PORTLAND STATE UNIVERSITY

Blumel Hall Remodel RFP for General Contractor (GC) Services

ADDENDUM #3

June 4, 2012

This Addendum is issued to provide answers to questions from potential proposers and to inform you of the following revisions to the above-referenced RFP and the Contact Documents for the Project. Where this Addendum is inconsistent with the RFP or any previous addenda, this Addendum shall control. Proposals shall conform to this Addendum. Unless specifically changed by this Addendum, all other requirements, terms and conditions of the RFP, and any previous addenda, remain unchanged and can be modified only in writing by PSU.

A. CHANGES TO RFP:

1. Correct Bids Due time in Section 1.03 of the RFP to 3:00 pm on June 14, 2012.
2. Amend Section 1.05 to include a third non-mandatory bid-walk on Thursday, June 7, 2012 at 9:00 to meet at Facilities and Planning, 617 SW Montgomery Street, 2nd floor, Portland, Oregon 97201.
3. Remove Section 2.01 and replace with:
   Eight copies of the proposal and single original of the bid form and bid bond should be submitted, containing the following items and providing the information as specified. Please respond to the requested information using the following same numbers in order in which the information is requested. This will allow us to easily compare the proposals. Incomplete proposals may not be considered. Proposals are not to exceed five double-sided pages in length (the equivalent of 10 single-sided pages) not including the pre-qualification statement, bid form or bid security. For sustainability reasons, please submit your response in loose-leaf, single, unbound sets printed on recycled paper containing a minimum of 30% post-consumer content. Please do not use ring binders and dividers.
4. Delete Bid Form in Section 4.01 and replace with **attached Revised Bid Form**
5. Delete Section 01030 Alternates and replace with attached Revised Section 01030
6. Add Appendix 5.05: Sample Assignment Agreement
7. Add Appendix 5.06: Snyder Roofing Contract and Schedule
8. Section 01300 Submittals, delete paragraph 1.04 in its entirety and replace with the following:

1.04 Transmit PDF files via email to email address provided by Owner or via CD to Owner at Facilities & Planning, PO Box 751, Portland, OR 97207.

9. Section 01630 Product Requirements & Substitutions, delete paragraph 3.01.A.1 in its entirety and replace with the following:
   1. Transmit PDF files via email to fapcontracts@pdx.edu or via CD to FAP Contracts, PO Box 751, Portland, OR 97207.
10. Section 01630 Product Requirements & Substitutions, delete paragraph 3.02.A.1 in its entirety and replace with the following:
    1. Transmit PDF files via email to email address provided by Owner or via CD to Owner at Facilities & Planning, PO Box 751, Portland, OR 97207.

B. SPECIFICATIONS:

1. Sheet A3.1, Note A.11 Penetrations – (Also Refer to Structural, Mechanical, and Electrical Work) Add to note A.11 the following:
   Contractor Documentation and Reporting of Existing and Proposed New Penetrations is Required: Prior to Work, Contractor to verify and document concrete floor plank existing penetrations at each dorm unit plumbing wall condition. Contractor to provide all documentation to Structural Engineer and to Owner.
   Contractor documentation shall include photographing, mapping, and recording on drawings the locations and sizes of existing penetrations with reference to existing walls and plank dimensions and locations. Contractor shall also locate all proposed new penetrations or enlarged penetrations and dimension on the drawings.
   Any existing / and / or new conditions not conforming to structural engineer's drawings shall be highlighted on documentation and be immediately reported by the Contractor to Structural Engineer.
2. Sheet A7.2.1 Demo + Floor Plan 1 st Flr. ADA Restroom – (Refer to MP1 note 1.7) At Patch areas of concrete slab demo for new waste line piping, with new concrete slab, reinforcing, and base. Use 4" thick reinforced concrete slab 3000 psi concrete, reinforced with 60 KSI, #3 bars at 12" oc each way over standard vapor barrier embedded in 2" of sand over min 6" min. compacted granular fill. Dowel 3" deep + grout new reinforcing into existing slab.
3. Sheet A3.2, Alternate Bid Items – Delete items listed on drawing. The Bid Form takes precedence over the list of alternate bid items listed on drawing A3.2.
4. Sheet E3.3, Light Fixture Schedule – Refer to attached Solus Lighting Substitution Request submitted and approved as noted.
5. Sheet A3.1, Note H.1 New Cabinetry –AWI construction type to be Reveal Overlay on Face Frame to match existing construction. Delete reference to flush overlay construction.
6. Sheet A3.2, Note K.1 Window Blinds – Revise To Read " Replace Existing Vertical Blinds With New Vertical Blinds……".

C. <u>DRAWINGS</u>:

1. Delete Sheet A5.3 and replace with the attached revised sheet – Added "Slope to Drain" notes.
2. Delete Sheet MP7 and replace with the attached revised sheet – Added to note 1.8 in order to reference architectural sheets for specific patching requirements.
3. Delete Sheet MP12 and replace with the attached revised sheet – Added general note; Re-specified L-1, previous product had been discontinued.
4. Delete Sheet MP13 and replace with the attached revised sheet – Added general note.
5. Delete Sheet MP15 and replace with the attached revised sheet – Deleted the depiction of the concrete slab, it is inaccurate and the structural drawings should be referenced for accurate detail.
6. Delete Sheet MP16 and replace with the attached revised sheet – Changed plumbing fixture schedule to reflect new L-1.

D. <u>ATTACHMENTS TO ADDENDUM</u>:

1. Revised Bid Form
2. Revised Section 01030 Alternates
3. Section 5.05 Reference Appendix: Sample Assignment Agreement
4. Section 5.06 Reference Appendix: Snyder Roofing Contract and Roofing Project Schedule
5. Mandatory Pre-Bid Sign-in Sheets
6. Non-Mandatory Second Bid Walk Sign in Sheet
7. Solus Lighting Substitution
8. Drawings: A5.3, MP7, MP12, MP13, MP15, MP16

E. <u>CLARIFICATIONS:</u>

1. Q: The Alternate list on drawing A3.2 lists some of them as deducts. The bid form appears to have all adds**. <u>Answer: BID FORM takes precedence over the drawings. Please review Revised Bid Form attached.</u>**
2. Q: The bid time is listed as both 3 PM and 4 PM. **<u>Answer: Bid time is 3pm. Please see Revised Bid Form attached.</u>**
3. Q: Drawing A5.2 says to patch/paint the existing GWB ceiling in the 2nd level of the garage, & install new AC ceiling. The as-built drawing A14 does not indicate any existing GWB ceiling on the west ½ of the parking. Is this to be a new GWB ceiling? **<u>Answer: See note N.8 on sheet A3.2. and A5.2.</u>**
4. Q: The drawings are not completely clear on where demolition is required to install the new work. Is it the intent for the bidders to find and estimate all the required demolition work using the as-built drawings? **<u>Answer: New work determines extent of demolition. Verify existing conditions to include the use of documents and on-site conditions.</u>**

5. Q: The drawings don't specify a fire panel brand or model. **Answer: See drawing E3.2 Note #2. Farenhyt IFP-2000VIP.**
6. Q: For Alternate #1 trimming of the existing trees and bushes will be needed in order to access the surface of the wall. Will PSU do the trimming? If the contractor is to do the trimming will an arborist specification be issued. Will the City of Portland become involved since the trimming will affect the trees? **Answer: Contractor to complete all requirements for Alternate #1, including any tree trimming, fees, consultants, permits, or other requirements to complete the work.**
7. Q: Will the value of the Snyder contract be issued by Addenda. Will that add affect the bid form? **Answer: See Snyder Contract attached to this Addendum. THE VALUE OF THE SNYDER CONTRACT IS NOT TO BE INCLUDED IN THE BASE BID AMOUNT AND WILL NOT AFFECT THE BID FORM. See Sections 1.02 and 4.02 of RFP.**
8. Q: We are assuming the bids will not be read aloud at the time of bid submission. **A: That is correct.**
9. Q: We suggest the Alternate bid form be turned in 24 hours after the submission of the base bid. **Answer: There will be no change to the submission timeline at this time.**
10. Q: Please confirm if the Part A: Prequalification Statement, which is required to be submitted is exempt from the allowed page count of the RFP response. **Answer: See Revised Section 2.01.**
11. Q: Clarify if there is any HVAC work associated with ceiling removal and replacement on A7.1. Drawing MP-7 shows no HVAC work. **Answer: There is no HVAC work associated with the 1st floor lobby area.**
12. Q: 2/MP-9: Is it acceptable by code to route domestic water piping through the exit stairwell? **Answer: This would match what the existing pipe routing is, the City of Portland plumbing inspector has approved our construction documents for permitting.**
13. Q: Clarify the scope of HVAC work associated with ceiling removal and replacement on MP-10 and A6.2 for the 8th floor only. **Answer: There is no HVAC scope of work associated with the 8th floor.**
14. Q: Clarify note 9 on MP-11: Does the balancing of each exhaust fan involve only balance at the fan inlet, or at every grille on the exhaust system on all floors? **Answer: Only at the fan inlet.**
15. Q: Clarify scope of test and balance for each MAU. Is it to be balanced at roof level only, or at each floor? **Answer: Only at roof level.**
16. Q: Clarify scope of HVAC in modified toilet rooms as shown on MP-12 and MP-13. **Answer: The only HVAC work associated with MP12 and MP13 is in the new ADA rooms, reference note 10 on MP12 and "new work-ADA units" on MP13.**
17. Q: On MP-14 clarify scope of controls and instrumentation needed for hot water system. P's and T's are shown in several locations, and it's not known if they are thermometers and gauges, or sensors involved in control. **Answer: The P's and T's you are seeing are thermometers/gauges, not instrumentation for DDC controls.**
18. On A3.2: ABI-10 says "no new electrical heaters at dorm unit bedrooms and living rooms." Is the base bid to provide new electric heaters in each of these locations? **Answer: Base bid is to include the replacement of the 2 electric heaters in each unit.**

ABI#10 is to omit the replacement of these heaters. See Revised Bid Form and Revised Section 01030.

19. Q: Would it be possible to extend the due date for questions by another week? **Answer: No.**
20. Q: Regarding Alternates 5 and 11, is it correct to assume that there should be no work in the parking garage included in the base bid, including re-piping and ceiling work as well as the other scope items listed in the description for Alternate 11? **Answer: See Revised Bid Form and Revised Section 01030 for changes to alternate descriptions.**
21. Q: Per walkthrough, please confirm that PSU will move in/out all furniture, in accordance to required schedule. **Answer: Yes.**
22. Q: Per walkthrough, please confirm that scheduled completion of PSU move-out is September 4, 2012. **Answer: Yes.**
23. Q: Reference Item D.2 on A3.1, "match existing door species". Please provide door species for pricing purposes. **Answer: Stain grade birch.**
24. Q: Will a formal specification be issued for this project for documentation of reference standards and such? **Answer: No, please see previously issued documents or addenda for specification information.**
25. Q: Please provide a copy of contract and schedule for Snyder Roofing. **Answer: See attached Appendix 5.06.**
26. Q: Is there a hazardous materials report for in-wall insulation/piping insulation? **Answer: See Appendix 5.01 for Asbestos Survey.**
27. Q: Please provide sections and details for casework and p-lam range screen. **Answer: Refer to interior elevation 3 + 4 / A8.1 and spec. note H. Cabinetry sheet A3.1.**
28. Q: Please provide spec for shower curtains and curtain hangers. Answer: **Refer to sheet A3.2, note U. Specialties.**
29. Q: Room Schedule on sheet A11.4 calls for Resilient and Carpet at Bathrooms and Entry Closets, respectively, of existing ADA units. Further down the list, but still under item 1, NEW ADA bathrooms and Entry Closets are scheduled to receive Tile and Resilient, respectively. Why different finishes at the existing and new ADA units? Is that the intent? **Answer: There are different finishes for the existing ADA units and the new ADA units. Follow the Room Schedule as written.**
30. Q: Laundry rooms at floors 3, 5 7, 9 are to receive new finishes, but what happens in that space on the even floors? Those rooms on even floors do not have description on the Room List on A2.1. **Answer: Existing interior room finishes to remain, no new finishes.**
31. Q: Spec section K.1, Window Blinds says to replace existing draperies with new vertical blinds to match existing at all residential unit bedroom and living room windows. During both walkthroughs, the units we toured had vertical blinds. Please specify quantity/location of rooms with draperies that need to switch to blinds. Are we to replace any of the existing vertical blinds? Please clarity scope of work here. **Answer: Refer To K.1 On Sheet A3.2 – Revise To Read " Replace Existing Veritical Blinds With New Vertical Blinds……".**

If you have any questions, e-mail to: fapcontracts@pdx.edu

END OF ADDENDUM #3

OREGON UNIVERSITY SYSTEM

STANDARD PUBLIC IMPROVEMENT CONTRACT

REVISED BID FORM

OUS CAMPUS: Portland State University

PROJECT: Blumel Hall Remodel

BID CLOSING: June 14, 2012 at 3:00 PM local time

BID OPENING: June 14, 2012 at 3:00 PM local time

FROM: _____
Name of Contractor

TO: Oregon State Board of Higher Education
(campus or office name and address)
_____
_____

1. The Undersigned (*check one of the following and insert information requested*):

____a. An individual doing business under an assumed name registered under the laws of the State of _____; or

____b. A partnership registered under the laws of the State of _____; or

____c. A corporation organized under the laws of the State of _____; or

____d. A limited liability corporation organized under the laws of the State of _____;

hereby proposes to furnish all material and labor and perform all work hereinafter indicated for the above project in strict accordance with the Contract Documents for the Basic Bid as follows:

_____ Dollars ($_____)

and the Undersigned agrees to be bound by the following documents:

- Advertisement for Bids
- Supplemental Instructions to Bidders
- Public Improvement Agreement Form
- OUS General Conditions
- Prevailing Wage Rates
- Plans and Specifications
- Instructions to Bidders
- Bid Bond
- Performance Bond and Payment Bond
- Supplemental General Conditions
- Payroll and Certified Statement Form
- Drawings and Details
- ADDENDA numbered ____ through____, inclusive *(fill in blanks)*

2. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items of work relating to the following Alternate(s) as designated in the Specifications:

A. Alternative No. 1 – OMIT Sealing and caulking of the exterior.
ADD or DEDUCT (circle one) $_____

B. Alternative No. 2 - Lower the grade of the carpet and flooring in all units.

ADD or DEDUCT (circle one) $_____

C. Alternative No. 3 - OMIT All window covering work.

ADD or DEDUCT (circle one) $_____

D. Alternative No. 4 - Lounge Ceiling – Do not install false beam detail and use the existing ceiling grid.

ADD or DEDUCT (circle one) $_____

E. Alternative No. 5 - Parking Garage Lighting: Replace parking garage lighting using a performance spec.

ADD or DEDUCT (circle one) $_____

F. Alternative No. 5a - Parking Garage Lighting: Replace parking garage lighting using the design and layout shown on the electrical design drawings.

ADD or DEDUCT (circle one) $_____

G. Alternative No. 6 – OMIT All work in boiler room including piping, electrical, and controls.

ADD or DEDUCT (circle one) $_____

H. Alternative No. 7 - Relocate the existing telecom boxes in all the units.

ADD or DEDUCT (circle one) $_____

I. Alternative No. 8 – OMIT Replacement of glass window panels shown on the drawings.

ADD or DEDUCT (circle one) $_____

J. Alternative No. 9 - Add (1) living room light in all of the units.
ADD or DEDUCT (circle one) $_____

K. Alternative No. 10 – OMIT Replacement of (2) electric heaters in all of the units.

ADD or DEDUCT (circle one) $_____

L. Alternative No. 11 – INCLUDE the remaining 1st and 2nd floor parking garage work not described in Alternate No. 5. (e.g., deck maintenance, re-striping, signage). Does not include interiors of enclosed rooms or stair wells adjoining the parking structure area or anything above the suspended ceilings. This work should be included in the base bid.

ADD or DEDUCT (circle one) $_____

M. Alternative No. 12 - Replace existing 12x12 access panels in the 8th floor unit bathrooms with 18x18 access panels.

ADD or DEDUCT (circle one) $_____

N. Alternative No. 13 - Expedite schedule so that Substantial Completion is December 10, 2012.

a. Failure to complete the Work by December 10, 2012 in this Contract will result in actual damages to the OWNER. Since actual damages will be difficult or impossible to determine, it is agreed that the CONTRACTOR shall pay OWNER, not as a penalty but as liquidated damages according to the following schedule for each Day elapsed in excess of the Substantial Completion Date.

Rooms - $100 per unit per day
Lounge - $100 per day
Lobby - $500 per day
Corridors - $500 per corridor per day
Parking Garage - $500 per day

ADD or DEDUCT (circle one) $_____

3. RESERVED

4. The substantial completion date shall be **March 9, 2013.** The final completion date shall be **April 9, 2013.**

5. Accompanying herewith is Bid Security which is equal to ten (10) percent of the total amount of the Basic Bid.

6. The Undersigned agrees, if awarded the Contract, to execute and deliver to the Oregon State Board of Higher Education, within twenty (20) calendar days after receiving the Contract forms, an Agreement Form, and a satisfactory Performance Bond and Payment Bond each in an amount equal to one hundred (100) percent of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be:

_____.
(name of surety company - not insurance agency)
The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

7. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with the Board; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Agreement Form, Performance Bond

and Payment Bond, and that if the Undersigned defaults in either executing the Agreement Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract forms, then the Bid Security may become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned executes and timely delivers said Agreement Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

8. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

9. The undersigned **HAS, HAS NOT** (*circle applicable status*) paid unemployment or income taxes in Oregon within the past 12 months and **HAS, HAS NOT** (*circle applicable status*) a business address in Oregon.

10. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

11. Contractor's CCB registration number is _____. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will make the bid unresponsive and it will be rejected, unless contrary to federal law.

12. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the contract.

13. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is _____, Policy No. _____, and that Contractor shall submit Certificates of Insurance as required.

14. RESERVED

15. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM _____

ADDRESS _____

_____

FEDERAL TAX ID _____

TELEPHONE NO _____

FAX NO _____

SIGNATURE 1) _____
Sole Individual

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation

(SEAL)

_____
Attested: Secretary of Corporation

Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information not matching IRS records could subject Contractor to 31 percent backup withholding.

******* END OF BID *******

REVISED SECTION 01030

ALTERNATES

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work of the Section includes administrative and procedural requirements to the Bid Alternates of the OUS Bid Form (OUS Form B-6).

1.02 RELATED WORK IN OTHER SECTIONS

A. Additional information regarding bid alternates and changes in scope may be found in the follows:

1. OUS Bid Form
2. OUS General Conditions
3. Other Sections of these specifications.

1.03 DEFINITION

A. An alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Project Manual that may be added or deducted from the Basic Bid amount if the Owner decides to accept a corresponding change in the amount of construction to be completed, or in the products, materials, equipment, systems, or installation method.

B. The cost change for each alternate is the net addition to or deletion from the Basic Bid to incorporate the alternate into the work. No other adjustments are made to the Basic Bid, unless stipulated in the Instructions to Bidders or the OUS General Conditions for Public Improvement Contracts.

PART 2 – ACCEPTANCE OF ALTERNATIVES

2.01 The Owner's initial intent is to contract for all work of the Basic Bid. All required bonding, deposits, securities or guarantees required by the Contract Documents shall be based on the Basic Bid amount.

2.02 Alternates quoted on the Bid Form will be reviewed and may be rejected, accepted individually, in combination or entirely at the Owner's Option.

2.03 Alternates to the Basic Bid will be executed by a Change Order, in accordance with Division 1 Section 01300 and the OUS General Conditions for Public Improvement Contracts Section D.

2.04 Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required to complete the alternative work and surrounding modifications whether or not mentioned as part of the work.

2.05 Coordinate related work and modify surrounding work to integrate the work of each alternative.

2.06 A "Schedule of Bid Alternates" is provided at the end of this Section. Refer to other Specification Sections of this Project Manual for materials necessary to achieve the Work described under each alternate.

PART 3 – SCHEDULE OF BID ALTERNATES

3.01 The following Alternates may be deducted and/or added from the Work of the Base Bid:

A. Alternative No. 1 - OMIT Sealing and caulking of the exterior.

B. Alternative No. 2 - Lower the grade of the carpet and flooring in all units.

C. Alternative No. 3 - OMIT All window covering work.

D. Alternative No. 4 - Lounge Ceiling – Do not install false beam detail and use the existing ceiling grid.

E. Alternative No. 5 - Parking Garage Lighting: Replace parking garage lighting using a performance spec.

F. Alternative No. 5a - Parking Garage Lighting: Replace parking garage lighting using the design and layout shown on the electrical design drawings.

G. Alternative No. 6 – OMIT All work in boiler room including piping, electrical, and controls.

H. Alternative No. 7 - Relocate the existing telecom boxes in all the units.

I. Alternative No. 8 - OMIT Replacement of glass window panels shown on the drawings.

J. Alternative No. 9 - Add (1) living room light in all of the units.

K. Alternative No. 10 - OMIT Replacement of (2) electric heaters in all of the units.

L. Alternative No. 11 - INCLUDE the remaining 1st and 2nd floor parking garage work not described in Alternate No. 5. (e.g., deck maintenance, re-striping, signage). Does not include interiors of enclosed rooms or stair wells adjoining the parking structure area or anything above the suspended ceilings. This work should be included in the base bid.

M. Alternative No. 12 - Replace existing 12x12 access panels in the 8th floor unit bathrooms with 18x18 access panels.

N. Alternative No. 13 - Expedite schedule for a Substantial Completion date of December 10, 2012.

a. Failure to complete the Work by December 10, 2012 in this Contract will result in actual damages to the OWNER. Since actual damages will be difficult or impossible to determine, it is agreed that the CONTRACTOR shall pay OWNER, not as a penalty but as liquidated damages according to the following schedule for each Day elapsed in excess of the Substantial Completion Date.

Rooms - $100 per unit per day
Lounge - $100 per day
Lobby - $500 per day
Corridors - $500 per corridor per day
Parking Garage - $500 per day

END OF SECTION

ASSIGNMENT, ASSUMPTION AND NOVATION AGREEMENT
("Agreement")

Parties: **Oregon State Board of Higher Education acting by and through Portland State University ("Assignor")**

[GC] ("Assignee")

Snyder Roofing of Oregon LLC ("Snyder")

Effective Date: _____

RECITALS

A. Assignor and Snyder entered into that certain Agreement – Blumel Hall Roof Replacement (PSU Contract No FAP00956), dated _____ (the "Roof Agreement") for the completion of certain roof replacement work (the "Work").

B. Assignor and Assignee entered into that certain [GC Agreement], dated _____, 2012, under which Assignor agreed to perform certain [GC Services] related to the renovation of Blumel Hall (the "Project"), which includes, without limitation, the Work, and that is contemplated to be completed pursuant to subcontracts between the GC and various subcontractors.

C. Assignor desires to assign to Assignee all of its right, title and interest in and to the Roof Agreement, which will allow Assignee to incorporate the Work into the overall Project.

D. Assignee desires to assume, perform and discharge all of Assignor's duties, obligations and liabilities under the Roof Agreement.

E. Snyder desires to consent to Assignor's assignment of all its right, title and interest in the Roof Agreement and to Assignee's assumption of Assignor's duties, obligations and liabilities under the Roof Agreement. Furthermore, Snyder desires to release the Assignor of its duties and obligations under the Roof Agreement and thereby novate the Roof Agreement, subject to the terms of this Agreement.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor, Assignee and Snyder agree as follows:

1. Assignment and Assumption of Assignor's Duties, Obligations and Liabilities

Assignor assigns to Assignee as of the Effective Date all of Assignor's rights, title and interest in and to the Roof Agreement, and Assignee accepts the assignment and assumes as of

the Effective Date all of Assignor's rights, title and interest in and to the Agreement. Assignee agrees to perform and discharge all of Assignor's duties, obligations and liabilities under the Agreement.

Upon the request of Assignee, Assignor shall do, execute, acknowledge and deliver or cause to be done, executed, acknowledged and delivered, such further acts, assignments, transfers, and assurances as may reasonably be required by Assignee in order to assign, transfer, set over, assure and confirm unto and vest in Assignee all of Assignor's right, title and interest in the Roof Agreement.

Assignee absolutely and unconditionally assumes all duties, obligations and liabilities under the Roof Agreement and agrees to be bound by the terms, conditions and covenants thereof.

2. Nature and Quality of Services under the Roof Agreement

Assignee represents and warrants that the assignment of Assignor's rights, title and interest in and to the Roof Agreement, and Assignee's assumption of Assignor's duties, obligations and liabilities under the Roof Agreement, will not result in any change whatsoever in the nature or the quality of services provided thereunder.

3. Indemnity

A. Subject to the limitations of Oregon Law (ORS 30.260 through 30.300) and the Oregon Constitution, Article XI, Section 7, Assignor shall indemnify, defend and hold harmless Assignee from and against all obligations, liabilities or claims asserted against Assignee with respect to the Roof Agreement, arising from Assignor's activities prior to the date of this Agreement and that relate solely to the period prior to the date hereof.

B. Assignee shall indemnify, defend and hold harmless Assignor from and against all obligations, liabilities or claims assumed by Assignee with respect to the Roof Agreement, arising from events which occur from and after the Effective Date of this Agreement.

4. Effective Date

This Agreement is effective as of the Effective Date set forth in the heading on page 1.

5. Time is of the Essence

Time is of the essence in the performance of this Agreement. The Assignor and Assignee shall at all times perform the requirements under this Agreement and the Assignee shall at all times perform all services under the Roof Agreement diligently and without delay, and shall punctually fulfill all requirements.

6. Assignment; Successors and Assigns

Assignee shall not assign or transfer any of its interest in the Roof Agreement without Assignor's prior written consent. The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto, and their respective successors and permitted assigns, if any.

7. Third Party Beneficiaries

Nothing in this Agreement gives, is otherwise intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Agreement.

8. Governing Law; Venue; Consent to Jurisdiction

This Agreement shall be governed and construed in accordance with the laws of the State of Oregon without regard to principles of conflicts of law. Any claim, action, suit or proceeding (collectively, "Claim") between Assignor and Assignee, that arises from or relates to this Agreement shall be brought and conducted solely and exclusively in the Circuit Court for Multnomah County, State of Oregon; provided, however, that if a Claim must be brought in a federal forum, than it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this provision be construed as a waiver of the State of Oregon's sovereign immunity.

9. Scope of Assignment and Assumption

Assignor, Assignee and Snyder agree that any obligations of Assignor to Snyder under contracts other than the Roof Agreement are not affected as a result of this Agreement.

10. Novation

Except as limited by the terms of this Agreement, Snyder agrees to novate the Roof Agreement and substitute Assignee for Assignor as the contractor (referred to as the "Owner") thereunder.

11. Counterparts

This Agreement may be executed in several counterparts, electronically transmitted, all of which when taken together shall constitute one agreement binding on all parties, notwithstanding that all parties are not signatories to the same counterpart. Each copy of the Agreement so executed shall constitute and original.

12. Consent

Assignor, Assignee and Snyder each consent to all of the provisions of this Agreement.

13. Notices

Representatives for Assignee and Assignor for purposes of notice and for other purposes under this Agreement are:

To Assignor: Portland State University
Attn: Mark Fujii
Facilities and Planning - FAP
P.O. Box 751
Portland, OR 97207-0751
Phone: (503) 725-3738
FAX: (503) 725-4329

To Assignee: _____
_____
_____
Phone: _____
FAX: _____

To Snyder: Snyder Roofing of Oregon LLC
PO Box 23819
Tigard, OR 97281
Phone: (503)
FAX: (503)

14. Tax Certificate

The undersigned representative of Assignee certifies and swears under penalty of perjury that he or she is authorized to act on behalf of Assignee and has authority and knowledge regarding Assignee's payment of taxes, and that to the best of his or her knowledge, Assignee is not in violation of any of any Oregon Tax Laws.

For purposes of this certificate, "Oregon Tax Laws" means a state tax imposed by ORS 320.005 to 320.150 (Amusement Device Taxes), 403.200 to 403.250 (Tax For Emergency Communications), 118 (Inheritance Tax), 314 (Income Tax), 316 (Personal Income Tax), 317 (Corporation Excise Tax), 318 (Corporation Income Tax), 321 (Timber and Forest Land Taxation) and 323 (Cigarettes And Tobacco Products) and the elderly rental assistance program under ORS 310.630 to 310.706 and any local taxes administered by the Department of Revenue under ORS 305.620.

IN WITNESS WHEREOF, the Parties have executed this Assignment, Assumption and Novation Agreement, as of the date(s) set forth below.

ASSIGNOR:

Oregon State Board of Higher Education acting by and through Portland State University

By: _____ Title: _____ Date: _____

ASSIGNEE:

_____
Federal Tax I.D. #: _____

By: _____ Title: _____ Date: _____

SNYDER:

Snyder Roofing of Oregon, LLC

Federal Tax I.D. #: _____

By: _____ Title: _____ Date: _____

OREGON UNIVERSITY SYSTEM

PUBLIC IMPROVEMENT AGREEMENT

FAP00956

This Agreement for the **Blumel Hall Roof Replacement** (the **"Contract"**), made by and between the State Board of Higher Education acting by and through Portland State University (hereinafter called **"Owner"**), and **Snyder Roofing of Oregon, LLC** (hereinafter called the **"Contractor"**) (collectively the **"Parties"**), shall become effective on the date this Contract has been signed by all the Parties and all required State of Oregon governmental approvals have been obtained, whichever is later (the **"Effective Date"**).

WITNESSETH:

1. Contract Price, Contract Documents and Work

Contractor agrees to provide to Owner on a timely basis, the Blumel Hall Roof Replacement located at 1705 SW Eleventh Avenue, Portland, Oregon (the **"Scope of Work"**). The intent is that Contractor will furnish all materials, services, supervision, labor, supplies, tools, equipment and other "things" required to complete all activities necessary for a completed Project, consistent with all local, municipal and applicable Codes, according to the terms and conditions of this Contract and the OUS General Conditions.

The maximum compensation for the Contractor's performance of the Work under this Contract is FOUR HUNDRED SEVENTY NINE THOUSAND SEVEN HUNDRED THIRTY ONE DOLLARS (**$479,731.00**) (the **"Contract Value"**). If this Contract is amended to include additional Work, the total maximum compensation must not exceed the greater of $1,000,000 or the maximum allowable under OAR 580-063-0030.

The CONTRACTOR, in consideration of the Contract Value to be paid to the CONTRACTOR by OWNER in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Instructions to Bidders and other Contract Documents (as defined in the OUS General Conditions referenced within the Instructions to Bidders), all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. The Contract Value is the amount contemplated by the Base Bid adjusted for Alternate 1 as indicated in the accepted Bid. Also, the following documents are incorporated by reference in this Contract and made a part hereof if checked for inclusion [X]:

[x]	Invitation to Bid	[x]	Instruction to Bidders
[x]	Bid Bond	[x]	Performance Bond and Payment Bond
[x]	OUS General Conditions	[x]	Supplemental General Conditions
[x]	Prevailing Wage Rates	[x]	Payroll and Certified Statement Form
[x]	Plans and Specifications	[x]	Drawings and Details
[x]	Division 1 Specifications		

Contractor acknowledges that the Owner intends to let a contract for the Blumel Hall Project, which will incorporate the work contemplated in this Contract. Contractor further acknowledges that the Owner intends to assign this Contract to the contractor (the "General Contractor") that is awarded the Blumel Hall Project contract. Contractor hereby consents to the assignment of this Contract from the Owner to the General Contractor. Contractor agrees to execute an assignment agreement and other documentation

as may be reasonably required by the Owner to effectuate the assignment of this Contract. Upon and after the effective date of such assignment, Contractor agrees (1) to look solely to the General Contractor for the proper performance of this Contract, and (2) that no contractual relationship will thereafter exist between the Owner and Contractor by virtue of this Contract except for the rights, responsibilities, or obligations, if any, that may be set forth in an assignment agreement or other such documentation.

2. Representatives.

CONTRACTOR has named **Dave Layton** its' Authorized Representative to act on its behalf.

OWNER designates **Mark Fujii** as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to Contract performance, payment, authorization, and to carry out the responsibilities of the OWNER.

3. Key Persons.

Not Applicable

4. Contract Dates.

The Contractor will commence work on the Effective Date (as defined above).

SUBSTANTIAL COMPLETION DATE: October 2, 2012.
FINAL COMPLETION DATE: **October 31, 2012.**

5. Liquidated Damages.

Not Applicable

6. Tax Compliance.

By signature on this Contract, the undersigned hereby certifies under penalty of perjury that the undersigned is authorized to act on behalf of Contractor and that Contractor is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon tax laws" means a state tax imposed by ORS 320.005 to 320.150 and 403.200 to 403.250, ORS Chapters 118, 314, 316, 317, 318, 321 and 323; the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Oregon Department of Revenue under ORS 305.620.

7. BOLI.

Prevailing Wage Rates requirements apply to this Project because the maximum compensation for all Owner-contracted Work is more than $50,000. Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates and the required public works bond, as outlined in Sections C.1, C.2 and G.2.3 of the OUS General Conditions. The Bureau of Labor and Industries (BOLI) wage rates and requirements set forth in the following BOLI booklet (and any listed amendments to that booklet), which are incorporated herein by reference, apply to the Work authorized under this Agreement:

PREVAILING WAGE RATES for Public Works Contracts in Oregon, January 1, 2012, as amended

April 1, 2012, which can be downloaded at the following web address:

[http://www.boli.state.or.us/BOLI/WHD/PWR/pwr_book.shtml]

The Work will take place in Multnomah County, Oregon.

8. Integration.

The Contract documents constitute the entire agreement between the Parties. There are no other understandings, agreements or representations, oral or written, not specified herein regarding this Contract. Contractor, by the signature below of its authorized representative, hereby acknowledges that it has read this Contract, understands it, and agrees to be bound by its terms and conditions.

9. Execution and Counterparts.

This Agreement may be executed in several counterparts, electronically transmitted, all of which when taken together constitute one agreement binding on all parties, notwithstanding that all parties are not signatories to the same counterpart. Each copy of the Agreement so executed constitutes an original.

In witness whereof, the STATE OF OREGON, acting by and through the Oregon State Board of Higher Education on behalf of **Portland State University** executes this Contract and the Contractor does execute the same as of the Effective Date.

CONTRACTOR DATA:

CONTRACTOR NAME:	Snyder Roofing of Oregon, LLC
ADDRESS:	PO Box 23819 Tigard, OR 97281
Telephone Number:	(503) 620-5252
Facsimile Number:	(503) 684-3310
CONTRACTOR FEDERAL ID:	93-1270887
CONTRACTOR CCB #:	135987
EXPIRATION DATE:	7/8/2013

[Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information must be provided prior to contract approval. Information not matching IRS records could subject Contractor to thirty-one (31%) percent backup withholding.]

CONTRACTOR SIGNATURE

By: _____ 5-25-12
(Signature) (Date)

By: DAN KOFFEL
(Printed or Typed)

Title: President

The State Board of Higher Education acting by and through **Portland State University**

By: _____ 5/29/2012

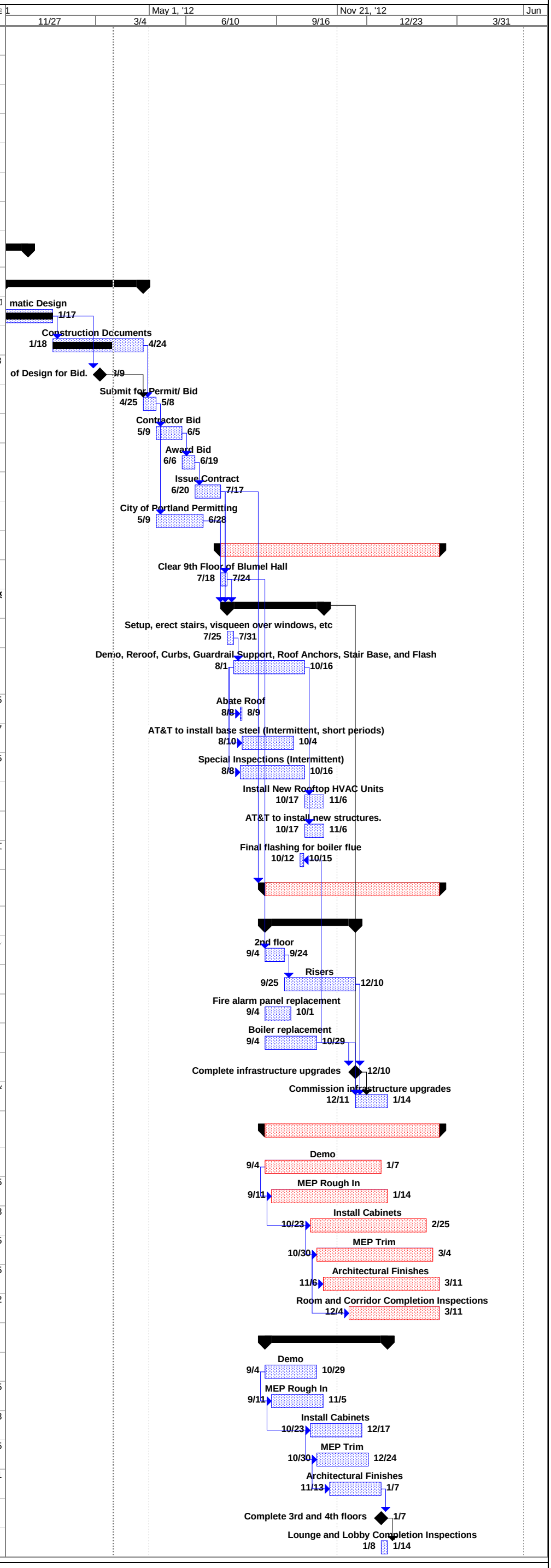
David Hobbs — Date

Assistant Director of Facilities & Planning

BLUMEL HALL REMODEL - PROJECT SCHEDULE - NON-PHASED CONSTRUCTION

Fri 3/23/12

ID	Task Name	Duration	Start	Finish	Predece
1	**PROJECT PLANNING**	**88 days**	**Fri 5/13/11**	**Tue 9/13/11**	
2	Authorized to begin	0 days	Fri 5/13/11	Fri 5/13/11	
3	Obtain Proposalf for Preliminary Cost Estimating Services	15 days	Fri 5/13/11	Thu 6/2/11	2
4	Contract for Preliminary Cost Estimating Services	20 days	Wed 6/8/11	Tue 7/5/11	3FS+3 days
5	Preliminary Cost Estimating Services	35 days	Wed 7/6/11	Tue 8/23/11	4
6	Create draw schedule	15 days	Wed 8/24/11	Tue 9/13/11	2,5
7	Submit Preliminary Cost Estimate	0 days	Tue 8/30/11	Tue 8/30/11	5FS+5 days
8	**REQUESTS FOR PROPOSALS AND SELECTION**	**51 days**	**Wed 10/12/11**	**Wed 12/21/11**	
19	**DESIGN**	**110 days**	**Wed 11/23/11**	**Tue 4/24/12**	
20	Schematic Design	40 days	Wed 11/23/11	Tue 1/17/12	18FS-21 days
21	Construction Documents	70 days	Wed 1/18/12	Tue 4/24/12	20
22	Issue Roof Design for Bid.	0 days	Fri 3/9/12	Fri 3/9/12	20FS+3 days
23	Submit for Permit/ Bid	10 days	Wed 4/25/12	Tue 5/8/12	21,22
24	Contractor Bid	20 days	Wed 5/9/12	Tue 6/5/12	23
25	Award Bid	10 days	Wed 6/6/12	Tue 6/19/12	24
26	Issue Contract	20 days	Wed 6/20/12	Tue 7/17/12	25
27	City of Portland Permitting	37 days	Wed 5/9/12	Thu 6/28/12	23
28	**CONSTRUCTION**	**169 days**	**Wed 7/18/12**	**Mon 3/11/13**	
29	Clear 9th Floor of Blumel Hall	5 days	Wed 7/18/12	Tue 7/24/12	26FS-5 days
30	**Phase 0 - Roof Replacement**	**75 days**	**Wed 7/25/12**	**Tue 11/6/12**	**27,26,2**
31	Setup, erect stairs, visqueen over windows, etc	5 days	Wed 7/25/12	Tue 7/31/12	
32	Demo, Reroof, Curbs, Guardrail Support, Roof Anchors, Stair Base, and Flash	55 days	Wed 8/1/12	Tue 10/16/12	31
33	Abate Roof	2 days	Wed 8/8/12	Thu 8/9/12	32SS+5 days
34	AT&T to install base steel (Intermittent, short periods)	40 days	Fri 8/10/12	Thu 10/4/12	32SS+7 days
35	Special Inspections (Intermittent)	50 days	Wed 8/8/12	Tue 10/16/12	32SS+5 days
36	Install New Rooftop HVAC Units	15 days	Wed 10/17/12	Tue 11/6/12	32
37	AT&T to install new structures.	15 days	Wed 10/17/12	Tue 11/6/12	32
38	Final flashing for boiler flue	2 days	Fri 10/12/12	Mon 10/15/12	44FF-1(days
39	**Phase I - Construct infrastructure upgrades and remodel in entire building**	**135 days**	**Tue 9/4/12**	**Mon 3/11/13**	**26**
40	**Replace water piping.**	**70 days**	**Tue 9/4/12**	**Mon 12/10/12**	
41	2nd floor	15 days	Tue 9/4/12	Mon 9/24/12	29FS+1 days
42	Risers	55 days	Tue 9/25/12	Mon 12/10/12	41
43	Fire alarm panel replacement	20 days	Tue 9/4/12	Mon 10/1/12	
44	Boiler replacement	40 days	Tue 9/4/12	Mon 10/29/12	
45	Complete infrastructure upgrades	0 days	Mon 12/10/12	Mon 12/10/12	42,44
46	Commission infrastructure upgrades	25 days	Tue 12/11/12	Mon 1/14/13	30,42,4
47	**Room and corridor remodels for entire building**	**135 days**	**Tue 9/4/12**	**Mon 3/11/13**	
48	Demo	90 days	Tue 9/4/12	Mon 1/7/13	
49	MEP Rough In	90 days	Tue 9/11/12	Mon 1/14/13	48SS+5 days
50	Install Cabinets	90 days	Tue 10/23/12	Mon 2/25/13	49SS+3 days
51	MEP Trim	90 days	Tue 10/30/12	Mon 3/4/13	50SS+5 days
52	Architectural Finishes	90 days	Tue 11/6/12	Mon 3/11/13	51SS+5 days
53	Room and Corridor Completion Inspections	70 days	Tue 12/4/12	Mon 3/11/13	51SS+2 days
54	**3rd floor Lounge/ Lobby Remodels**	**95 days**	**Tue 9/4/12**	**Mon 1/14/13**	
55	Demo	40 days	Tue 9/4/12	Mon 10/29/12	
56	MEP Rough In	40 days	Tue 9/11/12	Mon 11/5/12	55SS+5 days
57	Install Cabinets	40 days	Tue 10/23/12	Mon 12/17/12	56SS+3 days
58	MEP Trim	40 days	Tue 10/30/12	Mon 12/24/12	57SS+5 days
59	Architectural Finishes	40 days	Tue 11/13/12	Mon 1/7/13	58SS+1 days
60	Complete 3rd and 4th floors	0 days	Mon 1/7/13	Mon 1/7/13	59
61	Lounge and Lobby Completion Inspections	5 days	Tue 1/8/13	Mon 1/14/13	60



Project: BH Schedule 01-12-12
Date: Fri 3/23/12

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline | Critical Path

Mandatory Pre-Bid Conference Attendee List
Project: Blumel Hall Remodel
Project Manager: Mark Fujii
JOB WALK: May 23, 2012, 2:00 PM

Portland State UNIVERSITY

Name	Company	Email	Phone
Kyle Warren	Turner Construction	kwarren@tcco.com	503.209.1546
Marc Dyer	Turner Construction	cdyer@tcco.com	503-707-2314
John Samuel	Patriot Fire	johns@patriotfire.com	360-699-4405
Murray Johnson	Woodburn Plumbing	Woodburn@pacLink.Net	360 600 0661
Jerry " "	" "	N/A	—
Kenneth Troyer	Hydro-Temp Mech	ktroyer@hydrotempmech.com	503-582-9525
Steve Duch	Triplett wellman	Steve@Tripletwellman.com	503-982-4188
Justin Cook	Fortis Construction	justin.cook@fortisconstruction.com	503-726-6726
Derek Diaz	MCG Commercial	derek@mcgcommercial.com	503 358-3964
Gary Bockman	Bockman & Son Inc	bsfencing@msn.com	503 288-4571
Wayne Wilcox	PSU	w.wilcox@pdx.edu	503-725-2460
RON BLAJ	PSU	rblaj@pdx.edu	(503) 725-4308
Andrew Bourke	Reliant Plumbing	Andrew@Reliantplumbing.com	503-516-9915
Joseph Gallivan	Hoffman Construction	joseph-gallivan@hoffmancorp.com	503 221 8871
Chimin Ha	Ha's painting	haspainting@hotmail.com	503-281-6826

Mandatory Pre-Bid Conference Attendee List
Project: Blumel Hall Remodel
Project Manager: Mark Fujii
JOB WALK: May 23, 2012, 2:00 PM

Portland State UNIVERSITY

Name	Company	Email	Phone
Milo Reiser	Technocom	J.Case@Gotechnocom.com	503-209-9484
Bill Reed	AMD Commercial	CLADDMAN@GMAIL	503-360-4609
Bill Judge	Emerick Construction	billj@emerick.com	503-777-5531
Steve CLAPP	EMERICK CONSTRUCTION	Steve.C@EMERICK.com	503-777-5531
Sharon Estes	Interior Focus	sharone@Interior-Focus.com	503-246-1121
Helen Doolittle	Interior Focus	Helenda@interior-Focus.com	503-246-1121
Creighton Kearns	Total Mechanical Inc	creightonK@totalmechanical.com	503-239-8121 / 503-753-6603
Ed McQueown	Arctic Sheet Metal	EMcQueown@ArcticSheetMetal.com	503-288-5844
Bob GORDON	IRS Environmental	Bob@IRSEnvironmental.Com	503 693 6388
Justin Bubenik	Hoffman Corp.	Justin-Bubenik@hoffmancorp.com	503-548-7500
BRIAN ANTHONY	ANDERSEN	brianthony@andersen-const.com	503-969-4686
EMILY THEPHARAT	ANDERSEN	ethepharat@andersen-const.com	503.358.9262
ERIN STERLIE	ANDERSEN	ESTERLIE@ANDERSEN-CONST.COM	503.772.2414
Joellen Zhou	Alicata Glass. Inc	joellen@alicataglass.com	503-678-1199
MikeLanden	Payneconstruction	dpayne@paynecon.com	503 257 8221
[illegible]	General Sheet Metal	[illegible]	[illegible]
T. Prose	PSN PAP	tprose@pdx.edu	503.725.8161
CHRIS WIERMAN	INSITE GROUP	CHRIS@INSITEGROUP.NET	503.222.2044

Mandatory Pre-Bid Conference Attendee List
Project: Blumel Hall Remodel
Project Manager: Mark Fujii
JOB WALK: May 23, 2012, 2:00 PM

Portland State UNIVERSITY

Name	Company	Email	Phone
Thomas Volpe	NWR Construction LLC	Thomas.J.Volpe@comcast.net	503-799-7461
Ron Downey	NWR Construction LLC	radowne@gMail.com	503-231-9444
Ross Freeman	Heinz Mechanical	ross f@heinz-mech.com	503-220-0855
Jenny Browne	Convergint TECH.	jenny.browne@convergint.com	503.228.8522
STEVE CHEM	SKANSKA	steve.chem@skanska.com	503-804-4686
NIKOLAS HEAGY	SKANSKA	NIKOLAS.HEAGY@SKANSKA.COM	503-209-7541
Tim Carpenter	STAR Security	STAR Security @msn.com	503-504-4817
TIM BRESLIN	ANNING-JOHNSON	TIM.BRESLIN@ANNINGJOHNSON.COM	503-682-9882
KEITH HOLMGREN	HANDER MECH	KHOLMGREN@HANDERMECH.COM	503-281-1112
Dave Hanson	PointMonitor	dhanson@pointmonitor.com	503-627-0100
Jeff Hunt	Rayborn's Plumbing	jeff@rayborns.com	503-505-1329
Leif Amundson	The Rebuilding Center	leifa@rebuildingcenter.org	(503)310-7701
Ty Matsumoto	Currie & Brown	ty.matsumoto@currie brown.com	503-949-0206
Paul Shrum	Currie & Brown	Paul.shrum@curriebrown.com	503.806.9180
DUSTIN TINIUS	EC COMPANY	dustint@e-c-co.com	503-552-5535
JEFF LINDQUIST	HOFFMAN CONSTRUCTION	JEFF-LINDQUIST@hoffmancorp.com	503-793-3919

PSU Blumel Hall

Name	Company	Phone	Email
Mark Fujii	PSU	503-725-4966	fujim@pdx.edu
CHRIS WIEGMAN	INSITE Group	503-222-2044	CHRIS@INSITEGROUP.NET
Scott Morrill	Alliant systems	503 545 3167	S.morrill@alliant-systems.com
Chuck Goff	Hoffman	503-572-2857	chuck-goff@hoffmancorp.com
Brad Cram	Pioneer Waterproofing	503-969-6389	Bradpdx@Hotmail.com
Kendle Weintz	Pinnacle Waterproofing	503-969-5526	
Nancy Bebek	Prestige Tile + Stone	503-352-4209	
Andrew Lee	Contract Flooring Consultants	503-708-7218	
JEFF LINDQUIST	HOFFMAN CONSTRUCTION	(503) 793-3919	
Milo Reiser	Technocom	503 209 9484	M.Reiser@gotechnocom.com
JOHN BORRES	COSCO FIRE PROTECTION	503-991-1029	jborres@coscofire.com
DAN FLATT	FLATOUT RESURFACING & REMODEL	503 255 1700	danflatt@flatout.com
Del Gierke	Cascade Acoustics	503 612-0100	del@cainc.biz
EMILY THERHARDT	ANDERSEN CONST.	503.283.6712	ethepharat@andersen-const.com
CORAM ELDRIDGE	HEINZ MECH.	503-220-0855	gunac@heinz.com mech.com
MIKE HAROLD	MACMILLER	503-701-7267	mike.harold@macmiller.com
Baron Adams	Peninsula Plumb	503-761-0800	baron@peninsulaplumbing.com
WCTJ	JK Wendell Talley	503-793-9861	WCTJ@comcast.net
Matt Keikkala	Charter Mechanical	503 710 8546	matt.keikkala@chartermechanical.com
Jeff Menor	Basic Fire Protection	503-285-1855	jeff@basicfire.com
Holly King	Andersen Const	503-283-6712	hking@andersen-const.com

Submittal no. _____

An Oregon Lighting Agency

This document has been reviewed for general conformance with contract documents.

This review does not relieve the subcontractor or supplier of responsibility for adherence to the contract documents.

PSU BLUMEL HALL
PRIOR APPROVAL PACKAGE

☐ NO EXCEPTIONS TAKEN

☒ REVISE AS NOTED

☐ REVISE AND RESUBMIT

☒ REJECTED FIXT. "H" + "J"

☐ _____

May 14, 2012
David Wray

By: T. ARNICH

Date: 5-22-12

PORTLAND STATE UNIVERSITY
FACILITIES AND PLANNING

Project: PSU BLUMEL HALL

Contents - May 11, 2012

Type	Factory	Description
A	McGraw Edison	VPL-BO2-LED-E1-SQ-2L/SM/OS
AE	McGraw Edison	VPL-BO2-LED-E1-SQ-2L/SM/ICP/OS
B	McGraw Edison	VTS-CO2-LED-E1-T3-BZ-MX/X-LXX
BW	McGraw Edison	VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX
D	Corelite	Z1-WL-2N5-1C-UNV-24-T1
F	Corelite	Z1-WL-2N5-1C-UNV-22-T1
FE	Corelite	Z1-WL-2N5-1E-UNV-22-T1
H	Shaper	661-9-W-CFL/1/27-120V-NA
J	Evergreen Lighting	ESX-C-16-226T-MN-WF
L	Halo	PD6H142E-62H-4GFD-W
L2	Halo	PD8H142E-62H-4GFD-W
M	Spectrum Lighting	SPC0812CF-42EX-8115-SG-WM-BZ

Submitting Agency:	Description: VPL-BO2-LED-E1-SQ-2L/SM/OS	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	A

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE A

PROPOSED SUBSTITUTION: McGraw Edison, VPL-BO2-LED-E1-SQ-2L/SM/OS

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray

Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blair

Date 5/21/2012

Remarks

Submitting Agency:	Description: VPL-BO2-LED-E1-SQ-2L/SM/OS	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FAX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	A

McGRAW-EDISON®

energy solutions

DESCRIPTION

The Valet™ LED luminaire features a rugged and low-profile housing construction incorporating patented, modular LED LightBAR™ technology. Through superior optical control, Valet delivers uniform and energy-conscious illumination optimized to improve vehicular movement and pedestrian safety in parking structure applications. UL/cUL listed for wet locations.

Catalog #		Type
Project		TYPE A
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
One-piece, low copper die-cast aluminum housing features heavy wall construction for superior heat transfer and resistance to corrosion. Formed aluminum faceplate is secured via four (4) stainless steel fasteners, and is recessed for clean mating of door and housing. Optional tamper-proof Torx™-head fasteners offer vandal resistant access to the electrical compartment.

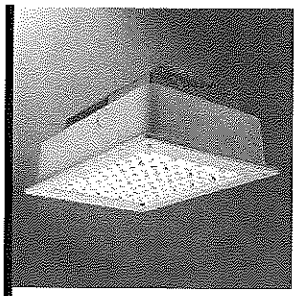
Optics
Choice of eight (8) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution, maximizing efficiency and application spacing. Optional GL optics internally shield the drive lane and pedestrians from direct source viewing. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical
LED drivers mount to die-cast aluminum back casting for optimal heat sinking and operation efficiency. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. 50,000 + hour life with >70% lumen maintenance. The Valet LED luminaire is suitable for operation in -30°C to 40°C ambient environments. LightBARs feature an IP66 enclosure rating.

Mounting
Standard fixture mounts to a square or octagonal 4" surface or recessed j-box via heavy gauge painted quick mount box complete with tool-less removable cable allowing for hands-free fixture wiring. Single carton packaging of housing and quick mounting box for contractor friendly arrival of product to site. Optional mounting methods include rigid or free-swinging 3/4" pendant including bird guard, trunnion mount, wall mount and direct lag surface mount.

Finish
Cast components and mounting box finished in a Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available.

Warranty
Valet features a five-year limited warranty.



VPL
VALET LED

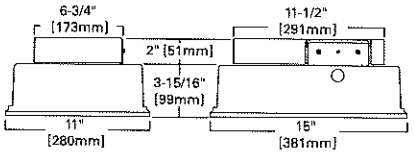
1 - 4 LightBARs
Solid State LED

PARKING GARAGE LUMINAIRE

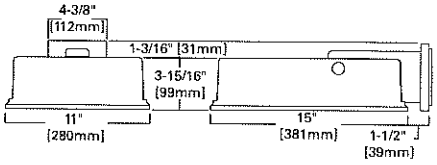
SustainabLED design

MOUNTING METHODS

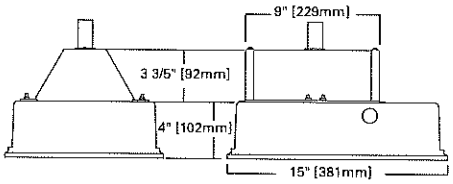
J-Box Mount [Standard]



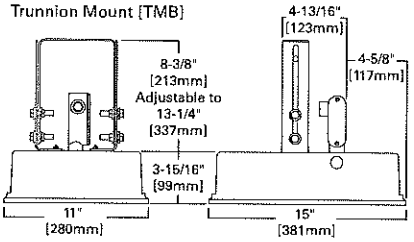
Wall Mount [WM]



Pendant Box / Bird Guard [PBG]



Trunnion Mount [TMB]



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP65 Fixture Rating, IP66 LightBARs
ARRA Compliant
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz, 480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating
50°C (Optional) Ambient Temperature Rating

SHIPPING DATA

Approximate Net Weight:
16 lbs. (8 kgs.)

COOPER Lighting
www.cooperlighting.com

Submitting Agency:	Description: VPL-B02-LED-E1-SQ-2L/SM/OS	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	A

TYPE A

POWER AND LUMENS BY BAR COUNT

Number of LightBARs	DISTRIBUTION									
	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	GL2	GL3	GL4	CQ	SQ	WQ	RW	CFP
	7 LED LIGHTBAR										
C01	27	0.23	0.13	1,869	1,895	1,842	1,959	1,929	1,965	1,866	1,742
C02	54	0.46	0.21	3,708	3,761	3,655	3,886	3,827	3,899	3,702	3,457
C03	77	0.65	0.29	5,463	5,540	5,384	5,725	5,638	5,744	5,454	5,093
C04	101	0.86	0.37	7,266	7,369	7,161	7,615	7,499	7,640	7,254	6,774
	21 LED LIGHTBAR										
B01	27	0.23	0.13	2,299	2,331	2,266	2,409	2,373	2,417	2,295	2,143
B02	51	0.43	0.20	4,561	4,625	4,495	4,780	4,707	4,796	4,554	4,252
B03	73	0.62	0.28	6,719	6,814	6,622	7,042	6,935	7,065	6,708	6,264
B04	95	0.81	0.35	8,938	9,064	8,808	9,366	9,224	9,397	8,923	8,332

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96
50°C	0.92

ORDERING INFORMATION

Sample Number: VPL-B02-LED-E1-SQ-AP

Product Family
- **VPL**[2] Valet Parking Garage Luminaire

Number of LightBARs [1, 2]
- **B01**[3] [1] 21 LED LightBAR[3]
- **B02**=[2] 21 LED LightBARs
- **B03**=[3] 21 LED LightBARs
- **B04**=[4] 21 LED LightBARs
- **C01**=[1] 7 LED LightBAR[3]
- **C02**=[2] 7 LED LightBARs
- **C03**=[3] 7 LED LightBARs
- **C04**=[4] 7 LED LightBARs

Lamp Type
- **LED**[2] Solid State Light Emitting Diodes

Voltage
- **E1**=Electronic (120-277V)
- **347**=347V
- **480**=480V

Distribution
- **CQ**[2] Concentrated Type V Square
- **SQ**=Type V Square
- **WQ**=Wide Type V Square
- **CR**=Concentrated Type V Round
- **RD**=Type V Round
- **GL2**=Type II w/ Glare Control
- **GL3**=Type III w/ Glare Control
- **GL4**=Type IV w/ Glare Control
- **CFP**=90 Degree Forward Throw Perimeter
- **RW**=Rectangular Wide

Finish
- **AP**=Grey
- **BZ**=Bronze
- **BK**=Black
- **DP**=Dark Platinum
- **GM**=Graphite Metallic
- **WH**=White

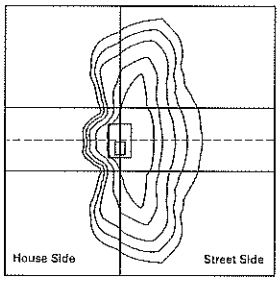
Options [4]
- **HA**[2] 50 Degrees C High Ambient[5] Temperature Rating
- **2L**=Two Circuits[6, 7]
- **WM**=Wall Mount
- **L90**=Optics Rotated 90 Degrees Left
- **R90**=Optics Rotated 90 Degrees Right
- **TR**=Tamper Resistant Fasteners
- **TMB**=Trunnion Mount with Connection Box. (some assembly required)
- **PBG**=Pendant Box/Bird Guard[8]
- **SM**=Surface Mount[9]
- **7060**=70 CRI/6000K CCT[10]
- **8030**=80 CRI/3000K CCT[10]
- **LCF**=LightBAR Cover Plate Matches Housing Finish
- **ICP**=Integral Cold Weather[11, 12] Battery Pack (Specify 120V or 277V)
- **OS**=Integral Occupancy Sensor[13] (Specify Number of LightBars)

Accessories [14]
- **MA1253**= 10kV Circuit Module Replacement
- **RV/WG**=Field-Installed wire guard

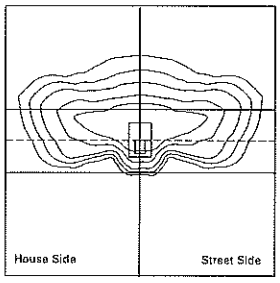
Notes:
1. Standard 4000K CCT and greater than 70CRI.
2. 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
3. Not available w/ 2L Two Circuits option.
4. Add as suffix.
5. Not available in models with B04 or C04.
6. Available in models with B02 or C02, B03 or C03, and B04 or C04. Low-Level output varies by bar count specified. Consult factory.
7. Consult factory before ordering in combination with OSX option.
8. Required for pendant mounting. Adjustable to accept a rigid or free swinging pendant configuration.
9. Surface mount configuration limited to 25 ° C ambient conditions.
10. Consult Factory for lead times and lumen multiplier.
11. Available with B01 and C01 configurations only. Rated for 25 ° C ambient operating temperature.
12. Must specify voltage.
13. Housed in external box mounted to the luminaire. Available in B02-B04 and C02-C04 configurations. Replace X with number of BARS (i.e., OS2). Controlled by the Occupancy Sensor, default time delay setting is 15 minutes. Standard lens covers up to 12' mounting height, 360 ° and maximum 20' diameter. For other configurations, consult customer service.
14. Order separately.

OPTIC ORIENTATION

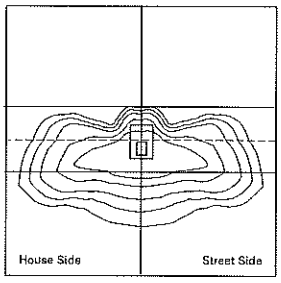
Dotted lines represent driving lanes.



Standard



Optics Rotated Left @ 90° [L90]



Optics Rotated Right @ 90° [R90]

Submitting Agency:	Description: VPL-BO2-LED-E1-SQ-2L/SM/ICP/OS	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	AE

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE AE

PROPOSED SUBSTITUTION: McGraw Edison, VPL-BO2-LED-E1-SQ-2L/SM/ICP/OS

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E	
☐ Approved	☒ Approved as noted
☐ Not Approved	☐ Received too late
By David Blair	
Date 5/21/2012	
Remarks See below.	

The Construction Specifications Institute
Northwest Region

Advancement of Construction Technology

May 2012

Battery pack option not necessary because emergency fixtures are on an emergency generator circuit. Therefore, just need to provide option for two circuits.

Submitting Agency:	Description: VPL-BO2-LED-E1-SQ-2L/SM/ICP/OS	Type:
SOLUS 1820 NE Gilsan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 Fx: 503-768-9990	Project: PSU BLUMEL HALL Notes:	AE

McGRAW-EDISON®

energy solutions

DESCRIPTION

The Valet™ LED luminaire features a rugged and low-profile housing construction incorporating patented, modular LED LightBAR™ technology. Through superior optical control, Valet delivers uniform and energy-conscious illumination optimized to improve vehicular movement and pedestrian safety in parking structure applications. UL/cUL listed for wet locations.

Catalog #		Type
Project		TYPE AE
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
One-piece, low copper die-cast aluminum housing features heavy wall construction for superior heat transfer and resistance to corrosion. Formed aluminum faceplate is secured via four (4) stainless steel fasteners, and is recessed for clean mating of door and housing. Optional tamper-proof Torx™-head fasteners offer vandal resistant access to the electrical compartment.

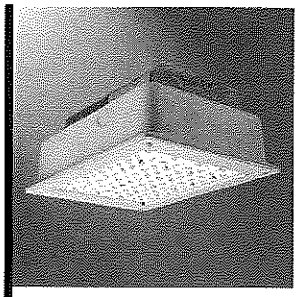
Optics
Choice of eight (8) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution, maximizing efficiency and application spacing. Optional GL optics internally shield the drive lane and pedestrians from direct source viewing. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical
LED drivers mount to die-cast aluminum back casting for optimal heat sinking and operation efficiency. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. 50,000 + hour life with >70% lumen maintenance. The Valet LED luminaire is suitable for operation in -30°C to 40°C ambient environments. LightBARs feature an IP66 enclosure rating.

Mounting
Standard fixture mounts to a square or octagonal 4" surface or recessed j-box via heavy gauge painted quick mount box complete with tool-less removable cable allowing for hands-free fixture wiring. Single carton packaging of housing and quick mounting box for contractor friendly arrival of product to site. Optional mounting methods include rigid or free-swinging 3/4" pendant including bird guard, trunnion mount, wall mount and direct lag surface mount.

Finish
Cast components and mounting box finished in a Super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available.

Warranty
Valet features a five-year limited warranty.



VPL
VALET LED

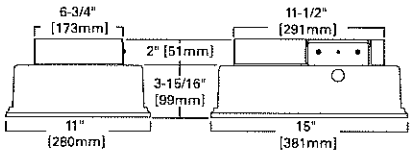
1 - 4 LightBARs
Solid State LED

PARKING GARAGE LUMINAIRE

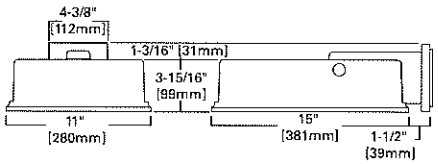
SustainabLEDesign

MOUNTING METHODS

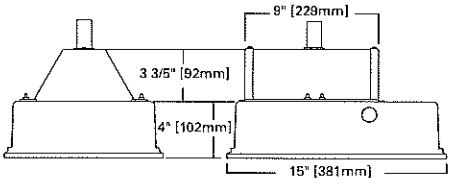
J-Box Mount [Standard]



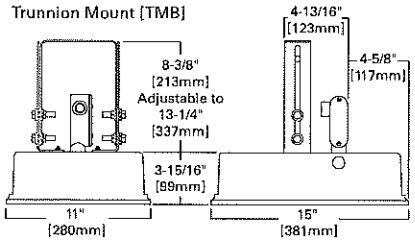
Wall Mount [WM]



Pendant Box / Bird Guard [PBG]



Trunnion Mount [TMB]



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP65 Fixture Rating, IP66 LightBARs
ARRA Compliant
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz, 480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating
50°C (Optional) Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
16 lbs. (8 kgs.)

COOPER Lighting
www.cooperlighting.com

Submitting Agency:	Description: VPL-B02-LED-E1-SQ-2L/SM/ICP/OS	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FAX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	AE

TYPE AE

POWER AND LUMENS BY BAR COUNT

Number of LightBARs	DISTRIBUTION									
	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	GL2	GL3	GL4	CQ	SQ	WQ	RW	CFP
	7 LED LIGHTBAR										
C01	27	0.23	0.13	1,869	1,895	1,842	1,959	1,929	1,965	1,866	1,742
C02	54	0.46	0.21	3,708	3,761	3,655	3,886	3,827	3,899	3,702	3,457
C03	77	0.65	0.29	5,463	5,540	5,384	5,725	5,638	5,744	5,454	5,093
C04	101	0.86	0.37	7,266	7,369	7,161	7,615	7,499	7,640	7,254	6,774
	21 LED LIGHTBAR										
B01	27	0.23	0.13	2,299	2,331	2,266	2,409	2,373	2,417	2,295	2,143
B02	51	0.43	0.20	4,561	4,625	4,495	4,780	4,707	4,796	4,554	4,252
B03	73	0.62	0.28	6,719	6,814	6,622	7,042	6,935	7,065	6,708	6,264
B04	95	0.81	0.35	8,938	9,064	8,808	9,366	9,224	9,397	8,923	8,332

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96
50°C	0.92

ORDERING INFORMATION

Sample Number: VPL-B02-LED-E1-SQ-AP

Product Family
- **VPL**= Valet Parking Garage Luminaire

Number of LightBARs [1, 2]
- **B01**= [1] 21 LED LightBAR[3]
- **B02**=[2] 21 LED LightBARs
- **B03**=[3] 21 LED LightBARs
- **B04**=[4] 21 LED LightBARs
- **C01**=[1] 7 LED LightBAR[3]
- **C02**=[2] 7 LED LightBARs
- **C03**=[3] 7 LED LightBARs
- **C04**=[4] 7 LED LightBARs

Lamp Type
- **LED**= Solid State Light Emitting Diodes

Voltage
- **E1**=Electronic (120-277V)
- **347**=347V
- **480**=480V

Distribution
- **CQ**= Concentrated Type V Square
- **SQ**=Type V Square
- **WQ**=Wide Type V Square
- **CR**=Concentrated Type V Round
- **RD**=Type V Round
- **GL2**=Type II w/ Glare Control
- **GL3**=Type III w/ Glare Control
- **GL4**=Type IV w/ Glare Control
- **CFP**=90 Degree Forward Throw Perimeter
- **RW**=Rectangular Wide

Finish
- **AP**=Grey
- **BZ**=Bronze
- **BK**=Black
- **DP**=Dark Platinum
- **GM**=Graphite Metallic
- **WH**=White

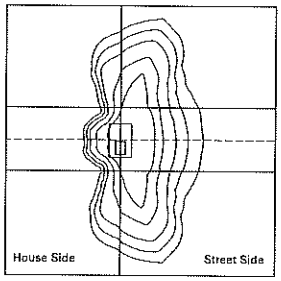
Options [4]
- **HA**= 50 Degrees C High Ambient[5] Temperature Rating
- **2L**=Two Circuits[6, 7]
- **WM**=Wall Mount
- **L90**=Optics Rotated 90 Degrees Left
- **R90**=Optics Rotated 90 Degrees Right
- **TR**=Tamper Resistant Fasteners
- **TMB**=Trunnion Mount with Connection Box. (some assembly required)
- **PBG**=Pendant Box/Bird Guard[8]
- **SM**=Surface Mount[9]
- **7060**=70 CRI/6000K CCT[10]
- **8030**=80 CRI/3000K CCT[10]
- **LCF**=LightBAR Cover Plate Matches Housing Finish
- **ICP**=Integral Cold Weather[11, 12] Battery Pack (Specify 120V or 277V)
- **OS**=Integral Occupancy Sensor[13] (Specify Number of LightBars)

Accessories [14]
- **MA1253**= 10kV Circuit Module Replacement
- **RV/WG**=Field-Installed wire guard

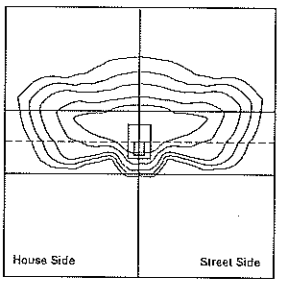
Notes:
1. Standard 4000K CCT and greater than 70CRI.
2. 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
3. Not available w/ 2L Two Circuits option.
4. Add as suffix.
5. Not available in models with B04 or C04.
6. Available in models with B02 or C02, B03 or C03, and B04 or C04. Low-Level output varies by bar count specified. Consult factory.
7. Consult factory before ordering in combination with OSX option.
8. Required for pendant mounting. Adjustable to accept a rigid or free swinging pendant configuration.
9. Surface mount configuration limited to 25 ° C ambient conditions.
10. Consult Factory for lead times and lumen multiplier.
11. Available with B01 and C01 configurations only. Rated for 25 ° C ambient operating temperature.
12. Must specify voltage.
13. Housed in external box mounted to the luminaire. Available in B02-B04 and C02-C04 configurations. Replace X with number of BARS (i.e., OS2). Controlled by the Occupancy Sensor, default time delay setting is 15 minutes. Standard lens covers up to 12' mounting height, 360 ° and maximum 20' diameter. For other configurations, consult customer service.
14. Order separately.

OPTIC ORIENTATION

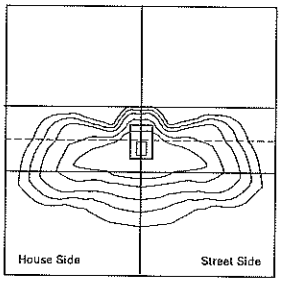
Dotted lines represent driving lanes.



Standard



Optics Rotated Left @ 90° [L90]



Optics Rotated Right @ 90° [R90]

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-MX/X-LXX	Type:
1820 NE Glisan St, Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	B

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE B

PROPOSED SUBSTITUTION: McGraw Edison, VTS-CO2-LED-E1-T3-BZ-MX/X-LXX

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

General Contractor (if after award of Contract)

For use by A/E

☐ Approved ☒ Approved as noted

☐ Not Approved ☐ Received too late

By David Blanc

Date 5/21/2012

Remarks Fixture is approved.

However, our lighting calculations indicate that additional fixtures will be necessary to meet IESNA 9th Ed. max to min uniformity ratio. See sheet E5.1 for performance requirements.

The Construction Specifications Institute
Northwest Region

Advancement of Construction Technology

May 2012

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-MX/X-LXX	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 SOLUSFX 503-768-9990	Project: PSU BLUMEL HALL Notes:	B

McGRAW-EDISON®

energy solutions

DESCRIPTION

The Ventus™ LED area luminaire provides uncompromising optical performance and outstanding versatility for a wide variety of area and roadway applications. Patent pending modular LightBAR™ technology delivers uniform and energy conscious illumination to walkways, parking lots, roadways, building areas, and any security lighting application. UL/cUL Listed for wet locations.

Catalog #		Type
Project		TYPE B
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Die-cast aluminum frame secures thermally conductive, extruded aluminum heat sink to independent electrical chamber. Heavy-wall, die-cast aluminum housing and door isolates driver components for cooler operation. The unique construction allows for passive cooling and natural cleaning of the extruded heat sink ensuring reliable operation at 40°C high ambient conditions. Stainless steel fasteners and hinging allow access to electrical components for installation and maintenance. Optional tool-less hardware available for ease of entry into electrical chamber.

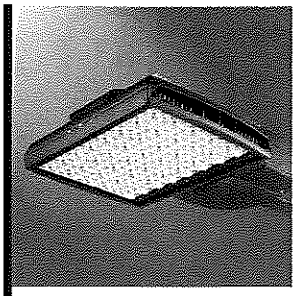
Optics
Choice of thirteen (13) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical
LED drivers mount to die-cast aluminum back casting for optimal heat sinking and operation efficiency. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. 50,000 + hour life with >70% lumen maintenance. The Ventus LED luminaire is suitable for operation in -30°C to 40°C ambient environments. LightBARs feature an IP66 enclosure rating.

Mounting
Cast aluminum 6" arm includes bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor friendly arrival of product on site. Optional internal mast arm mount accepts a 1-1/4" to 2" O.D. horizontal tenon, while a 2-bolt clamping mechanism secures fixture. Cast-in leveling guides provide +/-5° vertical leveling adjustment. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

Finish
Cast components and arm finished in SuperTGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty
Ventus features a five-year limited warranty.



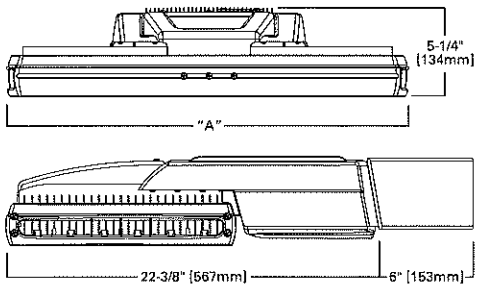
VTS
VENTUS
LED

2 - 12 LightBARs
Solid State LED

AREA LUMINAIRE

SustainabLEDesign

DIMENSIONS

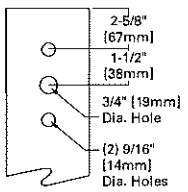


TABULATED REFERENCE DATA

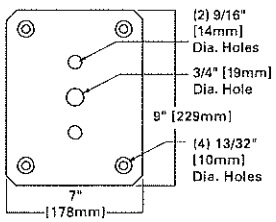
# of Bars	"A" Width [in/mm]	Weight (lbs.) w/o Arm	w/Arm	EPA (sq. ft.) w/o Arm	w/Arm
2-4	12-7/8 [328]	24 [10.91 kgs.]	29 [13.18 kgs.]	0.94	1.00
5-8	18 [458]	30 [13.64 kgs.]	35 [15.91 kgs.]	1.10	1.20
9-12	25-7/8 [658]	39 [17.73 kgs.]	44 [20.00 kgs.]	1.31	1.44

DRILLING PATTERNS

Type "C"



Wall Mount [WM]



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
3G Vibration Rated
ARRA Compliant
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz, 480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
(See Tabulated Reference Data)

COOPER Lighting
www.cooperlighting.com

ADH091647 pc
2012-01-26 09:42:51

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-MX/X-LXX	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 SOLUSFX 503-768-9990	Project: PSU BLUMEL HALL Notes:	B

TYPE B

ORDERING INFORMATION

Sample Number: VTS-B12-LED-E1-T3-GM

Product Family [1]
- **VTS**=Ventus

Number of LightBARs [2, 3]
- **B02**= [2] 21 LED LightBARs
- **B03**= [3] 21 LED LightBARs
- **B04**= [4] 21 LED LightBARs
- **B05**= [5] 21 LED LightBARs
- **B06**= [6] 21 LED LightBARs
- **B07**= [7] 21 LED LightBARs
- **B08**= [8] 21 LED LightBARs
- **B09**= [9] 21 LED LightBARs
- **B10**= [10] LED LightBARs
- **B11**= [11] 21 LED LightBARs
- **B12**= [12] 21 LED LightBARs
- **C02**= [2] 7 LED LightBARs
- **C03**= [3] 7 LED LightBARs
- **C04**= [4] 7 LED LightBARs
- **C05**= [5] LED LightBARs
- **C06**=[6] 7 LED LightBARS
- **C07**=[7] LED LightBARs
- **C08**=[8] 7 LED LightBARs
- **C09**=[9] 7 LED LightBARs
- **C10**=[10] 7 LED LightBARs
- **C11**=[11] 7 LED LightBARs
- **C12**=[12] 7 LED LightBARs

Lamp Type
- **LED**=Solid State Light Emitting Diodes

Voltage
- **E1**= Electronic (120-277V)
- **347**= 347V[4]
- **480**= 480V[4]

Distribution
- **T2**=Type II
- **T3**=Type III
- **T3S**=Type III Short
- **T4**= Type IV
- **5MQ**= Type V Square Medium
- **5WQ**= Type V Square Wide
- **5XQ**= Type V Square Extra Wide
- **SL2**= Type II w/Spill Control
- **SL3**= Type III w/Spill Control
- **SL4**= Type IV w/Spill Control
- **RW**= Rectangular Wide
- **SLL**= 90 Degree Spill Light Eliminator Left
- **SLR**= 90 Degree Spill Light Eliminator Right

Finish
- **AP**=Grey
- **BZ**=Bronze
- **BK**=Black
- **DP**= Dark Platinum
- **GM**= Graphite Metallic
- **WH**= White

Options [5]
- **P**= Button Type Photocontrol [4, 6] (120V, 208, 240, or 277V)
- **R**= NEMA Photocontrol Receptacle
- **HA**= 50 Degrees C High Ambient Temperature Rating [7]
- **2L**= Two Circuits [8, 9]
- **L90**= Optics Rotated 90 Degrees Left
- **R90**= Optics Rotated 90 Degrees Right
- **7060**=70 CRI/6000K CCT [10]
- **8030**=80 CRI/3000K CCT [10]
- **LCF**=LightBAR Cover Plate Matches Housing Finish
- **TH**=Toolless Door Hardware
- **WM**=Wall Mount with Arm
- **IM**=Internal Mast Arm
- **MS-LXX**=Motion sensor for [11] on/off operation
- **MX/X-LXX**=Motion sensor [12] for bi-level operation

Accessories [13]
- **VA1033-XX**=Single Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1034-XX**=2 @180 Degrees Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1035-XX**= 3 @ 120 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1036-XX**= 4 @ 90 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1037-XX**= 2 @ 90 Degree Tenon Adapter for 2-3/8" Tenon
- **VA1038-XX**= 3 @ 90 Degree Tenon Adapter for 2-3/8" Tenon
- **VA1039-XX**= 2 @ 120 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1040-XX**= Single Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1041-XX**= 2 @ 180 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1042-XX**= 3 @ 120 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1043-XX**= 4 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1044-XX**= 2 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1045-XX**=3 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1046-XX**=4 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **OA/RA1016**=NEMA Twistlock Photocontrol - Multi-Tap
- **OA/RA1027**=NEMA Twistlock Photocontrol - 480V
- **OA/RA1201**=NEMA Twistlock Photocontrol - 347V
- **MA1253**=10kV Circuit Module Replacement

Notes:
1. 6" arm and round pole adapter included with fixture.
2. 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
3. Standard 4000K CCT and greater than 70CRI.
4. Not available with HA option.
5. Add as suffix.
6. Must specify voltage.
7. Not available with button photocontrol or motion sensor.120 - 277V only.
8. Requires two electrical circuits to luminaire. See LightBAR operation table for additional information.
9. Consult factory before ordering in combination with MS-LXX or MS/X-LXX options.
10. Consult Factory for lead times and lumen multiplier.
11. Sensor housed in external box mounted to the luminaire. Available in B02 - B12 and C02 - C12 configurations. Replace XX with mounting height in feet for proper lens selection, (i.e., MS-L25). Consult factory for additional information.
12. Sensor housed in external box mounted to the luminaire. Available in B02 - B12 and C02 - C12 configurations. Replace X with number of bars operating in low output mode and replace XX with mounting height for proper lens selection, (i.e., MS/3-L25). Maximum 4 bars in low output mode. Consult factory for additional information.
13. Order separately, replace XX with color suffix.

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96
50°C	0.92

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-MX/X-LXX	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 SOLUS FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	B

TYPE B

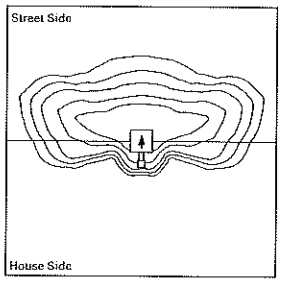
POWER AND LUMENS BY BAR COUNT

Number of LightBARs	Power [Watts]	Current @ 120V [A]	Current @ 277V [A]	DISTRIBUTION											
				T2A	T3A	T3S	T4S	SL2	SL3	SL4	5MQ	5WQ	5XQ	RWQ	SLR/ SLL
	7 LED LIGHTBAR														
C02	54	0.46	0.21	3,668	3,654	3,503	3,594	3,550	3,610	3,855	3,832	3,738	3,663	3,433	3,433
C03	77	0.65	0.29	5,554	5,533	5,305	5,442	5,375	5,465	5,837	5,802	5,660	5,546	5,198	5,198
C04	101	0.86	0.37	7,557	7,528	7,217	7,404	7,313	7,435	7,941	7,894	7,701	7,545	7,072	7,072
C05	131	1.11	0.50	9,228	9,193	8,813	9,041	8,930	9,080	9,697	9,640	9,404	9,214	8,636	8,636
C06	154	1.30	0.58	11,209	11,167	10,705	10,982	10,847	11,030	11,779	11,710	11,423	11,192	10,490	10,490
C07	178	1.51	0.66	12,969	12,919	12,385	12,706	12,550	12,761	13,628	13,548	13,216	12,949	12,137	12,137
C08	202	1.72	0.74	14,481	14,426	13,830	14,187	14,013	14,249	15,217	15,127	14,757	14,459	13,552	13,552
C09	232	1.97	0.87	16,800	16,737	16,045	16,460	16,258	16,531	17,654	17,550	17,121	16,775	15,723	15,723
C010	255	2.16	0.95	18,738	18,667	17,895	18,358	18,133	18,437	19,690	19,574	19,095	18,709	17,536	17,536
C011	279	2.37	1.03	20,506	20,429	19,584	20,091	19,844	20,178	21,549	21,422	20,898	20,475	19,191	19,191
C012	303	2.58	1.11	22,109	22,025	21,114	21,661	21,395	21,754	23,232	23,096	22,530	22,075	20,690	20,690
	21 LED LIGHTBAR														
B02	51	0.43	0.20	4,512	4,495	4,309	4,421	4,366	4,440	4,741	4,714	4,598	4,505	4,223	4,223
B03	73	0.62	0.28	6,832	6,806	6,525	6,693	6,611	6,722	7,179	7,137	6,962	6,822	6,394	6,394
B04	95	0.81	0.35	9,295	9,260	8,877	9,106	8,995	9,146	9,767	9,710	9,472	9,281	8,698	8,698
B05	124	1.05	0.48	11,350	11,307	10,840	11,120	10,984	11,168	11,927	11,857	11,567	11,333	10,622	10,622
B06	146	1.24	0.56	13,787	13,735	13,167	13,508	13,342	13,566	14,488	14,403	14,050	13,767	12,903	12,903
B07	168	1.43	0.63	15,951	15,891	15,234	15,628	15,436	15,696	16,762	16,664	16,256	15,927	14,928	14,928
B08	190	1.62	0.70	17,811	17,744	17,010	17,450	17,236	17,526	18,717	18,607	18,151	17,784	16,669	16,669
B09	219	1.86	0.83	20,664	20,586	19,735	20,246	19,997	20,333	21,715	21,587	21,059	20,633	19,339	19,339
B010	241	2.05	0.91	23,047	22,960	22,011	22,580	22,303	22,678	24,219	24,076	23,487	23,012	21,569	21,569
B011	263	2.24	0.98	25,223	25,127	24,089	24,712	24,408	24,818	26,505	26,349	25,704	25,185	23,605	23,605
B012	285	2.43	1.05	27,194	27,091	25,971	26,643	26,315	26,756	28,576	28,408	27,712	27,152	25,449	25,449

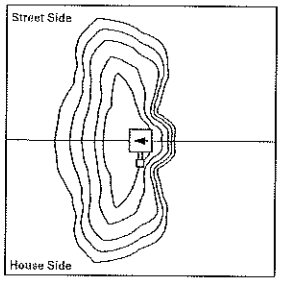
LIGHTBAR OPERATION WITH 2L TWO CIRCUIT OPTION

# of LightBARs	Circuit 1	Circuit 2
2	1	1
3	2	1
4	2	2
5	3	2
6	3	3
7	4	3
8	4	4
9	5	4
10	6	4
11	7	4
12	8	4

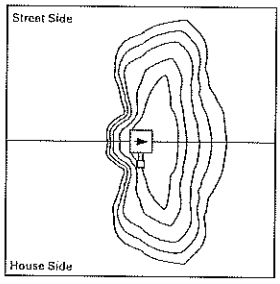
OPTIC ORIENTATION



Standard



Optics Rotated Left @ 90° [L90]



Optics Rotated Right @ 90° [R90]

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	BW

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE BW

PROPOSED SUBSTITUTION: McGraw Edison, VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E	
☐ Approved	☒ Approved as noted
☐ Not Approved	☐ Received too late
By David Blacie	
Date 5/21/2012	
Remarks Fixture is approved.	

May 2012

However, our lighting calculations indicate that additional fixtures will be necessary to meet IESNA 9th Ed. max to min Uniformity ratio. See sheet E5.1 for performance requirements.

The Construction Specifications Institute
Northwest Region

Advancement of Construction Technology

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	BW

McGRAW-EDISON®

energy solutions

DESCRIPTION

The Ventus™ LED area luminaire provides uncompromising optical performance and outstanding versatility for a wide variety of area and roadway applications. Patent pending modular LightBAR™ technology delivers uniform and energy conscious illumination to walkways, parking lots, roadways, building areas, and any security lighting application. UL/cUL Listed for wet locations.

		Type
Catalog #		TYPE BW
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Die-cast aluminum frame secures thermally conductive, extruded aluminum heat sink to independent electrical chamber. Heavy-wall, die-cast aluminum housing and door isolates driver components for cooler operation. The unique construction allows for passive cooling and natural cleaning of the extruded heat sink ensuring reliable operation at 40°C high ambient conditions. Stainless steel fasteners and hinging allow access to electrical components for installation and maintenance. Optional tool-less hardware available for ease of entry into electrical chamber.

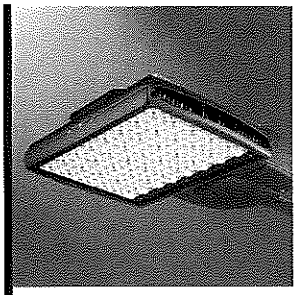
Optics
Choice of thirteen (13) patented, high-efficiency AccuLED Optics™ manufactured from injection-molded acrylic. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and nominal 70 CRI.

Electrical
LED drivers mount to die-cast aluminum back casting for optimal heat sinking and operation efficiency. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. Shipped standard with Cooper Lighting proprietary circuit module designed to withstand 10kV of transient line surge. 50,000 + hour life with >70% lumen maintenance. The Ventus LED luminaire is suitable for operation in -30°C to 40°C ambient environments. LightBARs feature an IP66 enclosure rating.

Mounting
Cast aluminum 6" arm includes bolt guides allowing for easy positioning of fixture during installation to pole or wall surface. Standard single carton packaging of housing, square pole arm and round pole adapter for contractor friendly arrival of product on site. Optional internal mast arm mount accepts a 1-1/4" to 2" O.D. horizontal tenon, while a 2-bolt clamping mechanism secures fixture. Cast-in leveling guides provide +/-5° vertical leveling adjustment. Tenon adapters available to slipfit over poles equipped with 2-3/8" or 3-1/2" O.D. tenon. 3G vibration rated.

Finish
Cast components and arm finished in SuperTGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum, and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty
Ventus features a five-year limited warranty.



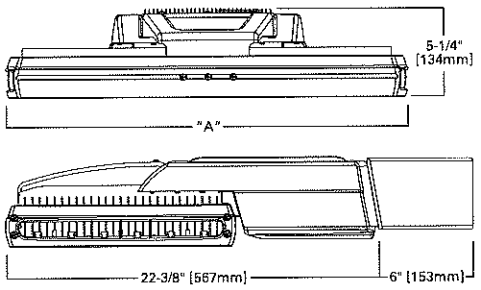
VTS
VENTUS
LED

2 - 12 LightBARs
Solid State LED

AREA LUMINAIRE

SustainabLEDesign

DIMENSIONS

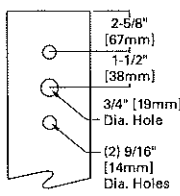


TABULATED REFERENCE DATA

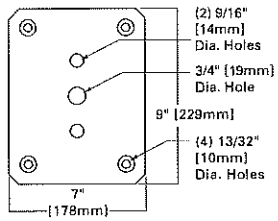
# of Bars	"A" Width [in/mm]	Weight [lbs.] w/o Arm	w/Arm	EPA [sq. ft.] w/o Arm	w/Arm
2-4	12-7/8 [328]	24 [10.91 kgs.]	29 [13.18 kgs.]	0.94	1.00
5-8	18 [458]	30 [13.64 kgs.]	35 [15.91 kgs.]	1.10	1.20
9-12	25-7/8 [658]	39 [17.73 kgs.]	44 [20.00 kgs.]	1.31	1.44

DRILLING PATTERNS

Type "C"



Wall Mount [WM]



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
3G Vibration Rated
ARRA Compliant
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60hz, 347V/60hz, 480V/60hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
(See Tabulated Reference Data)

COOPER Lighting
www.cooperlighting.com

ADH091647 pc
2012-01-26 09:42:51

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	BW

TYPE BW

ORDERING INFORMATION

Sample Number: VTS-B12-LED-E1-T3-GM

Product Family [1]
- **VTS**=Ventus

Number of LightBARs [2, 3]
- **B02**= [2] 21 LED LightBARs
- **B03**= [3] 21 LED LightBARs
- **B04**= [4] 21 LED LightBARs
- **B05**= [5] 21 LED LightBARs
- **B06**= [6] 21 LED LightBARs
- **B07**= [7] 21 LED LightBARs
- **B08**= [8] 21 LED LightBARs
- **B09**= [9] 21 LED LightBARs
- **B10**= [10] LED LightBARs
- **B11**= [11] 21 LED LightBARs
- **B12**= [12] 21 LED LightBARs
- **C02**= [2] 7 LED LightBARs
- **C03**= [3] 7 LED LightBARs
- **C04**= [4] 7 LED LightBARs
- **C05**= [5] LED LightBARs
- **C06**=[6] 7 LED LightBARS
- **C07**=[7] LED LightBARs
- **C08**=[8] 7 LED LightBARs
- **C09**=[9] 7 LED LightBARs
- **C10**=[10] 7 LED LightBARs
- **C11**=[11] 7 LED LightBARs
- **C12**=[12] 7 LED LightBARs

Lamp Type
- **LED**=Solid State Light Emitting Diodes

Voltage
- **E1**= Electronic (120-277V)
- **347**= 347V [4]
- **480**= 480V [4]

Distribution
- **T2**=Type II
- **T3**=Type III
- **T3S**=Type III Short
- **T4**= Type IV
- **5MQ**= Type V Square Medium
- **5WQ**= Type V Square Wide
- **5XQ**= Type V Square Extra Wide
- **SL2**= Type II w/Spill Control
- **SL3**= Type III w/Spill Control
- **SL4**= Type IV w/Spill Control
- **RW**= Rectangular Wide
- **SLL**= 90 Degree Spill Light Eliminator Left
- **SLR**= 90 Degree Spill Light Eliminator Right

Finish
- **AP**=Grey
- **BZ**=Bronze
- **BK**=Black
- **DP**= Dark Platinum
- **GM**= Graphite Metallic
- **WH**= White

Options [5]
- **P**= Button Type Photocontrol [4, 6] (120V, 208, 240, or 277V)
- **R**= NEMA Photocontrol Receptacle
- **HA**= 50 Degrees C High Ambient Temperature Rating [7]
- **2L**= Two Circuits [8, 9]
- **L90**= Optics Rotated 90 Degrees Left
- **R90**= Optics Rotated 90 Degrees Right
- **7060**=70 CRI/6000K CCT [10]
- **8030**=80 CRI/3000K CCT [10]
- **LCF**=LightBAR Cover Plate Matches Housing Finish
- **TH**=Toolless Door Hardware
- **WM**=Wall Mount with Arm
- **IM**=Internal Mast Arm
- **MS-LXX**=Motion sensor for [11] on/off operation
- **MX/X-LXX**=Motion sensor [12] for bi-level operation

Accessories [13]
- **VA1033-XX**=Single Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1034-XX**=2 @180 Degrees Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1035-XX**= 3 @ 120 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1036-XX**= 4 @ 90 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1037-XX**= 2 @ 90 Degree Tenon Adapter for 2-3/8" Tenon
- **VA1038-XX**= 3 @ 90 Degree Tenon Adapter for 2-3/8" Tenon
- **VA1039-XX**= 2 @ 120 Degree Tenon Adapter for 2-3/8" O.D. Tenon
- **VA1040-XX**= Single Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1041-XX**= 2 @ 180 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1042-XX**= 3 @ 120 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1043-XX**= 4 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1044-XX**= 2 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1045-XX**=3 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **VA1046-XX**=4 @ 90 Degree Tenon Adapter for 3-1/2" O.D. Tenon
- **OA/RA1016**=NEMA Twistlock Photocontrol - Multi-Tap
- **OA/RA1027**=NEMA Twistlock Photocontrol - 480V
- **OA/RA1201**=NEMA Twistlock Photocontrol - 347V
- **MA1253**=10kV Circuit Module Replacement

Notes:
1. 6" arm and round pole adapter included with fixture.
2. 21 LED LightBAR powered at 350mA, 7 LED LightBAR powered at 1A.
3. Standard 4000K CCT and greater than 70CRI.
4. Not available with HA option.
5. Add as suffix.
6. Must specify voltage.
7. Not available with button photocontrol or motion sensor.120 - 277V only.
8. Requires two electrical circuits to luminaire. See LightBAR operation table for additional information.
9. Consult factory before ordering in combination with MS-LXX or MS/X-LXX options.
10. Consult Factory for lead times and lumen multiplier.
11. Sensor housed in external box mounted to the luminaire. Available in B02 - B12 and C02 - C12 configurations. Replace XX with mounting height in feet for proper lens selection, (i.e., MS-L25). Consult factory for additional information.
12. Sensor housed in external box mounted to the luminaire. Available in B02 - B12 and C02 - C12 configurations. Replace X with number of bars operating in low output mode and replace XX with mounting height for proper lens selection, (i.e., MS/3-L25). Maximum 4 bars in low output mode. Consult factory for additional information.
13. Order separately, replace XX with color suffix.

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.04
15°C	1.03
25°C	1.00
40°C	0.96
50°C	0.92

Submitting Agency:	Description: VTS-CO2-LED-E1-T3-BZ-WM/MX/X-LXX	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FAX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	BW

TYPE BW

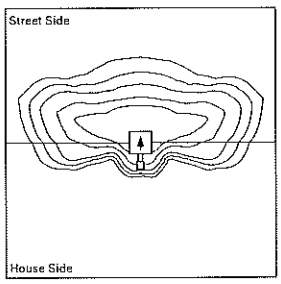
POWER AND LUMENS BY BAR COUNT

Number of LightBARs	Power (Watts)	Current @ 120V [A]	Current @ 277V [A]	DISTRIBUTION											
				T2A	T3A	T3S	T4S	SL2	SL3	SL4	5MQ	5WQ	5XQ	RWQ	SLR/ SLL
	7 LED LIGHTBAR														
C02	54	0.46	0.21	3,668	3,654	3,503	3,594	3,550	3,610	3,855	3,832	3,738	3,663	3,433	3,433
C03	77	0.65	0.29	5,554	5,533	5,305	5,442	5,375	5,465	5,837	5,802	5,660	5,546	5,198	5,198
C04	101	0.86	0.37	7,557	7,528	7,217	7,404	7,313	7,435	7,941	7,894	7,701	7,545	7,072	7,072
C05	131	1.11	0.50	9,228	9,193	8,813	9,041	8,930	9,080	9,697	9,640	9,404	9,214	8,636	8,636
C06	154	1.30	0.58	11,209	11,167	10,705	10,982	10,847	11,030	11,779	11,710	11,423	11,192	10,490	10,490
C07	178	1.51	0.66	12,969	12,919	12,385	12,706	12,550	12,761	13,628	13,548	13,216	12,949	12,137	12,137
C08	202	1.72	0.74	14,481	14,426	13,830	14,187	14,013	14,249	15,217	15,127	14,757	14,459	13,552	13,552
C09	232	1.97	0.87	16,800	16,737	16,045	16,460	16,258	16,531	17,654	17,550	17,121	16,775	15,723	15,723
C010	255	2.16	0.95	18,738	18,667	17,895	18,358	18,133	18,437	19,690	19,574	19,095	18,709	17,536	17,536
C011	279	2.37	1.03	20,506	20,429	19,584	20,091	19,844	20,178	21,549	21,422	20,898	20,475	19,191	19,191
C012	303	2.58	1.11	22,109	22,025	21,114	21,661	21,395	21,754	23,232	23,096	22,530	22,075	20,690	20,690
	21 LED LIGHTBAR														
B02	51	0.43	0.20	4,512	4,495	4,309	4,421	4,366	4,440	4,741	4,714	4,598	4,505	4,223	4,223
B03	73	0.62	0.28	6,832	6,806	6,525	6,693	6,611	6,722	7,179	7,137	6,962	6,822	6,394	6,394
B04	95	0.81	0.35	9,295	9,259	8,877	9,106	8,995	9,146	9,767	9,710	9,472	9,281	8,698	8,698
B05	124	1.05	0.48	11,360	11,307	10,840	11,120	10,984	11,168	11,927	11,857	11,567	11,333	10,622	10,622
B06	146	1.24	0.56	13,787	13,735	13,167	13,508	13,342	13,566	14,488	14,403	14,050	13,767	12,903	12,903
B07	168	1.43	0.63	15,951	15,891	15,234	15,628	15,436	15,696	16,762	16,664	16,256	15,927	14,928	14,928
B08	190	1.62	0.70	17,811	17,744	17,010	17,450	17,236	17,526	18,717	18,607	18,151	17,784	16,669	16,669
B09	219	1.86	0.83	20,664	20,586	19,735	20,246	19,997	20,333	21,715	21,587	21,059	20,633	19,339	19,339
B010	241	2.05	0.91	23,047	22,960	22,011	22,580	22,303	22,678	24,219	24,076	23,487	23,012	21,569	21,569
B011	263	2.24	0.98	25,223	25,127	24,089	24,712	24,402	24,818	26,505	26,349	25,704	25,185	23,605	23,605
B012	285	2.43	1.05	27,194	27,091	25,971	26,643	26,315	26,758	28,576	28,408	27,712	27,152	25,449	25,449

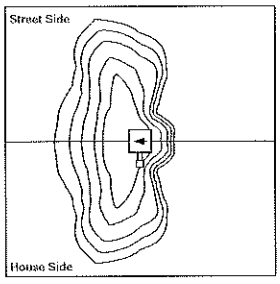
LIGHTBAR OPERATION WITH 2L TWO CIRCUIT OPTION

# of LightBARs	Circuit 1	Circuit 2
2	1	1
3	2	1
4	2	2
5	3	2
6	3	3
7	4	3
8	4	4
9	5	4
10	6	4
11	7	4
12	8	4

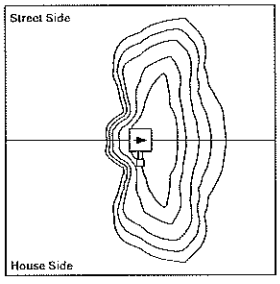
OPTIC ORIENTATION



Standard



Optics Rotated Left @ 90° [L90]



Optics Rotated Right @ 90° [R90]

Submitting Agency:	Description: Z1-WL-2N5-1C-UNV-24-T1	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	D

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE D

PROPOSED SUBSTITUTION: Corelite, Z1-WL-2N5-1C-UNV-24-T1

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

General Contractor (if after award of Contract)

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blacic

Date 5/18/2012

Remarks

The Construction Specifications Institute
Northwest Region

Advancement of Construction Technology

May 2012

Submitting Agency:	Description: Z1-WL-2N5-1C-UNV-24-T1	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	D

CORELITE™

DESCRIPTION

Corelite's Z1 recessed luminaire meets the demands of the new energy culture with superior lighting and energy performance. Its engineered optical system delivers luminaire efficiencies greater than 85% while maintaining a soft luminous glow for high visual comfort. Its unique light distribution fills the volume of space to ensure that vertical surfaces glow to create the perception of spaciousness. To further realize the Z1's series' design potential, it is available with a complete palette of shielding options, and maintains the series' dedication to shallow plenum applications with a minimal 1-3/4" deep housing.

		Type
Catalog #		TYPE D
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A ... Construction
Low profile housing die-formed 20 gauge cold rolled steel with integral one-piece 20 gauge gear tray.

B ... Reflectors
High reflectance white powder coat painted reflector system.

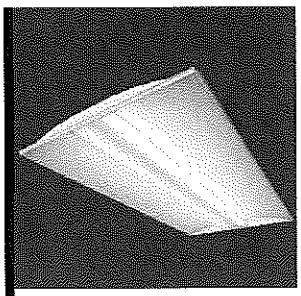
C ... Shielding
Linear prismatic fully frosted acrylic lens. Lens is designed to provide low glare ambient illumination while creating evenly luminous side reflectors. Lens secured to housing via injection molded inserts for easy lamp access.

D ... Electrical
T5/T5HO fixtures are pre-wired with quick wire connectors and use UL listed Class P, T5/T5HO program rapid start universal voltage electronic ballasts, power factor of 97% with less than 10% THD. Fixtures and electrical components certified to UL and CUL standards.

E ... Finish
Fixture housings are standard white using electrostatically applied polyester powder coat paint.

Mounting
Standard flange design works with most lay-in ceiling types. Integral pryout tabs secure luminaire to ceiling grid from above. Fixture offers tie-in locations for tie-wire on all corners, consult local code for appropriate tie-wire recommendations.

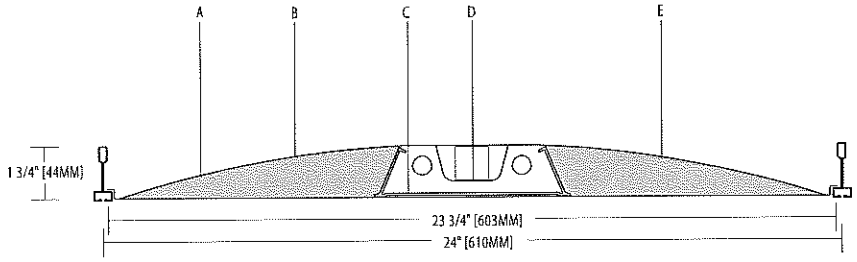
NOTE: Concealed Ceiling
Class R may be installed into inaccessible ceilings (sheet rock, wood panel, etc.). This is achieved with the Metalux DFW series drywall frame-in kit, ordered separately from Metalux. Specify "CC" for the Corelite Ceiling Type. Specify the following part numbers separately, from Metalux:
For 1x4, order Metalux part # DF-14W-U
For 2x2, order Metalux part # DF-22W-U
For 2x4, order Metalux part # DF-24W-U



CLASS Z1
Linear Prismatic Lens

2T5
2T5HO

2'x4' Ultra Shallow Recessed
1-3/4" Depth



ORDERING INFORMATION

Sample Number: Z1-WL-2N5-1C-UNV-24-T1

Series	Shielding	Lamp Type	Wiring [1]	Voltage [1]	Ceiling Type	Options [1]
Z1: Class Z1	L: Linear Prismatic Lens	N5: T5 Normal Output	B: Battery Pack	120: 120V	T1: 1" Grid, Slot-Grid, 9/16" Tegular	AR: Air Return
Reflector	Number of Lamps	T5: T5 High Output	C: Standard Circuit	277: 277V	T9: 9/16" Grid	CP: Chicago Plenum
W: White	2: 2 Lamps	Number of Circuits [1]	D: Dimming / Step Dimming	347: 347V	CC: Concealed Ceiling	NY: New York City Construction
		1: 1 Circuit	E: Emergency	UNV: Universal (120V-277V)		AM: Anti-Microbial Coating
		2: 2 Circuits	T: Nightlight	Size		LG: Lens Gasketing
			Y: Daylight	24: 2' x 4'		SD: Step Dimming
						W6: 6' Whip Flex
						W12: 12' Whip Flex

Notes: 1 Not all options available. Please consult your Cooper Lighting Representative for availability. Specifications and dimensions subject to change without notice.

Submitting Agency:	Description: Z1-WL-2N5-1C-UNV-22-T1	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	F

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE F

PROPOSED SUBSTITUTION: Corelite, Z1-WL-2N5-1C-UNV-22-T1

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

General Contractor (if after award of Contract)

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blacic

Date 5 / 18 / 2012

Remarks

The Construction Specifications Institute
Northwest Region

May 2012

Advancement of Construction Technology

Submitting Agency:	Description: Z1-WL-2N5-1C-UNV-22-T1	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 503-768-9999 503-768-9990	Project: PSU BLUMEL HALL Notes:	F

CORELITE™

DESCRIPTION

Corelite's Z1 recessed luminaire meets the demands of the new energy culture with superior lighting and energy performance. Its engineered optical system delivers luminaire efficiencies greater than 85% while maintaining a soft luminous glow for high visual comfort. Its unique light distribution fills the volume of space to ensure that vertical surfaces glow to create the perception of spaciousness. To further realize the Z1's series' design potential, it is available with a complete palette of shielding options, and maintains the series' dedication to shallow plenum applications with a minimal 1-3/4" deep housing.

		Type
Catalog #		TYPE F
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A ... Construction
Low profile housing die-formed 20 gauge cold rolled steel with integral one-piece 20 gauge gear tray.

B ... Reflectors
High reflectance white powder coat painted reflector system.

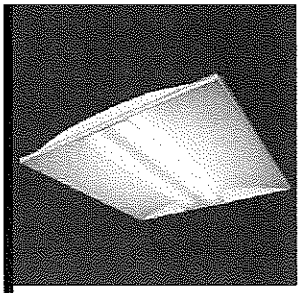
C ... Shielding
Linear prismatic fully frosted acrylic lens. Lens is designed to provide low glare ambient illumination while creating evenly luminous side reflectors. Lens secured to housing via injection molded inserts for easy lamp access.

D ... Electrical
T5/T5HO fixtures are pre-wired with quick wire connectors and use UL listed Class P, T5/T5HO program rapid start universal voltage electronic ballasts, power factor of 97% with less than 10% THD. Fixtures and electrical components certified to UL and CUL standards.

E ... Finish
Fixture housings are standard white using electrostatically applied polyester powder coat paint.

Mounting
Standard flange design works with most lay-in ceiling types. Integral pryout tabs secure luminaire to ceiling grid from above. Fixture offers tie-in locations for tie-wire on all corners, consult local code for appropriate tie-wire recommendations.

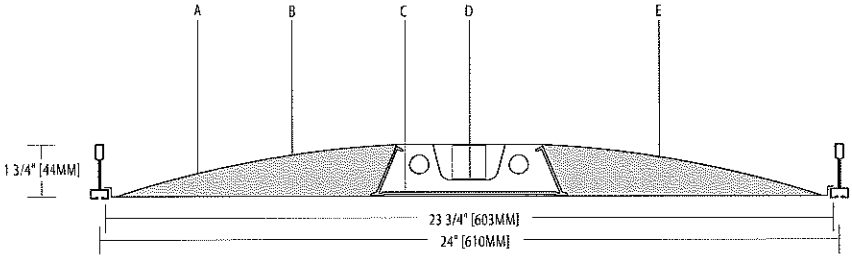
NOTE: Concealed Ceiling
Class R may be installed into inaccessible ceilings (sheet rock, wood panel, etc.). This is achieved with the Metalux DFW series drywall frame-in kit, ordered separately from Metalux. Specify "CC" for the Corelite Ceiling Type. Specify the following part numbers separately, from Metalux:
For 1x4, order Metalux part # DF-14W-U
For 2x2, order Metalux part # DF-22W-U
For 2x4, order Metalux part # DF-24W-U



CLASS Z1
Linear Prismatic Lens

2T5
2T5HO

2'x2' Ultra Shallow Recessed
1-3/4" Depth



ORDERING INFORMATION

Sample Number: Z1-WL-2N5-1C-UNV-22-T1

Series	Shielding	Lamp Type	Wiring [1]	Voltage [1]	Ceiling Type	Options [1]
Z1: Class Z1	L: Linear Prismatic Lens	N5: T5 Normal Output	B: Battery Pack	120: 120V	T1: 1" Grid, Slot-Grid, 9/16" Tegular	AR: Air Return
Reflector	Number of Lamps	T6: T5 High Output	C: Standard Circuit	277: 277V	T9: 9/16" Grid	CP: Chicago Plenum
W: White	2: 2 Lamps	Number of Circuits [1]	D: Dimming / Step Dimming	347: 347V	CC: Concealed Ceiling	NY: New York City Construction
		1: 1 Circuit	E: Emergency	UNV: Universal (120V-277V)		AM: Anti-Microbial Coating
			T: Nightlight	Size		LG: Lens Gasketing
			Y: Daylight	22: 2' x 2'		SD: Step Dimming
						W6: 6' Whip Flex
						W12: 12' Whip Flex

Notes: 1 Not all options available. Please consult your Cooper Lighting Representative for availability. Specifications and dimensions subject to change without notice.

Submitting Agency:	Description: Z1-WL-2N5-1E-UNV-22-T1	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 Tel: 503-768-9999 Fax: 503-768-9990	Project: PSU BLUMEL HALL Notes:	FE

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE FE

PROPOSED SUBSTITUTION: Corelite, Z1-WL-2N5-1E-UNV-22-T1

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

General Contractor (if after award of Contract)

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blasi

Date 5 / 18 / 2012

Remarks

Submitting Agency:	Description: Z1-WL-2N5-1E-UNV-22-T1	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 SOLUS Fax: 503-768-9990	Project: PSU BLUMEL HALL Notes:	FE

CORELITE™

DESCRIPTION

Corelite's Z1 recessed luminaire meets the demands of the new energy culture with superior lighting and energy performance. Its engineered optical system delivers luminaire efficiencies greater than 85% while maintaining a soft luminous glow for high visual comfort. Its unique light distribution fills the volume of space to ensure that vertical surfaces glow to create the perception of spaciousness. To further realize the Z1's series' design potential, it is available with a complete palette of shielding options, and maintains the series' dedication to shallow plenum applications with a minimal 1-3/4" deep housing.

Catalog #		Type
Project		TYPE FE
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A ... Construction
Low profile housing die-formed 20 gauge cold rolled steel with integral one-piece 20 gauge gear tray.

B ... Reflectors
High reflectance white powder coat painted reflector system.

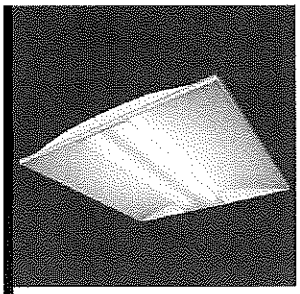
C ... Shielding
Linear prismatic fully frosted acrylic lens. Lens is designed to provide low glare ambient illumination while creating evenly luminous side reflectors. Lens secured to housing via injection molded inserts for easy lamp access.

D ... Electrical
T5/T5HO fixtures are pre-wired with quick wire connectors and use UL listed Class P, T5/T5HO program rapid start universal voltage electronic ballasts, power factor of 97% with less than 10% THD. Fixtures and electrical components certified to UL and CUL standards.

E ... Finish
Fixture housings are standard white using electrostatically applied polyester powder coat paint.

Mounting
Standard flange design works with most lay-in ceiling types. Integral pryout tabs secure luminaire to ceiling grid from above. Fixture offers tie-in locations for tie-wire on all corners, consult local code for appropriate tie-wire recommendations.

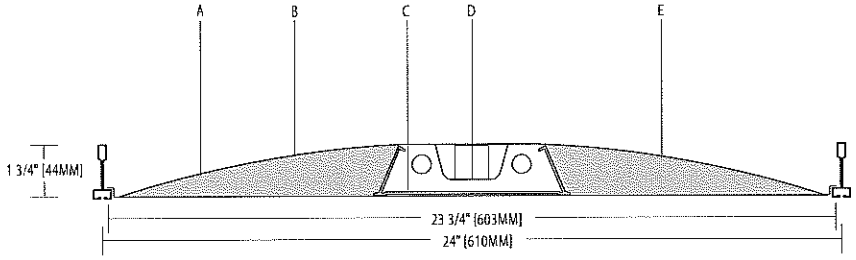
NOTE: Concealed Ceiling
Class R may be installed into inaccessible ceilings (sheet rock, wood panel, etc.). This is achieved with the Metalux DFW series drywall frame-in kit, ordered separately from Metalux. Specify "CC" for the Corelite Ceiling Type. Specify the following part numbers separately, from Metalux:
For 1x4, order Metalux part # DF-14W-U
For 2x2, order Metalux part # DF-22W-U
For 2x4, order Metalux part # DF-24W-U



CLASS Z1
Linear Prismatic Lens

2T5
2T5HO

2'x2' Ultra Shallow Recessed
1-3/4" Depth



ORDERING INFORMATION

Sample Number: Z1-WL-2N5-1C-UNV-22-T1

Series	Shielding	Lamp Type	Wiring [1]	Voltage [1]	Ceiling Type	Options [1]
Z1: Class Z1	L: Linear Prismatic Lens	N5: T5 Normal Output	B: Battery Pack	120: 120V	T1: 1" Grid, Slot-Grid, 9/16" Tegular	AR: Air Return
Reflector	Number of Lamps	T6: T5 High Output	C: Standard Circuit	277: 277V	T9: 9/16" Grid	CP: Chicago Plenum
W: White	2: 2 Lamps	Number of Circuits [1]	D: Dimming / Step Dimming	347: 347V	CC: Concealed Ceiling	NY: New York City Construction
		1: 1 Circuit	E: Emergency	UNV: Universal (120V-277V)		AM: Anti-Microbial Coating
			T: Nightlight	Size		LG: Lens Gasketing
			V: Daylight	22: 2' x 2'		SD: Step Dimming
						W6: 6' Whip Flex
						W12: 12' Whip Flex

Notes: 1 Not all options available. Please consult your Cooper Lighting Representative for availability. Specifications and dimensions subject to change without notice.

Submitting Agency:	Description: 661-9-W-CFL/1/27-120V-NA	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX 503-768-9990	Project: PSU BLUMEL HALL Notes: Offering 1 27W CFL	H

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE H

PROPOSED SUBSTITUTION: Shaper, 661-9-W-CFL/1/27-120V-NA

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray

Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

☐ Approved ☐ Approved as noted

☒ Not Approved ☐ Received too late

By David Blaine

Date 5/22/2012

Remarks

The Construction Specifications Institute
Northwest Region

May 2012

Advancement of Construction Technology

Submitting Agency:	Description: 661-9-W-CFL/1/27-120V-NA	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 Fax: 503-768-9990	Project: PSU BLUMEL HALL Notes: Offering 1 27W CFL	H

Shaper
shaperlighting.com

DESCRIPTION

661 Starter Collection features a Luminous Diffuser in Acrylic or Perforated Metal. ADA compliant.

Catalog #		Type: TYPE H
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Material
Plated or painted brushed die-cast aluminum with an aluminum mounting plate. Matte white acrylic diffuser.

Finish
Standard: Natural Aluminum (NA) (Sustainable Design)
Premium: Aluminum Paint (ALP), Bronze Metallic Paint (BM), Dark Platinum Paint (DP), Gold Metallic Paint (GM), Matte White (MW), Lacquered Satin Aluminum (SAL) or Custom Color (CC).

Optics
Refer to www.shaperlighting.com for complete photometrics.

Ballast
Integral electronic HPF, multi-volt 120/277V (347V Canada - Except 13W), thermally protected with end-of-life circuitry to accommodate the specified lamp wattage.

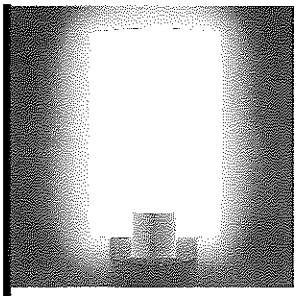
Lamp/Socket
9": One (1) 13W (G24q-1) 4-pin low wattage CFL Lamp, 26W or 32W (GX24q-3) 4-pin triple tube CFL lamp or one (1) 60W frosted T-10 lamp.
16: One (1) 27W (2G11) high lumen CFL lamp.
CFL socket injection molded plastic. INC socket fired ceramic rated for 660W-250V. Lamps furnished by others.

Installation
Supplied with a universal circular strap for a standard 4" J-box or plaster ring. Shaper luminaires are designed for interior installations only.

Options
Hand Painted Faux Alabaster Diffuser (FD), Hand Painted Faux Linen Diffuser (LND), Dimming Ballast: Advance Mark 7 (DMA7) or Advance Mark 10 (DMA10) - Available in (1) 13W & (1) 26W/32W (9") only or Lutron (DML) - Available in (1) 26W/32W only, Perforated Shield (PF), Remote Emergency Ballast - Supplied by others (REM), Damp Location (DL): All painted finishes only, MRI application (INC only) - Contact factory. Energy Star Rating - Contact factory.

Labels
U.L. and C.U.L approved for indoor and damp location. See options for damp location finishing requirements. Shaper's DL option is for interior applications (only) that have more than average moisture (i.e. bathroom, laundry room, etc.) but are not UL listed for pool, sauna, shower, whirlpool and any exterior applications (i.e. covered garage or building entrance) with exposure to weather elements such as rain, wind, etc. ADA compliant.

Modifications
Shaper's skilled craftspeople with their depth of experience offer the designer the flexibility to modify standard wall luminaires for project specific solutions. Contact the factory regarding scale options, unique finishes, mounting, additional materials/colors, or decorative detailing.



661 SERIES

Interior Wall Luminaire
Luminous Shield

ARRA
Shaper Lighting certifies that its products satisfy the requirements of Section 1605 of the American Recovery and Reinvestment Act (also known as the ARRA Buy American provision).

AMERICAN DISABILITIES ACT (ADA)
Shaper offers a large selection of ADA interior and exterior wall luminaires. ADA requires all fixtures below 68" to have a maximum projection of 4".

STARTER COLLECTION
Shaper's exclusive Starter Collection fixtures are featured throughout the Shaper product line. The concept of offering highly styled, affordable fixtures was introduced over fourteen years ago and has become one of our fastest growing lines. The design premise, basic construction, clean lines and unadorned shapes are highly desirable in modern architectural environments.

SUSTAINABLE DESIGN
Shaper has a long-standing history of offering environmentally-friendly fixtures. The copper and bronze alloys used in our exterior luminaires feature up to 98% recycled content, contribute less undesirable air emissions compared to painted aluminum and are easy to recycle.

MAGNETIC RESONANCE IMAGING (MRI)
Lighting fixtures for MRI facilities are specialized and unique, requiring non-ferrous construction. Fluorescent fixtures cannot be used due to the ferrous parts in ballasts and lampholders. Modified incandescent fixtures meet the requirements.

QUICK SHIP (QS)
Shaper's Quick Ship program features over thirty-four fixtures with finish options such as Satin Chrome, Natural Aluminum and Satin Brass and a wide variety of lamp selections. All products ship in five days from receipt of order.

Submitting Agency:	Description: 661-9-W-CFL/1/27-120V-NA	Type:
1820 NE Glisan St, Suite 150 Portland, OR 97232 PH: 503-768-9999 SOLUS FX 503-768-9990	Project: PSU BLUMEL HALL Notes: Offering 1 27W CFL	H

TYPE H

shapelighting.com

661 SERIES INTERIOR WALL LUMINAIRE

ORDERING INFORMATION

Sample Number: 661-16-W-CFL/1/27-277V-SAL-LND

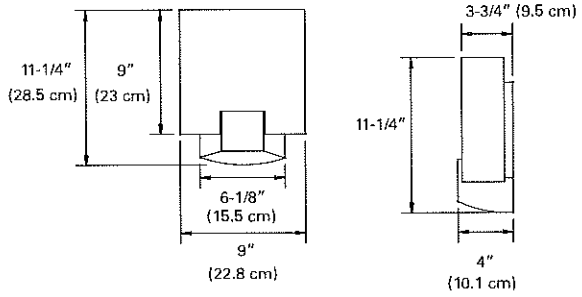
Series	Size	Mounting Type	Lamp	Voltage	Finish	Options
661 = Luminous Shield	9" 16"	W = Wall	CFL/1 (26/32W-Triple) [1] CFL/1/13 [1] CFL/1/27 [2] INC/1/60 [1]	120V 277V [3] 347V [3]	**Standard** NA = Natural Aluminum **Premium** ALP = Aluminum Paint BM = Bronze Metallic Paint CC = Custom Color GM = Gold Metallic Paint MW = Matte White SAL = Lacquered Satin Aluminum	DL = Damp Location [4] DMA7 = Dimming Ballast (Advance Mark 7) [5, 6] DMA10 = Dimming Ballast (Advance Mark 10) [5, 6] DML = Dimming Ballast (Lutron) [6] PF = Perforated Shield REM = Remote Emergency Ballast [7] FD = Hand Painted Faux Alabaster Diffuser LND = Hand Painted Faux Linen Diffuser

Notes:
1. Available in 9".
2. Available in 16".
3. Available with CFL only (347V not available in 13W).
4. Interior applications only.
5. Available with CFL/1/13W (9").
6. Available with CFL/1/26W/32W (9").
7. Supplied by others.

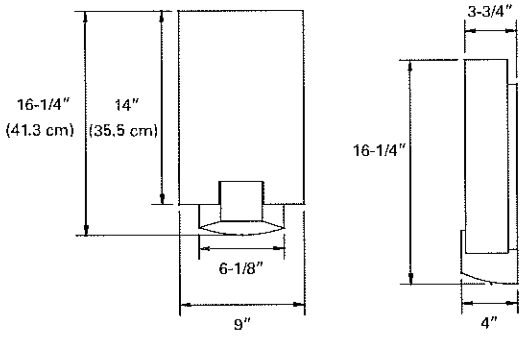
Offering 1 27W CFL

2 (2) 13W CFL specified in schedule

MOUNTING TYPE

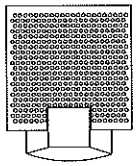


661-9" STANDARD



661-16" STANDARD

OPTIONS



PERFORATED SHIELD (PF)

Submitting Agency:	Description: ESX-C-16-226T-MN-WF	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	J

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE J

PROPOSED SUBSTITUTION: Evergreen Lighting, ESX-C-16-226T-MN-WF

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

~~☒ Approved~~ ☐ Approved as noted

☒ Not Approved ☐ Received too late

By David Blanc

Date 5/18/2012

Remarks

TA 5/22/12

The Construction Specifications Institute
Northwest Region

May 2012

Advancement of Construction Technology

Submitting Agency:	Description: ESX-C-16-226T-MN-WF	Type:
SOLUS 1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	J

TYPE J

DESCRIPTION

Essex Ceiling Flush Series features a low profile bowl and is available in two diameters.

Catalog #		Type	
Project			
Comments		Date	
Prepared By			

EVERGREEN LIGHTING

SPECIFICATION FEATURES

Material
Aluminum 1/2"- 3/4" round tube construction with an aluminum spun canopy for standard powdercoat finish or polished brass plated finish. With a white gloss reflective backplate with white ballast cover included. With P95 frosted virgin white acrylic bowl.

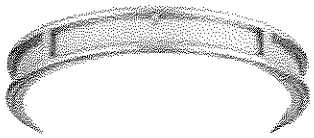
Installation
Supplied with standard mounting hardware to mount to a 4" J-box or plaster ring

Optics
Contact Evergreen Lighting for complete photometrics.

Ballasts
Integral electronic HPF, multivolt 120/277V ballasts, thermally protected with end-of-life circuitry to accommodate the specified lamp wattage.

Lamp/Sockets
16": Two (2)100 A-19 Med. Base Incandescent sockets, Two (2) 13W or 26W or 32W (GX24q-3) triple 4-pin CFL lamps,

23": Three (3)100 A-19 Med. Base Incandescent sockets, Four (4) 13W or 26W or 32W (GX24q-3) triple 4-pin CFL lamps



16" diameter X 7"H
23" diameter X 10"H

Essex Ceiling Flush

Labels
ETL for US and Canada for indoor and damp location.

ORDERING INFORMATION

Sample Number: ESX-C-23-432T-CH-WF

Series	Style	Size	Lamp	Finish	Lens	Options
ESX	Ceiling √	16" √ 23"	(2) 100A (2) 13W Quad (2) 26W TBX √ (2) 32W TBX (3) 100A (4) 13W Quad (4) 26W TBX (4) 32W TBX	Architectural Bronze (AB) Textured Bronze (TBR) √ Matte Black (MBK) Semi Gloss Black (GBK) Textured Black (TBK) Textured Rust (TR) Matte White (MW) Textured White (TW) Gloss White (GW) Metallic Grey (MG) Textured Gold (TG) Metallic Nickel (MN) Textured Verde Patina (TVP) Satin Brass (SB) Copper Vein (CV) Gold Vein (GV) Silver Vein (SV) Polished Brass (PB) Adder Chrome (CH)	White Frosted (WF) White Alabaster (WA) Honey Onyx (HO) Natural Horn (NH) Beige Alabaster (BA) Honey Swirl (HS)	EMR, 650 Lumen EMR, 900 Lumen Mark X Dimming Ballast

Submitting Agency:	Description: PD6H142E-62H-4GFD-W	Type:
SOLUS 1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE L

PROPOSED SUBSTITUTION: Halo, PD6H142E-62H-4GFD-W

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blacic

Date 5-18-2012

Remarks

The Construction Specifications Institute
Northwest Region

May 2012

Advancement of Construction Technology

Submitting Agency:	Description: PD6H142E-62H-4GFD-W	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L

HALO Commercial

DESCRIPTION

Recessed 6 inch aperture lens downlight for one horizontal 26W double twin tube or 26/32/42W triple twin tube compact fluorescent lamp. Fixture is suitable for commercial construction and wet location listed. Insulation must be kept 3" from top and sides of housing. Universal input electronic ballast with dimming and emergency options.

Catalog #		Type
Project		TYPE L
Comments		Date
Prepared by		

SPECIFICATION FEATURES

MECHANICAL

Frame
Boat shaped galvanized steel frame with 1/2" plaster lip accommodates ceilings up to 2" thick. May be used for new construction or remodeling installations. Provided with (2) remodel clips to secure frame when installed from below the ceiling.

Mounting Brackets
Bar hanger receivers adjusts 2" vertically from above the ceiling or thru the aperture. Use with No Fuss™ bar hangers or with 1/2" EMT. Removable to facilitate installation from below the ceiling.

No Fuss™ Bar Hangers
Pre-installed and centered bar hanger locks to tee grid with a screwdriver or pliers. Centering marks on the bar hanger mechanism allows consistent positioning of fixtures.

OPTICAL

Reflector
One piece aluminum reflector secures lens in place with integrated spring clips for a visually comfortable optic and allows for tool-less lens exchange from below the ceiling. Available with clear, diffuse, prismatic, fresnel or drop opal glass lens. Optional cross blade louver provides sharper cutoff to lamp. Self flanged standard.

- **Specular Reflectors** - Polished flange standard with white painted flange option.
- **Baffles and White Reflector** - White painted flange standard.

Trim Retention
Reflector is retained with two torsion springs and held tightly to the finished ceiling surface.

ELECTRICAL

Junction Box
(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (12) #12 AWG (six in, six out) 90°C conductors and feed thru branch wiring.

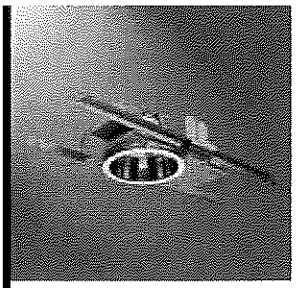
Lamp Socket
4-pin G24q base accepts (1) 26W DTT or 26/32/42W TTT lamp.

Socket Housing
Galvanized steel socket housing attached securely to reflector with captive thumbscrew. Vents provide effective lamp thermal management.

Control Gear
Universal 120V - 277V UNV or 347V input electronic ballast for 26/32/42W compact fluorescent lamp.

Emergency Battery Pack
Optional integral 120V/277V, 60Hz battery pack provides 90 minutes of emergency illumination. Long life maintenance free sealed nickel cadmium batteries recharge fully in 24 hours. Prewired remote test switch and indicator light.

Code Compliance
- Thermally protected and cULus listed for wet locations.
- IP44 rated for lens trims.
- NFPA Life Safety (Emergency Battery Pack).
- EMI/RFI per FCC Title 47 CFR, Part 18, non consumer limits.
- Peel down wattage label from 42W to 32W and 26W. Allows de-rating to set max. relamp wattage per project specifications.
- High efficacy luminaire may be used to meet IECC, ASHRAE, and Title 24 commercial standards.



PD6H142
62H

(1) 26W DTT
26/32/42W TTT

Compact Fluorescent

6-Inch Aperture
Lens Downlight

New Construction or Remodel
Non-IC

ENERGY DATA

PD6H142E, PD6CPH142E	
Min. Starting Temp -5°F / -20°C	Sound Rating Class A
EMI/RFI Emissions FCC 47CFR Part 18 Non-Consumer Limits	
Input Frequency 50/60 Hz	Power Factor > 0.98
THD < 10%	Input Voltage 120V - 277V ±10%
Crest factor < 1.7	
Operating Frequency > 40kHz	UL Listed Class P, Type 1 Outdoor, CSA or C/UL Certified
CFQ26W/G24Q	Input Power 28W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor 1.00
CFTR26W/GX24Q	Input Power 28W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor 1.00
CFTR32W/GX24Q	Input Power 35W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor .98
CFTR42W/GX24Q	Input Power 45W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor .96

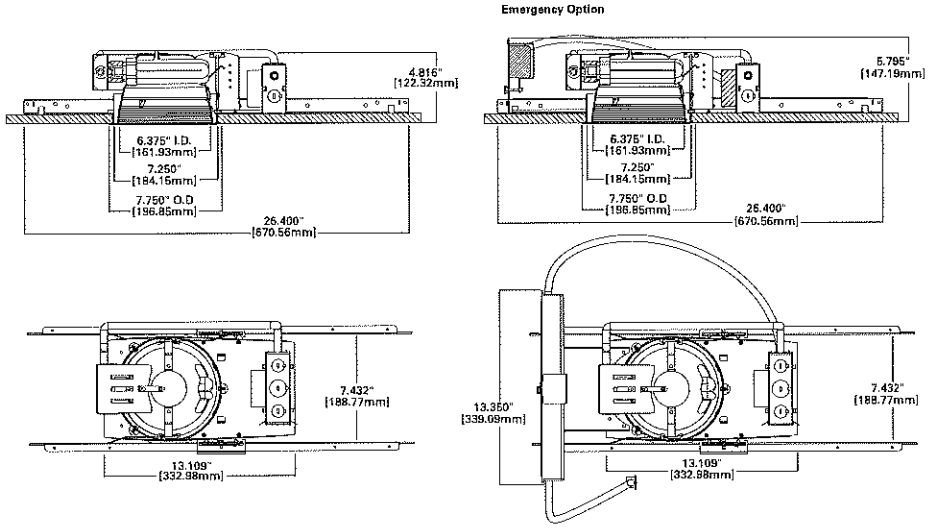
PD6H1423E	
Min. Starting Temp 0°F / -18°C	Sound Rating Class A
EMI/RFI Emissions FCC 47CFR Part 18 Non-Consumer Limits	
Input Frequency 60 Hz	Power Factor > 0.98
THD < 10%	Input Voltage 347VAC ±10%
Operating Frequency 50-60 kHz	cULus Listed Class P, Type 1 Outdoor, Type CC
CFQ26W/G24Q	Input Power 31W
	Input Current 0.09A @ 347V
	Ballast factor 1.02
	Crest factor < 1.6
CFTR26W/GX24Q	Input Power 31W
	Input Current 0.09A @ 347V
	Ballast factor 1.02
	Crest factor < 1.6
CFTR32W/GX24Q	Input Power 36W
	Input Current 0.11A @ 347V
	Ballast factor 0.98
	Crest factor < 1.5
CFTR42W/GX24Q	Input Power 50W
	Input Current 0.15A @ 347V
	Ballast factor 1.00
	Crest factor < 1.5

Submitting Agency:	Description: PD6H142E-62H-4GFD-W	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L

HALO Commercial

TYPE L

DIMENSIONS



ORDERING INFORMATION

SAMPLE NUMBER: PD6H142E 62H1GC

Order housing, reflector and lamp separately for a complete luminaire.

Housing
- **PD6H142** = 6 Inch horizontal (1) 26/32/42W DTT/TTT CFL
- **PD6CPH142** = 6 Inch horizontal (1) (1) 26/32/42W DTT/TTT CFL, CCEA listed (Chicago Plenum)

Ballast Option
- **E** = 120 – 277V 50/60Hz UNV
- **HEM** = 120V/277V, 60Hz emergency option
- **3E** = 347V 50/60Hz
- **1DMARKX** = 5% two-wire (26/32/42W) dimming, 120V
- **2DMARKX** = 5% two-wire (26/32/42W) dimming, 277V

Reflector
- **62H** = 6" horizontal

Lens Option
- **1G**=Prismatic Glass
- **2G**=Diffuse Glass
- **3G**=Clear Glass

Polymer "Dead Front" Trim [1]
- **1GDF**=Prismatic Glass with "Dead Front" Trim
- **2GDF**=Diffuse Glass with "Dead Front" Trim
- **3GDF**=Clear Glass with "Dead Front" Trim
- **4GDF**=Fresnel Glass with "Dead Front" Trim
- **5GDF**=Drop Opal Glass with "Dead Front" Trim

Finish Option
- **C**=Specular Clear
- **G**=Specular Gold
- **H**=Semi Specular Clear
- **W**=Gloss White (White Flange)
- **BB**=Black Baffle (White Flange)
- **WB**=White Baffle (White Flange)

Flange Option
- **Blank**=Polished Flange (C, G, H)
- **Blank**=White flange (W, BB, WB)
- **WF**=White Flange (C, G, H)

Accessories
- **HB128APK** = L channel hanger bar, 26", 'No-Fuss', pair (replacement)
- **RMB22** = 22" long wood joist mounting bars

Note:

1 "DF" trim option includes Specular Clear (C) reflector and white polymer flange only. No other finish or flange options apply.

Submitting Agency:	Description: PD6H142E-62H-4GFD-W	Type:
SOLUS 1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 FAX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L

HALO Commercial

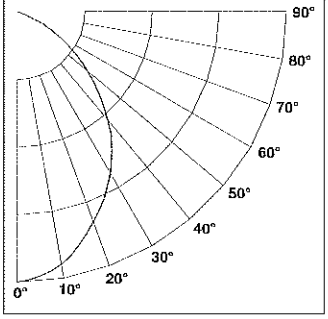
PD TYPE L

PHOTOMETRY

PD6H142E-62H1GC_32TTT

Spacing Criteria = 1.06
Lumens per Watt = 37 LpW
Test No. P31232
Test Model: PD6H142E-62H1GC_32TTT

Candle Distribution Curve (Candela Distribution 90° to 0°)



Candle Distribution

Degrees Vertical	Candela
0°	716
5	704
15	637
25	545
35	438
45	308
55	183
65	77
75	2
85	0
90	0

*CBCP

Luminaire

(Average Candela/M²)	
Degree	Avg. 0° Luminance
45	17667
55	11937
65	6033
75	204
85	0

Zonal Light Footcandles

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	24	5.5	6
7'	15	7	7.6
8'	11	8	8.7
9'	9	9	9.7
10'	7	10	10.8
12'	5	12.1	13
14'	4	14.1	15.2

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.
Footcandle values are initial, apply appropriate light loss factors where necessary.

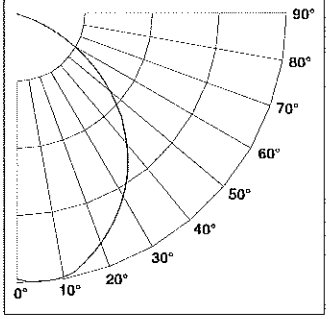
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	485.52	20.20	37.60
0-40	759.65	31.70	58.90
0-60	1192.24	49.70	92.40
0-90	1290.73	53.80	100.00

PD6H142E-62H1GC_42TTT

Spacing Criteria = 1.20
Lumens per Watt = 32 LpW
Test No. P31411
Test Model: PD6H142E-62H1GC_42TTT

Candle Distribution Curve (Candela Distribution 90° to 0°)



Candle Distribution

Degrees Vertical	Candela
0°	727
5	736
15	710
25	628
35	531
45	407
55	261
65	110
75	3
85	0
90	0

*CBCP

Luminaire

(Average Candela/M²)	
Degree	Avg. 0° Luminance
45	21748
55	15898
65	8076
75	288
85	0

Zonal Light Footcandles

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	24	5.8	6.2
7'	15	7.4	7.9
8'	11	8.5	9
9'	9	9.5	10.2
10'	7	10.6	11.3
12'	5	12.7	13.6
14'	4	14.8	15.8

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.
Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	518.55	16.20	36.60
0-40	813.99	25.40	57.50
0-60	1299.25	40.60	91.80
0-90	1415.36	44.20	100.00

Submitting Agency:	Description: PD8H142E-62H-4GFD-W	Type:
SOLUS 1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L2

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE L2

PROPOSED SUBSTITUTION: Halo, PD8H142E-62H-4GFD-W

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray
Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

☒ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blasic

Date 5/18/2012

Remarks

The Construction Specifications Institute
Northwest Region

May 2012

Advancement of Construction Technology

Submitting Agency:	Description: PD8H142E-62H-4GFD-W	Type:
1820 NE Gilsan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 Fx: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L2

HALO Commercial

DESCRIPTION

Recessed 8 inch aperture lens downlight for one horizontal 26W double twin tube or 26/32/42W triple twin tube compact fluorescent lamp. Fixture is suitable for commercial construction and wet location listed. Insulation must be kept 3" from top and sides of housing. Universal input electronic ballast with dimming and emergency options.

Catalog #		Type
Project		TYPE L2
Comments		Date
Prepared by		

SPECIFICATION FEATURES

MECHANICAL

Frame
Boat shaped galvanized steel frame with 1/2" plaster lip accommodates ceilings up to 2" thick. May be used for new construction or remodeling installations. Provided with (2) remodel clips to secure frame when installed from below the ceiling.

Mounting Brackets
Bar hanger receivers adjusts 2" vertically from above the ceiling or thru the aperture. Use with No Fuss™ bar hangers or with 1/2" EMT. Removable to facilitate installation from below the ceiling.

No Fuss™ Bar Hangers
Pre-installed and centered bar hanger locks to tee grid with a screwdriver or pliers. Centering marks on the bar hanger mechanism allows consistent positioning of fixtures.

OPTICAL

Reflector
One piece aluminum reflector secures lens in place with integrated spring clips for a visually comfortable optic and allows for tool-less lens exchange from below the ceiling. Available with clear, diffuse, prismatic, fresnel or drop opal glass lens. Optional cross blade louver provides sharper cutoff to lamp. Self flanged standard.

- **Specular Reflectors** - Polished flange standard with white painted flange option.
- **Baffles and White Reflector** - White painted flange standard.

Trim Retention
Reflector is retained with two torsion springs and held tightly to the finished ceiling surface.

ELECTRICAL

Junction Box
(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (12) #12 AWG (six in, six out) 90°C conductors and feed thru branch wiring.

Lamp Socket
4-pin G24q base accepts (1) 26W DTT or 26/32/42W TTT lamp.

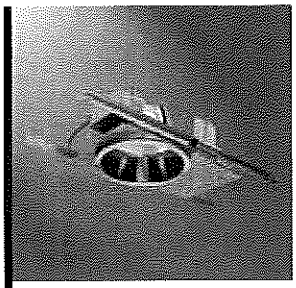
Socket Housing
Galvanized steel socket housing attached securely to reflector with captive thumbscrew. Vents provide effective lamp thermal management.

Control Gear
Universal 120V - 277V UNV or 347V input electronic ballast for 26/32/42W compact fluorescent lamp.

Emergency Battery Pack
Optional integral 120V/277V, 60 Hz battery pack provides 90 minutes of emergency illumination. Long life maintenance free sealed nickel cadmium batteries recharge fully in 24 hours. Prewired remote test switch and indicator light.

Code Compliance

- Thermally protected and cULus listed for wet locations.
- IP44 rated for lens trims
- NFPA Life Safety (Emergency Battery Pack)
- EMI/RFI per FCC Title 47 CFR, Part 18, non consumer limits.
- Peel down wattage label from 42W to 32W and 26W. Allows de-rating to set max. relamp wattage per project specifications.
- High efficacy luminaire may be used to meet IECC, ASHRAE, and Title 24 commercial standards.



PD8H142
82H

(1) 26W DTT
26/32/42W TTT

Compact Fluorescent

8-Inch Aperture
Lens Downlight

New Construction or Remodel
Non-IC

ENERGY DATA

PD8H142E, PD8CPH142E	
Min. Starting Temp -5°F / -20°C	Sound Rating Class A
EMI/RFI Emissions FCC 47CFR Part 18 Non-Consumer Limits	
Input Frequency 50/60 Hz	Power Factor > 0.98
THD < 10%	Input Voltage 120V - 277V ±10%
Crest factor < 1.7	
Operating Frequency > 40kHz	UL Listed Class P, Type 1 Outdoor, CSA or C/UL Certified
CFQ26W/G24Q	Input Power 28W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor 1.00
CFTR26W/GX24Q	Input Power 28W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor 1.00
CFTR32W/GX24Q	Input Power 35W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor .98
CFTR42W/GX24Q	Input Power 45W
	Input Current 0.50A @ 120V
	Input Current 0.22A @ 277V
	Ballast factor .96

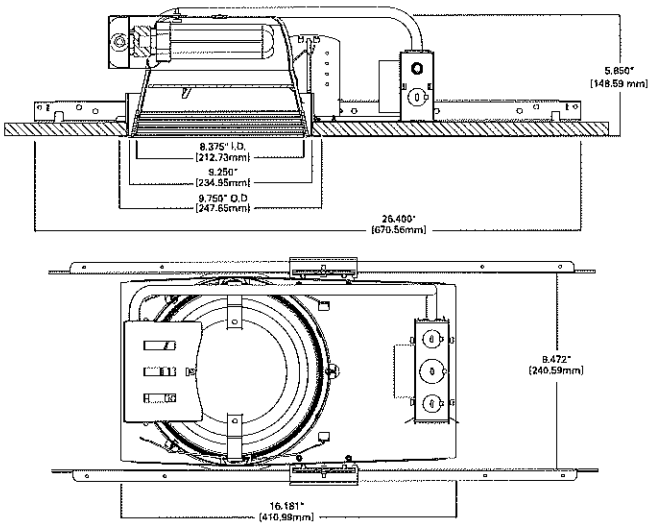
PD8H1423E	
Min. Starting Temp 0°F / -18°C	Sound Rating Class A
EMI/RFI Emissions FCC 47CFR Part 18 Non-Consumer Limits	
Input Frequency 60 Hz	Power Factor > 0.98
THD < 10%	Input Voltage 347VAC ±10%
Operating Frequency 50-60 kHz	cULus Listed Class P, Type 1 Outdoor, Type CC
CFQ26W/G24Q	Input Power 31W
	Input Current 0.09A @ 347V
	Ballast factor 1.02
	Crest factor < 1.6
CFTR26W/GX24Q	Input Power 31W
	Input Current 0.09A @ 347V
	Ballast factor 1.02
	Crest factor < 1.6
CFTR32W/GX24Q	Input Power 36W
	Input Current 0.11A @ 347V
	Ballast factor 0.98
	Crest factor < 1.5
CFTR42W/GX24Q	Input Power 50W
	Input Current 0.15A @ 347V
	Ballast factor 1.00
	Crest factor < 1.5

Submitting Agency:	Description: PD8H142E-62H-4GFD-W	Type:
SOLUS 1820 NE Gilsan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	L2

HALO Commercial

TYPE L2

DIMENSIONS



ORDERING INFORMATION

SAMPLE NUMBER: PD8H142E 82H1GC

Order housing, reflector and lamp separately for a complete luminaire.

Housing
- **PD8H142 =** 8 inch horizontal (1) 26/32/42W DTT/TTT CFL
- ~~**PD8CPH142 = 8 inch horizontal**~~ (1) 26/32/42W DTT/TTT CFL, CCEA listed (Chicago Plenum)

Ballast Option
- **E** = 120 – 277V 50/60Hz UNV
- ~~**REM** = 120V/277V, 60Hz with emergency option~~
- **3E** = 347V 50/60Hz
- **1DMARKX** = 5% two-wire (26/32/42W) dimming, 120V
- **2DMARKX** = 5% two-wire (26/32/42W) dimming, 277V

Reflector
- **82H** = 8" horizontal

Lens Option
- **1G**=Prismatic Glass
- **2G**=Diffuse Glass
- **3G**=Clear Glass
- **4GDF** = Fresnel Glass Lens

Finish Option
- **C**=Specular Clear
- **G**=Specular Gold
- ~~**H**=Semi-Specular Clear~~
- **W**=Gloss White (White Flange)
- ~~**BB** = Black baffle (White Flange)~~
- **WB** = White baffle (White Flange)

Flange Option
- **Blank**=Polished Flange (C, G, H)
- **Blank**=White Flange (W, BB, WB)
- **WF**=White Flange (C, G, H)

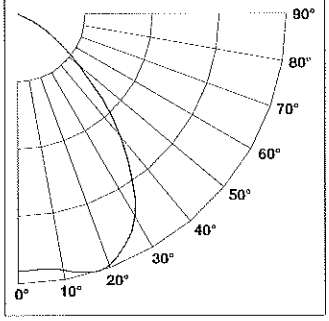
Accessories
- **HB128APK** = L channel hanger bar, 26", 'No-Fuss', pair (replacement)
- **RMB22** = 22" long wood joist mounting bars

PHOTOMETRY

PD8H142E-82H1GC_32TTT

Spacing Criteria = 1.22
Lumens per Watt = 44 LpW
Test No. P31433
Test Model: PD8H142E-82H1GC_32TTT

Candela Curve Distribution Curve



Candela Distribution

Degrees Vertical	Candela
0*	782
5	789
15	798
25	722
35	552
45	359
55	166
65	39
75	1
85	0
90	0

*CBCP

Luminance

(Average Candela/M²)	
Degree	Avg. 0° Luminance
45	11744
55	6285
65	1818
75	63
85	0

Nominal Spot Dimensions

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam (ft.)	
		L Length	W Width
5.5'	26	6.5	7.1
7'	16	8.3	9
8'	12	9.5	10.3
9'	10	10.6	11.6
10'	8	11.8	12.9
12'	5	14.2	15.5
14'	4	16.5	18

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.
Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	640.21	26.70	44.20
0-40	990.80	41.30	68.40
0-60	1398.25	58.30	96.60
0-90	1447.59	60.30	100.00

Note: Specifications and Dimensions subject to change without notice.

Visit our web site at www.cooperlighting.com

COOPER Lighting
www.cooperlighting.com

Customer First Center 1121 Highway 74 South Peachtree City, GA 30269 770.486.4800 FAX 770 486.4801
Cooper Lighting 5925 McLaughlin Rd. Mississauga, Ontario, Canada L5R 1B8 905.507.4000 FAX 905.568.7049

Submitting Agency:	Description: SPC0812CF-42EX-8115-SG-WM-BZ	Type:
1820 NE Glisan St. Suite 150 Portland, OR 97232 Ph: 503-768-9999 SOLUS Fx: 503-768-9990	Project: PSU BLUMEL HALL Notes:	M

SUBSTITUTION REQUEST

TO: PSU Facilities

PROJECT: PSU Blumel Hall

SPECIFIED ITEM: TYPE M

PROPOSED SUBSTITUTION: Spectrum Lighting, SPC0812CF-42EX-8115-SG-WM-BZ

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
3. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
4. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

David Wray

Name (Printed or typed) David Wray

General Contractor (if after award of Contract)

Signature

Solus, Inc.

1820 NE Glisan St., Ste 150

Portland, OR 97232

05/14/2012

Tel: **(503) 768-9999** Fax: **(503) 768-9990**

For use by A/E

☑ Approved ☐ Approved as noted

☐ Not Approved ☐ Received too late

By David Blacic

Date 5/18/2012

Remarks

The Construction Specifications Institute
Northwest Region

May 2012

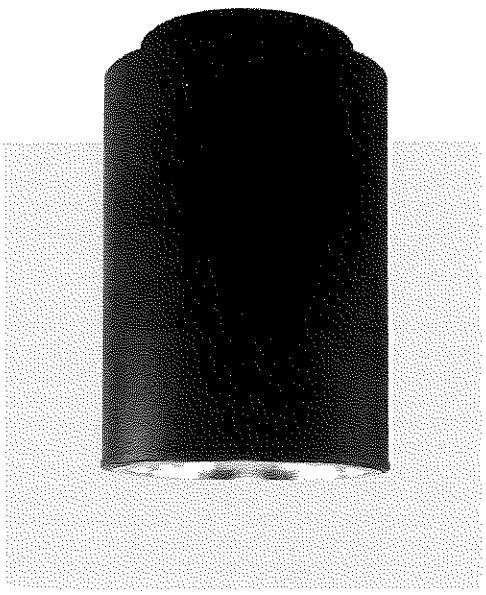
Advancement of Construction Technology

Submitting Agency:	Description: SPC0812CF-42EX-8115-SG-WM-BZ	Type:
SOLUS 1820 NE Glisan St. Suite 150 Portland, OR 97232 PH: 503-768-9999 FX: 503-768-9990	Project: PSU BLUMEL HALL Notes:	M

TYPE M

8" CYLINDER SERIES
OPEN 8" ROUND
1 x 42 WATT MAX CF

SPC08 SPECTRUM CYLINDERS



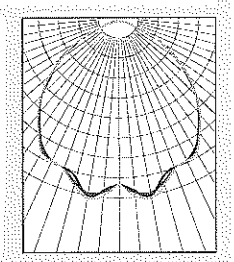
PRODUCT INFORMATION:

- 8" round cylinder series for use with compact fluorescent lamps.
- Extruded aluminum cylinder.
- 42 watt max triple tube compact fluorescent lamp.
- 20 powder coat options.
- Suitable for damp locations.
- Manufactured and tested to UL standard No. 1598.

Fixture Weight: 7.5 lbs

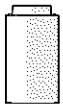
DISTANCE FROM CEILING			DIAMETER OF CIRCLE
5.5	27	13.0	
7.5	15	18.0	
9.5	9	23.0	
11.5	6	27.0	
13.5	5	32.0	

CONE OF LIGHT

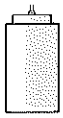


42w-Efficiency: 66.2%
Spacing: 1.31

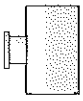
MOUNTING



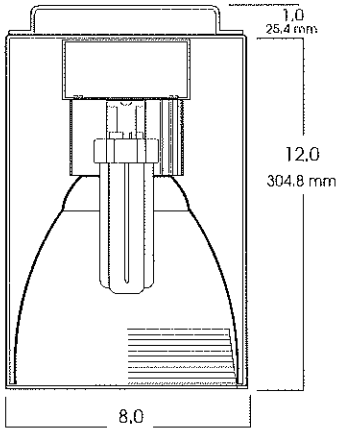
SM- Surface / Ceiling Mount



HM-Hang Straight Pendant
PM-Pendant Mount



WM-Wall Mount



No Louver Guard Available

SERIES	WATTS	BALLAST	OPTIONS	REFLECTOR	MOUNTING	FINISH
SPC0812CF- Compact Fluorescent Spectrum Cylinder ✓	13 18 26 32 42 ✓	EX -Electronic 120v / 277v (standard) ✓ Consult Factory for Dimming Options	FS -Fuse holder and fuse EMRM -Emergency Remote Ballast (90° MAX distance to ballast) EMENC -Remote Ballast Enclosure CP113 -Ceiling Surface Enclosure	8115-SG -Soft Glow Alzak CC -Custom Color BB -Black Micro Baffle WB -White Micro Baffle	HM* -Hang-Straight Mounting HMAT** -Field Cutable Length Hang Straight Pendant PM* -Pendant Mount SM -Surface Mount WM -Wall Mount ✓ * Specify Length in inches **12" or 36" lengths only See Cylinder Mounting Page for Additional Information	GW -Gloss White GB -Gloss Black MW -Matte White MB -Matte Black BZ -Bronze ✓ PT -Platinum Silver MT -Mini Tek Silver TW -Textured White CC -Custom Color
SPC0812CF	42	EX	FS	8115 SG	HM36	GW

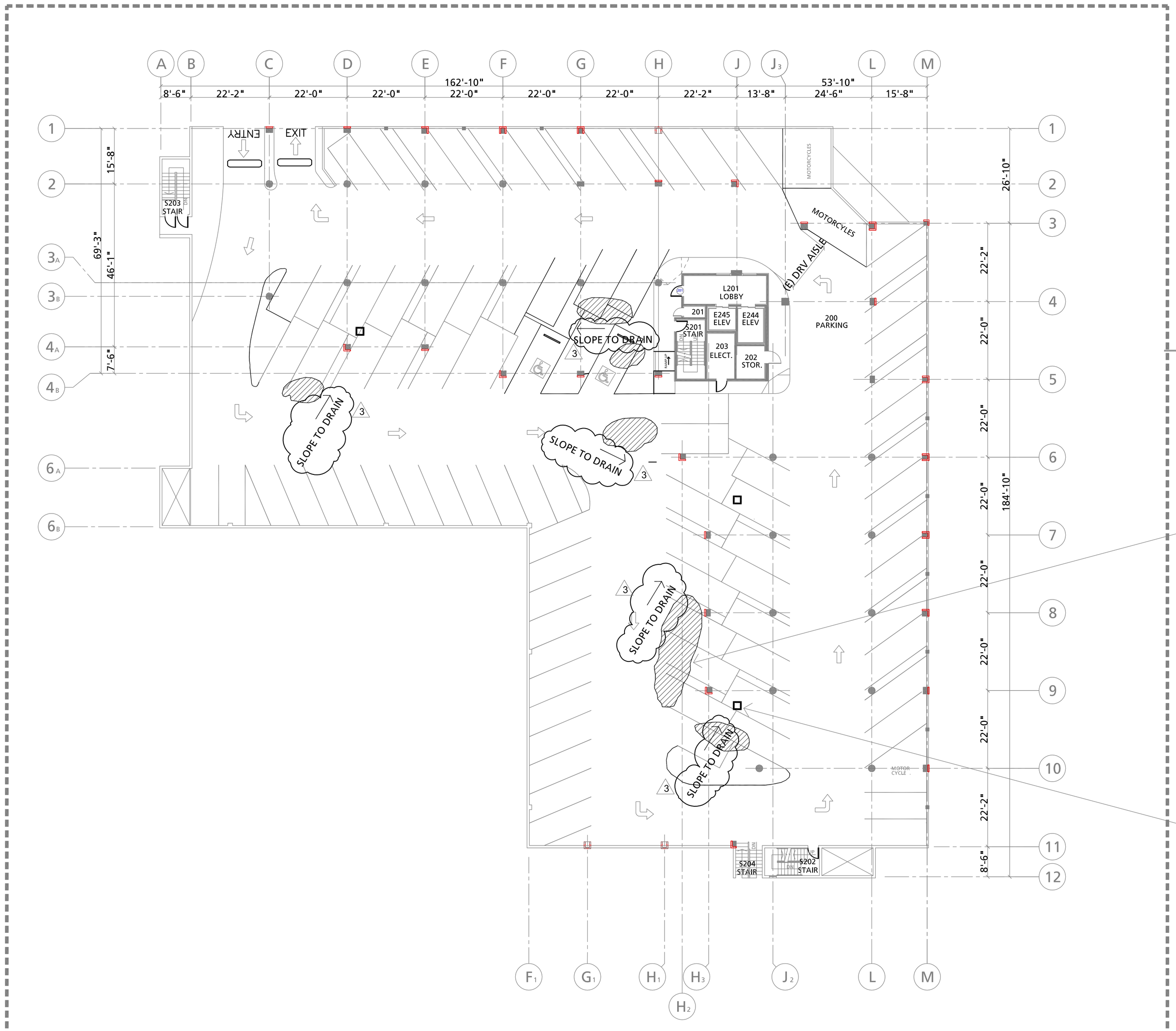
Dimensions shown are nominal. Spectrum Lighting is continually improving products and reserves the right to make changes that will not alter performance or appearance with or without written notice.

SPECTRUM LIGHTING, INC
www.speclight.com

PROJECT:	TYPE:
CAT. NO.:	

MADE IN THE USA

994 Jefferson Street, Fall River, MA 02721 508.678.2303 FAX 508.678.2260



2nd floor plan - ponding repair

1 /16" = 1' - 0"

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes.

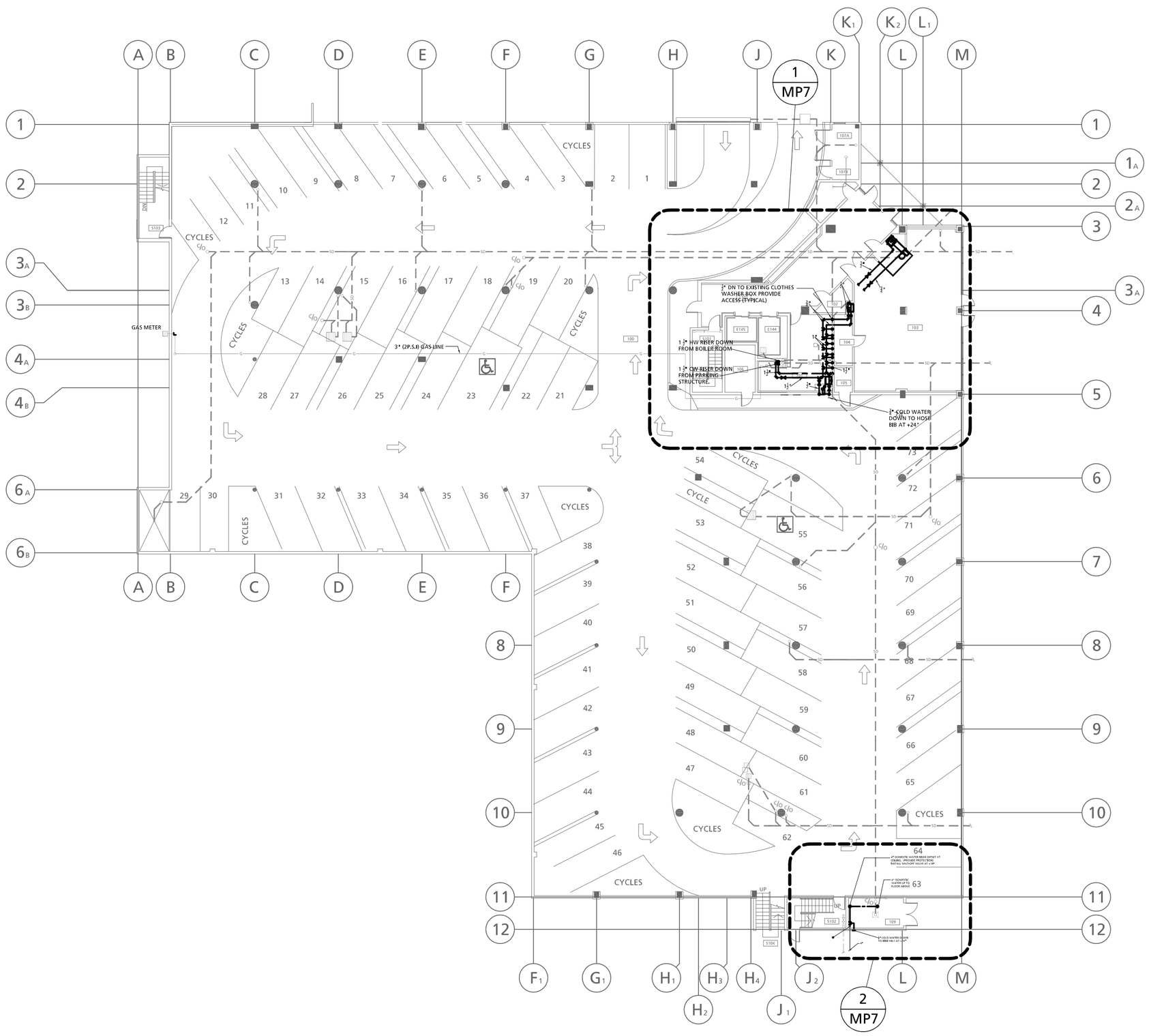
4/17/12
issued for bid/permit

REGISTERED ARCHITECT
3114
F. THOMAS ARNICH
GLADSTONE, OREGON
STATE OF OREGON

2nd Floor Plan Ponding Repair

Revisions :	Date :
3 6/1 /12 ADDENDUM #3	4/17/12
Drawn :	
Checked :	

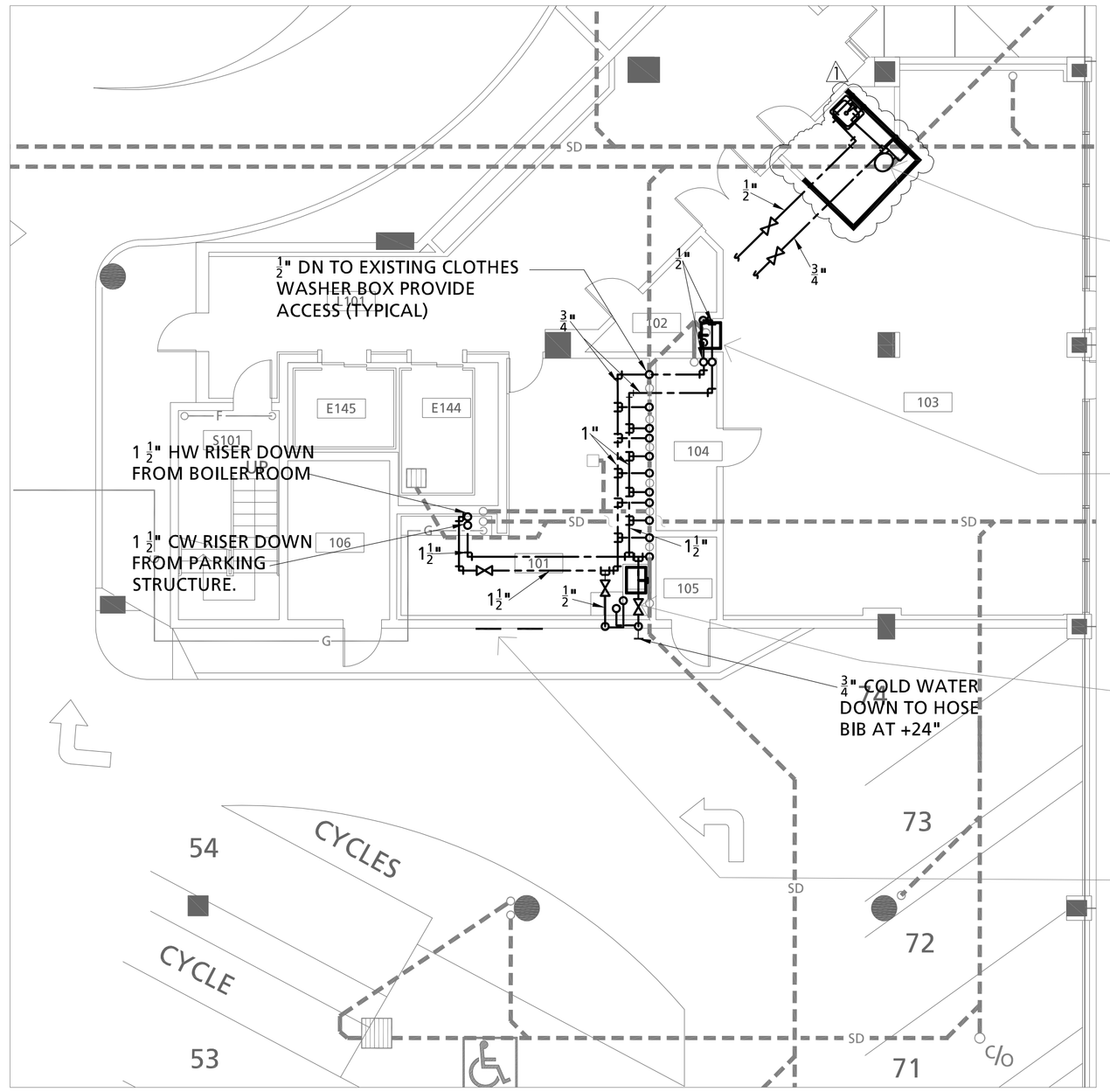
A5.3



key plan

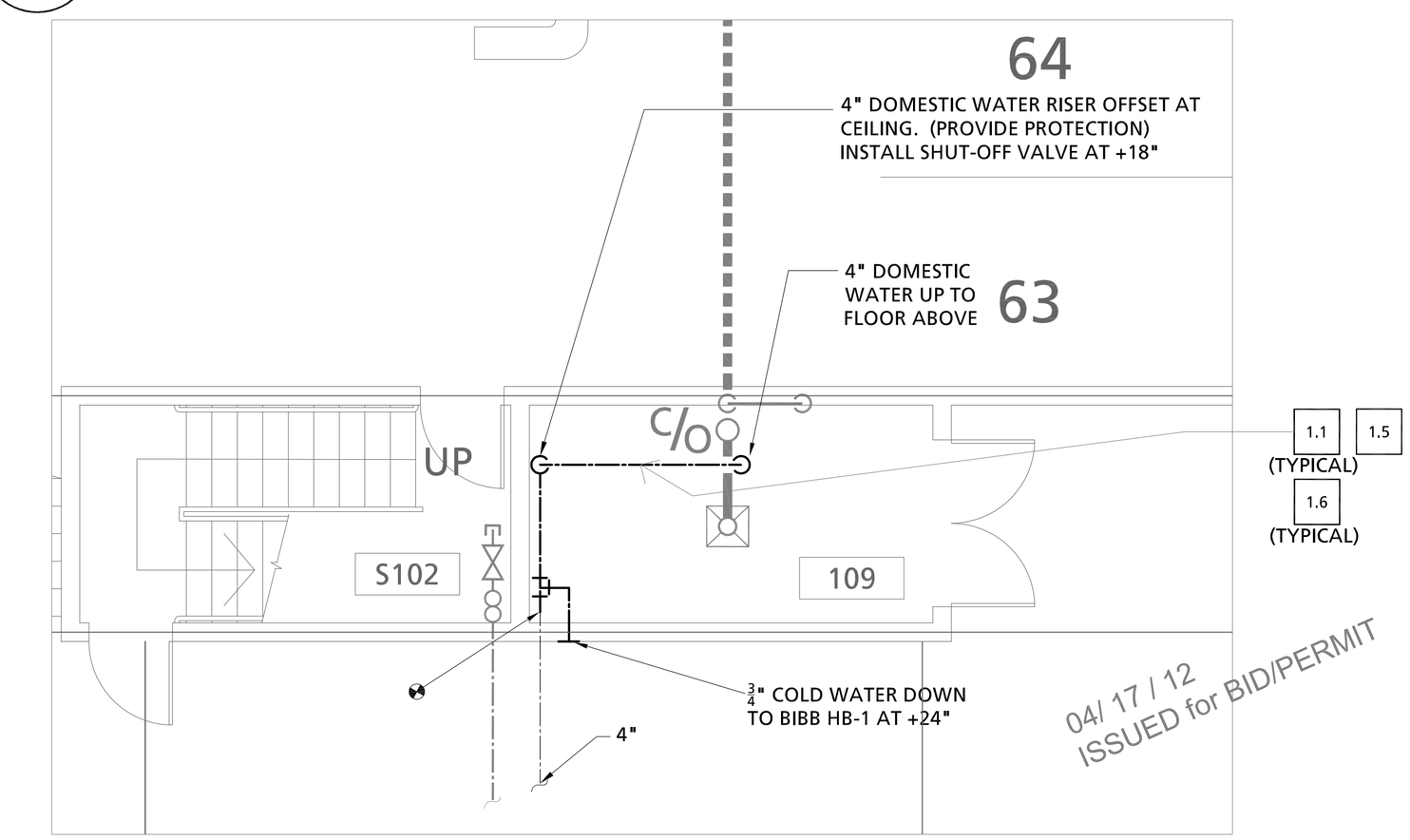
1.8 - CONTRACTOR TO PROVIDE NEW 3" WASTE PIPING AND CONNECT TO EXISTING. PATCH CONCRETE SLAB AIR AND WATER TIGHT.

REFERENCE DRWG. A.7.2.1 FOR SPECIFIC PATCHING REQUIREMENTS.



1 MP7 lower level parking - new work

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



2 MP7 lower level parking - new work

SCALE: 1 /4" = 1' - 0"

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

REGISTERED PROFESSIONAL ENGINEER 77747PE OREGON JAN. 4, 2011 QUINN D. SOIFER

EXPIRES: 6/30/12

General:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLOSYS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

1. NEW WORK

1.1 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING. PROVIDE NEW MAINS, RISERS AND BRANCH PIPING. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING STRUCTURAL OPENINGS. PROVIDE VALVES AND PIPING COMPONENTS AS SHOWN AND WHICH ARE REQUIRED BY CODE. PATCH, PAINT WALLS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED, REINSTALL DROP CEILING AND INSULATION.

1.2 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER PIPING SERVING THE LOWER LEVEL LAUNDRY ROOM. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, PAINT WALLS AS REQUIRED, REINSTALL DROP CEILING AND INSULATION. BRANCH PIPING TO SERVICE SINK AND CLOTHES WASHERS TO BE PEX AND REUSE WASHER BOXES. PROVIDE NEW SINK KS-2 REFER TO MP12/6.2.

1.3 - CONTRACTOR TO PROVIDE NEW 3/4" COLD WATER AND 1/2" HOT WATER PIPING SERVING THE LOBBY BATHROOM. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, AND PAINT WALLS AS REQUIRED. PROVIDE NEW ADA LAVATORY (L-2) AND WATER CLOSET (WC-2) REFERENCE SHEET MP12/4.2, MP12/3.2. BRANCH PIPING TO FIXTURES SHALL BE PEX.

1.4 - CONTRACTOR TO PROVIDE NEW 1/2" COLD WATER AND 1/2" HOT WATER PIPING SERVING THE NEW LOUNGE SINK. NEW SINK SHALL BE KS-1, REFERENCE SHEET MP12/6.1. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, AND PAINT WALLS AS REQUIRED. 1/2" CW, HW BRANCH PIPING TO NEW FIXTURES SHALL BE PEX.

1.5 - CONTRACTOR TO PROVIDE HEAT TAPE FOR ALL CW PIPING IN UNHEATED TRASH AREA ROOM 101. COORDINATE WITH ELECTRICAL CONTRACTOR. PROVIDE RAYCHEM XL TRACE OR APPROVED EQUAL. SIZE FOR 5 W/FT. AND 120V POWER SUPPLY. PROVIDE CONNECTION KITS, END SEALS AND CONTROLLER FOR A FULLY FUNCTIONAL SYSTEM. PROVIDE FLAME RETARDANT INSULATION AND WATER PROOF COVERING.

1.6 - PROVIDE DRAIN VALVES AT LOW POINT IN DOMESTIC WATER PIPING SYSTEM. REFERENCE SPECIFICATION ON MP0.2/XI.E.

1.7 - CONTRACTOR TO FIRE CAULK BOTH SIDES OF STRUCTURE AROUND 12 (FIELD VERIFY)EXISTING 4" DRYER DUCT DISCHARGE. FIRE CAULK SHALL BE HILTI OR APPROVED EQUAL, UL RATED AND 2-HOUR RATED.

Revisions : 1 5/4/2012 ADDENDUM #1 3 6/1/2012 ADDENDUM #3

Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

MP7

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

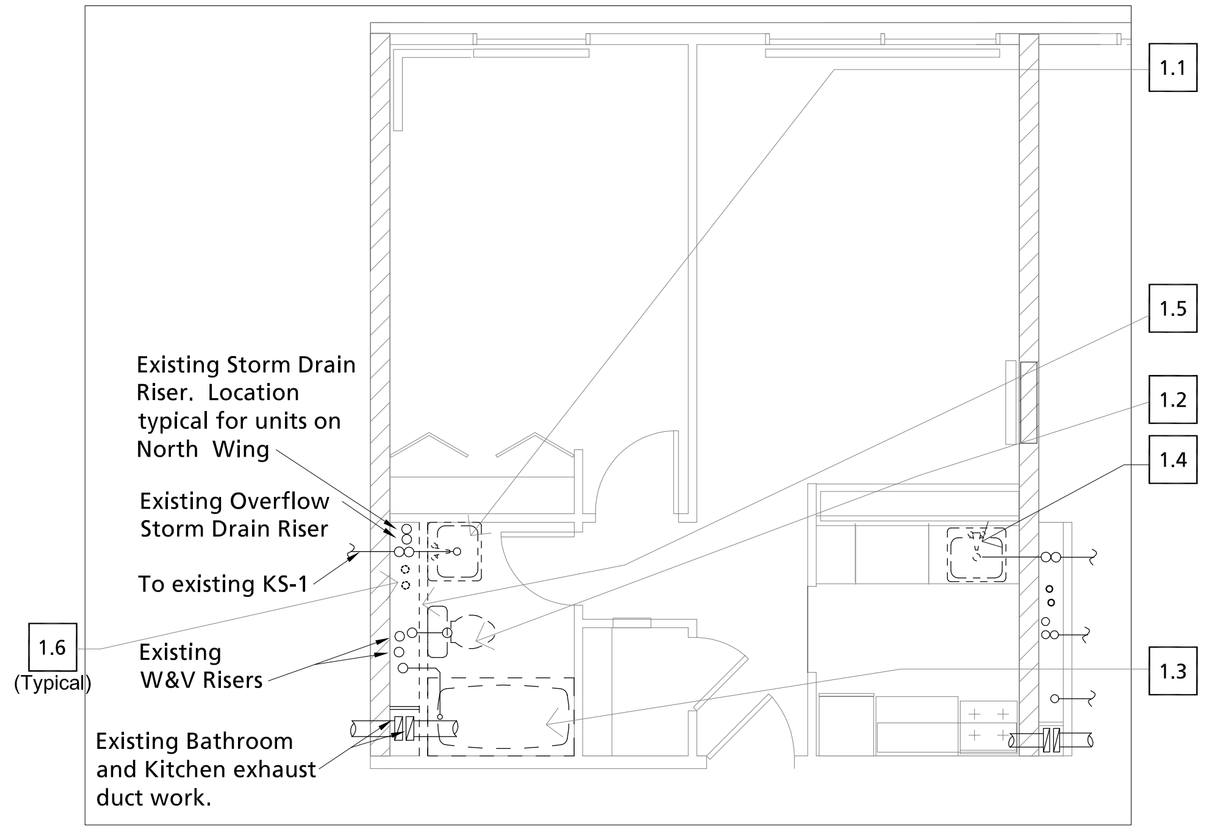
GENERAL:

1 REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.

3 REUSE EXISTING STRUCTURAL OPENINGS AS REQUIRED. PATCH, PAINT WALLS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED.

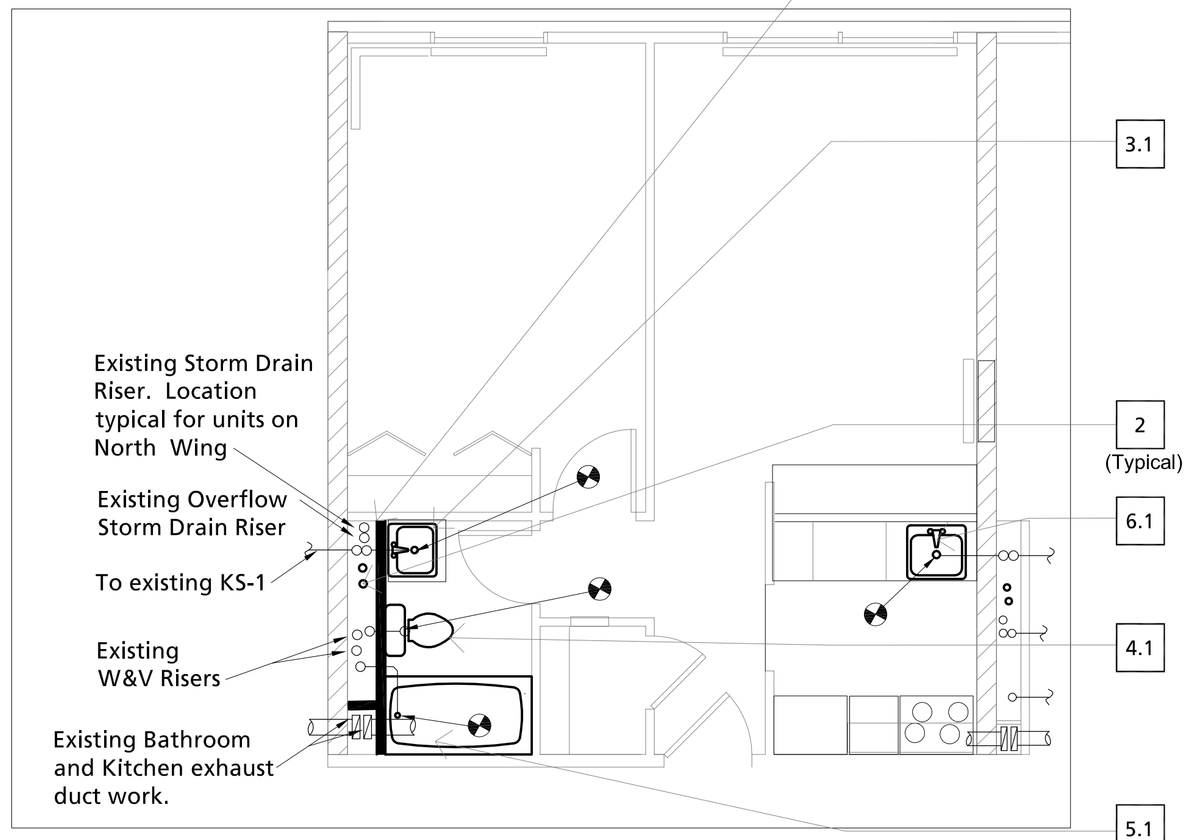
GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLOSYS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.



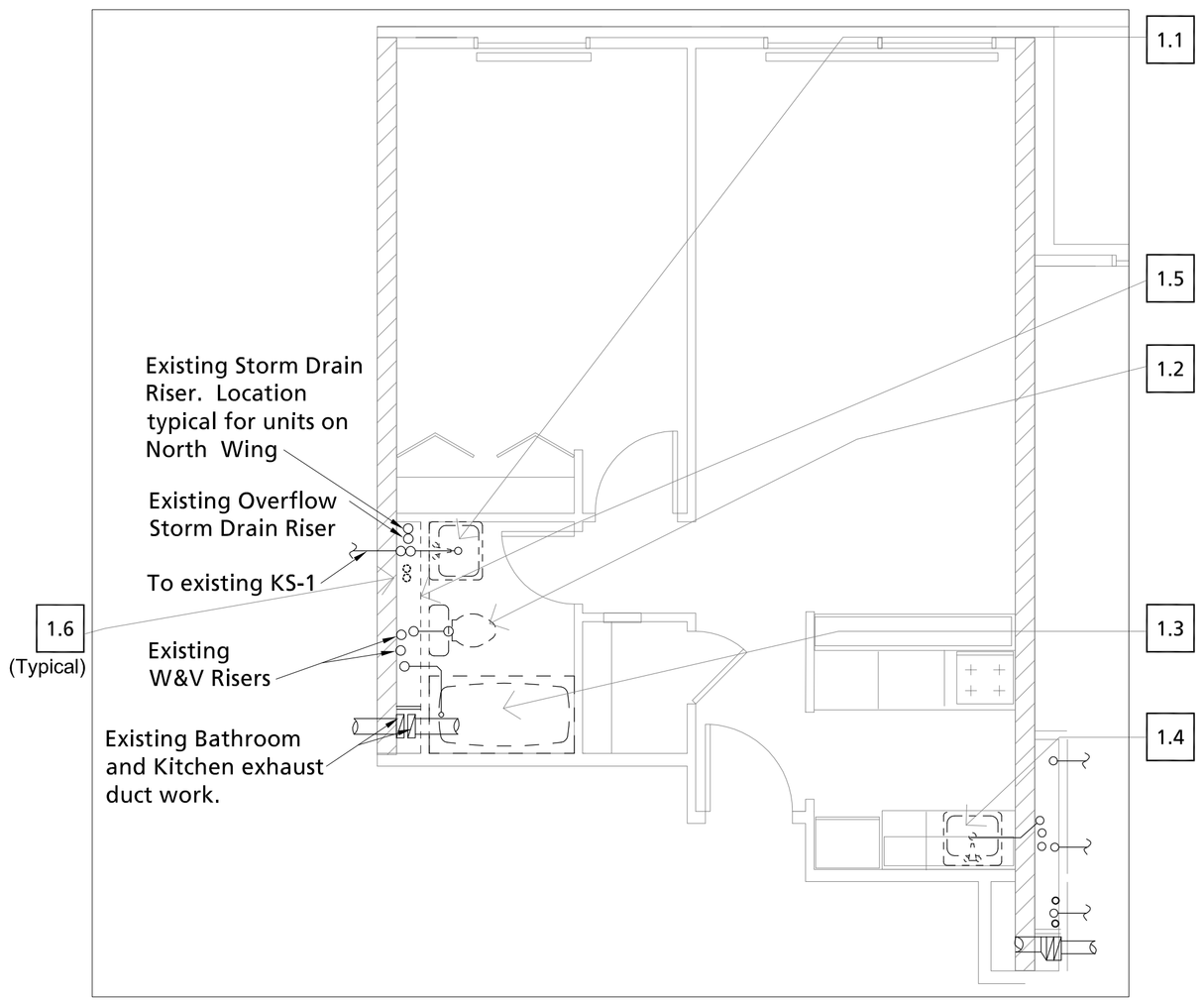
demo plan - standard unit

SCALE: 1 /4" = 1' - 0"



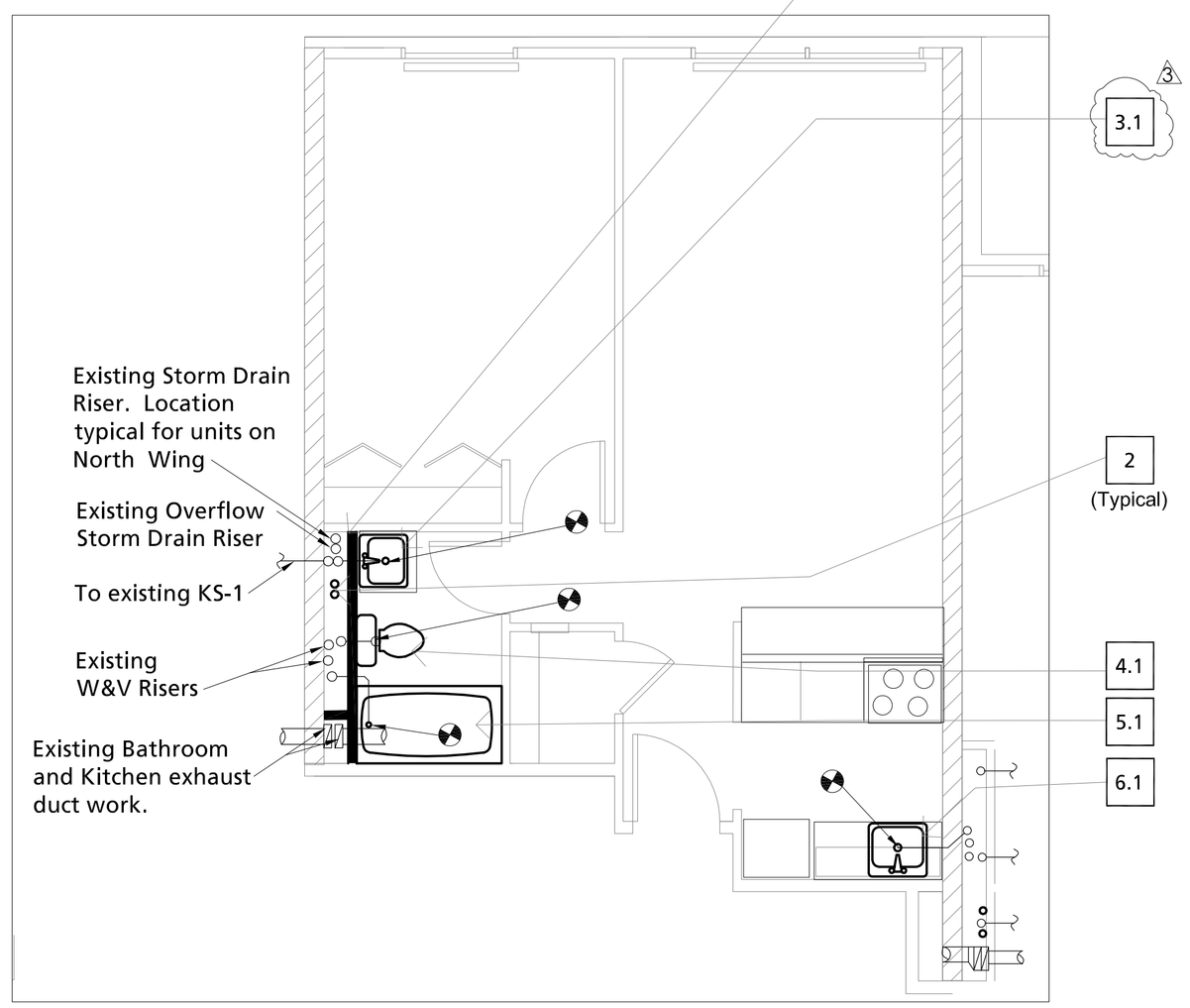
new work - standard unit

SCALE: 1 /4" = 1' - 0"



demo plan - expanded unit

SCALE: 1 /4" = 1' - 0"



new work - expanded unit

SCALE: 1 /4" = 1' - 0"

GENERAL NOTE:

THESE FLOOR PLANS DEPICT THE UNITS ON THE NORTH WING OF THE BUILDING, THESE FLOOR PLANS ARE ALSO TYPICAL OF UNITS ON THE EAST WING. CONTRACTOR TO TRANSLATE THE ORIENTATION OF BUILDING INFRASTRUCTURE AND FIXTURE LOCATION ACCORDINGLY.

Plan Notes 1

1. DEMO WORK:

   1.1 - CONTRACTOR TO DEMO EXISTING LAVATORY. DEMO EXISTING P-TRAP.

   1.2 - CONTRACTOR TO DEMO EXISTING WATER CLOSET.

   1.3 - CONTRACTOR TO DEMO EXISTING BATH TUB / SHOWER. DEMO EXISTING DRAIN OVERFLOW FITTING.

   1.4 - CONTRACTOR TO DEMO EXISTING KITCHEN SINK AND P-TRAP.

   1.5 - CONTRACTOR TO DEMO EXISTING WALL IN ORDER TO ACCESS PLUMBING.

   1.6 - CONTRACTOR TO DEMO EXISTING DOMESTIC HW AND CW PIPING RISERS AND BRANCH CW AND HW PIPING TO FIXTURES.

   1.7 - CONTRACTOR TO DEMO EXISTING ADA UNIT WATER CLOSET. DEMO EXISTING TOILET FLANGE AND WASTE PIPING. CAP AT MAIN. PATCH OPENING WATER AND AIR TIGHT WITH 2-HOUR FIRE RATED MATERIAL.

   1.8 - CONTRACTOR TO DEMO EXISTING ADA UNIT WATER CLOSET.

   1.9 - CONTRACTOR TO DEMO EXISTING SHOWER DRAIN. CAP AT MAIN. PATCH OPENING WATER AND AIR TIGHT WITH 2-HOUR FIRE RATED MATERIAL. UL APPROVED HILTI OR APPROVED EQUAL

2. NEW PIPING - CONTRACTOR TO PROVIDE NEW HW AND CW DOMESTIC WATER PIPING RISERS, TAKE OFF OF NEW RISERS AND CONNECT TO NEW FIXTURES. REFERENCE DETAIL MP15/7,8. ANCHOR TO STRUCTURE AND INSULATE.

3. NEW LAVATORIES:

   3 3.1 - STANDARD AND EXPANDED UNITS (L-1): CONTRACTOR TO PROVIDE NEWAMERICAN STANDARD AQUALYN COUNTER TOP SINK 0476.028 OR APPROVED EQUAL, VITREOUS CHINA, SELF-RIMMING, FAUCET HOLES ON 4"CENTERS. PROVIDE NEW P-TRAP. CONNECT TO EXISTING DRAIN PIPING. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 1-1/2"WASTE PIPING.

   FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL, CHROME, ADA COMPLIANT.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

   3.2 - ADA UNITS (L-2): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD COMRADE 0124.024 OR APPROVED EQUAL, VITREOUS CHINA, WALL HUNG, ADA COMPLIANT, FAUCET HOLES ON 4" CENTERS. PROVIDE NEW P-TRAP AND CONNECT TO EXISTING DRAIN PIPING. PROVIDE NEW ADA COMPLIANT PIPE COVERS, TRUEBRO LAV-GUARD OR APPROVED EQUAL. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 1-1/2" WASTE PIPING.

   FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL, CHROME, ADA COMPLIANT.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

4. NEW WATER CLOSETS: (ALL WATER CLOSETS TO COME WITH MANUFACTURER PROVIDED INTERNAL COMPONENTS, I.E. FILL VALVE, FLOAT, ETC.)

   4.1 - STANDARD AND EXPANDED UNITS (WC-1): CONTRACTOR TO PROVIDE NEW NIAGRA STEALTH MODEL: N7717/N7714 OR APPROVED EQUAL. VITREOUS CHINA, FLOOR MOUNTED, ROUND BOWL, 0.8 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

   4.2 - NEW ADA UNITS (WC-2): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD CADET 2467.100 OR APPROVED EQUAL, VIRTEOUS CHINA, FLOOR MOUNTED, ADA COMPLIANT, ELONGATED BOWL 16-1/2 " HIGH, 1.1 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING. PROVIDE 1/2" TOILET SEAT TO ACHIEVE ADA REQUIRED HEIGHT.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

   4.3 - EXISTING ADA UNITS (WC-3): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD CADET 3 RIGHT HEIGHT 2385.010 OR APPROVED EQUAL, VIRTEOUS CHINA, FLOOR MOUNTED, ADA COMPLIANT, 10" ROUGH IN, ELONGATED BOWL 16-1/2 " HIGH, 1.28 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING. PROVIDE 1/2" TOILET SEAT TO ACHIEVE ADA REQUIRED HEIGHT.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

5. NEW BATH / SHOWERS

   1 5.1 - STANDARD AND EXPANDED UNITS (SH-1): CONTRACTOR TO PROVIDE NEW BATHTUB AND 3-PIECE SHOWER ENCLOSURE FIBERFAB DELUXE MODEL 103TWKD OR APPROVED EQUAL. BATHTUB TO BE DESIGNED FOR CONCRETE INSTALLATION, LEAVING ENOUGH DEPTH FOR NEW SHOE TO BE INSTALLED. NEW 1/2" CW/HW PIPING TO BE FIRE CAULKED AROUND PENETRATION THROUGH SHAFT WALL.

   FAUCET: CONTRACTOR TO PROVIDE DELTA MODEL: 100-DST OR APPROVED EQUAL. 3-HOLE, 1.8 GPM, ADA COMPLIANT, CHROME FINISH. ADA COMPLIANT.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

   5.2 - ADA UNITS (ROLL IN SHOWER, SH-2): CONTRACTOR TO PROVIDE SHOWER WALL KIT AND BARRIER FREE SHOWER FLOOR IN ROOMS 303,506,722 AND 1 927. SEE ARCHITECTURAL FINISH SCHEDULE AND SPECIFICATION FOR PRODUCT DATA.NEW 1/2" CW/HW PIPING TO BE FIRE CAULKED AROUND PENETRATION THROUGH SHAFT WALL.

   WASTE: CONTRACTOR TO CORE DRILL CONCRETE SLAB FOR NEW DRAIN. PROVIDE NEW 2" SIOUX CHIEF JACK RABBIT SHOWER DRAIN AND STRAINER, OR APPROVED EQUAL, STRAINER FINISH SHALL BE CHROME.

   ADA COMPONENTS: CONTRACTOR TO PROVIDE NEW SYMMONS TEMPTROL II SHOWER SYSTEM WITH HAND SPRAY OR APPROVED EQUAL. SYSTEM IS EQUIPPED WITH PRESSURE BALANCING MIXING VALVE, SHOWER HEAD WITH ARM AND FLANGE, LEVER DIVERTER, WALL/HAND SHOWER WITH FLEXIBLE METAL HOSE AND SLIDE BAR. SYSTEM IS ADA COMPLIANT. SECURE NEW MIXING VALVE AND CONNECT WITH NEW 1/2" HW/CW PIPING.

6. NEW KITCHEN SINK

   6.1 - STANDARD AND EXPANDED UNITS (KS-1): CONTRACTOR TO PROVIDE ELKAY ELUMINA MODEL: EG2522 OR APPROVED EQUAL. SINK SHALL BE 18 GUAGE STAINLESS STEEL, SELF RIMMING, THREE FAUCET HOLES AT 4" ON CENTER. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 2" WASTE PIPING.

   FAUCET: CONTRACTOR TO PROVIDE DELTA MODEL: 100-DST OR APPROVED EQUAL. 3-HOLE, 1.8 GPM, ADA COMPLIANT, CHROME FINISH.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

   6.2 - ADA UNITS (KS-2): CONTRACTOR TO PROVIDE ELKAY CELEBRITY MODEL: GECR2521 OR APPROVED EQUAL. SINK SHALL BE 18 GUAGE STAINLESS STEEL, SELF RIMMING, THREE FAUCET HOLES AT 4" ON CENTER. SINK SHALL BE ADA COMPLIANT, PROVIDE NEW ADA COMPLIANT PIPE COVERS,TRUEBRO LAV-GUARD OR APPROVED EQUAL. PROVIDE NEW SCHEDULE 40ABS P-TRAP AND CONNECT TO EXISTING 2" WASTE PIPING.

   FAUCET: CONTRACTOR TO PROVIDE DELTA MODEL: 100-DST OR APPROVED EQUAL. 3-HOLE, 1.8 GPM, ADA COMPLIANT, CHROME FINISH.

   ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

   CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

7. NEW WALL - CONTRACTOR TO COVER AND FINISH PLUMBING WALL PER ARCHITECTURAL DRAWINGS.

8. NEW FLOOR DRAIN (FD-1) - CONTRACTOR, TO CORE DRILL CONCRETE SLAB. PROVIDE NEW 2" FLOOR DRAIN TO ACCOMMODATE THIN SET TILE INSTALLATION. NEW FLOOR DRAIN SHALL BE ZURN OR APPROVED EQUAL PROVIDE TRAP PRIMER. PROVIDE 1-1/2" VENT, CONNECT TO EXISTING IN PLUMBING CHASE, CORE DRILL REQUIRED. 1

9. ADA TOILET FLANGE: CONTRACTOR TO CORE DRILL CONCRETE SLAB FOR NEW WATER CLOSET WASTE. ROUTE TO EXISTING WASTE AND VENT STACK. PROVIDE NEW TOILET FLANGE AND SEAL PENETRATION WATER TIGHT.

10. KITCHEN EXHAUST: REMOVE EXISTING KITCHEN EXHAUST GRILLE AND CONNECT TO EXISTING DUCT WITH NEW 5" DUCT WORK TIGHT AND ROUTE TO UNDERSIDE OF UPPER CABINETS. TERMINATE AT THE EDGE OF CABINET WITH NEW 6" X 6" SIDE WALL GRILL PROVIDE STAINLESS STEEL FINISH.

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

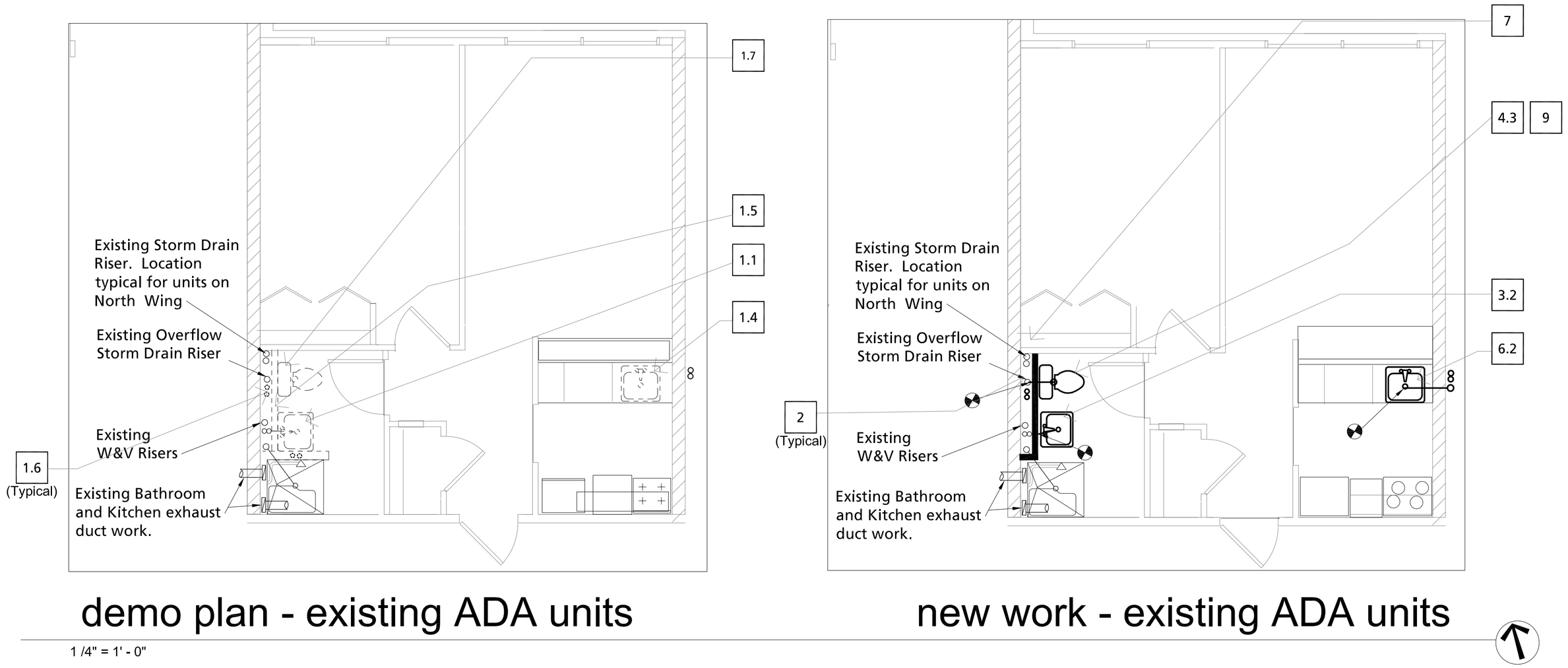
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

REGISTERED PROFESSIONAL ENGINEER 77747PE OREGON JAN. 4, 2011 QUINN D. SOIFER
EXPIRES: 6/30/12

Revisions :	Date :
1 5/4/2012 ADDENDUM #1 3 6/1/2012 ADDENDUM #3	4/17/2012
Drawn : L. Rinder	
Checked : Q. Soifer 04/17/12 ISSUED for BID/PERMIT	

MP12

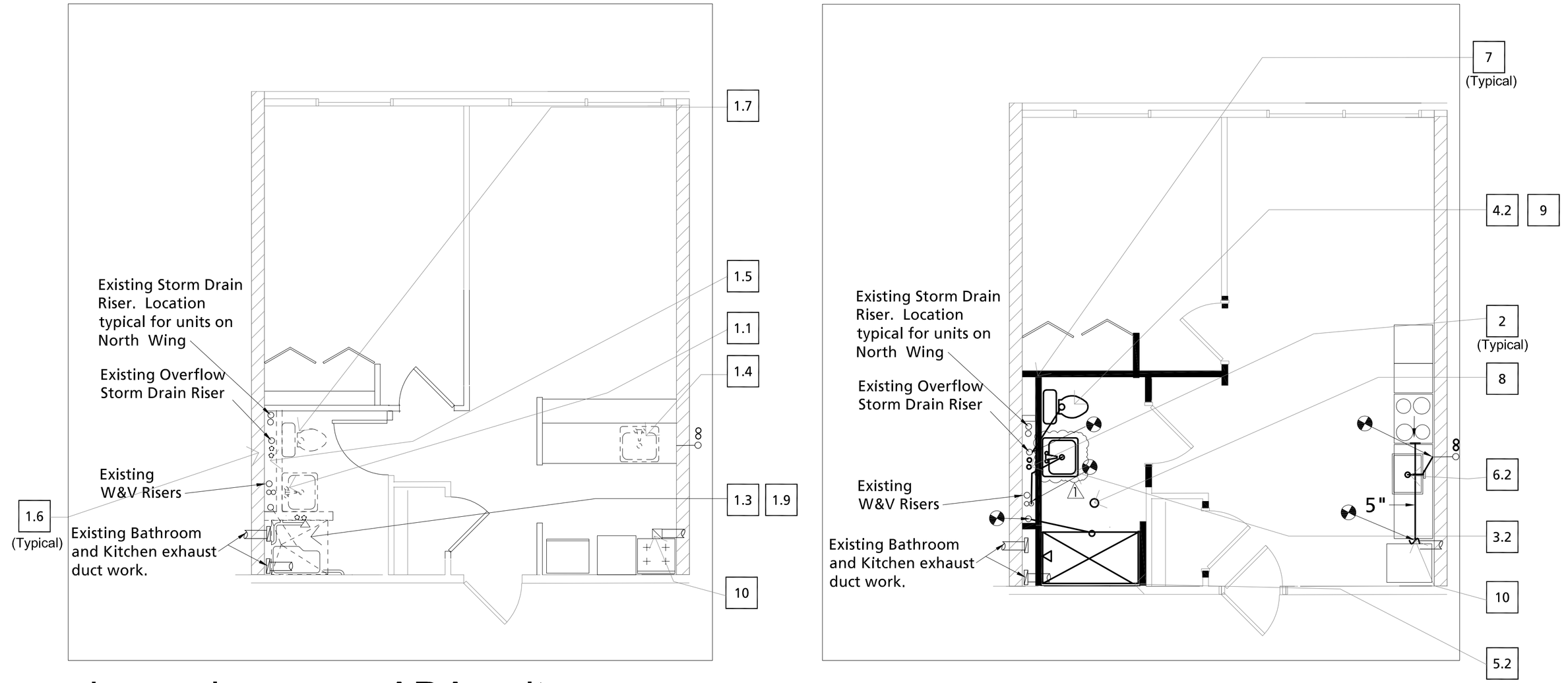
Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.m



demo plan - existing ADA units

new work - existing ADA units

1 /4" = 1' - 0"



demo plan - new ADA units

new work - new ADA units

1 /4" = 1' - 0"

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

REGISTERED PROFESSIONAL ENGINEER
77747PE
OREGON
JAN. 4, 2011
QUINN D. SOIFER
EXPIRES: 6/30/12

GENERAL NOTE:

THESE FLOOR PLANS DEPICT THE UNITS ON THE NORTH WING OF THE BUILDING, THESE FLOOR PLANS ARE ALSO TYPICAL OF UNITS ON THE EAST WING. CONTRACTOR TO TRANSLATE THE ORIENTATION OF BUILDING INFRASTRUCTURE AND FIXTURE LOCATION ACCORDINGLY.

GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLOSYS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

GENERAL:

1

REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.

REUSE EXISTING STRUCTURAL OPENINGS AS REQUIRED.PATCH, PAINT WALLS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED. 3

Plan Notes 1

*** SEE MP12**

04/ 17 / 12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

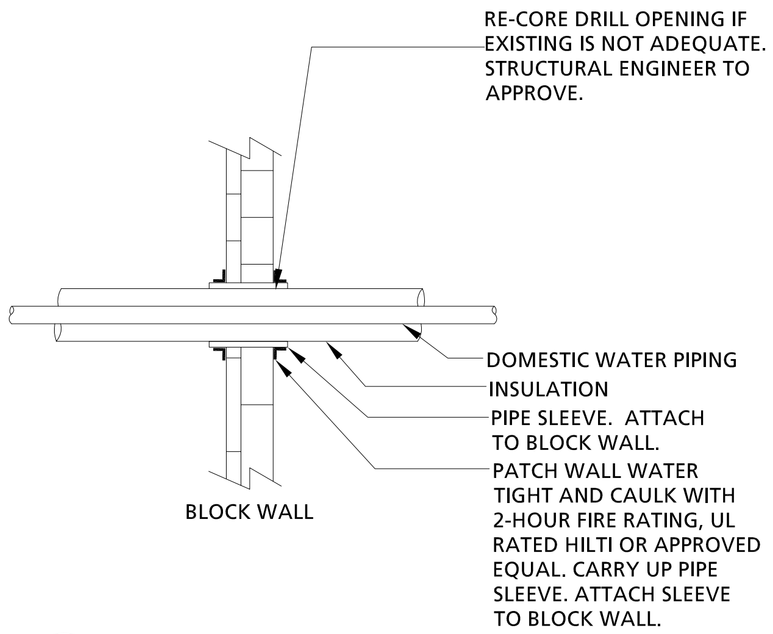
Revisions : 1 5/4/2012 ADDENDUM #1 3 6/1/2012 ADDENDUM #3

Date : 4/17/2012

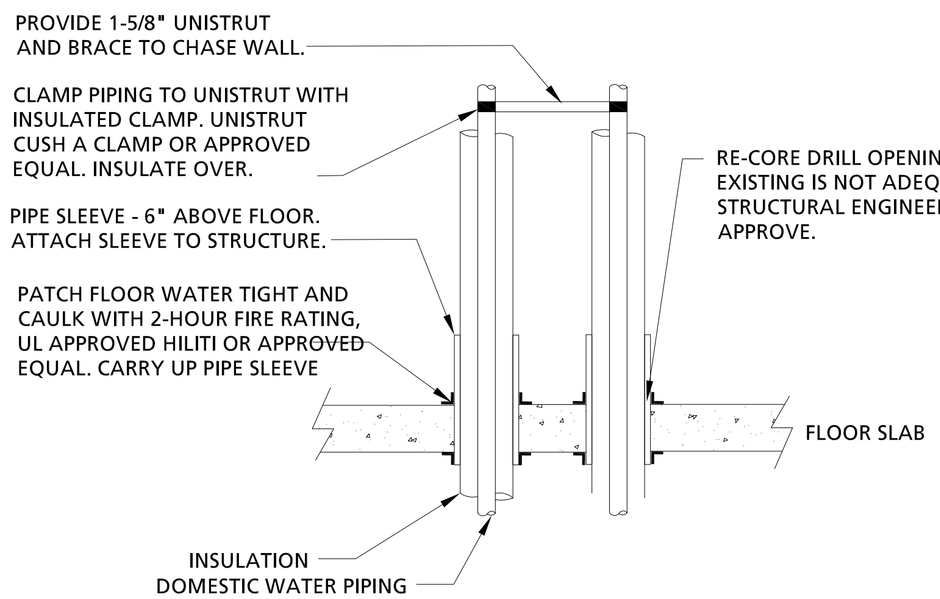
Drawn : L. Rinder

Checked : Q. Soifer

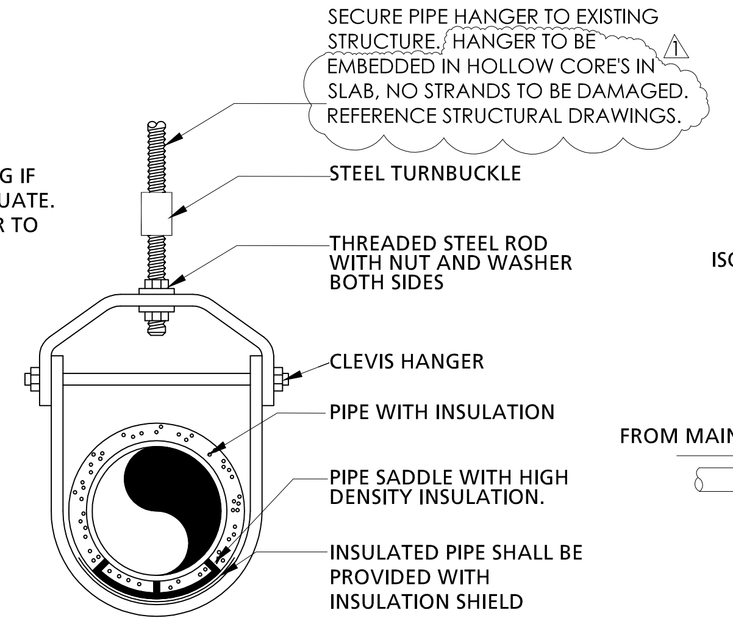
MP13



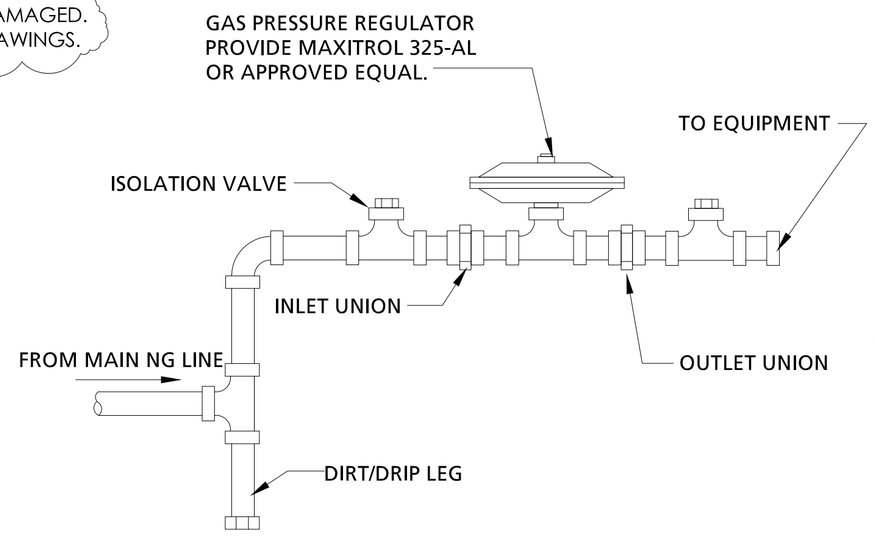
1/15 BLOCK WALL PENETRATION DETAIL
N.T.S.



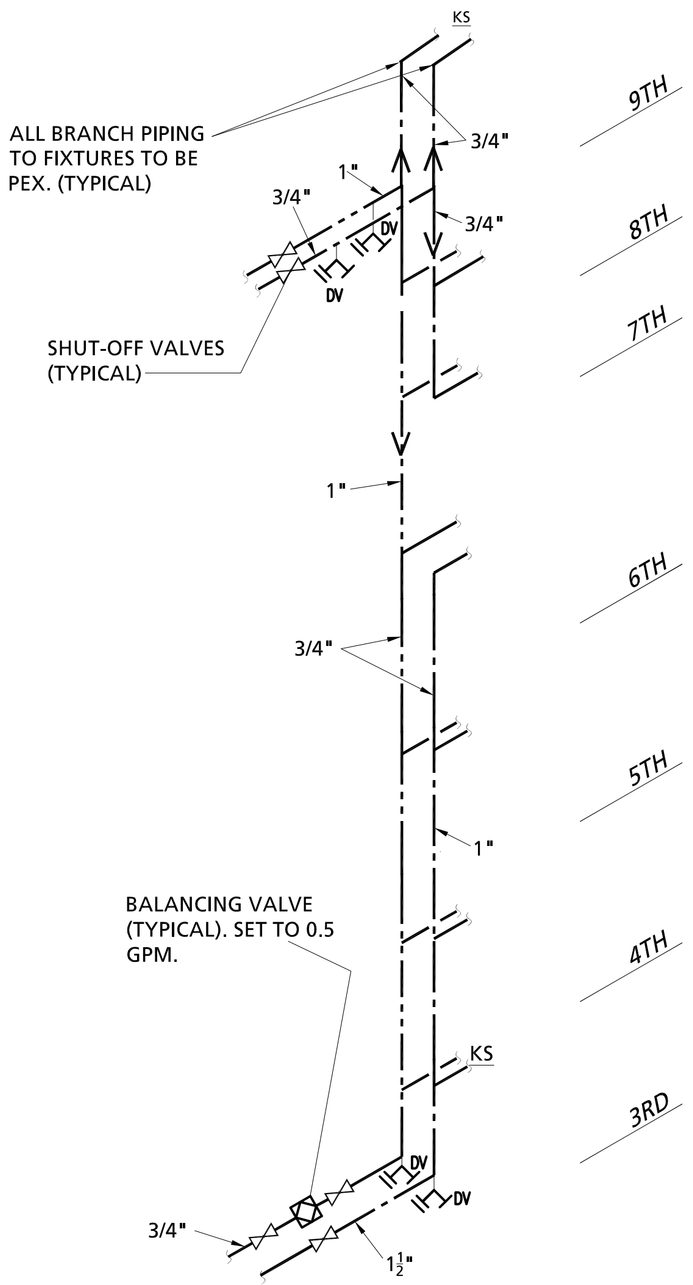
2/15 CONCRETE SLAB PENETRATION DETAIL
N.T.S.



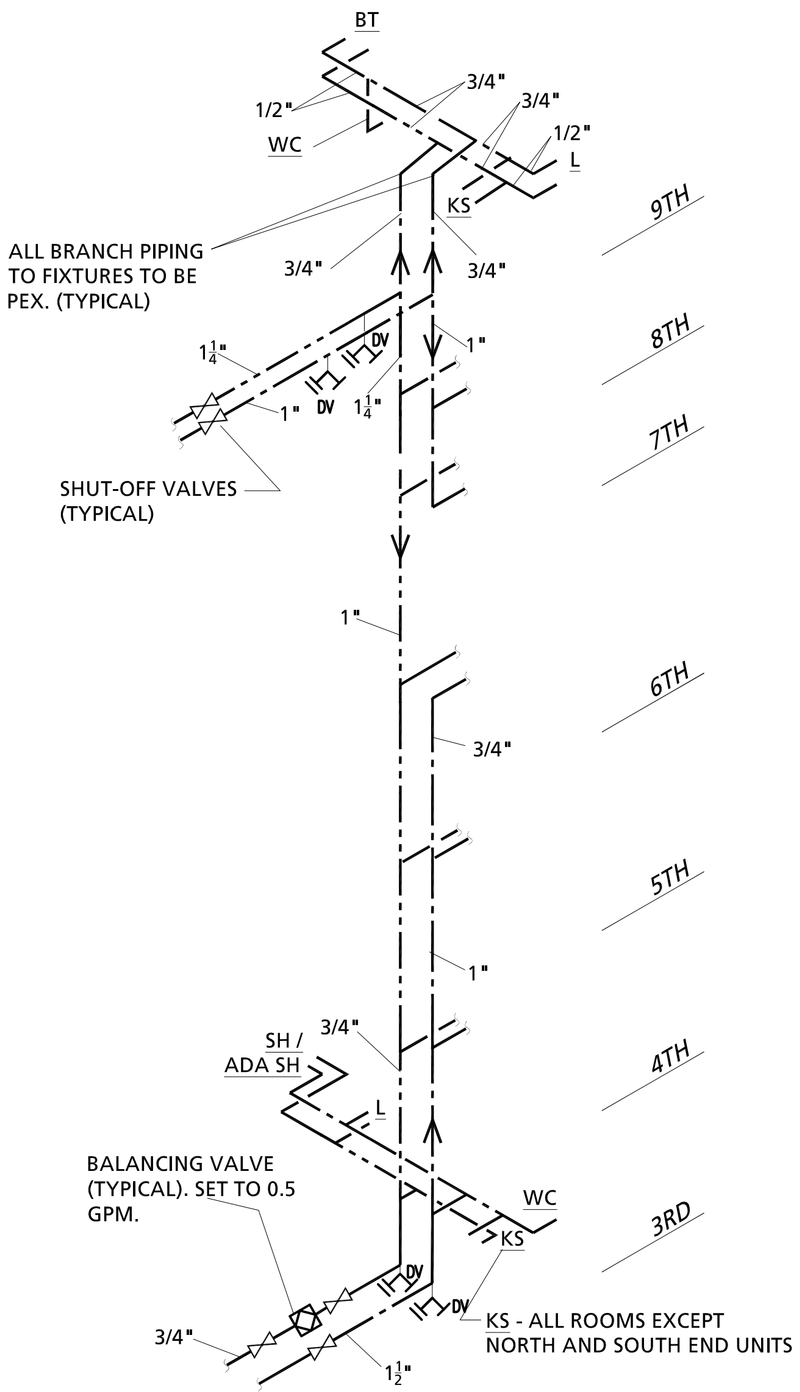
3/15 PIPE HANGER DETAIL
N.T.S.



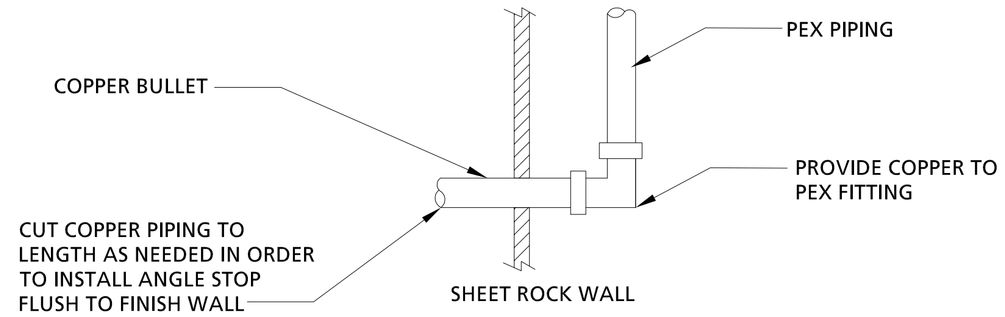
4/15 HVAC UNIT GAS CONNECTION DETAIL
N.T.S.



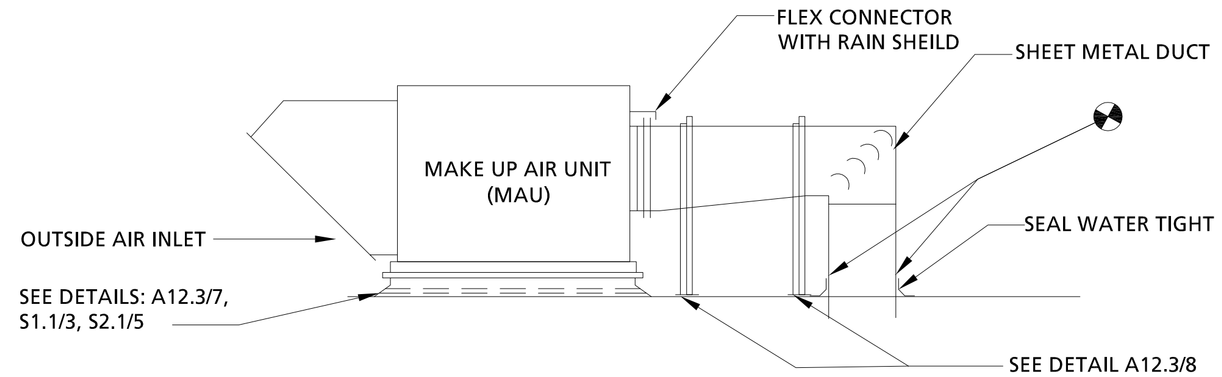
7/15 HW & CW RISER DIAGRAM
N.T.S.



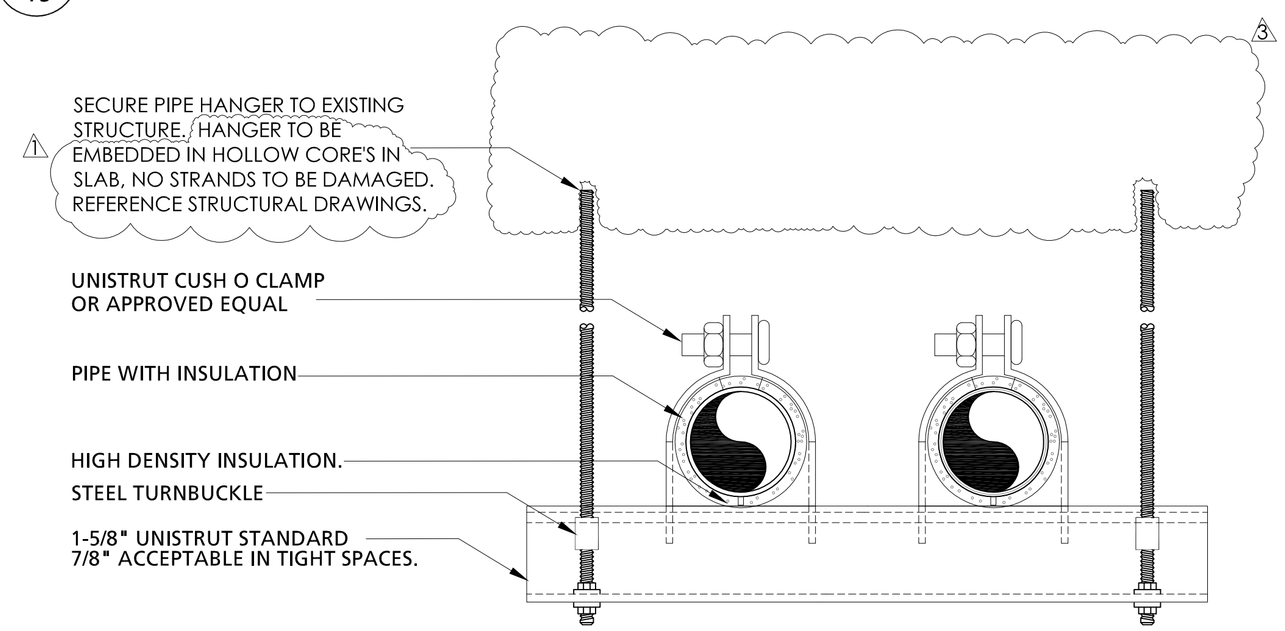
8/15 HW & CW RISER DIAGRAM
N.T.S.



5/15 FIXTURE PIPING DETAIL
N.T.S.



6/15 MAKE UP AIR UNIT DETAIL
N.T.S.



9/15 PIPE HANGER DETAIL - DOMESTIC HOT AND COLD WATER MAINS
N.T.S.

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

REGISTERED PROFESSIONAL ENGINEER 77747PE OREGON JAN. 4, 2011 QUINN D. SOIFER
EXPIRES: 6/30/12

Notes

GENERAL: 1

1) REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.

2) UNISTRUT BEING USED IN OUTDOOR ENVIRONMENT TO BE COATED WITH WEATHER PROOF FINISH.

04/ 17 / 12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications

Revisions : 1 5/4/2012 ADDENDUM #1; 3 6/1/2012 ADDENDUM #3
Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

MP15

Portland State UNIVERSITY

PSU Facilities and Planning

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

REGISTERED PROFESSIONAL ENGINEER 77747PE OREGON JAN. 4, 2011 QUINN D. SOIFER
EXPIRES: 6/30/12

Water Service Calculations								
	Fixture Quantity			Appendix A - 2009 UPC - Water Supply Fixture Units (WSFU)			Total Fixture Units	
Description	Private Individual Dwelling	Public General Use	Public Heavy Use Assembly	Private Individual Dwelling	Public General Use	Public Heavy Use Assembly	Cold Water	Hot Water
Bathtub or Combination Bath/Shower	190	-	-	4.0	-	-	760	760
Clothes Washer	-	13	-	-	4.0	-	52	52
Hose Bibs	-	1	-	-	2.5	-	3	-
Hose Bibs Additional	-	1	-	-	1.0	-	1	-
Lavatory	189	1	-	1.0	1.0	-	190	190
Sinks - Kitchen,domestic	189	1	-	1.5	1.5	-	285	285
Sinks - Laundry	-	1	-	-	1.5	-	2	2
Sinks - Service or Mop Basin	-	5	-	-	3.0	-	15	15
Water Closet, 1.6 GPF Gravity Tank	189	1	-	2.5	2.5	-	475	-
Total							1782	1304
Total GPM Required (Per Table A-2)							295	245

PLUMBING FIXTURE SCHEDULE								
TAG	FIXTURE	CONNECTION SIZES				MODEL	FITTINGS	NOTES
		W	V	CW	HW			
L-1	STANDARD LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	3AMERICAN STANDARD. AQUALYN OR APPROVED EQUAL	FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL	
L-2	ADA LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD. COMRADE OR APPROVED EQUAL	FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL	PROVIDE ADA COMPLIANT PIPE COVERS
WC-1	STANDARD WATER CLOSET	3"	2"	1/2"	-	NIAGRA. STEALTH OR APPROVED EQUAL	-	-
WC-2	ADA WATER CLOSET - NEW	3"	2"	1/2"	-	AMERICAN STANDARD. CADET OR APPROVED EQUAL	-	-
WC-3	ADA WATER CLOSET - EXISTING	3"	2"	1/2"	-	AMERICAN STANDARD. CADET OR APPROVED EQUAL	-	-
SH-1	STANDARD BATH TUB / SHOWER	1-1/2"	1-1/2"	1/2"	1/2"	1 FIBERFAB. 103TWKD OR APPROVED EQUAL.	MIXING VALVE: DELTA R10700-UNWS OR APPROVED EQUAL	-
SH-2	ADA ROLL IN SHOWER	2"	1-1/2"	1/2"	1/2"	SEE ARCHITECTURAL DRAWINGS	MIXING VALVE: SYMMONS OR APPROVED EQUAL	-
KS-1	STANDARD KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	ELKAY. ELUMINA OR APPROVED EQUAL	FAUCET: DELTA. 100-DST OR APPROVED EQUAL	-
KS-2	ADA KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	ELKAY. CELEBRITY OR APPROVED EQUAL.	FAUCET: DELTA. 100-DST OR APPROVED EQUAL	PROVIDE ADA COMPLIANT PIPE COVERS
FD-1	FLOOR DRAIN	2"	1-1/2"	-	-	ZURN OR APPROVED EQUAL	-	PROVIDE TRAP PRIMER

MECHANICAL EQUIPMENT SCHEDULE			
TAG	EQUIPMENT	BASIS OF DESIGN	DATA
B-1, B-2, B-2	DOMESTIC HOT WATER BOILERS	A.O. SMITH BTH-500	500 MBH, 822 GALLONS/HOUR @ 70 F TEMPERATURE RISE. 120/1/60 POWER SUPPLY
ET-1	EXPANSION TANK	AMTROL ST-70V-C	34 GALLON, 11.4 ACCEPTANCE VOLUME
ST-1	STORAGE TANK	A.O. SMITH HD24-140	150 GALLON STORAGE
RP-1	RECIRCULATING PUMP	TACO 1600	41 GPM, 20 FT., 120V/1/60 POWER SUPPLY
RP-2	RECIRCULATING PUMP	GRUNDFOS UP 26 99 BF	16 GPM, 24 FT., 120V/1/60 POWER SUPPLY

HVAC UNIT SCHEDULE		
TAG NO.	AREAS SERVED	PRODUCT DATA
MAU-1	NORTHEAST CORRIDORS - FLOORS 4-9	2800 CFM, 0.5" ESP. 300 MBH INPUT, 284 MBH OUTPUT. 208V/3P/60HZ.
MAU-2	SOUTHEAST CORRIDORS - FLOORS 4-9	
MAU-3	NORTHEAST CORRIDORS - FLOORS 4-9	
MAU-4	NORTHWEST CORRIDORS - FLOORS 4-9	
AC-1	ROOF TOP ELEVATOR MECHANICAL ROOM - 1002	1200 CFM, 0.3" ESP. 50 MBH INPUT, 40 MBH OUTPUT. 30,000 MBH COOLING. 208-230V/1P/60HZ.

PIPING MATERIAL SCHEDULE											
PIPING							FITTINGS		MAX WORKING		FIELD TEST	
SYSTEM	SIZE	TYPE	SCHEDULE	GRADE	ASTM	MATERIAL	MATERIAL	TYPE	PRESSURE	TEMP	PRESSURE	TIME
NATURAL GAS	1/2"-2"	E/S	40	B	A53	BLACK IRON	BLACK IRON	THREADED	120	40-180	150	1
DOMESTIC WATER	3/4"-4"	L,K	-	-	B88	COPPER	COPPER	SOLDERED	120	40-180	150	1
DOMESTIC WATER (BRANCH)	1/2" - 1"	PEX	-	-	F877	POLYETHYLENE (PEX)	BRASS	MECHANICAL	120	40-200	150	1
DRAIN/WASTE/VENT	1"-3"	ABS	40	-	D2661	ABS	ABS	SOLVENT CEMENT / MECHANICAL	-	40-200	TEST PER CODE	

Notes

NOTES

04/ 17 / 12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions : 1 5/4/2012 ADDENDUM #1 2 6/1/2012 ADDENDUM #3

Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

MP16