



Date: 12/5/2022

Prime Contract Change Order Number 001

Deschutes County Parole and Probation / Sheriff's Office WorkProject # 4120013-000

Skanska USA Building Inc.

To Contractor:
Skanska USA Building Inc.
2275 NE Doctors Drive
Suite 3
Bend, OR 97701

Architect's Project No:
Contract Date: 4/16/2020
Contract Number: GC-001

The Contract is hereby revised by the following items:

Parking Lot Expansion

AR	CE	Description	Amount
0004	0003	Parking Lot Expansion	\$300,243.00

Please note that this work is now scheduled for Spring of 2023. The supervision required for this project is now not concurrent with the completion of the DCPD project.

General Conditions will be tracked on a T&M basis for the duration of the work. Supervision required will be Jason Biever full time while work is ongoing and Chad Young will be administrating the material and cost management at approximately 25% of the project duration.

It is agreed that Skanska can apply remaining contingency and escalation allowance funds to increase General Conditions if required. Skanska will submit any increases in GC's with Deschutes County for Approval.

The original Contract Value was.....	\$6,356,969.00
Sum of changes by prior Prime Contract Change Orders.....	\$0.00
The Contract Value prior to this Prime Contract Change Order was.....	\$6,356,969.00
The Contract Value will be changed by this Prime Contract Change Order in the amount of.....	\$300,243.00
The new Contract Value including this Prime Contract Change Order will be.....	\$6,657,212.00
The Contract duration will be changed by.....	0 days
The revised Substantial Completion date as of this Prime Contract Change Order is.....	

Skanska USA Building Inc.

CONTRACTOR
2275 NE Doctors Drive
Suite 3
Bend, OR 97701

Address
BY _____
SIGNATURE _____
DATE _____

Deschutes County

OWNER
1300 NW Wall St., Bend, OR

Address
BY Patti Adair, Chair, Board of Commissioners

SIGNATURE _____
DATE _____



_Authorization Request

Skanska USA Building Inc.
4120013-000 - Deschutes County Parole and Probation / Sheriff's Office Work Center
63360 NW Britta St. #2
Bend, OR 97701

4120013-000 Deschutes County Parole and Probation / Sheriff's Office Work Center

Authorization Request: 0004 **Date: 6/2/2022**

To:	Lee Randall Deschutes County PO Box 6005 Bend , OR 97708-6005	From:	Chad Young Skanska USA Building Inc. 2275 NE Doctors Drive Suite 3 Bend, OR 97701 Tel: Fax:
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Description	Status
Parking Lot Expansion	Submitted

Reference	Required By	Amt Req	Days Req
	6/9/2022	\$300,243.00	0

Notes

The following request and associated cost is identified and agreed to become a modification to the GMP Contract :

Please see the attached cost breakdown and backup associated with the Parking Lot Expansion. Cost includes all labor, material, and equipment required to complete the following work as detailed in the attached and as listed below:

- Surveying and Staking
- Site Clearing
- Underground Utilities and Light Poles
- Site Work, Concrete, and Paving
- Striping
- Chain Link Fencing

Please note that this work is now scheduled for Spring of 2023. The supervision required for this project is now not concurrent with the completion of the DCPD project.

General Conditions will be tracked on a T&M basis for the duration of the work. Supervision required will be Jason Bieber full time while work is ongoing and Chad Young will be administrating the material and cost management at approximately 25% of the project duration.

It is agreed that Skanska can apply remaining contingency and escalation allowance funds to increase General Conditions, if required. Skanska will submit any increases in GC's with Deschutes County for Approval.

This request is to ADD \$300,243 to the GMP Contract Amount.

CE No	Date	Description	CE Category	CE Reason	Days Req
0003	4/2/2022	Parking Lot Expansion	Owner	Owner Directive	0

Item No	Company	Item Description	Amt Prop
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_Authorization Request



Skanska USA Building Inc.

4120013-000 - Deschutes County Parole and

Probation / Sheriff's Office Work Center

63360 NW Britta St. #2
Bend, OR 97701

Deschutes County Parole and Probation / Sheriff's Office Work Ce

_Authorization Request
Standard

Authorization Request: 0004			Date: 6/2/2022	
0001	Hickman, williams & Associates, Inc. dba HWA	Parking Lot Expansion - Surveying - Hickman & Williams	\$5,500.00	
0002	Tim Bloom Construction Inc.	Parking Lot Expansion - Sitework - Tim Bloom Construction	\$125,212.00	
0003	Skanska USA Building Inc.	Parking Lot Expansion - Site Concrete - Skanska	\$24,992.00	
0004	Aspen Ridge Electric, Inc.	Parking Lot Expansion - Electrical - Aspen Ridge	\$26,968.00	
0005	Severson Plumbing Mechanical, Inc.	Parking Lot Expansion - Plumbing - Severson	\$1,579.00	
0006	Mike's Fence Center Inc.	Parking Lot Expansion - Fencing - Mike's Fence	\$27,300.00	
0007	Tri County Paving, LLC	Parking Lot Expansion - Paving - Tri-County Paving	\$19,170.00	
0008	Tri County Paving, LLC	Parking Lot Expansion - Striping & Signage - Western Protective Coatings under Tri-County Paving	\$2,925.00	
0009	Tim Bloom Construction Inc.	Parking Lot Expansion - Allowance - Add Spare J-Box Near Existing Shed	\$2,500.00	
0010	Skanska USA Building Inc.	Parking Lot Expansion - Allowance - Seed in Swale	\$2,000.00	
0011	Skanska USA Building Inc.	Parking Lot Expansion - General Conditions	\$29,297.00	
0012	Skanska USA Building Inc.	Parking Lot Expansion - Construction Contingency	\$11,907.00	
0014	Skanska USA Building Inc.	Parking Lot Expansion - General Liability Insurance	\$2,654.00	
0015	Skanska USA Building Inc.	Parking Lot Expansion - Payment & Performance Bond	\$2,961.00	
0016	Skanska USA Building Inc.	Parking Lot Expansion - Subcontractor Default Insurance	\$2,934.00	
0017	Skanska USA Building Inc.	Parking Lot Expansion - Corporate Activity Tax	\$1,197.00	
0018	Skanska USA Building Inc.	Parking Lot Expansion - Fee	\$11,147.00	
			CE #0003 Total	\$300,243.00
			AR #0004 Total:	\$300,243.00

PROPOSAL RECAPITULATION

4120013

				Authorization Request - #	Proposal Date	Proposed Cost	
Parking Lot Expansion				CE #003	7-Dec	GMAX	\$ 300,243
WORK ITEM	Subcontractor	Hours	Rate	Subcontractor	PO	TOTAL	
Surveying	HWA			\$ 5,500		\$ 5,500	
Sitework	Bloom Construction			\$ 125,212		\$ 125,212	
Concrete	Skanska			\$ 24,992		\$ 24,992	
Electrical	Aspen Ridge			\$ 26,968		\$ 26,968	
Plumbing	Severson			\$ 1,579		\$ 1,579	
Fencing	Mike's Fence			\$ 27,300		\$ 27,300	
Paving	Tri-County Paving			\$ 19,170		\$ 19,170	
Striping & Seal Coat	Western Protective			\$ 2,925		\$ 2,925	
Add Spare J-Box Near Existing Shed (40LF Trenching + Electrical)	Allowance			\$ 2,500		\$ 2,500	
Landscaping Allowance - Seed in Swale	Allowance			\$ 2,000		\$ 2,000	
Subtotal Direct Construction Costs						\$ 238,146	
General Conditions	Skanska					\$ 29,297	
Contingency (5% of Direct Construction Costs)						\$ 11,907	
Subtotal General Conditions / Contingency						\$ 41,204	
				CM/GC Fee @ 3.99%		\$ 11,147	
				General Liability Insurance (GLI) @ 0.95%		\$ 2,654	
				Payment & Performance Bond (P&P) @ 1.00%		\$ 2,961	
				Subcontractor Default Insurance (SDI) @ 1.05%		\$ 2,934	
				Corporate Activity Tax (CAT) @ 0.43%		\$ 1,197	
Total						\$ 300,243	

Qualifications:

Assumes access to the on-site spoils disposal will not require stopping to check-in for each pass through the secure gate.
Assumes water can be shut off via existing valve.

Exclusions:

Decommissioning of the wet well. Appears to be in use still.
Rock hammering, no geotech report provided and current site appears to be a fill. T&M rates included with proposal from Tim Bloom Construction.
Amending of topsoil, none indicated on plans.
Plantings, none indicated on plans.
Handicap striping, none indicated on plans.
Signage, none indicated on plans.

General Conditions



Labor	Start	Finish	Duration		Projected Hours Per Week	Labor Rates	Projected Weekly Cost	Projected Job Total Costs
Project Duration	03/01/23	05/27/23	13	WKS				
Sr Project Manager - Schlottmann	03/01/23	05/27/23	13	WKS	0	\$125	\$0	\$0
Project Manager - Young	03/01/23	05/27/23	13	WKS	10	\$95	\$950	\$12,350
Sr Superintendent - Struck	03/01/23	05/27/23	13	WKS	0	\$125	\$0	\$0
Superintendent - Biever	03/01/23	05/27/23	13	WKS	40	\$95	\$3,800	\$49,400
Sr. Project Engineer - Blevins	03/01/23	05/27/23	13	WKS	0	\$75	\$0	\$0
Subtotal - Labor							\$4,750	\$61,750

Material	Start	Finish	Remaining		Projected QTY Per Week	Actual Cost Per Week	Projected Weekly Cost	Projected Job Total Costs
Field Toilets	03/01/23	05/27/23	13	WKS	2	\$35	\$70	\$910
Safety and Signage	03/01/23	05/27/23	13	WKS	1	\$50	\$50	\$650
Subtotal - Material						\$425	\$120	\$1,560
Subtotal - General Conditions							\$4,870	\$63,310

Qualifications:

These are anticipated General Condition costs for reference. Final costs will be reconciled upon completion of the proposed work.

Exhibit "A"
Scope of Work and Fee Proposal

Deschutes County Public Safety Facility
Construction Staking



March 28, 2022

Task 1	Construction Staking - Site Work	\$ 5,500
a	Coordination	
b	Data Processing and Calculations	
c	Establish Project Control	
d	Rough Grading Parking Lot	
f	Storm	
j	Light Poles	
k	Curb	
l	Fence Staking	
m	Materials/Expenses	

Total Fee Estimate: \$ 5,500

Assumptions and Understandings:

- This fee proposal valid for 30 days.
- Please see Construction Staking General Conditions for staking procedures and details.



Tim Bloom Construction, Inc
 1842 SE 1st Unit D
 Redmond, OR 97756
 Phone 541-948-0337
www.bloomconstructioninc.com

CO #1 Parking Lot Addition

Bid For: Skanska USA Inc

Date: May 24, 2022

Chad Young

Phone: (541)-233-6292

Email: chad.young@skanska.com

GENERAL CONSTRUCTION			
1	Mobilization		
2		Total	\$1,850.00
3	Erosion Control		
4	Construction entrance		
5	Concrete washout		
6		Total	\$2,887.00
7	Expose Irrigation Main		
8	Expose irrigation to confirm depth		
9		Total	\$682.00
10	Demo		
11	Demo & haul off 187 lf of fence		
12	Demo & haul off 175 sf of ADA fence		
13	Sawcut 4 ea curbs		
14	Demo & remove 50 lf of curb		
15	Expose water line & remove 17 lf (disconnect & cap water line by licensed plumber)		
16	Expose sewer line & remove 45 lf		
17	Salvage 6" of existing AB 5,912 lf to be hauled to hauled within 10 miles		
18	Remove existing debris to 2' bellow surface (estimated four solo dump trucks 10 cy ea)		
19		Total	\$22,369.00
20	Mass Excavation		
21	Cut site to subgrade 640 BCY		
22	Fill site to subgrade 3 BCY		
23		Total	\$16,065.00
24	Site Works		
25	Prep 6" of AB for asphalt 10,206 sf		
26	Prep 8" of round drain rock 365 sf w/ filter fabric		
27	Prep 3" of AB for 12" curb 500 lf		
28	Prep 18" of Screened Soil 1,812 sf w/ geo textile fabric (60% clean sand Hooker Creek O'Neil Pit 40% Hershey topsoil)		
29	Prep 6" of drain rock for pond drainage 175 sf		
30	Drill 4 ea 12" to 18" holes for bollards		
31	Prep 3" of 3/4" open aspen rock (Grizzly Gold) in landscape areas		
32		Total	\$50,495.00
33	Trenching Per E2.1		
34	Excavate trench per E2.1 143 lf		
35	Drill hole for power pole 1 ea		
36		Total	\$6,529.00
37	Trenching Per E2.0		
38	Excavate trench per E2.0 200 lf		
39	Drill hole for power poles 3 ea		
40		Total	\$9,272.00
41	Domestic Water		
42	Install water meter setter & box (all other plumbing by others)		
43		Total	\$3,026.00
		Sub Total	\$113,175.00
		OH&P 10%	\$11,317.50
		CAT Tax 0.0057	719.19

Signature _____

Date of
Acceptance _____

Special Provisions to our Bid

- 1) This proposal shall be included in the subcontract if accepted
- 2) Due to volatile world resin markets, the pvc pipe prices are subject to a pipe escalation clause
- 3) Due to volatile world crude markets, the AB prices are subject to a fuel escalation clause
- 4) Traffic control and signage for Bloom Construction work only.
- 5) Sewer, Water, & Fire connections to 5' of building, all piping under the footings or inside the building by others.
- 6) Hammering based on bore logs, any rock encountered outside of geo tech parameters will be subject to additional charges
- 7) All change orders subject to O&H & CAT tax

Items not included:

Layouts, Surveys, Permits and compaction testing
Clean up of other contractors materials will be time and material
Topsoil and amendments
Rock hammering, export, & replacement unless a soils report with bore logs is provided.
Wet Weather & winter weather conditions
Water for dust control when Bloom Construction is not present on the job

This proposal is valid for 30 days and subject to change. If there are any questions please call Justin Bloom at (541)-848-9707 or Tim Bloom (541)-948-0337

Thank You



Tim Bloom
tim@bloomconstructioninc.com



TIM BLOOM CONSTRUCTION, INC

Commercial Prevailing Rates

Price List

Hourly Rate

All Hourly Rates Are Min 4 HRS

The Rates Bellow Are For Regular Time Per Boli Regulations. Overtime & Double Time Will Be Additional Cost Based On Labor Rate For The Operator Specified By Boli Regulations.

Loader

3 Yard Loader	\$175.00
Backhoe	\$155.00
With Compactor	\$170.00
With Hammer	\$190.00
Skip Loader	\$155.00
Wheeled Skidsteer	\$130.00
Tracked Skidsteer	\$135.00
With Laser Box Blade	\$155.00
With GPS Box Blade	\$180.00
With Total Station Box Blade	\$200.00

Excavators

35 Ton Excavator	\$255.00
With Hammer	\$330.00
25 Ton Zero Turn Excavator	\$200.00
With Hammer	\$265.00
20 Ton Excavator	\$195.00
With Laser	\$215.00
With GPS	\$240.00
With Hammer	\$270.00



TIM BLOOM CONSTRUCTION, INC

12-16 Ton Excavator

\$175.00

With Laser \$200.00

With Hammer \$230.00

8 Ton Excavator \$150.00

With Compactor \$170.00

With Hammer \$195.00

5 Ton Mini Ex \$140.00

With compactor \$150.00

With Hammer \$165.00

3.5 Ton Mini Ex \$130.00

With Compactor \$150.00

With Hammer \$165.00

Dozers

650 Deere \$175.00

With Laser \$200.00

With GPS \$215.00

With Total Station \$235.00

Rental Dozer \$185.00

Rollers (min 4 hrs.)

Roller 48" or less \$125.00

Roller 54" to 64" \$150.00

Roller Large 84" \$250.00



TIM BLOOM CONSTRUCTION, INC

Screens

Skidsteer Grizzly	\$150.00 day
Backhoe Grizzly	\$175.00 day
Loader Grizzly	\$200.00 day
Shaker Screen	\$250.00 day

Off-Road Trucks

300 Cat	\$250.00
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Trucks

Dump Truck Solo	\$115.00
Dump Truck & Pup	\$135.00
Transfer unit	\$150.00
Belly Dump	\$145.00
End dump	\$140.00
Onsite Dump Truck	\$105.00

Labor

Labor	\$90.00
Foreman	\$100.00
Project Manager	\$85.00

Water (min 4 hrs.)

Water Trailer 1,000 Gallons or Less	\$150.00
Water Truck 2,000 Gallons	\$200.00



TIM BLOOM CONSTRUCTION, INC

Mobilization Bend & Redmond

Mobilization- Pickup & Trailer	\$250.00
Dump Truck & Trailer	\$250.00 (8 Ton or Smaller)
	\$400.00 (10 Ton to 16 Ton)
Tractor & Lowboy	\$700.00

MISC Day Rates

Service Truck	\$300.00 day
Plate Compactor	\$45.00 ½ day
Jumping Jack	\$45.00 ½ day
Mechanic Truck	\$135.00 per hrs.
Water Pump Gas Powered	\$50.00 ½ day
Water Pump Electric	\$40.00 ½ day



Change Order Request Form

4120013

Sub COR #		Parking Lot Expansion				Proposal Date	Proposed Cost				
Skanska - Concrete						5/5/2022	GMP	\$	24,992.00		
ITEM	LABOR			MATERIALS			EQUIPMENT			Subcontractors / Vendors	TOTAL
	Hours	Labor Rate	Cost	Quantity	Unit Rate	Cost	Hours	Hourly Rate	Cost		
12" Standard Curb - 500LF			\$ -	500	\$25.00	\$ 12,500.00			\$ -		\$ 12,500.00
Sidewalk - Patch 2 Panels for Electrical - 50SF			\$ -	50	\$15.00	\$ 750.00			\$ -		\$ 750.00
Light Pole Bases - 4EA			\$ -	4	\$2,000.00	\$ 8,000.00			\$ -		\$ 8,000.00
Bollards - 4EA	8	\$80.00	\$ 640.00	4	\$207.50	\$ 830.00			\$ -		\$ 1,470.00
			\$ -			\$ -			\$ -		\$ -
			\$ -			\$ -			\$ -		\$ -
Subtotals			\$ 640.00			\$ 22,080.00			\$ -	\$ -	\$ 22,720.00
										Labor Markup at 10%	\$ 64.00
										Material Markup at 10%	\$ 2,208.00
										Equipment Markup at 10%	\$ -
										Subcontractor / Vendor Markup at 5%	\$ -
										Total	\$ 24,992.00

Young, Chad

From: Brian Smith <brian@tplussteel.com>
Sent: Thursday, April 28, 2022 3:45 PM
To: Young, Chad
Subject: RE: DCP - Added Bollards

Warning - External Email

Would be \$830.00 supply for the 4 3in bollards supplied with caps and Galvanized \$207.50 each

From: Young, Chad <chad.young@skanska.com>
Sent: Thursday, April 28, 2022 9:14 AM
To: Brian Smith <brian@tplussteel.com>
Subject: RE: DCP - Added Bollards

Just galv, thanks.

Best Regards,

Chad A Young
Project Manager
Skanska USA Building Inc
Mobile: 541-233-6292

From: Brian Smith <brian@tplussteel.com>
Sent: Thursday, April 28, 2022 9:13 AM
To: Young, Chad <chad.young@skanska.com>
Subject: RE: DCP - Added Bollards

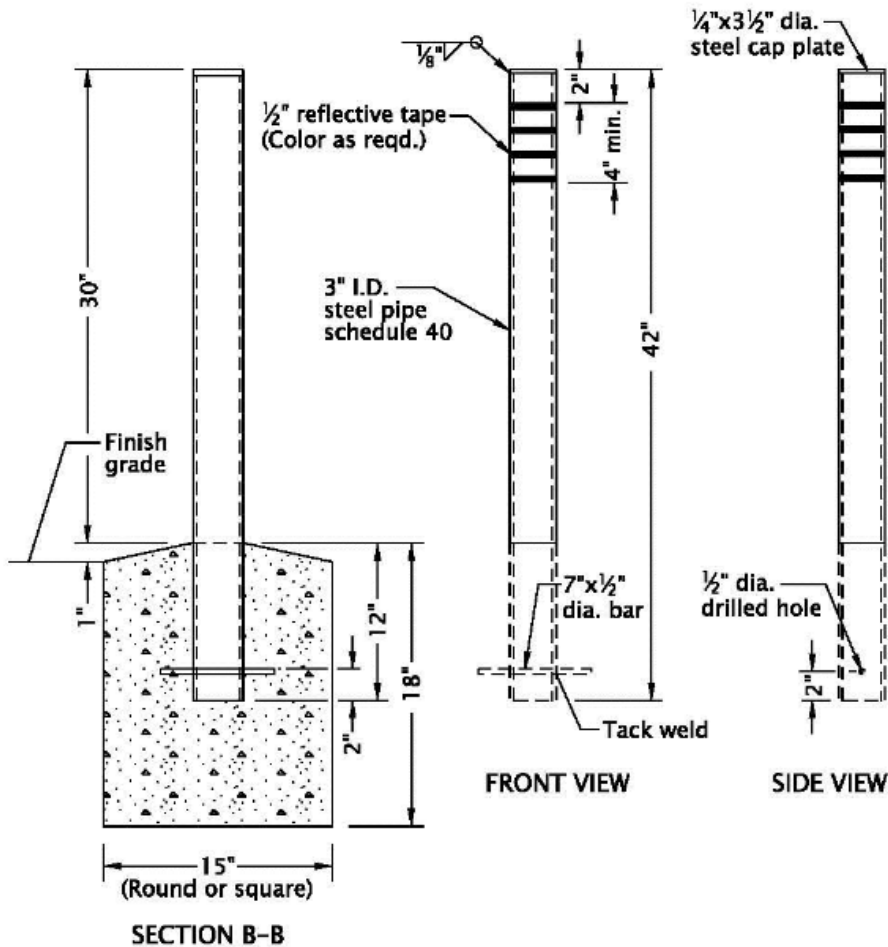
Warning - External Email

You want me to price as galv or yellow? Reason is we don't do color. But I can look at getting it painted or powdercoated

From: Young, Chad <chad.young@skanska.com>
Sent: Thursday, April 28, 2022 9:07 AM
To: Brian Smith <brian@tplussteel.com>
Subject: DCP - Added Bollards

Brian,

What would it cost to get 4 of these, we'll take care of the tape:



Best Regards,

Chad A Young
 Project Manager
 Skanska USA Building Inc.

We've moved! Please make note of our new address, 2275 NE Doctors Dr, Suite 3, Bend OR 97701

2275 NE Doctors Dr
 Suite 3
 Bend, OR 97701
 Mobile +1 541 233 6292

Skanska USA
usa.skanska.com
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Think twice before you press "print."

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April 22, 2022

Skanska USA Building inc.
Attn: Chad Young

RE: Deschutes County Parole and Probation Building
Public Safety Parking Lot
2890-4

Our price to furnish and install the 4 light poles and associated conduit and wiring for the new parking lot per the HWA drawings dated 2-16-22 is \$26,968.

Attached is back up for your review.

As usual, we are excluding excavation, backfill, painting, cutting and patching of existing surfaces, and concrete light pole bases. All work is figured during normal working hours.

Please feel free to call with any questions.

Sincerely,

Jeff Manley



Quote

Job Name: Deschutes County Public Safety Facility

Quote #: 22-61240-2

Job Location: Bend, Oregon

Issue Date: 4/21/2022

Good Through: 5/18/2022

Quoted By: Porter, Sharon

HARRY L STEARNS

5314 NE IRVING
 PORTLAND, OR 97213
 (Phn) 503-262-2640 EXT:
 (Fax) 503-262-2648

Quoted To: CRESCENT ELECTRIC SUPPLY CO
 2479 NE 4TH ST SUITE 110
 BEND, OR 97701-3666

Type	Qty	Manufacturer/Brand	Catalog #	Line Comment	Unit \$	Ext \$
AL	4	ABL-Lithonia Lighting	DSX1 LED P3 40K T4M MVOLT SPA PIRH1FC3V DDBXD 4/20/22 - PART NUMBER UPDATED.		\$926.72	\$3,706.88
AL-POLE	4	ABL-Lithonia Lighting	SSS 18 4C DM19AS FDL4B DDBXD	PLEASE CONFIRM IF THE FESTOON OUTLET SHOULD BE AT 2' OR 4' FROM BASE. NOTE ON POLES: PLEASE CONTACT A LOCAL STRUCTURAL ENGINEER IF ASSISTANCE IS NEEDED WITH THE CONCRETE BASE DESIGN. IF THE BASE REACTIONS FOR THE POLE ARE NEEDED IN ORDER TO COMPLETE CALCULATIONS, PLEASE REQUEST THEM.	\$751.19	\$3,004.76
					Total	6711.64

Manufacturer Totals

Manufacturer	Total
ABL-Acuity Brands Lighting	6711.64

Notes

- * LITHONIA FFA \$2.500
- * QUOTING PER SCHEDULE. SPECS PROVIDED
- * APPROVED SUBMITTALS REQUIRED PRIOR TO ORDER ENTRY

Job Name: DC Parole

Column 1 Column 2 Column 3 Column 4
 Combined Combined 2890-4 <none>

Items+ByProducts

Item #	Item Name	Quantity	Price 1	Ext Price 1	NECA 1	NECA 1 Ext	CCode
Category: CCode = Branch Rough							
2,024	3/4 GRC 90 ELBOW	2.00	\$1,513.20 C	\$30.26	0.40 E	0.80	cb
2,025	1 GRC 90 ELBOW	8.00	\$2,364.00 C	\$189.12	0.50 E	4.00	cb
7,791	3/4 PVC 40	20.00	\$119.20 C	\$23.84	4.50 C	0.90	cb
7,792	1 PVC 40	395.00	\$189.53 C	\$748.64	5.25 C	20.74	cb
8,272	1 PVC BELL END	10.00	\$763.80 C	\$76.38	0.16 E	1.60	cb
8,307	3/4 PVC FEMALE ADPT	4.00	\$102.00 C	\$4.08	0.16 E	0.64	cb
8,308	1 PVC FEMALE ADPT	16.00	\$138.73 C	\$22.20	0.18 E	2.88	cb
25,852	1G T&B WTG100-CV VERT GF	4.00	\$3,394.52 C	\$135.78	20.00 C	0.80	cb
Totals for CCode				<u>\$1,230.30</u>		<u>32.36</u>	

Category: CCode = Feeder Rough							
1,991	1 1/2 GRC	5.00	\$1,333.70 C	\$66.69	9.00 C	0.45	cf
2,027	1 1/2 GRC 90 ELBOW	2.00	\$4,021.80 C	\$80.44	0.75 E	1.50	cf
4,513	1 1/2 GRNDG LOCKNUT	1.00	\$963.12 C	\$9.63	0.26 E	0.26	cf
4,628	1 1/2 BUSH INSUL GRND	1.00	\$4,048.33 C	\$40.48	0.26 E	0.26	cf
7,794	1 1/2 PVC 40	10.00	\$307.17 C	\$30.72	7.00 C	0.70	cf
8,274	1 1/2 PVC BELL END	1.00	\$874.20 C	\$8.74	0.20 E	0.20	cf
8,310	1 1/2 PVC FEMALE ADPT	4.00	\$220.56 C	\$8.82	0.25 E	1.00	cf
Totals for CCode				<u>\$245.52</u>		<u>4.37</u>	

Category: CCode = Trim Devices/Plates							
25,449	DPLX 5-15R GFCI IV EXTRA H	4.00	\$48.15 E	\$192.60	30.00 C	1.20	dt
Totals for CCode				<u>\$192.60</u>		<u>1.20</u>	

Category: CCode = Lighting Fixtures							
22,978	250W PARKING LOT SHOE BO	4.00	\$0.00 Q	\$0.00	3.00 E	12.00	lf
23,012	20' STL/ALUM STREET LITE P	4.00	\$0.00 Q	\$0.00	4.00 E	16.00	lf
Totals for CCode				<u>\$0.00</u>		<u>28.00</u>	

Category: CCode = Underground/Civil Work							
27,913	HANDHOLE PRE-CAST 18" X2	2.00	\$0.00 E	\$0.00	3.00 E	6.00	mu
Totals for CCode				<u>\$0.00</u>		<u>6.00</u>	

Category: CCode = Lugs/Termination/Ground							
26,803	3/4" X 10' GRND ROD, CU	4.00	\$34.08 E	\$136.32	2.00 E	8.00	sl
26,842	1/2" - 1" X 2 GROUND CLAMP	4.00	\$1,609.18 C	\$64.37	0.64 E	2.56	sl
Totals for CCode				<u>\$200.69</u>		<u>10.56</u>	

Category: CCode = Panels/Loadcenters							
18,885	QOB-120 120/240V CB	5.00	\$19.34 E	\$96.72	0.34 E	1.70	sp

Job Name: DC Parole

Totals for CCode

\$96.72

1.70

Category: CCode = Branch Wire

11	12 THHN CU STRANDED	560.00	\$553.27 M	\$309.83	6.00 M	3.36 wb
12	10 THHN CU STRANDED	1,570.00	\$846.13 M	\$1,328.43	7.00 M	10.99 wb

Totals for CCode

\$1,638.26

14.35

Category: CCode = Feeder Wire

14	6 THHN CU STRANDED	1,245.00	\$2,625.82 M	\$3,269.15	11.00 M	13.69 wf
127	6 BARE CU STRANDED	40.00	\$2,173.35 M	\$86.93	12.00 M	0.48 wf

Totals for CCode

\$3,356.08

14.17

Totals:

\$6,960.16

112.71

Report Totals:

Items+ByProducts

Ext Price 1	NECA 1 Ext
\$6,960.16	112.71

Change Order

Order#: 2

Order Date: 05/06/2022

63110 Nels Anderson Rd
Bend, OR 97701
Phone (541) 382-3720
lori@seversonplumbers.com
CCB # 63655



To: Skanska
2275 NE Doctors Dr
Suite 3
Bend OR 97703

Project: 215453
Deschutes CO Parole & Probation
63360 NW Britta St #2
Bend OR 97701

Parking Lot Expansion Water Svc Allowance

The contractor agrees to perform and the owner agrees to pay for the following changes to this contract.

Plans Attached

Ordered By: 66 Robert Barrios

Customer Order:

Specifications Attached

Description of Work

Amount

This proposed change order is an Allowance Only and subject to change:

Supply and install new 1" Mueller meter stop and riser. Connect to existing 1" water service and terminate in water meter box (installed by others).

BID INCLUDES:

- Plumbing per detail 2-C3.2
- Cut / Connect to Existing Water service
- Install 1" Riser and Meter Stop

BID EXCLUDES:

- Water Service Shutdown
- Supply and Installation of Meter Box
- Excavation & Backfill
- Concrete Cutting & Patching
- Core Drilling
- Demo Existing Water Line
- Backflow Device / Meter
- Design
- Permits Fees

TOTAL CHANGE ORDER TO THE CONTRACT

1,578.69

Owner: _____ Date: _____

Contractor: _____ Date: _____



PO Box 7288
 Bend, OR 97708-7288
 Phone (541)388-1625
 Fax (541)389-4578
 B.B. 58356

Cost _____
 Down Payment 30% _____
 Terms: **Balance Upon Completion**
5% Cancellation Fee

Name	SKANSKA USA BUILDING INC.	Contact:	Chad Young	Date	4/14/2022
Street	2275 NE Doctors Dr., Ste 3	Phone:	541-233-6292		
City, State and Zip	Bend, OR 97701	Job Address:	NE Jamison St., Bend, OR		

Height	9'	WE PROPOSE TO: Supply & Install Per Plans For:			
O.A. Length	400'+	DESCHUTES COUNTY PUBLIC SAFETY FACILITY			
Gates	0				
Vinyl-----					
Chain Link-----	XX				
Wood-----		Remove & Haul-Away Approx. 125 LF of 8' Tall Galv. Chain Link w/3-Strand Top Barbed			
11 Ga-----		Wire (Post Remove Not Included - Posts To Be Removed & Hauled-Away By Others)			
9 Ga-----	XX	\$800.00			
11 1/2 Ga-----					
Top Rail--		400 LF of 8' Tall Galv. Chain Link Fence w/Gray Vinyl Slats & 3-Strand Top Barbed Wire			
1 3/8" <input type="checkbox"/>	1 5/8" <input type="checkbox"/>	40wt	\$27,300.00		
Posts	Line	Term	Gate		
OD	2 3/8"	2 7/8"			
Type	40wt				
Clearing By:					
Customer-----	XX				
Mike's-----					
Fence To:					
Follow Contour-----	XX				
Straight-----	XX				
Special Tools:	Rock				

YOU, THE OWNER OR AGENT, ARE RESPONSIBLE FOR A CLEARED AND STAKED PROPERTY LINE. Furnish locations and character of any underground wires, pipes, sewers, conduits or obstructions which might interfere or be damaged by **Mike's Fence Center, Inc.**, or be the cause of injury or other damage. This contract does not include any Grading, Surveying, nor the removal of any fence or shrubs unless specified above. In the event fence lines are NOT PREPARED, a \$75.00 trip fee will be charged to customer's account. If payment is not made as set forth above, SERVICE CHARGES will be added to the unpaid balance and shall be computed by a single periodic rate of 1-1/2% per month which is an ANNUAL PERCENTAGE RATE OF 18% per annum. If the services of an attorney are required for collection, all such fees will be for the purchaser's account.

CUSTOMER NOTIFICATION RECEIVED _____

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above. Please read the construction liens notice and sign if applicable.

Jeff Groves, V.P.

BUYER _____

MIKE'S FENCE CENTER, INC.

DATE SIGNED _____

BY JEFFREY K. GROVES (cell 541-480-1333)

Email: chad.young@skanska.com

BID GOOD FOR 30 DAYS

Email: jeff@mikesfence.com



TRI COUNTY PAVING PROPOSAL & CONTRACT

CCB# 189644, EST. 2010

PROJECT

PROJECT NAME: Deschutes County Parole & Probation Bldg	DATE: 12-14-2021
SITE ADDRESS: 63360 NW Britta St #2, Bend	REVISION # & DATE: 5/17/2022

CUSTOMER
OWNER/CONTRACTOR: Skanska USA Building
CONTACT: Chad Young
MAILING ADDRESS:
PHONE #: 233-6292
E-MAIL: chad.young@skanska.com
ALT. E-MAIL OR FAX:

TRI COUNTY PAVING
CONTACT: Jeff Curl
ADDRESS: PO Box 1621 Redmond, OR 97756
PHONE: 541-408-4926
OFFICE: 541-526-5800
FAX: 541-647-6515
E-MAIL: jeff@tricountypaving.net
WEB SITE: www.tricountypaving.net

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT \$\$	TOTAL \$\$
on-site (original)	3' compacted asphalt installation	1,841	sy	\$15.40	\$28,351.40
	3' compacted asphalt patch (6-ft x 40-ft)	240	sf	\$4.75	\$1,140.00
Deschutes County Public Safety Facility	3' compacted asphalt installation	1,065	sy	\$18.00	\$19,170.00

INCLUSIONS/EXCLUSIONS/NOTES

*inclusions: one mobilization, CSS-1 tack application
*exclusions: prep work, saw cuts, prime coat, weed sterilants, testing, traffic control, paving risers, permits, striping
*materials: asphalt (level 2, 1/2 inch dense mix w/ PG 64-28 binder)
*on-site proposal based on plans dated: 11-2-2021
*DCPSF proposal based on plans dated: 4/6/2022
*miscellaneous asphalt patching to be priced separately
*if scope is altered by owner more than 10%, TCP may review pricing and adjust accordingly
*proposal based on prevailing wage rates (July BOLI 2021)
*additional mobilizations - \$925.00/each
*proposal valid thru 2022

TERMS & CONDITIONS

This proposal is made by Tri County Paving, LLC ("Seller") to Skanska USA Building ("Purchaser"). Seller agrees to furnish all labor and materials completed in accordance with these specifications. All material is guaranteed to be as specified and all work is to be completed in a workmanlike manner according to standard practices. A limited one-year warranty on all materials and workmanship applies. Any alteration or deviation from the above specifications involving additional cost or risk to Seller will be performed only upon execution of a written change order agreed to between Purchaser and Seller, which will include any additional costs, compensation, charges and required extensions of time for performance over and above the estimate. Seller's employees are fully covered by workers' compensation insurance. Purchaser agrees to pay Seller for materials, labor and equipment used or to be purchased under this contract, plus any charges for additional materials, labor and equipment covered under a written change order. Payment is due upon Purchaser's receipt of invoice. A late charge of 1.5% per month (18% per annum) may be charged on all past due accounts over 30 days. Seller may stop all work hereunder if any account or other payable hereunder becomes 30 or more days past due and Seller shall not be responsible for any cost or delay arising from such discontinued work. Notice is hereby provided to Purchaser that a lien may be filed for material, labor and/or equipment furnished by Seller. Any and all costs associated with the collection of monies due Seller under this contract and/or written change orders will be the responsibility of Purchaser. Seller shall not be responsible for any loss or delay in performance arising from causes beyond the control of Seller (including, but not limited to, delay in delivery of materials or goods, fire, flood, strike or other casualty or act of God) or as a result of Purchaser's negligence or interference. In the event the parties become involved in litigation or arbitration, the prevailing party shall be fully compensated for its reasonable costs arising thereunder, including attorneys' fees and experts' fees. This contract shall constitute the entire agreement between the parties with respect to the subject matter contained herein. All notices which may be required under this contract shall be in writing and delivered by U.S. mail at the respective address listed above. This contract may be executed in one or more counterparts, which may be delivered by facsimile or other electronic means, and each of which will be deemed an original.

ACCEPTANCE OF PROPOSAL- The above prices, specifications and other terms and conditions contained herein are satisfactory and are hereby accepted by the parties.

<p style="text-align: center;">PURCHASER</p> <p style="text-align: center;">Skanska USA Building</p> <p>SIGNATURE: _____</p> <p>PRINT NAME: _____</p> <p>DATE: _____</p>	<p style="text-align: center;">SELLER</p> <p style="text-align: center;">Tri County Paving, LLC</p> <p>SIGNATURE: <u>Jeff Curl</u></p> <p>PRINT NAME: Jeff Curl</p> <p>TITLE: Member</p>
---	---

Deschutes County expansion



dougpaulabiz@aol.com

To Young, Chad

Retention Policy US-15 Year Email Retention-03 (15 years)



4G LTE 5:54

Deschutes County Puk



Apr 17

4/17/22 6:58 PM

Deschutes County Public safety
Expansion

Bid

04/18/22

Chad Skanska

30 Reg.

~~1 H cap~~

\$945. Total stripe

~~\$285. 1 H-cap Sign~~

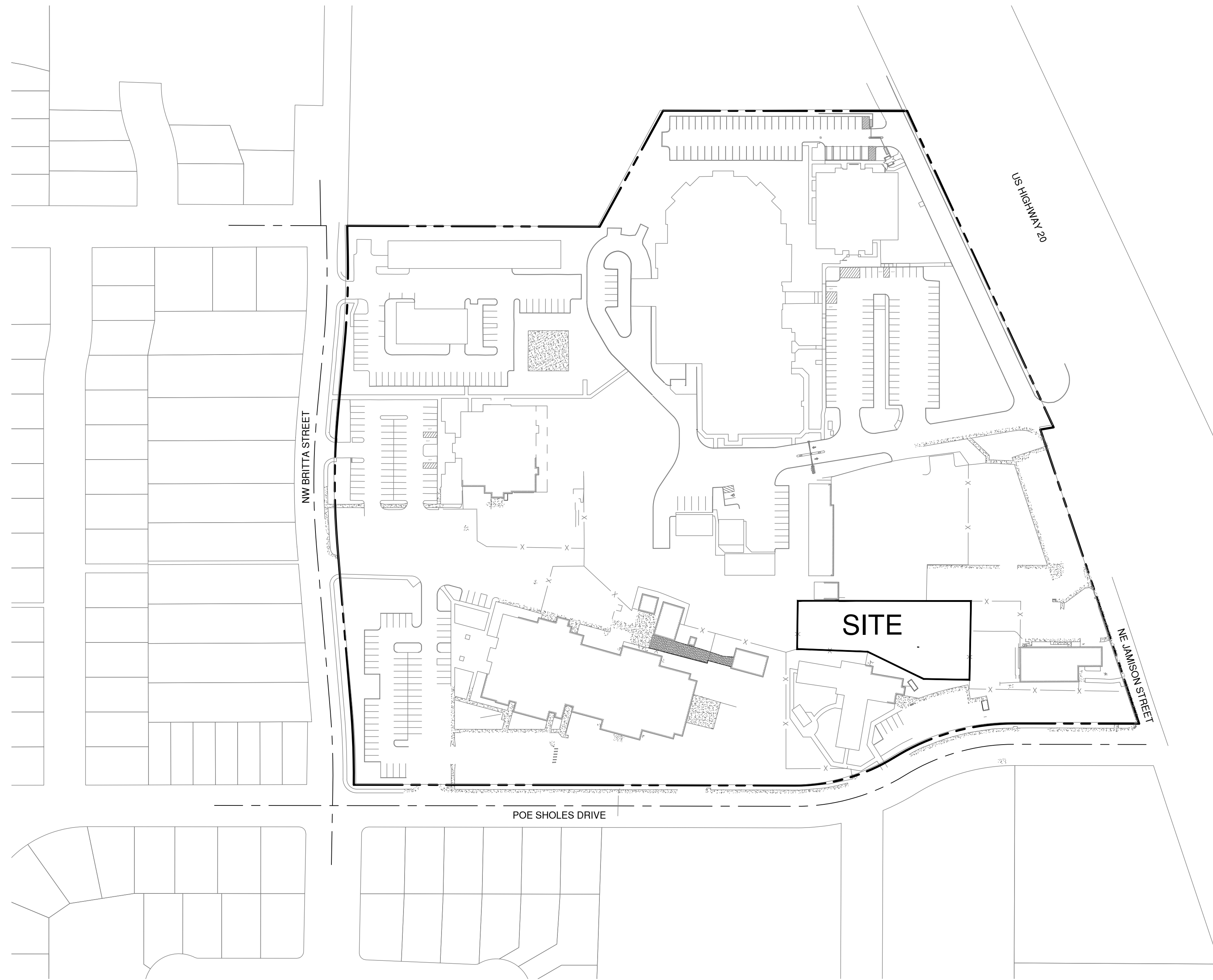
~~Option 2nd access sign~~

~~\$285.00~~

DESCHUTES COUNTY PUBLIC SAFETY FACILITY

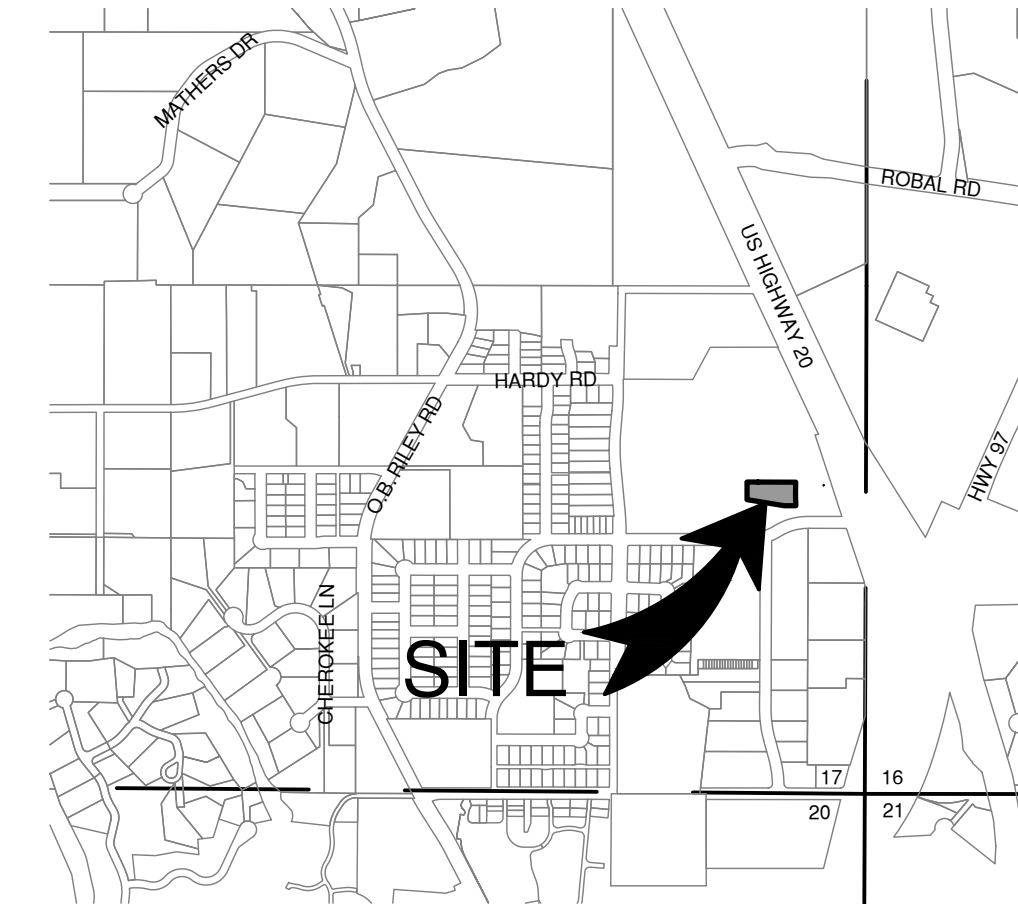
LOCATED IN THE SW 1/4 OF THE SE 1/4 SECTION 16 & THE NW 1/4 OF THE NE 1/4 SECTION 21, TOWNSHIP 17 SOUTH, RANGE 12 EAST, WILLAMETTE MERIDIAN
CITY OF BEND, DESCHUTES COUNTY, OREGON

PZ-19-0372



SITE MAP
SCALE: 1"=100'

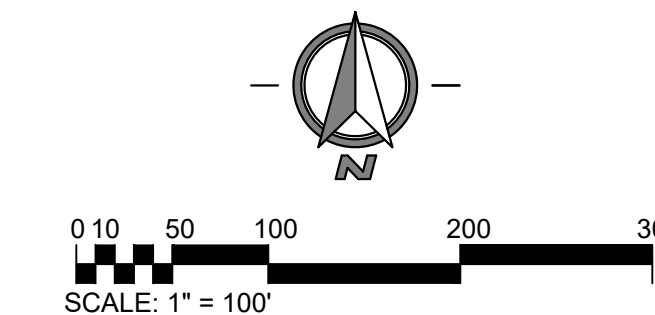
CITY OF BEND APPROVAL



VICINITY MAP
SCALE: 1"=1000'

SHEET INDEX

- C1.0 COVER SHEET
- C1.1 EXISTING CONDITIONS/REMOVAL PLAN
- C2.1 GRADING & DRAINAGE PLAN
- C2.2 EAST LOT SITE PLAN
- C3.1 DETAILS
- C3.2 DETAILS
- E0.1 NOTES AND LEGENDS
- E0.2 ELECTRICAL SPECIFICATIONS
- E0.3 LIGHTING SPECIFICATIONS
- E1.0 SITE LIGHTING PHOTOMETRICS-PARKING C
- E1.1 SITE LIGHTING PHOTOMETRICS-STABILIZATION PARKING
- E2.0 SITE LIGHTING POWER DISTRIBUTION-PARKING C
- E2.1 SITE LIGHTING POWER DISTRIBUTION-STABILIZATION PARKING
- E3.0 SITE LIGHTING DATA SHEETS AND ELECTRICAL DETAILS
- E4.0 ONE-LINE DIAGRAM AND PANEL SCHEDULES



Renewal Date: 12/31/2022

**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY**
COVER SHEET
BEND, OREGON

REVISIONS:



DESIGNED BY: BRS
DRAWN BY: BRS
CHECKED BY: BAP
SCALE: AS NOTED
FILE: 181205-CD-SITE C.dwg
DATE: 04/06/2022

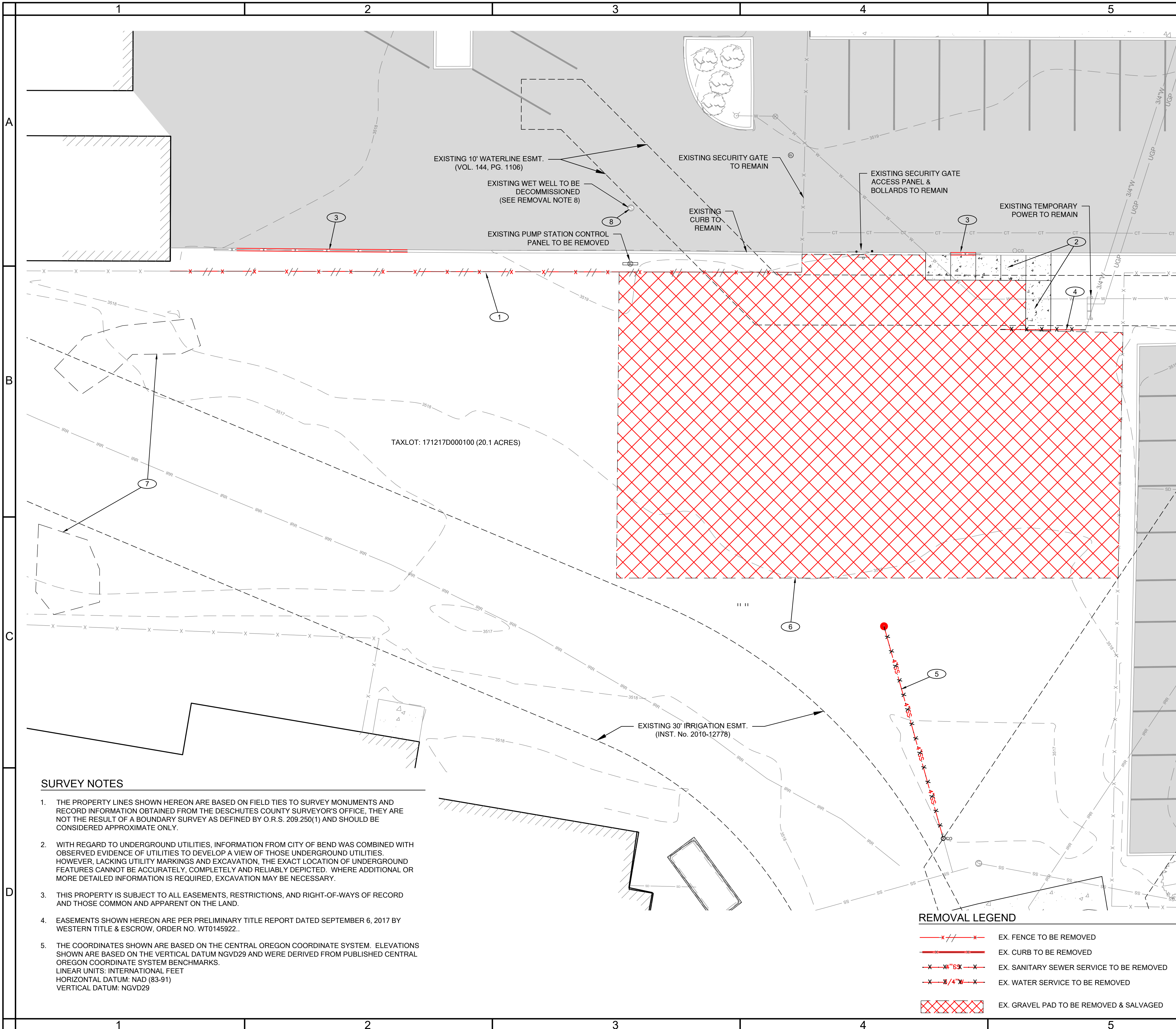
VERIFY SCALES
0 1" BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
C1.0

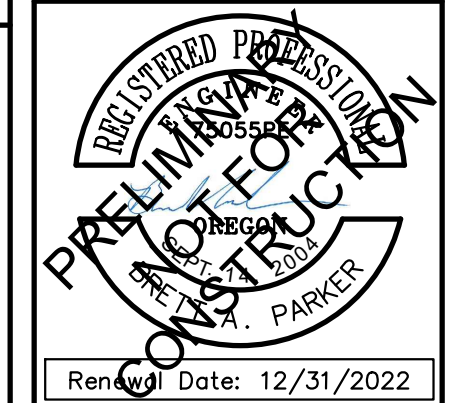
HWA # 181205

brett S: \Land Projects\181205-Des Co Safety Campus.dwg [CD] Site C - Parking Lot North\Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm

brettp S:\Land Projects\181205-Des Co Safety Campus.dwg | Site C - Parking Lot North | Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm



CITY OF BEND APPROVAL



LEGEND

---	PROJECT BOUNDARY
---	TAX LOT LINE (FOR INFORMATIONAL PURPOSES ONLY)
---	RIGHT OF WAY CENTERLINE
---	EASEMENT OF RECORD, AS NOTED
X	FENCE
UGP	UNDERGROUND POWER LINE
OHP	OVERHEAD POWER LINE
UGS	UNDERGROUND GAS LINE
UGP	UNDERGROUND SEWER LINE
SD	UNDERGROUND STORM LINE
W	UNDERGROUND WATER LINE
OHE	UNDERGROUND COMMUNICATION LINE
---	CURB LINE
---	CONTOUR LINE, 1' INTERVAL
---	CONTOUR LINE, 5' INTERVAL
●	FOUND MONUMENT
○	COMPUTED POSITION, NORTHING FOUND OR SET
□	CATCH BASIN
⊗	DRYWELL WITH GRATE
⊕	IRRIGATION VALVE
▲	SPRINKLER HEAD
⊕	WATER VALVE
⊕	FIRE HYDRANT
⊕	WATER SERVICE
⊕	WATER MANHOLE
⊕	WATER METER
⊕	SEWER MANHOLE
⊕	GAS METER
⊕	COMMUNICATION RISER
⊕	CABLE/TV RISER
⊕	ELECTRICAL SERVICE
⊕	UTILITY POLE
⊕	ELECTRICAL TRANSFORMER, WITH CONC. PAD
⊕	LUMIN
⊕	SIGN
⊕	SHRUB
⊕	DECIDUOUS TREE, SIZE NOTED
⊕	PONDEROSA PINE TREE, SIZE NOTED
---	ASPHALT PAVING
---	CONCRETE
---	BUILDING EDGE

- REMOVAL KEY NOTES***
- *QUANTITIES SHOWN HEREIN ARE FOR REFERENCE ONLY, NOT FOR BIDDING PURPOSES
 CONTRACTOR IS RESPONSIBLE FOR THEIR OWN QUANTITY TAKEOFFS
- 1 REMOVE EXISTING FENCE AND POSTS AS SHOWN - 187 LF
 - 2 SAWCUT & REMOVE EXISTING CONCRETE ADA RAMP & SIDEWALK - 1
 - 3 SAWCUT & REMOVE EXISTING CONCRETE CURB - 39 LF
 - 4 REMOVE EXISTING 1" WATER SERVICE (INSTALL CAP PER SHEET 2.1)
 - 5 REMOVE EXISTING 4" SEWER SERVICE (INSTALL CLEANOUT & CAP PER SHEET 2.1)
 - 6 REMOVE & SALVAGE EXISTING 3/4" MINUS UNCOMPACTED BUILDING PAD (CONTRACTOR TO COORDINATE WITH DESCHUTES COUNTY FOR SALVAGED ROCK LOCATION)
 - 7 REMOVE & DISPOSE OF EXISTING DEBRIS PILES
 - 8 REMOVE ALL ELECTRICAL COMPONENTS FROM WET WELL, REMOVE HYDROMATIC CONTROLLER AND WIRING, VACTOR OUT THE WET WELL TANK, CAP EXISTING SEWER PIPING, FILL EXISTING WET WELL TANK WITH CEMENT SLURRY.

REMOVAL LEGEND

---	EX. FENCE TO BE REMOVED
---	EX. CURB TO BE REMOVED
X-X"SS-X	EX. SANITARY SEWER SERVICE TO BE REMOVED
X-3/4"W-X	EX. WATER SERVICE TO BE REMOVED
---	EX. GRAVEL PAD TO BE REMOVED & SALVAGED

SURVEY NOTES

1. THE PROPERTY LINES SHOWN HEREON ARE BASED ON FIELD TIES TO SURVEY MONUMENTS AND RECORD INFORMATION OBTAINED FROM THE DESCHUTES COUNTY SURVEYOR'S OFFICE, THEY ARE NOT THE RESULT OF A BOUNDARY SURVEY AS DEFINED BY O.R.S. 209.250(1) AND SHOULD BE CONSIDERED APPROXIMATE ONLY.
2. WITH REGARD TO UNDERGROUND UTILITIES, INFORMATION FROM CITY OF BEND WAS COMBINED WITH OBSERVED EVIDENCE OF UTILITIES TO DEVELOP A VIEW OF THOSE UNDERGROUND UTILITIES. HOWEVER, LACKING UTILITY MARKINGS AND EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, EXCAVATION MAY BE NECESSARY.
3. THIS PROPERTY IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, AND RIGHT-OF-WAYS OF RECORD AND THOSE COMMON AND APPARENT ON THE LAND.
4. EASEMENTS SHOWN HEREON ARE PER PRELIMINARY TITLE REPORT DATED SEPTEMBER 6, 2017 BY WESTERN TITLE & ESCROW, ORDER NO. WT0145922.
5. THE COORDINATES SHOWN ARE BASED ON THE CENTRAL OREGON COORDINATE SYSTEM. ELEVATIONS SHOWN ARE BASED ON THE VERTICAL DATUM NGVD29 AND WERE DERIVED FROM PUBLISHED CENTRAL OREGON COORDINATE SYSTEM BENCHMARKS.
 LINEAR UNITS: INTERNATIONAL FEET
 HORIZONTAL DATUM: NAD (83-91)
 VERTICAL DATUM: NGVD29

**DESCHUTES COUNTY
 PUBLIC SAFETY FACILITY
 EXISTING CONDITIONS & REMOVAL PLAN**
 BEND, OREGON

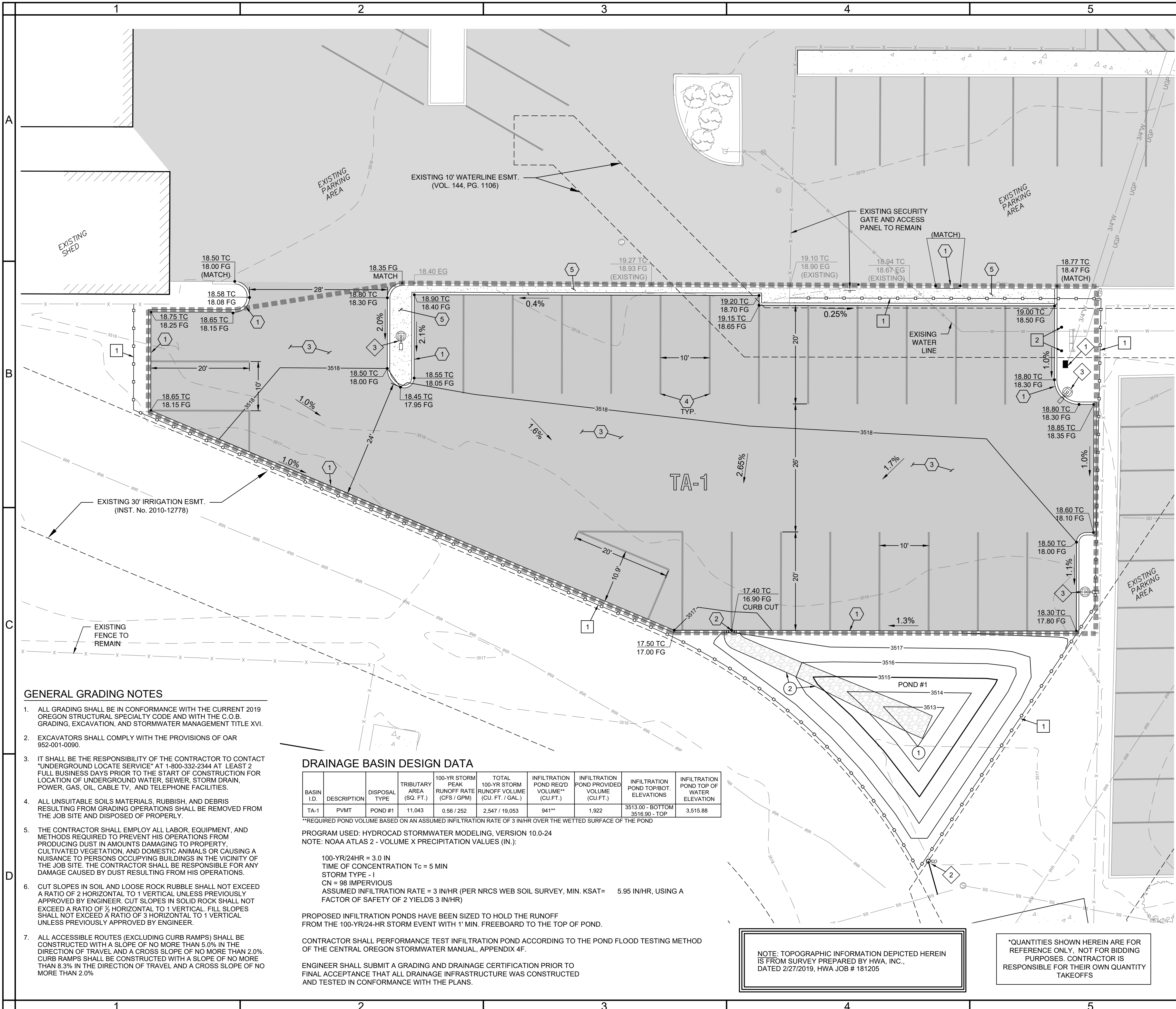
REVISIONS:



DESIGNED BY: BRS
 DRAWN BY: BRS
 CHECKED BY: BAP
 SCALE: AS NOTED
 FILE: 181205-CD-SITE C.dwg
 DATE: 04/06/2022

VERIFY SCALES
 0 1" BAR EQUALS ONE INCH ON ORIGINAL DRAWING
 SHEET: **C1.1**
 HWA # 181205

brettp S:\Land Projects\181205-Des Co Safety Campus\dwg\CD\Site C - Parking Lot North\Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm



CITY OF BEND APPROVAL

-weed spray
-no fabric
-(3") of 3/4" washed aspen rock
substitute salmon/pink if not available

all areas within fence plus 4ft beyond

PAVING KEY NOTES*

- 1 CONSTRUCT 12" CONCRETE CURB (SEE DETAIL 1/C3.1)
- 2 CONSTRUCT CURB CUT (SEE DETAIL 1/C3.1)
- 3 CONSTRUCT HMA PAVEMENT (SEE DETAIL 2/C3.1)
- 4 PROVIDE PARKING LOT STRIPING (SEE DETAIL 3/C3.1)
- 5 **INSTALL FILTER FABRIC AND 4"-6" ROUNDED RIVER ROCK MULCH**

DRAINAGE KEY NOTES*

- 1 CONSTRUCT INFILTRATION POND PER DRAINAGE DESIGN TABLE, THIS SHEET (SEE DETAIL 4/C3.1)
- 2 INSTALL ROCK OUTFALL PROTECTION (PER DETAIL, 4/C3.1, DITCH OUTFALL)

UTILITY KEY NOTES*

- 1 INSTALL WATER METER BOX & METER STOP - 1 (PER DETAIL 2/C3.2)
- 2 INSTALL SANITARY SEWER CLEANOUT W/ WATERTIGHT CAP - 1 (PER DETAIL 1/3.2)
- 3 INSTALL LIGHT POLE BASE, POLE, AND LIGHT - 3 (PER ELECTRICAL SHEETS)

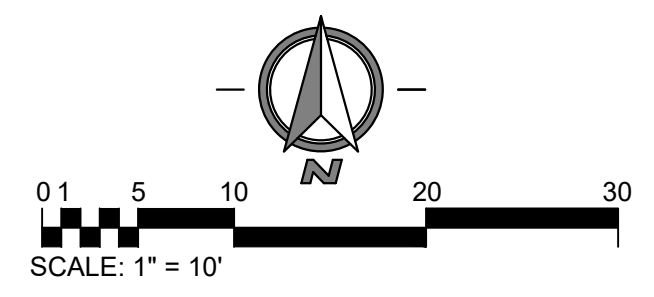
GENERAL CONSTRUCTION KEY NOTES*

- 1 CONSTRUCT CHAIN LINK FENCE - 400 LF TYPE 2 FENCE (8'-0" HIGH WITH PRIVACY SLATS, [3] STRANDS OF BARBED WIRE AT THE TOP OF FENCE) (SEE DETAIL 3/C3.2)
- 2 INSTALL BOLLARDS - 4 (NON-REMOVABLE, SEE DETAIL 4/C3.2)

GRADING LEGEND

- DRAINAGE BASIN BOUNDARY
- EXISTING CURB
- PROPOSED 12" CONCRETE CURB (6" REVEAL)
- o-o- PROPOSED FENCE
- 2976- EXISTING 1' GROUND SURFACE CONTOUR
- 2975- EXISTING 5' GROUND SURFACE CONTOUR
- 2977- PROPOSED 1' GROUND SURFACE CONTOUR
- 2975- PROPOSED 5' GROUND SURFACE CONTOUR
- 77.50 TC 76.00 FG PROPOSED SPOT ELEVATION
- TC TOP OF CURB
- FG FINISH GRADE
- EG EXISTING GRADE

- NOTE:
ADD 3500.00 FT TO ALL SPOT ELEVATIONS
- PROPOSED HMA PAVEMENT
 - PROPOSED FILTER FABRIC AND 4"-6" ROUNDED RIVER ROCK MULCH
 - EXISTING CONCRETE TO REMAIN



GENERAL GRADING NOTES

1. ALL GRADING SHALL BE IN CONFORMANCE WITH THE CURRENT 2019 OREGON STRUCTURAL SPECIALTY CODE AND WITH THE C.O.B. GRADING, EXCAVATION, AND STORMWATER MANAGEMENT TITLE XVI.
2. EXCAVATORS SHALL COMPLY WITH THE PROVISIONS OF OAR 952-001-0090.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT "UNDERGROUND LOCATE SERVICE" AT 1-800-332-2344 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION FOR LOCATION OF UNDERGROUND WATER, SEWER, STORM DRAIN, POWER, GAS, OIL, CABLE TV, AND TELEPHONE FACILITIES.
4. ALL UNSUITABLE SOILS MATERIALS, RUBBISH, AND DEBRIS RESULTING FROM GRADING OPERATIONS SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED OF PROPERLY.
5. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT, AND METHODS REQUIRED TO PREVENT HIS OPERATIONS FROM PRODUCING DUST IN AMOUNTS DAMAGING TO PROPERTY CULTIVATED VEGETATION, AND DOMESTIC ANIMALS OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM HIS OPERATIONS.
6. CUT SLOPES IN SOIL AND LOOSE ROCK RUBBLE SHALL NOT EXCEED A RATIO OF 2 HORIZONTAL TO 1 VERTICAL UNLESS PREVIOUSLY APPROVED BY ENGINEER. CUT SLOPES IN SOLID ROCK SHALL NOT EXCEED A RATIO OF 1/2 HORIZONTAL TO 1 VERTICAL. FILL SLOPES SHALL NOT EXCEED A RATIO OF 3 HORIZONTAL TO 1 VERTICAL UNLESS PREVIOUSLY APPROVED BY ENGINEER.
7. ALL ACCESSIBLE ROUTES (EXCLUDING CURB RAMPS) SHALL BE CONSTRUCTED WITH A SLOPE OF NO MORE THAN 5.0% IN THE DIRECTION OF TRAVEL AND A CROSS SLOPE OF NO MORE THAN 2.0%. CURB RAMPS SHALL BE CONSTRUCTED WITH A SLOPE OF NO MORE THAN 8.3% IN THE DIRECTION OF TRAVEL AND A CROSS SLOPE OF NO MORE THAN 2.0%.

DRAINAGE BASIN DESIGN DATA

BASIN I.D.	DESCRIPTION	DISPOSAL TYPE	TRIBUTARY AREA (SQ. FT.)	100-YR STORM PEAK RUNOFF RATE (CFS / GPM)	TOTAL 100-YR STORM RUNOFF VOLUME (CU. FT. / GAL.)	INFILTRATION POND REQ'D VOLUME** (CU.FT.)	INFILTRATION POND PROVIDED VOLUME (CU.FT.)	INFILTRATION POND TOP/BOT. ELEVATIONS	INFILTRATION POND TOP OF WATER ELEVATION
TA-1	PVMT	POND #1	11,043	0.56 / 252	2,547 / 19,053	941**	1,922	3513.00 - BOTTOM 3516.90 - TOP	3,515.88

**REQUIRED POND VOLUME BASED ON AN ASSUMED INFILTRATION RATE OF 3 IN/HR OVER THE WETTED SURFACE OF THE POND

PROGRAM USED: HYDROCAD STORMWATER MODELING, VERSION 10.0-24
NOTE: NOAA ATLAS 2 - VOLUME X PRECIPITATION VALUES (IN.).

100-YR/24HR = 3.0 IN
TIME OF CONCENTRATION Tc = 5 MIN
STORM TYPE - I
CN = 98 IMPERVIOUS
ASSUMED INFILTRATION RATE = 3 IN/HR (PER NRCS WEB SOIL SURVEY, MIN. KSAT= 5.95 IN/HR, USING A FACTOR OF SAFETY OF 2 YIELDS 3 IN/HR)

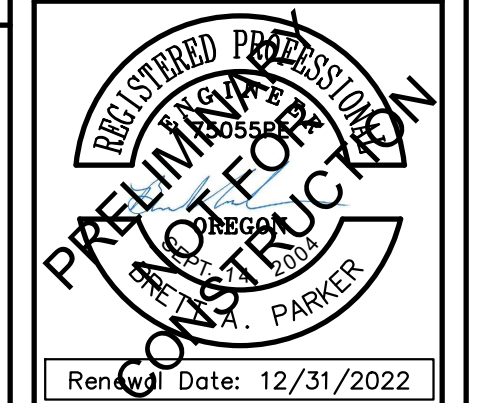
PROPOSED INFILTRATION PONDS HAVE BEEN SIZED TO HOLD THE RUNOFF FROM THE 100-YR/24-HR STORM EVENT WITH 1' MIN. FREEBOARD TO THE TOP OF POND.

CONTRACTOR SHALL PERFORMANCE TEST INFILTRATION POND ACCORDING TO THE POND FLOOD TESTING METHOD OF THE CENTRAL OREGON STORMWATER MANUAL, APPENDIX 4F.

ENGINEER SHALL SUBMIT A GRADING AND DRAINAGE CERTIFICATION PRIOR TO FINAL ACCEPTANCE THAT ALL DRAINAGE INFRASTRUCTURE WAS CONSTRUCTED AND TESTED IN CONFORMANCE WITH THE PLANS.

NOTE: TOPOGRAPHIC INFORMATION DEPICTED HEREIN IS FROM SURVEY PREPARED BY HWA, INC., DATED 2/27/2019, HWA JOB # 181205

*QUANTITIES SHOWN HEREIN ARE FOR REFERENCE ONLY, NOT FOR BIDDING PURPOSES. CONTRACTOR IS RESPONSIBLE FOR THEIR OWN QUANTITY TAKEOFFS



DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
GRADING, DRAINAGE & UTILITY PLAN
BEND, OREGON

REVISIONS:

NO.	DESCRIPTION

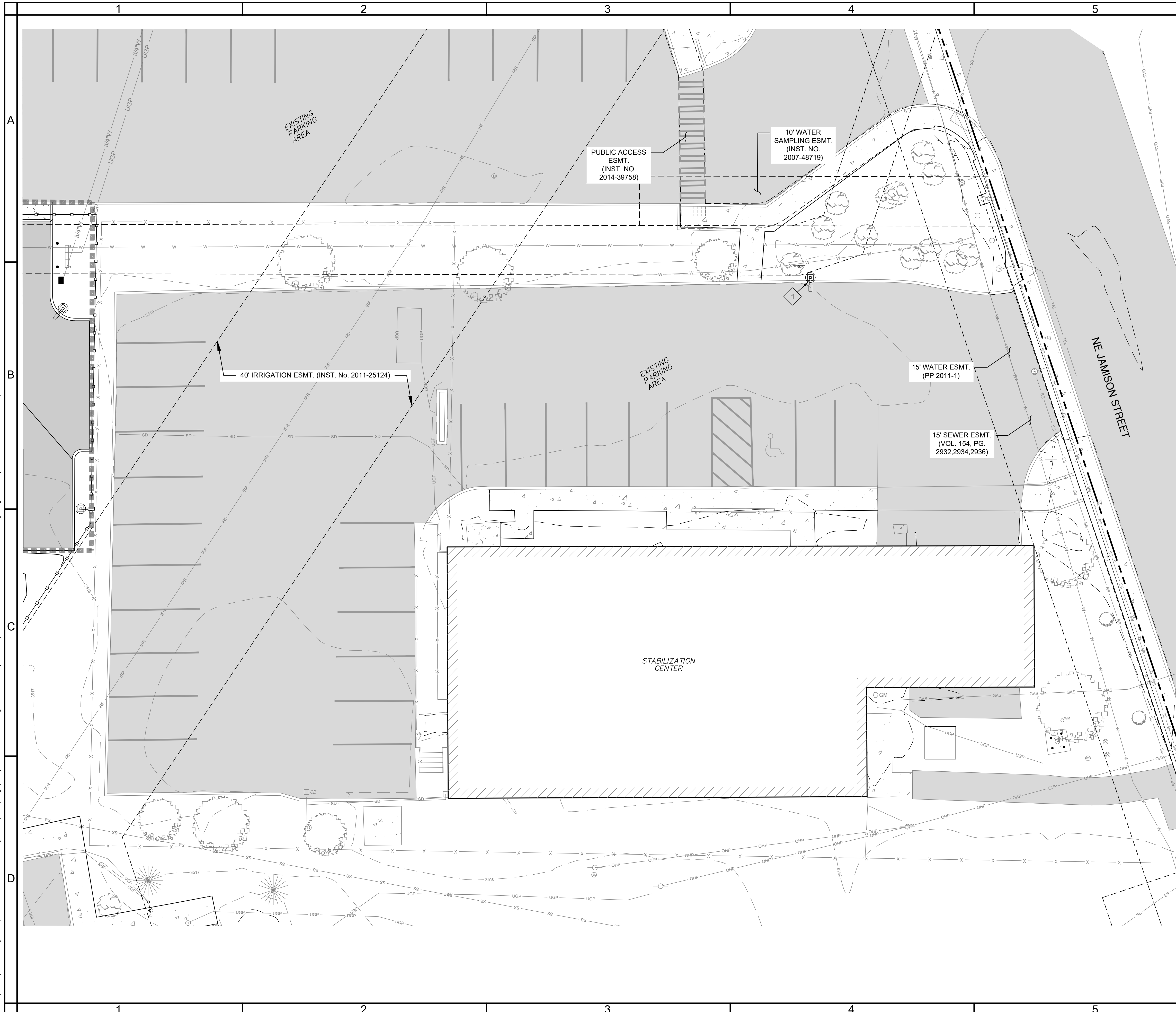


DESIGNED BY: BRS
DRAWN BY: BRS
CHECKED BY: BAP
SCALE: AS NOTED
FILE: 181205-CD-SITE C.dwg
DATE: 04/06/2022

VERIFY SCALES
0 1" = 1"
BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
C2.1
HWA # 181205

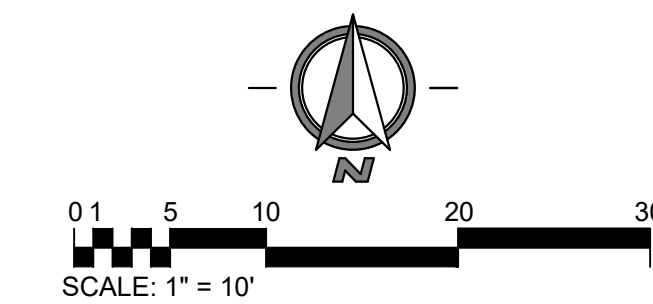
brettp S:\Land Projects\181205-Des Co Safety Campus.dwg [CD] Site C - Parking Lot North\Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm



CITY OF BEND APPROVAL

UTILITY KEY NOTES*
1 INSTALL LIGHT POLE BASE, POLE, AND LIGHT - 1 (PER ELECTRICAL SHEETS)

NOTE: TOPOGRAPHIC INFORMATION DEPICTED HEREIN IS FROM SURVEY PREPARED BY HWA, INC., DATED 2/27/2019, HWA JOB # 181205



Renewal Date: 12/31/2022

**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
EAST LOT SITE PLAN**
BEND, OREGON

REVISIONS:

NO.	DESCRIPTION



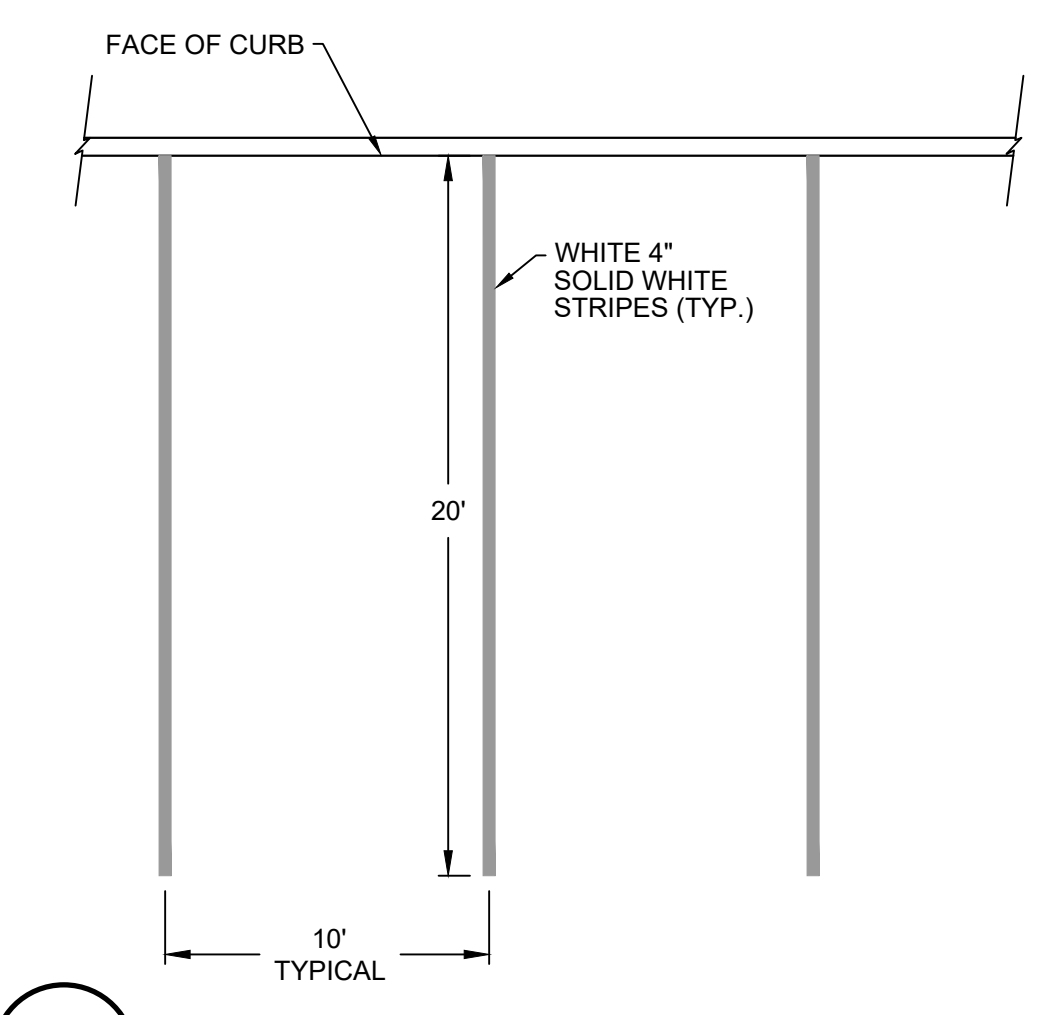
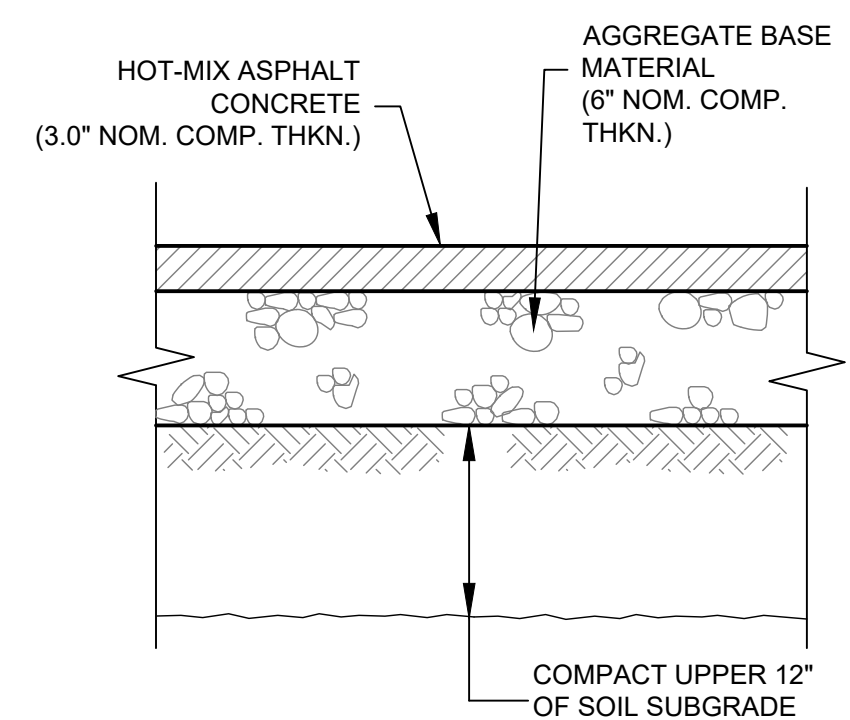
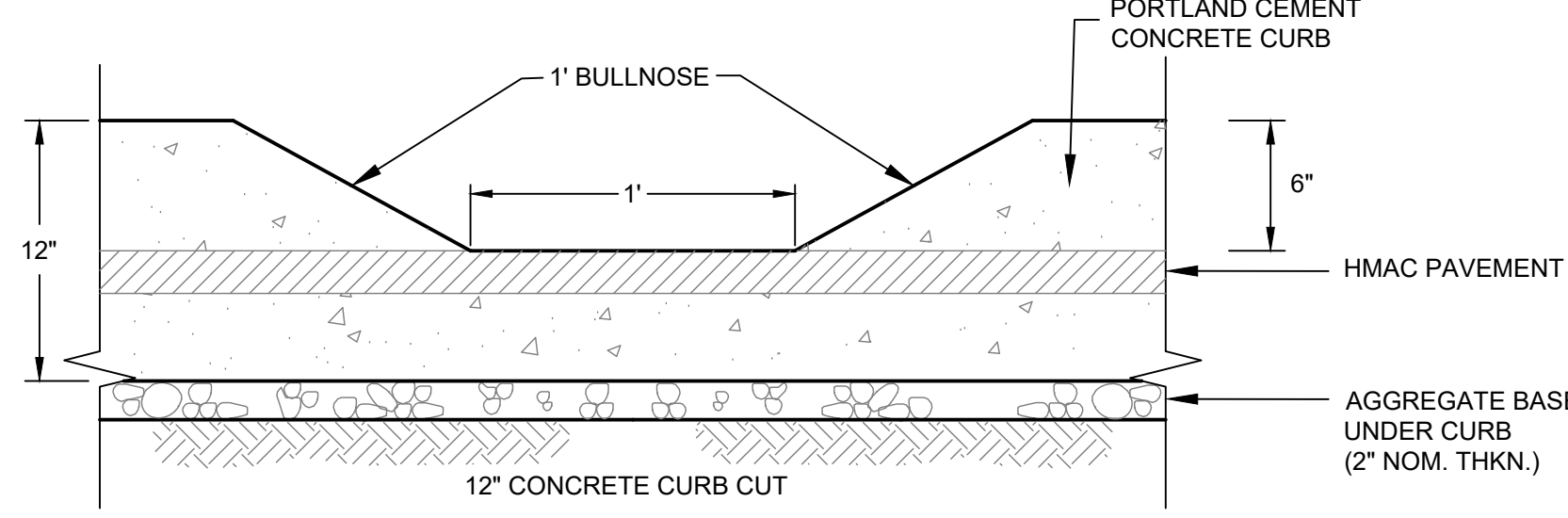
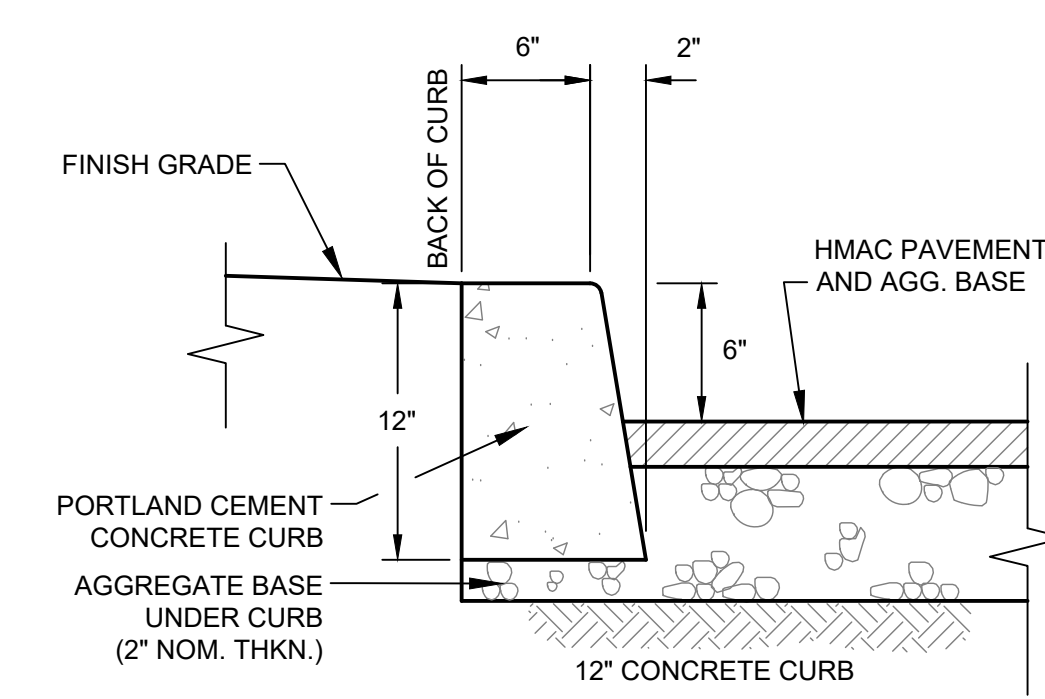
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CHECKED BY: BAP
SCALE: AS NOTED
FILE: 181205-CD-SITE C.dwg
DATE: 04/06/2022

VERIFY SCALES
0 1" BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
C2.2

HWA # 181205

brett S: \Land Projects\181205-Des Co Safety Campus.dwg\CD\Site C - Parking Lot North\Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm



NOTES (ALL CURB TYPES):

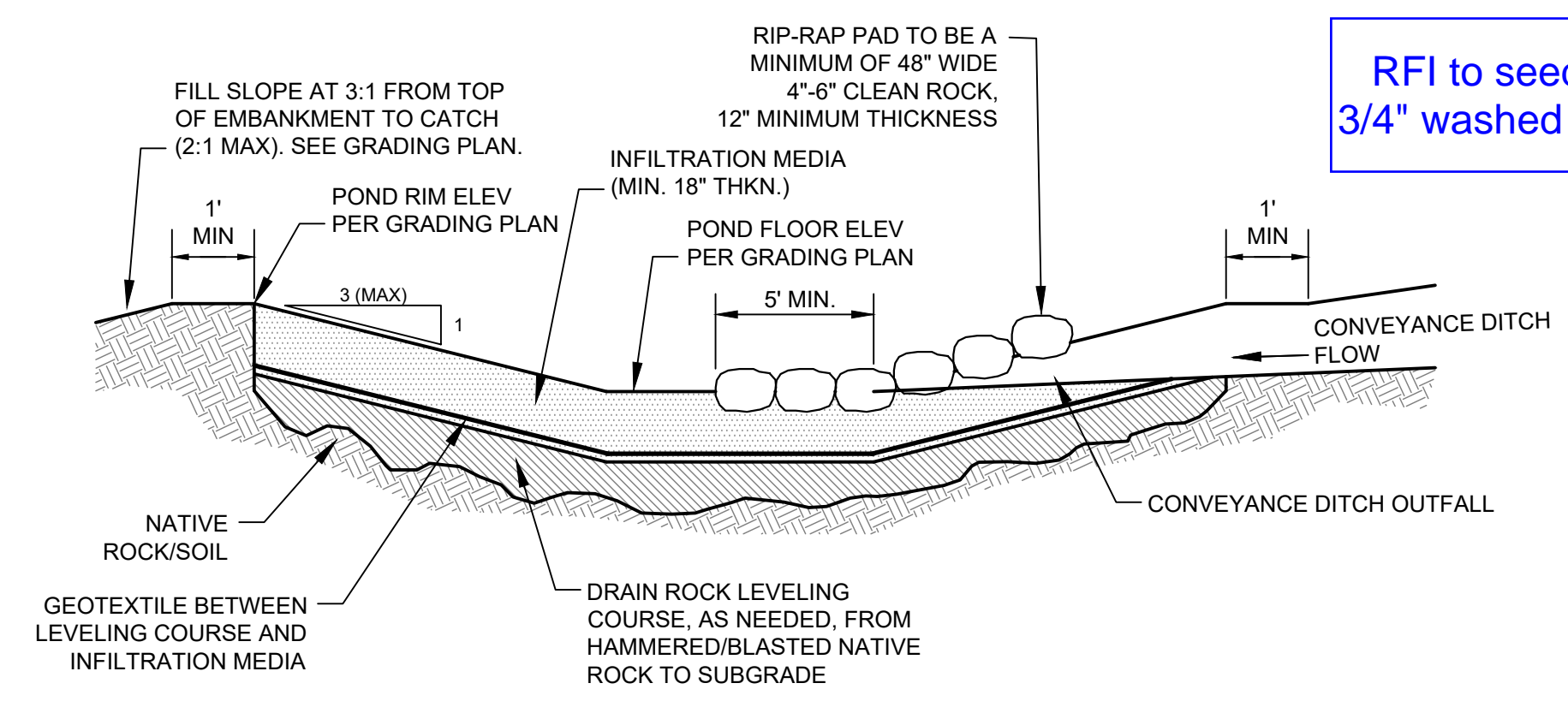
1. FINE BRUSH TOP & FRONT OF CURB PARALLEL TO LINE OF CURB
2. PROVIDE 1/2" EXPANSION JOINT AT EVERY CHANGE OF DIRECTION TYPICAL, AS INDICATED IN TABLE BELOW, AND WHERE NEW CONSTRUCTION ABUTS EXISTING OR OLD CONCRETE.
3. PROVIDE "BOND BREAKER" EXPANSION JOINT BETWEEN BACK OF CURB & SIDEWALK AND BETWEEN SIDEWALK AND BUILDING WHERE APPLICABLE.

TOOLED CONTRACTION JNT.	EXPANSION JNT.
CURB	SPACE @ 10' O.C. SEE NOTE 2

1 CONCRETE CURB
SCALE: NOT TO SCALE

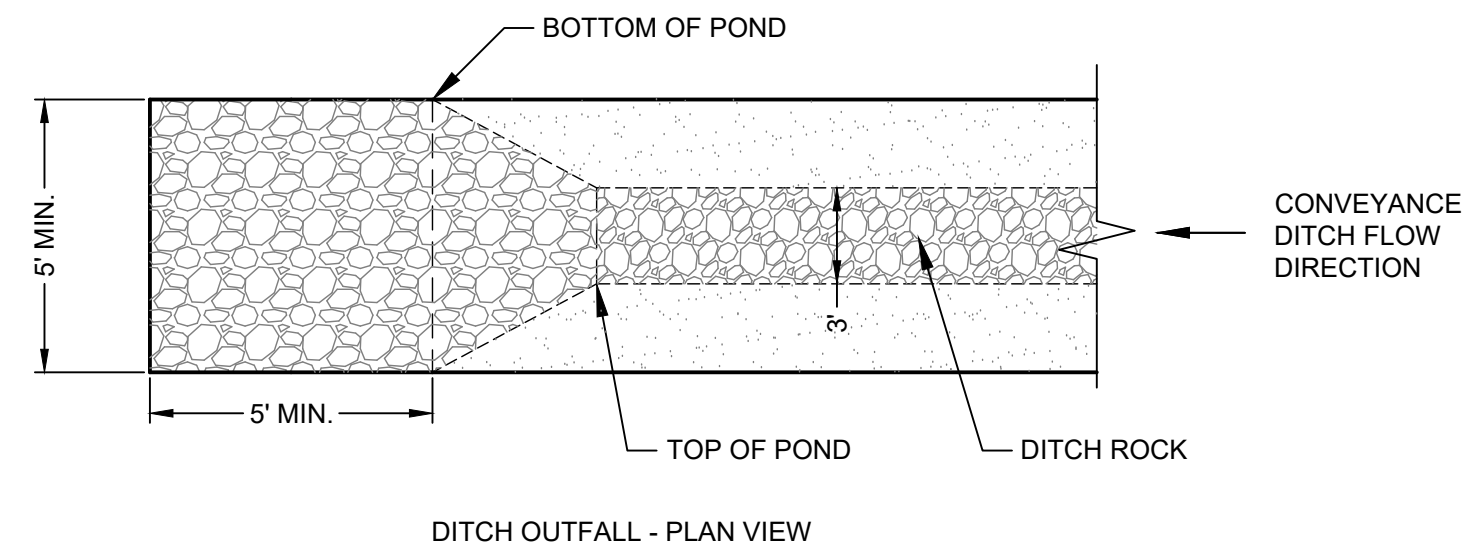
2 HMAC PAVEMENT DETAIL
SCALE: NOT TO SCALE

3 PARKING STRIPING
SCALE: NOT TO SCALE



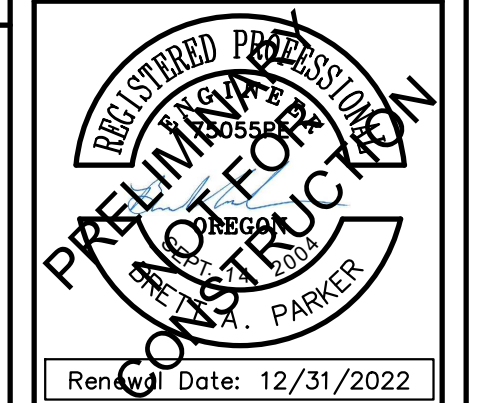
RFI to seed or add 3/4" washed to the top

1. INFILTRATION MEDIA SHALL CONTAIN 20-30% TOPSOIL, 50-65% CLEAN SAND, AND 5-20% COMPOST OR PEAT MOSS
2. WHERE POND IS LOCATED IN ROCK, FRACTURE ROCK 24-INCHES MIN. BELOW SUBGRADE. PLACE A 2-INCH SEPARATION LAYER OF PEA GRAVEL OVER EXISTING ROCK.
3. PROTECT INFILTRATION AREA FROM UNNECESSARY SOIL COMPACTION. DO NOT STOCKPILE MATERIALS IN POND AREA AND NO COMPACTION OF SOILS. MINIMIZE CONSTRUCTION TRAFFIC IN THE SWALE BY WORKING FROM THE PERIMETER OR BY WORKING OUTWARD AS MUCH AS PRACTICAL.
4. WHERE THERE IS EXISTING SUBGRADE SOIL, THE INFILTRATION AREA SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6-INCHES AND MAXIMUM DEPTH OF 12-INCHES PRIOR TO PLACEMENT OF TOPSOIL OR INFILTRATION MEDIA. DO NOT COMPACT SUBGRADE OF THE DESIGNATED INFILTRATION AREA.



4 RETENTION POND - CROSS SECTION & DITCH OUTFALL - PLAN
SCALE: NOT TO SCALE

CITY OF BEND APPROVAL



Renewal Date: 12/31/2022

**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
DETAILS**
BEND, OREGON

REVISIONS:



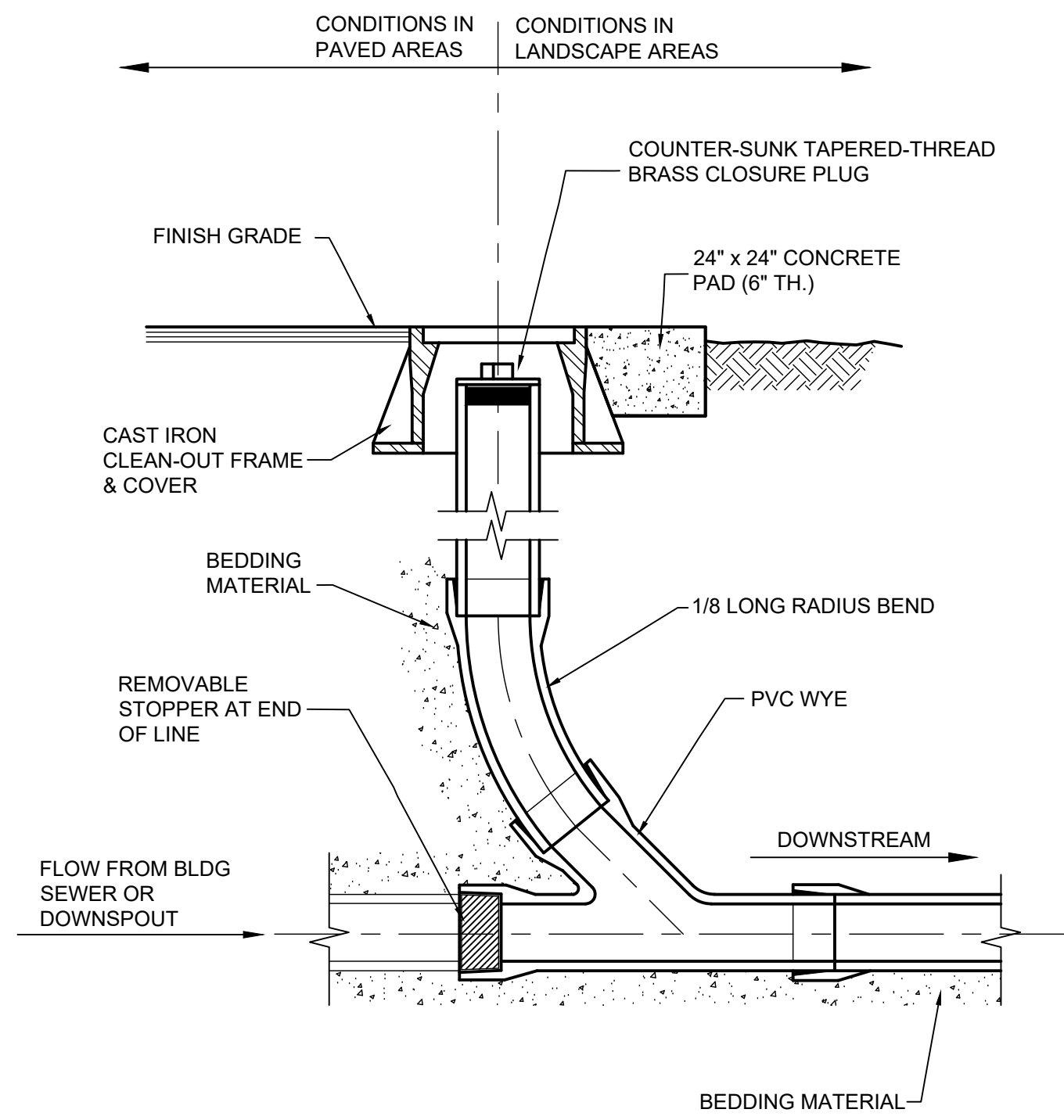
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CHECKED BY: BAP
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VERIFY SCALES
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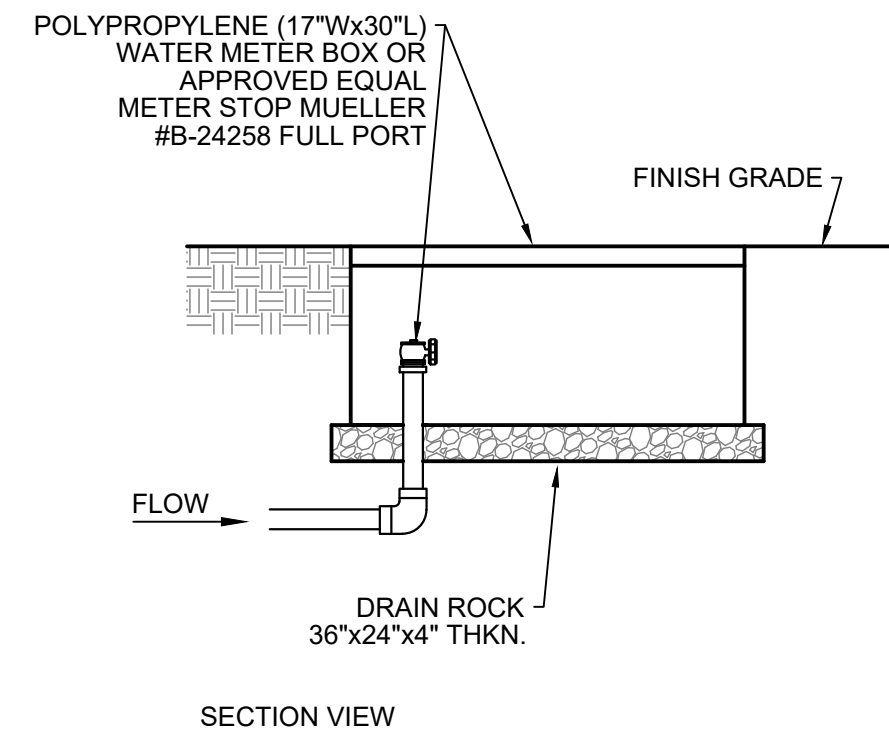
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HWA # 181205

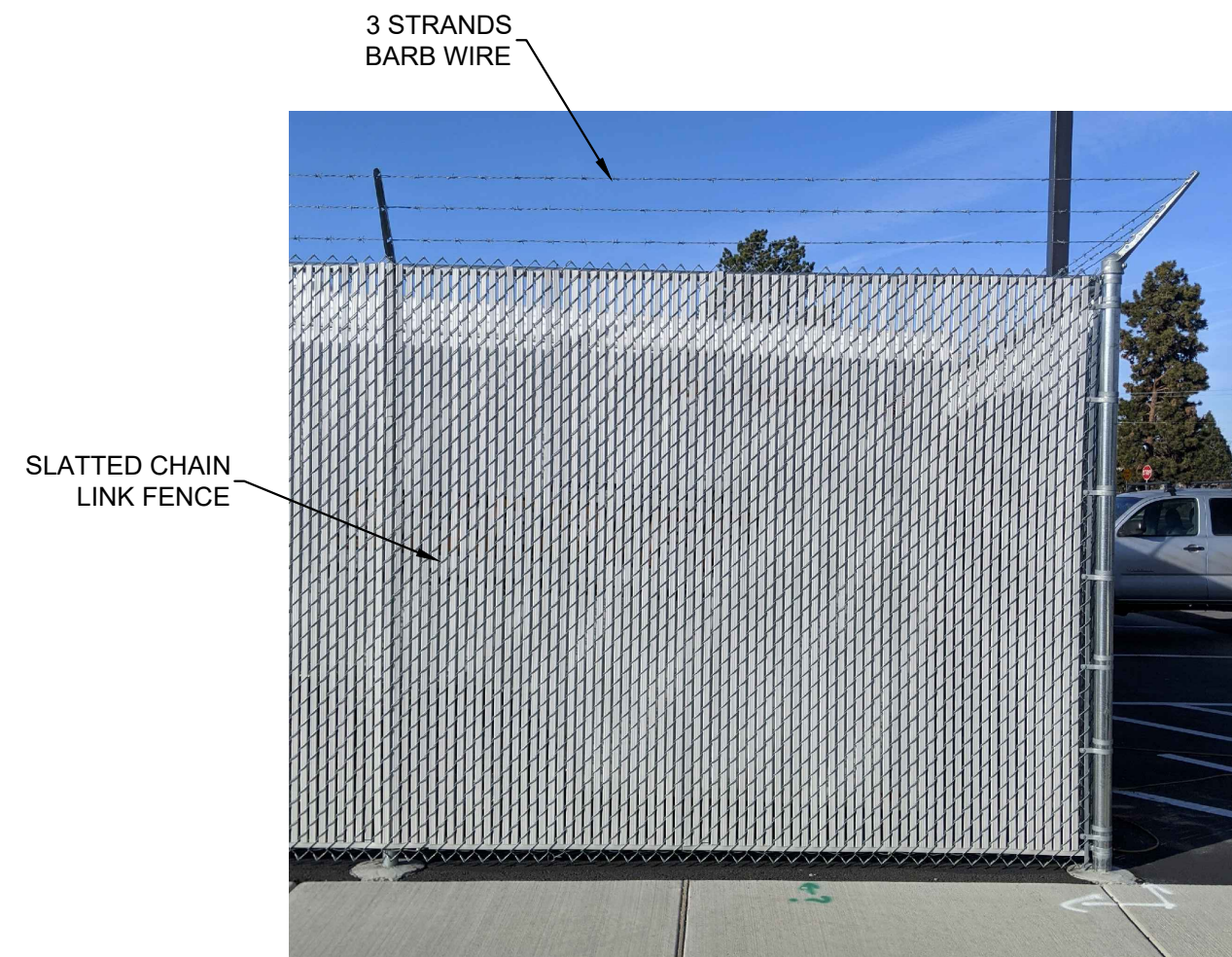
brett S: Land Projects\181205-Des Co Safety Campus\dwg\CD\Site C - Parking Lot North\Sheets\181205-CD-Site C-North Parking.dwg Wed Apr 13, 2022 - 12:29pm



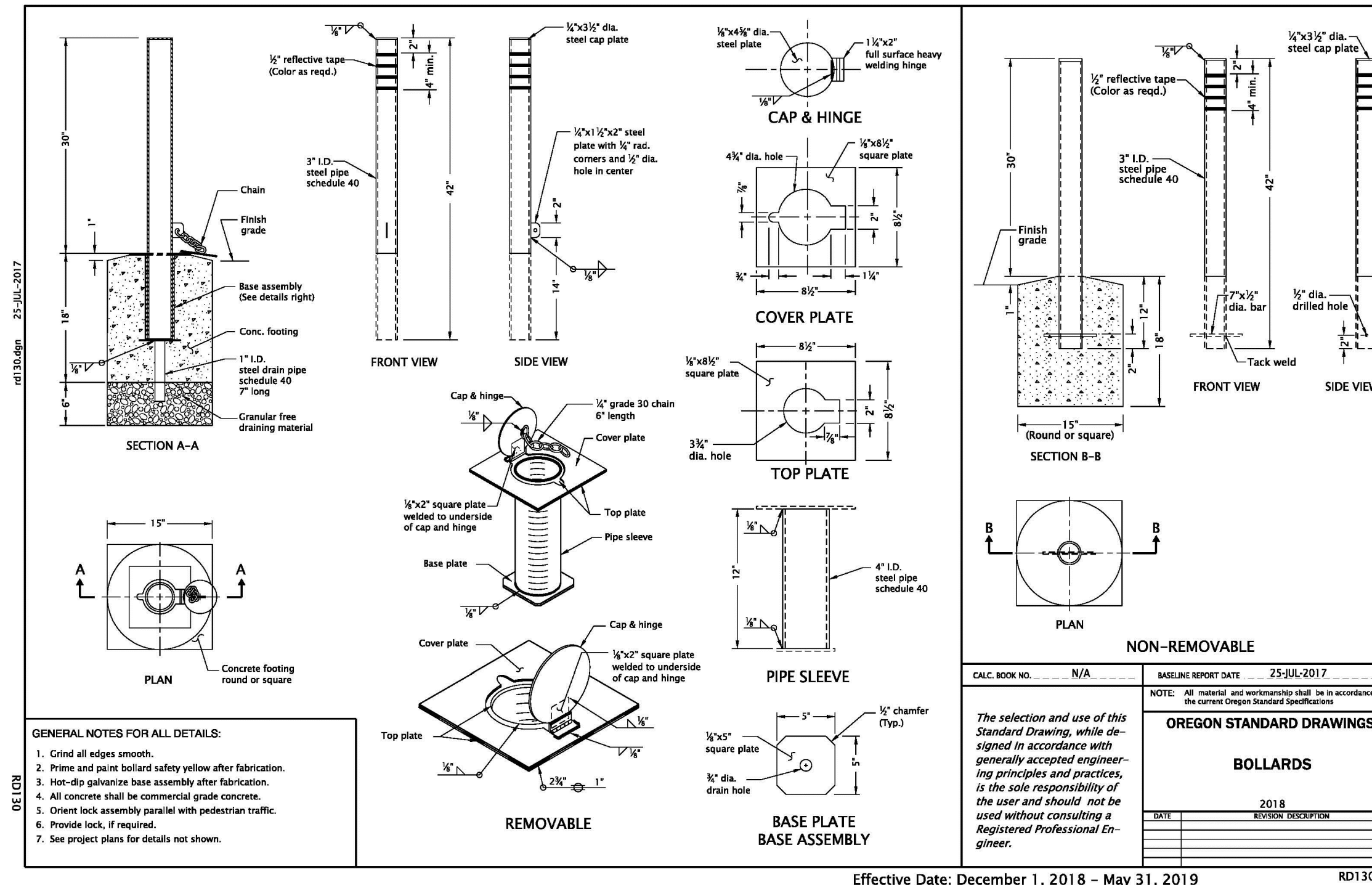
1
C3.2 CLEANOUT ASSEMBLY
SCALE: NOT TO SCALE



2
C3.2 WATER SERVICE TERMINATION
SCALE: NOT TO SCALE



3
C3.2 EXISTING FENCE (MATCH EXISTING)
NOT TO SCALE



4
C3.2 BOLLARD DETAIL
NOT TO SCALE

CITY OF BEND APPROVAL



Renewal Date: 12/31/2022

**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY**
DETAILS
BEND, OREGON

REVISIONS:



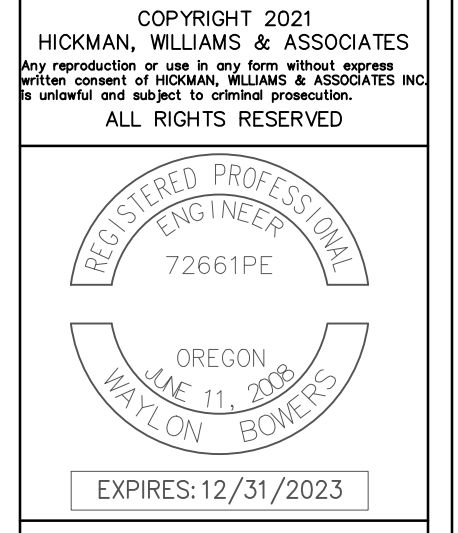
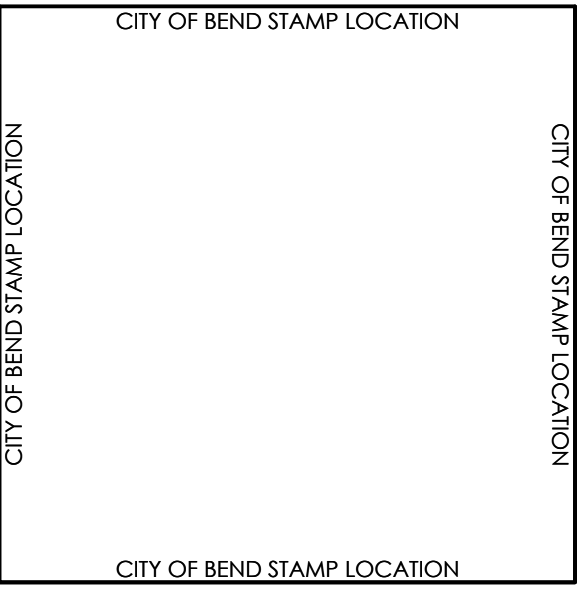
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HWA # 181205

Effective Date: December 1, 2018 - May 31, 2019 RD130

philswigart \\bend-ls1\projects_bend_office_lead\wickman, williams, & associate\pb22-0077-en - dc safety campus\3_working files\CAD\EO.1.dwg Thu Mar 31, 2022 - 1:52pm

<p>CONDUIT AND WIRING</p> <ul style="list-style-type: none"> ○ CONDUIT TURNED TOWARD VIEWER ◦ CONDUIT TURNED AWAY FROM VIEWER ⊥ CONDUIT TEE BODY ⊥ CONDUIT EL BODY ~ CONDUIT FLEX ← HOMERUN — INDICATOR CONDUCTOR — INDICATOR NEUTRAL — CONDUIT EXPOSED — NON EXPOSED CONDUIT ↔ CABLE MARKER ↔ CABLE MARKER ⊥ INSULATED BUSHING ⊥ FIBER OPTIC CABLE C1 = CABLE ID <p>RECEPTACLES</p> <ul style="list-style-type: none"> ○ SINGLE RECEPTACLE ⊕ DUPLEX RECEPTACLE ⊕ SPLIT WIRED (1) DUPLEX (1) DUPLEX AUTOMATICALLY CONTROLLED ⊕ GF DUPLEX GFI RECEPTACLE ⊕ QUADRUPLEX RECEPTACLE ⊕ RANGE RECEPTACLE ⊕ SINGLE SPECIAL PURPOSE RECEPTACLE ⊕ SPECIAL PURPOSE DEDICATED RECEPTACLE ⊕ DUPLEX SPECIAL PURPOSE RECEPTACLE ⊕ MULTI-OUTLET ASSEMBLY, ARROW LENGTH INDICATES LENGTH OF ASSEMBLY IN INCHES ⊕ CLOCK HANGER RECEPTACLE ⊕ SINGLE FLOOR RECEPTACLE ⊕ DUPLEX FLOOR RECEPTACLE ⊕ QUADRUPLEX FLOOR RECEPTACLE ⊕ SPECIAL PURPOSE FLOOR RECEPTACLE ⊕ PUBLIC TELEPHONE FLOOR OUTLET ⊕ PRIVATE TELEPHONE FLOOR OUTLET ⊕ RADIO OUTLET ⊕ TELEVISION OUTLET ⊕ MULTI-MEDIA OUTLET ⊕ DATA OUTLET ⊕ DUPLEX RECEPTACLE & SWITCH ⊕ SINGLE RECEPTACLE & SWITCH ⊕ DUPLEX WEATHER PROOF RECEPTACLE ⊕ WIRELESS ACCESS POINT 	<p>SWITCHES</p> <ul style="list-style-type: none"> S SINGLE POLE TOGGLE SWITCH S_D SINGLE POLE DIMMING TOGGLE SWITCH S₂ DOUBLE POLE TOGGLE SWITCH S₃ THREE WAY TOGGLE SWITCH S_{3D} THREE WAY DIMMING TOGGLE SWITCH S_K KEY OPERATED TOGGLE SWITCH S_P TOGGLE SWITCH WITH PILOT LIGHT S_O TOGGLE SWITCH WITH OCCUPANCY SENSOR S_{LVK} LOW VOLTAGE KEY PAD <p>SIGNALING DEVICES</p> <ul style="list-style-type: none"> ⊕ AMPLIFIER ⊕ MICROPHONE ⊕ INTERIOR SPEAKER ⊕ EXTERIOR SPEAKER ⊕ ANY OTHER ITEM ON SAME SYSTEM ⊕ PUBLIC TELEPHONE OUTLET ⊕ PRIVATE TELEPHONE OUTLET ⊕ CHIME ⊕ DOOR BELL BUTTON ⊕ BELL TRANSFORMER ⊕ CRITICALITY ALARM, MOTOR DRIVEN HOWLER ⊕ EVACUATION ALARM, MOTOR DRIVEN SIREN ⊕ BUZZER ⊕ BELL ⊕ BEACON, ROTATING ⊕ FLASHER ⊕ ALARM, SINGLE STROKE GONG ⊕ ANNUNCIATOR ⊕ ANNUNCIATOR D1 = DEVICE ID ⊕ HORN, HOWLER, LOUDSPEAKER OR SIREN ⊕ 90° DETECTOR, MOTION, WALL MOUNTED ⊕ 90° DETECTOR, MOTION, WALL MOUNTED ⊕ 90° DETECTOR, MOTION, CEILING MOUNTED ⊕ DETECTOR, MOTION, CONTROL UNIT, WALL MOUNTED ⊕ COMBINATION SMOKE & CARBON MONOXIDE DETECTOR ⊕ DETECTOR, W/TOGGLE SWITCH ⊕ DETECTOR, W/TOGGLE SWITCH ⊕ SWITCH, TOGGLE, MULTIPLE APPLICATION ⊕ SMOKE DETECTOR <p>BOXES</p> <ul style="list-style-type: none"> ⊕ WALL MOUNTED JUNCTION BOX MAXIMUM SIZE 4 11/16" SQUARE X 2 1/8" DEEP ⊕ CEILING MOUNTED JUNCTION BOX MAXIMUM SIZE 4 11/16" SQUARE X 2 1/8" DEEP ⊕ JUNCTION BOX LARGER THAN 4 11/16" SQUARE X 2 1/8" DEEP ⊕ PULL BOX ⊕ TRX TERMINAL BOX 	<p>CABLE</p> <ul style="list-style-type: none"> — AC ARMORED CABLE — G GROUND CONDUCTOR, UGND — HC HEAT TRACE CABLE — MC METAL CLAD — MI MINERAL INSULATED — TC TRAY CABLE ~ OPEN CABLE CONNECTION TO DEVICE <p>UTILITIES (AERIAL) LINES</p> <ul style="list-style-type: none"> — A 230KV, 3PH, 3W CKT — B 115KV, 3PH, 3W CKT — C 13.8KV, 3PH, 3W CKT — E 2400V, 3PH, 3W CKT — F 480KV, 3PH, 3W CKT — F1 480/277KV, 3PH, 4W CKT — G 240/120V, 3PH, 4W CKT — G1 120V, 1PH, 2W CKT — G2 240V, 1PH, 2W CKT — H 240/120V, 1PH, 3W CKT — H2 240V, 3PH, 3W CKT — J 208/120V, 3PH, 4W CKT — SL SERIES STREET LIGHTING CKT <p>OUTSIDE LINES</p> <ul style="list-style-type: none"> — FA FIRE ALARM CKT — SIG SIGNAL CIRCUIT — DB DIRECT BURIED CKT — GRD GROUND, COUNTERPOISE, OR STATIC WIRE — ML MULTIPLE LIGHTING <p>POWER AND CONTROL</p> <ul style="list-style-type: none"> ⊕ TRANSFORMER ⊕ SERVICE ENTRANCE FITTING ⊕ HEATER UNIT ⊕ DISTRIBUTION PANELBOARD ⊕ POWER PANELBOARD ⊕ LIGHTING PANELBOARD ⊕ THERMOSTAT ⊕ COMBINATION MOTOR CONTROLLER ⊕ SAFETY SWITCH ⊕ EQUIPMENT CONNECTION 	<p>LIGHTING</p> <ul style="list-style-type: none"> ⊕ LIGHTING FIXTURE, 2'x4' CEILING OR PENDANT MOUNTED ⊕ LIGHTING FIXTURE, 2'x2' CEILING OR PENDANT MOUNTED ⊕ LIGHTING FIXTURE, 1'x4' CEILING OR PENDANT MOUNTED ⊕ LIGHTING FIXTURE, RECESSED AIR HANDLING DIFFUSER ⊕ LIGHTING FIXTURE, LOW OR HIGH BAY SURFACE OR PENDENT MOUNTED ⊕ LIGHTING FIXTURE, LINEAR CEILING OR WALL MOUNTED ⊕ LIGHTING FIXTURE, 4" OR 6" SPOT OR CAN, CEILING MOUNTED ⊕ LIGHTING FIXTURE, VANITY WALL MOUNTED ⊕ LIGHTING FIXTURE, CEILING OR PENDENT MOUNTED ⊕ LIGHTING FIXTURE, WALL MOUNTED ⊕ LIGHTING FIXTURE, EXPLOSION PROOF ⊕ LIGHTING FIXTURE, WALL MOUNTED: SAFETY SHOWER ⊕ LIGHTING FIXTURE, WALL MOUNTED: FIRE ALARM ⊕ LIGHTING FIXTURE, WALL MOUNTED: RECESSED EXIT LIGHT ⊕ EXIT LIGHTING FIXTURE, CEILING OR WALL MOUNTED DIRECTION OF ILLUMINATION NOTED BY SHADED AREA ⊕ EXIT LIGHTING FIXTURE WITH EMERGENCY LIGHTING CEILING OR WALL MOUNTED DIRECTION OF ILLUMINATION NOTED BY SHADED AREA ⊕ EMERGENCY BATTERY POWER LIGHT FIXTURE CEILING OR WALL MOUNTED ⊕ LIGHTING CONTROL, PHOTOELECTRIC CELL SWITCH, 120 VAC ⊕ EMERGENCY REMOTE FLOODLIGHT WALL MOUNTED ⊕ FLOODLIGHT, WALL MOUNTED ⊕ LIGHTING CONTACTOR <p>LIGHTING CONTROLS</p> <ul style="list-style-type: none"> ⊕ PHOTOCELL ⊕ OCCUPANCY SENSOR WALL OR CEILING MOUNTED ⊕ VACANCY SENSOR WALL OR CEILING MOUNTED ⊕ LIGHTING ROOM CONTROLLER WALL OR CEILING MOUNTED --- INDICATES LIGHTING GROUP OR ZONE BOUNDARY 	<p>OUTSIDE LINES AND LIGHTING</p> <ul style="list-style-type: none"> ⊕ EXTERIOR AREA/SITE FIXTURE ⊕ LIGHTING FIXTURE, POLE MOUNTED PARKING LIGHT ⊕ GROUND ROD ⊕ GROUND CONDUCTOR EXOTHERMIC GROUND ROD ⊕ GROUND PLATE ⊕ UNDERGROUND DUCT, TELECOMMUNICATIONS ⊕ UNDERGROUND DUCT, INSTRUMENTATION ⊕ UNDERGROUND DUCT, CONTROL ⊕ UNDERGROUND DUCT, FIRE ALARM ⊕ UNDERGROUND DUCT, POWER ⊕ EXISTING POLE TO BE REMOVED ⊕ EXISTING STUB POLE FOR GUYING ⊕ STREETLIGHT AND BRACKET ⊕ FLOODLIGHT AND BRACKET ⊕ SIDEWALK GUY AND ANCHOR ⊕ DOWN GUY AND ANCHOR ⊕ SPAN GUY ⊕ TRANSFORMER, PAD MOUNTED ⊕ TRANSFORMER, POLE MOUNTED ⊕ MANHOLE ⊕ HANDHOLE ⊕ TRANSFORMER PAD ⊕ TRANSFORMER MANHOLE OR VAULT
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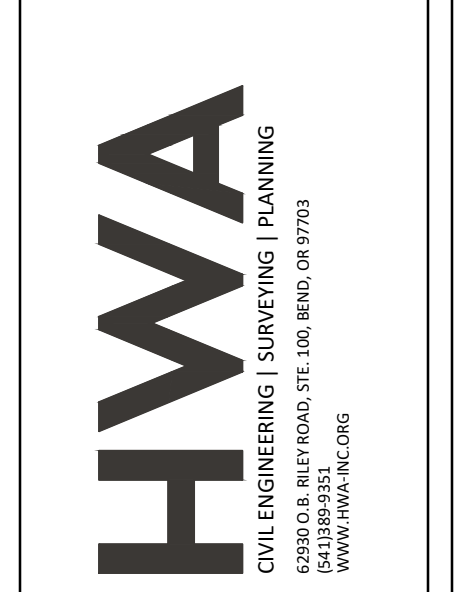


**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON**

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING

NOTES AND LEGENDS

REVISIONS:	DESCRIPTION

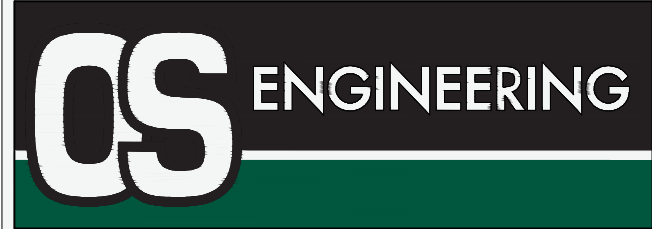


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VERIFY SCALES
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BAR EQUALS ONE INCH ON ORIGINAL DRAWING

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HWA # 181205



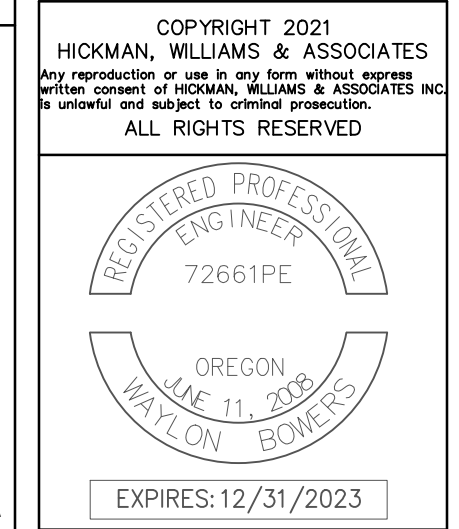
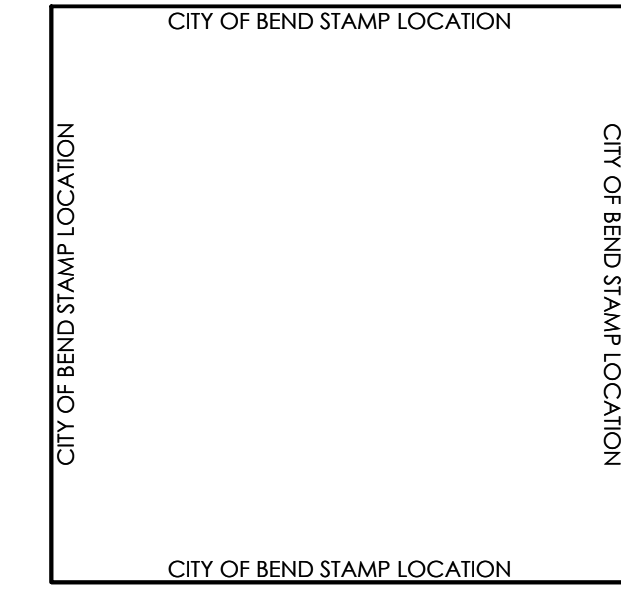
- CODES & STANDARDS:**
- ELECTRICAL EQUIPMENT AND INSTALLATION MUST MEET THE APPLICABLE REQUIREMENTS OF THE FOLLOWING CODES:
 - 2019 INTERNATIONAL BUILDING CODE
 - 2021 OREGON ENERGY EFFICIENCY CODE
 - 2020 NATIONAL ELECTRICAL CODE
 - STATE OF OREGON AMENDMENTS TO THE ABOVE CODES
 - ALL OTHER APPLICABLE, LOCAL, COUNTY, STATE, & FEDERAL CODES AND ORDINANCES.
 - EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF NEC, IEEE, ANSI, NEMA, UL, ASTM, CSA, & ETL AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

- GENERAL NOTES:**
- COORDINATE ALL WORK WITH OTHER TRADES.
 - RACEWAYS TO BE GALVANIZED RIGID STEEL CONDUIT, INTERMEDIATE METAL CONDUIT, ELECTRICAL METALLIC TUBING, FLEXIBLE STEEL CONDUIT, FLEXIBLE PVC CONDUIT, SCHEDULE 40 PVC CONDUIT, OR SCHEDULE 80 PVC CONDUIT.
 - WIRES AND CABLES TO BE COPPER, 600 VOLT RATED THROUGHOUT. CONDUCTORS #14AWG TO #10AWG, SOLID OR STRANDED. CONDUCTORS SAWG AND LARGER STRANDED. PHASE CONDUCTOR TO BE CONSISTENT AT FEEDER TERMINATIONS; A-B-C, TOP TO BOTTOM, LEFT TO RIGHT, FRONT TO BACK. CONDUCTORS #3AWG AND LARGER TO HAVE MINIMUM INSULATION RATING OF 75C. INSULATION TYPES THWN, THHN OR XHHW. MINIMUM INSULATION RATING OF 90C FOR BRANCH CIRCUITS. MC CABLE TO HAVE CONTINUOUS ALUMINUM JACKET, INTEGRAL GROUND CONDUCTOR, AND MINIMUM SIZE OF #12AWG.
 - ALL ELECTRICAL SYSTEMS MUST BE TESTED FOR PROPER OPERATION. PROVIDE TESTING DOCUMENTATION TO THE OWNER.
 - FURNISH AND INSTALL ALL COMPONENTS FOR A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM. COORDINATE ALL DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH OWNER PRIOR TO ROUGH-IN.
 - ENSURE ALL SURFACES MODIFIED DUE TO ELECTRICAL EQUIPMENT INSTALLATION ARE REPAIRED PER THE OWNER'S REQUIREMENTS.
 - VERIFY LOCATION OF ALL OUTLETS AND SWITCHES WITH ARCHITECTURAL DRAWINGS, INTERIOR DETAILS, FINISH SCHEDULES, OWNER, & EQUIPMENT VENDORS.
 - VERIFY DOOR HINGE LOCATIONS PRIOR TO SWITCH INSTALLATION AND ADJUST ACCORDINGLY.
 - DO NOT MOUNT ELECTRICAL EQUIPMENT, INCLUDING OUTLETS AND SWITCHES, IN LOCATIONS THAT WOULD CONFLICT WITH INTERIOR AND EXTERIOR DETAILS (MIRRORS, WALL SEAMS, WAINSCOTING, TILE TRANSITIONS, ETC.).
 - WARRANTY: THE ELECTRICAL CONTRACTOR MUST UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.
 - PERMITS AND FEES: THE ELECTRICAL CONTRACTOR MUST PROCURE AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE THE ELECTRICAL WORK.
 - TESTING AND COMMISSIONING: ELECTRICAL CONTRACTOR MUST BE READILY AVAILABLE DURING INSTALLATION VERIFICATION, TESTING, AND COMMISSIONING TO CORRECT ANY DEFICIENCIES OR DEFLECTIONS DISCOVERED DURING THIS PROCESS. CORRECTIONS MUST BE MADE IN A TIMELY MANNER, COORDINATED WITH THE OWNER, AND MINIMIZE IMPACT TO THE CONSTRUCTION SCHEDULE.

PERMIT

philswygart \\bend-esf\bend\7.0 projects_bend_office_lead\vickman, williams, & associate\pb22-0077-en - dc safety campus\3. working files\CAD\E0.2 ELECTRICAL SPECIFICATIONS.dwg Thu Mar 31, 2022 - 1:53pm

	1	2	3	4	5	6
A	<p>1. GENERAL</p> <p>1.1. THE INTENT OF THE SPECIFICATIONS AND DRAWINGS IS FOR THE ELECTRICAL CONTRACTOR TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR MUST FURNISH AND INSTALL ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ELECTRICAL WORK.</p> <p>1.2. COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND OTHER TRADES. THE ELECTRICAL CONTRACTOR MUST SECURE SHOP DRAWINGS FROM OTHER SUBCONTRACTORS AND VERIFY EXACT ELECTRICAL CHARACTERISTICS OF EQUIPMENT TO BE WIRED. THIS IS TO BE DONE BEFORE ELECTRICAL ROUGH-IN FOR SUBJECT EQUIPMENT.</p> <p>2. SUBMITTALS</p> <p>2.1. PRECONSTRUCTION</p> <p>2.2. PRODUCT DATA</p> <p>2.2.1. CONDUITS & RACEWAYS</p> <p>2.2.2. WIRE & CABLE</p> <p>2.2.3. SWITCHES</p> <p>2.2.4. RECEPTACLES</p> <p>2.2.5. OUTLETS, OUTLET BOXES, AND PULL BOXES</p> <p>2.2.6. CIRCUIT BREAKERS</p> <p>2.2.7. PANELBOARDS</p> <p>2.2.8. LAMPS & LIGHTING FIXTURES</p> <p>2.2.9. DRY-TYPE DISTRIBUTION TRANSFORMERS</p> <p>2.2.10. DISCONNECT SWITCHES</p> <p>2.2.11. FUSES</p> <p>2.2.12. TERMINATIONS & CONNECTORS</p> <p>2.2.13. NAMEPLATES</p> <p>2.3. TEST REPORTS</p> <p>2.3.1. CONTINUITY TEST</p> <p>2.3.2. INSULATION RESISTANCE TEST</p> <p>2.3.3. PHASE-ROTATION TESTS</p> <p>2.4. MANUFACTURER'S INSTRUCTIONS</p> <p>3. QUALITY ASSURANCE</p> <p>3.1. EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF NEC, IEE, ANSI, NEMA, UL, ASTM, CSA, & ETL AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.</p> <p>4. PRODUCTS</p> <p>4.1. SUBMIT MANUFACTURER'S INSTRUCTIONS INCLUDING SPECIAL PROVISIONS REQUIRED TO INSTALL EQUIPMENT COMPONENTS AND SYSTEM PACKAGES. SPECIAL PROVISIONS DETAIL IMPEDANCES, HAZARDS, AND SAFETY PRECAUTIONS.</p> <p>4.2. CONDUITS & RACEWAYS</p> <p>4.2.1. RIGID STEEL CONDUIT (RMC)</p> <p>4.2.1.1. ENSURE RIGID STEEL CONDUIT COMPLIES WITH UL 6 AND IS GALVANIZED BY THE HOT-DIP PROCESS. USE POLYVINYLCHLORIDE (PVC) COATED RIGID STEEL CONDUIT IN ACCORDANCE WITH NEMA RN 1, WHERE UNDERGROUND AND IN CORROSIVE AREAS, OR PAINTED WITH BITUMASTIC.</p> <p>4.2.1.2. USE THREADED FITTINGS FOR RIGID STEEL CONDUIT.</p> <p>4.2.1.3. USE SOLID GASKETS. ENSURE CONDUIT FITTINGS WITH BLANK COVERS HAVE GASKETS, EXCEPT IN CLEAN, DRY AREAS OR AT THE LOWEST POINT OF A CONDUIT RUN WHERE DRAINAGE IS REQUIRED.</p> <p>4.2.1.4. ENSURE COVERS HAVE CAPTIVE SCREWS AND ARE ACCESSIBLE AFTER THE WORK HAS BEEN COMPLETED.</p> <p>4.2.2. ELECTRICAL METALLIC TUBING (EMT)</p> <p>4.2.2.1. ENSURE EMT IS IN ACCORDANCE WITH UL 797 AND IS ZINC COATED STEEL. PROVIDE ZINC-COATED COUPLINGS AND CONNECTORS THAT ARE RAINTIGHT, GLAND COMPRESSION WITH INSULATION THROAT. CRIMP, SPRING, OR SETSCREW TYPE FITTINGS ARE NOT ACCEPTABLE</p> <p>4.2.3. INTERMEDIATE METAL CONDUIT</p> <p>4.2.3.1. ENSURE INTERMEDIATE METAL CONDUIT IS GALVANIZED STEEL AND COMPLIES WITH UL 1242.</p> <p>4.2.4. RIGID NONMETALLIC CONDUIT</p> <p>4.2.4.1. ENSURE RIGID NONMETALLIC CONDUIT COMPLIES WITH NEMA TC 2 AND NEMA TC 3 WITH WALL THICKNESS NOT LESS THAN SCHEDULE 40.</p> <p>4.2.5. WIREWAYS AND AUXILIARY GUTTERS</p> <p>4.2.5.1. ENSURE WIREWAYS AND AUXILIARY GUTTERS ARE A MINIMUM 100 BY 100 MILLIMETER 4 BY 4-INCH TRADE SIZE CONFORMING TO UL 870.</p> <p>4.3. WIRE AND CABLE</p> <p>4.3.1. USE COPPER, 600 VOLT INSULATION, TYPE THW, THHN, OR THWN.</p> <p>4.3.2. ALL WIRE MUST BE STRANDED. MINIMUM SIZE WIRE FOR LIGHTING AND POWER CIRCUITS IS #12 AWG.</p> <p>4.3.3. LIGHTING AND RECEPTACLE CIRCUITS WITH LENGTHS UP TO 100 FT MAY HAVE #12 AWG. FOR LENGTHS GREATER THAN 200 FT, #10 AWG IS THE MINIMUM WIRE SIZE AND VOLTAGE DROP OF NO MORE THAN 3% MUST BE MET.</p> <p>4.3. RECEPTACLES</p> <p>4.3.1. PROVIDE COMMERCIAL GRADE RECEPTACLES, 20A, 125 VAC, 2-POLE, 3-WIRE DUPLEX OR QUAD CONFORMING TO NEMA WD 6, NEMA 5-20R IN COMMERCIAL SPACES.</p> <p>4.3.2. EXTERIOR RECEPTACLES MUST BE GFCI TYPE WITH WEATHER COVER.</p> <p>4.3.3. RESIDENTIAL GRADE, 15 A, 125 VAC, RECEPTACLES MAY BE USED IN DWELLING SPACES ONLY.</p> <p>4.3.4. OUTLETS, OUTLET BOXES, AND PULL BOXES</p> <p>4.3.1. ENSURE OUTLET BOXES FOR USE WITH CONDUIT SYSTEMS ARE IN ACCORDANCE WITH NEMA FB 1 AND ANS/NEMA OS 1 AND ARE NOT LESS THAN 1-1/2 INCHES DEEP. FURNISH ALL PULL AND JUNCTION BOXES WITH SCREW-FASTENED COVERS.</p> <p>4.4. PANELBOARDS</p> <p>4.4.1. PROVIDE CIRCUIT BREAKER TYPE LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS, WHERE REQUIRED, IN ACCORDANCE WITH NEMA PB 1. BOLT CIRCUIT BREAKERS TO THE BUS. PLUG-IN CIRCUIT BREAKERS ARE NOT ACCEPTABLE. PROVIDE COPPER BUSES OF THE RATING INDICATED, WITH MAIN LUGS OR MAIN CIRCUIT BREAKER AS INDICATED. PROVIDE ALL PANELBOARDS FOR USE ON GROUNDED AC SYSTEMS WITH A FULL-CAPACITY ISOLATED NEUTRAL BUS AND A SEPARATE GROUNDING BUS BONDED TO THE PANELBOARD ENCLOSURE. ENSURE PANELBOARD ENCLOSURES ARE NEMA 250, TYPE 1, IN ACCORDANCE WITH NEMA PB 1 FOR INDORE AREAS AND TYPE 3R OR 4 FOR OUTDOOR AREAS. PROVIDE ENCLOSURE FRONTS WITH LATCHABLE HINGED DOORS.</p> <p>4.5. CIRCUIT BREAKERS</p> <p>4.5.1. ENSURE CIRCUIT-BREAKER INTERRUPTING RATING IS NOT LESS THAN THOSE INDICATED AND IN NO EVENT LESS THAN 10,000 AMPERES ROOT-MEAN-SQUARE (RMS) SYMMETRICAL AT 240 VOLTS, RESPECTIVELY. MULTIPOLE CIRCUIT BREAKERS ARE THE COMMON-TRIP TYPE WITH A SINGLE HANDLE. MOLDED CASE CIRCUIT BREAKERS ARE BOLT-ON TYPE CONFORMING TO UL 489.</p> <p>4.5.2. PROVIDE GFCI CIRCUIT BREAKERS FOR THOSE CIRCUITS REQUIRING GFCI PROTECTION THAT HAVE INACCESSIBLE RECEPTACLES.</p> <p>4.6. LAMPS AND LIGHTING FIXTURES</p> <p>4.6.1. MANUFACTURERS AND CATALOG NUMBERS SHOWN ARE INDICATIVE OF THE GENERAL TYPE DESIRED AND ARE NOT INTENDED TO RESTRICT THE SELECTION TO FIXTURES OF ANY PARTICULAR MANUFACTURER. FIXTURES WITH THE SAME SALIENT FEATURES AND EQUIVALENT LIGHT DISTRIBUTION AND BRIGHTNESS CHARACTERISTICS, OF EQUAL FINISH AND QUALITY, ARE ACCEPTABLE.</p> <p>4.7. MANUFACTURER'S NAMEPLATE</p> <p>4.7.1. ENSURE EACH ITEM OF EQUIPMENT HAS A NAMEPLATE BEARING THE MANUFACTURER'S NAME, ADDRESS, MODEL NUMBER, AND SERIAL NUMBER SECURELY AFFIXED IN A CONSPICUOUS PLACE; THE NAMEPLATE OF THE DISTRIBUTING AGENT IS NOT ACCEPTABLE.</p> <p>5. INSTALLATION</p> <p>5.1. CONDUITS, RACEWAYS AND FITTINGS</p>	<p>5.1.1. CONDUIT RUNS BETWEEN OUTLET AND OUTLET, BETWEEN FITTING AND FITTING, OR BETWEEN OUTLET AND FITTING CANNOT CONTAIN MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS, INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE OUTLET OR FITTING.</p> <p>5.1.2. DO NOT INSTALL CRUSHED OR DEFORMED CONDUIT. AVOID TRAPPED CONDUIT RUNS WHERE POSSIBLE. TAKE CARE TO PREVENT THE LODGMEN OF FOREIGN MATERIAL IN THE CONDUIT, BOXES, FITTINGS, AND EQUIPMENT DURING THE COURSE OF CONSTRUCTION. CLEAR ANY CLOGGED CONDUIT OF OBSTRUCTIONS OR BE REPLACED.</p> <p>5.1.3. CONDUIT AND RACEWAY RUNS CONCEALED IN OR BEHIND WALLS, ABOVE CEILINGS, OR EXPOSED ON WALLS AND CEILINGS 1470 MILLIMETER 5 FEET OR MORE ABOVE FINISHED FLOORS AND NOT SUBJECT TO MECHANICAL DAMAGE MAY BE ELECTRICAL METALLIC TUBING.</p> <p>5.2. RIGID STEEL CONDUIT</p> <p>5.2.1. MAKE FIELD-MADE BENDS AND OFFSETS WITH APPROVED HICKEY OR CONDUIT BENDING MACHINE. USE LONG RADIUS CONDUIT FOR ELBOWS LARGER THAN 65 MILLIMETER 2-1/2 INCHES.</p> <p>5.2.2. PROVIDE ALL CONDUIT STUBBED-UP THROUGH CONCRETE FLOORS FOR CONNECTIONS TO FREE-STANDING EQUIPMENT WITH THE EXCEPTION OF MOTOR-CONTROL CENTERS, CUBICLES, AND OTHER SUCH ITEMS OF EQUIPMENT, WITH A FLUSH COUPLING WHEN THE FLOOR SLAB IS OF SUFFICIENT THICKNESS. OTHERWISE, PROVIDE A FLOOR BOX SET FLUSH WITH THE FINISHED FLOOR. FOR CONDUITS INSTALLED FOR FUTURE USE, TERMINATE WITH A COUPLING AND PLUG SET FLUSH WITH THE FLOOR. INSTALL A MINIMUM 500 LBS TENSILE STRENGTH WIRE PULLING STRING IN ALL UNUSED OR RESERVED FOR FUTURE CONDUIT RUNS.</p> <p>5.3. ELECTRICAL METALLIC TUBING</p> <p>5.3.1. GROUND EMT IN ACCORDANCE WITH NFPA 70, USING PRESSURE GROUNDING CONNECTORS ESPECIALLY DESIGNED FOR EMT.</p> <p>5.4. INTERMEDIATE CONDUIT</p> <p>5.4.1. MAKE ALL FIELD-MADE BENDS AND OFFSETS WITH APPROVED HICKEY OR CONDUIT BENDING MACHINE. USE INTERMEDIATE METAL CONDUIT ONLY FOR INDOOR INSTALLATIONS.</p> <p>5.5. RIGID NONMETALLIC CONDUIT</p> <p>5.5.1. ENSURE RIGID PVC CONDUIT IS DIRECT BURIED.</p> <p>5.5.2. INSTALL A GREEN INSULATED COPPER GROUNDING CONDUCTOR IN CONDUIT WITH CONDUCTORS AND SOLIDLY CONNECT TO GROUND AT EACH END. SIZE GROUNDING WIRES IN ACCORDANCE WITH NFPA 70.</p> <p>5.6. SURFACE RACEWAYS AND ASSEMBLIES</p> <p>5.6.1. MOUNT SURFACE RACEWAYS PLUMB AND LEVEL, WITH THE BASE AND COVER SECURED. MINIMUM CIRCUIT RUN IS THREE-WIRE, WITH ONE WIRE DESIGNATED AS GROUND.</p> <p>5.7. WIRING</p> <p>5.7.1. USE CONDUCTORS UP TO AND INCLUDING AWG NO. 2 THAT ARE MANUFACTURED WITH COLORED INSULATING MATERIALS. FOR CONDUCTORS LARGER THAN AWG NO. 2, HAVE ENDS IDENTIFIED WITH COLOR PLASTIC TAPE IN OUTLET, PULL, OR JUNCTION BOXES.</p> <p>5.7.2. SPLICE IN ACCORDANCE WITH THE NFPA 70. PROVIDE CONDUCTOR IDENTIFICATION WITHIN EACH ENCLOSURE WHERE A TAP, SPLICE, OR TERMINATION IS MADE AND AT THE EQUIPMENT TERMINAL OF EACH CONDUCTOR. MATCH TERMINAL AND CONDUCTOR IDENTIFICATION AS INDICATED.</p> <p>5.7.3. WHERE SEVERAL FEEDERS PASS THROUGH A COMMON PULLBOX, TAG THE FEEDERS TO CLEARLY INDICATE THE ELECTRICAL CHARACTERISTICS, CIRCUIT NUMBER, AND PANEL DESIGNATION.</p> <p>5.8. WALL SWITCHES AND RECEPTACLES</p> <p>5.8.1. INSTALL WALL SWITCHES AND RECEPTACLES SO THAT WHEN DEVICE PLATES ARE APPLIED, THE PLATES ARE ALIGNED VERTICALLY TO WITHIN 1/16 INCH.</p> <p>5.8.2. BOND GROUND TERMINAL OF EACH FLUSH-MOUNTED RECEPTACLE TO THE OUTLET BOX WITH AN APPROVED GREEN BONDING JUMPER WHEN USED WITH DRY WALL TYPE CONSTRUCTION.</p> <p>5.9. BOXES AND FITTINGS</p> <p>5.9.1. FURNISH AND INSTALL PULL BOXES WHERE NECESSARY IN THE CONDUIT SYSTEM TO FACILITATE CONDUCTOR INSTALLATION. FOR CONDUIT, RUNS LONGER THAN 100 FEET OR WITH MORE THAN THREE RIGHT-ANGLE BENDS, INSTALL A PULLBOX AT A CONVENIENT INTERMEDIATE LOCATION.</p> <p>5.9.2. SECURELY MOUNT BOXES AND ENCLOSURES TO THE BUILDING STRUCTURE WITH SUPPORTING FACILITIES INDEPENDENT OF THE CONDUIT ENTERING OR LEAVING THE BOXES.</p> <p>5.9.3. ELECT THE MOUNTING HEIGHT OF WALL-MOUNTED OUTLET AND SWITCH BOXES, AS MEASURED BETWEEN THE BOTTOM OF THE BOX AND THE FINISHED FLOOR, IN ACCORDANCE WITH ICC/ANSI A117.1.</p> <p>5.10. LAMPS AND LIGHTING FIXTURES</p> <p>5.10.1. SECURELY FASTEN FIXTURES AND SUPPORTS TO STRUCTURAL MEMBERS AND INSTALL PARALLEL AND PERPENDICULAR TO MAJOR AXES OF STRUCTURES.</p> <p>5.11. PANELBOARDS</p> <p>5.11.1. SECURELY MOUNT PANELBOARDS SO THAT THE TOP OPERATING HANDLE DOES NOT EXCEED 72-INCHES ABOVE THE FINISHED FLOOR. DO NOT MOUNT EQUIPMENT WITHIN 36 INCHES OF THE FRONT OF THE PANEL. ENSURE DIRECTORY CARD INFORMATION IS COMPLETE AND LEGIBLE.</p> <p>5.12. FIELD FABRICATED NAMEPLATES</p> <p>5.12.1. ENSURE NAMEPLATES CONFORM TO ASTM D709. PROVIDE LAMINATED PLASTIC NAMEPLATES FOR EACH EQUIPMENT ENCLOSURE, RELAY, SWITCH, AND DEVICE, AS SPECIFIED IN THE TECHNICAL SECTIONS OR AS INDICATED ON THE DRAWINGS. EACH NAMEPLATE INSCRIPTION IDENTIFIES THE FUNCTION AND, WHEN APPLICABLE, THE POSITION. PROVIDE NAMEPLATES THAT ARE MELAMINE PLASTIC, 0.125 INCH THICK, WHITE WITH BLACK CENTER CORE AND A MATTE FINISH SURFACE. ACCURATELY ALIGN LETTERING AND ENGRAVE INTO THE CORE. MINIMUM SIZE OF NAMEPLATES IS 25 BY 65 MM 1 BY 2.5 INCHES. LETTERING IS A MINIMUM OF 6.35 MM 0.25 INCH HIGH NORMAL BLOCK STYLE.</p> <p>5.13. IDENTIFICATION PLATES AND WARNINGS</p> <p>5.13.1. FURNISH AND INSTALL IDENTIFICATION PLATES FOR LIGHTING AND POWER PANELBOARDS, MOTOR CONTROL CENTERS, ALL LINE VOLTAGE HEATING AND VENTILATING CONTROL PANELS, FIRE DETECTOR AND SPRINKLER ALARMS, DOOR BELLS, PILOT LIGHTS, DISCONNECT SWITCHES, MANUAL STARTING SWITCHES, AND MAGNETIC STARTERS. ATTACH IDENTIFICATION PLATES TO PROCESS CONTROL DEVICES AND PILOT LIGHTS.</p> <p>5.13.2. FURNISH IDENTIFICATION PLATES FOR ALL LINE VOLTAGE ENCLOSED CIRCUIT BREAKERS, IDENTIFYING THE EQUIPMENT SERVED, VOLTAGE, PHASE(S) AND POWER SOURCE. FOR CIRCUITS 480 VOLTS AND ABOVE, INSTALL CONSPICUOUSLY LOCATED WARNING SIGNS IN ACCORDANCE WITH OSHA REQUIREMENTS.</p> <p>5.14. QUALITY CONTROL</p> <p>5.14.1. AFTER COMPLETION OF THE INSTALLATION AND SPLICING, AND PRIOR TO ENERGIZING THE CONDUCTORS, PERFORM WIRE AND CABLE CONTINUITY AND INSULATION TESTS AS HEREIN SPECIFIED BEFORE THE CONDUCTORS ARE ENERGIZED.</p> <p>5.14.2. PROVIDE ALL NECESSARY TEST EQUIPMENT, LABOR, AND PERSONNEL TO PERFORM THE TESTS, AS HEREIN SPECIFIED.</p> <p>5.14.3. ISOLATE COMPLETELY ALL WIRE AND CABLE FROM ALL EXTRANEIOUS ELECTRICAL CONNECTIONS AT CABLE TERMINATIONS AND JOINTS. USE SUBSTATION AND SWITCHBOARD FEEDER BREAKERS, DISCONNECTS IN COMBINATION MOTOR STARTERS, CIRCUIT BREAKERS IN PANEL BOARDS, AND OTHER DISCONNECTING DEVICES TO ISOLATE THE CIRCUITS UNDER TEST.</p> <p>5.14.4. PERFORM INSULATION-RESISTANCE TEST ON EACH FIELD-INSTALLED CONDUCTOR WITH RESPECT TO GROUND AND ADJACENT CONDUCTORS. APPLIED POTENTIAL IS 500 VOLTS DC FOR 300 VOLT RATED CABLE AND 1000 VOLTS DC FOR 600 VOLT RATED CABLE. TAKE READINGS AFTER 1 MINUTE AND UNTIL THE READING IS CONSTANT FOR 15 SECONDS. MINIMUM INSULATION-RESISTANCE VALUES IS NOT LESS THAN 25 MEGOHMS FOR 300 VOLT RATED CABLE AND 100 MEGOHMS FOR 600 VOLT RATED CABLE. FOR CIRCUITS WITH CONDUCTOR SIZES 8AWG AND SMALLER INSULATION RESISTANCE TESTING IS NOT REQUIRED.</p> <p>5.14.5. PERFORM CONTINUITY TEST TO INSURE CORRECT CABLE CONNECTION (I.E CORRECT PHASE CONDUCTOR, GROUNDED CONDUCTOR, AND GROUNDING CONDUCTOR WIRING) END-TO END. REPAIR AND RE-VERIFY ANY DAMAGES TO EXISTING OR NEW ELECTRICAL EQUIPMENT RESULTING FROM MIS-WIRING. RECEIVE APPROVAL FOR ALL REPAIRS FROM THE GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF THE REPAIR.</p> <p>5.14.6. CONDUCT PHASE-ROTATION TESTS ON ALL THREE-PHASE CIRCUITS USING A PHASE-ROTATION INDICATING INSTRUMENT. PERFORM PHASE ROTATION OF ELECTRICAL CONNECTIONS TO CONNECTED EQUIPMENT CLOCKWISE, FACING THE SOURCE.</p> <p>5.14.7. FINAL ACCEPTANCE REQUIRES THE SUCCESSFUL PERFORMANCE OF WIRE AND CABLE UNDER TEST.</p>				
B						
C						
D						



DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
ELECTRICAL SPECIFICATIONS

REVISIONS:	DESCRIPTION

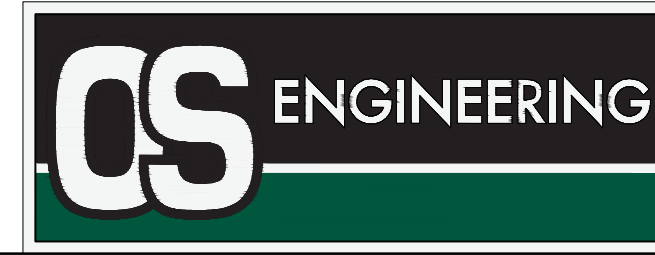


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BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET: **E0.2**

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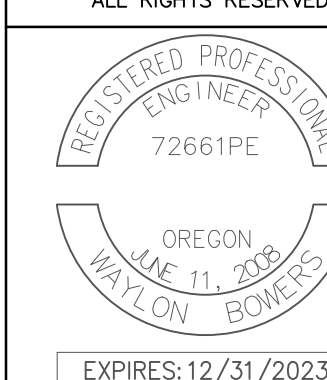


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<div style="display: flex; justify-content: space-between;"> <div style="width: 10%; border: 1px solid black; padding: 2px;">CITY OF BEND STAMP LOCATION</div> <div style="width: 80%; border: 1px solid black; height: 100px; position: relative;"> <div style="position: absolute; top: 0; right: 0; width: 50%; height: 50%; border: 1px solid black; text-align: center; vertical-align: middle;"> CITY OF BEND STAMP LOCATION CITY OF BEND STAMP LOCATION CITY OF BEND STAMP LOCATION </div> </div> <div style="width: 10%; border: 1px solid black; padding: 2px;">CITY OF BEND STAMP LOCATION</div> </div>					
<p style="text-align: center;">26-51-00-GENERAL LIGHTING REQUIREMENTS</p>					
<p>1. General</p> <p>1.1. Provide lighting control system as indicated OR AS REQUIRED BY THE ENERGY EFFICIENCY CODE. Lighting control equipment includes: control modules, timers, power packs, dimming ballasts, occupancy sensors, and light level sensors.</p> <p>2. Submittals</p> <p>2.1. Product data</p> <p>2.1.1. Fluorescent lighting fixtures</p> <p>2.1.2. Fluorescent electronic ballasts</p> <p>2.1.3. Fluorescent lamps</p> <p>2.1.4. Led luminaires</p> <p>2.1.5. Dimmer switches</p> <p>2.1.6. Exit signs</p> <p>2.1.7. Emergency lighting equipment</p> <p>2.1.8. Occupancy sensors</p> <p>2.1.9. Electric dimming ballasts</p> <p>2.1.10. Dimming ballast controls</p> <p>2.1.11. Light level sensors</p> <p>2.2. Test reports</p> <p>2.2.1. Operating test</p> <p>2.3. Manufacturer's instructions</p> <p>3. Quality Assurance</p> <p>3.1. Equipment and materials shall conform with appropriate provisions of NEC, IEEE, ANSI, NEMA, UL, ASTM, CSA, & ETL as applicable to each individual unit or assembly.</p> <p>3.2. Comply with the energy efficiency code and energy star requirements for lighting products.</p> <p>4. Products</p> <p>4.1. Use of incandescent lighting fixtures and lamps is prohibited.</p> <p>4.2. Fluorescent lighting fixtures</p> <p>4.2.1. Comply with UL 1598. Fluorescent fixtures must have electronic ballasts.</p> <p>4.2.2. Fluorescent electronic ballasts</p> <p>4.2.2.1. Ballast MUST comply with UL 935, NEMA ANSLG C82.11, NFPA 70, and CEC Title 24 unless specified otherwise. Ballast shall be 100 percent electronic high frequency type with no magnetic core and coil components. Ballast shall provide transient immunity as recommended by IEEE C62.41.1 and IEEE C62.41.2. Ballast shall be designed for the wattage of the lamps used in the indicated application. Ballasts shall be designed to operate on the voltage system to which they are connected.</p> <p>4.2.2.2. Power factor shall be 0.95 (minimum).</p> <p>4.2.2.3. Ballast shall operate at a frequency of 20,000 Hertz (minimum). Ballast shall be compatible with and not cause interference with the operation of occupancy sensors or other infrared control systems.</p> <p>4.2.2.4. Ballast shall have light regulation of plus or minus 10 percent lumen output with a plus or minus 10 percent input voltage regulation. Ballast shall have 10 percent flicker (maximum) using any compatible lamp.</p> <p>4.2.2.5. Ballast factor shall be between 0.85 (minimum) and 1.00 (maximum). Current crest factor shall be 1.7 (maximum).</p> <p>4.2.2.6. Ballast shall be UL listed Class P with a sound rating of "A."</p> <p>4.2.2.7. Ballast shall have circuit diagrams and lamp connections displayed on the ballast.</p> <p>4.2.2.8. Ballasts shall be instant start unless otherwise indicated. Ballasts shall be programmed start where indicated. Instant start ballasts shall operate lamps in a parallel circuit configuration that permits the operation of remaining lamps if one or more lamps fail or are removed. Programmed start ballasts may operate lamps in a series circuit configuration. Provide series/parallel wiring for programmed start ballasts where available.</p> <p>4.2.2.9. Ballasts for T-5 and smaller lamps shall have end-of-life protection circuits as required by NEMA ANSLG C78.81 and ANSI C78.901 as applicable.</p> <p>4.2.2.10. Ballast shall be capable of starting and maintaining operation at a minimum of 0 degrees F unless otherwise indicated.</p> <p>4.2.2.11. Electronic ballast shall have a full replacement warranty of 5 years from date of manufacture.</p> <p>4.2.3. LED LUMINAIRES</p> <p>4.2.3.1. LED luminaire housings shall be die cast or extruded aluminum. LED luminaires shall be rated for operation within an ambient temperature range of minus 22 degrees F to 104 degrees F and be UL listed per UL 1598 for wet areas.</p> <p>4.2.3.2. Housing finish must be baked-on enamel, anodized, or baked-on powder coat paint. Finish must be capable of surviving ASTM B117 salt fog environment testing for 2500 hours minimum without blistering or peeling.</p> <p>4.2.3.3. Luminaire efficacy in Lumens per watt must be no less than 86 LPW.</p> <p>4.2.3.4. All factory electrical connections must be made using crimp, locking, or latching style connectors. Twist-style wire nuts are not acceptable.</p> <p>4.2.3.5. Correlated color temperature (CCT) must comply with NEMA ANSLG C78.377. Color rendering index (CRI) must be greater than or equal to 70 for 4000 degrees K light sources.</p> <p>4.2.3.6. LED drivers must have a minimum efficiency of 85%. Power factor must be greater than or equal to 0.90. Total harmonic distortion (THD) current must be less than or equal to 20%. The driver must be dimmable & compatible with 0-10V control circuits.</p> <p>4.2.3.7. LED luminaire must be provided with surge protection integral to the luminaire. The surge current rating must be 20,000 amps using the industry standard 8/20 pSec wave. The clamping voltage must be at least 825V and the surge rating must be at least 540J.</p> <p>4.2.4. DIMMING BALLAST CONTROLS</p> <p>4.2.4.1. The dimming ballast controls shall be a slide dimmer with on/off control. The slide dimmer shall be compatible with the ballast and control the ballast light output over the full dimming range. Dimming</p>	<p>ballast controls shall be approved by the ballast manufacturer.</p> <p>4.2.5. Light Level Sensor</p> <p>4.2.5.1. Light level sensor shall be capable of detecting changes in ambient lighting levels, shall provide a dimming range of 20 percent to 100 percent, minimum, and shall be designed for use with dimming ballast and voltage system to which they are connected. Sensor shall be capable of controlling 40 electronic dimming ballast, minimum. Sensor light level shall be adjustable and have a set level range from 100 to 1000 lux 10 to 100 footcandles, minimum. Sensor shall have a bypass function to electrically override sensor control.</p> <p>4.2.6. Fluorescent lamps</p> <p>4.2.6.1. T-8 rapid start lamps shall be rated 32 watts (maximum), 2800 initial lumens (minimum), CRI of 75 (minimum), color temperature of 3500 K and an average rated life of 20,000 hours.</p> <p>4.2.6.2. T-8, U shaped fluorescent lamp, 32 watts maximum, 2600 initial lumens (minimum), 3500 K, 75 CRI (minimum), 20,000 hours average rated life, 1.625 inch leg spacing.</p> <p>4.2.6.3. Compact fluorescent lamps shall be: CRI 80, minimum, 3500 K 10,000 hours average rated life.</p> <p>4.2.7. Compact Fluorescent Fixtures</p> <p>4.2.7.1. Compact fluorescent fixtures shall be manufactured specifically for compact fluorescent lamps with ballasts integral to the fixture. Providing assemblies designed to retrofit incandescent fixtures is prohibited except when specifically indicated for renovation of existing fixtures. Fixtures shall use lamps as indicated, with a minimum CRI of 80.</p> <p>4.2.8. Open-Tube Fluorescent Fixtures</p> <p>4.2.8.1. Provide with self-locking sockets, or lamp retainers (two per lamp). Provide lamps with shatter resistant coating, non-yellowing, nominal thickness of 15 mils, and with 97 percent (minimum) light transmission OR a THERMALLY RATED clear polycarbonate protective sleeve with end caps, over lamp, with 95 percent (minimum) light transmission.</p> <p>4.3. RECESS- AND FLUSH-MOUNTED FIXTURES</p> <p>4.3.1. Provide type that can be relamped from the bottom. Access to ballast shall be from the bottom. Trim for the exposed surface of flush-mounted fixtures shall be as indicated.</p> <p>4.4. SUSPENDED FIXTURES</p> <p>4.4.1. Provide hangers capable of supporting twice the combined weight of fixtures supported by hangers. Provide with swivel hangers to ensure a plumb installation. Hangers shall allow fixtures to swing within an angle of 45 degrees. Brace pendants 4 feet or longer TO LIMIT Swinging. Single-unit suspended[fluorescent] fixtures shall have twin-stem hangers.</p> <p>4.5. POWER HOOK FIXTURE HANGERS</p> <p>4.5.1. Provide UL listed assembly including through-wired power hook housing, interlocking plug and receptacle, power cord, and fixture support loop. Power hook housing shall be cast aluminum having two 3/4 inch threaded hubs. Support hook shall have safety screw. Fixture support loop shall be cast aluminum with provisions for accepting 3/4 inch threaded fixture stems. Power cord shall include 16 inches of 3 conductor No. 16 Type SO cord. Assembly shall be rated 120-, 277-, OR 480-VOLTS, 15 OR 20 amperes, AS REQUIRED.</p> <p>4.6. EXIT SIGNS</p> <p>4.6.1. UL 924, NFPA 70, and NFPA 101. Exit signs shall be self-powered OR remote-powered type, AS INDICATED. Exit signs shall use no more than 5 watts.</p> <p>4.6.2. Self-Powered LED Type Exit Signs (Battery Backup)</p> <p>4.6.2.1. Provide with automatic power failure device, integral self-testing module, and fully automatic high/low trickle charger in a self-contained power pack. Battery shall be sealed electrolyte type, shall operate unattended, and require no maintenance, including no additional water, for a period of not less than 5 years. LED exit sign shall have emergency run time of 1 1/2 hours (minimum). The light emitting diodes shall have rated lamp life of 70,000 hours (minimum).</p> <p>4.6.3. Remote-Powered Exit Signs</p> <p>4.6.3.1. Provide remote exit signs with provisions for wiring to external ac and dc power sources. Provide signs with a minimum of two ac lamps for normal illumination and a minimum of two dc lamps for emergency lighting.</p> <p>4.7. EMERGENCY LIGHTING EQUIPMENT</p> <p>4.7.1. UL 924, NFPA 70, and NFPA 101. Provide lamps in wattage indicated.</p> <p>4.7.2. Each system shall consist of an automatic power failure device, test switch operable from outside of the fixture, pilot light visible from outside the fixture, and fully automatic solid-state charger in a self-contained power pack. Battery shall be sealed electrolyte type with capacity as required to supply power to the number of lamps shown for each system for 90 minutes at a minimum of 400 lumens per lamp output. Battery shall operate unattended and require no maintenance, including no additional water, for a period of not less than 5 years. Emergency ballasts provided with fixtures containing solid-state ballasts shall be fully compatible with the solid-state ballasts.</p> <p>4.8. OCCUPANCY SENSORS</p> <p>4.8.1. UL listed. Comply with GS-12. Occupancy sensors and power packs shall be designed to operate on the voltage indicated. Sensors and power packs shall have circuitry that only allows load switching at or near zero current crossing of supply voltage. Sensor shall have an LED occupant detection indicator. Sensor shall have adjustable sensitivity and adjustable delayed-off time range of 5 minutes to 15 minutes. Wall mounted sensors shall match the color of adjacent wall plates. Ceiling mounted sensors shall have 360 degree coverage unless otherwise indicated.</p> <p>4.8.2. Occupancy detection to turn lights on requires both ultrasonic and infrared sensor detection. Lights shall remain on if either the ultrasonic or infrared sensor detects movement. Infrared sensor shall have lens selected for indicated usage and daylight filter to prevent short wavelength infrared interference. Ultrasonic sensor frequency shall be crystal controlled.</p> <p>4.9. EQUIPMENT IDENTIFICATION</p> <p>4.9.1. Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.</p> <p>4.9.2. Provide labeled luminaires in accordance with UL 1598 requirements. All luminaires shall be clearly</p>	<p>marked for operation of specific lamps and ballasts according to proper lamp type.</p> <p>4.9.3. Lamp diameter code (T-4, T-5, T-8, T-12), tube configuration (twin, quad, triple), base type, and nominal wattage for fluorescent and compact fluorescent lumina</p> <p>4.9.4. Lamp type, wattage, bulb type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.</p> <p>4.9.5. Start type (preheat, rapid start, instant start) for fluorescent and compact fluorescent luminaires.</p> <p>4.9.6. All markings related to lamp type shall be clear and located to be readily visible to service personnel, but unseen from normal viewing angles when lamps are in place. Ballasts shall have clear markings indicating multi-level outputs and indicate proper terminals for the various outputs.</p> <p>5. INSTALLATION</p> <p>5.1. Lamps of the type, wattage, and voltage rating indicated shall be delivered to the project in the original cartons and installed just prior to project completion. Lamps installed and used for working light during construction shall be replaced prior to turnover Lamps shall be tested for proper operation prior to turn-over and shall be replaced if necessary with new lamps from the original manufacturer. Provide 10 percent spare lamps of each type from the original manufacturer.</p> <p>5.2. Set lighting fixtures plumb, square, and level with ceiling and walls, in alignment with adjacent lighting fixtures, and secure in accordance with manufacturers' directions and approved drawings. Installation shall meet requirements of NFPA 70. Mounting heights specified or indicated shall be to the bottom of fixture for ceiling-mounted fixtures and to center of fixture for wall-mounted fixtures. Obtain approval of the exact mounting for lighting fixtures on the job before commencing installation and, where applicable, after coordinating with the type, style, and pattern of the ceiling being installed. Recessed and semi-recessed fixtures shall be independently supported from the building structure by a minimum of four wires, straps, or rods per fixture and located near each corner of each fixture. Ceiling grid clips are not allowed as an alternative to independently supported light fixtures. Round fixtures or fixtures smaller in size than the ceiling grid shall be independently supported from the building structure by a minimum of four wires, OR straps, or rods per fixture spaced approximately equidistant around the fixture. Do not support fixtures by ceiling acoustical panels. Where fixtures of sizes less than the ceiling grid are indicated to be centered in the acoustical panel, support such fixtures independently and provide at least two 3/4 inch metal channels spanning, and secured to, the ceiling tees for centering and aligning the fixture.</p> <p>5.3. Suspended fixtures shall be provided with 45 degree swivel hangers so that they hang plumb and shall be located with no obstructions within the 45 degree range in all directions. The stem, canopy and fixture shall be capable of 45 degree swing. Pendants, rods, or chains 4 feet or longer excluding fixture shall be braced to prevent swaying using three cables at 120 degree separation. Suspended fixtures in continuous rows shall have internal wireway systems for end to end wiring and shall be properly aligned to provide a straight and continuous row without bends, gaps, light leaks or filler pieces. Aligning splines shall be used on extruded aluminum fixtures to assure hairline joints. Steel fixtures shall be supported to prevent "oil-canning" effects. Fixture finishes shall be free of scratches, nicks, dents, and warps, and shall match the color and gloss specified. Pendants shall be finished to match fixtures. Aircraft cable shall be stainless steel. Canopies shall be finished to match the ceiling and shall be low profile unless otherwise shown. Maximum distance between suspension points shall be 3.1 meters 10 feet or as recommended by the manufacturer, whichever is less.</p> <p>5.4. Electronic Dimming Ballasts</p> <p>5.4.1. All electronic dimming ballasts controlled by the same controller shall be of the same manufacturer. All fluorescent lamps on electronic dimming ballast control shall be seasoned or burned in at full light output for 100 hours before dimming.</p> <p>5.5. Exit Signs and Emergency Lighting Units</p> <p>5.5.1. Wire exit signs and emergency lighting units ahead of the switch to the normal lighting circuit located in the same room or area.</p> <p>5.6. Occupancy Sensor</p> <p>5.6.1. PROVIDE Full coverage WHICH MUST provide hand and arm motion detection for office and administration type areas and walking motion for industrial areas, warehouses, storage rooms and hallways. Locate the sensor(s) in accordance with the manufacturer's recommendations to maximize energy savings and to avoid nuisance activation and deactivation due to sudden temperature or airflow changes and usage. Set sensor "on" duration to 10 minutes.</p> <p>5.7. Light Level Sensor</p> <p>5.7.1. Locate light level sensor in accordance with the manufacturer's recommendations. Adjust sensor for 50 footcandles 500 lux or for the indicated light level at the typical work plane for that area.</p> <p>6. FIELD APPLIED PAINTING</p> <p>6.1. Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria..</p> <p>7. FIELD QUALITY CONTROL</p> <p>7.1. Upon completion of installation, verify that equipment is properly installed, connected, and adjusted. Conduct an operating test to show that equipment operates in accordance with requirements of this section.</p> <p>7.2. Electronic Dimming Ballast</p> <p>7.2.1. Test for full range of dimming capability. Observe for visually detectable flicker over full dimming range.</p> <p>7.3. Occupancy Sensor</p> <p>7.3.1. Test sensors for proper operation. Observe for light control over entire area being covered.</p>			

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EXPIRES: 12/31/2023

DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
LIGHTING SPECIFICATIONS

REVISIONS:	DESCRIPTION



HWA
CIVIL ENGINEERING | SURVEYING | PLANNING
1000 W. BEND, OR 97703
503.339.9361
WWW.HWA-INC.COM

DESIGNED BY: MC	DRAWN BY: MC	CHECKED BY: WB	SCALE: AS NOTED	FILE: EO.3.DWG	DATE: 02.16.22
<p>0 1"</p> <p>BAR EQUALS ONE INCH ON ORIGINAL DRAWING</p>					
<p style="font-size: 24px; font-weight: bold;">E0.3</p>					
<p>HWA # 181205</p>					

PERMIT

phi:swygart \\ bend-fs1\projects_bend_office_lead\Vickman, Williams, & associate\pb22-0077-en - dc safety campus\3. working files\CAD\E1.0 SITE LIGHTING PHOTOMETRICS-PARKING C.dwg Thu Mar 31, 2022 - 1:54pm

PHOTOMETRIC DETAILS - PARKING LOT C		
ILLUMINANCE (Fc)		
	ACTUAL	RP-20 TARGETS
AVERAGE	1.37	N/A
MAXIMUM	4.20	N/A
MINIMUM	0.30	0.2
MAXIMUM/MINIMUM	14.00	<20

CITY OF BEND STAMP LOCATION

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REGISTERED PROFESSIONAL ENGINEER
 72661PE

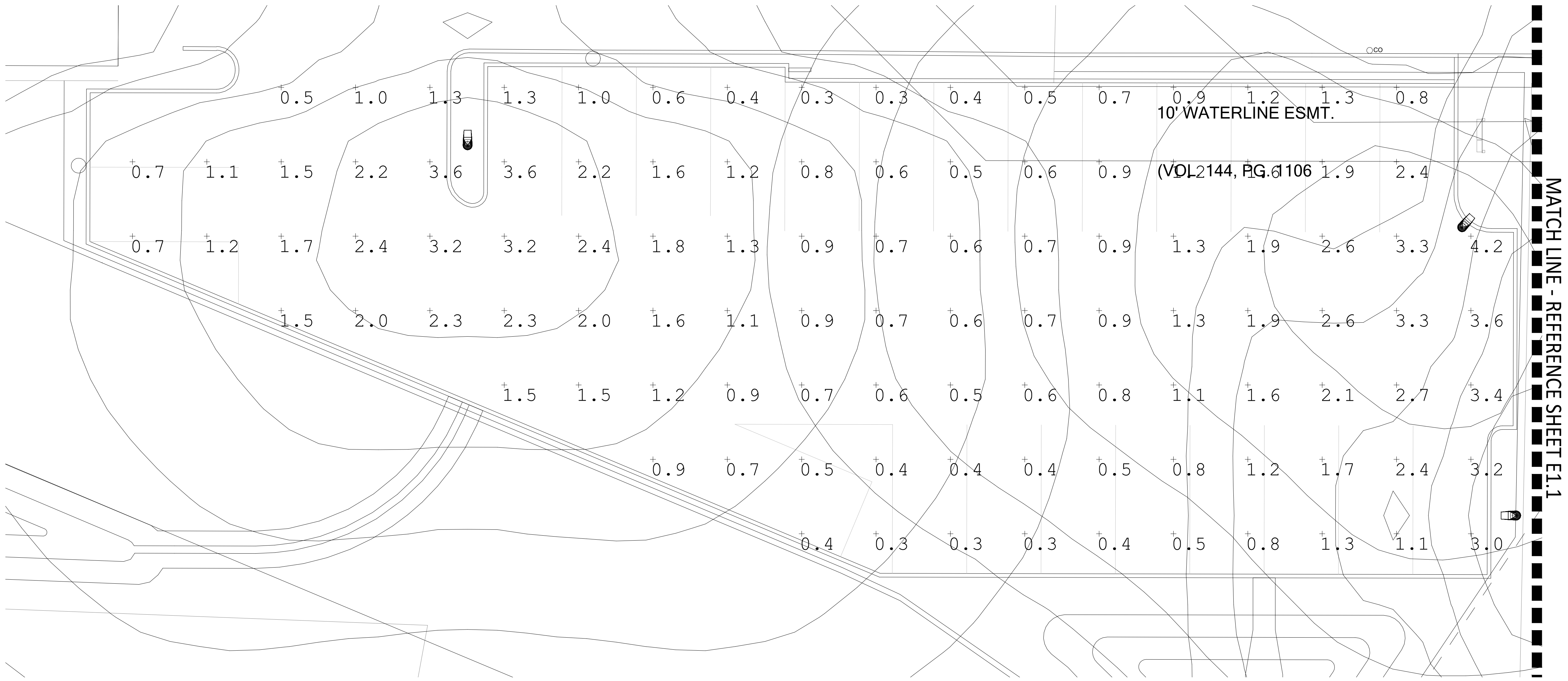
OREGON
 MAY 11, 2018
 WAYLON BOWERS

EXPIRES: 12/31/2023

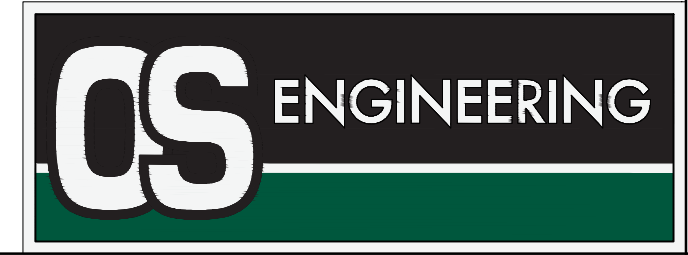
DESCHUTES COUNTY
 PUBLIC SAFETY FACILITY
 BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING

SITE LIGHTING PHOTOMETRICS - PARKING C



D1 SITE PLAN - LIGHTING PHOTOMETRICS - PARKING C
 SCALE: 1/8" = 1'-0"



REVISIONS:	DESCRIPTION

HWA
 CIVIL ENGINEERING | SURVEYING | PLANNING
 6413309-9361 PFD000 SITE 100, BEND, OR 97703
 WWW.HWA-INC.ORG

DESIGNED BY: MC
 DRAWN BY: MC
 CHECKED BY: WB
 SCALE: AS NOTED
 FILE: E1.0.DWG

DATE: 02.16.22

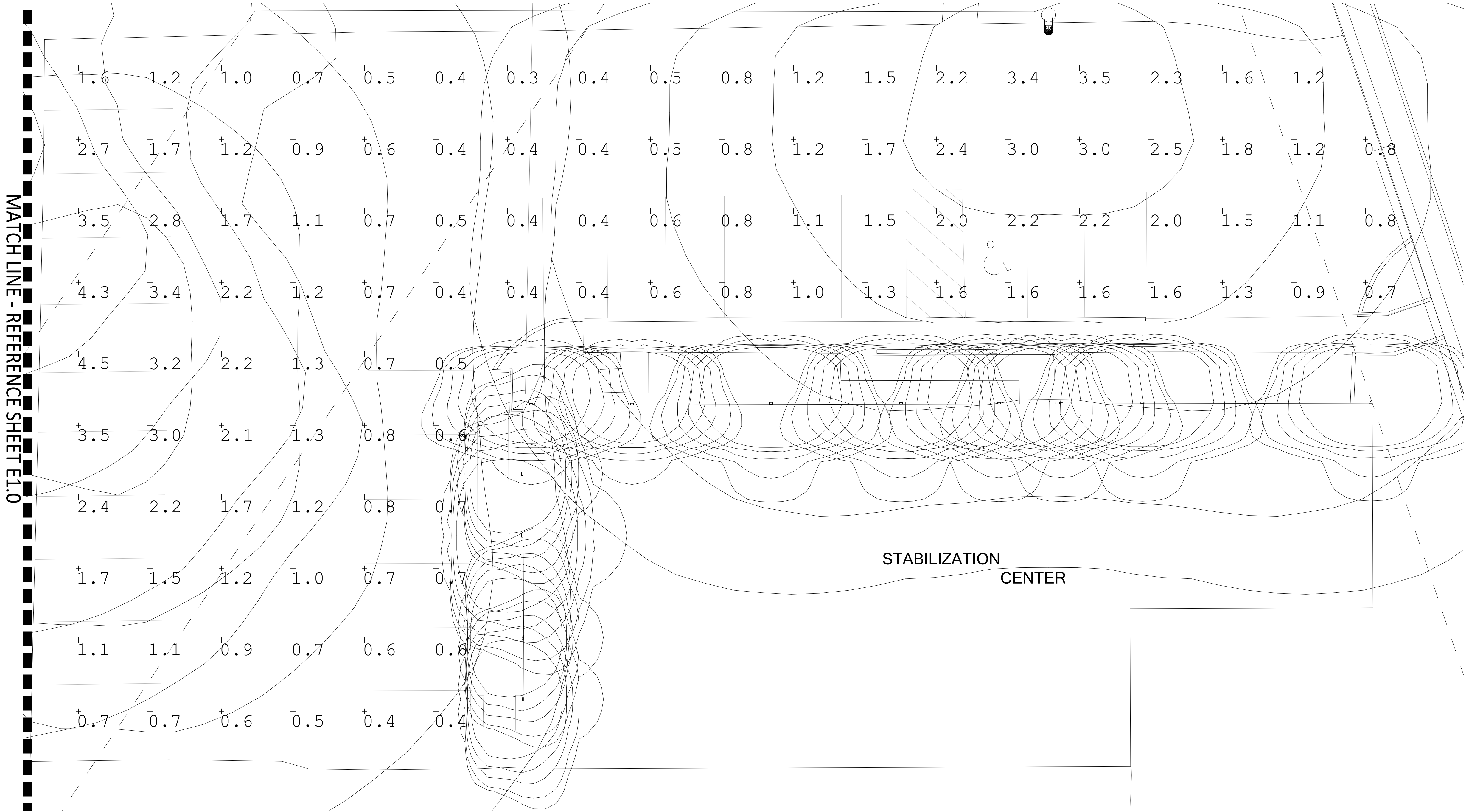
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 BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
E1.0
 HWA # 181205

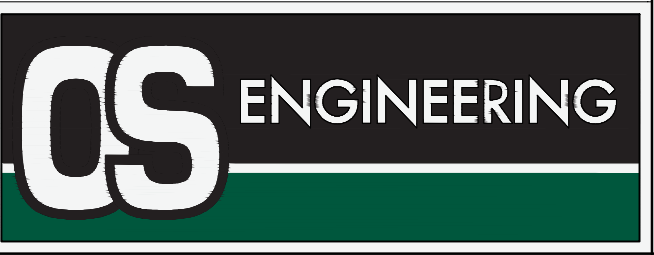
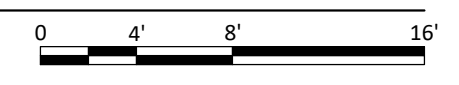
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phil.swygart \\bend-ls1\projects_bend_office_lead\wickman, williams, & associate\pb22-0077-en - dc safety campus\3. working files\CAD\E1.0 SITE LIGHTING PHOTOMETRICS-PARKING C.dwg Thu Mar 31, 2022 - 1:55pm

PHOTOMETRIC DETAILS - STABILIZATION CENTER PARKING		
ILLUMINANCE (Fc)		
	ACTUAL	RP-20 TARGETS
AVERAGE	1.37	N/A
MAXIMUM	4.50	N/A
MINIMUM	0.30	0.2
MAXIMUM/MINIMUM	15.00	<20



D1 SITE PLAN - LIGHTING PHOTOMETRICS
SCALE: 1/8" = 1'-0"



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REGISTERED PROFESSIONAL ENGINEER
72661PE

OREGON
JUNE 11, 2018
WAYLON BOWERS

EXPIRES: 12/31/2023

DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
SITE LIGHTING PHOTOMETRICS-STABILIZATION CENTER PARKING

REVISIONS:	DESCRIPTION

HWA
CIVIL ENGINEERING | SURVEYING | PLANNING
1000 NE 10TH ST. SUITE 100, BEND, OR 97703
WWW.HWA-INC.COM

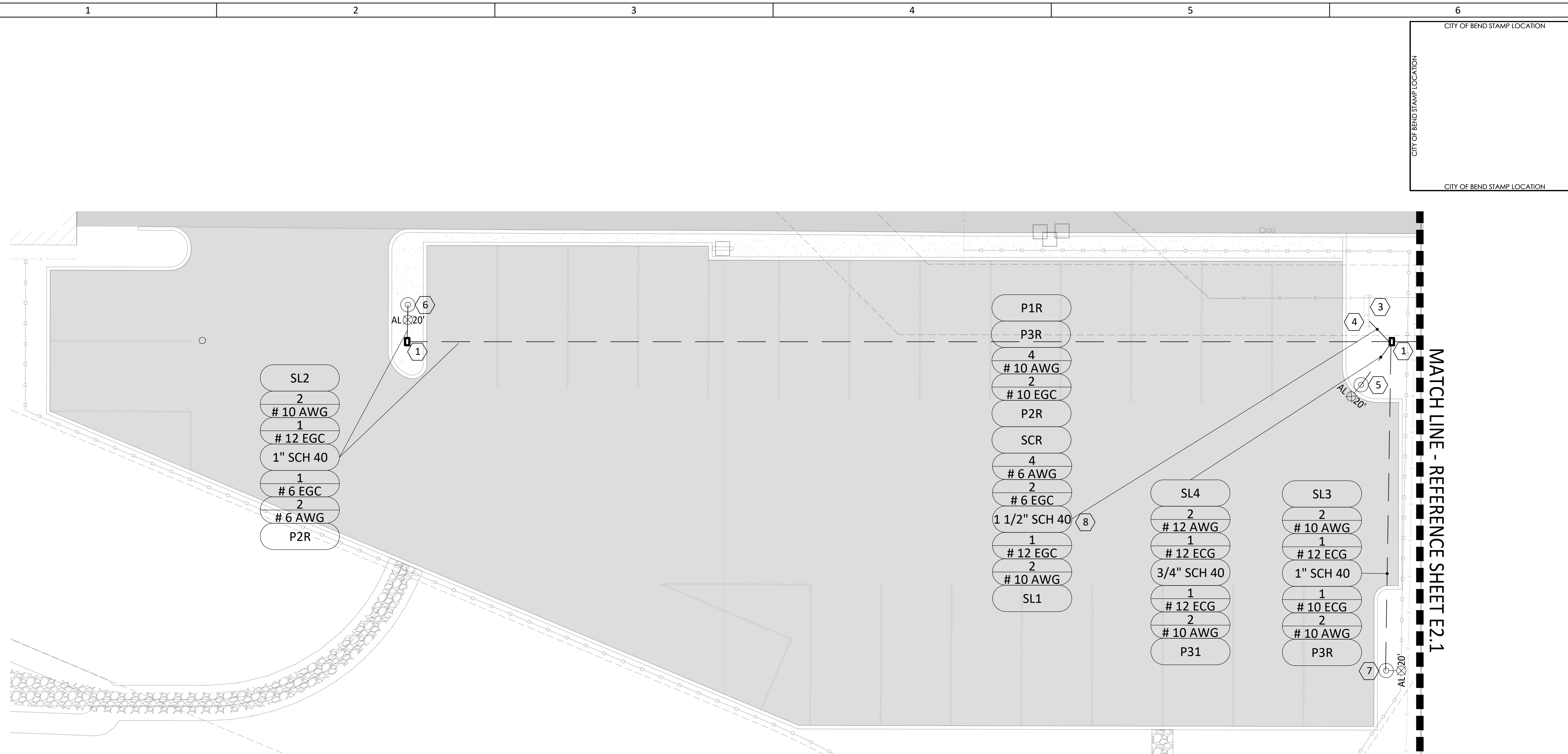
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DRAWN BY:	MC		
CHECKED BY:	WB		
SCALE:	AS NOTED		
FILE:	E1.1.DWG		

VERIFY SCALES
0 1"
BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
E1.1
HWA # 181205

PERMIT

phils.wygart \\bend-ls1\bend\7.0 projects_bend_office_lead\wickman, williams, & associate\pb22-0077-en - dc safety campus\3_working_files\CAD\E2.0 SITE LIGHTING POWER DISTRIBUTION-PARKING C.dwg Thu Mar 31, 2022 - 1:56pm



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 ENGINEER
 72661PE

OREGON
 JUNE 11, 2018
 WAYLON BOWERS

EXPIRES: 12/31/2023

DESCHUTES COUNTY
 PUBLIC SAFETY FACILITY
 BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
 SITE LIGHTING POWER DISTRIBUTION - PARKING C

REVISIONS:	DESCRIPTION

HWA

CIVIL ENGINEERING | SURVEYING | PLANNING
 1000 NE 10TH AVE, SUITE 100, BEND, OR 97703
 503.338.9361
 WWW.HWA-INC.COM

DESIGNED BY: MC
 DRAWN BY: MC
 CHECKED BY: WB
 SCALE: AS NOTED
 FILE: E2.0.DWG

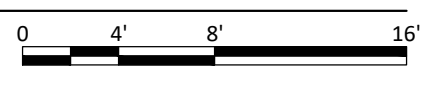
DATE: 02.16.22

VERIFY SCALES
 0 1"
 BAR EQUALS ONE INCH
 ON ORIGINAL DRAWING

SHEET:
E2.0
 HWA # 181205

PERMIT

D1 SITE PLAN - LIGHTING POWER DISTRIBUTION
 SCALE: 1/8" = 1'-0"



- GENERAL NOTES**
- LIGHTING AND POWER DISTRIBUTION ROUTES SHOWN ARE FOR DIAGRAMMATICAL PURPOSES ONLY TO SHOW CIRCUIT DESIGNATIONS AND DO NOT INDICATE EXACT DIRECTIONS OR ROUTING. CONTRACTOR TO VERIFY ALL TRENCHING AND ROUTING LOCATIONS WITH CIVIL PLANS AND OTHER UTILITIES THAT MAY CAUSE CONFLICTS PRIOR TO BREAKING GROUND. TRENCHING MAY BE SHARED WHERE APPLICABLE.
 - GROUND BOXES LOCATED WITHIN ANY INTERSECTION/DRIVEWAY/PARKING AREA/ROADWAY/SIDE WALK MUST BE TRAFFIC RATED.
 - GROUND BOXES MUST BE SLIP RESISTANT.
 - ANY CONDUIT SECTION NOT LABELED MUST USE 1" SCH 40 PVC, (3) #12 AWG.
 - SPlicing DEVICES MUST BE LISTED FOR USE WITH THE CONDUCTOR MATERIAL.

- EQUIPMENT NOTES**
- JUNCTION BOX LOCATION. MUST BE ANSI/SCTE-77, TIER 22 RATED. USE POLYMER CONCRETE LID WITH A MARKING OF "LIGHTING." ACCEPTABLE BOXES ARE: OLDCASTLE DURALITE, OLDCASTLE POLYMER, HUBBLE QUAZITE FRP, OR APPROVED EQUAL.
 - NOTE NOT USED
 - 400A SQUARE D METER MAIN-240/120V 1 Ø-EXISTING
 - PANEL A -200A SQUARE D LOAD CENTER-240/120V 1Ø-EXISTING: ELECTRICAL CONTRACTOR MUST PROVIDE ONE 20A, QO STYLE BREAKER FOR NEW SITE LIGHTING CIRCUIT. OCCUPY CIRCUIT DESIGNATION A-4. REFERENCE SHEET E4.0 DETAIL #1.
 - POLE 1 GFCI RECEPTACLE. ELECTRICAL CONTRACTOR MUST SUPPLY ONE 20A GFCI RECEPTACLE. REFERENCE SHEET E3.0 AND SHEET E4.0.
 - POLE 2 GFCI RECEPTACLE. ELECTRICAL CONTRACTOR MUST SUPPLY ONE 20A GFCI RECEPTACLE. REFERENCE SHEET E3.0 AND SHEET E4.0.
 - POLE 3 GFCI RECEPTACLE. ELECTRICAL CONTRACTOR MUST SUPPLY ONE 20A GFCI RECEPTACLE AND WEATHER COVER. REFERENCE SHEET E3.0 AND SHEET E4.0.
 - INSTALL RIGID PVC CONDUIT (SCH 80) FOR VERTICAL EXPOSED SECTION UNDER PANEL A.

Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
SL1	1	4.17	120	Cu	10	10	0.09%	0.09%	119.9
SL2	1	1.04	120	Cu	160	10	0.35%	0.43%	119.5
SL3	1	1.04	120	Cu	70	10	0.15%	0.24%	119.7
SL4	1	1.04	120	Cu	30	10	0.06%	0.15%	119.8
SCL2	1	1.04	120	Cu	170	10	0.37%	0.45%	119.5

1 SITE LIGHTING VOLTAGE DROP CALCULATION
 E2.0

Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
POLE 1 RECEPTACLE (P1R)	1	16.00	120	Cu	40	10	1.33%	1.33%	118.4

Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
POLE 2 RECEPTACLE (P2R)	1	16.00	120	Cu	150	6	1.97%	1.97%	117.6

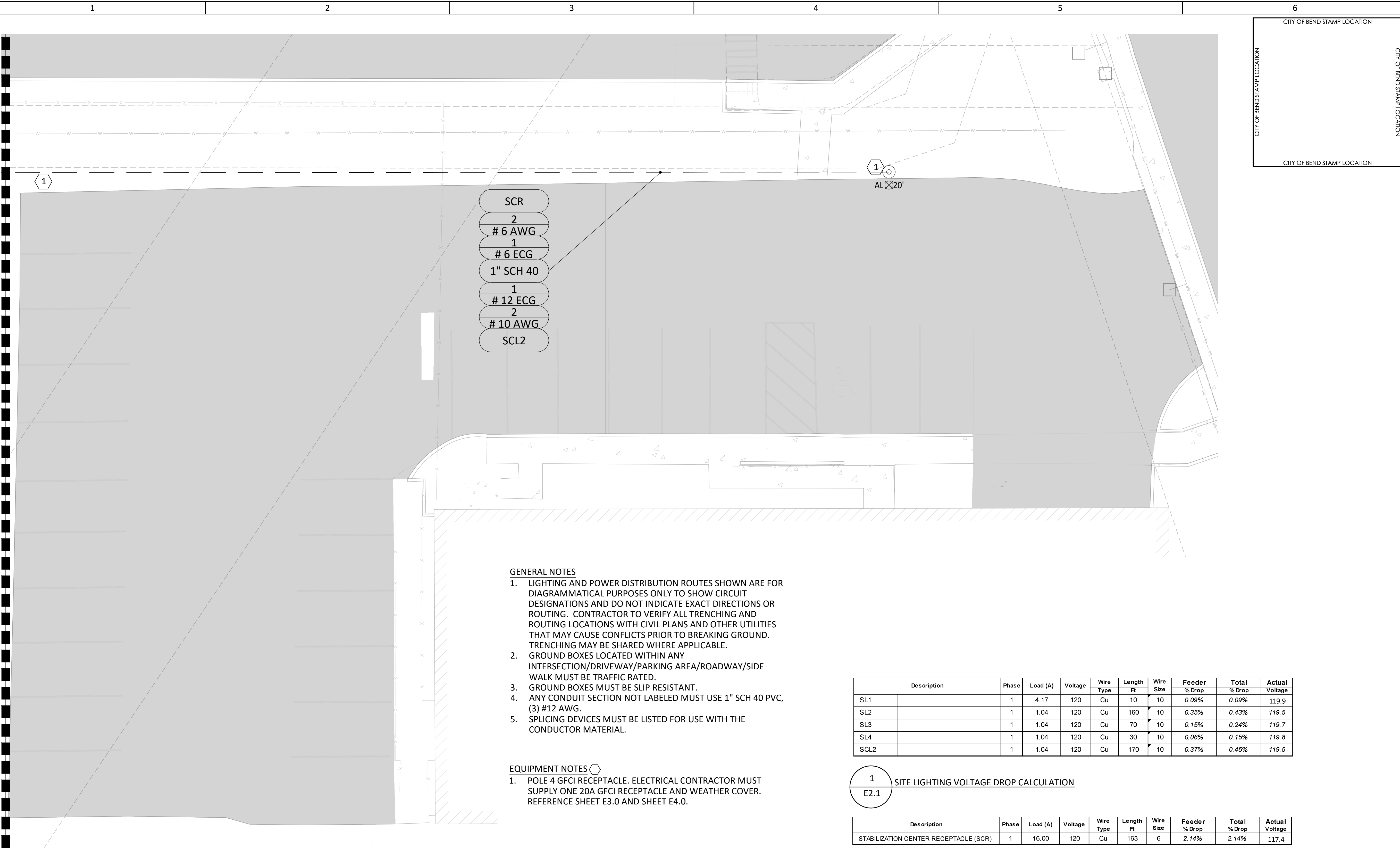
Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
POLE 3 RECEPTACLE (P3R)	1	16.00	120	Cu	57	10	1.89%	1.89%	117.7

Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
STABILIZATION CENTER RECEPTACLE (SCR)	1	16.00	120	Cu	163	6	2.14%	2.14%	117.4

2 POLE GFCI VOLTAGE DROP CALCULATION
 E2.0

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MATCH LINE - REFERENCE SHEET E2.0



- SCR
- 2
- # 6 AWG
- 1
- # 6 ECG
- 1" SCH 40
- 1
- # 12 ECG
- 2
- # 10 AWG
- SCL2

GENERAL NOTES

1. LIGHTING AND POWER DISTRIBUTION ROUTES SHOWN ARE FOR DIAGRAMMATICAL PURPOSES ONLY TO SHOW CIRCUIT DESIGNATIONS AND DO NOT INDICATE EXACT DIRECTIONS OR ROUTING. CONTRACTOR TO VERIFY ALL TRENCHING AND ROUTING LOCATIONS WITH CIVIL PLANS AND OTHER UTILITIES THAT MAY CAUSE CONFLICTS PRIOR TO BREAKING GROUND. TRENCHING MAY BE SHARED WHERE APPLICABLE.
2. GROUND BOXES LOCATED WITHIN ANY INTERSECTION/DRIVEWAY/PARKING AREA/ROADWAY/SIDE WALK MUST BE TRAFFIC RATED.
3. GROUND BOXES MUST BE SLIP RESISTANT.
4. ANY CONDUIT SECTION NOT LABELED MUST USE 1" SCH 40 PVC, (3) #12 AWG.
5. SPLICING DEVICES MUST BE LISTED FOR USE WITH THE CONDUCTOR MATERIAL.

EQUIPMENT NOTES

1. POLE 4 GFCI RECEPTACLE. ELECTRICAL CONTRACTOR MUST SUPPLY ONE 20A GFCI RECEPTACLE AND WEATHER COVER. REFERENCE SHEET E3.0 AND SHEET E4.0.

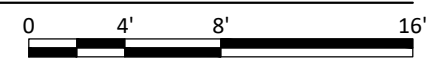
Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
SL1	1	4.17	120	Cu	10	10	0.09%	0.09%	119.9
SL2	1	1.04	120	Cu	160	10	0.35%	0.43%	119.5
SL3	1	1.04	120	Cu	70	10	0.15%	0.24%	119.7
SL4	1	1.04	120	Cu	30	10	0.06%	0.15%	119.8
SCL2	1	1.04	120	Cu	170	10	0.37%	0.45%	119.5

1 SITE LIGHTING VOLTAGE DROP CALCULATION
E2.1

Description	Phase	Load (A)	Voltage	Wire Type	Length Ft	Wire Size	Feeder % Drop	Total % Drop	Actual Voltage
STABILIZATION CENTER RECEPTACLE (SCR)	1	16.00	120	Cu	163	6	2.14%	2.14%	117.4

2 POLE GFCI VOLTAGE DROP CALCULATION
E2.1

D1 SITE PLAN - LIGHTING POWER DISTRIBUTION-STABILIZATION CENTER PARKING
SCALE: 1/8" = 1'-0"



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REGISTERED PROFESSIONAL ENGINEER
72661PE

OREGON
JUNE 11, 2018
WAYLON BOWERS

EXPIRES: 12/31/2023

**DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON**

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
SITE LIGHTING POWER DISTRIBUTION - STABILIZATION CENTER PARKING

REVISIONS:

DESCRIPTION

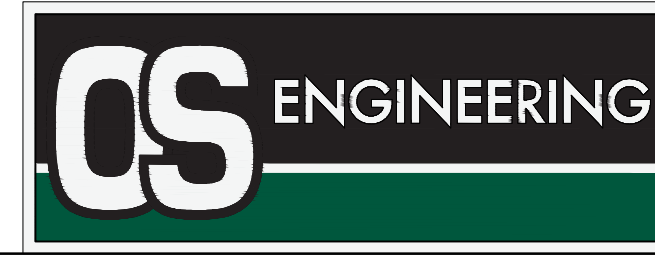
HWA

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1000 W. BROADWAY, SUITE 100, BEND, OR 97703
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DESIGNED BY: MC
DRAWN BY: MC
CHECKED BY: WB
SCALE: AS NOTED
FILE: E2.1.DWG
DATE: 02.16.22

VERIFY SCALES
0 1"
BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET:
E2.1
HWA # 181205



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philswygart \\bend-161\projects_bend_office_lead\wickman, williams, & associate pb22-0077-en - dc safety campus 3_working files\CAD\E3.0 SITE LIGHTING DATA SHEETS AND ELECTRICAL DETAILS.dwg Thu Mar 31, 2022 1:57pm

DSX1 LED P3 40K T4M MVOLT SPA PIRH1F3CV D-Series Size 1 LED Area Luminaire

Specifications:
 Size: 18" x 18" x 18"
 Height: 18"
 Weight: 15 lbs
 Mount: Pole Mount
 Finish: Dark Bronze

Accessories:
 Pole Mounting Hardware, GFCI Receptacle, Weather Cover, etc.

FIXTURE AL

Accessories:

Accessories	Part Number	Description
Pole Mounting Hardware	18-0001	Pole Mounting Hardware
GFCI Receptacle	18-0002	GFCI Receptacle
Weather Cover	18-0003	Weather Cover

Performance Data

Lumen Ambient Temperature (LxT) Multiplier

LxT	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
1.0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.1	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98

FEATURES & SPECIFICATIONS

SSS 18 4C DM19AS FDL 2 B DDBDX
SSS Square Straight Steel Poles

SSS Square Straight Steel Poles

Code	Height	Base	Top	Material	Finish	Weight	Volume	Surface Area
SSS18	18'	4C	DM19AS	FDL 2 B	DDBDX	150	100	100

1 LIGHTING SPECIFICATION SHEETS

SCALE: NOT TO SCALE

LIGHTING EQUIPMENT SCHEDULE

TAG ID	LIGHT SOURCE	DESCRIPTION	MANUFACTURER	MODEL	NOTES/ACCESSORIES/OPTIONS	VOLTAGE	WATTS
AL	LED	AREA LUMINAIRE	LITHONIA	DSX1 LED P3 40K T4M MVOLT	POLE MUST MATCH COLOR TO FIXTURE-DARK BRONZE POLE BASE ENGINEERING REQUIRED-USE POLE SPECIFIED ON DETAIL 1 POLE BASE IS 2.0' FROM GROUND LEVEL TO TOP OF BASE. POLE IS 18" FROM TOP OF BASE TO LIGHT FIXTURE. FIXTURE MOUNTING HEIGHT IS 20' AFF (BASE + POLE) MOUNT GFCI @ 4' AFF. MOUNT ON SAME SIDE AS LUMINAIRE (PART NUMBER "FDL 2 B" IS ONLY A PROVISION FOR A GFCI. INSTALLER MUST PROVIDE ONE) VERIFY ORIENTATION OF FDL 2 B WITH LUMINAIRE REPRESENTATIVE PRIOR TO ORDERING FIXTURES HAVE INTEGRATED MOTION/PHOTOCELL CONTROLS REFERENCE DETAIL 1 FOR ORDERING INFORMATION	120/277	102
EX1	LED	SCONCE	RAB	HID-20-H-E26-840-BYP-WP	FIXTURE IS EXISTING AND MOUNTED TO EXTERIOR OF STABILIZATION BUILDING FIXTURE USED FORPHOTOMETRIC DATA ONLY. DO NOT ORDER FIXTURE	NA	20
EX2	LED	SCONCE	JE WOO CORP	WEDL-901-AC&EM	FIXTURE IS EXISTING AND MOUNTED TO EXTERIOR OF STABILIZATION BUILDING FIXTURE USED FORPHOTOMETRIC DATA ONLY. DO NOT ORDER FIXTURE	NA	15

GENERAL ADDITIONAL EQUIPMENT NOTES
 1. VERIFY ALL COLOR SCHEME AND COLOR CODES PRIOR TO ORDERING.
 2. REFERENCE MANUFACTURERS SPECIFICATIONS FOR ALL ACCESSORIES/OPTIONS REQUIRED FOR PROPER INSTALLATION AND FUNCTION OF LUMINAIRES.

2 LIGHTING FIXTURE/CONTROLS SCHEDULE

SCALE: NOT TO SCALE

6 GFCI REPTACLE AND WEATHER COVER LOCATION

PROVISION FOR RECEPTACLE IS APPROX. 4' ABOVE FINISH GRADE

3 LEVELING DETAIL INSTALL POLE TO WALKER STRUCTURAL ENGINEERING DRAWINGS (JOB 22019, SD-1) SPECIFICATIONS

SCALE: NOT TO SCALE

4 LIGHTING GROUNDING DETAIL

SCALE: NOT TO SCALE

5 GROUND BOX EXAMPLE

SCALE: NOT TO SCALE

MODEL	SIZE (LxW)	DEPTH	AVAILABLE COVERS
1010	10" x 10"	12"	10" Round
1110	11" x 10"	12"	10" Round
1210	12" x 10"	12"	10" Round
1310	13" x 10"	12"	10" Round
1410	14" x 10"	12"	10" Round
1510	15" x 10"	12"	10" Round
1610	16" x 10"	12"	10" Round
1710	17" x 10"	12"	10" Round
1810	18" x 10"	12"	10" Round
1910	19" x 10"	12"	10" Round
2010	20" x 10"	12"	10" Round
2110	21" x 10"	12"	10" Round
2210	22" x 10"	12"	10" Round
2310	23" x 10"	12"	10" Round
2410	24" x 10"	12"	10" Round
2510	25" x 10"	12"	10" Round
2610	26" x 10"	12"	10" Round
2710	27" x 10"	12"	10" Round
2810	28" x 10"	12"	10" Round
2910	29" x 10"	12"	10" Round
3010	30" x 10"	12"	10" Round

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DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON

DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
LIGHTING DATA SHEETS AND ELECTRICAL DETAILS

REVISIONS:
DESCRIPTION

HWA
HWA ENGINEERING | SURVEYING | PLANNING
1000 W. BEND AVENUE, SUITE 100, BEND, OR 97703
WWW.HWA-INC.COM

DESIGNED BY: MC
DRAWN BY: MC
CHECKED BY: WB
SCALE: AS NOTED
FILE: E3.0.DWG
DATE: 02.16.22

VERIFY SCALE
0 1"
BAR EQUALS ONE INCH
ON ORIGINAL DRAWING

SHEET:
E3.0

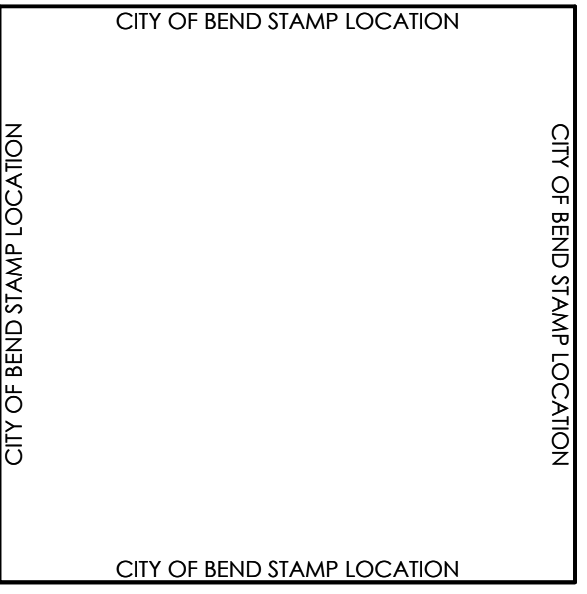
HWA # 181205

PERMIT

philsygart \\bend-ls1\projects_bend_office_lead\wickman, williams, & associate\pb22-0077-en - dc safety campus\3. working files\CAD\E4.0 ONE-LINE DIAGRAM AND PANEL SCHEDULES.dwg Thu Mar 31, 2022 - 1:57pm



- LOCATION FOR NEW 20A 1P QO STYLE BREAKER (POLE 1 RECEPTACLE)
- LOCATION FOR NEW 20A 1P QO STYLE BREAKER (POLE 2 RECEPTACLE)
- LOCATION FOR NEW 20A 1P QO STYLE BREAKER (LIGHTS)
- LOCATION FOR NEW 20A 1P QO STYLE BREAKER (POLE 3 RECEPTACLE)
- LOCATION FOR NEW 20A 1P QO STYLE BREAKER (POLE FUTURE RECEPTACLE)



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REGISTERED PROFESSIONAL
ENGINEER
72661PE

OREGON
JUNE 11, 2018
WAYLON BOWERS

EXPIRES: 12/31/2023

DESCHUTES COUNTY
PUBLIC SAFETY FACILITY
BEND, OREGON

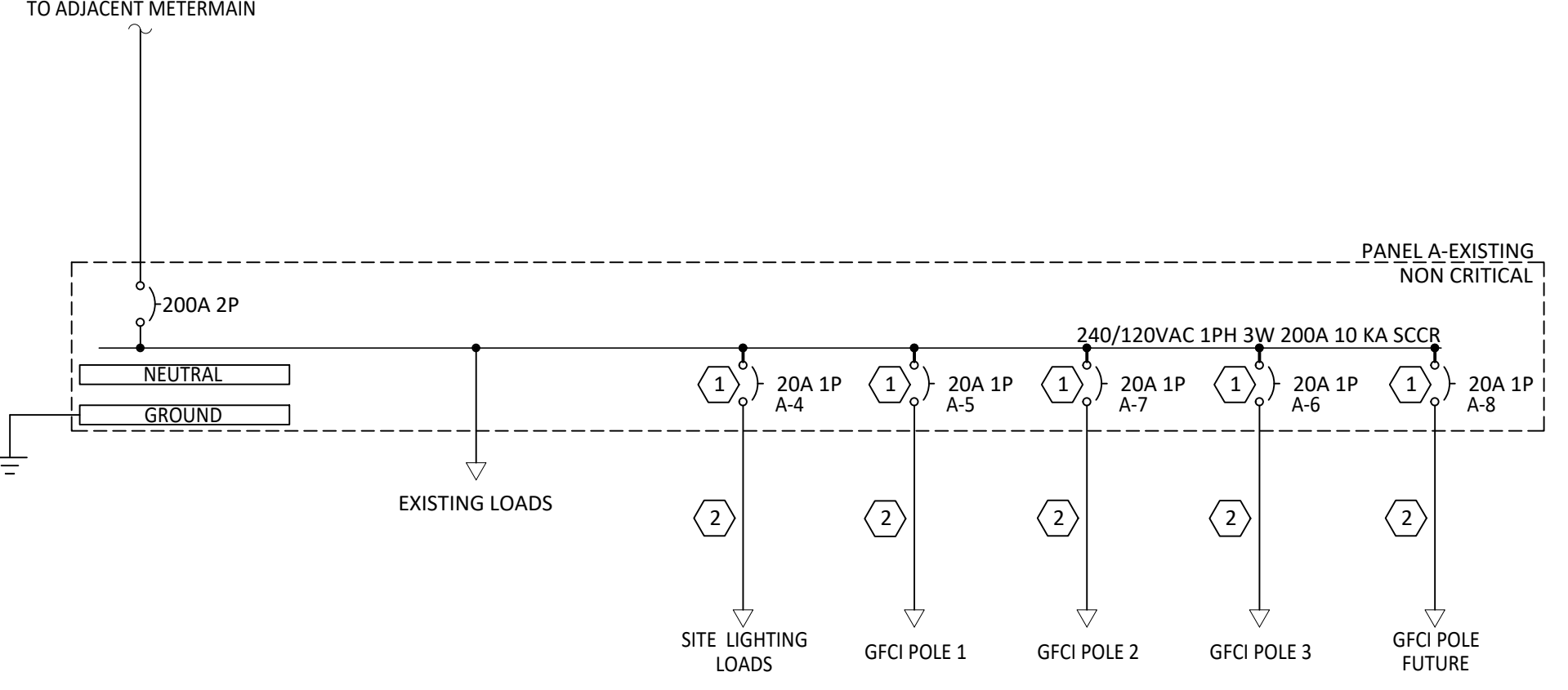
DC SAFETY CAMPUS PARKING LOT C & STABILIZATION CENTER PARKING
ONE-LINE DIAGRAM AND PANEL SCHEDULES

1 PANEL A DETAIL
SCALE: NOT TO SCALE

OCP		CONNECTED LOAD					LOAD (VA)					CONNECTED LOAD					OCP		CKT #
CKT #	P RATING	DESCRIPTION	TYPE	C OR N/C	VA	A	B	VA	C OR N/C	TYPE	DESCRIPTION	RATING	P	#					
1																			
3	2 50	TRAILER 5	MISC	C	5200	7120		1920	NC	RECEPT	GFCI UNDER PANEL	20		1	2				
5	1 20	POLE 1 GFCI RECEPTACLE	RECEPT	NC	1920	3840		1920	NC	RECEPT	SITE LIGHTING	20		1	4				
7	1 20	POLE 2 GFCI RECEPTACLE	RECEPT	NC	1920			1920	NC	RECEPT	POLE 3 GFCI RECEPTACLE	20		1	6				
9						0		1920	NC	RECEPT	POLE FUTURE RECEPTACLE	20		1	8				
11						0	0								10				
13						0	0								12				
15						0	0								14				
17						0	0								16				
19						0	0								18				
21						0	0								20				
23						0	0								22				
25						0	0								24				
27						0	0								26				
29						0	0								28				
31						0	0								30				
33						0	0								32				
35						0	0								34				
37						0	0								36				
39						0	0								38				
						0	0								40				

LOAD SUMMARY	LIGHTS	RECEPT	MOTOR	RESIST	MISC	SPARE	TOTAL	PHASE BALANCE	A	B	NOTES: ELECTRICAL CONTRACTOR MUST PROVIDE TYPE QO BREAKERS.
CONNECTED LOAD (KVA):	0.216	9.6	0	0	10.4	0	20.216	TOTAL (VA):	10960	9256	BREAKERS A-1,3 AND A-2 AND THEIR ACCOMPANYING LOADS ARE EXISTING.
DEMAND FACTOR (%):	*	**	***	*	*	*	-	TOTAL (A):	45.66667	38.56667	
DESIGN LOAD (KVA):	0.27	9.6	0	0	13	0	22.87	PHASE BALANCE %	54%	46%	BOLD CIRCUITS ARE NEW ADDITIONS

2 PANEL A PANEL SCHEDULE
SCALE: NOT TO SCALE



3 PARTIAL ONE LINE DIAGRAM
SCALE: NOT TO SCALE

- EQUIPMENT NOTES
- ELECTRICAL CONTRACTOR MUST PROVIDE QO STYLE BREAKERS.
 - REFERENCE SHEET(S) E2.0 AND E2.1 FOR CONDUCTOR AND CONDUIT SIZING. SOME CIRCUITS SHARE CONDUIT.

REVISIONS:	DESCRIPTION

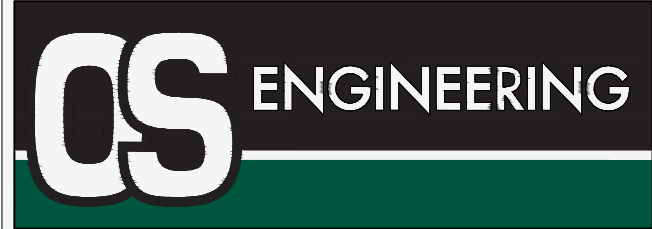
HWA
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0 1" BAR EQUALS ONE INCH ON ORIGINAL DRAWING

SHEET: E4.0

HWA # 181205



PERMIT