

Brothers Corporation

FEB 18 2015

**DEPARTMENT OF
PLANNING & ZONING****Exhibit 3**

To: Scott Gustin, Burlington Planning & Zoning
Burlington Development Review Board Member

From: Patrick O'Brien

Re: Project Narrative for Garden Street Apartments (formerly Grove Street Apartments).

Date: February 17, 2015

It has been almost a year since we received Preliminary approval for this project and since then we have been diligently working on all of the requested changes as well as obtaining all of the applicable state permits. I wanted to have as much of those in hand so all of their requests could be put on the plans as well. All too often I've received final approval from the municipality only to then have to change the plans and re-apply due to a change requested by another permitting authority.

With that said, I would like to start with the 22 Conditions that were attached to our Preliminary Approval. Below, in chronological order are our responses to these requirements. The second part of this narrative explains the changes relating to these conditions in more detail.

1. This preliminary plat approval in no way grants or implies final plat approval. Final plat application shall be filed in accordance with Section 10.1.9, Final Plat Approval Process, of the CDO and per these Conditions of Approval. No response required.
2. Prior to final plat application, written acceptance of the proposed public traffic and pedestrian transportation improvements shall be obtained from the Dept. of Public Works. This will be coming directly from DPW. Written approval of the proposed public water and sewer service upgrades shall also be obtained from the Dept. of Public Works. This will be coming directly from DPW.
3. Prior to final plat application, written acceptance of the proposed improvements to Schmanska Park and its parking lot shall be obtained from the Dept. of Parks & Recreation. Completed, Exhibit # "6".
4. Prior to final plat application, written acceptance of the proposed street trees along Grove Street shall be obtained from the City Arborist. Completed, see Exhibit # "7".
5. Prior to final plat application, written acceptance of the single access drive and its sufficiency for emergency service vehicles shall be obtained from the Fire Marshal. Completed, see Exhibit # "8".
6. Prior to final plat application, a boundary survey by a VT licensed land surveyor shall be provided and shall show all proposed boundary adjustments. Completed, see sheets PL 1 & PL 2.
7. Prior to final plat application, the applicant shall contact the Vermont Division for Historic Preservation to inquire as to studies of the area that may indicate heightened archaeological significance. Completed, see Exhibit # "9".
8. Prior to final plat application, a revised project phasing schedule shall be provided that estimates what will be constructed and when it will be constructed. Completed, see Exhibit # "4". The phasing schedule shall be consistent with the inclusionary housing requirements of Sections 9.1.18 & 9.1.19 of the CDO. If the inclusionary housing units are to be contained within a single building as presently proposed, the inclusionary housing units must be constructed first. Written acceptance of the proposed inclusionary housing shall be obtained from the city's Housing Trust Fund. The phasing schedule must also provide for the duplex housing units to be built early during the project construction. Please refer to my narrative for

- additional information on inclusionary housing and design.
9. Prior to final plat application, the site plan shall be substantially revised to strengthen the interior streetscape and to provide for a more gradual transition between smaller buildings to the largest apartment buildings. Doing so may be as recommended in Sec. 6.2.2 (h) of these findings or otherwise. Completed, please see my narrative and attached plans for details.
10. Prior to final plat application, the applicant shall investigate providing a second access into the site to improve connectivity with the surrounding neighborhood. If feasible, the second access shall be depicted on final plat plans. The Investigation proved that second access would potentially improve vehicle and pedestrian connectivity to Grove Street, but would be unsafe due to minimal site distances (it would be located where there is a curve in the road) and would be counter intuitive to the environmental restoration work (culvert removal). See narrative for additional details.
11. Final plat plans shall depict mechanical equipment, “hot box,” and outdoor mailbox details. Completed, see plan sheet PL 1-2 and attachment # (10).
12. Final plat plans shall contain consistent building labels between the elevation drawings and site plans. Elevation drawings in the final plat plans shall also include finished grade information on all building sides for all buildings proposed. Completed, see Architectural Plans and Final Grading Plan sheet L-2 and narrative for details. The final plat plans shall also include accurate perspective drawings. Completed, see Illustrations 1-4. The elevation drawings as presented at preliminary plat are not approvable. Completed, see Architectural Plans.
13. Final plat plans shall include a revised clubhouse building design with greater emphasis on perceived verticality. Completed, see sheet A-7.0
14. Final plat plans shall include installation details for the proposed exterior building materials. Completed, each architectural elevation includes installation details and specs.
15. Final plat plans shall depict a concrete public sidewalk across the access drive into the development. Completed.
16. Final plat plans shall include information relative to amenities (i.e. water access, tool sheds, etc.) for the community gardens. Completed, all formal amenities are depicted on the plans and described in the narrative.
17. Final plat plans shall address the feasibility of solar energy or hot water, or at least solar-ready construction, for the development. Due to the availability of Natural Gas, all other alternative energy methods are currently not cost beneficial. We are however constructing the buildings with sleeves in appropriate locations in the event that the benefit of solar roof top panels becomes financially beneficial in the future.
18. Final plat plans shall include fixture cut sheets and illumination levels for building entries shall be provided. Completed, see sheet 3.0 for illumination levels and attachment # 11 for cut sheets.
19. Final plat plans shall include written approval of the project stormwater management system and erosion prevention and sediment control plan from the Conservation Board and the Stormwater

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Administrator. We have worked with the City's Stormwater Administrator to design a system that surpasses the current standards. The written approvals from her as well as the Conservation Board are pending and will be received prior to the DRB meeting.

20. The final plat plans shall include a parking management plan per Sec. 8.1.15 of the CDO for the requested parking waiver. Completed, see attachments 5 & 5A.

21. The existing 59' tall concrete structure immediately along Grove Street shall be retained and integrated into the project design. Details shall be provided in the final plat plans. See sheet A 10. Buildings on the lower (eastern) plateau of the property may utilize this structure for a height limit. Buildings on the upper (western) plateau shall not exceed the standard 35' height limit. See architectural elevations and grading plan details.

22. Prior to final plat approval, Conservation Board shall review the project under Sections 4.5.4 (c) and (d) – riparian and wetland overlay zones. We agree.

As you will see from the plan set, we have made several modifications to the project and offsite improvements not only due to the above conditions, but also due to various requests by department heads (and staff), our neighbors and other permitting authorities. There are also market driven design changes made by us and our consultants. We feel that all of these changes both enhance the project and further the project's conformance to the BDO. Below is a description of the larger changes.

1. To further conform to the existing neighborhood along Grove Street, We have increased the number of smaller duplex and six plex buildings on the upper plateau 13. We have also reduced the size of the three larger buildings from three 33 unit buildings to a 21 unit, a 22 unit and a 33 unit. We also repositioned the buildings and brought them more parallel with the street and sidewalks. We feel that these changes have resulted in a softer transition from the smaller duplexes along Grove Street to the larger buildings in the rear of the project while and at the same time strengthened the interior streetscape and pedestrian circulation within the project.

2. To conform to the 35' height restriction on the upper plateau, the finished grade on every side of each building is just a few inches below the finish floor elevation of each building. The exceptions to this rule include one end of the larger buildings where we enter the underground garages, which obviously has to be 10 feet below finish floor elevation. In order to conform to the 35' restriction, we placed all underground parking for these buildings fully below grade. The proposed buildings heights on the upper plateau are as follows: Duplex's = 26', six plex's = 34', 21 unit = 24', 22 unit = 34' and the 33 unit = 34'.

3. We lowered the overall density from 245 to 232 units. These units were previously within the upper plateau and the largest single reduction was accomplished by removing a story from Building I, which went from 33 units to 22 units once a story was removed.

4. We are proposing to renovate portions of the old plant to provide a formal lookout and pedestrian & cycling rest area. The lookout will include a pavilion with benches and will also include a memorial which will hold two plaques. One plaque will briefly describe industrial history of the site and the other will be a memorial to Stuart D. Ireland, the company's founder. The lookout will remain private because neither the Parks Department nor the Street Department wants to incur the cost to maintain the structure. The Parks Department did guide us in the planning of the pavilion. No buildings on the lower plateau will be higher

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- than this structure, which is a condition of our Preliminary Approval.
5. We have added a permanent sign in the island at the entrance. It will consist of black letters and be placed on a concrete wall. No lighting for the sign is proposed.
6. We have added a larger and expandable community garden area and edible plantings around the project, which include an apple orchard as well as group plantings of black raspberry, raspberry and blueberry bushes.
7. We have designed a phasing plan that will conform to the 8th Condition of our Preliminary Approval. The phasing plan is designed to minimize the areas where construction traffic and resident traffic (vehicle and pedestrian) will co-exist. We will explain and show you in detail (at our DRB meetings) how this will work. Submitting the plan without being able to explain it would be too confusing, it needs to be explained. I have included a graphed timeline (exhibit 11-A) that depicts the phasing, and as you will see we are building the majority of the duplexes in the first 2 phases, which was part this Condition. In regards to the Inclusionary requirements, we will certainly meet them. We understand that if we place all of the inclusionary in 1 building, than that building shall be built first. We also understand that if we do not, than the inclusionary units shall be offered in the same timeline as the market rate units.
8. We have revised the design of the parking lot area for Syzmanska Park in conjunction with both Parks and Recreation and the Department of Public Works. The only area where the two departments did not agree on was if the sidewalk between the parking area and Grove Street. Parks and Recreation wants the sidewalk to be against the curb in the parking lot which will allow a wider green strip between the sidewalk and Grove Street. DPW wants the sidewalk to be in the middle of the green strip. We have shown what DPW wants. These details are shown on Sheet S-8
9. We have redesigned the Club House to give it a more vertical look. The clubhouse will include the rental office as well as the following amenities: Outdoor pool with sun deck, interior fitness room, a complete kitchen, meeting room, lounge and library. Upstairs there will be another lounge area with a large screen TV (for viewing and electronic gaming) and an area that will house ping pong and pool tables.
10. We have included one story maintenance building that will have a small office and enough room to park maintenance equipment. We have also designed an area adjacent to this building to hold seasonal material for the grounds crew.
11. At the request of the DPW we relocated the pump station to the lowest level of the site and have included a large holding tank.
12. In conjunction with Burlington Electric Department, we have designed a non-traditional layout to the electrical system. Typically the distribution system and associated above ground boxes run parallel to the street and negatively affect both the function and aesthetics of the street scape. Our distribution for the most part is opposite that and runs behind the buildings. The electric layout is depicted on the Utility Plan (sheet S3) and the Easement Plat (Sheet EA2 of 2). The route is easier to follow on the latter plan.
13. We have reduced parking spaces to 397, but therefore need to request a parking waiver to allow us to have 16% less parking spaces than the 448 that are required. A Parking Management Narrative and Parking Management Plan are attached as exhibits 5 & 5A.

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14. At the request of the neighbors, we have agreed to the following items:
- A. We have agreed to shorten our Saturday work hours from 8am to 3pm.
 - B. We have agreed to add a row of 8 -10 foot high White Spruce and White Pine behind building "T" (see sheet L-2).
 - C. As mentioned, we have agreed to reduce the density by 11 units and at the same time reduce the height of Building I by removing a complete story (see sheet A3A.0).
 - D. We have agreed to improve a second crossing on Grove Street, closer to the existing buildings. These improvements include Rectangular Rapid Flashing Beacons, a bump out and associated signage (see sheet S8).
 - E. We have also agreed to narrow the section of road from 34+/- feet 24 +/- feet from the new Syzmanska Parking lot down to the above mentioned bump out (see sheet S8).

All of these requests have been put on the plans, with the exception of item A.

Lastly, we are proposing four Boundary Line Adjustments all of which are depicted on the Boundary Plats.

1. We are quit claiming .81 acres to the Merchant family. During the survey process, Mr. Merchant disagreed with what our surveys had identified in the field and subsequently told me that when he purchased his land from Mr. Scott (the previous owner) that Mr. Scott told him that the lot went all the way to Centennial Brook. Since then Mr. Merchant has assumed that he owned that area and has maintained it and even has a shed on it. We have not used that land, have no use for the land and did not count that land as "developable" in our density calculations and we did not use it for lot coverage calculations so we feel the best thing to do is simply quit any claim that we may have to the land by giving it to the Merchants. This will clear up an ambiguity about the property lines in the future. The Merchants are amenable to this and have signed the appropriate application. See sheet PL2-2 for details.

2. We are completing a Boundary Line Adjustment with the Manhke family. Currently, there is a portion of their property that comes up onto the upper plateau of the Ireland Property. The Irelands did not know this and have always used it. The design of the project always designed around this property line. The Manhke's cannot access this property without crossing the stream and climbing the bank and we both felt that the best thing to do is to swap the 0.23 acres and square off the lot. This has not caused any redesign of the project and we are not using it in our density or lot coverage calculations. The Manhke's are amenable to this swap and have signed the appropriate application. See sheet PL1-2 for details.

3. We are proposing to complete a 0.69 acre boundary line with ourselves. As discussed at sketch and preliminary. The .69 acres is currently part of what we call "Apple Grove" which is the small development to the South of this project. Since sketch and preliminary we have used this area for density and lot coverage calculations. See sheet PL1-2 for details.

4. We are very excited to say that we are proposing to donate 6.22 acres to the Winooski Valley Park District as well as provide them an easement that will enable them to develop a trail system that would start at the Syzmanska Park parking lot and lead them to the parcel we are gifting them, which adjoins landlocked

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property in South Burlington that they already own. This is all depicted on the proposed Plat PL1-1. The WVPD is very excited about this. This land was not used in any of our density or lot coverage calculations. We are also proposing to grant them a trail easement from this parcel north along the edge of the river and then west to the Syzmanska Park parking lot. This will finally and permanently give them access to their previously landlocked parcel. See sheet PL1-2 for details.

Certainly there are other small changes that we have made that will be presented at the meeting. We have worked very hard to incorporate everyone's requirements and suggestions and I truly feel that this project will enhance the aesthetic, environmental and quality of life of the overall neighborhood and become a star in Burlington's housing stock.

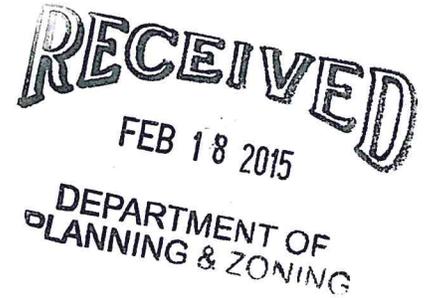
Respectfully submitted;

Patrick O'Brien (on behalf of the entire S.D. Ireland family)

Brothers Corporation

February 17, 2015

Scott Gustin, Senior Planner
Dept. of Planning & Zoning
149 Church Street
Burlington, VT 05401

**RE: Final Plat Approval – Garden Street Apartments (formerly Grove Street Apartments)**

Dear Scott,

Please consider this a formal request for Final Plat Review and Approval for the above mentioned project. Attached for your review and distribution are the following:

Exhibit #1 is the list of the project plans.

Exhibit #2 is a list of abutters.

Exhibit #3 is the Project Narrative.

Exhibit #4A is a phasing plan depicting the anticipated construction sequence of the buildings.

Exhibit #4B is a construction timeline in graph form of the anticipated construction sequence.

Exhibit #5A is a parking waiver request and associated narrative.

Exhibit #5B is the Parking Management Plan required for the parking waiver request.

Exhibit #5C is a Contingency Parking Plan, which is also requested as part of the waiver request.

Exhibit #'s 6, 7 & 8 are department emails (Fire, Parks & Rec, and Tree warden) relating to the Preliminary approval requirements of obtaining written “signoffs” from these departments prior to Final submission.

Exhibit #9 is an email from the Vermont Division for Historic Preservation relating to the Preliminary Requirements.

Exhibit #10 is the detail for the exterior mailboxes.

Exhibit #11, the cut sheets for the exterior lighting.

Exhibit # 12, detail for Frost Proof Hydrant to be used for the community gardens.

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Exhibit #'s 13A & 13B, cross sections of our two types of the concrete retaining walls (Form Tined and Recon Block).

Exhibit #14 is a copy of agreement with CarShare Vermont.

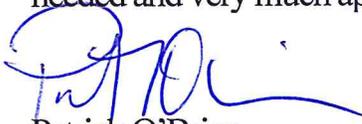
Exhibit # 15 are the boundary line adjustment applications.

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Also enclosed is a completed application and a check in the amount of \$ \$33,649.80 and six full size sets, one 11" x 17" full set and one disk of the plans, which include all of the required specifications and details and lastly a set of four 11" x 17" Illustrations taken from the 4 locations you, Mary and I spoke about. All illustrations are by Lincoln Brown Illustrations.

In regards to the 17 Preliminary Permit Conditions, I am happy to say that we have satisfied each one of them (where it was applicable) and have addressed each one of the conditions individually in the attached Narrative and or supporting documents and plans.

Thank you (and Mary) very much for your insight and help throughout this application process, it is both needed and very much appreciated.



Patrick O'Brien

Exhibit 1

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Exhibit #1 is the list of plans submitted to the City of Burlington Planning and Zoning department as part of the Final Plat Review application for Garden Street Apartments.

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Civil Sheets Prepared by O’Leary Burke Civil Associates:

- T1 – Title Sheet
- S1 – Existing Conditions Plan
- S2 – Site Plan
- S3 – Utility Plan
- S4 – Grading Plan
- S5 – Grove Street Pedestrian Improvement Plan I
- S6 – Grove Street Pedestrian Improvement Plan II
- S7 – Grove Street Pedestrian Improvement Plan III
- S8 – Burlington Parks & Rec Improvements
- S9 – Off- Site Water Line Extension
- S10 – Sewer Plan & Profile Upper Plateau
- S11 – Sewer Plan & Profile Transition
- S12 – Sewer Plan & Profile Lower Plateau
- S13 – Sewer Details
- S14 – Pump Station Details
- S15 – Parking Details
- S16 – Water Details
- S17 – Stormwater & Erosion Control Details
- EC1 – Erosion Control Pre-Construction Plan
- EC2 – Erosion Control Construction Plan
- EC3 – Erosion Control Construction Plan
- EC4 – Erosion Control Post-Construction Plan
- EC5 – Erosion Control Culvert Removal
- EC6 – Erosion Control Detail

Survey Sheets Prepared by O’Leary Burke Civil Associates:

- PL1-2 Boundary and Boundary Line Adjustment Plat
- PL2-2 Boundary and Boundary Line Adjustment Plat
- EA 1 OF 2 Easement Plat
- EA 2 OF 2 Easement Plat

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Landscaping Sheets Prepared by Wagner Hodgson Landscape Architects:

- L1.0 – Overall Landscape Site Plan
- L1.1 – Landscape Lighting Plan
- L1.2 – Overall Grading Plan
- L1.3 – Parking Lot Shade Study
- L2.0 – Tree Plan
- L2.1 – Enlarged Planting Plan Zone 1
- L2.2 – Enlarged Planting Plan Zone 2
- L2.3 – Enlarged Planting Plan Zone 3
- L2.4 – Enlarged Planting Plan Zone 4
- L2.5 – Enlarged Planting Plan Zone 5
- L2.6 – Enlarged Planting Plan Zone 6 + Schedules
- Site lighting layout by Swaney Lighting Associates, Inc.

Architectural sheets prepared by Michael Dugan, Architect:

- A1.0 BUILDINGS A,B,C,D,F,G,H O AND P Elevations
- A1.1 Buildings A, B, C & D Finish Grade Elevations.
- A1.2 Buildings F, G & H Finish Grade Elevations.
- A1.3 Buildings O & P Finish Grade Elevations.
- A2.0 Buildings E, L, M & N Front Elevations.
- A2.1 Buildings E, L, M & N Rear Elevations.
- A2.2 Buildings E, L, M & N Side Elevations.
- A2.3 Buildings E, L, M & N Side Elevations.
- A2.4 Building E, Finish Grade Elevations.
- A2.5 Building L, Finish Grade Elevations.
- A2.6 Building M, Finish Grade Elevations.
- A2.7 Building N, Finish Grade Elevations.
- A3.0 Building K, Front & Rear Elevations.
- A3.1 Building K, Garage Entry & On Grade Elevations.
- A3A.0 Building I, Front & Rear Elevations.
- A3A.1 Building I, Garage Entry & On Grade Elevations.
- A4.0 Building J, Front & Rear Elevations.
- A4.1 Building J, Garage Entry & On Grade Elevations.
- A5.0 Building S, Front & Rear Elevations.
- A5.1 Building S, Garage Entry & On Grade Elevations.
- A5.2 Building T, Front & Rear Elevations.
- A5.3 Building T, Garage Entry & On Grade Elevations.
- A6.0 Building R, Front & Rear Elevations.

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- A6.1 Building R, Garage Entry & On Grade Elevations
- A7.0 Building U Finish Grade Elevations
- A8.0 Building Q, Finish Grade Elevations
- A9.0 Pavilion Plans and Elevations.
- A10.0 Overlook Plan and Elevations.
- A11.0 Dumpster and Retaining Wall Details

Illustrations prepared by Lincoln Brownell

- I-1, which is the view looking down Grove Street.
- I-2, which is the view looking up Grove Street.
- I-3, which is the view looking in from Grove Street.
- I-4, which is the view from Garden Street looking down Arbor Street.

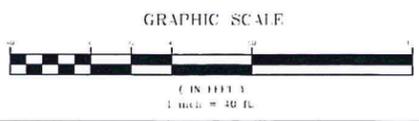
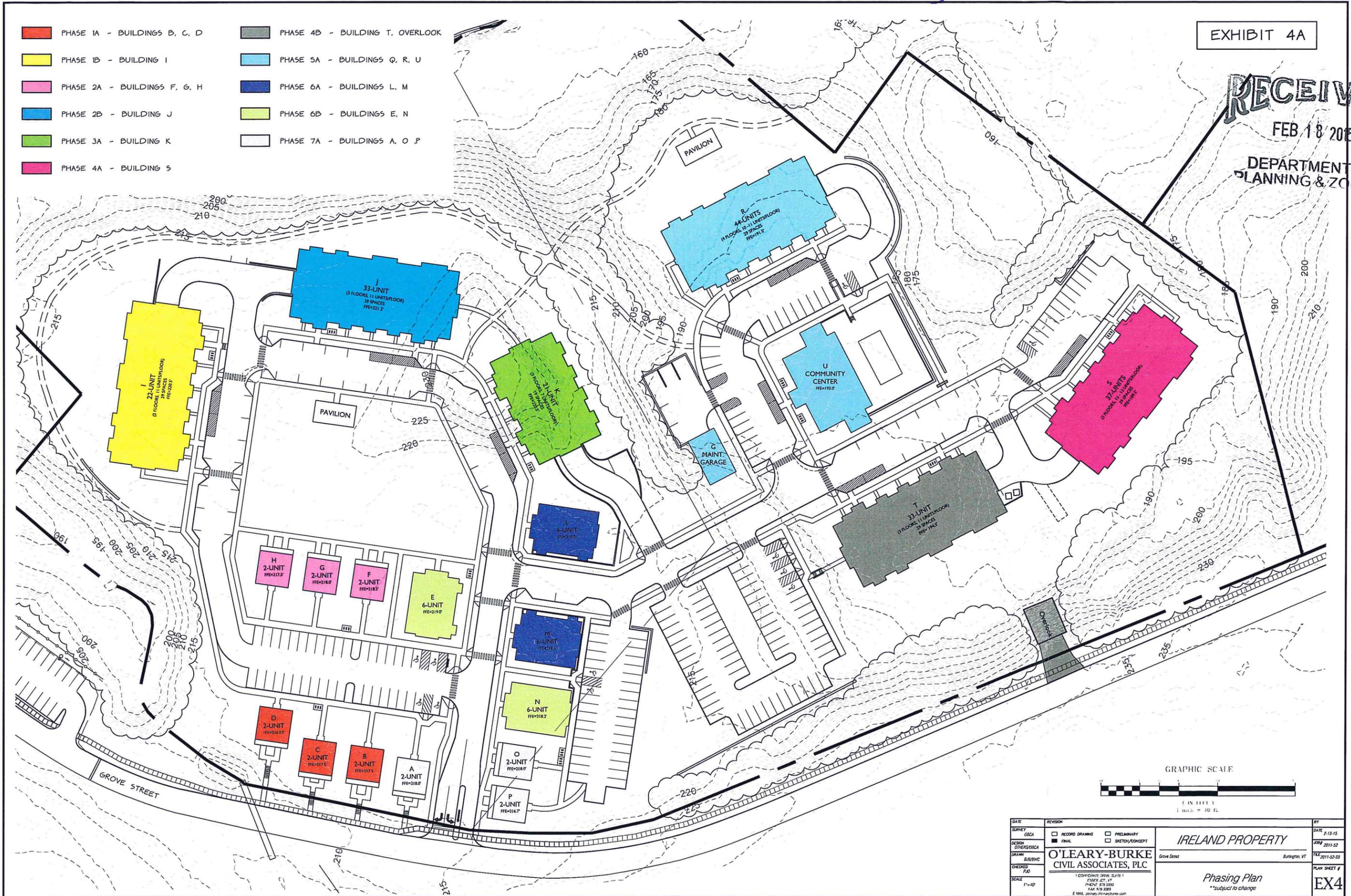
Phasing

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- PHASE 1A - BUILDINGS B, C, D
- PHASE 1B - BUILDING I
- PHASE 2A - BUILDINGS F, G, H
- PHASE 2B - BUILDING J
- PHASE 3A - BUILDING K
- PHASE 4A - BUILDING S
- PHASE 4B - BUILDING T, OVERLOOK
- PHASE 5A - BUILDINGS Q, R, U
- PHASE 6A - BUILDINGS L, M
- PHASE 6B - BUILDINGS E, N
- PHASE 7A - BUILDINGS A, O, P



DATE SURVEY DESIGN DRAWN CHECKED SCALE	REVISION <input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> FINAL <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> SKETCH/CONCEPT	DATE 2-13-15 2011-52 2011-52-53
O'LEARY-BURKE CIVIL ASSOCIATES, PLC <small>1 CORPORATE DRIVE, SUITE 1 FLORENCE, VT 05439 PHONE: 873-2693 FAX: 873-2693 E MAIL: o'b@o'b-civil.com</small>		IRELAND PROPERTY <small>Grove Street Burlington, VT</small>
Phasing Plan <small>**subject to change</small>		PLAN SHEET # EX4

Garden Street Apartments Anticipated Construction Phasing Schedule 2-16-15

EXHIBIT 4B
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ID	Task Name	Duration	Start	Finish	2016												2017												2018												2019											
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr														
1	Construction Phasing Schedule	978 days	Wed 7/1/15	Fri 3/29/19																																																
2																																																				
3	SITE WORK	198 days	Wed 7/1/15	Fri 4/1/16																																																
4	Offsite Water & Utilities	133 days	Wed 7/1/15	Fri 1/1/16																																																
5	Offsite Stormwater & Sidewalk	133 days	Wed 7/1/15	Fri 1/1/16																																																
6	Park Improvements	198 days	Wed 7/1/15	Fri 4/1/16																																																
7	Onsite Stormwater	198 days	Wed 7/1/15	Fri 4/1/16																																																
8	Onsite Water & Utilities - Upper	198 days	Wed 7/1/15	Fri 4/1/16																																																
9	Onsite Road & Parking - Upper	198 days	Wed 7/1/15	Fri 4/1/16																																																
10	PHASE 1A	132 days	Thu 10/1/15	Fri 4/1/16																																																
11	Building B - 2 Units	132 days	Thu 10/1/15	Fri 4/1/16																																																
12	Building C - 2 Units	132 days	Thu 10/1/15	Fri 4/1/16																																																
13	Building D - 2 Units	132 days	Thu 10/1/15	Fri 4/1/16																																																
14	PHASE 1B	198 days	Wed 7/1/15	Fri 4/1/16																																																
15	Building I - 22 Units	198 days	Wed 7/1/15	Fri 4/1/16																																																
16	PHASE 2A	130 days	Mon 1/4/16	Fri 7/1/16																																																
17	Building F - 2 Units	130 days	Mon 1/4/16	Fri 7/1/16																																																
18	Building G - 2 Units	130 days	Mon 1/4/16	Fri 7/1/16																																																
19	Building H - 2 Units	130 days	Mon 1/4/16	Fri 7/1/16																																																
20	PHASE 2B	195 days	Mon 1/4/16	Fri 9/30/16																																																
21	Building J - 33 Units	195 days	Mon 1/4/16	Fri 9/30/16																																																
22	PHASE 3A	195 days	Mon 7/4/16	Fri 3/31/17																																																
23	Building K - 21 Units	195 days	Mon 7/4/16	Fri 3/31/17																																																
24	SITE WORK	130 days	Mon 10/3/16	Fri 3/31/17																																																
25	Onsite Water & Utilities - Lower	130 days	Mon 10/3/16	Fri 3/31/17																																																
26	Onsite Road & Parking - Lower	130 days	Mon 10/3/16	Fri 3/31/17																																																
27	PHASE 4A	195 days	Mon 1/2/17	Fri 9/29/17																																																
28	Building S - 37 Units	195 days	Mon 1/2/17	Fri 9/29/17																																																
29	OVERLOOK	195 days	Mon 1/2/17	Fri 9/29/17																																																
30	Overlook Construction	195 days	Mon 1/2/17	Fri 9/29/17																																																
31	PHASE 4B	195 days	Mon 7/3/17	Fri 3/30/18																																																
32	Building T - 33 Units	195 days	Mon 7/3/17	Fri 3/30/18																																																
33	PHASE 5A	195 days	Mon 1/1/18	Fri 9/28/18																																																
34	Building Q - Maintenance Building	130 days	Mon 4/2/18	Fri 9/28/18																																																
35	Building R - 44 Units	195 days	Mon 1/1/18	Fri 9/28/18																																																
36	Building U - Club House	195 days	Mon 1/1/18	Fri 9/28/18																																																
37	PHASE 6A	260 days	Mon 4/2/18	Fri 3/29/19																																																
38	Building L - 6 Units	195 days	Mon 4/2/18	Fri 12/28/18																																																
39	Building M - 6 Units	260 days	Mon 4/2/18	Fri 3/29/19																																																
40	PHASE 6B	195 days	Mon 7/2/18	Fri 3/29/19																																																
41	Building E - 6 Units	195 days	Mon 7/2/18	Fri 3/29/19																																																
42	Building N - 6 Units	195 days	Mon 7/2/18	Fri 3/29/19																																																
43	PHASE 7A	130 days	Mon 10/1/18	Fri 3/29/19																																																
44	Building A - 2 Units	130 days	Mon 10/1/18	Fri 3/29/19																																																
45	Building O - 2 Units	130 days	Mon 10/1/18	Fri 3/29/19																																																
46	Building P - 2 Units	130 days	Mon 10/1/18	Fri 3/29/19																																																

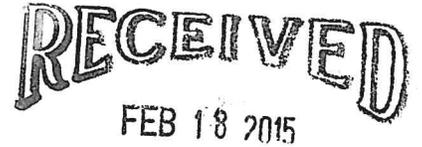
DEPARTMENT OF
PLANNING & ZONING

* THIS IS AN ESTIMATED SCHEDULE
WHICH IS SUBJECT TO CHANGE

Task		Milestone		Rolled Up Task		Rolled Up Progress		External Tasks		Group By Summary	
Progress		Summary		Rolled Up Milestone		Split		Project Summary		Deadline	

February 16, 2015

Burlington Development Review Board
City of Burlington, VT



DEPARTMENT OF
PLANNING & ZONING

RE: Market Street Apartment Parking Waiver Request

Dear Board members,

Please consider this a formal request for a parking waiver to allow for an 18% reduction in the minimum parking standard. I offer the following information as well as two attachment's which are Exhibit's 5 B, the Parking Management Plan and 5 C, the Parking Contingency Plan .

I Project Summary: Market Street Apartments is a proposed 232 unit apartment complex consisting of 19 apartment buildings, a rental office/clubhouse and a maintenance building. If the waiver is granted the parking ratio will be 1.70+/- spaces per unit rather than the 2 spaces per unit required.

II Parking Requirements vs. Proposed Spaces: ^{Garden} Market Street Apartments is located within the Neighborhood Parking District. The required minimum off street parking requirements in this district are 2 spaces per dwelling unit for the apartments, and 2 per 1,000 square feet for the rental office. The calculation showing the required minimum amount of spaces, the number of proposed spaces and the difference is shown in the table below:

<u>Use</u>	<u># units or s.f.</u>	<u>Required spaces</u>	<u>Proposed spaces</u>	<u>Difference</u>
Apartment	232 units	464	394	70
Rental office	1,000 s.f.	2	0	2
Total		466	394	72

III Parking Management Plan Summary: ^{Garden} Market Street Apartments will have a mix of building sizes from two story duplex's to a 4 story 44 unit building. The six largest buildings all have underground parking garages which will hold a total of 164 of the 394 total parking spaces (41%). The Parking in the garage will be fee based and therefore assigned. The remaining 230 surface spaces will be on a first come / first serve basis. Resident parking stickers will be mandatory and guest parking their car for more than one night will be required to register their car at the on-site rental office. A maximum number of nights will be allowed for overnight guest parking. Violators will be towed. These requirements will be thoroughly explained to all rental applicants and will all be set as terms in every rental/lease agreement.

IV Parking demand analysis: For our demand analysis we first looked to see if we would be targeting any specific market wherein the parking ratio would be extremely low or high. We concluded that we would not be. We then considered the number of bedrooms compared to the number of parking places. Please refer to the table below for unit types, which indicate that if the parking waiver is granted, there will still be 62 more parking spaces than bedrooms, which is adequate for guests and rental office employees. We then reviewed what other apartment developers were using for parking ratios both locally and nationally and found that there is a range of zero spaces per unit for large inner city projects to a high of 2.5 spaces per unit in suburban areas where there is virtually zero walkability/bike-ability to services, jobs, retail or public transportation. Our research indicates that our proposal for 1.70 +/- spaces per unit is slightly above the national average for new apartment buildings. Due to the fact that most spaces will be available during working hours, we have concluded that allocating additional parking for the rental office employees is not necessary.

<u>Unit type</u>	<u>Unit count</u>	<u>Total bedroom by unit type</u>
2 BR	77	154
1 BR	138	138
Efficiency	17	17
Total	232	309

In determining our demand, we also considered other parking demand adjustment factors. They are as follows:

<u>Factor</u>	<u>Description</u>	<u>Adjustment</u>
Geographic Location	Adjacent to city core	down
Location to Employment	Less than 1 mile	down
Location to Recreation	Less than 300 feet	down
Location to retail/shops/services	Less than 1 mile	down
Location of Public Transit	Less than ½ mile	down
Location of school bus stop	Less than 1/3 mile	down
Quality of walkability	lighted sidewalks/crosswalks etc.	down
Housing tenure	Rental, not owner occupied	down
On site Management	Mandatory permits, active enforcement	down
Bicycle Storage	Exceeds requirements	down
Unit types	66% one bedroom or efficiency	down
CARSHARE POD	On – site	down
Ability to expand parking areas	Yes	down
Potential of Trans. Mngt. Assoc.	Yes via CATMA	down

Exhibit 5 A

(V) Conformance with the CDO and MDP: Both the CDO and MDP encourage the thoughtful management of parking areas and the integration of strategies that foster the use of alternative methods of commuting. To that end, we feel that the planning and design of this project, inclusive of the Parking Management Plan and proposed off site pedestrian improvements meets the intent of Articles 8 of the CDO as well as Section V of the MDP, and therefore feel that this waiver should be granted.

(VI) CONTINGENCY PLAN: In the event that additional parking is necessary there is ample room to add additional parking by adding pavement to the perimeter of the green around Garden Street. See attachment plan. This would be done by adding 9' of pavement around the perimeter and rotating the spaces 90 degrees to make them standard perpendicular parking spaces. This would add a total of 26 spaces. In the event that the board feels that this change should take place now, we would be happy to make the change as a condition of approval. We would rather build the parking this way but acknowledge that at Preliminary we proposed all of the "on-street" parking as perpendicular and the general consensus of staff and the board was that took away from the interior streetscape.

The increase in parking will add 4,655 SF of impervious coverage to the site. This will not have an effect on the stormwater design as we over designed the system with an additional 10,000 SF of impervious coverage that is not currently being built. The lot coverage for the site will increase from 42.8% to 43.3% (net increase of 0.5%). We would have to move the existing pavilion and gardens back a couple of feet, away from the street in order to fit the 5' sidewalk.

In the event that you do agree to allow us to adopt attachment " 5 C" as a condition of approval it would increase the parking ratio to 1.82 spaces per unit which means that a waiver would still need to be granted.

Lastly, I am happy to report that Garden Street will have an on-site CarShare Vermont parking pod.

Thank you very much for considering this waiver.

Patrick O'Brien

**GARDEN STREET APARTMENTS
PARKING MANAGEMENT PLAN**

RECEIVED
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DEPARTMENT OF
PLANNING & ZONING

1.0 INTRODUCTION

1.1 Purpose: Garden Street Apartments (GSA) has developed this Parking Management Plan (PMP) to control and manage parking at Garden Street Apartments to ensure the safe and efficient utilization of parking spaces for residents, visitors and guests.

1.2 Applicability: This plan is applicable to all GSA residents and employees and their guests and invitees.

1.3 Definitions:

1.3.1 *Covered Parking* is defined as all parking spaces that are within the garages at GSA.

1.3.2 *Above Ground Parking* is defined as all parking at GSA that is not defined as Covered Parking.

1.3.3 *Resident* is defined as each person that has signed a formal lease agreement with GSA.

1.3.4 *Employee* is defined as each person that is employed by GSA.

1.3.5 *Guest or Invitee* is defined as a person who occupies a parking place for a period of less than 8 hours in a 7 day period.

1.3.6 *Long Term Guest or Invitee* is defined as a person who occupies a parking place for more than 8 hours in a 7 day period.

1.4 Timeframe: Parking restrictions are in effect 24 hours a day & 365 days a year.

2.0 GSA Parking Philosophy

2.1 GSA offers one parking space to each Resident (who signed the lease) on a first come first serve basis.



3.0 PARKING PERMIT: APPLICATION, TYPE AND DURATION

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PLANNING & ZONING

- 3.1 Application for a permit: All permits and passes are applied for and made available at the GSA rental office Monday through Friday from 8:30 a.m. to 5:00 p.m. and on Saturday from 8:30 a.m. to 12:30 P.M.
- 3.2 Covered Parking: There is a monthly charge for Covered Parking. Covered Parking stickers specify which space is allocated to a particular vehicle.
- 3.3 Above Ground Parking: Above Ground Parking Stickers are free and will not specify a particular space.
- 3.4 Guest / Visitor parking: Parking for a period of 8 hours or less per week in the Above Ground Parking area is allowed without the need for a parking pass. Guests & Visitors that are parking a vehicle for longer than 8 hours in a week shall be required to obtain a Short Term Parking Pass from the rental office.
- 3.5 Temporary parking permits: Temporary parking permits are available for residents who have a parking sticker issued but must utilize a rental car or temporary vehicle for a short time.
- 3.6 Number of Permits Issued: Residents will be given the opportunity to apply for a parking pass at the time the lease is executed. One permit may be issued to each person signing the lease. Parking passes are active for a period of 1 year from the date of issuance but will expire immediately upon termination of the lease. Only one type of parking permit may be issued at a time. Each vehicle must have its own permit and permits may not be transferred between vehicles.
- 3.7 Motorcycles, scooters, mopeds etc.: All registered vehicles, including motorcycles, scooters, mopeds etc. must have a valid parking permit to park at GSA.

3.8 Electric Vehicles: Electric Vehicle's charging stations will be made available upon requested. The resident will be charged a pro-rated fee based on time used. Once installed, application to park in the charging station shall be made at the GSA rental office.



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4.0 NEW OR REPLACEMENT PARKING PERMITS

4.1 New Vehicles: New vehicles replacing existing vehicles are required to apply for a new parking permit within 24 hours.

4.2 Replacement Permits: Lost/stolen or damaged permit reports will have to be completed at the GSA rental office to obtain a replacement permit. If a permit is lost before being attached to the vehicle for which it was issued, a \$__ fee may be assessed. If a permit is found to be removed from a vehicle to which it had been issued, either by natural cause or stolen, the driver of the vehicle has 24 hours from the time it is found to be missing, to apply for and obtain a new permit.

5.0 DISPLAY OF PARKING PERMITS

Parking permits shall be affixed to the upper left corner of the rear window of the vehicle so that the permit number is clearly visible from the outside of the vehicle. Vehicles without a rear window or a convertible will place the permit on the lower outside corner of the driver's side windshield so it can be seen and read from the outside of the vehicle. A citation will be issued to any vehicle where the parking permit is not displayed in the designated area on the vehicle window. A citation is not subject to appeal if the parking permit is covered or blocked from view in any manner where it is not visible for any reason other than it was blocked by snow or ice. Citations due to placing the sticker in the wrong location on the vehicle may be appealed and the

citation may be dismissed if the driver shows the permit has been relocated to the correct location.



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6.0 MISUSE / FRAUD

Misuse of, fraudulent obtaining of, or unauthorized reproduction of a GSA parking permit is prohibited and may result in the immediate loss of GSA parking privileges.

7.0 ABANDONED VEHICLES

Any vehicle that has an expired inspection sticker, expired registration sticker or is inoperative for more than 20 calendar days will be deemed abandon and subject to tow, even if it has a valid GSA parking permit.

8.0 VEHICLE MAINTENANCE AND WASHING

There shall be no vehicle maintenance performed or vehicles washed on GSA property.

9.0 PARKING ENFORCEMENT

The employees of GSA have been authorized to administer and enforce the GSA Parking Management Plan on GSA property and to issue citations for violations of the plan. GSA and their employees may also conduct a search through the Vermont Department of Motor Vehicles (DMV) in order to obtain registered owner information in order to determine if the vehicle is owned by the applicant.

Parking citations not paid or appealed within 10 days of the issuance of the citation are subject to an administrative fee in addition to the citation fee.

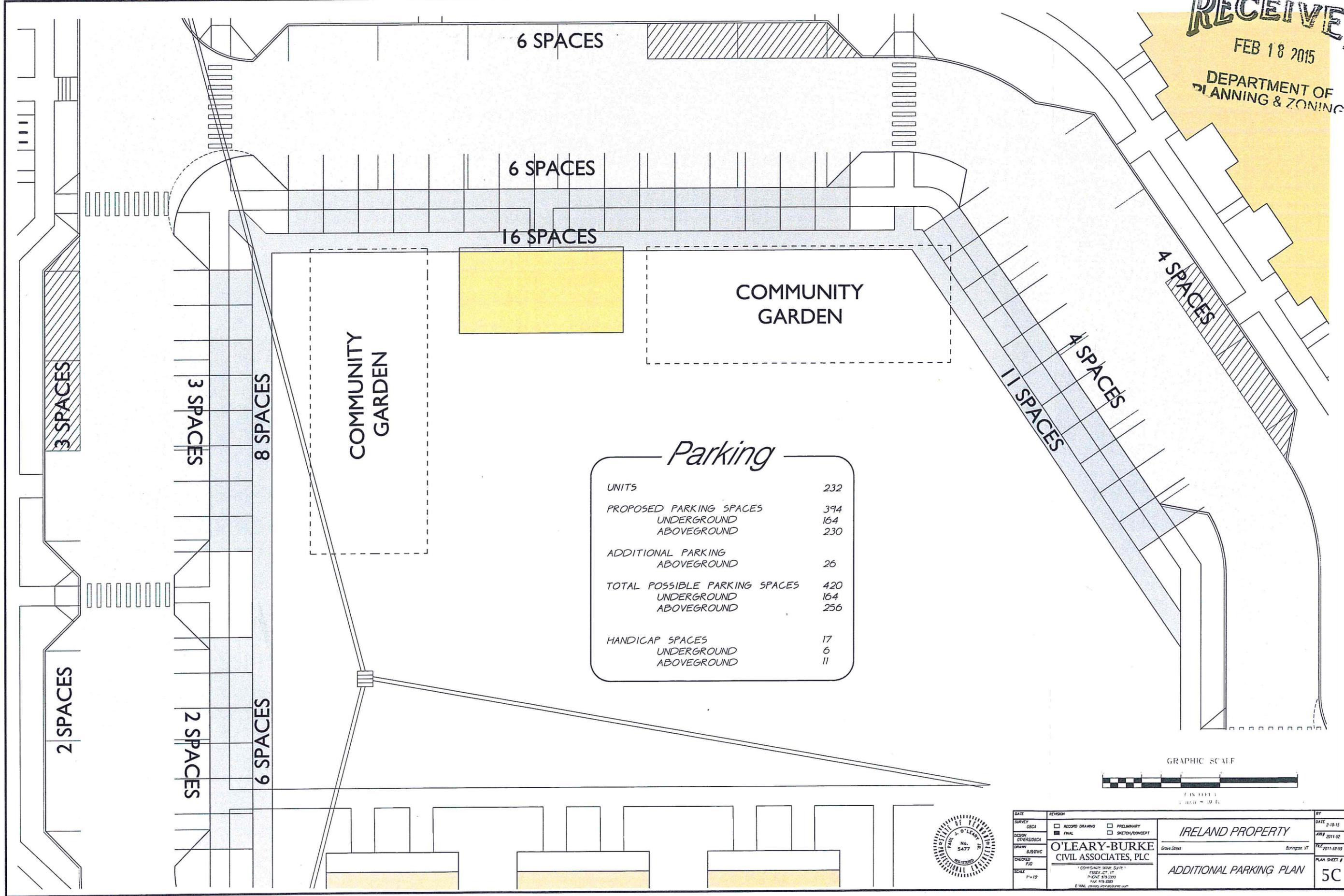
EXHIBIT 5 B

Appeals need to be received within 10 days in order to be accepted for review.

All citations shall be mailed to the owners address. Unpaid citations may be taken from the residents' security deposit as outlined in the lease agreement.

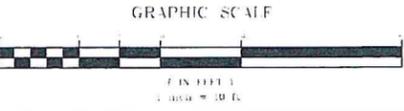
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Parking

UNITS	232
PROPOSED PARKING SPACES	394
UNDERGROUND	164
ABOVEGROUND	230
ADDITIONAL PARKING	
ABOVEGROUND	26
TOTAL POSSIBLE PARKING SPACES	420
UNDERGROUND	164
ABOVEGROUND	256
HANDICAP SPACES	17
UNDERGROUND	6
ABOVEGROUND	11



DATE	REVISION	BY
SURVEY	<input type="checkbox"/> RECORD DRAWING <input type="checkbox"/> PRELIMINARY <input checked="" type="checkbox"/> FINAL <input type="checkbox"/> SKETCH/CONCEPT	
DESIGN	OTHERS/OSCA	IRELAND PROPERTY
DRAWN	JB/BW/C	Civil Associates, PLC
CHECKED	PJD	Grave Street Burlington VT
SCALE	1" = 10'	ADDITIONAL PARKING PLAN

RECEIVED
MAR 05 2015

Memorandum of Understanding

This Memorandum of Understanding is dated as of 1/14, 2015, between S.D. Ireland Brothers Corp and Ireland Grove Street Properties LLC (SDI) and Green Mountain CarShare, Inc. (dba CarShare Vermont).

SDI has interest in providing access to CarShare Vermont's car-sharing service at an apartment complex that they are currently permitting at a location commonly and currently known as 140 Grove Street (herein referred to as the Property). SDI desires to provide future tenants at the Property and non-tenant members of CarShare Vermont with transportation alternatives to privately-owned motor vehicles and has discussed with CarShare Vermont the feasibility of locating one (1) CarShare Vermont-owned vehicle in a surface parking area on the Property, and CarShare Vermont has expressed a willingness to provide such vehicle and service to the tenants of the Property and non-tenant members of CarShare Vermont.

RECITALS

Property Description:

140 Grove Street
Burlington, VT 05401

Parking Rights:

SDI shall provide CarShare Vermont the use of one (1) parking space in a designated parking area on the Property. Parking space shall be independently accessible. The exact location of the space will be determined in the Parking License Agreement. CarShare Vermont members shall have unlimited access to such parking space 24 hours a day, unless otherwise agreed by CarShare Vermont and SDI.

Term of Agreement ("Term"):

Twelve (12) months, commencing one month after the 75th apartment unit is occupied and CarShare Vermont is notified of its occupation, or sooner if the parties mutually agree. Extension agreements to be determined in the Parking License Agreement.

Compensation:

The CarShare Vermont space shall be provided by SDI at no cost to CarShare Vermont for the entire Term, including any options to extend.

SDI shall also underwrite the cost of operating the CarShare Vermont vehicle at a rate ranging from \$0 to \$1,600 per month, depending upon the revenue generated by the vehicle each month (revenue includes hours and miles).

Pod Installation:

CarShare Vermont shall cover the cost of CarShare Vermont's pod installation.

Use:

The CarShare Vermont space shall be used for parking of a CarShare Vermont vehicle and the general operational needs of CarShare Vermont, including providing access for maintenance and cleaning of the vehicle. CarShare Vermont has the exclusive right but not the obligation to occupy the CarShare Vermont space.

Insurance:

For the length of the Term of this Agreement, CarShare Vermont shall maintain a policy of commercial general liability insurance and auto liability insurance against liability arising out of the use or maintenance of the CarShare Vermont space, or resulting from damage caused by CarShare Vermont members' operation of CarShare Vermont vehicles located at the Property. Said insurance shall be in the amount of Two Million Dollars (\$2,000,000.00) in the event of personal injury to any number of persons or of damage to property arising out of any one occurrence and annual aggregate. All of such insurance shall be primary with any insurance that may be carried by the Property Owner. Property Owner will not be held responsible for damage to CarShare Vermont's owned or leased vehicles while they are on Property premises except for negligent acts on the part of the Property Owner. Property Owner and its contractors will not assume any liability for CarShare Vermont's operation.

Signage:

Property Owner shall provide a suitable location for CarShare Vermont signage indicating to CarShare Vermont members and tenants the location of the CarShare Vermont space. Signage type, size, style, and location shall be consistent with CarShare Vermont's existing pod graphic standards, subject to Property Owner's reasonable approval and the City of Burlington sign ordinance. Exact location will be determined in the Parking License Agreement.

Service of Space(s)

CarShare Vermont shall be responsible for general upkeep of the CarShare Vermont space, including snow removal. If Property Owner plows the parking area occupied by CarShare Vermont's space, Property Owner shall do its due diligence to remove snow around the CarShare Vermont vehicle.

Enforcement

Property Owner shall authorize CarShare Vermont to tow any vehicle parked in the CarShare Vermont assigned parking space.

Marketing to Tenants

Property Owner shall use its reasonable efforts to provide CarShare Vermont marketing materials to all tenants during initial lease-up of the project and upon each new occupancy. CarShare Vermont shall provide marketing materials to the Property Owner; Property Owner shall make CarShare Vermont marketing materials available to tenants at no cost to CarShare Vermont.

Interruptions to Service:

SDI shall make a concerted effort to provide CarShare Vermont with reasonable advance notice about any known circumstances that may interrupt use of the CarShare Vermont space, such as parking obstructions, construction, and/or snow removal.

Assignment:

CarShare Vermont shall have exclusive right to use the CarShare Vermont space solely for car-sharing uses during the length of the term.

Termination:

Either party may terminate this Agreement with sixty (60) days advance written notice.

ACCEPTANCE:

This non-binding MOU reflects the terms and conditions upon which we are prepared to enter into an agreement at said Project. As such, it may be subject to Property Owner obtaining final entitlements from the City of Burlington, and the negotiation, execution, and delivery of a binding agreement and related documents. The terms and conditions herein are subject to change or withdrawal without notice.

THEREFORE, this MOU is dated as of the date set forth above.

S.D. Ireland Brothers Corp
& Ireland Grove Street Properties, LLC

By: Scott D. Ireland

Name: Scott D. Ireland

Title: President

CarShare Vermont

By: Annie E. Bourdon

Name: Annie Bourdon

Title: Executive Director

Patrick O'Brien

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FEB 18 2015

Subject: FW: Grove Street

DEPARTMENT OF
PLANNING & ZONING
EXHIBIT # 6

From: Jesse Bridges [mailto:jbridges@burlingtonvt.gov]
Sent: Monday, November 24, 2014 9:06 PM
To: Patrick O'Brien; Warren Spinner; Deryk Roach; Jen Francis
Cc: Scott Gustin
Subject: RE: Grove Street

Patrick,

This email serves to notice the Department's acceptance of the proposed improvements to Schmanska Park's access as well as its parking lot.

We appreciate your communication and cooperation.

Best,
Jesse

From: Patrick O'Brien [mailto:pobrien@SDIRELAND.COM]
Sent: Friday, November 21, 2014 9:03 AM
To: Warren Spinner; Deryk Roach; Jesse Bridges; Jeanne Francis
Cc: Scott Gustin
Subject: FW: Grove Street

To all, the improvements you requested yesterday have been incorporated into the attached plan.

Thank you,

Patrick

From: Bryan Currier [mailto:bcurrier@olearyburke.com]
Sent: Friday, November 21, 2014 8:46 AM
To: Patrick O'Brien
Subject: RE: Grove Street

Good Morning Patrick,

Changes have been made, see attached.

Thanks,
Bryan

From: Patrick O'Brien [mailto:pobrien@SDIRELAND.COM]
Sent: Thursday, November 20, 2014 4:30 PM
To: Bryan Currier
Subject: FW: Grove Street

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Bryan, please put these two changes on your list.

Thank you

DEPARTMENT OF
PLANNING & ZONING

From: Warren Spinner [<mailto:WSpinner@burlingtonvt.gov>]
Sent: Thursday, November 20, 2014 4:00 PM
To: Patrick O'Brien
Cc: Jesse Bridges; Deryk Roach; Jen Francis; Scott Gustin
Subject: RE: Grove Street

Hi Patrick,

I have reviewed the adjusted landscape plans for the Grove St Apartments and Schamanska Park and Parking Lot. The adjustments for tree spacing, tree species and tree sizes are all correct on the plans so those have my approval.

Just want to confirm that the 4' 'Merchants' Metal fence has a break in it for our service road entrance into the park. Also the removable ballads need to be moved back behind the sidewalk in line with the fence. Those two corrections will need to be shown on the plans.

If you need an approval for those corrections for P&Z please send it to Jen or Deryk. Please let us know if you have any questions.

Thanks, Warren

From: Patrick O'Brien [<mailto:pobrien@SDIRELAND.COM>]
Sent: Thursday, November 20, 2014 9:55 AM
To: Warren Spinner
Cc: Jesse Bridges
Subject: FW: Grove Street

Warren, it would be greatly appreciated if you could get you final letter out soon. I can not submit for final application without it.

Thank you very much.

Patrick O'Brien
S.D. Ireland Companies
193 Industrial Avenue
Williston, VT 05495
Office 802-863-6222 x 242
Cell 802-373-0096
e-mail pobrien@sdireland.com

From: Patrick O'Brien
Sent: Wednesday, October 01, 2014 1:42 PM
To: 'Warren Spinner'; Jesse Bridges; Deryk Roach
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: RE: Grove Street

Warren, as promised here are the revised sheets. I look forward to receiving a letter from you that will satisfy the DRB condition.

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FEB 18 2015

Thank you,

Patrick

DEPARTMENT OF
PLANNING & ZONING

From: Warren Spinner [<mailto:WSpinner@burlingtonvt.gov>]
Sent: Wednesday, October 01, 2014 10:04 AM
To: Patrick O'Brien; Jesse Bridges; Deryk Roach
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: RE: Grove Street

Hi Patrick,

Thanks for sending these sheets along for our review and comment.

On sheet S8 'The park and parking lot', we will move/transplant the young tree that's currently in the way of the new proposed path. The one we planted this spring. The three trees proposed for the parking lot redesign shall be specified on the sheet/plans as: 2.5"-3" caliper B&B Acer freemanii 'Celebration'.

On the Grove Street Apartments 'Tree Plan', Bonnie you will need to modify the street tree placements as you enter the new development from Grove Street. There needs to be a clear site vision for vehicles at this intersection of a minimum of 30 feet in both directions as you enter Grove street. So I would suggest the **first** tree to the south as you exit on to Grove St be removed from the plan as well as the first **two** going north as you exit. Totaling 3 'Princeton Elm's being removed from the plan. You now can readjust the remaining five Elm trees in that north section of greenbelt.

The trees to the south of the project that you are proposing to plant 'around' are Green Ash. Planning ahead for the Emerald Ash Borer arrival which in time will kill all the ash trees in our area. I would encourage you to remove the Ash trees now and plant the whole section with new elm trees. It makes sense to do this now so you don't end up with a fragmented section of greenbelt when these Ash trees die and need to be removed.

That's all I have for comments related to landscaping at this point. Please let me know if you have any questions based on my comments.

Best, Warren



Warren Spinner, Certified Arborist

City Arborist
Burlington Parks, Recreation & Waterfront
645 Pine Street
Burlington, VT 05401
802-862-8245



@BTVparks

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FEB 18 2015

DEPARTMENT OF
PLANNING & ZONING

From: Patrick O'Brien [mailto:pobrien@SDIRELAND.COM]
Sent: Tuesday, September 30, 2014 9:26 AM
To: Jesse Bridges; Deryk Roach; Warren Spinner
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: Grove Street

Hello everyone, as previously mentioned, condition # 3 of my Preliminary Approval states that *"Prior to final plat application, written acceptance of the proposed improvements to Schmanska Park and its parking lot shall be obtained from the Dept. of Parks & Recreation"*.

I have attached sheet S8 of our plan set for your review and comment.

Also, condition # 4 states that *"Prior to final plat application, written acceptance of the proposed street trees along Grove Street shall be obtained from the City Arborist"*.

Warren, you will see from the plan that I will be forwarding you that we are proposing some Elm trees along the street. You will also notice that we are proposing to plant some between the existing trees south of the project. Please let us know how you feel about that.

I asked Bonnie Kirn at HKW to turn on the existing tree locations and I have not received that plan yet but I will forward it to you as soon as I get it, which will likely be at some point this morning, or she may send them directly to you.

It would be great if you could offer your comments to us via email so we can incorporate them into the plans and then get a revised set back to you so you can write your letters.

As always, a rapid response would be GREATLY appreciated.

Thank you all,

Patrick

Patrick O'Brien
S.D. Ireland Companies
193 Industrial Avenue
Williston, VT 05495
Office 802-863-6222 x 242
Cell 802-373-0096
e-mail pobrien@sdireland.com

Patrick O'Brien

Subject: FW: Grove Street

EXHIBIT # 7

From: Warren Spinner [mailto:WSpinner@burlingtonvt.gov]
Sent: Thursday, November 20, 2014 4:00 PM
To: Patrick O'Brien
Cc: Jesse Bridges; Deryk Roach; Jen Francis; Scott Gustin
Subject: RE: Grove Street

Hi Patrick,

I have reviewed the adjusted landscape plans for the Grove St Apartments and Schamanska Park and Parking Lot. The adjustments for tree spacing, tree species and tree sizes are all correct on the plans so those have my approval.

Just want to confirm that the 4' 'Merchants' Metal fence has a break in it for our service road entrance into the park. Also the removable ballads need to be moved back behind the sidewalk in line with the fence. Those two corrections will need to be shown on the plans.

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Sent: Wednesday, October 01, 2014 1:42 PM

To: 'Warren Spinner'; Jesse Bridges; Deryk Roach
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: RE: Grove Street

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FEB 18 2015

Warren, as promised here are the revised sheets. I look forward to receiving a letter from you that will satisfy the condition.

DEPARTMENT OF
PLANNING & ZONING

Thank you,

Patrick

From: Warren Spinner [<mailto:WSpinner@burlingtonvt.gov>]
Sent: Wednesday, October 01, 2014 10:04 AM
To: Patrick O'Brien; Jesse Bridges; Deryk Roach
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: RE: Grove Street

Hi Patrick,

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Best, Warren



Warren Spinner, Certified Arborist

City Arborist
Burlington Parks, Recreation & Waterfront
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Burlington, VT 05401
802-862-8245



@BTVparks

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Sent: Tuesday, September 30, 2014 9:26 AM
To: Jesse Bridges; Deryk Roach; Warren Spinner
Cc: Bryan Currier; Bonnie Kirn Donahue (bkirn@wagnerhodgson.com); Scott Gustin
Subject: Grove Street

RECEIVED
FEB 18 2015

DEPARTMENT OF
PLANNING & ZONING

Hello everyone, as previously mentioned, condition # 3 of my Preliminary Approval states that *"Prior to final plat application, written acceptance of the proposed improvements to Schmanska Park and its parking lot shall be obtained from the Dept. of Parks & Recreation"*.

I have attached sheet S8 of our plan set for your review and comment.

Also, condition # 4 states that *"Prior to final plat application, written acceptance of the proposed street trees along Grove Street shall be obtained from the City Arborist"*.

Warren, you will see from the plan that I will be forwarding you that we are proposing some Elm trees along the street. You will also notice that we are proposing to plant some between the existing trees south of the project. Please let us know how you feel about that.

I asked Bonnie Kirn at HKW to turn on the existing tree locations and I have not received that plan yet but I will forward it to you as soon as I get it, which will likely be at some point this morning, or she may send them directly to you.

It would be great if you could offer your comments to us via email so we can incorporate them into the plans and then get a revised set back to you so you can write your letters.

As always, a rapid response would be GREATLY appreciated.

Thank you all,

Patrick

Patrick O'Brien
S.D. Ireland Companies
193 Industrial Avenue
Williston, VT 05495
Office 802-863-6222 x 242
Cell 802-373-0096
e-mail pobrien@sdireland.com

Burlington Fire Department
Office of the City Fire Marshal

132 North Avenue Burlington, Vermont 05401
Fire Alarm/Sprinkler/Plan Review Fax: (802) 658-7665
Inspection Services
(802) 864-5577

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EXHIBIT #
FEB 18 2015

Public Information & Application
DEPARTMENT OF
PLANNING & ZONING
(802) 864-6911

14 November 2014

Mr. Scott Gustin, Project Manager
Department of Planning and Zoning
City of Burlington
149 Church Street
Burlington, VT 05401

RE: Final Plat Review – 100 Grove Street (S.D. Ireland property, Grove Street Apartments)

Mr. Gustin,

I have completed review of the site plan dated 23 July 2014 and prepared by O'Leary – Burke Civil Associates, PLC for this project. I have determined that the final project documents provided to this office by Patrick O'Brien of S.D. Ireland on 22 September 2014 to be an accurate representation of the requirements set forth by the Burlington Fire Department and Fire Marshal's Office as reviewed in the meeting dated 1 April 2014

The applicant has successfully addressed the following open issues:

1. This office reaffirms our electronic mail message to you dated 20 December 2013 stating that the designed single access/egress road width of 40 – 45 feet with divided lanes (at Grove Street), tapering to 28 feet and to 24 feet width meets emergency vehicle access requirements for this complex. This office recognizes earlier communication from the applicant that both travel lanes separated by the dividing curbing will meet or exceed minimum width requirements (20 feet as per NFPA 1) for fire department access roads.
2. The applicant advised this office in a letter dated 16 September 2014 that radio signal strength testing was completed by Burlington Communications, and was determined to meet the minimum requirements for mobile and hand – held fire department radios under existing conditions as required by BCO 13-63 through BCO 13-68. Additional radio signal strength testing shall be conducted by an approved technician on completion of building construction and, if required, modifications conducted to boost signal strength in the event that the minimum requirements of BCO 13-63 to 68 are not met at that time.
3. The applicant has re-designed the diagonal parking spaces adjacent to the larger residential structures. The current design includes parking spaces parallel to the travel lane (perpendicular to the structure(s)), improving access to these structures for fire department aerial apparatus.
4. The applicant has re-designed grading around structures previously shown as being excessively steep. The new grading plan will improve fire department ground ladder access should the need arise.

I have reviewed this final plat plan against the applicable requirements of Burlington Code of Ordinances Chapter 13, Vermont Fire and Building Safety Code (2012), and NFPA 1 (2012) pertaining to fire department site access, water supply, and fire protection system requirements and note that no additional modifications to this plan, beyond those documented, are required at this time based on the information provided by the applicant.

Please contact this office with any questions or comments pertaining to this review.

In Fire and Life Safety;

A handwritten signature in black ink, appearing to read "Barry J. Simays", written over a horizontal line.

Battalion Chief Barry J. Simays, CFI
Fire Marshal

cc: Patrick O'Brien, S.D. Ireland Corporation



Fax (802) 658-7665

Burlington Fire Department Office of the City Fire Marshal

132 NORTH AVENUE • BURLINGTON, VERMONT 05401



(TTY) (802) 865-7142

Plan Review and Inspection Services: (802) 864-5577

Public Information and Education: (802) 864-6923

www.burlingtonvt.gov/fire

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26 March 2015

MAR 27 2015

DEPARTMENT OF
PLANNING & ZONING

Mr. Scott Gustin, Project Manager.
Department of Planning and Zoning
City of Burlington
149 Church Street
Burlington, VT 05401

RE: Final Plat Review – 140 Grove Street (S.D. Ireland property, Grove Street Apartments): 15-0801PD

Mr. Gustin,

I have completed review of the final plat plan set dated 3 September 2014 and prepared by O'Leary – Burke Civil Associates, PLC for this project. This set of plans was stamped as received by the Department of Planning and Zoning on 18 February 2015 and provided to this office for review on 23 February 2015.

I have reviewed this final plat plan against the applicable requirements of Burlington Code of Ordinances Chapter 13, Vermont Fire and Building Safety Code (2012), and NFPA 1 (2012) pertaining to fire department site access, water supply, and fire protection system requirements and note that no additional modifications to this plan, beyond those documented below, are required at this time based on the information provided by the applicant.

Based on this full set of plans, the following items are called out for resolution:

1. **Sheet S5: Relocate the existing fire hydrant located at the intersection of Chase Street and Grove Street to the south on Grove Street approximately 25 feet to alleviate a long-standing turning radius obstruction for fire apparatus turning south on Grove Street from Chase Street.** Relocation of the existing fire hydrant will also negate the requirement for a protective bollard. The current parking arrangement on Chase Street, the location of the hydrant and bollard on Grove Street, and the location of the utility pole on Grove Street opposite the hydrant have significantly restricted the ability for our larger fire apparatus to turn from Chase Street onto Grove Street for a number of years.

(Note: this requirement has not been previously called-out as this department was not provided with a set of off-site improvement plans prior to the set dated above.)

2. **Sheet S8: Speed bump removal and relocation: specification of new speed bump design is not provided for review.** This department approves the current "speed table" design as utilized in other City projects and as provided previously by the Department of Public Works Engineering Department.
3. **Resolution of BFD radio systems modifications (in accordance with BCO 13-63 through BCO 13-68):** The applicant advised this office in a letter dated 16 September 2014 that radio signal strength testing was completed by Burlington Communications, and was determined to meet the minimum requirements for mobile and hand – held fire department radios under existing conditions. Additional radio signal strength testing shall be conducted by an approved technician prior to completion of building construction and, if required, modifications conducted to boost signal strength in the event that the minimum requirements of BCO 13-63 to 68 are not met at

Scott Gustin

From: Barry Simays
Sent: Monday, March 16, 2015 10:04 AM
To: Patrick O'Brien; Seth Lasker; Scott Gustin
Subject: Re: 140 Grove Street

Patrick,

Received and attached to file. Thank you for the update.

BC Barry Simays, CFI
Fire Marshal
Burlington Fire Department
132 North Avenue
Burlington, VT 05401
(802) 864-5577
(802) 658-7665 (Fax)
bsimays@burlingtonvt.gov

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Monday, March 16, 2015 10:01
To: Seth Lasker; Scott Gustin
Cc: Barry Simays
Subject: RE: 140 Grove Street

To all, the email below is an accurate description of what has taken place and we understand the reasons for and the cost of the channel and acknowledge that if this cost cannot be paid via our impact fees for this project that we will pay directly for the necessary upgrades and furthermore understand that this will become a condition of our final approval.

Thank you,

Patrick

From: Seth Lasker [mailto:SLasker@burlingtonvt.gov]
Sent: Tuesday, March 10, 2015 12:54 PM
To: Scott Gustin
Cc: Patrick O'Brien; Barry Simays
Subject: Re: 140 Grove Street

Good afternoon Scott and Mr. O'Brien,

When this project was first purposed we did some testing of our radio system. Both Fire Department staff and Burlington Communications Inc. (BCS) conducted this testing and confirmed that our radio system has serious limitations in the area of the purposed project.

(copy of email sent on Dec, 20, 2013 by BC Simays)

3. The Burlington Fire Department has recently developed significant concerns regarding radio signal reliability for our emergency radio communications system in this area of the City based on location and topography. Our office will require that radio testing be conducted in accordance with BCO 13-63 through 13-68. In the event that the results of this testing are not satisfactory, this project will be required to provide improvements to the reliability of our radio system in this area.

The Fire Department utilizes a repeated radio system for communication with our dispatch center located at the Burlington Police Department. The location and topography of this project is to low for the current radio system to function and our dispatch center is unable to receive radio transmissions from our units operating at that location, in addition our units are not able to receive transmissions from dispatch in some cases as well. As you can imagine this creates several issues for us with the most important one being the safety of my staff. It is very important that dispatch be able to monitor our operations and to have to ability to hear requests for help at all times.

Through our testing and work with BCS we have identified a way to use a radio channel that is available to us in partnership with the University of Vermont Medical Center for operations in this area, however this channel would need to be installed at our dispatch center.

This solution would be the most cost effective way to solve this issue, the alternative would have to be the installation of a repeater/receiver at the purposed project site at a much greater cost. The cost of installing this channel is approximately \$4,000.00.

I look forward to working through this with both of you.

Kind regards.

Seth S. Lasker
Chief Engineer
Burlington Fire Department
136 South Winooski Avenue
Burlington, Vermont 05401
(P) 802-865-7578
(F) 802-865-5387

From: Scott Gustin
Sent: Tuesday, March 10, 2015 10:37 AM
To: Seth Lasker
Cc: 'Patrick O'Brien'
Subject: 140 Grove Street

Good morning Seth,

David tells me you've got some concerns relative to emergency services communications at the 140 Grove Street site (SD Ireland). This redevelopment project is undergoing final plat review and will likely be to the Development Review Board in April. I'm putting you in touch with the project manager, Patrick O'Brien, by way of this email so that you may work with him directly to resolve this matter. What I need from you in the mean time is something in writing stating what the concern is and what can be done to address it.

Let me know if you have any questions.

Scott Gustin

From: Seth Lasker
Sent: Tuesday, March 10, 2015 12:54 PM
To: Scott Gustin
Cc: 'Patrick O'Brien'; Barry Simays
Subject: Re: 140 Grove Street

Good afternoon Scott and Mr. O'Brien,

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(copy of email sent on Dec, 20, 2013 by BC Simays)

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The Fire Department utilizes a repeated radio system for communication with our dispatch center located at the Burlington Police Department. The location and topography of this project is too low for the current radio system to function and our dispatch center is unable to receive radio transmissions from our units operating at that location, in addition our units are not able to receive transmissions from dispatch in some cases as well. As you can imagine this creates several issues for us with the most important one being the safety of my staff. It is very important that dispatch be able to monitor our operations and to have the ability to hear requests for help at all times.

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This solution would be the most cost effective way to solve this issue, the alternative would have to be the installation of a repeater/receiver at the purposed project site at a much greater cost. The cost of installing this channel is approximately \$4,000.00.

I look forward to working through this with both of you.

Kind regards.

Seth S. Lasker
Chief Engineer
Burlington Fire Department
136 South Winooski Avenue
Burlington, Vermont 05401
(P) 802-865-7578

(F) 802-865-5387

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Sent: Tuesday, March 10, 2015 10:37 AM
To: Seth Lasker
Cc: 'Patrick O'Brien'
Subject: 140 Grove Street

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Let me know if you have any questions.

Scott

Scott Gustin, AICP, CFM
Senior Planner
Dept. of Planning & Zoning
149 Church Street
Burlington, VT 05401
(802) 865-7189

Patrick O'Brien

RECEIVED
FEB 18 2015

DEPARTMENT OF
PLANNING & ZONING

EXHIBIT # 9

Subject: FW: Grove Street Apartments

From: Dillon, Scott [<mailto:Scott.Dillon@state.vt.us>]

Sent: Tuesday, September 23, 2014 1:25 PM

To: Patrick O'Brien

Cc: Duggan, James

Subject: RE: Grove Street Apartments

Hey Patrick- This is to confirm that we conducted a site visit to the proposed Grove St. Apartment project area on July 11, 2014 and did not identify any archaeologically sensitive areas within the proposed project footprint. We will provide a final comment letter when you finalize plans and file your Land Use Permit application.

Thanks, Scott

R. Scott Dillon
Survey Archeologist
Vermont Division for Historic Preservation
One National Life Drive, Davis Bldg, 6th Floor
Montpelier, VT 05620-0501
802-272-7358
scott.dillon@state.vt.us

From: Patrick O'Brien [<mailto:pobrien@SDIRELAND.COM>]

Sent: Monday, September 22, 2014 10:55 AM

To: Dillon, Scott

Subject: Grove Street Apartments

Hello Scott.

As discussed I have a condition in the Preliminary Approval from the Burlington Development Review Board for this project that states:

"Prior to final plat application, the applicant shall contact the Vermont Division for Historic Preservation to inquire as to studies of the area that may indicate heightened archaeological significance".

Ironically, I think I have satisfied their condition as not only have I contacted you, but we also did a site visit. Having said that, I think it would be best that either you write me a letter or respond to this email saying that yes, I have indeed inquired and that there is no indication of heightened archaeological significance.

Thank you,

Patrick

Salsbury Industries is officially licensed and authorized by the U.S. Postal Service to manufacture Cluster Box Units (CBU's).

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FEB 18 2015
DEPARTMENT OF PLANNING & ZONING

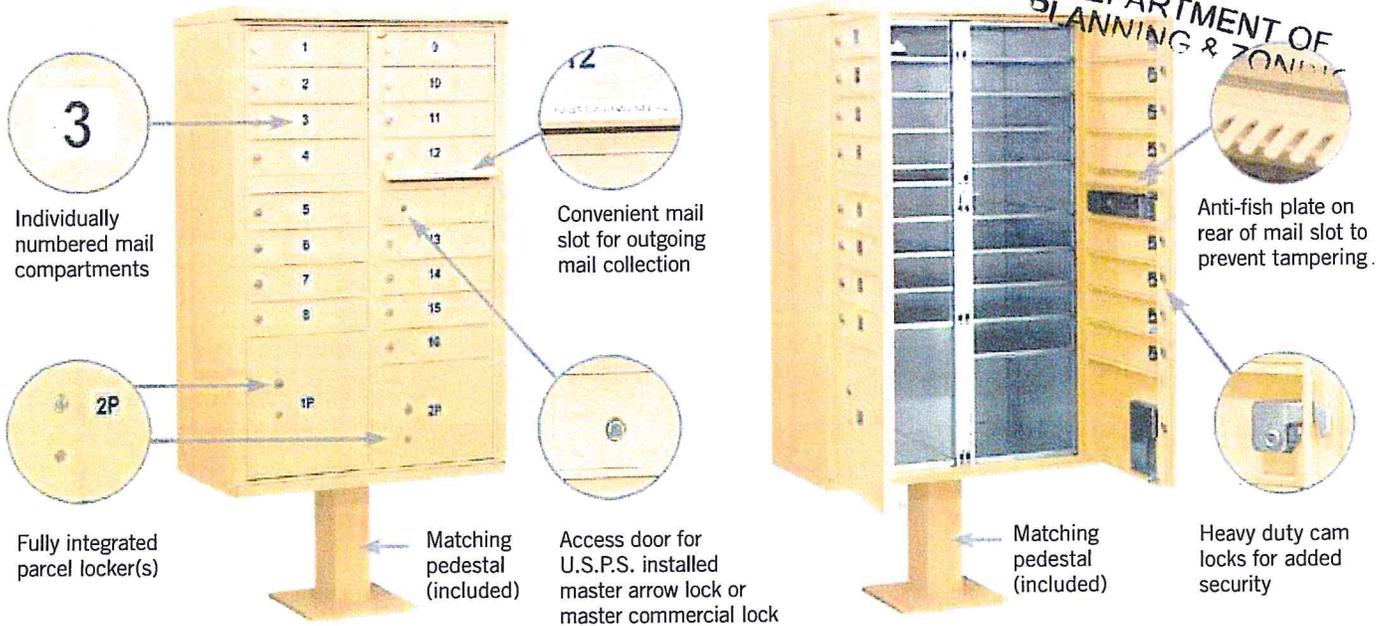
COMMERCIAL MAILBOXES

RESIDENTIAL MAILBOXES

CUSTOM SIGNAGE

CELL PHONE LOCKERS

STANDARD FEATURES

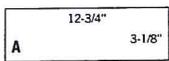


Front views of 3316 in sandstone finish displayed

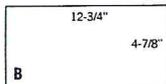
CBU SPECIFICATIONS & OPTIONS

MAILBOX DOOR SIZES

Each aluminum mailbox door includes a heavy duty five (5) pin cylinder cam lock with a dust/rain shield and three (3) keys.



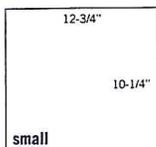
#3351 ¹ Replacement "A" door and lock \$50.00



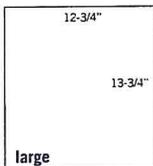
#3352 ¹ Replacement "B" door and lock \$60.00

PARCEL LOCKER DOOR SIZES

Each CBU includes one or two (2) fully integrated parcel lockers. Parcel lockers offer tenants a convenient way to receive packages on site and are fit with a two (2) key security system.



#3353 ¹ Replacement parcel locker door and tenant lock - small \$80.00



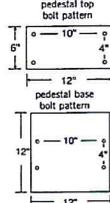
#3354 ¹ Replacement parcel locker door and tenant lock - large \$90.00

PEDESTALS

#3385 ¹ Replacement pedestal for #3316 and #3313 (14-1/2" H) \$125.00

#3395 ¹ Replacement pedestal for #3308 and #3312 (28-1/2" H) \$125.00

#3394 Pedestal mounting kit for new concrete installations (4) 1/2" X 8" anchor (J) bolts \$25.00



FINISHES

Durable and corrosion resistant CBU's feature a powder coated finish available in sandstone, bronze, green, black or white. Note - gray is available for replacement units only and is not available on Regency Decorative CBU's and accessories.

¹ Specify



IDENTIFICATION SYSTEMS

Each CBU mailbox door has a 1" high number (1-8, 1-12, 1-16, 1-13 for Type I, Type II, Type III and Type IV, respectively). The outgoing mail compartment is labeled "Outgoing Mail" and the parcel locker(s) are labeled with a "1P" on #3312 and #3313 and with a "1P" and a "2P" on #3308 and #3316. Custom identification systems are available as an option upon request.

CUSTOM ENGRAVED DOOR PLACARDS

1-3/4" W x 1-1/2" H custom engraved self-adhesive door placards are available as an option upon request. (#3367 - \$3.00)



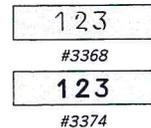
CUSTOM ENGRAVED UNIT PLACARDS

8" W x 1" H custom engraved self-adhesive unit placards are available as an option upon request. (#3363 - \$15.00)



CUSTOM ENGRAVED DOORS

- Custom engraved door - regular (#3368 - \$5.00)
- Custom engraved door - black filled (#3374 - \$5.00)



OUTGOING MAIL COMPARTMENTS

One additional compartment in each CBU is labeled "Outgoing Mail" and includes a weather protection flap and an 11-3/4" W x 3/4" H mail slot.

OUTGOING MAIL SLOT PLUG KIT

An outgoing mail slot plug kit is available for installations not serviced by the U.S.P.S. (#3370 - \$35.00)

MASTER COMMERCIAL LOCK

Factory installed if for private access - for access door and parcel lockers - with (2) keys (#3375 - \$30.00)



TENANT PARCEL LOCKER LOCK

For parcel locker door - with (3) keys (#3376 - \$40.00)



LOCKS

Each CBU mailbox door includes a heavy duty five (5) pin cylinder cam lock with a dust/rain shield and three (3) keys (2,000 different key changes).

- (#3390 - \$15.00)
- Additional keys per lock when ordering (#3398 - \$3.00)
- Key blanks - box of (50) (#3399 - \$35.00)



Note: For E series replacement CBU locks, see 3390-E on page 62.

Date: Feb 2, 2015



RECEIVED
 FEB 04 2015
 DEPARTMENT OF PLANNING & ZONING
 Swaney Lighting Associates
 15 Pleasant Hill Rd
 Scarborough ME 04074
 Phone: (207) 883-7100
 From: **THERESA FREEMAN X-103**

Project Grove St Appartments - Burl VT
Quote# SLA14-27041
Location burlington vt
 Contact:

ATTACHED WE ARE SENDING YOU 1 COPIES OF THE FOLLOWING ITEMS:

- | | | |
|-----------------------------------|--|--------|
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Specifications | Other: |
| <input type="checkbox"/> Prints | <input type="checkbox"/> Information | |
| <input type="checkbox"/> Plans | <input checked="" type="checkbox"/> Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|--|---------------------------------|
| <input type="checkbox"/> Prior Approval | <input type="checkbox"/> Resubmittal for Approval | <input type="checkbox"/> Record |
| <input type="checkbox"/> Approval | <input type="checkbox"/> Corrections | Bids due on: |
| <input type="checkbox"/> Approval as Submitted | <input type="checkbox"/> Your Use | Other: |
| <input type="checkbox"/> Approval as Noted | <input checked="" type="checkbox"/> Review and Comment | |

Type	MFG	Part
L1-2	BEACON PRODUCTS	CAP-21-24NB-27-4K-T2-UNV-3RNW-BBT
	BEACON PRODUCTS	AA44-S-4-B-P-BBT
L1-3	BEACON PRODUCTS	CAP-21-24NB-27-4K-T3-UNV-3RNW-BBT
	BEACON PRODUCTS	AA44-S-4-B-P-BBT
L1-4	BEACON PRODUCTS	CAP-21-24NB-27-4K-T4-UNV-3RNW-BBT
	BEACON PRODUCTS	AA44-S-4-B-P-BBT
L2	BEACON PRODUCTS	CAP-21-24NB-55-4K-T3-UNV-3RNW-BBT
	BEACON PRODUCTS	AA44-S-4-B-P-BBT
L3	PRESCOLITE	LC6LED120 / 6LCLED635K8
L5	SPAULDING	TRP30L-4K-035-4-U-BL-SCP
2L1-4	BEACON PRODUCTS	2-CAP-21-24NB-27-4K-T4-UNV-3RNW-BBT
	BEACON PRODUCTS	AA44-S-4-C-P-BBT

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
CAP-21-24NB-27-4K-T2-UNV-3RNW-BBT
Notes:

Type:
L1-2

SLA14-27041



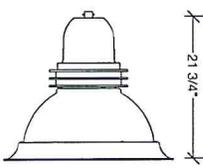
Type: _____
Project Name: _____
Notes: _____

RECEIVED
FEB 18 2015 rev. 03.14.2014
DEPARTMENT OF PLANNING & ZONING
Urban LED Luminaires

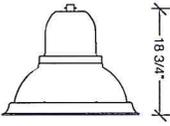
Sample	CAP-21	36NB-80	4K	T2	UNV	PEC	3RNW	BBT
Ordering	/	/	/	/	/	/	/	/
	A	B	C	D	E	F	G	H

DETAILS

CAP - Round Shade

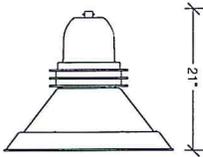


26" - CAP
Shown with optional 3RNW rings
EPA: 1.39 ft²
40 lbs



21" - CAP
EPA: 1.04 ft²
35 lbs

MRDS - Deep Shade

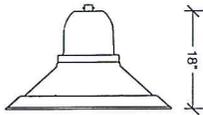


26" - MRDS
Shown with optional 3RNW rings
EPA: 1.25 ft²
40 lbs



21" - MRDS
EPA: 1.00 ft²
35 lbs

MRSS - Shallow Shade

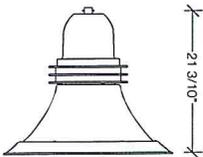


26" - MRSS
EPA: 1.17 ft²
40 lbs



21" - MRSS
EPA: 1.00 ft²
35 lbs

MAR - Curved Shade



26" - MAR
Shown with optional 3RNW rings
EPA: 1.25 ft²
40 lbs



21" - MAR
EPA: 1.00 ft²
35 lbs

A. MODEL

CAP-21 21" Capitol

MRDS-21 21" Miramar deep shade

MAR-21 21" Maritas

CAP-26 26" Capitol

MRSS-26 26" Miramar shallow shade

MRDS-26 26" Miramar deep shade

MAR-26 26" Maritas

B. ENGINE-WATTS

24NB-27 27 Watts - LED array

24NB-55 55 Watts - LED array

36NB-80 80 Watts - LED array

48NB-110 110 Watts - LED array¹

60NB-136 136 Watts - LED array¹

¹ = 26" Urban only

C. CCT - COLOR TEMP

3K 3000K

4K 4000K

5K 5000K (std.)

D. OPTICS

T2 type II

T3 type III

T4 type IV

T5R type V, rectangular

T5QM type V, square medium

T5W type V, round wide

E. VOLTAGE

UNV 120-277V

347 347V

480 480V

F. ELECTRICAL OPTIONS

PEC photocell, button

2PF dual power feed ^{1,2}

G. STYLE OPTIONS

NRNW no rings

3RNW three cast rings

H. COLOR

BBT basic black textured

BMT black matte textured

WHT white textured

MBT metallic bronze textured

BZT bronze textured

DBT dark bronze textured

GYS gray smooth

DPS dark platinum smooth

GNT green textured

MST metallic silver textured

MTT metallic titanium textured

OWI old world iron

RAL _____

¹ not available on 24NB-27

Submitted by Swaney Lighting Associates

Catalog Number:

CAP-21-24NB-27-4K-T2-UNV-3RNW-BBT
Notes:

Type:

L1-2

FEB 18 2015
SLA14-2704

DEPARTMENT OF PLANNING & ZONING
rev. 03/2014
URBAN (LED)
Urban LED Luminaires



Housing & LED Thermal Management: The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

Bezel optical system: Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Electrical: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Engine	Wattage	Delivered Lumens (varies by optlb)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
24NB	27	2752-3014	105-115	96.19%
24NB	55	5138-5500	93-100	96.19%
36NB	80	6935-8215	93-103	94.87%
48NB	110	10240-10950	93-103	92.73%
60NB	136	12800-13700	93-103	85.79%

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number

AA44-S-4-B-P-BBT

Type:

SLA11-27941

Notes:

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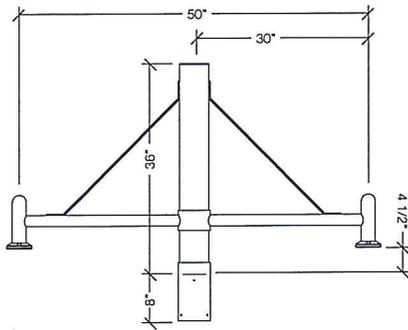
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Project Name: _____
Notes: _____

DEPARTMENT OF
PLANNING & ZONING

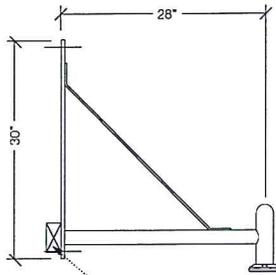
rev. 02.24.2014
AA-44 STRUT
Arms

Sample AA-44 S 4 B P BBT
Ordering / / / / / /
A B C D E F

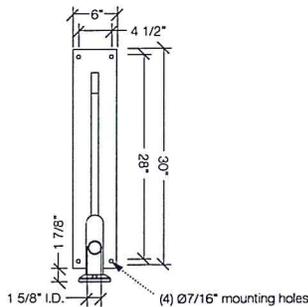
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL

AA-44 Strut

B. POST SHAFT PROFILE

W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER

4 4"
5 5"
6 6"
OTHER _____

D. ARRANGEMENT

B see arrangement table below

E. LUMINAIRE MOUNTING

P pendant

F. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as (projected surface area X drag factor) and measured in ft2. Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

		arrangement (EPA index ft ² / weight (lbs))												
		A	B	C	D	E	F	G	H	I	J			
shaft Ø	wall	weight	12	-	-	-	-	-	-	-	-	-	-	-
Ø4"	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	3.75	4.22	4.22	-	-	
	weight	-	15	20	22	20	25	27	25	30	32	-	-	
Ø5"	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55	-	-	
	weight	-	18	23	25	23	28	30	28	33	35	-	-	
Ø6"	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70	-	-	
	weight	-	21	26	28	26	31	33	31	36	38	-	-	

Submitted by Swaney Lighting Associates

Catalog Number:

Type:



Job Name:
Grove St Apartments - Burl VT

CAP-21-24NB-27-4K-T3-UNV-3RNW-BBT
Notes:

L1-3

SLA14-27041

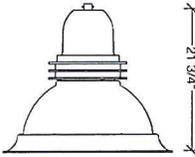
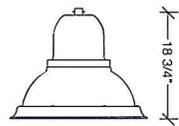
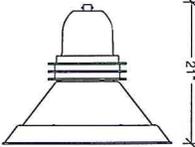
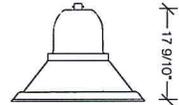
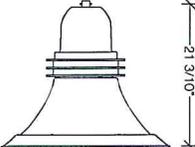


Type: _____
Project Name: _____
Notes: _____

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URBAN (LED)
Urban LED Luminaires

Sample CAP-21 36NB-80 4K T2 UNV PEC 3RNW BBT
Ordering / / / / / / / / /
A B C D E F G H

DETAILS		A. MODEL	G. STYLE OPTIONS
CAP - Round Shade	 26" - CAP Shown with optional 3RNW rings EPA: 1.39 ft ² 40 lbs	CAP-21 21" Capitol	NRNW no rings
	 21" - CAP EPA: 1.04 ft ² 35 lbs	MRDS-21 21" Miramar deep shade	3RNW three cast rings
MRDS - Deep Shade	 26" - MRDS Shown with optional 3RNW rings EPA: 1.25 ft ² 40 lbs	MAR-21 21" Maritas	H. COLOR
	 21" - MRDS EPA: 1.00 ft ² 35 lbs	CAP-26 26" Capitol	BBT basic black textured
MRSS - Shallow Shade	 26" - MRSS EPA: 1.17 ft ² 40 lbs	MRSS-26 26" Miramar shallow shade	BMT black matte textured
	 21" - MRSS EPA: 1.00 ft ² 35 lbs	MRDS-26 26" Miramar deep shade	WHT white textured
MAR - Curved Shade	 26" - MAR Shown with optional 3RNW rings EPA: 1.25 ft ² 40 lbs	MAR-26 26" Maritas	MBT metallic bronze textured
	 21" - MAR EPA: 1.00 ft ² 35 lbs		BZT bronze textured
		B. ENGINE-WATTS	DBT dark bronze textured
		24NB-27 27 Watts - LED array	GYS gray smooth
		24NB-55 55 Watts - LED array	DPS dark platinum smooth
		36NB-80 80 Watts - LED array	GNT green textured
		48NB-110 110 Watts - LED array ³	MST metallic silver textured
		60NB-136 136 Watts - LED array ³	MTT metallic titanium textured
		3 = 26" Urban only	OWI old world iron
		C. CCT - COLOR TEMP	RAL _____
		3K 3000K	
		4K 4000K	
		5K 5000K (std.)	
		D. OPTICS	
		T2 type II	
		T3 type III	
		T4 type IV	
		T5R type V, rectangular	
		T5QM type V, square medium	
		T5W type V, round wide	
		E. VOLTAGE	
		UNV 120-277V	
		347 347V	
		480 480V	
		F. ELECTRICAL OPTIONS	
		PEC photocell, button	
		2PF dual power feed ^{1,2}	
		¹ not available on 24NB-27	

Submitted by Swaney Lighting Associates

Catalog Number:

Type:



Job Name:

Grove St Appartments - Burl VT

CAP-21-24NB-27-4K-T3-UNV-3RNV

BBT

Notes:

RECEIVED L1-3 SLA14-27041 FEB 18 2015



rev. 03.14.2014 DEPARTMENT OF PLANNING & ZONING

Housing & LED Thermal Management: The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Bezel optical system: Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Table with 5 columns: Engine, Wattage, Delivered Lumens (varies by optic), Delivered LPW, TM21 Calculated % Lumen Maint. at 100,000 hrs. Rows include 24NB, 24NB, 36NB, 48NB, 60NB.

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

CCT (COLOR TEMP) Lumen Output Multipliers CRI (Color Rendering)

Table with 2 columns: CCT (COLOR TEMP) Lumen Output Multipliers, CRI (Color Rendering). Rows include 5000K = 1.0 min 67 CRI, 4000K = .92 min 70 CRI, 3000K = .75 min 80 CRI.

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Electrical: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 60OVAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
AA44-S-4-B-P-BBT

Notes:

Type:

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SLA14-27041

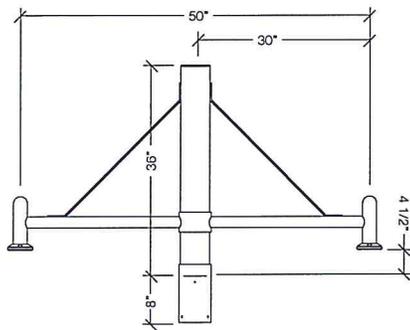


Type: _____
Project Name: _____
Notes: _____

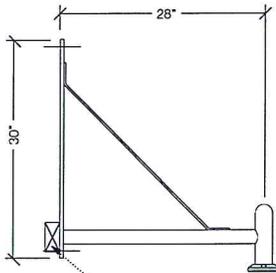
rev. 02.24.2014
DEPARTMENT OF PLANNING & ZONING
Arms

Sample AA-44 S 4 B P BBT
Ordering / / / / /
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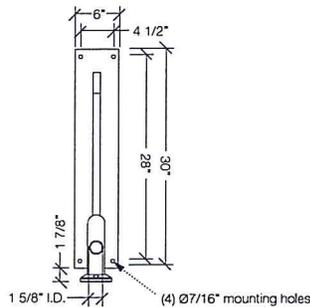
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL

AA-44 Strut

B. POST SHAFT PROFILE

W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER

4 4"
5 5"
6 6"
OTHER _____

D. ARRANGEMENT

B see arrangement table below

E. LUMINAIRE MOUNTING

P pendant

F. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as (projected surface area X drag factor) and measured in ft2. Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

		arrangement (EPA index ft ² / weight (lbs))									
		A	B	C	D	E	F	G	H	I	J
wall	weight	12	-	-	-	-	-	-	-	-	-
	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	3.75	4.22	4.22
Ø4"	weight	-	15	20	22	20	25	27	25	30	32
	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55
Ø5"	weight	-	18	23	25	23	28	30	28	33	35
	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70
Ø6"	weight	-	21	26	28	26	31	33	31	36	38
	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70

Submitted by Swaney Lighting Associates

Catalog Number:

Type:



Job Name:
Grove St Apartments - Burl VT

CAP-21-24NB-27-4K-T4-UNV-3RNV-
BBT
Notes:

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L1-4
SLA 42704
FEB 18 2015



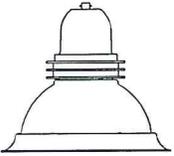
Type: _____
Project Name: _____
Notes: _____

rev. 03.14.2014
DEPARTMENT OF URBAN (LED) PLANNING & ZONING
Urban LED Luminaires

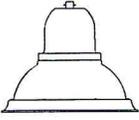
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Ordering	/	/	/	/	/	/	/	/
	A	B	C	D	E	F	G	H

DETAILS

CAP - Round Shade

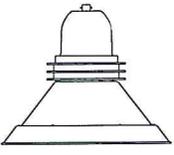


26" - CAP
Shown with optional 3RNV rings
EPA: 1.39 ft²
40 lbs



21" - CAP
EPA: 1.04 ft²
35 lbs

MRDS - Deep Shade

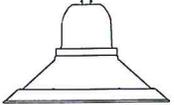


26" - MRDS
Shown with optional 3RNV rings
EPA: 1.25 ft²
40 lbs



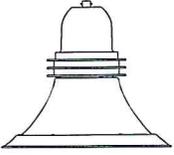
21" - MRDS
EPA: 1.00 ft²
35 lbs

MRSS - Shallow Shade



26" - MRSS
EPA: 1.17 ft²
40 lbs

MAR - Curved Shade



26" - MAR
Shown with optional 3RNV rings
EPA: 1.25 ft²
40 lbs



21" - MAR
EPA: 1.00 ft²
35 lbs

A. MODEL

CAP-21 21" Capitol

MRDS-21 21" Miramar deep shade

MAR-21 21" Maritas

CAP-26 26" Capitol

MRSS-26 26" Miramar shallow shade

MRDS-26 26" Miramar deep shade

MAR-26 26" Maritas

B. ENGINE-WATTS

24NB-27 27 Watts - LED array

24NB-55 55 Watts - LED array

36NB-80 80 Watts - LED array

48NB-110 110 Watts - LED array¹

60NB-136 136 Watts - LED array¹

¹ = 26" Urban only

C. CCT - COLOR TEMP

3K 3000K

4K 4000K

5K 5000K (std.)

D. OPTICS

T2 type II

T3 type III

T4 type IV

T5R type V, rectangular

T5QM type V, square medium

T5W type V, round wide

E. VOLTAGE

UNV 120-277V

347 347V

480 480V

F. ELECTRICAL OPTIONS

PEC photocell, button

2PF dual power feed ^{1,2}

G. STYLE OPTIONS

NRNW no rings

3RNV three cast rings

H. COLOR

BBT basic black textured

BMT black matte textured

WHT white textured

MBT metallic bronze textured

BZT bronze textured

DBT dark bronze textured

GYS gray smooth

DPS dark platinum smooth

GNT green textured

MST metallic silver textured

MTT metallic titanium textured

OWI old world iron

RAL _____

¹ not available on 24NB-27

Submitted by Swaney Lighting Associates

Catalog Number:

CAP-21-24NB-27-4K-T4-UNV-3RNL

BBT

Notes:

RECEIVED
FEB 18 2015
TYPE: CAP-21-24NB-27-4K-T4-UNV-3RNL



Job Name:

Grove St Appartments - Burl VT



DEPARTMENT OF PLANNING & ZONING
Rev. 03-14-2011
URBAN (LED) LUMINAIRE
Urban LED Luminaires

Housing & LED Thermal Management: The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

Bezel optical system: Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Electrical: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to -component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
24NB	27	2752-3014	105-115	96.19%
24NB	55	5138-5500	93-100	96.19%
36NB	80	6935-8215	93-103	94.87%
48NB	110	10240-10950	93-103	92.73%
60NB	136	12800-13700	93-103	85.79%

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
AA44-S-4-B-P-BBT

Type:

Notes:

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FEB 18 2015
SLA14-2704

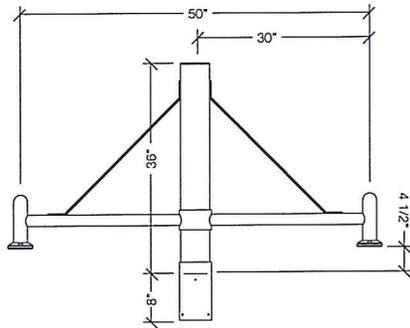


Type: _____
Project Name: _____
Notes: _____

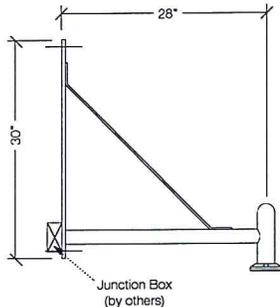
rev. 02.24.2014
DEPARTMENT OF PLANNING & ZONING
AA-44 STRUT Arms

Sample AA-44 S 4 B P BBT
Ordering / / / / / /
A B C D E F

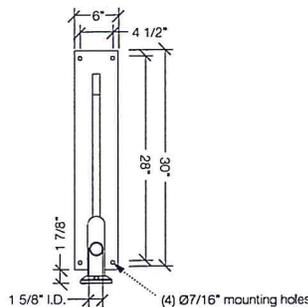
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL

AA-44 Strut

B. POST SHAFT PROFILE

W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER

4 4"
5 5"
6 6"
OTHER _____

D. ARRANGEMENT

B see arrangement table below

E. LUMINAIRE MOUNTING

P pendant

F. COLOR

BBT basic black textured

- BMT** black matte textured
- WHT** white textured
- MBT** metallic bronze textured
- BZT** bronze textured
- DBT** dark bronze textured
- GYS** gray smooth
- DPS** dark platinum smooth
- GNT** green textured
- MST** metallic silver textured
- MTT** metallic titanium textured
- OWI** old world iron
- RAL** _____

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as (projected surface area X drag factor) and measured in ft2. Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

		arrangement (EPA index ft ² / weight (lbs))									
		A	B	C	D	E	F	G	H	I	J
wall	weight	12	-	-	-	-	-	-	-	-	-
	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	3.75	4.22	4.22
Ø4"	weight	-	15	20	22	20	25	27	25	30	32
	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55
Ø5"	weight	-	18	23	25	23	28	30	28	33	35
	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70
Ø6"	weight	-	21	26	28	26	31	33	31	36	38

Submitted by Swaney Lighting Associates

Catalog Number:

Type:



Job Name:
Grove St Apartments - Burl VT

CAP-21-24NB-55-4K-T3-UNV-3RNW
BBT
Notes:

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L2
FEB 18 2015
SLA1432704



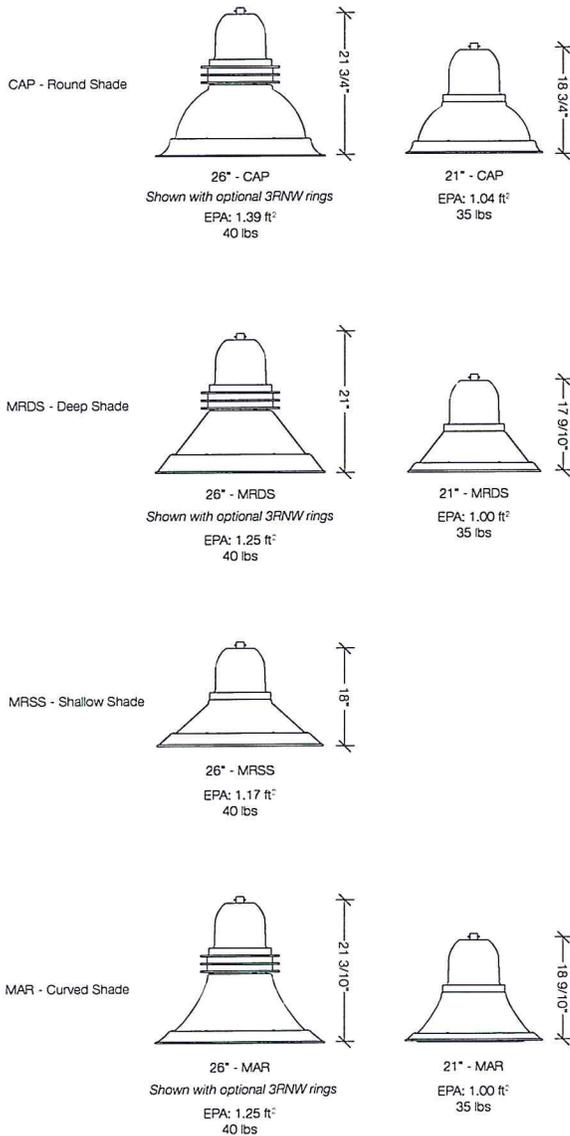
BEACON
design . performance . technology
www.beaconproducts.com

Type:
Project Name:
Notes:

rev. 03.14.2014
DEPARTMENT OF PLANNING & ZONING
URBAN (LED)
Urban LED Luminaires

Sample	CAP-21	36NB-80	4K	T2	UNV	PEC	3RNW	BBT
Ordering	/	/	/	/	/	/	/	/
	A	B	C	D	E	F	G	H

DETAILS



A. MODEL

CAP-21	21" Capitol
MRDS-21	21" Miramar deep shade
MAR-21	21" Maritas
CAP-26	26" Capitol
MRSS-26	26" Miramar shallow shade
MRDS-26	26" Miramar deep shade
MAR-26	26" Maritas

B. ENGINE-WATTS

24NB-27	27 Watts - LED array
24NB-55	55 Watts - LED array
36NB-80	80 Watts - LED array
48NB-110	110 Watts - LED array ³
60NB-136	136 Watts - LED array ³
3 = 26" Urban only	

C. CCT - COLOR TEMP

3K	3000K
4K	4000K
5K	5000K (std.)

D. OPTICS

T2	type II
T3	type III
T4	type IV
T5R	type V, rectangular
T5QM	type V, square medium
T5W	type V, round wide

E. VOLTAGE

UNV	120-277V
347	347V
480	480V

F. ELECTRICAL OPTIONS

PEC	photocell, button
2PF	dual power feed ^{1,2}

G. STYLE OPTIONS

NRNW	no rings
3RNW	three cast rings

H. COLOR

BBT	basic black textured
BMT	black matte textured
WHT	white textured
MBT	metallic bronze textured
BZT	bronze textured
DBT	dark bronze textured
GYS	gray smooth
DPS	dark platinum smooth
GNT	green textured
MST	metallic silver textured
MTT	metallic titanium textured
OWI	old world iron
RAL	_____

¹ not available on 24NB-27

Submitted by Swaney Lighting Associates



Job Name:
Grove St Appartments - Burl VT

Catalog Number:
CAP-21-24NB-55-4K-T3-UNV-3RNW-
BBT
Notes:

Type:
FEB 12 2015

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DEPARTMENT OF
PLANNING & ZONING

rev. 03.14.2014

URBAN (LED)
Urban LED Luminaires



Housing & LED Thermal Management: The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

Bezel optical system: Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Electrical: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to -component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty. Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Engine	Wattage	Delivered Lumens (varies by optic)	Delivered LPW	TM21 Calculated % Lumen Maint. at 100,000 hrs
24NB	27	2752-3014	105-115	96.19%
24NB	55	5138-5500	93-100	96.19%
36NB	80	6935-8215	93-103	94.87%
48NB	110	10240-10950	93-103	92.73%
60NB	136	12800-13700	93-103	85.79%

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

CCT (COLOR TEMP) Lumen Output Multipliers	CRI (Color Rendering)
5000K = 1.0	min 67 CRI
4000K = .92	min 70 CRI
3000K = .75	min 80 CRI

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
AA44-S-4-B-P-BBT

Notes:

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FEB 18 2015

Type:

SLA14-27041

DEPARTMENT OF
PLANNING & ZONING

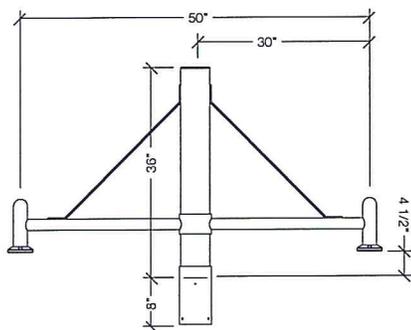
rev. 02.24.2014
AA-44 STRUT
Arms



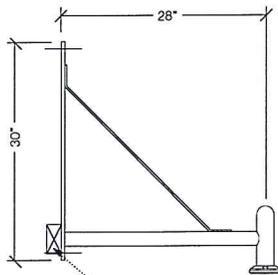
Type: _____
Project Name: _____
Notes: _____

Sample AA-44 S 4 B P BBT
Ordering / / / / /
A B C D E F

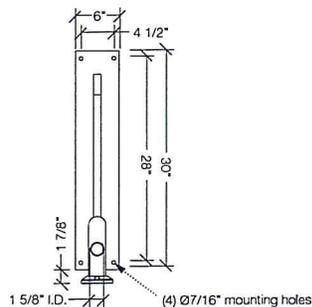
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL

AA-44 Strut

B. POST SHAFT PROFILE

W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER

4 4"
5 5"
6 6"
OTHER _____

D. ARRANGEMENT

B see arrangement table below

E. LUMINAIRE MOUNTING

P pendant

F. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as (projected surface area X drag factor) and measured in ft2. Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

		arrangement (EPA index ft ² / weight (lbs))									
		A	B	C	D	E	F	G	H	I	J
wall	weight	12	-	-	-	-	-	-	-	-	-
	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	4.22	4.22	
Ø4"	weight	-	15	20	22	20	25	27	25	30	32
	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55
Ø5"	weight	-	18	23	25	23	28	30	28	33	35
	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70
Ø6"	weight	-	21	26	28	26	31	33	31	36	38

Submitted by Swaney Lighting Associates

Catalog Number
LC6LED120 / 61LC6LED635K8

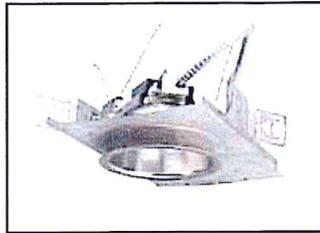
Type:



Job Name:
Grove St Apartments - Burl VT

Notes:

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FEB 18 2015
SLA14-2015



6" LED Downlight
LC6LED
120 or 277V
0-10V Dimming Option

APPLICATIONS:

LiteFrame Commercial (LC6LED) is a 6" commercial grade LED downlight with available outputs between 1000-1600 lumens. This is suitable to replace most CFL downlighting applications, while realizing substantial energy and maintenance savings. Rated for a minimum of 50,000 hours life (70% lumen maintenance) with ambient plenum temperatures up to 35°C (LED5), 28°C (LED6), 25°C (LED7). Free Air Flow around fixture is required for optimal life performance.

HOUSING:

One-piece 22 gauge non-corrosive steel platform. Pre-wired J-box with snap-on cover for easy access. Snap-in connection from driver compartment allows easy installation of light engine/trim assembly and can be upgraded to accommodate technology improvements. Approved for 8 (4 in/4 out) No. 12 AWG conductors rated for 90°C through wiring.

REFLECTOR:

High purity aluminum, Alzak, iridescence suppressed, semi-diffuse reflector. Self-trim standard. Painted white self-trim (WT) available as option.

LED LIGHT ENGINE:

The LC6LED uses either 36, 54, 72 low power Nichia LEDs, specifically mixed to provide a minimum of 80 CRI with 3 SCDM color consistency. The use of multiple low power LED's allows for optimal thermal management by effectively spreading the heat over a larger area and eliminating hot spots on the LED's. A diffuse, yet highly transmissive lens obscures the view of the LEDs and creates a smooth, even look from below. The light engine is available in multiple Kelvin temperatures and the system is designed to provide optimal life and lumen maintenance (50,000 hours at 70% lumen maintenance). The reflector/light engine assembly is mechanically retained to the housing.

LED DRIVER:

The LC6LED utilizes a 25 watt constant current Thomas Research Products LED driver. This same driver is capable of running all three different lumen outputs, resulting in a reduction of housing sku's and simplified specification. The driver is UL8750 and Class II compliant.

DIMMING:

A 0-10V dimming option is available (DM), providing flicker-free dimming down to 10%. See list of compatible dimmers on page (3). For the sizing of the control circuit, the dimming circuit may require up to 1.2mA of sink current.

INSTALLATION:

Light commercial bar hangers included. Universal adjustable mounting brackets also accept 1/2" EMT conduit or 1 1/2" or 3/4" lathing channel (by others) or Prescolite 24" bar hangers (B24 or B6). Wall wash orientation may be field adjusted in 90° increments to housing.

CERTIFICATIONS:

CSA certified to US and Canadian safety standards. Suitable for wet locations (EM & VVV damp location). ENERGY STAR qualified on standard downlight.

WARRANTY:

5 year warranty. See www.prescolite.com for details.

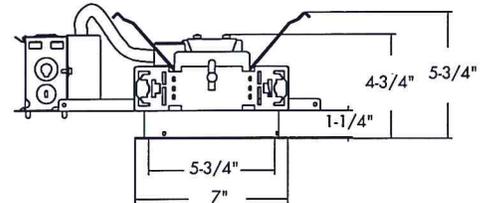
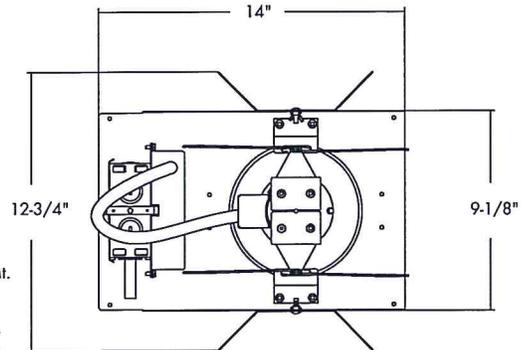
DEPARTMENT OF PLANNING & ZONING

FIRM NAME:

PROJECT:

LiteFrame

Ceiling Cutout: 6 1/4"
Maximum Ceiling Thickness 1 1/4"
For conversion to millimeters, multiply inches by 25.4
Not to Scale



6LCLED 5 & 6

*See page 5 for 6LCLED 7 line art
*See page 5 for 6LCLEDEM line art

Order housing, reflector, and accessories separately

CATALOG NUMBER:

EXAMPLE: LC6LED120DM - 6LCLED535K8WT

HOUSING	VOLTAGE	HOUSING OPTIONS	TRIM APERTURE	OUTPUT	KELVIN	CRI	REFLECTOR FINISH	REFLECTOR COLOR	REFLECTOR OPTIONS	ACCESSORIES
<input type="checkbox"/> LC6LED 6" LED Housing	<input type="checkbox"/> 120 <input type="checkbox"/> 120V <input type="checkbox"/> 277 <input type="checkbox"/> 277V	<input type="checkbox"/> Blank No Dimming <input type="checkbox"/> DM 0-10V dimming to 10% <input type="checkbox"/> WH Wi-Hubb Enabled <input type="checkbox"/> EM ³ Bodine BSL310C-DF Battery Pack with integral test switch and indicator light <input type="checkbox"/> EMR Bodine BSL310C Battery Pack with remote test switch and indicator light	<input type="checkbox"/> 6LCLED 6" Open Reflector/Light Engine Assembly	<input type="checkbox"/> 5 Nominal Delivered Lumens <input type="checkbox"/> 6 Nominal Delivered Lumens <input type="checkbox"/> 7 Nominal Delivered Lumens	<input type="checkbox"/> 27K 2700 Kelvin <input type="checkbox"/> 30K 3000 Kelvin <input type="checkbox"/> 35K 3500 Kelvin <input type="checkbox"/> 40K 4000 Kelvin	<input type="checkbox"/> 8 80+ CRI	<input type="checkbox"/> Blank Clear Alzak, Semi-Diffuse	<input type="checkbox"/> WH ¹ White Paint	<input type="checkbox"/> WT White Trim <input type="checkbox"/> EM ³ Pre-punched reflector to accept integral test switch <input type="checkbox"/> WF Wide Flange <input type="checkbox"/> WW ^{5,6} Wall Wash	<input type="checkbox"/> B24 Set of two(2) 24" bar hangers for T-bar ceilings <input type="checkbox"/> B6 Set of two (2) bar hangers for ceiling joist up to 24" centers <input type="checkbox"/> LG15 ^{2,4} DualLite 100VA Surface Wall Mount LiteGear Emergency Lighting Inverter <input type="checkbox"/> LG17 ^{2,4} DualLite 100VA Recessed Wall Mount LiteGear Emergency Lighting Inverter <input type="checkbox"/> LG17 ^{2,4} DualLite 100VA Recessed Ceiling T-Grid LiteGear Emergency Lighting Inverter <input type="checkbox"/> LG25 ^{2,4} DualLite 250 VA Surface Wall Mount LiteGear Emergency Lighting Inverter <input type="checkbox"/> SCA6D Sloped ceiling adapter (see note on page 4)

¹ Requires WT option
² See LC6LED and LiteGear Compatibility on page 3
³ EM must be selected on both the housing and the trim, not compatible with WW trim
⁴ Not compatible with EM or EMR
⁵ Damp location only
⁶ Not compatible with EM (EMR is compatible)



In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.
Web: www.prescolite.com • Tech Support: (888) 777-4832

LEDFR-013

Submitted by Swaney Lighting Associates

Catalog Number: LC6LED120 / 6LCLED635K8

RECEIVED
Type L3
FEB 18 2015
SLA14-27041



Job Name:
Grove St Apartments - Burl VT

Notes:

SLA14-27041

DEPARTMENT OF
PLANNING & ZONING
LiteFrame - 6" LC6LED Downlight

PHOTOMETRIC DATA

DRIVER DATA	6LCLED5xxx	6LCLED6xxx	6LCLED7xxx
Input Voltage	120-277V	120-277V	120-277V
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Input Current	0.143 (120v)	0.200 (120v)	0.148 (120v)
	0.062 (277v)	0.087 (277v)	0.108 (277v)
Input Power	17.1W	24.0W	29.8W
Constant Current Output	700mA	700mA	700mA
Power Factor	≥0.90	≥0.90	≥0.90
THD	<25%	<20%	<20%
EMI Filtering	FCC 47CFR Part 15, Class A	FCC 47CFR Part 15, Class A	FCC 47CFR Part 15, Class A
Operating Temperature	-30°C to +35°C	-30°C to +28°C	-30°C to +25°C
Dimming	0-10V	0-10V	0-10V

Over-voltage, over-current, short-circuit protected

Lumen Multiplier Table

Photometrics for the LC6LED are published below at a nominal 3500 Kelvin temperature. This table may be used to approximate the lumen values at different Kelvin temperatures. Power consumption would stay the same.

5000 Kelvin	1.14
4000 Kelvin	1.03
3500 Kelvin	1.00
3000 Kelvin	1.00
2700 Kelvin	0.91

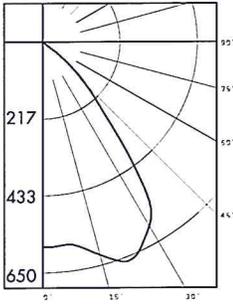
LC6LED120 6LCLED535K8
LED Light Engine: 3500K, 80+ CRI
System Wattage: 17.1W
Fixture Delivered Lumens: 925
Fixture Efficacy: 54.0
Spacing Criteria: 1.3

ZONAL LUMEN SUMMARY

ZONE	LUMENS
0-60	920.4
0-90	925.1
90-180	0.0
0-180	925.1

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average - 0°
45°	12691
55°	873
65°	326
75°	164
85°	62



CANDELA DISTRIBUTION

DEG	CANDELA
0	560
5	552
15	593
25	621
35	444
45	161
55	10
65	2
75	1
85	0
90	0

Test No. 1911.6074

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

COEFFICIENTS OF UTILIZATION

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance																							
	80%				70%				50%				30%				10%							
	20% Effective Floor Cavity Reflectance																							
													% Wall Reflectance											
	70	50	30	10	70	50	30	10	70	50	30	10	70	50	30	10	70	50	30	10				
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	94	93	92	91			
2	106	101	96	93	104	99	95	92	96	93	90	93	90	88	90	88	86	88	86	84	81			
3	100	93	87	83	98	91	86	82	89	84	81	86	83	80	84	81	78	81	78	75	72			
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	75	72	76	73	70	67			
5	88	79	72	68	87	78	72	67	76	71	67	74	70	66	73	69	65	71	67	64	61			
6	83	73	66	62	82	72	66	61	71	65	61	69	64	60	68	63	60	67	63	60	57			
7	78	68	61	56	77	67	61	56	66	60	56	64	59	55	63	59	55	62	58	55	52			
8	74	63	56	52	72	62	56	51	61	55	51	60	55	51	59	54	51	58	54	51	48			
9	69	59	52	47	68	58	52	47	57	51	47	56	51	47	55	50	47	54	50	47	44			
10	65	55	48	44	64	54	48	44	53	48	44	52	47	43	52	47	43	51	46	43	40			

LC6LED120 6LCLED535K8

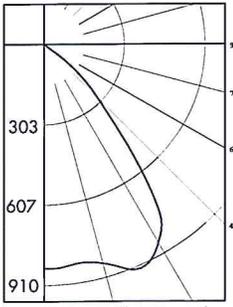
LC6LED120 6LCLED635K8
LED Light Engine: 3500K, 80+ CRI
System Wattage: 24.0W
Fixture Delivered Lumens: 1375
Fixture Efficacy: 57.3
Spacing Criteria: 1.3

ZONAL LUMEN SUMMARY

ZONE	LUMENS
0-60	1369.3
0-90	1375.2
90-180	0.0
0-180	1375.2

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average - 0°
45°	19982
55°	1447
65°	541
75°	244
85°	89



CANDELA DISTRIBUTION

DEG	CANDELA
0	836
5	824
15	847
25	869
35	649
45	249
55	16
65	4
75	1
85	0
90	0

Test No. 1910.6073

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

COEFFICIENTS OF UTILIZATION

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance																							
	80%				70%				50%				30%				10%							
	20% Effective Floor Cavity Reflectance																							
													% Wall Reflectance											
	70	50	30	10	70	50	30	10	70	50	30	10	70	50	30	10	70	50	30	10				
1	113	110	107	105	110	108	105	103	103	102	100	100	98	97	96	95	94	94	93	92	91			
2	106	101	96	93	104	99	95	91	96	92	89	93	90	87	90	88	86	88	86	84	81			
3	100	93	87	83	98	91	86	82	89	84	81	86	83	80	84	81	78	81	78	75	72			
4	94	85	79	74	92	84	79	74	82	77	73	80	76	72	78	75	72	76	73	70	67			
5	88	79	72	68	87	78	72	67	76	71	67	74	70	66	73	69	65	71	67	64	61			
6	83	73	66	61	82	72	66	61	71	65	61	69	64	60	68	63	60	67	63	60	57			
7	78	68	61	56	77	67	61	56	66	60	56	64	59	55	63	59	55	62	58	55	52			
8	74	63	56	51	72	62	56	51	61	55	51	60	55	51	59	54	51	58	54	51	48			
9	69	59	52	47	68	58	52	47	57	51	47	56	51	47	55	50	46	54	50	47	44			
10	65	54	47	43	64	54	48	43	53	48	44	52	47	43	51	46	43	50	46	43	40			

LC6LED120 6LCLED635K8



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Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
LC6LED120 / 6LCLED635K8

Type:
L3

Notes:



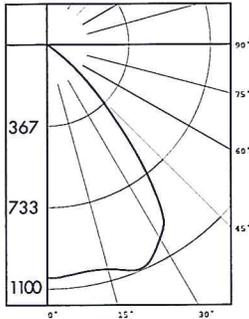
14-27041

PHOTOMETRIC DATA

LifeFrame - 6" LC6LED Downlight

DEPARTMENT OF
PLANNING & ZONING

LC6LED120 6LCLED735K8
LED Light Engine: 3500K, 80+ CRI
System Wattage: 29.8W
Fixture Delivered Lumens: 1598
Fixture Efficacy: 53.6
Spacing Criteria: 1.3



CANDELA DISTRIBUTION

DEG	CANDELA
0	1003
5	996
15	998
25	1020
35	822
45	314
55	25
65	5
75	2
85	0
90	0

Test No. 1912.6072

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

ZONAL LUMEN SUMMARY

ZONE	LUMENS
0-60	1590.1
0-90	1597.6
90-180	0
0-180	1597.6

LUMINANCE DATA IN CANDELA/SQ. METER

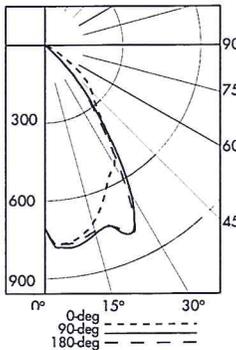
Angle in Vertical	Average - 0°
45°	22934
55°	1376
65°	538
75°	272
85°	75

COEFFICIENTS OF UTILIZATION

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance																
	80%			70%			50%			30%			10%				
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	
1	113	110	107	106	110	108	105	103	103	101	100	100	98	97	96	95	94
2	106	101	96	93	104	99	95	91	96	92	89	93	90	88	90	88	85
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71
5	88	79	72	67	86	78	72	67	76	70	65	74	69	65	73	68	65
6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60
7	78	67	61	56	76	67	60	56	65	59	55	64	59	55	63	58	55
8	73	63	56	51	72	62	55	51	61	55	51	60	54	50	59	54	50
9	69	58	52	47	68	58	51	47	57	51	47	56	50	47	55	50	46
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43

LC6LED120 6LCLED735K8

LC6LED120-6LCLED635K8 WW
LED Light Engine: 3500K, 80 CRI
System Wattage: 15.6W
Fixture Delivered Lumens: 1051
Fixture Efficacy: 67



CANDELA DISTRIBUTION

DEG	0.0	90.0	180.0
0	706	706	706
5	768	783	772
15	712	753	743
25	574	797	798
35	422	435	384
45	254	121	119
55	121	3	4
65	33	1	2
75	2	1	1
85	0	0	0
90	0	0	0

Test No. 7829

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	0 DEG	90 DEG	180 DEG
45°	19685	9377	9222
55°	11561	287	382
65°	4279	130	259
75°	423	212	212
85°	0	0	0

MULTIPLE UNITS	
UNITS ON 3' CENTER	UNITS ON 4' CENTER
1' 2' 3' 4'	

3' DISTANCE FIXTURE MOUNTED OUT FROM WALLS
FOOTCANDLE DISTRIBUTION ON WALL SURFACE

DISTANCE FROM CEILING IN FEET	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
1	2	1	1	1	1	1	1	1	1	1	4	4	4	4	4	4	4	3	4	4										
2	9	7	3	1	1	1	1	1	1	1	12	10	12	11	6	11	11	6	11	11										
3	14	12	6	2	1	1	1	1	1	1	19	19	19	16	13	16	16	13	16	16										
4	13	11	7	4	2	1	1	1	1	1	21	21	21	16	15	16	16	15	16	16										
5	11	10	8	5	2	1	1	1	1	1	21	22	21	16	17	16	16	15	16	15										
6	8	8	7	5	3	1	1	1	1	1	20	20	20	15	16	15	15	14	13	13										
7	6	6	6	5	3	1	1	1	1	1	19	18	19	13	14	13	13	12	11	11										
8	5	5	5	4	3	1	1	1	1	1	17	17	17	13	13	13	13	12	11	11										
9	4	4	4	4	3	1	1	1	1	1	15	15	15	12	11	12	12	11	10	10										

LC6LED120-6LCLED635K8 WW

Test No. 7829



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Hubbell Lighting, Inc.

Submitted by Swaney Lighting Associates	Catalog Number: LC6LED120 / 6LCLLED635K8	Type: L3
 Job Name: Grove St Appartments - Burl VT	Notes:	SLA14-27041

PHOTOMETRIC DATA

LiteFrame - 6" IC6LED Downlight

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DIMMING COMPATIBILITY TABLE

Control Manufacturer	Wallbox Dimmer	Power Booster Available
Douglas Lighting Controls	WPC 5721	
Entertainment Technology	Tap Glide TG600FAM120 (120V) Tap Glide Heatsink TGH1500fam120 (120V) Oasis DA2000FAMU (120/277V)	
Honeywell, Inc.	EL731A1019 and EL7315A1009	EL7305A1010
HUNT Dimming	Preset Slide: PS-010-IV-120V and PS-010-WH-120V Preset Slide: PS-010-3W-IV-120V and PS-010-3W-WH-120V Preset Slide: PS-010-IV-277V and PS-010-WH-277V Preset Slide: PS-010-3W-IV-277V and PS-010-3W-WH-277V Preset Slide, controls FD-010: PS-IFC-010-IV- and PS-IFC-010-32-WH-120/277V Preset Slide, controls FD-010: PS-IFC-010-32-IV- and PS-IFC-010-3W-WH-120/277V Remoted mounted unit: FD-010120V and FD-010-277V	
Lehigh Electric Products Co.	Solitaire	PBX
Leviton Lighting Controls Div.	Leviton Centura Fluorescent Control System IllumaTech™ IP7 Series	CN100 PE300
Lutron Electronics Co., Inc.	Visit www.lutron.com/advance for the latest control information and selection	
PDM Electrical products	WPC-5721	
Starfield Controls	TR61 with DALI Interface port	RT03 DALInet Router
The Watt Stopper, Inc.	LS-4 used with LCD-101 and LCD-103	

DEPARTMENT OF
PLANNING & ZONING

Central Inverters

For fixture full light output in back-up mode, Prescolite and Dual-lite have jointly tested the LiteFrame Commercial LED with the 100 (LG1) and 250 (LG2) VA LiteGear inverters. For more information on LiteGear go to http://www.dual-lite.com/resources/litegear_luminaire_loading_chart/

wiHUBB®

Fixture comes with a pre-installed In-Fixture Module (1 relay, 0-10V) compatible with the HBA wiHUBB system. Actual dimming requires the selection of 0-10V dimming ballast as well. Consult factory for compatibility with EM fixtures.



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Catalog Number:
LC6LED120 / 6LCLED635K8

Type:

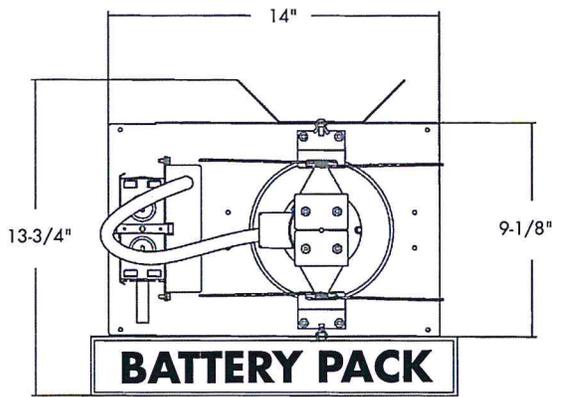


Job Name:
Grove St Apartments - Burl VT

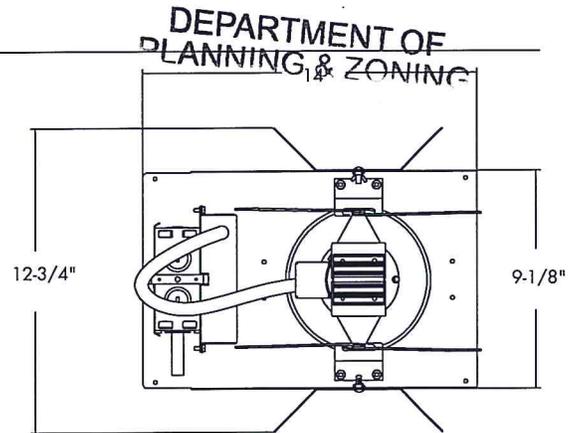
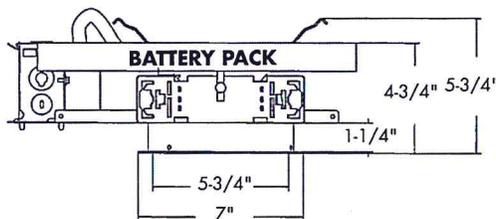
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SLA# 27041
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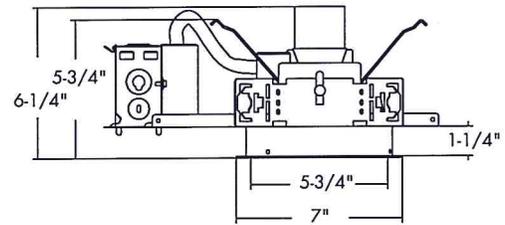
PHOTOMETRIC DATA



LC6LED EM



LC6LED 7



SCA6D

When ordering a sloped ceiling adapter, specify the degree of slope in 5° increments, maximum of 35°. For a more precise degree or wet ceiling applications, please contact factory. Sloped ceiling adapter and housing must be installed at the same time.

LED lighting facts
A Program of the U.S. DOE

Light Output (Lumens)	925
Watts	17.12
Lumens per Watt (Efficacy)	54

Color Accuracy
Color Rendering Index (CRI) 83

Light Color
Correlated Color Temperature (CCT) 3434 (Bright White)

2700K 3000K 4500K 6500K

Warm White | Bright White | Daylight

Visit www.lightingfacts.com for the Label Reference Guide

Register # Number: 1844-838119-121226120
Model Number: 1844-838119-121226120
Type: recessed lighting

LED lighting facts
A Program of the U.S. DOE

Light Output (Lumens)	1375
Watts	23.98
Lumens per Watt (Efficacy)	57

Color Accuracy
Color Rendering Index (CRI) 83

Light Color
Correlated Color Temperature (CCT) 3423 (Bright White)

2700K 3000K 4500K 6500K

Warm White | Bright White | Daylight

Visit www.lightingfacts.com for the Label Reference Guide

Register # Number: 1844-838119-121226120
Model Number: 1844-838119-121226120
Type: recessed lighting

LED lighting facts
A Program of the U.S. DOE

Light Output (Lumens)	1598
Watts	29.79
Lumens per Watt (Efficacy)	53

Color Accuracy
Color Rendering Index (CRI) 83

Light Color
Correlated Color Temperature (CCT) 3418 (Bright White)

2700K 3000K 4500K 6500K

Warm White | Bright White | Daylight

Visit www.lightingfacts.com for the Label Reference Guide

Register # Number: 1844-838119-121226120
Model Number: 1844-838119-121226120
Type: recessed lighting



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Submitted by Swaney Lighting Associates

Catalog Number: TRP30L-4K-035-4-U-BL-SCP

Job Name: Grove St Apartments - Burl VT

Type: L5

Notes:

DEPARTMENT OF PLANNING & ZONING



Cat.#

Job

Type



SPECIFICATIONS

Applications:

- Architectural wallpack in stylish Trapezoid shape with molded contours to accentuate building architecture. Provides excellent illumination in energy-saving LED systems.

Construction:

- Die-cast aluminum housing and door
- Seven powder coat standard finishes, plus custom color options

LED:

- 30 high power LEDs deliver up to 5,062 lumens
- Up to 105 lumens per watt
- Variety of IES distribution patterns - Type II, III, and IV (Forward Throw)
- 3000K - 80 CRI, 4000K - 70 CRI, and 5000K - 67 CRI, CCT nominal

Electrical:

- Two driver options: 34w at 350mA (1 driver) and 53w at 525mA (1 driver)
- Operating temperature: -30°C/-22°F to 40°C/104°F

Electrical (Cont.):

- 120-277VAC, 50/60Hz
- Power factor ≥ 90%
- THD (Total Harmonic Distortion) <20%
- 10 KA, 10 KV, 270 joules surge suppressor

Controls:

Drivers are 0-10V dimming standard. Photocell and occupancy sensors available for complete on/off and dimming control.

Listings:

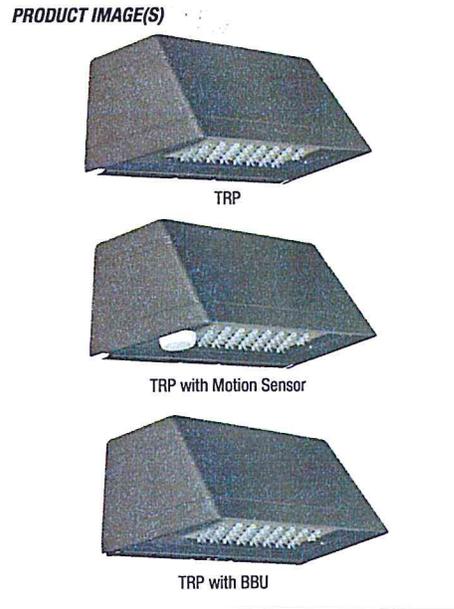
- UL1598 listed for use in wet locations
- 4K and 5K models meet DesignLights Consortium (DLC) qualifications, consult DLC website for more details: <http://www.designlights.org/QPL>
- Zero uplift (UO), dark sky, neighbor friendly
- Drivers IP66 and RoHS compliant

TRP-BBU Egress Wallpack:

Designed to meet strict 1fc minimum requirements. At 12ft mounting height 1fc covers 16x16ft area, well beyond the 10x10ft standard; No uplift, external test button; 120V or 277V only; Rated -20°C to 35°C

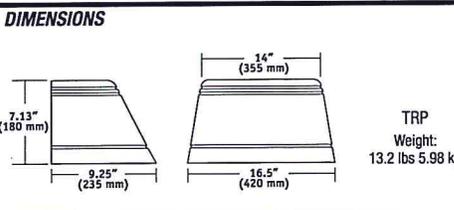
Warranty:

For more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>



SHIPPING INFORMATION

Catalog Number	G.W.(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
TRP	16 (7.3)	18.5 (47)	9.5 (24)	11.5 (29)



CERTIFICATIONS/LISTINGS

ORDERING INFORMATION

ORDERING EXAMPLE: TRP-30L5K-053-2-U-DB

FAMILY	# OF LEDS	CCT	DRIVE CURRENT	DISTRIBUTION	VOLTAGE	FINISH	CONTROL OPTIONS	OPTIONS
TRP Trapezoid	30L 30 High brightness LEDs	3K ¹ 3000K 4K 4000K 5K 5000K	035 ² 350mA 053 525mA	2 Type II 3 ³ Type III 4 Type IV	U 120V-277V 1 ^{1A} 120V 2 ¹ 208V 3 ¹ 240V 4 ^{1A} 277V	CC ³ Custom Color BL Black DB Bronze FG Forest Green GR Gray PS Platinum RD Red WH White	PC ¹ Photocontrol (Must specify individual voltage) SC0 ^{2A} Motion sensor On/Off control, No light output when no motion detected SCP ^{2A} Programmable motion control, factory default is 10% light output	BBU ^{1A} Integral battery for 120 or 277V only rated for -20°C to 35°C (Must specify individual voltage) F ¹ Fusing (Must specify individual voltage)

[Controls Guide](#)

¹ Must specify individual voltage for BBU, PC and Fusing options
² Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120V or 277V only
³ Consult factory for Custom Color option
⁴ DLC qualification 4K and 5K models only
⁵ PC option not applicable, included in sensor. For SCP, PC function turns on to lower setting until motion is detected
⁶ BBU only available in TRP: 350mA, Type III, 120V or 277V

ACCESSORIES - Order separately

Catalog Number	Description
SCP-REMOTE ²	Remote control for SCP option. Order at least one per project to program and control.

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Catalog Number:
TRP30L-4K-035-4-U-BL-SCP

Type:

L5

Job Name:
Grove St Appartments - Burl VT

Notes:

SLA14-27041



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PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	5K (5000K nominal, 67 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 80 CRI)				
				LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G	LUMENS	LPW ¹	B	U	G
30	350mA	34w	2	3549	104	1	0	2	3161	93	1	0	1	2404	71	1	0	1
			3	3583	105	1	0	2	3191	94	1	0	1	2443	72	1	0	1
			4	3459	102	1	0	2	3081	91	1	0	1	2375	70	1	0	1
			2	4935	93	1	0	2	4466	84	1	0	2	3420	65	1	0	1
	525mA	53w	3	5062	96	1	0	2	4508	85	1	0	2	3452	65	1	0	2
			4	4887	92	1	0	2	4353	82	1	0	2	3352	63	1	0	2

Lumen values are from photometric tests performed at a NVLAP certified laboratory in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment, application and performance tolerances of the electrical components.

ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
30	1	350mA	120	34	0.29
			277	34	0.12
		525mA	120	53	0.45
			277	53	0.18

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

AMBIENT TEMPERATURE	LUMEN MULTIPLIER	
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.98

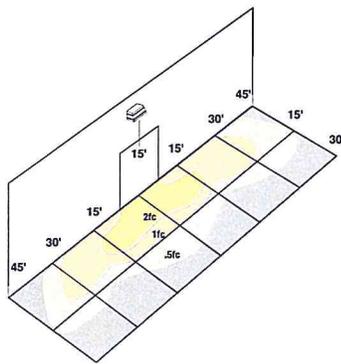
Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

PROJECTED LUMEN MAINTENANCE

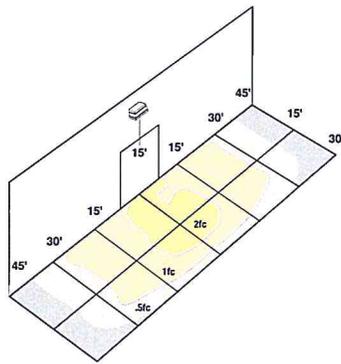
Ambient Temp.	OPERATING HOURS					L70 (hours)
	0	25,000	50,000	TM-21-11 ¹ 60,000	100,000	
25°C / 77°F	1.00	0.98	0.97	0.96	0.95	>774,000
40°C / 104°F	0.99	0.96	0.95	0.95	0.93	>625,000

¹ Nichia 2198, 700mA, 85°C Ts, 10,000hrs
Data references the extrapolated performance projections for the TRP base model in 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

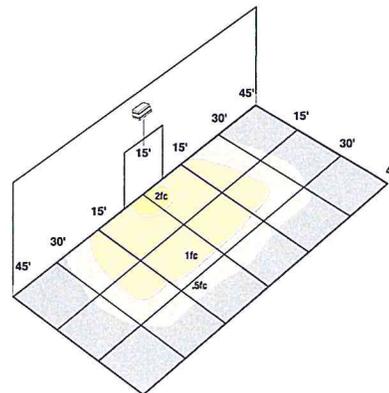
PHOTOMETRIC REPORTS



TYPE II



TYPE III



TYPE IV (Forward throw)



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TRP-SPEC 9/14

Submitted by Swaney Lighting Associates



Job Name:
Grove St Apartments - Burl VT

Catalog Number:
2-CAP-21-24NB-27-4K-T4-UNV-3RNW-BBT
Notes:

Type:
2L1-4

SLA14-27041

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www.beaconproducts.com

Type:
Project Name:
Notes:

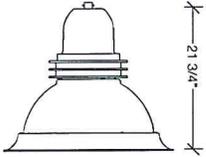
DEPARTMENT OF PLANNING & ZONING

rev. 03.14.2014
URBAN (LED)
Urban LED Luminaires

Sample	CAP-21	36NB-80	4K	T2	UNV	PEC	3RNW	BBT
Ordering	/	/	/	/	/	/	/	/
	A	B	C	D	E	F	G	H

DETAILS

CAP - Round Shade

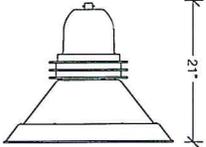


26" - CAP
Shown with optional 3RNW rings
EPA: 1.39 ft²
40 lbs



21" - CAP
EPA: 1.04 ft²
35 lbs

MRDS - Deep Shade

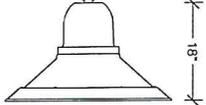


26" - MRDS
Shown with optional 3RNW rings
EPA: 1.25 ft²
40 lbs



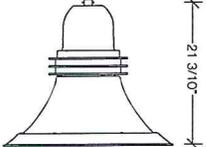
21" - MRDS
EPA: 1.00 ft²
35 lbs

MRSS - Shallow Shade

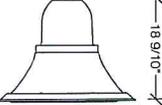


26" - MRSS
EPA: 1.17 ft²
40 lbs

MAR - Curved Shade



26" - MAR
Shown with optional 3RNW rings
EPA: 1.25 ft²
40 lbs



21" - MAR
EPA: 1.00 ft²
35 lbs

A. MODEL

CAP-21 21" Capitol (2 Fixtures)

MRDS-21 21" Miramar deep shade

MAR-21 21" Maritas

CAP-26 26" Capitol

MRSS-26 26" Miramar shallow shade

MRDS-26 26" Miramar deep shade

MAR-26 26" Maritas

B. ENGINE-WATTS

24NB-27 27 Watts - LED array

24NB-55 55 Watts - LED array

36NB-80 80 Watts - LED array

48NB-110 110 Watts - LED array³

60NB-136 136 Watts - LED array³

³ = 26" Urban only

C. CCT - COLOR TEMP

3K 3000K

4K 4000K

5K 5000K (std.)

D. OPTICS

T2 type II

T3 type III

T4 type IV

T5R type V, rectangular

T5QM type V, square medium

T5W type V, round wide

E. VOLTAGE

UNV 120-277V

347 347V

480 480V

F. ELECTRICAL OPTIONS

PEC photocell, button

2PF dual power feed ^{1,2}

G. STYLE OPTIONS

NRNW no rings

3RNW three cast rings

H. COLOR

BBT basic black textured

BMT black matte textured

WHT white textured

MBT metallic bronze textured

BZT bronze textured

DBT dark bronze textured

GYS gray smooth

DPS dark platinum smooth

GNT green textured

MST metallic silver textured

MTT metallic titanium textured

OWI old world iron

RAL _____

¹ not available on 24NB-27

2041 58th Avenue Circle East Bradenton, fl 34203 Phone: (800) 345-4928 Fax: (941) 751-5535

ORDERING

Submitted by Swaney Lighting Associates

Catalog Number:

Type:



Job Name:

Grove St Appartments - Burl VT

2-CAP-21-24NB-27-4K-T4-UNV-3RNW-BBT

Notes:

2L1-4

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rev. 03.14.2014

DEPARTMENT OF PLANNING & ZONING URBAN (LED) Urban LED Luminaires



Housing & LED Thermal Management: The drivers shall be located in the top cast housing and shall be accessible without tools by hinging the lower shade assembly. The driver and all electrical components shall be on a tray. The lower shade shall be made from a one-piece aluminum spinning. The LED bezel assembly shall be attached to a one piece aluminum heat sink to provide direct-heat exchange between the LED light engine and the cool outdoor air. The Housing is designed for LED thermal management without the use of metallic screens, cages, or fans. The top casting shall be able to be pendent mounted in place with a stainless steel safety pin and then permanently held in place with four stainless steel bolts.

Bezel optical system: Each Beacon luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel. The cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system. A two-piece die cut silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the luminaire to be rated for high-pressure hose down applications.

The optical cartridge is secured to the aluminum heat sink with fasteners to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assembly is gasketed for high pressure hose down cleaning. The cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Printed Circuit Board (PCB): Aluminum thermal clad board with 0.062" thick aluminum base layer "high temperature" HT-06503 or equivalent (subject to change) dielectric (0.003" thick, thermal conductivity of 2.2 W/MK, UL RTI of 140°C) 0.0014" thick copper circuit layer Circuit layer designed with copper pours to minimize thermal impedance across dielectric. Board shall be supplied with QPAD-3 fiberglass reinforced thermal pad 0.005" thick thermal conductivity of 2.0 W/Mk. Continuous use temperature of 180°C UL94 V-0. Board will be mounted to the heat sink using 12 #4-40 screws to ensure contact with thermal pad and heat sink. Use of thermal grease will not be allowed.

LifeShield™ Circuit: Thermal circuit shall protect the luminaire from excessive temperature by interfacing with its 0-10V dimmable drivers to reduce drive current as necessary. The factory-preset temperature limits shall be designed to ensure maximum hours of operation to assure L70 rated lumen maintenance. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range in recognition of the effect of reduced current on the internal temperature and longevity of the LEDs and other components. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F).

The thermal circuit will allow higher maximum Wattages than would be permissible on an unregulated luminaire (if some variation in light output is permissible), without risk of premature LED failure.

Operation shall be smooth and undetectable to the eye. Thermal circuit shall directly measure the temperature at the LED solder point.

Thermal circuit shall consist of surface mounted components mounted on the LED engine (printed circuit board). For maximum simplicity and reliability, the device shall have no dedicated enclosure, circuit board, wiring harness, gaskets, or hardware. Device shall have no moving parts, and shall operate entirely at low voltage (NEC Class 2). The device shall be located in an area of the luminaire that is protected from the elements.

Thermal circuit shall be designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers.

Device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.). The device will effectively control the solder point temperature as needed; otherwise it will allow the other control device(s) to function unimpeded.

Electrical: Luminaires are equipped with an LED driver that accepts 100V through 277V, 50 Hz to 60 Hz (UNIV), or a driver that accepts 347V or 480V input. Power factor is .92 at full load. All electrical components are rated at 50,000 hours at full load and 40°C ambient conditions per MIL-217F Notice 2. Optional 0 to 10 volt dimming drivers are available upon request. All driver components supplied are Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600VAC at 50°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

Surge Protector: The on-board surge protector shall be a UL recognized component for the United States and Canada and have a surge current rating of 20,000 Amps using the industry standard 8/20 pSec wave. The LSP shall have a clamping voltage of 825V

and surge rating of 540J. The case shall be a high-temperature, flame resistant plastic enclosure.

Fasteners: All fasteners shall be stainless steel. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, consult factory).

Color Rendering Index (CRI): Luminaire shall have a minimum CRI of 67 at 5000K.

Operating Environment: Shall be able to operate normally in ambient temperatures from -40°C to 40°C

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Agency Certification: The luminaire shall bear a CSA label and be marked suitable for wet locations.

Warranty: Beacon luminaires feature a 5 year limited warranty, Beacon LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays. LED drivers are covered by a 5 year limited warranty. PIR sensors carry a 5 year limited warranty from the sensor manufacturer. See Warranty Information on www.beaconproducts.com complete details and exclusions.

Power/Lumens & Distributions

Table with 5 columns: Engine, Wattage, Delivered Lumens (varies by optic), Delivered LPW, TM21 Calculated % Lumen Maint. at 100,000 hrs. Rows include 24NB, 36NB, 48NB, 60NB.

TM21 is the framework for taking LM-80 data and making useful LED lifetime projections. Reported and Calculated Lifetimes shown are based on hours at the time of this printing. For current Reported and Calculated hours please contact factory or Beacon's web-site.

Table with 2 columns: CCT (COLOR TEMP) Lumen Output Multipliers, CRI (Color Rendering). Rows include 5000K, 4000K, 3000K.

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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Submitted by Swaney Lighting Associates

Catalog Number:
AA44-S-4-C-P-BBT

Type:



Job Name:
Grove St Apartments - Burl VT

Notes:

DEPARTMENT OF
PLANNING & ZONING

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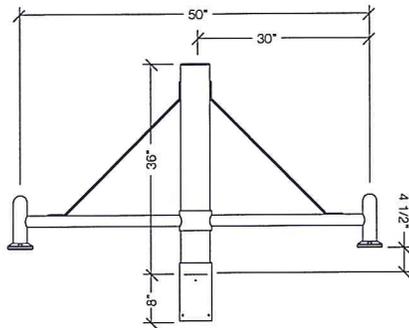


Type: _____
Project Name: _____
Notes: _____

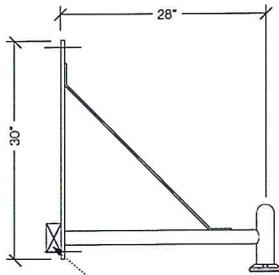
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AA-44 STRUT
Arms

Sample AA-44 S 4 B P BBT
Ordering / / / / / /
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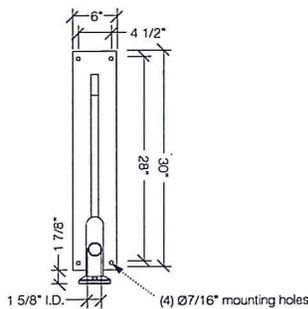
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL

AA-44 Strut

B. POST SHAFT PROFILE

W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER

4 4"
5 5"
6 6"
OTHER _____

D. ARRANGEMENT

C see arrangement table below

E. LUMINAIRE MOUNTING

P pendant

F. COLOR

BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
OWI old world iron
RAL _____

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as (projected surface area X drag factor) and measured in ft². Allowable post, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate post for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of post. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (snake eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacote V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

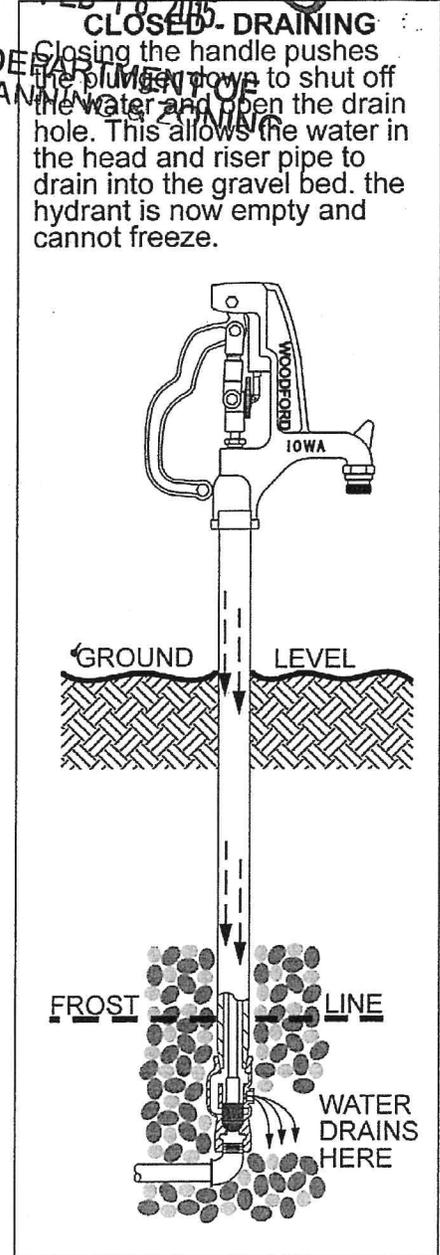
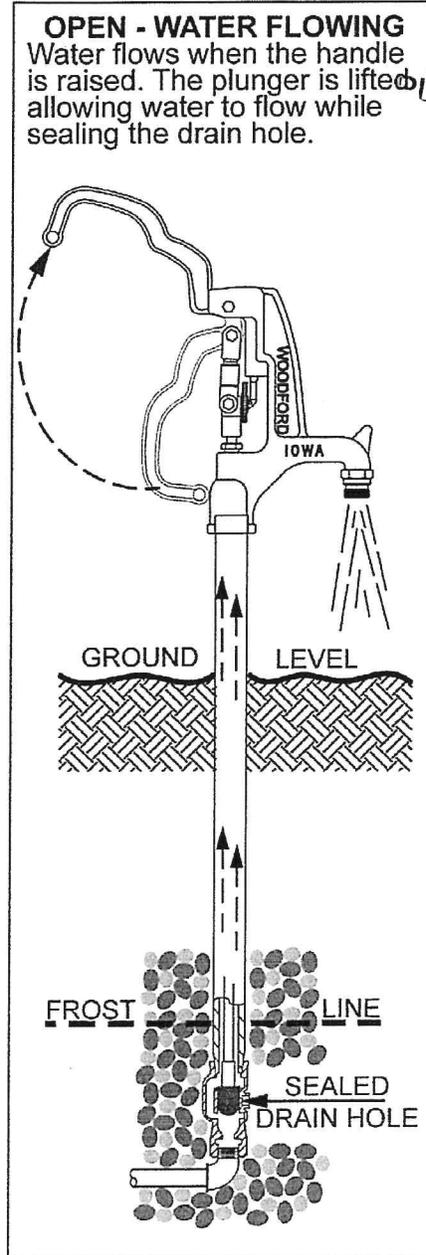
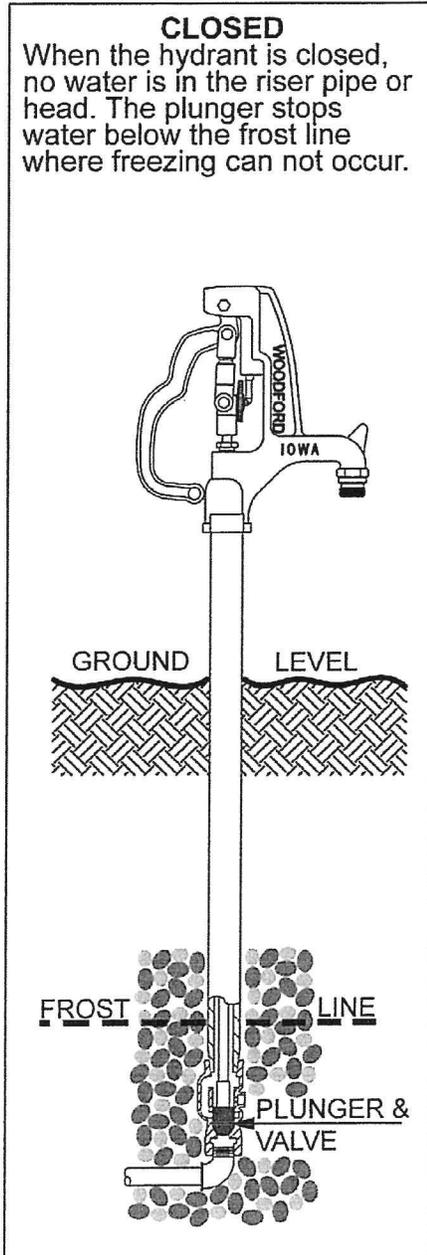
		arrangement (EPA index ft ² / weight (lb))												
		A	B	C	D	E	F	G	H	I	J			
shaft Ø	wall	weight	12	-	-	-	-	-	-	-	-	-	-	-
Ø4"	EPA	-	2.34	3.28	3.28	2.73	3.75	3.75	3.75	4.22	4.22	-	-	-
	weight	-	15	20	22	20	25	27	25	30	32	-	-	-
Ø5"	EPA	-	2.67	3.61	3.61	3.06	4.08	4.08	4.08	4.55	4.55	-	-	-
	weight	-	18	23	25	23	28	30	28	33	35	-	-	-
Ø6"	EPA	-	2.82	3.76	3.76	3.21	4.23	4.23	4.23	4.70	4.70	-	-	-
	weight	-	21	26	28	26	31	33	31	36	38	-	-	-

WOODFORD



How a Freeze Proof Hydrant Works

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For more information contact...

WOODFORD MANUFACTURING COMPANY

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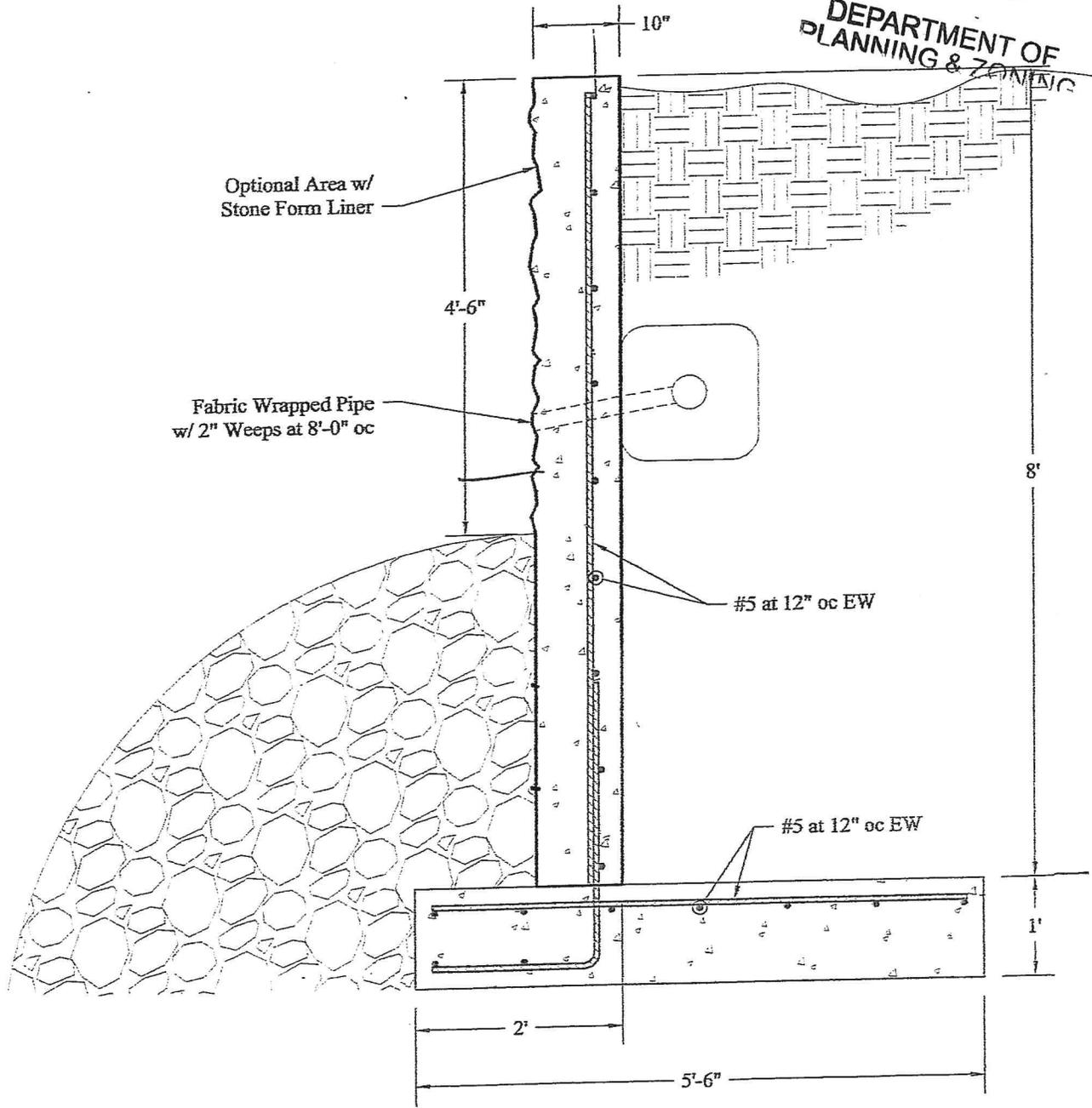
To view our complete product line visit: www.woodfordmfg.com or email: sales@woodfordmfg.com

A Division of WCM Industries, Inc.

CROSS SECTION FOR A "FORM LINED" WALL.

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DEPARTMENT OF
PLANNING & ZONING



Retaining Wall Section (Typical)

Graden Street Apartments

Parks + Rec

Scott Gustin

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Tuesday, March 24, 2015 12:22 PM
To: Deryk Roach; Warren Spinner
Cc: Jesse Bridges; Jen Francis; Scott Gustin; Bryan Currier; Laura Wheelock
Subject: RE: 140 Grove St

Deryk, got it, thank you.

Patrick

From: Deryk Roach [mailto:droach@burlingtonvt.gov]
Sent: Tuesday, March 24, 2015 10:20 AM
To: Patrick O'Brien; Warren Spinner
Cc: Jesse Bridges; Jen Francis; Scott Gustin; Bryan Currier; Laura Wheelock
Subject: RE: 140 Grove St

Patrick, regarding the seed – you can share the spec with whomever you like to get a better price. The ratio of tall fescue, bluegrass, perennial ryegrass and the percent weed seed/inert matter is what we care about – not necessarily the varieties.

Deryk

From: Patrick O'Brien [mailto:pobrien@SDIRELAND.COM]
Sent: Tuesday, March 24, 2015 8:40 AM
To: Warren Spinner
Cc: Jesse Bridges; Deryk Roach; Jen Francis; Scott Gustin; Bryan Currier; Laura Wheelock
Subject: RE: 140 Grove St

Warren, thank you for checking in. We are ready and willing to make the changes but as discussed at the meeting, we are awaiting Laura's draft letter to proceed. I have asked her a few times for them and yesterday she said she hopes to have that very soon. She said something had come up that she had to prioritize. As discussed at the meeting, if the requests are clear and concise than I was going to run it by Scott Gustin to see if he wanted the changes made prior to or if they were clear enough to be made conditions of approval. With that said, it would help a great deal if you could put together a clear letter or clearer e-mail outlining the changes we talked about. I don't think your email is not clear and concise. I have learned that Planning and Zoning likes it is best if the list of changes comes directly from City staff rather than the applicant because some (other) applicants may choose to leave a few things out. The only other way to do this would be to have myself or Bryan pen a clear letter and then get you all to sign off on it and then review that with Scott G. to see if changing the plans is necessary or if it could be made conditions.

I just checked my old email account and saw Jen's email with the lighting spec's and have forwarded them to Bryan and yes we have the ridiculously expensive grass seed mixture specs (sorry Deryk).

Lastly, it would be great if one of you could come to the meeting on the 21st. There are several folks in the neighborhood who think that DPW and P&R have not had any input on this project and that you are just letting us do what we want....which we all know is the furthest thing from the truth. I have told them that you all have been a pain in the ass but they don't believe me. Ok, so I am kind of joking with you all being a pain in the ass but surely you have not simply stood on the sideline and accepted everything we have proposed. The DRB needs to know that because these folks will be at the DRB meeting and they are going to throw your departments under the bus.

Scott, in regards to making changes, you mentioned that I would only need one set. As you know the set is @ 70 sheets. Would I only need to submit the sheets that were changed? Also, the requested changes we are talking about are all very minor.

Thank you all very much,

Patrick

From: Warren Spinner [mailto:WSpinner@burlingtonvt.gov]
Sent: Tuesday, March 24, 2015 8:07 AM
To: Patrick O'Brien
Cc: Jesse Bridges; Deryk Roach; Jen Francis; Scott Gustin
Subject: 140 Grove St

Hi Patrick,

Planning and Zoning is asking us for final comments on the 140 Grove St project. This is in preparation for the April 21st DRB Meeting.

Do you have an updated plan that shows our suggested changes from our meeting 2 weeks ago with Laura Wheelock (DPW) Jen Francis and myself?

We discussed changes on plan sheet S8 to the parking lot area and adjustments to the pedestrian path and crossing to the parking lot. Jen provided details and specifications for the Parking lot lights that need to be included in the plans. We also provided grass seed mix specifications to be included on plan sheet S15.

We would like to see that our comments have been added to the development plans. Please let me know if you have any questions.

Thanks, Warren



Warren Spinner, Certified Arborist

City Arborist

Burlington Parks, Recreation & Waterfront

645 Pine Street

Burlington, VT 05401

802-862-8245



@BTVparks

Wetlands

Gilman & Briggs Environmental, Inc.

1 Conti Circle, Suite 5

Barre, Vermont 05641

Tel: (802) 479-7480; FAX: (802) 476-5610

gbenvironmental@earthlink.net

RECEIVED

FEB 23 2015

DEPARTMENT OF
PLANNING & ZONING

22 January 2014

Patrick O'Brien
Patrick O'Brien Development LLC
200 Old Farm Road
South Burlington, VT 05403

Subject: Grove Street Wetlands

Dear Patrick,

This is to summarize my findings regarding wetlands at the site of the proposed Grove Street Apartments, and their relevance to the Burlington Comprehensive Development Ordinance. There are five wetlands on or near the proposed site of the Grove Street Apartments – two associated with Centennial Brook and near or three adjacent to the Winooski River.

These wetlands were delineated in August 2014, using methodology found in the 1987 US Army Corps of Engineers Wetland Delineation Manual and 2009 Regional Supplement, as required by the Vermont Wetland Rules, and surveyed/mapped by O'Leary-Burke Civil Associates.

Wetland A is a riparian wetland that has formed in an area where the bank of Centennial Brook has slumped, allowing wetland vegetation such as sensitive fern and glossy buckthorn to become established. The 100-foot buffer zone around this wetland extends into the area around proposed Building F and its parking garage entrance ramp, but calculations indicate that impervious acreage in this buffer zone will be reduced by 0.23 acres (from 0.32 (existing) to 0.09 (proposed)).

- a. **Water storage for floodwater and stormwater:** Not applicable; this wetland has no capacity to store water.
- b. **Erosion and sediment control through binding and stabilizing the soil or shoreline:** Not applicable; this wetland is on unstable ground and as such does not contribute to erosion or sediment control.
- c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge:** Although under existing conditions this wetland may receive runoff from industrial activity upslope, it is not of a size or wetland type that might perform this function.
- d. **Fisheries habitat:** Not applicable.
- e. **Wildlife habitat:** Not applicable; although the wetland lies in a travel corridor along Centennial Brook, the fact that it is a wetland is irrelevant to this function.
- f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable.

- g. **Habitat for rare, threatened or endangered species:** Not applicable.
- h. **Education and research in natural sciences:** Not applicable.
- i. **Recreation and economic benefits:** Not applicable.
- j. **Open space and aesthetics:** Not applicable.

Wetland B is another riparian wetland at the mouth of Centennial Brook, well away from any proposed activity regarding this project.

Wetland C is on the floodplain of the Winooski River, dominated with silver maple and box elder over ostrich fern, sensitive fern, reed canary-grass, and jewelweed. All proposed development lies outside the 100-foot buffer zone of this wetland.

- a. **Water storage for floodwater and stormwater:** Although this wetland is in the Winooski River floodplain, it does not significantly contribute to this function because of its size.
- b. **Erosion and sediment control through binding and stabilizing the soil or shoreline:** While this wetland is adjacent to the Winooski River, it provides no more erosion or sediment control than "upland" shorelines nearby.
- c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge:** Because it is in a depositional area, during flood events this wetland likely intercepts and retains sediments carried by the river.
- d. **Fisheries habitat:** This wetland lies well above the normal river level and therefore does not contribute to this function.
- e. **Wildlife habitat:** The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river.
- f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable; although mapped in the Vermont Natural Resource Atlas as an S3 (uncommon) high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest, this wetland does not have the characteristics of that community.
- g. **Habitat for rare, threatened or endangered species:** Not applicable.
- h. **Education and research in natural sciences:** Not applicable.
- i. **Recreation and economic benefits:** Not applicable.
- j. **Open space and aesthetics:** Not applicable, based on its size.

Wetland D is a depression on the terrace above the river bank. Dominant vegetation includes reed canary-grass, grass-leaved goldenrod, purple loosestrife, jewelweed, riverbank grape, and groundnut under a canopy of box elder. All proposed development lies outside the 100-foot buffer zone of this

wetland except for a split rail fence to be installed at the request of the Burlington Conservation Committee.

- a. **Water storage for floodwater and stormwater:** Although this wetland is in the Winooski River floodplain, but because of its small size, it does not significantly contribute to this function.
- b. **Erosion and sediment control through binding and stabilizing the soil or shoreline:** While this wetland is adjacent to the Winooski River, it provides no more erosion or sediment control than "upland" shorelines nearby.
- c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge:** Because it is in a depositional area, during flood events this wetland likely intercepts and retains sediments carried by the river.
- d. **Fisheries habitat:** This wetland lies well above the normal river level and therefore does not contribute to this function.
- e. **Wildlife habitat:** The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river.
- f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable; although mapped in the Vermont Natural Resource Atlas as an S3 (uncommon) high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest, this wetland does not have the characteristics of that community.
- g. **Habitat for rare, threatened or endangered species:** Not applicable.
- h. **Education and research in natural sciences:** Not applicable.
- i. **Recreation and economic benefits:** Not applicable.
- j. **Open space and aesthetics:** Not applicable, based on its size.

Wetland E is a large floodplain forest upstream (to the east) of the proposed development, extending into South Burlington. Although this wetland is entirely off the subject property, the 100-foot buffer extends as far as proposed Building B and its parking lot. Proposed impervious acreage within this buffer zone will be 0.02 acres, which represents a 0.12 acre reduction from the existing 0.14 acres.

- a. **Water storage for floodwater and stormwater:** This wetland is the first significant floodplain area on the Winooski as it enters Burlington, and because of its location on the outside of a river bend, very likely intercepts, slows and stores floodwaters.
- b. **Erosion and sediment control through binding and stabilizing the soil or shoreline:** This wetland receives the full force of the river during high water events, and is able to withstand erosive forces by absorbing and ameliorating currents in its dense vegetation.

- c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge:** Because it is in a depositional area on the outside of broad bend in the river, this wetland intercepts and retains sediments and detritus. There is evidence that material that is washed downstream is carried far into this wetland during high water events.
- d. **Fisheries habitat:** This wetland likely provides fisheries habitat during high water events when it is flooded.
- e. **Wildlife habitat:** The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river. In addition, in combination with Centennial Woods, it is an important part of a 200+ acre wooded section of the city that provides habitat for a diverse wildlife community.
- f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** This wetland comprises about 13 acres, and in combination with wetlands across the river, constitutes a significant wetland complex. This wetland is classified as an S3 (uncommon) but high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest.
- g. **Habitat for rare, threatened or endangered species:** Not applicable.
- h. **Education and research in natural sciences:** Not applicable.
- i. **Recreation and economic benefits:** Not applicable.
- j. **Open space and aesthetics:** The wetland is visible from the river and from the southbound Interstate 89 Bridge, and although it is perceived as forest rather than wetland, it represents an aesthetic natural community in an otherwise urban environment.

Summary

The buffer zones of two wetlands on or near the property extend into areas proposed for development: a small slump area on the bank of Centennial Brook and a large floodplain forest to the east. The first of these wetlands performs no functions at a significant level, but the second, larger one is significant for water storage for floodwater, erosion and sediment control, surface and groundwater protection, wildlife habitat, exemplary natural community, and open space and aesthetics. This wetland is shown on the Vermont Natural Resources Atlas as covering over 19 acres, but the on-site delineation shows that it does not extend as far downstream as shown on the Atlas and probably measures about 13 acres.

The proposed project will have no direct impacts on jurisdictional wetlands, but will impinge on wetland buffer areas in two places:

1. Near Wetland A (on Centennial Brook) where proposed actions will impact 0.09 acres, but will result in a reduction of 0.35 acres of impervious surface, and
2. Near Wetland E (the large wetland) where proposed actions will impact 0.12 acres.

Patrick O'Brien
22 January 2014
Page 5

Because there will be a reduction in the amount of impervious surface area, and because stormwater treatment and erosion control measures will be employed, neither of these two impact areas will negatively affect the wetlands and their protected functions.

Sincerely,

A handwritten signature in black ink, appearing to read "Errol C. Briggs". The signature is written in a cursive style with a large, prominent initial "E".

Errol C. Briggs

Inclusionary

Scott Gustin

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Monday, April 13, 2015 9:04 AM
To: Scott Gustin; Brian Pine
Subject: Inclusionary
Attachments: Grove St 140 (2) Prel plat approval.doc; Construction phasing plan.pdf

Hello Scott, I was worried about this all weekend and so I thought I should review everything this morning to make sure that I am on proper footing heading into the upcoming board meeting, with that, I offer the following:

Condition 8 of the Preliminary Approval states:

Prior to final plat application, a revised project phasing schedule shall be provided that clearly depicts what will be constructed and when it will be constructed. The phasing schedule shall be consistent with the inclusionary housing requirements of Sections 9.1.18 & 9.1.19 of the CDO. If the inclusionary housing units are to be contained within a single building as presently proposed, the inclusionary housing units must be constructed first. Written acceptance of the proposed inclusionary housing shall be obtained from the city's Housing Trust Fund. The phasing schedule must also provide for the duplex housing units to be built early during the project construction.

Section 9.1.18 & 9.1.19 read as follows:

Sec. 9.1.18 DRB Review of Proposal for Phasing

Proposals for projects to be constructed in phases shall be reviewed as a component of the initial project review and shall be included in DRB conditions of approval. A schedule setting forth the phasing of the total number of units in a covered project, along with a schedule setting forth the phasing of the required inclusionary unit(s), shall be presented to the DRB for review and approval as part of the permitting process, for any development subject to the provisions of this article. If phasing is not included as part of the review process, no phasing of the inclusionary units shall be allowed. If a covered project is approved to be constructed in phases, the requirements of the following section shall be applicable to each such phase.

Sec. 9.1.19 Timeline for Availability/Phasing of Inclusionary

Units for Issuance of Certificate of Occupancy

Inclusionary units shall be made available for occupancy on approximately the same schedule as a covered project's market units, except that certificates of occupancy for the last ten percent (10%) of the market units shall be withheld until certificates of occupancy have been issued for all of the inclusionary units; except that with respect to covered projects to be constructed in phases, certificates of occupancy may be issued on a phased basis consistent with the conditions of approval set forth by the DRB in Sec. 9.1.18.

I also think that it is important to understand Section 9.1.7, which states:

Sec. 9.1.7 Certificate of Inclusionary Housing Compliance

Notwithstanding any other provision of this ordinance, no certificate of occupancy for a project covered by this chapter shall be granted unless and until a Certificate of Inclusionary Housing Compliance has been issued by the Manager of the city's Housing Trust Fund.

In regards to breaking this down to determine if I need to submit anything to you I am going to take the safe route and explain how we are meeting these sections as well as the DRB's Preliminary Condition. First, it is important to note that at this point we do not plan on having all of the IZ units in 1 building, rather they will be interspersed around the project, but initially they will be made available at the same time as the market rate ones become available. In other words, we are proposing 232 units, 15% of which (35) will be made available at the same time as the first 35 market rate rentals. In the event that all of the Inclusionary Units are in the same building, that building will come on line first and our phasing plan would be adjusted accordingly.

1. We have submitted a project phasing schedule (see attached) with our Final Application that clearly depicts what we will be building and the anticipated sequence and timeline.
2. Assuming the Final Condition of Approval relating to Section 9 will mirror the Preliminary Approval, one can therefore see that we are proposing to construct the phase 1A (three duplex buildings) and 1B (22 unit building) at the same time and we are also proposing that they become available to renters at the same time. That means, that at the end of Phase 1A and 1B, 28 units will be occupied and 14 of those will be Inclusionary. The next two phases (2A & 2B) consist of 39 total unit and 20 of those will be Inclusionary which will bring the total to 34. The next phase (3A) is 21 units, so as soon as the Phase 3A building becomes available for occupancy one of the first two units will be Inclusionary. At that point, the inclusionary requirement for timing of occupancy and required # of units will be met.

Please let me know if this clarifies how we propose to meet the above listed requirements.

Lastly, it would be nice if the timing condition could be amended to read that the last 50% of the Inclusionary Units need to be offered prior to the 200th unit being occupied.

Thank you,

Patrick

Patrick O'Brien
S.D. Ireland Companies
193 Industrial Avenue
Williston, VT 05495
Office 802-863-6222 x 242
Cell 802-373-0096
e-mail pobrien@sdireland.com

Scott Gustin

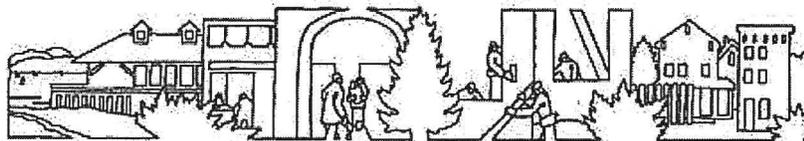
From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Tuesday, April 14, 2015 1:12 PM
To: Scott Gustin
Subject: FW: Inclusionary
Attachments: Grove St 140 (2) Prel plat approval.doc; Construction phasing plan.pdf

Scott, I just received your message and question. This is what I meant and here is the reasoning behind the statement.

It would be best if one of the non profits own the inclusionary units, I don't think anyone would argue that point. It is also pretty easy math to determine that the rental or sale of inclusionary units is a losing (\$) proposition due to the combination of soft and hard costs of the units. Our preliminary approval gives us two options, the first is to construct a building that would house all (or most) of the inclusionary units but if we do it that way, that building needs to be first. If you work that into the financial proforma, the lenders won't touch the project, they all say that from a financial standpoint the Inclusionary units should be built in the second half of the project. We have explained to all of them our requirements and hence our reasoning to go with our second option which is to incorporate them into the first 70 units that we built on a 1:1 ratio (for each Inclusionary built we get a market rate unit). While the lenders still see this as a losing proposition, it is our only option unless we ask the DRB to amend that condition to say that the second half of the inclusionary units need to be built before the 200th c.o. is obtained. My sentence regarding putting them in one building simply states that if something arises and we find a way to build most of the inclusionary units in one building, than we would have to change @ our phasing plan accordingly. For example, we could start phase 2B (33 units) at the same time we start phase 1A and 1B. We would just have to make sure that the 33 units in phase 2B and one of the duplex's in phase 1A were occupied first under and were Inclusionary.

Clear as mud?

Patrick



COMMUNITY & ECONOMIC DEVELOPMENT OFFICE

ROOM 32 • CITY HALL • BURLINGTON, VERMONT 05401
(802) 865-7144 • (802) 865-7142 (TTY) • (802) 865-7024 (FAX)

TO: Scott Gustin, Senior Planner

FROM: Brian Pine *B.P.* Housing Consultant

DATE: April 13, 2015

RE: Certificate of inclusionary housing compliance for 140 Grove St.
(SD Ireland property)

I am writing to certify that this project is in compliance with the requirements of Article 9, Inclusionary Zoning (IZ), and, upon final completion, will be eligible for a partial waiver of impact fees per the City of Burlington Impact Fee Administrative Regulations.

The Owner will execute standard Housing Subsidy Covenants, which are subject to final review and approval by CEDO, to restrict both the initial rental price and the ongoing price on 15% of the planned 232 units - 35 units. In order to ensure an adequate distribution of IZ units by household size, the bedroom mix of the IZ units shall be the same ratio as the bedroom mix of the market rate units. The Housing Subsidy Covenant that will be executed for each of these units will ensure the initial affordability of the 35 required inclusionary units and shall preserve the affordability of these units through rent restrictions for 99 years.

Due to the affordability of the 35 IZ units, the project meets the requirements for a partial waiver of impact fees. With the 35 IZ units being perpetually affordable to households with incomes at or below 75% Area Median Income, this project is entitled to a 50% impact fee waiver on the gross floor area of those 35 units. The precise amount of the impact fee waiver will be calculated when the applicant is required to submit payment.

Please contact me if you have any questions about the information in this memo.



Office of Engineering
645 Pine Street, Suite A
Burlington, VT 05402
802.863.9094 P
802.863.0466 F
802.863.0450 TTY
<http://www.burlingtonvt.gov/DPW/>

Memo

Chapin Spencer
DIRECTOR OF PUBLIC WORKS

Norman Baldwin, P.E.
CITY ENGINEER

Date: April 9, 2015
To: City of Burlington Planning & Zoning
Patrick O'Brien - SD Ireland
From: Laura Wheelock P.E.
Public Works Engineer
Subject: SD Ireland Grove Street Development



This memo is to certify the review of the work being proposed within the right-of-way for the above mentioned development/project. The review and comments are based on the 100% plan set as received February 18, 2015.

As reviewed by the Department of Public Works (DPW) we find the following:

1. The proposed improvements including but not limited to new sidewalk throughout the project area meets City Standards.
2. Improvements at the pedestrian crossings of Grove Street in the vicinity of the park and crossing north of the park as shown on the 100% plans are acceptable with signage, RRFBs, and bumpout for northern crossing.
3. DPW has reviewed the traffic plan with update provided 3/25/15 and recommendations. DPW has no further comments and accept the recommendations in the study.
4. At the north end of Grove Street the traffic study recommended moving the no parking here to corner sign 25'-0" to the south. The developer will be required to submit a traffic request to DPW for this recommendation which will need to be reviewed and approved by the DPW commission. DPW does not required approval of this recommendation prior to initiation of the project as it was only a recommendation of the study and not a requirement. DPW will require the developer to at least make the request.

April 9, 2015

RE: SD Ireland Grove Street Development

5. Clarifications to be made to the plans include:
 - a. Updating the crosswalk marking to match City Standard – This will be a 24" Paint with 24" clear space block pattern.
 - b. Updating the Car Parking and Roadway Area Detail to Match City Standard – This will be 3" of Asphalt, with 4-6" Fine Graded Crushed Stone, with 12" Dense Graded Crushed Stone. Typical Asphalt courses are 1" of Type IV over 2" of Type III.
 - c. Widening of the crosswalk ramps at the crosswalk at the park to be 6'-0", widening should happen to the south side of the crosswalk shown in the plans.
 - d. At the crosswalk from the parking lot to the park on the west side of the road, at minimum one tree should be removed to improve the alignment of the park path with the proposed sidewalk.
 - e. In the dividing island between Grove Street and the parking lot adjacent to the sidewalk DPW and Parks have asked that a permeable paver either open and filled with pea stone or closed and permeable be used in place of any vegetation. This treatment should also be considered in the narrow wedge that is created on the west side of the road between the proposed sidewalk and the new path leading into the Park.
 - f. The proposed sidewalk where the vehicle will cross the sidewalk should be constructed with an 8" thick section to meet DPW's standard at commercial drives. This includes, but is not limited to the drives at:
 - i. Garden Street
 - ii. Parks vehicle access into Schmanska Park
 - g. At the southern end of the project DPW has asked that the crosswalk markings at the 284 Grove Street development be removed from the project; as painting those crossings does not meet the DPW warrant for painted crosswalk.
 - h. At the look out structure the curb cut shown for bicycle access should either be removed as we do not require it be provided, or have a tapered approach so it allows for proper bicycle movement and does not resemble a curb ramp typical to a crosswalk.
6. DPW has asked that property lines and ROW boundaries be added to the all the plan sheets to clarify the work that is occurring in the various areas.
7. DPW is concerned with the placement of stairs within the ROW at Units B and C. It is our preference that no stairs be placed within the ROW should that area be required in the future. DPW is asking the DAB and DRB take our concerns regarding the placement of permanent structures in the ROW into consideration and remove the requirement placed on the developer to provide these connections at this location.

April 9, 2015

RE: SD Ireland Grove Street Development

DPW is in favor of providing a single pedestrian connection from to the north of Unit D that would connect the development's sidewalk network directly to the sidewalk on the east side of Grove Street.

Should a connection out the back of the Units be remain as a requirement the stairs should either:

- a. be pulled back so they do not encroach on the ROW
- b. connect the sidewalk to the stairs at Unit A and D and eliminate the stairs out of the units

Should none of these alternatives be found acceptable the developer will be required to enter a license with the City for the infrastructure that exists in the ROW. The lease will have a 10 year renewal with a 6 month revocation period should DPW require use of the ROW in this location. The developer will also be required to fully maintain the infrastructure within the ROW. License agreements are subject to approval of the City Council who will either approve or reject the use of the ROW and the license.

If you have any questions please contact me directly at LWheelock@burlingtonvt.gov or 802-540-0397.

RECEIVED
MAR 05 2015

DEPARTMENT OF
PLANNING & ZONING
P.O. Box 849
BURLINGTON, VT
05402
(802) 863-9094 P
(802) 863-0466 F

Chapin Spencer
PUBLIC WORKS DIRECTOR

Norman J. Baldwin, P.E.
CITY ENGINEER



March 4, 2015

Patrick O'Brien
c/o S.D. Ireland Brothers Corporation
P.O. Box 2286
So. Burlington, VT 05407

Re: Water/Sewer Capacity for Garden Street Apartments at 100 Grove Street

Dear Mr. O'Brien,

This letter is to inform you, your client, the State of Vermont Environmental District and other interested parties that the City of Burlington's water and wastewater facilities have sufficient capacity to handle additional flows associated with a large residential project at the above address. Using the State Environmental Protection Rules, you have calculated the water and sewer demands to be 42,327 gpd (gals/day) and 39,092 gpd, respectively. Your calculations are provided on the next page.

Flow from this area is treated at our East Wastewater Plant on Riverside Avenue. It is important to note that this letter only addresses treatment plant and not distribution or collection system capacities. We have and are continuing to work with you and your client to address water supply and sewer collection system issues.

This letter is good for two (2) years from the date of writing. If this letter is not filed with the proper offices, or if the proper permits are not obtained within that year, you will need to reapply. Any changes in flow estimates or property usage also requires reapplication. Please feel free to call me at 865-7258 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "S. T. Roy".

Steve Roy, P.E.
Project Engineer
Burlington Public Works



O'Leary-Burke Civil Associates, PLC

CIVIL ENGINEERING | REGULATORY AND PERMIT PREPARATION | LAND SURVEYING | CONSTRUCTION SERVICES | LAND USE PLANNING

February 24, 2015

RECEIVED
FEB 24 2015

DEPARTMENT OF
PLANNING & ZONING

Megan Moir
Stormwater Plangineer
Burlington Public Works Department
234 Penny Lane
Burlington, VT 05401

Re: Stormwater Discharge Plan
SD Ireland - 140 Grove Street
Burlington, VT 05401

Dear Megan:

We are writing on behalf of SD Ireland (c/o Scott Ireland) to request a letter of approval (in order to submit the project for final plat review) for the Stormwater design of the proposed development at 140 Grove Street, Burlington. A state individual stormwater discharge permit has already been authorized (4773-INDS).

1. Project Description

The project is called "Ireland Property - 140 Grove Street". The project will involve the decommissioning of the SD Ireland concrete batch plant at 140 Grove Street, Burlington and the construction of a new 232 unit residential development complex on the 20.79 acre site. The proposed use of the site will reduce the overall impervious surfaces by 3.59 acres from 10.21 acres to 6.62 acres (35% reduction). This includes connecting all of the impervious surface runoff to the impaired Centennial Brook watershed (currently 3.67 acres) to the proposed stormwater system during large storm events. The project will also include the removal of a 60ft long culvert along Centennial Brook located at the existing northern entrance to the concrete facility. The removal of the culvert is at the request of the Burlington Conservation Board.

The parcel is bound by several residential buildings across Centennial Brook, the Winooski River, Ethan Allen Park, and The University of Vermont. The parcel is currently the site of the SD Ireland concrete batch plant. All existing stormwater on the site generally flows directly to Centennial Brook/Winooski River or to an existing infiltration pond located along the eastern boundary of the site.

The Chittenden County Soil Survey classifies the on-site soils primarily as Fu - fill land and Le - limerick silt loam. The limerick silt loam soils are classified as a class C soil. Due to the nature of the sites current use the proposed development area soils are generally made up of coarse fill soils suitable for industrial activity. All of the on-site soils were modeled as HSG Class C soils for the HydroCAD analysis.

2. Existing Conditions

The parcel is currently being used as the SD Ireland concrete batch plant. The site varies in topography; 68% - slopes less than 0.15, 20% - slopes greater than 0.30, and 12% - slopes between 0.15 and 0.30. The on-site soils were modeled as HSG Class C soils for all HydroCAD analysis. The site currently has approximately 10.21 acres of impervious coverage.

3. Existing Stormwater System

There is an existing stormwater infiltration pond located along the eastern property boundary that is being used to collect the runoff for approximately 5.44 acres of the existing impervious surfaces. The remaining impervious surfaces drain off the site into Centennial Brook (3.67 acres) and the Winooski River (1.10 acres).

Watershed	Impervious Acres	Drainage Path
Centennial Brook	3.67	Overbank directly to Centennial
Winooski River	1.10	Overbank directly to Winooski
Winooski River	5.44	Existing Stormwater Infiltration Pond

Total: 10.21 acres

4. Receiving Water

The site is divided into six (6) sections based on specific combinations of the following criteria; Dis-Connected Impervious vs Connected Impervious, Original vs. Proposed Centennial Brook Watershed, and Original vs. Proposed Winooski River Watershed. The dis-connected impervious areas have been designed and modeled to show, at a minimum the 0.9" water quality storm (WQv) can be sufficiently stored without the use of any overflow structures connected to the system. This is done by the use of sheet flow and rain gardens to provide as much recharge back into the original watersheds as possible. When a storm event larger than the water quality storm of 0.9" takes place, the sites watershed boundary shifts towards being completely within the Winooski Watershed. The watershed boundary shifting is due to the utilization of the overflow devices by the infiltration features within the Centennial Brook Watershed.

Connectivity	Original Watershed	≤ WQv Storm Watershed	> WQv Storm Watershed	Acres
Disconnected	Centennial	Winooski	Winooski	0.06
Disconnected	Winooski	Winooski	Winooski	1.74
Disconnected	Winooski	Centennial	Centennial	0.34
Disconnected	Centennial	Centennial	Centennial	1.40
Connected	Centennial	Winooski	Winooski	0.88
Connected	Winooski	Winooski	Winooski	2.20

Total: 6.62

5. Proposed Stormwater System

The proposed stormwater system is comprised of a network of yard drains, rain gardens, grassed swales, and catch basins that all drain to the proposed upgraded detention pond (P-3), formally the infiltration pond, located along the eastern property boundary. All of the proposed 6.62 acres of impervious surfaces will be captured and treated by the new system with no direct runoff to Centennial Brook or the Winooski River. The detention pond (72,263 ft³) is designed with a sediment forebay (12,375 ft³) that is easily accessible for maintenance. The proposed stormwater design integrates flat areas with sheet flow and grassed swales to provide sustainable pretreatment/groundwater recharge wherever possible.

The following information summarizes the project:

- a. Project Site - Point of Interest 13.95 acres
6.62 acres of impervious
- b. The project was modeled as a cold water habitat.
- c. Demonstrate Compliance with each of the criteria:
 - i. Water Quality Treatment Standard

The Point of Interest is defined as follows:

S/N 001 - Contains all of the disturbed area associated with the project (6.62 acres of impervious) to estimate the Detention Pond (P-3) performance. The Water Quality standard is being met by containing 50% of the WQ_v event in a permanent pool at elevation 160' (elevation of 1.0" low flow orifice). The sediment forebay capacity exceeds 10% of the WQ_v event.

The following observations can be derived from the model:

Proposed Site

Drainage Area: 13.95 acres (607,688 SF)

Impervious: 6.62 acres (288,170 SF)

$WQ_v = 21,744 \text{ ft}^3$

50% WQ_v Permanent Pool Elevation: 160.0 ft (storage = 10,872 ft^3)

ii. Groundwater Recharge Treatment Standard

The recharge standard is met by using the percent area method to provide the adequate recharge necessary in order to preserve existing water table elevations. It should be noted that the project is reducing the amount of impervious surfaces on the site by 3.58 acres. Rooftop runoff from three of the large apartment buildings were modeled to show that the recharge standards are being met for class "C" soils. The grass channels were designed to meet the WQ_v standards in order to provide acceptable groundwater recharge.

$Re_a = (F)(A)(I)$

$Re_a = 0.67 \text{ acres}$

$F = .10$ (HSG Class C)

$A = 20.79 \text{ acres}$

$I = 32\%$

Recharged Impervious Coverage:

Grassed Channel #1 (O-3)

Area: 0.49 acres

Impervious: 0.29 acres

Swale Dimensions: 5' wide bottom x 1' deep channel x 170' long

10 minute residence time required: 13.9 min provided - met

Grassed Channel #2 (O-3)

Area: 0.35 acres

Impervious: 0.29 acres

Swale Dimensions: 5' wide bottom x 1' deep channel x 170' long

10 minute residence time required: 14.6 min provided - met

Grassed Channel #3 (O-3)

Area: 0.25 acres

Impervious: 0.20 acres

Swale Dimensions: 5' wide bottom x 1' deep channel x 120' long

10 minute residence time required: 11.4 min provided - met

$$Re_a = 0.78 \text{ acres } (0.29 \text{ acres } + 0.29 \text{ acres } + 0.20 \text{ acres}) > 0.67 \text{ acres}$$

Along with the grassed swales modeled here to show they meet the WQv standards the project utilizes multiple rain gardens, additional grassed swales, and sheet flow techniques for even further groundwater recharge.

iii. Channel Protection Standard (1-year)

The channel protection volume is met by the design of the retrofitted detention pond. The small low flow orifice was sized to most closely model a 720 min center of mass detention time for the 1-year storm.

The existing site currently has 10.21 acres of impervious coverage draining to three different locations; the Winooski River, Centennial Brook, and the existing infiltration pond on the site. The 3.67 acres of impervious flowing to Centennial Brook has a 1-year pre-development peak flow of 12.29 cfs. The 1.10 acres of impervious flowing directly to the Winooski River has a 1-year pre-development peak flow of 4.03 cfs. The 5.44 acres of impervious flowing to the existing infiltration pond does not currently have an outlet so its pre-development discharge is 0.00 cfs, see model. By taking a conservative approach to the pre-development flows; the post-development flows were compared to the pre-development runoff only to the Winooski River (4.03 cfs). This was done because the proposed post-development system will only discharge directly to the Winooski River in large storm events. This design method shows the proposed stormwater system will not exceed the peak flows previously discharged to the Winooski River. The following summary is derived from the HydroCAD model:

Detention Pond (P-3)	
Predevelopment Flow	3.97 cfs
Post Development Flow	19.46 cfs
Routed Post Development Flow	0.36 cfs
Center of Mass Detention Time	742.30 min

iv. Overbank Flood Protection Standard (10-year)

The channel protection volume is met by the design of the retrofitted detention pond. The same predevelopment flow approach for the 10-yr overbank flood protection standard was used as the 1-yr standard. The following summary is derived from the HydroCAD model:

Detention Pond (P-3)

Predevelopment Flow	6.91 cfs
Post Development Flow	36.88 cfs
Routed Post Development Flow	2.86 cfs

v. Extreme Flood Protection Standard (QP100)

This criteria is not applicable since the new impervious coverage is less than 10 acres.

d. Manner of Discharge:

S/N 001: Stormwater runoff from roofs, driveways, parking areas, and sidewalks flows to a network of yard drains, rain gardens, grass channels, and catch basins where it is either infiltrated to the Centennial Brook watershed or routed to an extended wet detention pond discharging via controlled outlet structure to a wetland adjacent to the Winooski River.

Please find the following attachments for your review:

- USGS Map & Soils Map;
- Impervious Coverage and Breakdown;
- Pre-Development & Post-Development Flow Patterns;
- Electronic Version of HydroCad Model;
- Pertinent Plans Set;
- Annual Inspection Form;

We look forward to working with you on this project. If you have any questions or need additional information please let me know.

Sincerely,


Bryan Currier, E.I.

Scott Gustin

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Tuesday, February 24, 2015 3:24 PM
To: Scott Gustin
Cc: Bryan Currier; Steve Roy
Subject: FW: Grove Street Water/Sewer Review

Hello Scott, if you follow this email trail you will see that Steve Roy has a few minor requests and is ok having them be conditions of approval. What do you think?

His original comments are in black and our reply is in blue and his final comments are in red and those are the ones I am referring to.

Patrick

From: Bryan Currier [mailto:bcurrier@olearyburke.com]
Sent: Tuesday, February 24, 2015 3:21 PM
To: Patrick O'Brien
Subject: FW: Grove Street Water/Sewer Review

Patrick,

Steve Roy has submitted some minor revisions he would like us to correct on the water and sewer detail sheets. He said that he was alright with having the changes be made part of our conditions of approval for the final application, since we have already submitted to the City.

Thanks,
Bryan

From: Steve Roy [mailto:SRoy@burlingtonvt.gov]
Sent: Tuesday, February 24, 2015 3:10 PM
To: Bryan Currier
Cc: Paul O'Leary; pjobrien66@comcast.net; Norm Baldwin
Subject: RE: Grove Street Water/Sewer Review

Sure. As long as it makes into the construction-ready set of drawings.

Steve

From: Bryan Currier [mailto:bcurrier@olearyburke.com]
Sent: Tuesday, February 24, 2015 3:08 PM
To: Steve Roy
Cc: Paul O'Leary; pjobrien66@comcast.net; Norm Baldwin
Subject: RE: Grove Street Water/Sewer Review

Good Afternoon Steve,

Unfortunately, the plan set has already been submitted for Final Approval. Can we make these changes a condition of approval? We are expecting to have a few conditions from the board that are going to have to incorporate into the plans.

Let me know if you have any questions

Thanks,
Bryan

From: Steve Roy [<mailto:SRoy@burlingtonvt.gov>]
Sent: Tuesday, February 24, 2015 2:33 PM
To: Bryan Currier
Cc: Paul O'Leary; pjobrien66@comcast.net; Norm Baldwin
Subject: FW: Grove Street Water/Sewer Review

Hi Bryan,

Sorry this took so long. My DRAFT comments below are in RED.

Thanks,
Steve

Steve Roy, PE
Burlington Public Works
53 Lavalley Lane
Burlington, VT 05401
T: 802.865.7258
F: 802.864.7653

From: Bryan Currier [<mailto:bcurrier@olearyburke.com>]
Sent: Thursday, January 15, 2015 9:10 AM
To: Steve Roy
Cc: Paul O'Leary; Guillermo Gomez; Norm Baldwin; Patrick O'Brien (pobrien@SDIRELAND.COM)
Subject: RE: Grove Street Water/Sewer Review

Good Morning Steve,

Please find below our responses below to the Burlington Public Works review of the water/sewer systems for the proposed 243 unit apartment complex at 140 Grove St.

Water Comments:

1. The Utility Plan (Sheet S3) calls for C900 pipe but the Water Detail (Sheet S16) has a DI pipe specification under PVC Pipe and DI fittings. Change S16 sheet to include the C900 DR14 (305 psi) PVC pipe spec and C907 for molded PVC fittings. Include tracer wire, tracer wire test stations (if valves are >500' apart) and magnetic warning tape stating "Caution – Buried Water Line Below" approximately 3' below grade. We use tracer wire and test stations from Copperhead Industries.

Sheet S16 – Water Details has been updated to include the C900 DR14 (305 psi) PVC pipe spec and C907 for molded PVC fittings. The typical water trench detail has been updated to include tracer wire from Copperhead Industries as well as warning tape. Tracer wire test station were not required because the valves are <500' apart.

Sheet S16 still contains references to DI pipe in Section 1.2 and 1.8 . Hydrant detail still shows DI pipe as well. Change thrust block on hydrant elbow to 2'x2'x3' precast.

2. Add/Move valves to have valves on each leg of a tee.

Sheet S3 – Utility Plan has been updated to have gate valves on each leg of the tees proposed with the new 8" C900 water main. **OK, great.**

3. Sprinklered building I needs a fire hydrant within 100' per NFPA 1.

Sheet S3 – Utility Plan has been updated to show a proposed hydrant within 100' of Building I. The hydrant is proposed to be located west of the building. **OK, great.**

4. Hydrant doesn't meet City specifications. I will send our detail sheet with this review sheet.
Sheet S16 – Water Details has been updated to have the hydrant detail meet City specifications.

Section 1.6 on fire hydrant does not include City requirements. We've worked with the local suppliers to develop a Kennedy "Burlington Spec" hydrant. Please just reference that.

5. Add mechanical restraint at all fittings in addition to thrust blocking.

Sheet S16 – Water Details has been updated to have the thrust block detail include mechanical restraint at all fittings.

Section 1.3 (incorrectly called 1.2) on Sheet S16 only references retainer glands on vertical bends and not everywhere as you said above. Also PVC pipe requires a restraint specifically for PVC pipe. Reference Megalug 2000PV or equal.

6. See Burlington Water Details Sheet for valve specification.

Sheet S16 – Water Details has been updated with a valve specification that meets the city's standards.

As per our Detail Sheet all valves in Burlington are open right (clockwise). Please add to Section 1.4.

7. Agreements and easements are required for the off-site water line extension.

All of the agreements and easements have been obtained for the off-site water line extension. OK, great.

8. Even though our hydraulic model says the water main extension from Colchester Ave is sufficient, the cost of upsizing this main to 10" is negligible and would provide an added factor of safety.

The proposed water main (C900 PVC) will have an inner diameter of at least 8". Fine.

9. Consider elimination of dead ends by looping water mains around the site.

Due to the added expense and expected water pressures we are not proposing to loop the water mains around the site. Fine.

Sewer Comments:

1. DPW will take ownership, operation and maintenance of the proposed pump station if the following conditions are met:

It is our intent to have the City of Burlington take ownership, operation and maintenance of the proposed pump station. Fine.

a. The proposed Multitrode pump controller is replaced with our standard Siemens/Evoqua LC150 duplex pump controller with A1000 pressure transducer and backup float.

Sheet S14 – Pump Station Details has been updated to have the controls replaced with the city's standard controls with transducer and backup float. OK, great.

b. A Mission Communications M-800 Real Time monitoring system be installed and wired to temporarily disable the pump station when a signal is received from CSO manhole R1.12 on Colchester Avenue. With its built in digital and analog inputs, add wet well level, pump status/runtimes, high and low wet well alarms, and power failure.

Sheet S14 – Pump Station Details has been updated to include the real time monitoring system. OK, great.

c. The control panel include an auxiliary power hookup for a future generator purchase.

Sheet S14 – Pump Station Details has been updated to include auxiliary power hookups for a future generator. OK, great.

d. A pump is selected with the best possible total efficiency (pump plus motor). If the horsepower is greater than 5, then three phase power is required.

The pump is expected to be around 7.5 hp and will be required to have three phase power. OK.

e. The panel is UL listed.

Sheet S14 – Pump Station Details has been updated to have the panel be UL listed. OK, great.

f. An easement is drafted allowing city personnel to access the site for pump station and force main maintenance.

Sheet S3 – Utility Plan has been updated to show an access easement to the City for pump station and force main maintenance.

There's nothing found on S3 pertaining to this. Easement will need to be a separate, legal, document.

g. The access road to the station is expanded and paved for better access to the wet well, storage tanks and valve pit.

Sheet S3 – Utility Plan has been updated to show the access road being expanded and paved for better access to the station

In order to clean the wetwell and storage vaults the front end of our Vactor needs to be within 6' of the access manholes. Please make the necessary modifications to enable us to clean these structures.

- h. The force main material is changed from PVC to fusion-welded HDPE with an attached tracer wire that terminates in the valve pit and at a test station in the right-of-way near the existing sewer manhole. The force main design should address the relatively high coefficient of thermal expansion of HDPE.

Sheet S13 – Sewer Details has been updated to change the force main to fusion-welded HDPE with attached tracer wire. The test station in the right of way has also been included. The force main design has addressed the relatively high coefficient of thermal expansion of the HDPE pipe by burying the pipe at minimum 6' underground where the temperature fluctuation is minimal.

Provide specification on HDPE force main (i.e. SDR, IPS or DIPS).

- i. The force main out of the wet well remains as ductile iron until after the valve pit cross.

Sheet S14 – Pump Station Details has been updated to have the force main out of the wet well remains as ductile iron until after the valve pit cross. **OK, great.**

- j. The wet well bracket get moved up close to the access hatch.

Sheet S14 – Pump Station Details has been updated to have the wet well bracket moved up closer to the access hatch. **OK, great.**

2. Given this station's size and proximity to buildings S and T, consider adding an activated carbon vent pipe on the station wet well to reduce potential odors.

Sheet S14 – Pump Station Details has been updated to include an activated carbon vent pipe on the station wet well and storage tanks.

Provide specification.

3. This note is just a comment that the gravity sewer pipes seem quite deep. As seen in the review above, we try and keep them in the 5' to 9' depth whenever possible.

Due to the topography of the site and the state separation requirements the sewers have been designed with a min depth of 6.61' and max depth of 13.21' with an average depth of 10.02'. **Fine.**

You had previously stated that Champlin Associates was the local rep the city uses for pumps and controls. Please see below the comments from Jon Champlin that have also been included on Sheet S14 – Pump Station Details.

Please let me know if you have any questions

Thanks,
Bryan

From: Bryan Currier
Sent: Tuesday, December 02, 2014 8:58 AM
To: 'Jonathan Champlin'
Cc: Paul O'Leary
Subject: RE: Grove Street Water/Sewer Review

Good Morning Jon,

Thank you very much for your comments. I have included the changes in the plans. We will not be requiring explosion proof pumps.

Thanks,
Bryan

From: Jonathan Champlin [<mailto:jon@champlinassociates.com>]
Sent: Monday, December 01, 2014 6:05 PM
To: Bryan Currier
Cc: Paul O'Leary
Subject: RE: Grove Street Water/Sewer Review

Hi Bryan-

Couple of notes:

Floats should be mechanical, mercury not allowed in the state.
Plan mentions intrinsically safe. Should the pumps be explosion proof as well?
Pump condition is looking to be a 7.5 HP so 3 phase power would be required by City.

Let me know if you have any questions.

Jon Champlin

From: Bryan Currier [<mailto:bcurrier@olearyburke.com>]
Sent: Monday, December 01, 2014 1:22 PM
To: Jon Champlin (jon@champlinassociates.com)
Cc: Paul O'Leary
Subject: Grove Street Water/Sewer Review

Good Afternoon Jon,

I am working on a 243 unit development project for SD Ireland located at 140 Grove St Burlington. We have submitted a set of water/sewer plan to the City of Burlington Public Works and Steve Roy has given us his comments (see attached). He mentioned that Champlin Associates is the local rep they use for the pump station controls and pumps. Can you please take a quick look at the pump station designs (see attached) and let me know if you have any additional comments on the stations configuration.

Thanks,

Bryan Currier, EIT
O'Leary-Burke Civil Associates
1 Corporate Drive | Essex Jct., VT 05452
p: (802)878-9990
bcurrier@olearyburke.com

From: "Roy, Steve" <SRoy@burlingtonvt.gov>
To: pjobrien66@comcast.net
Cc: "Guillermo Gomez" <ggomez@burlingtonvt.gov>, "Norm Baldwin" <nbaldwin@burlingtonvt.gov>
Sent: Thursday, November 20, 2014 8:40:21 AM
Subject: Grove Street Water/Sewer Review

Hi Patrick,

Here are my comments on your development plans for water & sewer. Please forward to Paul O'Leary after you've had a chance to review, and let him know that Champlin Associates is the local rep for all the control stuff we use as well as pumps. I am happy to sit down with you folks to discuss further.

Traffic update
MEMO



**DEPARTMENT OF
PLANNING & ZONING**

TO: Patrick O'Brien
FROM: Ben Swanson
DATE: March 25, 2015
SUBJECT: Grove Street Development – Review of March 2015 Traffic Improvements

In October 2013, RSG drafted the Traffic Impact Study (TIS) for the proposed Grove Street housing development in Burlington, Vermont. Since completion of this study, the applicant has been in discussions with Burlington Public Works (BPW) regarding the roadway and pedestrian improvements that will be completed by the applicant in association with this project. From these discussions, the following additional pedestrian improvements have been identified:

1. The proposed project will now install a second rapid rectangular flashing beacon (RRFB) at the mid-block crossing east of the Schmanska Park parking area. This existing pedestrian crossing will also receive a new bump-out to further improve pedestrian safety.
2. The section of Grove Street proximate to Schmanska Park will now be reduced to 24 feet.
3. The proposed site access width has been reduced from approximately 57 feet to approximately 43 feet at the pedestrian crossing. We understand this change was made at the request of Burlington DPW and has been reviewed and accepted by the Burlington Fire Chief.

These recent additions to the project plan further improve the pedestrian environment proximate to the project site. In conjunction with previously planned sidewalk, pedestrian crossing, and traffic calming elements, the proposed pedestrian improvements greatly enhance the existing infrastructure and provide an important pedestrian connection between South Burlington, Burlington, and Winooski.

Additionally, since completion of the original TIS, the total number of proposed residential units has decreased from 247 units (assumed in previous analysis) to 232 units. This results in a net decrease in overall site-generated traffic during both peak hours, as shown below. Any impacts from the project as currently proposed, would be slightly less than previously analyzed in the Traffic Impact Study. In addition to the substantial off-site pedestrian improvements planned for this project, and traffic impact fees levied by the City, we had previously recommended the applicant make a fair-share contribution towards large-scale improvements at the Colchester Avenue/Riverside Avenue/Barrett Street triangle and at the US 2/White Street intersection. Based on the updated trip generation, these contributions would be approximately \$5,500 and \$14,500, respectively.

FIGURE 1: PREVIOUS AND CURRENT SITE TRIP GENERATION

	Previous Study (247 Units)			Current Proposal (232 Units)			Net Change (-15 units)		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
AM Peak Hour	25	100	125	23	94	117	-1	-6	-7
PM Peak Hour	100	54	154	94	51	145	-5	-3	-8

Please feel free to contact us with any questions.



Burlington Design Advisory Board

149 Church Street, City Hall

Burlington, VT 05401

www.burlingtonvt.gov/PZ/DAB

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*Matthew Bushy, Chair
Todd Thomas, Vice Chair
Ron Wanamaker
Sean McKenzie
Steven Offenhartz
Philip Hammerslough, Alt.
Jeremy Gates, Alt.*



DESIGN ADVISORY BOARD Tuesday, March 10, 2015 Conference Room 12, City Hall, Burlington, VT MINUTES

Board Members present: Ron Wanamaker, Matt Bushey, Steve Offenhartz, Todd Thomas, Jeremy Gates (alternate), Phil Hammerslough (alternate)

Board Members Absent: Sean McKenzie

Staff: Scott Gustin, Mary O'Neil, Ken Lerner

Session I - 3:00-3:45 p.m.

15-0801PD; 140 Grove St (RL, Ward 1) Ireland Grove Street Properties
Final plat review of PUD to demolish existing concrete plant and buildings, construct 19 new buildings for 223 residential units, clubhouse, and maintenance building with associated road, parking, and site improvements

Also present:

Michael Dugan, Robin Jeffers, Scott Ireland, and Patrick O'Brien

Motion by Matt Bushey: I move we approve the proposal and forward to the DRB with the following recommendations:

1. Dumpster in front of unit H should be moved farther away from the adjacent duplex.
2. Intersperse the inclusionary units throughout the project.
3. Roof (with supports similar to pavilions) should be provided over the Garden Street exterior gang mailbox.
4. Pedestrian path should be added from 1st parking lot at NW corner to Grove Street.
5. As part of final plat approval:
 - a. Revised boundary survey to depict the merger of the two primary parcels on which the proposed development will be built;
 - b. Corrected labeling for the maintenance garage (i.e. should be building Q);
 - c. Depiction and screening of utility meters; and,
 - d. Installation of concrete crosswalks within the development if feasible.

2nd – Todd Thomas

Vote 6-0-0

Motion carries.

Session II - 3:45-4:30 p.m.

DAB

Scott Gustin

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Monday, March 30, 2015 9:15 AM
To: Scott Gustin
Cc: Ken Lerner
Subject: Grove Street

Hello Scott,

In regards to your final plan review and the final DPW recommendations and the DAB recommendations, I offer the following:

We concur with the DPW recommendations but would like to know your thoughts on the sidewalks/stairways leading to Grove Street from the duplex's. The stairs cannot be simply pushed back out of the ROW. We prefer to stick with the existing design and enter a lease agreement with the City.

We concur with the DAB recommendations with the following exceptions:

#2. We believe that this recommendation is not within their scope of design responsibilities and therefore the DRB should not take this recommendation into their consideration. We say this for two reasons. The first is because there is still a possibility that we will be able to conform to the other option that was given to us by the DRB at Preliminary and that option was to have all inclusionary in one building as long as it was built first. The second reason has nothing to do with this project but has everything to do with somehow letting the DAB know that they should only be offering recommendations to the DRB that relate to a projects design. They are not the DRB.

#5(d). The installation of concrete crosswalks inside of the development would not be a wise decision. We like concrete, but as most people know, in Vermont we have a freeze thaw cycle that wreaks havoc on asphalt and concrete joints. The reason is simple, the two materials are have two distinctly different binding compounds that react to temperature and water differently leading to differences in how they expand and contract which leads to an uneven joint. The problem then becomes exacerbated when a plow truck comes through the blade gets caught on that uneven edge.

We have 19 of these crosswalks within the project. If we had two or three, that would still be too many. We would like this recommendation to be removed.

Thank you,

Patrick

Patrick O'Brien
S.D. Ireland Companies
193 Industrial Avenue
Williston, VT 05495
Office 802-863-6222 x 242
Cell 802-373-0096
e-mail pobrien@sdireland.com

Scott Gustin

From: Patrick O'Brien <pobrien@SDIRELAND.COM>
Sent: Monday, March 09, 2015 4:14 PM
To: Scott Gustin
Subject: RE: conservation board attendance
Attachments: Bike Rack information.pdf; cross section of form lined wall.pdf; 102
_typical_gravity_wall_cross_section Recon block.pdf; RECON Block profile.jpg; Cluster
Box Unit (Includes Pedestal) - 16 A Size Doors - Type III - Bronze - USPS Access _
Mailboxes.pdf; Detail of light L3.pdf

Hello Scott,

In regards to your staff notes, I offer the following clarifications and questions:

- A) Sheet L1.0 has 12 short term bike racks, but they are labelled in the table as bench and pad, which is incorrect. Attached as "Bike Rack information" is a copy of sheet L1.0. I highlighted the bike racks for you. These bike racks are for short term bike parking and are 7.5 feet long and will each hold three of our proposed bike holders which hold two bikes each, so each rack holds six bikes. There are 12 racks in all which equates to 72 spaces. I believe the ordinance requires 1 short term space for every 10 units, so we are proposing to more than double the required 32. In regards to the bike rack themselves, we are proposing to use something a bit funky, but I think the DAB and DRB will appreciate and like it. It is also embedded in the attached "Bike Rack information".

In regards to long term bike parking, last year before preliminary I confirmed with Nicole Losch from DPW that we can allocate space in each parking garage for long term storage. Attached are two garage floor plans, the first one is for buildings I,J,R,S & T and the second one is for building K. As you will see we have designated bicycle parking in the first parking space as you enter the building. Using the same bike rack spec, building K's space will properly fit 8 locked bikes and building I,J,R,S & T's space will hold 16 locked bikes. This brings the total long term bikes spaces to 86 but does not include the fact that we also have a storage bay in front of each garage space that could fit a bike. This adds the potential for more than a 150 more long term bike spaces. The requirements for long term bike parking are 1 per every 4 units which equates to 58 required spaces so needless to say, we are proposing to well exceed the requirement. Again, I have been through this exercise with Nicole and she is on board with it.

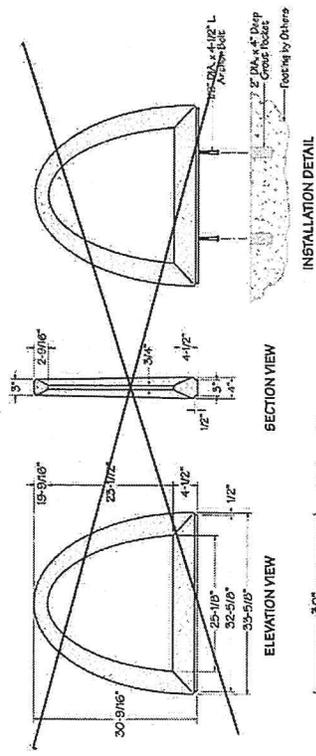
- B) We have two types of retaining walls, we are calling them Gravity and Form Lined and we refer to them on the last sheet of the package, A-11. Spec # 5 is the form lined wall. Form liners are the liners used in the preparation of designs on concrete walls. The use of form liners often results in more attractive poured concrete walls. Form liners come in many different shapes and designs, and can produce a variety of different results on concrete. A form liner panel is placed on the inside of a concrete forming system before the concrete has been poured and acts as a mold for the concrete to be formed against. Once the concrete has set, the forming system can be removed and the form liner can be stripped from the hardened concrete surface. The resulting concrete surface is permanently textured with the pattern of the form liner.
- The form liners are attached to forms and concrete is placed against the liner. The liner pattern is transferred into the wet concrete. After the concrete has cured, the liner is stripped and the unique sculpture is exposed. This wall has a standard poured footing and wall and the interior of the form is lined with a stone wall pattern and the concrete is can be dyed to match the color you want. If you refer to the illustrations that look down Arbor Street to the lower level, this is a good depiction of the color and pattern we propose. Attached is a cross section of what that wall looks like. The second type of wall is depicted as Spec #6, and is basically a pre-cast boulder concrete retaining wall system. They are typical referred to as Recon Block wall Systems. In regards to



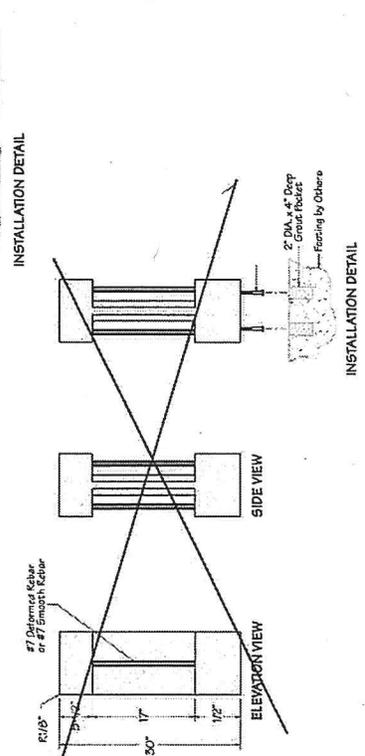
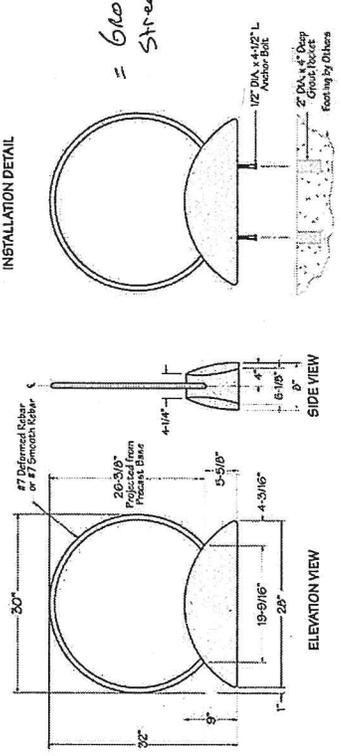
QUICK
CRETE
PRODUCTS
CORP.
SINCE 1976

BIKE RACKS

from Quick Crete



= Grove Street.

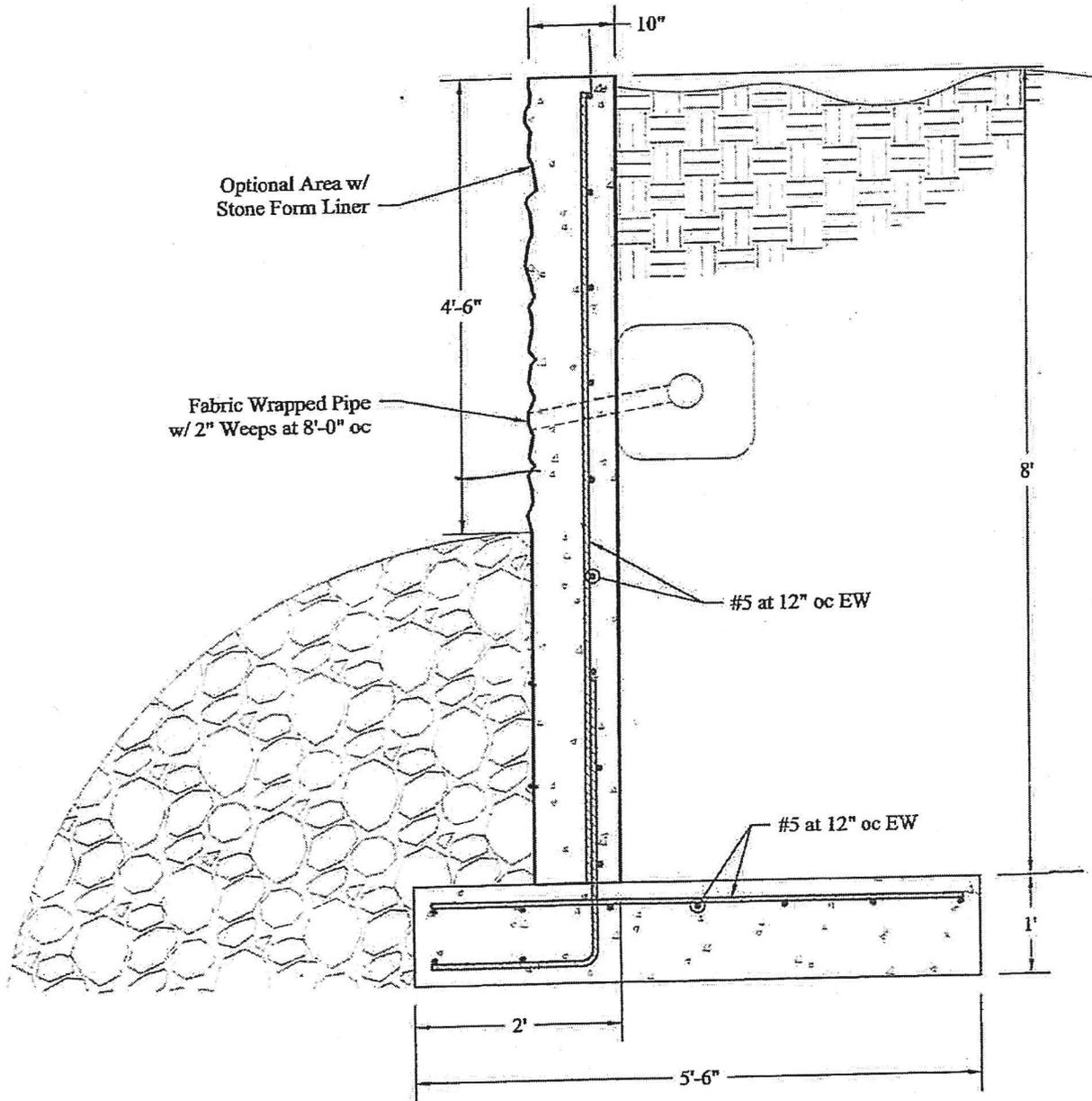


PRODUCT GUARANTEE
 QUICKCRETE products, purchased new, are guaranteed free from defects in material and workmanship, under normal use, for a period of one year from the original date of delivery. Damage incurred from vandalism and acts of God are not covered. Replacement and repair shall be at the discretion of Quickcrete Products Corporation.

GSA
APA
QUICKCRETE
 Fred Crook, Jr., President
 731 Parkridge Ave., Norco, CA 92860 Ph 951/737-6240 Fax 951/737-7032 www.quickcrete.com sales@quickcrete.com

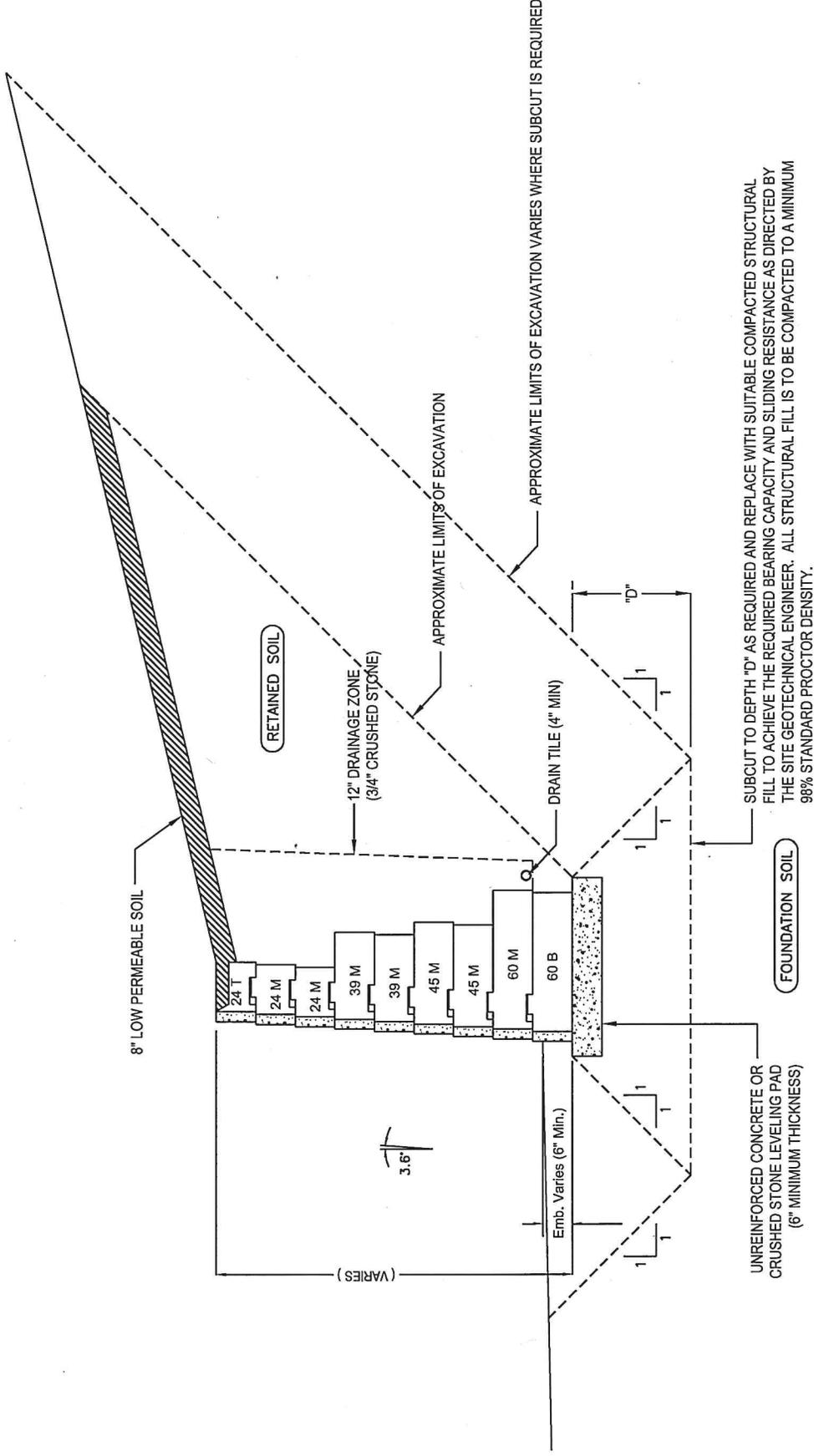


CROSS SECTION FOR A "FORM LINED" WALL.



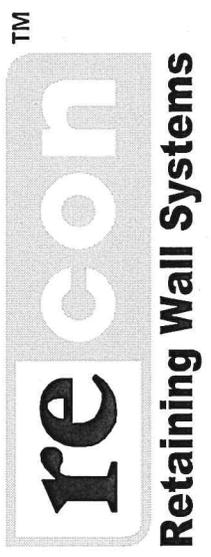
Retaining Wall Section (Typical)

Graded Street Apartments



**TYPICAL GRAVITY WALL
CROSS SECTION**

RECON WALL SYSTEMS, INC
 7600 WEST 27TH STREET, #229
 ST LOUIS PARK, MN 55426
 PH: 952-922-0027
 www.reconwalls.com



DRAWING # 102

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Design is for internal stability of the RECON wall structure only. External stability, including but not limited to foundation and slope stability is the responsibility of the Owner. The design is based on the assumption that the materials within the retained mass, methods of construction, and quality of materials conform to RECON'S specification for this project.

Disclaimer: This drawing was prepared by ReCon Wall Systems, Inc. and to the best of our knowledge, accurately represents the product use in the application that is illustrated. This drawing is for conceptual, instructional, and estimating purposes only. Anyone making use of this drawing does so at their own risk and assumes all liability for such use. Final design for construction purposes must be done by a registered professional engineer who is familiar with the product and who has taken into account the specific site conditions.

SUBCUT TO DEPTH "D" AS REQUIRED AND REPLACE WITH SUITABLE COMPACTED STRUCTURAL FILL TO ACHIEVE THE REQUIRED BEARING CAPACITY AND SLIDING RESISTANCE AS DIRECTED BY THE SITE GEOTECHNICAL ENGINEER. ALL STRUCTURAL FILL IS TO BE COMPACTED TO A MINIMUM 98% STANDARD PROCTOR DENSITY.

UNREINFORCED CONCRETE OR
CRUSHED STONE LEVELING PAD
(6" MINIMUM THICKNESS)

FOUNDATION SOIL

APPROXIMATE LIMITS OF EXCAVATION VARIES WHERE SUBCUT IS REQUIRED

APPROXIMATE LIMITS OF EXCAVATION

12" DRAINAGE ZONE
(3/4" CRUSHED STONE)

RETAINED SOIL

8" LOW PERMEABLE SOIL

DRAIN TILE (4" MIN)

3.6'

Emb. Varies (6" Min.)

(VARIES)

24 T

24 M

24 M

39 M

39 M

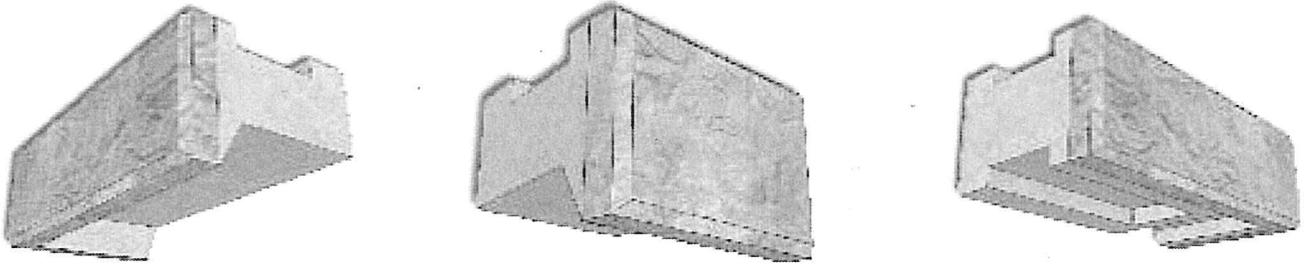
45 M

45 M

60 M

60 B

"D"



March 2014

RECON "SERIES 60" RETAINING WALL BLOCK CATALOG

