PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

Bull Run TREATMENT PROJECTS

Filtration

Technical Memorandum

Subject:	Filtration Facility Site and Lighting Plans
PWB Project #s:	W02229
Date:	September 23, 2022
To:	Lyda Hakes, P.E., Project Manager Portland Water Bureau
From:	Mark Graham, P.E., Project Manager Stantec
Prepared by:	Jason Hirst, Oregon #LA0821 NNA Landscape Architecture LLC Rafael Gaeta, P.E. Emerio Design
Reviewed by:	Mark Graham, P.E. Stantec

Stantec | in association with carollo and other firms

The two sets of drawings attached to this technical memorandum (TM) were prepared in support of the City of Portland Water Bureau's Bull Run Treatment Facilities' land use applications in Multnomah County. These drawings reflect the current status of the Filtration Facility design, which is approximately 90% complete as of the date of this TM. The drawings have been prepared and compiled for the specific purpose of addressing conformance to Multnomah County land use requirements as expressed in the Multnomah County Code.

The contents of each set of drawings are listed in the tables below.

Table 1. Site Plan Drawings

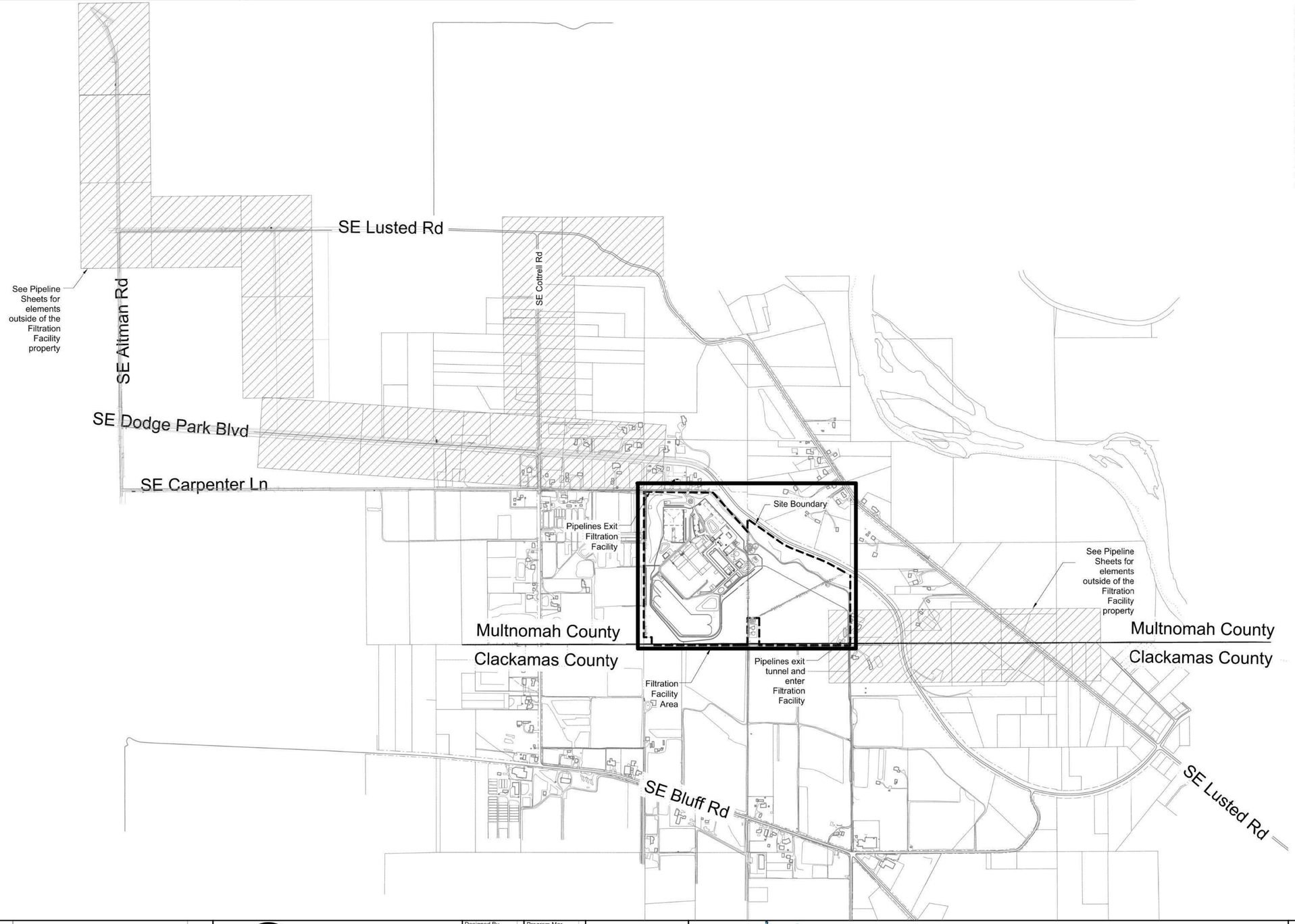
Drawing Number	Drawing Name
00-LU-101	Cover Sheet
00-LU-102	Vicinity and Zoning Map
00-LU-301	Existing Conditions Plan
00-LU-302	Proposed Conditions Site Plan
00-LU-303	Utility Plan
00-LU-304	Grading Plan
00-LU-305	Facility Circulation Map
00-LU-306	Landscape Plan
00-LU-307	Stormwater Management Plan - Filtration Facility
00-LU-400	Facility Enlargement 1
00-LU-401	Facility Enlargement 2
00-LU-402	Tower Area Enlargement
00-LU-403	Signs
00-LU-404	Stormwater Planting
00-LU-405	Roadway Typical Section
00-LU-406	Roadway Typical Section - 2
00-LU-407	Pond Section Details
00-LU-408	Flow Control Maintenance Hole Details
GEN-C-920	Storm Details
GEN-C-923	Storm Details
00-LU-101	Cover Sheet
00-LU-102	Vicinity and Zoning Map
00-LU-301	Existing Conditions Plan
00-LU-302	Proposed Conditions Site Plan

Table 2. Lighting Plan Drawings	
Drawing Number	**Drawing Name**
00-E-322	Site Lighting Key Plan
00-E-323	Lighting & Receptacle Plan - Grid 1
00-E-324	Lighting & Receptacle Plan - Grid 2
00-E-325	Lighting & Receptacle Plan - Grid 3
00-E-326	Lighting & Receptacle Plan - Grid 4
00-E-327	Lighting & Receptacle Plan - Grid 5
00-E-328	Lighting & Receptacle Plan - Grid 6
00-E-329	Lighting & Receptacle Plan - Grid 7
00-E-330	Lighting & Receptacle Plan - Grid 8
00-E-331	Lighting & Receptacle Plan - Grid 9
00-E-332	Lighting & Receptacle Plan - Grid 10
00-E-333	Lighting & Receptacle Plan - Grid 11
GEN-E-140	Lighting Schedule - 1
GEN-E-141	Lighting Schedule - 2
GEN-E-142	Lighting Schedule - 3

Attachment A: Site Plans

Filtration Facility Land Use Submittal

Drawing Index



Site North

0 650 1300
SCALE IN FEET

REGISTERED
0821
Jason Hirst
OREGON
02/20/2014
LANDSCAPE ARCHITECT
Expires: 02/27/2023

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By
Drawn By
Checked By
Project Mgr MRG

Program Mgr DWP
Const Mgr TG
Const Supvr RM
Date 09/02/22

Warning
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If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Land Use Plans

Cover Sheet

SAP Project No
W02229
1/4 Section

Sheet No
00-LU-101
1 of 18

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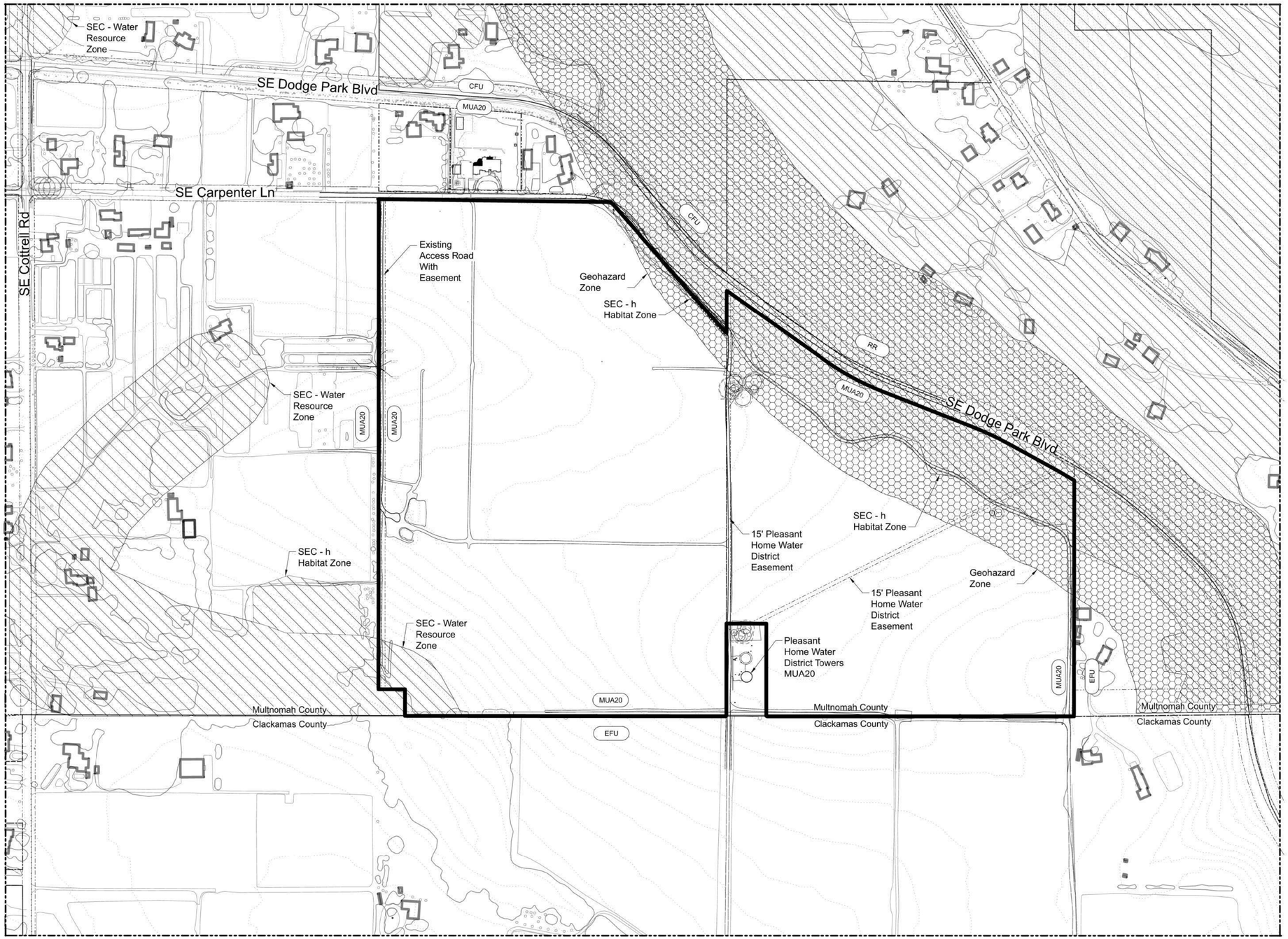

PLAN

SCALE: 1" = 200'-0"

KEY PLAN

General Sheet Notes

1. No development or construction activity proposed within SEC zones on Filtration Site.

Legend

- Geohazard Zone
- Significant Environmental Concern (SEC) Zones - See Labels
- Lot Line
- ROW Line
- Topographic Lines - 5' Interval
- Structure
- Vegetation Edge
- MUA20 — MUA20 Zone
- EFU — EFU Zone
- CFU — CFU Zone
- RR — RR Zone

0 200 400 600 800

FEET

Site North

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0821
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OREGON
02/20/2014
LANDSCAPE ARCHITECT
Expires: 02/27/2023

No	Date	Description	Appd
		Revision	
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
Survey			

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Designed By	NNA	Program Mgr	XXX
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	XXX
Project Mgr	KKK	Date	09/02/22

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David W. Peters, Engineering Manager, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Land Use Plans

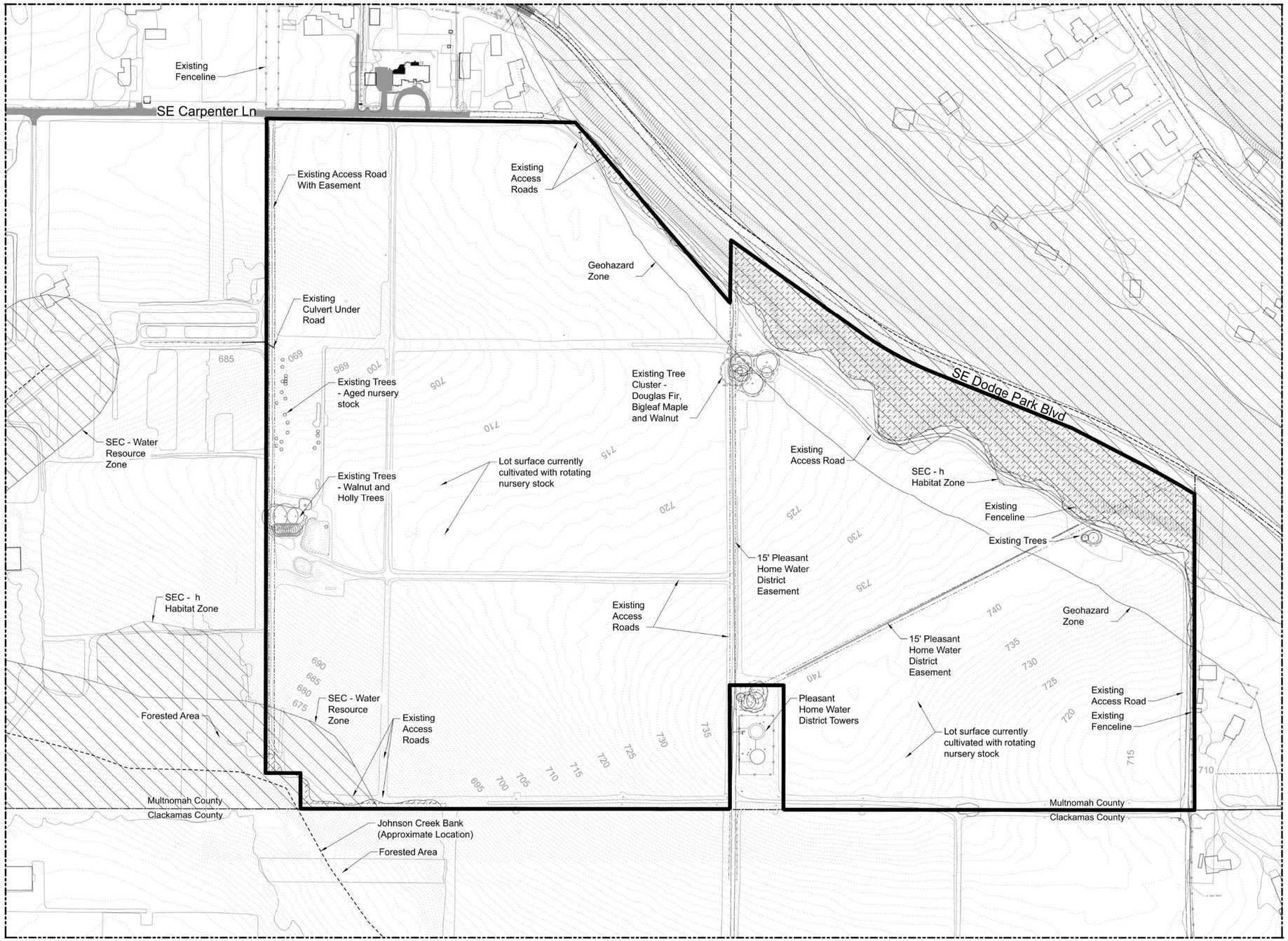
Vicinity and Zoning Map

SAP Project No W02229

1/4 Section -

Sheet No 00-LU-102

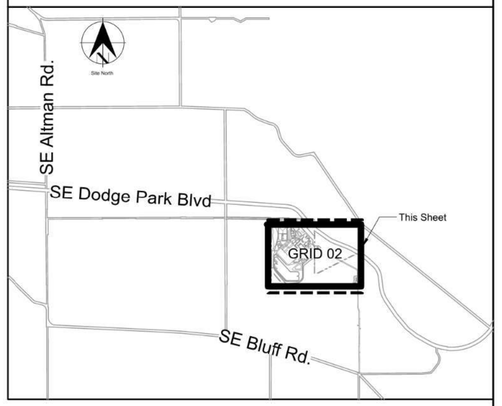
2 of 18



PLAN

SCALE: 1" = 200'-0"

KEY PLAN



General Sheet Notes

1. Site is currently cultivated as nursery stock.

Legend

Zones

- See Labels
- Lot Line
- ROW Line
- Topographic Lines - 5' Interval
- Structure
- Existing Fencing
- Edge of Existing Vegetation Areas
- Forested Area within Site Boundary

0 200 400 600 800

FEET

REGISTERED 0821 Jason Hirst OREGON 02/20/2014 LANDSCAPE ARCHITECT

Expires: 02/27/2023

Site North

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
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A	07/2021	Initial Design - 30% Submittal	MRG

Revision

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Designed By	NNA	Program Mgr	XXX
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

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David W. Peters, Engineering Manager, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Land Use Plans

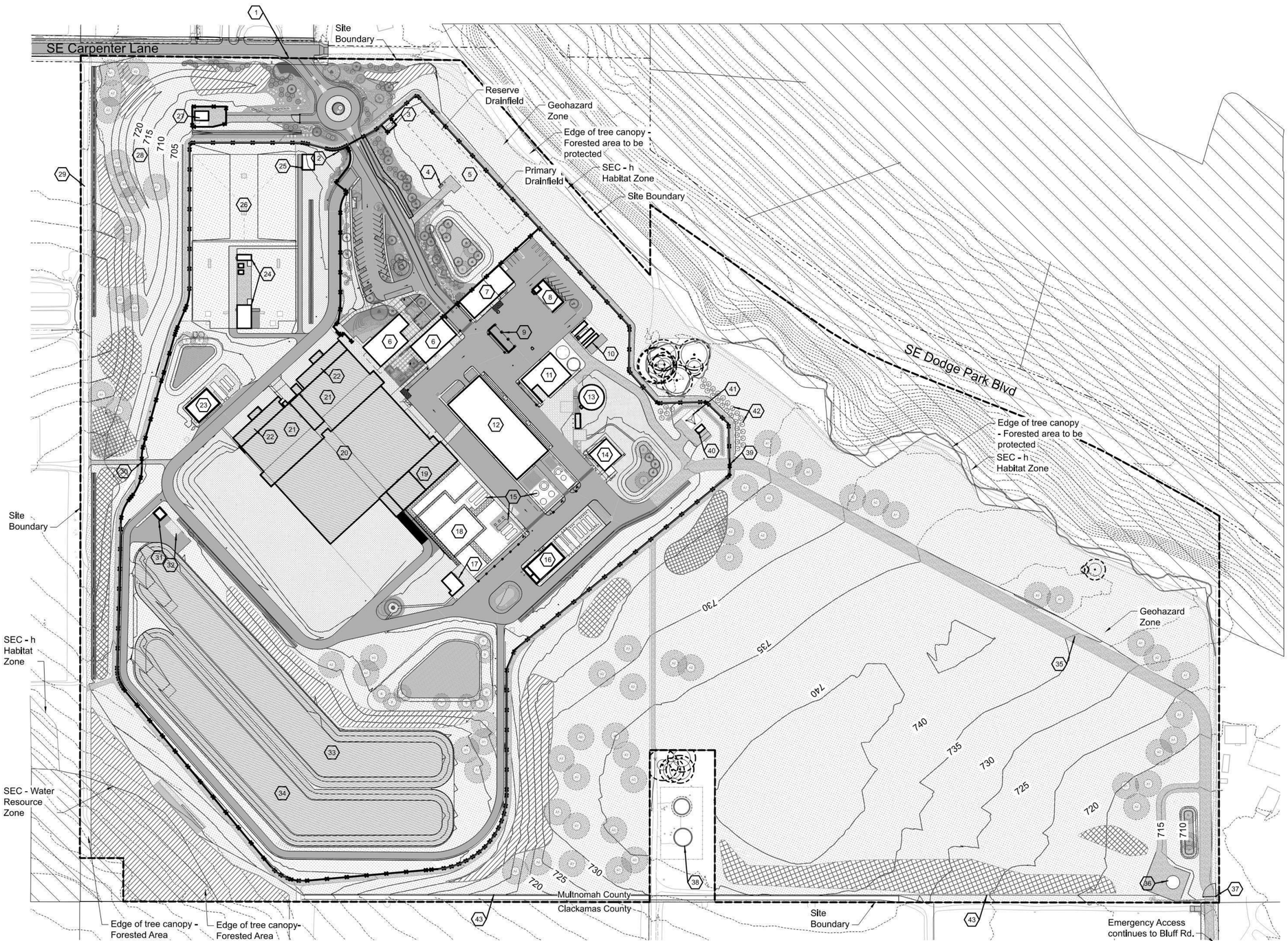
Existing Conditions Plan

SAP Project No W02229

1/4 Section -

Sheet No 00-LU-301

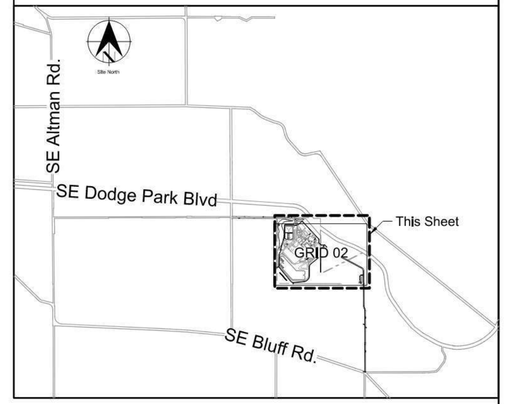
3 of 18



PLAN

SCALE: 1" = 120'-0"

KEY PLAN



Sheet Keynotes

1. Carpenter Lane Entry
2. Main Facility Entry Gates
3. North PGE Electrical Cutout
4. Septic Structure (At Grade)
5. Septic Drainage Field
6. Administration Building
7. Maintenance Building
8. General Storage Building
9. Refuse / Recycling Storage Shed
10. Pilot (CONEX)
11. Mechanical Dewatering / Solids
12. Chemical Building
13. Gravity Thickeners
14. Washwater Clarification
15. Chemical Storage Tanks
16. Main Electric Complex
17. Raw Water Inlet Structure
18. Ozone Building (Not In Use)
19. Ozone Injection / Flash Mix
20. Floccuation / Sedimentation Basin
21. Filtration Basin
22. Waste Washwater Equalization Basins
23. North Electric Complex
24. Pumpstation
25. Fire Pumpstation Enclosure
26. Finish Water Clearwell (Below Grade)
27. Pleasant Home Pumpstation (Non-PWB)
28. West Screening Berm
29. Easement on PWB Property (To Remain)
30. West Gate
31. Electrical Building
32. Overflow Pumpstation (At-Grade)
33. North Overflow Basin
34. South Overflow Basin
35. Emergency Access Route
36. Raw Water Pipeline Cover (At-Grade)
37. Manual Bar Gate with Knox Box
38. Pleasant Home Water Towers (Off-Site)
39. East Gate
40. Communication Tower Accessory Building
41. Communication Tower
42. Tower Screen Planting (Native Evergreen Hedge and 25' Min. Tree Buffer)
43. Agricultural Style Fence

General Sheet Notes

1. Site is Zoned MUA-20
2. No development or construction activity proposed within SEC zones on Filtration Site. Revegetation of existing agricultural land to be performed with hand tools only. Native plant species only allowed for revegetation in these zones
3. No development or construction activity proposed within Geohazard Area on Filtration Site.

Legend

- Asphalt Paving
- Concrete Paving
- Gravel Paving
- Basins
- Fenceline
- Native Grass / Forb Mixes
- Swale Planting
- Stormwater Planting
- Screen Mix: Forested Planting
- Screen Mix: Shrubby Planting
- Tree / Shrub Planting Clusters
- Proposed Trees - Deciduous and Evergreen
- Landscape Bed - Shrubs, Groundcover, Mulch
- Existing tree to remain

0 120 240 360 480

FEET

Site North

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Project Mgr	MRB	Date 09/02/22	

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PORTLAND WATER BUREAU

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David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Land Use Plans

Proposed Conditions Site Plan

SAP Project No W02229

1/4 Section -

Sheet No 00-LU-302

4 of 18

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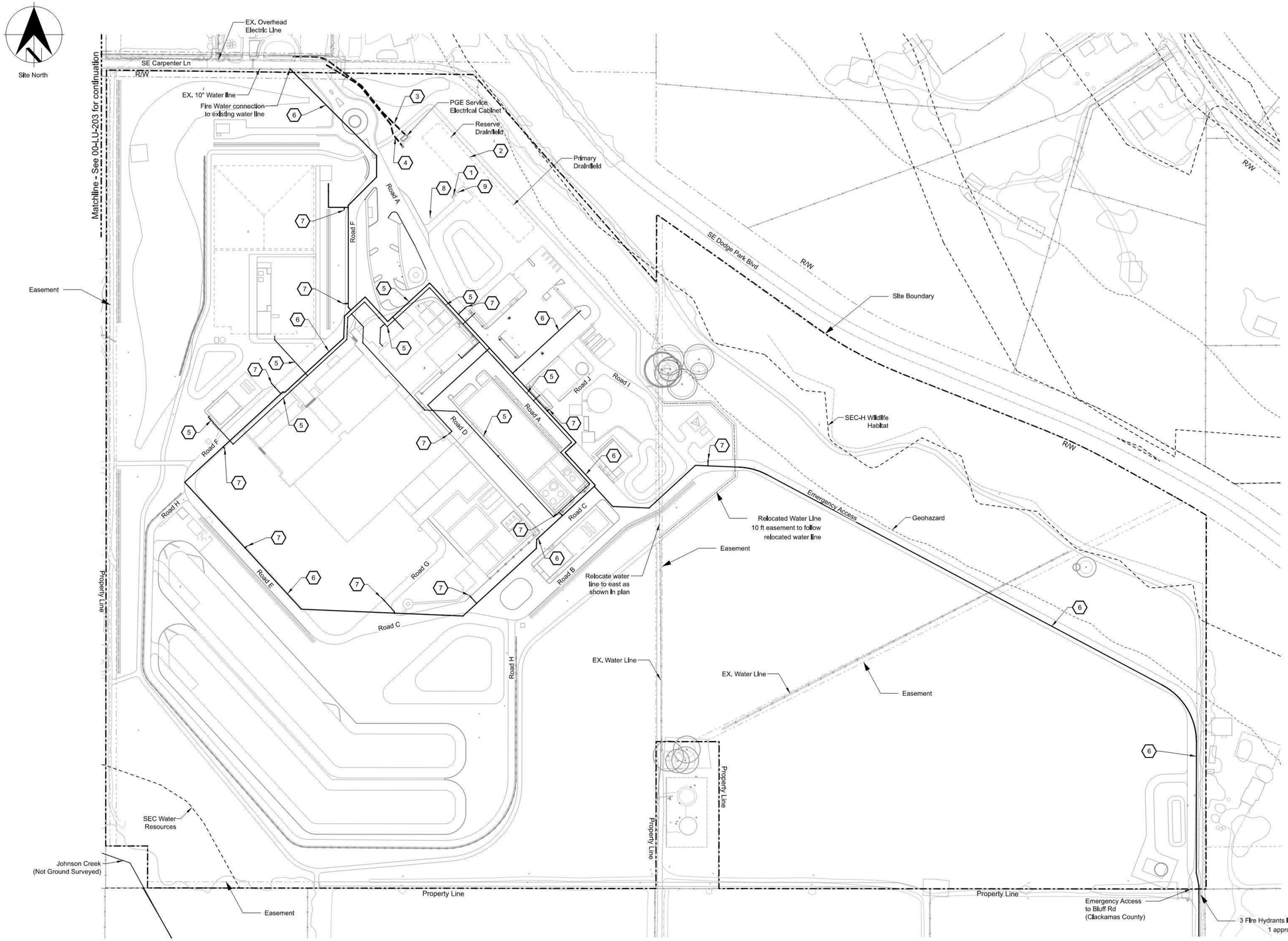

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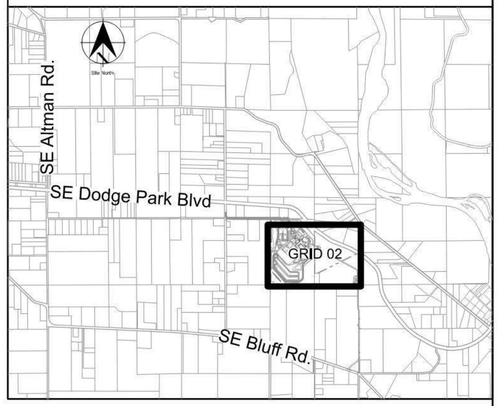

General Sheet Notes

1. All existing utilities to remain in place and protected during construction.
2. See Sheet 00-LU-307 for Stormwater features and pipes.
3. Potable Water and Utility Water lines come from Clearwell (on-site finished water).

Sheet Keynotes

1. Septic Tank
2. Septic Drainfield
3. Electrical Duct bank (underground)
4. Fiber Optic Line (underground)
5. Potable Water
6. Fire Water
7. Fire Hydrant
8. Septic Sewer Lift Station
9. Septic Dosing Tank

Legend

- Fire Water
- Potable Water
- Duct Bank
- SEC Zone
- Geohazard
- Existing Water Line
- Existing Gas Line
- Existing Overhead line
- Property Line
- Right-of-Way
- Easement
- Ditch
- Water Valve
- Utility Pole
- Sanitary Maintenance Hole
- Fire Hydrant
- Site Boundary
- Monitor Well
- Water Line

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA
EXPIRES 6-30-23

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
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A	07/2021	Initial Design - 30% Submittal	MRG
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Designed By	JSL	Program Mgr	RWK
Drawn By	BS	Const Mgr	XXX
Checked By	RG	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

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FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Civil

Utility Plan
Filtration Facility

SAP Project No W02229
1/4 Section 3765 / 3766
Sheet No 00-LU-303
3 of 10

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Site North

Matchline - See 00-LU-204 for continuation

Dedicated ROW

SE Carpenter Ln

ROW

Road A

703.25'
Clearwell

Road F

705.25'
CT Basin

Retaining Wall

Site Boundary

ROW

ROW

SE Dodge Park Blvd

SEC-H

713.50'

714.00'

717.00'

716.50'

14.00'

15.00'

701.00'

704.50'

717.25'

Road F

Road D

Chemical Building

716.00'

Core Process Area

718.00'

723.00'

19.00'

Road C

Road G

716.60'

Road E

693.00'

693.00'

Property Line

Overflow Basin

Geohazard

Emergency Access

Property Line

SEC Water Resources

Johnson Creek (Approximate)

Property Line

Limit of Disturbance

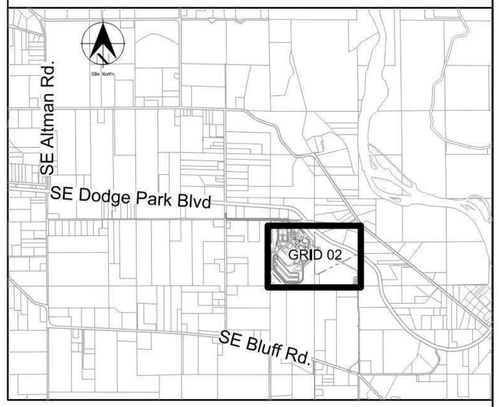
Property Line

Multnomah County

Clackamas County

Emergency Access to Bluff Rd (Clackamas County)

KEY PLAN



Legend

- Major Contour
- Minor Contour
- Existing Major Contour
- Existing Minor Contour
- SEC Zone
- Geohazard
- Deciduous Tree
- Evergreen Tree
- Existing Water Line
- Existing Fence
- Existing Gas Line
- Existing Overhead line
- Existing Structure
- Existing Edge of Vegetation
- Property Line
- Right-of-Way
- Easement
- Ditch
- Water Valve
- Utility Pole
- Sanitary Maintenance Hole
- Edge of Gravel
- Fire Hydrant
- Site Boundary

0 120 240
SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA
EXPIRES 6-30-23

Plot Date: 19-SEP-2022 20:04 User: stanpw11-pw-svc File: W02229_FF_00-LU-304.dgn Model: 00-LU-304 ColorTable: bw_IPlot.ctb DesignScript: PWB_PenTable.pen PlotScale: 0.083333:1

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B	01/2021	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	JSL	Program Mgr	DWP
Drawn By	BYS	Const Mgr	TG
Checked By	RG	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

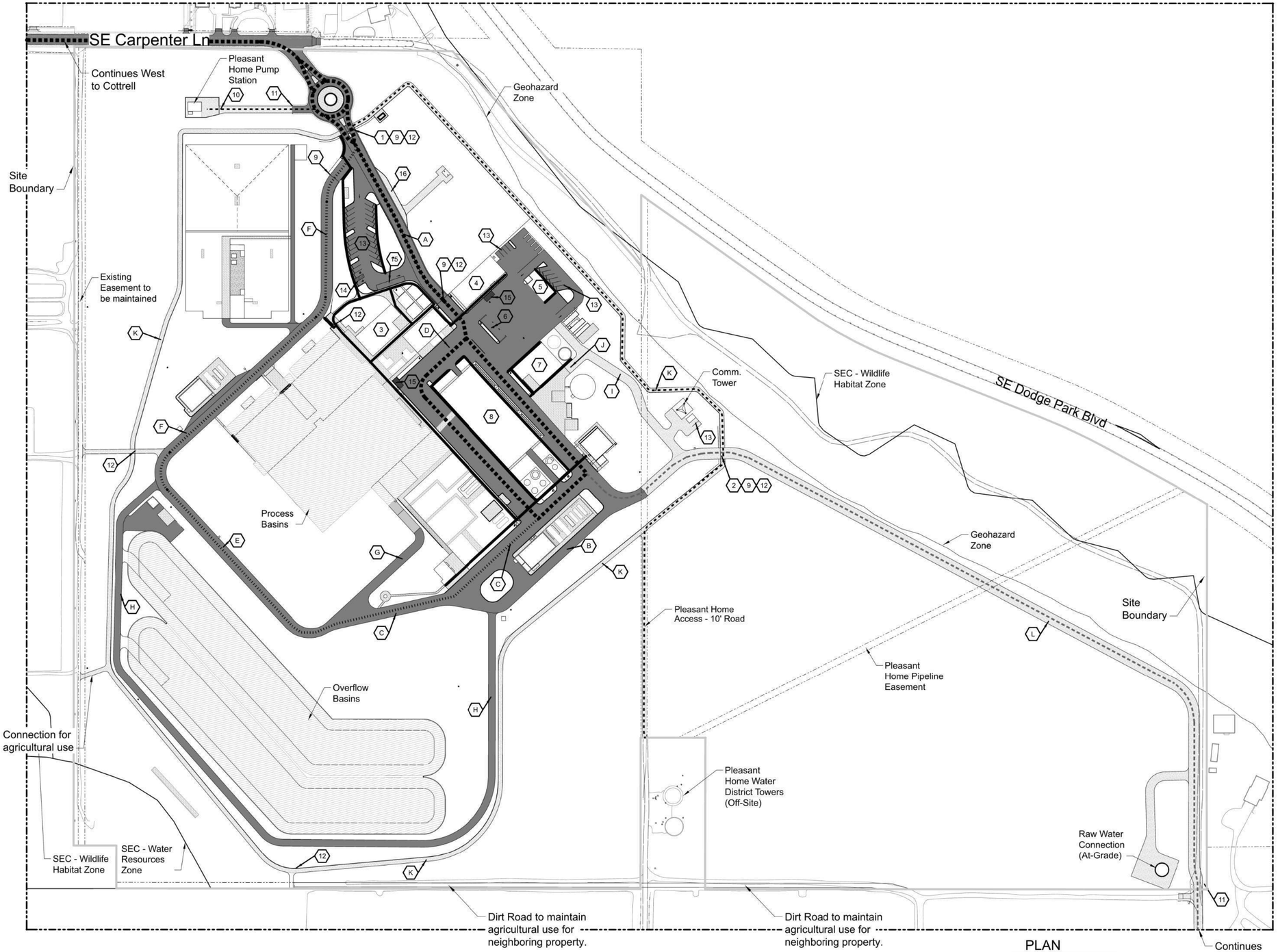
CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Civil

Grading Plan
Filtration Facility

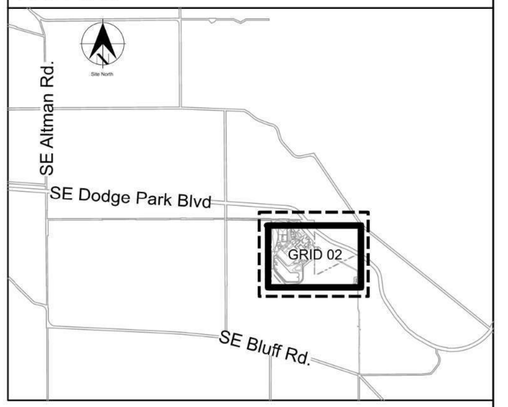
SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
00-LU-304
4 of 10



PLAN

SCALE: 1" = 120'-0"

KEY PLAN



Sheet Keynotes

1. Carpenter Lane Entry
2. Emergency Access Entry
3. Administration Building (Mail Delivery)
4. Maintenance Building
5. General Storage Building
6. Refuse / Recycling Storage (Pickup)
7. Solids Handling Building
8. Chemical Building
9. Automated Vehicle Gate
10. Manual Vehicle Gate
11. Manual Bar Gate
12. Pedestrian Gate
13. Parking Area
14. ADA Parking (2 spots + refuge)
15. Loading Zone
16. Bus Parking Area

Road Keynotes

A.	Road A	- Width varies 26' to 63'	- Asphalt Surface
B.	Road B	- 20' Width	- Asphalt Surface
C.	Road C	- 26' and 40' Width	- Asphalt Surface
D.	Road D	- 54' Width	- Asphalt Surface
E.	Road E	- 26' Width	- Asphalt Surface
F.	Road F	- 26' Width	- Asphalt Surface
G.	Road G	- 20' Width	- Asphalt Surface
H.	Road H	- 16' Width	- Asphalt Surface
I.	Road I	- 20' Width	- Gravel Surface
J.	Road J	- 20' Width	- Asphalt and Gravel Surface
K.	Perimeter Road	- 10' Width	- Gravel Surface
L.	Emergency Access	- 26' Width	- Gravel Surface

General Sheet Notes

1. Unlabeled paved areas are operational / maintenance access routes.

Legend

- Main Truck / Access Route - Chemical Delivery, Solids Removal, Process Circulation, General Deliveries
- Secondary Truck Route - Fuel Delivery, Alternative Chemical and Solids Use
- Emergency Access Route - Connects to Bluff Rd. to the south
- Pleasant Home Access Routes - Tank and Pump Station accesses
- Main Pedestrian Routes
- Site Boundary
- Asphalt Paving - Vehicular Focus
- Concrete Paving - Pedestrian Focus
- Crushed Rock Road / Access
- Basins
- Lot Line
- ROW Line
- Easement Line

REGISTERED 0821 Jason Hirst OREGON 02/20/2014 LANDSCAPE ARCHITECT Expires: 02/27/2023

0 120 240 360 480

FEET

Site North

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
		Survey	

Stantec

Designed By		Program Mgr	XXX
Drawn By		Const Mgr	XXX
Checked By		Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning

0 ½ 1

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PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Land Use Plans

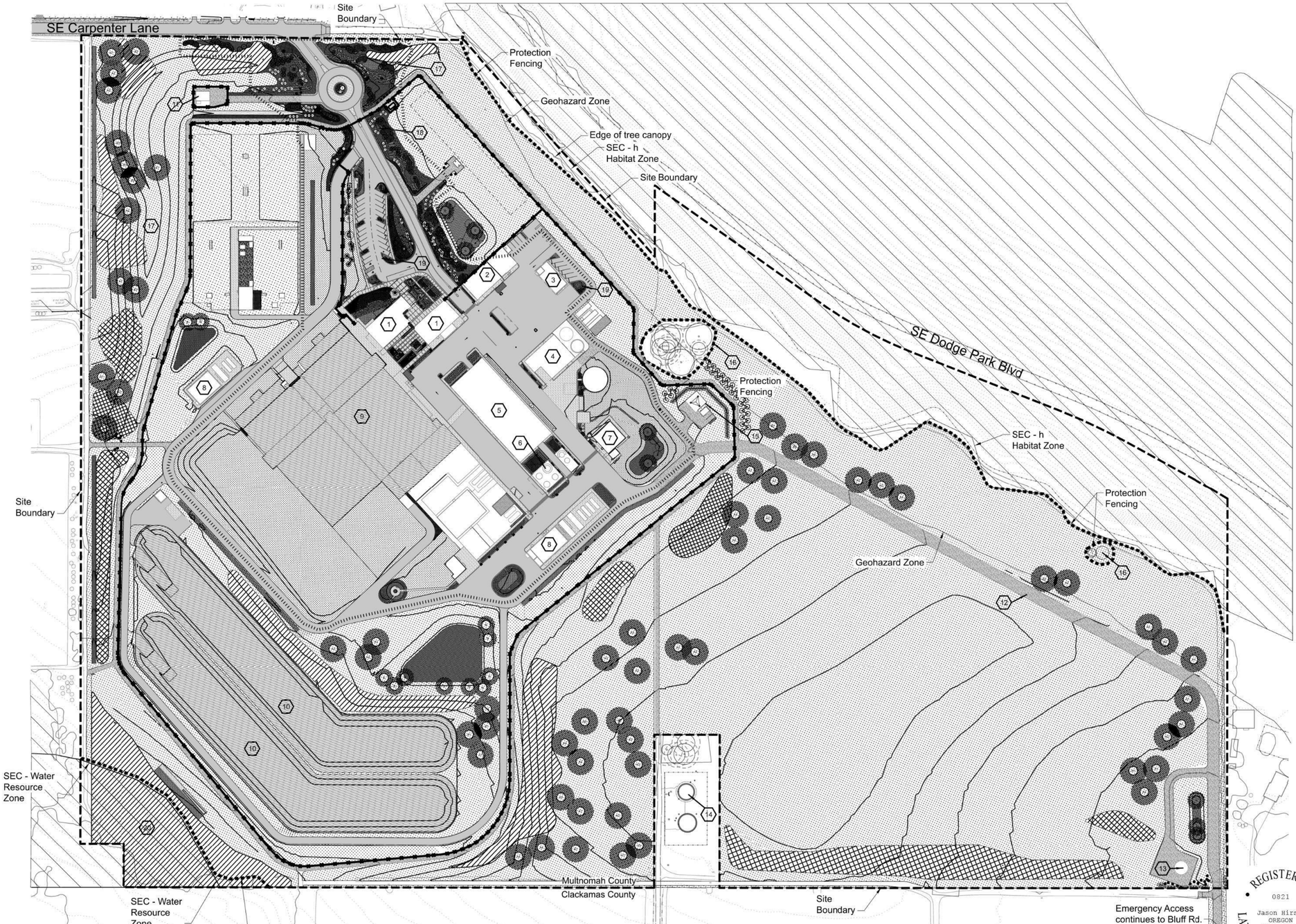
Facility Circulation Map

SAP Project No W02229

1/4 Section -

Sheet No 00-LU-305

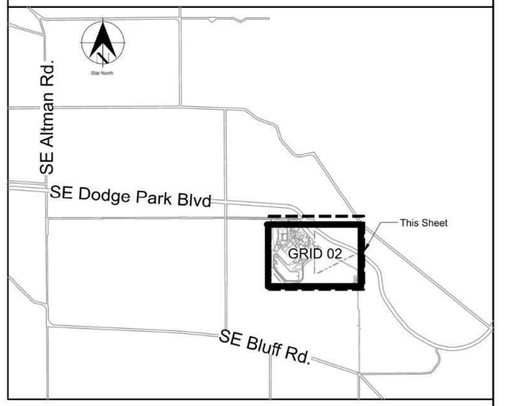
7 of 18



PLAN

SCALE: 1" = 120'-0"

KEY PLAN



Sheet Keynotes

1. Administration Building
2. Maintenance Building
3. General Storage Building
4. Mechanical Dewatering Bldg.
5. Chemical Building
6. Chemical Storage Tanks
7. Washwater Clarification
8. Electric Building
9. Filtration Basins
10. Overflow Basins
11. Pleasant Home Pumpstation
12. Emergency Access Route
13. Raw Water Pipeline Cover (At-Grade)
14. Pleasant Home Water Towers (Off-Site)
15. Communication Tower Area (See Planting Note 1)
16. Existing Trees to Remain
17. Planted Berm for Screening
18. Plantings at Facility Entry (See Planting Note 2)
19. Parking Area plantings (See Planting Note 3)
20. SEC Water Resource Area (See Planting Note 4)

Planting Notes

1. Communication Tower Area planting is designed to meet screening and parking requirements. See sheet LU-402 for enlargment and more detail on specific requirements.
2. Plantings around facility buildings are of a more ornamental nature and are proposed as containerized plants which will have supplemental irrigation. See sheet LU-400,401 and 402 for enlargements to see plant sizes and locations in this area. Additional seeded areas shown within facility also may recieve supplemental irrigation as a fire risk mitigation measure. See outlined area.
3. Parking Area plantings - See sheets LU-400 and LU-402 for enlargments to see locations of parking islands with plant sizes to meet parking lot planting requirements and listed by Multnomah County.
4. SEC Water Resource Area - This area is currently under agricultrual use and has bare soil. Proposed plans have no additional disturbance within this zone. Proposed plantings to be all native species installed with hand tools only.

General Sheet Notes

1. No development or construction activity proposed within SEC zones on Filtration Site. Native plantings only within these zones.

Legend

- Asphalt Paving
- Concrete Paving
- Gravel Paving
- Basins
- Facility Fenceline
- Protection Fencing
- Areas to recieve supplemental irrigation
- Native Grass / Forb Mixes
- Swale Planting
- Stormwater Planting
- Screen Mix: Forested Planting
- Screen Mix: Shrubby Planting
- Tree / Shrub Planting Clusters
- Proposed Trees - Deciduous and Evergreen
- Landscape Bed - Shrubs, Groundcover, Mulch
- Existing tree to remain
- Significant Environmental Concern (SEC) Zone

0 120 240 360 480

FEET

Site North

REGISTERED LANDSCAPE ARCHITECT
0821
Jason Hirst
OREGON
02/20/2014
Expires: 02/27/2023

No	Date	Description	Appd
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Stantec

Designed By	NNA	Program Mgr	XXX
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning

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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

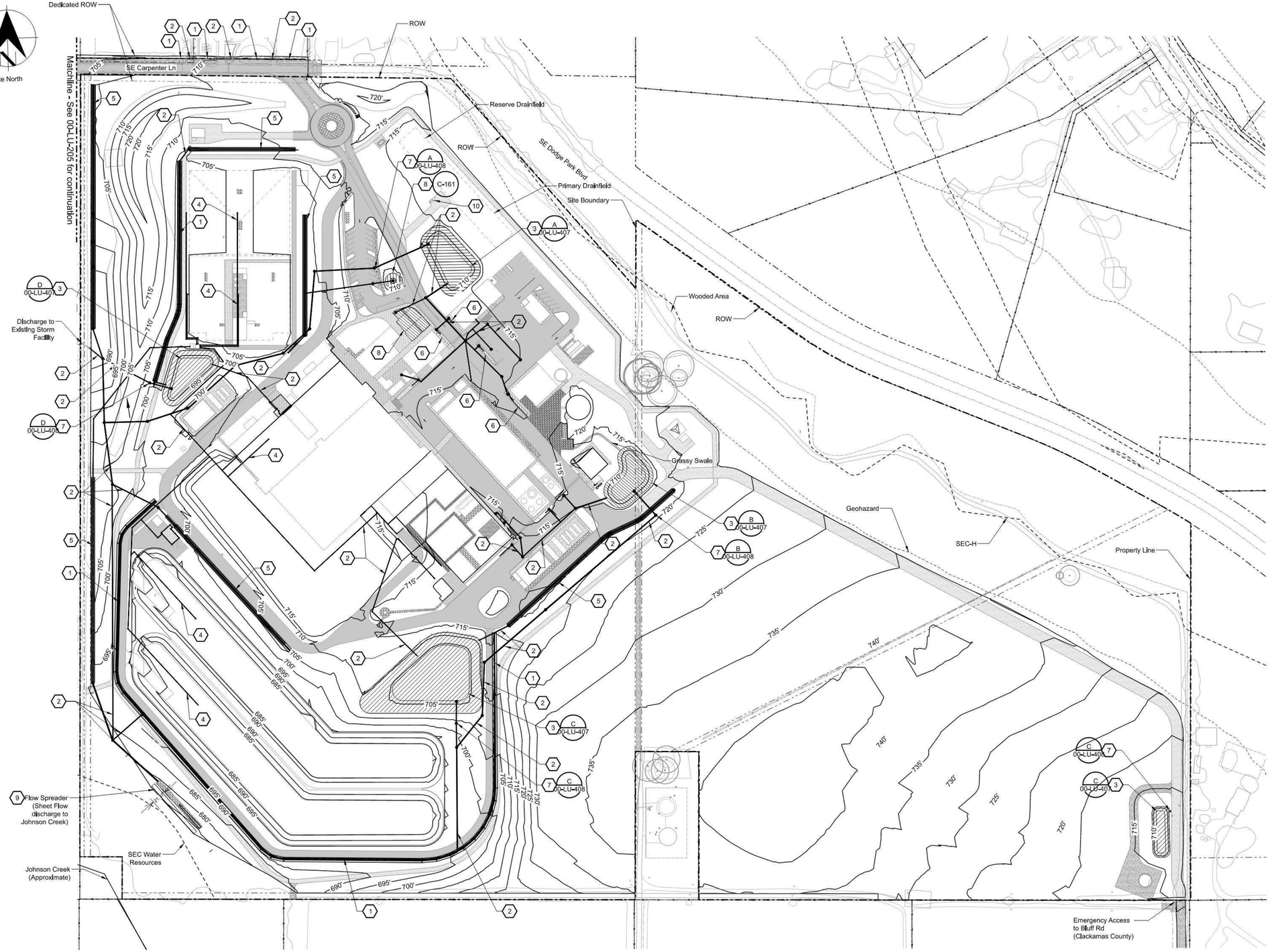
Bull Run Filtration Facility

Land Use Plans

Landscape Plan

SAP Project No
W02229
1/4 Section
-
Sheet No
00-LU-306
8 of 18

Plot Date: 30-AUG-2022 10:15 User: JASON File: W02229-FF-00-LU-306.dgn Model: Layout1 ColorTable: user attached from dialog DesignScript: PWB_PenTable.pen PlotScale: 1:0.0833333



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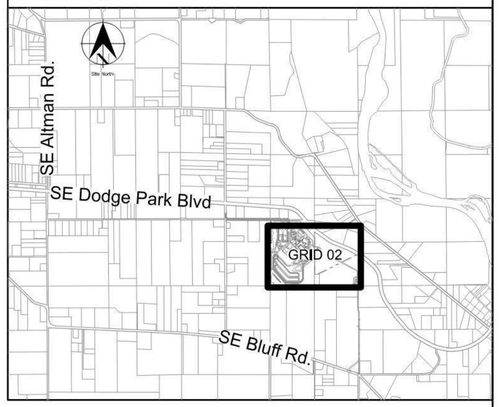


General Sheet Notes

1. Refer to Filtration Facility Stormwater Report (Appendix H.1) for stormwater calculations and sizing.
2. See 00-LU-304 (Grading Plan) for ground disturbance limits.
3. See 00-LU-306 (Landscape Plan) for propose vegetation.

Sheet Keynotes

1. Drainage Ditch per detail C-169/GEN-C-923
2. Storm Pipes
3. Detention Pond
4. Underdrain Storm Pipe
5. Water Quality Swale per detail C-168/GEN-C-923
6. Stormwater Planter per detail C-162/GEN-C-920
7. Flow Control Maintenance Hole
8. Stormwater Basin per detail C-161/GEN-C-920
9. Outfall Flow Spreader per detail C-171/GEN-C-923
10. Septic Tank

Legend

- Major Contour
- SEC Zone
- Geohazard
- Deciduous Tree
- Evergreen Tree
- Existing Water Line
- Existing Fence
- Existing Gas Line
- Existing Overhead line
- Existing Structure
- Property Line
- Right-of-Way
- Easement
- Ditch
- Detention Pond
- Storm Planter
- Swale/Ditch
- Site Boundary

0 120 240
SCALE IN FEET

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2003 RAFAEL GAETA EXPIRES 6-30-23

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	JSL	Program Mgr	XXX
Drawn By	BYS	Const Mgr	XXX
Checked By	RG	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

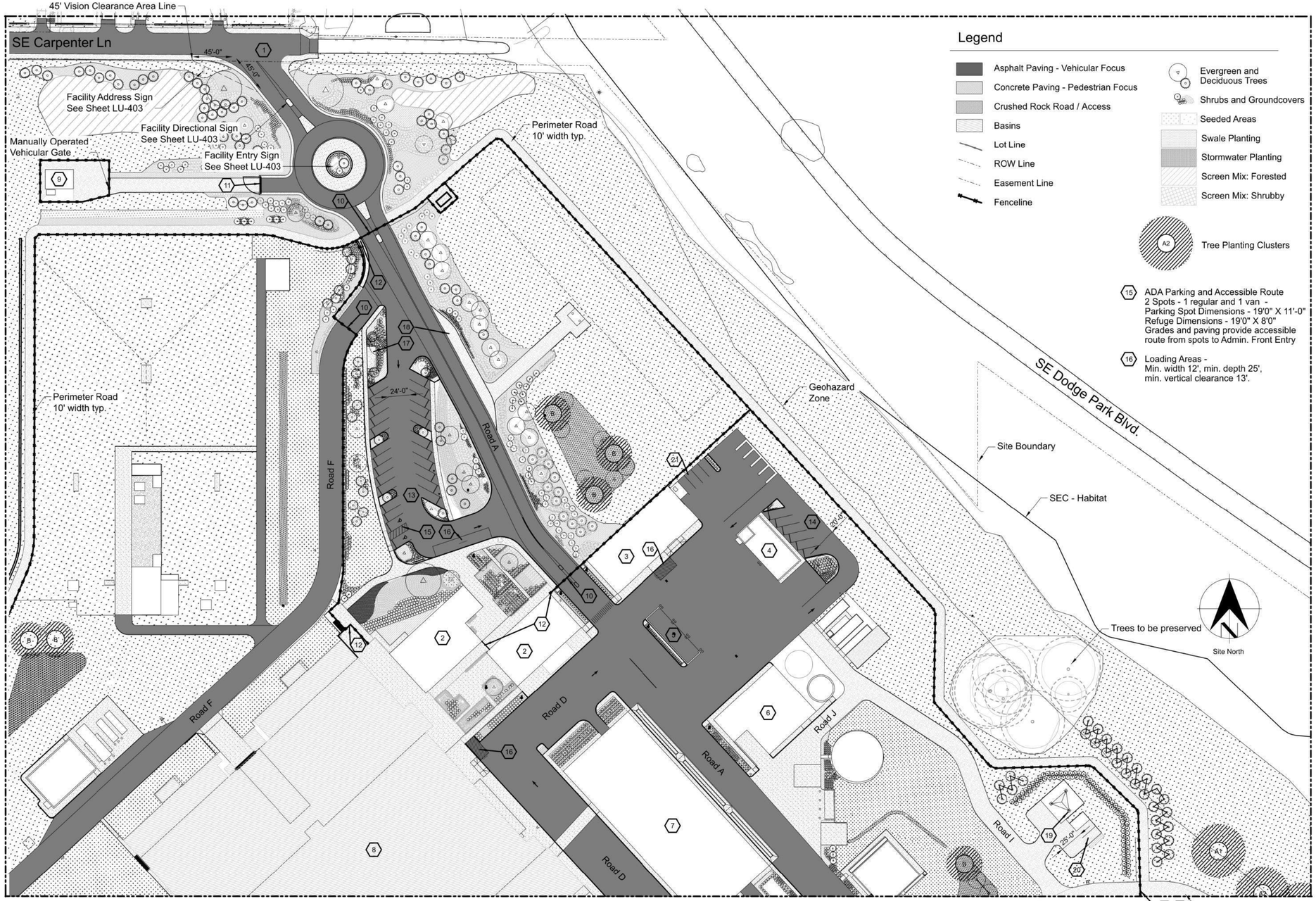
Bull Run Filtration Facility

Civil

Stormwater Management Plan
Filtration Facility

SAP Project No W02229
1/4 Section 3765 / 3766
Sheet No 00-LU-307
3 of 10

Plot Date: 19-SEP-2022 20:04 User: stanpw11-pw-svc File: W02229_FF_00-LU-307.dgn Model: 00-LU-307 ColorTable: bw_JPlot.ctb DesignScript: PWB_PenTable.pen PlotScale: 0.083333:1



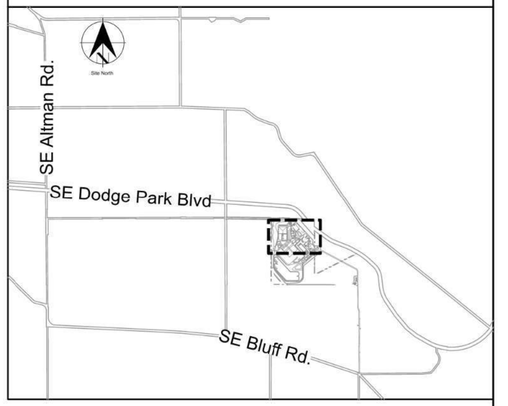
Legend

- Asphalt Paving - Vehicular Focus
- Concrete Paving - Pedestrian Focus
- Crushed Rock Road / Access
- Basins
- Lot Line
- ROW Line
- Easement Line
- Fenceline
- Evergreen and Deciduous Trees
- Shrubs and Groundcovers
- Seeded Areas
- Swale Planting
- Stormwater Planting
- Screen Mix: Forested
- Screen Mix: Shrubby
- A2 — Tree Planting Clusters

15 ADA Parking and Accessible Route
2 Spots - 1 regular and 1 van -
Parking Spot Dimensions - 19'0" X 11'-0"
Refuge Dimensions - 19'0" X 8'0"
Grades and paving provide accessible route from spots to Admin. Front Entry

16 Loading Areas -
Min. width 12', min. depth 25',
min. vertical clearance 13'.

KEY PLAN



Sheet Keynotes

1. Carpenter Lane Entry
2. Administration Building - Mail Drop-Off
3. Maintenance Building
4. General Storage Building
5. Refuse / Recycling Storage and Pickup
6. Solids Handling Building
7. Chemical Building
8. Process Basins
9. Pleasant Home Pumpstation (Non-PWB)
10. Automated Vehicle Gate
11. Manual Bar Gate
12. Pedestrian Gate
13. Parking Area 1
14. Parking Area 2
15. ADA Parking (2 spots + refuge)
16. Loading Zone
17. Emergency Gathering Area
18. Bus Parking Spot
19. Comm. Tower and Accessory Building
20. Communication Tower Parking
21. Parking Area 4 Maintenance

Requirements

13 Parking Area 1 - Administration
Angled Parking Drive Aisle Width - Requirement is not less than 20'
Proposed width 23'-6"
Number of Parking Spots - 23 standard and 2 accessible and 1 Bus (See note 18)
Area of Landscape - Parking/Loading Area greater than 10 spots requires 25 s.f. per.
Parking Area 1 requires 625 s.f. - Area proposed exceeds 1,110 s.f. - Min. 5' width.
Parking Spot Dimensions - 19'-0" X 10'-0"
Wheelstops Typical - Bumper rails allowing for stormwater passage
Parking area 1 is set back from closest public road (Carpenter Lane) by over 350'. Planted buffer between Admin parking area and Carpenter is a min. 60' width and contains numerous evergreen shrubs and trees to create continuous screening.

14 Parking Area 2 - Fleet Parking
Angled Parking Drive Aisle Width - Requirement is not less than 20'
Proposed width 20'-0"
Number of Parking Spots - 6 standard and 0 accessible
Area of Landscape - Parking/Loading Area greater than 10 spots requires 25 s.f. per.
Parking Area 2 requires 0 s.f. - Area proposed exceeds 275 s.f. - Min. 5' width.
Parking Spot Dimensions - 20-0" X 10'-0"
Wheelstops Typical - Bumper rails allowing for stormwater passage
Parking area 2 is set back from closest public road (Dodge Park Blvd.) by over 290'. Existing forest buffer between Fleet parking area and Dodge Park Blvd. is minimum 100' width and populated with a dense stand of developed evergreen forest forming a visual buffer.

19 Parking Area 3 - Tower Parking Area
Parking Drive Aisle Width - Requirement is not less than 25'
Proposed width 25'-0"
Number of Parking Spots - 2 standard and 0 accessible. Non-public area.
Area of Landscape - Parking/Loading Area greater than 10 spots requires 25 s.f. per.
Tower Parking Area requires 0 s.f. - Area proposed exceeds 100 s.f. - Min. 5' width.
Standard Parking Spot Dimensions - 20'-0" X 10'-0"
Wheelstops Typ. - Bumper rails allowing for stormwater passage
Tower parking area set back from closest public road (Dodge Park Blvd.) by over 330'. Planted buffer between Tower parking area contains 2 rows of large evergreen shrubs as well as 2 rows of evergreen trees to exceed the parking strip requirement listed in Multnomah County Code.

21 Parking Area 4 - Maintenance Parking
Parking Drive Aisle Width - Requirement is not less than 25'
Proposed width min. 40'-0"
Number of Parking Spots - 4 standard and 0 accessible. Non-public area.
Area of Landscape - Parking/Loading Area greater than 10 spots requires 25 s.f. per.
Maint. Parking Area requires 0 s.f. - Area proposed exceeds 105 s.f. - Min. 5' width.
Standard Parking Spot Dimensions - 20'-0" X 10'-0"
Wheelstops Typ. - Bumper rails allowing for stormwater passage
Parking area 4 is set back from closest public road ROW (Dodge Park Blvd.) by over 195'. Existing forest buffer between Maintenance parking area and Dodge Park Blvd. is minimum 100' width and populated with a dense stand of developed evergreen forest forming a visual buffer.

REGISTERED
0821
Jason Hirst
OREGON
02/20/2014
LANDSCAPE ARCHITECT
Expires: 02/27/2023

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	NNA	Program Mgr	XXX
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	XXX
Project Mgr	KKK	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

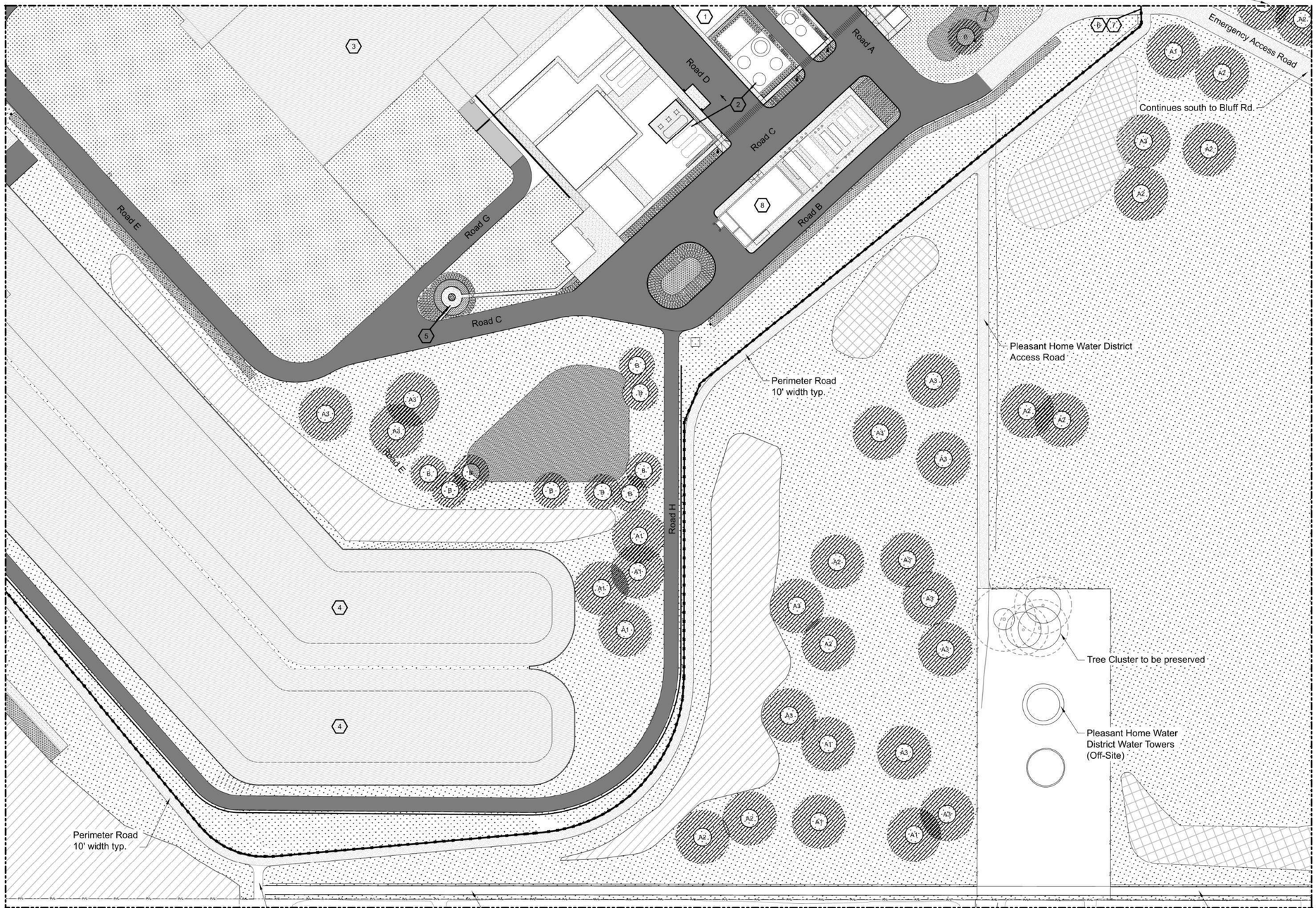
Land Use Plans

Facility Enlargement 1

SAP Project No
W02229
1/4 Section
-
Sheet No
LU-400
10 of 18

Plot Date: 30-AUG-2022 10:20 User: JASON File: W02229-FF-00-LU-400.dgn Model: Layout1 ColorTable: user attached from dialog DesignScript: PWB_PenTable.pen PlotScale: 1:0.0833333

See LU-400 for Continuation



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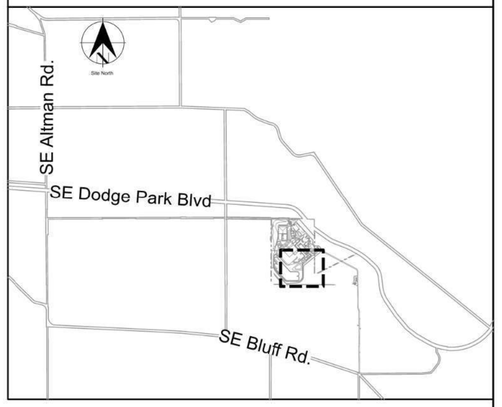

Sheet Keynotes

1. Chemical Building
2. Storage Tanks
3. Process Basins
4. Overflow Basins
5. Emergency Gathering Area
6. Pedestrian Gate
7. Automatic Vehicular Gate
8. Electrical Building

Requirements

No parking areas in this portion of the facilty.

5 Emergency Gathering Area - 550' from Administration Building
Accessible Route - 250 s.f. of paved space

Legend

- Asphalt Paving - Vehicular Focus
- Concrete Paving - Pedestrian Focus
- Crushed Rock Road / Access
- Basins
- Lot Line
- ROW Line
- Easement Line
- Fenceline
- Evergreen and Deciduous Trees
- Shrubs and Groundcovers
- Seeded Areas
- Swale Planting
- Stormwater Planting
- Screen Mix: Forested
- Screen Mix: Shrubby
- A2 Tree Planting Clusters

0 60 120 FEET

REGISTERED 0821 Jason Hirst OREGON 02/20/2014 LANDSCAPE ARCHITECT Expires: 02/27/2023

Site North

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	NNA	Program Mgr	XXX
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

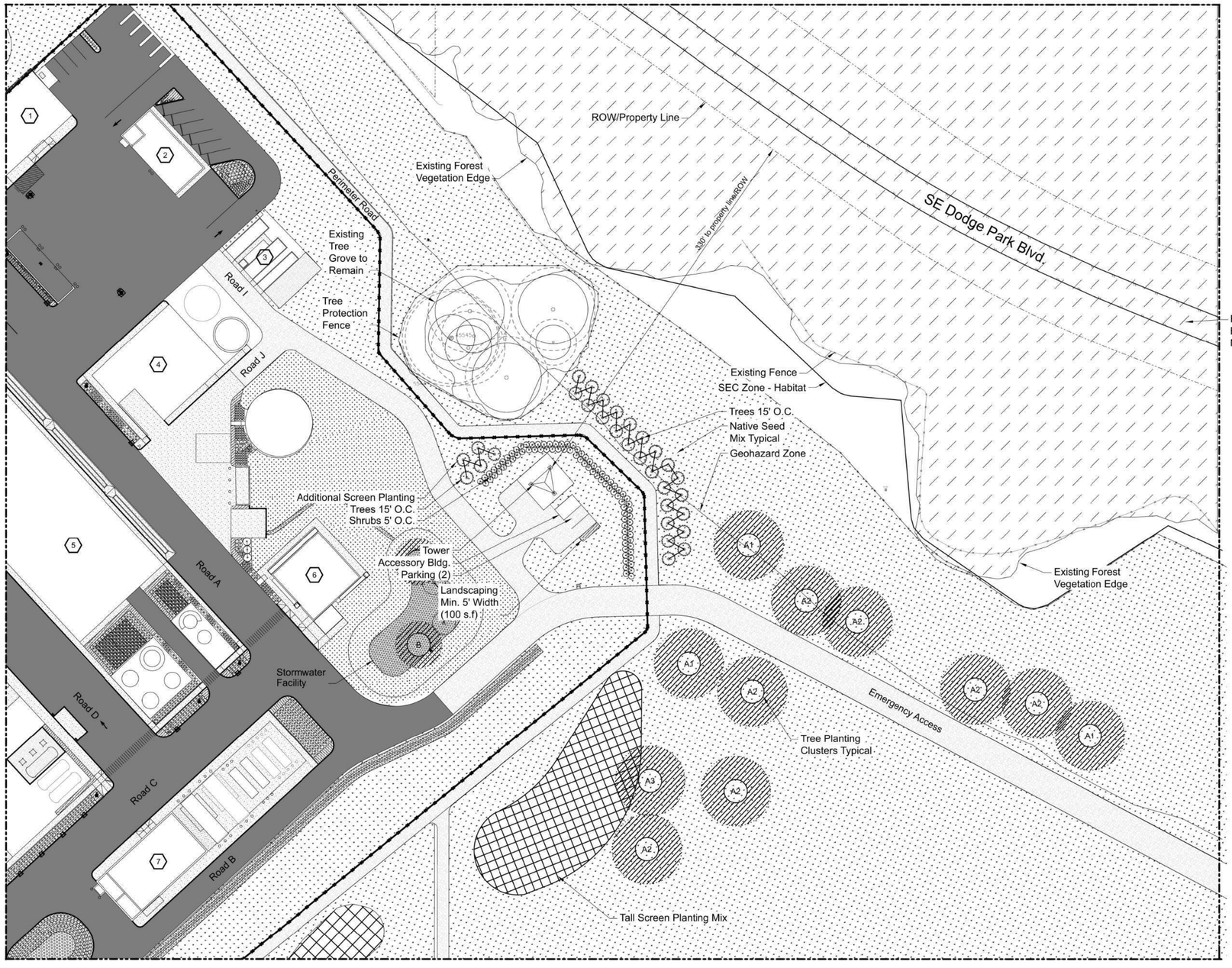
CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

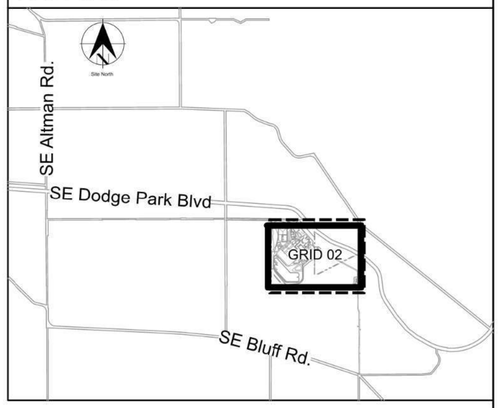
Land Use Plans

Facility Enlargement 2

SAP Project No W02229
1/4 Section -
Sheet No LU-401
11 of 18



KEY PLAN



Sheet Keynotes

1. Maintenance Building
2. General Storage Building
3. Pilot Plant
4. Solids Handling Building
5. Chemical Building
6. Washwater Clarification
7. Electrical Building

Tower Screening Requirements and Information

Requirement - Provide Tower Buffer Area of no less than 25 feet wide.
Response - Buffer area from tower base to adjacent ROW is 330 feet wide.

Requirement - Screening of at least 1 row of evergreen shrubs shall be spaced not more than 5 feet apart. Shall grow to form a continuous hedge 5 feet in height at two years.
Response - Screening plantings of 2 rows of evergreen shrubs spaced 5' O.C.
Materials selected will exceed 5 feet in height at two years.
(88) Myrica californica - California Wax Myrtle

Requirement - Screening of at least 1 row of evergreen trees, not less than 4' height and spaced not more than 15 feet apart.
Response - Screening plantings of 2 rows of evergreen trees spaced 15' O.C.
Materials planted will exceed 4' height at time of planting.
(30) Pinus contorta var. contorta - Shore Pine

Distance from Tower to closest propertly line is 330 Linear Feet.
Dodge Park Boulevard is approximately 80' downslope from Tower base elevation.

Legend

- Asphalt Paving - Vehicular Focus
- Concrete Paving - Pedestrian Focus
- Crushed Rock Road / Access
- Lot Line
- ROW Line
- Easement Line
- Existing Douglas Fir Forest - Vegetation Leads Down Hillside with heights in excess of 100'

REGISTERED LANDSCAPE ARCHITECT
0821
Jason Hirst
OREGON
02/20/2014
Expires: 02/27/2023

0 50 100 150 200
FEET

Site North

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
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A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
Survey			

Stantec

Designed By	NNA	Program Mgr	KKK
Drawn By	NNA	Const Mgr	XXX
Checked By	NNA	Const Supvr	KKK
Project Mgr	KKK	Date	09/02/22

Warning
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

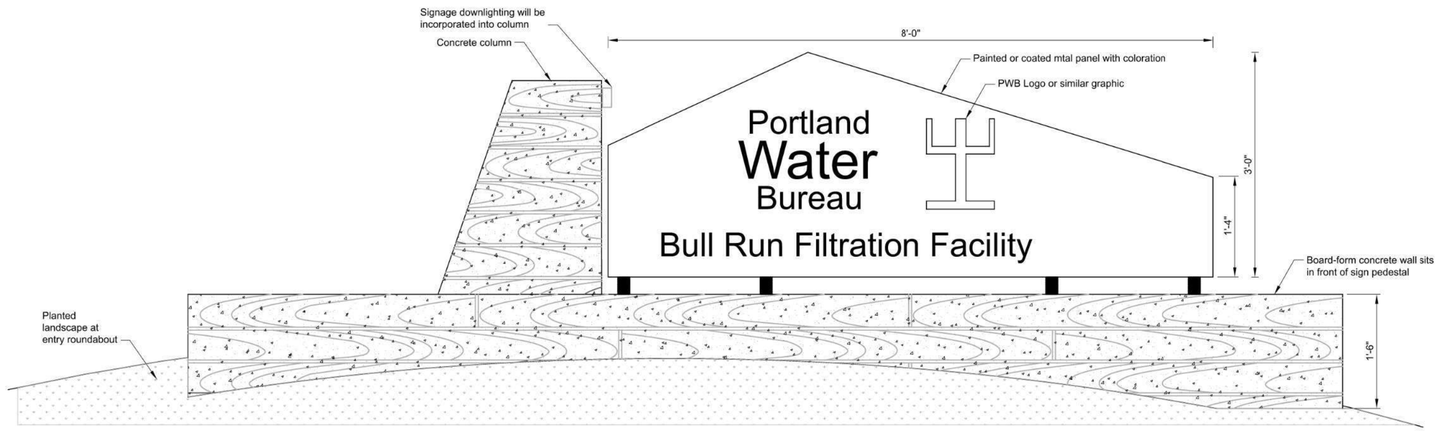
Bull Run Filtration Facility

Land Use Plans

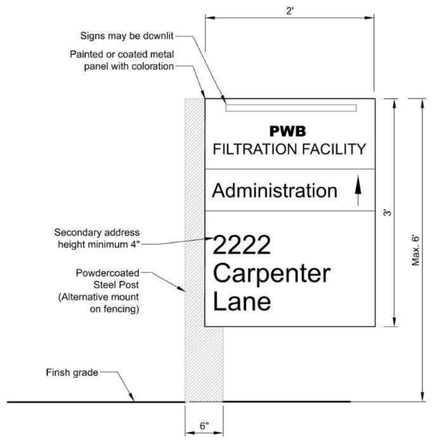
Tower Area Enlargement

SAP Project No
W02229
1/4 Section
-
Sheet No
00-LU-402
12 of 18

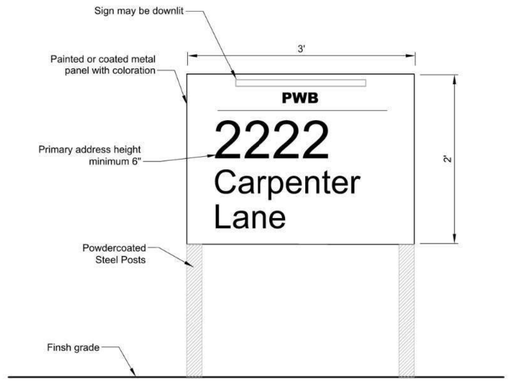
Plot Date: 6-SEP-2022 13:53 User: JASON File: W02229-FF-00-LU-402.dgn Model: Layout1 ColorTable: user attached from dialog DesignScript: PWB_PenTable.pen PlotScale: 1:0.0833333



1 Elevation - Monument Entry Sign
NTS



2 Elevation - Directional Sign
NTS



3 Elevation - Address Sign
NTS

REGISTERED
0821
Jason Hirst
OREGON
02/20/2014
LANDSCAPE ARCHITECT
Expires: 02/27/2023

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
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Revision

Survey

Stantec

Designed By	XXX	Program Mgr	XXX
Drawn By	XXX	Const Mgr	XXX
Checked By	XXX	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

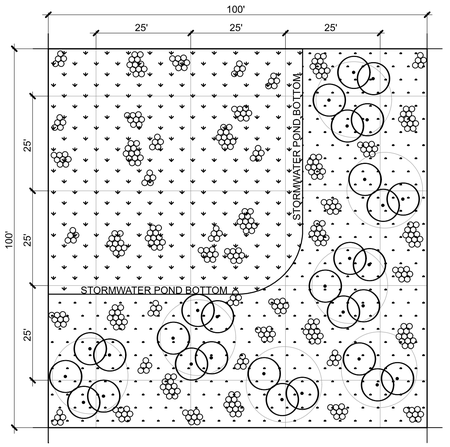
Bull Run Filtration Facility

Land Use Plans

Details
Signs

SAP Project No
W02229
1/4 Section
-
Sheet No
00-LU-403
13 of 18

Plot Date: 30-AUG-2022 10:52 User: JASON File: W02229-FF-00-LU-404.dgn Model: Layout1 ColorTable: user attached from dialog DesignScript: PWB_PenTable.pen PlotScale: 1:0.0833333



NOTES

1) Prior to Installing plants, apply Stormwater Seed Mix to the sides of the Pond and the Stormwater Pond Bottom Mix to the bottom of the pond and establish for 45-days minimum.
2) Install trees on side slopes in clumps within a 20' diameter circle spaced 25' on-center. Space trees at least 5' apart minimum.
3) 50% of tree clumps to be 5 trees, 50% of tree clumps to be 3 trees, all clumps to be single species.
4) Install shrubs at an overall density of 400 shrubs/10,000 s.f. (11742/acre)
5) Install shrubs in groups of 3-12 plants per species. Space shrubs 1' min to 3' max on-center.
6) provide 5' minimum spacing between shrub groups and between a tree and shrubs group.
7) Spread species throughout the given planting area to avoid monocultures, a random 10,000 s.f. sample should contain all species.
8) Maintain a 1' diameter plant-free area around all stems and mulch with wood chip mulch to prevent weeds.
9) Install Shrubs at an average density range of 12 shrubs/400s.f.
10) Install shrubs on 3:1 side slopes in groups of 3-5 plants per species. Space shrubs 1' min to 3' max on-center. Alternate shrubs groups on either side of the swale spaced 12'-18' apart
11) Maintain a 1' diameter plant-free area around all stems and mulch with wood chip mulch to prevent weeds.
12) See seed mixes on this sheet for mix species and application rates.

STORMWATER POND BOTTOM SEED MIX

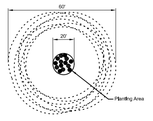
STORMWATER SEED MIX

SHRUBS

TREE CLUMP (20' DIAMETER)

Stormwater Pond Side - Trees	
Alnus rhombifolia	White Alder
Rhamnus purshiana	Cascara
Thuja plicata	Western Red Cedar
Stormwater Pond Side - Shrubs	
Lonicera involucrata	Twinberry
Mahonia aquifolium	Oregon Grape
Physicarpus capitatus	Ninebark
Rosa pisocarpa	Swamp Rose
Ribes sanguineum	Red Floweing Currant
Sambucus racemosa	Red Elderberry
Symphoricarpus albus	Snowberry
Stormwater Pond Bottom - Shrubs	
Cornus sericea	Redtwig Dogwood
Salix sitchensis	Sitka Willow
Salix hookeriana	Hooker's WIllow
Spiraea douglasii	Douglas Spirea

Stormwater Pond Planting
NTS



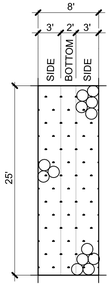
Legend

- Tree - 6 per cluster
- Shrub - 8 per cluster
  See plant schedule GEN-L-102 for types

PLAN - PLANTING DIAGRAM FOR B1

B1	*Mahonia aquifolium*	Oregon Grape	1 Gal. size bareroot
	Rhamnus purshiana	Cascara	1/2" Bareroot
	Salix scouleriana	Scouler's Willow	1/2" Bareroot
	Sambucus cerulea	Blue elderberry	1 gal size bareroot
	Symphoricarpos albus	Snowberry	1 Gal. Size Bareroot
	Symphoricarpos mollis	Snowberry	1 Gal. Size Bareroot

Stormwater Planting Cluster
NTS



NOTES

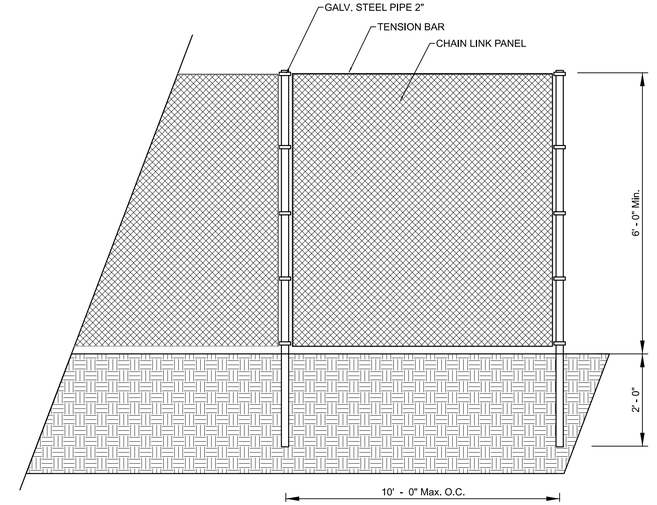
1) Prior to installing plants, apply Stormwater Seed Mix and establish for 45-days minimum.
2) Install Shrubs at an average density range of 12 shrubs/400s.f.
3) Install shrubs on 3:1 side slopes in groups of 3-5 plants per species. Space shrubs 1' min to 3' max on-center. Alternate shrubs groups on either side of the swale spaced 12'-18' apart
4) Maintain a 1' diameter plant-free area around all stems and mulch with wood chip mulch to prevent weeds.
5) See seed mixes on this sheet for mix species and application rates.

STORMWATER SEED MIX

SHRUBS

Conveyance Swale - Shrubs	
Mahonia repens	Low Oregon Grape
Rosa pisocarpa	Swamp Rose
Spiraea betulifolia	Birchleaf spirea
Spiraea douglasii	Douglas Spirea

Conveyance Swale Planting
NTS



NOTES

1. Install tree protection fence before any ground disturbing activities including storage of equipment or materials, clearing and grubbing, grading, or construction starts. Fencing shall remain in place until final inspection.
2. The following is prohibited within the tree protection fence; ground disturbance or construction activity including vehicle or equipment access; storage of equipment or materials including soil, temporary or permanent stockpiling, trenching or other work activities.
3. Place any required erosion control devices at the tree protection fence if the base of the tree is at, or below, the new grade elevation. Any erosion control device installed at the fence must not be trenched into the ground but must be designed to prevent the ingress of any materials or fluids beyond the fence line.

Tree Protection Fencing
NTS

STORMWATER SEED MIXES

These seed mixes are only to be applied to stormwater areas that are depicted with the hatch patterns shown in the sheet legends.

Stormwater - Seed Mix			
Legend	**Botanical Name**	**Common Name**	**Lbs/Acre**
	Grasses		
	Danthonia californica	California Oatgrass	5
	Deschampsia cespitosa	Tufted Hairgrass	3
	Deschampsia elongata	Slender Hairgrass	3
	Hordeum brachyantherum	Meadow Barley	1
	Flowering Plants		
	Achillea millefolium	Yarrow	0.5
	Aesclepias speciosa	Milkweed	0.5
	Carex densa	Dense Sedge	1
	Carex unilateralis	Lateral Sedge	1
	Juncus patens	Slender Rush	1
	Juncus tenuis	Spreading Rush	1
	Lupinus latifolius	Broadleaf Lupine	0.1
	Potentilla gracilis	Graceful Cinqufoil	0.5

Stormwater Pond Bottom - Seed Mix			
Legend	**Botanical Name**	**Common Name**	**Lbs/Acre**
	Carex densa	Dense Sedge	0.25
	Carex pachystachya	Chamisso Sedge	0.5
	Carex scoparia	Broom Sedge	0.5
	Carex unilateralis	Bone-Sided Sedge	0.5
	Agrostis exerata	Spike bentgrass	1
	Danthonia californica	California Oatgrass	2
	Deschampsia cespitosa	Tufted Hairgrass	1
	Juncus tenuis	Slender Rush	0.1
	Achillea millefolium	Western Yarrow	0.25
	Epilobium densiflorum	Spike Primrose	0.1
	Grindelia integrifolia	Willamette Gumweed	0.1
	Lupinus rivularis	Riverbank Lupine	0.1
	Madia elegans	Common Madia	0.3
	Mimulus guttatus	Yellow Monkeyflower	0.1
	Plagiobothrys figuratus	Fragrant Popcorn Flower	0.1
	Sidalcea campestris	Checkermallow	0.5

Additional Stormwater Plants

These plants are planned to be used or may be used in limited areas near the Admin Building.

Stormwater Plants			
AST SUB	*Aster subspicatus*	Douglas Aster	1 Gal.
CAM LEI	*Camassia leichtlinii*	Great Camas	Corm
CAR OBN	*Carex obnupta*	Slough Sedge	Plug
COR MID	*Cornus 'Midwinter Fire'*	Midwinter Fire Osier	1 Gal.
JUN TEN	*Juncus tenuis*	Spreading Rush	Plug
MAH COM	*Mahonia 'Compacta'*	Compact Oregon Grape	1 Gal.
MYR CAL	*Myrica californica*	Pacific Wax Myrtle	5 Gal.
PHY CAP	*Physocarpus capitatus*	Ninebark	1 Gal.
POL MUN	*Polysticum munitum*	Western Sword Fern	1 Gal.
SAL NAN	*Salix 'Nana'*	Purple Willow	5 Gal.
SPI TOR	*Spirea 'Tor'*	Birchleaf Spirea	5 Gal.
DES GOL	*Deschampsia 'Goldtau'*	Gold Dew Tufted Hairgrass	Plug
CAM QUA	*Camassia quamash*	Camas	Corm
CAR DEN	*Carex densa*	Slough Sedge	Plug
COR KEL	*Cornus 'Kelseyi'*	Kelsey's Dogwood	1 Gal.
IRI DOU	*Iris douglasii*	Douglas Iris	Corm
IRI TEN	*Iris tenax*	Pacific Coast Iris	Corm
MAH REP	*Mahonia repens*	Creeping Oregon Grape	1 Gal.
MAH SOF	*Mahonia 'Soft Caress'*	Soft Caress Mahonia	5 Gal.

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	XXX	Program Mgr	XXX
Drawn By	XXX	Const Mgr	XXX
Checked By	XXX	Const Supvr	XXX
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

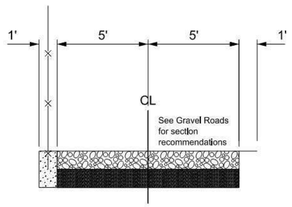
CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

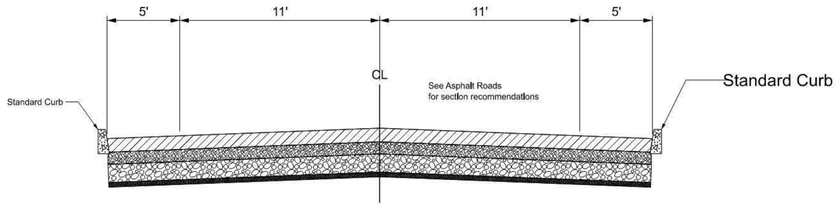
Land Use Plans

Details
Stormwater Planting

SAP Project No
W02229
1/4 Section
-
Sheet No
00-LU-404
14 of 18

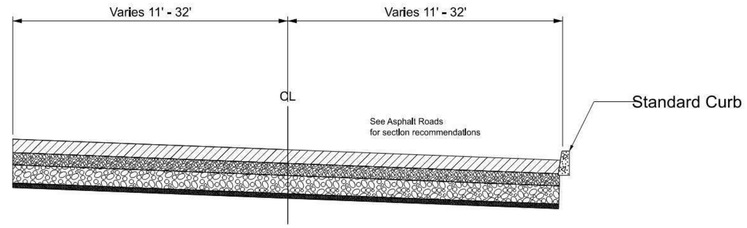


A 02-C-901 **Perimeter Road Typical Section**
NTS



Road A
Sta "A" 0+00.00 - 7+09.08

B 02-C-901 **Road A Typical Section**
NTS



Road A
Sta "A" 7+09.08 - 13.42.49

C 02-C-901 **Road A Typical Section**
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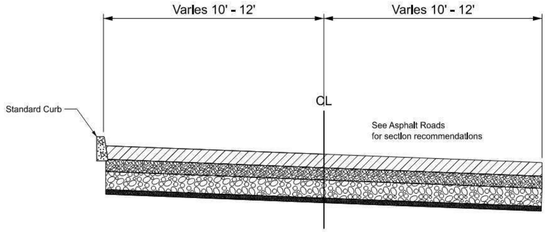

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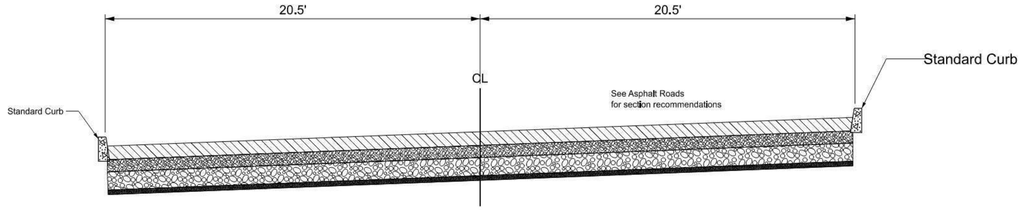
D 02-C-901 **Road B Typical Section**
NTS



Road C
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E 02-C-901 **Road C Typical Section**
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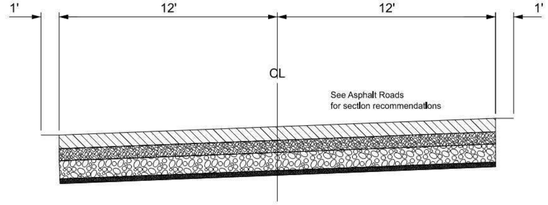
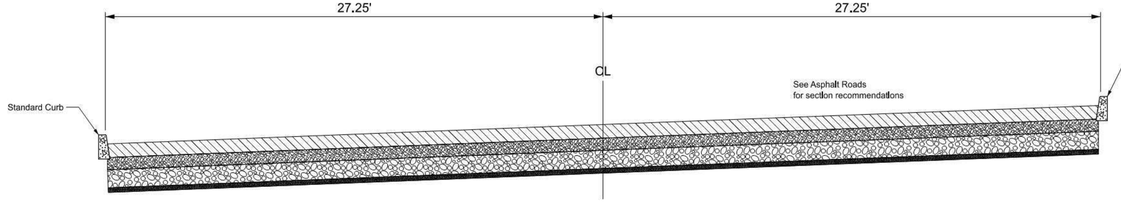


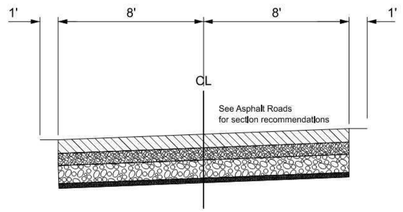
Road C, Road E, Road F
Sta "C2" 0+00.00 - 5+50.00
Sta "E" 0+00.00 - 6+24.20
Sta "F" 0+00.00 - 9+18.82

F 02-C-901 **26" Road Typical Section**
NTS



Road D
Sta "D" 1+46.52 - 5+93.63

G 02-C-901 **Road D Typical Section**
NTS



Road H
Sta "H" 0+00.00 - 20+80.52

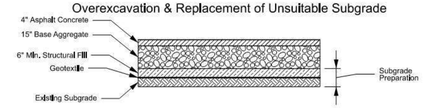
H 02-C-901 **Road H Typical Section**
NTS

General Sheet Notes

1. Prepare subgrade in accordance with the sections shown below. Choose one method to stabilize the subgrade for each road.
2. Asphalt design parameters per Table 10-3 on sheet 00-LU-406.

Asphalt Roads

Overexcavation & Replacement of Unsuitable Subgrade



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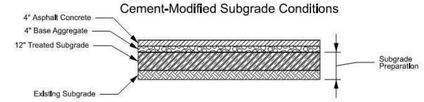
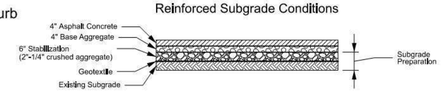
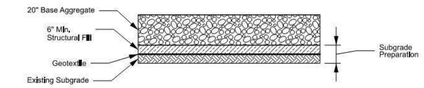


Reinforced Subgrade Conditions



Gravel Roads

Overexcavation & Replacement of Unsuitable Subgrade



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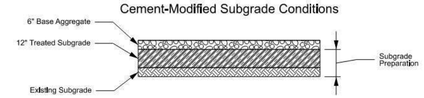
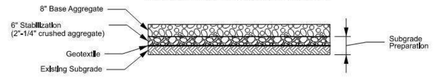


Reinforced Subgrade Conditions



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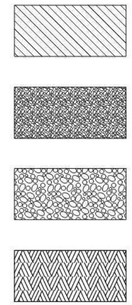

Asphalt Concrete

Aggregate

Compacted Base Rock

Compacted Subgrade

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA
EXPIRES 6-30-23

No	Date	Description	Appd
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		Revision	
Survey			

Stantec

Designed By	RG	Program Mgr	DWP
Drawn By	JSL	Const Mgr	TG
Checked By	LCS	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Civil

Roadway Typical Sections

SAP Project No W02229
1/4 Section 3765 / 3766
Sheet No 00-LU-405
X of X

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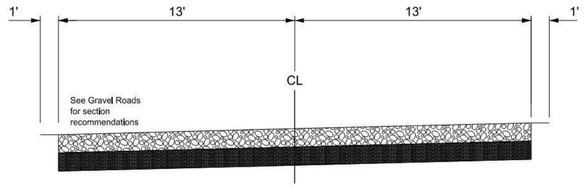

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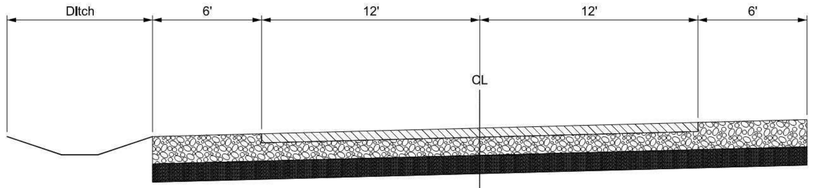
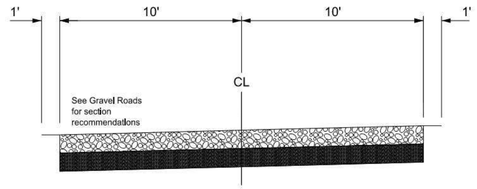
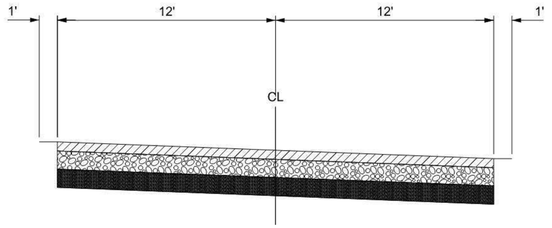
00-LU-406 NTS



B Road I
00-LU-406 NTS



C Carpenter Lane
00-LU-406 NTS



D Cottrell Rd
00-LU-406 NTS

Table 10-3. Asphalt and Gravel Road Design Parameters

Parameter	Value	Parameter		Value
Pavement Design Life (years)[e]	20	Subgrade Resilient Modulus, M_R (psi)	Existing Subgrade Conditions - Fat Clay (CH), Lean Clay (CL), and Elastic Silt (MH)	3,300[c]
Growth Rate (%)	0		Cement-Modified Subgrade[d]	22,500
Initial Serviceability[a]	4.2		Reinforced Subgrade[e]	9,000
Terminal Serviceability[a]	2.5		Compacted Subgrade[f]	15,000
Standard Deviation[a]	0.49	Resilient Modulus - Aggregate Base (psi)[a]		20,000
Reliability (%)[b]	90	Structural Coefficient - Apshalt[a]		0.42
Drainage Coefficient - Asphalt[a]	1.0	Structural Coefficient - Aggregate Base[a]		0.10
Drainage Coefficiaent - Aggregate Base[a]	1.0	Design Traffic (ESALs)[g]		41,000

a. Values based on quidelines presented in the 2019 ODOT Pavement Design Guide for flexible pavements.

b. A 90% reliability value was selected to account for variations in traffic predictions and performance predictions to provide a predetermined level of assurance that pavement sections will survive the design life period (AASHTO, 1993).

c. Existing subgrade conditions M_R value based on mean value minus one standard deviation from the results of the 12 DCP tests performed, as discussed in Section 10.2.2.

d. Cement-modified subgrade consists of a 12-inch subgrade treatment depth, amended with 8 percent Portland Cement (by weight). The cement-modified subgrade should have a minimum 7-day compressive strength of 100 psi and have a minimum in-place density of 95% of maximum dry density per Modified Proctor test. M_R value based on a conservative 50% improvement factor of subgrade conditions (Hopkins, et al. 2004).

e. Reinforced subgrade consists of a reinforcement & separation geotextile overlain by a minimum 6-inch subgrade stabilization layer in accordance with Section 9.5. M_R value recommended by geosynthetic manufacturer's engineer.

f. M_R value for compacted subgrade conditions is based on results of CBR tests performed on bulk samples. In-place density testing must be performed to verify that 95% of maximum dry density per Modified Proctor test has been achieved.

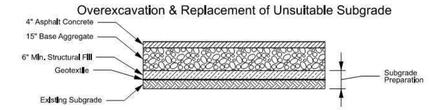
g. Our ESAL calculations assumed an average daily traffic (ADT) of 100 vehicles consisting of: two WB-50 trucks (Class 9, 5-axle tractor semitrailor truck), 44 passenger cars, 44 pickup trucks/vans, 2-axle, 6-tire (dual rear tires) trucks.

General Sheet Notes

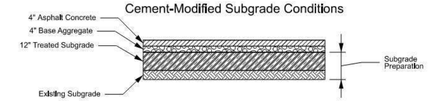
1. Prepare subgrade in accordance with the sections shown below. Choose one method to stabilize the subgrade for each road.
2. Asphalt design parameters per Table 10-3 on sheet 00-LU-406.

Asphalt Roads

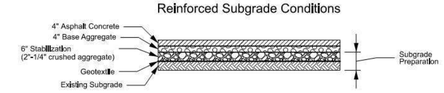
Overexcavation & Replacement of Unsuitable Subgrade



Cement-Modified Subgrade Conditions

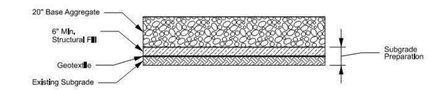


Reinforced Subgrade Conditions

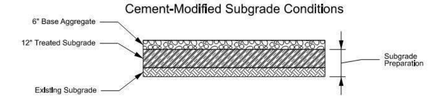


Gravel Roads

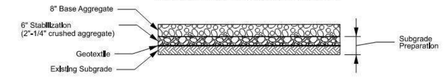
Overexcavation & Replacement of Unsuitable Subgrade



Cement-Modified Subgrade Conditions



Reinforced Subgrade Conditions



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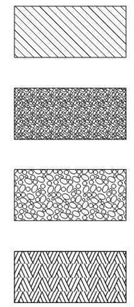


REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2003 RAFAEL GAETA
EXPIRES 6-30-23

No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec

Designed By	RG	Program Mgr	DVP
Drawn By	JSL	Const Mgr	TG
Checked By	LCS	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

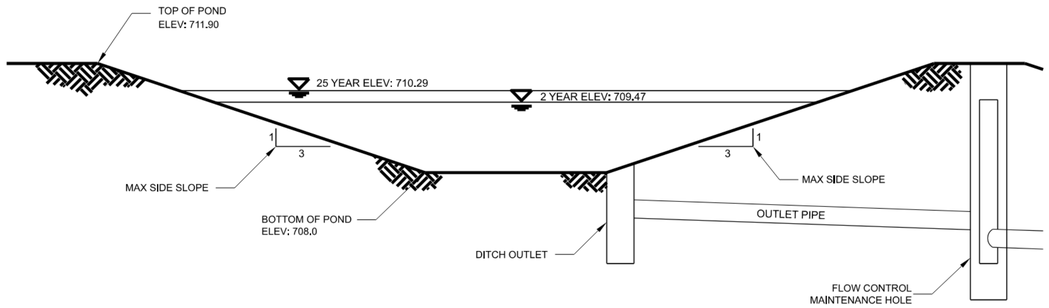
David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility
Civil
Roadway Typical Sections -2

SAP Project No W02229
1/4 Section 3765 / 3766
Sheet No 00-LU-406
X of X

Plot Date: 1-SEP-2022 02:27 User: stanpw11-pw-svc File: W02229_FF_00-LU-406.dgn Model: 00-LU-406 ColorTable: bw_IPlot.ctb DesignScript: PWB_PenTable.pen PlotScale: 0.083333:1



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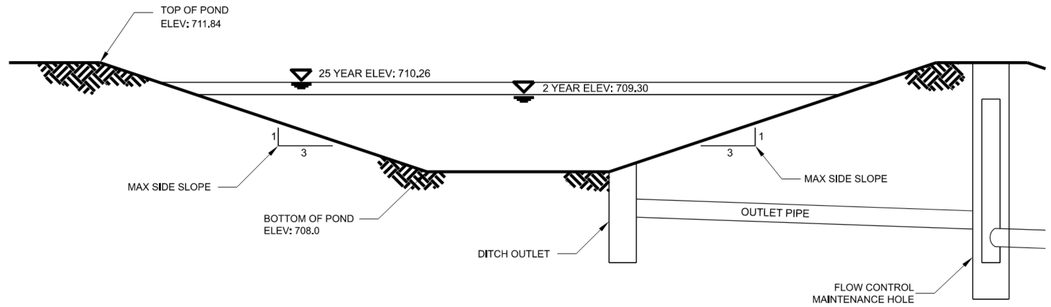
00-LU-407 N.T.S.



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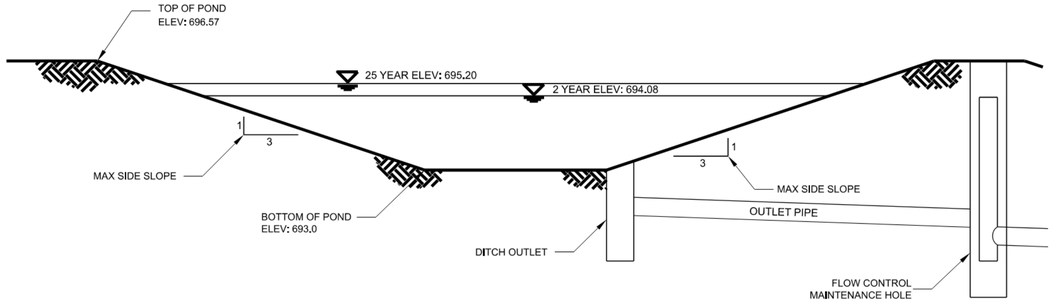

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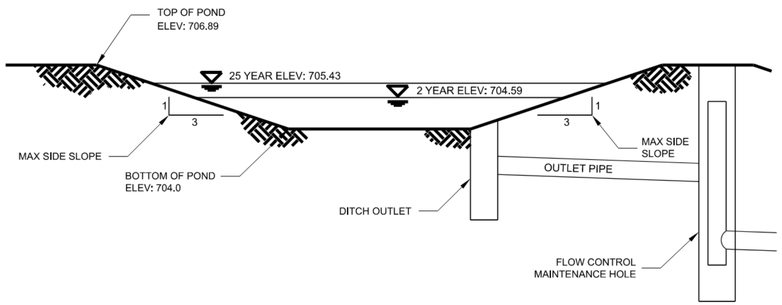

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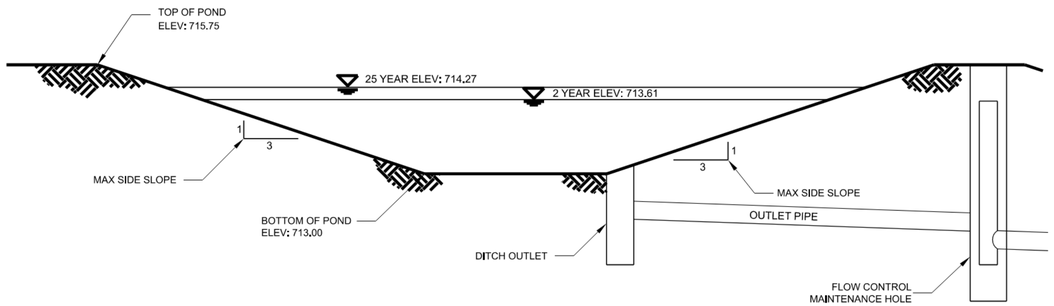

E Pond E
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REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA
EXPIRES 6-30-23

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review • 90% Submittal	MRG
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Revision

Survey

Stantec

Designed By	JSL	Program Mgr	DWP
Drawn By	KRF	Const Mgr	TG
Checked By	LCS	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683

Date

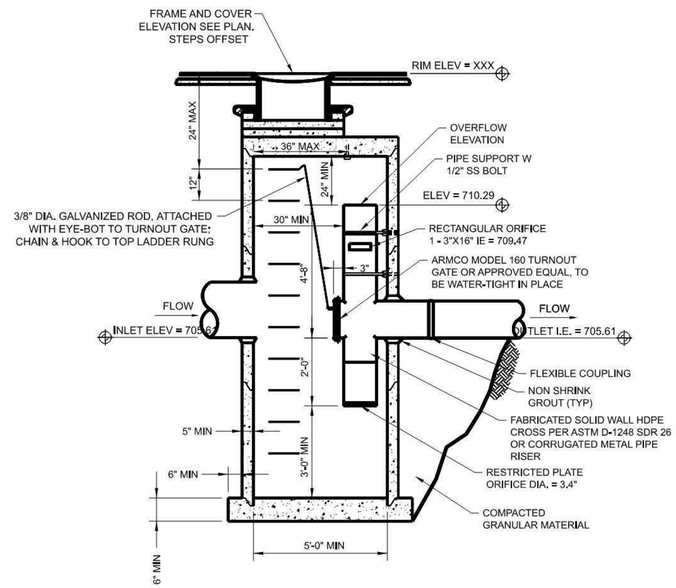
CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Civil

Pond Section Details

SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
00-LU-407
of



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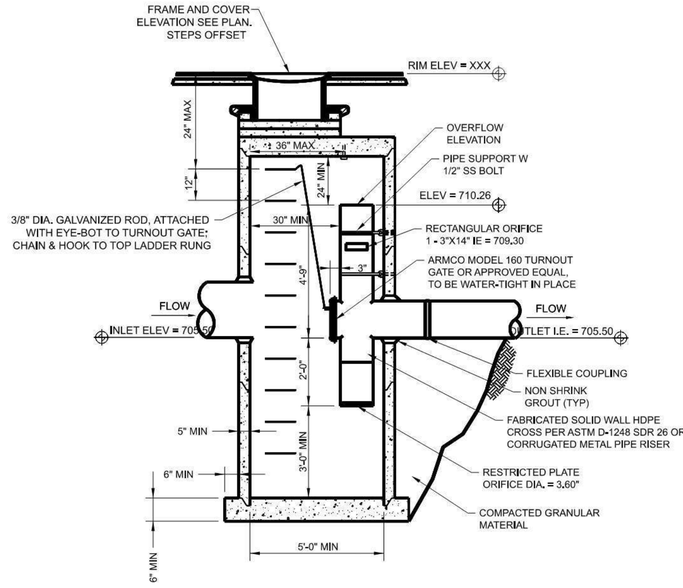

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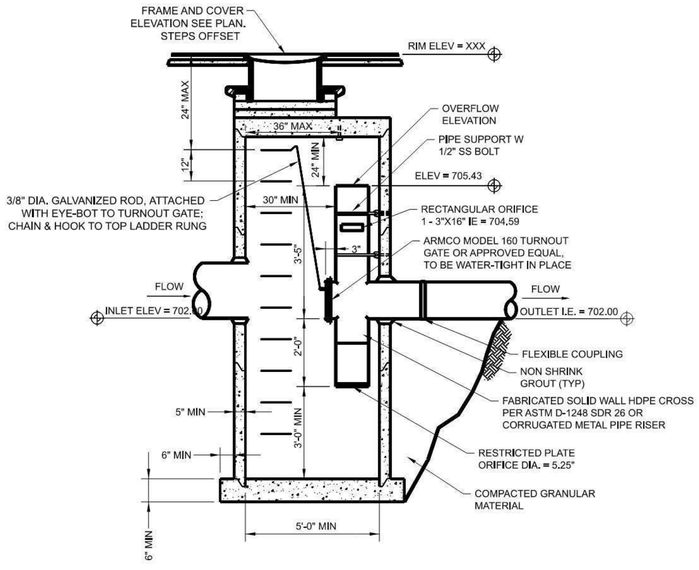

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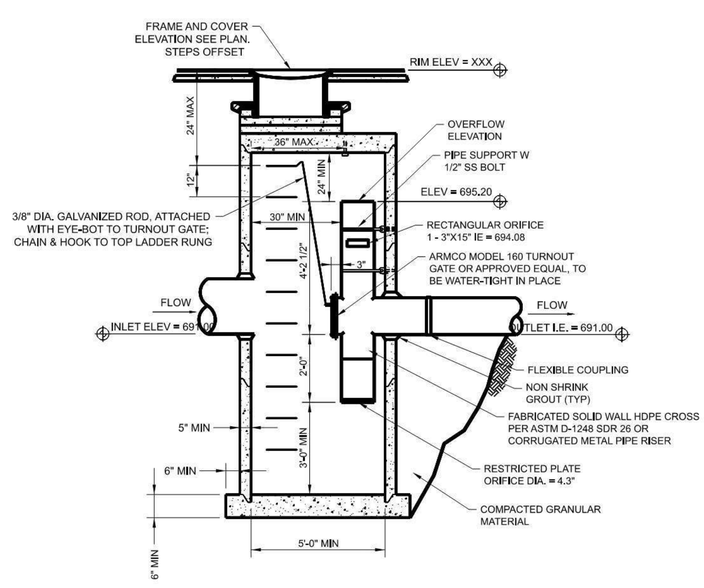
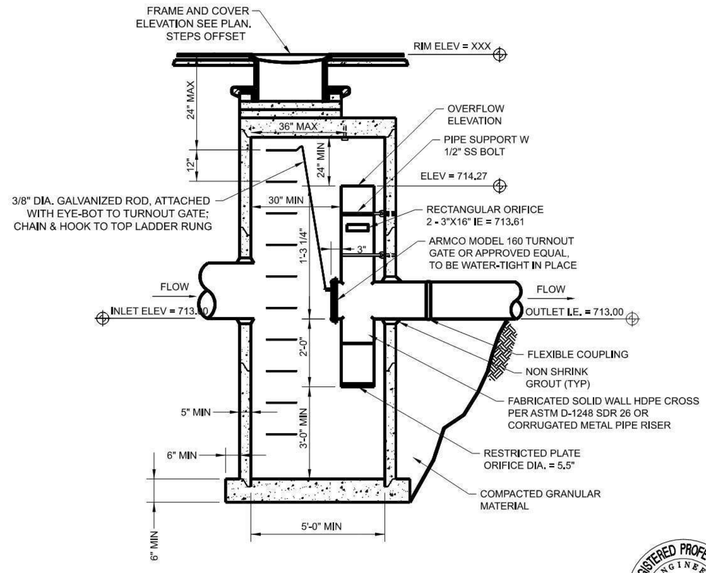


D 00-LU-408 Flow Control Maintenance Hole - Pond D
N.T.S.



E 00-LU-408 Flow Control Maintenance Hole - Pond E
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REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA EXPIRES 6-30-23

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$$$$USER$$$$
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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
Survey			

Stantec

Designed By	KRF	Program Mgr	XXX
Drawn By	KRF	Const Mgr	XXX
Checked By	LCS	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

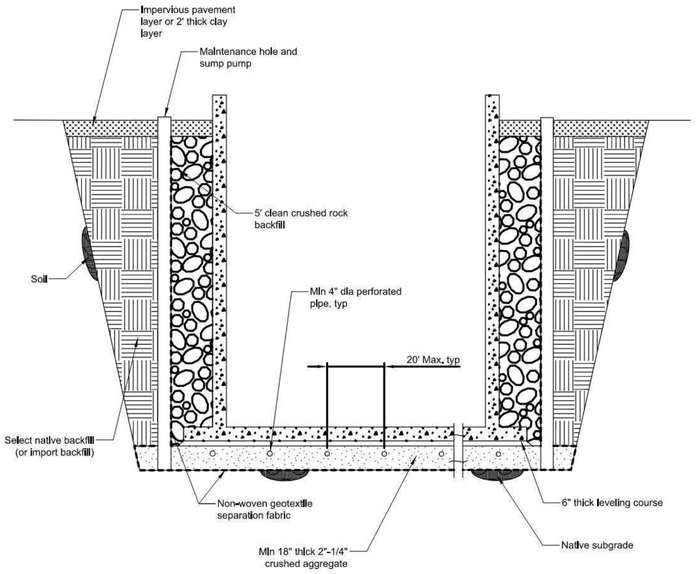
PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

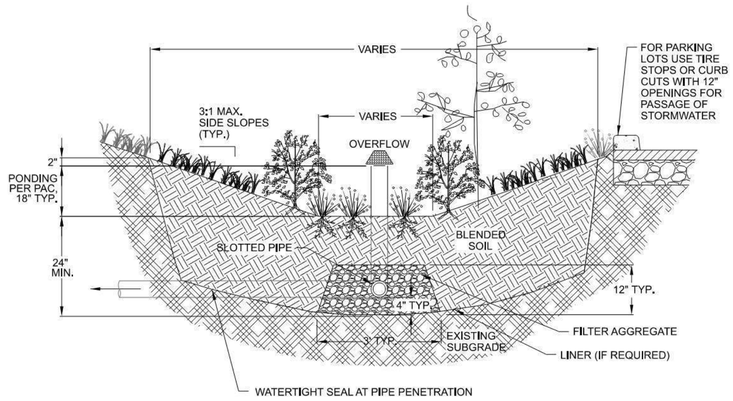
CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility
Civil
Flow Control Manhole Details

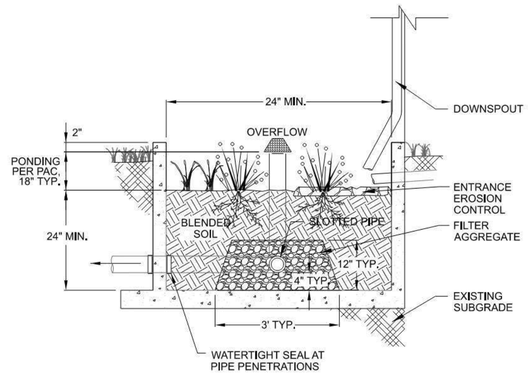
SAP Project No W02229
1/4 Section 3765 / 3766
Sheet No 00-LU-408
of



C-160 UNDERDRAIN SYSTEM
NTS



C-161 BASIN WITH UNDERDRAIN
NTS



C-162 PLANTER WITH UNDERDRAIN
NTS

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA
EXPIRES 6-30-23

PRELIMINARY NOT FOR CONSTRUCTION

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

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EMERIO ENGINEERING • SURVEYING • DESIGN

Designed By	RG	Program Mgr	XXX
Drawn By	DJD	Const Mgr	XXX
Checked By	LCS	Const Supvr	XXX
Project Mgr	XXX	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND, OREGON 1851

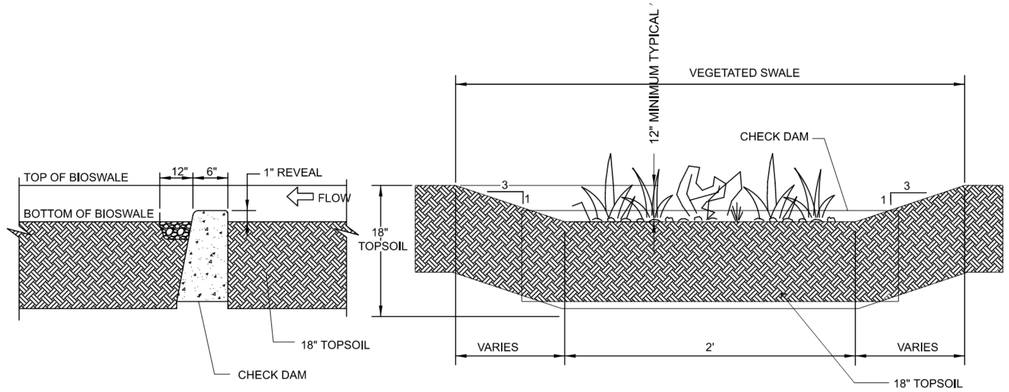
Bull Run Filtration Facility

Civil

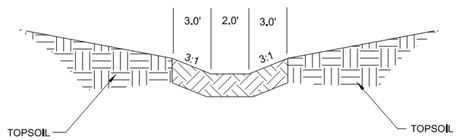
Storm
Details 1

SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
GEN-C-920
X of X

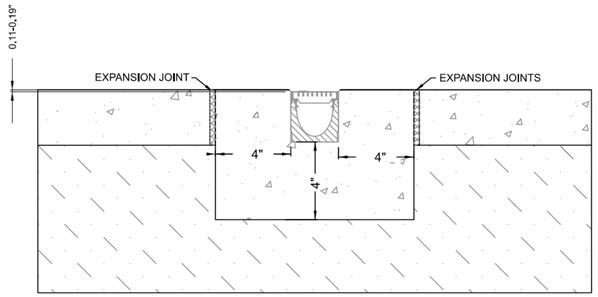
Plot Date: 31-AUG-2022 02:30 User: stanpw11-pw-svc File: W02229_FF_GEN_C_920.dgn Model: GEN-C-920 ColorTable: bw_IPlot.ctb DesignScript: PWB_PenTable.pen PlotScale: 0.083333:1



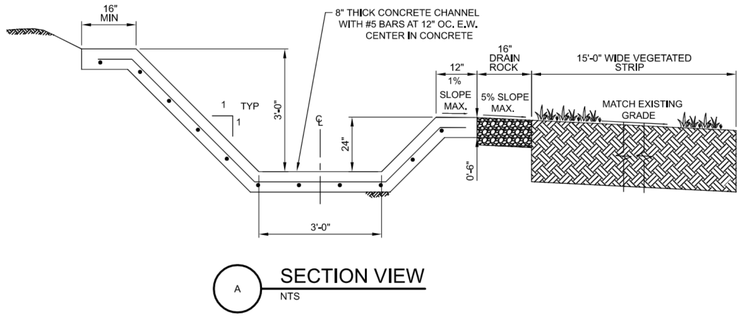
C-168 TYPICAL GRASSY SWALE
NTS



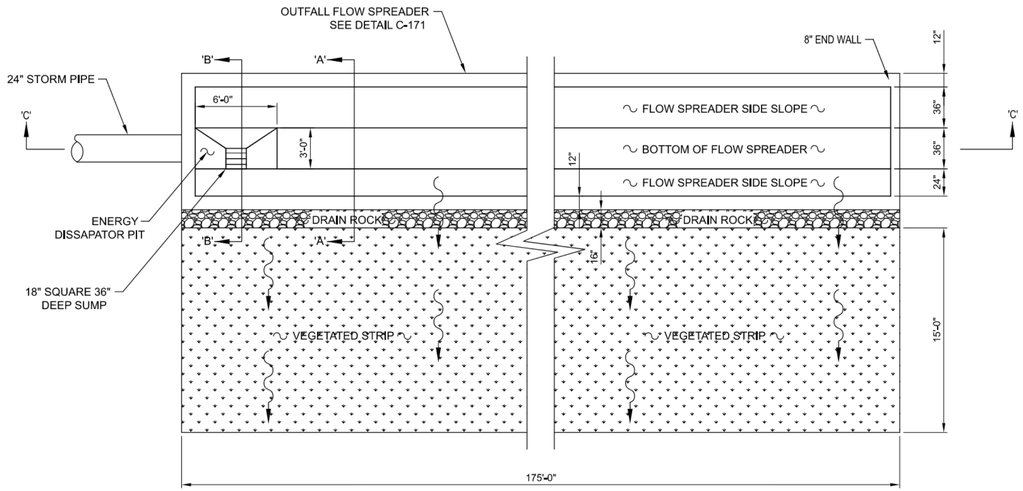
C-169 ROADSIDE DITCH
NTS



C-170 TRENCH DRAIN
NTS



A SECTION VIEW
NTS



C-171 OUTFALL FLOW SPREADER
NTS

REGISTERED PROFESSIONAL ENGINEER 55529 OREGON JULY 15, 2005 RAFAEL GAETA EXPIRES 6-30-23

PRELIMINARY NOT FOR CONSTRUCTION

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey

Stantec
EMERIO ENGINEERING ▪ SURVEYING ▪ DESIGN

Designed By	RG	Program Mgr	RKK
Drawn By	DJD	Const Mgr	XXX
Checked By	LCS	Const Supvr	XXX
Project Mgr	RKK	Date	09/02/22

Warning
0 ½ 1
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

David W. Peters, Engineering Manager, PE No 16683 — Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Civil

Storm
Details 4

SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
GEN-C-923

X of X

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Attachment B: Lighting Plans

Facility North

Key Plan

SCALE: 1" = 1560

PRELIMINARY NOT FOR CONSTRUCTION

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
Survey		-	

Stantec

ELCON ASSOCIATES, INC.

Designed By	MGK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JANUARY 22, 2013 DAVID JAMES PETERS

RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Key Plan

SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
03-E-322

of

Site North

Lighting & Receptacle Plan - Grid 1

SCALE: 1" = 30'-0"

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from the building 16 panel, FF16-DP-1001.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting and fixture type.
4. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-334 for Lighting Control Plan.
5. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. Plant entry sign floodlights. Provide and install on 8 feet round pole elevated on a 1.5' planting bed. Circuit fixture to FF16-PNL-1001.
2. See Area 40 Plans for pole, light fixture, and circuiting information.

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
Survey		-	

Stantec

ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER
84324
OREGON
JANUARY 22, 2008
JAMES ARNTZEN
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

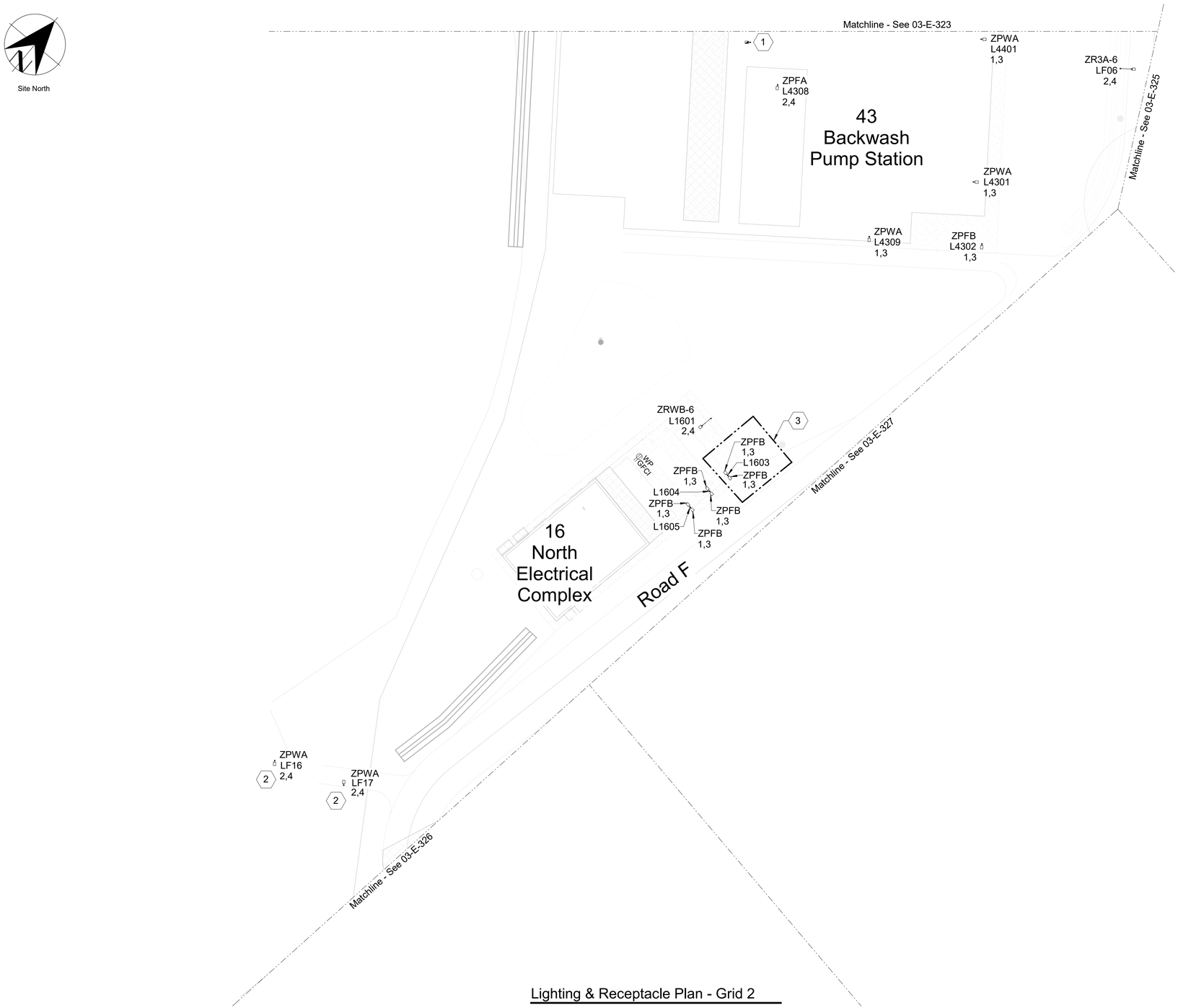
Site Lighting
Lighting & Receptacle Plan
Grid 1

SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
03-E-323

of



General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 16, FF16-DP-1001.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting and fixture type.
4. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-335 for Lighting Control Plan.
5. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. See Area 40 Plans for pole, light fixture, and circuiting information.
2. Fixtures are circuited to the panel in building 16.
3. Provide and install light pole with fixtures under Bid Alternate except as noted. See specification section 01_23_00 Alternates.

Lighting & Receptacle Plan - Grid 2

SCALE: 1" = 30'-0"

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
Revision			
Survey		-	

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ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER
84324
OREGON
JULY 22, 2005
JAMES MARTIN
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

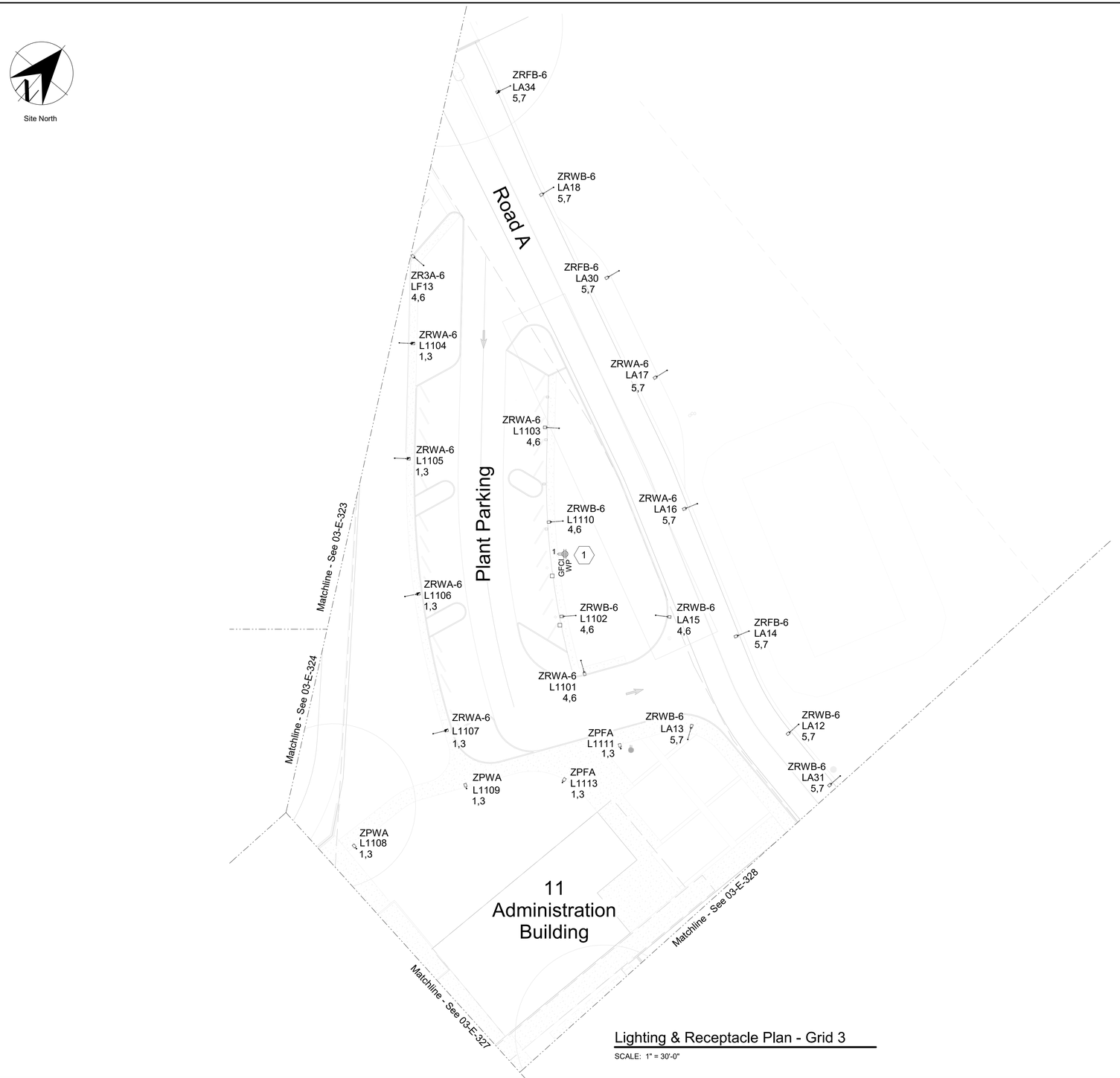
CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 2

SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
03-E-324
of



General Sheet Notes

1. All the light poles shown on this sheet are powered from building 11. Refer to area specific plans for the panel name and schedule.
2. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building 11.
3. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-336 for Lighting Control Plan.
4. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. Provide and install receptacle.

Lighting & Receptacle Plan - Grid 3

SCALE: 1" = 30'-0"

PRELIMINARY NOT FOR CONSTRUCTION

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey | - |

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ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

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PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 12, 2005 JAMES A. ARNEIN

RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 3

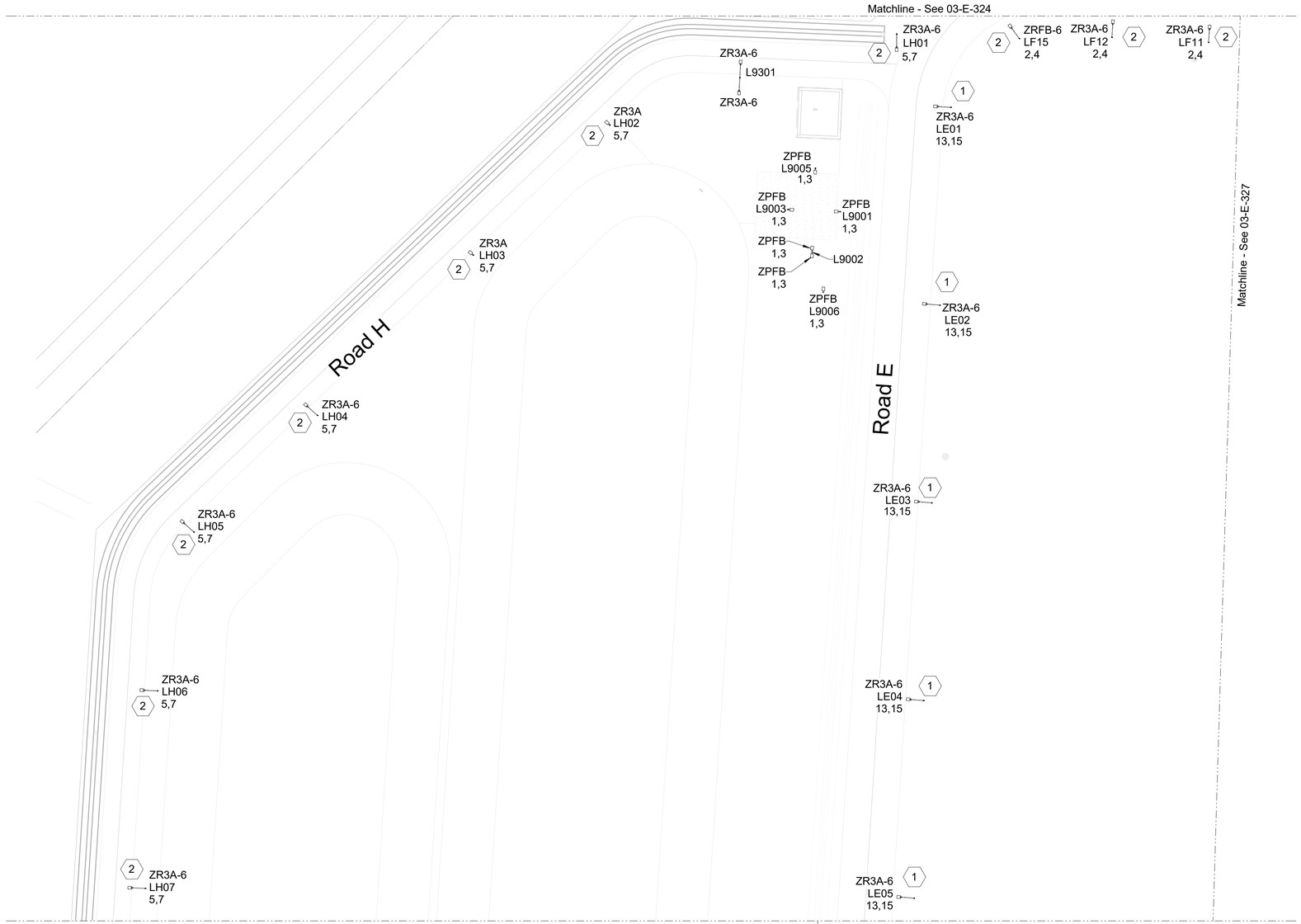
SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
03-E-325

of

Site North



Lighting & Receptacle Plan - Grid 4

SCALE: 1" = 30'-0"

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 15 and 16.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-337 for Lighting Control Plan.
4. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. The fixture is circuited to the panel in building 15.
2. The fixture is circuited to the panel in building 16.

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No	Date	Description	Appd
		Revision	
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
Survey		-	

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ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
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PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 22, 2005 DAVID JAMES PETERS
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 4

SAP Project No	W02229
1/4 Section	3765 / 3766
Sheet No	03-E-326
of	

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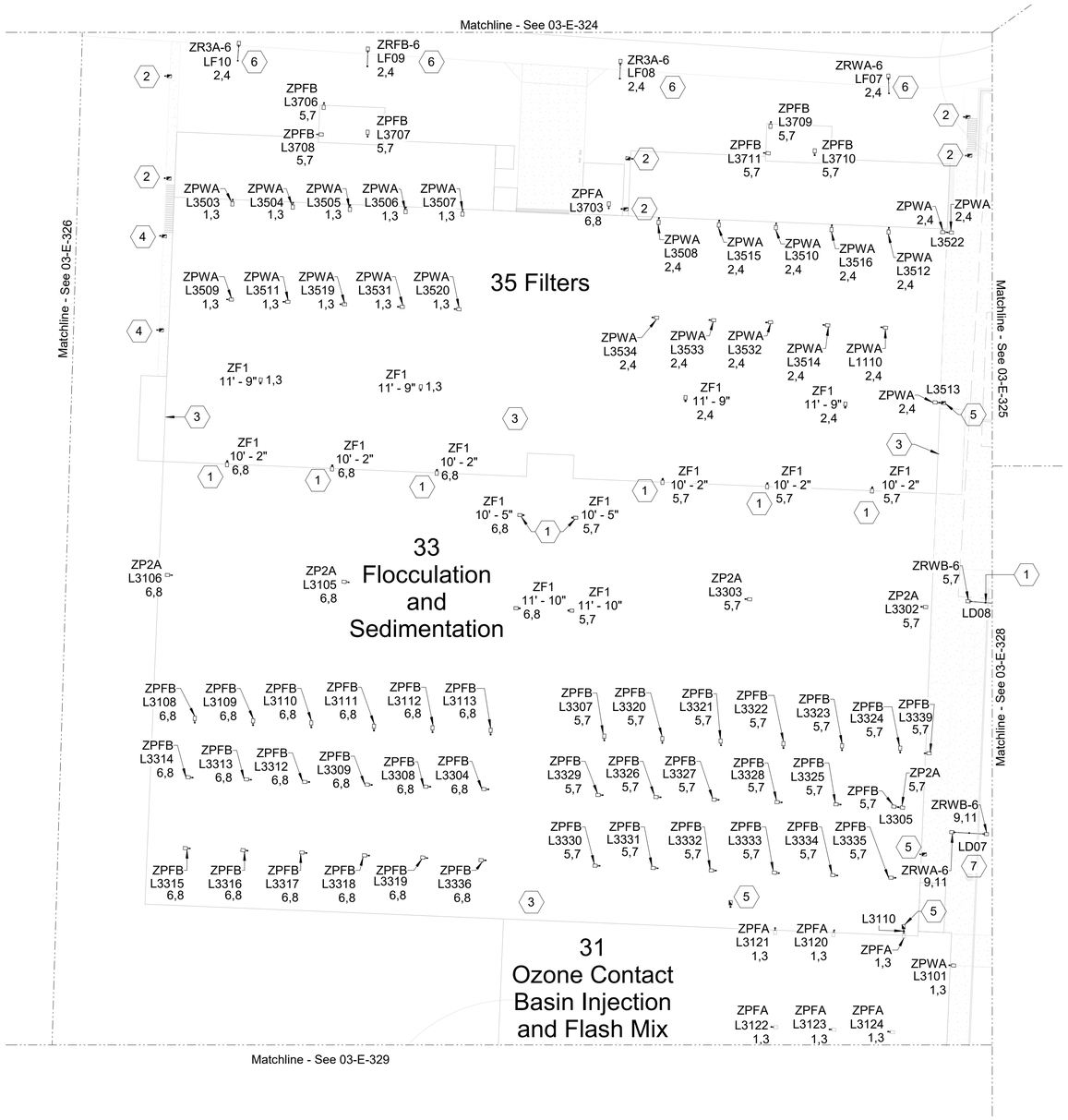
Site North



Lighting & Receptacle Plan - Grid 5

SCALE: 1" = 30'-0"

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 35 or 31 unless otherwise noted.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting.
4. Circuit numbers are shown. Refer to panel schedules to match the fixtures with the same circuit numbers.
5. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-338 for Lighting Control Plan.
6. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. This fixture is circuited to 480V panel in building 31. Fixtures to the north are circuited to 480V panel in building 35. Fixtures to the south are circuited to 480V panel in building 31. Refer to panel schedules to match the fixtures with the same circuit numbers.
2. See Area 37 plans for fixture, pole, and circuiting information.
3. See Area 30 plans for switch bank and switch circuiting information.
4. See Area 35 plans for fixture, pole, and circuiting information.
5. See Area 33 plans for fixture, pole, circuiting information.
6. Light pole is circuited to area 16 panel, FF16-DP-1001.
7. Light pole is circuited to area 15 panel, FF15-DP-1001.
8. Light pole is within LEED boundary. It is circuited to area 11 panel, FF11-DP-1001.

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey | - |

Stantec

ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DMP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

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PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON DAVID W. PETERS 22 RENEWS: 12/31/23 Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 5

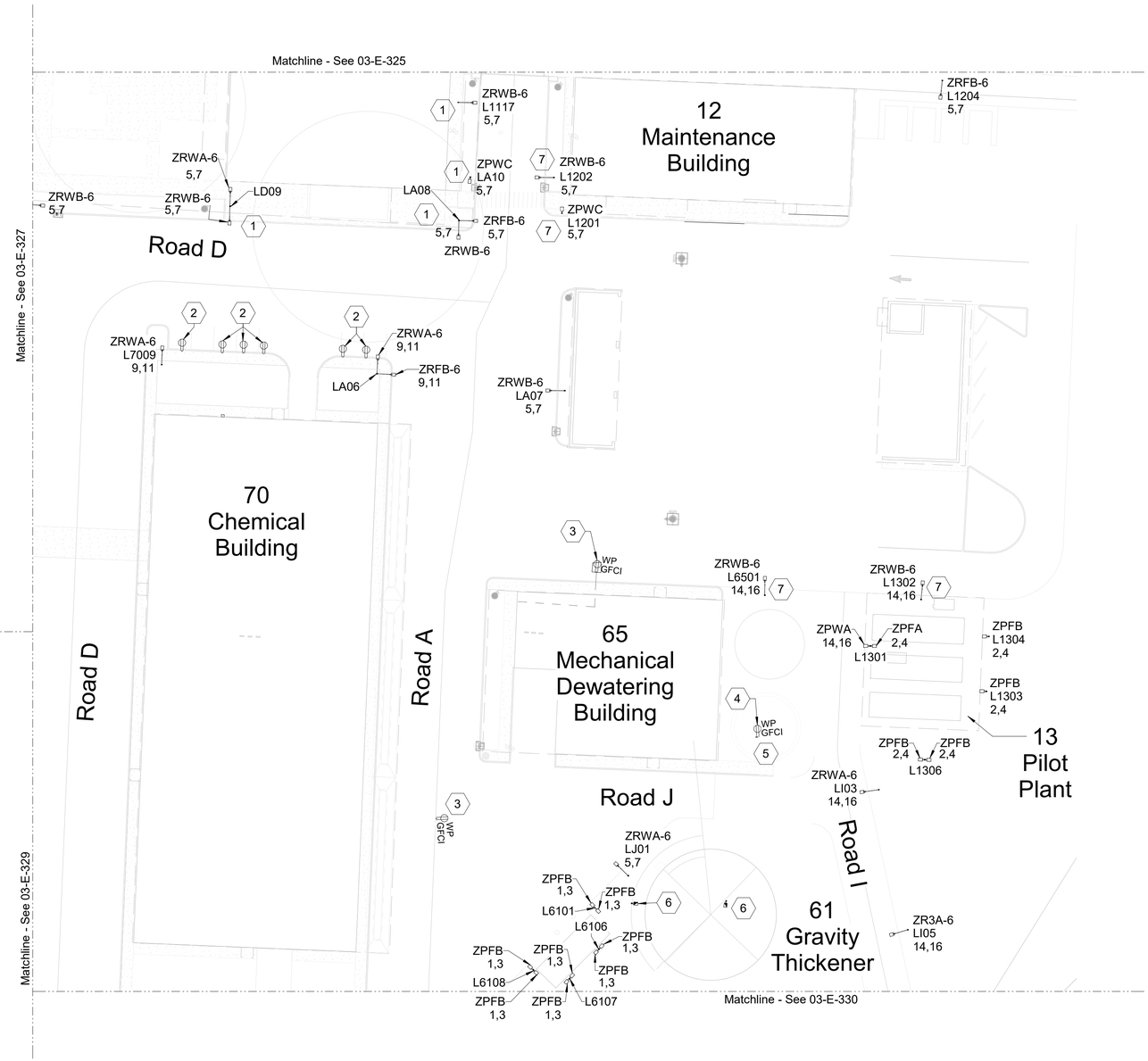
SAP Project No W02229

1/4 Section 3765 / 3766

Sheet No 03-E-327

of

Site North



Lighting & Receptacle Plan - Grid 6

SCALE: 1" = 30'-0"

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from the building 15 panel.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting.
4. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-339 for Lighting Control Plan.
5. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.
6. Task light pole fixtures in area 13, 61 and 51 are circuited to area 65 panel.

Sheet Keynotes

1. This fixture is within LEED boundary. It is circuited to the panel in building 11.
2. Provide and install dedicated receptacles for cart charger. Refer to area specific plans for circuiting.
3. Provide and install a receptacle in the metering vault. Provide with weatherproof and gfci features. Refer to area specific plans for circuiting.
4. Provide and install the dedicated receptacle for 65 tank dewatering pump. See area 65 plans for circuiting.
5. See Area 65 plans for lighting and circuiting information on 65 tank dewatering pump.
6. See Area 61 plans for pole, light fixture, and circuiting information.
7. The light pole is circuited to area 15 panel, FF15-DP-1001.

PRELIMINARY NOT FOR CONSTRUCTION

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
		Revision	
Survey		-	

Stantec
ELCON ASSOCIATES, INC.

Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning
0 ½ 1
If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU
FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER
84324
OREGON
JULY 22, 2005
JAMES ARNTZEN
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

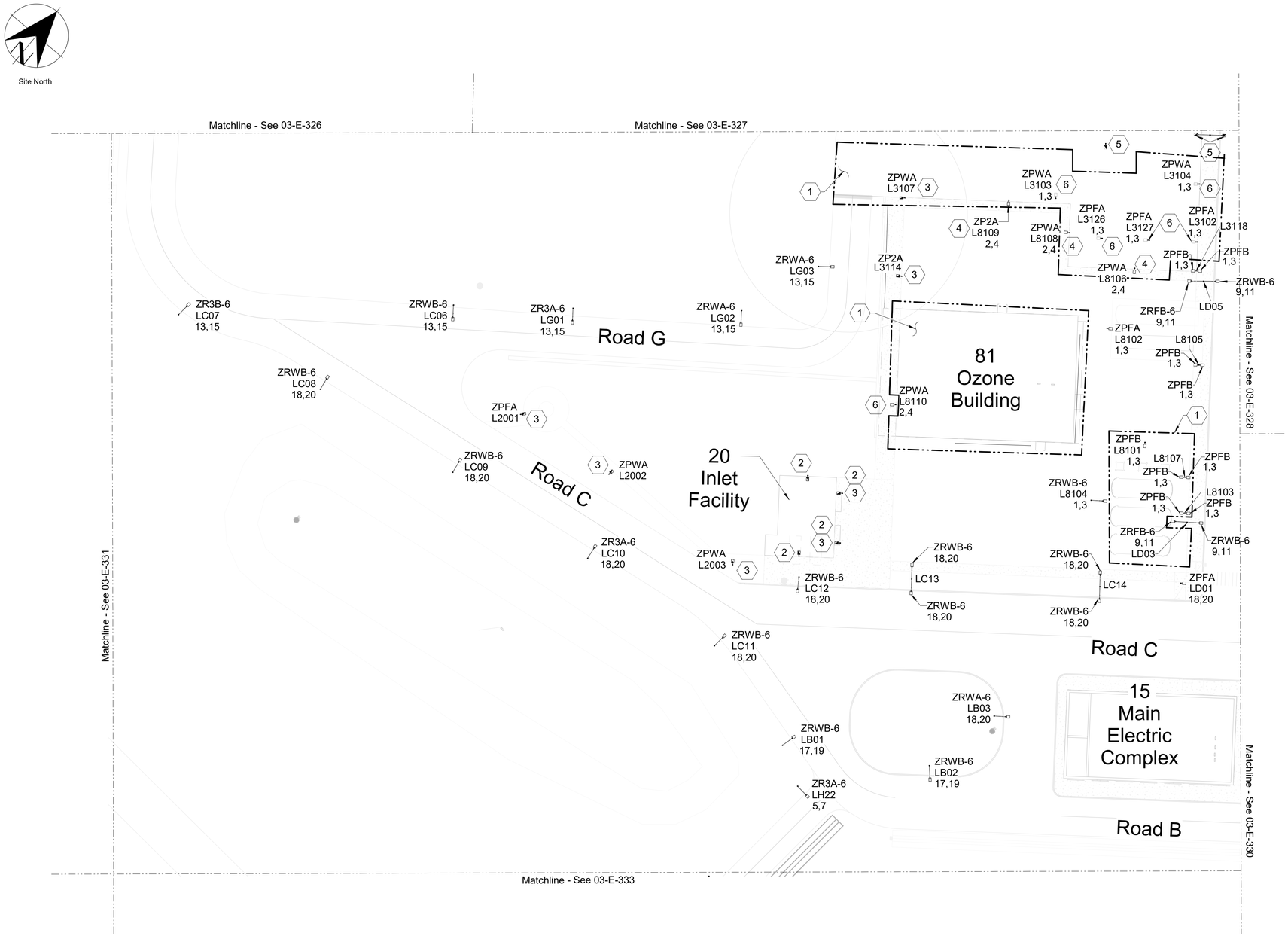
CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 6

SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
03-E-328
of



General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from the building 15 panel.
2. Area 20 fixtures are powered from the panels in building 31.
3. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
4. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting.
5. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-340 for Lighting Control Plan.
6. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. Work in this area to be performed under Bid Alternate except as noted. See specification section 01_23_00 Alternates.
2. See Area 20 plan for pole, light fixture, and circuit information.
3. Fixture is circuited to the emergency panel in building 31; FF31-ELP-1001, CKT # 22.
4. Fixture is circuited to the panel in building 81.
5. See Area 31 plans for fixture, pole, circuiting information.
6. The pole fixture is circuited to area 31 panel, FF31-DP-1001.

Lighting & Receptacle Plan - Grid 7

SCALE: 1" = 30'-0"

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG
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ELCON ASSOCIATES, INC.

Designed By	MJK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

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PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 22, 2005 DAVID JAMES PETERS

RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 7

SAP Project No	W02229
1/4 Section	3765 / 3766
Sheet No	03-E-329
of	

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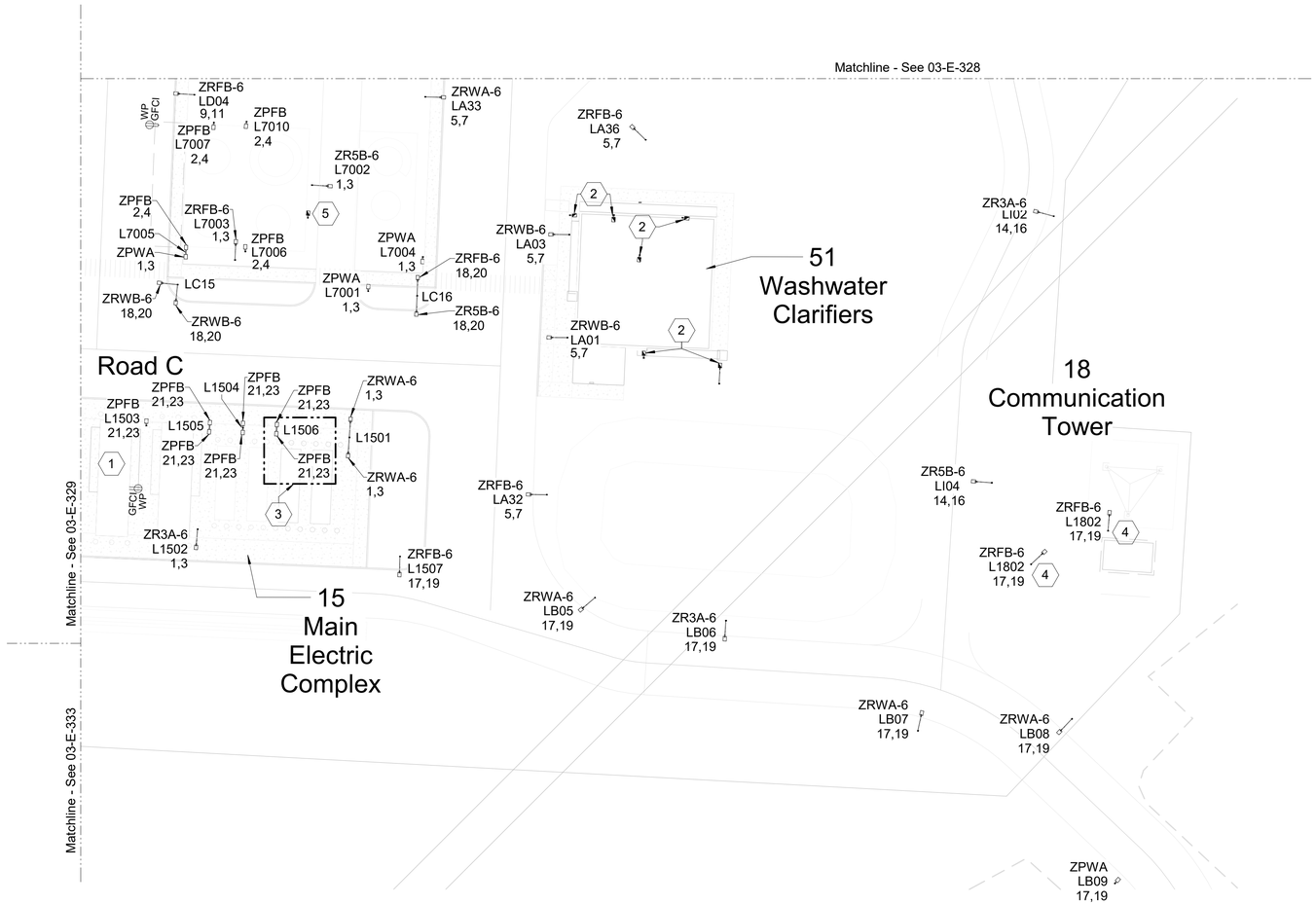
Site North



Lighting & Receptacle Plan - Grid 8

SCALE: 1" = 30'-0"

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from the building 15 panel.
2. 480V pedestrian and roadway lightpoles with the area name tag are powered from the building feeding the area unless otherwise noted.
3. Light pole fixture with the emergency symbol is circuited to 120V emergency panel in the building feeding power to that area. Refer to area specific plans for circuiting.
4. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-341 for Lighting Control Plan.
5. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Sheet Keynotes

1. Generator enclosure exterior wallpacks and receptacle to be provided by generator manufacturer.
2. See Area 51 plan for pole, light fixture, and circuiting information.
3. Provide and install the light pole with fixtures under Bid Alternate except as noted. See specification section 01_23_00 Alternates.
4. The light pole is circuited to area 15 panel, FF15-DP-1001.
5. See Area 70 plan for pole, light fixture, and circuiting information.

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Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

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DAVID W. JAMES PETERS
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 8

SAP Project No
W02229
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3765 / 3766
Sheet No
03-E-330
of

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Site North

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 16.
2. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-342 for Lighting Control Plan.
3. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Lighting & Receptacle Plan - Grid 9

SCALE: 1" = 30'-0"

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Project Mgr	MRG	Date	09/02/22

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RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 9

SAP Project No
W02229

1/4 Section
3765 / 3766

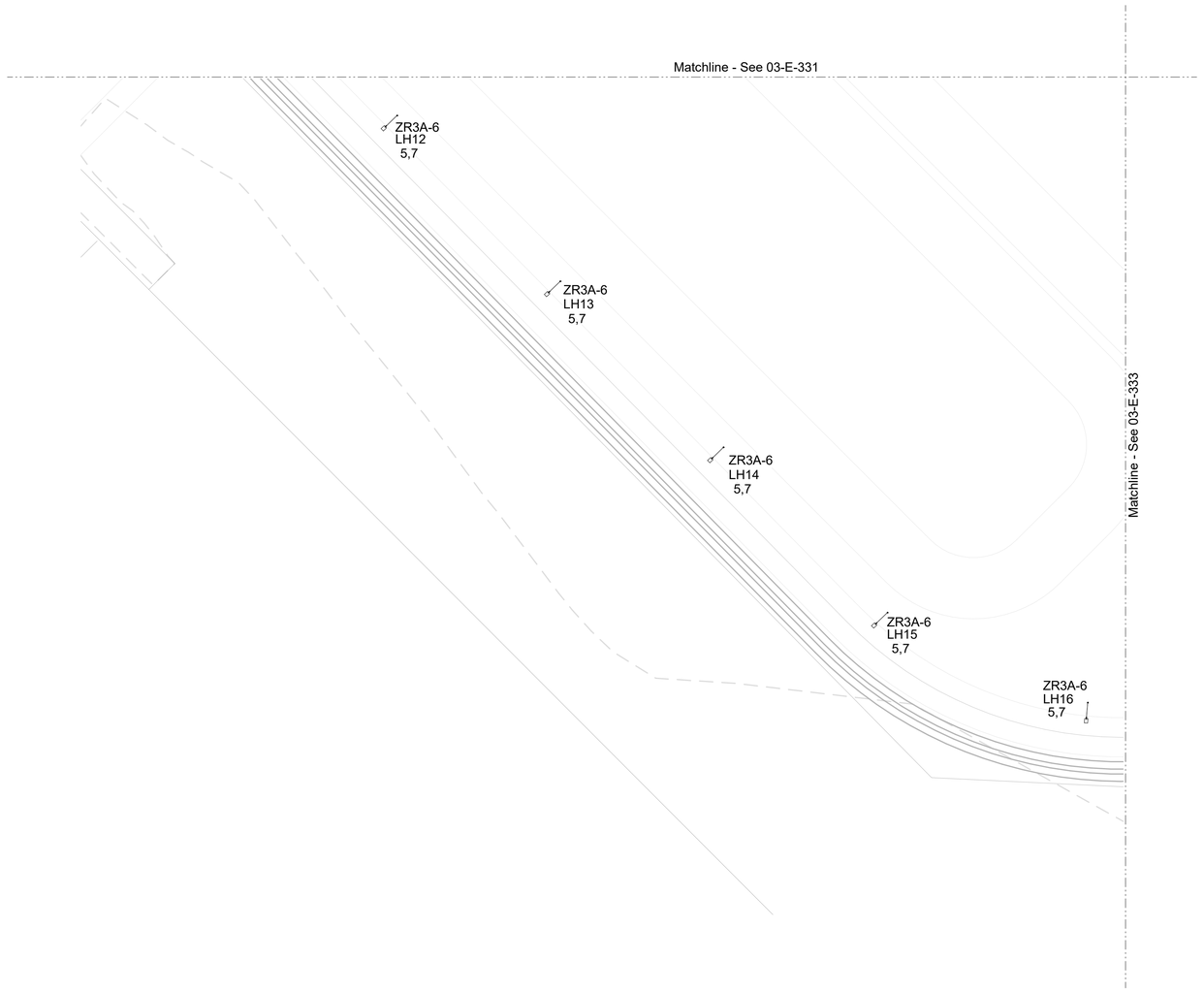
Sheet No
03-E-331

of

Site North

General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 16.
2. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-343 for Lighting Control Plan.
3. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.



Lighting & Receptacle Plan - Grid 10

SCALE: 1" = 30'-0"

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Designed By	MOK	Program Mgr	DWP
Drawn By	AMH	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

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REGISTERED PROFESSIONAL ENGINEER
84324
OREGON
JANUARY 22, 2013
DAVID W. JAMES PETERS
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 10

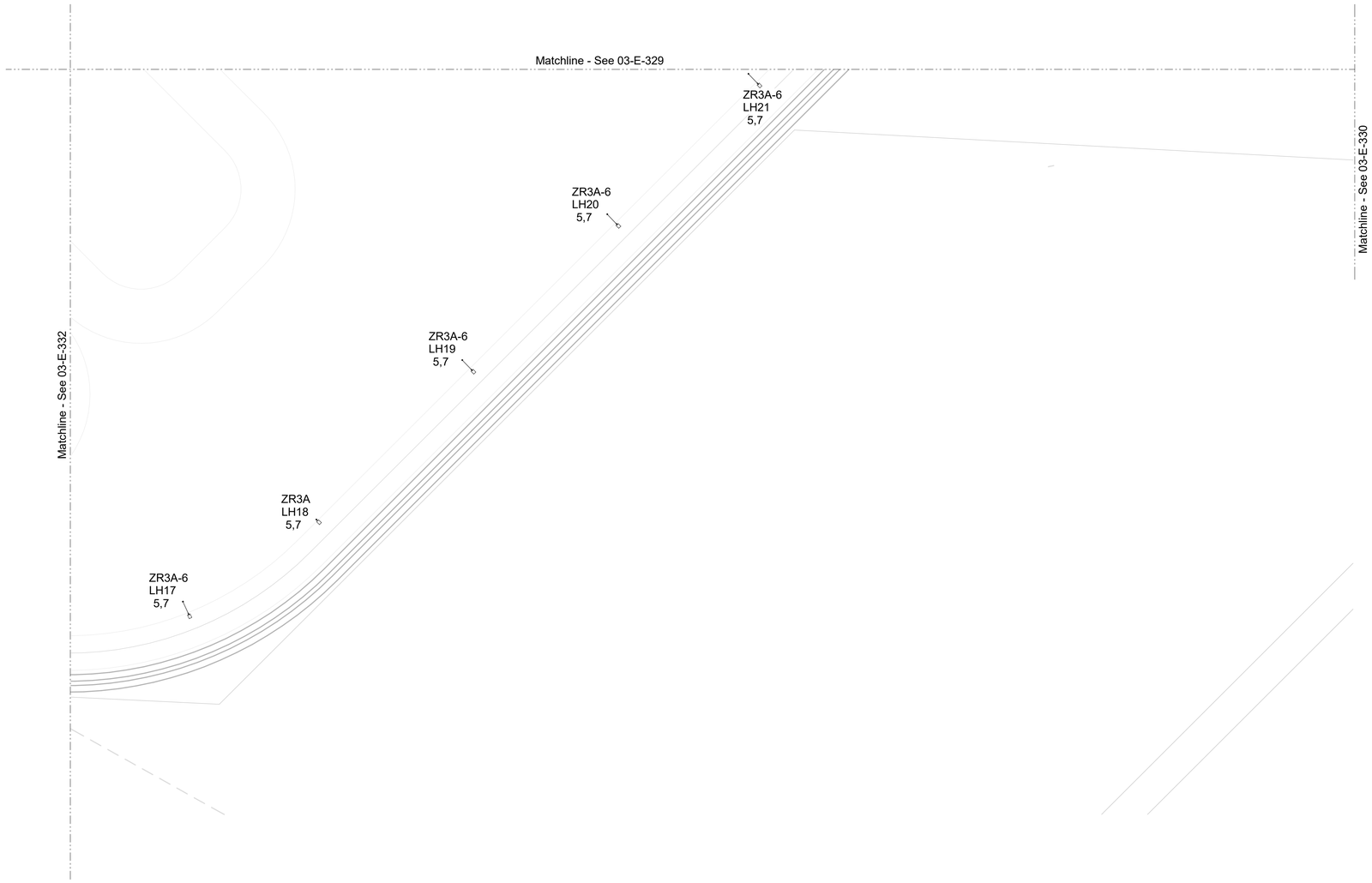
SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
03-E-332

of

Site North



General Sheet Notes

1. 480V roadway lightpoles with the road name tag shown on this sheet are powered from building 16.
2. See sheet GEN-E-142 for Lighting Controls and Controlled Receptacles Schedule and 03-E-344 for Lighting Control Plan.
3. See sheets GEN-E-140 and GEN-E-141 for Luminaire Schedule.

Lighting & Receptacle Plan - Grid 11

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Project Mgr	MRG	Date	09/02/22

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REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 22, 2005 DAVID JAMES PETERS

RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

Site Lighting
Lighting & Receptacle Plan
Grid 11

SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
03-E-333

of

Lighting Fixture Schedule - 1

Type	Voltage	Input Power	Description	Color Temp	CRI	Delivered Lumens	Lumens Per Watt	B-U-G Rating	Finish	Mounting	Manufacturer	Series
D1	120V	13 VA	3" square recessed downlight, die-cast aluminum frame and body, flanged trim, 60deg beam spread, 0-10V 1% dimming driver.	3500	80	1100	85	N/A	White	Recessed	Zaniboni	Luna 3 AQ
D2	120V	9 VA	3" square recessed downlight, die-cast aluminum frame and body, flanged trim, 60deg beam spread, 0-10V 1% dimming driver.	3500	80	800	89	N/A	White	Recessed	Zaniboni	Luna 3 AQ
D3	120V	35 VA	5" round dead front shower downlight. Rustproof and gasketed trim assembly, white polycarbonate trim and lens, aluminum housing, 0-10V 1% dimming driver, wide beam distribution.	3500	80	1100	31	N/A	White	Recessed	Kirlin	LRR
HB1	120V	82 VA	1'x2' Linear high bay pendant, aluminum body with steel channel, DLC listed, frosted acrylic IP5X rated lens, wide distribution, 10% 0-10V dimming driver.	4000	80	11500	140	N/A	Arch to select from std finishes	Pendant	ILP	EDV
HB1D	120V	82 VA	Same as HB1 except with integral photocell.	4000	80	11500	140	N/A	Arch to select from std finishes	Pendant	ILP	EDV
HB2	120V	104 VA	1'x2' Linear high bay pendant, aluminum body with steel channel, DLC listed, frosted acrylic IP5X rated lens, wide distribution, 10% 0-10V dimming driver.	4000	80	14900	143	N/A	Arch to select from std finishes	Pendant	ILP	EDV
HB2D	120V	104 VA	Same as HB2 except with integral photocell.	4000	80	14900	143	N/A	Arch to select from std finishes	Pendant	ILP	EDV
HB3	120V	80 VA	1'x2' Vapor tight high bay pendant, fiberglass body, F1 weatherability rating, 1500 psi high pressure hosedown, 5VA flame rating, IP65, IPip66, IP69 rated, DLC rated, frosted acrylic lens, wide distribution, 10% 0-10V dimming driver.	4000	80	12500	156	N/A	Arch to select from std finishes	Pendant	ILP	BL
HB4	120V	51 VA	1'x2' Linear high bay pendant, aluminum body with steel channel, DLC listed, frosted acrylic IP5X rated lens, wide distribution, 10% 0-10V dimming driver.	4000	80	7527	148	N/A	Arch to select from std finishes	Pendant	ILP	EDV
HB4D	120V	51 VA	Same as HB1 except with integral photocell.	4000	80	7527	148	N/A	Arch to select from std finishes	Pendant	ILP	EDV
L1	120V	5 VA	3" Recessed linear, high output, extruded aluminum trim with formed cold rolled 18-gauge steel back box housing, white painted steel reflector, satine acrylic high efficiency lens, powder coated trim, 0-10V 1% dimming driver. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	750	144	N/A	White	Recessed	Pinnacle	EV3D
L2	120V	4 VA	3" Recessed linear, standard output, extruded aluminum trim with formed cold rolled 18-gauge steel back box housing, white painted steel reflector, satine acrylic high efficiency lens, powder coated trim, 0-10V 1% dimming driver. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	500	143	N/A	White	Recessed	Pinnacle	EV3D
L3	120V	10 VA	3" Direct-indirect linear pendant, high output direct, standard output indirect, 6063-T6 extruded aluminum housing, die-formed white painted reflector, acrylic lens, powder coat finish, 0-10V 1% dimming driver, batwing distributions. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	1250	128	N/A	Arch to select from std finishes	Pendant	Pinnacle	EX3D
L4	120V	5 VA	3" Linear pendant, high output, 6063-T6 extruded aluminum housing, die-formed white painted reflector, acrylic lens, powder coat finish, 0-10V 1% dimming driver, batwing distribution. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	750	144	N/A	Arch to select from std finishes	Pendant	Pinnacle	EX3D
L5	120V	4 VA	3" Linear pendant, standard output, 6063-T6 extruded aluminum housing, die-formed white painted reflector, acrylic lens, powder coat finish, 0-10V 1% dimming driver, batwing distribution. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	500	122	N/A	Arch to select from std finishes	Pendant	Pinnacle	EX3D
L6H	120V	10 VA	3" Direct-indirect linear pendant, high output direct, standard output indirect, 6063-T6 extruded aluminum housing, die-formed white painted reflector, acrylic lens, powder coat finish, 0-10V 1% dimming driver, asymmetric distribution direct, batwing distribution indirect. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	1250	130	N/A	Arch to select from std finishes	Pendant	Pinnacle	EX3D
L6L	120V	8 VA	3" Direct-indirect linear pendant, standard output direct, standard output indirect, 6063-T6 extruded aluminum housing, die-formed white painted reflector, acrylic lens, powder coat finish, 0-10V 1% dimming driver, asymmetric distribution direct, batwing distribution indirect. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	1000	128	N/A	Arch to selec from std finishes	Pendant	Pinnacle	EX3D
L7	120V	33 VA	4' Linear striplight, steel construction, frosted acrylic lens, DLC listed, 0-10V 10% dimming driver. Integral motion sensor where required. See Lighting Control Schedule.	4000	80	4300	130	N/A	Factory Standard	Pendant/Surface/Wall	ILP	FZ
L7D	120V	33 VA	Same as L7 except with integral photocell. Additional integral motion sensor where required. See Lighting Control Schedule.	4000	80	4300	130	N/A	Factory Standard	Pendant/Surface/Wall	ILP	FZ
L8	120V	54 VA	4' Linear striplight, steel construction, frosted acrylic lens, DLC listed, 0-10V 10% dimming driver. Integral motion sensor where required. See Lighting Control Schedule.	4000	80	7300	135	N/A	Factory Standard	Pendant/Surface/Wall	ILP	FZ
L8D	120V	54 VA	Same as L8 except with integral photocell. Additional integral motion sensor where required. See Lighting Control Schedule.	4000	80	7300	135	N/A	Factory Standard	Pendant/Surface/Wall	ILP	FZ
L9	120V	38 VA	48" Linear vapor tight, fiberglass body with 51 weatherability rating & 5VA flame rating, IP67, NEMA4x, & 1500 PSI Hosedown, ETL listed for wet location, DLC listed, shallow acrylic frosted lens, 0-10V 10% dimming driver.	4000	80	5100	134	N/A	Factory Standard		ILP	
L10	120V	6 VA	3" Led linear wall wash, standard output, extruded aluminum flanged trim with formed cold rolled 20 gauge steel back box housing, die-formed white painted steel reflector, diffuse acrylic lens, powder-coat textured finish, 0-10v 1% dimming driver, wall wash distribution. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	343	57	N/A	White	Recessed	Pinnacle	EV3WW
L11	120V	10 VA	3" Led linear wall wash, high output, extruded aluminum flanged trim with formed cold rolled 20 gauge steel back box housing, die-formed white painted steel reflector, diffuse acrylic lens, powder-coat textured finish, 0-10V 1% dimming driver, wall wash distribution. Wattage and lumens listed is per foot. See plans for fixture lengths.	3500	80	534	52	N/A	White	Recessed	Pinnacle	EV3WW
LP1	120V	45 VA	2'x4' Flat lens volumetric troffer, lightweight aluminum body, impact & scratch resistant PMMA frosted acrylic lens, 0-10v 1% dimming driver.	4000	80	4800	107	N/A	White	Recessed	ILP	FLT
LP1D	120V	45 VA	2'x4' Flat lens volumetric troffer, lightweight aluminum body, impact & scratch resistant PMMA frosted acrylic lens, integral photocell, 0-10v 1% dimming driver.	4000	80	4800	107	N/A	White	Recessed	ILP	FLT
LP2	120V	30 VA	2'x2' flat lens volumetric troffer, lightweight aluminum body, impact & scratch resistant PMMA frosted acrylic lens, 0-10V 1% dimming driver.	4000	80	3500	117	N/A	White	Recessed	ILP	FLT
LP2D	120V	30 VA	2'x2' flat lens volumetric troffer, lightweight aluminum body, impact & scratch resistant PMMA frosted acrylic lens, integral photocell, 0-10V 1% dimming driver.	4000	80	3500	117	N/A	White	Recessed	ILP	FLT
P1	120V	3 VA	2.5" Dia round cylinder pendant, die-cast aluminum body, 60deg beam spread, solite lens, 0-10V 1% dimming driver integral to canopy.	3500	80	370	123	N/A	Arch to select from std finishes	Pendant	Zaniboni	
P2	120V	154 VA	6'x6'x3" Linear square direct-indirect pendant, medium output direct, low output direct, one-piece heavy gauge 6063 extruded aluminum housing, microstructure edge tech optics, batwing distributions, 0-10V 1% dimming integral driver.	3500	80	18600	121	N/A	Arch to select from std finishes	Pendant	Extant	Huntington 3
P3	120V	17 VA	24" Direct round led pendant, low output, rolled and welded aluminum housing, dire-formed white painted steel reflector, single piece flush satine lens, powder-coat textured finish, 0-10v dimming driver.	3500	80	1800	108	N/A	Arch to select from std finishes	Pendant	Pinnacle	Fina F24D
P4	120V	12 VA	18" Direct round led pendant, low output, rolled and welded aluminum housing, dire-formed white painted steel reflector, single piece flush satine lens, powder-coat textured finish, 0-10V dimming driver.	3500	80	1300	107	N/A	Arch to select from std finishes	Pendant	Pinnacle	Fina F18D
R1	120V	9 VA	14" Recessed direct architectural round pendant, low output, extruded aluminum housing, highly reflective die-formed white painted steel reflector, flush satine lens, flanged trim, 0-10V 1% dimming driver.	80	80	800	88	N/A	Arch to select from std finishes		Pinnacle	Fina F14D
R2	120V	17 VA	24" Recessed direct architectural round pendant, low output, extruded aluminum housing, highly reflective die-formed white painted steel reflector, flush satine lens, flanged trim, 0-10V 1% dimming driver.	3500	80	1800	108	N/A	White	Recessed	Pinnacle	Fina F24D
R3	120V	44 VA	36" Recessed direct architectural round pendant, low output, extruded aluminum housing, highly reflective die-formed white painted steel reflector, flush satine lens, flanged trim, 0-10V 1% dimming driver.	3500	80	4800	109	N/A	Arch to select from std finishes	Recessed	Pinnacle	Fina F36D
UC1	120V	8 VA	18" Surface mount undercabinet light, extruded aluminum low profile housing, integral pir sensor, 5% ELV dimming.	3500	90	440	54	N/A	Arch to select from std finishes	Surface	Halo	HU30
UC2	120V	4 VA	9" Surface mount undercabinet light, extruded aluminum low profile housing, integral pir sensor, 5% ELV dimming.	3500	90	220	59	N/A	Arch to select from std finishes	Surface	Halo	HU30
W1	120V	18 VA	24" Wall mount vanity, high output, heavy gauge extruded aluminum, impact resistant co-extruded frosted white lens, 0-10V 1% dimming driver.	3500	80	1900	106	N/A	Arch to select from std finishes	Wall Mount	Birchwood	NOL-LED
WA1D	120V	129 VA	Wall pack, die-cast aluminum heat sink, patented high-efficiency injection-molded Acculed optics, TGIC polyester powder coat paint, 0-10V dimming driver, Type 4 forward throw distribution.	4000	70	16200	126	B2-U0-G3	Arch to select from std finishes	Wall	McGraw-Edison	GWC
X1B	120V	1 VA	Illuminated Exit Sign, aluminum housing, high impact acrylic panel, single & double sided lenses included, clear, mirror, & white insert included, field installed and NFPA 101 compliant chevron directional indicators, 6" red letters.						Brushed Aluminum	Back Mounted	Cooper AtLite	AUX
X1S	120V	1 VA	Illuminated Exit Sign, aluminum housing, high impact acrylic panel, single & double sided lenses included, clear, mirror, & white insert included, field installed and NFPA 101 compliant chevron directional indicators, 6" red letters.						Brushed Aluminum	Side Mounted	Cooper AtLite	AUX
ZA1	120V	21 VA	Adjustable accent, nominal 12.6" long x 3.6" dia, cylindrical die cast aluminum housing, 20 degree 50% beamspread, 9500 max candela, 180 degree tilt, 0-10v dimming capability, integral driver, 45 degree angle cut cap, softening lens, IP66 wet location rated, thermoset powder coat finish. See lighting drawings for number of heads on pole.	3000	80	1300	62	N/A	Arch to select from std finishes	Pole	Hydrel	SAF1 (fixture) AMHM (mount) AMPC (pole clamp)
ZC1	120V	28 VA	18" Diameter led pendant, die-cast aluminum housing, integral motion sensor and photocell for bi-level switching, solite glass lens, powder coat finish, 0-10v dimming driver, concentrated type CQ distribution, integral wavelinx wireless sensor, bird guard, pendant stem with 30 degree hang straight swivel at canopy, contractor to specify quantity and location of threaded taps on j-boxes.	3000	80	3400	121	B1-U0-G1	Arch to select from std finishes	Pendant	Mcgraw-Edison (fixture) HK Lighting (j-box)	Top Tier (fixture) CCB5.3 (j-box)

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ELCON ASSOCIATES, INC.

Designed By	MOK/AMP	Program Mgr	DWP
Drawn By	RK	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

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REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 22, 2005 JAMES ARNTSEN
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

General
Lighting Schedule - 1

SAP Project No
W02229
1/4 Section
3765 / 3766
Sheet No
GEN-E-140
of

Lighting Fixture Schedule - 2

Type	Voltage	Input Power	Description	Color Temp	CRI	Delivered Lumens	Lumens Per Watt	B-U-G Rating	Finish	Mounting	Manufacturer	Series
ZC1H	120V	75 VA	18" Diameter led pendant, die-cast aluminum housing, integral motion sensor and photocell for bi-level switching, solite glass lens, powder coat finish, 0-10v dimming driver, concentrated type CQ distribution, integral wavelinx wireless sensor, bird guard, pendant stem with 30 degree hang straight swivel at canopy, contractor to specify quantity and location of threaded taps on j-boxes.	3000	80	8300	111	B3-U0-G1	Arch to select from std finishes	Pendant	Mcgraw-Edison (fixture) HK Lighting (j-box)	Top Tier (fixture) CCB5.3 (j-box)
ZC2	120V	11 VA	4" Shallow square downlight, 2.75" max depth above ceiling, UL wet listed, rustproof acrylic enameled aluminum housing, white self-flanged regressed trim with clear microprismatic lens, 0-10V 1% dimming driver, wide 65 degree 50% beam distribution.	3000	80	1000	91	B2-U0-G0	Arch to select from std finishes	Recessed	Kirlin	LRC-04SDN
ZC4H	120V	36 VA	Exterior 4' linear direct fixture, heavy gauge 4" square extruded aluminum housing, frosted white impact resistant extruded lens, UL listed for wet locations, 0-10v dimming drive. Provide bird spikes on top surface of fixture.	3000	80	2800	78	B1-U0-G1	Arch to select from std finishes	Cable Suspension	Birchwood	VAN-LED-400
ZC4M	120V	36 VA	Exterior 4' linear direct fixture, heavy gauge 4" square extruded aluminum housing, frosted white impact resistant extruded lens, powder coat finish, UL listed for wet locations, 0-10v dimming driver, provide bird spikes on top surface of fixture.	3000	80	2800	78	B1-U0-G1	Arch to select from std finishes	Mullion / Side mount	Birchwood	VAN-LED-400
ZC4S	120V	36 VA	Exterior 4' linear direct fixture, heavy gauge 4" square extruded aluminum housing, frosted white impact resistant extruded lens, powder coat finish, UL listed for wet locations, 0-10v dimming driver.	3000	80	2800	78	B1-U0-G1	Arch to select from std finishes	Mullion / Side mount	Birchwood	VAN-LED-400
ZD2F	120V	10 VA	Exterior decorative door light, nominal 9" wide x 8" tall x 5.5" deep die cast aluminum housing, thermoset powder coat finish, wedge profile, non-pixelated light source, forward throw beamspread, UL listed for wet locations, 0-10v dimming capability, full cutoff. Provide back box option as needed for surface mounted conduit connection.	3000	80	1100	110	B0-U0-G0	Arch to select from std finishes	Wall	Lithonia	WDGE1
ZD2W	120V	10 VA	Exterior decorative door light, nominal 9" wide x 8" tall x 5.5" deep die cast aluminum housing, thermoset powder coat finish, wedge profile, non-pixelated light source, wide beamspread, UL listed for wet locations, 0-10v dimming capability, full cutoff. Provide back box option as needed for surface mounted conduit connection.	3000	80	1100	110	B0-U0-G0	Arch to select from std finishes	Wall	Lithonia	WDGE1
ZD3	120V	15 VA	Exterior ADA door light, nominal 11-7/8" wide x 4-3/8" tall x 3-3/8" deep die cast aluminum housing, convex arc top profile, matte safety glass lens, Type 2 very short distribution, UL listed for wet locations, 0-10v dimming driver, nominal 85 degree 50% beamspread, full cutoff.	3000	80	1050	70	B1-U0-G0	Arch to select from std finishes	Wall	Bega	24374
ZEP2	120V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10V dimming driver, Type 2 with spill control distribution, quick mount 5" arm.	3000	80	3200	94	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZEPC	120V	17 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10V dimming driver, Type 4 wide distribution, modified lumen output, quick mount 5" arm.	3000	80	1400	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZEPF	120V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10V dimming driver, Type 4 forward throw distribution, quick mount 5" arm.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZEPG	120V	44 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 forward throw distribution, quick mount 5" arm.	3000	80	3400	77	B1-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZEPW	120V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, quick mount 5" arm.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZERW-6	120V	44 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, 6 ft steel mast arm.	3000	80	3300	75	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZF1	120V	52 VA	Exterior floodlight, nominal 17" long x 10.35" wide x 4" deep extruded aluminum housing, 0-90 degree tilt, trunnion mount bracket, UV stable clear polycarb lens, powder coat finish, 0-10V dimming driver, 7-pin NEMA receptacle, type 4 beamspread, nominal 0.58 EPA at 0 degree tilt above nadir, full cutoff aiming angle.	3000	70	8100	156		Arch to select from std finishes	Surface / Eaves	Linmore LED	LL-SL1
ZP2A	480V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 2 with spill control distribution, quick mount 5" arm.	3000	80	3200	94	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZP2C	480V	17 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 2 with spill control distribution, modified lumen output, quick mount 5" arm.	3000	80	1600	94	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZPFA	480V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 forward throw distribution, quick mount 5" arm.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZPFB	480V	44 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 forward throw distribution, quick mount 5" arm.	3000	80	3400	77	B1-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZPWA	480V	34 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, quick mount 5" arm.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZPWC	480V	17 VA	Exterior pedestrian light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral outdoor control module and wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, modified lumen output, quick mount 5" arm.	3000	80	1400	82	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GPC
ZR3A	480V	33 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 3R roadway distribution, quick mount 9" arm.	3000	80	2800	85	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZR3A-6	480V	33 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 3R roadway distribution, 6 ft steel mast arm.	3000	80	2800	85	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZR3B-6	480V	44 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 3R roadway distribution, 6 ft steel mast arm.	3000	80	3500	80	B1-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZR5B-6	480V	44 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 5 wide distribution, 6 ft steel mast arm.	3000	80	4700	107	B3-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZRFB-6	480V	44 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 forward throw distribution, 6 ft steel mast arm.	3000	80	3200	73	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZRWA-6	480V	33 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, 6 ft steel mast arm.	3000	80	2800	85	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZRWB-6	480V	44 VA	Exterior area light, die-cast aluminum housing and heat sink, houseside shield, 7-pin nema receptacle, integral wireless sensor, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10v dimming driver, Type 4 wide distribution, 6 ft steel mast arm.	3000	80	3300	75	B0-U0-G1	Arch to select from std finishes	Pole / Arm	McGraw-Edison	GALN
ZS1	120V	22 VA	Submersible floodlight, 316 marine grade stainless steel housing, 300 degree tilt, fully sealed and gasketed, IP68 at 10m/32.8 ft, powered by remote 100 watt transformer in stainless steel nema 3r housing (1 fixture per transformer), 20x40 degree horizontal 50% beamspread. See lighting details for fixture mounting to column/winch assembly to adjust mounting height. See lighting details for transformer mounting.	4300	80	1100	50	N/A	Arch to select from std finishes	Custom Column / Winch (fixture), Rail (Transformer)	Lumascape	LS365LED (fixture) LS-TSS-100 (Transformer)
ZWFA	120V	34 VA	Exterior wall pack, die-cast aluminum housing and heat sink, houseside shield, integral motion sensor and photocell for bi-level switching, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10V dimming driver, Type 4 forward throw distribution.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Wall	McGraw-Edison	GWC
ZWFB	120V	44 VA	Exterior wall pack, die-cast aluminum heat sink, patented high-efficiency injection-molded Acculed optics, TGIC polyester powder coat paint, 0-10V dimming driver, Type 4 forward throw distribution.	3000	80	3400	77	B1-U0-G1	Arch to select from std finishes	Wall	McGraw-Edison	GWC
ZWWA	120V	34 VA	Exterior wall pack, die-cast aluminum heat sink, patented high-efficiency injection-molded Acculed optics, TGIC polyester powder coat paint, 0-10V dimming driver, Type 4 wide distribution.	3000	80	2800	82	B0-U0-G1	Arch to select from std finishes	Wall	McGraw-Edison	GWC
ZWWB	120V	44 VA	Exterior wall pack, die-cast aluminum housing and heat sink, houseside shield, 7-pin Nema receptacle, integral motion sensor and photocell for bi-level switching, patented high-efficiency injection molded Acculed optics, TGIC polyester powder coat finish, 0-10V dimming driver, Type 4 wide distribution.	3000	80	3500	80	B0-U0-G1	Arch to selec from std finishes	Wall	McGraw-Edison	GWC

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No	Date	Description	Appd
C	09/2022	Second Intermediate Design and BCOE Review - 90% Submittal	MRG
B	01/2022	Intermediate Design - 60% Submittal	MRG
A	07/2021	Initial Design - 30% Submittal	MRG

Revision

Survey - -

Stantec

ELCON ASSOCIATES, INC.

Designed By	MOK/AMP	Program Mgr	DWP
Drawn By	RK	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

Warning

0 ½ 1

If this bar does not measure 1" then the drawing is not to scale

PORTLAND WATER BUREAU

FROM FOREST TO FAUCET

REGISTERED PROFESSIONAL ENGINEER 84324 OREGON JULY 22, 2005 JAMES ANTON

RENEWS: 12/31/23

Preliminary

David W. Peters, Principal Engineer, PE No 16683

Date

CITY OF PORTLAND OREGON 1851

Bull Run Filtration Facility

Electrical

General

Lighting Schedule - 2

SAP Project No W02229

1/4 Section 3765 / 3766

Sheet No GEN-E-141

of

Lighting Fixture Schedule - 3

Type	Voltage	Input Power	Description	Color Temp	CRI	Delivered Lumens	Lumens Per Watt	B-U-G Rating	Finish	Mounting	Manufacturer	Series
ZX1B	120V	1 VA	Exterior exit sign, single-face, pvc frame, polycarbonate faceplate, heavy aluminum backplate, white with green letters, field selectable chevrons, UL listed for wet locations, back mounted.						Arch to select from std finishes	Back Mounted	Emergi-lite	SVX
ZX1P	120V	1 VA	Exterior exit sign, single-face, pvc frame, polycarbonate faceplate, heavy aluminum backplate, white with green letters, field selectable chevrons, UL listed for wet locations, pendant mounted.						Arch to select from std finishes	Pendant	Emergi-lite	SVX
ZX1S	120V	1 VA	Exterior exit sign, single-face, pvc frame, polycarbonate faceplate, heavy aluminum backplate, white with green letters, field selectable chevrons, UL listed for wet locations, side mounted.						Arch to select from std finishes	Side Mounted	Emergi-lite	SVX
ZX2P	120V	1 VA	Exterior exit sign, double-face, pvc frame, polycarbonate faceplate, heavy aluminum backplate, white with green letters, field selectable chevrons, UL listed for wet locations, pendant mounted.						Arch to select from std finishes	Pendant	Emergi-lite	SVX
ZX2S	120V	1 VA	Exterior exit sign, double-face, pvc frame, polycarbonate faceplate, heavy aluminum backplate, white with green letters, field selectable chevrons, UL listed for wet locations, side mounted.						Arch to select from std finishes	Side Mounted	Emergi-lite	SVX

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No	Date	Description	Appd
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Revision

Survey | - |

Stantec

ELCON ASSOCIATES, INC.

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Drawn By	RK	Const Mgr	TG
Checked By	TJA	Const Supvr	RM
Project Mgr	MRG	Date	09/02/22

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REGISTERED PROFESSIONAL ENGINEER
84324
OREGON
JANUARY 22, 2013
JANUARY JAMES ABRAHA
RENEWS: 12/31/23
Preliminary

David W. Peters, Principal Engineer, PE No 16683

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CITY OF PORTLAND, OREGON 1851

Bull Run Filtration Facility

Electrical

General
Lighting Schedule - 3

SAP Project No
W02229

1/4 Section
3765 / 3766

Sheet No
GEN-E-142

of