





Application for Urban Design Committee Review

Department of Planning and Development Review Planning & Preservation Division 900 E. Broad Street, Room 510 Richmond, Virginia 23219 | (804) 646-6335 www.richmondgov.com/CommitteeUrbanDesign



Application Type (select one)		Review Type (select one)
Location, Character, & Extent Section 17.05 Other:	Encroachment Design Overlay District	Conceptual Final
Project Information		Submission Date:
Project Name:		
Project Address:		
Applicant Information (a City represen	ntative must be the applicant, w	vith an exception for encroachments)
Name:	Email:	
City Agency:		Phone:
Main Contact (if different from Applica	ant):	
Company:		Phone:
Email:		_
Submittal Deadlines	must be filed no later than 21 di	ave prior to the scheduled meeting

All applications and support materials must be filed no later than 21 days p of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. Late or incomplete submissions will be deferred to the next meeting.

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.

Submittal Deadlines

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission (CPC) on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06, and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.



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Submssion Requirements

An electronic copy (PDF preferred) of all application materials, which can be emailed, or delivered by FTP or USB.
Three (3) copies of the application cover sheet and all support materials (see below).

•Plan sheets should be 11" x 17", folded to 8 1/2" x 11". If it is not possible to scale plans to these dimensions, please provide one set of larger, scaled plans.

•All applications must include the attached cover sheet and the following support materials, as applicable to the project, based on Review Type:

Conceptual Review:

•A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).

•A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.

•A set of floor plans and elevations, as detailed as possible.

•A landscaping plan which shows the general location and character of plant materials and notes any existing tree to be removed.

Final Review:

•A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program, and estimated construction start date (description should also provide information on the surrounding area to provide context).

•A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.

•A set of floor plans and elevations, as detailed as possible.

•A landscaping plan that includes a complete plant schedule, the precise location of all plant materials, and a landscape maintenance analysis. The plant schedule must show number, size and type of each planting proposed. If existing trees are to be removed, their size, type, and location must be noted on the landscape plan.

•The location of all lighting units should be noted on a site plan, including wall-mounted, site, and parking lot lighting. Other site details such as benches, trash containers, and special paving materials should also be located. Include specification sheets for each item.

•Samples of all proposed exterior building materials, including but not limited to brick, mortar, shingles, siding, glass, paint, and stain colors. When an actual sample cannot be provided, a product information sheet that shows the item or a photo of an existing item may be substituted.

Review and Processing

•Once an application is received, it is reviewed by Staff, who compiles a report that is sent to the UDC. •A copy of the report and the meeting agenda will be sent to the applicant prior to the meeting.

•At the UDC meeting, the applicant or a representative should be present or the application may be deferred to the next regularly scheduled meeting. It is also strongly suggested that a representative of the City Agency which will have final responsibility for the item be present at the meeting (if the applicant and the representative are not the same).

•Once the UDC recommends action on the application, it is automatically placed on the agenda for the next City Planning Commission (CPC) meeting. Exceptions to this are encroachment applications, recommendations for which are forwarded to the Department of Public Works.

•At the CPC meeting, the applicant or a representative should be present, or the application may be deferred to the next regularly scheduled meeting.



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Regular meetings are scheduled on the Thursday after the first Monday of each month at **10:00 a.m. in the 5th floor conference room of City Hall, 900 E. Broad Street**. Special meetings are scheduled as needed.

UDC Meeting Submission Deadline CPC meeting to follow UDC November 15, 2018 **December 6, 2018** December 17, 2018 December 13, 2018 January 10, 2019 January 22, 2019¹ February 7, 2019 February 19, 2019² January 17, 2019 February 14, 2019 March 7, 2019 March 18, 2019 March 14, 2019 April 4, 2019 April 15, 2019 April 11, 2019 May 9, 2019 May 20, 2019 May 16, 2019 June 6, 2019 June 17, 2019 July 3, 2019** July 15, 2019 June 13, 2019 July 11, 2019** August 8, 2019 August 19, 2019³ August 15, 2019 September 5, 2019 September 16, 2019 September 12, 2019 **October 10, 2019** October 21, 2019 October 17, 2019 November 7, 2019 November 18, 2019 November 14, 2019 **December 5, 2019** December 16, 2019

Meeting Schedule 2019

¹ Monday, January 21, 2019 is a City of Richmond Holiday.

² Monday, February 18, 2019 is a City of Richmond Holiday.

³ This August CPC Meeting may be canceled. If so, the meeting would be Tuesday, September 3, 2019.

** Moved forward to account for Independence Day

The Richmond Urban Design Committee is a ten member advisory committee created by City Council in 1968. Its purpose is to advise the City Planning Commission on the design of City projects. The Urban Design Committee reviews projects for appropriateness in "location, character, and extent" and for consistency with the City's Master Plan and forwards recommendations to the City Planning Commission. The Urban Design Committee also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

For more information, please contact the Planning and Preservation Division staff at (804) 646-6335 or the Secretary to the Urban Design Committee at (804) 646-3741 or at joshua.son@richmondgov.com.

PURPOSE

Brown and Caldwell (BC) is under contract to the City of Richmond Department of Public Utilities to design a cover system for the existing biosolids storage pad to minimize rain and snow from re-wetting the dewatered biosolids.

PROJECT BACKGROUND

The City of Richmond Wastewater Treatment Plant (WWTP) produces a Class B biosolids product by dewatering anaerobically digested sludge. The dewatered biosolids cake is transported by a third-party contractor in dump trucks to the southern end of the WWTP to the existing biosolids storage pad where they are dumped. The biosolids cake is stored on the pad until it is hauled off-site to be land applied.

The existing pad is not covered, which results in an increased moisture content of the dewatered biosolids cake due to exposure to rain and snow. The City is charged for hauling the biosolids cake by the third-party contractor on a per weight basis, so it is of interest to the City to prevent the stored biosolids from being exposed to rain and snow to limit the amount of water that is being hauled. The proposed cover system will assist in the aversion of accumulated moisture.

The proposed cover system will cover an area of approximately 264 feet by 95 feet wide. A 100 feet by 50 feet section will remain uncovered to avoid conflict with underground utilities. The cover system will include structural steel primary and secondary members, metal roof system, column base plates, and anchor bolts.



BASIS OF DESIGN: BUTLERIB II ROOF SYSTEM





The cover system fits into the existing infrastructure, so pedestrian routes and parking will not change. Landscape alterations are minimal, causing few changes to existing canopies and/or screening.

CONSTRUCTION SCHEDULING AND COST ESTIMATE

The preliminary estimated construction cost for the Biosolids Storage Pad Cover is approximately \$2,000,000. A detailed cost estimate is provided in this document.

The preliminary construction schedule is provided below. It is estimated that the project will take approximately 10 months to complete from Notice to Proceed. Prior to construction biosolids stored on the pad will need to be relocated to the "Overflow Biosolids Pad" to the west. The overflow biosolids pad will need to be used throughout the duration of construction.

					D	uration	(Monti	15)			
Major Activities	0	1	2	3	4	5	6	7	8	9	10
Notice to Proceed]			
Submittals and Shop Drawings											
Site Work											
Concrete Sawcut and Removal								j			
Strucutral											
New Concrete: Footings, Slab, Walls			0								
New Roof Support System and Roof Deck								ĵ,			
Civil									1		
Instal New Gravity Drain Pipe											
Electrical								12			
Route Power											
Install Lighting System	6							2			
Site Restoration			C.						1		

Preliminary construction schedule

No.	Item	Unit	Unit Price	Est. Qty.	Total Cost
1.	Site Work				
Α.	Concrete Sawcut	LF	\$25	1,700	\$42,500
B.	Concrete Removal	CY	\$100	236	\$23,600
C.	Excavation	CY	\$60	1,008	\$60,500
D.	Grading, Topsoiling, Seeding and Strawing of Trenches	SY	\$16	200	\$3,200
2.	Structural				
A.	New Concrete				
i.	Walls	CY	\$1,050	410	\$430,500
ii.	Footings & Pedestals	CY	\$1,000	36	\$36,500
iii.	Slab	CY	\$1,000	104	\$104,000
В.	Backfill	CY	\$70	1,036	\$72,600
C.	Structural Support System and Roofing System Furnishment and Installation	LS	\$450,000	1	\$450,000
D.	Footing Tie Rods	LF	\$100	570	\$60,000
E.	Embedded Push Wall Steel Plate	SF	\$30	1,620	\$48,600
3.	Civil				
A.	12" PVC SDR-35	LF	\$32	310	\$10,000
В.	Mount to Concrete Wall	LS	\$5,000	1	\$5,000
C.	Standard Sanitary Manhole (4-ft Diameter)	VF	\$400	5	\$2,000
D.	Replace/Install Standard Manhole Frame and Cover	EA	\$1,100	1	\$1,100
E.	Earth Excavation for Storm Pipe	CY	\$60	62	\$3,700
G.	Backfill	CY	\$70	62	\$4,400
H.	Grading, Topsoiling, Seeding and Strawing of Trenches	SY	\$16	30	\$500
4.	Subtotal				
Α.	Subtotal				\$1,358,700
5.	Additional Items				
Α.	Electrical and Lighting Improvements	LS	10%	1	\$140,000
В.	Erosion and Sediment Control	LS	2%	1	\$30,000
C.	Contingency (30%)	LS	30%	1	\$407,610
5.	Total				
Α.	Construction Cost				\$2,000,000

Preliminary cost estimate

	1 2			3	4			5	
GENE	RAL	CONCRETE	E					TABLE	1
G 1	SCOPE THE GENERAL NOTES AND STANDARD DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.	C 1 APF COI COI	PLICABLE CODE DNCRETE CONS DNCRETE", AND	S IRUCTION SHALL CONFORM TO ACI 301-05 "SPECIFICATIONS FOR STRUCTURA THE FOLLOWING CODES: IS CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"	AL	REQUIRE	D SPECI	AL INSPECTION	S - STRU
G 2	PRECEDENCE IF THERE IS A CONFLICT BETWEEN PROJECT SPECIFICATIONS AND STRUCTURAL DRAWINGS, INCLUDING STRUCTURAL NOTES, CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR CLARIFICATION, SPECIFIC NOTES AND DETAIL SON DRAWINGS TAKE PRECEDENCE OVER GENERAL	C 2 REI ALL SH/	EINFORCING STE L DETAILING, FA	EL DETAILS BRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOT RDANCE WITH ACI DETAILING MANUAL (ACI SP-66), LATEST EDITION.	SYSTEM OR MATERIAL	RE	QUIRED INSPECT	FION	FREQUE INSPE CONTII
	NOTES AND TYPICAL DETAILS.	C 3 DES	ESIGN STRENGT	1 ST-IN-PLACE CONCRETE fc = 4 000 PS	SOILS	VERIFY EXCAVATIONS ARE E DEPTH AND HAVE REACHED	XTENDED TO PR		
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64	PROVISIONS FOR EQUIPMENT MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND EMBEDMENTS NOT SPECIFIED ON THE STRUCTURAL DRAWINGS, BUT SPECIFIED ON OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCERTE	MIN	1. CC 2. CC 2. CC CH 3. CC	JF UNE BAR JIAME I ER: NORETE CAST AGAINST EARTH		PREPARED PROPERLY PERFORM CLASSIFICATION A CONTROLLED FILL MATERIAL	AND TESTING OF		
5	MEANS, METHODS & CONSTRUCTION LOADS CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION, AND SHALL MAKE	C 5 BAF SLA	WA AR DEVELOPMEN ABS, BEAMS, GI	STEWATER, CHEMICALS OR WEATHER		VERIFY USE OF PROPER MAT LIFT THICKNESSES DURING F COMPACTION OF CONTROLL	TERIALS, DENSITI PLACEMENT AND ED FILL	IES AND	
	ADEQUATE PROVISION TO MAINTAIN THE INTEGRITY OF ALL STRUCTURES AT ALL STAGES OF CONSTRUCTION. DETERMINATION OF AND PROVISIONS FOR CONSTRUCTION LOADING SHALL BE PROVIDED BY THE CONTRACTOR.	SPE	PECIFIED. ALL SF	LICES SHALL CONFIRM TO THE REQUIREMENTS OF ACI 318-08.		PROOF ROLLING OF SOILS D	ISTURBED BY GR	ROUND	
6	SAFETY CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO ENSURE THE SAFETY OF WORKERS AND		LAI BAR SIZE TOP BAR*	<u>° SPLICE SCHEDULE</u> #3 #4 #5 #6 #7 #8 #9 2-1" 2'-10" 3'-6" 4'-3" 5'-10" 6'-9" 7'-6"		PERMANENT SHEET PILING II VERIFYING TIP AND CUTOFF	NSTALLATION, IN ELEVATIONS	ICLUDING	
	VISITORS TO THE SITE, INCLUDING BUT NOT LIMITED TO SHORING, BRACING AND ACCESS RESTRICTION. COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY CODES AND STANDARDS.		OTHER	1'-8" 2'-2" 2'-8" 3'-3" 4'-6" 5'-1" 5'-9" VELOPMENT LENGTH SCHDULE		SHORING SYSTEM WELDING			
7	DRAINAGE SURFACES SLOPE DRAINAGE SURFACES UNIFORMLY TO DRAIN. SLOPE SHALL BE 1/8" TO 1/4" PER FOOT EXCEPT WHERE NOTED OTHERWISE ON THE PLANS.		BAR SIZE TOP BAR* OTHER	#3 #4 #5 #6 #7 #8 #9 1 ⁻⁵ " 2 ⁻ 2" 2 ⁻ 8" 3 ⁻ 3" 4 ⁻ 6" 5 ⁻ 2" 5 ⁻ 9" 1 ⁻ 3" 1 ⁻ 8" 2 ⁻¹ " 2 ⁻ 6" 3 ⁻ 6" 3 ⁻ 1" 4 ⁻ 5"	CONCRETE	INSPECT FORMWORK FOR LO OF MEMBER BEING FORMED	OCATION AND DI	MENSIONS	
8	OPENINGS OPENINGS THROUGH NEW AND EXISTING WALLS AND SLABS FOR PIPES, DUCTS, CONDUITS, ETC., ARE	*TO REI	OP BAR IS DEFIN	ED AS ANY HORIZONTAL BAR PLACED AT THE CENTER OR AS THE TOP LAYER) ALL WALL HORIZONTAL REINFORCING.	R OF SLAB	VERIFY MATERIAL FOR REIN	FORCEMENT		
	NOT ALL SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHOLL COORDINATE WITH OTHER DISCIPLINES AND PROVIDE THESE OPENINGS IN ACCORDANCE WITH THE OTHER CONTRACT DOCUMENTS.	C 6 WE ALL ACC	ELDING REINFO L REINFORCING	RCING BARS TO BE WELDED SHALL CONFORM TO ASTM A706. REBAR WELDING SHALL BE H AWS D1.4.	IN	REINFORCING STEEL PLACE		TF	
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2	LIVE LOADS 1. SLABS	C 8 CH/ EXC CH/	HAMFERS (CEPT AS OTHEF HAMFERS, RE-E	WISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3 NTRANT CORNERS SHALL NOT HAVE FILLETS.	3/4"	CONTINUOUS INSPECTION	NONCRETE MIX DE	ESIGN(S)	
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	CUDI LARC; TOR SHALL FOLLOW THE PROJECT SPECIFICATIONS AND TAKE INTO CONSIDERATION RECOMMENDATIONS CONTAINED IN THE REPORT. NOTIFY THE OWNER, ENGINEER AND CONSTRUCTIC MANAGER OF CONFLICTS BETWEEN SPECIFICATIONS AND THE REPORT RECOMMENDATIONS FOR	N REC	EQUIREMENTS.		FILL IN-PLACE DENSITY	A	STM D6938	EACH 300 SF OF EACH LIFT PLACED EACH DA'	Y PER G
2	RESOLUTION. ALLOWABLE BEARING PRESSURE SHALLOW FOUNDATIONS SHALL BEAR ON NATURAL SOILS OR STRUCTURAL FILL WITH A MINIMUM ALL OWABLE BEARING PRESSURE OF 2 200 PSE	30 2 REC 1. 2. 3.	STRUCTUF STRUCTUF FOUNDATI COMPLETI BRACING,	TUTNE COSERVATIONS INCLUDE: ALA FILL AND DEEP FOUNDATIONS. DNS PREPARED FOR CONCRETE PLACEMENT. DN OF LATERAL FORCE RESISITING ELEMENTS INCLUDING MOMENT CONNECT DIAPHRAGMS, AND OTHER ELEMENTS.	TIONS, CONCRETE COMPRESSI STRENGTH	VE AST C39	M C31,ASTM ASTM C172	CONCRETE SEE SPECIFICATION 03300	
5		1			CONCRETE SLUMP	A	STM C143	WHENEVER CYLINDERS ARE CAST	
1	ADC COMPACTED STRUCTURAL FILL (AS DIRECTED BY THE GEOTECHNICAL REPORT).				CONCRETE AIR CONTEN	T A	STM C231	WHENEVER CYLINDERS ARE CAST	
	FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE INDICATED IN THE REPORT SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGEI CONTRACTOR IS RESPONSIBLE FOR REPLACING WORK CONDUCTED AFTER SUCH NOTIFICATION BUT BEFORE CONSTRUCTION MANAGER PROVIDES ADDITIONAL DIRECTIONS.	R.			CONCRETE TEMPERATU	RE AS	STM C1064	WHENEVER CYLINDERS ARE CAST	
5	EXCAVATION, DE-WATERING, & SAFETY CONTRACTOR SHALL PROVIDE FOR ALL DE-WATERING OF EXCAVATIONS, AND DESIGN / PROVIDE ALL CRIBBING, SHORING, AND BRACING REQUIRED FOR SAFETY AND TO ALLOW CONSTRUCTION OF THE						-		
6	STRUCTURAL BACKFILL UNLESS NOTED OTHERWISE, STRUCTURAL BACKFILL SHALL BE PLACED IN UNIFORM LAYERS AND UNLESS NOTED OTHERWISE, STRUCTURAL BACKFILL SHALL BE PLACED IN UNIFORM LAYERS AND SHALL BE BROUGHT UP UNIFORMLY AROUND THE STRUCTURE. ADDITIONALLY, BACKFILL SHALL BE BROUGHT UP UNIFORMATION ON BOTH SIDES OF FOUNDATION WALLS. SEE SPECIFICATION 31 23 00 FOR A DDITIONAL INFORMATION.				QUALITY ASS 1. THE QUALITY OF 2. ALL NEW STRUC WASTE WATERT 3. TO ASSURE THE ACCORDANCE W 4. WHERE FREQUE PERFORMED AN 5. WHERE FREQUE BEING PERFORM 6. SPECIAL INSPEC WITH BUILDINGS 7. CONTRACTOR SI TESTING AND ST	THE WORKMANSHIP AND THE UTRES AND MODIFICATIONS TO REATMENT FACILITY, IN ACCOO QUALITY OF THE CONSTRUCTI ITH IBC, CHAPTER 17. NCY OF INSPECTION IS SPECIF- D PROVIDING FULL-TIME OBSEP NCY OF INSPECTION IS SPECIF- IED AND AT THE COMPLETION US ITONS ARE IN ADDITION TO INS DEPARTMENT TO DETERMINE HALL PROVIDE ACCESS TO THE RUCTURAL OBSERVATIONS.	D QUALITY OF THE EXISTING STRU ADANCE WITH TH DN OF THIS PRO. IED TO BE CONTI- VIATION OF THE IED TO BE PERIO DF THE WORK (PI PECTIONS BY TH EQUIRED INSPEC WORK FOR REQ	MATERIALS OF CONSTRUCTIO CTURES TO BE CONSTRUCTED 4E IBC. THE STRUCTURES ARE JECT, STRUCTURAL TESTS, SP INUOUS, THE SPECIAL INSPECT WORK REQUIRING SPECIAL IN DIC, THE SPECIAL INSPECTOR RIOR TO THE NEXT CONSTRUC IE BUILDING OFFICIALS. CONST CTIONS.	N ARE GOVE O AS A PART CLASSIFIED ECIAL INSPE TOR IS EXPERIES SPECTION. IS EXPECTED TION TASK) RUCTION IS CTOR SHALL
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FREQUENCY OF INSPECTION		REMARKS
CONTINUOUS	PERIODIC	
	x	
	x	
	x	
	x	SEE TABLE 3
х		SEE TABLE 3
	x	
х		
х		
	x	
	x	CONTRACTOR TO SUBMIT CERTIFIED MILL TEST REPORTS
	x	
	x	PRIOR TO AND DURING CONCRETE PLACEMENT
x	x	INSPECTION TO CONFORM TO IBC AND TO ANCHOR MANUFACTURER'S RECOMMENDATIONS AND ICC REPORTS
	x	
x		CONTINUOUS DURING PREPARATION OF SAMPLES
x		
	x	VERIFY APPROPRIATE CURING METHOD HAS BEEN IMPLEMENTED AFTER EACH POUR
	x	
х		

INSPECTIONS

REMARKS

PER GEOTECHNICAL REPORT

PER GEOTECHNICAL REPORT

RE GOVERNED BY THE 2012 NORTH CAROLINA BUILDING CODE (IBC 2009). A PART OF THIS PROJECT ARE CLASSIFIED AS OCCUPANT CATEGORY III, SSIFIED AS SEISMIC DESIGN CATEGORY B. L INSPECTION AND STRUCTURAL OBSERVATION WILL BE PERFORMED IN S EXPECTED TO BE PRESENT IN THE AREA WHERE THE WORK IS BEING TION. CTION. XPECTED TO BE PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS N TASK). TION IS SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL. COORDINATE R SHALL PROVIDE NOTIFICATION IN ADVANCE OF REQUIRED INSPECTIONS,

Brown AND Caldwell	
PRELIMINARY DESIGN	D
THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS IT BEARS THE SEAL OF A DULY REGISTERED PROFESSIONAL	
	c
CITY OF RICHMOND BIOSOLIDS COVER	B



FOUNDATION PLAN - DEMO

4

SCALE: 1/16" = 1'-0"

3



2

ANTICIPATED WIDTH OF EXCAVATION CUT ALONG WEST WALL WORSE CASE.

2 EXCAVATION CUT

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

1





Plot





Pbt Date. 3/8/2019 6:57:45 AM Path: Nbcvabb01/tprojects(Clients)RichmondMSA WW Sub to JMT/152170 Sbrage Pad Covers1000 BIM/04-Revit/152170-;





Lumi	Luminaire Locations														
		L	ocation						Aim						
No.	Label	x	Y	z	мн	Orientation	Tilt	x	Y	z					
7	A	6.00	9.00	28.00	28.00	180.00	0.00	6.00	9.00	0.00					
14	A	6.00	45.00	30.50	30.50	180.00	0.00	6.00	45.00	0.00					
21	A	6.00	81.00	33.00	33.00	0.00	0.00	6.00	81.00	0.00					
22	A	41.00	9.00	28.00	28.00	180.00	0.00	41.00	9.00	0.00					
23	A	41.00	45.00	30.50	30.50	180.00	0.00	41.00	45.00	0.00					
24	A	41.00	81.00	33.00	33.00	0.00	0.00	41.00	81.00	0.00					
25	A	76.00	9.00	28.00	28.00	180.00	0.00	76.00	9.00	0.00					
26	A	76.00	45.00	30.50	30.50	180.00	0.00	76.00	45.00	0.00					
27	A	76.00	81.00	33.00	33.00	0.00	0.00	76.00	81.00	0.00					
28	A	111.00	9.00	28.00	28.00	180.00	0.00	111.00	9.00	0.00					
29	A	111.00	45.00	30.50	30.50	180.00	0.00	111.00	45.00	0.00					
30	A	111.00	81.00	33.00	33.00	0.00	0.00	111.00	81.00	0.00					
31	A	146.00	9.00	28.00	28.00	180.00	0.00	146.00	9.00	0.00					
32	A	146.00	45.00	30.50	30.50	180.00	0.00	146.00	45.00	0.00					
33	A	146.00	81.00	33.00	33.00	0.00	0.00	146.00	81.00	0.00					
34	A	181.00	9.00	28.00	28.00	180.00	0.00	181.00	9.00	0.00					
35	A	181.00	45.00	30.50	30.50	180.00	0.00	181.00	45.00	0.00					
37	A	216.00	9.00	28.00	28.00	180.00	0.00	216.00	9.00	0.00					
38	A	216.00	45.00	30.50	30.50	180.00	0.00	216.00	45.00	0.00					
40	A	251.00	9.00	28.00	28.00	180.00	0.00	251.00	9.00	0.00					
41	A	251.00	45.00	30.50	30.50	180.00	0.00	251.00	45.00	0.00					

CITY OF RICHMOND BIOSOLID COVER LIGHTING POINT ILLUMINATION STUDY

Schedule											
Symbol	Label	Quantity	Manufactur er	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
\bigcirc	Α	21	Holophane	PHZ 40L 4K 80CRI XX XX XXX M xxxxxx	Phuzion 40,000 Lumens, 4K CCT, 80 CRI, Medium Glass	LED	1	PHZ_40L_4K _80CRI_XX_ XX_XXX_M_ xxxxxx.ies	37222	0.9	288.36

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
CALCULATIONS	+	22.0 fc	25.9 fc	16.2 fc	1.6:1	1.4:1

Note

1. Readings shown are based on a total LLF of .90 at floor. 2. Please refer to the :luminaire locations" for mounting heights.

3. Product information can be obtained at www.Holophane.com or

through you local agency.

4. Reflectance = 80/0/0.

1 of 1

ERATIONAL DAT	A CONTINUE	0					
ergency Lume	ns						
	Package		Narrow	Medium	Wide	Frosted Multiplier	
stimated Mimimum D 30L, 35L,4	elivered Lumens fo 10L, 45L,50L and 6	r 12L, 18L, 24L, DL	2,841	2,841	2,841	0.92	
	UMAW		123	123	123		
men Maintena	nce 12L Pack	age					
Ambient "C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.98	0.97	0.96	0.96	0.95	0.92
30	1.00	0.98	0.97	0.96	0.%	0.95	0.92
35	1.00	0.98	0.97	0.96	0.96	0.95	0.92
40	1.00	0.98	0.97	0.96	0.96	0.95	0.92
45	1.00	0.97	0.96	0.96	0.95	0.94	0.91
50	1.00	0.97	0.96	0.95	0.95	0.93	0.90
55	1.00	0.97	0.95	0.95	0.94	0.93	0.89
60	1.00	0.97	0.95	0.94	0.93	0.92	0.88
nen Maintena Ambient °C	nce 18L Pack	age 15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.98	0.97	0.96	0.96	0.95	0.92
30	1.00	0.98	0.97	0.96	0.96	0.95	0.92
35	1.00	0.97	0.96	0.96	0.95	0.94	0.91
40	1.00	0.97	0.96	0.95	0.95	0.93	0.90
45	1.00	0.97	0.95	0.95	0.94	0.93	0.89
50	1.00	0.97	0.95	0.94	0.94	0.92	0.88
55	1.00	0.96	0.95	0.94	0.93	0.91	0.87
60	1.00	0.96	0.94	0.93	0.92	0.90	0.85
65	1.00	0.95	0.92	0.91	0.90	0.88	0.83
nen Maintena	nce 24L Pack	age					
Ambient °C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.98	0.97	0.96	0.96	0.95	0.92
30	1.00	0.98	0.97	0.96	0.96	0.95	0.92
35	1.00	0.97	0.96	0.95	0.95	0.94	0.91
40	1.00	0.97	0.96	0.95	0.94	0.93	0.90
45	1.00	0.97	0.95	0.95	0.94	0.92	0.88
50	1.00	0.96	0.95	0.94	0.93	0.91	0.87
55	1.00	0.96	0.94	0.94	0.92	0.91	0.86
60	1.00	0.96	0.94	0.93	0.92	0.90	0.84

RATIONAL DAT	TA CONTINUE)					
nen Maintena	nce 30L Pack	age					
Ambient "C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.98	0.97	0.97	0.96	0.96	0.94
30	1.00	0.97	0.96	0.96	0.96	0.95	0.93
35	1.00	0.97	0.96	0.96	0.96	0.95	0.93
40	1.00	0.97	0.96	0.96	0.95	0.95	0.93
45	1.00	0.97	0.96	0.96	0.95	0.94	0.92
50	1.00	0.97	0.96	0.96	0.95	0.94	0.92
55	1.00	0.97	0.96	0.95	0.95	0.94	0.92
60	1.00	0.96	0.95	0.95	0.94	0.93	0.91
65	1.00	0.96	0.95	0.95	0.94	0.93	0.90
Ambient °C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
20	1.00	0.97	0.90	0.90	0.90	0.95	10.0
15	100	0.97	0.96	0.96	0.95	0.95	0.93
40	1.00	0.97	0.96	0.96	0.95	0.94	0.92
45	1.00	0.97	0.96	0.96	0.95	0.94	0.92
50	1.00	0.97	0.96	0.95	0.95	0.94	0.92
55	1.00	0.96	0.95	0.95	0.94	0.93	0.91
60	1.00	0.96	0,95	0,95	0.94	0.93	0.90
65	1.00	0.96	0.95	0.94	0.94	0.93	0.90
nen Maintena Ambient °C	nce 40L Pack O Hours	age 15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.97	0.96	0.96	0.96	0.95	0.93
30	1.00	0.97	0.96	0.96	0.95	0.95	0.93
35	1.00	0.97	0.96	0.96	0.95	0.94	0.92
40	1.00	0.97	0.96	0.96	0.95	0.94	0.92
45	1.00	0.97	0.96	0.95	0.95	0.94	0.92
50	1.00	0.%	0.95	0.95	0.94	0.93	0.91
55	1.00	0.96	0.95	0.95	0.94	0.93	0.90
60	1.00	0.96	0.95	0.94	0.94	0.93	0.90
800	10.000		\$4712	102-4320711	1.	5702-01	10.02.25

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Page 7 of 12

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PHZ

Page 8 of 12

	huzion™ D High Bay			HOLOTHANE	Phuzion™ LED High Bay	HOLOFHANE	Phuzion™ LED High Bay						HOLOPHANE	Phuzion LED High Ba	n™ ay						HOL	<u>ophan</u>
	A+ Capable op	tions indicated					OPERATIONAL	ATA						OPERATIO	NAL DATA							
				Example: DUZ 451 4V 00/DLAS D / W	Accessories: Order as separate catalog number. PH7CHAIN3 3-ft, safety chain	UPH-35-18-480-WH Thru-way powerhook for 480V PE-129-A Anti-rotational book, 3/4" male	Operating Cha	acteristics						Operating	g Characteristics							
Al al al la construcción de	NDERING INFOR	MATION		Example: FIZ 45L 4K 60CKI AS F G W	PHZCHAIN6 6-ft. safety chain	UPH-36-***-WH Powerhook for 1209, 2089, 2409, 2779 and 3479's PF-105-B Loop, 3/4" male				Delivered Lumens			1000 s					Delivered Lumens	aler alle			In the second
	eries Lumens ¹		Color rendering Color temperature index Voltage	Mounting Finish	PH2CHAINX X-ft. safety diain® UPH-35-***-WH Thru-way powerhook for 120V, 208 277V and 347V/6	V 240V, PF-121-A Safety hook, 3/4" male V, 240V, PF-116-A Loop, 3/4" female PF-291 Gasketed hook, 3/4" male	Lumen Package Dist	ution 3000K 3500 70CRI 70CR	NK 4000K 5000K 3000 RI 70CRI 70CRI 80CR	OK 3500K 4000K Ri 80cri 80cri	5000K 3000K 35 80CRI 90CRI 9	1500K 4000K 5000K 90CRI 90CRI 90CRI	Watts @ LPW @ 5000K, 120V 70 CRI	Lumen Package	Distribution 3000K 70CR	3500K 4000K 70CRI 70CRI	5000K 3000K 70CRI 80CRI	3500K 4000K 80CRI 80CRI	5000K 3000K 80CRI 90CRI	3500K 4000K 90CRI 90CRI	5000K Watts 90CRI 120	9 5000K, 7 70 CRI
	PHZ 121 12,0	00 nominal lumens	3K 3000K CCT ZOCRI AS Autosensing AH	Autosensing P Pendant W Whitesuper durable	27300317	PF-122-A Safety hook, 3/4" female WGLED Wire guard		@25°C @25°	°C @25°C @25°C @25°	i°c @25°c @25°c	@25°c @25°c @	925°c 925°c 925°c			@25°c	@25°C @25°C	@25°C @25°C	@25°c @25°c	@25°C @25°C	@25°C @25°C	@25°c	
 A DECIMANT A DECIMANTA A DE	18L 18,0 24L 24,0	00 nominal lumens 00 nominal lumens	35K 3500K (CT 300K3 12 120V 34	347V N Non-disconnect K Black super durable	Notes			R 11712 1186	37 12956 12973 1135 52 11973 11989 1049	59 11701 11889 97 10813 10986	12341 9958 10 11405 9203 9	10274 10428 11154 9495 9637 10308	81 160		M 40897 MER 37794	40897 44639 37794 41252	45976 38224 42487 35324	39293 40630 36312 37547	41164 30205 38041 27913	31542 34215 29148 31618	37422 323	142 i 132
	30L 30,0	00 nominal lumens	SK 5000K CCT 20 208V 48	480% QR Quick disconnect retrofit? L Satin nickel super	2 Damplocation only. Selection only.			12768 1293	32 13052 13069 1144	43 11787 11977	12433 10032 10	10350 10505 11237	81 161		N 41200	41200 44970	46316 38507	39584 40931	41469 30429	31775 34468	37699 323	143
	35L 35,0 40L 40,0	00 nominal lumens 00 nominal lumens	27 277V	NR Non-disconnect thru-wiring durative retrofit ² H Graphite super	Agy not be used with any other dimming options. All of the option of the opti		121	R 11719 1186	i9 11980 11995 1050.	03 10819 10992	11411 9208 9	9500 9642 10313	81 148	45L	N FR 37815	37815 41275	42511 35343	36332 37567	38062 27928	29164 31636	34602 323	132
	45L 45,0	00 nominal lumens		durable TDC Tiner Division	6 Not available with 60L			12881 1304	16 13168 13185 1154 14 12963 12980 1136	45 11892 12083 65 11707 11895	12543 10121 10 12348 9954 10	10442 10599 11336 10280 10434 11160	81 163		NA 41565 W 40920	41565 45369 40920 44564	46/2/ 38849 46001 38245	39935 41294	41837 30699	32057 34774 31559 34233	38034 323	145
	50L 50,0	00 nominal lumens 00 nominal lumens			 Processing and the second secon			R 11008 1114	19 11253 11268 9866	6 10163 10326	10719 8649 8	8924 9057 9688	81 139		WFR 35521	35521 38772	39932 33200	34128 35289	35753 26235	27395 29717	32503 323	124
	001 000	oo nonningi fumens			 Must or der a nook or loop option. To For new installation, order matching UPH accessory. For existing 	pinstallation with UPH accessory, match PHCB.		4 12929 1309	6 13217 13234 1158	88 11936 12128	12590 10159 10	10481 10638 11378	81 163		WA 41720	41720 45538	46901 38993	40084 41447	41993 30813	32176 34903	38175 323	145
Norm Norm <th< td=""><td>-</td><td>0.00</td><td></td><td></td><td>11 IP mountonly. 12 Not available with AH, 34, 48.</td><td></td><td>-</td><td>19708 1996 D 19212 1944</td><td>0 20146 20173 1766.</td><td>63 18194 18486</td><td>19190 15485 12</td><td>15976 16215 17344</td><td>130 155</td><td></td><td>M 45751</td><td>45751 49938</td><td>51433 42761</td><td>43957 45452</td><td>46050 33790</td><td>35285 38276</td><td>41864 374</td><td>137</td></th<>	-	0.00			11 IP mountonly. 12 Not available with AH, 34, 48.		-	19708 1996 D 19212 1944	0 20146 20173 1766.	63 18194 18486	19190 15485 12	15976 16215 17344	130 155		M 45751	45751 49938	51433 42761	43957 45452	46050 33790	35285 38276	41864 374	137
Nome	ptics Morrow	Vptions Non Dimming	morel	Dama location conductei/	13 12,27 only. Not available with cordsets. Customer to connect sw 14 Not available in 121, 18L, 24L. Not available with cordsets with p	i tched & unswitched power in supplied Junction box. Iug. During installation this option requires un-switched power.		19854 2010	13 10017 10042 1032. 18 20295 20322 1779.	93 18328 18623	19332 15599 14	14965 16028 16094 16335 17472	130 144		N 46090	46090 50308	47530 59516 51814 43078	44283 45789	46391 34040	35547 38559	42174 374	12/
	V Narrow	MSEGNWL	360° motion sensor embedded, high bay 15-45 ft., on/off.	CD-3 3-ft. cord ² ELR PS30250	15 XX denotes length. 16 Musthave PCHB on fixture.		19	R 18222 1845	56 18628 18652 1633	31 16822 17093	17743 14318 14	14772 14993 16037	130 144	604	N FR 42303	42303 46174	47556 39538	40644 42027	42580 31243	32626 35391	38709 374	i 127
	Frosted	MSETONWL	360° motion sensor embedded, high bay 8-15 ft., on/off.	CD-6 6-ft. cord ^o Emergency remote power			10L	20030 2028	6 20475 20502 1795	51 18491 18788	19503 15738 16	16237 16480 17627	130 158	301.	NA 46499	46499 50754	52274 43460	44676 46195	46803 34343	35862 38901	42548 374	140
 Markan Markan Marka Markan Markan Markan Markan Markan Markan Markan Markan Mar	WFR Medium	MSE6NWL DSCI	WL Photocell with two selectable modes of operation. Defaults to on/ off mode. Photocell has full control during periods of occupancy.	CD-X X-TL. COND ^{3/18} Sentitry ¹⁵ CDP-1 5-15-X 120V condiand plus ^{3/18} FLIPC BS1 7232				19719 1997 9 17117 1723	71 20157 20184 1767, x6 17498 17521 1534	72 18204 18496	19200 15493 1: 16667 12449 1	15985 16224 17353 13876 14084 15064	130 156		W 45777	45777 49965	51461 42785 44672 37140	43982 45477	46076 33809	35305 38297	41887 374	138
	Frosted W Wide	ALCENDARIA DO	High bay 15-45 ft. MU - Restand with two coloritable moder of constation. Defaults to an /	CDP-L6-15-X 208V/240V cord and plug ^{9/8} Emergency	OPERATIONAL DATA			4 20104 2036	12 20551 20578 1801	18 18560 18858	19576 15796 14	16297 16541 17693	130 159		WA 46672	46672 50943	52468 43622	44842 46367	46977 34470	35995 39046	42706 374	i 140
	WFR Wide	MOEIOWWEDO	off mode. Photocell has full control during periods of occupancy.	CDP-L7-15-X 277V cord and plug ⁹³⁵ CDP-L7-15-X 277V cord and plug ⁹³⁵ Bodine cold	Ambient Temperature Ratings			24842 2516	10 25394 25427 2226	64 22933 23302	24189 19518 20	20138 20439 21862	170 150		M 53480	53480 58374	60121 49985	51383 53131	53830 39498	41246 44742	48936 437	138
	Frosted IA Narrow		nign bay 8-15 m.	CDP-L24-20-X 347V Cord and pug ⁴ ³⁵ 9Cto 50 °C	Mounting nLight Occ Sensor xPoi	nt Battery Ambient Supply Tet accurace property Voltage and the law		R 22957 2325	50 23467 23498 2057-	74 21193 21533	22353 18037 18	18610 18888 20203	170 138		MFR 49422	49422 53944	55559 46192	47484 49099	49745 36501	38116 41346	45223 437	127
	Acrylic	Dimming Sense	<u>S</u> ³⁴	CDP-5-15-X Straight blade 120V plug and cord ⁹⁸ max. ⁰⁴		H B3L722L P330250 12L 18L 24L 30L 35L 40L 45L 50L 60L HH		25026 2534 8 22969 2326	16 25582 25616 2242 33 23480 23511 2058	29 23103 234/4 86 21205 21545	24368 19663 A 27366 18047 1/	20287 20590 22024 18620 18899 20214	1/0 151	100	N 538/6 NFR 49449	53876 58806 49449 53974	60567 50355 55590 46217	51/63 53524 47510 49126	54228 39791 49772 36521	41552 45073	49298 437	139
	WA Wide Acryl Focus	MSE62L3VWL	360° motion sensor embedded, high bay 15–45 ft., on/off with second time-out period, goes to a dimmed state before turning off. ⁹	OSK-XX S-wire drop cord for use with external low voltage dimming controls - G 3-ft. safety	N	N 347-480 65 65 60 55 N Y 120-277 45 45 45 45	24L	25248 2557	1 25809 25843 2262	28 23308 23682	24584 19837 2	20467 20773 22219	170 152	60L	NA 54354	54354 59328	61104 50802	52223 53999	54709 40144	41920 45473	49736 437	140
	FR Focus	MSE102E3VWE	360° motion sensor embedded, low bay 8-15 ft., on/off with second	Black ⁴³⁵ Chain (DSW.YY Suring drop cord for use with external (6 6-ft. Safety	N	Y N 120-277 50 50 50 50		24855 2517	74 25408 25441 2227	76 22946 23314	24202 19529 20	20149 20450 21874	170 150		₩ 53510	53510 58406	6015S 50012	\$1411 53160	53859 39520	41269 44766	48963 437	138
	Distributio	n	3volt min. dim setting.	low voltage dimming controls - chain		N N 120-277 55 45 40 40 40 40 40 40	3	R 21576 2185	2 22056 22085 1933	37 19919 20239	21009 16953 15	17491 17752 18988	170 130		WFR 46450	46450 50701	52219 43414	44629 46147	46754 34306	35824 38860	42504 437	120
		MSE6XAWL DS	(A XPoint Wireless enabled with photocell sensor & occupancy sensor, High bay 15-45 ft. ⁵	A Holoflex I, 6 ft cord, must specify chain ⁵		N Y 120-277 45 45 40 40 Y N 120-277 50 45 40 40		4 25341 2500 27892 2789	0 25905 25959 2271. 02 30444 31356 2606/	12 23395 23770 69 26798 27710	29675 19911 20	21511 23334 25522	218 144		000040 700	54550 59546	01331 30991	52417 54200	54913 40293	420/0 40042	49921 437	140
mmm mmm <td></td> <td>MSETOXAWL DS</td> <td>XA XPoint Wireless enabled with photocell sensor & occupancy sensor,</td> <td>voltage³</td> <td>N</td> <td>N N 120-277 55 45 40 40</td> <td></td> <td>R 25775 2577</td> <td>75 28134 28976 2409</td> <td>91 24764 25607</td> <td>25944 19037 19</td> <td>19879 21564 23585</td> <td>218 133</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		MSETOXAWL DS	XA XPoint Wireless enabled with photocell sensor & occupancy sensor,	voltage ³	N	N N 120-277 55 45 40 40		R 25775 2577	75 28134 28976 2409	91 24764 25607	25944 19037 19	19879 21564 23585	218 133									
		SBGR10BTP	360° Low Mount Occ Sensor, pre-wired; Bluetooth® 6	3 notonex in , or cord, musc speciny NSG Non-sancore gasket	p N	N Y 120-277 45 45 40 40 90		28098 2809	8 30669 31588 2626	62 26996 27915	28282 20752 2	21671 23507 25711	218 145									
Normalization Normalicity Normalization Normalizat		SBGR6BTP	360° High Mount Occ Sensor, pre-wired; Bluetooth® 6	PHCB Powerhook cord for 120V-277V, 347V ¹⁰ WG Wire guard	. ү	Y N 120-277 50 45 40 40	30L	R 25790 2579	0 28149 28992 2410 19 30040 31969 3640	04 24778 25621	25958 19047 19	19890 21576 23598 21963 22716 26020	218 133									
		SBGR10BTP HL SRGR&RTP HI	360° Low Mount Occ Sensor w/HL Default, pre-wired; Bluetooth® 360° High Mount Occ Sensor w/HL Default, pre-wired; Bluetooth®6		Y	N N 347-480 55		20346 2034	16 <u>30912</u> 31308 2019. 17 <u>30461</u> 31373 2608.	83 26813 27725	28090 20611 2	21523 23347 25536	218 144									
		SBGR10BTP AD	360° Low Mount Occ Sensor w/ADC Default, pre-wired; Bluetooth® 6	Wet location_cordsets: 10		<u>Y</u> N 120-277 50 45 40 40		R 24225 2422	25 26442 27234 2264	42 23275 24067	24384 17892 12	18684 20267 22167	218 125									
		SBGR6BTP ADC	360° High Mount Occ Sensor w/ADC Default, pre-wired: Bluetooth® 6	CDW-3 3TL cord only (includes PF-291) CDW-6 6ft cord only (includes PF-291)	N N	N N 120-277 50 50 50 50 N Y 120-277 45 45 45 45		A 28453 2845	53 31057 31986 2659	93 27337 28267	28639 21014 2	21944 23804 26036	218 147									
		SBGR10BTP AN SBGR6BTP ANL	360° Low Mount Occ Sensor W/ANL Default, pre-wired; Bluetooth* 5 360° High Mount Occ Sensor W/ANL Default, pre-wired; Bluetooth* 5	GDW-X X ft cord only (includes PF-291) ¹⁵	Υ	Y N 120-277 50 50 50 50		31352 3135 29072 3997	52 34221 35245 2930. 73 31634 33571 3707	03 30122 3114/ 79 37817 38781	31557 23155 24	24180 26229 28688 22245 24239 26511	254 139									
		1200000000		CDPW-L5-15-X 120V cord and plug (includes PF-291) ¹⁵ CDPW-L6-15-X 2082/240V cord and plug (includes	Y N	N Y 120-277 45 45 40 40		31584 3158	34 34474 35506 2952	20 30345 31378	31790 23327 24	24359 26423 28900	254 140									
		Controls: NPP16D	Poweritelay nack (0.1000) (dimmine output) ²	PF-291) ¹⁵		Y N 120-227 50 45 40 40 U 120-227 65 65 60 55	39	R 28989 2898	89 31641 32589 2709-	94 27852 28799	29178 21410 2	22357 24252 26526	254 128									
		NPP16DER	Power/relay pack (0-10VDC dimming, output, UL924 emergency	CDPW-L7-15-X 277V cord and plug (includes PF-291) ¹⁶	N N	N N 347-480 65 65 60 55 120-377 55 45 40 40		31864 3186	54 34780 35821 2978. TO MANO 35927 2978.	82 30615 31656	32073 23534 2	24575 26658 29157	254 141									
		OFAXA	operation) ⁷ XPnint Wireless enabled ⁶	Hooks 6	N N Y	N N <u>347-480</u> 55 900		R 27231 2723	99 34240 35265 2931 81 29722 30612 2545	19 30139 31164 S1 26163 27053	315/4 23168 2 27409 20112 2	24193 26244 28704 21002 22781 24917	254 139									
no field agles deport famming field agles deport famm		naniy	SO WALL WALCE COMPLY	PE-129 Anti-rotational hook, 3/4" male?	NR N	N N <u>120-277 55 45 40 40</u> 347-480 55 45 40 40		4 31983 3198	l3 34909 35955 2989.	92 30729 31774	32192 23621 24	24666 26757 29265	254 142									
0 pr.2n1 6skted hold, 34 ^m male hit is pr.2 main and is an		A0	Field adjustable output dimming ⁴	PF-105 Loop, 3/4" male ² PF-121_A Safety book, 3/4" male ²	, r	N N 120-277 55 45 40 40 347-480 55		37468 3746	i8 40897 42121 35019	19 35999 37223	37713 27673 2	28897 31346 34285	288 146									
N 3/140 3/1		U	Dimming terminal	PF-291 Gasketed hook, 3/4" male	* BTP not available without occupany sensor			R 34625 3462	25 37793 38925 3236.	62 33267 34399 70 36365 37400	348S1 25573 24	26704 28967 31683	288 135									
NA 3001 4165 4209 3552 3637 37832 28125 29369 3185 3445 28 148 W 37485 37485 4099 47144 5093 3619 3724 3732 28125 29369 3185 3445 28 148 W 37485 37485 3749 2714 5703 3724 3733 2825 29169 2728 29169 146 WR 3254 3254 3552 3658 3016 3125 2909 2728 2917 2989 146 WR 3252 3252 3252 3552 3658 3016 3125 2909 2728 2917 298 146 WR 3252 3252 3252 3552 3658 3016 3125 2909 2128 2919 1919 1919 WR 3252 3128 3252 3128 3127 3127 3127 3127 3127 3149 1919							1000	R 34644 3464	H 37814 38946 3238	80 33286 34418	34871 25587 20	26719 28983 31701	288 135									
W 37489 40919 4214 5039 5019 3724 37734 27688 2891 31363 34304 288 146 W RR 32543 32543 35521 36584 30416 31267 32330 32756 20035 25099 2726 29778 288 127 WA 38222 38222 1770 42689 37724 26723 37972 28172 2829 29178 288 107 WA 38222 38224 1770 42969 35724 36723 37972 28172 2829 29178 288 107 WA 38222 38224 1770 42969 35724 36723 37972 2817 288 199 WA 38222 38224 1770 42969 35724 36723 37972 2817 31977 288 199 WA 382525 18000 18000 18000 18000 18000 18000 18000 18000 18000 18000 18000 18000 18000 18000							401.	38081 3808	81 41565 42809 3559.	92 36587 37832	38329 28125 2	29369 31858 34845	288 148									
WH 32543 32521 3684 9046 3125 2015 2015 2015 2015 11 WH 32543 32521 36384 9046 3125 <								37489 3748	89 40919 42144 3503	39 36019 37244	37734 27688 20	28913 31363 34304	288 146									
SEE NEXT PAGE FOR ACCESSORIES AND NOTES Holophane 3825 Columbus Rd. Granville 0H 43023 Phone \$66-H010PHAIE www.holophane.rom PH7								m 32543 3254 A 38222 3822	13 35521 36584 30410 22 41720 42969 3572	10 31267 32330 24 36723 37972	32756 24035 2	29479 31977 34975	288 149									
Holoohane 1 3825 Columbus Rd. Granville 0H 43023 Phone: \$65-HOLOPHANE www.boloohane.com				SEE NEXT PAGE FOR ACCESSORIES AND NOTES	<u> </u>					and a second												
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ATIONAL DAT	A CONTINUE)					
en Maintena	nce 45L Pack	age					
Ambient °C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.97	0.96	0.96	0.95	0.95	0.93
30	1.00	0.97	0.96	0.96	0.95	0.94	0.92
35	1.00	0.97	0.96	0.96	0.95	0.94	0.92
40	1.00	0.97	0.96	0.95	0.95	0.94	0.92
45	1.00	0.96	0.95	0.95	0.94	0.93	0.91
50	1.00	0.96	0.95	0.95	0.94	0.93	0.90
55	1.00	0.96	0.95	0.94	0.94	0.93	0.90
60	1.00	0.96	0.95	0.94	0.93	0.92	0.89
65							
Ambient °C	0 Hours	15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	1.00	0.97	0.96	0.96	0.95	0.94	0.92
30	1.00	0.97	0.96	0.96	0.95	0.94	0.92
35	1.00	0.96	0.95	0.95	0.94	0.93	0.91
40	1.00	0.96	0.95	0.95	0.94	0.93	0.90
45	1.00	0.96	0.95	0.94	0.94	0.93	0.90
50	1.00	0.96	0.95	0.94	0.94	0.92	0.89
55	1.00	0.96	0.95	0.94	0.93	0.92	0.89
60	1.00	< 0.96	<0.95	<0.94	< 0.93	<0.92	<0.89
65	Ú,						
en Maintena Ambient °C	nce 60L Pack O Hours	age 15000 Hours	30000 Hours	36000 Hours	45000 Hours	60000 Hours	100000 Hours
25	100	0.96	200	0.95	0.94	0.93	691
້	100	0.96	0.95	0.95	0.94	0.93	0.90
35	1.00	0.96	0.95	0.90	0.94	0.93	0.90
40	100	0.96	0.95	0.94	0.94	0.97	0.90
45	1.00	0.96	0.93	0.04	0.07	0.92	0.90
5	1.00	0.96	0.94	0.94	0.93	0.92	0.09
	1.00	<0.96	<0.04	<0.94	<0.03	<10.02	<0.07
60	TINY		340.1	3001			
65	6	-		-	-		-

ille	

RATIONAL DA	TA CONTINU	JED							
Ambient °C	12L	18L	24L	30L	35L	40L	45L	50L	60L
25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
35	0.99	0.99	0.99	0,98	0.98	0.98	0.98	0.98	0.98
40	0.98	0.98	0.98	0.98	0.97	0.97	0.97	0.97	0.97
45	0.98	0.97	0.97	0.97	0.97	0.96	0.96	0.96	0.96
50	0.97	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95
55	0.96	0.96	0.95	0.95	0.95	0.95	0.94	0.94	0.94
60	0.95	0.95	0.95	0.94	0.94	0.94	0.93	0.93	
65	0.95	0.94	0.94	0.93	0.93				

FAO Position	% Light Output	% Power Consumption
8	100%	10096
7	89%	86%
6	78%	75%
5	67%	6296
.4	54%	49%
3	41%	36%
2	28%	2496
1	14%	1196

Model	Default Operation	Occupan cy Time Delay	Photocell Mode	Photocell Set-point	Low Trim	High Trim	Dim to Off Time Dela
SBGR10BTP	On/Off O ccupancy Only Disabled	10 minutes	Disabled	n/a	n/a	100%	Disabled
SBGR6BTP	On/Off Occupancy Only Disabled	10 minutes	Disabled	n/a	n/a	100%	Disabled
SBGR10BTP HL	Occupancy w/O-10V Dimming (High/Low/Off)	10 minutes	Disabled	n/a	10%	100%	2.5 minutes
SBGR6BTP HL	Occupancy w/ O-10V Dimming (High/Low/Off)	10 minutes	Disabled	n/a	10%	100%	2.5 minutes
SBGR10BTP ADC	Occupancy w/ Dim & Switch Photocell	10 minutes	On/Off & Auto Dim	50 fc	10%	100%	0 seconds
SBGR6BTP ADC	Occupancy w/ Dim & Switch Photocell	10 minutes	On/Off & Auto Dim	50 fc	10%	100%	0 seconds
SBGR10BTP ANL	Dim & Switch Photocell with High/Low Occupancy Operation	10 minutes	0n/0ff & Auto Dim	50 fc.	10%	100%	Stay Dim/Never Off
SBGR6BTP ANL	Dim & Switch Photocell with High/Low Occupancy Operation	10 minutes	On/Off & Auto Dim	S0 fc	10%	100%	Stay Dim/Never Off
		-					

-----DISTRIBUTION DATA Narrow

Phuzion™

LED High Bay

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								HOLO	الله PHANE
Av 0 177 5 142 15 127 25 109 35 95: 35 83; 55 67/ 65 46/ 55 30; 85 76 90 32	 Lumens 54 1388 564 3583 5042 68 6437 6437 4695 8 6230 1 025 	Zons Lumans 0*-30* 100223 0*-40* 15074 0*-60* 24024 0*-90* 37337 0*-10* 3638 90*-12* 3638 90*-12* 3638 90*-12* 3638 90*-18* 3693 0*-18* 3693 9*-18* 3693 9*-18* 3693 9*-18* 3693	%Lamp 266 423 753 990 09 09 10 10 10 10 10	6 90% w 50% 50% 0 110 1110 1119 1 00 36 9.4 2 39 82 9.4 3 78 70 63 5 62 54.6 40 6 50 41 35 6 62 54.6 40 7 50 41 35 6 42 34 28 0 39 31 26	200% 70% 50%,30%,10% 116 116 116 116 116 16 16 116 16 16 12 87 81 9 87 81 9 88 31 26 88 31 26 88 31 26 89 81 80 81 26 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80	50%5 50%30%510%5 1111 111 111 111 111 116 93 189 83 78 73 72 66 61 65 56 52 58 51 45 53 45 39 46 40 35 54 43 38 31 40 33 28 37 30 25	Nital FC Mourting Cantar Haight Basam 0.0 454.8 10.0 254. 12.0 196.9 14.0 134.4 16.0 97.5	50% beam 56.8* <u>Diameter PC</u> 5.9 2024 8.1 1243 103 767 124 523 145 380	10% beam - 109.2° Dismater PC 15.2 46.5 20.7 25.0 26.2 15.6 31.8 10.9 37.3 7.7
Av 0 126 5 130 15 127 25 116 35 03 45 97 55 661 65 431 76 24 85 76 90 31	Lumens 34 33 1241 33 3562 36 6373 36 6373 36 5388 7 4356 6 2599 3 327	Zone Lumens 0*-30* 10004 9 0*-60* 280572 4 0*-60* 280572 4 0*-10* 2805 9 90*-12* 2805 90*-12* 2805 90*-13* 3058 0 0*-16* 3058 0 0*-18* 3068 7 * Hitcancy	%Lamp F 2722 445 781 992 08 08 08 08 08 08	d 80% w 50% 30% 10% 0.119 119 1.03 93 2.50 83 70 71 64 70 75 53 63 64 75 63 64 47 61 42 9 47 9 47 9 43 32 9 0 40 32 26	200% 70% 50%30%40% 116 116 116 118 71 87 94 89 82 73 84 69 81 70 64 69 81 70 64 69 53 47 55 42 45 60 42 36 46 38 32 42 34 29 39 31 26	50% 50%,30%,10% 50%,30%,10% 57,30%,10% 57,30%,20% 57,46%,59 59,52 54,46% 40,44% 46,40 49,41 26 45,37,32 41,34 29,38 31,26%	hital FC Mourting Center Height Besam 9.0 4229 10.0 2234 12.0 1000 14.0 955 16.0 69.3	50% beam - 65.0* 70 2115 96 1146 12:1 714 147 467 172 35.4	10% baam - 109.5° Dismeter PC 15.6 42.3 21.2 22.7 26.9 14.2 325 3.7 38.2 7.0
Ave 0 8741 5 7793 5 8361 5 9004 5 1065 5 1065 5 5241 5 5241 5 782 0 337	Lumens 759 2266 3884 5723 8 8087 7435 5156 2872 928	Zone Lumens 3 0* 40° 600.9 0* 40° 126314 0* 60° 215142 0* 50° 471057 90* 120° 3054 90* 130° 372.4 90* 160° 372.4 90* 160° 372.4 90* 160° 372.4 180° 374870 * *Bit ciamor	pi pi pi pi pi pi pi pi pi pi pi pi pi p	80% 50% 20% 10% 119 119 102 36 103 91 104 36 107 67 108 91 109 91 109 91 100 50 101 36 102 36 103 14 104 30 105 49 107 37 41 30 108 30 308 30 305 27 21 36	20% 50%20%10% 116 116 116 09 96 92 96 79 73 74 66 96 75 748 49 51 42 35 74 48 49 51 42 35 46 32 31 41 33 27 38 22 4 34 25 21	50% 50% 30% 10% 111 111 111 111 111 111 111 110 58 52 62 89 82 76 71 14 58 52 57 41 55 47 41 49 41 35 55 47 41 49 30 22 26 36 22 23 36 22 21	Inital FC Mounting Carter Height Been 1 80 2553 100 138 1 120 969 14.0 662 16.0 480	50% boam - 88.1* 2%meter FC C 10.6 127.6 18.4 43.3 222 285 28.2 28.5 26.1 21.4	10% beam - 120.5* 1932 265 26.3 137 333 86 40.3 5.8 47.3 4.2
Av 0 131 5 111 15 880 25 517 35 307 45 17 35 98 85 58 85 58 85 58 85 74 990 30	Lumens 0 14 955 5 2370 2 2430 8 1915 2 1306 8 88 8 88 584 902 91	Zena Lumens 9 0*-30* 525.1 0*-60* 525.5 0*-60* 9874.1 90*-10* 283.3 90*-10* 283.3 90*-10* 283.9 90*-10* 283.9 90*-10* 283.9 90*-10* 283.9 90*-10* 283.9 90*-10* 283.9 10*-180* 10883.4	F KLamp P 2029 0 705 0 907 2 907 2 907 3 907 3 03 4 03 4 03 4 03 5 1 1000 5 1	5 80% 50% 30% 10% 119 119 119 119 1008 105 102 98 93 88 99 83 78 89 83 78 89 83 78 80 83 88 80 78 80 78	2086 7006 5095 3095 1095 116 113 116 106 113 100 96 91 87 80 74 69 74 68 63 69 62 57 74 68 63 69 52 53 60 53 49 56 50 45	50%, 50%,30%,10%, 111 111 111 101 99 95 38 80 76 78 73 68 72 66 62 67 61 57 52 69 53 48 55 49 45 52 46 42	Inital FC Mounting Center Height Beam 1 80 3574 100 2340 120 1450 140 995 160 722	50% beam - 42.6° <u>43.178.7</u> 5.9.965 9.0.406 10.5.29.5	10% beam- 78.9* 9.0 36.7 12.3 18.7 15.6 11.7 18.9 80 22.2 5.8

Page 11 of 12

Proposed Improvements - Footprint

- 264-ft-by 95-ft covered area
- A 100-ft by 50-ft section will remain open to avoid conflict with underground utilities.
- Existing Storage Volume = 81,000 cf
- Storage Volume to be Covered = 160,000 cf

Existing Biosolids Storage Pad Facing East

Existing Biosolids Storage Pad Facing South

Existing Biosolids Storage Pad Facing West

Proposed Biosolids Storage Pad Facing East

Proposed Biosolids Storage Pad Facing South

Proposed Biosolids Storage Pad Facing West

City of Richmond Wastewater Treatment Plant **Biosolids Storage Pad Cover**

Site Location

Existing Aerial View

Proposed Aerial View