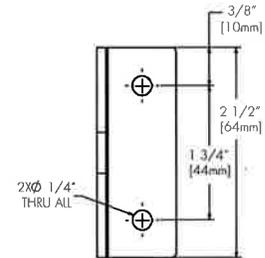
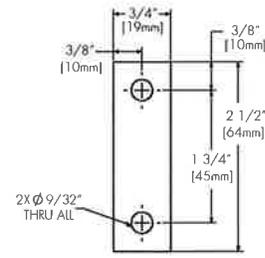
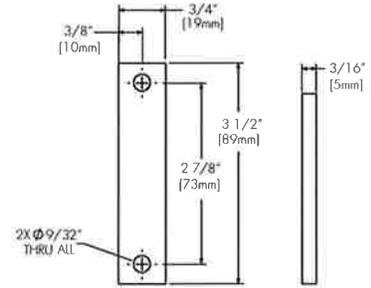
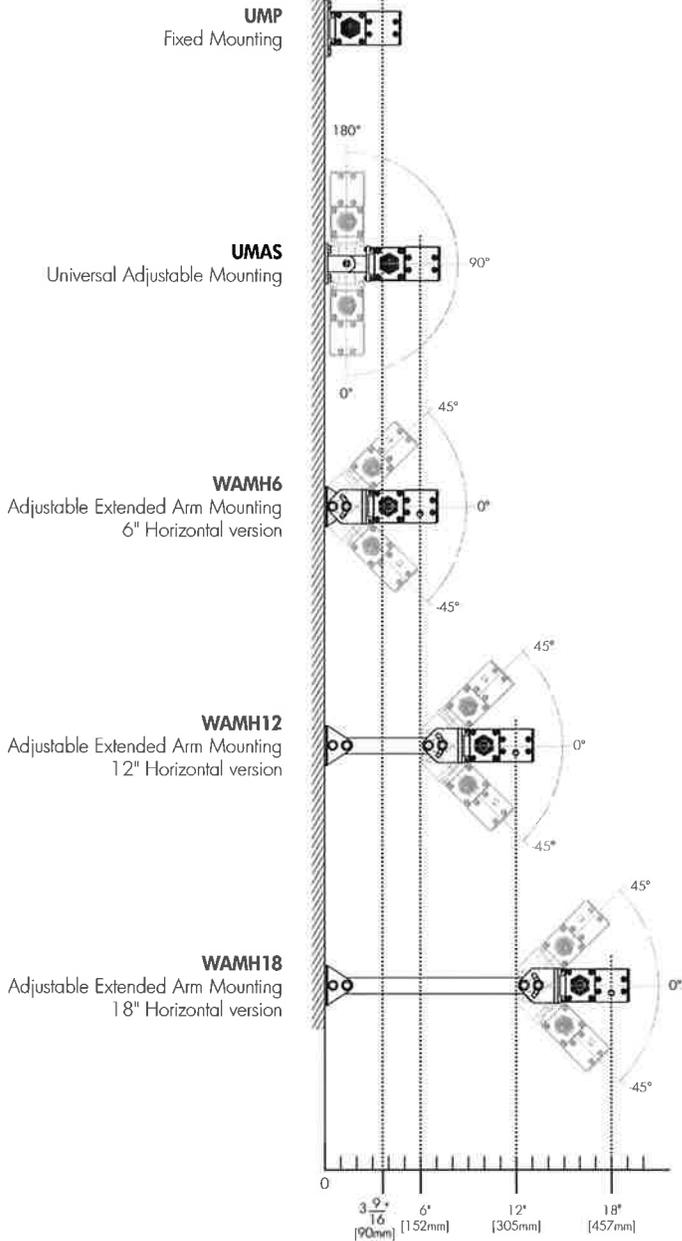


Specification Sheet

MOUNTING OPTIONS

lumenfacade™

HORIZONTAL
COLOR CHANGING



4/8

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5-year limited warranty.



01/SE/2015
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Consult www.lumenpulse.com
for our complete Standard Terms
and Conditions of Sales.

Lumenpulse reserves the right to make changes to this product at any time
without prior notice and such modification shall be effective immediately.

Submitted by:	Job Name:	Catalog Number:	Type:
			

Specification Sheet

lumenfacade™

HORIZONTAL
COLOR CHANGING

ACCESSORIES

Order separately

Control Systems:

- LTO2** Lumentouch is a wall mount DMX 512 controller keypad.
- LCU** Lumentcue is a USB / mini SD DMX 512 controller.
- LID** LumenID is a diagnostic and addressing DMX 512 controller. It must be specified on all DMX applications. Refer to LID specification sheet for details.
- LITN** Lumentone is a simple pre-programmed DMX 512 controller with a push button rotary dial and live feedback.

Control Boxes:

- CBX** DMX/RDM control box. Up to six power and data outputs to fixtures or fixture runs. Ethernet enabled option. Refer to CBX specification sheet for details.

Leader Cable :

- LOGLCD__** Leader Cable for Lumenfacade. Please add desired cable length : 10', 25' or 50' [3m, 7.6m or 15.2m] standard lengths. Sealing endcap is mandatory for any unused connector. (1) included with every leader cable
- LOGLCD__-ETE** Leader Cable for Lumenfacade, ETE option. Please add desired cable length : 10', 25' or 50' [3m, 7.6m or 15.2m] standard lengths. Sealing endcap is mandatory for any unused connector. (1) included with every leader cable

Jumper Cable :

- LOGJCD__** Jumper Cable for Lumenfacade. Please add desired cable length : 2' or 4' [0.6m, 1.2m] standard lengths
- LOGJCD__-ETE** Jumper Cable for Lumenfacade, ETE option. Please add desired cable length : 2' or 4' [0.6m, 1.2m] standard lengths



Specification Sheet

lumenfacade™

HORIZONTAL
COLOR CHANGING

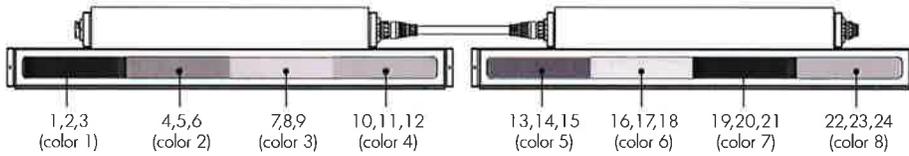
RESOLUTION DETAILS

Fixture resolution can be configured on-site within the LumenID V3 software. A DMX/RDM enabled CBX is required.

Resolution per foot: each foot is addressed independently

DMX ADDRESSES:

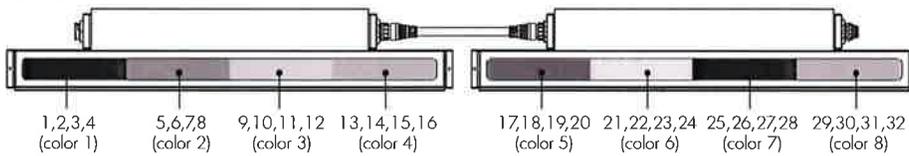
TOP VIEW



LOGH 48 inches
RGB color mixing option

LOGH 48 inches
RGB color mixing option

TOP VIEW



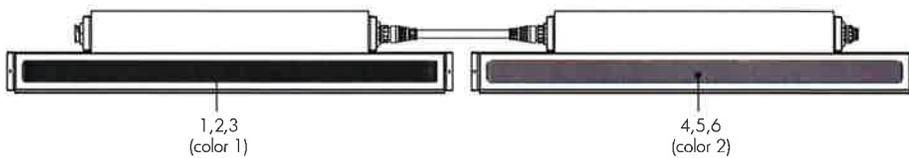
LOGH 48 inches
RGBW color mixing option

LOGH 48 inches
RGBW color mixing option

Resolution per fixture: each fixture is addressed independently

DMX ADDRESSES:

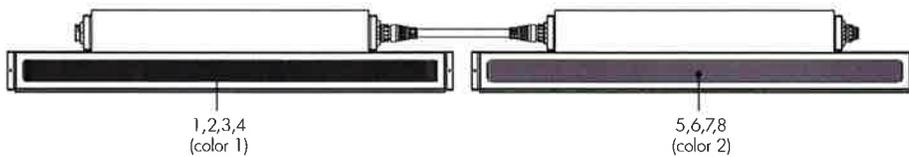
TOP VIEW



LOGH 48 inches
RGB color mixing option

LOGH 48 inches
RGB color mixing option

TOP VIEW



LOGH 48 inches
RGBW color mixing option

LOGH 48 inches
RGBW color mixing option

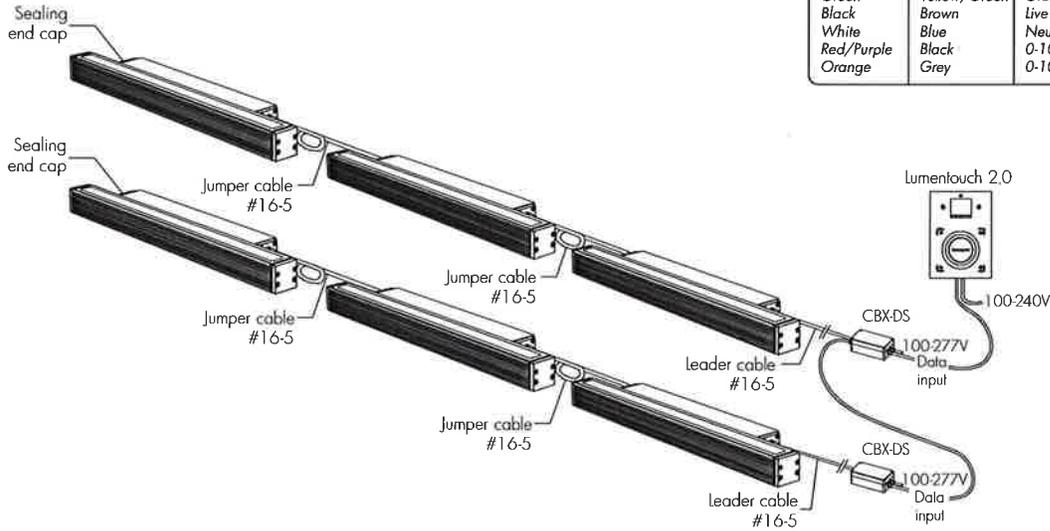
Specification Sheet

lumenfacade™

HORIZONTAL
COLOR CHANGING

TYPICAL WIRING DIAGRAM

Daisy Chain layout (DMX/RDM)



American Color Code	CE Color Code	USE
Green	Yellow/Green	Ground
Black	Brown	Live 100-277V
White	Blue	Neutral
Red/Purple	Black	0-10V / Data +
Orange	Grey	0-10V / Data -

Maximum run length by 15A circuit			
Cable length/Voltage	120V	240V	277V
10ft leader cable	78ft	100ft	112ft
50ft leader cable	68ft	80ft	88ft

*Up to 170 individually addressable 1 foot sections per DMX/RDM run.
*Maximum run length calculations are typically based on 4ft fixtures.
Consult factory for specific applications.

Submitted by:

Job Name:

Catalog Number:

Type:



Specification Sheet

lumenfacade™

HORIZONTAL
COLOR CHANGING

HOW TO ORDER

LOGH	Select:	Select:	RGBW	WW	Select:	Select:	Select:	DMX/RDM	Select:
1	2	3	4	5	6	7	8	9	10

1

Housing:

LOGH - Lumenfacade™ Horizontal

2

Voltage:

100 - 100 volts	220 - 220 volts
120 - 120 volts	240 - 240 volts
208 - 208 volts	277 - 277 volts

3

PLEASE ADVISE VOLTAGE

Length:

12 - 13 3/8 inches (340mm) (2 kg/4.5 lbs)
24 - 25 3/8 inches (645mm) (3.17 kg/7 lbs)
36 - 37 3/8 inches (949mm) (4.75 kg/10.5 lbs)
48 - 49 3/8 inches (1254mm) (6.35 kg/14 lbs)

4

PLEASE ADVISE LENGTH

Colors and Color temperatures:

RGB - Additive red, green and blue
RGBW - Additive red, green, blue and white 4000K

5

Optic:

WW - Asymmetric Wallwash optic*
10x10 - 10° x 10°**
10x60 - 10° x 60°
30x60 - 30° x 60°
60x60 - 60° x 60°

*Available September 2015.

**For best results, we recommend a 6-inch (15cm) setback from surface. Contact factory for application support.

6

Feeding Side:

Please specify one of the following:

(Right Feeding side is standard unless otherwise specified)

LF - Left Feeding side
RF - Right Feeding side

7

Mounting Option:

UMP - Fixed Mounting
UMAS - Universal Adjustable Mounting
(Suitable to use when **3GV** option is specified)
WAMH6 - Adjustable Extended Arm Mounting 6"
Horizontal version
WAMH12 - Adjustable Extended Arm Mounting 12"
Horizontal version
WAMH18 - Adjustable Extended Arm Mounting 18"
Horizontal version

8

Finish:

SI - Silver SandText
BK - Black SandText
WH - White
CC - Custom (please specify RAL color)

9

Control:

DMX/RDM - DMX/RDM enabled
Fixtures come pre-addressed by fixture (consult Resolution Details page for the number of DMX addresses per color mixing option).

10

Option:

ETE - End-to-end configuration, no jumper cable needed
CRC - Corrosion-resistant coating for hostile environments
3GV - 3G ANSI C136.31 Vibration Rating
N.B. Available with UMAS mounting option only.

8/8

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1.877.937.3003
P.514.937.3003
F.514.937.6289
info@lumenpulse.com
www.lumenpulse.com

5-year limited warranty.

Consult www.lumenpulse.com for our complete Standard Terms and Conditions of Sales.

lumenpulse

Lumenpulse reserves the right to make changes to this product at any time without prior notice and such modification shall be effective immediately.

01/SE/2015
N.Kassabian - Rev.14

1751 Richardson, Suite 1505
Montreal (Quebec) Canada
H3K 1G6

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT PROPOSED SUBSTITUTION

Trade Name, Model: Type K1 _____

Manufacturer: Paramount FG2 _____ LC Doane RXB Series _____

Installer: TBA _____

History of proposed substitution: New product 2-5 years old ___ 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:

Not currently aware of any

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
	SANFORD HIGH SCHOOL & TECHNICAL CENTER	RXB22-2L40-SW-VARDM-122/00-NS-RO (14W)	K1



RXB-LED

Cleanroom **LED** Recessed Grid 1 to 1.5 in. T-grid

PRODUCT SPECIFICATION

Cleanrooms, laboratories, research facilities, kitchen areas, vivariums, natatoriums

Mounting

Mounts recessed in 1 to 1.5 in. T-grid ceiling. Cable fastener earthquake clips provided.

Housing

18 gauge cold rolled steel die-formed to shape with seams welded, ground smooth, and caulked airtight.

Door

One-piece 18 gauge cold rolled steel, gasketed and sealed overlapping door. Freedom Hinge™ design permits removal and hinging from either side. Aluminum and stainless steel available.

Lens

Optic Plus lens (standard) completely hides diode image while providing minimum 95% light transmission.

Finish

Polyester powder-coated after phosphate pretreatment for superior adhesion and corrosion resistance. Brushed stainless steel door available.

Hardware

Recessed stainless steel fasteners.

Certifications

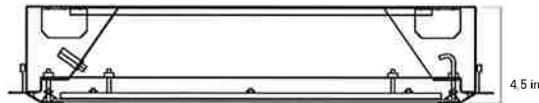
UL Listed wet location, IP66 rated, certified NSF2 for splash/non-food zones (option) and suitable for use in ISO 5 rated cleanrooms (209E Class 100).

Job Name _____

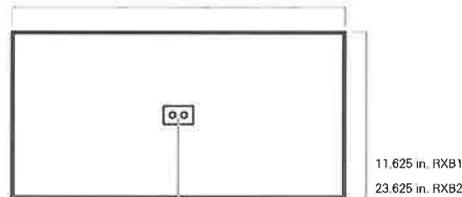
Fixture Type _____

Catalog No. _____

Approval _____ Date _____



24 in. with 2 ft lamps
48 in. with 4 ft lamps



± 0.075 in. knockout



RXB	22	-	2L	40	-	S	W	-	VAR	DM	122	/	00	-	NS-RO(14W)
	one		two	three		four	five		six	seven	eight		nine		ten

one Luminaire Size

- 14 1 x 4 - three rows max
- 22 2 x 2
- 24 2 x 4

two LED Rows

- 1L One
- 2L Two
- 3L Three
- 4L Four

three Color Temperature

- 35 3500K
- 40 4000K
- 50 5000K

four Door Material

- A Aluminum
- C Cold rolled steel, standard
- S Stainless steel

five Door Finish

- R Brushed stainless steel
- W White

six Voltage

- 120 120 V, 60 Hz
- 277 277 V, 60 Hz
- VAR Variable, 120-277 V, 50/60Hz

seven Driver

- DM 0-10Vdc Dimming, standard

eight Internal Lens

- 122 Optic Plus LED diffusing acrylic lens, std

nine External Lens

- 00 No external lens
- 33 .125 in. clear polycarbonate lens

ten Options

- RO Reduced output*
- CU Canadian UL Listing
- EM Emergency ballast
- FH Fuse and holder
- NS NSF listing
- RF Radio interference filter, one per circuit
- AH Painted aluminum housing
- SH Painted stainless steel housing
- AM Anti-microbial painted door
- TP Stainless steel torx head fasteners
- NL-LED Night light, LED

* Indicated as ROxx/xx. Reduced output, input watts / lumens per watt to be determined based on specified requirements.

Modifications are available to meet custom requirements.

Submitted by:	Job Name:	Catalog Number:	Type:
			

RXB-LED

PRODUCT SPECIFICATION

Photometric Data for a 1x4 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
18105	164.3 watts	110	3943K	84.1

Photometric Data for a 2x2 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
13007	119.5 watts	109	3950K	83.1

Photometric Data for a 2x4 fixture with three rows (Full Output)

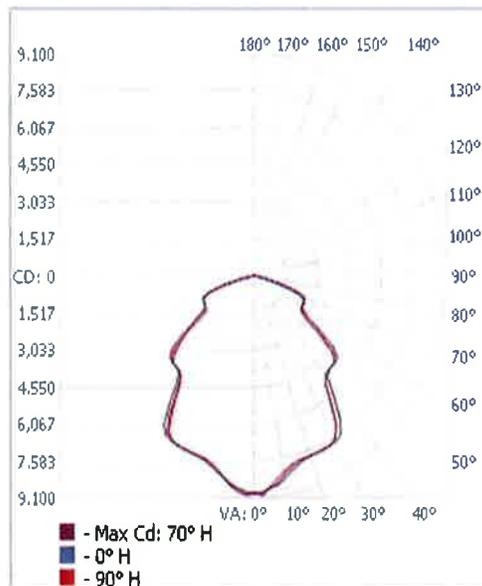
Lumens	Input Watts	Lumens / Watt	CCT	CRI
22250	175.5 watts	127	3896K	83.4

Coefficients of Utilization - Zonal Cavity Method (RXB-LED 2x4)

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0
RW %:	Z0	S0	30	0	Z0	S0	30	0	S0	30	20	0	S0	30	20	0	S0	30	20	0	0
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	1.00
1	1.10	1.05	1.01	.98	1.07	1.03	.99	.86	.99	.96	.93	.95	.92	.90	.91	.89	.88	.88	.88	.86	.86
2	1.00	.92	.86	.80	.97	.90	.84	.73	.87	.82	.78	.84	.79	.76	.81	.77	.74	.74	.74	.72	.72
3	.91	.81	.73	.67	.89	.80	.72	.63	.77	.71	.65	.74	.69	.64	.72	.67	.63	.63	.63	.61	.61
4	.84	.72	.64	.57	.82	.71	.63	.54	.69	.62	.56	.66	.60	.55	.64	.59	.55	.55	.55	.53	.53
5	.77	.65	.56	.50	.75	.64	.55	.48	.62	.54	.49	.60	.53	.48	.58	.52	.48	.48	.48	.46	.46
6	.71	.58	.50	.43	.70	.58	.49	.42	.56	.48	.43	.54	.48	.43	.53	.47	.42	.42	.42	.40	.40
7	.66	.53	.45	.39	.65	.52	.44	.37	.51	.43	.38	.49	.43	.38	.48	.42	.38	.38	.38	.36	.36
8	.62	.49	.40	.34	.60	.48	.40	.34	.47	.39	.34	.45	.39	.34	.44	.38	.34	.34	.34	.32	.32
9	.58	.45	.37	.31	.56	.44	.36	.30	.43	.36	.31	.42	.35	.31	.41	.35	.31	.31	.31	.29	.29
10	.54	.41	.33	.28	.53	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.28	.28	.26	.26

RXB-LED - Polar Candela Distribution (RXB-LED 2x4)



The L.C. Doane Company
 PO Box 700, Ivoryton, CT 06442
 tel: 860.767.8295 fax: 860.767.1397
 www.lcdoane.com

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes__ No X To be sent if requested by Architect Yes X No __

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type K2</u>	<u></u>
Manufacturer:	<u>Paramount FF2</u>	<u>LC Doane RXF Series</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product X 2-5 years old __ 5-10 years old __ > 10 years old __

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only __ or materials installed __.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes __ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	RXF22-2L40-SW-VARDM-122/00-NS-RO (14W)	K2



RXF-LED

Cleanroom **LED** Recessed Flange

PRODUCT SPECIFICATION

Cleanrooms, laboratories, research facilities, kitchen areas, vivariums, natatoriums

Mounting

Mounts recessed in ceiling via swing brackets that extend and clamp with a single screw action.

Housing

18 gauge cold rolled steel die-formed to shape with seams welded, ground smooth, and caulked airtight.

Door

One-piece 18 gauge cold rolled steel, gasketed and sealed overlapping door. Freedom Hinge design permits removal and hinging from either side. Aluminum and stainless steel available.

Internal Lens

Optic Plus lens (standard) completely hides diode image while providing minimum 95% light transmission.

Finish

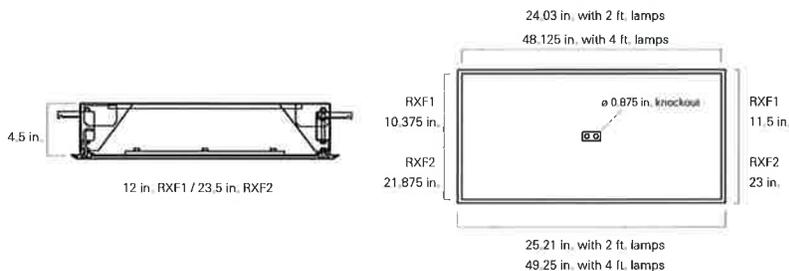
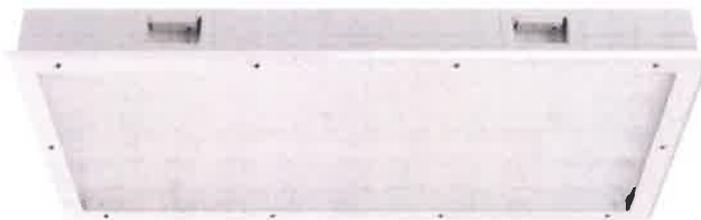
Polyester powder-coated after phosphate pretreatment for superior adhesion and corrosion resistance. Brushed stainless steel door available.

Hardware

Recessed Stainless steel fasteners.

Certifications

UL Listed wet location, IP65 rated, certified NSF2 for splash/non-food zones (option). Suitable for use in ISO-5 clean rooms (209E Class 100).



RXF	22	-	2L	40	-	S	W	-	VAR	DM	122	/	00	-	NS-RO(14W)
	one		two	three		four	five		six	seven	eight		nine		ten

one Luminaire Size

- 12 1 x 2 - three rows max
- 14 1 x 4 - three rows max
- 22** 2 x 2
- 24 2 x 4

two LED Rows

- 1L one
- 2L** two
- 3L three
- 4L four

three Color Temperature

- 35 3500K
- 40** 4000K
- 50 5000K

four Door Material

- A Aluminum
- C Cold rolled steel
- S** Stainless steel

five Door Finish

- R Brushed stainless steel
- W** White

six Voltage

- 120 120 V
- 277 277 V
- VAR** Variable, 120-277 V, 50/60Hz

seven Driver

- DM** 0-10VDC Dimming, standard

eight Internal Lens

- 122** Optic Plus LED diffusing acrylic lens, std

nine External Lens

- 00** No external lens
- 33 .125 in. clear polycarbonate lens

ten Options

- RO** Reduced output*
- 2C Two circuit wired
- CU Canadian UL Listing
- EM Emergency ballast
- FH Fuse and holder
- NL-LED LED night light
- NS** NSF listing
- RF Radio interference filter, one per circuit
- PF Plaster frame
- AH Painted aluminum housing
- SH Painted stainless steel housing
- SB Brushed stainless steel housing
- TP Stainless steel torx head fasteners

* Indicated as ROxx/xx. Reduced output, Input watts / lumens per watt to be determined based on specified requirements.

Modifications are available to meet custom requirements.

RXF-LED

PRODUCT SPECIFICATION

Photometric Data for a 1x4 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
18105	164.3 watts	110	3943K	84.1

Photometric Data for a 2x2 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
13007	119.5 watts	109	3950K	83.1

Photometric Data for a 2x4 fixture with three rows (Full Output)

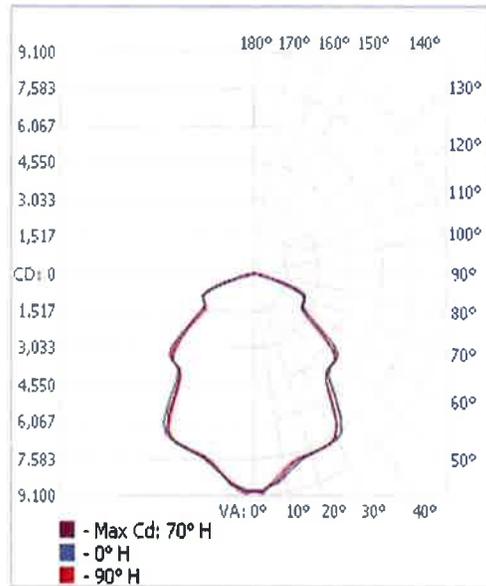
Lumens	Input Watts	Lumens / Watt	CCT	CRI
22250	175.5 watts	127	3896K	83.4

Coefficients of Utilization - Zonal Cavity Method (RXF-LED 2x4)

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0
	Z0	50	30	0	Z0	50	30	0	50	30	20	10	50	30	20	10	50	30	20	0	
RW %:	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.00	
RCR: 0	1.10	1.05	1.01	.98	1.07	1.03	.99	.86	.99	.96	.93	.95	.92	.90	.88	.86	.81	.77	.74	.72	
1	1.00	.92	.86	.80	.97	.90	.84	.73	.87	.82	.78	.84	.79	.76	.74	.72	.67	.63	.61	.61	
2	.91	.81	.73	.67	.89	.80	.72	.63	.77	.71	.65	.74	.69	.64	.63	.61	.58	.52	.48	.46	
3	.84	.72	.64	.57	.82	.71	.63	.54	.69	.62	.56	.66	.60	.55	.53	.53	.48	.42	.38	.36	
4	.77	.65	.56	.50	.75	.64	.55	.48	.62	.54	.49	.60	.53	.48	.48	.46	.44	.38	.34	.32	
5	.71	.58	.50	.43	.70	.58	.49	.42	.56	.48	.43	.54	.48	.43	.43	.42	.41	.35	.31	.29	
6	.66	.53	.45	.39	.65	.52	.44	.37	.51	.43	.38	.49	.43	.38	.38	.36	.35	.29	.26	.26	
7	.62	.49	.40	.34	.60	.48	.40	.34	.47	.39	.34	.45	.39	.34	.34	.32	.31	.26	.23	.23	
8	.58	.45	.37	.31	.56	.44	.36	.30	.43	.36	.31	.42	.35	.31	.31	.29	.28	.23	.20	.20	
9	.54	.41	.33	.28	.53	.41	.33	.28	.40	.33	.28	.39	.32	.28	.28	.26	.25	.20	.17	.17	
10																					

RXF-LED - Polar Candela Distribution (RXF-LED 2x4)



The L.C. Doane Company
 PO Box 700, Ivoryton, CT 06442
 tel: 860.767.8295 fax: 860.767.1397
 www.lcdoane.com

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type K3</u>	<u></u>
Manufacturer:	<u>Paramount FG2</u>	<u>LC Doane RXB Series</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product 2-5 years old ___ 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:

Not currently aware of any

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	RXB24-2L40-SW-VARDM-122/00-NS-RO(83W)	K3



RXB-LED

Cleanroom **LED** Recessed Grid 1 to 1.5 in. T-grid

PRODUCT SPECIFICATION

Cleanrooms, laboratories, research facilities, kitchen areas, vivariums, natatoriums

Mounting

Mounts recessed in 1 to 1.5 in. T-grid ceiling. Cable fastener earthquake clips provided.

Housing

18 gauge cold rolled steel die-formed to shape with seams welded, ground smooth, and caulked airtight.

Door

One-piece 18 gauge cold rolled steel, gasketed and sealed overlapping door. Freedom Hinge™ design permits removal and hinging from either side. Aluminum and stainless steel available.

Lens

Optic Plus lens (standard) completely hides diode image while providing minimum 95% light transmission.

Finish

Polyester powder-coated after phosphate pretreatment for superior adhesion and corrosion resistance. Brushed stainless steel door available.

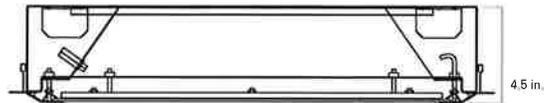
Hardware

Recessed stainless steel fasteners.

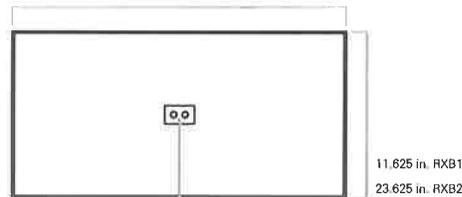
Certifications

UL Listed wet location, IP66 rated, certified NSF2 for splash/non-food zones (option) and suitable for use in ISO 5 rated cleanrooms (209E Class 100).

Job Name _____
 Fixture Type _____
 Catalog No. _____
 Approval _____ Date _____



24 in. with 2 ft. lamps
 48 in. with 4 ft. lamps



ø 0.075 in. knockout



RXB	24	-	2L	40	-	S	W	-	VAR	DM	122	/	00	-	NS-RO(83W)
	one		two	three		four	five		six	seven	eight		nine		ten

one Luminaire Size

- 14 1 x 4 - three rows max
- 22 2 x 2
- 24 2 x 4

two LED Rows

- 1L One
- 2L Two
- 3L Three
- 4L Four

three Color Temperature

- 35 3500K
- 40 4000K
- 50 5000K

four Door Material

- A Aluminum
- C Cold rolled steel, standard
- S Stainless steel

five Door Finish

- R Brushed stainless steel
- W White

six Voltage

- 120 120 V, 60 Hz
- 277 277 V, 60 Hz
- VAR Variable, 120-277 V, 50/60Hz

seven Driver

- DM 0-10Vdc Dimming, standard

eight Internal Lens

- 122 Optic Plus LED diffusing acrylic lens, std

nine External Lens

- 00 No external lens
- 33 .125 in. clear polycarbonate lens

ten Options

- RO Reduced output*
- CU Canadian UL Listing
- EM Emergency ballast
- FH Fuse and holder
- NS NSF listing
- RF Radio interference filter, one per circuit
- AH Painted aluminum housing
- SH Painted stainless steel housing
- AM Anti-microbial painted door
- TP Stainless steel torx head fasteners
- NL-LED Night light, LED

* Indicated as ROxx/xx. Reduced output, Input watts / lumens per watt to be determined based on specified requirements.

Modifications are available to meet custom requirements.

Submitted by:	Job Name:	Catalog Number:	Type:
			

RXB-LED

PRODUCT SPECIFICATION

Photometric Data for a 1x4 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
18105	164.3 watts	110	3943K	84.1

Photometric Data for a 2x2 fixture with three rows (Full Output)

Lumens	Input Watts	Lumens / Watt	CCT	CRI
13007	119.5 watts	109	3950K	83.1

Photometric Data for a 2x4 fixture with three rows (Full Output)

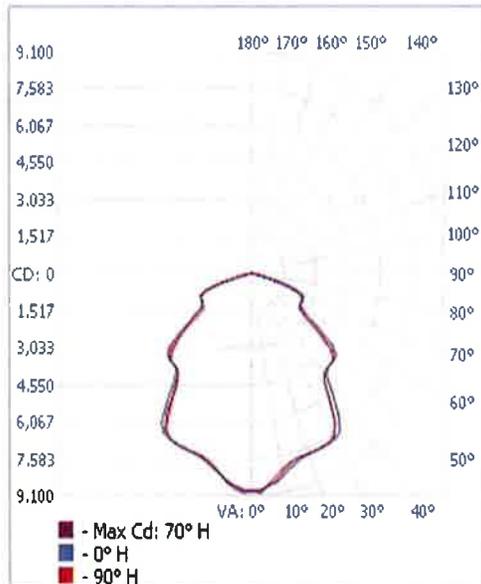
Lumens	Input Watts	Lumens / Watt	CCT	CRI
22250	175.5 watts	127	3896K	83.4

Coefficients of Utilization - Zonal Cavity Method (RXB-LED 2x4)

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0
RW %:	Z0	S0	30	0	Z0	S0	30	0	S0	30	20	0									
RCR: 0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.00	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.02	1.02	1.02	1.00
1	1.10	1.05	1.01	.98	1.07	1.03	.99	.86	.99	.96	.93	.95	.92	.90	.91	.89	.88	.88	.86	.86	.86
2	1.00	.92	.86	.80	.97	.90	.84	.73	.87	.82	.78	.84	.79	.76	.81	.77	.74	.74	.72	.72	.72
3	.91	.81	.73	.67	.89	.80	.72	.63	.77	.71	.65	.74	.69	.64	.72	.67	.63	.63	.61	.61	.61
4	.84	.72	.64	.57	.82	.71	.63	.54	.69	.62	.56	.66	.60	.55	.64	.59	.55	.55	.53	.53	.53
5	.77	.65	.56	.50	.75	.64	.55	.48	.62	.54	.49	.60	.53	.48	.58	.52	.48	.48	.46	.46	.46
6	.71	.58	.50	.43	.70	.58	.49	.42	.56	.48	.43	.54	.48	.43	.53	.47	.42	.42	.40	.40	.40
7	.66	.53	.45	.39	.65	.52	.44	.37	.51	.43	.38	.49	.43	.38	.48	.42	.38	.38	.36	.36	.36
8	.62	.49	.40	.34	.60	.48	.40	.34	.47	.39	.34	.45	.39	.34	.44	.38	.34	.34	.32	.32	.32
9	.58	.45	.37	.31	.56	.44	.36	.30	.43	.36	.31	.42	.35	.31	.41	.35	.31	.31	.29	.29	.29
10	.54	.41	.33	.28	.53	.41	.33	.28	.40	.33	.28	.39	.32	.28	.38	.32	.28	.28	.26	.26	.26

RXB-LED - Polar Candela Distribution (RXB-LED 2x4)



The L.C. Doane Company
 PO Box 700, Ivoryton, CT 06442
 tel: 860.767.8295 fax: 860.767.1397
 www.lcdoane.com

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type L3</u>	<u></u>
Manufacturer:	<u>Pinnacle EVL</u>	<u>Lumenwerx VIA 5 Perimeter</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Lindt Chocolate Corporate HQ, Exeter, NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
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Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	V5PERL HLO LED 80 350 35 XX UNV D 1 DTL W	L3

VIA 5 PERIMETER LED

RECESSED

LUMENWERX
WWW.LUMENWERX.COM



DESCRIPTION

Via Perimeter 5 creates a continuously illuminated "slot" at the wall/ceiling intersection. Lighted corners with telescopic end sleeves are available. Via Perimeter installs in grid or drywall ceilings in a choice of three arrangements: level, shallow 1", and deep 3 1/4". A trimless detail is available for drywall installation.



PROJECT: _____

TYPE: _____

NOTES: _____

ORDER GUIDE

IC RATED

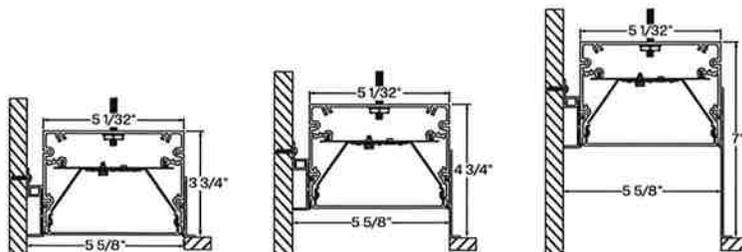
V5PERL	HLO	LED	80	350	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
V5PERL - via 5 perimeter levelled	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	350 - low output 350lm/ft 500 - med output 500lm/ft 750 - high output 750lm/ft	30 - 3000k 35 - 3500k 40 - 4000k
V5PERS - via 5 perimeter shallow					
V5PERD - via 5 perimeter deep					

XX		UNV	D	1
LUMINAIRE LENGTH	TELESCOPIC SLEEVE	VOLTAGE	DRIVER	ELECTRICAL
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	#TES - telescopic end sleeve +/- 2 1/2" NA - not applicable	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit +EB - emergency battery pack (for min 4' fixture) +EM - emergency light circuit +NL - night light circuit +GTD - generator transfer device

See page 2 for ordering code detailed information

DTL	W	
MOUNTING	FINISH	OPTIONS
TG9 - tegular 9/16" TG15 - tegular 15/16" TB9 - t-bar 9/16" TB15 - t-bar 15/16" ST - screw slot t-bar DTL - drywall trimless OHC - other ceiling (specify)	W - matte white CF# - custom finish specify RAL#	FU - fuse FWC - flexible whip cable (6' std) CP - Chicago Plenum CU - custom

CROSS SECTION



V5PERL - via 5 perimeter levelled

V5PERS - via 5 perimeter shallow

V5PERD - via 5 perimeter deep

LIGHT DISTRIBUTION



V5PERL - via 5 perimeter levelled

TECHZONE™ & USG Compatible with 6" ceiling

File Name: VIA5.PERI.RECESSED.SPEC

Page: 1 / 4

February 5, 2016

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VIA 5 PERIMETER LED

RECESSED



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

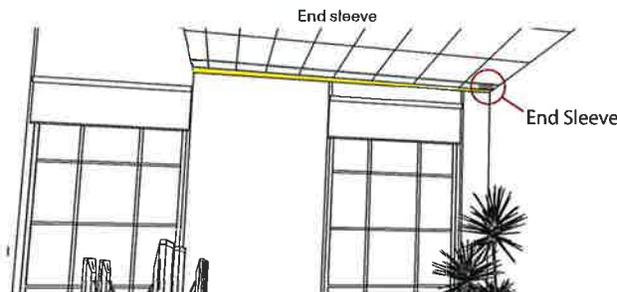
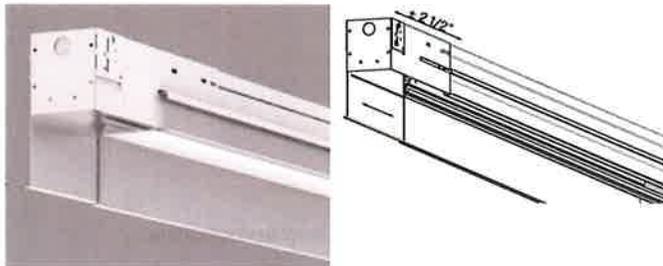
Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

PERFORMANCE PER 4' AT 4000K

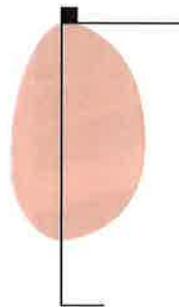
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	15.5	1400	90
medium output	4000K	22.5	2000	89
high output	4000K	35	3000	86

TELESCOPIC SLEEVE

Adjustable telescopic sleeve designed to extend and contract to the desired luminaire length. Available for end sections with an adjustable range of +/- 2 1/2" to accommodate easy installation and maintenance. Specify quantity and type in the ordering code.



LIGHT DISTRIBUTION



V5PERD-HLO-
LED-80-750-40-20
Wall Luminaires: 20' run
Lumen Output: 750 lm/ft
Watts: 9 watts/ft
Ceiling Height: 10'
Efficacy: 86 lpw

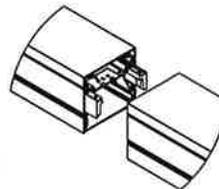
Foot Candles on 20' wide wall, 10' ceiling

0.8	0.9	1.4	8.9	12.9	12.4	11.2	1.4	0.9	0.8
1.0	1.1	1.7	4.1	8.1	8.3	4.3	1.8	1.1	1.0
1.2	1.2	1.5	2.2	2.8	2.8	2.2	1.5	1.2	1.2
1.4	1.3	1.4	1.7	1.9	1.9	1.7	1.5	1.3	1.4
1.4	1.3	1.4	1.7	1.9	1.9	1.7	1.5	1.4	1.4

LUMINAIRE LENGTH

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

Joining system



ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. Terminal block connections for easy service. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.



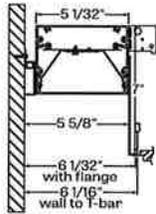
VIA 5 PERIMETER LED

RECESSED

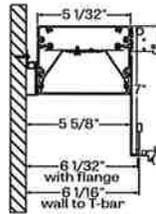
LUMENWERX
WWW.LUMENWERX.COM

MOUNTING OPTIONS

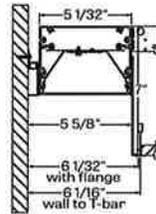
Recess mount into exposed or concealed T-Bar or Tegular grid ceiling.
Trimless mounting detail is available for drywall ceilings.



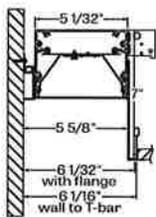
TG9 - tegular 9/16"



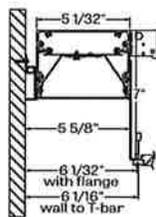
TG15 - tegular 15/16"



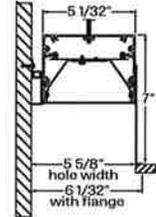
TB9 - t-bar 9/16"



TB15 - t-bar 15/16"



ST - screw slot t-bar



DTL - drywall trimless

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white powder coating.

Custom finishes are also available.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Joining system - Die cast Zinc (0.95" nominal) and die Formed galvanized sheet 18 gauge

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

Recessed flanges - Extruded Aluminum (0.075" nominal) up to 90% Recycled Content

End plate - Die formed cold rolled sheet steel 18 gauge thick

MAINTENANCE

LED boards are housed in a removable cartridge for easy replacement. Driver is accessible from below.

WEIGHT

Via 5 perimeter 4ft - 11.78lbs - 5.35kg

Via 5 perimeter 8ft - 23.79lbs - 10.8kg

Via 5 perimeter 12ft - 35.24lbs - 16kg

CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

IC rated - suitable for direct contact with insulation.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications.

Submitted by:

Job Name:

Catalog Number:

Type:

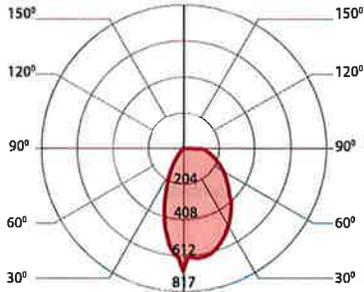


VIA 5 PERIMETER LED

RECESSED



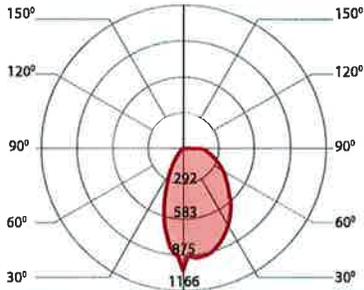
350 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	16.5	1400	84
low output	3500K	16	1400	87
low output	4000K	15.5	1400	90

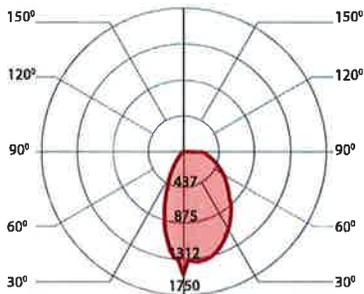
500 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	24	2000	83
medium output	3500K	23	2000	86
medium output	4000K	22.5	2000	89

750 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	37	3000	81
high output	3500K	36	3000	83
high output	4000K	35	3000	86



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type P4</u>	<u></u>
Manufacturer:	<u>Corelite DSI</u>	<u>Peerless Vellum LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Provident Bank, Bedford, NH - Stibler Associates - installed 11/15.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
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Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VMM9 LO 4FT R4 277 SCT EZB LP835 F1/48 C041	P4

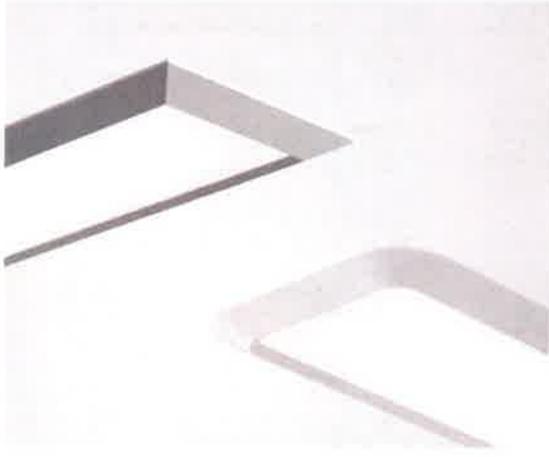
Peerless®
Lighting for People®

Vellum LED
VMM9 | LED | I/D or Direct | Suspended

SPECIFICATIONS

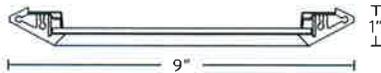
Type:

Project:

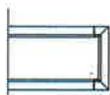


DIMENSIONS

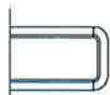
□ **VMM9**



DETAILS



Squared End Cap

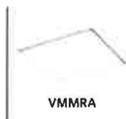


Rounded End Cap
Option: ROEP

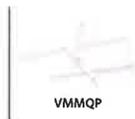


Optional sensor with
SubtleView Integration™

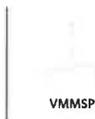
COMPANION LUMINAIRE(S)



VMMRA



VMMQP



VMMSP

CUSTOMIZATION

Ask us about the following possibilities: Alternate section lengths, alternate distributions, alternate voltages, additional mounting options, custom colors, higher CRI and R9 values and other modifications.

HIGHLIGHTS

- Peerless 360° Total System Integration features 5-year limited warranty by Acuity Brands covering all components and construction
- 4 and 8' sections
- Up to 106 lm/W
- Three distributions available: (see page 2)
- High performance batwing distribution using light technology guide
- Softshine®-engineered comfort optics
- Flicker-free dimming to dark (0.1%) powered by eldoLED® driver
- Integrated nLight® control module for system networking (optional)
- Integrated sensor for daylight dimming and/or occupancy detection (optional)
- Squared or rounded end caps
- White, black, painted aluminum or custom color
- LED Lighting Facts® partner; DesignLights Consortium® qualified



DLC qualification may be limited to specific model configurations. Please search DesignLights.org/QPL by keyword "Peerless" to confirm whether or not a specific model number qualifies.

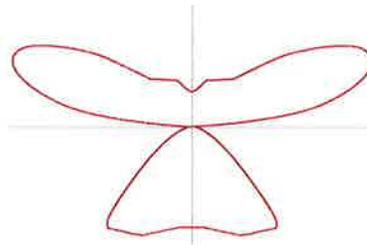
LUMEN PACKAGES Based on 3500K. Additional color temperatures available.

Lumen Packages:	Low (LO)	High (HI)
Delivered Lumens*	4380	5477
Input Watts*	38	51
Lumens Per Watt*	92	106

*per 4' section

STANDARD DISTRIBUTION

60% Up | 40% Down



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Rev. 03/03/15



Submitted by:	Job Name:	Catalog Number:	Type:
			

Peerless | Vellum LED
Lighting for People | VMM9 | LED | I/D or Direct | Suspended

Type:

Project:

VMM9 LO 4FT R4 277 SCT EZB LP835 F1/ 48 C041

SPECIFICATIONS

Housing

Extruded aluminum housing.

End Caps

Die-cast aluminum end caps are mechanically attached with no exposed fasteners. Squared end caps standard. For rounded end caps, choose option RDEP.

Color

Color for housing and end caps is white, black or painted aluminum. Consult factory for custom colors.

Luminaire Length

4' and 8' lengths in a single section for nominal suspension spacing of 4' and 8'. For total length, add 2 1/2" for each end cap. Longer rows are comprised of starter, joiner and end sections.

Source

Two LED lumen packages and three available color temperature options (3000K, 3500K and 4000K) — all within 2.5 MacAdam ellipses.

Optics

Softshine® optical system consists of high performance acrylic lens and microstructure film.

Embedded Sensor

Optional sensor is embedded directly into the lens surface following Peerless' proprietary SubtleView Integration™ process.

Remote Dimming Driver

Remote eldoLED® driver (see page 3) provides "natural dimming" with smooth, continuous and flicker-free dimming to dark (0.1%). Syncing for controls: 2mA max. THD: < 20%. Insignificant inrush current at 120 and 277VAC. FCC Class A and B tested for EMI and RFI.

For 0-10V driver details go to: PeerlessLighting.com/S67M

Controls and System Networking Options

For wired networking via Cat-5e, choose an integrated nLight® module (driver: ENNB). For daylight dimming and/or dual technology occupancy detection, see Page 5 for integrated sensor options. One control module per 4' section or 40' maximum row.

Lumen Management

For constant lumen output at 80% of initial light output, choose lumen management (LMES20).

Electrical

LED light engine — consisting of modular LED boards and eldoLED® dimming driver — is rated for 50,000 hours (L80) at 25° C ambient temperature. Specify

120V, 277V or 347V. Pre-wired with 16AWG fixture wire. For special circuiting or wire gauge, consult factory. Plug-in electrical connectors included.

Environment

Ambient operating temperature between 0° C and 25° C. For damp location label, choose option DL.

Validation

CSA/CUS listed. LM-79 tested. Individual sections meet FCC Part 15 requirements. Lighting Facts partner. Design Lights Consortium qualified.

DLC qualification may be limited to specific model configurations. Please search DesignLights.org/DPL by keyword "Peerless" to confirm whether or not a specific model number qualifies.

Packaging

Recycled cardboard box and inserts. Biodegradable, protective luminaire bag. Recycled kraft paper tape.

Warranty

5-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C.

MODEL NUMBER Example: VMM9 HI 16FT R8 120 SCT EZB LP835 F1/24 C041

VMM9	LO		4FT	R4	277			
Luminaire	Light Output	Distribution	Luminaire Row Length	Maximum Section Length	Voltage	# of Emergency Modules	Emergency Type	
VMM9	LO 4400 nominal delivered lumens	(Blank) Std, 60% up; 40% down	4 FT	R4 4' section(s)	120	(Blank) None	(Blank) None	
	HI 5400 nominal delivered lumens	20/80 20% up; 80% down	Indicate Luminaire Row Length in 4' increments. Ex: 12FT	R8 8' section(s)	277	1SE 1 section	EC Emergency circuit	
		0/100 0% up; 100% down			347	2SE 2 sections	EL ¹ Emergency battery pack (1100 lumens)	
		Nominal distribution. Refer to photometric tests for exact distribution.				SE sections	Emergency type is installed in last 4' of luminaire sections. Separate feed required.	
							1. Not available for CSA and F2 options.	

SCT	EZB				
Switching	Remote Dimming Driver with Integrated System Networking	Integrated Sensor	Integrated Lumen Management		
SCT Single circuit	ENNB eldoLED with integrated nLight controller	(Blank) No sensor	(Blank) None		
	ENNB Linear dimming curve	DSCNL Daylight only	LMES20* 80% lumen management		
		MSD7NL DSCNL Daylight/occupancy	*Available with EZBN and ENNB only.		
	Remote Dimming Driver		Non-Integrated Lumen Management		
	EZB eldoLED 0-10V	(Blank) No sensor	(Blank) None		
	EZBN Linear dimming curve	DSCNL Daylight only	XLMES20* 80% lumen management		
	Driver must be paired with sensor option from the same row. Ex: ENNB 2DSCNL	MSD7N DSCN Daylight/occupancy	*EZBN must be selected if planning to install a separate, non-integrated nLight networking system with lumen management.		
		Indicate number of zones per row. Ex: 3DSCN			

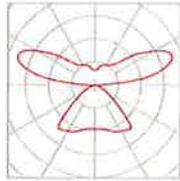
LP835	F1/	48	C041		
LED Color Temperature	Mounting Type	Overall Suspension	Color	Options	
LP830 3000K 80+ CRI 17-20+ R9	F1/ T-bar ceiling (universal mounting bracket)	12 12"	C041 White white (low gloss)	CSA Meets Canadian standards. (Must select with Canadian orders)	
LP835 3500K 80+ CRI 17-20+ R9		18 18"	C110 Painted aluminum (fine textured)	DL Damp location label	
LP840 4000K 90+ CRI 17-20+ R9	F2/* Hard ceiling (horizontal J-box)	24 24"	C201 Black (low gloss)	DU Dust cover	
LP930 3000K 90+ CRI 50 R9	*Refer to page 3 for details	36 36"	C099 Custom color	GLR Fusing (fast blow)	
LP935* 3500K 90+ CRI 50 R9		48 48"		GMF Fusing (slow blow)	
LP940* 4000K 90+ CRI 50 R9		XX XX"		RDEP Rounded end cap	
*Longer lead times - consult factory.		Measured from ceiling to bottom of luminaire.			
		Adjustable cable grippers come standard.			

Peerless®
Lighting for People™

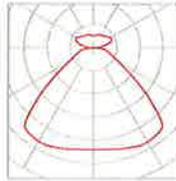
Vellum LED
VMM9 | LED | I/D or Direct | Suspended

Type:
Project:

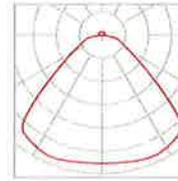
PHOTOMETRICS



HI LP835
106 lm/W
5477 delivered lumens
60% up / 40% down



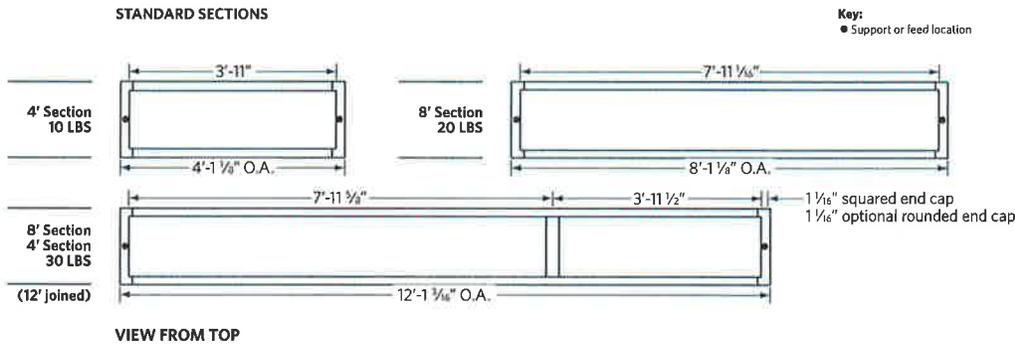
HI 20/80 LP835
103 lm/W
5285 delivered lumens
20% up / 80% down



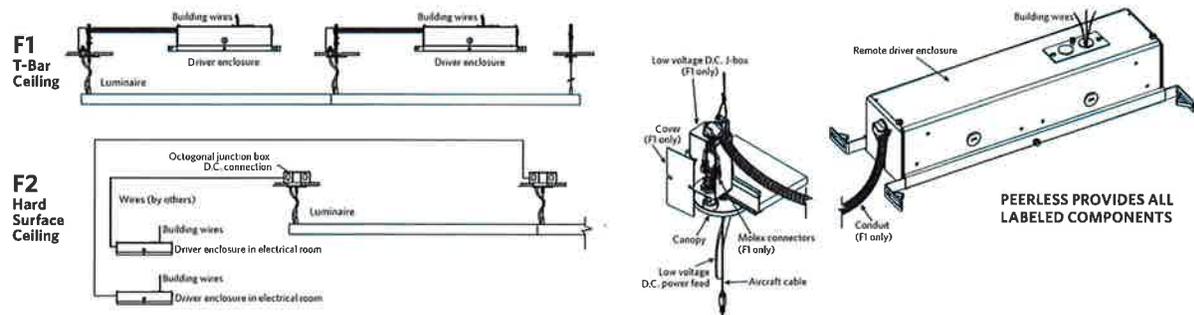
HI 0/100 LP835
100 lm/W
5167 delivered lumens
4% up / 96% down

WEIGHTS & SUPPORT SPACING

Suspension spacing equals section length. Default location shown. Consult factory for stem mounting suspension spacing and alternate locations.



REMOTE DRIVER MOUNTING



The driver is housed in a remote-mounted, aluminum enclosure. In T-bar ceiling installations, the driver enclosure attaches to the grid bars with provided hanging brackets and clips. For hard ceiling installations, the driver enclosure resides inside an electrical room and can be mounted to a rack or wall with screws (by others), if necessary.

NOTE: Every 4' and 8' luminaire section comes with (1) driver enclosure and each section has (1) low voltage D.C. power feed leading out of the luminaire. See installation instructions for further details.

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Submitted by: 	Job Name:	Catalog Number:	Type:
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Peerless | Vellum LED
Lighting for People® | VMM9 | LED | I/D or Direct | Suspended

Type:

Project:

MOST COMMON MOUNTING TYPES AND OPTIONS Options available for this specific luminaire are checked in the boxes below.

Mounting Type

F1/ For use with most T-Bar and screw slot grid ceilings. Designed for on-grid and off-grid applications.

F2/ For use with recessed or surface mount horizontal J-box applications.

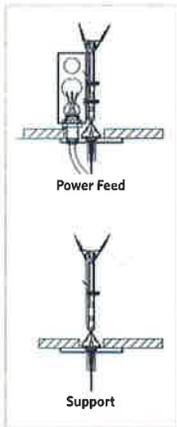
Mounting Options

MCS Matching canopy at support for aesthetics.

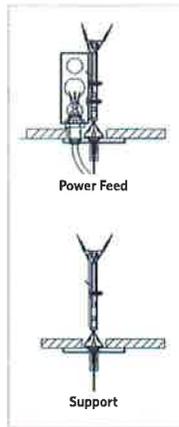
For more detailed mounting drawings and information, see PeerlessLighting.com/MountingOptions

Indicates mounting options available with this luminaire.

F1/



F1/MCS



F2/



F2/MCS



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Peerless
Lighting for People®

Vellum LED
VMM9 | LED | I/D or Direct | Suspended

Type:
Project:

For more information about sensor and networking options, download the controls guide at PeerlessLighting.com/ControlsGuide

INTEGRATED SENSOR OPTIONS

Dimming Driver	Integrated Sensor	Daylight Dimming	Daylight Dimming and/or Occupancy Detection	nLight Wired Networking	XPoint Wireless Networking	Link to Spec Sheet
ENNB	DSCNL	X		X		PeerlessLighting.com/nES-ADCX
ENNB	MSD7NL DSCNL		X	X		PeerlessLighting.com/nES-PDT7
EXAB	MS17XA DSCXA					PeerlessLighting.com/XPW
EZB	DSCN					PeerlessLighting.com/nES-ADCX
EZB	MSD7N DSCN		X			PeerlessLighting.com/nES-PDT7



Daylight harvesting deactivated by default and field programmed per sequence of operations.

Luminaires specified with nLight system networking ship with one RJ-45 connector integrated into the luminaire, 10' of Cat-5e cable and a splitter to control the entire luminaire row (depending on wattage/voltage limitations). For multiple zones, please contact TechSupport@PeerlessLighting.com.

OCCUPANCY DETECTION COVERAGE

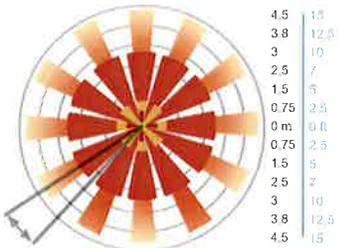
At the 7.5 ft (2.9 m) hanging height of a typical pendant mount fixture the sensor provides 10 ft (3.05 m) radial detection of small motion. At a 9 ft (2.74 m) hanging height the radius is 12 ft (3.66 m) for small motion.

Adequate for walking motion detection from mounting heights between 7.5 ft (2.29 m) and 20 ft (6.10 m).

Initial detection will occur earlier when walking across sensor's field of view than when walking directly at sensor.

Initial detection of walking motion into long coverage segment will occur at distances of 2x the mounting height up to 15 ft (4.57 m) and 1.75x up to 20 ft (6.10 m). Lens assembly rotates 15° to enable adjustment in order to line up long segments.

Lens rotates 15° to enable adjustment



LAYOUT EXAMPLES

Key: ● Support ✕ Support with power feed ⊕ Support with emergency feed □ Support with Cat-5e ⊞ Support with emergency feed and Cat-5e * Embedded sensor

EZB — eldoLED 0-10Vdriver



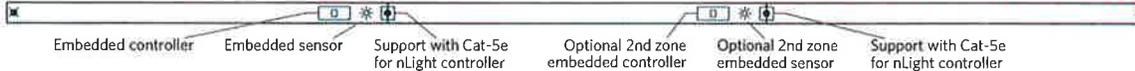
EZBN LMES20 — eldoLED 0-10V driver with controller for lumen management



ENNB LMES20 — nLight enabled eldoLED 0-10V driver with controller for system networking and lumen management



ENNB (DSCNL or MSD7NL DSCNL) LMES20 — nLight enabled eldoLED 0-10V driver with integrated sensor(s) and controller(s) for system networking and lumen management



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Submitted by:	Job Name:	Catalog Number:	Type:
			

Peerless | Vellum LED
 Lighting for People® | VMM9 | LED | I/D or Direct | Suspended

Type:
 Project:

COMPATIBLE nLIGHT COMPONENTS WITH INTEGRATED CONTROLS



nPODM DX WH nPODM 2P DX WH nPODM 4P DX WH nPODM 2L WH nPOD GFX WH
SensorSwitch.com/DataSheets/nPODM.pdf SensorSwitch.com/DataSheets/nPODM-xL.pdf SensorSwitch.com/DataSheets/nPOD-GFX.pdf

EZB COMPATIBILITY Additional control options with eldoLED 0-10V driver(s).

PeerlessLighting.com/eldoLED-compatibility

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type P7</u>	<u></u>
Manufacturer:	<u>Axis WB</u>	<u>Lumenwerx VIA Wet</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any local installations.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIAWETP HLO LED 80CRI 750 35 8FT UNV D 1 TF XX AL	P7

VIA WET LED

PENDANT



DESCRIPTION

Via Wet offers architectural lighting for wet locations in both exterior and interior applications. With a simple 3¾" high by 4½" wide profile of extruded aluminum, Via Wet can be installed in recessed, ceiling, wall, or pendant mounting.

Fully sealed, Via Wet is suitable for extreme weather condition, -20°C/-4°F to 40°C/104°F. A choice of output options provides up to 1000 lumens per foot section.

PROJECT: _____

TYPE: _____

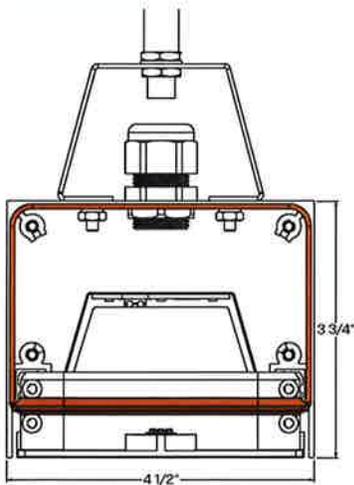
NOTES: _____

ORDER GUIDE

VIAWETP	HLO	LED	80CRI	750	35	
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.	
VIAWETP - via wet pendant.	TMG - Tempered Clear Glass PYC - Clear Polycarbonated +HLO - High-Efficiency Lambertian Optic +PMO - Precision Micro-Prism Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI (consult factory)	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft	30 - 3000k 35 - 3500k 40 - 4000k 50 - 5000k	
8FT	UNV	D	1	TF	XX	AL
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	POWER FEED	MOUNTING	FINISH
Standard sections - 3', 4' For all other specify length 8FT - nominal length in feet Continuous Run - 4' sections joint together	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V	1 - 1 circuit +EM - emergency light circuit +NL - night light circuit +GTD - generator transfer device	TF - top feed	55WSW18 - power 5" + non power 5" white canopy & stem (18" stem) For all other mountings refer to the Pendant Mounting Guide.	W - matte white AL - aluminum CF# - custom finish specify RAL#

See page 2 for ordering code detailed information

CROSS SECTION



VIAWETP - stem

OPTICS

PLEASE ADVISE MOUNTING



TMG +HLO - Tempered Clear Glass with High Efficiency Lambertian Optic

File Name: VIAWET.PENDANT.SPEC

Page: 1 / 4

January 8, 2016



VIA WET LED

PENDANT



OPTICS

Via Wet is available with a clear tempered glass (TMG) or a clear, UV stabilized polycarbonate (PYC) protective enclosure, which are installed outside of the luminaire optic itself.

The Precision Micro Optic (PMO) option utilizes a special catadioptric lens with a two-dimensional array of prisms designed to eliminate glare while maintaining high efficiency and clean luminous appearance. The High efficiency Lambertian Optic (HLO) option uses a diffuser that combines 88% transmission with good source obscuration.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

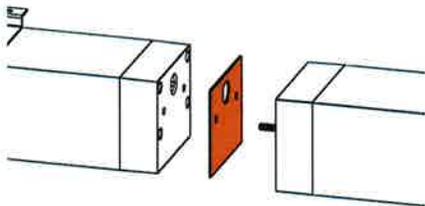
PERFORMANCE PER 4' AT 4000K

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	22	2000	92
medium output	4000K	33.5	3000	90
high output	4000K	45.5	4000	88

LUMINAIRE LENGTH

Via Wet is made up of standard 3, and 4 foot sections that can be joined cleanly and securely for continuous runs in all configurations.

Joining system



All individual sections are joined together onsite using the 1/4"-20 screws and nuts provided. The joint between 2 adjacent individual sections is sealed by a silicone gasket attached to one of the 2 sections. The electrical connection between sections is made through the holes provided in the end-caps.

ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at -20°C min. and 40°C max. ambient (and 70°C max. case) temperature. Terminal block connections for easy service. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%.

Power grommet forcable diameter between 0.276" and 0.512" (7-13mm).

MOUNTING OPTIONS

Fixtures can be pendant-mounted using stem.

Unless otherwise specified, LumenWerx provides 55WSW18 (5" white canopy for all power mounting point, and non power mounting point, and a 18" white stem)

For all other required mountings options, for all our Pendant Mounting Guide at www.lumenwerx.com

Submitted by:

Job Name:

Catalog Number:

Type:

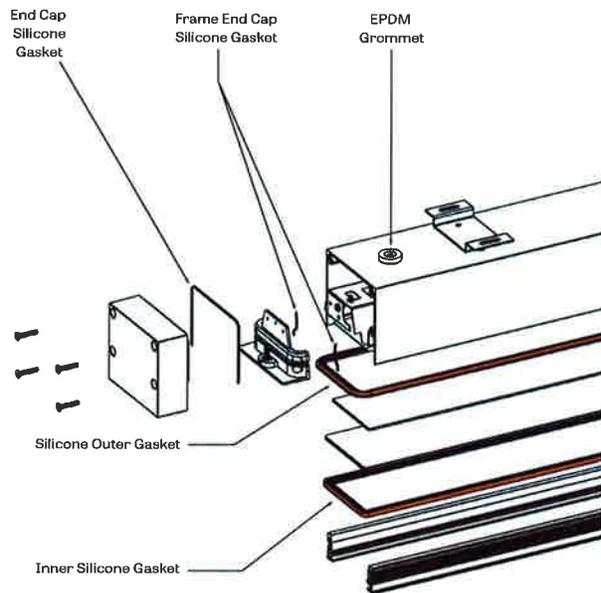


VIA WET LED

PENDANT



GASKETTED FIXTURE MOUNTING OPTIONS



Lens and enclosure are sealed with inner and outer silicone gaskets

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating.

Custom finishes are also available.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Side frame extrusions - Extruded Aluminum (0.125" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 16 gauge thick

Joining system - 2 x 1/4"-20 screws + nuts accessible from inside the fixture + one silicone gasket attached to one of the end-caps.

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

End Cap - Aluminum Die Cast

Stem - 0.5" diameter threaded steel tube matte white or silver powder coating. Custom finishes are also available

Tempered Clear Glass - clear, 1/8" thickness, fully tempered optics.

Polycarbonated - clear, 1/8" thickness, UV protected optics.

Gaskets - Fixture lens unit and end-caps are fully sealed using silicone gaskets.

Power grommet - EPDM rubber rated IP67.

WEIGHT

Via Wet 4ft - 18.2lbs - 8.27kg

CERTIFICATIONS

ETL - Rated for Wet location. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

WARRANTY

LumenWerx provides a three-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.



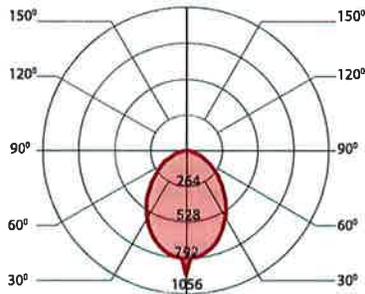


VIA WET LED

PENDANT



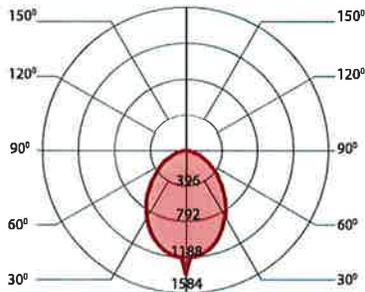
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	23	2000	86
low output	3500K	22.5	2000	89
low output	4000K	22	2000	92
low output	5000K	21	2000	96

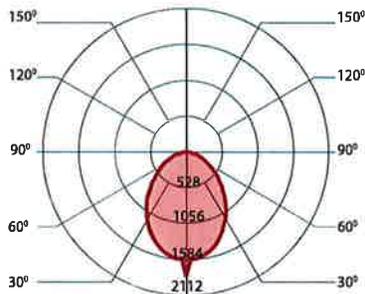
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	35.5	3000	84
medium output	3500K	34.5	3000	87
medium output	4000K	33.5	3000	90
medium output	5000K	32	3000	94

1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	49	4000	82
high output	3500K	47	4000	85
high output	4000K	45.5	4000	88
high output	5000K	43.5	4000	92

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes__ No To be sent if requested by Architect Yes No __

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type S1</u>	<u></u>
Manufacturer:	<u>Pinnacle EX44</u>	<u>Lumenwerx VIA 4 LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product __ 2-5 years old 5-10 years old __ > 10 years old __

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any local installations.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only __ or materials installed __.

Original product \$ ____ per ____ Substitution \$ ____ per ____

Savings to Owner for accepting substitution: N/A \$ ____

Proposed substitution changes Contract Time: No Yes __ Add/Deduct ____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

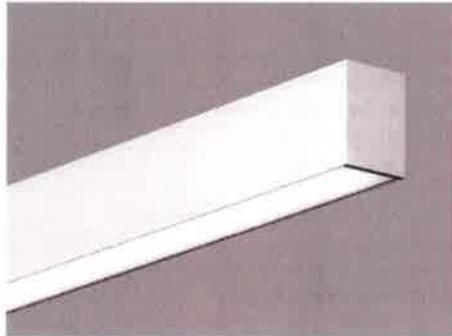
Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA4S HLO LED 80CRI 750 35 XFT UNV D 2CIR XX W	S1

VIA 4 LED

SURFACE



LUMENWERX
WWW.LUMENWERX.COM



Shown with HLO optics

DESCRIPTION

Via 4 is the flexible linear LED luminaire system for pendant, surface and recessed or in-wall installation, whether as discrete luminaires, continuous runs or patterns. Via 4 features numerous high-efficiency optical configurations, including separately controlled indirect/direct, wall wash and asymmetric distributions, as well as a wide range of electrical, control and trim options. See separate spec sheets for patterns and other available mountings.

PROJECT: _____

TYPE: _____

NOTES: _____



up to 105 lm/w performance

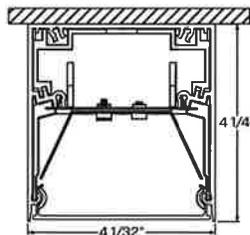
ORDER GUIDE

VIA4S	HLO	LED	80CRI	750	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA4S - via 4" surface	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT	UNV	D	2CIR	XX	W
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit + #EB - emergency battery pack (for min 4' fixture) + #EM - emergency light circuit + #NL - night light circuit + #COB/MR - COB/MR circuit + #GTD - generator transfer device 2 CIRCUIT	GRD - grid ceiling DRC - drywall ceiling OHC - other ceiling (specify) XX-ADVISE MOUNTING	W - matte white AL - aluminum CF# - custom finish specify RAL#

CONTROLS	LED DOWNLIGHT	COB CRI	COB LUMEN PACK.	COB COLOR TEMP.	COB DRIVER	OPTIONS
ONBOARD OMS - Motion Sensor & power pack ODS - Daylight Sensor & controller WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	#COB20 - COB 20° #COB30 - COB 30° #COB40 - COB 40° #MR16 - MR16 Minimum individual section with downlight 4'	80 - 80CRI 90 - 90CRI 97 - 97CRI (consult factory)	600 - 600lm 1200 - 1200lm 1800 - 1800lm	30 - 3000k 35 - 3500k 40 - 4000k	D - dimming 0-10V DA - Dali LHL# - Lutron Hi-Lume A LEN - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	FU - fuse TB# - T-bar caddy clip specify grid size TG# - Tegular caddy clip specify grid size ST - Screw Slots caddy clip CU - custom

CROSS SECTION



VIA4S - surface

OPTICS



HLO - High-efficiency Lambertian Optic

See page 2 for ordering code detailed information

File Name: VIA4.SURFACE.SPEC

Page: 1 / 4

February 16, 2016

www.lumenwerx.com (T) 514-225-4304 (F) 514-931-4862 © All rights are reserved to LumenWerx ULC.
LumenWerx ULC. reserves the right to change or modify product specifications without notification



VIA 4 LED

SURFACE

LUMENWERX
WWW.LUMENWERX.COM

OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - Matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

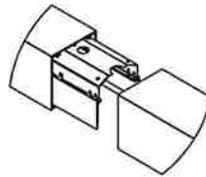
PERFORMANCE PER 4' AT 4000K

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	105
medium output	4000K	29	3000	104
high output	4000K	40	4000	101
ultra high output	4000K	48	4800	101

LUMINAIRE LENGTH

Via 4 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot, and continuous run lengths can be ordered in 2 inch increments.

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.



joining system Via 4 direct

ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator, minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

MOUNTING OPTIONS

Fixtures can be mounted directly to T-Bar, drywall and hard surface ceilings, hardware supplied by others. Long runs require a minimum of 6" distance from the vertical wall.

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating. Custom finishes are also available.

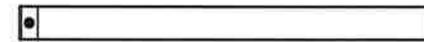
CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 4 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration. Onboard options incorporate both the sensor and controller/powerpack. Onboard sensors, while inherently simpler, have limitations of control and coverage.

Onboard

Onboard Motion Sensor and power pack (OMS) provide automatic on and automatic off control, using PIR detection. Sensor is designed to detect fine-motion when installed within 6' of occupants.

Onboard Daylight Sensor and controller (ODS) provide input for 0-10V dimming drivers. Separate switched control of line input is required for on/off control.



Location of an Onboard sensor

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.

Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 4 LED

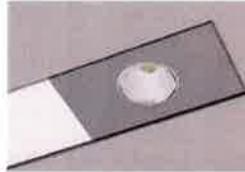
SURFACE

LUMENWERX
WWW.LUMENWERX.COM

Lutron Motion Controller (LMC) and Daylight Controller (LDC) provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

LIGHT SOURCE - COB

Fixtures with Chip On Board (COB) technology are able to provide a maximum output of 1800 lumens from a discrete 50mm aperture on 8 inch centers. Standard CRI is 80, for 90 and 97 CRI with elevated R9 values please consult factory. Standard 20°, 30° and 40° beam angles are available, as are custom angles with prior factory approval. All our Chip-On-Board products have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 50,000 hours.



Chip On Board (COB)

LIGHT SOURCE - MR16

Our MR16 option is a replaceable bulb solution which allows for up to a 50W halogen equivalent solution.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Joining system - Die cast Zinc (0.95" nominal)

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

End caps - Die cast Aluminum (0.95" nominal)

WEIGHT

Via 4 4ft - 11.45lbs - 5.2kg

Via 4 8ft - 23.13lbs - 10.5kg

Via 4 12ft - 34.58lbs - 15.7kg

CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.

Lighting facts - testing products and reporting performance results according to industry standards.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.

Submitted by:

Job Name:

Catalog Number:

Type:

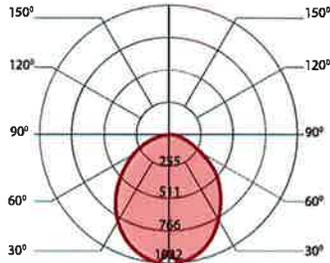


VIA 4 LED

SURFACE



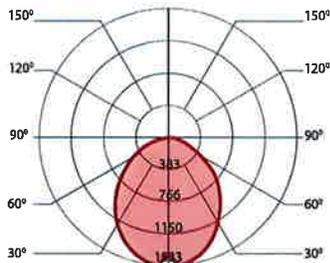
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	99
low output	3500K	20	2000	102
low output	4000K	19	2000	105

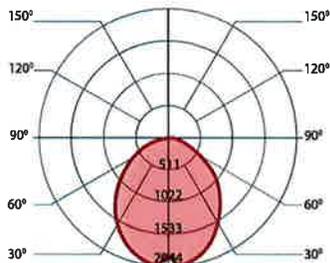
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	98
medium output	3500K	30	3000	101
medium output	4000K	29	3000	104

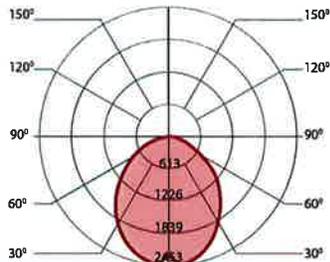
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	95
high output	3500K	41	4000	98
high output	4000K	40	4000	101

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	51	4800	95
ultra high output	3500K	49	4800	98
ultra high output	4000K	48	4800	101



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes__ No X To be sent if requested by Architect Yes X No __

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type S2</u>	<u></u>
Manufacturer:	<u>H.E. Williams WM AUD</u>	<u>Healthcare Lighting - Archer LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product __ 2-5 years old X 5-10 years old __ > 10 years old __

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Dartmouth College Health Services, Hanover, NH - installed 6/15

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only __ or materials installed __.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes __ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	HPW348 LED35 1U2D SX FW	S2



Archer LED

Patient Room Wall Light

Project:

Type:

Qty:

SPECIFICATIONS	Interior	ARCHER LED
-----------------------	-----------------	-------------------

SPECIFICATIONS

Construction

Extruded Aluminum Housing
High impact acrylic lens, UV treated, with frosted diffuse coating

Source

Nichia LED chips (or equivalent) mounted on linear boards

Driver

Roal Strato RSL035-09 or equivalent

Finish

Polymer powder coat flat white finish; anti-microbial finish (optional)

Weight

38 lbs (3ft); 50 lbs (4ft)

Voltage

Multi-volt 120-277V

Input Watts

125 watts (top and bottom mode 2u2d configuration 4ft fixture)
63 watts (top mode 2u2d configuration 4ft fixture)

Light Output

9000 lumens (top and bottom mode 2u2d configuration 4ft fixture)
4600 lumens (top mode 2u2d configuration 4ft fixture)

Dimming

0-10V dimming standard

Color Quality

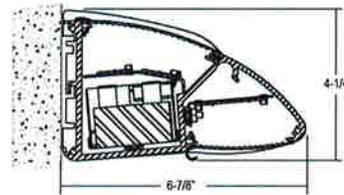
>80 CRI

Life Estimate

40,000 hours*
*LED life projection based on IES TM-21 and IES LM-80

Warranty

Five-year standard LED warranty, terms and conditions apply. (see www.healthcare-lighting.com)



	Nominal	Actual
Length:	3'	35-7/8"
	4'	47-5/8"

CATALOG NUMBER

Example: HPW348 120 LED35 2U2D LV LCR AM

HPW348		LED35	1U2D	SX
Series	Voltage	Lamping Type	Lamping	Switching Config
HPW336 Archer 3ft in Length HPW348 Archer 4ft in Length	120 120 Volt 277 277 Volt	LED35 3500K LED ²	2U1D 2 Rows LEDs Up, 1 Row LEDs Down 2U2D 2 Rows LEDs Up, 2 Rows LEDs Down 1U1D 1 Row LEDs Up, 1 Row LEDs Down 1U2D 1 Row LEDs Up, 2 Rows LEDs Down 0U1DMT Only 1 Row LEDs Down with Top Plate 0U2DMT 2 Rows LEDs Down with Top Plate	LV Low Voltage Controller - Sequential Switching LV1L LVC with Pillow Switch for Down Light on Left LV1R LVC with Pillow Switch for Down Light on Right LV2L LVC with Pillow Switch on Left - Sequencing Up + Down Light LV2R LVC with Pillow Switch on Right - Sequencing Up + Down Light S2L On/Off Pull Chain on Left (top & bottom) ² S2R On/Off Pull Chain on Right (top & bottom) ² S2C On/Off Pull Chain on Center (top & bottom) ² S2LDL On/Off Pull Chain on Left (bottom only) ² S2RDL On/Off Pull Chain on Right (bottom only) ² S2CDL On/Off Pull Chain on Center (bottom only) ² S4L 4-Position Pull Chain on Left ² S4R 4-Position Pull Chain on Right ² S4C 4-Position Pull Chain on Center ² SX No Switch
		FW		

Option	Finish	Certification	Notes
LCL 3w LED Chart Light with Switch on Left LCR 3w LED Chart Light with Switch on Right LCLHW 3w LED Chart Light Hard Wired Left LCRHW 3w LED Chart Light Hard Wired Right BD Bed-Stop Switch	FW Flat White (standard) AM Anti-Microbial White CC Custom Color ²	CSA certified damp location (Canada, US)	1 Custom color requires factory pricing 2 Switching: S2 and S4 options are compatible with 120v only 3 Wall mount brackets included, packaged separately 4 For pull chain and pillow switch, specify "left" or "right" as viewed facing the head wall 5 3W LED chart light (option) always installed opposite end from pull chain or pillow switch 6 Consult factory for LED availability and specifications

Healthcare Lighting • 3 Kilmer Road • Edison, NJ 08817 • 855.868.6980 • f 855.868.6981 • www.healthcare-lighting.com



Archer LED

Patient Room Wall Light

Project:

Type:

Qty:

SPECIFICATIONS	Interior	ARCHER LED
-----------------------	----------	-------------------

PERFORMANCE DATA

Lumen Output

Lumen values are from photometric tests from an accredited laboratory. Data is considered to be representative of the configurations shown, within the tolerances allowed within generally accepted industry tolerances. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

For 4ft Fixture		
Light Switch Mode	Lumen Output	Max CD
top and bottom on	9000 lumens	2060 candela
DIRECT: bottom on	4500 lumens	2060 candela
INDIRECT: top on	4600 lumens	2030 candela

Electrical Load

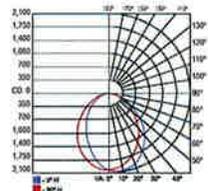
For 4ft Fixture	
Light Switch Mode	Input Watts
top and bottom on	125 watts
DIRECT: bottom on	64 watts
INDIRECT: top on	63 watts

PHOTOMETRICS

Actual performance may differ as a result of end-user environment and application

DIRECT

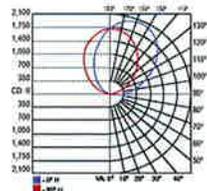
Test Report: 501927
 HPW348-120-LED35-
 2U2D-LV1R-LCL-GLR
 Lumens: 4,496
 Input Wattage: 63.5
 Max. Candela: 2,062 H: 15°, V: 7.5°



Illuminance at a Distance	
Height	Center Beam Foot Candle
4.0	125.4fc
8.0	31.4fc
12.0	13.9fc
16.0	7.8fc
20.0	5.0fc

INDIRECT

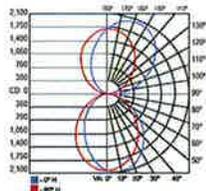
Test Report: 501929
 HPW348-120-LED35-
 2U2D-LV1R-LCL-GLR
 Lumens: 4,660.1
 Input Wattage: 62.7
 Max. Candela: 2,035 H: 10°, V: 157.5°



Illuminance at a Distance	
Height	Center Beam Foot Candle
4.0	0fc
8.0	0fc
12.0	0fc
16.0	0fc
20.0	0fc

DIRECT & INDIRECT (All On)

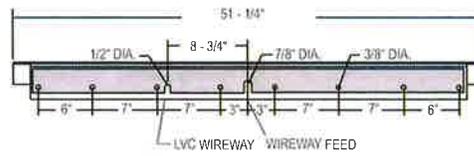
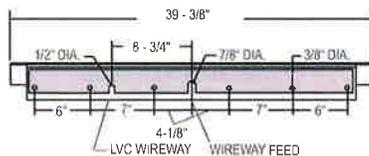
Test Report: 501930
 HPW348-120-LED35-
 2U2D-LV1R-LCL-GLR
 Lumens: 9,077.8
 Input Wattage: 125.7
 Max. Candela: 2,062 H: 15°, V: 7.5°



Illuminance at a Distance	
Height	Center Beam Foot Candle
4.0	125.4fc
8.0	31.4fc
12.0	13.9fc
16.0	7.8fc
20.0	5.0fc

Photometric data based on test results from an independent NIST traceable testing lab. IES data is available at www.healthcare-lighting.com. Always refer to our website for the latest IES file updates.

MOUNTING



Healthcare Lighting • 3 Kilmer Road • Edison, NJ 08817 • 855.868.8980 • 1.855.868.8981 • www.healthcare-lighting.com

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Version 03/19/14

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

- Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.
 Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___
- Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model: <u>Type S3</u>	<u>LC Doane VSA LED</u>
Manufacturer: <u>Kenall MLH</u>	<u>LC Doane VSA LED</u>
Installer: <u>TBA</u>	<u></u>
History of proposed substitution: New product ___ 2-5 years old <input checked="" type="checkbox"/> 5-10 years old ___ > 10 years old ___	
Significant variations of proposed substitution from original product: <u>N/A</u>	

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any local installations.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

- Unit costs, if applicable: State if cost is materials only ___ or materials installed ____.
 Original product \$ _____ per _____ Substitution \$ _____ per _____
 Savings to Owner for accepting substitution: N/A \$ _____
 Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:  VISIBLELIGHT <small>MANUFACTURERS REPRESENTATIVE</small>	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: VSA-4-2L35K-VAR-DM-OP-WH-TP-65	Type: S3
---	--	--	--------------------



VSA-LED

VR Architectural Surface Mount **LED** Linear

PRODUCT SPECIFICATION

The VSA is designed for general purpose lighting in high abuse areas where an architectural look is required.

Mounting

Surface mounts to ceilings or walls.

Housing

Marine grade aluminum extruded housing and die-cast end caps.

Lens Frame

Marine grade aluminum extruded side rails and die-cast ends captivates lens.

Finish

Polyester powder-coated after phosphate pretreatment for superior adhesion and corrosion resistance.

Lens

.125 in. thick extruded polycarbonate snap-fits into lens frame for ease of replacement. Opal lens completely hides diode image while maintaining excellent transmission.

Gasket

Closed cell foam gasket continuously seals lens frame to housing for up to IP67 rating.

Fasteners

Stainless steel, tamperproof fasteners finished to match housing.

Driver

0-10Vdc dimming, Range 10%-100%
-40°C Min. starting temperature, >0.9 PF, <20% THD

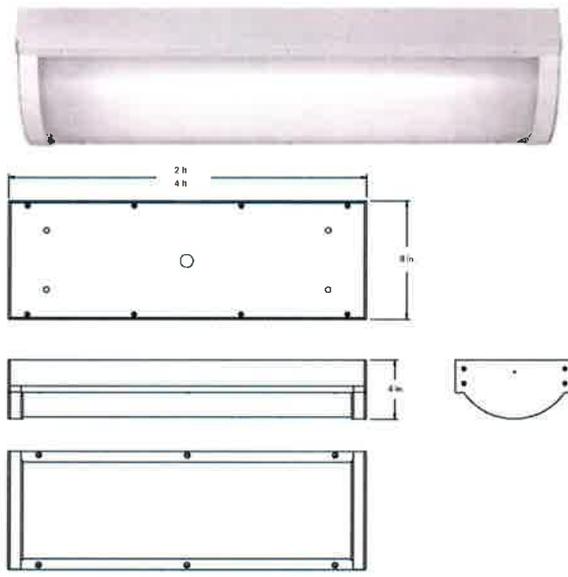
Wiring

Driver provided with pre-wired 3-wire self-aligning input power quick disconnect and 2-wire quick disconnect to LED module.

Certifications

UL Listed wet location, Covered ceilings only, IP65 Rated, optional IP66 and IP67 Ratings available. Constructed to pass MIL-S-901 Grade A, Type A, High Impact Shock Test and MIL-S-167 Type 1, Vibration Test.

Job Name _____
 Fixture Type _____
 Catalog No. _____
 Approval _____ Date _____



VSA	-	4	2L	35K	-	VAR	DM	-	OP	WH	TP	65	-	
		one	two	three		four	five		six	seven	eight	nine		ten

one Luminaire Size	five Driver	nine UL Listing
2 2 ft. fixture	DM 0-10Vdc Dimming, <u>standard</u>	65 IP65 Rated, <u>standard</u>
4 4 ft. fixture	six Lens	66 IP66 Rated
two LED Rows	OP Opal polycarbonate, <u>standard</u>	67 IP67 Rated
1L 1 Row	seven Finish	ten Options
2L 2 Rows	WH White, <u>standard</u>	RO Reduced output*
three Color Temperature	BK Black	2C Two circuit wired
35 3500K	BZ Bronze	CU Canadian UL Listing
40 4000K	eight Fasteners	EM Emergency ballast
50 5000K	TP Torx head, <u>standard</u>	FH Fuse holder
four Voltage	PH Phillips head	NL-LED LED night light
120 120 V, 60 Hz		PC Photocell
277 277 V, 60 Hz		OS Occupancy sensor
VAR Variable, 120-277 V, 50/60Hz		CM Corner mounting bracket

* Indicated as ROxx/xx. Reduced output, Input watts / lumens per watt to be determined based on specified requirements.

Modifications are available to meet custom requirements.

VSA-LED

PRODUCT SPECIFICATION

Photometric Data for a 2-ft fixture with two rows

Lumens	Input Watts	Lumens / Watt	CCT	CRI
5824	57 watts	101	3966K	85.44

Photometric Data for a 2-ft fixture (Example of RO - Reduced Output option)

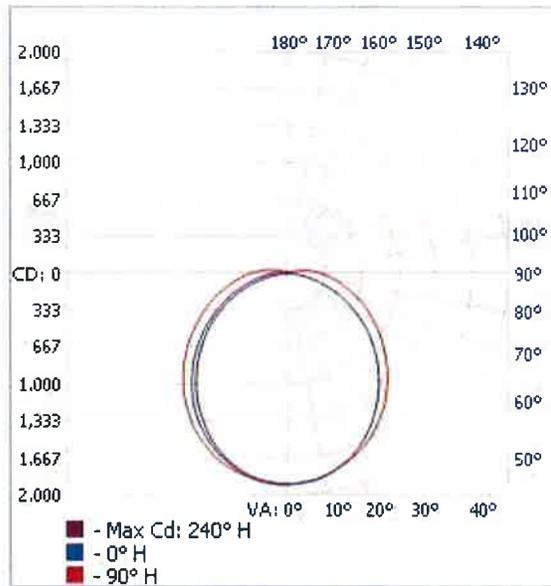
Lumens	Input Watts	Lumens / Watt	CCT	CRI
3249	34 watts	94	3943K	85.48

Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50				30				10				0			
	70	50	30	0	70	50	30	0	50	30	20	10	50	30	20	10	50	30	20	10	50	30	20	10
RW %:	1.18	1.18	1.18	1.18	1.15	1.15	1.15	.97	1.09	1.09	1.09	1.09	1.04	1.04	1.04	1.04	.99	.99	.99	.99	.97	.97	.97	.97
RCR: 0	1.07	1.01	.96	.92	1.03	.99	.94	.79	.94	.90	.87	.87	.89	.86	.83	.83	.85	.83	.80	.80	.78	.78	.78	.78
1	.97	.88	.80	.74	.93	.85	.79	.66	.81	.76	.71	.71	.77	.73	.69	.69	.74	.70	.67	.67	.64	.64	.64	.64
2	.88	.77	.68	.61	.85	.75	.67	.55	.71	.65	.59	.59	.68	.62	.58	.58	.65	.60	.56	.56	.54	.54	.54	.54
3	.80	.68	.59	.52	.78	.66	.58	.48	.63	.56	.50	.50	.61	.54	.49	.49	.58	.53	.48	.48	.46	.46	.46	.46
4	.74	.61	.51	.45	.71	.59	.51	.41	.57	.49	.43	.43	.54	.48	.42	.42	.52	.46	.42	.42	.39	.39	.39	.39
5	.68	.55	.45	.39	.66	.53	.45	.36	.51	.44	.38	.38	.49	.42	.37	.37	.47	.41	.37	.37	.34	.34	.34	.34
6	.63	.49	.40	.34	.61	.48	.40	.32	.47	.39	.33	.33	.45	.38	.33	.33	.43	.37	.33	.33	.30	.30	.30	.30
7	.59	.45	.36	.31	.57	.44	.36	.29	.43	.35	.30	.30	.41	.34	.30	.30	.40	.34	.29	.29	.27	.27	.27	.27
8	.55	.41	.33	.27	.53	.41	.33	.26	.39	.32	.27	.27	.38	.31	.27	.27	.37	.31	.26	.26	.24	.24	.24	.24
9	.52	.38	.30	.25	.50	.38	.30	.24	.36	.29	.24	.24	.35	.29	.24	.24	.34	.28	.24	.24	.22	.22	.22	.22
10																								

VSA-LED - Polar Candela Distribution



The L.C. Doane Company
 PO Box 700, Ivoryton, CT 06442
 tel: 860.767.8295 fax: 860.767.1397
 www.lcdoane.com

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model: <u>Type S5</u>	<u>Mark Lighting - Slot 4 LED</u>
Manufacturer: <u>A Light G3</u>	<u>Mark Lighting - Slot 4 LED</u>
Installer: <u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
East Rochester Elementary School, Rochester, NH - Lavallee Brensinger Architects, installed 6/15

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
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- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	S4LWD 4FT 1H35WG EZB 277 WHT	S5

MARK
ARCHITECTURAL
LIGHTING™



Slot 4 LED
Direct or Indirect Wall

The Slot LED family of luminaires offers an unparalleled package of performance and features for your next lighting project. Our complete set includes two aperture sizes, three mounting types, three lighting distributions and six fixture lengths. Precision lumen DIRECTIR optics deliver optimized light where needed and are available in standard and high lumen outputs. With other key features such as simplified installation, seamless controls integration and superior color and quality, the Slot LED family from Mark Lighting offers exceptional quality and design flexibility.

Type:

Project:

Catalog Number:

DO NOT TYPE HERE. Autopopulated field.

Specification Features (continued on page 2)

Housing
Nominal 3.5" x 3.75" extruded aluminum housing

Finish
White, Black or Silver powdercoat

Reflector
Extruded aluminum with high reflectance white powdercoat

Fixture Performance

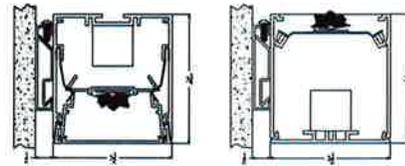
4FT INDIVIDUAL (35K)	DIRECT		INDIRECT	
	Normal	High	Normal	High
Delivered Lumens	2,299	4,598	2,854	5,708
Input Watts	28	56	26	56
Lumen/Watt	82	82	102	102

* Consult factory for customized lumen output and wattage

Shielding

Extruded 90% transmissive acrylic lens with a textured surface providing diffuse illumination and a uniform appearance for direct lambertian distribution (No Optics). Straight blade louver shield supplied for Wall Graze (WG) distribution. Louver will be painted to match housing. Clear Acrylic dustcover (DC) is available for the indirect distribution only.

Technical Drawing



Direct Wall Mount

Indirect Wall Mount

Ordering

Example: S4LWD 4FT 1N35WG EZB 120 WHT EMPK

Series	Length	Distribution Type	Lumens	Color Temp	Optics	Driver	Voltage	Finish	Controls
S4LWD Direct Wall	2FT 2'	1 Direct Distribution	N Normal Output	30 3000K ≥80 CRI	(Blank) No Optics	EOHN Non-dimming	120	WHT White	LMES20[®] Constant lumen management - 80%
S4LWI Indirect Wall	3FT 3'	2 Indirect Distribution	H High Output	35 3500K ≥80 CRI*	WG¹ Wall Graze Distribution	EZB Constant current, 0-10V, 0.1% dimming to off For other options see page 2	277	BLK Black	MSDN[®] PIR & Microphonics Occupancy Sensor with 360° Coverage - ON/OFF Control
	4FT 4'			40 4000K ≥80 CRI*	AS² Asymmetric Distribution		347[®]	SLV Silver	DSCC¹ Closed loop photocell with continuous dimming
	5FT 5'				DC³ Dust Cover (Clear)				EMPK³ Emergency Battery Pack
	6FT 6'								
	7FT 7'								
	8FT 8'								
	_FT Specify continuous run length (in whole feet)								

Notes:

- WG optics available with Type 1 Direct and/or 2 indirect distributions, straight blade louver shielding provided for Type 1 distribution only.
- AS optic and DC dustcover options are available with Type 2 indirect distribution ONLY.
- Consult factory for 347V.
- Occupancy and Photocells are supplied at one end of an individual unit.
- Remote mounted; consult factory for remote mounting options.



AcuityBrands.

Submitted by:	Job Name:	Catalog Number:	Type:
			

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Slot 4 LED
Direct or Indirect Wall

Specification Features (continued)

LED Components

Linear: Nichia®- 757 series LED chips (>80 CRI)

LED Life

Rated 55,000 hours (L80) at 25° C ambient temperature.

Color Consistency

The Acuity Brands circuit boards for the linear LED components use a precise binning algorithm which creates a consistent color temperature from board to board. The color a variation of no greater than a 2.5 Step MacAdam (2.5SDCM) along the black body locus from board to board.

Driver

eldoLED constant current driver options deliver choice of dimming range for ultra-smooth dimming resolution from 100% to less than 1% , and choices for control, while assuring flicker free, low current inrush, 89% efficiency and low EMI.

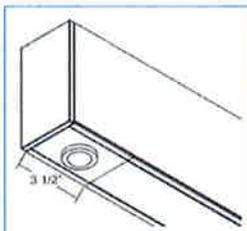
Slot LED Drivers

Driver Options	Dimming Protocol	Dimming Range	Integrated Controls
EOHN	Non-dimming	----	----
EZB	0 -10v	100 to 0.1%	----
EDAB	Dall	100 to 0.1%	----
ENCB*	0 -10v	100 to 0.1%	nLight
ENNB*	0 -10v	100 to 0.1%	nLight with generator supplied EM power
EESB*	0 -10v	100 to 0.1%	Lutron EcoSystem interface

*Integral driver with remote mounted nLight or EcoSystem interface, consult factory for mounting options.

Integrated Controls

Optional nLight® integrated controls make Slot LED luminaires addressable- allowing them to digitally communicate with other nLight enabled controls such as dimmers, switches, occupancy sensors and photocontrols. Simply connect all the nLight enabled control devices using standard CAT5 Cabling.



Occupancy Sensor (MSD9N) and/or Photocell (DSCC)

Lumen Management

An optional lumen management system provides onboard intelligence that actively manages the LED light source so that constant lumen output is maintained over the system's life, creating a consistently illuminated environment while preventing energy waste. (Option: LMES20)

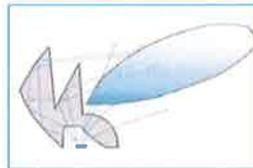
Mark 360° Total System Integration

Complete lighting systems with components and technologies all manufactured, warrantied and supported by Acuity Brands®.

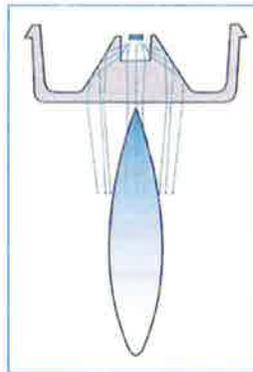


Optics

Slot LED's patent-pending, precision lumen DIRECTIR optics condition and refract light to deliver accurately controlled, striation-free, and uniform white light. All lumen DIRECTIR optics are injection-molded, optical grade, UV-resistant acrylic with selective finishing/polishing treatment.



Asymmetric (half batwing) (AS)



Wall Graze (WG)

Certification

CSA Certified to meet U.S. and Canadian standards, and IBEW (Local 3) Union-made, assembled in the USA.

Warranty

5-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomerResources/Terms and conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms%20and%20conditions.aspx)

Notes

- a. Specifications subject to change without notice
- b. Actual performance may differ as a result of end-user environment and application
- c. For photometric information refer to www.marklighting.com

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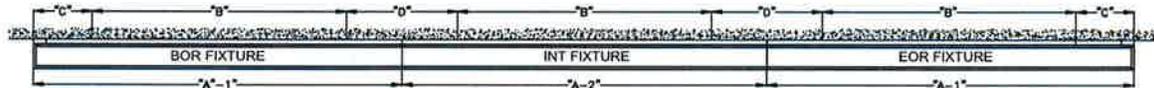
Slot 4 LED
 Direct or Indirect Wall

Individual Fixture Configurations



INDIVIDUAL UNITS (MOUNTING)			
LENGTH	"A" O.A.L.	"B" FEED POINTS	"C" FROM END
2FT	2'-0 1/2"	1'-1"	5 3/4"
3FT	3'-0 1/2"	2'-1"	5 3/4"
4FT	4'-0 1/2"	3'-1"	5 3/4"
5FT	5'-0 1/2"	4'-1"	5 3/4"
6FT	6'-0 1/2"	5'-1"	5 3/4"
7FT	7'-0 1/2"	6'-1"	5 3/4"
8FT	8'-0 1/2"	7'-1"	5 3/4"

Run Configurations



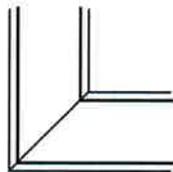
RUN LAYOUT (MOUNTING)					
LENGTH	"A-1" O.A.L.	"A-2" O.A.L.	"B" FEED POINT	"C" FROM END	"D" FEED POINT
2FT	2'-0 1/4"	2'-0"	1'-1"	5 3/4"	11"
3FT	3'-0 1/4"	3'-0"	2'-1"	5 3/4"	11"
4FT	4'-0 1/4"	4'-0"	3'-1"	5 3/4"	11"
5FT	5'-0 1/4"	5'-0"	4'-1"	5 3/4"	11"
6FT	6'-0 1/4"	6'-0"	5'-1"	5 3/4"	11"
7FT	7'-0 1/4"	7'-0"	6'-1"	5 3/4"	11"
8FT	8'-0 1/4"	8'-0"	7'-1"	5 3/4"	11"

Continuous Runs

Slot 4 LED continuous rows can be configured in 1' increments and featuring the AEL precision joiner to create a hairline seam between luminaires, providing a monolithic visual aesthetic. (see AEL joiner information on page 4). For custom run lengths less than a 1' increment, consult factory.

Run Patterns, Corners and Junction

Slot 4 LED patterns be configured in 1' increments with illuminated 90° inside or outside corners, with standard 2' corner junction lengths. For custom angles, corner or junction lengths, consult factory.



90° Corner

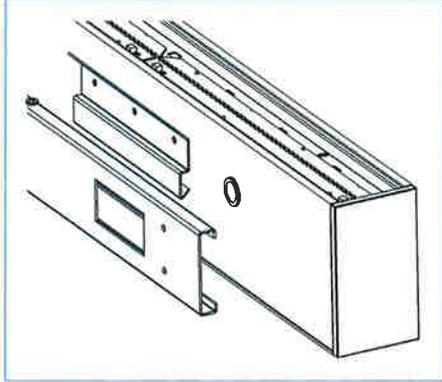


Submitted by: 	Job Name:	Catalog Number:	Type:
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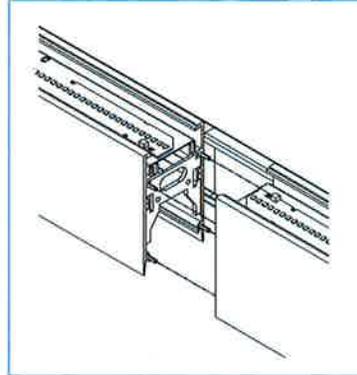
Slot 4 LED
Direct or Indirect Wall

Mounting



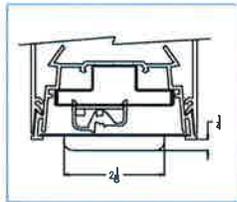
Joiners

AEL Precision Row-Mount 3-step fixture-to-fixture connection method

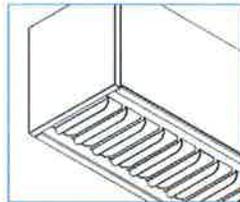


Step 1: Align

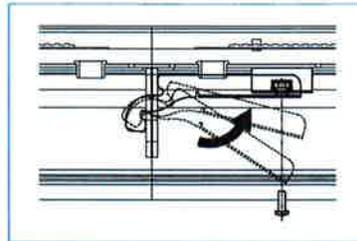
Wall Graze Shielding



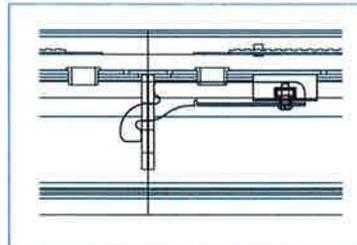
Cross Section



Louver - Painted to Match Housing



Step 2: Engage



Step 3: Lock

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type S7</u>	<u></u>
Manufacturer:	<u>Pinnacle EX44</u>	<u>Lumenwerx VIA 4 LED</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:

Acquia Boston, 53 State St.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
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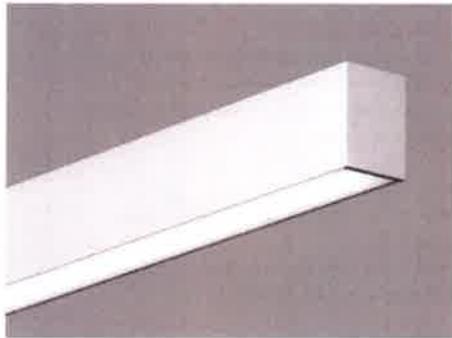
Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	VIA4S HLO LED 80CRI 750 35 XFT UNV D 1 XX W	S7

VIA 4 LED

SURFACE



Shown with HLO optics

DESCRIPTION

Via 4 is the flexible linear LED luminaire system for pendant, surface and recessed or in-wall installation, whether as discrete luminaires, continuous runs or patterns. Via 4 features numerous high-efficiency optical configurations, including separately controlled indirect/direct, wall wash and asymmetric distributions, as well as a wide range of electrical, control and trim options. See separate spec sheets for patterns and other available mountings.

PROJECT: _____

TYPE: _____

NOTES: _____



up to 105 lm/w performance

ORDER GUIDE

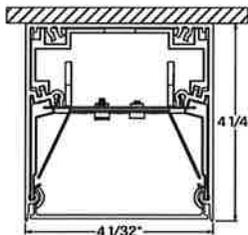
VIA4S	HLO	LED	80CRI	750	35
LUMINAIRE ID	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	COLOR TEMP.
VIA4S - via 4" surface	HLO - High-Efficiency Lambertian Optic	LED - high performance LED	80 - 80CRI 90 - 90CRI	500 - low output 500lm/ft 750 - med. output 750lm/ft 1000 - high output 1000lm/ft 1200 - ultra high output 1200lm/ft	30 - 3000k 35 - 3500k 40 - 4000k

XFT	UNV	D	I	XX	W
LUMINAIRE LENGTH	VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH
Standard sections - 2', 3', 4', 5', 8' & 12' For all other specify length #FT - nominal length in feet #IN - length in inches Continuous Run - for luminaires over 12' Minimum Individual section 2'	120 - 120V 277 - 277V UNV - 120V-277V 347 - 347V	D - dimming 0-10V DA - Dali LA2 - Lutron Hi-Lume A - 2 wires 120V LA3 - Lutron Hi-Lume A - 3 wires/EcoS LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	1 - 1 circuit + #EB - emergency battery pack (for min 4' fixture) + #EM - emergency light circuit + #NL - night light circuit + #COB/MR - COB/MR circuit + #GTD - generator transfer device	GRD - grid ceiling DRC - drywall ceiling OHC - other ceiling (specify)	W - matte white AL - aluminum CF# - custom finish specify RAL#

XX - PLEASE SPECIFY MOUNTING

CONTROLS	LED DOWNLIGHT	COB CRI	COB LUMEN PACK.	COB COLOR TEMP.	COB DRIVER	OPTIONS
ONBOARD OMS - Motion Sensor & power pack ODS - Daylight Sensor & controller WIRELESS EWC - EnOcean Wireless Controller LMC - Lutron Motion Controller LDC - Daylight Controller	#COB20 - COB 20° #COB30 - COB 30° #COB40 - COB 40° #MR16 - MR16 Minimum individual section with downlight 4'	80 - 80CRI 90 - 90CRI 97 - 97CRI (consult factory)	600 - 600lm 1200 - 1200lm 1800 - 1800lm	30 - 3000k 35 - 3500k 40 - 4000k	D - dimming 0-10V DA - Dali LHL# - Lutron Hi-Lume A LEH - Lutron EcoSystem H LE5 - Lutron EcoSystem 5 OTH - other (consult factory)	FU - fuse TB# - T-bar caddy clip specify grid size TG# - Tegular caddy clip specify grid size ST - Screw Slots caddy clip CU - custom

CROSS SECTION



VIA4S - surface

OPTICS



HLO - High-efficiency Lambertian Optic

See page 2 for ordering code detailed information

File Name: VIA4.SURFACE.SPEC

Page: 1 / 4

February 16, 2016

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VIA 4 LED

SURFACE



OPTICS

HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO) - Matte white side reflectors combined with High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - LED

Custom linear array of mid-flux LED's are cartridge-mounted with quick-connect wiring to facilitate service and thermal management. Available in 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance.

All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

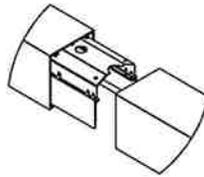
PERFORMANCE PER 4' AT 4000K

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	19	2000	105
medium output	4000K	29	3000	104
high output	4000K	40	4000	101
ultra high output	4000K	48	4800	101

LUMINAIRE LENGTH

Via 4 is made up of standard 2, 3, 4, 5, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 2 foot, and continuous run lengths can be ordered in 2 inch increments.

All individual sections are joined together onsite using the joiner kits provided. LumenWerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.



joining system Via 4 direct

ELECTRICAL

Factory-set adjustable output current electronic driver with 120-277V AC line input. Dimmable from at least 100%-5% with 0-10V control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron HI-Lume A (specify 2, 3 or 4 wires), EcoSystem H (100%-1%, fade-to-black) and EcoSystem 5 (100%-5%) dimmable drivers and DALI protocol drivers.

EMERGENCY

Factory installed long life high temperature recyclable Ni-Cad battery pack with test switch and charge indicator; minimum of 90 minutes operation, up to 1000 lumens per 4ft (25°C) emergency lighting output. Recharge time of 24 hours.

MOUNTING OPTIONS

Fixtures can be mounted directly to T-Bar, drywall and hard surface ceilings, hardware supplied by others. Long runs require a minimum of 6" distance from the vertical wall.

FINISH

Interior - 95%, reflective matte powder coated white paint

Exterior - matte white or silver powder coating. Custom finishes are also available.

CONTROLS

LumenWerx offers several options for integrating motion and daylight controls into Via 4 luminaires. Wireless options incorporate a wireless controller/powerpack into the luminaire, which receives signals from a wireless sensor (by others) installed in the space. The advantages of the wireless option include greater flexibility of control options, sensor coverage and system integration. Onboard options incorporate both the sensor and controller/powerpack. Onboard sensors, while inherently simpler, have limitations of control and coverage.

Onboard

Onboard Motion Sensor and power pack (OMS)

provide automatic on and automatic off control, using PIR detection. Sensor is designed to detect fine-motion when installed within 6' of occupants.

Onboard Daylight Sensor and controller (ODS)

provide input for 0-10V dimming drivers. Separate switched control of line input is required for on/off control.



Location of an Onboard sensor

Wireless

EnOcean Wireless Controller (EWC) provides both a power pack for presence detection control and a 0-10V interface for daylight harvesting. EnOcean wireless sensors (by others) mounted in the room signal the onboard EWC. This option permits manual on/automatic off (vacancy) control.



Submitted by:	Job Name:	Catalog Number:	Type:
			

VIA 4 LED

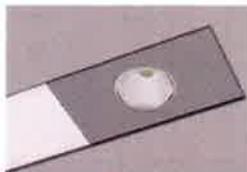
SURFACE

LUMENWERX
WWW.LUMENWERX.COM

Lutron Motion Controller (LMC) and Daylight Controller (LDC) provide inputs to Ecosystem drivers. Compatible Lutron wireless motion and daylight sensors (by others) mounted in the room signal onboard LPC or LDC. This option permits manual on/automatic off (vacancy) control.

LIGHT SOURCE - COB

Fixtures with Chip On Board (COB) technology are able to provide a maximum output of 1800 lumens from a discrete 50mm aperture on 8 inch centers. Standard CRI is 80, for 90 and 97 CRI with elevated R9 values please consult factory. Standard 20°, 30° and 40° beam angles are available, as are custom angles with prior factory approval. All our Chip-On-Board products have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 50,000 hours.



Chip On Board (COB)

LIGHT SOURCE - MR16

Our MR16 option is a replaceable bulb solution which allows for up to a 50W halogen equivalent solution.

CONSTRUCTION

Housing - Extruded Aluminum (0.095" nominal) up to 90% Recycled Content

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Joining system - Die cast Zinc (0.95" nominal)

Reflectors - Flat rolled Aluminum sheet 0.040" thick precisely die formed, 95% reflective matte white painted

End caps - Die cast Aluminum (0.95" nominal)

WEIGHT

Via 4 4ft - 11.45lbs - 5.2kg

Via 4 8ft - 23.13lbs - 10.5kg

Via 4 12ft - 34.58lbs - 15.7kg

CERTIFICATIONS

ETL - Rated for Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

DLC - Testing to DLC requirements, for this product, have been completed by an Accredited Laboratory and certified by DLC.

Lighting facts - testing products and reporting performance results according to industry standards.

WARRANTY

LumenWerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. LumenWerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.



Submitted by:

Job Name:

Catalog Number:

Type:

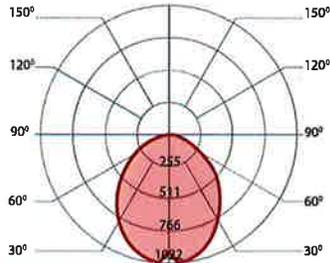


VIA 4 LED

SURFACE



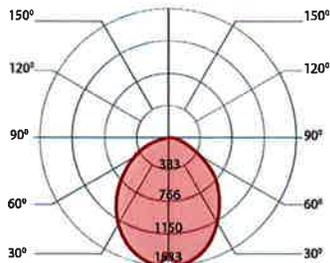
500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	3000K	20	2000	99
low output	3500K	20	2000	102
low output	4000K	19	2000	105

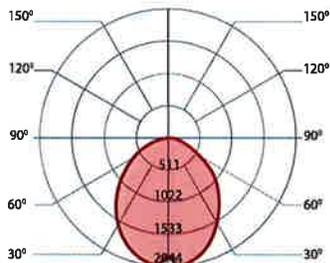
750 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	3000K	31	3000	98
medium output	3500K	30	3000	101
medium output	4000K	29	3000	104

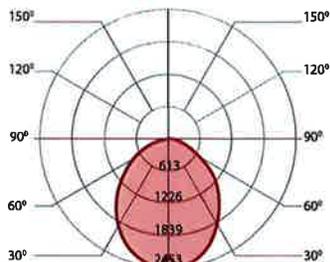
1000 LUMEN AT 80CRI - HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	3000K	42	4000	95
high output	3500K	41	4000	98
high output	4000K	40	4000	101

1200 LUMEN AT 80CRI - ULTRA HIGH OUTPUT



PERFORMANCE PER 4'

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
ultra high output	3000K	51	4800	95
ultra high output	3500K	49	4800	98
ultra high output	4000K	48	4800	101



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16

From Contractor: TBA Number: N/A

Specification Section: 26 51 00 Page: 1-13

Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Type W2</u>	<u>Deco Lighting - D453</u>
Manufacturer:	<u>Gardco 161</u>	<u>Deco Lighting - D453</u>
Installer:	<u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any local installations.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	D453-LED-90-40-UNV-T3-2UNV-DM	W2


DECO digital[®]

Powered By:
 **NICHIA**

D453-LED

Horizontal Wall Sconce



Job Information

Digitize your light.

Type: _____
 Catalog #: _____
 Project: _____
 Comments: _____
 Prepared by: _____

Description

The D453-LED Horizontal Wall Sconce delivers specification-grade performance and style at a competitive price. Sweeping curves and distinctive lines provide a progressive look that enhances the architectural integrity of any site.

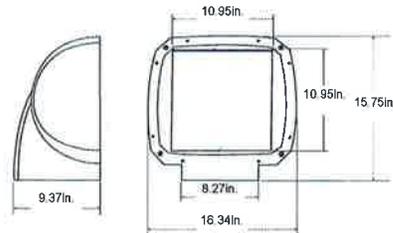
D453-LED



Features

- Full cutoff lighting distribution (Dark Sky compliant).
- One-piece, die-cast aluminum housing.
- Standard color is bronze; also available in black and white. Contact factory for custom finishes.
- Universal mounting plate is used for both uplight and downlight applications.
- One-piece, extruded silicone gasket prevents moisture, dust or insects from entering the lamp.
- Powdercoated finish.
- The die-cast aluminum door frame features two black stainless steel captive fasteners that allow for quick and easy access into the fixture

Dimensions



Ordering Information:

Example: (D453-LED-60-30-UNV-T2-B2-WDF)

D453-LED	90	40	UNV	T3	2UNV-DM							
Series	Wattage/Lumen	Color Temp.	Voltage	Optics	Finish	Option						
Horizontal Wall Sconce	30	30W/3840 ^{1,5}	30	3000K	UNV	120-277V	T2	Type 2	BZ	Bronze ¹	SM	Smart Dim
	60	60W/7680 ^{1,5}	35	3500K	347	347V	T3	Type 3	BL	Black	PC	Photocell
	90	90W/11520 ¹	40	4000K	480	480V	T4	Type 4	WH	White	WSF	Wired Single Fuse
	120	120W/15360 ¹	50	5000K ^{1,5}		(Step-Down Transformer used for 480V Divider)			CU	Custom ²	WDF	Wired Double Fuse
											EM	Emergency

⁵ Standard for fixture Contact factory for custom finish
¹ Initial Delivered Lumens
¹ Standard Color Temp.
¹ DLC Listed

→ 2UNV - 2 DRIVERS
 → DM - DIMMING



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 Rev Date: 1/11/16 #5

LED Lighting

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LIGHTING

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLERIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>			



Powered By:


D453-LED

Horizontal Wall Sconce



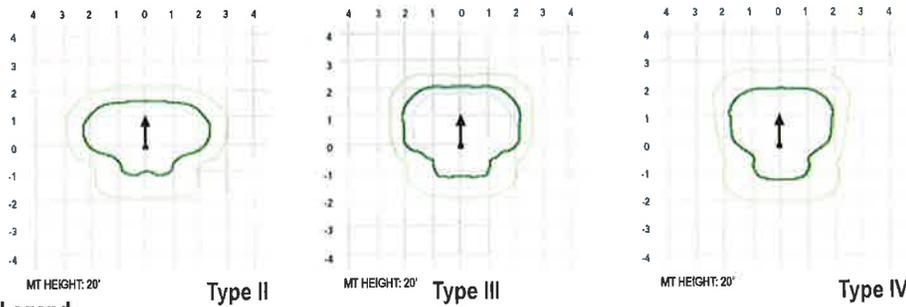
Job Information *Digitize your light.*

Type:	
Catalog #:	
Project:	
Comments:	
Prepared by:	

LED Lighting

DECO[®] LIGHTING

Photometric Data



Legend

- 0.1 fc
- 0.5 fc
- 1.0 fc

Performance Data

CRI:	80+			
CCT:	3000K, 3500K, 4000K, 5000K			
Warranty:	10 yr. Limited Warranty			
Dimming:	Available with 0-10V inputs dimming down to 10%			
Operating Temperature:	-30° to 65°C Max Ambient			
L70 Rating:	100,000+ Hours			
IP Rating:	IP65			
Driver Current:	700mA			
BUG Rating:	Type II	B3	U2	G2
	Type III	B3	U2	G3
	Type IV	B4	U1	G2

Delivered Light Output and Equivalency Chart

HID to LED Replacement		
Initial Lumens Delivered	LED	HID Replacement
3810 lm	30W	150W
7620 lm	60W	250W
15240 lm	120W	400W



Digitize your light.

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Rev Date: 1/11/16 #5

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT PROPOSED SUBSTITUTION

Trade Name, Model: Type W3 _____

Manufacturer: Gardco 161 _____ Deco Lighting - D453 _____

Installer: TBA _____

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A _____

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Not currently aware of any local installations.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
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- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	D453-LED-60-40-UNV-T3-2UNV-DM	W3



Powered By:


D453-LED

Horizontal Wall Sconce



Job Information

Digitize your light.

Type: _____
 Catalog #: _____
 Project: _____
 Comments: _____
 Prepared by: _____

Description

The D453-LED Horizontal Wall Sconce delivers specification-grade performance and style at a competitive price. Sweeping curves and distinctive lines provide a progressive look that enhances the architectural integrity of any site.

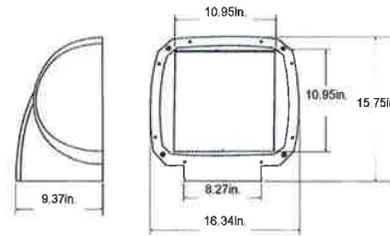
D453-LED



Features

- Full cutoff lighting distribution (Dark Sky compliant).
- One-piece, die-cast aluminum housing.
- Standard color is bronze; also available in black and white. Contact factory for custom finishes.
- Universal mounting plate is used for both uplight and downlight applications.
- One-piece, extruded silicone gasket prevents moisture, dust or insects from entering the lamp.
- Powdercoated finish.
- The die-cast aluminum door frame features two black stainless steel captive fasteners that allow for quick and easy access into the fixture

Dimensions



Ordering Information:

Example: (D453-LED-60-30-UNV-T2-BZ-WDF)

D453-LED	60	40	UNV	T3	2UNV-DM	
Series	Wattage/Lumen	Color Temp.	Voltage	Optics	Finish	Option
Horizontal Wall Sconce	30 30W/3840 ^{1,5}	30 3000K	UNV 120-277V	T2 Type 2	BZ Bronze ¹	SM Smart Dim
	60 60W/7680 ^{1,5}	35 3500K	347 347V	T3 Type 3	BL Black	PC Photocell
	90 90W/11520 ¹	40 4000K	480 480V	T4 Type 4	WH White	WSF Wired Single Fuse
	120 120W/15360 ³	50 5000K ^{4,5}	(Step-Down Transformer used for 480V Divider)		CU Custom ²	WDF Wired Double Fuse
						EM Emergency

Standard for fixture
 Contact factory for
 custom finish
¹ Factory Delivered Lumens
² Standard Color Temp.
 DLC Listed

→ 2UNV - 2 DRIVERS
 → DM - DIMMING



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LIGHTING

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLERIGHT <small>MANUFACTURER REPRESENTATIVE</small>			


DECO digital[®]

Powered By:


D453-LED

Horizontal Wall Sconce



Job Information

Digitize your light.

Type: _____

Catalog #: _____

Project: _____

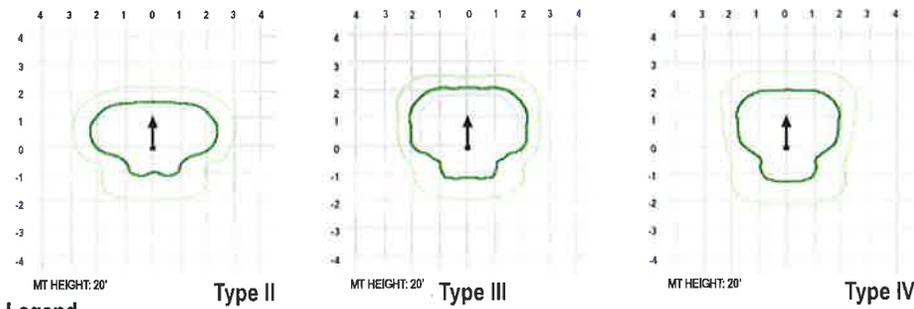
Comments: _____

Prepared by: _____

LED Lighting

DECO [®] | **LIGHTING**

Photometric Data



Legend

- 0.1 fc
- 0.5 fc
- 1.0 fc

Performance Data

CRI:	80+			
CCT:	3000K, 3500K, 4000K, 5000K			
Warranty:	10 yr. Limited Warranty			
Dimming:	Available with 0-10V inputs dimming down to 10%			
Operating Temperature:	-30° to 65°C Max Ambient			
L70 Rating:	100,000+ Hours			
IP Rating:	IP65			
Driver Current:	700mA			
BUG Rating:	Type II	B3	U2	G2
	Type III	B3	U2	G3
	Type IV	B4	U1	G2

Delivered Light Output and Equivalency Chart

Initial Lumens Delivered	Watts to LED Replacement	
	LED	HID Replacement
3810 lm	30W	150W
7620 lm	60W	250W
15240 lm	120W	400W



Digitize your light.

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Rev Date: 1/11/16 #5

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT PROPOSED SUBSTITUTION

Trade Name, Model: Type W5 _____
Manufacturer: Luminis L2W _____ V2 Lighting Group - Core 400
Installer: TBA _____

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Granite Investment Advisors - Eagle Square, Concord, NH. Installed 11/15.

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
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- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURER REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	C4LU N V W 10 83 4000K 25 10 83 4000K 41 T2	W5



CORE 400 LX

up + down sconce

PROJECT

Job	Notes
Type	
Part #	

SPECIFICATIONS

- Source Two Xicato XTM LED modules - up to 4000 lumens each
- C.C.T. 2700K, 3000K, 3500K or 4000K
- Color Consistency 1x2 SDCM (MacAdam) along BBL, CCT +/- 40K to 70K, Duv +/- .001
- CRI (Ra) 83 or 98
- Driver / Location Included / Internal with remote or deep canopy options
- Dimming 0-10V or phase dimming to 10% standard; DALI, DMX and 1% dimming available
- Input Voltage 100 to 277VAC, phase dimmable versions are 120VAC only
- Power Up to 71 watts max, depending on LED module / driver
- Reflector 11°, 25°, 41°, 51°, or 83° - field replaceable without tools
- Material CNC machined aluminum with stainless steel hardware
- Finish Powder coat - TGIC polyester for exterior and interior use
- Weight 8.5 lb. [3.9 kg]
- Location Listed for Wet & Damp locations
- Approvals ETL Listed to UL 1598, 2108, 8750 and CSA C22.2# 9 & #250.0
- L80 Life > 50,000 hours at 80% lumen maintenance based on IESNA LM-80-08
- Warranty Lifetime Limited Warranty - see warranty for details
- IES Files LM-79-08 IES files available at www.v2LightingGroup.com/downloads
- Modifications Any modification or customization is possible - consult factory



ORDERING LOGIC

Model	Driver Location	Dimming	Mounting Location	Output	Up Direction CRI*	Up Direction C.C.T.	Reflector	Output	Down Direction CRI*	Down Direction C.C.T.	Reflector	Shell Color	Options
C4LU-N	N	V	W	-10	83	4000K	25	-10	83	4000K	41	-T2	
	N=Internal R=Remote D=Deep Canopy	N=None P=Phase V=0-10V Z=Other	D=Damp W=Wet	07=700lm 10=950lm 13=1300lm 20=2000lm 30=3000lm 40=4000lm	83=83 98=98	27=2700K 30=3000K 35=3500K 40=4000K	11=11°** 25=25° 41=41° 51=51° 83=83°**	07=700lm 10=950lm 13=1300lm 20=2000lm 30=3000lm 40=4000lm	83=83 98=98	27=2700K 30=3000K 35=3500K 40=4000K	11=11°** 25=25° 41=41° 51=51° 83=83°**	XX (see chart on page 4) ZZ=Custom	

→ T2 - TEXTURED MATTE LIGHT GRAY

* 98 CRI not available in 4000 lm ** Not available with wet location

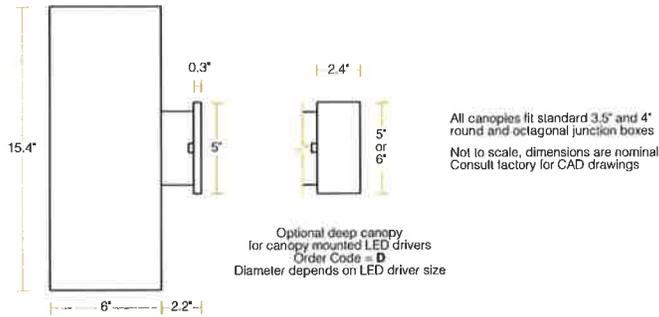
Example Part Number: **C4LU-RND-13832725-20832741-S3**
CORE 400 LX Up + Down Sconce - Remote Driver, No Dimming, Damp Location - UP= 1300 lm, 83 CRI, 2700K, 25° Reflector - DOWN= 2000 lm, 83 CRI, 2700K, 41° Reflector - S3 Red Shell



CORE 400 LX

up + down sconce

DIMENSIONS



LED OPTIONS

Reflector Option	LES ¹	CRI	LED Specifications		
			Lumens ^{2,3}	Wattage ⁴ (W)	Efficacy ⁵ (lm/W)
11°, 26°, 41°, 51° & 83°	19mm	Ra = 83 ± 3	700	5.6	129
			950	8.2	118
			1300	11.7	111
			2000	19.5	102
			3000	29.3	102
		Ra = 98 R9 ≥ 90 R15 ≥ 95	4000	39.1	102
			700	7.4	97
			950	10.9	89
			1300	15.6	83
			2000	26.4	76
			3000	34.1	88

¹ LES: Light Emitting Surface diameter
² ±10%
³ Source lumens - see photometrics on page 3 for LOR to calculate delivered lumens
⁴ Maximum luminaire wattage including LED driver = LED wattage x 1.2
⁵ Higher efficacies are available via lower drive currents - consult factory

CONTROL OPTIONS

Standard LED Drivers* (included in base price)	Order Code V = 0-10V dimming to 10% Order Code P = Phase dimming to 10% Compatible with both forward and reverse phase dimmers
Optional LED Drivers*	eldoLED 0-10V, DALI, or DMX dimming to 0% Lutron Hi-lume™ A-series, EcoSystem or forward phase dimming to 1% Lutron Hi-lume™ 5-series, EcoSystem dimming to 5%

- * Standard LED drivers are suitable for Wet Location
- * Optional LED drivers are suitable for Damp Location
- * All LED drivers must be mounted in a deep canopy or remote
- * Dual LED drivers available for independent Up + Down control
- * Choosing different lumen outputs for Up + Down may require dual drivers
Consult factory for details
- * For EM applications:
All LED drivers may be used with 3rd party inverter style systems



CORE 400 LX

up + down sconce

PHOTOMETRICS

LM-79-08 IES files available at www.v2LightingGroup.com/downloads

Beam Angle	Order Code	Intensity Plot (cd) (3000lm)	Polar Plot (cd) (3000lm)	Cone Diagram (3000lm)	Description										
11°	11			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Illuminance at Center</td> <td style="width:50%;">Beam Diameter</td> </tr> <tr> <td>5' 1178 fc</td> <td>1.0'</td> </tr> <tr> <td>10' 295 fc</td> <td>1.9'</td> </tr> <tr> <td>15' 131 fc</td> <td>2.9'</td> </tr> <tr> <td>20' 74 fc</td> <td>3.8'</td> </tr> </table>	Illuminance at Center	Beam Diameter	5' 1178 fc	1.0'	10' 295 fc	1.9'	15' 131 fc	2.9'	20' 74 fc	3.8'	CBCP = 29,547 cd Beam Angle = 11° Field Angle = 23° LOR = 89.1 % Beam = full width @ 50% Field = full width @ 90%
Illuminance at Center	Beam Diameter														
5' 1178 fc	1.0'														
10' 295 fc	1.9'														
15' 131 fc	2.9'														
20' 74 fc	3.8'														
25°	25			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Illuminance at Center</td> <td style="width:50%;">Beam Diameter</td> </tr> <tr> <td>5' 311 fc</td> <td>2.2'</td> </tr> <tr> <td>10' 78 fc</td> <td>4.5'</td> </tr> <tr> <td>15' 35 fc</td> <td>6.7'</td> </tr> <tr> <td>20' 19 fc</td> <td>8.9'</td> </tr> </table>	Illuminance at Center	Beam Diameter	5' 311 fc	2.2'	10' 78 fc	4.5'	15' 35 fc	6.7'	20' 19 fc	8.9'	CBCP = 7,785 cd Beam Angle = 25° Field Angle = 59° LOR = 87.5 % Beam = full width @ 50% Field = full width @ 90%
Illuminance at Center	Beam Diameter														
5' 311 fc	2.2'														
10' 78 fc	4.5'														
15' 35 fc	6.7'														
20' 19 fc	8.9'														
41°	41			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Illuminance at Center</td> <td style="width:50%;">Beam Diameter</td> </tr> <tr> <td>5' 205 fc</td> <td>3.7'</td> </tr> <tr> <td>10' 51 fc</td> <td>7.4'</td> </tr> <tr> <td>15' 23 fc</td> <td>11.1'</td> </tr> <tr> <td>20' 13 fc</td> <td>14.8'</td> </tr> </table>	Illuminance at Center	Beam Diameter	5' 205 fc	3.7'	10' 51 fc	7.4'	15' 23 fc	11.1'	20' 13 fc	14.8'	CBCP = 5,127 cd Beam Angle = 41° Field Angle = 62° LOR = 82.4 % Beam = full width @ 50% Field = full width @ 90%
Illuminance at Center	Beam Diameter														
5' 205 fc	3.7'														
10' 51 fc	7.4'														
15' 23 fc	11.1'														
20' 13 fc	14.8'														
51°	51			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Illuminance at Center</td> <td style="width:50%;">Beam Diameter</td> </tr> <tr> <td>5' 143 fc</td> <td>4.8'</td> </tr> <tr> <td>10' 36 fc</td> <td>9.6'</td> </tr> <tr> <td>15' 16 fc</td> <td>14.4'</td> </tr> <tr> <td>20' 9 fc</td> <td>19.1'</td> </tr> </table>	Illuminance at Center	Beam Diameter	5' 143 fc	4.8'	10' 36 fc	9.6'	15' 16 fc	14.4'	20' 9 fc	19.1'	CBCP = 3,564 cd Beam Angle = 51° Field Angle = 76° LOR = 83.0 % Beam = full width @ 50% Field = full width @ 90%
Illuminance at Center	Beam Diameter														
5' 143 fc	4.8'														
10' 36 fc	9.6'														
15' 16 fc	14.4'														
20' 9 fc	19.1'														
83°	83			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Illuminance at Center</td> <td style="width:50%;">Beam Diameter</td> </tr> <tr> <td>5' 72 fc</td> <td>8.9'</td> </tr> <tr> <td>10' 18 fc</td> <td>17.8'</td> </tr> <tr> <td>15' 8 fc</td> <td>26.7'</td> </tr> <tr> <td>20' 5 fc</td> <td>35.6'</td> </tr> </table>	Illuminance at Center	Beam Diameter	5' 72 fc	8.9'	10' 18 fc	17.8'	15' 8 fc	26.7'	20' 5 fc	35.6'	CBCP = 1,802 cd Beam Angle = 83° Field Angle = 96° LOR = 84.8 % Beam = full width @ 50% Field = full width @ 90%
Illuminance at Center	Beam Diameter														
5' 72 fc	8.9'														
10' 18 fc	17.8'														
15' 8 fc	26.7'														
20' 5 fc	35.6'														

Beam Shaping Options

Add the order code shown below to the options box at the end of the part number:

Order Code	Description
-HL	Honeycomb Louver
-DF	Diffusion Lens
-SF	Satin finish on any standard reflector
-LS	Linear Spread Lens (60° x 1°)
-WW	Wall Wash Lens (shifts beam 20° from vertical)



CORE 400 LX

up + down sconce

COLOR OPTIONS

Anodized Effect



Metallic



Basic



Sparkle



The complete range of powder coat colors from Tiger Drylac is available - consult factory
 Custom match powder coat colors are available - consult factory
 Printed or on-screen colors are only approximations - consult v2 Color Chip Set Rev.4 before specifying



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
 From Contractor: TBA Number: N/A
 Specification Section: 26 51 00 Page: 1-13
 Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No X To be sent if requested by Architect Yes X No ___

2. Itemized comparison of proposed substitution with product specified is attached.

ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model: <u>Type F1 - Site</u>	<u>Lithonia Lighting - DSXF</u>
Manufacturer: <u>RAB Lighting</u>	<u>Lithonia Lighting - DSXF</u>
Installer: <u>TBA</u>	<u></u>

History of proposed substitution: New product ___ 2-5 years old X 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No X Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
BAE Systems, Hudson, NH; Throwback Brewery, North Hampton, NH

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No X Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	DSXF2 LED 3 A530/40K NSP MVOLT IS DDBXD	F1-SITE



d"series

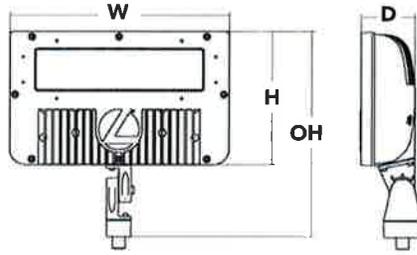
D-Series Size 2 LED Flood Luminaire



Catalog Number
Notes
Type

Specifications

EPA:	0.8 ft ² (0.05 m ²)
Depth:	3-1/8" (8.0 cm)
Width:	12-7/8" (32.6 cm)
Height:	7-3/4" (19.8 cm)
Overall Height:	12" (30.5 cm)
Weight:	10.5 lbs (4.8 kg)



Introduction

The D-Series Size 2 Flood features precision optics to beautifully illuminate a variety of applications as its sleek, compact styling blends seamlessly with its environment.

The D-Series Flood reflector systems and cutting-edge chip-on-board LED technology produce low field-to-beam ratios for minimal spill light and incredible photometric performance. It's the ideal long-life replacement for 150 - 250W metal halide floods, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSXF2 LED 4 A530/40K MSP MVOLT THK DDBXD

DSXF2 LED	3	A530/40K	NSP	MVOLT	IS		DDBXD
Series	Light Engines	Performance Package	Distribution	Voltage	Mounting	Options	Finish (optional)
DSXF2 LED	3 Three COB engines ¹ 4 Four COB engines	530 mA options: A530/30K 3000K A530/40K 4000K A530/50K 5000K	NSP Narrow spot MSP Medium spot MFL Medium flood FL Flood WFL Wide flood WFR Wide flood, rectangular HMF Horizontal flood	MVOLT ² 120 ² 208 ² 240 ² 277 ² 347 480	Shipped Included THK Knuckle with 1/2" NPS threaded pipe YKC62 Yoke with 16-3 SO cord IS Integral slipfitter (fits 2-3/8" O.D. tenon) Shipped separately ³ DSXF1/2TS Tenon slipfitter (2-3/8" O.D. THK required) FTS CG6 Tenon slipfitter (2-7/8" O.D. YKC62 required)	Shipped installed PE Photocontrol, button style ⁴ DMG 0-10V dimming driver (no controls) ^{4,5} SF Single fuse (120, 277, 347V) ⁶ DF Double fuse (208, 240, 480V) ⁶ Shipped separately ³ UBV Upper/bottom visor (universal) FV Full visor VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number
DSXF2 LED 3 A530/40K WFL MVOLT THK DDBXD	DSXF2 LED 3 40K
DSXF2 LED 3 A530/50K WFL MVOLT THK DDBXD	DSXF2 LED 3 50K
DSXF2 LED 4 A530/40K WFL MVOLT THK DDBXD	DSXF2 LED 4 40K
DSXF2 LED 4 A530/50K WFL MVOLT THK DDBXD	DSXF2 LED 4 50K

Accessories

Ordered and shipped separately.

DSXF1/2TS DDBXD U	Slipfitter for 1-1/4" to 2-3/8" O.D. tenons; mates with 1/2" threaded knuckle (specify finish)
FTS CG6 DDBXD U	Slipfitter for 2-3/8" to 2-7/8" O.D. tenons; mates with yoke mount (specify finish)
FRWB DDBXD U	Radius wall bracket, 2-3/8" O.D. tenon (specify finish)
FSPB DDBXD U	Steel square pole bracket, 2-3/8" O.D. tenon (specify finish)
DSXF2UBV DDBXD U	Upper/bottom visor accessory (specify finish)
DSXF2FV DDBXD U	Full visor accessory (specify finish)
DSXF2VG U	Vandal guard accessory

For more mounting options, visit our pages.

NOTES

- Not available with 347 or 480V.
- MVOLT driver operates on any line voltage from 120-277V. Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options) or photocontrol (PE).
- Also available as separate accessories; see Accessories information at left.
- Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option.
- Not available with three-engine product (DSXF2 LED 3).
- Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.



One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com
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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	Field Angle		30K (3000K, 70 CRI)			40K (4000K, 70 CRI)			50K (5000K, 70 CRI)					
					H	V	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW			
					°	°	lm	lm	lm	lm	lm	lm	lm	lm	lm			
3	530	AS30/-K	54W	NSP	48	49	19	19	19,398	3868	72	20,166	4648	86	20,103	4670	86	
					MSP	50	48	24	23	18,631	4234	78	18,619	5087	94	18,561	5111	95
					MFL	60	60	47	46	6177	3614	67	7751	4342	80	7726	4363	81
					FL	85	84	63	62	5069	4813	89	5124	5783	107	5108	5810	108
					WFL	106	106	71	72	3573	4776	88	3842	6108	113	3830	5766	107
					WFR	107	88	85	64	3513	4845	90	3828	5821	108	3816	5849	108
					HMF	100	62	80	13	3969	2119	39	3479	2546	47	3468	2558	47
					NSP	48	49	19	19	25,870	5159	70	26,893	6198	84	26,809	6228	84
4	530	AS30/-K	74W	NSP	50	48	24	23	25,415	5775	78	24,830	6933	94	24,752	6966	94	
					MFL	60	60	47	46	8237	4820	65	10,336	5791	78	10,304	5818	79
					FL	85	84	63	62	6760	6419	87	6833	7712	104	6811	7749	105
					WFL	106	106	71	72	4758	6359	86	5124	7633	103	5108	7670	104
					WFR	107	88	85	64	4684	6462	87	5105	7764	105	5089	7801	105
					HMF	100	62	80	13	5293	2826	38	4639	3396	46	4625	3412	46

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	32°F	Lumen Multiplier
0°C	32°F	1.07
10°C	50°F	1.04
20°C	68°F	1.02
25°C	77°F	1.00
30°C	86°F	0.98
40°C	104°F	0.95

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the DSXF LED 4 AS30 platform based on 84000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.94	0.90	0.80

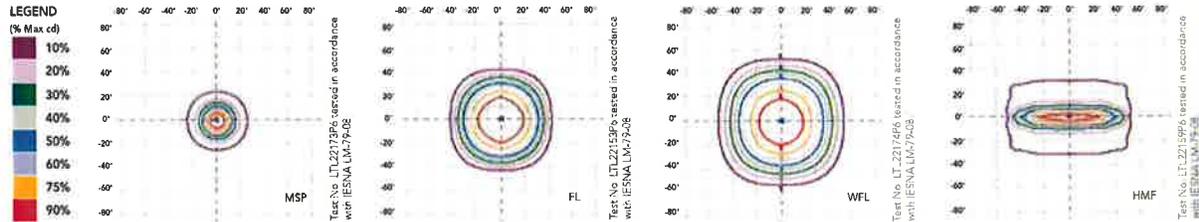
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
3	530	54W	0.47	0.28	0.22	0.2	0.17	0.12
4	530	74W	0.63	0.37	0.33	0.3	0.22	0.16

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D Series Flood Size 2 homepage](#).

Isocandela plots for the DSXF2 LED 4 AS30/40K.



Mounting, Options and Accessories



THK - Knuckle with 1/2" NPS threaded pipe

YK62 - Yoke with 50 cord
 W=4-3/4" (12.0 cm)
 H=4-1/4" (10.7 cm)
 D=2-1/4" (5.7 cm)

IS - Integral slipfitter
 H=2-1/2" (6.3 cm)
 ID=2-3/8" (6.0 cm)
 OD=3-1/2" (8.6 cm)

UBV - Upper/bottom visor
 W=10" (25.4 cm)
 H=2-1/2" (6.3 cm)
 D=3" (7.6 cm)

FW - Full visor
 W=10" (25.4 cm)
 H=2-1/2" (6.3 cm)
 D=3" (7.6 cm)

VG - Vandal guard
 W=10-1/2" (26.6 cm)
 H=4" (10.1 cm)



Submitted by: 	Job Name:	Catalog Number:	Type:
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FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 2 Flood reflects the embedded high performance LED technology. It is ideal for larger signage, facade and flagpole lighting in many commercial and residential applications.

CONSTRUCTION

Die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65), Low EPA (0.8 ft²) for optimized wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

A variety of precision-molded vacuum-metallized specular reflectors are engineered for superior field-to-beam ratios, uniformity and spacing. Light engines are available in 3000K (70 CRI min), 4000K (70 CRI min) or 5000K (70 CRI min) configurations. Optional visors offer additional versatility.

ELECTRICAL

Light engine(s) consist of chip-on-board (COB) LEDs directly coupled to the housing to maximize heat dissipation and promote long life (100,000 hrs, L80). Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Surge protection meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Integral adjustable knuckle with 1/2-14 NPS threaded pipe, tenon slipfitter, or yoke mounting, facilitates quick and easy installation to a variety of mounting accessories. This secure connection enables the D-Series Size 2 to withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five year limited warranty. Full warranty terms located at www.designlights.org

Note: Specifications subject to change without notice.



CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: Lavallee Brensinger Date: 3/7/16
From Contractor: TBA Number: N/A
Specification Section: 26 51 00 Page: 1-13
Article / Paragraph: 1.04 B

1. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data.

Sample attached: Yes ___ No To be sent if requested by Architect Yes No ___

2. Itemized comparison of proposed substitution with product specified is attached.

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:	<u>Lighting Controls</u>	<u></u>
Manufacturer:	<u>WattStopper basis of design</u>	<u>nLight Controls - div. of Acuity Brands</u>
Installer:	<u>TBA</u>	<u>Lighting</u>

History of proposed substitution: New product ___ 2-5 years old 5-10 years old ___ > 10 years old ___

Significant variations of proposed substitution from original product: N/A

Proposed substitution affects other parts of the Work: No Yes, explain _____

Similar installations within 150 miles: Provide project name, address, architect, install date:
Plymouth State Univ. Allwell Center; Dover PD; Phillips Exeter Academy; Portsmouth Naval Shipyard

Reason for not providing specified item: Manufacturers' Rep 10-day request for prior approval

3. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product \$ _____ per _____ Substitution \$ _____ per _____

Savings to Owner for accepting substitution: N/A \$ _____

Proposed substitution changes Contract Time: No Yes ___ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: Stephen M. Barlock, VP Visible Light Inc.

Attachments: Product Specification Sheet

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLERIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NGWY2 KIT	

Catalog Number:

Date:

Project:

OVERVIEW

The nLight Series 2 Gateway (**nGWY2**) provides time-based control of an nLight network as well as acts as the Ethernet interface for SensorView software. Consisting of a control unit and touch screen wall station, the **nGWY2** expands the capacity and functionality of the Series 1 nLight Gateway (**nGWY**) and enables enhanced nLight architectures to be utilized (see operation notes on back of datasheet).

FEATURES

- Discovers nLight Devices (max 1500 or 400 depending on version)
- Provides System Time Clock Stores Time-Based Profiles
- Enables Setup of Global Control Channels via SensorView
- On-Demand Profile Forwarding Between Gateways
- Communicates over TCP/IP with nWiFi Devices (consult factory)
- Interfaces with SensorView Software
- Remotely Upgradeable
- Touch Screen Control User Interface

SPECIFICATIONS

Control Unit

Size: 4.90" H x 4.90" W x 1.05" D (12.45cm x 12.54cm x 2.67cm)
 Mounting: 4" x 4" Square Box
 Ports: 2 nLight Bus Ports (RJ-45), 1 Touch Screen Interface Port (RJ-45), 10/100/1000 BaseT Ethernet, 2 Power Terminal Inputs
 Input Current/ Voltage: 160 mA @ 15-28 VDC

Touch Screen

Size: 5.06" H x 3.50" W x 0.69" D (12.85 cm x 8.89 cm x 1.75 cm)
 Mounting: Single-Gang Low Voltage Switch Box or Ring
 Mounting Height: 60 in (152 cm)
 Ports: 2 nLight Bus Ports (RJ-45)
 Input Current/ Voltage: 60 mA @ 15-28 VDC

Power Supply

Size: 3.00" H x 2.25" W x 1.88" D (7.62 cm x 5.72 cm x 4.78 cm)
 (not including 1/2" chase nipple)
 Mounting: 1/2" Knockout
 Operating Voltage: **FCS PS10:** 120-277 VAC; **PS 150 347:** 347 VAC
 Output Power: 7W ~292 mA@ 24 VDC (**FCS PS10**), (note ~150 mA @ 15 VDC for dual **PS 150 347** configuration)
 Wires: 18 AWG (2) & 20 AWG (2)

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

ORDERING INFORMATION

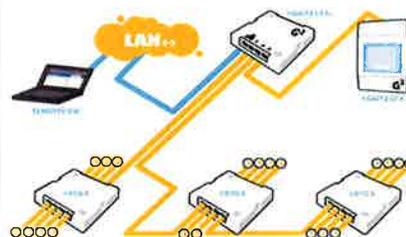
nGWY2		Example: nGWY2 347 KIT	
Series	Max Devices	Voltage	Power Supply Kit
nGWY2	[blank] 1500 Max L400 400 Max	[blank] 120-277 VAC 347 347 VAC	KIT Kit w/ Power Supply

 AcuityControls

nLight.

nGWY2

Clock & Network Interface
Controller

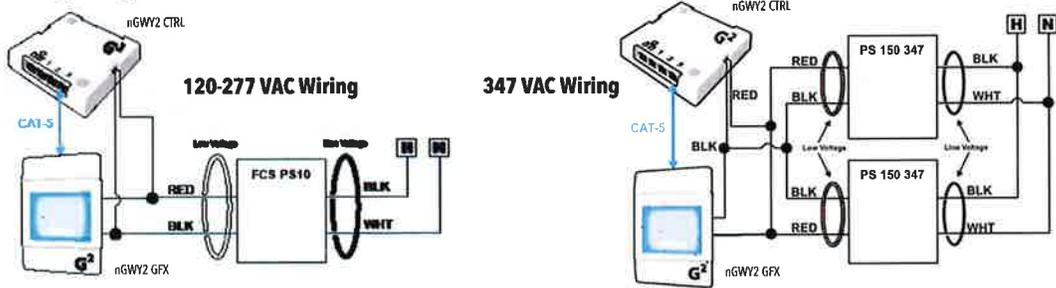


Title 24 System Component

Submitted by:	Job Name:	Catalog Number:	Type:
			

WIRING (DO NOT WIRE HOT)

The **nGWY2 CTRL** and **nGWY2 GFX** units are powered via a **FCS PS10** power supply wired via each unit's power terminal connectors.
Note: For 347 VAC powering, dual **PS 150 347** power supplies are provided. Be sure to connect the red power output wires from the **PS 150 347** supplies together and then wire to both the **nGWY2 GFX** and **nGWY2 CTRL** units.



DESIGN / OPERATION NOTES

- Series 2 nLight Gateways (nGWY2) can operate under the same SensorView as Series 1 nLight Gateways (nGWY)
- Forwarding of On-Demand profiles is supported between nGWY2 devices only.
- Global channels are supported by nGWY2 managed devices only.
- Configuration and time-based control of nWiFi devices is supported by nGWY2 only
- SensorView version 7.x.x or newer is required for nGWY2 (note upgrading to SensorView 7.x.x will also require a firmware update on all devices for compatibility).
- A Gateway Touch Screen (nGWY2 GFX) can not be substituted for a Graphic WallPod (nPOD GFX), and vice versa.

nGWY2 - TN-707-01

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT <small>MANUFACTURERS REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NBRG8 KIT	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight Bridge increases the number of lighting control zones in an nLight system. This ability stems from the fact that each Bridge has 8 RJ-45 ports into which zones of daisy-chained nLight devices can connect. The Bridge also is an integral component of the communication backbone in an nLight network. Fundamentally, Bridges act as hubs by aggregating traffic from the connected downstream zones and placing it onto the backbone. They also act as routers by forwarding information from the backbone out to the applicable downstream zones.

FEATURES

- Communicates with nLight Network
- Remotely configurable/upgradeable
- Push-button programmable
- Green LED indicators for each Port
- Redistributes bus power between ports
- Supports up to 128 devices per port

SPECIFICATIONS

Dimensions: 4.90" H x 4.90" W x 1.05"D
 Color: White
 Mounting: 4" x 4" square box
 nLight Network Ports: (8) RJ-45 Electrical
 Input Voltage: 15-24 VAC/VDC
 Input Current: 60 mA
 Bus Power Contribution: ~90mA total (if powered via **PS 150**)
 Max Input Current/Port: 40mA (e.g. from a connected **nPP16**)
 Max Output Current/Port: 40mA (assumes sufficient bus power is present from combination of local power supply and other connected zones with net positive bus power)
 Recom'd Power Supply: **PS 150** via terminal connections (or **PS 150 347**)
 RoHS Compliant, Title 24 System Component



nLight.

nBRG 8
8-Port nLight Bridge



Warranty

Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

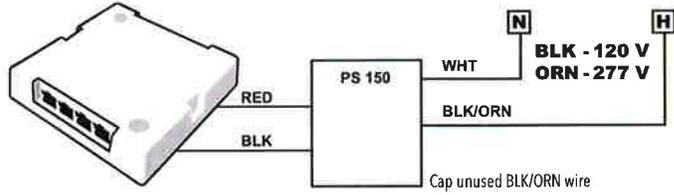
ORDERING INFORMATION



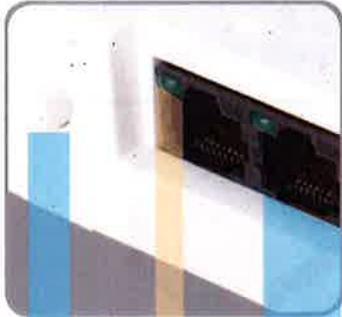
nBRG 8		Example: nBRG 8 KIT	
NBRG8			KIT
Series	Voltage	Temp/Humidity	Power Supply
nBRG 8 Bridge	[blank] 120/277VAC 347 347VAC	[blank] Standard LT Low temp	[blank] Unit Only KIT Kit w/ power supply

WIRING (DO NOT WIRE HOT)

A 15-24 VDC or VAC power supply can deliver power to the Bridge via the terminal connections on the side of the unit. The **PS 150** version power supply (included in the **KIT** option) is recommended, as it conveniently mounts through a knock-out on the side of the junction box where the Bridge unit is mounted.



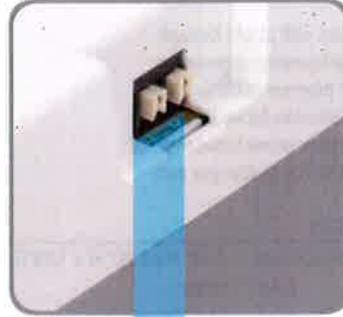
DETAILED DIAGRAM



BUTTON LED RJ-45 PORT



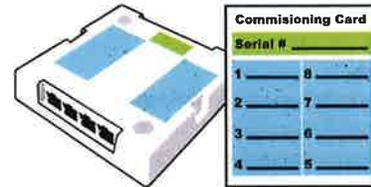
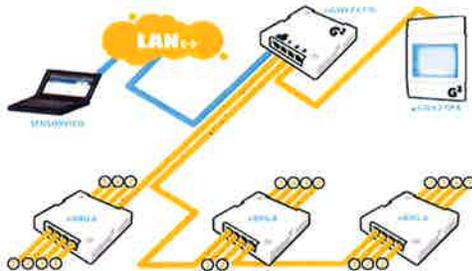
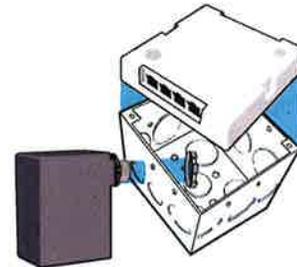
SCREW HOLES



POWER TERMINAL CONNECTION

INSTALLATION

1. Mount power supply to a 4" x 4" square junction box (through a 1/2" knockout)
2. Connect the power supply's class 1 line voltage wires. Cap any unused wires.
3. Mount Bridge unit to top of same junction box
4. Connect the power supply's low voltage wires to the Bridge's terminal connectors. Upon power up, unit's LEDs will flash.
5. Attach CAT-5e cables from lighting zones to the appropriate Bridge RJ-45 ports according to system design. Individual port LEDs will blink according to the following pattern:
 - Rapid Flash - Port is in discovery
 - 1 Blink - Healthy zone of devices
 - 2 Blinks - Upstream bridge or gateway is detected
 - 4 Blinks - Downstream bridge is detected
6. Fill out Bridge's port identification sticker(s) and commissioning card



NETWORK CONFIGURATION

An nLight network backbone consists of one or more Bridges and a Gateway (nGWY2 CTRL & nGWY2 GFX) communicating over CAT-5e wired connections. The architecture can be topology-free, however wide branching backbone networks are recommended over linear runs. Any one or more RJ-45 ports on a Bridge may be used to connect to other Bridge or Gateway devices.

Note: A maximum of 9 bridges may be used in a row (ie: bridge jumps from the gateway to the last bridge should remain less than 9).

PROGRAMMING

Refer to included instructions on LED indications and push button functionality.

nBRG-TN-701

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT <small>MANUFACTURER REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	nADR	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

OpenADR is an open and standardized way for electricity providers to communicate demand response signals with their customers using a common language over any existing IP-based communications network, such as the Internet. The nADR client allows an nLight system to integrate with an OpenADR 2.0a Demand Response Automation Server (DRAS). This device functions by communicating with a configured OpenADR DRAS to retrieve live power demand information from the utility company and shed load according to pre-configured user settings. The device supports four demand response settings: None, Moderate, High and Special; allowing a user to define load shed strategies for each mode.

FEATURES

- Automated demand response and load shed capabilities for nLight systems
- Enables 2013 CA Title 24 compliance¹
- Enables LEED Version 4 compliance. Qualifies building for a 2-point credit²
- Acuity Controls Virtual End Point (VEN)³ to Open Automated Demand Response 2.0a (OpenADR) Demand Response Automation Server (DRAS)
- Supports four demand response levels (None, Moderate, High, Special)
- Supports integration through proxy servers, if required

NOTES

1. http://www.openadr.org/index.php?option=com_content&view=article&id=81:openadr-and-title-24&catid=21:press-releases&Itemid=121 The code states that demand responsive controls and equipment shall be capable of receiving and automatically responding to at least one standards-based messaging protocol such as OpenADR. For example, in response to a DR signal, buildings larger than 10,000 square feet will have to automatically reduce their lighting power by at least 15 percent below the building's maximum lighting power.
2. <http://www.usgbc.org/node/2613001?return=/credits>
3. A VEN is also referred to as a DRAS client; Acuity Controls supports the OpenADR simpleDRAS client mode

SPECIFICATIONS

Size: 2.76" W x 1.06" H x 3.94" D (7.0 cm x 2.7 cm x 10.0 cm)
 Mounting: Wall-mountable via screws
 Ports: Micro USB Power Connector, 1 x 10/100 BaseT Ethernet
 Electrical Power: DC 5V 1500mA (1.5A) [110VAC power cord included]
 RoHS Compliant, Title 24 System Component

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

ORDERING INFORMATION

nADR	Example: nADR L400
Series	
nADR L400	Supports up to one (1) nGWY2 L400 version nLight Gateway
nADR	Supports up to five (5) nLight Gateways (nGWY2 or nGWY2 L400)



nADR
Demand Response Client
Interface



nADR - TN-802

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	MP20	

Catalog Number:

Date:

Project:

OVERVIEW

The **MP20** power/relay pack and **MSP20** secondary relay pack work with low voltage occupancy sensors to switch lighting loads on and off. The **MP20** also transforms 120, 240, and 277 VAC single phase power to Class 2 15 VDC to power remote sensors. Although plenum rated, the elongated mounting nipple allows for these packs to be mounted either directly through a 1/2 inch knockout in a junction box, or to be located inside an adjacent box for specific local code requirements. Up to 14 sensors may be connected to one **MP20**. Multi-circuit control can be handled by multiple **MP20** or **MSP20** packs. **MP20**s can be wired continuously hot (line side), or on the switch leg (load side) without nuisance delays upon turn on.

FEATURES

- Powers Low Voltage Sensors (MP20)
- Switches Line Voltage Loads
- Plenum Rated

SPECIFICATIONS

Size:	(not including chase nipple) 3.00" H x 2.25" W x 1.88" D (7.62 cm x 5.72 cm x 4.78 cm)
Weight:	6 oz
Mounting:	1/2" knockout
Color:	Black
Operating Voltage:	120, 240, 277 VAC (single phase)
Relay Current Reqs:	40 mA
Switching Load:	20 Amps
Output Voltage/Current:	15 VDC, 150 mA at 120 or 277 VAC (MP20)
Motor Load:	1 HP
ROHS compliant	



Sensor Switch™

MP20
MSP20
Power Pack/ Secondary Pack



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

MP20		Example: MP20 LT	
MP20			
Series		Temperature/Humidity	
MP20	Power/ Relay Pack	[blank]	Standard
MSP20	Secondary Relay Pack	LT	Low Temp

WIRING (DO NOT WIRE HOT)

POWERING CAPACITY

An **MP20** power pack's transformer can supply up to 150 mA of power. Each relay requires 40 mA during the on state. Low voltage remote sensors typically require 3 mA when detecting occupants, and 0.15 mA when in standby. Therefore, each transformer can handle up to 3 relays (including its own relay). For example, one **MP20** can power its relay (40 mA) and 110 mA of external devices. Because of the ultra low current design of Sensor Switch sensors, up to 14 sensors can be connected to a single power pack. If multiple power packs are used together, an additional 110 mA is available.

	Sensors	Sensors w/ -R (aux. relay) option
1 MP20	14	8
1 MP20 w/MSP20	7	6
2 MP20	28	16

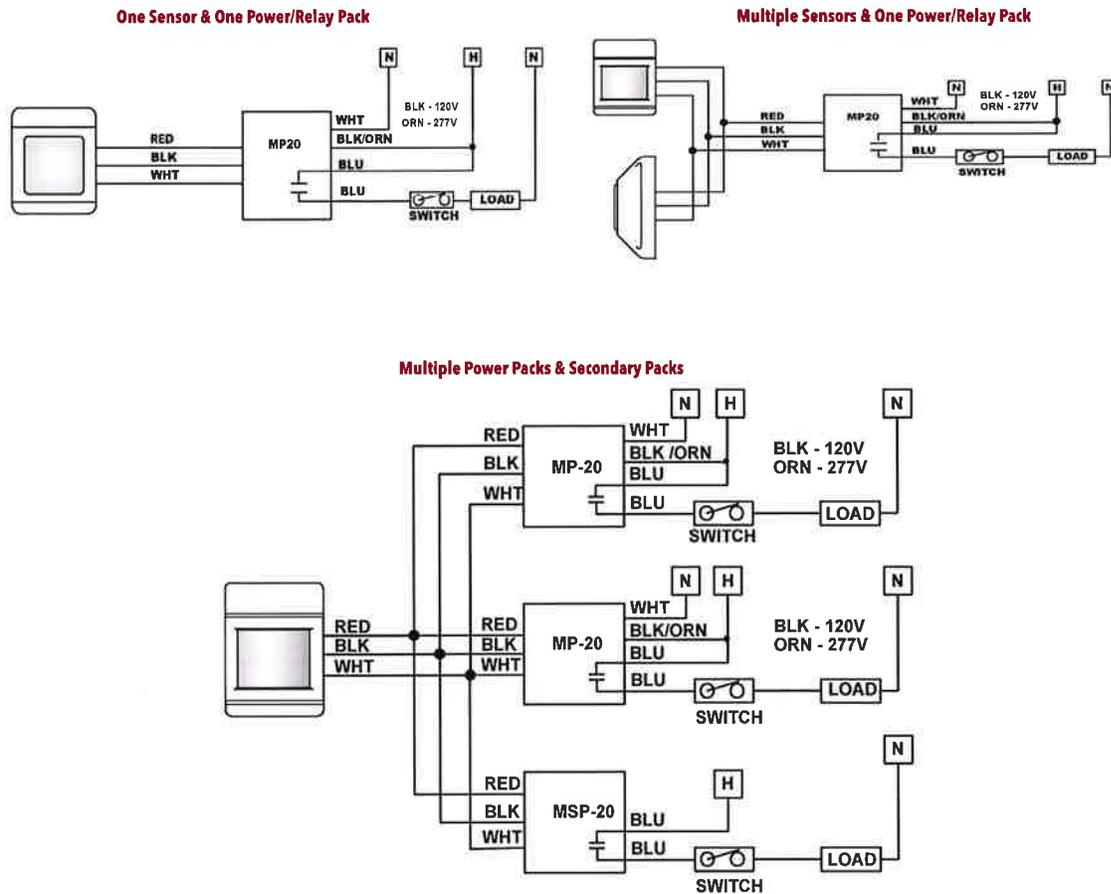
Note 1: Only three relays may be controlled with one power pack. If controlling more than three circuits is required, multiple power packs must be used.
 Note 2: Only one sensor with auxiliary relay (-R option) is required in most cases. See datasheets on low voltage sensors.

LOW VOLTAGE OPERATION AND TEST

The pack's low voltage wires are color coded: Red (15 VDC), Black (Common), and White (Occupancy Signal). With no sensors connected, touch the Red wire to the White wire. The lights should turn on. Remove the connection and the lights should turn off. With the sensors connected, the Red and Black wires provide DC power to the remote sensors, and when there is occupancy detected, the White wire produces a 15 VDC signal from the sensor to the power pack initiating the lights to on. Upon initial power up, the sensors automatically send an on signal until the sensors have stabilized and their time delays have expired.

TYPICAL WIRING

The Power Pack must be connected to a single phase Hot and Neutral System. For 120 VAC, connect the Black wire to Hot, White wire to Neutral, and Cap off the Orange wire. For 240-277 VAC, connect the Orange to Hot, White to Neutral, and Cap off the Black wire. **Never connect both the Black and Orange wires!** Low Voltage wire can be 18 to 22 AWG; shielding is not necessary.



M(S)P20 - T053

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	PTS 720	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **PTS 60** and **PTS 720** Series Electronic Auto Shut-off Timer Switches provide a simple to use and simple to apply lighting control alternative to wall switch occupancy sensors. These elegant decorator style wall stations each provide six preset countdown timer selections as well as an on/off push-button. The **PTS 60** and **PTS 720** units are powered from 120/277 VAC (optional 347 VAC) and are intended to switch a line voltage lighting load or small motor load (see specifications). Additionally, the **PTS 60** and **PTS 720** can be applied without requiring a neutral wiring connection, making them ideal for retrofit applications.

FEATURES

- Self-Contained Relay
- Interchangeable Hot & Load Wires - Impossible to Wire Backwards
- No Neutral Connection Required
- Self-Grounding Mounting Strap
- No Minimum Load Requirement
- Push-Button Programmable w/o Removing Switch Plate
- Fixed or Adjustable Preset Times
- Optional Audible Timeout Warning at 45, 30, and 15 sec
- Optional Flicker Timeout Warning at 2 and 1 min
- Continuous LED Flash for Last 30 sec of Button's Time Setting
- Green On/Off Switch Status LED
- Green LED Time Indicators

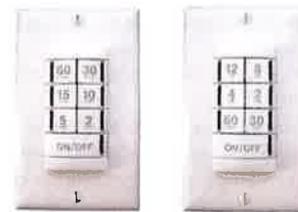
SPECIFICATIONS

Size: 4.2"H x 1.8"W x 1.4" Deep
 Weight: 5 oz.
 Mounting Height: 30 to 48 inches
 Color: White
 Maximum Load: 10 Amps @ 30 VDC, 800 W @ 120 VAC, 1200 W @ 277 VAC
 Minimum Load: None
 Motor Load: 1/4 HP
 Frequency: 50/60 Hz



Sensor Switch

PTS 60
PTS 720
Programmable (Interval)
Timer Switch



Warranty

Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

ORDERING INFORMATION

PTS			
PTS 720			
Series	Voltage	Color	Temp/ Humidity
PTS 60 60 Min Max	[blank] 120/277 VAC	WH White	[blank] Standard
PTS 720 12 Hr Max	347 347 VAC	IV Ivory GY Gray AL Lt. Almond	LT Low Temp

XX- PLEASE ADVISE COLOR

Submitted by:	Job Name:	Catalog Number:	Type:
			

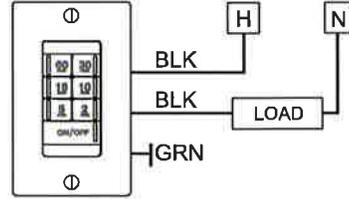
WIRING (DO NOT WIRE HOT)

STANDARD WIRING

- BLACK*** - Line Input
- BLACK*** - Load Output
- GREEN SCREW** - Ground (required connection)

347 VAC OPTION (347)

Black wires are replaced w/ Red wires



Note: Connection to Ground required for sensor to function

PROGRAMMING INSTRUCTIONS (PLEASE READ ALL 7 STEPS BEFORE PROGRAMMING)

1. Enter programming mode by pressing & holding upper left button until LED flashes rapidly. Release button.
 2. Enter a specific programming function by pressing button the number of times as the desired function number from the tables on the following pages (e.g., for a PTS 60, press five times for function 5, Max Time Allowable).
 3. The selected function's current setting will then be read out in a sequence of LED flashes (e.g., one flash for 60 min). To change setting, proceed to step 4 before sequence repeats 10 times.
 4. While the switch is flashing back current setting, interrupt it by pressing button the number of times for the new desired setting as indicated in the particular function's detailed table (e.g., press twice for 30 min). Switch will begin to flash new setting as confirmation.
 5. Next, while the switch is flashing back new setting, interrupt it by pressing and holding button until LED flashes rapidly. Release button.
 6. As final confirmation and activation of the new setting, re-enter the programming function number that was changed (e.g., press five times for function 5, Max Time Allowable).
 7. LED will flash twice indicating acceptance of new setting. If two flashes are not seen, repeat 7 step process.
- Note: To exit programming mode without saving or to change to a different function, wait for blink back sequence to repeat 10 times then return to step 1.

Function Number	Function Name	Settings (* indicates default setting)		
2	Blink Warning	1. Enabled 2 min & 1 min*	3. Enabled 1 min	
		2. Disabled	4. Enabled 2 min	
3	Beep Warning	1. Enabled*	2. Disabled	
4	Status tick	1. Enabled (ticks every 1 sec)	2. Disabled*	3. Enabled, (ticks every 0.5 sec)
5	Max Time Allowable (model # PTS 60)	1. 60 min*	3. 15 min	5. 5 min
		2. 30 min	4. 10 min	6. 2 min
5	Max Time Allowable (model # PTS 720)	1. 12 hr*	3. 4 hr	5. 60 min
		2. 8 hr	4. 2 hr	6. 30 min
6	Default time - when on/off button pressed (model # PTS 60)	1. 60 min	4. 10 min	7. Last time selected*
		2. 30 min	5. 5 min	
		3. 15 min	6. 2 min	
6	Default time - when on/off button pressed (model # PTS 720)	1. 12 hr	4. 2 hr	7. Last time selected*
		2. 8 hr	5. 60 min	
		3. 4 hr	6. 30 min	
9	Factory Defaults	1. Maintain current*	2. Restore defaults	

PTS - TS-PTS-001A

Submitted by:  VISIBLELIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NCM 6	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nCM xx RJB** family of nLight ceiling/surface mount occupancy sensors provide a range of networked sensor solutions for applications with finished ceilings (e.g. ceiling tiles, sheetrock, plaster). **nCM xx RJB** family sensors utilize 100% digital Passive Infrared (PIR) detection and are available with several lens options, providing flexibility for multiple mounting height and coverage pattern requirements. Dual technology occupancy detection can also be added as an option for applications where occupants are stationary for long periods of time. All sensors have integrated on/off photocells as a standard feature, with automatic daylight harvesting/dimming control as an available option. Additionally, **nCM xx RJB** family sensors are also available with an optional auxiliary low voltage relay for simple integration with a BMS system or other building system.

nCM xx RJB family sensors are powered via the nLight network bus and typically communicate with one or more nLight enabled luminaires (e.g. Lithonia VTLED Series) or nLight relay/dimming packs to enable control of fixtures individually or in groups. These configurations work standalone and do not require a connection to a larger nLight network.

FEATURES

- 100% digital PIR detection
- Integrated photocell standard (disabled by default) – Photocell views down through sensor lens and when enabled provides two selectable modes of operation
 - On/Off mode: Photocell has full on/off control during periods of occupancy
 - Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off
- Optional dimming photocell (ADCX option)
- Optional auxiliary low voltage relay (AR option) for dry contact output - relay only tracks occupancy by default, ignoring switch and photocell commands
- LED status indicator
- Adjustable settings (e.g. occupancy time delays, photocell set-points) via push-button or SensorView software application
- Broadcasts occupancy and photocell information over a local nLight channel
- Remotely upgradeable firmware

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



ORDERING INFORMATION

nCM xx RJB		Example: nCM PDT 9 ADCX RJB	
NCM	6		
Series / Detection	Coverage Type	Options (See Below)	RJ45 Port Location
nCM PIR Detection	9 Small Motion 360°		RJB Rear RJ45 (CAT5e patch cable & RJ45 splitter included)
nCM PDT Dual Tech (PIR/ Microphonics)	10 Large Motion 360°		
	6 High Mount 360° (not available with PDT version)		

nCM xx RJB Options			
Photocell	Auxiliary Relay	Dual Time Delay ²	Temp/ Humidity
[blank] On/Off Photocell (disabled by default)	[blank] None	[blank] Single Time Delay	[blank] Standard
ADCX Automatic Dimming Control (of remote dimming output)	AR Low Voltage Aux. Relay	2P Dual Time Delay	LT Low Temp / High Humidity

NOTES:

1. For information on models with side RJ45 ports, see website
2. Not available with **AR** or **ADCX** options

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT <small>MANUFACTURER'S REPRESENTATIVE</small>			

SPECIFICATIONS

Size:	4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)	nLight Bus Power Consumption:	~3mA
Weight:	6 oz	nLight Network Connection:	2 RJ-45 Ports (via an included RJ-45 splitter)
Mounting:	Ceiling Tile / Sheetrock Surface, 3.5" Octagon Box, Single Gang Handy box	Relay Rating (AR option only):	1A @ 24 VAC/VDC (resistive only)
Color:	Matte White	ROHS Compliant, Title 24 Component	
Wires / Cables:	(1) CAT5e patch cable, 1ft (factory installed) (2) 20 AWG wires (AR option only)		

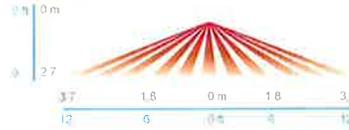
COVERAGE PATTERNS

SMALL MOTION 360° (Model # nCM 9/nCM PDT 9¹)

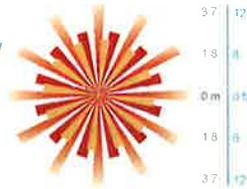


- Best choice for small motion (e.g. hand movements) detection
- 360° conical shaped pattern
- Provides 12 ft (3.66 m) radial coverage (~500 ft²) when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage

SIDE VIEW



TOP VIEW



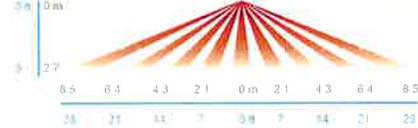
¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

LARGE MOTION 360° (Model # nCM 10/nCM PDT 10¹)

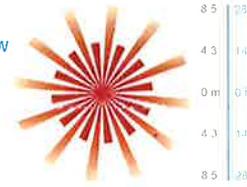


- Best choice for large motion detection (e.g. walking)
- 360° conical shaped pattern
- Provides ~24 ft (7.32 m) radial coverage (~2000 ft²) when mounted at 9 ft (2.74 m)
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Detection range improves when walking across beams compared to into beams

SIDE VIEW



TOP VIEW



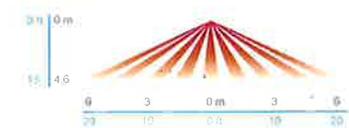
¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

HIGH MOUNT 360° (Model # nCM 6)

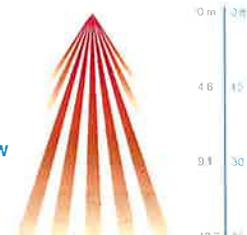


- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. walking) up to 35 ft (10.76 m)
- Excellent detection of extra large motion (e.g. forklifts) up to a 45 ft (13.72 m)

LOW VIEW

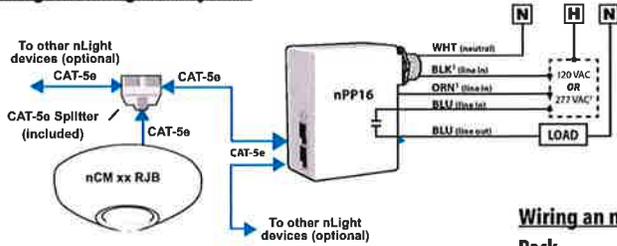


HIGH VIEW

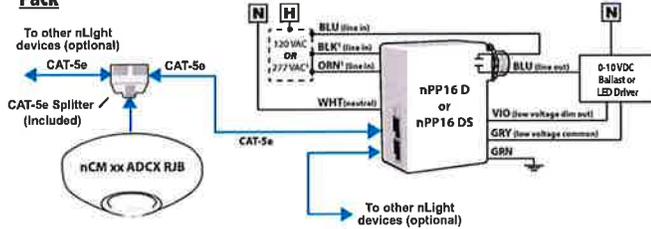


TYPICAL APPLICATIONS

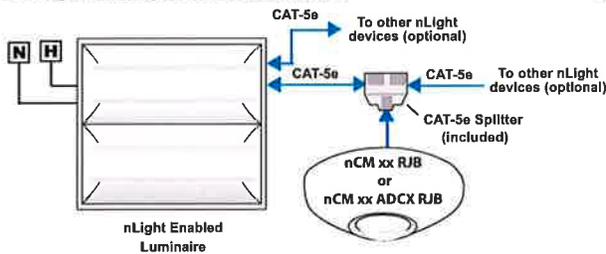
Wiring to an nLight Relay Pack



Wiring an nCM xx ADCX RJB to an nLight Dimming Pack



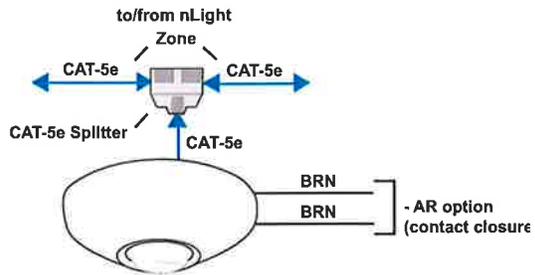
Wiring to an nLight Enabled Luminaire



TYPICAL APPLICATIONS

The following instructions are for mounting sensor directly to a ceiling tile or sheetrock surface. Sensor's mounting holes also align with standard round fixture or single gang handy box (screws not provided).

1. Using template included with unit, mark spots on ceiling tile/sheetrock for cable hole and mounting anchors/screws
2. Drill 1/2" hole through ceiling surface at location indicated on template
3. Insert provided anchors into ceiling surface at locations indicated on template
4. Remove provided RJ-45 splitter from sensor's attached CAT5e cable and then thread cable (and low voltage wires if -AR option included) through hole from underside
5. Mount sensor to anchors using two screws provided
6. Attach provided RJ45 splitter device (model **CATS V**) above ceiling to cable from sensor (see diagram on right)
7. Interconnect CAT-5e cables to/from rest of nLight zone to RJ45 splitter
8. Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults
9. Install decorative sensor lid by rotating clockwise
10. Refer to included instruction card for default settings and directions on push-button programming.



nCM xx RJB - TN-140-001

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NCM ADCX	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nCM ADCX RJB** and **nCM PC RJB** photocell sensors are ceiling/surface mount devices that provide a range of daylight harvesting features for nLight Control System installations with finished ceilings (e.g. ceiling tiles, sheetrock, plaster). The **nCM PC RJB** version provides on/off photocell control by default, while the **nCM ADCX RJB** provides automatic dimming photocell control by default. Ideal for spaces with windows, such as vestibules, corridors, classrooms, or offices, these sensors work by first monitoring daylight conditions in a room. They then signal networked nLight control devices to adjust their dimming outputs (and/or turn lighting off) to obtain maximum energy savings while ensuring adequate lighting levels are maintained.

The **nCM ADCX RJB** sensor controls nLight enabled luminaires (e.g. **VTLED** Family from Lithonia), nLight dimming relay packs (e.g. **nPP16 D** or **nSP5 PCD**), or auxiliary dimming output devices (e.g. **nIO D**). The **nCM PC RJB** switches nLight enabled luminaires or any relay/dimming device in an nLight system (e.g. **nPP16**). Both sensors can also be used together with nLight occupancy sensors. Manual override or adjustment of the dimming level is possible via WallPod dimmers or through the SensorView software.

Both versions are powered via the nLight network bus and can communicate with one or more nLight enabled luminaires or nLight relay/dimming packs to enable control of fixtures individually or in groups. These configurations work standalone and do not require a connection to a larger nLight network.

FEATURES

- Automatic Dimming Photocell Control (**nCM ADCX RJB** model only)
- Full On/Off Photocell Switching Control (disabled by default on **nCM ADCX RJB**)
- Optional Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but does turn lights off (**nCM PC RJB** model only)
- LED status indicator
- Adjustable settings (e.g. set-point) via push-button or SensorView software application
- Broadcasts photocell information over a local nLight channel
- Remotely upgradeable firmware

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



nLight

nCM ADCX RJB

nCM PC RJB

Daylight Harvesting
Photocell



ORDERING INFORMATION

nCM		Example: nCM ADCX RJB	
NCM ADCX			
Series / Photocell Control Type	Dual Zone	Temp / Humidity	RJ45 Port Location
nCM ADCX Automatic Dimming Control Photocell	[blank] Single Zone Control	[blank] Standard	RJB Rear RJ45 (CAT5e patch cable & RJ45 splitter included)
nCM PC On/Off Control Photocell	DZ Dual Zone Control	LT Low Temp / High Humidity	

Submitted by:	Job Name:	Catalog Number:	Type:
			

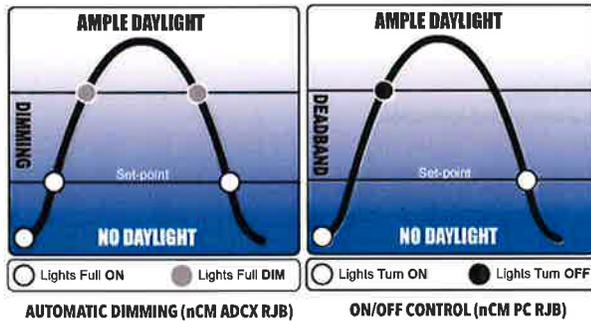
SPECIFICATIONS

Size: 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)
 Weight: 6 oz
 Mounting: Ceiling Tile / Sheetrock Surface
 3.5" Octagon Box
 Single Gang Handy Box
 Color: Matte White
 nLight Network Ports: 2 RJ-45 (via an included RJ45 splitter)
 Bus Power Consumption: ~3 mA
 Wires/Cables: (1) 1ft CAT5e patch cable (factory installed)
 RoHS Compliant, Title 24 System Component

PHOTOCELL OPERATION

The **nCM ADCX RJB** sensor continuously adjusts a space's lighting to achieve maximum daylight harvesting while maintaining a minimum light level, referred to as the set-point. When no daylight is available, the sensor allows the controlled dimmable lighting to operate at its full bright level. As daylight increases and begins to contribute to the overall light level of the room, the Automatic Dimming Control (ADC) feature starts dimming the room proportionally, eventually reaching the full dim level (or optionally switching off, see paragraph below). As the daylight levels fall, the ADC feature will again take control of the lights; reducing the dim level (increasing the brightness) in order to achieve the necessary total light level. At the point when all daylight contribution is gone, lighting will be back at its full bright level.

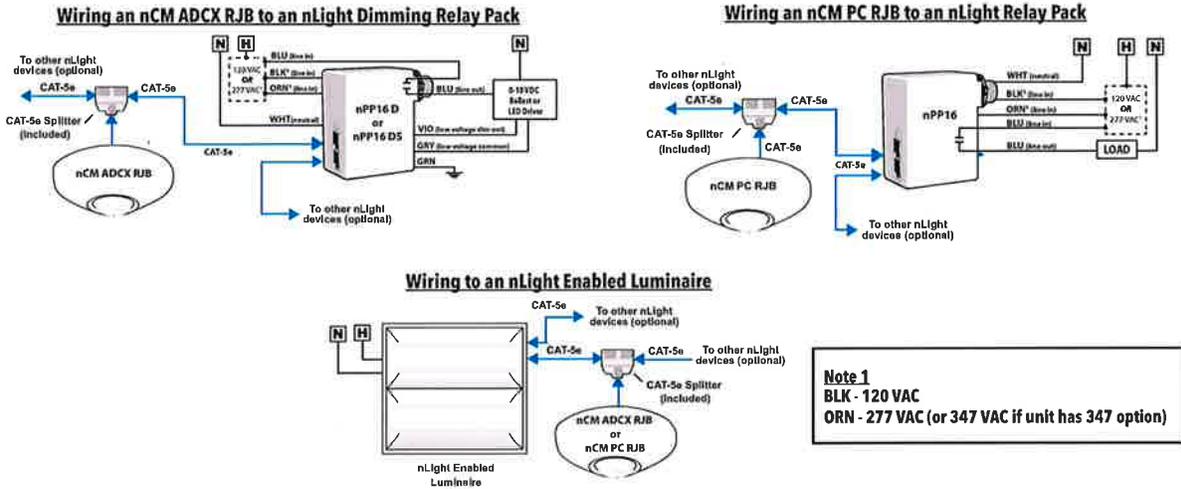
The **nCM PC RJB** sensor does not control dimming, but instead signals nLight devices located elsewhere within the sensor's zone to switch a controlled lighting load on when more light is needed. The lights are also signaled to turn off when light is above the set-point plus a 10% safety factor and deadband. The safety factor will prevent the system from cycling when the light level is very near the set-point. The deadband is the level of light contributed by the artificial lights being controlled. This level is tracked so if the lighting conditions change (for example a lamp burns out) the point at which the lights turn off is adapted accordingly. If the photocell can not view the lights being controlled (for example if it is looking up at skylights), there is no deadband and the sensor is said to be working open loop. There is also an adaptive cloud delay (optional) before the photocell turns the lights off to prevent the system from cycling on a cloudy day.





WIRING

T568B pin/pair assignment is recommended for all CAT-5e cables. Sensor power is provided via the CAT-5e connection to an nLight power pack/supply, nLight enabled digital luminaire, or nLight Bridge.



DEVICE SETTINGS

Several operational settings for the **nCM ADCX RJB** and **nCM PC RJB** are available and configurable through the unit's push-button and/or SensorView software, including:

Common Settings:

- Photocell Broadcasting (Enable/Disable)
- Photocell Broadcasting Channel (1-16)
- LED Indicator (Enabled/Disable)
- Automatic Set-point Calibration Mode
- Blink-back Set-point (in footcandles)
- Set-point (0-200 fc)
- Sunlight Discount Factor (1-10)
- Photocell On/Off Transition Time (45 sec - 25 min)

nCM PC RJB Specific Settings:

- Adaptive Cloud Delay (Enable/Disable)

nCM PC DZ RJB Specific Settings:

- Photocell Pole 2 Broadcasting Channel (1-16)
- Photocell Mode:
 - ☐ **Duo** - Automatic step dimming
 - ☐ **Duo (Never off)** - Automatic step dimming with one load always left on
 - ☐ **Inhibit** - Loads will be held off if sufficient daylight present, but once on will not turn off from daylight
- Dual Zone Off-Point (110 to 200%)

nCM ADCX RJB Specific Settings:

- Override (Full Dim/Full Bright/Normal)
- Switch Tracking (Enable/Disable)
- Switch Tracking Channel (1-16)
- WallPod Dimming Adjustment (Temporary, Photocell Temporary Override, Permanent)
- Occupied Bright Level (1-100%)
- Unoccupied Dim Level (1-100%)
- Dimming Rate
- Photocell On/Off (Enable/Disable)

nCM ADCX DZ RJB

- Photocell Pole 2 Broadcasting Channel (1-16)
- Dual Zone Percentage Offset (-200 to 200%)
- Dual Zone Off-Point (110 to 200%)

nCM ADCX(PC) RJB - TN-140-001

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NCM PDT 10 AR RJB	Type:
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Catalog Number:

Date:

Project:

OVERVIEW

The **nCM xx RJB** family of nLight ceiling/surface mount occupancy sensors provide a range of networked sensor solutions for applications with finished ceilings (e.g. ceiling tiles, sheetrock, plaster). **nCM xx RJB** family sensors utilize 100% digital Passive Infrared (PIR) detection and are available with several lens options, providing flexibility for multiple mounting height and coverage pattern requirements. Dual technology occupancy detection can also be added as an option for applications where occupants are stationary for long periods of time. All sensors have integrated on/off photocells as a standard feature, with automatic daylight harvesting/dimming control as an available option. Additionally, **nCM xx RJB** family sensors are also available with an optional auxiliary low voltage relay for simple integration with a BMS system or other building system.

nCM xx RJB family sensors are powered via the nLight network bus and typically communicate with one or more nLight enabled luminaires (e.g. Lithonia VTLED Series) or nLight relay/dimming packs to enable control of fixtures individually or in groups. These configurations work standalone and do not require a connection to a larger nLight network.

FEATURES

- 100% digital PIR detection
- Integrated photocell standard (disabled by default) – Photocell views down through sensor lens and when enabled provides two selectable modes of operation
 - On/Off mode: Photocell has full on/off control during periods of occupancy
 - Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off
- Optional dimming photocell (ADCX option)
- Optional auxiliary low voltage relay (AR option) for dry contact output - relay only tracks occupancy by default, ignoring switch and photocell commands
- LED status indicator
- Adjustable settings (e.g. occupancy time delays, photocell set-points) via push-button or SensorView software application
- Broadcasts occupancy and photocell information over a local nLight channel
- Remotely upgradeable firmware

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

AcuityControls

nLight

nCM xx RJB
nCM PDT xx RJB



nCM 9 RJB
nCM PDT 9 RJB



nCM 10 RJB
nCM PDT 10 RJB



nCM 6 RJB



ORDERING INFORMATION

nCM xx RJB		Example: nCM PDT 9 ADCX RJB	
NCM PDT	10		RJB
Series / Detection	Coverage Type	Options (See Below)	RJ45 Port Location
nCM PIR Detection	9 Small Motion 360°		RJB Rear RJ45 (CAT5e patch cable & RJ45 splitter included)
nCM PDT Dual Tech (PIR/ Microphonics)	10 Large Motion 360°		
	6 High Mount 360° (not available with PDT version)		

nCM xx RJB Options			
	AR		
Photocell	Auxiliary Relay	Dual Time Delay ²	Temp/ Humidity
[blank] On/Off Photocell (disabled by default)	[blank] None	[blank] Single Time Delay	[blank] Standard
ADCX Automatic Dimming Control (of remote dimming output)	AR Low Voltage Aux. Relay	2P Dual Time Delay	LT Low Temp / High Humidity

NOTES:

1. For information on models with side RJ45 ports, see website
2. Not available with AR or ADCX options

Submitted by:  VISIBLE LIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>	Job Name:	Catalog Number:	Type:
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SPECIFICATIONS

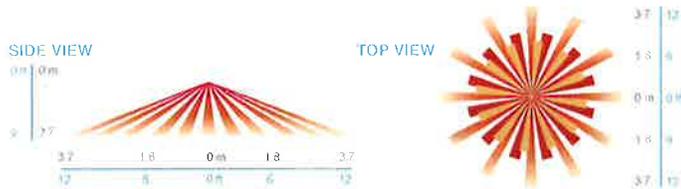
Size: 4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)	nLight Bus Power Consumption: ~3mA
Weight: 6 oz	nLight Network Connection: 2 RJ-45 Ports (via an included RJ-45 splitter)
Mounting: Ceiling Tile / Sheetrock Surface, 3.5" Octagon Box, Single Gang Handy box	Relay Rating (AR option only): 1A @ 24 VAC/VDC (resistive only)
Color: Matte White	ROHS Compliant, Title 24 Component
Wires / Cables: (1) CAT5e patch cable, 1ft (factory installed) (2) 20 AWG wires (AR option only)	

COVERAGE PATTERNS

SMALL MOTION 360° (Model # nCM 9/nCM PDT 9¹)



- Best choice for small motion (e.g. hand movements) detection
- 360° conical shaped pattern
- Provides 12 ft (3.66 m) radial coverage (~500 ft²) when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage



¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

LARGE MOTION 360° (Model # nCM 10/nCM PDT 10¹)



- Best choice for large motion detection (e.g. walking)
- 360° conical shaped pattern
- Provides ~24 ft (7.32 m) radial coverage (~2000 ft²) when mounted at 9 ft (2.74 m)
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Detection range improves when walking across beams compared to into beams

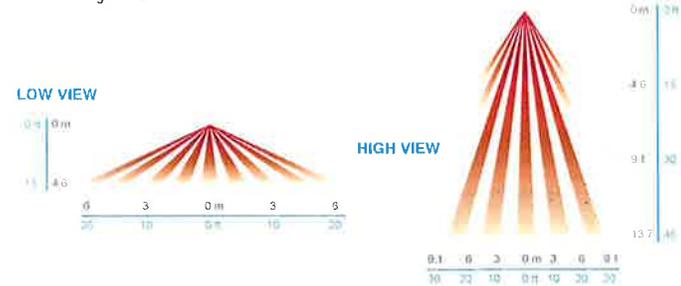


¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

HIGH MOUNT 360° (Model # nCM 6)



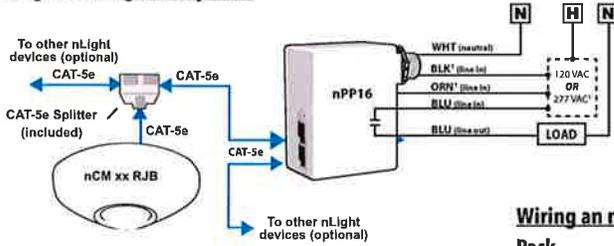
- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. walking) up to 35 ft (10.76 m)
- Excellent detection of extra large motion (e.g. forklifts) up to a 45 ft (13.72 m)



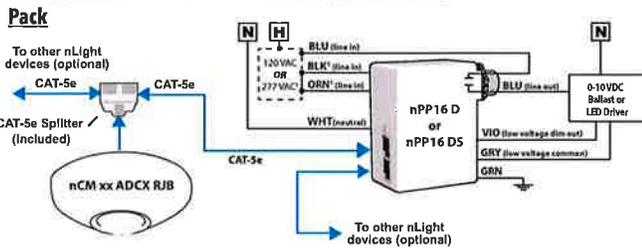


TYPICAL APPLICATIONS

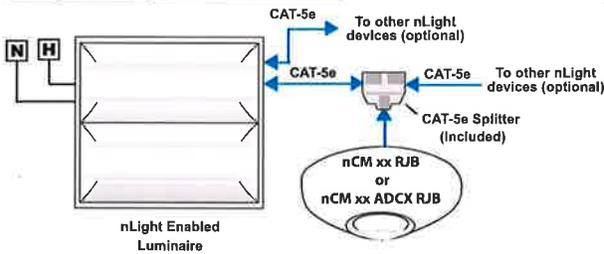
Wiring to an nLight Relay Pack



Wiring an nCM xx ADCX RJB to an nLight Dimming Pack



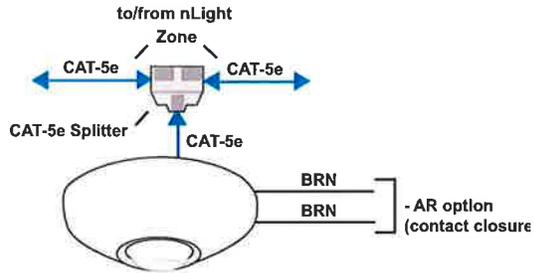
Wiring to an nLight Enabled Luminaire



TYPICAL APPLICATIONS

The following instructions are for mounting sensor directly to a ceiling tile or sheetrock surface. Sensor's mounting holes also align with standard round fixture or single gang handy box (screws not provided).

1. Using template included with unit, mark spots on ceiling tile/sheetrock for cable hole and mounting anchors/screws
2. Drill 1/2" hole through ceiling surface at location indicated on template
3. Insert provided anchors into ceiling surface at locations indicated on template
4. Remove provided RJ-45 splitter from sensor's attached CAT5e cable and then thread cable (and low voltage wires if -AR option included) through hole from underside
5. Mount sensor to anchors using two screws provided
6. Attach provided RJ45 splitter device (model CAT5 Y) above ceiling to cable from sensor (see diagram on right)
7. Interconnect CAT-5e cables to/from rest of nLight zone to RJ45 splitter
8. Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults
9. Install decorative sensor lid by rotating clockwise
10. Refer to included instruction card for default settings and directions on push-button programming.



nCM xx RJB - TN-140-001

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLERIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NCM PDT 9 AR RJB	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nCM xx RJB** family of nLight ceiling/surface mount occupancy sensors provide a range of networked sensor solutions for applications with finished ceilings (e.g. ceiling tiles, sheetrock, plaster). **nCM xx RJB** family sensors utilize 100% digital Passive Infrared (PIR) detection and are available with several lens options, providing flexibility for multiple mounting height and coverage pattern requirements. Dual technology occupancy detection can also be added as an option for applications where occupants are stationary for long periods of time. All sensors have integrated on/off photocells as a standard feature, with automatic daylight harvesting/dimming control as an available option. Additionally, **nCM xx RJB** family sensors are also available with an optional auxiliary low voltage relay for simple integration with a BMS system or other building system.

nCM xx RJB family sensors are powered via the nLight network bus and typically communicate with one or more nLight enabled luminaires (e.g. Lithonia VLED Series) or nLight relay/dimming packs to enable control of fixtures individually or in groups. These configurations work standalone and do not require a connection to a larger nLight network.

FEATURES

- 100% digital PIR detection
- Integrated photocell standard (disabled by default) – Photocell views down through sensor lens and when enabled provides two selectable modes of operation
 - On/Off mode: Photocell has full on/off control during periods of occupancy
 - Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off
- Optional dimming photocell (ADCX option)
- Optional auxiliary low voltage relay (AR option) for dry contact output - relay only tracks occupancy by default, ignoring switch and photocell commands
- LED status indicator
- Adjustable settings (e.g. occupancy time delays, photocell set-points) via push-button or SensorView software application
- Broadcasts occupancy and photocell information over a local nLight channel
- Remotely upgradeable firmware

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



nLight®

nCM xx RJB
nCM PDT xx RJB



nCM 9 RJB
nCM PDT 9 RJB



nCM 10 RJB
nCM PDT 10 RJB



nCM 6 RJB



ORDERING INFORMATION

nCM xx RJB		Example: nCM PDT 9 ADCX RJB	
NCM PDT	9		RJB
Series / Detection	Coverage Type	Options (See Below)	RJ45 Port Location
nCM PIR Detection	9 Small Motion 360°		RJB Rear RJ45 (CAT5e patch cable & RJ45 splitter included)
nCM PDT Dual Tech (PIR/ Microphonics)	10 Large Motion 360°		
	6 High Mount 360° (not available with PDT version)		

nCM xx RJB Options			
AR			
Photocell	Auxiliary Relay	Dual Time Delay ²	Temp/ Humidity
[blank] On/Off Photocell (disabled by default)	[blank] None	[blank] Single Time Delay	[blank] Standard
ADCX Automatic Dimming Control (of remote dimming output)	AR Low Voltage Aux. Relay	2P Dual Time Delay	LT Low Temp / High Humidity

NOTES:

1. For information on models with side RJ45 ports, see website
2. Not available with AR or ADCX options

Submitted by:	Job Name:	Catalog Number:	Type:
			

SPECIFICATIONS

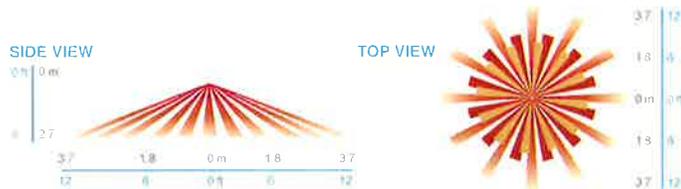
Size:	4.55" Dia. (11.56 cm) 1.55" Deep (3.94 cm)	nLight Bus Power Consumption:	~3mA
Weight:	6 oz	nLight Network Connection:	2 RJ-45 Ports (via an included RJ-45 splitter)
Mounting:	Ceiling Tile / Sheetrock Surface, 3.5" Octagon Box, Single Gang Handy box	Relay Rating (AR option only):	1A @ 24 VAC/VDC (resistive only)
Color:	Matte White	ROHS Compliant, Title 24 Component	
Wires / Cables:	(1) CAT5e patch cable, 1ft (factory installed) (2) 20 AWG wires (AR option only)		

COVERAGE PATTERNS

SMALL MOTION 360° (Model # nCM 9/nCM PDT 9¹)



- Best choice for small motion (e.g. hand movements) detection
- 360° conical shaped pattern
- Provides 12 ft (3.66 m) radial coverage (~500 ft²) when mounted to standard 9 ft (2.74 m) ceiling
- 8 to 15 ft (2.44 to 4.57 m) mounting heights provide 10 to 20 ft (3.05 to 6.10 m) radial coverage

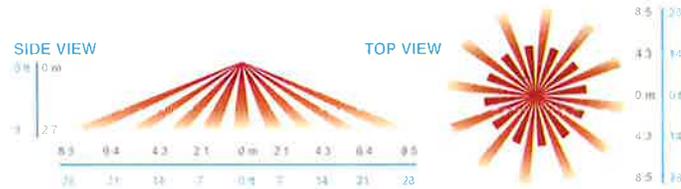


¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

LARGE MOTION 360° (Model # nCM 10/nCM PDT 10¹)



- Best choice for large motion detection (e.g. walking)
- 360° conical shaped pattern
- Provides ~24 ft (7.32 m) radial coverage (~2000 ft²) when mounted at 9 ft (2.74 m)
- 7 to 15 ft (2.13 to 4.57 m) mounting heights provide 16 to 36 ft (4.88 to 10.97 m) radial coverage
- Detection range improves when walking across beams compared to into beams

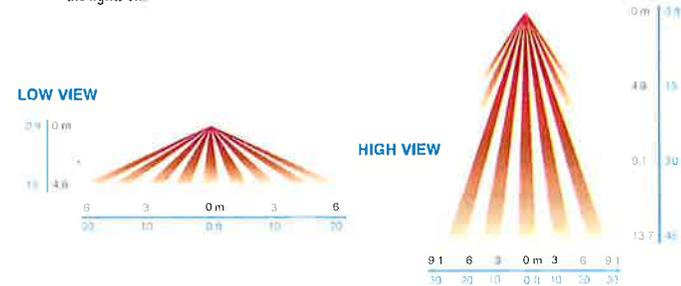


¹ Sensors with Microphonics™ provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is also utilized to prevent non-occupant noises from keeping the lights on.

HIGH MOUNT 360° (Model # nCM 6)

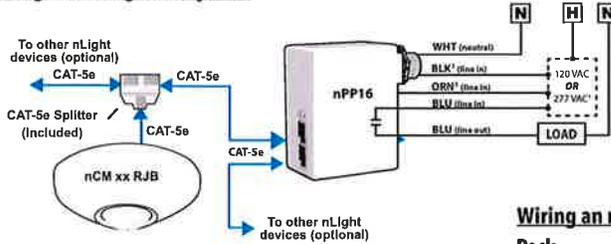


- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. walking) up to 35 ft (10.76 m)
- Excellent detection of extra large motion (e.g. forklifts) up to a 45 ft (13.72 m)

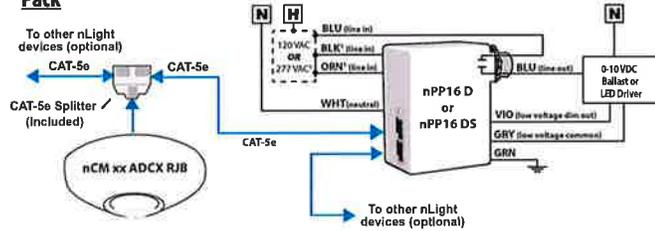


TYPICAL APPLICATIONS

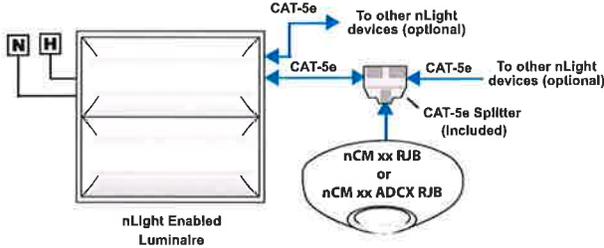
Wiring to an nLight Relay Pack



Wiring an nCM xx ADCX RJB to an nLight Dimming Pack



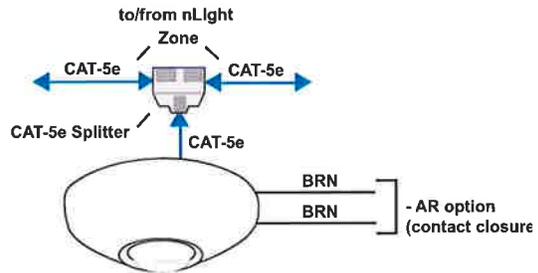
Wiring to an nLight Enabled Luminaire



TYPICAL APPLICATIONS

The following instructions are for mounting sensor directly to a ceiling tile or sheetrock surface. Sensor's mounting holes also align with standard round fixture or single gang handy box (screws not provided).

1. Using template included with unit, mark spots on ceiling tile/sheetrock for cable hole and mounting anchors/screws
2. Drill 1/2" hole through ceiling surface at location indicated on template
3. Insert provided anchors into ceiling surface at locations indicated on template
4. Remove provided RJ-45 splitter from sensor's attached CAT5e cable and then thread cable (and low voltage wires if -AR option included) through hole from underside
5. Mount sensor to anchors using two screws provided
6. Attach provided RJ45 splitter device (model **CATS Y**) above ceiling to cable from sensor (see diagram on right)
7. Interconnect CAT-5e cables to/from rest of nLight zone to RJ45 splitter
8. Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults
9. Install decorative sensor lid by rotating clockwise
10. Refer to included instruction card for default settings and directions on push-button programming.



nCM xx RJB - TN-140-001

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NIO 1S	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight **nIO D / nIO 1S** is a low voltage device that interfaces and provides network addressability for a variety of non-nLight devices. The **nIO D** is an output device that controls the dimming level of 0-10 VDC dimming ballasts / LED drivers. The **nIO 1S** is an input device that detects a toggle or momentary dry contact closure switch. Additionally, the **nIO 1S**'s can read a 0-10 VDC dimming control signal from non-nLight dimming photocells and wall dimmers.

nIO D / nIO 1S devices wire into any zone of nLight devices (sensors, power packs, WallPods) using CAT-5e cabling. Class 2 interface wires are present with each unit: an input or an output wire, and a common/ground. The **nIO D / nIO 1S** comes standard in an inline wired housing or with a 1/2" chase nipple for mounting to a luminaire or junction box knockout (**KO** option).

FEATURES

nIO D

- Outputs 0-10VDC Dimming Signal

nIO 1S

- Inputs Dry Contact Switches (Toggle or Momentary)
- Inputs 0-10 VDC Dimming Signal from a non-nLight Device
- Toggles Local Relays On/Off
- Communicates w/ nLight Network
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Inline Wired - No Mounting Required

SPECIFICATIONS

Size (Inline Wired): 2.54"H x 1.98"W x 1.00"D (6.45 cm x 5.03 cm x 2.54cm)
 Size (**KO** option): 3.38"H x 2.53"W x 1.83"D (8.59 cm x 6.43 cm x 4.65 cm)
 (dimensions do not include 1/2" chase nipple)
 Weight: 2 oz
 Color: White
 nLight Network Ports: 2 RJ-45
 Bus Power Consumption: ~3 mA
 Dimming Input: (**nIO 1S**) 0-10VDC
 Dimming Output Load: (**nIO D**) sinks <20mA, 0-10VDC LED drivers/ ballasts
 Wire: 20 AWG (3)
 RoHS compliant, Plenum rated



nIO D
nIO 1S



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

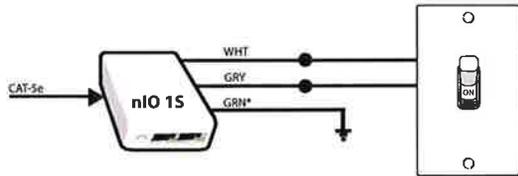
nIO		Example: nIO D KO LT	
NOI	1S		
Series	I/O Options	Mounting	Temp/Humidity
nIO	D 0-10VDC dimming output 1S Contact closure input	[blank] Inline wired KO Chase nipple mounting	[blank] Standard LT Low Temp

WIRING

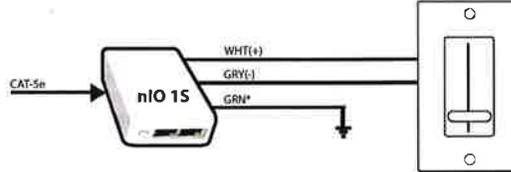
Power to a **nIO D** / **nIO 1S** device is provided by the CAT-5e connection to an nLight power pack/supply or other nLight device supplying bus power. If power is not present on the CAT-5e bus, the **nIO D**'s dimming output will release lights to highest level. T568B pin/pair assignment is recommended for all CAT-5e cables.

TYPICAL nIO 1S WIRING CONFIGURATIONS

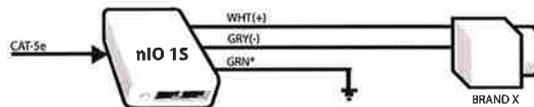
ON/OFF SWITCHES (TOGGLE OR MOMENTARY)



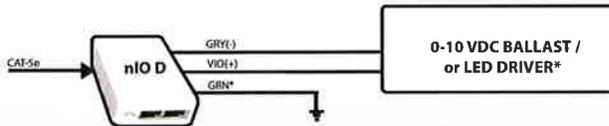
0-10 VDC WALL DIMMERS



0-10 VDC DIMMING PHOTOCELL



nIO D WIRING CONFIGURATION



*Note: A green wire is available for an optional connection to an approved ground. This wire is isolated from the class 2 circuitry of the sensor. Connection will provide improved network protection in case of accidental landing of line voltage to VIOLET or GRAY dimming wires. It also provides network isolation from any high voltage leakage from a ballast or driver's 0-10V input wires. If an approved ground is not available the green wire should be capped.

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NIO PC KIT	Type:
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Catalog Number:

Date:

Project:

OVERVIEW

The nLight **nIO PC KIT** provides an outdoor photocontrol solution for nLight networks. In addition to a weatherproof outdoor photocontrol that mounts to any 1/2" knockout, the **nIO PC KIT** includes an interface device with a normally low input. This device called a **nIO NLI 1S**, detects the state of the photocontrol and communicates it over the nLight network to a relay(s) controlling a lighting load. The **nIO NLI 1S** can also trigger local or remote control scenes to run when the photocontrol's state changes.

The **nIO NLI 1S** is daisy-chain wired into any zone of nLight devices (sensors, power packs, WallPods) using CAT-5e cabling. Power to the **nIO NLI 1S** device is provided by the CAT-5e connection to an nLight power pack/supply within its zone, or a Bridge. Power to the outdoor photocontrol is provided via Class 2 wires from the included **PS 150** power supply or other low voltage source (for example the auxiliary power output on an **nPANEL 4**).

The **nIO NLI 1S** can trigger one of several modes when the connected outdoor photocontrol changes states:

- WallPod Mode: Turns relays on/off within its zone
- Local Scene Mode: Initiates a scene to run on its local zone
- Remote Scene Mode: Requests the Gateway to run a system profile on non-local devices or zones

FEATURES

- Kit Provides both Outdoor Photocell & Specialized nIO Interface Device
- nIO Interfaces Outdoor Photocell Using Normally Low Input
- Sends Toggle Signal to Relays within Local Zone
- Initiates a Local or Remote Scene
- Communicates w/ nLight Network
- Remotely Configurable/Upgradeable
- Push-Button Programmable

Daylight Condition	PC Output	nIO NLI 1S Action	
		WallPod Mode	Scene Mode
Night Time	High	Exert On	Send Scene
Day Time	Low	Exert Off	Run Defaults



nLight®

nIO PC Kit
Outdoor Photocell
Interface Kit



*Outdoor Photocell (PC) is model number LCS 624D from Precision Multiple Controls Inc.

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



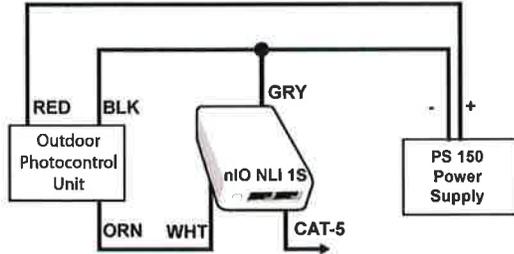
ORDERING INFORMATION

nIO PC Kit	Example: nIO PC Kit
NIO PC KIT	
Series	
nIO PC Kit	

WIRING

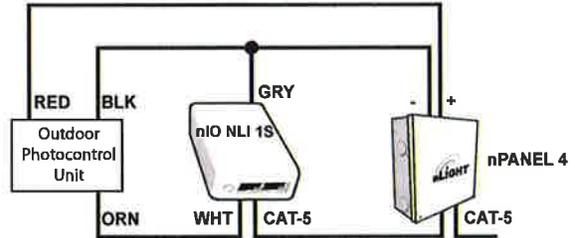
OPTION 1*

*Note, line connection to power supply not shown. Additional nLight devices are required to switch lighting load (e.g., nPP16).



OPTION 2*

*Note, line and load connections to nPANEL 4 not shown.



SPECIFICATIONS

(nIO NLI 1S)

- Size: 3.38" H x 2.53" W x 1.83" D (8.59 cm x 6.43 cm x 4.65 cm)
 - Weight: 2 oz
 - Color: White
 - Network Connection: 2 RJ-45 each device
 - Power Requirements: < 3 mA
 - Wires: 20 AWG (3)
- RoHS Compliant

(PC)

- Size: 3.50" H x 1.25" W x 0.25" D (8.89 cm x 3.18 cm x 0.64 cm)
- Mounting: 1/2" KO in any approved weatherproof outdoor box
- Weight: 4 oz
- Color: Gray
- Power Requirements: < 35 mA @ 12-28 VDC
- Wires: 20 AWG (3)

(PS150)

- Size: (not including 1/2" chase nipple) 3.00" H x 2.25" W x 1.88" D (7.62 cm x 5.72 cm x 4.78 cm)
 - Weight: 6 oz
 - Mounting: 1/2" KO
 - Color: Black
 - Operating Voltage: 120/277
 - Output Voltage, Current: 15 VDC, 150 mA
 - Wires: 18 AWG (3) & 20 AWG (2)
- RoHS Compliant

nIO PC Kit - TN-704-02

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NIO X KIT	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight **nIO X** is a small inline wired device that digitally interfaces an nLight-enabled zone with a non-nLight device with RS-232 or RS-485 outputs (such as a 3rd party touch panel). This allows rooms with non-nLight touch panels (often for controlling HVAC or A/V) to also individually turn controlled lighting loads on/off and to raise/lower their light level. Additionally, the **nIO X** enables one of four local/global scenes to be run upon request.

FEATURES

- Digitally Interfaces an nLight Zone with a non-nLight Device (e.g. 3rd Party Touch Panel)
- Enables On/Off/Dim Commands
- Provides Relay and Dimming Level Status to Touch Screen when polled
- Toggles Local Relays On/Off
- Stores and runs up to 4 local or global scenes
- Remotely configurable/upgradeable
- Communication indicator via LED per RJ-45 port

SPECIFICATIONS

nIO X CTRL / nIO X 485:

Size: 2.54" H x 1.98" W x 1.00" D (6.45 cm x 5.03 cm x 2.54 cm)
 Mounting: Predrilled screw hole
 Weight: nIO X CTRL or nIO X 485: 2 oz
 nIO X Kit: 16 oz
 Serial Ports: **nIO X CTRL**- 1 RS-485 Native nLight (RJ-45),
 1 RS-232 External Interface (RJ-45)
nIO X 485- 1 RS-485 Native nLight (RJ-45),
 1 RS-485 External Interface (RJ-45)
 Provided Accessories: 1 DB9F to RJ-45F adapter & 6" CAT-5 patch cable
 nLight Bus Power Consumption: < 3mA
 RoHS Compliant

RS232 ISO (not including power supply):

Size: 4.38" H x 2.13" W x 1.00" D (11.13 cm x 5.41 cm x 2.54 cm)
 Serial Ports: 2 RS-232 Interface Ports (DB9M)
 Provided Accessories: 2 DB9 Patch Cables, AC Adapter (120-240V, 50/60 Hz)

RS-232 Comm.:

Baud Rate: 115,200 bps
 Data Bits: 8
 Parity: None
 Start Bit(s): 1
 Stop Bit(s): 1



nLight

nIO X
 External Third Party
 Interface Device



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

nIO X		Example: nIO X Kit	
NIO X KIT			
Series		Temp/Humidity (nIO X CTRL only)	
nIO X Kit	nLight RS-232 Interface Kit (includes controller & RS232 Isolator)	[blank]	Standard
nIO X CTRL	nLight RS-232 Interface Controller (replacement only)	LT	Low Temp
RS232 ISO	RS-232 Isolator (replacement only)		
nIO X 485	nLight RS-485 Interface Controller (isolator not required for RS-485 version)		

OPERATION

Using the protocol commands specified, a 3rd party interface would send commands (via status packets) to the **nIO X**. The **nIO X** will translate the received command into the corresponding nLight status packet and then retransmit over the nLight port. All nLight devices in that zone then execute the command (i.e. transfer relays, dim, or run a scene). If a scene is to be executed, it must first be setup using the normal nLight SensorView interface. When a user initiates a scene, the touch panel sends a special scene command which the **nIO X** executes by sending all the scene's settings to the necessary nLight devices. A touch panel can also periodically poll the **nIO X** in order to determine the status of the zone's relays and/or dimming levels.

WIRING / PINOUT

Physically, the **nIO X** has two RJ-45 ports. The first is an nLight port that is wired using CAT-5e cable to any nLight-enabled device within the zone to be controlled. The second is a port that communicates to the touch screen using the digital protocol specified within this document. Both RS-232 and RS-485 electrical interfaces are supported (see pin-out tables on page 2). The serial data format consists of 8 data bits, no parity, one start bit, and one stop bit at 115,200 bps. Included with the **nIO X** is a DB9F to RJ-45 adapter (see image on below) and a 6 in CAT-5e cable. The **nIO X KIT** also includes an RS-232 Isolator that is required when interfacing RS-232 equipment.



nIO X PIN-OUT DESCRIPTION

RS-232 Pin-out (DB9 Female)				RS-485 Pin-out (DB9 Female) - nIO X 485 unit only		
PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DIRECTION	DESCRIPTION
1	No Connection	6	No Connection	Tie Pins 1 & 9 together	Bi-Directional	RS485 -
2	(TXD) RS-232 Transmit Data	7	No Connection	Tie Pins 4 & 6 together	Bi-Directional	RS485 +
3	(RXD) RS-232 Receive Data	8	No Connection	Pin 5	Ground	Ground
4	No Connection	9	No Connection	Pins 2, 3, 7, 8		No Connection
5	Ground (RS-232 Common)					

nIO X COMMUNICATION PROTOCOL DESCRIPTION

To assist in the encoding of specific instructions for the nIO X into the binary values that must be sent by the non-nLight device (e.g. touch screen), a software tool is available at www.sensorswitch.com/support/encoder.exe

The technical documentation for the protocol is described further below. Consult the non-nLight device's documentation and/or manufacturer for technical support related to programming.

PACKET FORMAT

Sync Byte (0xA5)	Length	Subject	Data	Checksum
1-byte	1-byte	1-byte	Variable	2-bytes
(8-bits)	(8-bits)	(8-bits)	(Variable)	(16-bits)

Min. Size: 5-bytes (No-data field)
Max Size: 50 bytes

Sync Byte (1 byte long):

The header is a single byte (8 bits). This byte is always 0xA5. It signifies the beginning of a new packet. Its bit pattern, 10100101, may also be used to synchronize to the exact baud rate by measuring the bit widths.

Length (1 byte long):

The length value includes every byte in the packet from the Sync byte to the checksum bytes.
Valid packet lengths: 5-50

Subject (1 byte long):

1-253 Commands and Responses

Data (0 to 45 bytes long)

Checksum (2 bytes long):

The 16-bit (2 bytes) checksum is calculated over all received/transmitted bytes B1...Bn in the data frame except the checksum bytes themselves by XORing odd bytes and even bytes separately and inverting the result.

Formula:

$$CK1 = INV [B1 XOR B3 XOR \dots XOR Bn-1]$$

$$CK2 = INV [B2 XOR B4 XOR \dots XOR Bn]$$

For example:

To send the packet: A5 08 7A 01 04 05 CK1 CK2, the sender must calculate CK1 and CK2 and attach them to the end of the packet.

$$CK1 = INV[A5 \wedge 7A \wedge 04] = 24$$

$$CK2 = INV[08 \wedge 01 \wedge 05] = F3$$

TRANSMISSION CODES

Acknowledgement - ACK (0x04):

An ACK indicates that the command was received. The Data Field holds the command which is being acknowledged (ACK'd).

Example:	<u>Sync Byte</u>	<u>Length</u>	<u>Subject</u>	<u>Data</u>	<u>Checksum</u>
	0xA5	0xFF	0x04	0xFF	0xFFFF

Poll - (0x0C):

Used to request status of nLight Zone.

Example:	<u>Sync Byte</u>	<u>Length</u>	<u>Subject</u>	<u>Checksum</u>
	0xA5	0xFF	0x0C	0xFFFF

Poll Response (0x0D):

Contains information regarding status of nLight Zone.

Example:	<u>Sync Byte</u>	<u>Length</u>	<u>Subject</u>	<u>Data</u>	<u>Checksum</u>
	0xA5	0xFF	0x0D	0xFFFF	0xFFFF

The Data Field holds the status of relays in the zone (as follows on following pages):

Poll Response Data Field (0xXXXX):

Byte 0:

- Bit 7 = Set if any relays tracking switches on channel 16 are closed.
- Bit 6 = Set if any relays tracking switches on channel 15 are closed.
- Bit 5 = Set if any relays tracking switches on channel 14 are closed.
- Bit 4 = Set if any relays tracking switches on channel 13 are closed.
- Bit 3 = Set if any relays tracking switches on channel 12 are closed.
- Bit 2 = Set if any relays tracking switches on channel 11 are closed.
- Bit 1 = Set if any relays tracking switches on channel 10 are closed.
- Bit 0 = Set if any relays tracking switches on channel 9 are closed.

Byte 1:

- Bit 7 = Set if any relays tracking switches on channel 8 are closed.
- Bit 6 = Set if any relays tracking switches on channel 7 are closed.
- Bit 5 = Set if any relays tracking switches on channel 6 are closed.
- Bit 4 = Set if any relays tracking switches on channel 5 are closed.
- Bit 3 = Set if any relays tracking switches on channel 4 are closed.
- Bit 2 = Set if any relays tracking switches on channel 3 are closed.
- Bit 1 = Set if any relays tracking switches on channel 2 are closed.
- Bit 0 = Set if any relays tracking switches on channel 1 are closed.

Byte 2:

Maximum Dim Level of any device tracking switches on channel 1

Byte 3:

Maximum Dim Level of any device tracking switches on channel 2

Byte 4:

Maximum Dim Level of any device tracking switches on channel 3

Byte 5:

Maximum Dim Level of any device tracking switches on channel 4

Byte 6:

Maximum Dim Level of any device tracking switches on channel 5

Byte 7:

Maximum Dim Level of any device tracking switches on channel 6

Byte 8:

Maximum Dim Level of any device tracking switches on channel 7

Byte 9:

Maximum Dim Level of any device tracking switches on channel 8

Byte 10:

Maximum Dim Level of any device tracking switches on channel 9

Byte 11:

Maximum Dim Level of any device tracking switches on channel 10

Byte 12:

Maximum Dim Level of any device tracking switches on channel 11

Byte 13:

Maximum Dim Level of any device tracking switches on channel 12

Byte 14:

Maximum Dim Level of any device tracking switches on channel 13

Byte 15:

Maximum Dim Level of any device tracking switches on channel 14

Byte 16:

Maximum Dim Level of any device tracking switches on channel 15

Byte 17:

Maximum Dim Level of any device tracking switches on channel 16

Byte 18:

- Bits 0-3: Pole 2 Scene Status (see codes below)
- Bits 4-7: Pole 1 Scene Status (see codes below)

Byte 19:

- Bits 0-3: Pole 4 Scene Status (see codes below)
- Bits 4-7: Pole 3 Scene Status (see codes below)

Status Codes	Hex Value	Description
Scene Control Disable	0x00	Scene control is disabled, this overrides control button action
Scene Control Active	0x01	Scene control is active, button has been pressed from the scene selector and settings were sent successfully
Scene Control Idle	0x02	Scene Control is enabled, waiting for execution from button press or remote execution command
Scene Control Error	0x03	Scene control error, the execution was initiated and an error occurred during transmission of settings to the list of devices

Submitted by:	Job Name:	Catalog Number:	Type:
			

Channel Exert (0x7A):

Command to perform one of the following actions:

Exert On, Exert Off, Dim Up, Dim Down, and Go To Dim Level

This command will respond immediately with an Acknowledge packet.

Sync Byte	Length	Subject	Payload	Checksum
0xA5	0xFF	0x7A	(see below)	0xFFFF

Payload Format:

byte0	byte1	byte2
Channel	Action	Dim Amount

Channel (1 byte): The switch broadcast channel of the switch being pressed.

Channel 1 = 0x01, Channel 2 = 0x02, ..., Channel 16 = 0x10.

Action (1 byte)

- Exert On = 0x01
- Exert Off = 0x02
- Dim Up = 0x03
- Dim Down = 0x04
- Go To Dim Level = 0x05

Dim Amount (1 byte)

1. For Exert On and Exert Off: (don't care)
2. For Dim Up and Dim Down: 5, 10, 15, 20, or 25 => The percentage (in hex) the dim level will change by with each button press
3. For Go To Dim Level: 0-100 => The percentage (in hex) of full brightness desired

Examples:

Exert On Channel 1 =	A5 08 7A 01 01 00 21 F6
Ack =	A5 07 04 7A 01 5F 82
Exert On Channel 2 =	A5 08 7A 02 01 00 21 F5
Ack =	A5 07 04 7A 01 5F 82
Exert Off Channel 3 =	A5 08 7A 03 02 00 22 F4
Ack =	A5 07 04 7A 02 5C 82
Exert Up 5% on Channel 4 =	A5 08 7A 04 03 05 23 F6
Ack =	A5 07 04 7A 03 5D 82
Exert Down 5% on Channel 1 =	A5 08 7A 01 04 05 24 F3
Ack =	A5 07 04 7A 04 5A 82
Go To 78% on Channel 8 =	A5 08 7A 08 05 4E 25 B1
Ack =	A5 07 04 7A 05 5B

Execute Scene (0x85)

This command will execute all settings from the respective scene control button and will respond immediately with an Acknowledge packet. The specific actions (settings) associated with the scene will be setup using nLight Sensorview software.

Sync Byte	Length	Subject	Payload	Checksum
0xA5	0xFF	0x85	(see below)	0xFFFF

Payload:

- 0x01 = Scene 1
- 0x02 = Scene 2
- 0x03 = Scene 3
- 0x04 = Scene 4

nLOX-TN-706-01

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPANEL 4	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight nPANEL 4 is targeted at rooms that require multiple relays be co-located in a cabinet enclosure. Utilizing four 30 Amp rated relays at 277VAC, the nPANEL 4 can switch up to four 120/277/347 VAC loads. Further, as a standard feature, the nPANEL 4 pairs a 0-10 VDC dimming output with each relay (i.e. relay 1 and 0-10V dimming output 1 are programmed and operate together). This enables connected loads to be both switched and dimmed as necessary.

The nPANEL 4's onboard power supply provides up to 40 mA of power from each of its RJ-45 (bus) connections and 200 mA via its auxiliary power output. This enables other nLight devices to connect directly to the nPANEL without any further consideration for device powering.

nLIGHT OPERATION

This panel is nLight-enabled, meaning it has the ability to directly communicate over an nLight network. When daisy-chain wired, using CAT-5e cabling, with other nLight-enabled sensors, power packs, or WallPods, an nLight control zone is created. Functionally the nPANEL 4 operates as two devices (each with two relays/dimming outputs and a unique network serial number) that can be utilized together in a single zone or in separate zones. When controlling the nPANEL via time schedules or profile scenes (local or global), relays 1&2 must both be part of the scene (same for relays 3&4). Once linked to a Gateway, directly or via a Bridge, the zone becomes capable of remote status monitoring and control via SensorView software.

FEATURES

- Communicates w/ nLight Network
- Four Relays
- Four 0-10 VDC Dimming Outputs
- Integrated Power Supply Provides both Bus & Auxiliary Device Power
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Heavy-Duty Terminal Blocks
- UL 924 Recognized (ETL Listed) for Switching Emergency Circuits

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



nLight

nPANEL 4
Relay & 0-10 VDC
Dimming Cabinet

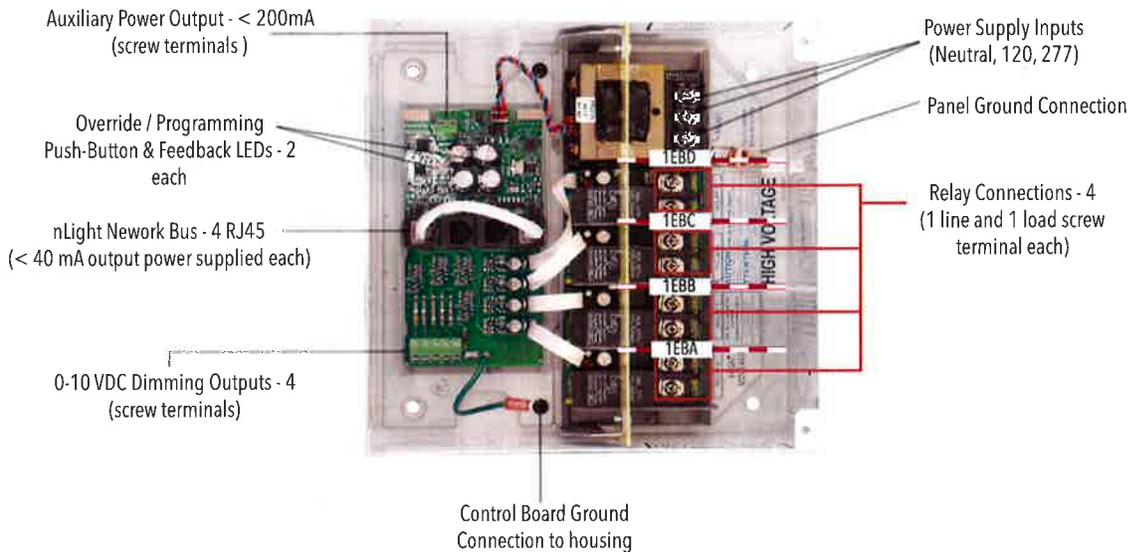


ORDERING INFORMATION

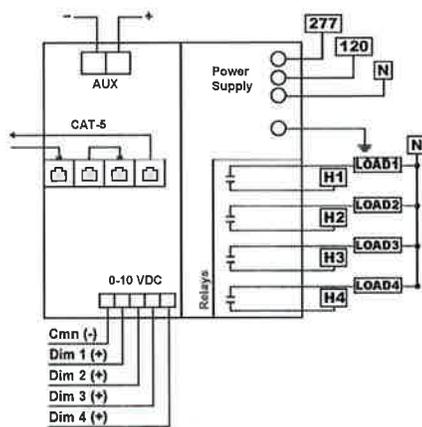


nPANEL 4	Example: nPANEL 4
NPANEL 4	
Series	
nPANEL 4	nLight Cabinet - 4 relays (120/277/347VAC), 4 dimming outputs (0-10VDC)
nPANEL 4 1EBA	nLight Cabinet - 4 relays (120/277/347VAC), 4 dimming outputs (0-10VDC), EM barrier pos. A
nPANEL 4 1EBB	nLight Cabinet - 4 relays (120/277/347VAC), 4 dimming outputs (0-10VDC), EM barrier pos. B
nPANEL 4 1EBC	nLight Cabinet - 4 relays (120/277/347VAC), 4 dimming outputs (0-10VDC), EM barrier pos. C
nPANEL 4 1EBD	nLight Cabinet - 4 relays (120/277/347VAC), 4 dimming outputs (0-10VDC), EM barrier pos. D

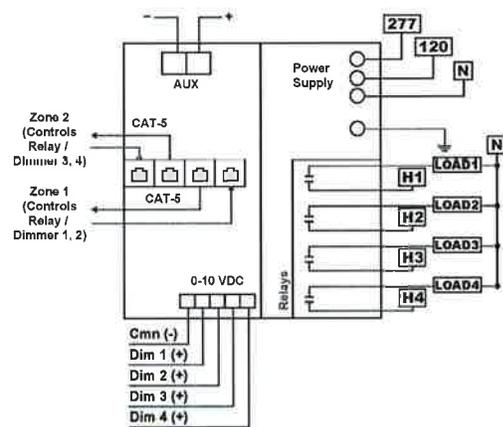
WIRING



1 Zone Wiring Configuration



2 Zone Wiring Configuration



SPECIFICATIONS

<p>Size: 8.375" W x 8.375" H x 3.125" D (21.27 cm x 21.27 cm x 7.94 cm)</p> <p>Weight: 6.0 lbs</p> <p>Enclosure Type: NEMA 1</p> <p>Mounting: Surface mount, screw cover door</p> <p>Color: White</p> <p>Network Connection: (4) RJ-45 ports (2 sets of 2)</p> <p>Relay Terminal Size: (2) #8 AWG wires per lug</p> <p>Operating Voltage: 120/277 VAC</p> <p>Power Draw: 0.7 W - 7 W; Wattage depends on number of devices being powered by nLight bus</p>	<p>Relay Type: Normally closed latching</p> <p>Dimming Load: Sinks <20 mA / output; ~40 ballasts @ .5 mA each</p> <p>Relay Load: 30 A @ 277 VAC Ballast, 20A @ 120 VAC Tungsten, 20 A @ 347 VAC Ballast, 1.5 HP@ 120 VAC Motor Load, 3 HP @ 277 VAC Motor Load</p> <p>SCCR: 18 kA @ 277 VAC</p> <p>Auxiliary Power Output: 200 mA @ 28 VDC</p> <p>RoHS Compliant, Title 24 System Component</p>
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nPANEL 4 - TN-612-01

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT <small>MANUFACTURERS REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NPOD GFX	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The Graphic WallPod (**nPOD GFX**) provides an elegant and sophisticated user control to any nLight controlled space. Its 3.5", high resolution touch screen is easy to view and simple to use.

FEATURES

- 3.5" Full-color Touch Screen (Diagonal)
- Provides up to 16 On/Off/Dim Controls
- Provides up to 16 Scene Controls
- Enables User Customization of all Presets and On/Off/Dim Controls
- Enables Programming of Switch Tracking Channels of Devices in Zone
- Mounts to a Single Gang Switch Box
- Front Accessible Micro-USB Connector for Simple Laptop Connectivity
- Optional Password Protection for Controls and Setup Screens
- Customizable Screen Saver Image
- Onboard Help Screens

SPECIFICATIONS

Size: 5.06"H x 3.50"W x 0.69"D (12.85 cm x 8.89 cm x 1.75 cm)
 Weight: 6 oz
 Mounting: Single gang switch box or low voltage ring
 Mounting Height: 60" (152 cm) - recommended
 Color: White, Ivory, Black, Light Almond, Gray
 Network connection: (2) RJ45 ports
 Input Voltage: 15-24VDC
 Power Consumption: 60mA
 Wires: None
 Power Supply: PS-150 (347) via terminal connections - included
 ROHS Compliant, Title 24 Component

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

nPOD GFX		Example: nPOD GFX WH	
NPOD GFX			
Series	Voltage	Color	
nPOD GFX	[blank] 120/277VAC 347 347VAC	WH	White
		IV	Ivory
		GY	Gray
		AL	Almond
		BK	Black

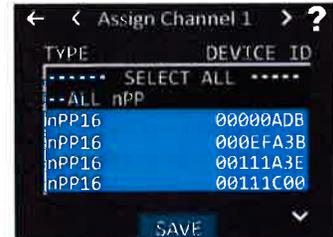
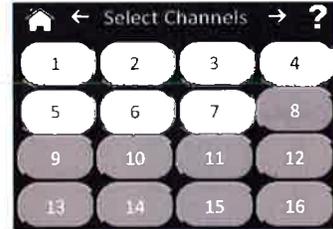
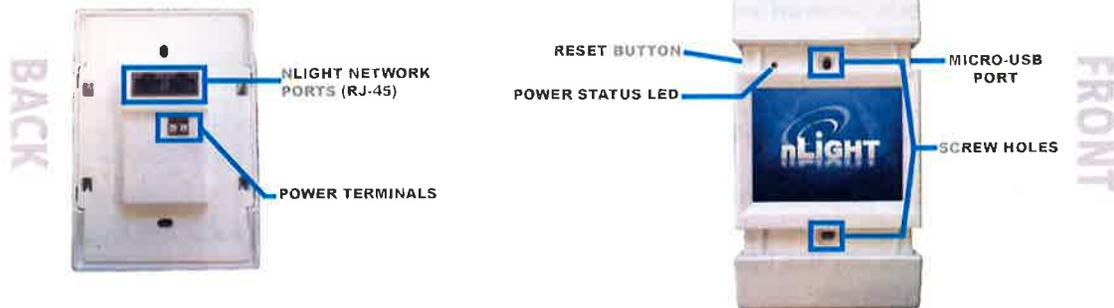
→ ** PLEASE ADVISE COLOR

OVERVIEW

There are two RJ-45 ports on the rear of the Graphic WallPod for CAT5e connection to other nLight-enabled devices. Additionally, there is a set of power terminals where low voltage power (from the provided PS 150 power supply module) is connected.



The Graphic WallPod flush mounts to a single-gang switch box. The housing has two sliding panels that cover the mounting screws, an indicator LED, a reset button, and a micro-USB style port. This port is provided as a convenient location for which to connect a laptop running the nLight SensorView software. While not needed for setup and configuration of the Graphic WallPod, SensorView is required to perform advanced configuration and firmware upgrades of devices within the Graphic WallPod's local zone. Remote access and control is available via SensorView if the zone is connected to an nLight backbone with a Gateway. **Note:** no power is used/supplied from/to the nLight bus.



- Before mounting, connect Class 2 low voltage wires from power supply to power terminal connections (polarity insensitive)
- Verify unit has power by observing screen and/or LED
- Connect CAT-5e cable(s) from local zone of nLight-enabled devices to RJ-45 port(s)
- Unit will begin discovering connected devices (indicated by on-screen message box)
- Mount unit to standard single gang switch box (screws provided)
- To access configuration screens, touch lock icon in upper left. Default password is "1234"
- Pressing reset button twice is equivalent to repowering unit
- Press reset button three times to restart unit in screen-calibration mode

nPOD GFX

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPODM 2L	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

nLight Preset Scene Control WallPods provide users a quick way to set the light levels of an nLight controlled zone. All **nPODM xL** devices are single gang wall devices with soft-click push-buttons and green LED indicators for each button. These buttons are field replaceable and can be custom engraved. Two RJ-45 connectors allow the devices to be daisy-chain wired with CAT5e cabling to other nLight network devices.

FEATURES

- Sets lights to one of two or four preset levels with single button push
- Functions as an On/Off switch
- Communicates with nLight network
- Remotely Configurable/Upgradable
- Soft-click push-buttons
- Green LED indicator per button
- Custom button engraving at No Charge

SPECIFICATIONS

Size: (not including ground strap) 2.74" H x 1.68" W x 1.63" D (6.96 cm x 4.27 cm x 4.14 cm)
 Weight: 2 oz
 Mounting: Single Gang Switch Box or Low Voltage Ring
 Color: White, Ivory, Lt. Almond, Gray
 nLight Network Ports: 2 RJ-45
 Power Consumption: < 5 mA
 Wires: None

ROHS compliant

Warranty

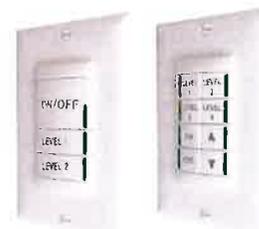
Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



nLight

nPODM 4L DX
 nPODM 2L
 nPDOM 2L AB



ORDERING INFORMATION

nPODM		Example: nPODM 2L WH	
Series	Preset Type	Color	Temp/ Humidity
nPODM	2L Two levels 2L AB High/low step control 4L DX Four levels with raise/lower	WH White IV Ivory AL Light almond	[blank] Normal LT Low temp

→ XX- PLEASE ADVISE COLOR

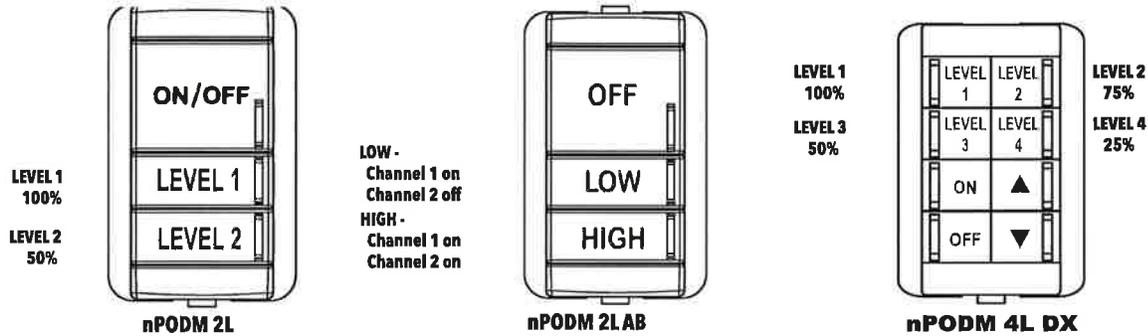
CUSTOM BUTTON ENGRAVING

- Standard button labeling is shown on back.
- Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: http://nlightcontrols.com/wp-content/uploads/nGrave_Order_Form.pdf.
- To ensure color uniformity, ordering templates facilitate specifying all buttons on a unit as custom lettered. Replacing single buttons not recommended.
- Buttons may ship separately and require field installation.

OVERVIEW

CONFIGURATION

Below is an outline of the factory configurations:



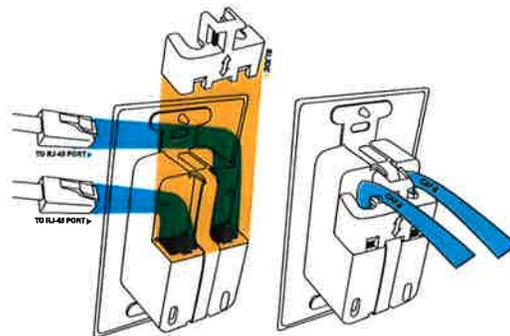
Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: <http://www.acuitybrands.com/products/-/media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>

PROGRAMMING

- nPODM 2L - All buttons come factory set (LEVEL 1 button is set to 100%, LEVEL 2 button is set to 50%)
- nPODM 4L DX - All buttons come factory set (LEVEL1 button is set to 100%, LEVEL 2 button is set to 75%, LEVEL 3 button is set to 50% and LEVEL 4 button is set to 25%).
- The preset dim level of a button can be changed by first adjusting the light level with either the unit's raise/lower buttons (nPODM 4L DX) or via another raise/lower WallPod broadcasting on the same switch channel (necessary with a nPODM 2L). Once lights are at desired level, hold a LEVEL button for 8 seconds until the LED flashes. Levels can also be set via SensorView.
- Refer to instruction card IN-11.3 for directions on programming the wallpods switch channel via the LEVEL buttons.
- All nPODM 2L and nPODM 4L DX units are factory set to switch channel 1. nPODM 2LAB units are factory set to switch channels 1 & 2.

INSTALLATION & WIRING

- Mount WallPod using holes that align with standard single gang switch box or low voltage ring
- Access RJ-45 ports by sliding plastic guard up
- Remove rubber plug(s) and insert CAT-5e cable(s), T568B wiring convention recommended
- Slide guard back onto metal strap
- Interconnect unit with other nLight devices in lighting zone using CAT-5e cables
- Once power is received via CAT-5e connection, all devices in zone will begin functioning together according to respective device's defaults



Attention! Only use non-booted CAT5e cables.

nPODM xL (TN-509-03)

Submitted by:  VISIBLELIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPODM 4P DX	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nPODM** Series WallPods are nLight-enabled toggle and/or raise/lower switches that provide a user with local control of a lighting zone. These single gang decorator style devices have soft-click buttons and have a green LED indicator for each button. WallPods communicate with other nLight devices via a CAT-5e cable that connects to one of its two RJ-45 connectors. A basic low voltage WallPod can work with an nLight power pack or nLight enabled fixture to provide toggle switch operation. WallPods with the DX option have the added ability to adjust the level of any nLight controlled dimmable lighting.

FEATURES

- Communicates with nLight network
- Remotely configurable/upgradeable
- Soft-click push-button control
- Custom button engraving at no charge (WH, IV, AL GY units only)
- 1, 2, or 4 channel on/off
- 1, 2, or 4 channel raise/lower

SPECIFICATIONS

Size: (not including ground strap) 2.74" H x 1.68" W x 1.63" D
(6.96 cm x 4.27 cm x 4.14 cm)
 Weight: 2 oz
 Mounting: Single Gang Switch Box or Low Voltage Ring
 Color: White, Ivory, Lt. Almond, Gray, Black
 nLight Network Ports: 2 RJ-45
 Power Consumption: < 5 mA
 Wires: None
 RoHS Compliant, Title 24 System Component

Warranty

Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



ORDERING INFORMATION

nPODM		Example: nPODM 2P WH		
NPODM	4P	DX		
Series	Preset Type	Control Type	Color	Temp/ Humidity
nPODM	[blank] Single channel 2P Two channels 4P Four channels	[blank] On/off control DX On/off + raise/lower control	WH White IV Ivory AL Light almond GY Gray BK Black	[blank] Normal LT Low temp

CUSTOM BUTTON ENGRAVING

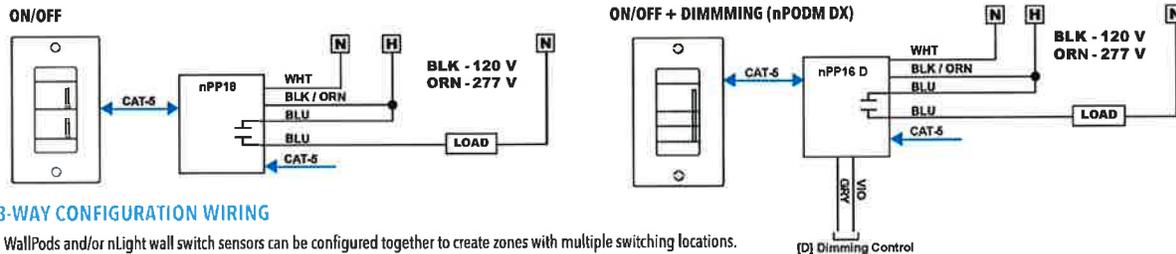
→ XX- PLEASE ADVISE COLOR

- Standard button labeling is shown on back.
- Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: <http://www.acuitybrands.com/products/-media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>
- To ensure color uniformity, ordering templates facilitate specifying all buttons on a unit as custom lettered. Replacing single buttons not recommended.
- Buttons may ship separately and require field installation.

WIRING

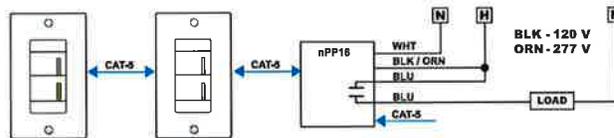
TYPICAL WIRING

Power to WallPod device is provided via the CAT-5e connection to an nLight enabled fixture, nLight power pack (e.g. **nPP16**), power supply (**nPS00**), or Bridge (**nBRG 0**).

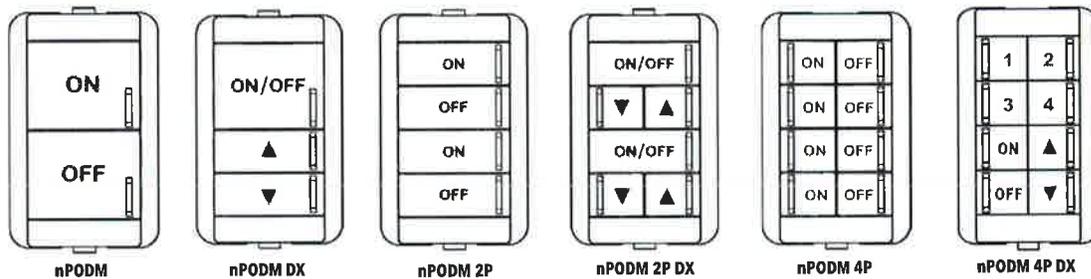


3-WAY CONFIGURATION WIRING

WallPods and/or nLight wall switch sensors can be configured together to create zones with multiple switching locations.



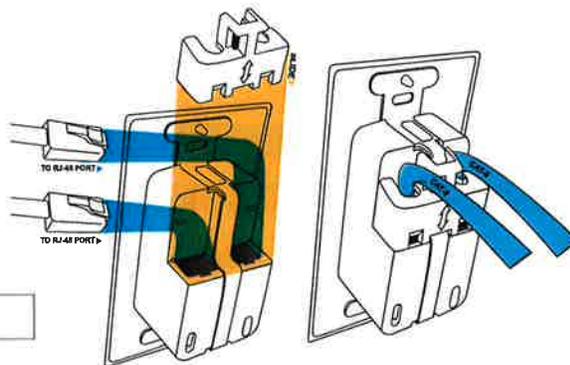
DEFAULT LABELING



Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at:
<http://www.acuitybrands.com/products/-/media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>

INSTALLATION

- Mount WallPod using holes that align with standard single gang switch box or low voltage ring
- Access RJ-45 ports by sliding plastic guard up
- Insert CAT-5e cable(s), T568B wiring convention recommended
- Slide guard back onto metal strap
- Interconnect unit with other nLight devices in lighting zone using CAT-5e cables
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to respective device's defaults



Attention! Only use non-booted CAT5e cables.

PROGRAMMING

Refer to instruction card IN-11.3 for directions on programming the sensor via the upper-most left push-button. All buttons are factory set to the matching switch channel (button 1 - channel 1, button 2 - channel 2, etc). For nPODM 4P DX, channels to be controlled are selected first, then the control button (on/off or raise/lower).

nPODM - TN-506-01

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPODM	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nPODM** Series WallPods are nLight-enabled toggle and/or raise/lower switches that provide a user with local control of a lighting zone. These single gang decorator style devices have soft-click buttons and have a green LED indicator for each button. WallPods communicate with other nLight devices via a CAT-5e cable that connects to one of its two RJ-45 connectors. A basic low voltage WallPod can work with an nLight power pack or nLight enabled fixture to provide toggle switch operation. WallPods with the DX option have the added ability to adjust the level of any nLight controlled dimmable lighting.

FEATURES

- Communicates with nLight network
- Remotely configurable/upgradeable
- Soft-click push-button control
- Custom button engraving at no charge (WH, IV, AL GY units only)
- 1, 2, or 4 channel on/off
- 1, 2, or 4 channel raise/lower

SPECIFICATIONS

Size: (not including ground strap) 2.74" H x 1.68" W x 1.63" D
(6.96 cm x 4.27 cm x 4.14 cm)
 Weight: 2 oz
 Mounting: Single Gang Switch Box or Low Voltage Ring
 Color: White, Ivory, Lt. Almond, Gray, Black
 nLight Network Ports: 2 RJ-45
 Power Consumption: < 5 mA
 Wires: None
 RoHS Compliant, Title 24 System Component

Warranty

Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



nPODM

Wallpod: On/Off & On/Off+Raise/Lower



ORDERING INFORMATION

nPODM		Example: nPODM 2P WH		
Series	Preset Type	Control Type	Color	Temp/ Humidity
nPODM	[blank] Single channel 2P Two channels 4P Four channels	[blank] On/off control DX On/off + raise/lower control	WH White IV Ivory AL Light almond GY Gray BK Black	[blank] Normal LT Low temp

CUSTOM BUTTON ENGRAVING

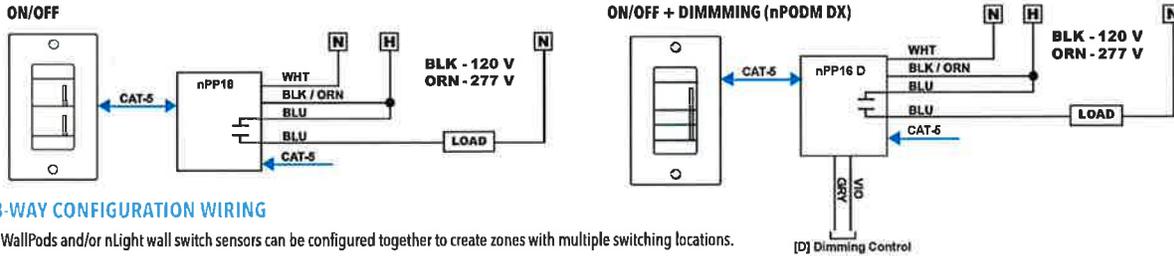
→ XX- PLEASE ADVISE COLOR

- Standard button labeling is shown on back.
- Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: <http://www.acuitybrands.com/products/media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>
- To ensure color uniformity, ordering templates facilitate specifying all buttons on a unit as custom lettered. Replacing single buttons not recommended.
- Buttons may ship separately and require field installation.

WIRING

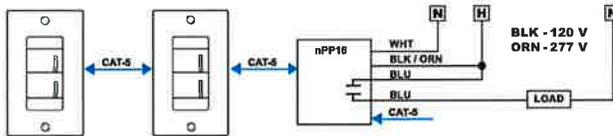
TYPICAL WIRING

Power to WallPod device is provided via the CAT-5e connection to an nLight enabled fixture, nLight power pack (e.g. nPP16), power supply (nPS80), or Bridge (nBRG 8).

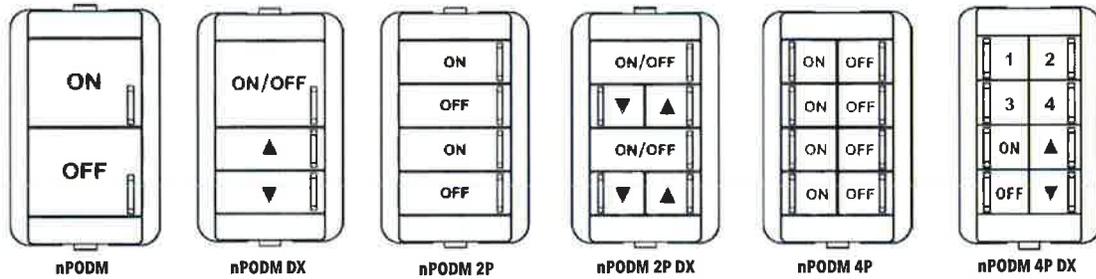


3-WAY CONFIGURATION WIRING

WallPods and/or nLight wall switch sensors can be configured together to create zones with multiple switching locations.



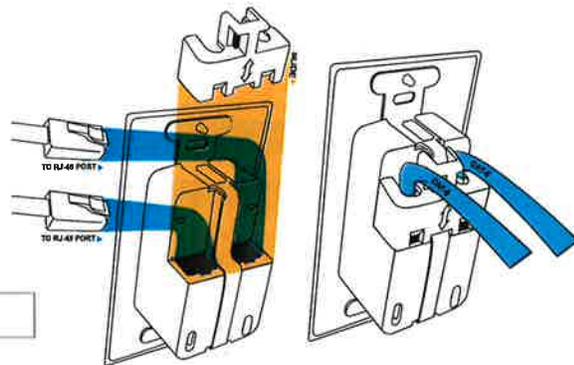
DEFAULT LABELING



Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: <http://www.acuitybrands.com/products/-/media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>

INSTALLATION

- Mount WallPod using holes that align with standard single gang switch box or low voltage ring
- Access RJ-45 ports by sliding plastic guard up
- Insert CAT-5e cable(s), T568B wiring convention recommended
- Slide guard back onto metal strap
- Interconnect unit with other nLight devices in lighting zone using CAT-5e cables
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to respective device's defaults



Attention! Only use non-booted CAT5e cables.

PROGRAMMING

Refer to instruction card IN-11.3 for directions on programming the sensor via the upper-most left push-button. All buttons are factory set to the matching switch channel (button 1 - channel 1, button 2 - channel 2, etc). For nPODM 4P DX, channels to be controlled are selected first, then the control button (on/off or raise/lower).

nPODM - TN-506-01

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPODM DX	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nPODM Series WallPods are nLight-enabled toggle and/or raise/lower switches that provide a user with local control of a lighting zone. These single gang decorator style devices have soft-click buttons and have a green LED indicator for each button. WallPods communicate with other nLight devices via a CAT-5e cable that connects to one of its two RJ-45 connectors. A basic low voltage WallPod can work with an nLight power pack or nLight enabled fixture to provide toggle switch operation. WallPods with the DX option have the added ability to adjust the level of any nLight controlled dimmable lighting.

FEATURES

- Communicates with nLight network
- Remotely configurable/upgradeable
- Soft-click push-button control
- Custom button engraving at no charge (WH, IV, AL GY units only)
- 1, 2, or 4 channel on/off
- 1, 2, or 4 channel raise/lower

SPECIFICATIONS

Size: (not including ground strap) 2.74" H x 1.68" W x 1.63" D
(6.96 cm x 4.27 cm x 4.14 cm)

Weight: 2 oz

Mounting: Single Gang Switch Box or Low Voltage Ring

Color: White, Ivory, Lt. Almond, Gray, Black

nLight Network Ports: 2 RJ-45

Power Consumption: < 5 mA

Wires: None

RoHS Compliant, Title 24 System Component

Warranty

Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.
Specifications subject to change without notice.



nPODM

Wallpod: On/Off & On/
Off+Raise/Lower



ORDERING INFORMATION

nPODM		Example: nPODM 2P WH		
Series	Preset Type	Control Type	Color	Temp/ Humidity
nPODM	[blank] Single channel 2P Two channels 4P Four channels	[blank] On/off control DX On/off + raise/lower control	WH White IV Ivory AL Light almond GY Gray BK Black	[blank] Normal LT Low temp

CUSTOM BUTTON ENGRAVING

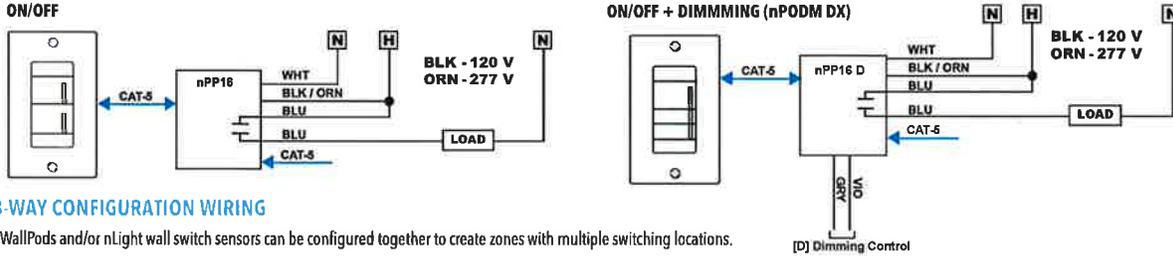
→ XX- PLEASE ADVISE COLOR

- Standard button labeling is shown on back.
- Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at: <http://www.acuitybrands.com/products/-media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>
- To ensure color uniformity, ordering templates facilitate specifying all buttons on a unit as custom lettered. Replacing single buttons not recommended.
- Buttons may ship separately and require field installation.

WIRING

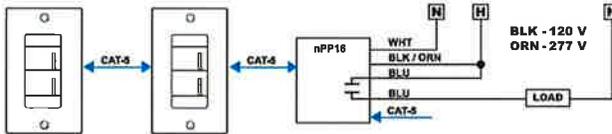
TYPICAL WIRING

Power to WallPod device is provided via the CAT-5e connection to an nLight enabled fixture, nLight power pack (e.g. nPP16), power supply (nPS80), or Bridge (nBRG 8).

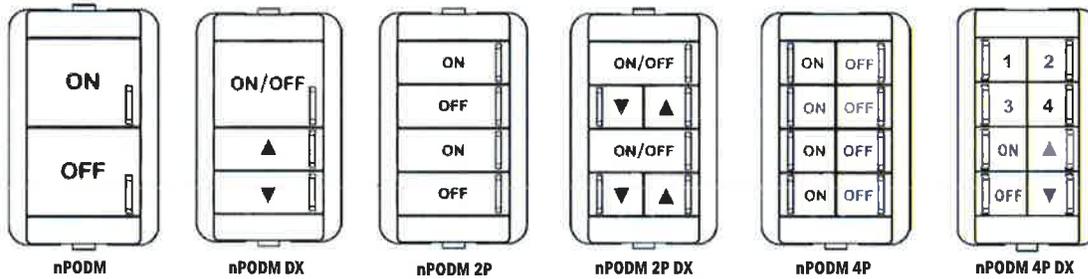


3-WAY CONFIGURATION WIRING

WallPods and/or nLight wall switch sensors can be configured together to create zones with multiple switching locations.



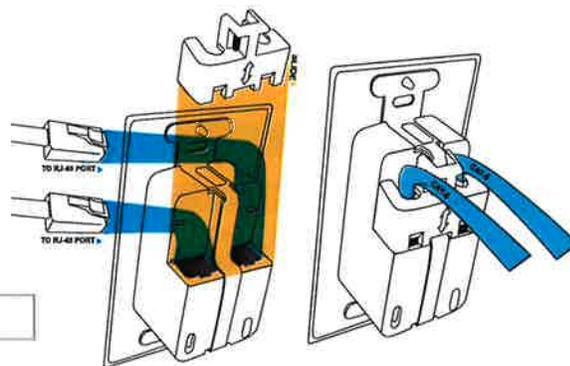
DEFAULT LABELING



Custom lettering for WH, IV, AL, and GY units can be specified and ordered at no charge at:
<http://www.acuitybrands.com/products/-/media/Files/Acuity/Brands/Controls/nLight/NGRAVE.PDF>

INSTALLATION

- Mount WallPod using holes that align with standard single gang switch box or low voltage ring
- Access RJ-45 ports by sliding plastic guard up
- Insert CAT-5e cable(s), T568B wiring convention recommended
- Slide guard back onto metal strap
- Interconnect unit with other nLight devices in lighting zone using CAT-5e cables
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to respective device's defaults



Attention! Only use non-booted CAT5e cables.

PROGRAMMING

Refer to instruction card IN-11.3 for directions on programming the sensor via the upper-most left push-button. All buttons are factory set to the matching switch channel (button 1 - channel 1, button 2 - channel 2, etc). For nPODM 4P DX, channels to be controlled are selected first, then the control button (on/off or raise/lower).

nPODM - TN-506-01

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPP16 D	Type:
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Catalog Numbers: _____

Date: _____

Project: _____

OVERVIEW

The nLight nPP16 family of power packs is the workhorse of an nLight system, delivering robust system performance and design versatility for commercial and industrial lighting control applications. The nPP16 family is capable of switching loads up to 16 Amps via an internal latching relay designed with robust protection from the harsh switching requirements of T5 fluorescent and LED loads. These power packs also provide nLight system bus power - up to 40mA from each of its two RJ-45 ports - by transforming Class 1 line voltage (120/277 VAC or 347 VAC) to Class 2 low voltage (15 VDC). This power is typically utilized by other nLight devices within the power pack's local control zone; however, remaining power is also made available over the network for Bridges and devices in other zones to utilize.

FEATURES

- Communicates w/ nLight Network
- Self-Contained Relay Switches Line Voltage Load
- Supplies 40mA of Bus Power / RJ-45 port
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Configurable Relay Logic
- Extended Chase Nipple

SPECIFICATIONS

Size: (not including 1/2" chase nipple) 3.38" H x 2.53" W x 1.83" D
(8.59 cm x 6.43 cm x 4.65 cm)

Weight: 6 oz

Mounting: 1/2" Knockout

Color: White (standard), Red (**ER**)

nLight Network Ports: 2 RJ-45

Operating Voltage: 120/240/277VAC, 347VAC (with 347 option)

Max Load: 16A @ 120VAC/277VAC, 347VAC

Motor Load: 1 HP

Relay type: Latching

Frequency: 50/60Hz

Bus Output Current/Voltage: 15 VDC, 40 mA / port (non-ER units only), 40 mA total at 240VAC

Max Dimming Load: Sinks 100mA; 0-10VDC dimmable ballasts or LED drivers

*If power pack is enclosed within a junction box, max ambient temperature is 45° C

RoHS Compliant, Title 24 System Component, Class 1 Listed



nLight

nPP16
Power/ Relay Pack



Model #: nPP16 (D)



Model #: nPP16 (D) ER

Warranty

Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

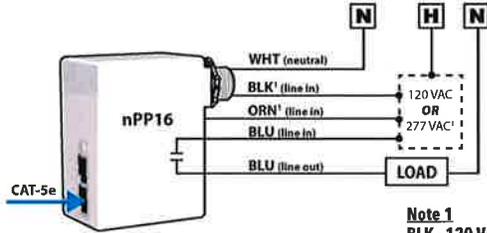
ORDERING INFORMATION

nPP16		Example: nPP16 D ER LT			
NPP16	D				
Series	Dimming	Emergency	Default Mode	Voltage	Temp/humidity
nPP16 Power/Relay Pack	[blank] None D 0-10VDC Dimming output (via chase nipple) DS 0-10VDC Dimming output (via side slot)	[blank] None ER UL924 Emergency Operation	[blank] Auto On (Switch Ch. 1) SW2 Auto On (Switch Ch. 2) SA Manual On (Switch Ch. 1) SA2 Manual On (Switch Ch. 2) PA Auto On to 50% (Partial On)*	[blank] 120/277VAC 347 347VAC	[blank] Standard LT Low temp
Notes: 1. Requires D or DS option 2. Not available with D or DS option					

WIRING (DO NOT WIRE HOT)

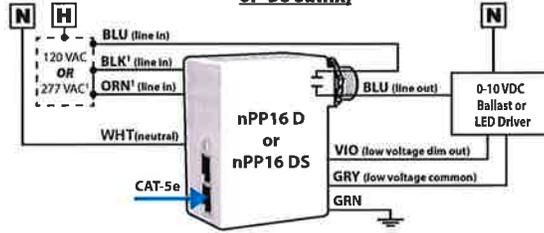
T568B pin/pair assignment is recommended for all CAT-5e cables. For Supply Connections, use 14 AWG/90°C, 12 AWG/75°C or larger.

Diagram for non-dimming units



Note 1
 BLK - 120 VAC
 ORN - 277 VAC (or 347 VAC if unit has 347 option)

Diagram for units with a dimming option (-D or -DS suffix)



WIRING FOR EMERGENCY (-ER) UNITS

T568B pin/pair assignment is recommended for all CAT-5e cables. Unit powers itself but does not provide any bus power to other connected nLight devices. For Supply Connections, use 14 AWG/90°C, 12 AWG/75°C or larger.

Diagram for non-dimming units

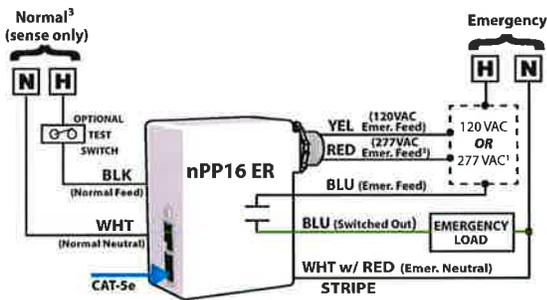
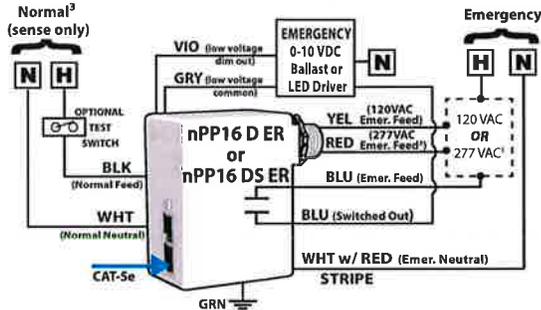


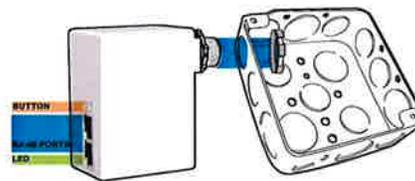
Diagram for units with a dimming option (-D or -DS suffix)



Notes
 1) Connect to 120VAC or 277VAC feed ONLY. Cap off unused wire.
 2) For 347V product, Red wire is 347VAC Emer. Feed
 3) Normal Sense input: 120-277VAC. For 347V product: 120-347VAC

GENERAL INSTALLATION INSTRUCTIONS

- Mount through a 1/2" knockout in any junction box or luminaire. Secure with lock nut.
- Following above wiring diagram, connect wires to line voltage feed(s), neutral(s), and load.
- If applicable, connect low voltage violet and gray dimming wires to 0-10 VDC ballast/driver and green wire to an approved ground connection. **Note:** wires have 600V rated insulation.
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5e cables.



ADDITIONAL EMERGENCY (-ER) INSTRUCTIONS

PUSH-BUTTON TESTING: As long as the relay is in the open (lights off) position and normal power is present, you are able to simulate normal power being lost by pressing and releasing the unit's push-button one time. After a few seconds the relay will close for 4 seconds, then open back up and return to normal operation. A separate push-button test switch (not included) can also be wired in as shown in above diagrams.

INTERFACING WITH A FIRE ALARM PANEL: To interface unit to a fire alarm system such that the relay is overridden closed (lights on) upon activation of the fire alarm system, the fire alarm system must provide a normally closed relay which opens when the fire alarm system is activated. This relay must be put in series with the Black power sense line on the **nPP16 ER**. When the normally closed relay opens, the **nPP16 ER** will close its relay to provide egress lighting when the fire alarm system is activated.

nPP16 Family - TN-602-04

Submitted by: 	Job Name: SANFORD HIGH SCHOOL & TECHNICAL CENTER	Catalog Number: NPP16 D ER	Type:
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Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight nPP16 family of power packs is the workhorse of an nLight system, delivering robust system performance and design versatility for commercial and industrial lighting control applications. The nPP16 family is capable of switching loads up to 16 Amps via an internal latching relay designed with robust protection from the harsh switching requirements of T5 fluorescent and LED loads. These power packs also provide nLight system bus power - up to 40mA from each of its two RJ-45 ports - by transforming Class 1 line voltage (120/277 VAC or 347 VAC) to Class 2 low voltage (15 VDC). This power is typically utilized by other nLight devices within the power pack's local control zone; however, remaining power is also made available over the network for Bridges and devices in other zones to utilize.

FEATURES

- Communicates w/ nLight Network
- Self-Contained Relay Switches Line Voltage Load
- Supplies 40mA of Bus Power / RJ-45 port
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Configurable Relay Logic
- Extended Chase Nipple

SPECIFICATIONS

Size: (not including 1/2" chase nipple) 3.38" H x 2.53" W x 1.83" D
(8.59 cm x 6.43 cm x 4.65 cm)

Weight: 6 oz

Mounting: 1/2" Knockout

Color: White (standard), Red (**ER**)

nLight Network Ports: 2 RJ-45

Operating Voltage: 120/240/277VAC, 347VAC (with 347 option)

Max Load: 16A @ 120VAC/277VAC, 347VAC

Motor Load: 1 HP

Relay type: Latching

Frequency: 50/60Hz

Bus Output Current/Voltage: 15 VDC, 40 mA / port (non-ER units only), 40 mA total at 240VAC

Max Dimming Load: Sinks 100mA; 0-10VDC dimmable ballasts or LED drivers

*If power pack is enclosed within a junction box, max ambient temperature is 45° C

RoHS Compliant, Title 24 System Component, Class 1 Listed



nLight

nPP16
Power/ Relay Pack



Model #: nPP16 (D)



Model #: nPP16 (D) ER

Warranty

Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

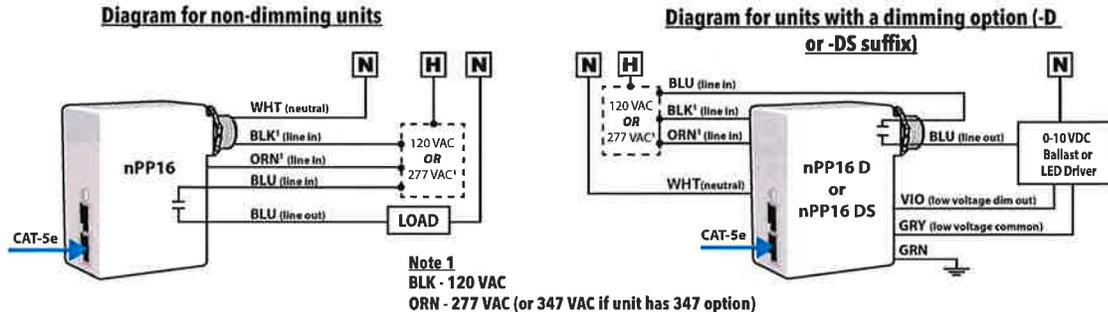
Specifications subject to change without notice.

ORDERING INFORMATION

nPP16		Example: nPP16 D ER LT			
NPP16	D	ER			
Series	Dimming	Emergency	Default Mode		Voltage
nPP16 Power/Relay Pack	[blank] None D 0-10VDC Dimming output (via chase nipple) DS 0-10VDC Dimming output (via side slot)	[blank] None ER UL924 Emergency Operation	[blank] Auto On (Switch Ch. 1) SW2 Auto On (Switch Ch. 2) SA Manual On (Switch Ch. 1) SA2 Manual On (Switch Ch. 2) PA Auto On to 50% (Partial On) ¹	[blank] 120/277VAC 347 347VAC	[blank] Standard LT Low temp
Notes: 1. Requires D or DS option 2. Not available with D or DS option					

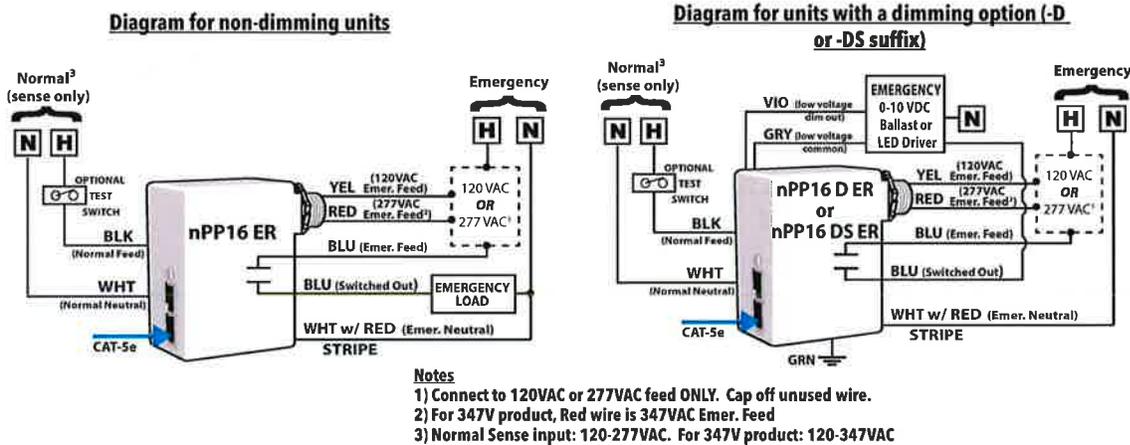
WIRING (DO NOT WIRE HOT)

T568B pin/pair assignment is recommended for all CAT-5e cables. For Supply Connections, use 14 AWG/90°C, 12 AWG/75°C or larger.



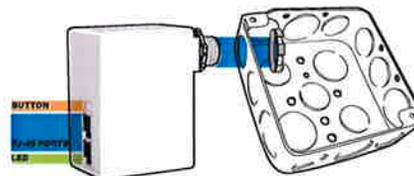
WIRING FOR EMERGENCY (-ER) UNITS

T568B pin/pair assignment is recommended for all CAT-5e cables. Unit powers itself but does not provide any bus power to other connected nLight devices. For Supply Connections, use 14 AWG/90°C, 12 AWG/75°C or larger.



GENERAL INSTALLATION INSTRUCTIONS

- Mount through a 1/2" knockout in any junction box or luminaire. Secure with lock nut.
- Following above wiring diagram, connect wires to line voltage feed(s), neutral(s), and load.
- If applicable, connect low voltage violet and gray dimming wires to 0-10 VDC ballast/driver and green wire to an approved ground connection. **Note:** wires have 600V rated insulation.
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5e cables.



ADDITIONAL EMERGENCY (-ER) INSTRUCTIONS

PUSH-BUTTON TESTING: As long as the relay is in the open (lights off) position and normal power is present, you are able to simulate normal power being lost by pressing and releasing the unit's push-button one time. After a few seconds the relay will close for 4 seconds, then open back up and return to normal operation. A separate push-button test switch (not included) can also be wired in as shown in above diagrams.

INTERFACING WITH A FIRE ALARM PANEL: To interface unit to a fire alarm system such that the relay is overridden closed (lights on) upon activation of the fire alarm system, the fire alarm system must provide a normally closed relay which opens when the fire alarm system is activated. This relay must be put in series with the Black power sense line on the **nPP16 ER**. When the normally closed relay opens, the **nPP16 ER** will close its relay to provide egress lighting when the fire alarm system is activated.

nPP16 Family - TN-602-04

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NPS80 EZ	

Catalog Number:

Date:

Project:

OVERVIEW

The nLight **nPS 80 EZ** dimming pack controls LED luminaires with 0-10V LED drivers from eldoLED. This smart device results in the luminaire being "nLight enabled" - making it both addressable as well as capable of digitally communicating with other nLight enabled controls such as occupancy sensors, photocells, and WallPods. This allows for advanced operation and design flexibility ranging from stand-alone rooms to building and campus-wide networks.

The **nPS 80 EZ** device also provides energy saving lumen management. With lumen management the device actively manages the luminaires LED light output such that constant lumen output is maintained over system life, thus preventing the energy waste created by the traditional practice of over-lighting.

An **nPS 80 EZ** is compatible with all eldoLED 0-10V drivers, however a **nIO EZ PH** device is also an option for controlling eldoLED ECOdrive (1%) family drivers with an auxiliary power output.

FEATURES

- Optimized for eldoLED drivers
- Supplies nLight bus power
- Remotely configurable/upgradeable
- Push-button programmable
- Plenum rated

SPECIFICATIONS

Size:	(not including 1/2" chase nipple): 3.38" H x 2.53" W x 1.83" D (8.59 cm x 6.43 cm x 4.65 cm)
Weight:	6 oz
Mounting:	1/2" knockout, (7/8" hole) on box or fixture
Color:	White (standard) Red (ER)
Network connection:	(2) RJ45 ports
Bus Power Contribution:	~ 40 mA / port (non-ER units only)
Max Dimming Load:	0-10 VDC dimmable eldoLED drivers
Wires (all wires 600V rated):	Standard: 20 AWG (2), 18 AWG (4) ER Version: 20 AWG (2), 18 AWG (6)
RoHS Compliant, Title 24 System Component	

 **AcuityControls**

nLight

nPS 80 EZ
Dimming Power Pack



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

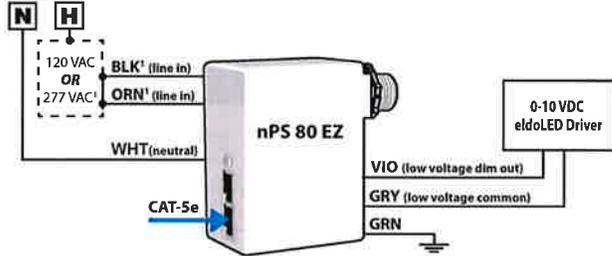
nPS 80 EZ		Example: nPS 80 EZ ER LT				
Series	Emergency	Voltage	Lumen Compensation		Temp/Humidity	
nPS 80 EZ	[blank] Standard ER Emergency	[blank] 120/277VAC 347 120/347VAC	[blank] Lumen comp. (disabled by default) N80 Lumen comp. (enabled by default)		[blank] Standard LT Low temp	

Submitted by:	Job Name:	Catalog Number:	Type:
			

WIRING (DO NOT WIRE HOT)

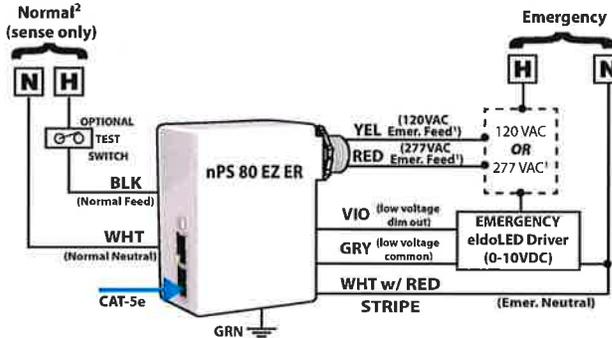
T568B pin/pair assignment is recommended for all CAT-5e cables. For Supply Connections, use 14 AWG or larger wires rated for at least 75° C.

Diagram for standard units



Notes
 1) BLK - 120 VAC, ORN - 277 VAC (or 347 VAC if unit has 347 option)

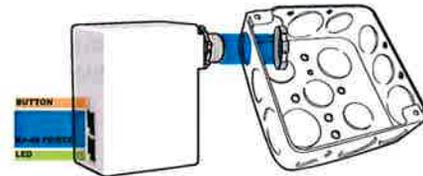
Diagram for emergency units



Notes
 1) YEL - 120 VAC; RED - 277 VAC (or optional 347 VAC)
 2) Normal Power connection can sense 120-347VAC

INSTALLATION INSTRUCTIONS

- Mount through a 1/2" knockout in any junction box or luminaire. Secure with lock nut.
- Following above wiring diagram, connect wires to line voltage feed(s), neutral(s), and load.
- Connect low voltage violet and gray dimming wires to 0-10 VDC driver leads and green wire to an approved ground connection. Note wires have 600V rated insulation.
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5e cables.



ADDITIONAL EMERGENCY (-ER) INSTRUCTIONS

OPERATION: A nPS 80 EZ Family device does not switch power. To turn a luminaire off the device dims the 0-10VDC line down below 0.3mV in order activate the "sleep" mode of the eldoLED driver. To control fixtures powered from emergency, the nPS 80 EZ ER emergency unit must be used and provided with a normal power feed in order to monitor when normal power has been lost. When the unit senses loss of normal power, it will automatically return the luminaire to full bright, regardless of current state or sensor status. Operation complies with UL924 guidelines, however since the nPS 80 EZ ER does not actually switch power to the fixture, a UL924 listing is not required for the device.

PUSH-BUTTON TESTING: As long as the unit is in the lights off status and normal power is present, you are able to simulate normal power being lost by pressing and releasing the unit's push-button one time. After a few seconds the dimming level will go high for 4 secs, then return to lights off operation. A separate push-button test switch (not included) can also be wired in as shown in above diagrams.

INTERFACING WITH A FIRE ALARM PANEL: To interface unit to a fire alarm system such that the lights are overridden upon activation of the fire alarm system, the following setup must be used. The fire alarm system must provide a normally closed relay which opens when the fire alarm system is activated. This relay must be put in series with the Black power sense line on the nPS 80 EZ ER. When the normally closed relay opens, the nPS 80 EZ ER will raise lights to full bright to provide egress lighting when the fire alarm system is activated.

nPS 80 EZ - TN-633

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT <small>MANUFACTURER'S REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NPS80 EZ ER	

Catalog Number:

Date:

Project:

OVERVIEW

The nLight **nPS 80 EZ** dimming pack controls LED luminaires with 0-10V LED drivers from eldoLED. This smart device results in the luminaire being "nLight enabled" - making it both addressable as well as capable of digitally communicating with other nLight enabled controls such as occupancy sensors, photocells, and WallPods. This allows for advanced operation and design flexibility ranging from stand-alone rooms to building and campus-wide networks.

The **nPS 80 EZ** device also provides energy saving lumen management. With lumen management the device actively manages the luminaires LED light output such that constant lumen output is maintained over system life, thus preventing the energy waste created by the traditional practice of over-lighting.

An **nPS 80 EZ** is compatible with all eldoLED 0-10V drivers, however a **nIO EZ PH** device is also an option for controlling eldoLED ECOdrive (1%) family drivers with an auxiliary power output.

FEATURES

- Optimized for eldoLED drivers
- Supplies nLight bus power
- Remotely configurable/upgradeable
- Push-button programmable
- Plenum rated

SPECIFICATIONS

Size:	(not including 1/2" chase nipple): 3.38" H x 2.53" W x 1.83" D (8.59 cm x 6.43 cm x 4.65 cm)
Weight:	6 oz
Mounting:	1/2" knockout, (7/8" hole) on box or fixture
Color:	White (standard) Red (ER)
Network connection:	(2) RJ45 ports
Bus Power Contribution:	~ 40 mA / port (non-ER units only)
Max Dimming Load:	0-10 VDC dimmable eldoLED drivers
Wires (all wires 600V rated):	Standard: 20 AWG (2), 18 AWG (4) ER Version: 20 AWG (2), 18 AWG (6)
RoHS Compliant, Title 24 System Component	

 **AcuityControls**

nLight

nPS 80 EZ
Dimming Power Pack



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



ORDERING INFORMATION

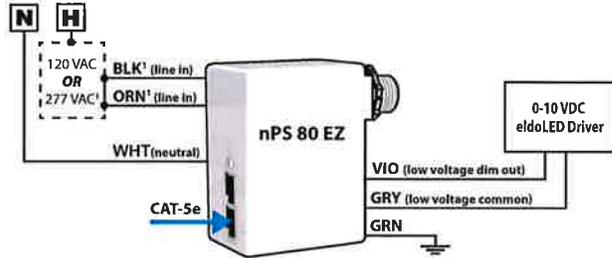
nPS 80 EZ		Example: nPS 80 EZ ER LT				
Series	Emergency	Voltage	Lumen Compensation	Temp/Humidity		
nPS 80 EZ	[blank] Standard ER Emergency	[blank] 120/277VAC 347 120/347VAC	[blank] Lumen comp. (disabled by default) N80 Lumen comp. (enabled by default)	[blank] Standard LT Low temp		

Submitted by:	Job Name:	Catalog Number:	Type:
			

WIRING (DO NOT WIRE HOT)

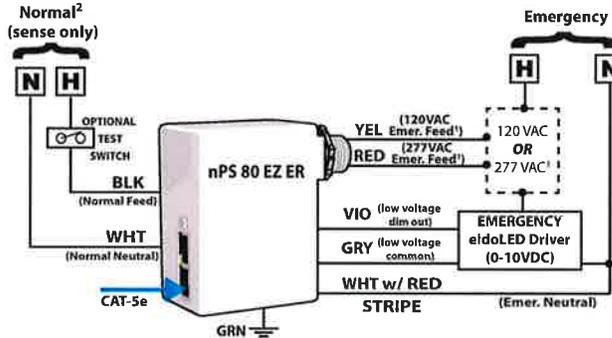
T568B pin/pair assignment is recommended for all CAT-5e cables. For Supply Connections, use 14 AWG or larger wires rated for at least 75° C.

Diagram for standard units



Notes
1) BLK - 120 VAC, ORN - 277 VAC (or 347 VAC if unit has 347 option)

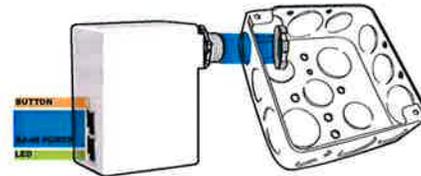
Diagram for emergency units



Notes
1) YEL - 120 VAC; RED - 277 VAC (or optional 347 VAC)
2) Normal Power connection can sense 120-347VAC

INSTALLATION INSTRUCTIONS

- Mount through a 1/2" knockout in any junction box or luminaire. Secure with lock nut.
- Following above wiring diagram, connect wires to line voltage feed(s), neutral(s), and load.
- Connect low voltage violet and gray dimming wires to 0-10VDC driver leads and green wire to an approved ground connection. Note wires have 600V rated insulation.
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5e cables.



ADDITIONAL EMERGENCY (-ER) INSTRUCTIONS

OPERATION: A nPS 80 EZ Family device does not switch power. To turn a luminaire off the device dims the 0-10VDC line down below 0.3mV in order activate the "sleep" mode of the eldoLED driver. To control fixtures powered from emergency, the nPS 80 EZ ER emergency unit must be used and provided with a normal power feed in order to monitor when normal power has been lost. When the unit senses loss of normal power, it will automatically return the luminaire to full bright, regardless of current state or sensor status. Operation complies with UL924 guidelines, however since the nPS 80 EZ ER does not actually switch power to the fixture, a UL924 listing is not required for the device.

PUSH-BUTTON TESTING: As long as the unit is in the lights off status and normal power is present, you are able to simulate normal power being lost by pressing and releasing the unit's push-button one time. After a few seconds the dimming level will go high for 4 secs, then return to lights off operation. A separate push-button test switch (not included) can also be wired in as shown in above diagrams.

INTERFACING WITH A FIRE ALARM PANEL: To interface unit to a fire alarm system such that the lights are overridden upon activation of the fire alarm system, the following setup must be used. The fire alarm system must provide a normally closed relay which opens when the fire alarm system is activated. This relay must be put in series with the Black power sense line on the nPS 80 EZ ER. When the normally closed relay opens, the nPS 80 EZ ER will raise lights to full bright to provide egress lighting when the fire alarm system is activated.

nPS 80 EZ - TN-633

Submitted by:	Job Name:	Catalog Number:	Type:
	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NSP5 PCD ELV 120	

Catalog Number:

Date:

Project:

OVERVIEW

The nLight **nSP5 PCD** Series Secondary Relay and Dimming Pack is capable of switching and dimming incandescent lighting loads, certain line voltage dimmable fluorescent lighting loads, magnetic low voltage (MLV) lighting loads, and electronic low voltage (ELV) lighting loads. Manual switching and adjustment of the dimming level is possible via WallPods or through the nLight SensorView software. The **nSP5 PCD**'s two RJ-45 connectors make control wiring with standard CAT-5 cabling quick and easy. For mounting, the **nSP5 PCD** has an elongated chase nipple that allows it to be attached either directly through a ½" knockout onto a junction box, or to an adjacent box for meeting specific local code requirements in ceiling plenums.

SWITCHING & DIMMING OPERATION

The **nSP5 PCD** performs phase cut dimming (either forward or reverse depending on model) of the line voltage being supplied to a 120 VAC incandescent (tungsten) load, a 120/277 VAC dimmable fluorescent (ballast) load, a 120/277 VAC magnetic low voltage (inductive) load, or a 120 VAC electronic low voltage (non-inductive) load. The **nSP5 PCD 2W** version dims the switched line voltage connection going to a 2-wire dimming ballast or incandescent lamp. The **nSP5 PCD MLV** version is designed to dim low voltage lighting powered by an inductive (magnetic) transformer. Similarly the **nSP5 PCD ELV** version is designed to reverse phase dim electronic low voltage loads. The **nSP5 PCD 3W** dims the dedicated dimming input to a 3-wire dimming ballasts. All versions have an internal latching relay that switches the loads (see electrical specifications). Note, that in order to function the **nSP5 PCD** must be connected as part of an adequately powered nLight zone as the unit does not power itself from the line voltage it is switching/dimming.

FEATURES

- Communicates w/ nLight network
- Remotely configurable/upgradable
- Push-button programmable
- Configurable relay logic
- Self-contained relay
- Forward phase and reverse phase options
- Extended chase nipple
- Plenum rated

Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.



nLight

nSP5 PCD



ORDERING INFORMATION



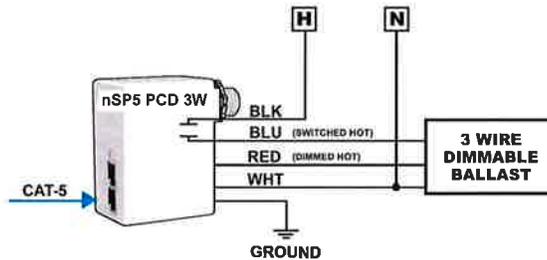
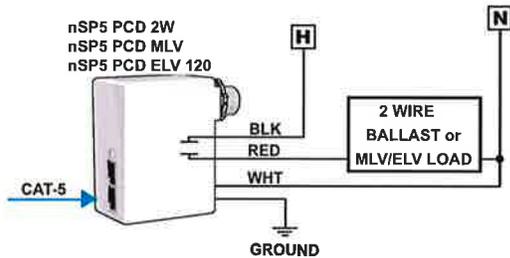
nSP5 PCD		Example: nSP5 PCD 2W LT	
NSP5 PCD	ELV 120		
Series	Dimming Type	Frequency	Temp/Humidity
nSP5 PCD	2W Two wire dimming	[blank] 60 Hz	[blank] Standard
	3W Three wire dimming	50HZ 50 Hz	LT Low temp
	MLV Magnetic low voltage		
	ELV 120 Electronic low voltage (120 VAC)		

WIRING (DO NOT WIRE HOT)

Device power is provided via the CAT-5e connection and not taken off the line. T568B pin/pair assignment is recommended for all CAT-5e cables. For dimming 120 VAC incandescent loads use the 2-wire diagram below. In multi-phase applications, use a separate neutral for each phase containing a dimmer circuit.

Additional notes on usage of nSP5 PCD ELV 120 module:

1. **Caution:** module should not be used to dim a load fed from a local step-down transformer.
2. **Caution:** to avoid overheating and possible damage to other equipment, do not use module to control receptacles, magnetic fluorescent lighting fixtures, motor-operated, or transformer-supplied appliances.
3. Use only to control the primary side of electronic transformer-supplied low-voltage lighting.
4. Some fixture manufacturers do not recommend dimming their solid-state transformers. To determine if a fixture may be dimmed, consult literature of the fixture manufacture.



OPERATIONAL SETTINGS

Several operational settings for the nSP5 PCD are available:

- Override (On/Off/Normal)
- Occupancy Tracking (Enable/Disable)
- Photocell Tracking (Enable/Disable)
- Switch Tracking (Enable/Disable)
- Local Occupancy Tracking Channel (1-16)
- Local Photocell Tracking Channel (1-16)
- Local Switch Tracking Channel (1-16)
- Global Tracking (Enable/Disable)
- Global Tracking Channel (1-128)
- Button Mode (Enable/Disable)
- Invert Relay Logic* (Enable/Disable)
- Idle Time Until Dim
- Dimming Range High (0 - 100%)
- Dimming Range Low (0 - 100%)
- Dimming Offset (-200% to +200%)
- LED (Override On/Override Off/Normal)
- Follow Photocell Mode (Enabled +, Enabled +/-, Disabled)
- WallPod Dimming Adjustments (Perm., Temp., Photocell Temp. Override)
- Special Modes:
 - Manual On to Auto Off (Semi-Auto), Auto to (Timed) Override On,
 - Manual to (Timed) Override On, Manual On to Full Auto, Predictive Off
- Frequency (60 Hz / 50 Hz)

SPECIFICATIONS

<p>Size: (not including 1/2" chase nipple) 3.38" H x 2.53" W x 1.83" D (8.59 cm x 6.43 cm x 6.22 cm)</p> <p>Weight: 6 oz</p> <p>Mounting: 1/2" knockout (open air only)</p> <p>Network Connection: 2 RJ-45 ports</p> <p>Bus Power Consumption: < 7 mA</p> <p>Switching/ Dimming Ratings: nSP5 PCD 2W 575 W @ 120 VAC, 1375 W @ 277 VAC, Tungsten / Ballast</p> <p>nSP5 PCD 3W 575 W @ 120 VAC, 1375 W @ 277 VAC, Ballast</p> <p>nSP5 PCD MLV 575 W @ 120 VAC, 1375 W @ 277 VAC (MLV Transformers only)</p> <p>nSP5 PCD ELV 120 475 W @ 120 VAC</p>	<p>Minimum Load: nSP5 PCD 2W/3W/MLV: 7W nSP5 PCD ELV 120: None</p> <p>Default Trim Levels: 2W/3W 56 to 110 VAC w/ 120 VAC feed 129 to 254 VAC w/ 277 VAC feed</p> <p>MLV/ ELV 24 to 117 VAC w/ 120 VAC feed 55 to 270 VAC w/ 277 VAC feed</p> <p>Wires: nSP5 PCD 2W/MLV/ELV 120: 18 AWG (4) nSP5 PCD 3W: 18 AWG (5)</p> <p>Title 24 System Component, ROHS Compliant</p>
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nSP5-PCD - TN-611

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT MANUFACTURERS' REPRESENTATIVE	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NWSX PDT LV	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The **nWSX LV / nWSX PDT LV** series nLight wall switch occupancy sensor provides a simple control solution for a small room, in particular one utilizing nLight enabled digital luminaires. Capable of detecting small motion up to 20 ft (6.10 m), this sensor is perfect for private offices, private rest rooms, copy rooms, closets or any small enclosed space. The **nWSX LV** uses Passive Infrared (PIR) detection while the **nWSX PDT LV** utilizes PIR/Microphonics Dual Technology (PDT). This stylish sensor can be programmed locally, via the front push-button(s), or remotely via the nLight SensorView software. The **nWSX LV/nWSX PDT LV** includes an integrated photocell (disabled by default).

FEATURES

- 100% digital PIR detection, vandal resistant lens standard, includes wall plate (screwless sold separate)
- Push-button programmable, adjustable time delays, multiple operating modes
- Multiple **nWSX** sensors or WallPods can be used in 3 way(or greater) configurations w/o traveler wires
- Photocell standard (disabled by default) - Not available in night light versions
- Broadcasts occupancy, photocell, and switch information over a local and/or global nLight channel
- Remotely firmware upgradeable

CONTROL MODES

A control zone with an **nWSX LV / nWSX PDT LV** can operate in several modes:

1. Auto On / Auto Off (i.e. Fully Automatic)
2. Manual On (initial state) to Override On (with expiration timer)
3. Auto On (initial state) to Override On (with expiration timer)
4. Manual On / Automatic Off (i.e. Semi-Automatic)
5. Manual On (initial state) to Fully Automatic
6. Predictive Off Switch (returns zone to auto-on unless person remained in room after an off switch press)

*See MLO operation chart on page 2.

SPECIFICATIONS

Size: 2.74" H x 1.68" W x 1.63" D
 Weight: 5 oz
 Mounting: Single gang switch box or low voltage ring
 Bus power consumption: < 3mA
 Wires: None
 RoHS Compliant, Title 24 component



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.



ORDERING INFORMATION

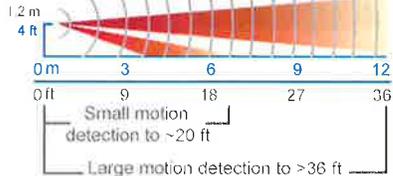
nWSX		Example: nWSX LV WH LT			
NWSX PDT LV					
Series	Night Light or Dimming	Color		Temp/Humidity	
nWSX LV	Passive Infrared	WH	White	[blank]	Standard
nWSX PDT LV	Dual Technology	NL	Integrated night light	IV	Ivory
		DX	Raise/Lower dim control	GY	Gray
				AL	Lt. Almond

→ XX- PLEASE ADVISE COLOR

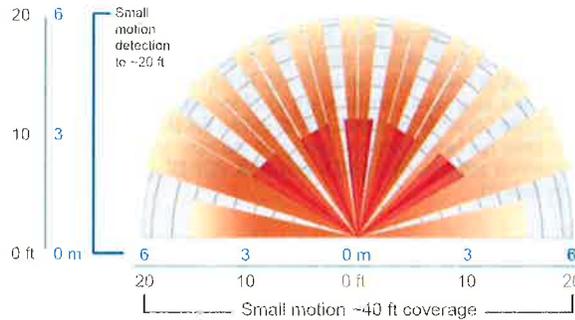
COVERAGE PATTERN

- Small Motion (e.g. hand movements) detection up to 20 ft (6.10 m)
- Large motion (e.g. walking) detection greater than 36 ft (10.97 m)
- Wall to Wall Coverage
- Passive Dual Technology (Microphonics) provides overlapping detection of human activity over the complete PIR coverage area. Advanced filtering is utilized to prevent non-occupant noises from keeping the lights on.

SIDE VIEW



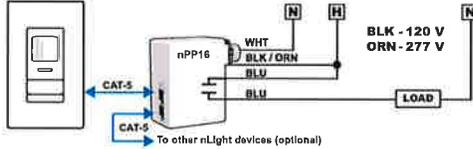
TOP VIEW



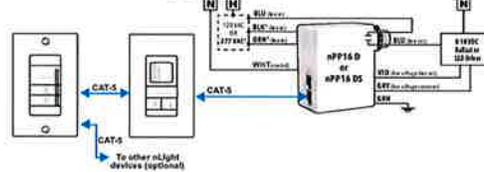
TYPICAL WIRING DIAGRAMS

Sensor power is provided via the CAT-5e connection to an nLight power pack/supply, nLight enabled digital luminaire, or nLight Bridge. T568B pin/pair assignments is recommended for CAT-5e cables.

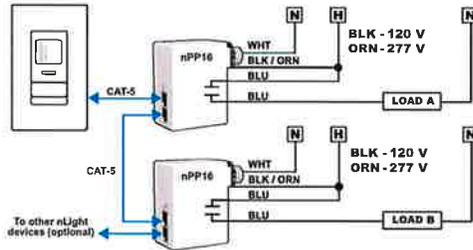
SINGLE LOAD SWITCHING



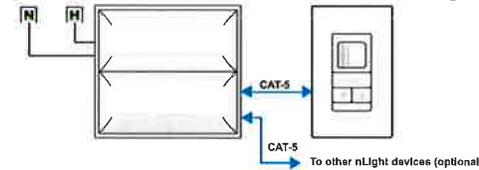
3-WAY SWITCHING AND DIMMING CONTROL



BI-LEVEL SWITCHING USING MULTI-LEVEL OPERATING MODE (MLO)



WIRING to nLIGHT ENABLED DIGITAL LUMINAIRE (e.g. RTLED)



NOTES:

- nLight enabled fixture must have **nIO LEDG/nIO EZ PH** for standalone operation
- Luminaires with **nIO LEDG ER/nIO EZ PH ER** require bus power from another device
- Provides on/off and continuous raise/lower dimming operation by default. For bi-level operation only program **nWSX LV / nWSX PDT LV** for Multi-Level Operating Mode (MLO)

MLO OPERATIONAL MODES

Additionally, an **nWSX LV / nWSX PDT LV** can be set to function in Multi-Level Operating Mode (MLO) which enables the user to select from multiple on/off lighting states using just the unit's single on/off button. This mode is designed specifically for bi-level applications and eliminates user confusion created when wall stations have multiple buttons. Several different transition sequences are available in order to comply with energy codes or user preference. Depending on the sequence selected and initial lighting state, every subsequent button push steps through states according to below table. MLO sequences are also available that enable high/low or low/high step operation via any nLight dimming output.

Button Press #	2 State (Bi-Level) Sequence		2 State - Alternating Sequence		3 State Sequence	
	Load A	Load B	Load A	Load B	Load A	Load B
1	On	Off	On	Off	On	Off
2	On	On	Off	On	Off	On
3	Off	Off	Off	Off	On	On
4					Off	Off

nWSX (PDT) LV - TN-408-01

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLE LIGHT <small>MANUFACTURER REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NWV PDT 16	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight **nWV 16** Series Wide View occupancy sensor is designed to mount in a corner and detect small motions up to 40 ft (12.19 m) away, and larger motions up to 70 ft (21.34 m) away. This makes it ideal for 30 ft x 30 ft (9.14 m x 9.14 m) classrooms or corridors up to 70 ft (21.34 m) long. The enclosure's convenient tilting feature enables the sensor to be mounted at any height from 8 to 10 ft (2.44 to 3.05 m). When corner or wall mounting is not possible, the **WV BR** bracket accessory can be used to mount the **nWV 16** to the ceiling. Additionally, the **nWV 16** may be used in combination with other nLight sensors to customize coverage for very large or irregularly shaped spaces. For rooms with obstructions, use the **nWV PDT 16** Series sensor which adds Microphonics™ detection.

FEATURES

- Patented Dual Technology with PIR / Microphonics™ Detection (PDT version)
- 120° by 40 ft (12.19 m) Coverage for Small Motion
- Integrated On/Off Photocell
- Communicates w/ nLight Network
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Adjustable Time Delay
- 100 hr Lamp Burn-in Timer

SPECIFICATIONS

Corner Mount Enclosure

- Size: 3.00" H x 3.60" W x 1.75" D (7.62 cm x 9.14 cm x 4.45 cm)
- Weight: 4 oz
- Mounting: Directly to Corner or to Ceiling using nWV BR bracket
- Color: White
- nLight Network Ports: 2 RJ-45

Ceiling Mount Bracket WV-BR (only included w/ kit)

- Size: 4.70" Dia. (11.94 cm) 3.30" Deep (8.38 cm)
- Weight: 3 oz.
- Mounting: Ceiling Tile Surface, Round Fixture Box, Single Gang Handy Box
- Color: White
- Power Consumption: < 3mA
- Wires: None

Title 24 System Component



nWV 16
nWV PDT 16
Corner Mount 120°
Wide View Sensor



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

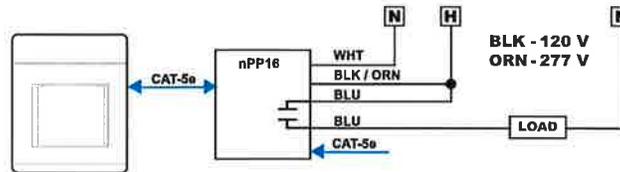
Specifications subject to change without notice.

ORDERING INFORMATION

nWV 16 / nWV PDT 16		Example: nWV PDT 16 KIT	
NWV PDT 16			
Series	Temp/ Humidity	Bracket Kit	
nWV 16 120° Wide View Sensor	[blank] Standard	[blank] Sensor Only	
nWV PDT 16 120° Wide View Sensor Dual-Technology	LT Low Temp	KIT Sensor & WV BR Bracket	

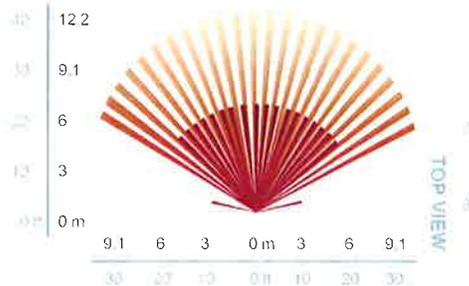
WIRING

Sensor power is provided via the CAT-5e connection.

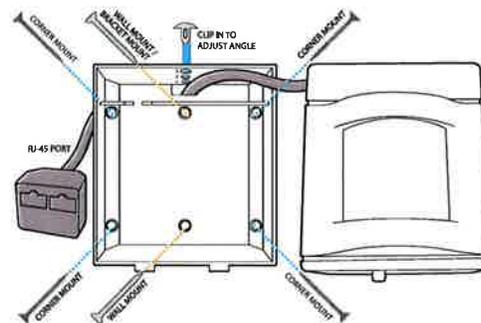


WIDE VIEW LENS

- Small motion (e.g. hand movements) detection up to 40 ft (12.2 m)
- Large motion (e.g. walking) detection up to 70 ft (21.34 m)
- Designed for 8 to 10 ft (2.44 to 3.05 m) high mounting in room corner



- Unit's rear enclosure piece is beveled so as to facilitate corner mounting. Mount between 8 to 10 ft (2.44 to 3.05 m) high using the four screws provided.
- Interconnect unit (via RJ-45 splitter) with other nLight devices in lighting zone using CAT-5e cables.
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults.
- Snap front piece into mounted rear piece and set sensor view angle using the plastic tilt adjustment peg (see table below right).
- The WV BR bracket (pictured right, only included in kit option) enables mounting to ceiling, if desired. Route CAT-5e cable through hole in bracket, then using provided screw, mount sensor to the bracket's flat side for 8 to 10 ft (2.44 to 3.05 m) heights. Mount sensor to angled side for mounting above 10 ft (3.05 m).



CEILING MOUNT BRACKET (WV BR)

The **WV BR** Ceiling Mount Bracket allows the **nWV 16** to be mounted in the corner of the area from the ceiling for conditions where mounting to the wall is not possible.

TILT ADJUSTMENT Mounting Height Position

7' - 8'	Vertical
8' - 9'	Center
9' - 10'	Forward
Above 10'	Use WV BR



nWV (PDT) 16 - TN-300

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT <small>MANUFACTURER'S REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NWV PDT 16 KIT	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight **nWV 16** Series Wide View occupancy sensor is designed to mount in a corner and detect small motions up to 40 ft (12.19 m) away, and larger motions up to 70 ft (21.34 m) away. This makes it ideal for 30 ft x 30 ft (9.14 m x 9.14 m) classrooms or corridors up to 70 ft (21.34 m) long. The enclosure's convenient tilting feature enables the sensor to be mounted at any height from 8 to 10 ft (2.44 to 3.05 m). When corner or wall mounting is not possible, the **nWV BR** bracket accessory can be used to mount the **nWV 16** to the ceiling. Additionally, the **nWV 16** may be used in combination with other nLight sensors to customize coverage for very large or irregularly shaped spaces. For rooms with obstructions, use the **nWV PDT 16** Series sensor which adds Microphonics™ detection.

FEATURES

- Patented Dual Technology with PIR / Microphonics™ Detection (PDT version)
- 120° by 40 ft (12.19 m) Coverage for Small Motion
- Integrated On/Off PhotoCell
- Communicates w/ nLight Network
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Adjustable Time Delay
- 100 hr Lamp Burn-in Timer

SPECIFICATIONS

Corner Mount Enclosure

- Size: 3.00" H x 3.60" W x 1.75" D (7.62 cm x 9.14 cm x 4.45 cm)
- Weight: 4 oz
- Mounting: Directly to Corner or to Ceiling using nWV BR bracket
- Color: White
- nLight Network Ports: 2 RJ-45

Ceiling Mount Bracket WV-BR (only included w/ kit)

- Size: 4.70" Dia. (11.94 cm) 3.30" Deep (8.38 cm)
- Weight: 3 oz.
- Mounting: Ceiling Tile Surface, Round Fixture Box, Single Gang Handy Box
- Color: White
- Power Consumption: < 3mA
- Wires: None

Title 24 System Component



nWV 16
nWV PDT 16
Corner Mount 120°
Wide View Sensor



Warranty

Five-year limited warranty. Complete warranty terms located at:

www.acuitybrands.com/CustomerResources/terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

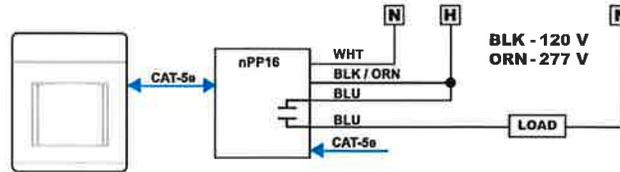
Specifications subject to change without notice.

ORDERING INFORMATION

nWV 16 / nWV PDT 16		Example: nWV PDT 16 KIT	
NWV PDT 16		KIT	
Series	Temp/ Humidity	Bracket Kit	
nWV 16 120° Wide View Sensor	[blank] Standard	[blank] Sensor Only	
nWV PDT 16 120° Wide View Sensor Dual-Technology	LT Low Temp	KIT Sensor & WV BR Bracket	

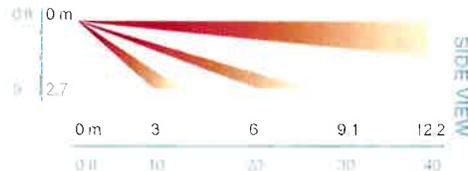
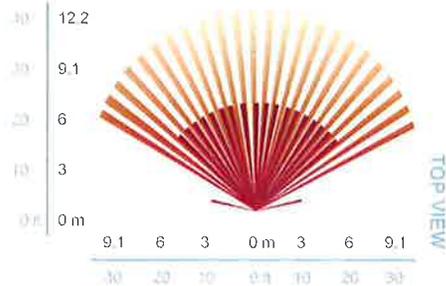
WIRING

Sensor power is provided via the CAT-5e connection.

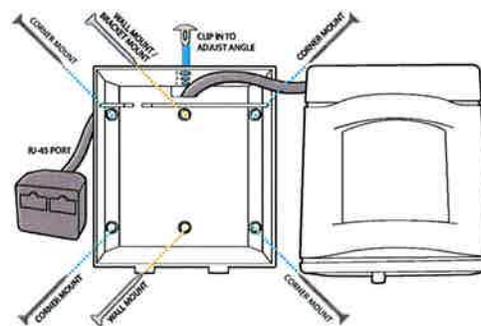


WIDE VIEW LENS

- Small motion (e.g. hand movements) detection up to 40 ft (12.2 m)
- Large motion (e.g. walking) detection up to 70 ft (21.34 m)
- Designed for 8 to 10 ft (2.44 to 3.05 m) high mounting in room corner



- Unit's rear enclosure piece is beveled so as to facilitate corner mounting. Mount between 8 to 10 ft (2.44 to 3.05 m) high using the four screws provided.
- Interconnect unit (via RJ-45 splitter) with other nLight devices in lighting zone using CAT-5e cables.
- Once power is received via CAT-5e connection, all devices in zone will automatically begin functioning together according to each device's defaults.
- Snap front piece into mounted rear piece and set sensor view angle using the plastic tilt adjustment peg (see table below right).
- The WV BR bracket (pictured right, only included in kit option) enables mounting to ceiling, if desired. Route CAT-5e cable through hole in bracket, then using provided screw, mount sensor to the bracket's flat side for 8 to 10 ft (2.44 to 3.05 m) heights. Mount sensor to angled side for mounting above 10 ft (3.05 m).



CEILING MOUNT BRACKET (WV BR)

The **WV BR** Ceiling Mount Bracket allows the **nWV 16** to be mounted in the corner of the area from the ceiling for conditions where mounting to the wall is not possible.

TILT ADJUSTMENT Mounting Height Position

7' - 8'	Vertical
8' - 9'	Center
9' - 10'	Forward
Above 10'	Use WV BR



nWV (PDT) 16 - TN-300

Submitted by:	Job Name:	Catalog Number:	Type:
 VISIBLELIGHT <small>MANUFACTURERS' REPRESENTATIVE</small>	SANFORD HIGH SCHOOL & TECHNICAL CENTER	NAR40	

Catalog Number: _____ Date: _____ Project: _____

OVERVIEW

The nLight nAR40 Series auxiliary relay pack is a device that enables convenient switching of low voltages primarily for interfacing with non-nLight devices or control systems. Its two RJ-45 connectors make control wiring with standard CAT-5 cabling easy and clean. For simplifying installation, an auxiliary relay pack has an elongated chase nipple that allows it to be attached directly through a 1/2" knockout into a junction box.

FEATURES

- Communicates w/ nLight Network
- Remotely Configurable/Upgradeable
- Push-Button Programmable
- Reversible Relay Logic
- Plenum Rated
- Green LED Indicator

SPECIFICATIONS

Size: (not including 1/2" chase nipple) 3.38" H x 2.53" W x 1.83" D
(8.59 cm x 6.43 cm x 4.65 cm)
 Weight: 6 oz
 Mounting: 1/2" knockout
 Color: White
 Network Connection: (2) RJ45 ports
 Power Consumption: <2 mA
 Switching Load: 1A @ 40 VAC/VDC
 Wires: 20 AWG (2)
 Title 24 System Component



nAR 40
Auxiliary Relay



Warranty

Five-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

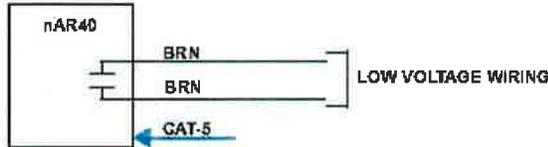


ORDERING INFORMATION

nAR40		Example: nAR40
NAR40		
Series	Temp/Humidity	
nAR40	[blank] Standard	
	LT Low temp	

WIRING (DO NOT WIRE HOT)

Sensor power is provided via the CAT-5 connection. CAT-5 cables can be wired using either T568A or T568B pin/pair assignments.



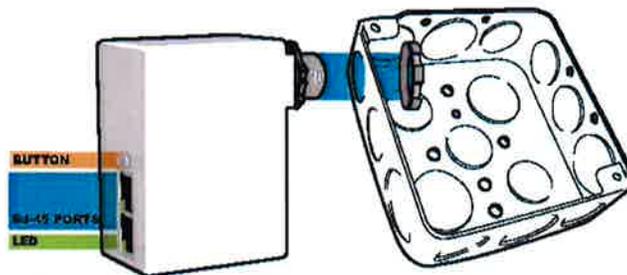
OPERATIONAL SETTINGS

Several operational settings for the **nAR40** are available:

- | | |
|-------------------------------------|--|
| Override (On/Off/Normal) | Switch Tracking Channel (1-16) |
| Occupancy Tracking (Enable/Disable) | Button Mode (Enable/Disable) |
| Photocell Tracking (Enable/Disable) | Start to High (Enable/Disable) |
| Switch Tracking (Enable/Disable) | Invert Relay Logic (Enable/Disable) |
| Occupancy Tracking Channel (1-16) | LED (Override On/Override Off/Normal) |
| Photocell Tracking Channel (1-16) | Special Modes:
Manual On to Auto Off (Semi-Auto), Auto to (Timed) Override On,
Manual to (Timed) Override On, Manual On to Full Auto, Predictive Off |

INSTALLATION

- Mount to any junction box through a ½" knockout (note: chase nipple is long enough to accommodate mounting inside an adjacent box if necessary for local code requirements)
- Interconnect unit (via RJ-45 ports) with other nLight devices in lighting zone using CAT-5 cables
- Once power is received via CAT-5 connection, all devices in zone will automatically begin functioning together according to each device's defaults



nAR40 - TN-605-01