PLANNING DEPARTMENT
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Milwaukie OR 97206

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Application for Land Use Action

Master File #: _____

Review type*: ❑ I ❑ II ❑ III ❑ IV ❑ V

CHOOSE APPLICATION TYPE(S):

Development Review

Natural Resource Review

...

...

...

Use separate application forms for:

- Annexation and/or Boundary Change
- Compensation for Reduction in Property Value (Measure 37)
- Daily Display Sign
- Appeal

RESPONSIBLE PARTIES:

APPLICANT (owner or other eligible applicant—see reverse): Day Wireless Systems c/o Day Management Corporation

Mailing address: ATTN: Suvi Wesa, 4620 SE International Way, Milwaukie OR Zip: 97222

Phone(s): 503 343-7002 E-mail: swesa@daywireless.com

APPLICANT'S REPRESENTATIVE (if different than above): Mackenzie

Mailing address: ATTN: Lee Leighton, 1515 SW Water Ave #100, Portland OR Zip: 97214

Phone(s): 503 224-9560 E-mail: lleighton@mcknze.com

SITE INFORMATION:

Address: 11405 SE 37th Avenue, Milwaukie, OR 97222 Map & Tax Lot(s): 1 1E 36AD 07200

Comprehensive Plan Designation: I Zoning: BI Size of property: 1.05 Acres

PROPOSAL (describe briefly):

Industrial tools warehouse, sales, repair and management offices in a single 12,300 square foot building.

SIGNATURE:

ATTEST: I am the property owner or I am eligible to initiate this application per Milwaukie Municipal Code (MMC) Subsection 19.1001.6.A. If required, I have attached written authorization to submit this application. To the best of my knowledge, the information provided within this application package is complete and accurate.

Submitted by: Suvi Wesa Date: July 20, 2017

IMPORTANT INFORMATION ON REVERSE SIDE

RESET

*For multiple applications, this is based on the highest required review type. See MMC Subsection 19.1001.6.B.1.

WHO IS ELIGIBLE TO SUBMIT A LAND USE APPLICATION (excerpted from MMC Subsection 19.1001.6.A):

Type I, II, III, and IV applications may be initiated by the property owner or contract purchaser of the subject property, any person authorized in writing to represent the property owner or contract purchaser, and any agency that has statutory rights of eminent domain for projects they have the authority to construct.

Type V applications may be initiated by any individual.

PREAPPLICATION CONFERENCE:

A preapplication conference may be required or desirable prior to submitting this application. Please discuss with Planning staff.

REVIEW TYPES:

This application will be processed per the assigned review type, as described in the following sections of the Milwaukie Municipal Code:

- Type I: Section 19.1004
- Type II: Section 19.1005
- Type III: Section 19.1006
- Type IV: Section 19.1007
- Type V: Section 19.1008

THIS SECTION FOR OFFICE USE ONLY:

FILE TYPE	FILE NUMBER	FEE AMOUNT*	PERCENT DISCOUNT	DISCOUNT TYPE	DEPOSIT AMOUNT	DATE STAMP
Master file		$			$	
Concurrent application files		$			$	
		$			$	
		$			$	
		$			$	
SUBTOTALS		**$**			**$**	
TOTAL AMOUNT RECEIVED: $			**RECEIPT #:**			**RCD BY:**

Associated application file #s (appeals, modifications, previous approvals, etc.)**:**

Neighborhood District Association(s):

Notes:

*After discount (if any)

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

TYPE II DEVELOPMENT REVIEW AND TYPE II NATURAL RESOURCES REVIEW

To
City of Milwaukie

For
Day Wireless

Dated
July 19, 2017

Project Number
2160642.00

MACKENZIE
Since 1960

RiverEast Center | 1515 SE Water Ave, Suite 100, Portland, OR 97214
PO Box 14310, Portland, OR 97293 | T 503.224.9560 | www.mcknze.com

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L1.10, L0.01 ..... Landscape Site Plan (Planting Plan) and General Notes

3. Vegetated Corridor Assessment/Wetland Impact Permit by Wetland Solutions Northwest, LLC
4. Trip Generation Estimate and related correspondence, including Loading Area Maneuvering Diagrams
5. Preliminary Storm Report
6. Pre-Application Conference Notes

I. PROJECT SUMMARY

Applicant/Owner:	Day Wireless Systems c/o Day Management Corporation ATTN: Suvi Wesa, Manager of Real Estate Development 4620 SE International Way Milwaukie, Oregon 97222
Site Address:	11405 SE 37th Avenue, Milwaukie, OR 97222
Tax Map/Lot #:	1 1E 36AD 07200
Assessor Site Acreage:	1.05 Acres (45,901 SF)
Zoning:	Business Industrial (BI) Vegetated Corridor and Habitat Conservation Area (HCA) Overlays (partial)
Comprehensive Plan Map:	Industrial (I)
Adjacent Zoning:	Business Industrial (BI) to the south General Commercial (C-G) to the east (across SE 37th Avenue) Community Shopping Commercial (C-CS) to the north Single Family Residential (R-5) to the west (across Highway 224)
Existing Structures:	Subject Property is undeveloped and vacant
Request:	Type II Development Review for a new 12,300 square foot warehouse building with accessory office and retail, and associated parking
Project Contact:	Mackenzie ATTN: Lee Leighton, AICP 1515 SE Water Avenue, Suite 100 Portland, OR 97214 lleighton@mcknze.com (503) 224-9560

II. INTRODUCTION

Description of Request

This application requests Type II Development Review and Natural Resources approvals for a proposed single-story building containing 12,300 square feet of floor area on a 1.05-acre site in the Business Industrial (BI) zone.

The northern edge of the site contains delineated wetlands in a secondary protected resource, subject to a 15-foot vegetated corridor (buffer) requirement. The Applicant has provided a detailed delineation, inventory and assessment report to demonstrate compliance with applicable Natural Resources requirements. (See Attachment 3.)

Anticipated uses are warehouse, office and retail activities for tool sales, tool repair, and parts distribution operations with a limited showroom area. Warehouse and office uses are allowed as of right in the BI zone. Because retail use will be limited to a maximum of 3,075 square feet (25% of the floor area), Conditional Use Permit review is not required.

A pre-application meeting for this project for the same owner and tenant was held on July 21, 2016. The site plan has changed slightly following feedback from that meeting and additional site information. The Pre-Application Conference Notes provided by City staff are in Attachment 6.

Existing Site & Surrounding Land Use

The Subject Property is undeveloped and vacant. It fronts on SE 37th Avenue to the east, with its rear (west) property line on the Highway 224 right-of-way. Driveway access is proposed only by way of SE 37th Avenue.

The neighboring property to the north is the Milwaukie Marketplace retail shopping center. The closest building to the Subject Property currently contains dental and eye care offices. An unnamed tributary to Mt. Scott Creek flows between the two sites.

The neighboring property to the south contains an auto/truck service and parts distribution operation (Six Robblees).

A dental office and a self-storage facility (Public Storage) are located to the east, across SE 37th Avenue. North of those sites, there is an unimproved segment of SE Minthorn Loop along the south edge of Minthorn Springs and the Minthorn North Natural Area, which extend north to the SE Railroad Avenue intersection.

Single-family residential development is located to the west, across Highway 224.

Description of Proposed Development

The proposed development consists of a new approximately 12,300-SF building containing areas for warehouse (45-55%), accessory office (25-30%), and retail showroom (20-25%) activities. The anticipated tenant for the site is Charles H. Day Company (CHDC), which specializes in power tool sales, repairs, and parts distribution, relocating from an existing site in the City of Portland.

The site and proposed building will have a drive-up loading dock, a 4-foot high loading dock, 25 vehicle parking spaces (including 1 ADA-accessible space) and 3 outdoor bicycle parking stalls, site landscaping, and stormwater management facilities.

Aerial Image – Project Site

III. NARRATIVE & COMPLIANCE

Chapter 19. 900 Land Use Applications

19. 906 Development Review

19.906.4 Approval Criteria

The criteria in this subsection are the approval criteria for Type I and Type II development review applications. The criteria are based on a review of development standards throughout Title 19 Zoning. Not all of the standards within the chapters listed below are applicable to a proposal, and the City will identify the applicable standards through the development review process. Though the criteria are the same for Type I and Type II development review, the standards evaluated in a Type I review will be clear and objective or require limited professional judgment, while the Type II review will involve discretionary standards and/or criteria.

An application for Type I or Type II development review shall be approved when all of the following criteria have been met:

- *A. The proposal complies with all applicable base zone standards in Chapter 19.300.*
- *B. The proposal complies with all applicable overlay zone and special area standards in Chapter 19.400.*
- *C. The proposal complies with all applicable supplementary development regulations in Chapter 19.500.*
- *D. The proposal complies with all applicable off-street parking and loading standards and requirements in Chapter 19.600.*
- *E. The proposal complies with all applicable public facility standards and requirements, including any required street improvements, in Chapter 19.700.*
- *F. The proposal complies with all applicable conditions of any land use approvals for the proposal issued prior to or concurrent with the development review application.*

Response: The applicant has prepared this Burden of Proof Statement, together with accompanying drawings and reports to which it refers, to demonstrate compliance with all of the applicable requirements. The Subject Property is not subject to any prior issued land use decisions or conditions of approval.

Chapter 19.300 Base Zones

19.310 Business Industrial Zone

19.310.1 Purpose

This section is adopted to implement the policies of the Comprehensive Plan for industrial land uses providing a mix of clean, employee-intensive, industrial and office uses, with associated services, in locations supportive of mass transit and the regional transportation network.

19.310.2 Uses Permitted Outright

- *A. The following business and industrial uses are allowed outright, subject to the standards of Subsection 19.310.6.*
  - *1. Experimental, research, film, or testing laboratories, provided no operation shall be conducted or equipment used which would create hazards and/or nuisances off the site (marijuana testing or research shall also be subject to the security and odor control standards of Subsection 19.509.2);*

2. *Manufacturing, processing, fabrication, packaging, or assembly of products from previously prepared materials;*
3. *Printing, publishing, bookbinding, graphic or photographic reproduction, blueprinting or photo processing;*
4. *Trade schools primarily serving the business community within the area.*

B. *Business and professional offices, including product design, sales, service, packaging; corporate headquarters or regional offices.*

C. *Warehousing and distribution (marijuana warehousing shall be subject to the security and odor control standards of Subsection 19.509.2).*

D. *Any other use similar to the above uses but not listed elsewhere.*

Response: The proposed approximately 12,300 SF building is designed to accommodate a single initial warehousing/distribution tenant with areas for warehouse (45-55%), accessory office (25-30%) and limited retail showroom (20-25%) activities, in compliance with the allowances above. This standard is met.

19.310.3 Accessory Uses

Uses accessory to and in conjunction with uses permitted outright may include the following:

A. *Employee lounges and dining rooms, employee day-care facilities, conference rooms for tenant use, newsstands, central mail room and self-service postal and banking facilities, and product information and display areas;*

B. *Executive, administrative, design, or product showroom offices provided in conjunction with uses listed under Subsection 19.310.2 of this section;*

C. *Indoor and outdoor recreational facilities, such as swimming pools, saunas, game and craft rooms, exercise and dance studios, community meeting rooms, lounges, playgrounds, tennis and other courts, bike and walking trails, and pedestrian plazas and courts, which are provided in association with uses listed in Subsection 19.310.2 of this section;*

D. *Rental and development information offices, handyman and maintenance services, and other business offices and services in association with allowed uses in the development;*

E. *Recycling center, provided that any storage of materials shall be adequately screened;*

F. *Accessory uses and structures not otherwise prohibited which are customarily accessory and incidental to any use permitted outright or limited use;*

G. *Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work;*

H. *Retail outlets associated with manufacturing uses as outlined in Subsection 19.310.2.A.2 of this section. Products sold at the accessory retail outlet shall be primarily those assembled or manufactured onsite. The accessory retail outlet shall be located within the associated manufacturing building and occupy up to a maximum of 25% of the floor area of the associated manufacturing building or 4,000 sq ft, whichever is less.*

Response: The proposal includes a showroom area for retail use, occupying 20-25% of the total building area (i.e., not to exceed 3,075 square feet of the 12,300 square foot building), in compliance with subparagraph H. This standard is met.

19.310.4 Limited Uses

A. *Limited retail or service uses may be allowed that primarily service the needs of BI Zone clients, employees, and businesses, as opposed to the general public. These uses, subject to the provisions of Subsection 19.310.4.B below, shall include:*
   1. *A restaurant or deli, offering at least breakfast and/or lunch items, without a drive-in or drive-through service;*
   2. *Office supply and equipment, sales, or service;*

3. *Personal service businesses such as a barber, beauty parlor, tailor, dressmaking, shoe repair shop, self-service laundry, dry cleaning, photographer, instruction studios, or similar uses;*
4. *A bank or other financial institution;*
5. *A computer or other similar small electronic office machines store, sales and service; and*
6. *Any other use similar and compatible to the above-listed uses.*

B. *Limitations and conditions on the development of the limited uses itemized above shall be as follows:*

1. *All limited uses shall be located, arranged, and integrated within the district to serve primarily the shopping and service needs of clients, businesses, and employees of the district;*
2. *Limited uses may occupy up to a maximum of 25% of the square footage of a building. A limited use that is to be located in a building and exceeds 25% of the building's square footage shall be reviewed as a conditional use;*

Response: The retail area, a limited use, will occupy not more than 25% of the total building area. This standard has been met.

3. *Maximum floor area for a limited use shall be 4,000 sq ft;*

Response: The retail portion of the building area will occupy a maximum of 3,075 SF (25% of 12,300 square feet of total floor area). This standard is met.

4. *All limited uses shall comply with the standards under Subsection 19.310.6.*

Response: Detailed findings of compliance are provided below under the heading for that Subsection. This requirement is met.

19.310.5 Conditional Uses

A. *Conditional uses may be established in a business industrial district subject to review and action on the specific proposal, pursuant to Section 19.905 Conditional Uses. Approval shall not be granted unless the proposal satisfies the criteria in Section 19.905; and, in addition, the proposed use:*

1. *Will have minimal adverse impact on the appropriate development of uses permitted outright on abutting properties and the surrounding area considering location, size, design, and operating characteristics of the use;*
2. *Is compatible with the character and scale of uses allowed within the district and on a site no larger than necessary for the use and operational requirements of the use;*
3. *Will provide vehicular and pedestrian access, circulation, parking, and loading areas which are compatible with uses on the same site or adjacent sites; and*
4. *Is a needed service/product in the district, considering the mix of potential clientele and the need to maintain high-quality development in a highly visible area.*

B. *Uses allowed subject to the above conditions are:*

1. *Public and private community buildings, indoor and outdoor recreational facilities, such as swimming pools, racquetball clubs, athletic clubs, health and exercise spas, gymnasiums, tennis courts, playground, and other similar uses, developed to serve primarily the recreational needs of clients and employees of the district;*
2. *Mini-warehousing, mini-storage, public storage, and similar commercial facilities that lease storage space to the general public;*
3. *A limited use or uses that exceed 25% of the building's square footage as per Subsection 19.310.4.B.2 above.*

4. *Marijuana producers and processors. Marijuana producers and processors shall be subject to the security and odor control standards of Section 19.509.*

Response: These provisions are not applicable because no conditional use is proposed. The retail showroom area is proposed to occupy not more than 25% of the total building floor area, i.e., not more than 3,075 of the proposed 12,300 square feet. The applicant understands that any future modification to make the retail component larger will be required to obtain a separate conditional use permit approval at that time.

19.310.6 Standards

In the BI district, the following standards shall apply to all uses:

A. *Lot size. None, except that lots created shall be of a size sufficient to fulfill the applicable standards of this district.*

Response: No land division to create any new lots is proposed. The size of the proposed building is in proportion to the developable land area of the Subject Property, ensuring that the site can meet development standards, including having adequate on-site parking, landscaping, stormwater management facilities, and other features.

B. *Front yard. A front yard shall be at least 20 ft unless additional setback is required in Subsection 19.501.2.A.*

Response: As shown on sheet C1.10, the proposed building is set back more than 80 feet from the front property line (SE 37th Avenue) because on-site parking and circulation are located in front of the building. The landscape islands along the front property line are 10 feet wide. This standard is met.

C. *Side yard. No side yard shall be required except on corner lots where a side yard shall be at least 10 ft on the side abutting the street, unless additional setback is required in Subsection 19.501.2.A.*

Response: No side yard is required because the subject site is not a corner lot and Subsection 19.501.2.A does not apply. This standard is met.

D. *Rear yard. No rear yard shall be required except as provided in Subsection 19.501.2.A.*

Response: The rear property line abuts Milwaukie Expressway (Highway 224), which is not listed in Subsection 19.501.2.A/Table 19.501.2.A *Additional Yard Requirements*.

E. *Off-street parking and loading. As specified in Chapter 19.600.*

Response: Parking and loading requirements are addressed below in this narrative, in responses to Chapter 19.600. These standards are met.

F. *Site Access*

One curb cut (45 ft maximum) per 150 ft of street frontage, or fraction thereof, for industrial uses; and 1 curb cut per 100 ft of street frontage or fraction thereof, for business park, limited or conditional uses.

Response: The Subject Property's frontage on SE 37th Avenue measures 205 feet. For industrial use (which is proposed), the site is eligible for two curb cuts to provide access. Both proposed driveways are shown in preliminary plans at widths of 24 feet, consistent with the allowed maximum width of 45 feet.

G. *Height restriction. Maximum height of a structure shall be 3 stories or 45 ft, whichever is less.*

Response: From finished floor, the total building height is 30 feet (see sheet A2.11). This standard is met.

H. Landscaping

15% of the site must be landscaped, except for sites adjacent to Hwy. 224, which shall provide landscaping to 20% of the site. This should consist of a variety of lawn, trees, shrubbery, and ground cover. Street trees must be provided along street frontages and within required off-street parking lots to help delineate entrances, provide shade, and permeable areas for stormwater runoff. A bond or financial guarantee for landscape completion shall be required.

Response: The Subject Property is located adjacent to Highway 224, so a minimum 20% of on-site landscape area is required. The site plan responds to wetlands, a vegetated corridor and Habitat Conservation Areas in the north and west portions of the Subject Property, providing a relatively deep rear yard abutting the Highway. Sheet C1.10 provides site data indicating that approximately 20,366 square feet (44.4%) of site area will be landscaped. This standard is met.

I. Screening and Outside Storage

Outside storage adjacent to International Way, Freeman Way, 37th Ave., Lake Road, or Hwy. 224 is prohibited. Outside storage in side or rear yards is allowed, provided it is enclosed by a sight-obscuring fence or vegetative screen.

Response: No outdoor storage is proposed. The proposed development (which abuts both Highway 224 and 37th Avenue) complies with this standard.

J. Building Siting and Design

Buildings and sites shall be designed using the following principles:

1. Sites shall be developed to the maximum extent practicable, so that buildings have solar access and utilize other natural features in their design.

Response: The site is relatively small and limited by existing natural resources. The design of the building and parking have been laid out as efficiently as possible, while respecting, enhancing and protecting natural features. This standard is met.

2. Assure that building placement and orientation and landscaping allow ease of security surveillance.

Response: There are no obstructions blocking lines of sight from adjacent public rights-of-way to the building and its parking, providing for effective security surveillance. This standard is met.

3. Design buildings with shapes, colors, materials, textures, lines, and other architectural design features which enhance the character of the district and complement the surrounding area and development, considering, but not limited to, the following techniques:

a. Use color, materials, and architectural design to visually reduce the scale and impact of large buildings;

b. Use building materials and features that are durable and consistent with the proposed use of the building, level of exposure to public view, and exposure to natural elements.

Response: The proposed design uses a combination of ground-face and split-face Concrete Masonry Unit (CMU) blocks, in different shades of grey with some burgundy red CMU and currant red painted doors, to form a pattern of columns and panels for the 30-foot tall single-story building. This panelization reduces the perception of the building as a single large form, breaking it down visually into smaller components. On the east, south and west elevations, storefront window/door systems with dark bronze frame elements provide light and visibility.

Storefront doors and pedestrian-level windows on the east and south clarify entrance locations, complemented by vertically-oriented dark grey box rim metal inserts between CMU column structures. These durable materials are designed to withstand exposure to natural elements and remain attractive, while supporting the proposed industrial use at a visible public location. These standards are met.

4. To the extent possible, screen or mask roof-mounted mechanical equipment, except solar collection apparatus, from view.

Response: Rooftop mechanical equipment locations and dimensions will be specified to remain below the sight line (cutoff) formed by the parapet wall, so equipment will not be visible from public streets. This standard is met.

5. Orient major service activity areas (e.g., loading, delivery, and garbage collection, etc.) of the development away from major streets.

Response: The Subject Property is a small, approximately 1-acre parcel situated between Highway 224 and SE 37th Avenue, with additional development constraints due to natural resource features at the north and west. For efficiency, and to reduce public visibility from Highway 224 (the higher-order street frontage), the site's parking, loading, and refuse handling facilities are all located on the east side of the proposed building, where its public street access is located (to SE 37th Avenue). The proposed design approach optimizes compliance with this standard in a situation involving trade-offs between two road frontage exposures. This standard is met.

6. Arrange use and buildings to maximize opportunities for shared circulation, access, parking, loading, pedestrian walkways and plazas, recreation areas, and transit-related facilities.

Response: The Subject Property is an infill development site with existing development to both its north and south. Neither of the neighboring properties has been designed to support creation of a shared access and circulation plan. At the north, a wetland crossing would be necessary to do so. This provision is not applicable at this site due to those existing development conditions and resource conflicts.

7. Provisions for bus shelters, bike racks, street furniture, kiosks, drinking fountains, art sculptures, and/or other pedestrian and transit amenities as required by Chapter 19.700.

Response: Required bicycle parking is provided on-site at a location north of the building entrance door on the east (front) façade. This site is served by TriMet bus route number 152, which provides service on SE 37th Avenue and SE International Way, but is not a high-frequency bus route. Additional transit service demand from the proposed development and use is anticipated to be very low, such that installation of a bus shelter or other facilities is not warranted as a condition of approval. Additionally, staff has not identified any improvements required for compliance with 19.700 Public Facility Improvements. This standard does not apply.

K. Nuisances

The use shall not be of a type or intensity which produces dust, odor, smoke, fumes, noise, glare, heat, or vibrations which are incompatible with other uses allowed in this zone; and the use does not produce off-site impacts that create nuisance as defined by the Oregon D.E.Q. and the City Noise Ordinance.

Response: The proposed operation is a wholesale tool distribution, sales, and repair operation. Its activities are consistent with the site's industrial zoning, and will be conducted entirely within the enclosed building, so there is no reason to anticipate external dust, odor, smoke, fumes, noise, glare, heat or vibrations. Additionally, nuisance impacts are subject to enforcement on an ongoing basis, ensuring that building occupants maintain compliance in the future. This standard is met.

Chapter 19.400 Overlay Zones and Special Areas

19.402 Natural Resources

19.402.4 Exempt Activities

B. Limited Exemptions Within HCAs

The following activities within HCAs are exempt from the provisions of Section 19.402, except that a construction management plan is required, according to the provisions of Subsection 19.402.9, where the activity disturbs a total of more than 150 sq ft.

5. Facilities that infiltrate stormwater on the site, including the associated piping, so long as the forest canopy and the areas within the driplines of the trees are not disturbed. Such facilities may include, but are not limited to, vegetated swales, rain gardens, vegetated filter strips, and vegetated infiltration basins. Native or nonnative vegetation may be planted in these facilities, provided that none of the plantings are identified as a nuisance species on the Milwaukie Native Plant List.

Response: The applicant proposes to locate on-site water quality facilities partially within a required 15-foot vegetated corridor (buffer) along the unnamed tributary to Mount Scott Creek that flows generally along the north property boundary. Such siting is consistent with the Limited Exemption within HCAs provided by Subsection 19.402.4.B.5. This action is exempt and thus this area does not contribute to the 10% maximum disturbance allowed by 19.402.11.D.1.b.

19.402.11 Development Standards

A. Protection of Natural Resources During Site Development

During development of any site containing a designated natural resource, the following standards shall apply:

1. Work areas shall be marked to reduce potential damage to the WQR and/or HCA.
2. Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.
3. Native soils disturbed during development shall be conserved on the property.
4. An erosion and sediment control plan is required and shall be prepared in compliance with requirements set forth in the City's Public Works Standards.
5. Site preparation and construction practices shall be followed that prevent drainage of hazardous materials or erosion, pollution, or sedimentation to any WQR adjacent to the project area.
6. Stormwater flows that result from proposed development within and to natural drainage courses shall not exceed predevelopment flows.
7. Prior to construction, the WQR and/or HCA that is to remain undeveloped shall be flagged, fenced, or otherwise marked and shall remain undisturbed. Such markings shall be maintained until construction is complete.
8. The construction phase of the development shall be done in such a manner as to safeguard the resource portions of the site that have not been approved for development.
9. Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.
10. All work on the property shall conform to a construction management plan prepared according to Subsection 19.402.9.

Response: The requirements of this Section represent implementation of Best Management Practices (BMPs) for design and construction in and near natural resource areas. The applicant has provided an on-site stormwater management plan and report demonstrating that "stormwater flows that result from proposed development within and to natural drainage courses shall not exceed predevelopment flows," consistent with subparagraph 6 (See Attachment 5). Implementation is achieved by a combination of design approaches and specific notations in construction plans, which can be required through conditions of approval and verified in the review/approval process for construction plans (as specifically suggested by subparagraph 10). Therefore, these requirements can be met through one or more conditions of approval.

B. General Standards for Required Mitigation

Where mitigation is required by Section 19.402 for disturbance to WQRs and/or HCAs, the following general standards shall apply:

1. Disturbance

a. Designated natural resources that are affected by temporary disturbances shall be restored, and those affected by permanent disturbances shall be mitigated, in accordance with the standards provided in Subsection 19.402.11.C for WQRs and Subsection 19.402.11.D.2 for HCAs, as applicable.

Response: The applicant has provided an analysis report and recommendations by Stacy Benjamin, Principal Ecologist at Wetland Solutions Northwest, LLC (WSNW). Ms. Benjamin performed research, site inventory and analysis; identified boundaries of natural features corresponding to the City's Water Quality Resource (WQR) and Habitat Conservation Area (HCA) definitions, including assessment of functions and values; and consulted with the applicant's design team in site planning, including the location for surface stormwater management facilities. The WSNW report identifies the resulting impacts and provides specific mitigation recommendations consistent with the applicable provisions of Section 19.402.11.C and D. (See Attachment 3.) Those recommendations have been incorporated into the proposed development plans, and this requirement is met.

b. Landscape plantings are not considered to be disturbances, except for those plantings that are part of a non-exempt stormwater facility; e.g., raingarden or bioswale.

Response: The WSNW report (Attachment 3) provides mitigation planting recommendations for disturbances consisting of 576 square feet of minor permanent impacts to the HCA (4 percent of the total HCA area of 14,432 square feet), and the proposed stormwater management facility that will impact 1,863 square feet of the required 15-foot wide vegetated corridor, but which does not encroach into the wetland resource itself. This requirement is met.

2. Required Plants

Unless specified elsewhere in Section 19.402, all trees, shrubs, and ground cover planted as mitigation shall be native plants, as identified on the Milwaukie Native Plant List. Applicants are encouraged to choose particular native species that are appropriately suited for the specific conditions of the planting site; e.g., shade, soil type, moisture, topography, etc.

3. Plant Size

Required mitigation trees shall average at least a ½-in caliper—measured at 6 in above the ground level for field-grown trees or above the soil line for container-grown trees—unless they are oak or madrone, which may be 1-gallon size. Required mitigation shrubs shall be at least 1-gallon size and 12 in high.

4. *Plant Spacing*
   Trees shall be planted between 8 and 12 ft on center. Shrubs shall be planted between 4 and 5 ft on center or clustered in single-species groups of no more than 4 plants, with each cluster planted between 8 and 10 ft on center. When planting near existing trees, the dripline of the existing tree shall be the starting point for plant spacing measurements.
5. *Plant Diversity*
   Shrubs shall consist of at least 2 different species. If 10 trees or more are planted, then no more than 50% of the trees shall be of the same genus.

Response: The WSNW report (Attachment 3, see Table 3 at page 5) provides mitigation planting recommendations consistent with the City of Milwaukie Native Plant List, sizing, spacing, and plant diversity standards. These requirements are met.

6. *Location of Mitigation Area*
   a. *On-Site Mitigation*

   All mitigation vegetation shall be planted on the applicant's site within the designated natural resource that is disturbed, or in an area contiguous to the resource area; however, if the vegetation is planted outside of the resource area, the applicant shall preserve the contiguous planting area by executing a deed restriction such as a restrictive covenant.

Response: All required mitigation plantings will be located within the Subject Property and consistent with this requirement.

   b. *Off-Site Mitigation*
      (1) *For disturbances allowed within WQRs, off-site mitigation shall not be used to meet the mitigation requirements of Section 19.402.*
      (2) *For disturbances allowed within HCAs, off-site mitigation vegetation may be planted within an area contiguous to the subject-property HCA, provided there is documentation that the applicant possesses legal authority to conduct and maintain the mitigation, such as having a sufficient ownership interest in the mitigation site. If the off-site mitigation is not within an HCA, the applicant shall document that the mitigation site will be protected after the monitoring period expires, such as through the use of a restrictive covenant.*

Response: These provisions are not applicable because no off-site mitigation activities are proposed.

7. *Invasive Vegetation*
   Invasive nonnative or noxious vegetation shall be removed within the mitigation area prior to planting, including, but not limited to, species identified as nuisance plants on the Milwaukie Native Plant List.
8. *Ground Cover*
   Bare or open soil areas remaining after the required tree and shrub plantings shall be planted or seeded to 100% surface coverage with grasses or other ground cover species identified as native on the Milwaukie Native Plant List. Revegetation shall occur during the next planting season following the site disturbance.

Response: Proposed mitigation activities include removal of invasive non-native plant species and seeding of bare ground areas with native grass seed mix, meeting these requirements. (See Attachment 3, see Table 3 at page 5.)

9. *Tree and Shrub Survival*

A minimum of 80% of the trees and shrubs planted shall remain alive on the second anniversary of the date that the mitigation planting is completed.

a. *Required Practices*

To enhance survival of the mitigation plantings, the following practices are required:

(1) *Mulch new plantings to a minimum of 3-in depth and 18-in diameter to retain moisture and discourage weed growth.*

(2) *Remove or control nonnative or noxious vegetation throughout the maintenance period.*

b. *Recommended Practices*

To enhance survival of tree replacement and vegetation plantings, the following practices are recommended:

(1) *Plant bare root trees between December 1 and April 15; plant potted plants between October 15 and April 30.*

(2) *Use plant sleeves or fencing to protect trees and shrubs against wildlife browsing and the resulting damage to plants.*

(3) *Water new plantings at a rate of 1 in per week between June 15 and October 15 for the first 2 years following planting.*

c. *Monitoring and Reporting*

Monitoring of the mitigation site is the ongoing responsibility of the property owner. Plants that die shall be replaced in kind as needed to ensure the minimum 80% survival rate. The Planning Director may require a maintenance bond to cover the continued health and survival of all plantings. A maintenance bond shall not be required for land use applications related to owner-occupied single-family residential projects. An annual report on the survival rate of all plantings shall be submitted for 2 years.

Response: These practices and requirements for tree and shrub survival require post-approval compliance by the applicant. Compliance can be assured through appropriate conditions of approval.

10. *Light Impacts*

Where practicable, lights shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.

Response: No active human use areas around the building (e.g., main entrances, parking and loading areas) are immediately adjacent to WQR or HCA boundaries. Lighting with a steep cutoff angle can be specified to minimize light impacts on these features. Compliance can be assured through a condition of approval.

C. *Mitigation Requirements for Disturbance within WQRs*

1. *The requirements for mitigation vary depending on the existing condition of the WQR on the project site at the time of application. The existing condition of the WQR shall be assessed in accordance with the categories established in Table 19.402.11.C.*

2. *When disturbance within a WQR is approved according to the standards of Section 19.402, the disturbance shall be mitigated according to the requirements outlined in Table 19.402.11.C and the standards established in Subsection 19.402.11.B.*

Table 19.402.11.C Mitigation Requirements for WQRs	
Existing Condition of WQR	Requirements
Class A ("Good") **Extent and character of existing vegetation provides good conditions for water quality and wildlife habitat**	
Combination of trees, shrubs, and ground cover are 80% present, with more than 50% tree canopy coverage in vegetated corridor.	• Submit a plan for mitigating water quality impacts related to the development, including: sediments, temperature, nutrients, or any other condition that may have caused the protected water feature to be listed on DEQ's 303(d) list. • Inventory and remove debris and noxious materials.
Class B ("Marginal") **Extent and character of existing vegetation provides marginal conditions for water quality and wildlife habitat**	
Combination of trees, shrubs, and ground cover are 80% present, with 25-50% canopy coverage in vegetated corridor.	• Restore and mitigate disturbed areas with native species from the Milwaukie Native Plant List, using a City-approved plan developed to represent the vegetative composition that would naturally occur on the site. • Inventory and remove debris and noxious materials.
Class C ("Poor") **Extent and character of existing vegetation provides poor conditions for water quality and wildlife habitat**	
Combination of trees, shrubs, and ground cover are less than 80% present and/or less than 25% canopy coverage in vegetated corridor.	• Restore and mitigate disturbed areas with native species from the Milwaukie Native Plant List, using a City-approved plan developed to represent the vegetative composition that would naturally occur on the site. • Plant and/or seed all bare areas to provide 100% surface coverage. • Inventory and remove debris and noxious materials.

Response: As discussed above, the applicant has provided an analysis report and recommendations by Stacy Benjamin, Principal Ecologist at Wetland Solutions Northwest, LLC (WSNW). Ms. Benjamin performed research, site inventory and analysis; identified boundaries of natural features corresponding to the City's Water Quality Resource (WQR) and Habitat Conservation Area (HCA) definitions, including assessment of functions and values; and consulted with the applicant's design team in site planning, including the location for surface stormwater management facilities. The WSNW report identifies the resulting impacts and provides specific mitigation recommendations consistent with the applicable provisions of Section 19.402.11.C and D. (See Attachment 3.) Those recommendations have been incorporated into the proposed development plans, and this requirement is met.

D. Nondiscrectionary Standards for HCAs

The following nondiscretionary standards may be applied to proposals that are subject to Type I review and located within HCAs only. These standards do not apply to activities proposed within WQRs.

1. Disturbance Area Limitations in HCAs

To avoid or minimize impacts to HCAs, activities that are not otherwise exempt from the requirements of Section 19.402, and that would disturb an HCA, are subject to the following disturbance area limitations, as applicable:…

b. All Other Uses

A maximum net disturbance area of 10% of the HCA on the site is allowed by right, subject to the mitigation requirements described in Subsection 19.402.11.D.2

c. Temporary and Permanent Disturbances

All disturbances within an HCA that occur during construction or other development activities, whether temporary or permanent disturbances, count equally for the purposes of calculating and tracking the maximum disturbance area allowed for a particular site. Disturbance resulting from any activity deemed exempt per Subsection 19.402.4 shall not be counted against the amount of disturbance allowed by Subsection 19.402.

Response: The proposed plan results in 576 square feet of minor permanent impacts to the HCA, which is four percent of the total HCA area of 14,432 square feet. The applicant has provided an on-site plan consistent with Subsection 19.402.11.D.2 to mitigate for those impacts (See Attachment 3). These requirements are met.

d. Disturbance in Excess of that Allowed by Section 19.402

In accordance with Subsection 19.402.8, proposed development that would disturb more HCA than allowed by Subsections 19.402.11.D.1.a and b shall be subject to the Type III review process and general discretionary review criteria, as outlined in Subsection 19.402.12.C.1.

Response: This provision is not applicable because the proposed development will not disturb more HCA than allowed by Subsections 19.402.11.D.1.a and b.

e. Disturbance Changes HCA Status

When disturbances within HCAs are allowed, in accordance with the applicable provisions of Section 19.402, the City shall remove the HCA designation from such disturbance areas on the NR Administrative Map, as provided in Subsection 19.402.15.B.

In the case of a request to develop within an HCA on a property where a prior development request was subject to the disturbance area limitations of Subsection 19.402.11.D.1, the calculation of the new amount of disturbance area allowed within the HCA on the property shall be based on the mapped location of the HCA at the time of the request, notwithstanding any previous calculation of allowed disturbance area.

Response: This provision provides procedural guidance to staff for updating of reference maps to reflect development approvals over time. It requires no evidence submittal by the applicant. The Subject Property is a vacant site that is not subject to a prior HCA disturbance area approval.

2. Mitigation Requirements for Disturbance in HCAs

To achieve the goal of reestablishing forested canopy that meets the ecological values and functions described in Subsection 19.402.1, when development intrudes into an HCA, tree replacement and vegetation planting are required according to the following standards, unless the planting is also subject to wetlands mitigation requirements imposed by state and federal law.

These mitigation options apply to tree removal and/or site disturbance in conjunction with development activities that are otherwise permitted by Section 19.402. They do not apply to situations in which tree removal is exempt per Subsection 19.402.4 or approvable through Type I review.

An applicant shall meet the requirement of Mitigation Option 1 or 2, whichever results in more tree plantings; except that where the disturbance area is 1 acre or more, the applicant shall comply with Mitigation Option 2.

a. Mitigation Option 1

This mitigation requirement is calculated based on the number and size of trees that are removed from the site. Trees that are removed from the site shall be replaced as shown in Table 19.402.11.D.2.a. Conifers shall be replaced with conifers. Bare ground shall be planted or seeded with native grasses or herbs. Nonnative sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

TABLE 19.402.11.D.2.A TREE REPLACEMENT	
Size of Tree to be Removed (inches in diameter)	**Number of Trees and Shrubs to be Planted**
6 to 12	2 trees and 3 shrubs
13 to 18	3 trees and 6 shrubs
19 to 24	5 trees and 12 shrubs
25 to 30	7 trees and 18 shrubs
over 30	10 trees and 30 shrubs

b. Mitigation Option 2

This mitigation requirement is calculated based on the size of the disturbance area within an HCA. Native trees and shrubs are required to be planted at a rate of 5 trees and 25 shrubs per 500 sq ft of disturbance area. This is calculated by dividing the number of square feet of disturbance area by 500, multiplying that result times 5 trees and 25 shrubs, and rounding all fractions to the nearest whole number of trees and shrubs. For example, if there will be 330 sq ft of disturbance area, then 330 divided by 500 equals 0.66, and 0.66 times 5 equals 3.3, so 3 trees must be planted, and 0.66 times 25 equals 16.5, so 17 shrubs must be planted. Bare ground shall be planted or seeded with native grasses or herbs. Nonnative sterile wheat grass may also be planted or seeded, in equal or lesser proportion to the native grasses or herbs.

Response: As noted in the WSNW report and recommendations:

> "Since no trees will be removed in the HCA, the mitigation requirement has been calculated according to the size of the disturbance area in the HCA (mitigation option 2). The mitigation area will be located on-site in the existing portion of the HCA that lacks tree canopy. Native trees and shrubs are required to be planted at a rate of 5 trees and 25 shrubs per 500 SF of disturbance area. The mitigation requirement is 6 trees and 29 shrubs based on the 576 SF of HCA impact. Invasive Himalayan blackberry will be removed in the HCA prior to installing the mitigation plantings, and resulting bare ground areas will be seeded with a native grass seed mix. In addition, to mitigate for the impacts within the WQR vegetated corridor due to construction of the stormwater facility, the remaining portion of the HCA without existing tree cover will also be enhanced to meet the City's good condition vegetated corridor standards in accordance with Table 19.402.11C. The total number of HCA plantings required for the 1,151 SF area that currently lacks tree cover is 12 trees and 58 shrubs. Lastly, the portion of the HCA that has existing tree cover but was determined to be in marginal condition due to having 45% tree canopy and low native species cover will also be enhanced with native tree and shrub plantings. Trees and shrubs will be planted at lower densities in the area with existing trees than the area without existing trees will be planted. HCA mitigation plantings are shown in Table 3, including the size, spacing, and diversity of mitigation plantings. Mitigation plantings shall be mulched, and invasive species shall be removed from the mitigation period in accordance with Section 19.402.11.B.9.a." (See Attachment 3 at pages 4-5.)

The proposed plantings are sufficient to comply with Mitigation Option 2, and therefore satisfy this requirement.

c. Adjustments to HCA Mitigation Requirements

Proposals to vary the number or size of trees and shrubs required as mitigation in Subsection 19.402.11.D.2 shall be subject to the Type II review process and the requirements of Subsection 19.402.12.C.2.

Response: This provision is not applicable because the applicant does not propose to vary the applicable mitigation planting requirements.

E. Standards for Special Uses

Unless they are exempt per Subsection 19.402.4, or do not meet the nondiscretionary standards for HCAs provided in 19.402.11.D, the special uses listed in Subsection 19.402.7.A are subject to Type II review if they comply with the applicable standards in Subsection 19.402.11.E. Otherwise, the special uses listed in Subsection 19.402.7.A are subject to Type III review and the general discretionary review criteria provided in Subsection 19.402.12.

1. General Standards for Special Uses

Except for stormwater management plans, all nonexempt special uses listed in Subsections 19.402.11.E.2 through 5 that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D shall comply with the specific applicable standards in Subsection 19.402.11.E, as well as with the following general standards:

a. In addition to a construction management plan prepared according to the standards of Subsection 19.402.9; a mitigation plan shall be submitted per Subsection 19.402.11.D.2 or 19.402.12.C.2 for HCAs, as applicable, or per Subsection 19.402.11.C for WQRs. WQRs and HCAs shall be restored and maintained in accordance with the approved mitigation plan.

b. Existing vegetation outside of approved work areas shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage to WQRs and HCAs. Trees in WQRs or HCAs shall not be used as anchors for stabilizing construction equipment.

c. Where existing vegetation has been removed, or the original land contours disturbed, the site shall be revegetated and the vegetation shall be established as soon as practicable. Interim erosion control measures, such as mulching, shall be used to avoid erosion on bare areas.

Response: This application proposes to include on-site surface facilities for stormwater quality treatment and detention, located adjacent to the delineated wetlands in the northern part of the Subject Property. The submitted plans, including the mitigation recommendations contained in the WSNW report (Attachment 3 at pages 4-5) demonstrate compliance with these General Standards. Compliance can be assured through a condition of approval.

2. Public or Private Utility Facilities

In addition to the requirements of Subsection 19.402.11.E.1, the following disturbance area limitations apply to all new public and private utility facilities, as well as to facility upgrades that are not exempted by Subsection 19.402.4 or that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D.

a. The disturbance area for the upgrade of existing utility facilities shall be no greater than 15 ft wide.

b. The disturbance area for new underground utility facilities shall be no greater than 25 ft wide and disturb no more than 200 linear feet of WQR within any 1,000-linear-foot stretch of WQR. Such a disturbance area shall be restored with the exception of necessary access points to the utility facility.

c. *Disturbance areas shall be revegetated.*

d. *No fill or excavation is allowed within the ordinary high water mark of a stream, unless a permit is obtained from the Corps through the Standard Local Operating Procedures for Endangered Species (SLOPES) process.*

Response: These provisions are not applicable because the proposal does not include upgrading of an existing utility facility or installation of new underground utility facilities within the HCA, or fill or excavation within the ordinary high water mark of a stream.

3. *New Stormwater Facilities*

In addition to the requirements of Subsection 19.402.11.E.1, new stormwater facilities that are not exempted by Subsection 19.402.4, or that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D, shall not encroach more than 25 ft into the outer boundary of the WQR adjacent to a primary protected water feature.

Response: The proposed stormwater facility is exempt per 19.402.4.B.5. This standard does not apply.

4. *Walkways and Bike Paths*

In addition to the requirements of Subsection 19.402.11.E.1; walkways and bike paths that are not exempted by Subsection 19.402.4, or that do not meet the nondiscretionary standards for HCAs provided in Subsection 19.402.11.D, and that are proposed to be constructed or improved with gravel, pavement, pavers, wood, or other materials, shall comply with the following standards:

a. *Walkways and bike paths within WQRs or HCAs shall not exceed a 10-ft width.*

b. *If the proposed walkway or bike path will be located within a WQR and will be paved, then, for the purposes of evaluating the proposed project, the vegetated corridor shall be widened by the width of the walkway or bike path.*

c. *The walkway or bike path shall be designed to avoid WQRs and HCAs, to the greatest extent practicable, and shall be constructed so as to minimize disturbance to existing vegetation and slope stability.*

d. *The walkway or bike path shall be a minimum of 10 ft from the boundary of the protected water feature.*

e. *Where practicable, any lights associated with the walkway or bike path shall be placed so that they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.*

Response: These provisions are not applicable because no walkway or bike path is proposed within the WQR or HCA.

5. *Stormwater Management Plans*

Stormwater management plans that authorize disturbance within the WQR or HCA may be approved if in compliance with all of the following standards:

a. *Stormwater facilities will be designed to provide an environmentally beneficial hydrological impact on protected water features.*

Response: The City of Milwaukie, like all Portland Metropolitan Area jurisdictions, has adopted standards requiring private development to provide water quality treatment and detention facilities in conjunction with land developments, specifically to provide environmentally beneficial hydrological impacts on protected water features. The proposed surface stormwater management facilities represent on-site implementation of a stormwater management plan designed to reduce levels of contaminants from surface water runoff before flows enter the protected stream/wetland resource, and to detain and slow the volume of water entering the stream

to avoid high flow rates during storm events, which can cause erosive downstream impacts. Therefore, the proposed on-site facility meets this requirement.

b. Protected water features will be protected from erosion by implementing a stream protection strategy and quantity control strategies.

Response: As noted above, the proposed surface stormwater management facilities will detain and slow the volume of water entering the stream to avoid high flow rates during storm events (a "quantity control strategy"), which can cause erosive downstream impacts. Therefore, the proposed facility meets this requirement.

c. Watershed health will be improved through the use of vegetated facilities to meet pollution reduction, flow control, and infiltration goals. These facilities will be maintained in a manner that ensures a continued benefit to watershed health.

Response: As noted above, the proposed surface stormwater management facilities will reduce levels of contaminants from surface water runoff before flows enter the protected stream/wetland resource, and will detain and slow the volume of water entering the stream to avoid high flow rates during storm events (flow control). Therefore, the proposed facility will contribute to watershed health, meeting this requirement.

d. Proposed stormwater management facilities will correct or improve conditions caused by past management and/or disturbance events, if any are present.

Response: The proposed on-site system is to manage runoff from proposed new development areas within the Subject Property, rather than to correct conditions due to prior actions. This provision is not applicable.

e. Where there is no reasonable expectation of returning to natural conditions, beneficial habitat, vegetation, and stream function and hydrology will be restored to the fullest extent practicable within developed areas.

Response: At the Subject Property, invasive Himalayan blackberry has overgrown much of the vegetated corridor adjacent to the resource; however, due to the small area within the upstream drainage basin, the feature is a short segment of a secondary protected water feature with a protective corridor width of 15 feet, between an urban street and an urban highway. At this location, there is no reasonable expectation of returning to natural conditions. The proposed mitigation planting plan provides practicable restoration for this developed area, consistent with this provision.

Chapter 19.500 Supplementary Development Regulations

19.504 Site Design Standards

19.504.1 Clear Vision Areas

A clear vision area shall be maintained on the corners of all property at the intersection of 2 streets or a street and a railroad according to the provisions of the clear vision ordinance in Chapter 12.24.

Response: The Subject Property is not located at an intersection corner or a railroad crossing, so this provision is not applicable. Plantings and maintenance of vegetation at the two proposed driveways will be required to comply with clear vision area requirements.

19.504.2 Maintenance of Minimum Ordinance Requirements

No lot area, yard, other open space, or off-street parking or loading area shall be reduced by conveyance or otherwise below the minimum requirements of this title, except by dedication or conveyance for a public use.

Response: This provision is not applicable because no change in the Subject Property boundary is proposed.

19.504.3 Dual Use of Required Open Space

No lot area, yard, or other open space or off-street parking or loading area which is required by this title for one use shall be used to meet the required lot area, yard, or other open space or off-street parking area for another use, except as provided in Subsection 19.605.4.

Response: This provision is not applicable because no dual use of any part of the Subject Property is proposed.

19.504.5 Distance from Property Line

Where a side or rear yard is not required and a structure is not to be erected at the property line, it shall be set back at least 3 ft from the property line.

Response: As shown in the attached plans, the building will be set back at least 13' from all property lines. This standard is met.

19.504.6 Transition Area Measures

Where commercial, mixed-use, or industrial development is proposed abutting or adjacent to properties zoned for lower-density residential uses, the following transition measures shall be required. These additional requirements are intended to minimize impacts on lower-density residential uses.

A. All yards that abut, or are adjacent across a right-of-way from, a lower-density zone shall be at least as wide as the required front yard width of the adjacent lower-density zone. This additional yard requirement shall supersede the base zone yard requirements for the development property where applicable, except in the NMU Zone. In the NMU Zone, the base zone front yard requirements supersede these requirements.

Response: Single Family Residential (R-5) zoning is located to the west of the Subject Property, across Highway 224; however, on neither side of that right-of-way do properties have front yards facing it. At its nearest point (southwest corner), the proposed building is set back approximately 24 feet from the Highway 224 right-of-way, which exceeds the R-5 front yard minimum setback of 20 feet. This standard is satisfied.

B. All yards that abut, or are adjacent across a right-of-way from, a lower-density zone shall be maintained as open space. Natural vegetation, landscaping, or fencing shall be provided to at least the 6-ft level to screen lower-density residential uses from direct view across the open space, subject to the provisions of Subsection 19.502.2.B.

Response: Single Family Residential (R-5) zoning is located to the west of the Subject Property, across Highway 224**.** The Subject Property's rear yard, abutting the Highway, contains open space including wetlands, Water Quality Resources and Habitat Conservation Areas. The proposed combination of existing natural vegetation and mitigation actions will result in rear yard landscaping that satisfies this requirement.

19.504.7 Minimum Vegetation

No more than 20% of the required vegetation area shall be covered in mulch or bark dust. Mulch or bark dust under the canopy of trees or shrubs is excluded from this limit. Plans for development shall include landscaping plans which shall be reviewed for conformance to this standard.

Response: Because the Subject Property is adjacent to Highway 224, its minimum required landscape area is 9,180 square feet (20%, of the 45,901 square-foot site). As a result, no more than 1,836 square feet (20% of the required landscape area) may be covered in mulch or bark dust. Compliance can be assured through a condition of approval.

19.504.9 On-Site Walkways and Circulation

A. Requirement

All development subject to Chapter 19.700 (excluding single-family and multifamily residential development) shall provide a system of walkways that encourages safe and convenient pedestrian

movement within and through the development site. Redevelopment projects that involve remodeling or changes in use shall be brought closer into conformance with this requirement to the greatest extent practicable. On-site walkways shall link the site with the public street sidewalk system. Walkways are required between parts of a site where the public is invited to walk. Walkways are not required between buildings or portions of a site that are not intended or likely to be used by pedestrians, such as truck loading docks and warehouses.

Response: As shown on the site plan, a pedestrian walkway directly in front of the principal building entrance extends east to connect with the proposed new sidewalk in SE 37th Avenue. Paved walkways are located along the southern part of the east building façade, and along the south building façade. This standard is met.

B. Location

A walkway into the site shall be provided for every 300 ft of street frontage.

Response: The Subject Property's east frontage, on SE 37th Avenue, measures 205 feet, requiring one walkway into the site on that frontage. Although the Subject Property also has frontage on Highway 224, there are no pedestrian sidewalks along that Highway to which to make a connection. This requirement is satisfied.

C. Connections

Walkways shall connect building entrances to one another and building entrances to adjacent public streets and existing or planned transit stops. On-site walkways shall connect with walkways, sidewalks, bicycle facilities, alleys, and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multifamily, institutional, or park use. The City may require connections to be constructed and extended to the property line at the time of development.

Response: The proposed development contains a single building with walkways connecting building entrances to each other and to the public street. This requirement is satisfied.

D. Routing

Walkways shall be reasonably direct. Driveway crossings shall be minimized. Internal parking lot circulation and design shall provide reasonably direct access for pedestrians from streets and transit stops to primary buildings on the site.

Response: The walkway between the building entrances and the public street makes a linear, direct connection to the sidewalk in the SE 37th Avenue right-of-way. This requirement is satisfied.

E. Design Standards

Walkways shall be constructed with a hard surface material, shall be permeable for stormwater, and shall be no less than 5 ft in width. If adjacent to a parking area where vehicles will overhang the walkway, a 7-ft-wide walkway shall be provided. The walkways shall be separated from parking areas and internal driveways using curbing, landscaping, or distinctive paving materials. On-site walkways shall be lighted to an average 5/10-footcandle level. Stairs or ramps shall be provided where necessary to provide a direct route.

Response: Walkways are proposed in the form of a curbed concrete sidewalk adjacent to the building's south wall and along roughly the southerly half of its east wall, together with striping for a pedestrian crossing of the parking lot drive aisle.

19.504.10 Setbacks Adjacent to Transit

The following requirement applies to all new commercial, office, and institutional development within 500 ft of an existing or planned transit route measured along the public sidewalk that provides direct access to the transit route:

When adjacent to a street served by transit, new commercial, office, or institutional development, including uses authorized under Section 19.904 Community Service Uses, shall be set back no more than 30 ft from the right-of-way that is providing transit service. [detailed provisions omitted for brevity]

Response: The proposed development is for industrial use rather than commercial, office, or institutional development. Therefore, these provisions are not applicable.

19.504.11 Preliminary Circulation Plan

A preliminary circulation plan is intended to guide site development by establishing a plan for multimodal access, connectivity, and circulation. A preliminary circulation plan is a conceptual plan, in that it does not establish a precise alignment for street, pedestrian, or bicycle facilities.

A. Applicability

A preliminary circulation plan is required for nonresidential development on sites 3 acres and larger that are subject to development review per Section 19.906 and where any of the following is true:

1. The site is vacant.

2. The proposed new development or redevelopment will result in reconfiguration of the transportation and development pattern for > 50% of the site.

3. The development is in the Flex Space Overlay Zone.

Response: These provisions are not applicable because the Subject Property is smaller than 3 acres.

Chapter 19.505 Building Design Standards

19.505.7 Nonresidential Development

A. Purpose

The design standards contained in this section are intended to encourage building design and construction with durable, high-quality materials. The design standards support development of an attractive, cohesive, and pedestrian-friendly commercial area. The design standards do not prescribe a particular building or architectural style.

B. Applicability

1. The design standards in this section generally apply to the street-facing façades of new commercial, institutional, manufacturing, and mixed-use buildings within the commercial mixed-use zones.

2. The standards in this section do not apply to rowhouses or live/work units. Rowhouses and live/work units are subject to the design standards in Subsections 19.505.5 Rowhouses and 19.505.6 Live/Work Units.

3. The standards in this section do not apply to stand-alone multifamily housing. Stand-alone multifamily buildings are subject to the design standards in Subsection 19.505.3 Multifamily Housing.

4. The standards in this section do not apply to cottage cluster housing. Cottage cluster housing is subject to the design standards in Subsection 19.505.4 Cottage Cluster Housing.

Response: These provisions are not applicable because the Subject Property is not in either of the City's commercial mixed-use zones (GMU or NMU).

19.505.8 Building Orientation to Transit

The following requirement applies to all new commercial, office, mixed-use, and institutional development within 500 ft of an existing or planned transit route measured along the public sidewalk that provides direct access to the transit route:

New buildings shall have their primary orientation toward a transit street or, if not adjacent to a transit street, a public right-of-way which leads to a transit street. The primary building entrance shall be visible from the street and shall be directly accessible from a sidewalk connected to the public right-of-way. A building may have more than 1 entrance. If the development has frontage on more than 1 transit street, the primary building entrance may be oriented to either street or to the corner.

Response: TriMet provides bus service on SE 37th Avenue in front of the Subject Property. The proposed building's main entrance is oriented toward, and visible from, SE 37th Avenue, and a pedestrian walkway is proposed between the main entrance and the sidewalk in SE 37th Avenue. This standard is met.

Chapter 19.600 Off-Street Parking and Loading

Chapter 19.604 General Parking Standards

19.604.1 Parking Provided with Development Activity

All required off-street parking areas shall be provided at the time the structure is built; at the time a structure or site is enlarged; or when there is change in use or an increase in density or intensity. All required off-street parking areas shall be provided in conformance with the standards of Chapter 19.600 prior to issuance of a certificate of occupancy, or final development permit approval, or as otherwise specified in any applicable land use decision.

19.604.2 Parking Area Location

Accessory parking shall be located in one or more of the following areas:

- *A. On the same site as the primary use for which the parking is accessory.*
- *B. On a site owned by the same entity as the site containing the primary use that meets the standards of Subsection 19.605.4.B.2. Accessory parking that is located in this manner shall not be considered a parking facility for purposes of the base zones in Chapter 19.300.*
- *C. Where shared parking is approved in conformance with Subsection 19.605.4.*

Response: Sufficient off-street parking is proposed within the Subject Property, consistent with subparagraph A. No off-site parking or shared parking is needed or proposed. This standard does not apply.

19.604.3 Use of Parking Areas

All required off-street parking areas shall continually be available for the parking of operable vehicles of intended users of the site. Required parking shall not be rented, leased, sold, or otherwise used for parking that is unrelated to the primary or accessory use of the site, except where a shared parking agreement per Subsection 19.605.4 has been recorded. Subsection 19.604.3 does not prohibit charging fees for parking when the parking serves the primary or accessory uses on site.

Response: This Code provision contains performance requirements for management of the on-site parking. The applicant recognizes these requirements and is not requesting a waiver or other relief. Compliance does not require an evidence submittal by the applicant.

19.604.4 Storage Prohibited

No required off-street parking area shall be used for storage of equipment or materials, except as specifically authorized by Subsection 19.607.2 Commercial Vehicle, Pleasure Craft, and Recreational Vehicle Parking.

Response: This Code provision contains performance requirements for management of the on-site parking. The applicant recognizes these requirements and is not requesting a waiver or other relief. The proposed site plan does not include any outdoor storage area, and the parking area is not proposed for storage use. Compliance does not require an evidence submittal by the applicant.

Chapter 19.605 Vehicle Parking Quantity Requirements

The purpose of Section 19.605 is to ensure that development provides adequate, but not excessive, vehicle parking based on their estimated parking demand. Subsection 19.605.1 establishes parking ratios for common land uses, and Subsection 19.605.3 allows certain exemptions and reductions to these ratios based on location or on-site amenities. Modifications to the established parking ratios and determinations of parking requirements for unique land uses are allowed with discretionary review per Subsection 19.605.2.

Nonresidential development in the Downtown Mixed Use (DMU) and Open Space (OS) Zones is exempt from the requirements of Section 19.605.

19.605.1 Minimum and Maximum Requirements

A. Development shall provide at least the minimum and not more than the maximum number of parking spaces as listed in Table 19.605.1. Modifications to the standards in Table 19.605.1 may be made as per Section 19.605. Where multiple ratios are listed, the Planning Director shall determine which ratio to apply to the proposed development or use.

TABLE 19.605.1 (EXCERPT)
MINIMUM TO MAXIMUM OFF-STREET PARKING REQUIREMENTS

Use	*Minimum Required*	*Maximum Allowed*
F. Commercial Uses – Retail Goods		
2. General retail—grocery stores, convenience stores, specialty retail and shops.	2 spaces per 1,000 sq ft of floor area.	5 spaces per 1,000 sq ft of floor area.
F. Commercial Uses - Services		
1. General office, including banks.	2 spaces per 1,000 sq ft of floor area.	3.4 spaces per 1,000 sq ft of floor area.
4. Commercial services, such as dry cleaners and repair shops (does not include vehicle repair).	2.8 spaces per 1,000 sq ft of floor area.	5.1 spaces per 1,000 sq ft of floor area.
G. Industrial Uses		
1. Manufacturing.	1 space per 1,000 SF of floor area.	2 spaces per 1,000 SF of floor area.
2. Storage, warehouse, wholesale establishment less than 150,000 SF.	0.5 spaces per 1,000 SF of floor area.	1 space per 1,000 SF of floor area.
3. Storage, warehouse, wholesale establishment 150,000 SF or greater.	0.3 spaces per 1,000 SF of floor area.	0.4 spaces per 1,000 SF of floor area.
4. Mini-warehouse; self-service storage.	1 space per 45 storage units, plus 1 space per employee of the largest shift.	1 space per 20 storage units, plus 1 space per employee of the largest shift.

Response: Although the proposed building is not large, it is designed to accommodate multiple functions necessary for its intended user, a specialty tool and parts distribution, sales, and repair facility. The building will incorporate a sales/management office, a retail showroom/drop-off location for repair services, and warehousing for local merchandise inventory. The applicant provides this calculation of parking ratio requirements based on the proposed allocations of square footage within the building among those functions:

PARKING RATIO CALCULATION				
Activity	**SF / %**	**Parking Category [Table 19.605.1]**	**Min. - Max. Spaces per 1000 sf**	**Min. - Max. Allowed Spaces**
Sales/Management Office	2,483 / 21%	Commercial Services	2.8 - 5.1	7.0 – 12.7
Showroom	2,854 / 24%	Retail	2.0 – 5.0	5.7 – 14.3
Storage	6,441 / 55%	Storage, Wholesale Warehouse <150,000 sf	0.5 – 1.0	3.2 – 6.4
TOTAL	**11,778 / 100%**	**-**	**-**	**15.9 – 33.4**

Based on this calculation, with rounding per subparagraph D below, between 15 and 33 parking spaces are required to meet the needs of the proposed facility. The proposal includes 25 parking spaces, which falls within the allowed range. This requirement is met.

B. When a specific use has not been proposed or identified at the time of permit review, the Planning Director may elect to assign a use category from Table 19.605.1 to determine the minimum required and maximum allowed parking. Future tenants or property owners are responsible for compliance with Chapter 19.600 per the applicability provisions of Section 19.602.

Response: Although the use of the building is described in this application, there is no one category listed in Table 19.605.1 that closely matches the mix of activities the site and building are designed to support. It is appropriate for the Planning Director to determine the minimum required and maximum allowed parking in this situation.

C. If a proposed use is not listed in Table 19.605.1, the Planning Director has the discretion to apply the quantity requirements of a similar use listed in the table upon finding that the listed use and unlisted use have similar parking demands. If a similar use is not listed, the quantity requirements will be determined per Subsection 19.605.2.

Response: No single category listed in Table 19.605.1 closely matches the mix of activities the site and building are designed to support. The Planning Director has discretion to identify similar uses in that Table and make the determination of minimum required and maximum allowed parking on that basis. The applicant's proposed floor area allocations and activities support finding that the proposed 25 parking spaces falls within an appropriate range (between 15 and 33 spaces) and should be approved.

D. Where the calculation of minimum parking spaces does not result in a whole number, the result shall be rounded down to the next whole number. Where the calculation of maximum parking spaces does not result in a whole number, the result shall be rounded to the nearest whole number.

Response: The applicant has rounded the minimum/maximum parking range calculation using this method.

E. *Parking spaces for disabled persons, and other improvements related to parking, loading, and maneuvering for disabled persons, shall conform to the Americans with Disabilities Act and shall be subject to review and approval by the Building Official. Spaces reserved for disabled persons are included in the minimum required and maximum allowed number of off-street parking spaces.*

Response: One ADA-accessible van parking space is identified on the site plan near the main entrance to the office/showroom part of the building. This requirement is satisfied.

F. *Uses that have legally established parking areas that exceed the maximum number of spaces allowed by Section 19.605 prior to June 17, 2010, the effective date of Ordinance #2015, shall be considered nonconforming with respect to the quantity requirements. Such uses shall not be considered parking facilities as defined in Section 19.201.*

Response: This provision is not applicable because the site is vacant.

Chapter 19.606 Parking Area Design and Landscaping

The purpose of Section 19.606 is to ensure that off-street parking areas are safe, environmentally sound, aesthetically pleasing, and that they have efficient circulation. These standards apply to all types of development except for cottage clusters, rowhouses, duplexes, single-family detached dwellings, and residential homes.

Response: Statements and findings of compliance below refer to design features in the submitted drawings, demonstrating compliance with all applicable parking area design and landscaping requirements.

19.606.1 Parking Space and Aisle Dimensions

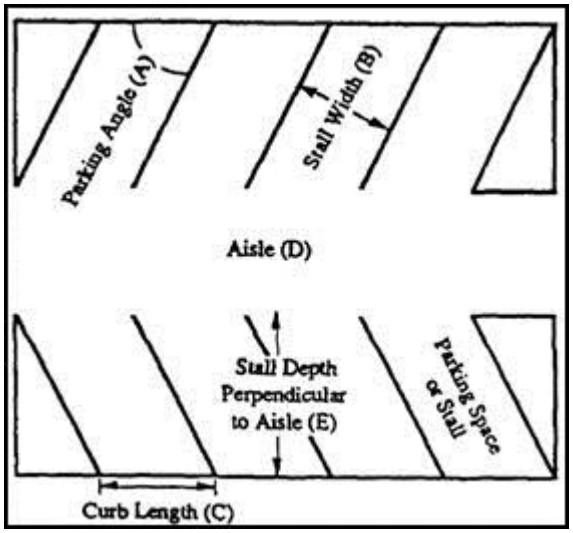
A. *The dimensions for required off-street parking spaces and abutting drive aisles, where required, shall be no less than in Table 19.606.1. The minimum dimensions listed in Table 19.606.1 are illustrated in Figure 19.606.1.*

TABLE 19.606.1
MINIMUM PARKING SPACE AND AISLE DIMENSIONS

Angle (A)	Width (B)	Curb Length (C)	1-Way Aisle Width (D)	2-Way Aisle Width (D)	Depth (E)
0° (Parallel)	8.5′	22′	12′	19′	8.5′
30°	9′	17′	12′	19′	16.5′
45°	9′	12′	13′	19′	18.5′
60°	9′	10′	17′	19′	19′
90°	9′	9′	22′	22′	18′

Figure 19.606.1

Parking Dimension Factors



B. The dimension of vehicle parking spaces provided for disabled persons shall be according to federal and State requirements.

C. Parking spaces shall be provided with adequate aisles or turnaround areas so that all vehicles may enter the street in a forward manner.

Response: The parking space layout and dimensions illustrated in the Site Plan (Sheet C1.10) demonstrate compliance with these requirements.

D. Drive aisles shall be required in parking areas greater than 5 spaces. Drive aisles shall meet the minimum width standards of Subsection 19.606.1. Where a drive aisle or portion thereof does not abut a parking space(s), the minimum allowed width for a one-way drive aisle shall be 8 ft and the minimum allowed width for a two-way drive aisle shall be 16 ft.

Response: This provision is applicable because more than 5 parking spaces are proposed. The parking space layout and dimensions illustrated in the Site Plan (Sheet C1.10) demonstrate compliance with these requirements.

19.606.2 Landscaping

A. Purpose

The purpose of the off-street parking lot landscaping standards is to provide vertical and horizontal buffering between parking areas and adjacent properties, break up large expanses of paved area, help delineate parking spaces and drive aisles, and provide environmental benefits such as stormwater management, carbon dioxide absorption, and a reduction of the urban heat island effect.

B. General Provisions

1. Parking area landscaping shall be required for the surface parking areas of all uses, except for cottage clusters, rowhouses, duplexes, and single-family detached dwellings. Landscaping shall be based on the standards in Subsections 19.606.2.C-E.

Response: This provision is applicable because the proposed use is not listed as an exception. The parking area landscaping illustrated in the Site Plan (Sheet C1.10) and Landscape Plan (Sheet L1.10) demonstrates compliance with these requirements.

2. *Landscaped areas required by Subsection 19.606.2 shall count toward the minimum amount of landscaped area required in other portions of Title 19.*

Response: The applicant has included parking area landscaping in the calculation of site landscaping, which totals 20,366 square feet, or 44.4% of site area.

3. *Parking areas with 10 or fewer spaces in the Downtown Mixed Use Zone are exempt from the requirements of Subsection 19.606.2.*

Response: This provision is not applicable because the site and the proposal do not meet the exemption criteria.

C. *Perimeter Landscaping*

The perimeter landscaping of parking areas shall meet the following standards which are illustrated in Figure 19.606.2.C.

1. *Dimensions*

The minimum width of perimeter landscape areas are shown in Table 19.606.2.C.1. Where a curb provides the border for a perimeter landscape area, the dimension shall be measured from the inside of the curb(s). The Planning Director may reduce the required minimum width of a perimeter landscaping area where existing development or site constraints make it infeasible to provide drive aisles, parking spaces, and the perimeter landscaping buffer width listed in Table 19.606.2.C.1.

TABLE 19.606.2.C.1
MINIMUM PERIMETER LANDSCAPE STRIP DIMENSIONS

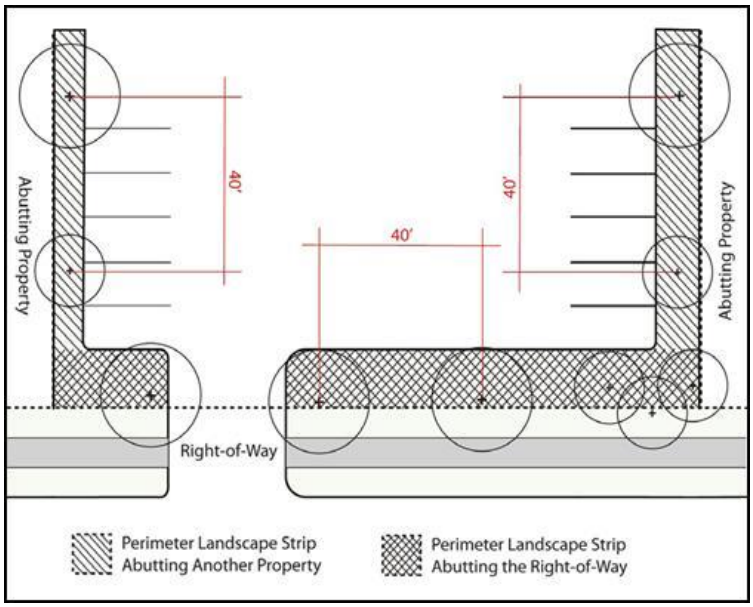
Location	Downtown Zones	All Other Zones
Lot line abutting a right-of-way	4’	8’
Lot line abutting another property, except for abutting properties that share a parking area	0’	6’

Response: The Site Plan (Sheet C1.10) demonstrates that the “All Other Zones” requirements for perimeter landscape strip widths are satisfied.

2. *Planting Requirements*

Landscaping requirements for perimeter buffer areas shall include 1 tree planted per 40 lineal ft of landscaped buffer area. Where the calculation of the number of trees does not result in a whole number, the result shall be rounded up to the next whole number. Trees shall be planted at evenly spaced intervals along the perimeter buffer to the greatest extent practicable. The remainder of the buffer area shall be grass, ground cover, mulch, shrubs, trees, or other landscape treatment other than concrete and pavement.

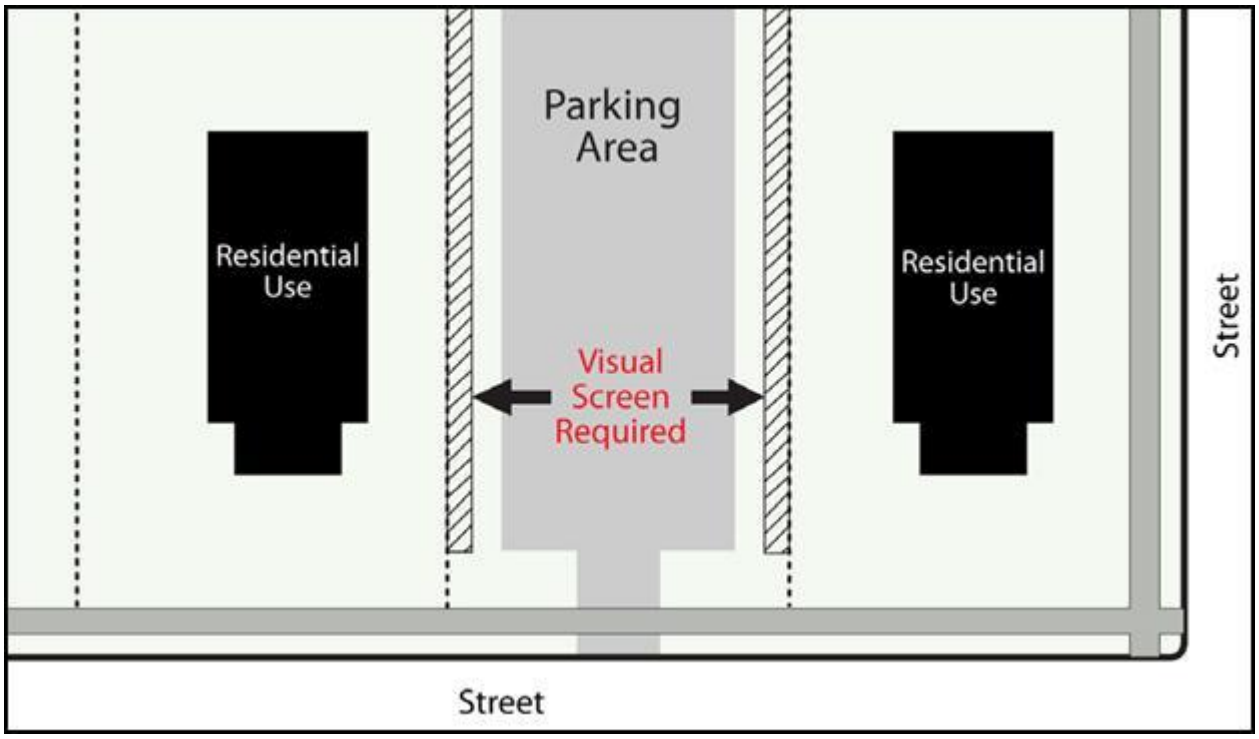
Figure 19.606.2.C. Perimeter Landscaping Areas



Response: As shown in the attached plans, perimeter landscaping of six to 11 feet is proposed. No trees can be provided near or on top of the existing retaining wall on the southern lot line, but five trees are proposed abutting SE 37th Avenue, which has 157' of landscaped buffer area, requiring only four trees. This standard is met.

3. *Additional Planting Requirements Adjacent to Residential Uses*
In addition to the planting requirements of Subsection 19.606.2.D.2, all parking areas adjacent to a residential use shall have a continuous visual screen in the landscape perimeter area that abuts the residential use. The area of required screening is illustrated in Figure 19.606.2.C.3. The screen must be opaque throughout the year from 1 to 4 ft above ground to adequately screen vehicle lights. These standards must be met at the time of planting. Examples of acceptable visual screens are a fence or wall, an earth berm with plantings, and other plantings of trees and shrubs.

Figure 19.606.2.C.3. Additional Planting Requirements Adjacent to Residential Uses



Response: These provisions are not applicable because the Subject Property is not adjacent to a residential use.

D. Interior Landscaping

The interior landscaping of parking areas shall meet the following standards which are illustrated in Figure 19.606.2.D.

1. General Requirements

Interior landscaping of parking areas shall be provided for sites where there are more than 10 parking spaces on the entire site. Landscaping that is contiguous to a perimeter landscaping area and exceeds the minimum width required by Subsection 19.606.2.C.1 will be counted as interior landscaping if it meets all other requirements of Subsection 19.606.2.D.

Response: The Site Plan (Sheet C1.10) and Planting Plan (Sheet L1.10) demonstrate compliance with Interior Landscaping requirements.

2. Required Amount of Interior Landscaped Area

At least 25 sq ft of interior landscaped area must be provided for each parking space. Planting areas must be at least 120 sq ft in area and dispersed throughout the parking area.

Response: Each of the proposed planting areas on the site contains at least 120 square feet. The combined landscape area exceeds 625 square feet (25 spaces x 25 sf per parking space), meeting the per-space requirement.

3. Location and Dimensions of Interior Landscaped Areas

a. Interior landscaped area shall be either a divider median between opposing rows of parking, or a landscape island in the middle or at the end of a parking row.

Response: Landscape islands are provided as end caps on groups of parking spaces, consistent with this requirement.

b. *Interior landscaped areas must be a minimum of 6 ft in width. Where a curb provides the border for an interior landscape area, the dimension shall be measured from the inside of the curb(s).*

Response: The Site Plan (Sheet C1.10) demonstrates that landscape planter islands have a minimum width of 6 feet, consistent with this requirement.

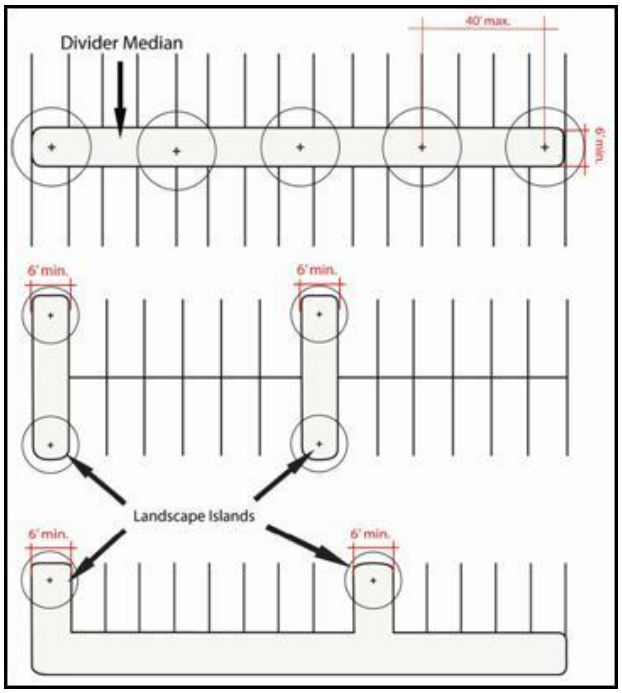
4. *Planting Requirements for Interior Landscaped Areas*

a. *For divider medians, at least 1 shade or canopy tree must be planted for every 40 linear ft. Where the calculation of the number of trees does not result in a whole number, the result shall be rounded up to the next whole number. Trees shall be planted at evenly spaced intervals to the greatest extent practicable.*

b. *For landscape islands, at least 1 tree shall be planted per island. If 2 interior islands are located contiguously, they may be combined and counted as 2 islands with 2 trees planted.*

c. *The remainder of any divider median or landscape island shall be grass, ground cover, mulch, shrubs, trees, or other landscape treatment other than concrete and pavement.*

Figure 19.606.2.D Location and Dimensions of Interior Landscaped Areas



Response: The Planting Plan (Sheet L1.10) includes shade tree plantings in compliance with these requirements.

5. *Additional Landscaping for Large Parking Areas*
Parking areas with more than 100 spaces on a site shall not have more than 15 spaces in a row without providing an interior landscaped island. See Figure 19.606.2.D.5.

Response: This provision is not applicable because the proposed development is too small to contain more than 100 spaces.

E. Other Parking Area Landscaping Provisions

1. Preservation of existing trees is encouraged in the off-street parking area and may be credited toward the total number of trees required, based on staff's review.

Response: There are no existing trees within the proposed parking/circulation area. This provision is not applicable.

2. Installation of parking area landscaping shall be required before a certificate of occupancy is issued, unless a performance bond is posted with the City. Then landscaping shall be installed within 6 months thereafter or else the bond will be foreclosed and plant materials installed by the City.

3. Parking area landscaping shall be maintained in good and healthy condition.

Response: These provisions provide guidance for implementation of approved plans in the construction and occupation/use phases of a project, and requires no evidence from the applicant.

4. Required parking landscaping areas may serve as stormwater management facilities for the site. The Engineering Director has the authority to review and approve the design of such areas for conformance with the Public Works Standards. This allowance does not exempt the off-street parking landscape area from meeting the design or planting standards of Subsection 19.606.2.

Response: The proposed site plan incorporates a stormwater management facility within the landscape area adjacent to SE 37th Avenue, between the two proposed driveways, which satisfies the requirements for approval under this provision.

5. Pedestrian walkways are allowed within perimeter and interior landscape buffer if the landscape buffer is at least 2 ft wider than required in Subsections 19.606.2.C.1 and 19.606.2.D.3.b.

Response: This provision is not applicable because the Site Plan (Sheet C1.10) does not include a proposal to locate pedestrian walkways within required landscape buffers.

19.606.3 Additional Design Standards

A. Paving and Striping

Paving and striping are required for all required maneuvering and standing areas. Off-street parking areas shall have a durable and dust-free hard surface, shall be maintained for all-weather use, and shall be striped to show delineation of parking spaces and directional markings for driveways and accessways. Permeable paving surfaces may be used to reduce surface water runoff and protect water quality.

Response: The proposed development plans specify paving with permanent materials, i.e., durable, weather-resistant asphalt and concrete, with striping and markings to guide circulation and define parking spaces. The proposed plan complies with this provision.

B. Wheel Stops

Parking bumpers or wheel stops, of a minimum 4-in height, shall be provided at parking spaces to prevent vehicles from encroaching on the street right-of-way, adjacent landscaped areas, or pedestrian walkways. Curbing may substitute for wheel stops if vehicles will not encroach into the minimum required width for landscape or pedestrian areas.

Response: Wheel stops are proposed on the south and west sides of the parking area, where necessary to avoid vehicular contact with an existing retaining wall or encroachment on a pedestrian walkway, respectively. This provision is satisfied.

C. Site Access and Drive Aisles

1. Accessways to parking areas shall be the minimum number necessary to provide access while not inhibiting the safe circulation and carrying capacity of the street. Driveway approaches shall comply with the access spacing standards of Chapter 12.16.

Response: As discussed above in this narrative, two driveways are appropriate based on the Subject Property's 205-foot frontage on SE 37th Avenue. Both proposed driveways are narrower than the allowed maximum width for industrial driveways; moreover, their spacing, locations relative to property boundaries, and other features are designed to meet the requirements of Chapter 12.16 Streets, Sidewalks and Public Places. This provision is satisfied.

2. Drive aisles shall meet the dimensional requirements in Subsection 19.606.1.

Response: The Site Plan (Sheet C1.10) shows that drive aisles satisfy the 22-foot minimum aisle width requirement for a 90-degree parking configuration in Table 19.606.1.

3. Parking drive aisles shall align with the approved driveway access and shall not be wider than the approved driveway access within 10 ft of the right-of-way boundary.

Response: The Site Plan (Sheet C1.10) shows that drive aisles align with proposed driveways and comply with this requirement.

4. Along collector and arterial streets, no parking space shall be located such that its maneuvering area is in an ingress or egress aisle within 20 ft of the back of the sidewalk, or from the right-of-way boundary where no sidewalk exists.

Response: This provision applies only on the west side of the Subject Property, where no access is proposed. It is not applicable to the driveways on SE 37th Avenue because it is not a collector or an arterial street.

5. Driveways and on-site circulation shall be designed so that vehicles enter the right-of-way in a forward motion.

Response: All access to and from the public right-of-way is designed to operate only in a forward motion. Truck maneuvering to access freight doors can be accommodated within the Subject Property, requiring no reversing movements that would enter a public street right-of-way.

D. Pedestrian Access and Circulation

Subsection 19.504.9 establishes standards that are applicable to an entire property for on-site walkways and circulation. The purpose of Subsection 19.606.3.D is to provide safe and convenient pedestrian access routes specifically through off-street parking areas. Walkways required by Subsection 19.606.3.D are considered part of the on-site walkway and circulation system required by Subsection 19.504.9.

1. Pedestrian access shall be provided for off-street parking areas so that no parking space is further than 100 ft away, measured along vehicle drive aisles, from a building entrance, or a walkway that meets the standards of Subsection 19.606.3.D.2.

Response: The site's small size, with only 205 feet of eastern frontage on SE 37th Avenue, limits the size of the parking and circulation area. A paved pedestrian walkway extends along the south side of the building and along the southern half (roughly) of its east side, such that no parking space is more than 100 feet from a walkway. This requirement is satisfied.

2. Walkways through off-street parking areas must be continuous, must lead to a building entrance, and meet the design standards of Subsection 19.504.9.E.

Response: The only walkway, other than the one along the south and east sides of the building, is an east-west crossing of the drive aisle that extends east from the main entrance to the SE 37th Avenue sidewalk. Both walkways satisfy this requirement.

E. Internal Circulation

1. General Circulation

The Planning Director has the authority to review the pedestrian, bicycle, and vehicular circulation of the site and impose conditions to ensure safe and efficient on-site circulation. Such conditions may include, but are not limited to, on-site signage, pavement markings, addition or modification of curbs, and modifying drive aisle dimensions.

Response: This provision, which authorizes the Planning Director to impose certain conditions in making land use approvals, requires no evidence from the applicant.

2. Connections to Adjacent Parking Areas

Where feasible, parking areas shall be designed to connect with parking areas on adjacent sites to eliminate the use of the street for cross movements.

Response: The previous design and construction of neighboring sites, as well as the presence of wetlands along the north property boundary, make parking lot connectivity infeasible at this location. This standard does not apply.

3. Drive-Through Uses and Queuing Areas

The following standards apply to uses with drive-through services and uses such as gas stations and quick vehicle service facilities where vehicles queue rather than park on the site. The Planning Director has the authority to determine when the standards apply to a proposed use. [detailed provisions omitted for brevity]

Response: This provision is not applicable because no drive-through service or use is proposed.

F. Lighting

Lighting is required for parking areas with more than 10 spaces. The Planning Director may require lighting for parking areas of less than 10 spaces if the parking area would not be safe due to the lack of lighting. Lighting shall be designed to enhance safe access for vehicles and pedestrians on the site, and shall meet the following standards:

1. *Lighting luminaires shall have a cutoff angle of 90 degrees or greater to ensure that lighting is directed toward the parking surface.*
2. *Parking area lighting shall not cause a light trespass of more than 0.5 footcandles measured vertically at the boundaries of the site.*
3. *Pedestrian walkways and bicycle parking areas in off-street parking areas shall have a minimum illumination level of 0.5 footcandles, measured horizontally at the ground level.*
4. *Where practicable, lights shall be placed so they do not shine directly into any WQR and/or HCA location. The type, size, and intensity of lighting shall be selected so that impacts to habitat functions are minimized.*

Response: Lighting equipment with the required performance specifications is readily available. The applicant will provide a compliant lighting plan as part of the construction permit application submittal package.

Chapter 19.608 Loading

19.608.1 General Provisions

A. The purpose of off-street loading areas is to contain loading activity of goods on-site and avoid conflicts with travel in the public right-of-way; provide for safe and efficient traffic circulation on the site; and minimize the impacts of loading areas to surrounding properties.

Response: This purpose statement requires no evidence or response from the applicant.

B. Off-street loading areas may be required for commercial, industrial, public, and semipublic uses for the receipt or distribution of merchandise, goods, or materials by vehicles. Off-street loading is not required in the Downtown Mixed Use Zone.

Response: The proposal includes two freight bays located in the northern part of the eastern building wall: a drive-up loading dock, and a 4-foot high loading dock with a depressed ramp.

19.608.2. Number of Loading Spaces

The Planning Director shall determine whether to require off-street loading for commercial, industrial, public, and semipublic uses. The ratios listed below should be the minimum required unless the Planning Director finds that a different number of loading spaces are needed upon reviewing the loading needs of a proposed use.

B. Nonresidential and Mixed-Use Buildings

Buildings where any floor area is in nonresidential uses should meet the following standards:

1. Less than 20,000 sq ft of total floor area: no loading spaces required.

2. 20,000 to 50,000 sq ft of total floor area: 1 loading space.

3. More than 50,000 sq ft of total floor area: 2 loading spaces.

Response: The two loading spaces proposed exceed the applicable minimum requirement, and no maximum requirement applies. This standard is satisfied.

19.608.3 Loading Space Standards

A. Loading spaces shall be at least 35 ft long and 10 ft wide, and shall have a height clearance of at least 13 ft.

Response: The proposed loading spaces, neither of which is a required space, meet these dimensional standards.

B. Loading areas shall be provided on the site and be separate from parking spaces.

Response: The development constraints and small size of the site, at 1.05 acres, make it impractical to attempt to achieve complete segregation of passenger vehicle and truck circulation. The site's access, circulation and parking are designed so that 20 of the proposed 25 on-site parking spaces (80%) are located with a direct walk to the main entrance that does not cross in front of the loading bays. The other five parking spaces are located on the north side of the northerly driveway because it must be aligned with the 4-foot high dock door for truck ingress and egress. Motorists who park in those northerly five parking spaces can safely use the sidewalk in SE 37th Avenue to walk to the pedestrian walkway that aligns with the main entrance, in lieu of needing to cross the loading area. Therefore, given the limitations of the site, the proposed development complies with this requirement to the extent it is feasible to do so.

C. Off-street loading areas shall have a durable and dust-free hard surface. Permeable paving surfaces may be used to reduce surface water runoff and protect water quality.

Response: Off-street loading areas are proposed to be paved with asphaltic concrete, a durable and dust-free hard surface. Pervious paving is not proposed.

D. Lighting of loading areas shall conform to the standards of Subsection 19.606.3.F.

Response: Lighting equipment with the required performance specifications is readily available. The applicant will provide a compliant lighting plan as part of the construction permit application submittal package.

E. Off-street loading areas for materials and merchandise shall be located outside of the minimum front and side yard requirements for structures.

Response: The loading doors are set back from the SE 37th Avenue right-of-way by more than 80 feet, meeting this requirement.

F. Off-street loading areas shall be located where not a hindrance to drive aisles, walkways, public or private streets, or adjacent properties.

Response: The south driveway will provide ingress/egress to the main parking area and safe pedestrian access to the main building entrance even when a truck is maneuvering to access a loading bay. Additionally, as noted above, motorists who park in the northerly five parking spaces can safely use the sidewalk in SE 37th Avenue to walk to the pedestrian walkway that aligns with the main entrance, in lieu of needing to cross the loading area. This requirement is satisfied.

19.608.4 Prohibitions

A. Loading activity for a site, regardless of whether loading spaces are required, shall not obstruct travel within the right-of-way.

Response: Truck maneuvering to access the loading area and doors is accomplished within the Subject Property, and will not obstruct travel in the right-of-way. This requirement is met.

B. The accumulation of goods in loading areas shall be prohibited when it renders the space useless for loading and unloading of goods and passengers.

Response: The applicant recognizes that this operational requirement will apply to the use of the site and facilities.

Chapter 19.609 Bicycle Parking

19.609.1 Applicability

Bicycle parking shall be provided for all new commercial, industrial, community service use, and multifamily residential development. Temporary and seasonal uses (e.g., fireworks and Christmas tree stands) and storage units are exempt from Section 19.609. Bicycle parking shall be provided in the Downtown Mixed Use Zone and at transit centers.

19.609.2 Quantity of Spaces

A. The quantity of required bicycle parking spaces shall be as described in this subsection. In no case shall less than 2 spaces be provided.

1. Unless otherwise specified, the number of bicycle parking spaces shall be at least 10% of the minimum required vehicle parking for the use.

Response: Two bicycle parking spaces are provided, on the north side of the main entrance, adjacent to the east building wall. Based on the minimum required vehicle parking, calculated above to be 15 spaces, the minimum of two bicycle parking spaces is required. The proposed bicycle parking therefore satisfies this requirement.

2. The number of bicycle parking spaces at transit centers shall be provided at the ratio of at least 1 space per 100 daily boardings.

Response: This provision is not applicable because the Subject Property is not a transit center.

3. Multifamily residential development with 4 or more units shall provide 1 space per unit.

Response: This provision is not applicable because the proposed development is not multifamily residential.

B. Covered or enclosed bicycle parking. A minimum of 50% of the bicycle spaces shall be covered and/or enclosed (in lockers or a secure room) in any of the following situations:

1. When 10% or more of vehicle parking is covered.

2. If more than 10 bicycle parking spaces are required.

3. Multifamily residential development with 4 or more units.

Response: This provision is not applicable because none of the three threshold requirements for applicability is met.

19.609.3 Space Standards and Racks

A. The dimension of each bicycle parking space shall be a minimum of 2 x 6 ft. A 5-ft-wide access aisle must be provided. If spaces are covered, 7 ft of overhead clearance must be provided. Bicycle racks must be securely anchored and designed to allow the frame and 1 wheel to be locked to a rack using a high security, U-shaped, shackle lock.

Response: The location shown on the Site Plan (Sheet C1.10) is sufficiently large to satisfy these dimensional requirements. Compliance can be assured in construction plans through a Condition of Approval.

B. Lighting shall conform to the standards of Subsection 19.606.3.F.

Response: Lighting equipment with the required performance specifications is readily available. The applicant will provide a compliant lighting plan as part of the construction permit application submittal package.

19.609.4 Location

A. Bicycle parking facilities shall meet the following requirements:

1. Located within 50 ft of the main building entrance.

2. Closer to the entrance than the nearest non-ADA designated vehicle parking space.

Response: Two bicycle parking spaces are provided, adjacent to the main entrance on the north side. This requirement is met.

3. Designed to provide direct access to a public right-of-way.

Response: Cyclists can directly access the public right-of-way by crossing the drive aisle in the striped walkway aligned with the main entrance, or by traveling in the main drive aisle to either of the two driveways. This requirement is met.

4. Dispersed for multiple entrances.

Response: This provision is not applicable because there is only one main building entrance.

5. In a location that is visible to building occupants or from the main parking lot.

Response: The proposed location is prominently visible, near the main entrance.

6. Designed not to impede pedestrians along sidewalks or public rights-of-way.

Response: The proposed location is internal to the Subject Property and will not encroach or congest the public sidewalk or street.

7. Separated from vehicle parking areas by curbing or other similar physical barriers.

Response: The proposed location is at the same level as, and alongside of, a curbed and elevated pedestrian walkway between the building and the parking area.

B. The public right-of-way may be utilized for bicycle parking when parking cannot be reasonably accommodated on the site and the location is convenient to the building's front entrance. The bicycle parking area in the right-of-way must leave a clear, unobstructed width of sidewalk that meets the Engineering Department's Public Works Standards for sidewalk passage. See Figure 19.609 for illustration of space and locational standards. A right-of-way permit is required.

Response: This provision is not applicable because the applicant does not propose to locate bicycle parking in the public right-of-way.

Chapter 19.610 Carpool and Vanpool Parking

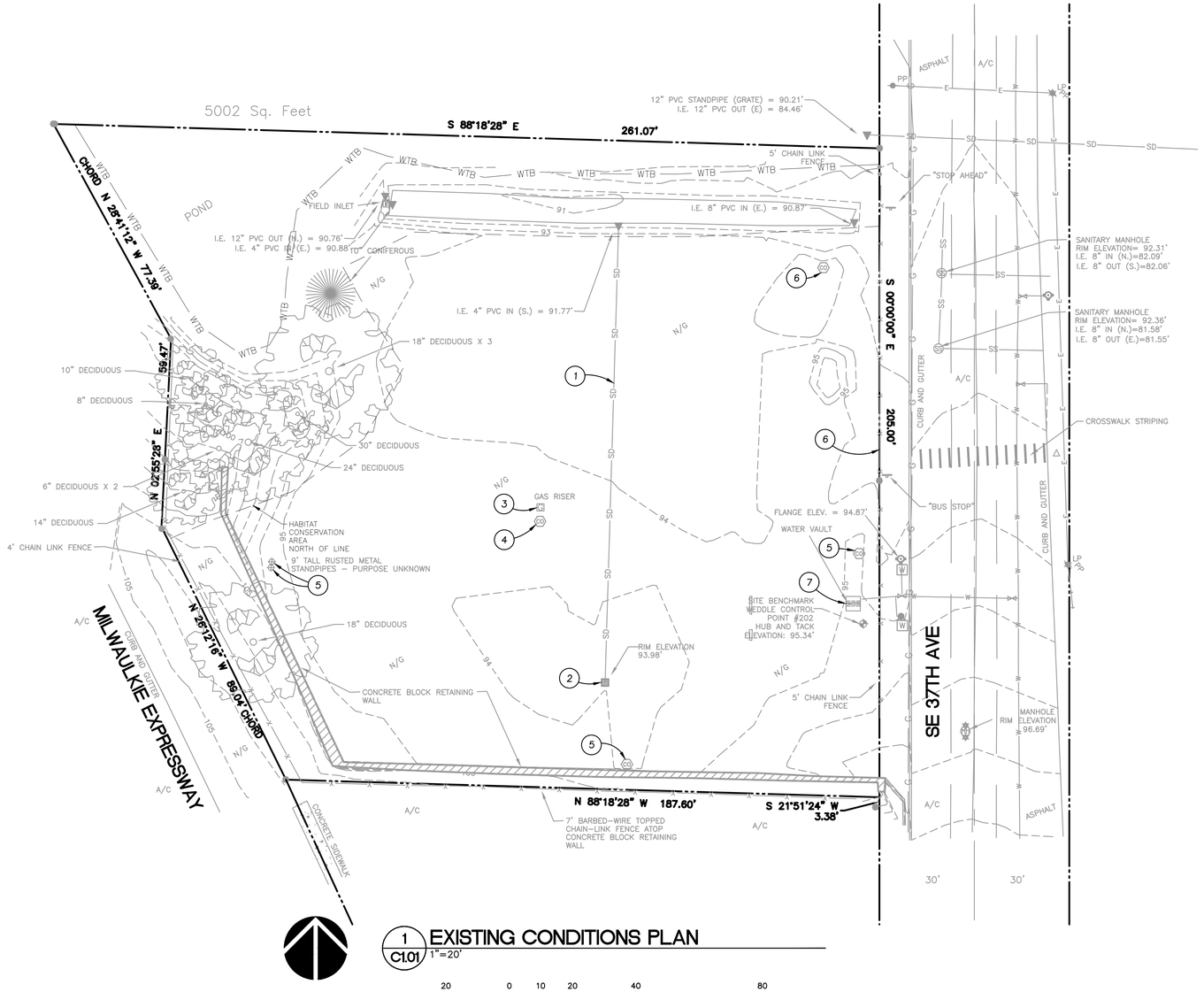
19.610.1 Applicability

New industrial, institutional, and commercial development with 20 or more required parking spaces shall provide carpool/vanpool parking.

Response: These provisions are not applicable because the proposed development's minimum required parking, calculated above, is 15 spaces, which is below the 20-space threshold for applicability.

IV. CONCLUSION

The applicant has provided evidence in the form of plans, technical reports, specifications, and other supporting materials. The submitted evidence demonstrates compliance with all applicable approval standards for the requested permits. The applicant respectfully requests approval of the proposed development.



1 C1.01 **EXISTING CONDITIONS PLAN**

1"=20'

20 0 10 20 40 80

(IN FEET)

1 inch = **20** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

DEMOLITION NOTES

1. OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 8-1-1.
2. INSTALL EROSION CONTROL MEASURES AND TEMPORARY FENCING PRIOR TO WORK, SEE EROSION CONTROL PLANS
3. DEMOLISH EXISTING PAVED AND GRAVEL AREAS ON SITE WITHIN THE LIMITS OF CONSTRUCTION AND AS SHOWN. MATERIALS SHALL BE REMOVED FROM SITE. PAVED AREAS SHOULD BE EXCAVATED TO A MIN. OF 4" TO REMOVE SUBBASE. IF REMOVED GRAVEL OR ASPHALT MATERIALS ARE TO BE RECYCLED OR RE-USED ON SITE, PREVENT CONTAMINATION OF THESE MATERIALS FROM TOPSOIL OR OTHER DELETERIOUS MATERIAL. REFER TO GEOTECHNICAL REPORT FOR APPLICABILITY OF USING RECYCLED MATERIALS ON SITE.
4. DEMOLISH AND REMOVE FENCING, SIDEWALKS, DRIVEWAYS, FENCES, PLANTERS, AND TREES AS SHOWN. PROTECT LANDSCAPING, SIDEWALKS, PAVING, TREES, AND BUILDINGS TO REMAIN.
5. REMOVE ALL UNDERGROUND UTILITY SERVICES AND CONDUIT WITHIN THE CONSTRUCTION LIMITS AND AS SHOWN. COORDINATE WITH UTILITY AND ELECTRICAL PLANS.
6. MAINTAIN SERVICES DURING CONSTRUCTION TO EXISTING BUILDINGS SERVED BY UTILITY LINES AFFECTED BY CONSTRUCTION.
7. PROTECT ALL STRUCTURES, FENCING AND VEGETATION OUTSIDE CONSTRUCTION LIMITS, EXCEPT AS SHOWN.

KEYNOTES

(#)

1. STORM LINE TO BE REMOVED
2. STORM CATCH BASIN TO BE REMOVED
3. GAS RISER TO BE REMOVED, CONTRACTOR TO VERIFY NO GAS SERVICING SITE
4. CLEANOUT TO BE REMOVED
5. STANDPIPES TO BE REMOVED IF POSSIBLE, CONTRACTOR TO INFORM ENGINEER OF UTILITY/PURPOSE OF STANDPIPES BEFORE FULLY REMOVING
6. CHAINLINK FENCE TO BE REMOVED
5. CLEANOUT TO BE REMOVED IF POSSIBLE, CONTRACTOR TO INFORM ENGINEER OF UTILITY/PURPOSE OF CLEANOUTS BEFORE FULLY REMOVING
6. CLEANOUT TO REMAIN. CONTRACTOR TO PROTECT AS NECESSARY
7. WATER VAULT TO REMAIN. CONTRACTOR TO PROTECT AS NECESSARY. CONTRACTOR TO VERIFY AND INFORM ENGINEER OF VAULT CONTENTS AND SIZES

LEGEND

A/C	ASPHALTIC CONCRETE	SS	SANITARY SEWER MANHOLE
BW	BOTTOM OF WALL		SIGN
	CATCH BASIN (SYPHON)		SITE BENCHMARK
CO	CLEAN-OUT	X	SPOT ELEVATION
	CONIFEROUS TREE		STANDPIPE (PROPERTY UNKNOWN)
	DECIDUOUS TREE	TC	TOP OF CURB
	FIRE DEPARTMENT CONNECT	TW	TOP OF WALL
	FIRE HYDRANT	W	WATER METER
	FIELD INLET		WATER VALVE
	GAS RISER	WV	WATER VAULT
G	GUTTER	4S	WETLANDS FLAG NUMBER
	GUY ANCHOR	2	WETLANDS PLOT NUMBER
	PIPE INVERT (I.E.)	X X	FENCE
LP	LIGHT POLE	G	GAS
MH	MANHOLE (UNKNOWN UTIL)	E	POWER LINES
	MONITORING WELL	SS	SANITARY SEWER
N/G	NATURAL GROUND	SD	STORM DRAIN
PP	POWER POLE	W	WATER
	PROPERTY CORNER MONUMENT	WTB	WETLAND BOUNDARY
			HABITAT CONSERVATION AREA

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REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EXISTING CONDITIONS PLAN

DRAWN BY: NKL

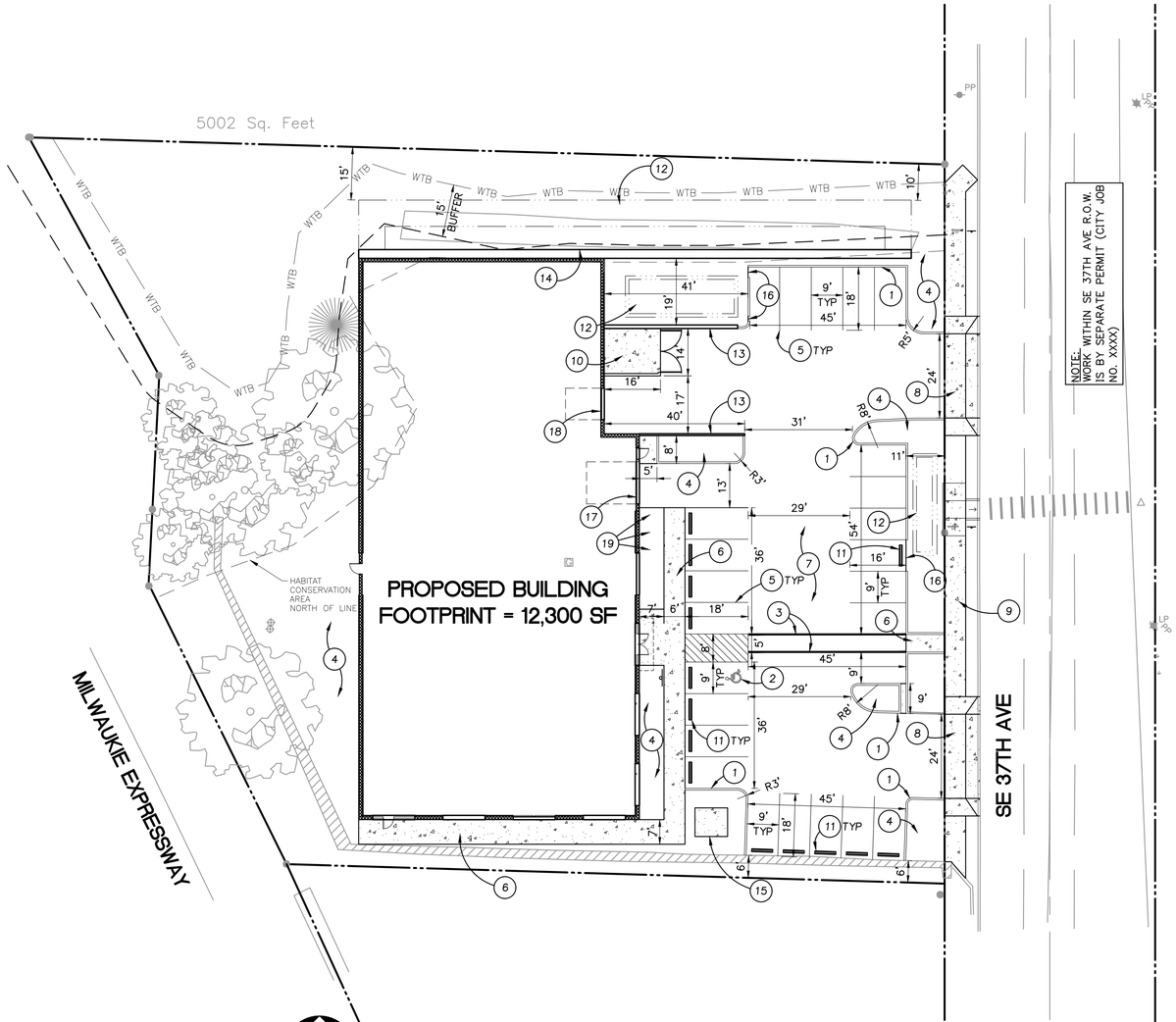
CHECKED BY: MWB

SHEET:

C1.01

JOB NO. **2160642.00**

LAND USE SUBMITTAL 07/18/2017



1 C1.10 SITE PLAN
1"=20'

20 0 10 20 40 80
(IN FEET)
1 inch = **20** ft.

CURB NOTE

ALL ON-SITE CURB RADII ARE 2.0' UNLESS OTHERWISE NOTED ON THE PLANS

PARKING DATA

STANDARD STALLS	24 SPACES
ADA STALLS	1 SPACE
TOTAL	25 SPACES

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF THE CITY OF MILWAUKIE AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. EFFECTIVE EROSION CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED TO MEET THE CITY OF MILWAUKIE AND DEQ. REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES.
6. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) MUST COMPLY WITH O.R.S. 757.541 THROUGH 757.571; EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. (ONE CALL LOCATE UTILITY NOTIFICATION CENTER – PORTLAND METRO AREA 246-6699, OREGON 696-4848, ALL OTHER AREAS 1-800-332-2344).
7. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
8. REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.

LEGEND

- PROPERTY LINE
- 6" VERTICAL CURB
- EDGE OF ASPHALT

KEYNOTES

1. VERTICAL CURB, SEE DETAIL 1/C5.10
2. ADA COMPLIANT PARKING STALL, SEE DETAIL 2/C5.10
3. CROSSWALK STRIPING
4. LANDSCAPE AREA
5. 4" WHITE PARKING STRIPE
6. CONCRETE SIDEWALK, SEE DETAIL 8/C5.10
7. ASPHALT PAVING AREA, SEE DETAIL 6/C5.10
8. 8" THICK COMMERCIAL DRIVEWAY PER SEPARATE PUBLIC WORKS PERMIT
9. PROPOSED SIDEWALK PER SEPARATE PUBLIC WORKS PERMIT
10. TRASH ENCLOSURE
11. WHEEL STOPS, SEE DETAIL 3/C5.10
12. STORM MANAGEMENT FACILITY, SEE GRADING & UTILITY PLAN
13. CIP WALL
14. GABION WALL
15. TRANSFORMER PAD
16. CURB BREAK WITH SPLASH PAD & RIP RAP, SEE DETAIL 7/C5.10
17. DRIVE UP LOADING DOCK
18. 4' HIGH LOADING DOCK
19. BIKE PARKING

SITE DATA

SITE AREA	45,901 SF (1.05 AC)
BUILDING AREA	12,300 SF
BUILDING COVERAGE	26.80%
INTERIOR PARKING LANDSCAPING REQUIRED: 25 SPACES * 25SF/SPACE = 625 SF	1,363 SF
LANDSCAPING	20,245 SF (0.46 AC) = 44.1%
BIKE PARKING	2 SPACES PROVIDED

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REVISIONS:

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SHEET TITLE:
SITE PLAN

DRAWN BY: NKL

CHECKED BY: MWB

SHEET:
C1.10

JOB NO. 2160642.00

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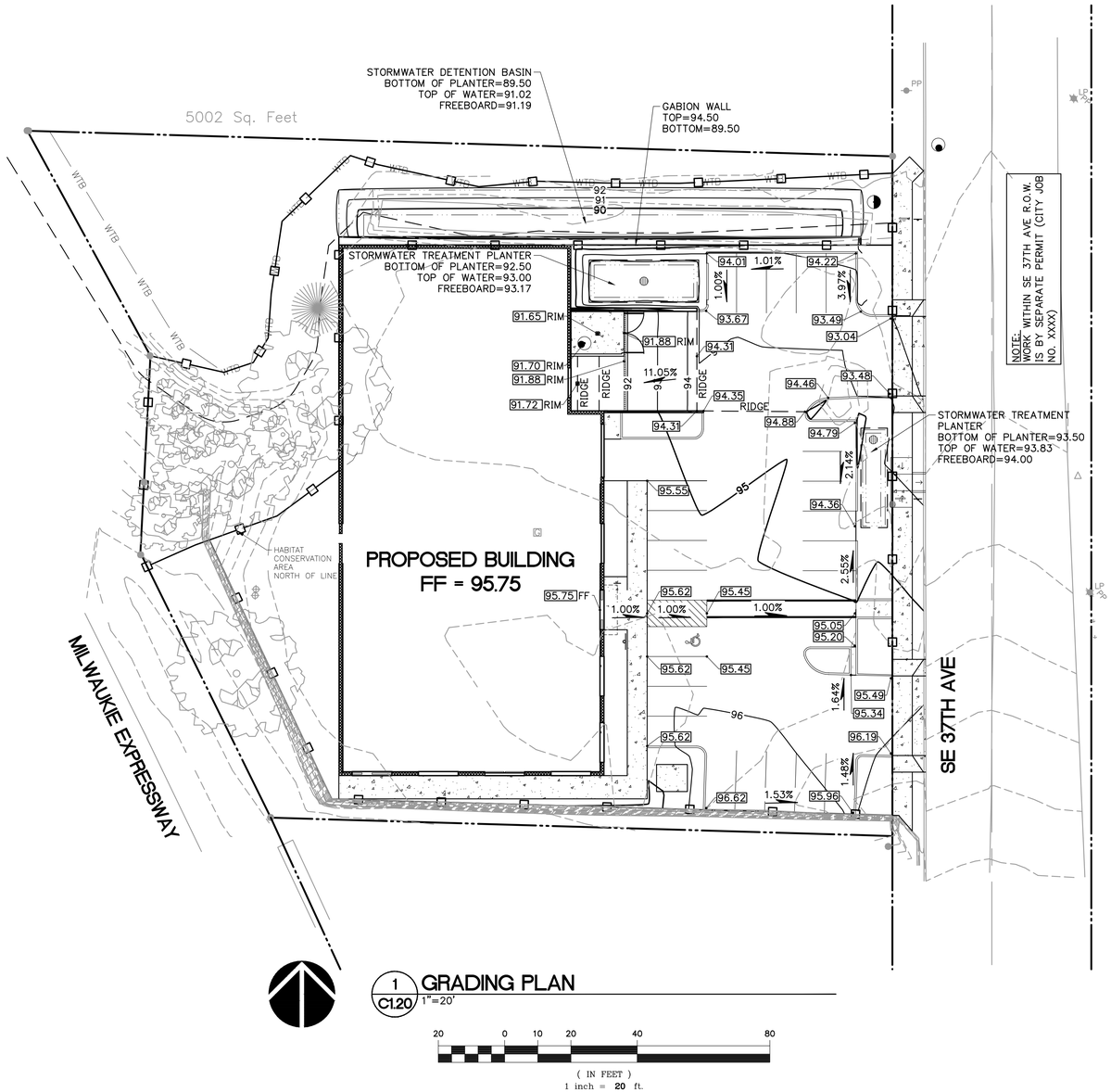

1 C1.20 GRADING PLAN
1"=20'

20 0 10 20 40 80
(IN FEET)
1 inch = **20** ft.

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GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. ROUGH GRADE TO ALLOW FOR DEPTH OF CONCRETE SLABS, WALKS, AND THEIR BASE COURSES. GRADE FOR PAVED DRIVES AND PAVED PARKING AREAS AS INDICATED AND SPECIFIED HEREIN, AND PROVIDE FOR SURFACE DRAINAGE AS SHOWN, ALLOWING FOR THICKNESS OF SURFACING MATERIAL.
   FINISH GRADING: AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER CRAFTS HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES. GRADING TOLERANCES:
   ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ±0.1 FT.
   FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ±0.03 FT.
2. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) MUST COMPLY WITH O.R.S. 757.541 THROUGH 757.571; EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS 72 HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
3. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY OF MILWAUKIE REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE SO ROUTED THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. SITE TOPSOIL SHALL BE STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING.
6. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY WEDDLE SURVEYING, AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION.
7. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
8. 2% MAXIMUM SLOPE AT ALL ADA–COMPLIANT PARKING SPACES AND LOADING ZONES.
9. 5% MAX SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
10. WHERE SLOPES ARE STEEPER THAN 3:1, CONTRACTOR SHALL INSTALL JUTE MATTING. SLOPE SHALL BE PREPARED TO ENSURE COMPLETE AND DIRECT CONTACT OF MATTING WITH SOIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS.
11. ALL ELEVATIONS ARE FINISHED SURFACE UNLESS OTHERWISE NOTED.

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SHEET TITLE:
GRADING PLAN

DRAWN BY: NKL

CHECKED BY: MWB

SHEET:

C1.20

JOB NO. **2160642.00**

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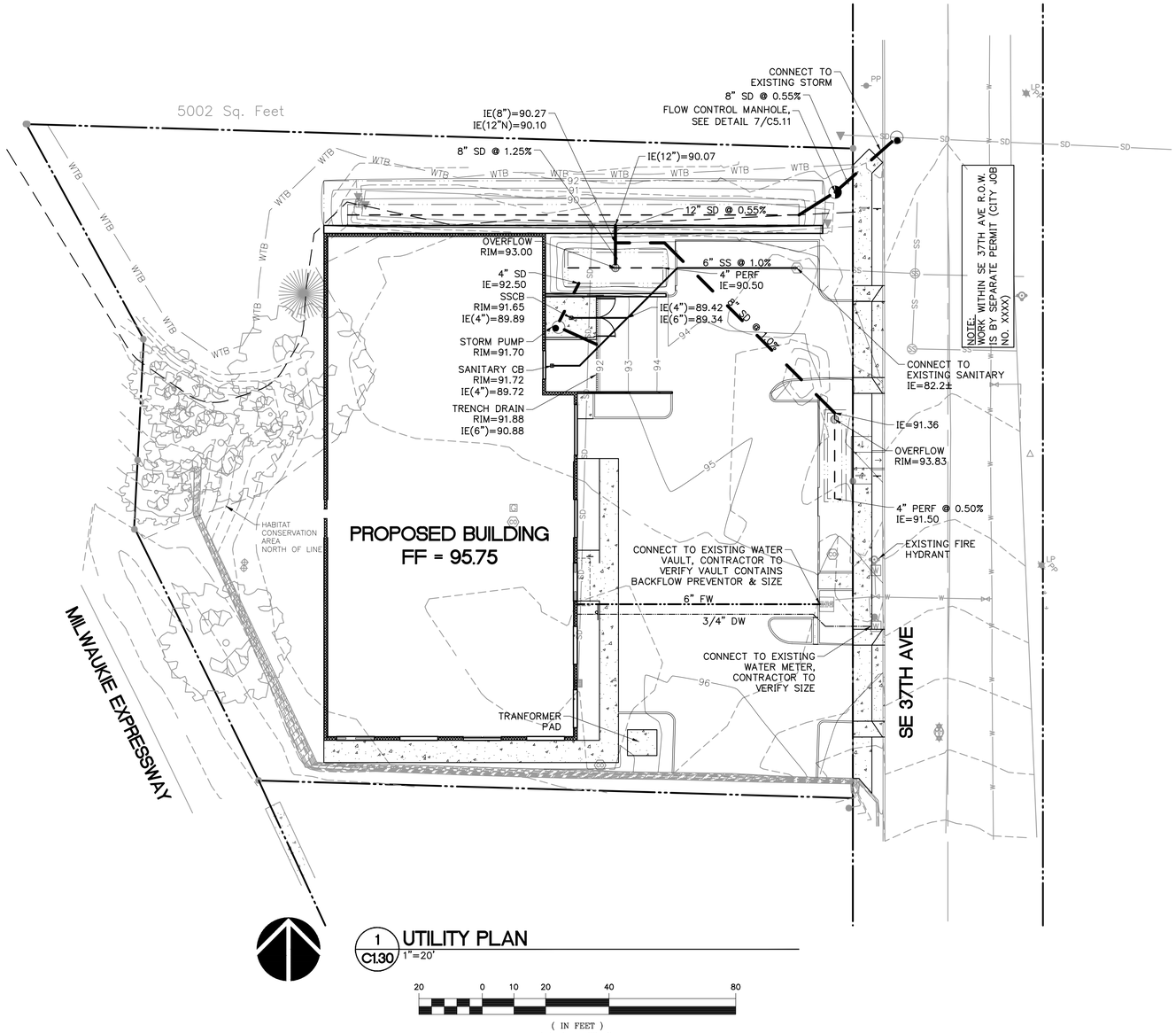

1 C1.30 UTILITY PLAN
1"=20'

20 0 10 20 40 80

(IN FEET)
1 inch = **20** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF CITY OF MILWAUKIE AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE INTERNATIONAL BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W. REQUIRES A PUBLIC WORKS PERMIT.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.12. NOTE: NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS.
4. ALL STORM PIPING IS SIZED FOR A MANNING'S "N" VALUE = 0.013. ALL STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED.
5. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
6. ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE.
7. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WEDDLE SURVEYING, INC, DATED MARCH, 2017.
9. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
10. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
11. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.

LEGEND

- SANITARY SEWER CATCH BASIN, SEE BABY LYNCH DETAIL 6/C5.11
- FLOW CONTROL MANHOLE, SEE DETAIL 7/C5.11
- STORM PUMP MANHOLE
- PERF PIPE, SEE DETAIL 8/C5.11
- STORM SEWER, SEE DETAIL 5/C5.11
- STORM SEWER OVERFLOW, SEE DETAIL 10/C5.11

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UTILITY PLAN

DRAWN BY: NKL

CHECKED BY: MWB

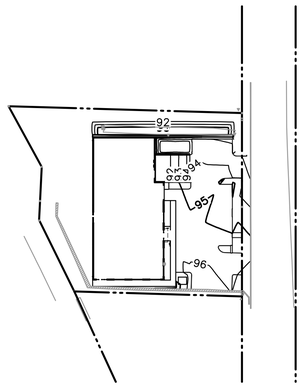
SHEET:
C1.30

JOB NO. 2160642.00

LAND USE SUBMITTAL 07/18/2017

DAY WIRELESS - 11405 SE 37TH
EROSION AND SEDIMENT CONTROL PLAN-1200C

MILWAUKIE, OR
11E36AD 07200
CLACKAMAS COUNTY, OREGON



SITE PLAN
1"=80'

VICINITY MAP
NOT TO SCALE

PROPERTY DESCRIPTION:
TAX LOT 07200, SECTION 36, TOWNSHIP 1 SOUTH, RANGE 1 EAST
CLACKAMAS COUNTY, OREGON

LATITUDE = 45°26'26"
LONGITUDE = -122°37'29"

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* CURRENTLY UNDEVELOPED, FLAT WITHOUT VEGETATION LOT.

DEVELOPED CONDITIONS

* COMMERCIAL REPAIR BUILDING WITH SMALL RETAIL AREA AND OFFICE

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* **MASS GRADING (JUNE 2017 TO JULY 2017)**
* **UTILITY INSTALLATION (AUGUST 2017 TO OCTOBER 2017)**
* **SITE CONSTRUCTION (JUNE 2017 TO OCTOBER 2017)**
* **FINAL STABILIZATION (OCTOBER 2017)**

TOTAL SITE AREA = 45,901 SF (1.05 AC)
TOTAL DISTURBED AREA = 38,893 SF (0.89 AC)

SITE SOIL CLASSIFICATION:
91B WOODBURN SILT LOAM, 3 TO 8 PERCENT SLOPE
42 HUMAQUEPTS PONDED

RECEIVING WATER BODIES:

NEAREST WATER BODY: WILLAMETTE RIVER

PERMITTEE'S SITE INSPECTOR:

COMPANY/AGENCY:
PHONE:
FAX:
E-MAIL:
EXPERIENCE: CESCL#

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

PROJECT LOCATION:
SITE LOCATED BETWEEN SE 37TH AVE AND SE MILWAUKIE EXPRESSWAY
CLACKAMAS COUNTY, OR

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MILWAUKIE, OR 97222
CONTACT: SUVI WESA
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SURVEYOR
WEDDLE SURVEYING
CONTACT: TONY RYAN
PHONE: 503-941-9585

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION & SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
2. ALL INSPECTIONS MUCH BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS (SCHEDULE A.12.B & B.1)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS (SCHEDULEB.1.C & B.2)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE (SCHEDULE B.2.C)
5. ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT (SCHEDULE A.8.A)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS (SCHEDULE A.12.C.I)
7. SUBMISSION OF ALL EXCP REVISION IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS (SCHEDULE A.12.C.IV & V)
8. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION (SCHEDULE A.7.A.III)
9. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS (SCHEDULE A.8.C.I(1) & (2))
10. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED (SCHEDULE A.7.A.V)
11. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN 50-FEET OF WATER OF THE STATE (SCHEDULE A.7.B.I & 2(A)(B))
12. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS AND BARRIERS PRIOR TO LAND DISTURBANCE (SCHEDULE A.8.C.I(5))
13. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS (SCHEDULE A.7.C)
14. CONTROL SEDIMENT AS NEEDED ALONG PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY (SCHEDULE A.7.D.I)
15. ESTABLISH CONCRETE TRUCK & OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK (SCHEDULE A.8.C.I(6))
16. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATION MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS (SCHEDULE A.8.C.II(3))
17. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS (SCHEDULE A.8.C.I(7))
18. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND DISTURBING ACTIVITIES (SCHEDULE A.7.D.II & A.8.C.I(4))
19. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATERTIGHT TRUCKS OR DRAIN LOADS ON SITE (SCHEDULE A.7.D.II(5))
20. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAIN AND CURING COMPOUNDS (SCHEDULE A.6)
21. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS (SCHEDULE A.7.E.I(2))
22. IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES (SCHEDULE A.7.E.III)
23. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL (SCHEDULE A.7.A.IV)
24. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE (SCHEDULE A.9.B.III)
25. IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS (SCHEDULE A.9.D)
26. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENT AT ALL TIMES OF THE YEAR (SCHEDULE A.7.B)
27. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTS TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS (SCHEDULE A.7.E.II(2))
28. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND ACTIVITIES DURING WET WEATHER (SCHEDULE A.7.A.I)
29. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHED ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL (SCHEDULE A.9.C.I)
30. OTHER SEDIMENT BARRIER (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHED TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL (SCHEDULE A.9.C.I)
31. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT (SCHEDULE A.9.C.III & IV)
32. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEANUP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME (SCHEDULE A.9.B.I)
33. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWER OR DISCHARGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEAN UP RELEASED SEDIMENTS (SCHEDULE A.9.B.II)
34. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE (SCHEDULE A.7.F.I)
35. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE (SCHEDULE A.7.F.II)
36. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS (SCHEDULE A.8.C.III(1) & D.3.C.II & III)

ATTENTION EXCAVATORS:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

RATIONALE STATEMENT
A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESCP PLAN, AN ACTION PLAN WILL BE SUBMITTED.

_____ INITIAL

LOCAL AGENCY-SPECIFIC EROSION CONTROL NOTES

1. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAT SEPTEMBER 1; THE TYPE AND PERCENTAGES OF SEED IN THE MIX MUST BE IDENTIFIED ON THE PLANS.
2. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP I.E. (FILTER BAG).
3. ALL EXPOSED SOILS MUST BE COVERED DURING THE WET WEATHER PERIOD, OCTOBER 01 – MAY 31.

INSPECTION FREQUENCY TABLE

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. AT LEAST ONCE EVERY FOURTEEN (14) DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (Schedule A.8.c.i.(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS.
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS.
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION. (Schedule B.2.a)

BMP MATRIX FOR CONSTRUCTION PHASES
REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

BMP \ YEAR: 2017, MONTH #:	6	7	8	9	10
BIOBAGS	X	X	X	X	X
BIOSWALES					
CHECK DAMS	X	X	X	X	X
COMPOST BERM					
COMPOST BLANKETS					
COMPOST SOCKS					
CONCRETE TRUCK WASHOUT	X	X	X	X	X
CONSTRUCTION ENTRANCE	X	X	X	X	X
DEWATERING (TREATMENT LOCATION, SCHEMATIC, & SAMPLING PLAN REQUIRED)					
DRAINAGE SWALES					
EARTH DIKES (STABILIZED)					
ENERGY DISSIPATORS					
EROSION CONTROL BLANKETS & MATS (SPECIFY TYPE)					
HYDROSEEDING					
INLET PROTECTION	X	X	X	X	X
MULCHES (SPECIFY TYPE)					
MYCORRHIZAE/ BIOFERTILIZERS					
NATURAL BUFFER ZONE					
ORANGE FENCING (PROTECTING SENSITIVE/PRESERVED AREAS)	X	X	X	X	X
OUTLET PROTECTION					
PERMANENT SEEDING AND PLANTING					
PIPE SLOPE DRAINS					
PLASTIC SHEETING					
PRESERVE EXISTING VEGETATION	X	X	X	X	X
SEDIMENT FENCING	X	X	X	X	X
SEDIMENT BARRIER					
SEDIMENT TRAP					
SODDING					
SOIL TACKIFIERS					
STORM DRAIN INLET PROTECTION	X	X	X	X	X
STRAW WATTLES					
TEMPORARY DIVERSION DIKES					
TEMPORARY OR PERMANENT SEDIMENTATION BASINS					
TEMPORARY SEEDING AND PLANTING					
TREATMENT SYSTEM (O & M PLAN REQUIRED)					
UNPAVED ROADS GRAVELED OR OTHER BMP ON THE ROAD					
VEGETATIVE BUFFER STRIPS	X	X	X	X	X

SHEET INDEX
EROSION AND SEDIMENT CONTROL PLANS

C1.40 EROSION AND SEDIMENT CONTROL COVER SHEET
C1.41 CLEARING AND DEMO EROSION AND SEDIMENT CONTROL PLAN
C1.42 EROSION AND SEDIMENT CONTROL PLAN
C1.43 EROSION AND SEDIMENT CONTROL DETAILS

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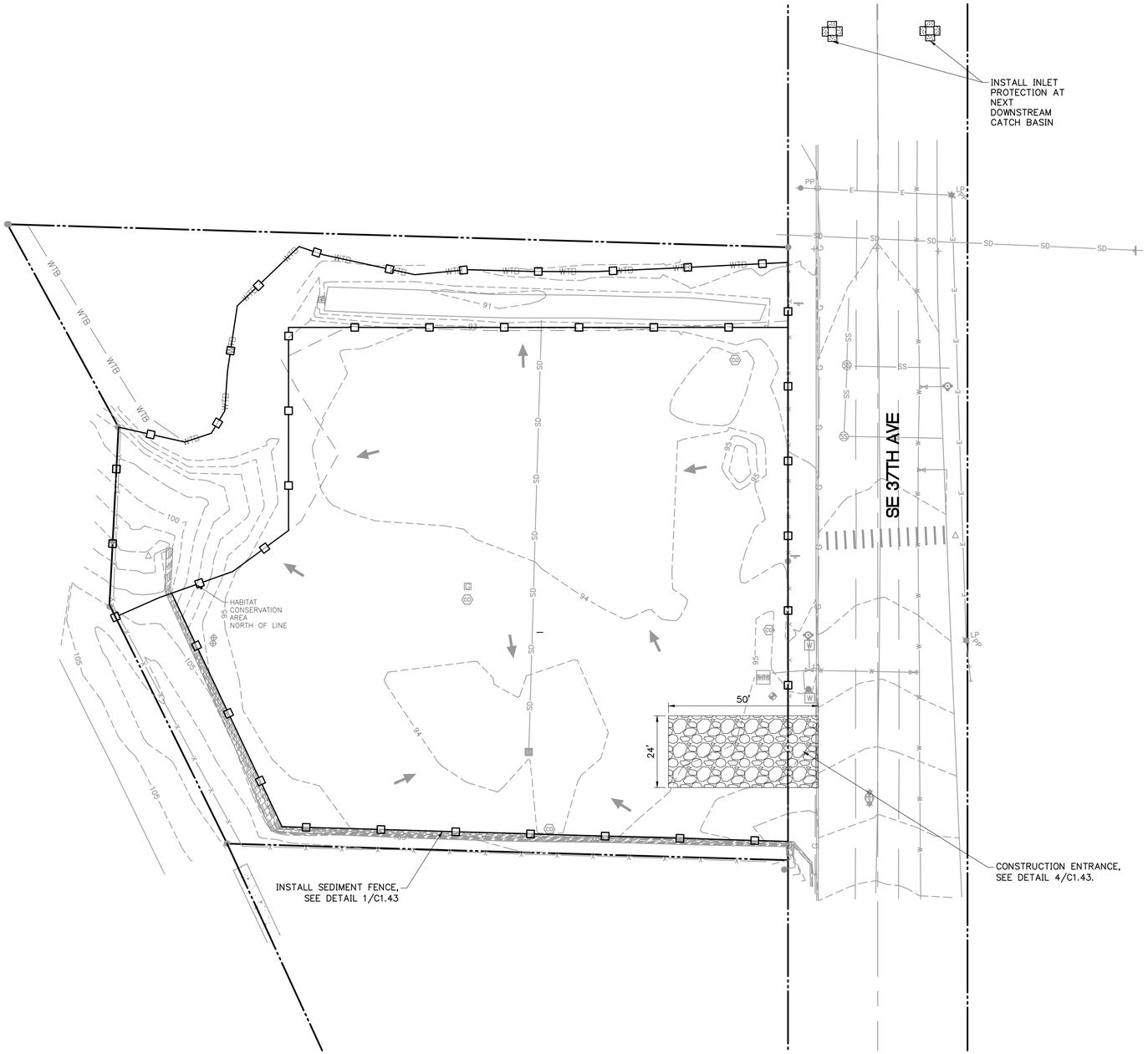

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS, CONSTRUCTED OUT OF MULCH, CHIPPINGS OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS ,AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.

LEGEND

- CATCH BASIN SEDIMENT FILTER BAG
- 20 — EXISTING CONTOUR
- SEDIMENT FENCE
- EXISTING DRAINAGE FLOW ARROW
- CONSTRUCTION ENTRANCE

CLEARING AND DEMO EROSION AND SEDIMENT CONTROL PLAN

1 / C1.41

20 0 10 20 40 80

(IN FEET)
1 inch = **20** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: MIDDLE SURVEYING, INC DATE: MARCH 28, 2017

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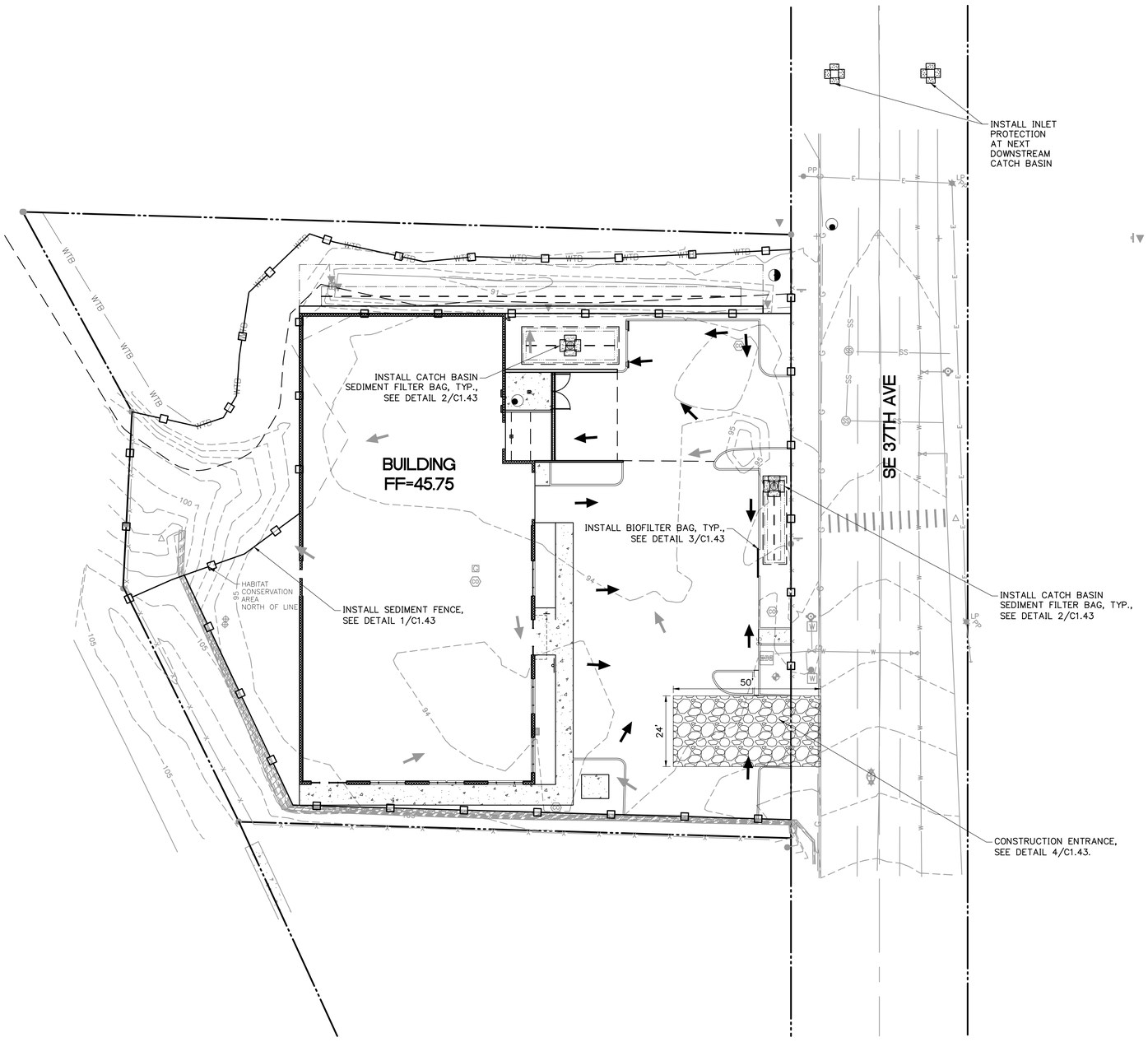

1 C1.42 EROSION AND SEDIMENT CONTROL PLAN

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

EROSION CONTROL GENERAL NOTES

TOTAL DISTURBANCE AREA: 38,893 SF (0.89 AC)

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS.
2. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING PERIMETER SEDIMENT CONTROL MUST BE IN PLACE BEFORE VEGETATION IS DISTURBED AND MUST REMAIN IN PLACE AND BE MAINTAINED, REPAIRED, AND PROMPTLY IMPLEMENTED FOLLOWING PROCEDURES ESTABLISHED FOR THE DURATION OF CONSTRUCTION, INCLUDING PROTECTION FOR ACTIVE STORM DRAIN INLETS AND CATCH BASINS AND APPROPRIATE NON-STORMWATER POLLUTION CONTROLS.
3. THIS DRAWING IS FOR GENERAL GUIDANCE ONLY. THE CONTRACTOR SHALL MEET ALL CITY OF MILWAUKIE EROSION/SEDIMENT CONTROL REQUIREMENTS. ALL EROSION CONTROL MEASURES SHALL CONFORM TO THE AUTHORITY HAVING JURISDICTION REQUIREMENTS AND THE PLANS AND SPECIFICATIONS SPECIFIC TO THIS PROJECT.
4. CONSTRUCT EROSION CONTROL IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS. STAGE CONSTRUCTION TO INCLUDE INSTALLATION OF PERIMETER SEDIMENT FENCING AS REQUIRED.
5. METHOD OF INSTALLATION FOR SEDIMENT FENCE SHALL NOT CAUSE DAMAGE TO VEGETATED SLOPE EXCEPT AT POINT OF INSTALLATION. SIDECAST MATERIAL SHALL BE KEPT TO A MINIMUM AND SHALL BE TO THE UPHILL SIDE OF THE SEDIMENT FENCE. THE FENCE SHALL BE INSTALLED AT LEAST 4 FEET FROM ADJACENT TREES. ANY EXPOSED GROUND SHALL BE SEEDED AND COVERED WITH STRAW MULCH TO PREVENT EROSION. TEMPORARY GROUND COVER SHALL BE MAINTAINED UNTIL A HEALTHY STAND OF GRASS HAS BEEN ESTABLISHED. SEEDING SHALL BE WITH NATURAL SPECIES FOR THE AREA. SEE THE SPECIAL SPECIFICATIONS FOR PROPER SEED MIX.
6. ALL EROSION CONTROL DEVICES SHALL BE EXAMINED AND REPAIRED AFTER EACH STORM OCCURRENCE, AND INLETS SHALL BE CLEANED OF SEDIMENT WHENEVER NECESSARY.
7. HYDROSEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE INSPECTOR. THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC TO PAVED AREAS TO PREVENT AND MINIMIZE SEDIMENT TRACKING OFF-SITE. CONTRACTOR SHALL SWEEP OR VACUUM PAVED AREAS IF SEDIMENT ACCUMULATION OCCURS. DO NOT TRACK SEDIMENT TO THE PUBLIC STREET.
8. THE CONTRACTOR SHALL LIMIT CONSTRUCTION TRAFFIC TO PAVED AREAS TO PREVENT AND MINIMIZE SEDIMENT TRACKING OFF-SITE. CONTRACTOR SHALL SWEEP OR VACUUM PAVED AREAS IF SEDIMENT ACCUMULATION OCCURS. DO NOT TRACK SEDIMENT TO THE PUBLIC STREET.
9. INSTALL TEMPORARY EROSION PREVENTION SUCH AS JUTE NETTING OR GEOTEXTILE ON DISTURBED AREAS STEEPER THAN 4H:1V.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. THE STORM WATER FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO THE STORM WATER SYSTEM FUNCTIONING AND SITE PAVING.
4. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING INSTALLATION OF CATCH BASINS

SEDIMENT FENCE/CONSTRUCTION FENCE

CONSTRUCTION LIMITS SHALL BE DELINEATED WITH EITHER A SEDIMENT FENCE OR CONSTRUCTION FENCE. USE A SEDIMENT FENCE WHERE RUNOFF IS AWAY FROM THE SITE. USE A CONSTRUCTION FENCE IN ALL OTHER LOCATIONS.

LEGEND

- CATCH BASIN SEDIMENT FILTER BAG
- 20 — PROPOSED CONTOUR
- 20 — EXISTING CONTOUR
- SEDIMENT FENCE
- EXISTING DRAINAGE FLOW ARROW
- PROPOSED DRAINAGE FLOW ARROW
- CONSTRUCTION ENTRANCE
- BIO FILTER BAG

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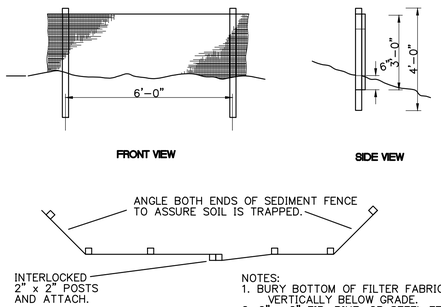
C1.42

JOB NO. 2160642.00

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: MEDDLE SURVEYING, INC DATE: MARCH 28, 2017

LAND USE SUBMITTAL 07/18/2017

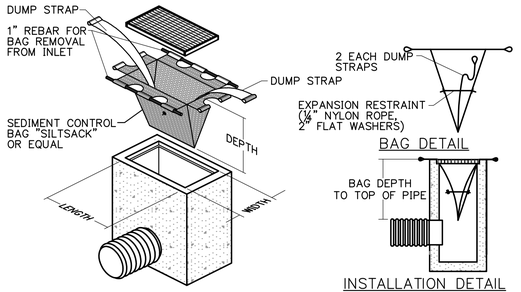


NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" MIN. VERTICALLY BELOW GRADE.
2. 2" x 2" FIR, PINE, OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED UPHILL SIDE OF SLOPE.
4. COMPACT NATIVE FILL IN ALL AREAS OF FILTER FABRIC TRENCH.
5. ACCUMULATED SEDIMENT CAN BE ALLOWED TO REACH NO MORE THAN ONE-THIRD THE HEIGHT OF THE SEDIMENT FENCE.

1 1.43 FILTER FABRIC SEDIMENT FENCE

N.T.S.

SED-FENCE

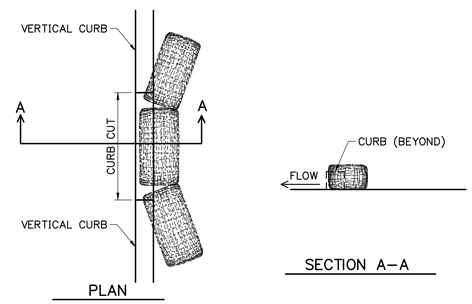


NOTE:
1. THE DIMENSION CHART ABOVE IS FOR STANDARD CATCH BASINS AND INLETS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET.
2. THE CONTRACTOR SHALL MEASURE DIMENSIONS IN THE FIELD AND ORDER THE APPROPRIATE SIZE(S).
3. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF NORMAL FLOW DESIGN, 40 GAL/MIN/SF WITH NO OVERFLOWS.
4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.

2 1.43 CATCH BASIN SEDIMENT FILTER BAG

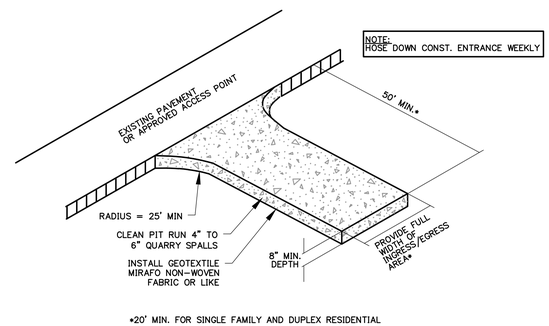
N.T.S.

CBSACK3



3 1.43 BIOFILTER BAG CURB CUT PROTECTION

N.T.S.



*20' MIN. FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL

4 1.43 CONSTRUCTION ENTRANCE

N.T.S.

CONST-ENTR

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2160642.00\4_DRAWINGS\CIVIL\642-C1.43 EC DETS.DWG NKL 07/18/17 14:32 1:1

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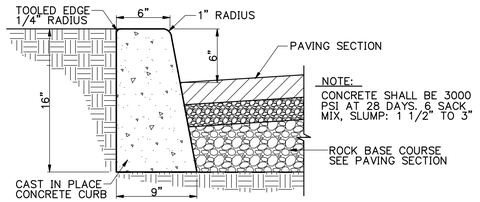
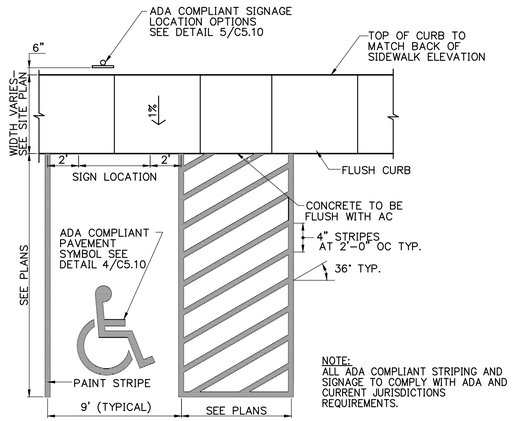


1 C5.10 CONCRETE VERTICAL CURB

N.T.S.

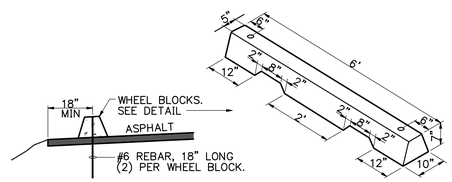
VCURB



2 C5.10 ADA COMPLIANT PARKING STALL

N.T.S.
WITH SQUARE WING RAMP

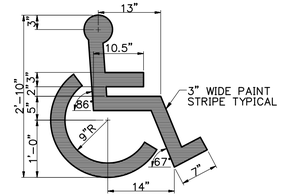
HSTALL1



3 C5.10 PRECAST CURB STOP

N.T.S.

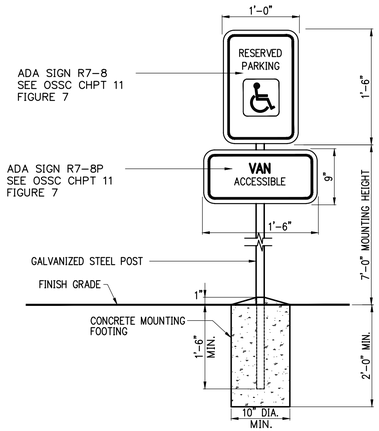
CURBSTOP



4 C5.10 ADA COMPLIANT PARKING SYMBOL

N.T.S.

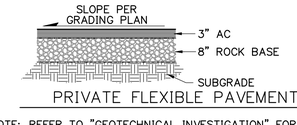
HSYMB



5 C5.10 ADA COMPLIANT PARKING SIGN

N.T.S.

HSIGN



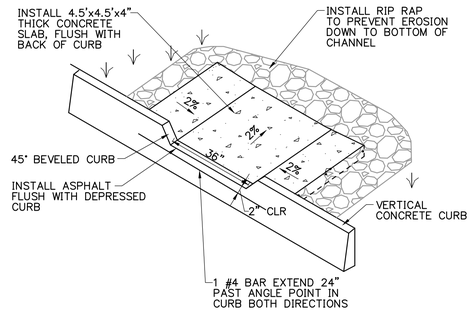
PRIVATE FLEXIBLE PAVEMENT

NOTE: REFER TO "GEOTECHNICAL INVESTIGATION" FOR DAY WIRELESS WAREHOUSE/OFFICE FACILITY DATED DECEMBER 4, 2000.

6 C5.10 AC PAVEMENT SECTION

N.T.S.

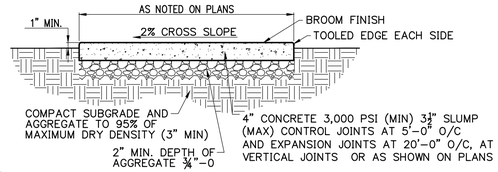
AC-PAVE



7 C5.10 CURB BREAK WITH SPLASH PAD AND RIP RAP

N.T.S.

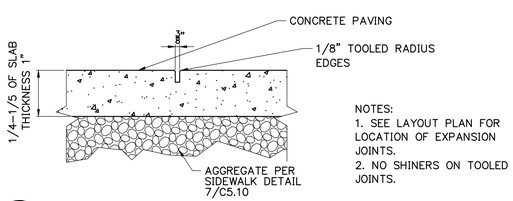
CURB-BREAK



8 C5.10 CONCRETE SIDEWALK

N.T.S.

SWALK

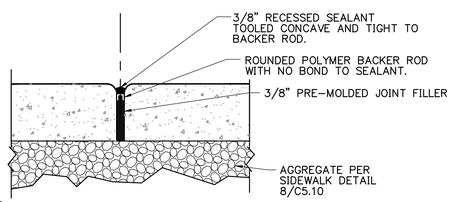


NOTES:
1. SEE LAYOUT PLAN FOR LOCATION OF EXPANSION JOINTS.
2. NO SHINERS ON TOOLED JOINTS.

9 C5.10 CONTROL JOINT

N.T.S.

CONTROL-JOINT
1:1



10 C5.10 EXPANSION JOINT

N.T.S.

EXPANSION-JOINT
1:1

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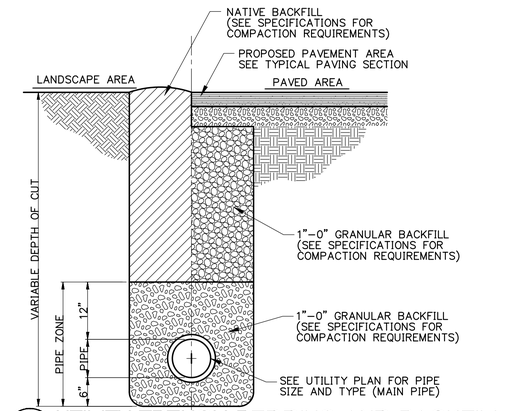
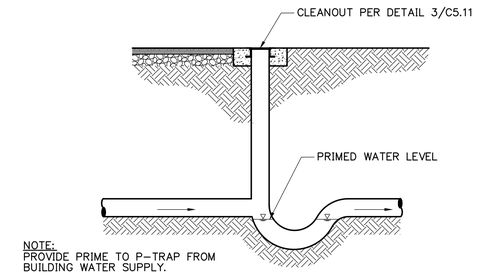


1 C5.11 UTILITY TRENCH BEDDING AND BACKFILL

N.T.S.

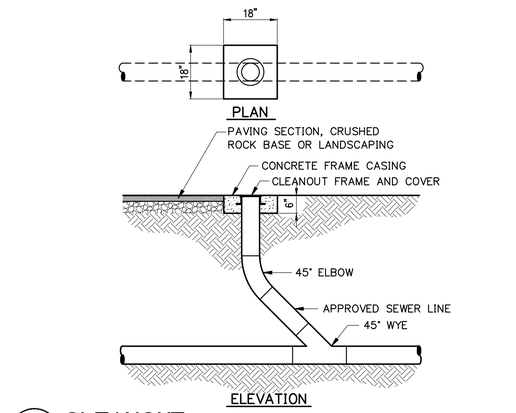
TRENCH1



2 C5.11 P-TRAP

N.T.S.

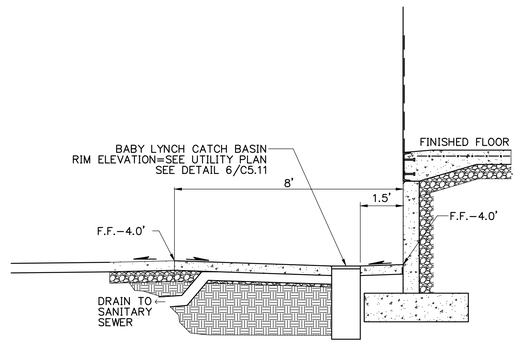
P-TRAP
1:1



3 C5.11 CLEANOUT

N.T.S.

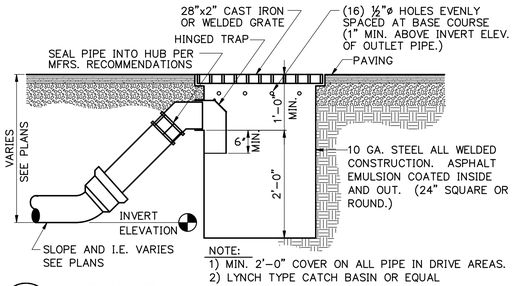
CLEANOUT



4 C5.11 LOADING DOCK SECTION

N.T.S.

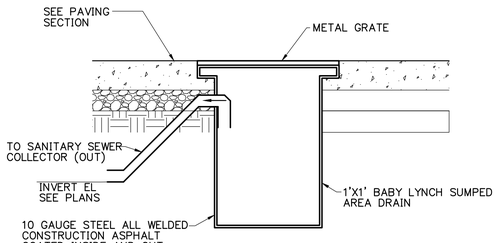
1:1



5 C5.11 CATCH BASIN

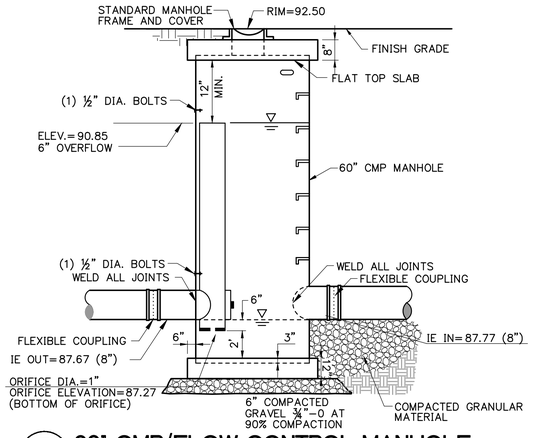
N.T.S.
LYNCH STYLE

C-BASIN



6 C5.11 "BABY LYNCH"

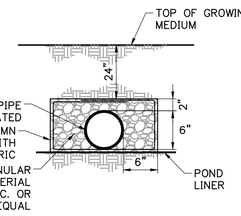
N.T.S.



7 C5.11 60" CMP/FLOW CONTROL MANHOLE

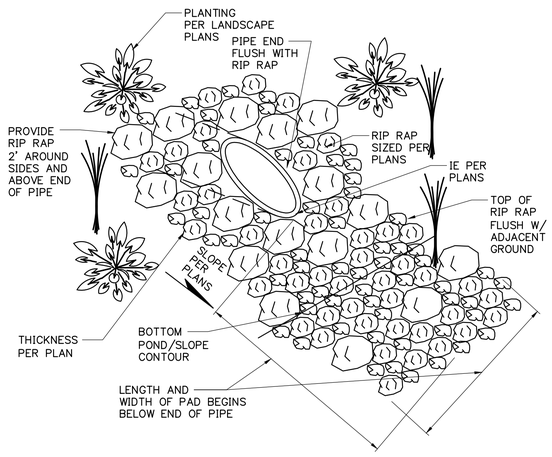
N.T.S.

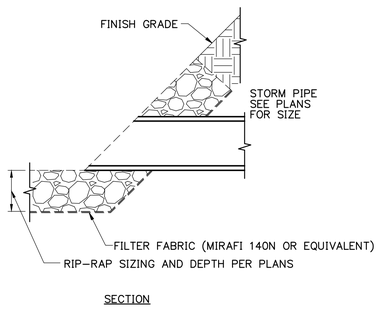
CONTRMH2



8 C5.11 PERFORATED PIPE SECTION

N.T.S.

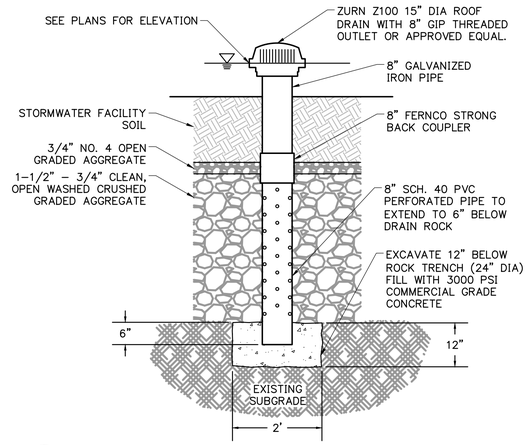




9 C5.11 PIPE OUTFALL

N.T.S.

PIPE-OUTFALL1
1:1



10 C5.11 OVERFLOW DRAIN

N.T.S.

1:1

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SHEET:

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PLANT SCHEDULE

TREES	BOTANICAL NAME	SIZE	
	MAGNOLIA GRANDIFLORA 'EDITH BOGUE' EDITH BOGUE SOUTHERN MAGNOLIA	2" CAL. B&B	
	PRUNUS SARGENTII 'RANCHO' SARGENT CHERRY	2" CAL. B&B	
	THUJA PLICATA WESTERN RED CEDAR	5'–6' HT.	
	TILLIA TOMENTOSA 'STERLING' SILVER LINDEN	2" CAL. B&B	
SHRUBS	**BOTANICAL NAME**	**SIZE**	**SPACING**
	CORNUS SERICEA 'KELSEYI' KELSEYI DOGWOOD	1 GAL	24" o.c.
	EUONYMUS JAPONICUS 'MICROPHYLLUS' BOXLEAF EUNONYMUS	1 GAL	24" o.c.
	GAULTHERIA SHALLON SALAL	5 GAL	24" o.c.
	ILEX GLABRA 'SHAMROCK' INKBERRY	5 GAL	48" o.c.
	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	5 GAL	60" o.c.
	NANDINA DOMESTICA 'GULF STREAM' HEAVENLY BAMBOO	5 GAL	36" o.c.
	PENNISETUM ALOPECUROIDES 'HAMELN' DWARF FOUNTAIN GRASS	5 GAL	24" o.c.
	PHYSOCARPUS CAPITATUS PACIFIC NINEBARK	5 GAL	36" o.c.
	POLYSTICHUM MUNITUM WESTERN SWORD FERN	5 GAL	30" o.c.

SHRUBS	BOTANICAL NAME	SIZE	SPACING
	PRUNUS LAUROCERASUS 'OTTO LUYKEN' OTTO LUYKEN LAUREL	5 GAL	36" o.c.
	RIBES SANGUINEUM RED FLOWERING CURRANT	5 GAL	48" o.c.
	SPIRAEA DOUGLASII WESTERN SPIREA	5 GAL	48" o.c.
	SYMPHORICARPOS ALBUS COMMON WHITE SNOWBERRY	5 GAL	36" o.c.
GROUND COVERS	**BOTANICAL NAME**	**CONT**	**SPACING**
	FRAGARIA CHILOENSIS BEACH STRAWBERRY	1 GAL	18" o.c.
	PACHYSANDRA TERMINALIS 'GREEN CARPET' JAPANESE SPURGE	1 GAL	18" o.c.
	TURF SEED	SEED	
	TURF SEED POLLINATOR MIX	SEED	
STORMWATER BASIN	**BOTANICAL NAME**	**CONT**	**SPACING**
	ARCTOSTAPHYLOS UVA–URSI KINNIKINNICK	1 GAL	18" o.c.
	JUNCUS PATENS SPREADING RUSH	1 GAL	18" o.c.

NOTES

GENERAL

1. CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL LOCATE AND VERIFY ALL UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF WORK. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. TO REQUEST LOCATES FOR PROPOSED EXCAVATION CALL 1–800–332–2344.
3. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS WITH EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK.
4. LOCATION OF EXISTING TREES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
5. DAMAGE TO EXISTING CONCRETE CURB, ASPHALT PAVING, OR OTHER STRUCTURE SHALL BE REPAIRED OR REPLACED TO PRE CONSTRUCTION CONDITIONS.
6. CONTRACTOR SHALL COORDINATE WITH THE OWNER ANY DISRUPTION TO VEHICULAR CIRCULATION PRIOR TO COMMENCEMENT OF ANY WORK.
7. COORDINATE ALL LANDSCAPE WORK WITH OTHER TRADES AND SCHEDULES.
8. COORDINATE STAGING AREA WITH GENERAL CONTRACTOR AND OWNER.

PLANTING

1. ALL EXISTING TREES, PLANTS, AND ROOTS SHALL BE PROTECTED FROM DAMAGE FROM ANY CONSTRUCTION PREPARATION, REMOVAL OR INSTALLATION ACTIVITIES WITHIN AND ADJACENT TO PROJECT LIMITS.
2. EXISTING AREAS PROPOSED FOR NEW PLANT MATERIAL SHALL BE CLEARED AND LEGALLY DISPOSED UNLESS SO NOTED.
3. *ALL PLANT MATERIAL SHALL BE HEALTHY NURSERY STOCK, WELL BRANCHED AND ROOTED, FULL FOLIAGE, FREE FROM INSECTS, DISEASES, WEEDS, WEED ROT, INJURIES AND DEFECTS WITH NO LESS THAN MINIMUMS SPECIFIED IN AMERICAN STANDARDS FOR NURSERY STOCK, ANSI Z60.1.*
4. VERIFY ALL UNDERGROUND PIPING AND LINES BEFORE TREE PLACEMENT. DO NOT PLANT TREES OVER PIPING OR UTILITY LINES.
5. REPLACE, REPAIR AND RESTORE DISTURBED LANDSCAPE AREAS DUE TO GRADING, TRENCHING OR OTHER REASONS TO PRE–CONSTRUCTION CONDITION AND PROVIDE MATERIAL APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.
6. FOR TREE/SHRUB INSTALLATION AND SOIL PREPARATION NOTES AND DETAILS, REFER TO SHEET L5.10.
7. ALL TYPICAL PLANTING AREAS SHALL BE COVERED BY A LAYER OF MEDIUM–GRIND HEMLOCK MULCH TO A DEPTH OF 2 INCHES.
8. PROVIDE LANDSCAPE ARCHITECT WITH PLANT ORDER FORM WITHIN 30 DAYS OF CONTRACT AWARD. NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY IF ANY PLANTS ARE FOUND TO BE UNAVAILABLE.
9. THE NURSERY SOURCE OF TREES ALONG WITH ONE REPRESENTATIVE DIGITAL IMAGE SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT AT LEAST TWO WEEKS BEFORE THE DELIVERY OF THE TREES TO THE SITE. THE LANDSCAPE ARCHITECT MAY REJECT LANDSCAPE PLANTS THAT DO NOT MEET SIZE OR OTHER PLANTING SPECIFICATIONS.
10. FIELD CONDITIONS:
    A. DO NOT INSTALL PLANT LIFE WHEN AMBIENT TEMPERATURES MAY DROP BELOW 35 DEGREES F OR RISE ABOVE 90 DEGREES F.
    B. DO NOT INSTALL PLANT LIFE WHEN WIND VELOCITY EXCEEDS 30 MILES PER HOUR.
    C. PROTECT STORED ON–SITE PLANT MATERIAL FROM EXTREME HEAT, CHILL OR WIND.
    D. *PREPARE PLANTING BEDS PROPERLY BY REMOVING MATERIAL NOT CONDUCIVE TO HEALTHY PLANT GROWTH. IF HARD PACKED CONDITIONS OR DEBRIS FROM OTHER OPERATIONS EXISTS WITHIN PLANT BEDS, REMOVE THE DEBRIS, ROCK, CEMENT TREATED BASE, TRASH, OR OTHER DELETERIOUS DEBRIS.*
11. *PROVIDE 365 DAY WARRANTY, REPLACE DEAD OR UNHEALTHY PLANTS.*
12. *LANDSCAPE CONTRACTOR SHALL CONTACT PROJECT LANDSCAPE ARCHITECT FOR ALL SITE OBSERVATIONS 72 HOURS PRIOR TO SITE VISIT.*
13. AT CLOSE OF PROJECT, REMOVE ALL EXTRA MATERIALS, SUPPLIES AND EQUIPMENT FROM SITE.

IRRIGATION

1. *CONTRACTOR TO PROVIDE DESIGN/BUILD IRRIGATION DESIGN FOR L.A.'S REVIEW AND APPROVAL PRIOR TO INSTALLATION.*
2. ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A PERMANENT FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM.
3. VALVES SHALL BE WIRED AND INSTALLED PER MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES AND CONNECTED TO THE IRRIGATION CONTROLLER. DO NOT PLACE VALVES IN R.O.W. OR IN HIGH VISIBILITY AREAS.
4. IRRIGATION SYSTEM AS DESIGNED AND INSTALLED SHALL PERFORM WITHIN THE TOLERANCES AND SPECIFICATIONS OF THE SPECIFIED MANUFACTURERS.
5. ALL IRRIGATION PIPE MATERIAL AND INSTALLATION SHALL CONFORM TO APPLICABLE CODE FOR PIPING AND COMPONENT REQUIREMENTS.
6. SYSTEM SHALL SUPPLY MANUFACTURER'S SPECIFIED MINIMUM OPERATING PRESSURE TO FARTHEST EMITTER FROM WATER METER.
7. REFERENCE L1.20 FOR IRRIGATION PLAN.
8. *IRRIGATION SYSTEM AS–BUILT REVIEW REQUIRED UPON SUBSTANTIAL COMPLETION.*
9. *FOR IRRIGATION DETAILS, REFER TO L5.11.*

STORMWATER AREA INFORMATION

BES PLANTING REQUIREMENTS

STORMWATER TREATMENT PLANTER
ZONE A:
80 HERBACEOUS PLANTS PER 100 S.F. OR
72 HERBACEOUS PLANTS AND 4 SHRUBS PER 100 S.F.

NORTH STORMWATER TREATMENT PLANTER - PLANT SCHEDULE

STORMWATER AREA – ZONE A	BOTANICAL NAME / COMMON NAME	CONT	SPACING	QUANTITY REQUIRED	QUANTITY PROVIDED
	ZONE A (421 SF)				
	HERBACEOUS PLANTS (72 PLANTS PER 100 SF)			304 TOTAL	304 TOTAL
	JUNCUS ENSIFOLIUS / DAGGER–LEAF RUSH	1 GAL.	12" O.C.		78
	ELEOCHARIS OVATA / OVATE SPIKE RUSH	1 GAL.	12" O.C.		79
	JUNCUS EFFUS v. PACIFICUS / SOFT RUSH	1 GAL.	12" O.C.		78
	ARCTOSTAPHYLOS UVA–URSI/KINNIKINNICK	1 GAL.	12" O.C.		69
	SMALL SHURBS (4 PER 100 SF)			12 TOTAL	12 TOTAL
	SYMPHORICARPOS ALBA/COMMON SNOWBERRY	3 GAL.	AS SHOWN		12

EAST STORMWATER TREATMENT PLANTER - PLANT SCHEDULE

STORMWATER AREA – ZONE A	BOTANICAL NAME / COMMON NAME	CONT	SPACING	QUANTITY REQUIRED	QUANTITY PROVIDED
	ZONE A (241 SF)				
	HERBACEOUS PLANTS (72 PLANTS PER 100 SF)			174 TOTAL	174 TOTAL
	JUNCUS ENSIFOLIUS / DAGGER–LEAF RUSH	1 GAL.	12" O.C.		33
	ELEOCHARIS OVATA / OVATE SPIKE RUSH	1 GAL.	12" O.C.		32
	JUNCUS EFFUS v. PACIFICUS / SOFT RUSH	1 GAL.	12" O.C.		33
	ARCTOSTAPHYLOS UVA–URSI/KINNIKINNICK	1 GAL.	12" O.C.		76
	SMALL SHURBS (4 PER 100 SF)			10 TOTAL	12 TOTAL
	CORNUS SERICEA 'KELSEYI'	3 GAL.	AS SHOWN		12

STORMWATER SOIL NOTES

CITY OF PORTLAND SWMM APPENDIX F.3

01040.14 TOPSOIL

FURNISH TOPSOIL CONTAINING NO SUBSTANCE DETRIMENTAL TO THE GROWTH OF PLANTS AND THAT IS FREE OF PLANTS DESIGNATED BY THE OREGON DEPARTMENT OF AGRICULTURE AS TYPE "A" OR TYPE "B" WEEDS. UNSUITABLE TOPSOIL, OR TOPSOIL PLACED WITHOUT APPROVAL IN AREAS TO BE PLANTED, MAY BE REQUIRED TO BE REPLACED AT NO ADDITIONAL COST.

(d.) STORMWATER FACILITY BLENDED SOIL – FOLLOWING THE GENERAL PROVISIONS FOR TOPSOIL, AND INCORPORATING THE FOLLOWING REQUIREMENTS, FURNISH IMPORTED BLENDED SOIL FOR ALL VEGETATED STORMWATER FACILITIES CONFORMING TO THE FOLLOWING:

(1) GENERAL COMPOSITION – USE MATERIAL THAT IS ANY BLEND OF LOAMY SOIL, SAND, AND COMPOST THAT IS 30–40% COMPOST (BY VOLUME) AND MEETS THE OTHER CRITERIA IN THIS SPECIFICATION.

(2) ANALYSIS REQUIREMENTS FOR THE BLENDED MATERIAL:
   a. PARTICLE GRADATION – A SIEVE ANALYSIS OF THE BLENDED MATERIAL, INCLUDING COMPOST, SHALL BE CONDUCTED IN CONFORMANCE WITH ASTM C117/C136, AASHTO T11/T27, ASTM D422/D1140, OR ASTM D6913. THE ANALYSIS SHALL INCLUDE THE FOLLOWING SIEVE SIZES: 1 INCH, 3/8 INCH, #4, #10, #20, #40, #60, #100, & #200. THE GRADATION OF THE BLEND SHALL MEET THE GRADATION CRITERIA FROM APPENDIX F.3 FROM THE CITY OF PORTLAND STORMWATER MANAGEMENT MANUAL.
   b. ACIDITY – THE PH (POWER OF HYDROGEN) OF THE BLENDED MATERIAL SHALL BE TESTED AND BE BETWEEN 6 TO 8.

(3) GENERAL REQUIREMENTS FOR THE BLENDED MATERIAL:
   a. THE MATERIAL SHALL BE LOOSE AND EASILY BROKEN INTO SMALL PIECES
   b. IT SHALL BE WELL MIXED AND HOMOGENOUS.
   c. IT SHALL BE FREE OF WOOD PIECES, PLASTIC, AND OTHER FOREIGN MATTER.
   d. IT SHALL HAVE NO VISIBLE FREE WATER.

(4) COMPOST – THE COMPOST SHALL BE DERIVED FROM PLANT MATERIAL AND PROVIDED BY A MEMBER OF THE US COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM. SEE WWW.COMPOSTINGCOUNCIL.ORG FOR A LIST OF LOCAL PROVIDERS.

THE COMPOST SHALL BE THE RESULT OF THE BIOLOGICAL DEGRADATION AND TRANSFORMATION OF PLANT–DERIVED MATERIALS UNDER CONDITIONS DESIGNED TO PROMOTE AEROBIC DECOMPOSITION. THE MATERIAL SHALL BE WELL COMPOSTED, FREE OF VIABLE WEED SEEDS, AND STABLE WITH REGARD TO OXYGEN CONSUMPTION AND CARBON DIOXIDE GENERATION. THE COMPOST SHALL HAVE NO VISIBLE FREE WATER AND PRODUCE NO DUST WHEN HANDLED. IT SHALL MEET THE FOLLOWING CRITERIA, AS REPORTED BY THE US COMPOSTING COUNCIL STA COMPOST TECHNICAL DATA SHEET PROVIDED BY THE VENDOR.

* 100% OF THE MATERIAL MUST PASS THROUGH A 1/2–INCH SCREEN.
* THE PH OF THE MATERIAL SHALL BE BETWEEN 6 MIN. AND 8.5 MAX.
* MANUFACTURED INERT MATERIAL (PLASTIC, CONCRETE, CERAMICS, METAL, ETC.) SHALL BE LESS THAN 1.0% BY WEIGHT.
* THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 30 AND 70% (DRY WEIGHT BASIS).
* SOLUBLE SALT CONTENT SHALL BE LESS THAN 6.0 MMHOS/CM.
* MATURITY INDICATOR SHALL BE GREATER THAN 80% FOR GERMINATION AND VIGOR.
* STABILITY SHALL BE 'STABLE' TO 'VERY STABLE'.
* CARBON/NITROGEN (C/N) RATIO SHALL BE LESS THAN 25:1.
* TRACE METALS TEST RESULT = 'PASS.'[15]

(5) SUBMITTALS – AT LEAST 14 WORKING DAYS IN ADVANCE OF CONSTRUCTION, SUBMIT THE FOLLOWING:
   a. DOCUMENTATION FOR THE TWO ANALYSES DESCRIBED IN SECTION 01040.14(D)(2) OF THIS SPECIFICATION (PARTICLE GRADATION AND PH) SHALL BE PERFORMED BY AN ACCREDITED LABORATORY WITH CURRENT CERTIFICATION. THE DATE OF THE ANALYSES SHALL BE NO MORE THAN 90 CALENDAR DAYS PRIOR TO THE DATE OF THE SUBMITTAL. IINCLUDE THE FOLLOWING INFORMATION IN THE REPORT: NAME AND ADDRESS OF THE LABORATORY.
      PHONE CONTACT AND E–MAIL ADDRESS FOR THE LABORATORY.
      TEST DATA, INCLUDING THE DATE AND NAME OF THE TEST PROCEDURE.
   b. FOR THE COMPOST COMPONENT OF THE BLENDED SOIL, A COMPOST TECHNICAL DATA SHEET FROM THE VENDOR. THE ANALYSIS AND REPORT MUST CONFORM TO THE SAMPLING AND REPORTING REQUIREMENTS OF THE US COMPOSTING COUNCIL SEAL OF TESTING ASSURANCE (STA) PROGRAM. THE ANALYSIS SHALL BE PERFORMED AND REPORTED BY AN APPROVED INDEPENDENT STA PROGRAM LABORATORY AND BE NO MORE THAN 90 CALENDAR DAYS PRIOR TO THE DATE OF THE SUBMITTAL.
   c. UP TO TWO 5–GALLON BUCKETS OF THE BLENDED MATERIAL, AS REQUESTED.

(6) STORMWATER FACILITY BLENDED SOIL INSTALLATION – SEE 01040.43(E).

CONSTRUCTION

01040.43(e) STORMWATER FACILITY BLENDED SOIL:

(1) PROTECTION OF THE SOIL – THE MATERIAL SHALL BE PROTECTED FROM ALL SOURCES OF CONTAMINATION, INCLUDING WEED SEEDS, WHILE AT THE SUPPLIER, IN CONVEYANCE, AND AT THE PROJECT SITE.

(2) WET AND WINTER CONDITIONS – HAULING AND PLACEMENT OF THE MATERIAL WILL NOT BE ALLOWED WHEN THE WEATHER IS TOO WET OR THE GROUND IS FROZEN OR SATURATED AS DETERMINED BY THE OWNERS REPRESENTATIVE.

(3) PLACEMENT OF THE SOIL – PLACE THE MATERIAL IN LOOSE LIFTS, NOT TO EXCEED 8 INCHES EACH AND EACH LIFT SHALL BE COMPACTED WITH A WATER–FILLED LANDSCAPE ROLLER. DO NOT OTHERWISE MECHANICALLY COMPACT THE MATERIAL.

(4) TIMING OF PLANT INSTALLATION – WEATHER PERMITTING AND AS APPROVED, INSTALL PLANTS AS SOON AS POSSIBLE AFTER PLACING AND GRADING THE SOIL IN ORDER TO MINIMIZE EROSION AND FURTHER COMPACTION.

(5) EROSION CONTROL – TEMPORARY EROSION CONTROL MEASURES ARE REQUIRED UNTIL PERMANENT STABILIZATION MEASURES ARE FUNCTIONAL.

(6) PROTECTION OF THE INSTALLED SOIL – IN ALL CASES, THE PROTECT INSTALLED MATERIAL FROM FOOT OR EQUIPMENT TRAFFIC AND SURFACE WATER RUNOFF. INSTALL TEMPORARY FENCING OR WALKWAYS AS NEEDED TO KEEP WORKERS, PEDESTRIANS, AND EQUIPMENT OUT OF THE AREA. UNDER NO CIRCUMSTANCES SHOULD MATERIALS AND EQUIPMENT BE STORED ON TOP OF THE INSTALLATION AREA.

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MILWAUKIE, OR
97222

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
GENERAL NOTES

DRAWN BY: NRF

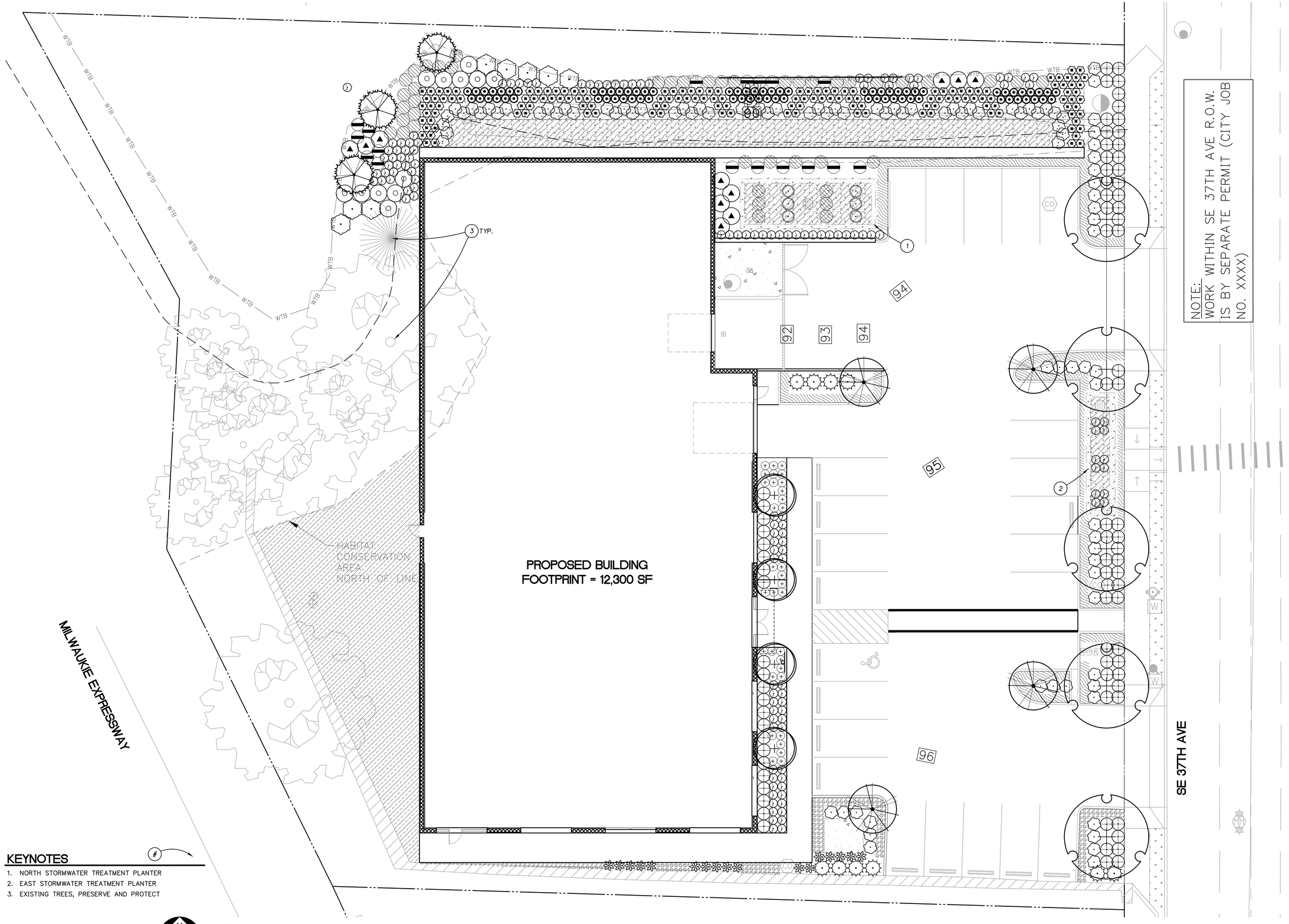
CHECKED BY: SPT

SHEET:

L0.01

JOB NO. 2160642.00

LAND USE SUBMITTAL 07/18/2017



KEYNOTES

1. NORTH STORMWATER TREATMENT PLANTER
2. EAST STORMWATER TREATMENT PLANTER
3. EXISTING TREES, PRESERVE AND PROTECT

1 / L1.10 LANDSCAPE PLAN
1"=20'

10 0 5 10 20 40
(IN FEET)
1 inch = **10** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

LAND USE SUBMITTAL 07/18/2017

2160642.00\X_DRAWINGS\LANDSCAPE\642-L1.10 SITE PLAN.DWG AJ 07/19/17 08:42 1:10

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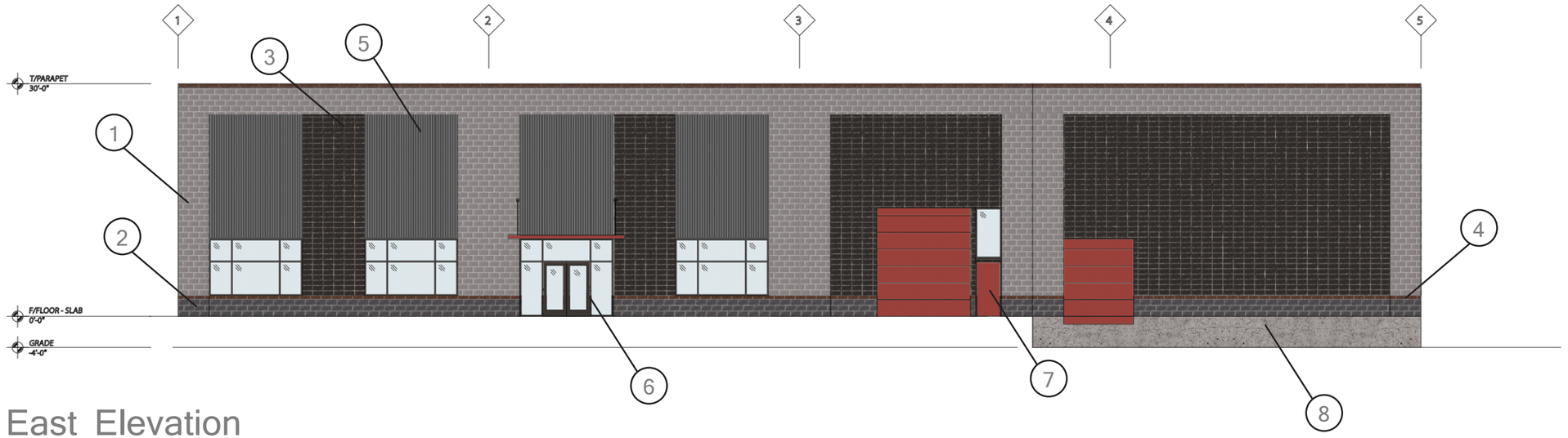
DRAWN BY: NRF

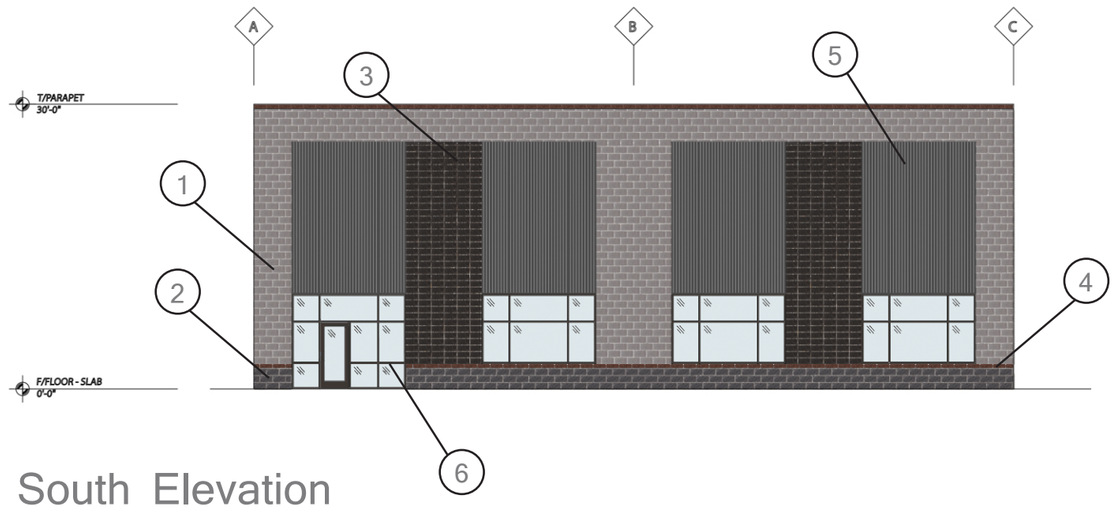
CHECKED BY: SPT

SHEET:
L1.10

JOB NO. 2160642.00



East Elevation



South Elevation

1. Ground Face CMU - Charcoal
2. Split Face CMU - Charcoal
3. Split Face CMU - Onyx
4. Split Face CMU - Burgundy Red
5. Box Rib Metal - Dark Gray
6. Storefont Window System - Dark Bronze
7. Paint - Currant Red
8. Concrete - Dark Gray

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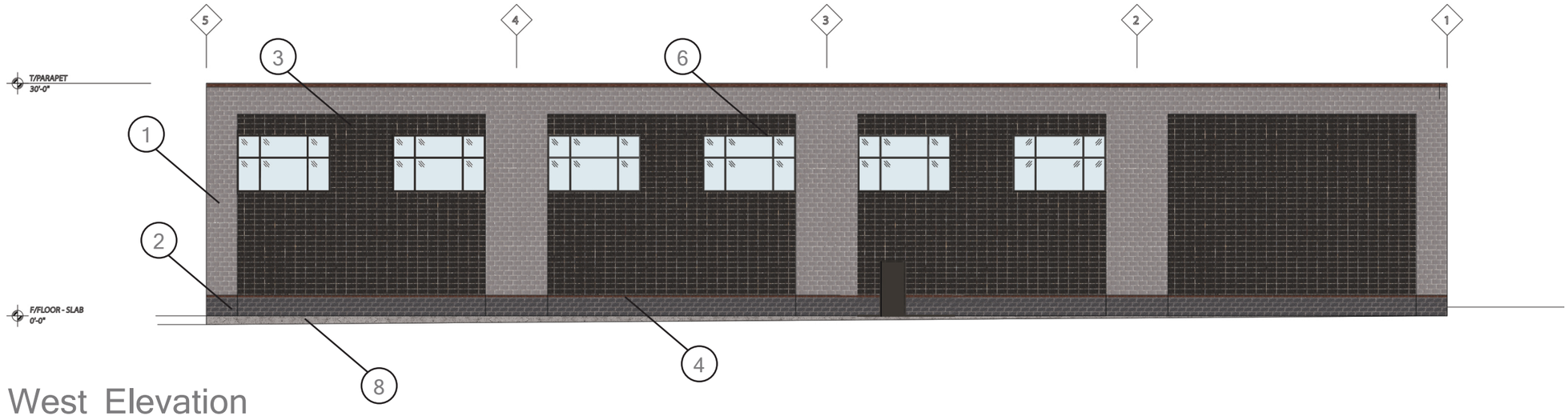
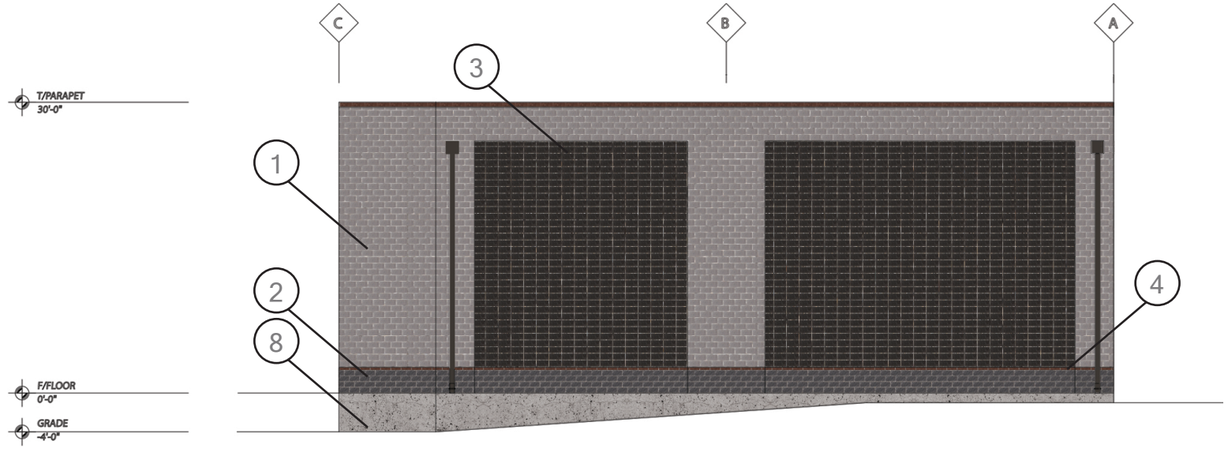
Day Wireless Systems
Milwaukie, Oregon
June 19, 2017

Elevations
1/16"=1'-0"

A.1



West Elevation



North Elevation

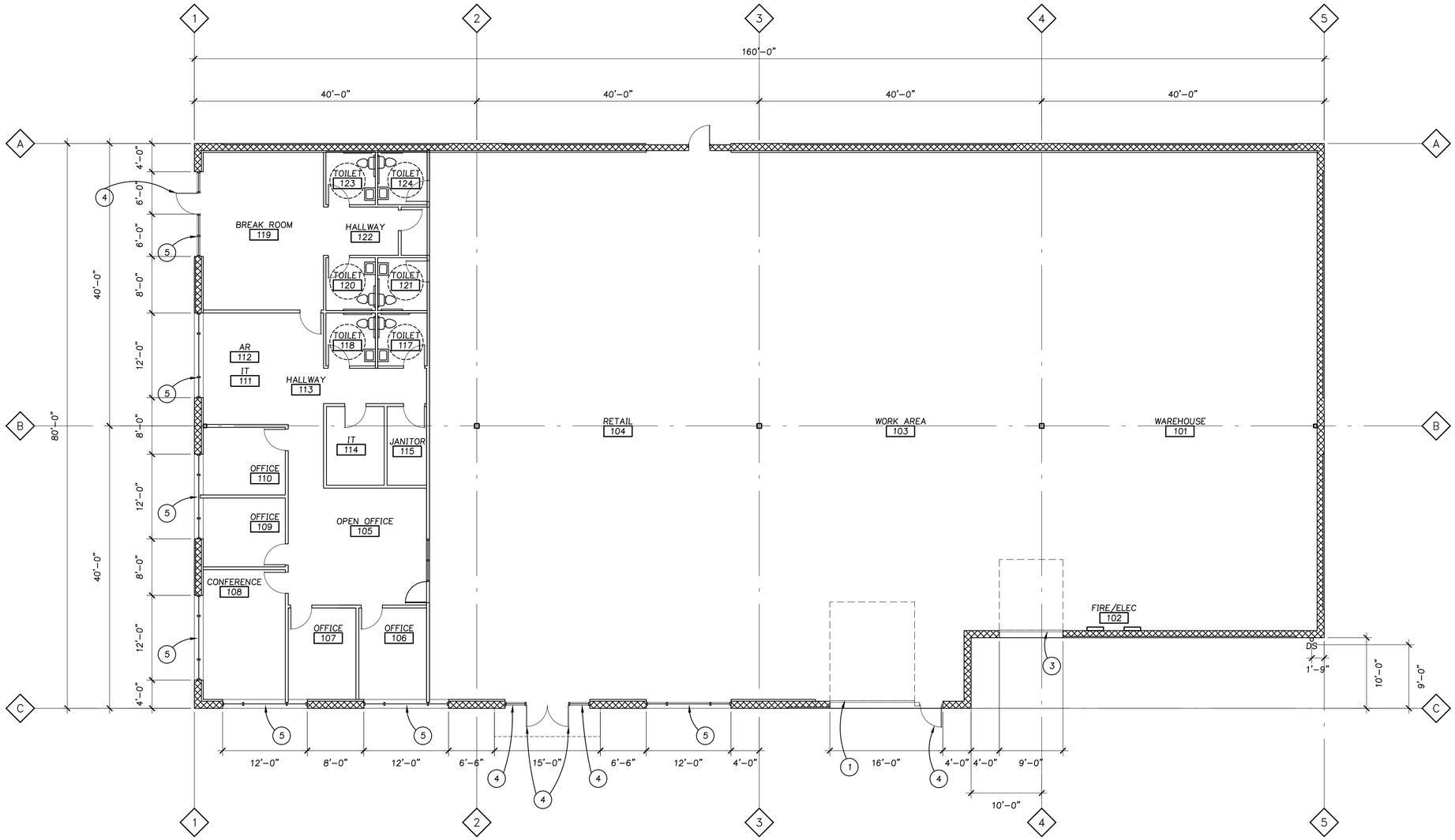
1. Ground Face CMU - Charcoal
2. Split Face CMU - Charcoal
3. Split Face CMU - Onyx
4. Split Face CMU - Burgundy Red
5. Box Rib Metal - Dark Gray
6. Storefont Window System - Dark Bronze
7. Paint - Currant Red
8. Concrete - Dark Gray

MACKENZIE.

Day Wireless Systems
Milwaukie, Oregon
June 19, 2017

Elevations
1/16"=1'-0"

A.2



4 A2.0 **FLOOR PLAN**
1/8"=1'-0"

LEGEND

- 10"/12" CMU WALL
- INTERIOR WALL
- DS — DOWNSPOUT

GENERAL NOTES

1. SEE ARCHITECTURAL GENERAL NOTES ON A0.01 FOR ADDITIONAL INFORMATION.
2. SEE A3.20 FOR WALL TYP

BUILDING AREAS

AREA	SQUARE FEET	OCCUPANCY
AREA OF WORK TOTAL	11,778 SF	
– OFFICE	2,483 SF	B (NON-SEPARATED)
– STORAGE	6,441 SF	S-1 (NON-SEPARATED)
– RETAIL	2,854 SF	M (NON-SEPARATED)

KEYNOTES

1. 12'X14' OVERHEAD DOOR
2. 3'X7' HM DOOR W/ TRANSOM ABOVE
3. 9'X11' OVERHEAD DOOR
4. STOREFRONT DOOR
5. STOREFRONT WINDOW SYSTEM

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REVISIONS:

REVISION DELTA	REVISION DELTA CLOSING DATE

SHEET TITLE:
FLOOR PLAN

DRAWN BY: AJS/MJB

CHECKED BY: AJS

SHEET:

A1.10

JOB NO. 2160642.00

PRELIMINARY ONLY

Wetland Solutions Northwest, LLC
59446 Lytle Dr.
St. Helens, Oregon 97051
Stacy@WetlandSolutionsNW.com
503-367-7177

June 30, 2017

Suvi Wesa
Day Management Corporation
4620 SE International Way
Milwaukie, Oregon 97222

SUBJECT: 11405 SE 37th Avenue Vegetated Corridor Assessment
T1S, R1E, Section 36, Tax lot 7200; Milwaukie, Oregon

Introduction

Wetland Solutions Northwest, LLC (WSNW) conducted a wetland and waters delineation and vegetated corridor assessment on behalf of the Day Management Corporation to meet the City of Milwaukie natural resource assessment requirements for site development and to obtain a natural resource boundary verification based upon the actual location of delineated natural resources on the site. The project site is located east of Highway 224 and north of SE International Way (Figure 1) and consists of tax lot 7200 in T1S, R1E, Section 36 (Figure 2).

Existing Conditions

The subject site is located in a developed area of Milwaukie and is surrounded by commercial development. The majority of the study area is level and slopes very gradually to the north with an elevation of approximately 95 feet above sea level. A pond is located in the northwest portion of the site, and an unnamed stream flows from west to east along the north property boundary before being culverted under SE 37th Avenue to a large wetland area (Minthorn Springs) on the east side of SE 37th Avenue. The stream appears to flow to Mount Scott Creek, which is a tributary to Kellogg Creek, a tributary to the Willamette River. The City of Milwaukie Natural Resource Administrative Map shows a Habitat Conservation Area (HCA) and a Water Quality Resource (WQR) in the north portion of the site (Figure 1).

The site is currently vacant; however, the site was graded and leveled approximately 20 years ago, and stormwater infrastructure was constructed in approximately 2002. Wetland fill permits were issued by the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) for the site in 1998 to fill 0.064 acre of emergent wetlands (DSL 15582-FP; Corps #98-910). The wetland mitigation plan proposed to create 0.092 acre of emergent wetlands and to enhance 0.008 acre of existing emergent reed canarygrass dominated wetland. According to the wetland mitigation plan, the mitigation was conducted contiguous to an existing off-site pond located immediately north of the site by excavating the area south of the

existing off-site pond to extend wetlands into the northwest corner of the site. An approximately 3-foot high side slope/berm was constructed along the southern edge of the created wetlands and stream channel at the time the mitigation was constructed.

In 2002, phase 1 site improvements were conducted including the construction of a linear east-west oriented detention pond in the north portion of the site. The detention pond is located immediately south of the berm that forms the south bank of the stream channel.

The wetland boundary of the pond that was constructed as wetland mitigation, and the wetland boundary along the southern edge of the tributary to Mount Scott Creek were delineated in March 2017. Additional information on the methods and results of the wetland and waters delineation is provided under separate cover in the attached wetland delineation report (Wetlands Solutions Northwest 2017).

Methods & Results

A wetland delineation and natural resource assessment were conducted on March 2 and 23, 2017 by Stacy Benjamin of Wetland Solutions Northwest to delineate the boundary of the WQR and determine the width of the vegetated corridor required by the City. The unnamed tributary to Mount Scott Creek was determined to be a secondary protected water feature due to having an upstream drainage basin of 8.67 acres. The upstream drainage basin is shown in Figure 2. The slope adjacent to the wetland boundary is less than 25 percent; therefore, a 15-foot vegetated corridor is required by the City.

Vegetation Communities

Vegetated corridor plant communities were documented, and percent tree canopy, percent cover by native species, and percent cover by invasive species were recorded at two representative vegetated corridor plot locations in accordance with the WQR existing condition classification criteria listed in Table 19.402.11.C. Vegetation recorded at the sample plot locations is summarized in Table 1.

The condition of the vegetated corridor located in the western portion of the site, to the south of the pond, was documented at Plot A. The tree canopy consists of a few big-leaf maple (*Acer macrophyllum*) and English hawthorn (*Crataegus monogyna*), and one Douglas fir (*Pseudotsuga menziesii*). The shrub and groundcover layers consist of non-native species including a large thicket of Himalayan blackberry (*Rubus armeniacus*) and scattered English laurel (*Prunus laurocerasus*) and English holly (*Ilex aquifolium*) in the shrub layer, with English ivy (*Hedera helix*) dominating the groundcover. This community was determined to be in marginal condition due to having 45 percent tree canopy and greater than 80 percent total cover by trees, shrubs, and ground cover.

The vegetated corridor located south of the tributary includes the approximately 5-foot wide berm immediately south of the wetland boundary, and the detention pond comprises the outer 10-foot wide area of the vegetated corridor. Both of these features were constructed in approximately 2002. The condition of the vegetated corridor located south of the tributary was

documented at Plot B. The vegetated corridor was dominated by Himalayan blackberry in the shrub layer and by tall false rye grass (*Schedonorus arundinaceus*) and bentgrass (*Agrostis* species) in the groundcover layer. This community was determined to be in poor condition due to having zero tree canopy cover.

Table 1. Condition of Vegetated Corridor

Species	**Native/ Invasive**	**Plot A % Cover**	**Plot B % Cover**
Trees			
Big-leaf maple	Native	30	
English hawthorn	Non-native	10	
Douglas fir	Native	5	
Shrubs			
English laurel	Non-native	5	
Himalayan blackberry	Non-native	20	50
English holly	Non-native	5	
Herbs			
English ivy	Non-native	20	
Sword fern	Native	5	
Bentgrass	Non-native		20
Tall false rye grass	Non-native		30
Total Areal Cover		100	100
Tree Canopy Cover		45	0
Corridor Condition		**Marginal**	**Poor**

Functions and Values

The WQR and HCA were assessed qualitatively using best professional judgment to determine the functions and values currently provided in their existing condition. The functions and values evaluated were those listed in Section 19.402.1.C.2.

Table 2. WQR and HCA Function & Values

Function & Value	**Rating**	**Comments**
Provide separation of protected water features from development	Low	Minimal tree and shrub cover for screening the natural resource from future development
Microclimate & shade	Low	Minimal shade-producing vegetation
Streamflow moderation & water storage	Medium	Existing detention pond and stream-associated wetlands moderate stream flows
Water filtration, infiltration, and natural purification	Medium	Well vegetated; existing detention pond provides water quality functions
Bank stabilization & sediment pollution	Medium	Bank is stabilized with non-native

Function & Value	Rating	Comments
control		Himalayan blackberry
Large wood recruitment & retention, natural channel dynamics	Low	Minimal woody species present; stream channel confined by adjacent berm/side slope
Organic material resources	Medium	Well vegetated

WQR & HCA Boundary Adjustment

The HCA is shown as having a shrub/scrub canopy type on the Metro Vegetative Cover Map. In reviewing historic aerial photographs available from Google Earth, the southern portion of the site (outside the mapped HCA) previously appeared to contain scattered trees and shrubby vegetation. The northern portion of the site, where the HCA is located, appeared more open and likely consisted of mainly herbaceous vegetation. Between the dates of the July 2001 and May 2002 aerial photographs, site clearing and grading occurred resulting in a graveled pad for the development that was proposed at that time.

The current boundary of the HCA was surveyed and mapped in May 2017 based upon the location of the outer edge of the tree canopy drip line in the northwest portion of the site and the edge of herbaceous riparian vegetation cover that begins at the northern edge of the previously leveled and graveled portion of the site in the north-central and northeast portion of the site. The surveyed HCA boundary is shown in the natural resource boundary verification map included as Figure 3. A total of 14,432 square feet (SF) of HCA is present on the site. The location of the delineated wetland boundary and the associated 15-foot vegetated corridor are also shown in Figure 3. The actual field-delineated boundaries of the WQR and HCA on the site are fairly similar to the boundaries shown in the City's Natural Resource Administrative Map.

Proposed Impacts

Minor permanent impacts to the HCA, totaling 576 SF, will result due to construction of the proposed office building on the site. The proposed HCA impact is only 4 percent of the total area of HCA present on the site. The proposed impact area is shown in the site plan included as Figure 4. No trees will be removed in the HCA, and no additional temporary disturbance to the HCA is proposed due to construction of the office building. A stormwater quality facility will also be constructed on the site. Stormwater facilities are an exempt use and are not included in the calculation of HCA impacts. The stormwater facility will be located within the 15-foot vegetated corridor within the WQR, resulting in 1,863 SF of impact to the vegetated corridor, but the stormwater facility will not encroach into the wetland.

HCA Mitigation

The City requires mitigation for impacts to HCAs in accordance with the standards provided in Subsection 19.402.11.D.2. Since no trees will be removed in the HCA, the mitigation requirement has been calculated according to the size of the disturbance area in the HCA (mitigation option 2). The mitigation area will be located on-site in the existing portion of the

HCA that lacks tree canopy. Native trees and shrubs are required to be planted at a rate of 5 trees and 25 shrubs per 500 SF of disturbance area. The mitigation requirement is 6 trees and 29 shrubs based on the 576 SF of HCA impact. Invasive Himalayan blackberry will be removed in the HCA prior to installing the mitigation plantings, and resulting bare ground areas will be seeded with a native grass seed mix. In addition, to mitigate for the impacts within the WQR vegetated corridor due to construction of the stormwater facility, the remaining portion of the HCA without existing tree cover will also be enhanced to meet the City's good condition vegetated corridor standards in accordance with Table 19.402.11C. The total number of HCA plantings required for the 1,151 SF area that currently lacks tree cover is 12 trees and 58 shrubs. Lastly, the portion of the HCA that has existing tree cover but was determined to be in marginal condition due to having 45% tree canopy and low native species cover will also be enhanced with native tree and shrub plantings. Trees and shrubs will be planted at lower densities in the area with existing trees than the area without existing trees will be planted. HCA mitigation plantings are shown in Table 3, including the size, spacing, and diversity of mitigation plantings. Mitigation plantings shall be mulched, and invasive species shall be removed from the mitigation period in accordance with Section 19.402.11.B.9.a.

Table 3. HCA & WQR Mitigation Plantings

Scientific Name	Common Name	Spacing	Size	Quantity
Planting Area Currently Lacking Trees				
Acer macrophyllum	Big-leaf maple	12 feet on center	½-caliper	6
Pseudotsuga menziesii	Douglas fir	12 feet on center	½-caliper	6
Holodiscus discolor	Oceanspray	5 feet on center	1 gallon	9
Ribes sanguineum	Red flowering currant	5 feet on center	1 gallon	9
Rosa pisocarpa	Wild clustered rose	5 feet on center	1 gallon	20
Symphoricarpos albus	Snowberry	5 feet on center	1 gallon	20
Planting Area With Existing Trees				
Acer macrophyllum	Big-leaf maple	12 feet on center (in open canopy areas)	½-caliper	10
Pseudotsuga menziesii	Douglas fir	12 feet on center	½-caliper	10
Gaultheria shallon	Salal	5 feet on center	1 gallon	30
Mahonia nervosa	Oregon grape	5 feet on center	1 gallon	30
Symphoricarpos albus	Snowberry	5 feet on center	1 gallon	30

Mitigation Monitoring Plan

The mitigation site will be monitored annually for a period of two years, beginning the first growing season after planting is completed. Annual site visits will be conducted in the late spring or early summer to document vegetation cover, species diversity, and survival of planted

vegetation. An 80 percent survival rate of planted trees and shrubs is required by the City. Annual monitoring reports shall be submitted for a period of two years to the City documenting survival of planted vegetation, any maintenance actions conducted, and recommendations for replanting or other maintenance measures, should they be necessary.

Qualifications

This report was prepared by Stacy Benjamin, WSNW Principal Ecologist. Stacy has been providing wetland services for 21 years in the Pacific Northwest. She specializes in wetland and waters delineations, jurisdictional determinations, wetland permit applications and mitigation plans, and facilitation of agency review and receipt of regulatory approvals. Stacy is well versed in the methodology of the 1987 U.S. Army Corps of Engineers (Corps) Wetlands Delineation Manual and the Western Mountains, Valleys, and Coast Regional Supplement. Stacy has authored and received concurrence for hundreds of wetland and waters delineation reports since 1996. She is experienced in conducting wetland functional assessments and vegetated corridor assessments to meet the wetland and natural resource requirements of local jurisdictions throughout Oregon.

List of Figures and Attachments

Figure 1. City of Milwaukie Zoning Map
Figure 2. Drainage Basin Map
Figure 3. Natural Resource Boundary Verification Map
Figure 4. Site Plan
Wetland Delineation Report

Figure 1. City of Milwaukie Zoning

February 23, 2017

1:2,400

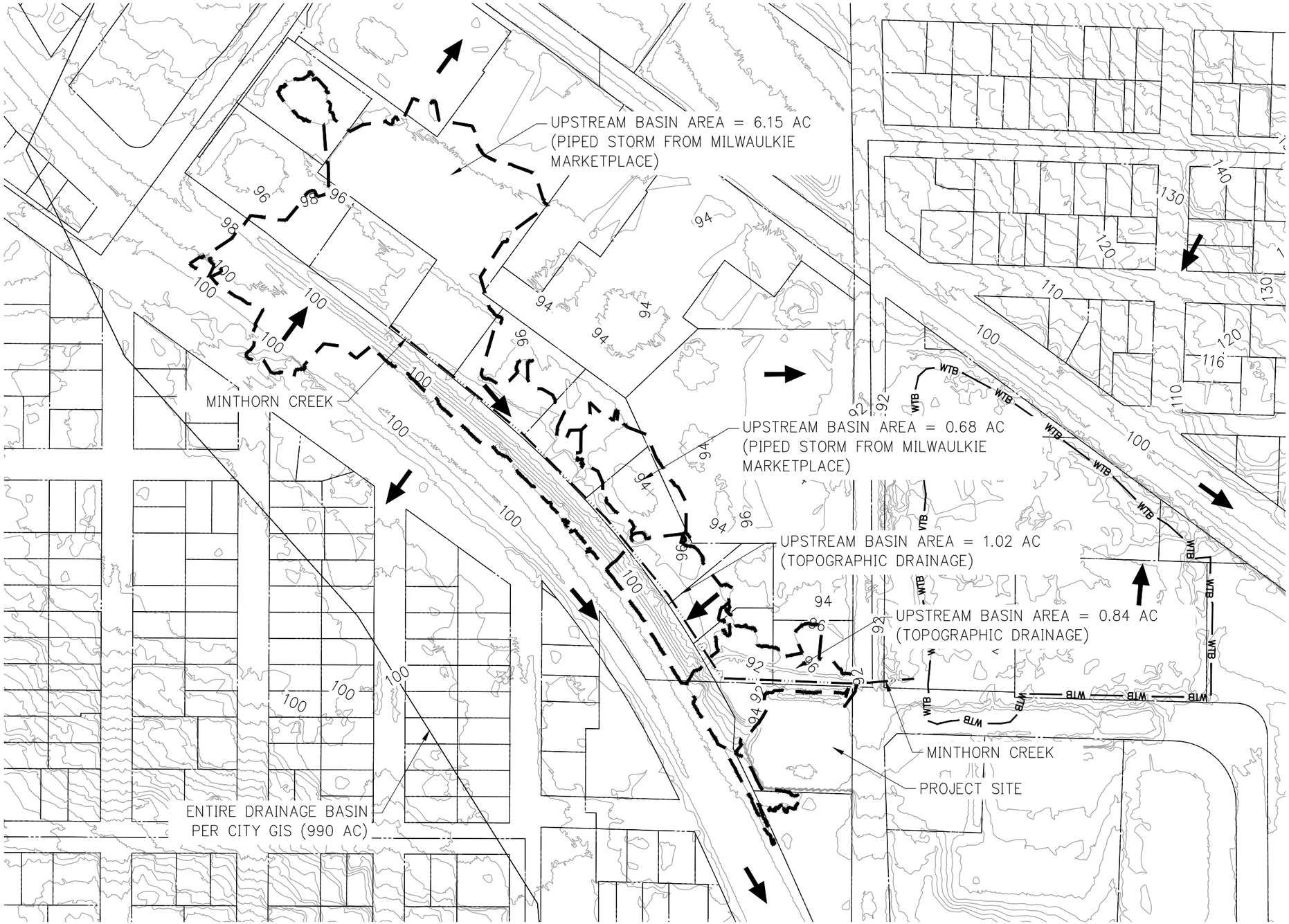
0 0.0175 0.035 0.07 mi

0 0.0225 0.045 0.09 km

- Taxlots
- Wetlands
- Vegetated Corridors
- Habitat Conservation Areas

Data Resource Center/Metro
Data Resource Center\Metro

City of Milwaukie GIS
City of Milwaukie



AREA SUMMARY

TOTAL MINTHORN CREEK BASIN AREA UPSTREAM OF PROJECT SITE (11405 SE 37TH AVE)

= 8.67 AC

RUNOFF FLOW DIRECTION

WTB — MINTHORNE WETLAND BOUNDARY PER CITY GIS

MINTHORN CREEK UPSTREAM DRAINAGE BASIN

11406 SE 37TH, MILWAUKIE, OR

FIGURE 2

MAY 9, 2017
Job # 2160642.00

SCALE: 1"=200'
0 100 200

Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
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•216064200• C:\TEMP\ACPUBLISH_5976\MINTHORN CREEK BASIN UPSTREAM BASIN DRAINAGE.DWG NKL 05/09/17 15:26 1:200.00

NATURAL RESOURCE BOUNDARY VERIFICATION FIGURE 3

11405 SE 37TH AVE

Milwaukie, Oregon

- Subject
- HCA Boundary
- WQR Boundary
- Wetland Boundary; secondary protected water feature
- Tax

0 20 40 80 Feet

N

1 inch = 40 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Aug 2014

GEOGRAPHIC PROJECTION:
NAD 83 HARN, Oregon North Lambert Conformal Conic

Date: 5/22/2017
File: NR Boundary Verification Figure

Map Created By: ENR
Project No: 2160642.00

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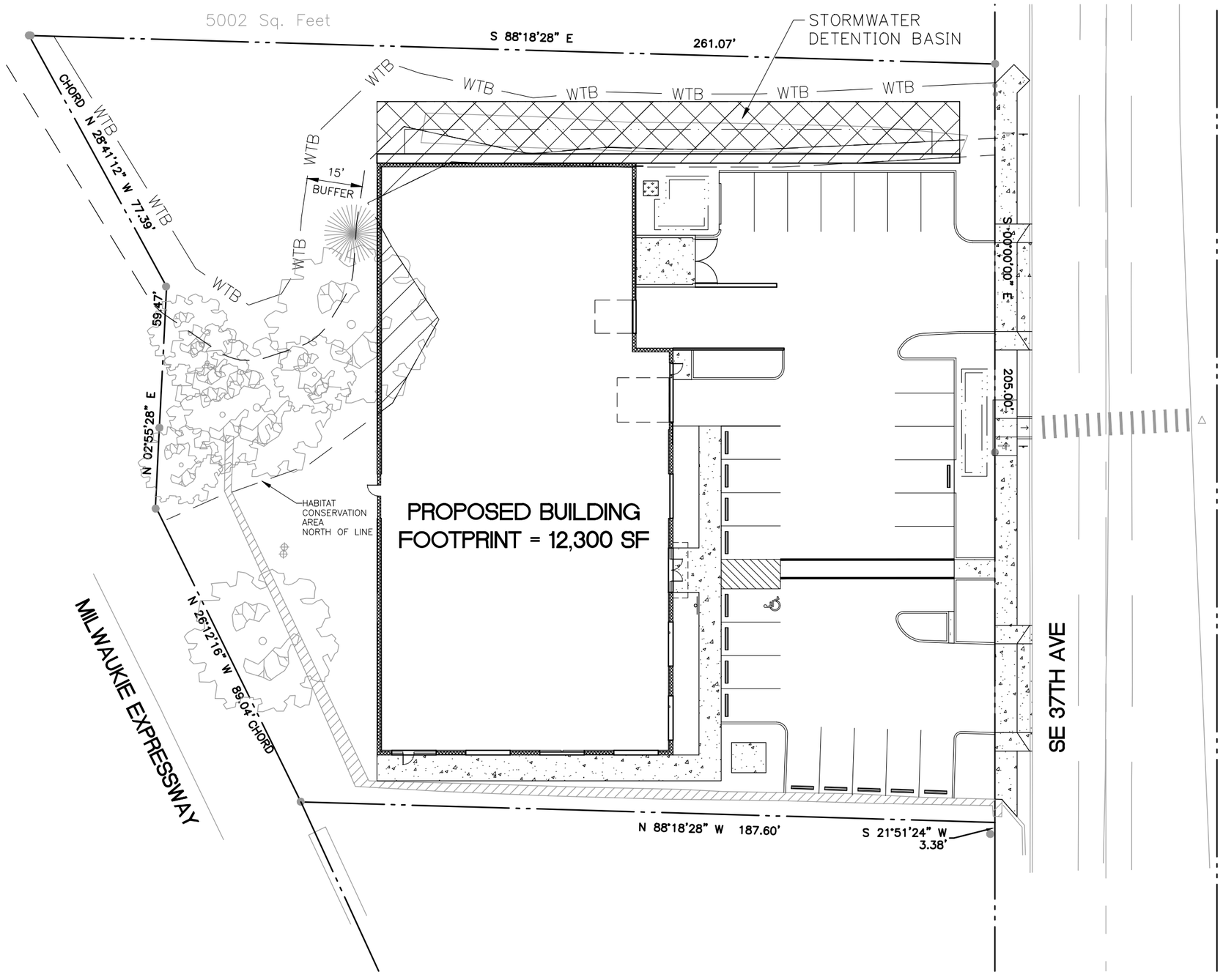
P 503.224.9560 ▪ F 503.228.1285 ▪ W MCKNZE.COM
RiverEast Center, 1515 SE Water Avenue, #100, Portland, OR 97214
Portland, Oregon ▪ Vancouver, Washington ▪ Seattle, Washington



SITE DATA

HCA AREA	13,432 SF (0.31 AC)
HCA IMPACT AREAS	
BUILDING	576 SF
STORMWATER FACILITY	2,591 SF
TOTAL=	3,167 SF
WQR IMPACT AREAS	
BUILDING	0 SF
STORMWATER FACILITY	1,863 SF
TOTAL=	1,863 SF
REMAINING HCA AREA	
UNDER TREE CANOPY	3,931 SF
NO TREE CANOPY	1,151 SF
TOTAL=	5,082 SF

SENSITIVE AREA IMPACT

11405 SE 37TH AVE, MILWAUKIE, OR

JUNE 28, 2017
JOB # 2160642.00

SCALE: 1"=30'
0 15 30

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+216064200+ C:\TEMP\ACPUBLISH_12896\SENSITIVE AREA IMPACT.DWG NKL 06/28/17 06:01 1:30

FIGURE 4.SITE PLAN WITH

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report or include a hard copy of the completed form with a CD/DVD that includes a single PDF file of the report cover form and report (minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF attachment of the completed cover from and report may be e-mailed to **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail instructions on how to access the file from your ftp or other file sharing website. Fees can be paid by check or credit card. Make the check payable to the Oregon Department of State Lands. To pay the fee by credit card, call 503-986-5200.

☒ Applicant ☐ Owner Name, Firm and Address: **Suvi Wesa** **Day Management Corporation** **4620 SE International Way** **Milwaukie, Oregon 97222**	Business phone # **(503) 659-1240** Mobile phone # (optional) E-mail: **SWesa@daywireless.com**
☐ Authorized Legal Agent, Name and Address:	Business phone # Mobile phone # E-mail:

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name:_____ Signature: _____

Date: Special instructions regarding site access:

Project and Site Information (using decimal degree format for lat/long.,enter centroid of site or start & end points of linear project)

Project Name: **11405 SE 37th Avenue**	Latitude: **45.440650 °N** Longitude: **−122.624820°W**
Proposed Use: **Commercial Development**	Tax Map # **1 1E 36AD**
Project Street Address (or other descriptive location): **11405 SE 37th Avenue**	Township **1S** Range **1E** Section **36** QQ **NE 1/4** Tax Lot(s) **7200**
City: **Milwaukie** County: **Clackamas**	Waterway: **Trib. to Mount Scott Creek** River Mile: **N/A** NWI Quad(s): **Gladstone**

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: **Stacy Benjamin** Wetland Solutions Northwest, LLC 59446 Lytle Dr. St. Helens, OR 97051	Phone # Mobile phone # **503-367-7177** E-mail: **Stacy@wetlandsolutionsnw.com**

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Stacy Benjamin Date: 4/5/2017

Primary Contact for report review and site access is ☐ Consultant ☒ Applicant/Owner ☐ Authorized Agent

Wetland/Waters Present? ☒ Yes ☐ No | Study Area Size: **1.05 acres** Wetlands **0.11 acre**

Check Box Below if Applicable:	**Fees:**
☐ R-F permit application submitted	☒ Fee payment **$419**
☐ Mitigation bank site	☐ Fee ($100) for resubmittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)	☐ No fee for request for reissuance of an expired report
☐ Industrial Land Certification Program Site	
☐ Reissuance of a recently expired delineation Previous DSL # Expiration date	

Other Information:	Y	N	
Has previous delineation/application been made on parcel?	☒	☐	If known, previous DSL # 1997-0431; FP-15582
Does LWI, if any, show wetland or waters on parcel?	☐	☒	

For Office Use Only

DSL Reviewer: _____ Fee Paid Date: ____ / ____ / ____ DSL WD # _____

Date Delineation Received: ___ / ___ / ___ DSL Project # _____ DSL Site # _____

Scanned: ☐ Final Scan: ☐ DSL WN # _____ DSL App. # _____

11405 SE 37th AVENUE
WETLAND & WATERS DELINEATION REPORT

T1S, R1E, Section 36, Tax lot 7200
Milwaukie, Clackamas County, Oregon

Prepared for

Day Management Corporation
4620 SE International Way
Milwaukie, Oregon 97222

Prepared by

Wetland Solutions Northwest, LLC
59446 Lytle Dr.
St. Helens, Oregon 97051

April 2017

Project No. 17024

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Figure 4. Local wetland inventory map.
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Introduction

Wetland Solutions Northwest, LLC (WSNW) was contracted by Day Management Corporation to conduct a wetland and waters delineation of the site located at 11405 SE 37th Avenue in Milwaukie, Oregon. The subject site is located east of Highway 224 and north of SE International Way (Figure 1; Appendix A). The 1.05 acre study area consists of tax lot 7200 in T1S, R1E, Section 36 (Figure 2). A wetland delineation was conducted on the site in 1997 (DSL #97-0431; Corps #97-1378), and wetland fill permits were issued for the site in 1998 (DSL #15582-FP; Corps #98-910). The western portion of the tax lot contains a wetland mitigation site. Site alterations conducted in accordance with the wetland fill permits and mitigation plan are discussed in section B of this report.

A. Landscape Setting and Land Use

The subject site is located in a developed area of Milwaukie and is surrounded by commercial development. The majority of the study area is level and slopes down very gradually to the north with an elevation ranging from approximately 95 feet to 93 feet above sea level. An unnamed stream flows from west to east along the north property boundary before being culverted under SE 37th Avenue to a large wetland area on the east side of SE 37th Avenue. The stream flows to Mount Scott Creek, which is a tributary to Kellogg Creek, a tributary to the Willamette River. The site is currently vacant; however, the site was graded approximately 20 years ago, and stormwater infrastructure was constructed in approximately 2002. Site alterations are discussed in the section below.

B. Site Alterations

Wetland fill permits were issued by the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps) for the site in 1998 to fill 0.064 acre of emergent wetland (DSL #15582-FP; Corps #98-910). The wetland mitigation plan proposed to create 0.092 acre of emergent wetland and to enhance 0.008 acre of existing emergent reed canarygrass dominated wetland. According to the wetland mitigation plan, the mitigation was conducted contiguous to an existing pond located immediately north of the site by excavating the area south of the pond to extend wetlands into the northwest corner of the site. An approximately 3 foot high slope/berm was constructed along the southern edge of the created wetlands and stream channel.

According to a previous wetland delineation conducted on the site in 1997, the site had already been graded in anticipation of site development at the time of the delineation. In 2002, phase 1 site improvements were conducted including the construction of a linear east-west oriented detention pond in the north portion of the site. The detention pond is located immediately south of the berm that forms the southern wetland boundary of the stream-associated wetlands. According to the 2002 site plans, the location of the detention pond is shown as being located within the 25 foot wetland buffer setback adjacent to the stream.

C. Precipitation Data and Analysis

Information regarding average monthly precipitation for the project vicinity was obtained from the USDA Natural Resources Conservation Service WETS table for the Portland Airport weather station. The WETS table provides a month by month summary and probability analysis of temperature and precipitation. According to the WETS table for Portland, monthly observed precipitation was within the normal range for December 2016 and January 2017, and precipitation was above the normal range for February 2017. Precipitation data are summarized in the tables below and are also included in Appendix D.

Table 1. Precipitation Data for the National Weather Service Portland Station (inches)

Field Date	Rainfall on Field Date	Rainfall Two Weeks Prior to Field Date	Rainfall for the Water Year-to-Date (WYTD)	Departure from Average WYTD
March 2, 2017	0.06	3.86	34.30	11.36
March 23, 2017	0.32	3.82	39.51	14.33

Table 2. Average Precipitation Data According to the Portland WETS Station (inches)

Prior Three Months	Average	30% Chance Will Have Less Than	30% Chance Will Have More Than	Observed Precipitation	Within Normal Range?
February 2017	4.18	2.84	4.98	10.36	No, above normal
January 2017	5.07	2.98	6.15	4.13	Yes
December 2016	5.71	3.89	6.82	4.61	Yes

D. Methods

The methodology used for determining the presence of wetlands and delineating wetland boundaries followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. The National Wetland Plant List was used to assign wetland indicator status for the appropriate region.

Field work was initiated on March 2, 2017 by Stacy Benjamin. Blackberry had to be cleared along the south side of the stream in order for field work to be completed on March 23, 2017. Soils, vegetation, and indicators of hydrology were recorded at four sample plot locations on standardized wetland determination data forms (Appendix B) to document site conditions.

The following soil units are mapped within the study area according to the Natural Resources Conservation Service web soil survey map for Clackamas County (Figure 3):

- 42 Humaquepts, ponded
- 91B Woodburn silt loam, 3 – 8% slopes

No wetlands were mapped on the site in the City of Milwaukie's local wetland inventory according to the City's interactive zoning map. Representative ground level site photographs are included in Appendix C. References are listed in Appendix F.

E. Description of All Wetlands and Other Non-Wetland Waters

Wetlands

The pond in the northwest corner of the site is an open water wetland estimated to be up to approximately 2.5 feet deep based on the grading plan shown in the wetland mitigation plan. According to the wetland mitigation plan, the created wetlands were intended to consist of areas of open water, submerged vegetation wetlands, and inundated emergent vegetation wetlands. None of the submerged and emergent vegetation species specified in the mitigation plan were observed at the time of the March 2017 site visit. The wetland boundary around the edge of the pond was very well-defined by a steep-sided slope, and the wetland boundary was delineated at the edge of ponded water. No sample plots were located inside the wetland boundary since it was ponded several inches deep up to the edge of the wetland boundary.

Unnamed Tributary

An unnamed tributary to Mount Scott Creek flows east through the north portion of the study area. The stream along with its associated emergent wetland fringe is approximately 20 to 25 feet wide and was ponded to an unknown depth during the March 2017 site visits. The stream was not actively flowing, and it may be constricted at the downstream edge of the site by the culvert under SE 37th Avenue, which was submerged during the site visits. The ordinary high water line was not visible due to the depth of ponding, and it appears that the culvert is possibly backing water up into the stream and wetlands at deeper depths than would normally occur. A band of reed canarygrass is present along the south edge of the stream, and this area was ponded several inches deep during the March site visits. Immediately upslope of the reed canarygrass community, a dense thicket of Himalayan blackberry (*Rubus armeniacus*) is present. Scattered red osier (*Cornus alba*) and willow (*Salix* species) shrubs are present along the base of the berm that comprises the southern wetland boundary of the stream-associated emergent wetlands. The wetland boundary was delineated at representative locations along the south side of the tributary, where paths had been cut through the blackberry in order to access the stream and wetlands.

Uplands

Uplands to the south of the pond are dominated by a non-hydrophytic community consisting of big-leaf maple (*Acer macrophyllum*) and English hawthorn (*Crataegus monogyna*), with small amounts of English laurel (*Prunus laurocerasus*) and English holly (*Ilex aquifolium*) in the shrub layer, and English ivy (*Hedera helix*) dominating the groundcover. Uplands along the south side of the tributary are dominated by Himalayan blackberry along with scattered wetland buffer plantings including red osier and willow.

The upland area immediately south of the detention pond is dominated by bentgrass (*Agrostis* species), with scattered upland weeds including English plantain (*Plantago lanceolata*), dovefoot geranium (*Geranium molle*), common selfheal (*Prunella vulgaris*), meadow knapweed (*Centaurea moncktonii*), hairy bittercress (*Cardamine hirsuta*), and stinking willy (*Jacobaea vulgaris*). This area was previously leveled and graded, and the substrate consists of approximately 50 percent soil and 50 percent angular gravels.

F. Deviation from Local Wetland Inventory

No wetlands were mapped in the study area in the City's Local Wetland Inventory. The wetland boundary delineated in this investigation is consistent with the location of wetlands mapped in the wetland mitigation plan that was permitted by DSL and the Corps in 1998.

G. Mapping Method

Wetland boundaries, the top of stream bank, and sample plots were flagged in the field and professionally land surveyed by Weddle Surveying, Inc. The wetland map is included as Figure 5.

H. Additional Information

The wetlands delineated in this study are likely to be determined to be jurisdictional by the Oregon Department of State Lands and the U.S. Army Corps of Engineers since they have a direct surface connection to Mount Scott Creek, which is a tributary to Kellogg Creek, a tributary to the Willamette River.

I. Results and Conclusions

An open water pond that was constructed as wetland mitigation and stream-associated wetlands totaling 0.11 acre were delineated in the study area.

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with Oregon Administrative Rule (OAR) 141-090-0005 through 141-090-0055.

K. Preparer

Stacy Benjamin

Stacy Benjamin
Principal Ecologist

APPENDIX A

Maps

Figure 1. Site location map.

Figure 2. Tax lot map.

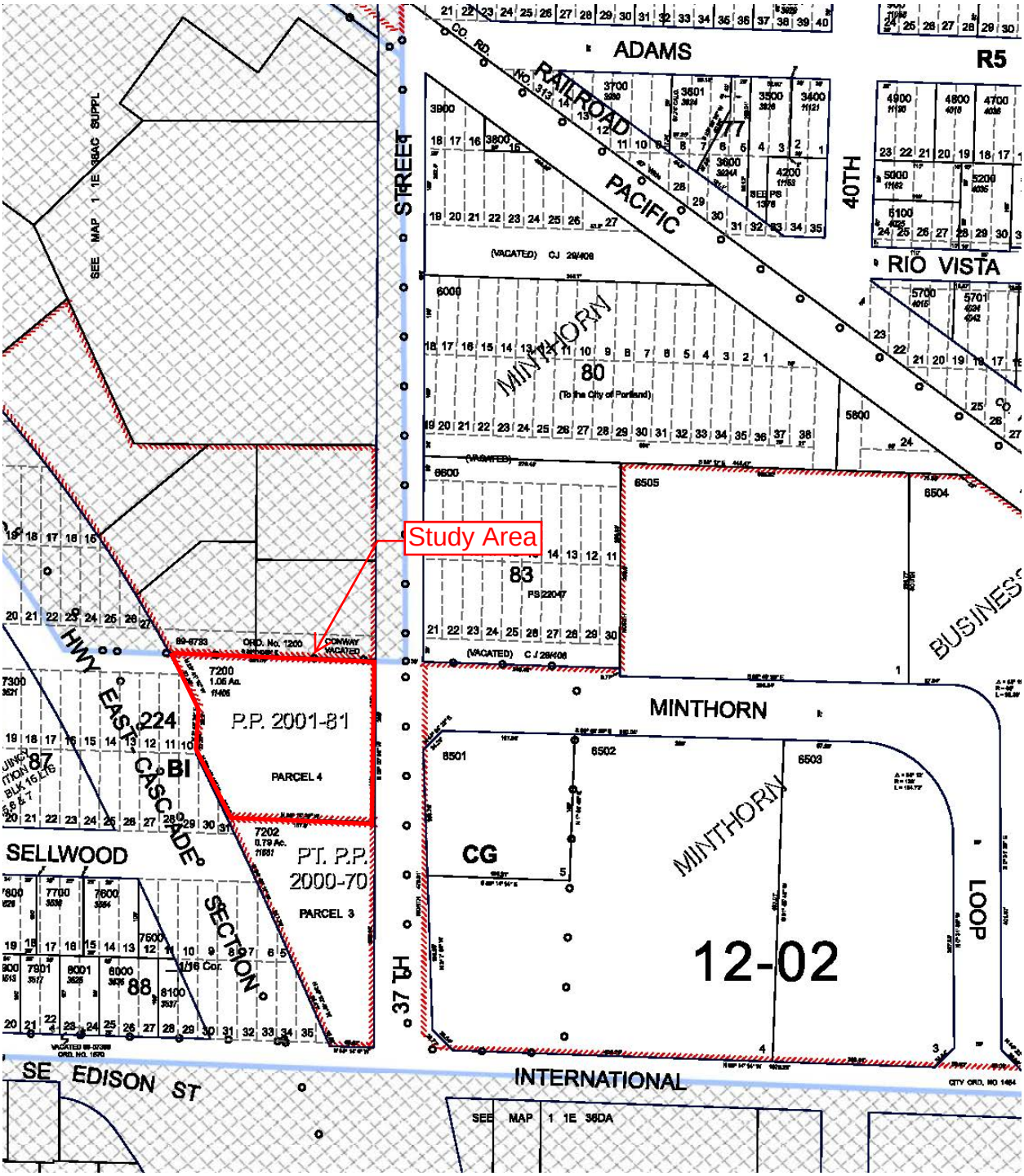
Figure 3. Soil map.

Figure 4. Local wetland inventory map.

Figure 5. Wetland map.

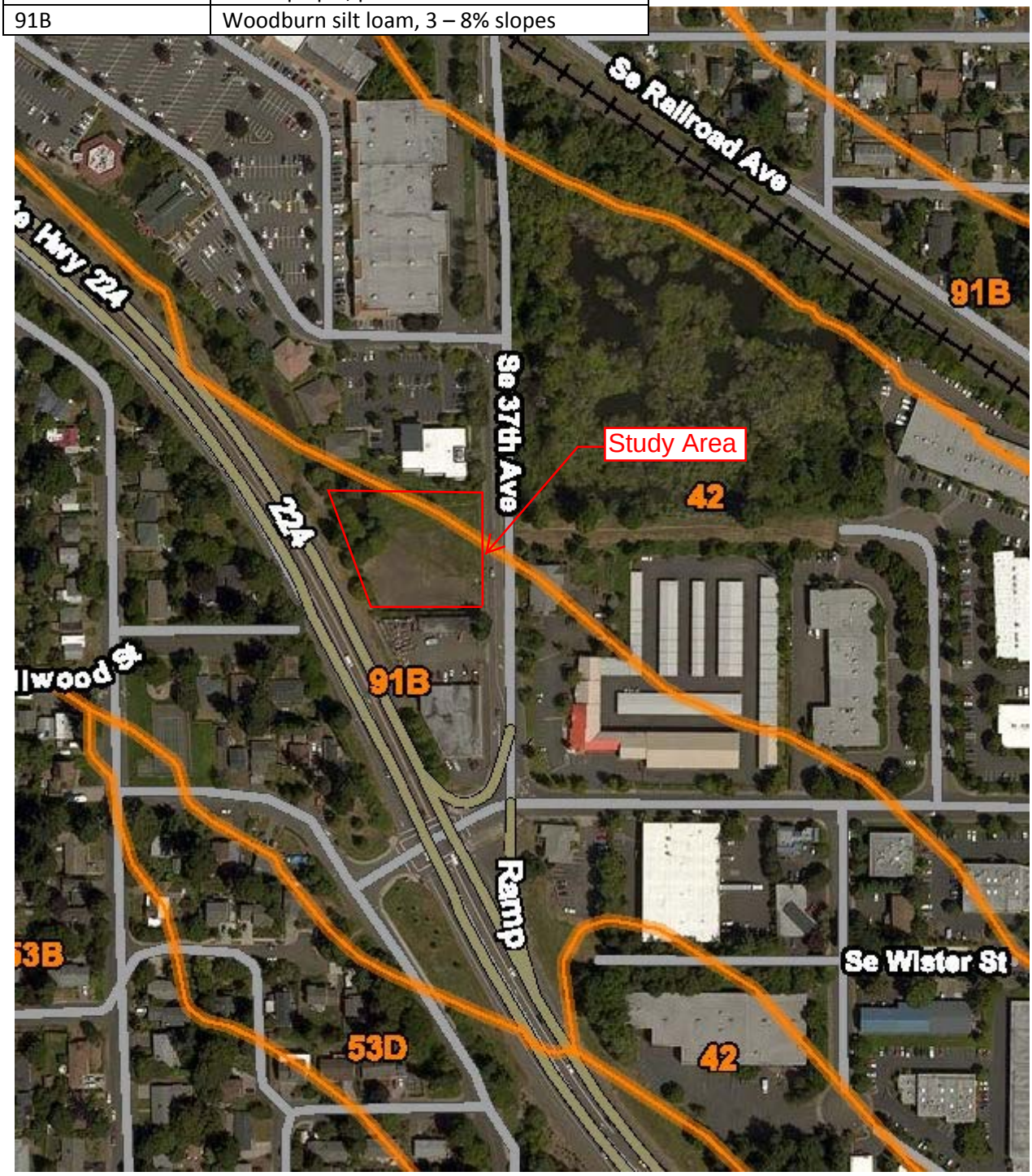
Figure 6. Recent aerial photo.

11405 SE 27th Avenue, Milwaukie Wetland & Waters Delineation Figure 1. Site Location Map	↑ Scale approx. 1 inch =1,500 ft	Wetland Solutions Northwest, LLC
Source: USGS. Lake Oswego and Gladstone, OR 7.5' quadrangles. Available at: http://store.usgs.gov. Accessed 3/6/2017.		April 2017

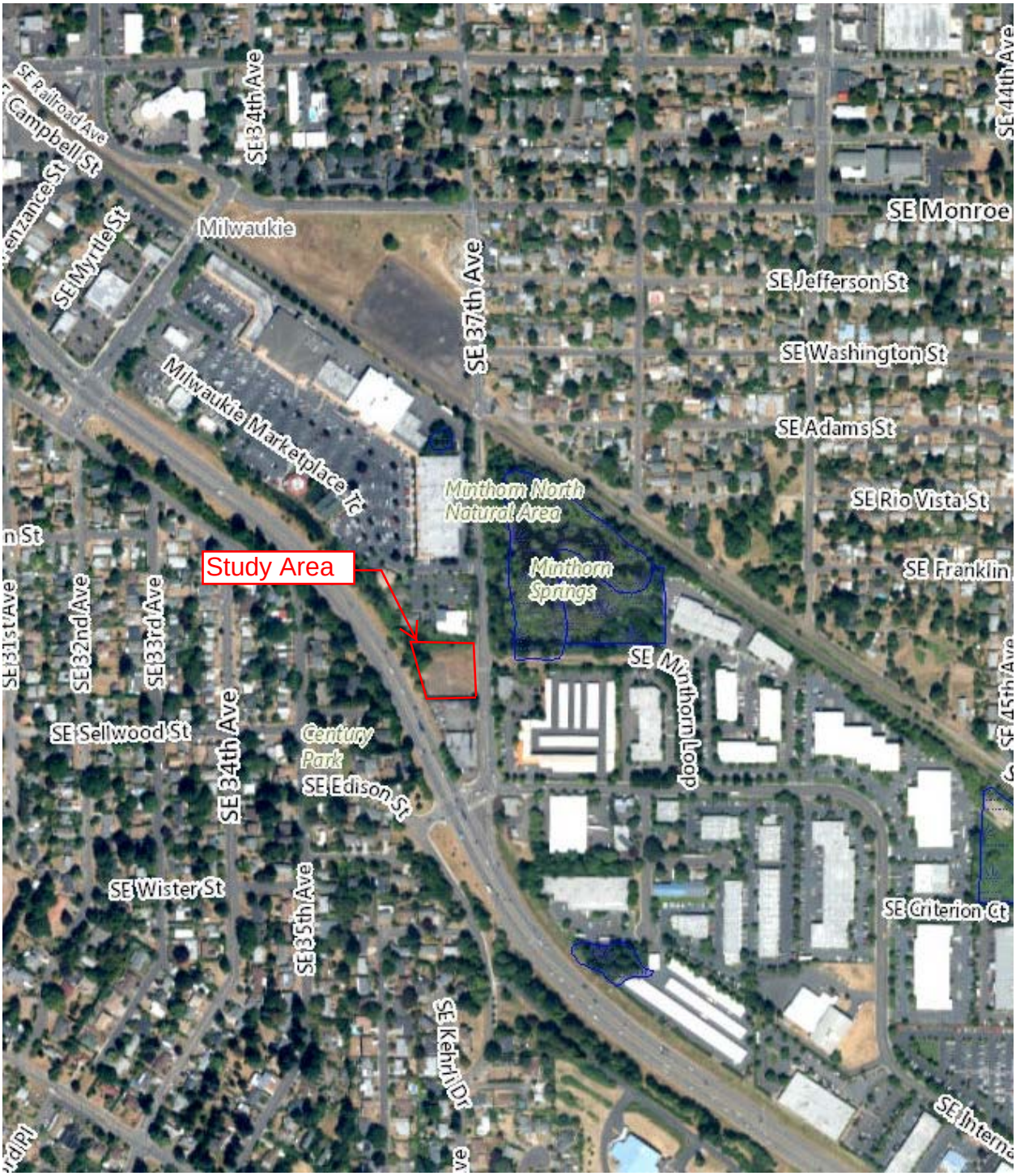


11405 SE 37th Avenue, Milwaukie Wetland & Waters Delineation Figure 2. Tax Lot Map	↑ Scale approx. 1 inch = 200 ft	Wetland Solutions Northwest, LLC
Source: Tax lot map downloaded from: www.ormap.net, Clackamas County, T1S, R1E, Sec. 36AD. Accessed 1/31/2017.		April 2017

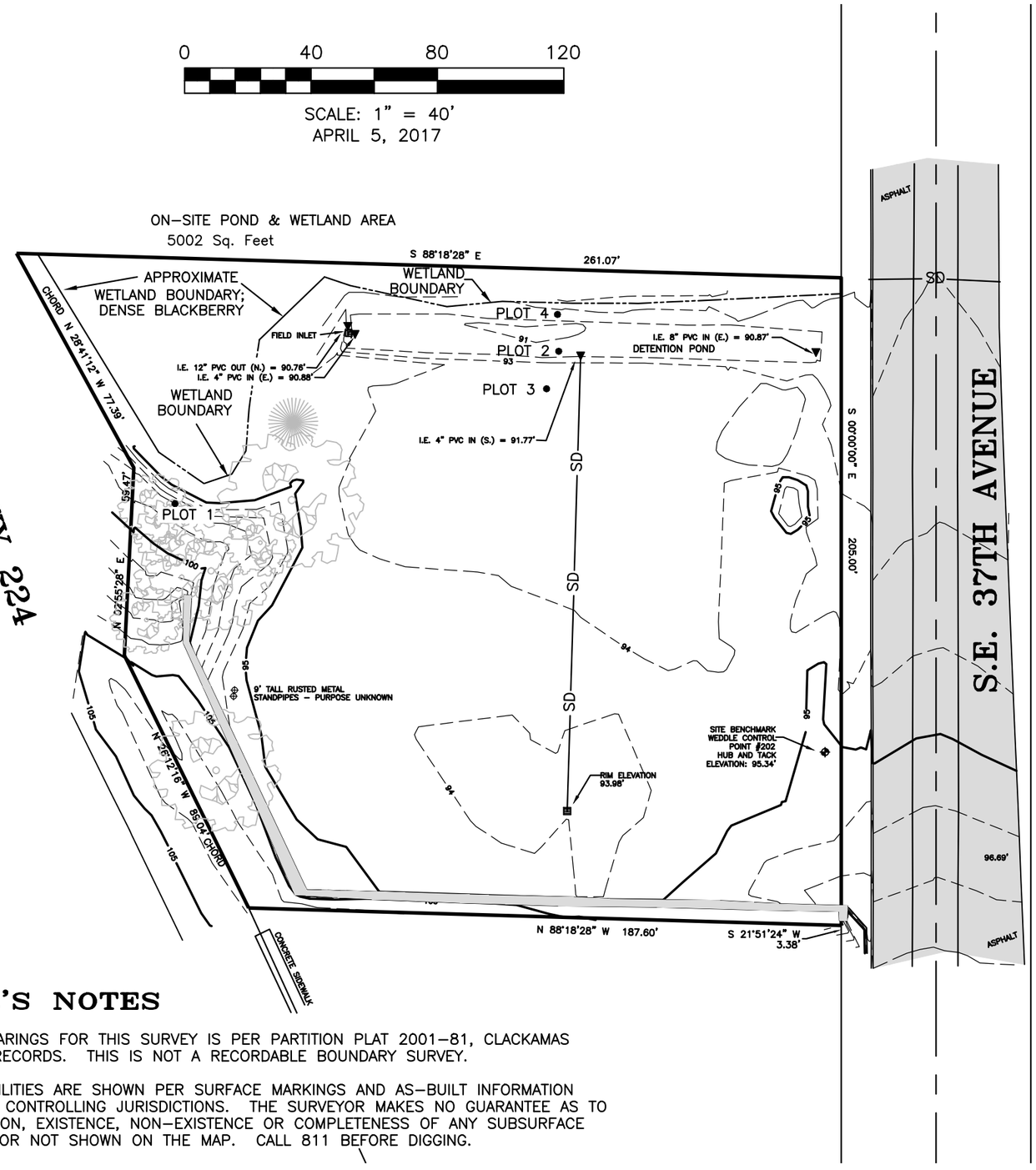
Map Unit	Map Unit Name
42	Humaquepts, ponded
91B	Woodburn silt loam, 3 – 8% slopes



11405 SE 37th Avenue, Milwaukie Wetland and Waters Delineation Figure 3. Soil Survey Map	⬆ Scale approx. 1 inch = 300 ft	Wetland Solutions Northwest, LLC
Source: USDA NRCS Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed 1/31/2017.		April 2017



11405 SE 37th Avenue, Milwaukie Wetland and Waters Delineation Figure 4. Local Wetlands Inventory Map	⬆ Scale approx. 1 inch = 700 ft	Wetland Solutions Northwest, LLC
Source: City of Milwaukie. Accessed 1/31/2017.		April 2017



WETLANDS SURVEY

11405 S.E. 37TH AVENUE

BEING PARCEL 4 OF
PARTITION PLAT 2001-81
LOCATED IN THE EAST 1/2 OF SECTION 36
T. 1 S., R. 1 E., W.M.
CITY OF MILWAUKIE
CLACKAMAS COUNTY, OREGON

REQUESTED BY:

STACY BENJAMIN
WETLAND SOLUTIONS NORTHWEST, LLC
(503) 367-7177

BENCHMARK NOTE

THE BENCHMARK USED FOR THIS PROJECT IS AN OPUS-DERIVED ELEVATION ON WEDDLE SURVEYING CONTROL POINT NO. 202, A HUB AND TACK ON-SITE AS SHOWN.
ELEVATION: 95.34' (DATUM NAVD '88, GEOID 12B).

REGISTERED
PROFESSIONAL
LAND SURVEYOR
OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833
RENEWAL: DECEMBER 31, 2018

SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER PARTITION PLAT 2001-81, CLACKAMAS COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY.

2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS AND AS-BUILT INFORMATION PROVIDED BY THE CONTROLLING JURISDICTIONS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.

WEDDLE SURVEYING INC.
Excellence is our benchmark.
6950 SW HAMPTON ST., STE. 170, TIGARD, OR 97223
PH: (503) 941-9585 FAX: (503) 941-9640
www.weddlesurveying.net

Figure 5. Wetland Map JOB NO. 5239

11405 SE 37th Avenue, Milwaukie Wetland and Waters Delineation Figure 6. Recent Aerial Photo	⬆ Scale approx. 1 inch = 400 ft	Wetland Solutions Northwest, LLC
Source: Google Earth. Imagery date 7/23/2016.		April 2017

APPENDIX B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 11405 SE 37th Avenue City/County: Milwaukie / Clackamas Sampling Date: 3/2/2017
Applicant/Owner: Day Management Corporation State: OR Sampling Point: 1
Investigator(s): S. Benjamin Section, Township, Range: Sec. 36, T1S, R1E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): A – NW Forests & Coast Lat: Long: Datum:
Soil Map Unit Name: 91B – Woodburn silt loam NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?**	**Yes ___ No X**
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X		

Remarks: 3.86 inches of precipitation two weeks prior to field work. Plot located at top of slope south of pond (created for mitigation in 2002).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum	70	Y	FACU
2. Crataegus monogyna	30	Y	FAC
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10')			
1. Prunus laurocerasus	5	Y	UPL
2. Ilex aquifolium	1	N	FACU
3.			
4.			
5.			
	6	= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 100

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Scattered moss present.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					sil	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: Roots

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: 1 to 2 inch diameter rock and small pieces of concrete present throughout profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	___	No	X	Depth (inches):	>10
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	>10

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils moist only throughout profile.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 11405 SE 37th Avenue | City/County: Milwaukie / Clackamas | Sampling Date: 3/2/2017
Applicant/Owner: Day Management Corporation | State: OR | Sampling Point: 2
Investigator(s): S. Benjamin | Section, Township, Range: Sec. 36, T1S, R1E
Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave | Slope (%): <5
Subregion (LRR): A – NW Forests & Coast | Lat: | Long: | Datum:
Soil Map Unit Name: 91B – Woodburn silt loam | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes	X	No	

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

Remarks: 3.86 inches of precipitation two weeks prior to field work. Plot located at bottom of slope along edge of ponded water in detention pond created in 2002.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	Y	FACW
2. Agrostis species	50	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					sil	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Soils too saturated to dig deeper.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No ___ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 11405 SE 37th Avenue City/County: Milwaukie / Clackamas Sampling Date: 3/2/2017
Applicant/Owner: Day Management Corporation State: OR Sampling Point: 3
Investigator(s): S. Benjamin Section, Township, Range: Sec. 36, T1S, R1E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): A – NW Forests & Coast Lat: Long: Datum:
Soil Map Unit Name: 91B – Woodburn silt loam NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: 3.86 inches of precipitation two weeks prior to field work. Plot located approx. 10 feet south of detention pond in flat, leveled area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Rubus armeniacus	1	N	FAC
2.			
3.			
4.			
5.			
	1 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Agrostis species	75	Y	FAC
2. Plantago lanceolata	5	N	FACU
3. Jacobaea vulgaris	5	N	FACU
4. Centaurea species	5	N	FACU?
5. Geranium molle	5	N	UPL
6. Prunus vulgaris	5	N	FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	50					sil	
		50					gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: Gravel

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: 1/4 inch to 1 inch diameter angular gravel throughout profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	___	No	X	Depth (inches):	>10
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	>10

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils moist only throughout profile.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 11405 SE 37th Avenue City/County: Milwaukie / Clackamas Sampling Date: 3/23/2017
Applicant/Owner: Day Management Corporation State: OR Sampling Point: 4
Investigator(s): S. Benjamin Section, Township, Range: Sec. 36, T1S, R1E
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <3
Subregion (LRR): A – NW Forests & Coast Lat: Long: Datum:
Soil Map Unit Name: 91B – Woodburn silt loam NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No	
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: 3.82 inches of precipitation two weeks prior to field work. Plot located on top of berm immediately south of stream along north property boundary.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10')			
1. Rubus armeniacus	50	Y	FAC
2.			
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Schedonorus arundinaceus	30	Y	FAC
2. Agrostis species	20	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					sil	
5-10	10YR 4/3	90	10YR 4/6	10			sil	
10-12	10YR 4/3	50					sil	
	5YR 3/4	50					sil	compacted rust layer
12-15	10YR 4/3	90	10YR 4/4	10			sil	trace sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: Fill soils used to construct berm.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	___	No	X	Depth (inches):	>15
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	>15

Wetland Hydrology Present? **Yes** ___ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils moist only throughout profile.

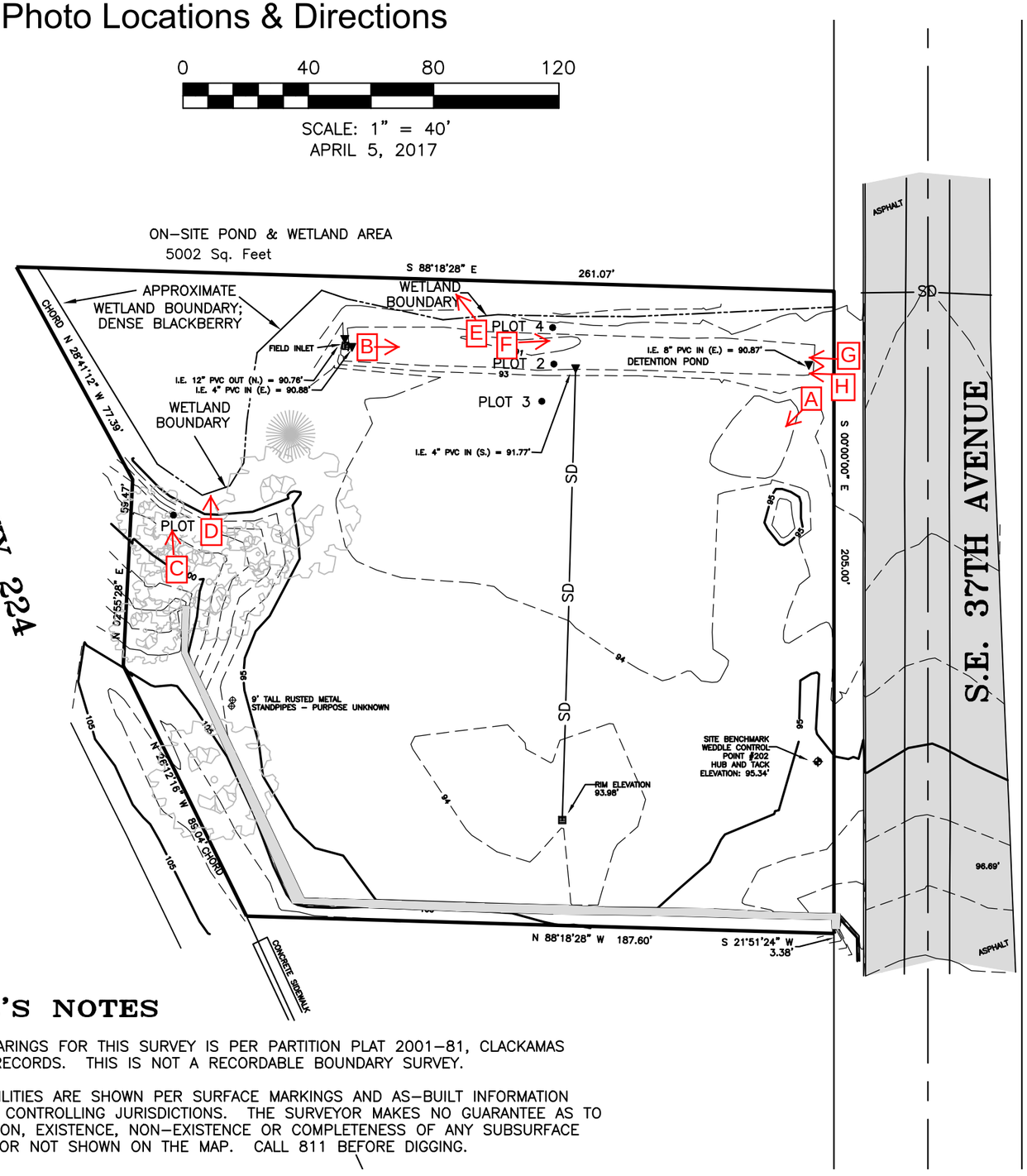
APPENDIX C

Ground-level Site Photographs

Photo Locations & Directions

0 40 80 120

SCALE: 1" = 40'
APRIL 5, 2017



SURVEYOR'S NOTES

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS PER PARTITION PLAT 2001-81, CLACKAMAS COUNTY SURVEY RECORDS. THIS IS NOT A RECORDABLE BOUNDARY SURVEY.

2. UNDERGROUND UTILITIES ARE SHOWN PER SURFACE MARKINGS AND AS-BUILT INFORMATION PROVIDED BY THE CONTROLLING JURISDICTIONS. THE SURVEYOR MAKES NO GUARANTEE AS TO THE EXACT LOCATION, EXISTENCE, NON-EXISTENCE OR COMPLETENESS OF ANY SUBSURFACE UTILITIES SHOWN, OR NOT SHOWN ON THE MAP. CALL 811 BEFORE DIGGING.

WETLANDS SURVEY

11405 S.E. 37TH AVENUE

BEING PARCEL 4 OF
PARTITION PLAT 2001-81
LOCATED IN THE EAST 1/2 OF SECTION 36
T. 1 S., R. 1 E., W.M.
CITY OF MILWAUKIE
CLACKAMAS COUNTY, OREGON

REQUESTED BY:

STACY BENJAMIN
WETLAND SOLUTIONS NORTHWEST, LLC
(503) 367-7177

BENCHMARK NOTE

THE BENCHMARK USED FOR THIS PROJECT IS AN OPUS-DERIVED ELEVATION ON WEDDLE SURVEYING CONTROL POINT NO. 202, A HUB AND TACK ON-SITE AS SHOWN.
ELEVATION: 95.34' (DATUM NAVD '88, GEOID 12B).

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833

RENEWAL: DECEMBER 31, 2018

WEDDLE SURVEYING INC.
Excellence is our benchmark.

6950 SW HAMPTON ST., STE. 170, TIGARD, OR 97223
PH: (503) 941-9585 FAX: (503) 941-9640
www.weddlesurveying.net

Figure 5. Wetland Map JOB NO. 5239

Photo A. View southwest of the site. south of the detention pond constructed in 2002.

Photo B. View east of the detention pond constructed in 2002, and the berm in photo left along the south side of the stream.

Photo C. View north of upland plot 1, south of the mitigation wetland constructed in 2002.

Photo D. View north of the wetland boundary along the edge of the mitigation pond (red flagging).

Photo E. View northwest of stream from top of berm, prior to blackberry clearing.

Photo F. View east of wetland boundary south of stream and upland plot 4, after blackberry clearing.

Photo G. View west of stream prior to blackberry being cleared, showing stagnant water at potentially blocked inlet to culvert under SE 37th Avenue.

Photo H. View west of wetland boundary on south side of stream from east edge of site, after blackberry clearing.

APPENDIX D

Precipitation

AgACIS for Multnomah County

AgACIS

Format for export | Print

WETS Station: PORTLAND INTL AP, OR

Requested years: 1971 - 2000

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have		Avg number of days with 0.10 inch or more	Average total snowfall
					less than	more than		
Jan	46.0	34.6	40.3	5.07	2.98	6.15	12	1.1
Feb	50.7	36.4	43.6	4.18	2.84	4.98	10	1.3
Mar	56.4	39.3	47.8	3.71	2.85	4.31	10	0.1
Apr	61.4	42.6	52.0	2.64	1.93	3.10	8	0.0
May	67.7	48.1	57.9	2.38	1.44	2.88	7	0.0
Jun	73.6	53.2	63.4	1.59	0.94	1.93	5	0.0
Jul	80.1	57.4	68.7	0.72	0.33	0.86	2	0.0
Aug	80.6	57.7	69.1	0.93	0.35	1.09	2	0.0
Sep	75.6	52.8	64.2	1.65	0.72	1.93	4	0.0
Oct	64.3	45.4	54.8	2.88	1.57	3.52	7	0.0
Nov	52.5	40.0	46.3	5.61	3.72	6.73	13	0.6
Dec	46.0	35.3	40.6	5.71	3.89	6.82	12	1.2
Annual:					32.85	40.58		

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Daily)

```
282
CDUS46 KPQR 241141
CLIPDX


CLIMATE REPORT
NATIONAL WEATHER SERVICE PORTLAND OREGON
441 AM PDT FRI MAR 24 2017


.................................

...THE PORTLAND OR CLIMATE SUMMARY FOR MARCH 23 2017...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1940 TO 2017


WEATHER ITEM   OBSERVED TIME   RECORD YEAR NORMAL DEPARTURE LAST
                VALUE   (LST)  VALUE       VALUE  FROM      YEAR
                                                   NORMAL
.............................................................
TEMPERATURE (F)
 YESTERDAY
  MAXIMUM         58    357 PM  73    1982  58      0       54
                                      1979
  MINIMUM         41    232 AM  31    1954  41      0       46
                                      1951
  AVERAGE         50                        49      1       50

PRECIPITATION (IN)
  YESTERDAY        0.32          1.00 2015   0.11   0.21     0.09
  MONTH TO DATE    5.57                      2.82   2.75     4.56
  SINCE OCT 1     39.81                     25.48  14.33    39.31
  SINCE JAN 1     20.06                     11.36   8.70    15.89

SNOWFALL (IN)
  YESTERDAY        0.0           T    1942
  MONTH TO DATE    T
  SINCE MAR 1      T
  SINCE JUL 1     11.2

DEGREE DAYS
 HEATING
  YESTERDAY       15                        16     -1       15
  MONTH TO DATE  409                       401      8      343
  SINCE MAR 1    409                       401      8      343
  SINCE JUL 1   3614                      3459    155     2946

 COOLING
  YESTERDAY        0                         0      0        0
  MONTH TO DATE    0                         0      0        0
  SINCE MAR 1      0                         0      0        0
  SINCE JAN 1      0                         0      0        0
.............................................................
```

```
WIND (MPH)
  HIGHEST WIND SPEED    16   HIGHEST WIND DIRECTION    SE (120)
  HIGHEST GUST SPEED    21   HIGHEST GUST DIRECTION    SE (120)
  AVERAGE WIND SPEED     9.0


SKY COVER
  POSSIBLE SUNSHINE  MM
  AVERAGE SKY COVER 0.9


WEATHER CONDITIONS
 THE FOLLOWING WEATHER WAS RECORDED YESTERDAY.
  LIGHT RAIN
  FOG


RELATIVE HUMIDITY (PERCENT)
 HIGHEST   100           900 PM
 LOWEST     40           400 PM
 AVERAGE    70

.....................................................


THE PORTLAND OR CLIMATE NORMALS FOR TODAY
                         NORMAL    RECORD    YEAR
 MAXIMUM TEMPERATURE (F)   58        72      1960
 MINIMUM TEMPERATURE (F)   41        29      1969
                                             1945


SUNRISE AND SUNSET
MARCH 24 2017.........SUNRISE   705 AM PDT   SUNSET   729 PM PDT
MARCH 25 2017.........SUNRISE   703 AM PDT   SUNSET   730 PM PDT


-  INDICATES NEGATIVE NUMBERS.
R  INDICATES RECORD WAS SET OR TIED.
MM INDICATES DATA IS MISSING.
T  INDICATES TRACE AMOUNT.
```

The U.S. Naval Observatory (USNO) computes astronomical data. Therefore, the NWS does not record, certify, or authenticate astronomical data. Computed times of sunrise, sunset, moonrise, moonset; and twilight, moon phases and other astronomical data are available from USNO's Astronomical Applications Department (http://www.usno.navy.mil). See http://www.usno.navy.mil/USNO/astronomical-applications/astronomical-information-center/litigation for information on using these data for legal purposes.

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

WFO Monthly/Daily Climate Data

```
105
CXUS56 KPQR 271200
CF6PDX
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                          STATION:   PORTLAND OR
                                          MONTH:     MARCH
                                          YEAR:      2017
                                          LATITUDE:   45 35 N
                                          LONGITUDE: 122 36 W

  TEMPERATURE IN F:        :PCPN:    SNOW:  WIND      :SUNSHINE: SKY     :PK WND
=================================================================================
1   2   3   4   5  6A  6B    7    8   9   10  11  12  13   14  15   16   17  18
                                    12Z  AVG MX 2MIN
DY MAX MIN AVG DEP HDD CDD  WTR  SNW DPTH SPD SPD DIR MIN PSBL S-S WX    SPD DR
=================================================================================

 1  51  40  46   0  19   0    T  0.0    0  9.6 17 200   M    M  10        21 200
 2  51  36  44  -2  21   0 0.06  0.0    0  8.8 17 200   M    M   9        20 190
 3  53  43  48   2  17   0 0.11  0.0    0 12.7 24 200   M    M  10 1      32 170
 4  47  35  41  -5  24   0 0.14  0.0    0  7.6 23 200   M    M   9 1      27 210
 5  47  36  42  -4  23   0 0.09  0.0    0 14.2 26 200   M    M   8 1      35 220
 6  46  34  40  -6  25   0 0.11    T    0 11.1 21 230   M    M   8 13     26 210
 7  50  40  45  -2  20   0 0.49  0.0    0 11.3 20 200   M    M   9 1      26 200
 8  47  41  44  -3  21   0 0.43  0.0    0  2.9  8 280   M    M  10 1      11 290
 9  58  41  50   3  15   0 0.53  0.0    0  7.3 23 200   M    M  10 1      31 210
10  60  44  52   5  13   0    T  0.0    0  8.4 23 220   M    M   7 1      29 240
11  58  39  49   2  16   0 0.30  0.0    0  8.0 21 230   M    M   9 1      26 220
12  61  46  54   6  11   0 0.00  0.0    0  6.4 15 120   M    M   8        18 120
13  53  47  50   2  15   0 0.73  0.0    0  8.7 21 120   M    M  10 1      24 120
14  57  49  53   5  12   0 0.62  0.0    0 10.7 22 120   M    M   8 1      26 120
15  57  45  51   3  14   0 0.51  0.0    0 12.8 31 200   M    M  10 1      40 210
16  55  37  46  -2  19   0 0.00  0.0    0  3.9 10 300   M    M   5        13 300
17  48  37  43  -5  22   0 0.35    M    0  8.2 24 120   M    M   9 1      29 120
18  55  36  46  -3  19   0 0.36    M    0  8.2 21 120   M    M   8 1      27 120
19  57  32  45  -4  20   0 0.00  0.0    0  4.1 13 310   M    M   6        16 300
20  55  38  47  -2  18   0 0.11  0.0    0 11.5 25 100   M    M   8        32 100
21  57  44  51   2  14   0 0.23  0.0    0 12.8 30 110   M    M   9 13     35 100
22  55  42  49   0  16   0 0.08  0.0    0 10.2 22 230   M    M   7 58     28 190
23  58  41  50   1  15   0 0.32  0.0    0  9.0 16 120   M    M   9 1      21 120
24  53  46  50   1  15   0 0.77    M    0 10.8 20 210   M    M   9 1      25 200
25  55  41  48  -2  17   0    T    M    0  6.5 14 230   M    M   8        18 200
26  50  44  47  -3  18   0 0.66    M    0  9.1 18 110   M    M  10 1      23 120
=================================================================================
SM 1394 1054       459   0  7.00    T    234.8          M      223
=================================================================================
AV 53.6 40.5                              9.0 FASTST   M    M   9    MAX(MPH)
                                 MISC ---->  # 31 200               # 40  210
=================================================================================
NOTES:
# LAST OF SEVERAL OCCURRENCES
```

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: PORTLAND OR
MONTH: MARCH
YEAR: 2017
LATITUDE: 45 35 N
LONGITUDE: 122 36 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 47.1
DPTR FM NORMAL: -0.7
HIGHEST: 61 ON 12
LOWEST: 32 ON 19

[PRECIPITATION DATA]

TOTAL FOR MONTH: 7.00
DPTR FM NORMAL: 3.85
GRTST 24HR 0.77 ON 24-24

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: T
GRTST 24HR T ON 6- 6
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 1
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 20
0.10 INCH OR MORE: 17
0.50 INCH OR MORE: 6
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 459
DPTR FM NORMAL 12
TOTAL FM JUL 1 3664
DPTR FM NORMAL 159

CLEAR (SCALE 0-3) 0
PTCLDY (SCALE 4-7) 8
CLOUDY (SCALE 8-10) 18

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP M ON M
LOWEST SLP 29.55 ON 4

[REMARKS]

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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WFO Monthly/Daily Climate Data

```
039
CXUS56 KPQR 011200
CF6PDX
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                        STATION:   PORTLAND OR
                                        MONTH:     FEBRUARY
                                        YEAR:      2017
                                        LATITUDE:   45 35 N
                                        LONGITUDE: 122 36 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG MX 2MIN								
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	41	35	38	-5	27	0	0.00	0.0	0	27.9	38	100	M	M	7		50	80
2	39	32	36	-7	29	0	T	T	0	29.5	40	90	M	M	9		51	90
3	34	31	33	-10	32	0	0.55	0.0	0	14.5	24	100	M	M	10	146	30	110
4	52	33	43	0	22	0	0.59	0.0	0	13.6	21	200	M	M	10	1	26	200
5	46	34	40	-3	25	0	2.19	T	0	5.5	16	230	M	M	10	1	21	230
6	44	33	39	-4	26	0	0.04	0.0	0	8.1	22	200	M	M	8	1	28	190
7	39	32	36	-7	29	0	0.08	T	0	6.0	14	120	M	M	10	12	15	120
8	37	35	36	-7	29	0	1.01	0.0	0	12.6	26	110	M	M	10	1	31	120
9	59	37	48	5	17	0	0.96	0.0	0	14.8	26	220	M	M	8	13	35	210
10	51	36	44	1	21	0	0.09	0.0	0	9.5	22	240	M	M	8		29	240
11	53	35	44	1	21	0	T	0.0	0	1.5	7	120	M	M	7		8	130
12	51	31	41	-2	24	0	0.00	0.0	0	3.4	10	290	M	M	8	12	13	280
13	53	29	41	-3	24	0	0.00	0.0	0	10.0	21	120	M	M	1	1	25	120
14	50	33	42	-2	23	0	0.01	0.0	0	10.8	28	110	M	M	6		33	120
15	43	38	41	-3	24	0	0.98	0.0	0	17.2	25	120	M	M	10	1	32	120
16	49	41	45	1	20	0	1.70	0.0	0	10.1	22	110	M	M	10	1	30	250
17	57	40	49	5	16	0	T	0.0	0	3.5	13	90	M	M	8	12	16	70
18	46	40	43	-1	22	0	0.25	0.0	0	6.0	13	110	M	M	10	1	16	110
19	51	40	46	2	19	0	0.27	0.0	0	10.5	24	180	M	M	9	1	38	180
20	50	40	45	1	20	0	0.81	0.0	0	6.5	18	210	M	M	10	1	23	210
21	48	36	42	-2	23	0	0.52	0.0	0	3.7	17	190	M	M	9	1	21	190
22	45	31	38	-6	27	0	T	0.0	0	2.4	13	300	M	M	9	12	16	300
23	44	32	38	-7	27	0	T	T	0	3.6	10	300	M	M	8	18	13	300
24	41	32	37	-8	28	0	0.07	0.0	0	6.1	14	110	M	M	9	1	17	100
25	48	31	40	-5	25	0	0.05	0.0	0	3.0	9	160	M	M	8	1	11	310
26	43	35	39	-6	26	0	0.14	0.0	0	8.8	17	180	M	M	10	1	23	180
27	45	36	41	-4	24	0	0.03	0.0	0	7.7	18	210	M	M	10		23	210
28	50	36	43	-3	22	0	0.02	0.0	0	5.3	15	240	M	M	8		20	240
SM	1309	974			672	0	10.36	T		262.1			M		240			
AV	46.8	34.8								9.4	FASTST		M	M	9		MAX(MPH)	
								MISC ---->		# 40	90					# 51	90	

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: PORTLAND OR
MONTH: FEBRUARY
YEAR: 2017
LATITUDE: 45 35 N
LONGITUDE: 122 36 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 40.8
DPTR FM NORMAL: -3.0
HIGHEST: 59 ON 9
LOWEST: 29 ON 13

[PRECIPITATION DATA]

TOTAL FOR MONTH: 10.36
DPTR FM NORMAL: 6.70
GRTST 24HR 2.19 ON 5- 5

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: T
GRTST 24HR T ON 23-23
GRTST DEPTH: 0

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 9
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 20
0.10 INCH OR MORE: 12
0.50 INCH OR MORE: 9
1.00 INCH OR MORE: 3

[HDD (BASE 65)]

TOTAL THIS MO. 672
DPTR FM NORMAL 78
TOTAL FM JUL 1 3205
DPTR FM NORMAL 147

CLEAR (SCALE 0-3) 1
PTCLDY (SCALE 4-7) 9
CLOUDY (SCALE 8-10) 18

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.54 ON 11
LOWEST SLP 29.22 ON 5

[REMARKS]
#FINAL-02-17#

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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WFO Monthly/Daily Climate Data

```
001
CXUS56 KPQR 011200
CF6PDX
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                        STATION:   PORTLAND OR
                                        MONTH:     JANUARY
                                        YEAR:      2017
                                        LATITUDE:   45 35 N
                                        LONGITUDE: 122 36 W

  TEMPERATURE IN F:       :PCPN:    SNOW:  WIND      :SUNSHINE: SKY     :PK WND
=================================================================================
1   2   3   4   5  6A  6B    7    8   9   10  11  12  13   14  15   16   17  18
                                    12Z  AVG MX 2MIN
DY MAX MIN AVG DEP HDD CDD  WTR  SNW DPTH SPD SPD DIR MIN PSBL S-S WX    SPD DR
=================================================================================

 1  40  32  36  -4  29   0 0.05    T    0  7.8 17 210   M    M   8 1      22 210
 2  35  29  32  -8  33   0 0.00  0.0    0 19.4 28  90   M    M   8        36  90
 3  34  27  31  -9  34   0 0.00  0.0    0 23.1 35  90   M    M   1        45  80
 4  33  27  30 -10  35   0 0.00  0.0    0 21.2 33  80   M    M   5        48  70
 5  35  17  26 -14  39   0 0.00  0.0    0  7.1 15 120   M    M   0        18 130
 6  34  17  26 -14  39   0 0.00  0.0    0 12.7 20 110   M    M   1        24 130
 7  30  24  27 -13  38   0 0.02  0.4    T 17.6 36 100   M    M  10 16     44 100
 8  34  28  31 -10  34   0 0.53  0.0    0 15.2 32 100   M    M  10 16     42 100
 9  41  30  36  -5  29   0 0.28  0.0    0  9.8 17 190   M    M  10 16     23 180
10  38  31  35  -6  30   0 0.65  6.5    7 13.3 28 100   M    M  10 1      35 100
11  32  26  29 -12  36   0 0.07  1.5    6 12.2 24  90   M    M  10 1      29  90
12  33  18  26 -15  39   0 0.00  0.0    5  5.0 13 130   M    M   4        15 130
13  29  11  20 -21  45   0 0.00  0.0    5  6.8 17 120   M    M   7 1      21 130
14  29  19  24 -17  41   0 0.00  0.0    4 14.2 23 120   M    M   2        29 110
15  28  19  24 -17  41   0 0.00  0.0    4 10.9 23 140   M    M   4        25 140
16  29  22  26 -16  39   0 0.00  0.0    3 14.2 22 130   M    M   8        26 130
17  34  24  29 -13  36   0 0.70  0.0    3 18.2 32 120   M    M   9 16     36 110
18  47  33  40  -2  25   0 1.06  0.0    T 15.0 30 110   M    M  10 1      35 110
19  52  35  44   2  21   0    T  0.0    0 11.9 23 200   M    M   8        28 210
20  42  37  40  -2  25   0 0.26  0.0    0 11.4 20 120   M    M  10 1      23 120
21  47  36  42   0  23   0 0.33  0.0    0 11.6 22 110   M    M   8 1      25 120
22  46  36  41  -1  24   0 0.15  0.0    0  9.9 23  80   M    M   9 1      26  70
23  50  32  41  -1  24   0    T  0.0    0  5.8 15  80   M    M   7        18  90
24  41  26  34  -8  31   0    T  0.0    0  2.7  8 290   M    M   6 1      10 290
25  45  35  40  -2  25   0 0.01    M    0  2.7  9 100   M    M  10 1      10 100
26  48  35  42   0  23   0    T  0.0    0  4.2 10 110   M    M   8 1      11 110
27  48  29  39  -3  26   0 0.00  0.0    0  6.7 16 120   M    M   5 12     20 110
28  44  31  38  -4  27   0 0.00  0.0    0  8.0 17 120   M    M   7        20 110
29  46  33  40  -2  25   0 0.01  0.0    0  7.5 17 110   M    M   9 1      21 120
30  44  35  40  -3  25   0    T  0.0    0  4.0 12 110   M    M  10 1      13 120
31  41  33  37  -6  28   0 0.01  0.0    0  7.9 16  80   M    M   8 1      21  70
=================================================================================
SM 1209  867       969   0  4.13     8.4 338.0          M      222
=================================================================================
AV 39.0 28.0                              10.9 FASTST   M    M   7    MAX(MPH)
```

MISC ----> # 36 100 # 48 70

NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: PORTLAND OR
MONTH: JANUARY
YEAR: 2017
LATITUDE: 45 35 N
LONGITUDE: 122 36 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 33.5
DPTR FM NORMAL: -7.9
HIGHEST: 52 ON 19
LOWEST: 11 ON 13

[PRECIPITATION DATA]

TOTAL FOR MONTH: 4.13
DPTR FM NORMAL: -0.75
GRTST 24HR 1.42 ON 17-18

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 8.4 INCHES
GRTST 24HR 6.5 ON 10-10
GRTST DEPTH: 7 ON 10

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 6
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 21
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 14
0.10 INCH OR MORE: 8
0.50 INCH OR MORE: 4
1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 969
DPTR FM NORMAL 237
TOTAL FM JUL 1 2533
DPTR FM NORMAL 69

CLEAR (SCALE 0-3) 4
PTCLDY (SCALE 4-7) 13
CLOUDY (SCALE 8-10) 14

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0
TOTAL FM JAN 1 0
DPTR FM NORMAL 0

[PRESSURE DATA]

HIGHEST SLP 30.70 ON 27
LOWEST SLP 29.09 ON 20

[REMARKS]
#FINAL-01-17#

[Explanation of the Preliminary Monthly Climate Data (F6) Product]

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WFO Monthly/Daily Climate Data

```
048
CXUS56 KPQR 200703
CF6PDX
PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

                                        STATION:   PORTLAND OR
                                        MONTH:     DECEMBER
                                        YEAR:      2016
                                        LATITUDE:   45 35 N
                                        LONGITUDE: 122 36 W
```

TEMPERATURE IN F:							:PCPN:		SNOW:	WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
									12Z	AVG	MX	2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	47	39	43	0	22	0	0.02	0.0	0	4.8	9	190	M	M	8		10	200
2	48	44	46	4	19	0	0.08	0.0	0	5.7	14	190	M	M	10	1	19	190
3	52	42	47	5	18	0	0.14	0.0	0	5.5	16	200	M	M	8	1	21	180
4	48	34	41	-1	24	0	0.54	T	0	6.2	17	190	M	M	8	1	22	200
5	39	35	37	-5	28	0	0.25	T	0	7.0	20	190	M	M	10	1	23	190
6	45	29	37	-5	28	0	T	0.0	0	3.7	13	80	M	M	6	1	16	110
7	40	27	34	-7	31	0	0.00	0.0	0	15.0	33	90	M	M	6	12	41	90
8	34	30	32	-9	33	0	0.15	0.5	1	26.1	38	90	M	M	9	16	49	110
9	33	32	33	-8	32	0	0.70	0.0	T	12.8	23	120	M	M	10	16	26	120
10	44	32	38	-3	27	0	0.24	0.0	0	8.3	20	210	M	M	10	16	24	210
11	47	41	44	4	21	0	0.41	0.0	0	7.1	17	200	M	M	8	1	24	240
12	47	38	43	3	22	0	0.02	0.0	0	4.4	12	230	M	M	8	1	14	200
13	41	34	38	-2	27	0	0.00	0.0	0	7.7	23	100	M	M	8	12	29	110
14	35	27	31	-9	34	0	0.05	2.3	2	23.1	33	90	M	M	10	18	42	90
15	33	25	29	-11	36	0	0.01	T	1	4.6	16	120	M	M	10		19	120
16	38	25	32	-8	33	0	0.00	0.0	1	4.8	15	130	M	M	7	12	18	130
17	35	27	31	-9	34	0	T	T	1	5.9	15	130	M	M	9	1	17	130
18	38	27	33	-7	32	0	0.00	0.0	T	4.9	14	110	M	M	8	1	17	110
19	48	30	39	-1	26	0	0.84	T	0	9.3	17	110	M	M	10	14	23	180
20	52	35	44	4	21	0	0.47	0.0	0	7.8	22	190	M	M	9	1	31	200
21	38	30	34	-6	31	0	0.00	0.0	0	2.8	10	320	M	M	9	12	12	320
22	46	30	38	-2	27	0	0.02	0.0	0	2.9	12	90	M	M	9	1	14	130
23	45	32	39	-1	26	0	0.19	0.0	0	6.0	20	120	M	M	8	1	24	110
24	41	27	34	-6	31	0	T	0.0	0	2.2	8	290	M	M	7	12	10	280
25	44	32	38	-2	27	0	0.00	0.0	0	4.2	12	110	M	M	9	1	14	120
26	40	27	34	-6	31	0	0.21	0.0	0	6.0	16	110	M	M	8	1	22	170
27	47	36	42	2	23	0	0.11	0.0	0	6.2	26	210	M	M	8	1	35	210
28	42	35	39	-1	26	0	T	0.0	0	3.5	12	290	M	M	8	12	14	280
29	42	33	38	-2	27	0	0.06	0.0	0	5.5	17	120	M	M	9	12	21	130
30	44	31	38	-2	27	0	0.01	0.0	0	2.3	13	320	M	M	6	1	15	350
31	37	32	35	-5	30	0	0.09	T	0	5.3	15	180	M	M	10	1	18	180
SM	1310	998		854	0		4.61		2.8	221.6			M		263			
AV	42.3	32.2								7.1	FASTST		M	M	8		MAX(MPH)	

MISC ----> # 38 90 # 49 110

NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: PORTLAND OR
MONTH: DECEMBER
YEAR: 2016
LATITUDE: 45 35 N
LONGITUDE: 122 36 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 37.2
DPTR FM NORMAL: -3.2
HIGHEST: 52 ON 20, 3
LOWEST: 25 ON 16,15

[PRECIPITATION DATA]

TOTAL FOR MONTH: 4.61
DPTR FM NORMAL: -0.88
GRTST 24HR 1.29 ON 19-20

SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 2.8 INCHES
GRTST 24HR   2.3 ON   M
GRTST DEPTH: 2 ON 14

SYMBOLS USED IN COLUMN 16

1 = FOG OR MIST
2 = FOG REDUCING VISIBILITY
    TO 1/4 MILE OR LESS
3 = THUNDER
4 = ICE PELLETS
5 = HAIL
6 = FREEZING RAIN OR DRIZZLE
7 = DUSTSTORM OR SANDSTORM:
    VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0
MAX 90 OR ABOVE: 0
MIN 32 OR BELOW: 19
MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 21
0.10 INCH OR MORE: 12
0.50 INCH OR MORE: 3
1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO.   854
DPTR FM NORMAL   91
TOTAL FM JUL 1 1564
DPTR FM NORMAL -168

CLEAR (SCALE 0-3)   0
PTCLDY (SCALE 4-7) 12
CLOUDY (SCALE 8-10) 19

[CDD (BASE 65)]

TOTAL THIS MO.   0
DPTR FM NORMAL   0
TOTAL FM JAN 1   548
DPTR FM NORMAL   124

[PRESSURE DATA]

HIGHEST SLP 30.60 ON 18
LOWEST SLP 29.51 ON 23

[REMARKS]
#FINAL-12-16#

APPENDIX E

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erosion control permit

Traffic Impact Study: Code Section 19.704.1(A) states that the City will determine whether a transportation impact study (TIS) is required. In the event the proposed development will significantly increase the intensity of use, a transportation impact study will be required. The City of Milwaukie Engineering Director will make this determination based on proposed preliminary subdivision design and the number of lots created.

Applicant shall provide a narrative indicating expected trip counts (including trucks) to/from the property. Narrative must address truck turning movements both on site and in the right-of-way and potential vehicle stacking in the center turn lane. It is on this narrative that the Milwaukie Engineering Director bases their decision on the need for the traffic impact study.

"If required...the applicant shall schedule a second pre-application meeting...to review and comment on the applicant's traffic impact study prior to submission"
This is not necessary; see email dated June 20, 2017 from Alex Roller with City of Milwaukie

If required, the transportation impact study triggers a Transportation Facilities Review (TFR) Land Use Application to be filed concurrent with the land use application. Once the scope of the proposed development is determined and a deposit of $1000.00 is paid, the City of Milwaukie will provide a detailed transportation impact study scope for the traffic study. When the traffic impact study is completed in accordance with the TIS scope, the applicant shall schedule a second pre-application meeting with Milwaukie Engineering Staff. The second pre-application meeting will allow Engineering staff to review and comment on the applicant's traffic impact study prior to submission of any land use applications. The fee for the second pre-application meeting is $100.00 and a deposit of $2500.00. Upon completion of the second pre-application meeting, the applicant may submit their land use applications

TRANSPORTATION SDC
The Transportation SDC will be based on the increase in trips generated by the new use per the Trip Generation Handbook from the Institute of Transportation Engineers. The SDC for transportation is $1,921 per trip generated. Credits will be given for any demolished structures, which shall be based upon the existing use of the structures.

PARKS & RECREATION SDC
The parks & recreation System Development Charge (SDC) is triggered when application for a building permit on a new dwelling is received. Commercial properties are accessed fees based on employee counts that correspond to the use of the building. Currently, the parks and recreation SDC for each employee is $60.00. SDC will be assessed and collected at the time the building permits are issued.

REQUIREMENTS AT FINAL PLAT
- Engineered plans for public improvements (street, sidewalk, and utility) are to be submitted and approved prior to start of construction. Full-engineered design is required along the frontage of the proposed development.

- The applicant shall pay an inspection fee of 5.5% of the cost of public improvements prior to start of construction.

- The applicant shall provide a payment and performance bond for 100% of the cost of the public improvements prior to the start of construction.

- The applicant shall provide a final approved set of Mylar "As Constructed" drawings to the City of Milwaukie prior to the final inspection.

- The applicant shall provide an 18 month maintenance bond for 100% of the cost of the public improvements prior to the final inspection

Janet T. Jones

From: Roller, Alex <RollerA@milwaukieoregon.gov>
Sent: Tuesday, June 20, 2017 2:11 PM
To: Jennifer E. Danziger
Cc: Adam Solomonson
Subject: RE: Day

Categories: Filed by Newforma

Jennifer,

Thank you for the trip count information. We have determined that this trip generation onto a collector street will not require any additional transportation studies. The improvements that were listed in the preapp conference notes will be the majority of the improvements required. The one additional improvement required will be the construction of a receiving ramp on the east side of 37th. Your work will allow ADA access to the crosswalk, which therefore requires access to get off of the crosswalk.

From: Jennifer E. Danziger [mailto:JDanziger@mcknze.com]
Sent: Monday, June 19, 2017 2:29 PM
To: Eaton, Chuck <EatonC@milwaukieoregon.gov>
Cc: Adam Solomonson <ASolomonson@mcknze.com>
Subject: FW: Day

Hi Chuck,

I'm following up on the trip generation and truck turning template materials I sent to you while you were out of the office. For your convenience, I've attached the documents to this email as well.

We need to confirm that no additional traffic analysis will be necessary for the proposed development. If that's not the case, let's talk about what will be required.

The attached truck turning templates show that the current site layout and one-way driveway traffic will not require any off-site truck maneuvering.

Please let me know if you have any questions or comments.

Regards,

Jennifer
503.224.9560 ext. 187
vcard

From: Jennifer E. Danziger
Sent: Tuesday, June 06, 2017 11:15 AM
To: 'eatonc@milwaukieoregon.gov' <eatonc@milwaukieoregon.gov>
Cc: Adam Solomonson <ASolomonson@mcknze.com>
Subject: Day

Hi Chuck,

We spoke back in March about the proposed Day Wireless development at 11405 SE 37th Avenue (i.e., the site north of Edison and east of Hwy 224). The preapplication report for the project (PreApp Project ID# 16-019PA) indicated that we need to provide an estimate of trips to and from the property to assist the City with determining the need for a TIS. The attached letter provides an estimate of trip generation for the proposed use.

We also need to provide truck turning templates for the site. The attached file shows the turning templates for the largest single unit truck (SU-40) turning left into the site from the center refuge lane. The templates show that an SU-40 truck can maneuver into the loading bay while remaining entirely within the site. Most truck deliveries will be smaller vehicles than an SU-40. No semi-trailer deliveries currently occur at the existing site and none are anticipated at this new location.

If you have any questions, please email or call.

Regards, Jennifer

Jennifer Danziger, PE
Transportation Engineer | Project Manager

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P 503.224.9560 **W** mcknze.com **C** vcard

RiverEast Center
1515 SE Water Ave, Suite 100
Portland OR 97214

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DESIGN DRIVEN | CLIENT FOCUSED

June 2, 2017

City of Milwaukie, Engineering
Attention: Charles Eaton, Engineering Director
6101 SE Johnson Creek Boulevard
Milwaukie, OR 97206

Re: **11405 SE 37th Avenue**
Trip Generation Estimate
Project Number 2160642.00

Dear Mr. Eaton:

Mackenzie has prepared this trip generation estimate for the building and site improvements proposed at 11405 SE 37th Avenue.

PROPOSED DEVELOPMENT

The project site is approximately 1.05 acres that is zoned Business Industrial (BI) with frontage on SE 37th Avenue. The proposed building footprint is expected to be no more than 10,500 square feet (SF) with a future 2,000 SF mezzanine for a maximum building area of 12,500 SF. The building uses will include warehouse/storage (45-55%), showroom (20-25%), and office space (25-30%). The planned tenant for the site is Charles H. Day Company (CHDC), who specialize in power tool sales, repair, and parts distribution. This tenant would be relocating from their existing site at 602 SE 11th Avenue in Portland.

TRIP GENERATION

The Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition* has no use that directly aligns with power tool sales and repair therefore, another approach to estimating trip generation was developed. First, a 30-minute survey of the site trip activity at the existing site of CHDC was conducted during the morning and afternoon peak periods to gain a base understanding of site trip generation. The 30-minute trip counts were extrapolated to 60 minutes and compared with several different land uses in the ITE Trip Generation Manual.

Existing Trip Survey Results

Trip activity at the existing site of CHDC was observed on March 9, 2017 from 7:35 AM to 8:05 AM and from 4:35 PM to 5:05 PM. Hours of operation are 7:00 AM to 5:00 PM therefore, the last five minutes surveyed during the afternoon were all assumed to be employees leaving the site. The morning and afternoon counts are attached to this letter.

Table 1 summarizes the observations of trips to and from the existing site. Only five trips were observed during the morning survey period while 21 trips, including a UPS delivery truck and seven employees departing after 5:00 PM, were observed in the evening. To estimate the 60-minute trip activity in the morning, the visitor estimates for the 30-minute AM period were prorated to 55 minutes and seven employees, approximately half the staff, were added as arrivals in the morning. To estimate the 60-minute trip activity in the evening, the visitor estimates for the 25-minute PM period were

prorated to 55 minutes and the seven employees departing the site were added. The result is an estimated 17 AM peak hour and 38 PM peak hour trips.

TABLE 1: EXISTING SITE DATA		
Survey Period	**AM Peak Hour**	**PM Peak Hour**
30-minute Observation	5	21
Visitors	*5*	*14*
Employees	*0*	*7*
60-minute Estimation	17	38
Visitors	*10*	*31*
Employees	*7*	*7*

Comparable ITE Land Uses

Table 2 summarizes trip generation estimated for the existing building in Portland using three different ITE land uses and compares those estimates with existing site data. Morning trip generation ranged from 11 to 22 trips with the ITE calculations versus 17 trips estimated from existing site observations. Evening trip generation ranged from 30 to 58 trips versus 38 trips estimated from existing site observations. From these estimates, trip generation for the site appears to lie somewhere between the retail characteristic of a Hardware/Paint Store and the service characteristics of an Automobile Care Center. Therefore, these uses were applied to the proposed new building site.

TABLE 2: COMPARABLE USE TRIP CALCULATIONS FOR EXISTING BUILDING (9,750 SF)				
ITE Land Use (Code)	**Basis for Calculation**	**AM Peak Hour**	**PM Peak Hour**	**Daily**
Hardware/Paint Store (816)	ITE Trip Estimate	11	47	500
	Comparison with 60-minute Estimate	*-6*	*9*	
Automobile Parts Sales (843)	ITE Trip Estimate	22	58	604
	Comparison with 60-minute Estimate	*5*	*20*	
Automobile Care Center (942)	ITE Trip Estimate	22	30	Not Available
	Comparison with 60-minute Estimate	*5*	*-8*	

Potential Trip Generation

Table 3 presents trip generation for the proposed new 12,500 SF building at 11405 SE 37th Avenue. Trip generation was estimated using the Hardware/Paint Store and Automobile Care Center and then averaged to represent potential trip generation for the site. The result is 21 AM peak hour, 50 PM peak hour, and 525 daily trips. This rate conservatively assumes that the larger building will generate more trips than are currently occurring at the existing Portland site.

Other land uses allowed in the Business Industrial (BI) zone include office, light industrial, manufacturing, and warehousing. Trip generation for these uses would be considerably lower than the estimate presented in Table 3.

TABLE 3: TRIP GENERATION FOR PROPOSED BUILDING (12.5 KSF)							
	AM Peak Hour			PM Peak Hour			
ITE Land Use (Code)	In	Out	Total	In	Out	Total	Daily
Hardware/Paint Store (816)	7	7	14	29	32	61	641
Automobile Care Center (942)	18	10	28	19	20	39	-
Average	12	9	21	24	26	50	525*

* Daily traffic is estimated based on Daily to PM peak hour ratio for Hardware/Paint Store since the ITE Trip Generation Manual does not have daily trip rates for Automobile Care Center.

CONCLUSION

Because the ITE *Trip Generation Manual* has no use that aligns with the proposed development, power tool sales and repair, an alternative approach to estimating trip generation was developed using some existing site observations and an average of the two most similar retail and service ITE land uses. The resulting site trip generation is estimated at 21 AM peak hour, 50 PM peak hour, and 525 daily trips.

Please call me if you have questions.

Sincerely,

Jennifer Danziger, PE
Transportation Engineer

Enclosure: Existing Site Traffic Counts

c: Adam Solomonson – Mackenzie

Location: Charles H Day Co - 602 SE 11th Avenue, Portland, OR
Start Date: 3/9/2017
Start Time: 7:35am
End Time: 8:05am

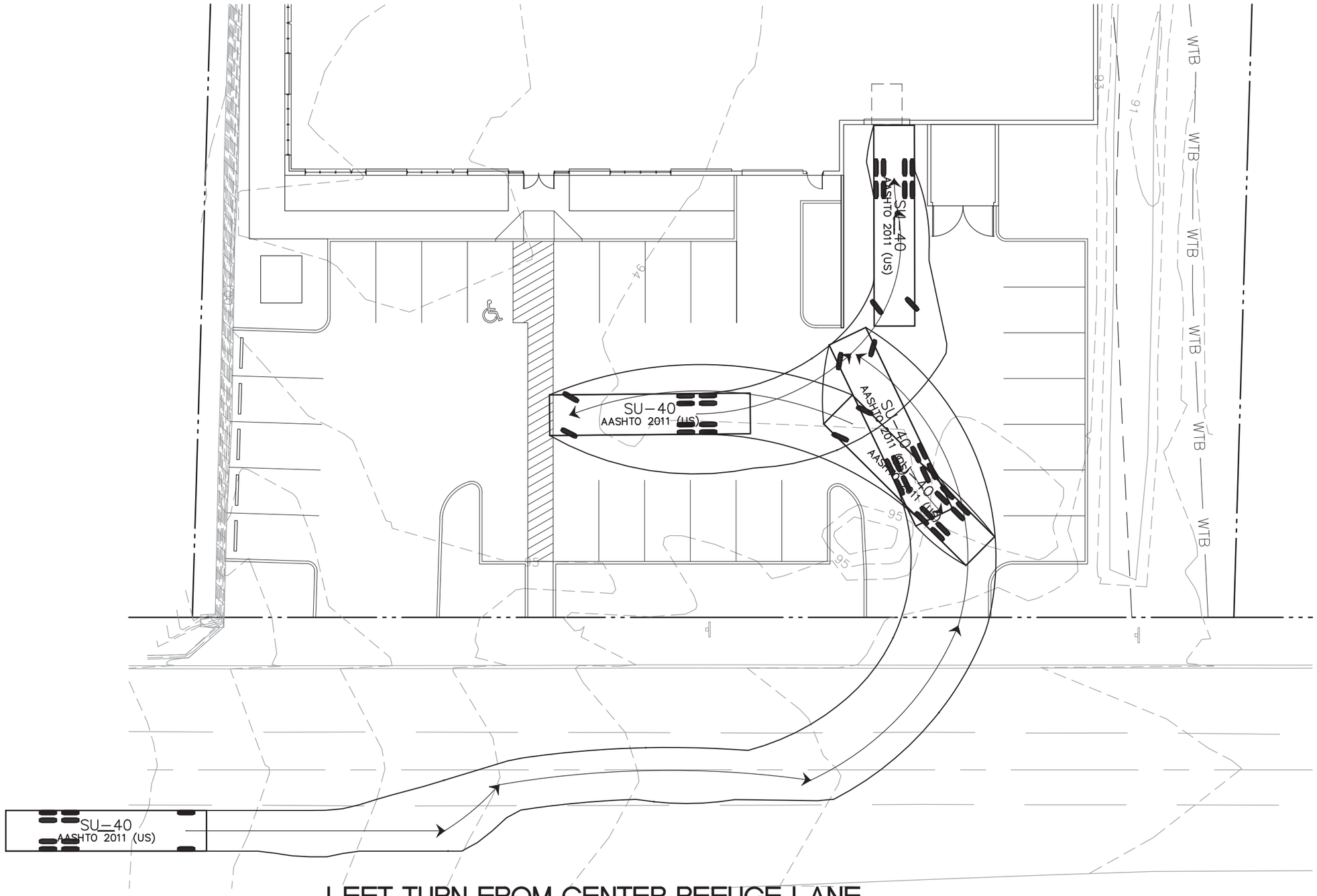
	Trips Using the Parking Lot			
Start Time	Entering	Exiting	Combined Total	
7:35 AM	1	0	1	Work Truck
7:40 AM	0	0	0	
7:45 AM	1	0	1	Construction Van
7:50 AM	1	0	1	Personal Truck
7:55 AM	1	1	2	Construction Van & Personal Truck
8:00 AM	0	0	0	
Total	**4**	**1**	**5**	

	In	Out	Total
30-min Visitors	4	1	5
Start of Day Employees			0
30-min Total	4	1	5
55-min Visitors	8	2	10
Start of Day Employees	7	0	7
60-min Total	**15**	**2**	**17**

Location: Charles H Day Co - 602 SE 11th Avenue, Portland, OR
Start Date: 3/9/2017
Start Time: 4:35pm
End Time: 5:05pm

	Parking Lot		Loading Bay		On-Street Parking		Employees Walking		Total Trips		
Start Time	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Vehicle Trips	Vehicle + Walk Trips	Types of Vehicles
4:35 PM	1	2	0	0	1	0	0	0	4	4	SUV, Work Van, Truck, Truck
4:40 PM	1	0	0	0	0	1	0	0	2	2	Truck, Truck
4:45 PM	0	1	0	0	0	1	0	0	2	2	Work Van, Car
4:50 PM	2	1	1	0	0	1	0	0	5	5	SUV, Truck, Car, Work Van, UPS Delivery
4:55 PM	0	0	0	1	0	0	0	0	1	1	UPS Delivery
5:00 PM	0	1	0	0	0	3	0	3	4	7	Truck, Van, SUV, Car
Total	**4**	**5**	**1**	**1**	**1**	**6**	**0**	**3**	**18**	**21**	

	In	Out	Total
25-min Visitors	6	8	14
End of Day Employees	0	7	7
30-min Total	6	15	21
55-min Visitors	13	18	31
End of Day Employees	0	7	7
60-min Total	**13**	**25**	**38**



LEFT TURN FROM CENTER REFUGE LANE

(ADDITIONAL MANEUVERING REQUIRED)

DAY WIRELESS

37th AVE. MILWAUKIE

Month Day, Year
Job # 2160642.00

SCALE: 1"=20'
0 10 20

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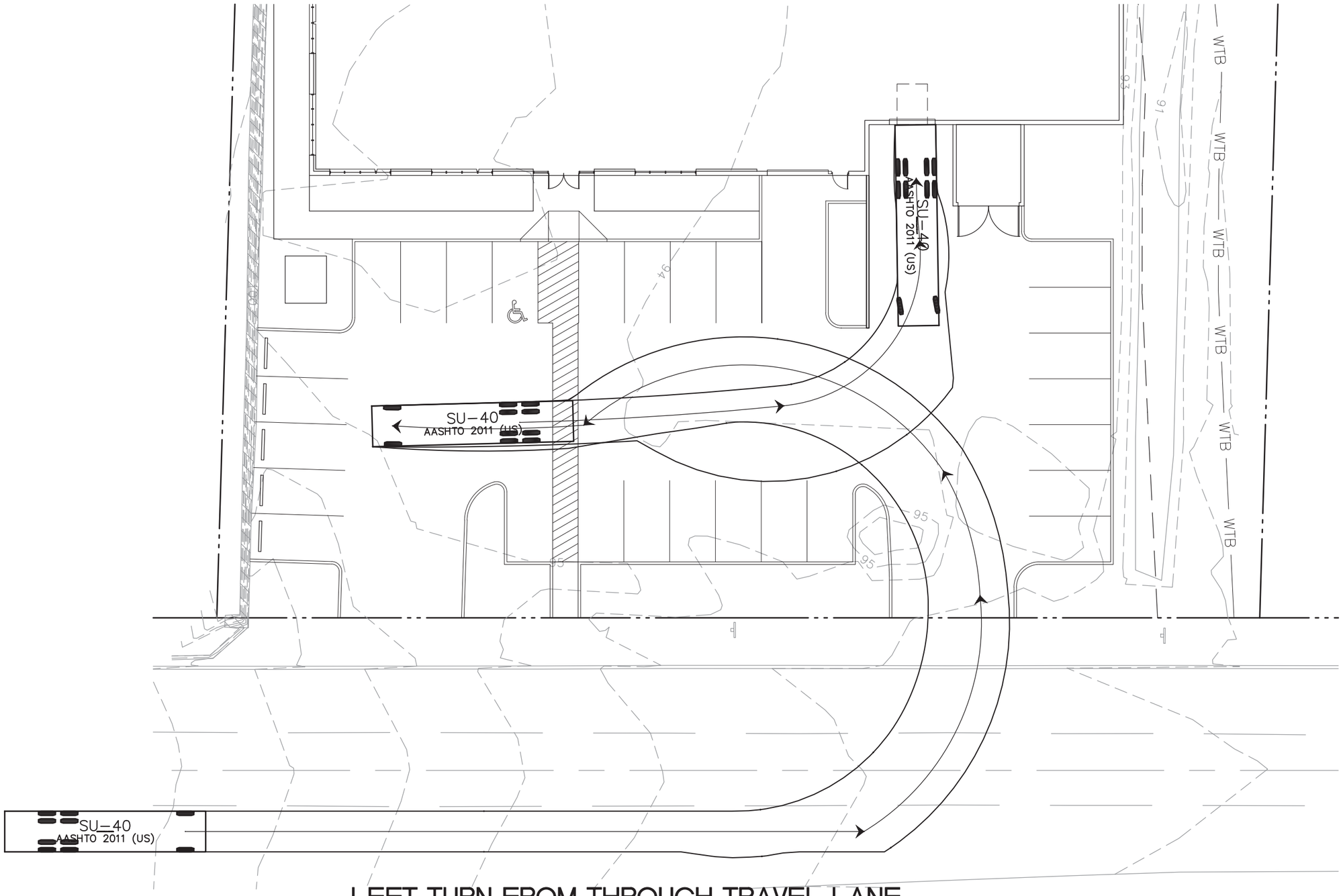
+2160642004+ C:\TEMP\ACPUBLISH_18084\642-AUTOTURN.DWG SWC 06/02/17 13:41 1:20.00



LEFT TURN FROM THROUGH TRAVEL LANE

DAY WIRELESS

37th AVE. MILWAUKIE

Month Day, Year
Job # 2160642.00

SCALE: 1"=20'
0 10 20

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+2160642.00+ C:\TEMP\ACPUBLISH_18084\642-AUTOTURN.DWG SWC 06/02/17 13:41 1:20.00

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PRELIMINARY STORMWATER MANAGEMENT REPORT

To
City of Milwaukie

For
Day Wireless
11405 SE 37th Avenue
Land Use Review

Submitted
July 18, 2017

Project Number
2160642.00

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ATTACHMENTS

Appendix A: Site, Grading & Utility Plans

Appendix B: Landscape Plans

Appendix C: Basin Map

Appendix D: Geotechnical Investigation – Day Wireless Warehouse/Office Facility, Dated December 4, 2000

Appendix E: NRCS Web Soil Survey Hydrologic Soil Group Summary

Appendix F: PAC Report

Appendix G: Conveyance Calculations

I. DESIGNER'S CERTIFICATION AND STATEMENT

I hereby certify that this Stormwater Management Report for Day Wireless, 37th Ave has been prepared by me or under my supervision and meets minimum standards of the City of Milwaukie and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability or performance of drainage facilities designed by me.

II. PROJECT OVERVIEW

The proposed Day Wireless is located at 11405 SE 37th Avenue in Milwaukie, Oregon. The site is bounded by SE 37th Avenue and Milwaukie Expressway. The vicinity map and site plan below indicate the general project location and overall scope of the proposed project.

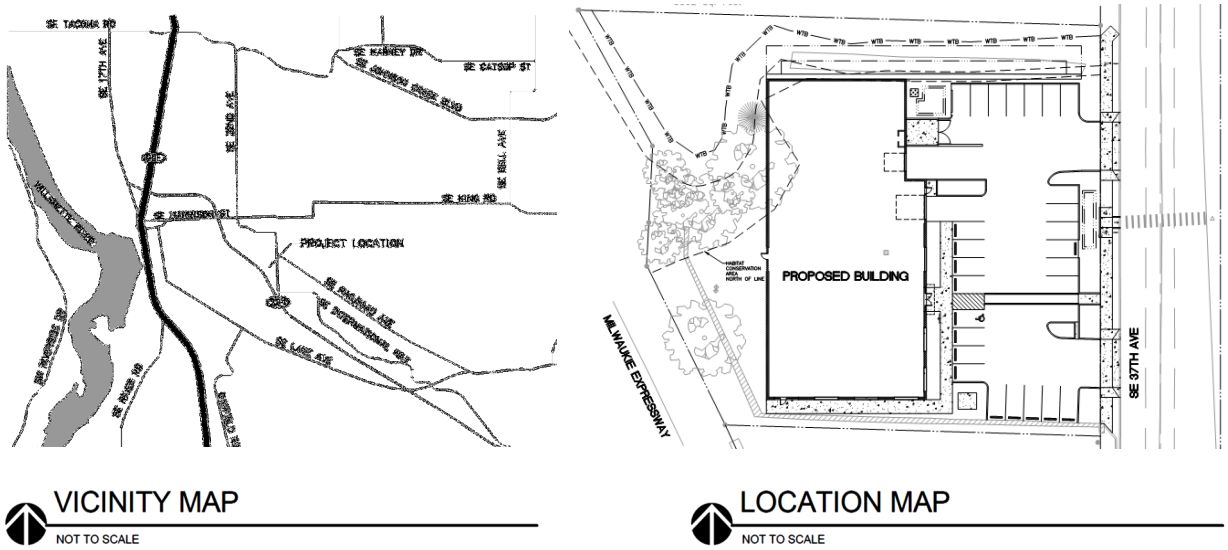


Figure 1: Vicinity Map

The proposed project involves the construction of a new building with associated parking. There is currently no development on the site. The site slopes to the north where a manmade pond and wetlands are present. The new building will be used for tool repair with accompanying retail space and office space for business activities and minimal parking. Stormwater management of runoff from the proposed on-site redevelopment will be permitted through the City of Milwaukie and follow the requirements of the City of Portland Stormwater Management Manual (SWMM) 2016 for treatment procedures and follow the City of Milwaukie Public Works Design Standards for detention.

On-site improvements include the proposed building with two loading docks (one 4' high and one pull up) accessed from SE 37th Avenue. The proposed improvements along SE 37th Avenue include constructing a sidewalk and two driveway curb cuts. The existing curb and flowline are to remain. The stormwater along SE 37th Avenue is a crown section that flows to the north where existing stormwater catch basins collect the water.

III. STORMWATER MANAGEMENT METHODOLOGY

Existing On-Site Drainage

The 1.05-acre site appears to be covered by an existing unpaved pad constructed around 2002 for a proposed building that was never built. There is minimal vegetation on the site except for the three sides not along SE 37th Avenue. Over time, low brush and grass has crept onto the lot. An existing curb cut at the southern edge of the project site exists. There is an approximately 7' high wall along the southern boundary retaining the adjacent property. The site drains from the southeast corner to the northern property line. In the northwest corner, a pond is located and along the northern property line a wetland is present. There is a habitat conservation area associated with the tree canopy along the pond and the top of bank along the wetlands.

The Minthorn North Natural Area is across SE 37th Avenue to the north and east. The pond and wetland on-site drain via overflow atrium drain on an adjacent property at the east end of the wetland through a culvert and outfalls on the other side of the street. Geotechnical reports have indicated the groundwater on-site during the wet season will be within two feet below current ground surface. Infiltration tests were not conducted due to the high ground water encountered during borehole investigations. For more information, refer to attached Geotechnical Investigation.

Proposed On-Site Drainage

The proposed on-site improvements include a new building with parking, vehicular movement area, and pedestrian hardscape.

Runoff from the sidewalk surfaces will drain either to an adjacent landscaped area or on to the asphalt where it will sheet flow to treatment planters. South of the loading dock wall will flow to the east and be treated in the landscape area between the parking and the right of way. The area north of the loading dock will sheet flow to the northwest and be treated to the north of the trash enclosure. The roof of the building will also drain to this treatment planter. All treatment and detention facilities will be lined. No infiltration will be permitted due to high groundwater elevation.

With the lack of infiltration available on-site, the project will fall into Discharge Hierarchy Category 3 that requires on-site detention with vegetated facilities that overflow to a drainage way or storm-only pipe. Treatment of the runoff will follow Portland's SWMM 2016 requirements and flow control requirements will be according to City of Milwaukie Public Works Design Standards Section 2.

IV. STORMWATER ANALYSIS

Stormwater Quality (Treatment)

The proposed stormwater treatment facilities were designed and sized using Portland's Bureau of Environmental Services (BES) Presumptive Approach Calculator (PAC) for pollution reduction; the PAC was not used for flow control. The drainage area was split into three different collection basins: the area north of the loading dock delineated by a ridge line, the area to the south of the loading dock and ridge line, and the roof. See attached Basin Map for limits of proposed basins.

The North Basin will sheet flow to the northwest corner of the basin where curb cuts will allow the stormwater to run off into the treatment facility. Stormwater collected at the 4' deep loading dock will be collected via trench drain and pumped to the same treatment facility receiving the overland flow. The South Basin will sheet flow to the eastern property line and be treated in a stormwater planter located between the parking lot and right of way line. Water collected on the roof will be routed to the northern stormwater planter.

The stormwater planters have been sized to treat the water quality storm event. Both planters have overflows that will connect the treatment facility to the detention basin.

Table 1: Catchment and Facility Summary

Catchment or Facility ID	Impervious Area Type	Impervious Area (ft^2)	Ownership (public/private)	Facility Type	Facility Size (ft^2)	CN
North Basin & Building	Parking & Roof	15,663	Private	Stormwater Planter	293	98
South Basin	Parking	8,072	Private	Stormwater Planter	121	98

Proposed Stormwater Planters

When sizing both stormwater planters for the pollution reduction (PR) storm event, a basin facility type was used to take advantage of slope edges. The sides slopes of the facility are 4:1. There will be no infiltration through the facilities so Facility Configuration D corresponding to a lined facility was chosen with a user defined Facility Shape. The Bottom Area is the bottom of the planter and the Surface Capacity at Depth 1 uses the surface area when the water level is 4" above the bottom. The top of the facility will allow 2" of freeboard with an overflow pipe sized to carry any storm event larger than the PR event. Both planters have 24" of growing medium depth and underlain with a perf pipe per SWMM private stormwater basin requirements. Refer to the attached PAC report for more information.

Stormwater Quantity (Detention & Flow Control)

Stormwater quantity is dictated by the City of Milwaukie Public Works Design Standards Section 2. Storm detention facilities are to provide storage for the 25-year storm event with safe overflow for the 100-year storm event. The post-development runoff rates for the 2, 5, 10 and 25-year storm must not exceed the pre-development runoff rates for the 2, 5, 10 and 25-year storm. The PAC was used for pollution reduction calculations only and should not be referenced for flow control. Flow control and detention design were calculated using Hydraflow.

The detention basin has been sized to hold the 100-year storm event with 2" of freeboard. The control manhole to the east of the detention basin will not allow the post-development runoff rate for the 10 and 25-year storm to exceed the 10 and 25-year pre-development runoff rate and will overflow the 100-year storm with an internal overflow standpipe.

The storm detention facility criteria of the City of Milwaukie Public Works Design Standards section 2.0013.A states that an orifice cannot be smaller than 1". The site's post-development runoff rate is unable to meet the pre-development runoff rate for the 2 and 5-year storm event without an orifice smaller than 1". In order to meet the Design Standards, the orifice is sized at 1" but does not limit the post-development 2 and 5-year storm to pre-development flow rates.

Table 2: Pre vs. Post Construction Flow Rates

Catchment ID	Peak Flow Rate (CFS)								Time of Concentration	
	2-year		5-year		10-year		25-year			
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Detention Basin	0.021	0.045	0.041	0.048	0.084	0.075	0.125	0.125	47.8	5.0

The detention basin is located within the HCA but will not encroach on the wetland and will be lined. A perf pipe will collect the water and convey it to the control manhole where flow will be controlled. The outflow from the control manhole will connect to the public 12" storm drain only pipe that will cross under SE 37th Avenue and ultimately outfall to the Minthorn North Natural Area.

V. STORMWATER CONVEYANCE ANALYSIS

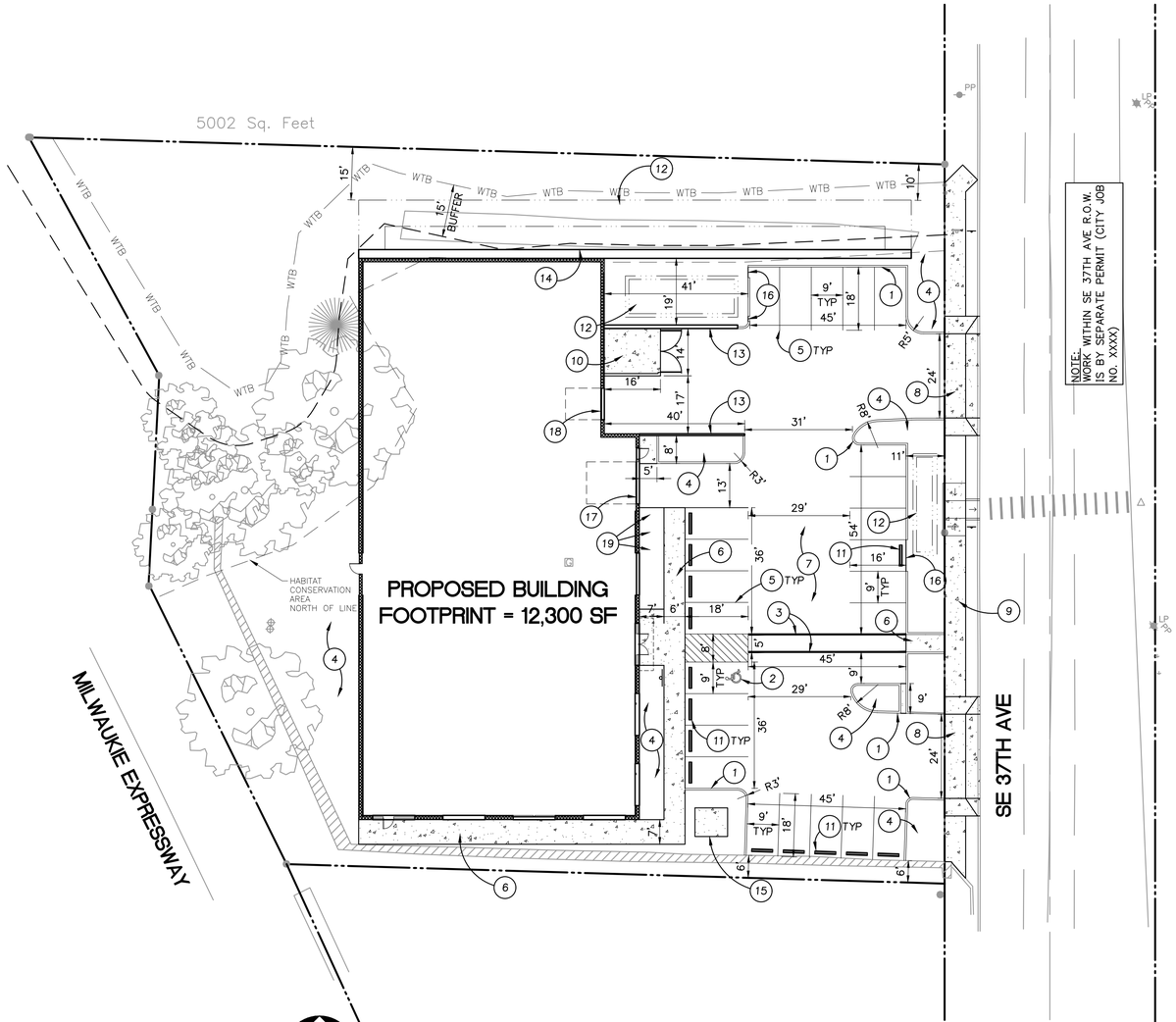
Stormwater conveyance facilities at the 11405 SE 37th Avenue, in accordance with City of Milwaukie guidelines, have been sized to accommodate the 100-year storm event determined with a capacity comparison of the Rational Method of incoming runoff to the maximum conveyance of pipe determined from the Manning's Equation. Pipe sizing calculations are provided in the Appendix of this report.

VI. ENGINEERING CONCLUSIONS

The private stormwater facilities at the proposed 11405 SE 37th Avenue have been designed in accordance with the City of Milwaukie's Stormwater Design Standards. Stormwater from the hardscape surfaces around the site will be routed through stormwater planters for treatment and to a detention basin for flow control located on-site.

APPENDIX A

SITE, GRADING & UTILITY PLANS



1 C1.10 SITE PLAN
1"=20'

20 0 10 20 40 80
(IN FEET)
1 inch = **20** ft.

CURB NOTE

ALL ON-SITE CURB RADII ARE 2.0' UNLESS OTHERWISE NOTED ON THE PLANS

PARKING DATA

STANDARD STALLS	24 SPACES
ADA STALLS	1 SPACE
TOTAL	25 SPACES

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF THE CITY OF MILWAUKIE AND THE CURRENT AMERICAN PUBLIC WORKS ASSOCIATION STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. EFFECTIVE EROSION CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED TO MEET THE CITY OF MILWAUKIE AND DEQ. REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE ROUTED SO THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. CONTRACTOR SHALL ADJUST ALL STRUCTURES IMPACTED BY CONSTRUCTION IMPROVEMENTS TO NEW FINISH GRADES.
6. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) MUST COMPLY WITH O.R.S. 757.541 THROUGH 757.571; EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS SEVENTY-TWO (72) HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. (ONE CALL LOCATE UTILITY NOTIFICATION CENTER – PORTLAND METRO AREA 246-6699, OREGON 696-4848, ALL OTHER AREAS 1-800-332-2344).
7. WHERE CONNECTING TO AN EXISTING PIPE, AND PRIOR TO ORDERING MATERIALS, THE CONTRACTOR SHALL EXPOSE THE END OF THE EXISTING PIPE VERIFY THE LOCATION, SIZE, AND ELEVATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
8. REQUEST BY THE CONTRACTOR FOR CHANGES TO THE PLANS MUST BE APPROVED BY THE ENGINEER.

LEGEND

- PROPERTY LINE
- 6" VERTICAL CURB
- EDGE OF ASPHALT

KEYNOTES

1. VERTICAL CURB, SEE DETAIL 1/C5.10
2. ADA COMPLIANT PARKING STALL, SEE DETAIL 2/C5.10
3. CROSSWALK STRIPING
4. LANDSCAPE AREA
5. 4" WHITE PARKING STRIPE
6. CONCRETE SIDEWALK, SEE DETAIL 8/C5.10
7. ASPHALT PAVING AREA, SEE DETAIL 6/C5.10
8. 8" THICK COMMERCIAL DRIVEWAY PER SEPARATE PUBLIC WORKS PERMIT
9. PROPOSED SIDEWALK PER SEPARATE PUBLIC WORKS PERMIT
10. TRASH ENCLOSURE
11. WHEEL STOPS, SEE DETAIL 3/C5.10
12. STORM MANAGEMENT FACILITY, SEE GRADING & UTILITY PLAN
13. CIP WALL
14. GABION WALL
15. TRANSFORMER PAD
16. CURB BREAK WITH SPLASH PAD & RIP RAP, SEE DETAIL 7/C5.10
17. DRIVE UP LOADING DOCK
18. 4' HIGH LOADING DOCK
19. BIKE PARKING

SITE DATA

SITE AREA	45,901 SF (1.05 AC)
BUILDING AREA	12,300 SF
BUILDING COVERAGE	26.80%
INTERIOR PARKING LANDSCAPING REQUIRED: 25 SPACES * 25SF/SPACE = 625 SF	1,363 SF
LANDSCAPING	20,245 SF (0.46 AC) = 44.1%
BIKE PARKING	2 SPACES PROVIDED

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MILWAUKIE, OR 97222

Project
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MILWAUKIE, OR
97222

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
SITE PLAN

DRAWN BY: NKL

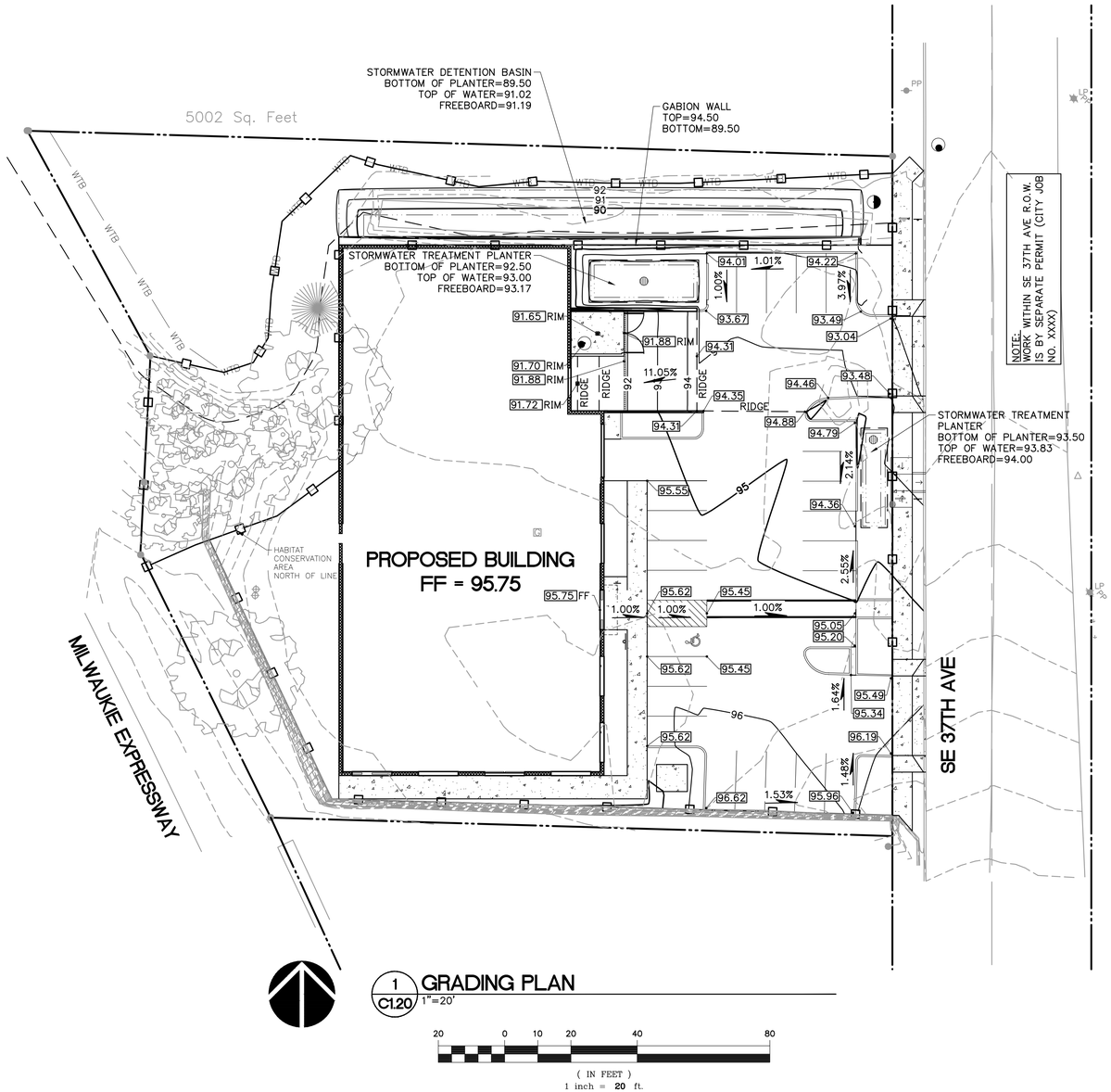
CHECKED BY: MWB

SHEET:
C1.10

JOB NO. 2160642.00

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: MEDDLE SURVEYING, INC DATE: MARCH 28, 2017

LAND USE SUBMITTAL 07/18/2017



1 C1.20 GRADING PLAN
1"=20'

20 0 10 20 40 80
(IN FEET)
1 inch = **20** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS INDICATED. WHERE GRADES ARE NOT OTHERWISE INDICATED, FINISH GRADES ARE TO BE THE SAME AS ADJACENT SIDEWALKS, CURBS, OR THE OBVIOUS GRADE OF ADJACENT STRUCTURE. GRADE TO UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE GRADES ARE GIVEN. ROUND OFF SURFACES, AVOID ABRUPT CHANGES IN LEVELS. ROUGH GRADE TO ALLOW FOR DEPTH OF CONCRETE SLABS, WALKS, AND THEIR BASE COURSES. GRADE FOR PAVED DRIVES AND PAVED PARKING AREAS AS INDICATED AND SPECIFIED HEREIN, AND PROVIDE FOR SURFACE DRAINAGE AS SHOWN, ALLOWING FOR THICKNESS OF SURFACING MATERIAL.
   FINISH GRADING: AT COMPLETION OF JOB AND AFTER BACKFILLING BY OTHER CRAFTS HAS BEEN COMPLETED, REFILL AND COMPACT AREAS WHICH HAVE SETTLED OR ERODED TO BRING TO FINAL GRADES. GRADING TOLERANCES:
   ROUGH GRADE AT PAVED OR LANDSCAPED AREAS: ±0.1 FT.
   FINISH GRADE PRIOR TO PLACING FINAL SURFACING: ±0.03 FT.
2. EXCAVATION: EXCAVATE FOR SLABS, PAVING, AND OTHER IMPROVEMENTS TO SIZES AND LEVELS SHOWN OR REQUIRED. ALLOW FOR FORM CLEARANCE AND FOR PROPER COMPACTION OF REQUIRED BACKFILLING MATERIAL. EXCAVATOR(S) MUST COMPLY WITH O.R.S. 757.541 THROUGH 757.571; EXCAVATOR(S) SHALL NOTIFY ALL UTILITY COMPANIES FOR LINE LOCATIONS 72 HOURS (MINIMUM) PRIOR TO START OF WORK. DAMAGE TO UTILITIES SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
3. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY OF MILWAUKIE REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
4. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE CONTROLLED WITHIN THE WORK SITE AND SHALL BE SO ROUTED THAT ADJACENT PRIVATE PROPERTY, PUBLIC PROPERTY, AND THE RECEIVING SYSTEM ARE NOT ADVERSELY IMPACTED. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE DRAINAGE CONTROL.
5. SITE TOPSOIL SHALL BE STOCKPILED DURING CONSTRUCTION AND USED FOR LANDSCAPING.
6. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY WEDDLE SURVEYING, AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION.
7. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
8. 2% MAXIMUM SLOPE AT ALL ADA–COMPLIANT PARKING SPACES AND LOADING ZONES.
9. 5% MAX SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
10. WHERE SLOPES ARE STEEPER THAN 3:1, CONTRACTOR SHALL INSTALL JUTE MATTING. SLOPE SHALL BE PREPARED TO ENSURE COMPLETE AND DIRECT CONTACT OF MATTING WITH SOIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS.
11. ALL ELEVATIONS ARE FINISHED SURFACE UNLESS OTHERWISE NOTED.

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SHEET TITLE:
GRADING PLAN

DRAWN BY: NKL

CHECKED BY: MWB

SHEET:

C1.20

JOB NO. **2160642.00**

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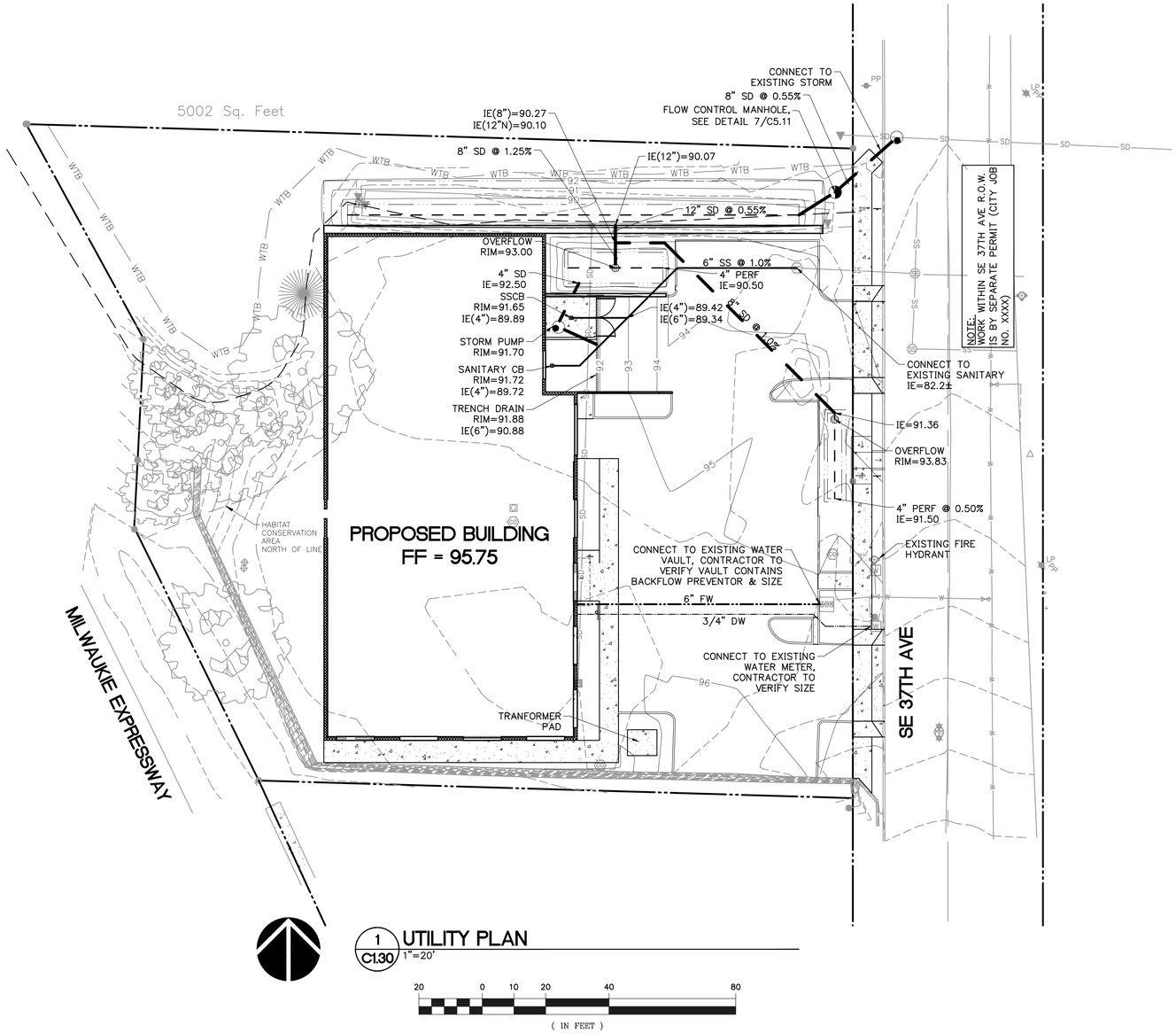

1 C1.30 UTILITY PLAN
1"=20'

20 0 10 20 40 80

(IN FEET)
1 inch = **20** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF CITY OF MILWAUKIE AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE INTERNATIONAL BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W. REQUIRES A PUBLIC WORKS PERMIT.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.12. NOTE: NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS.
4. ALL STORM PIPING IS SIZED FOR A MANNING'S "N" VALUE = 0.013. ALL STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS, UNLESS OTHERWISE NOTED.
5. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
6. ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE.
7. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WEDDLE SURVEYING, INC, DATED MARCH, 2017.
9. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
10. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
11. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.

LEGEND

- SANITARY SEWER CATCH BASIN, SEE BABY LYNCH DETAIL 6/C5.11
- FLOW CONTROL MANHOLE, SEE DETAIL 7/C5.11
- STORM PUMP MANHOLE
- PERF PIPE, SEE DETAIL 8/C5.11
- STORM SEWER, SEE DETAIL 5/C5.11
- STORM SEWER OVERFLOW, SEE DETAIL 10/C5.11

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UTILITY PLAN

DRAWN BY: NKL

CHECKED BY: MWB

SHEET:
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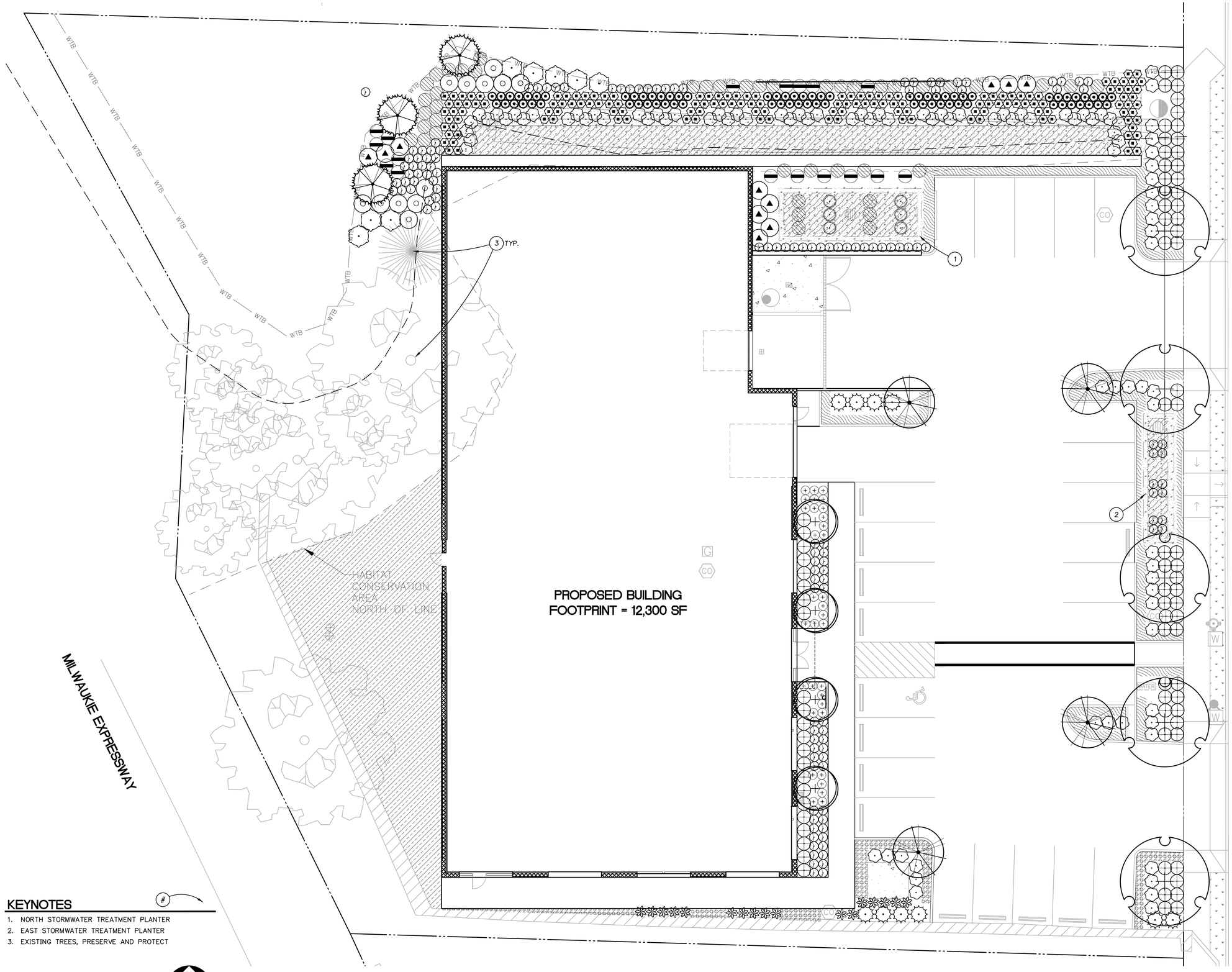
APPENDIX B

LANDSCAPE PLANS



KEYNOTES

1. NORTH STORMWATER TREATMENT PLANTER
2. EAST STORMWATER TREATMENT PLANTER
3. EXISTING TREES, PRESERVE AND PROTECT

1 / L1.10 LANDSCAPE PLAN
1"=20'

10 0 5 10 20 40
(IN FEET)
1 inch = **10** ft.

THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS SHOWN FOR REFERENCE ONLY AND IS BASED ON A SURVEY BY: WEDDLE SURVEYING, INC DATE: MARCH 28, 2017

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SHEET TITLE:
LANDSCAPE PLAN

DRAWN BY: NRF

CHECKED BY: SPT

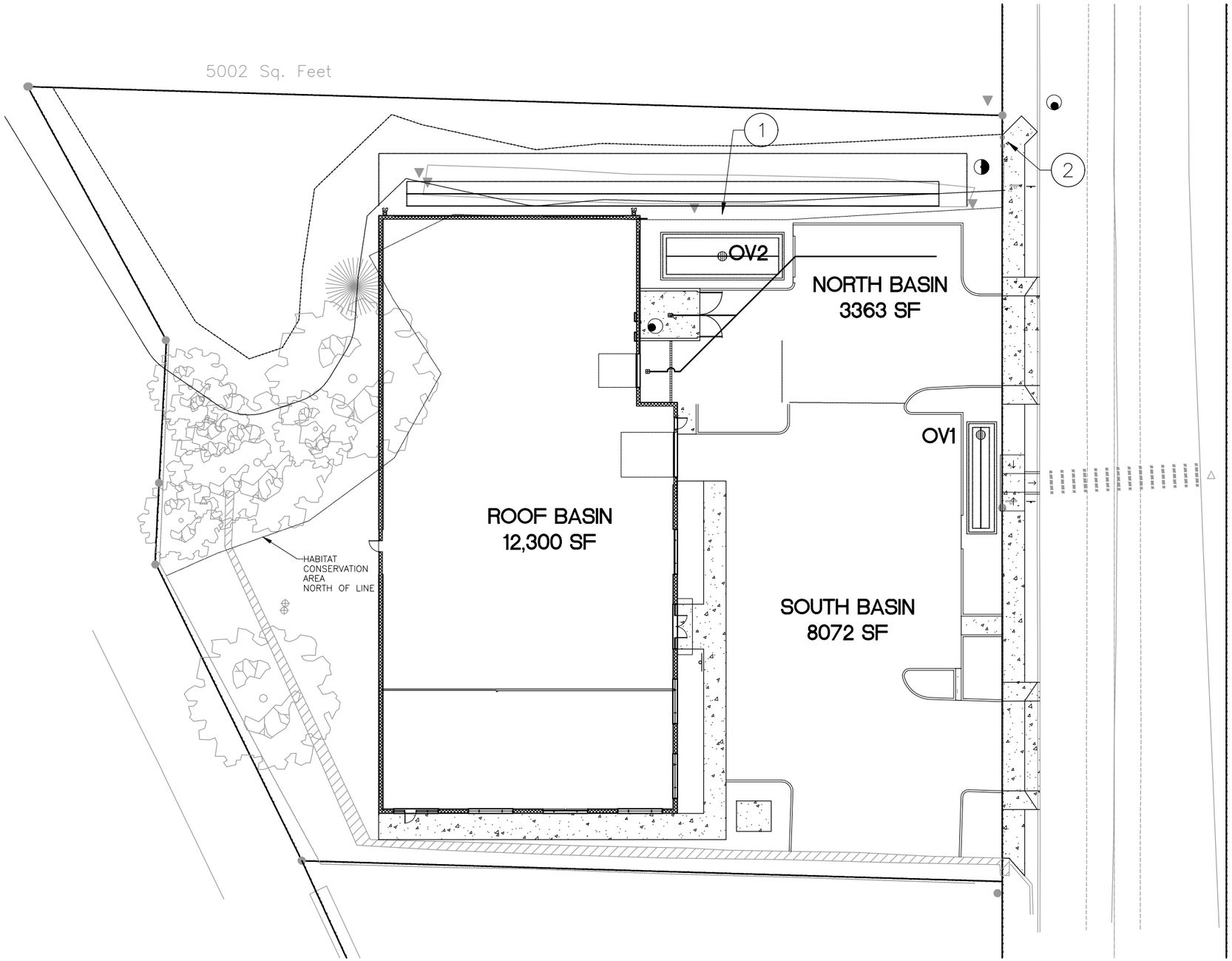
SHEET:
L1.10

JOB NO. 2160642.00

PRELIMINARY ONLY

APPENDIX C

BASIN MAP



DAY WIRELESS - 11405 SE 37TH AVE, MILWAUKIE, OR

BASIN MAP

JUNE 26, 2016
JOB # 2160642.00

SCALE: 1"=30'
0 15 30

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+216064200+ C:\TEMP\ACPUBLISH_13204\642-BASIN MAP.DWG NKL 06/29/17 07:55 1:30

APPENDIX D

GEOTECHNICAL INVESTIGATION – DAY WIRELESS WAREHOUSE/OFFICE FACILITY

Phase 2

Geotechnical Investigation

Day Wireless Warehouse/Office Facility

Milwaukie, Oregon

Prepared for:

Day Wireless Systems
Milwaukie, Oregon

December 4, 2000

Foundation Engineering, Inc.

Professional Geotechnical Services

Foundation Engineering, Inc.
Professional Geotechnical Services

Dean Ballew
Day Wireless Systems
4700 International Way
Milwaukie, OR 97222

December 4, 2000

Day Wireless Warehouse/Office Facility
Geotechnical Investigation
Milwaukie, Oregon

Project 2002035

Dear Mr. Ballew:

We have completed the planned subsurface investigation, geotechnical analysis and design for the proposed Day Wireless Systems warehouse and office facility. The following report summarizes the work completed and provides recommendations for site development, building foundations and the proposed retaining wall construction.

An investigation conducted in August, 2000, found extensive deposits of compressible organic soil. A memorandum dated September 6 documented our opinion that conventional spread footing foundations would be subject to excessive settlement and pile support of the proposed structure would be required.

It has been a pleasure assisting you with this phase of the project. Please call if you have any questions or require additional assistance.

Sincerely,

FOUNDATION ENGINEERING, INC.

Tim Pfeiffer, P.E.
Project Manager

TP/pld

Exp. 12-31-00

Portland • Salem • Corvallis • Eugene
7420 SW Hunziker Road, Suite A • Portland, Oregon 97223-8252 • Bus. (503) 684-9514 • Fax (503) 598-9343

DAY WIRELESS WAREHOUSE/OFFICE FACILITY
GEOTECHNICAL INVESTIGATION
MILWAUKIE, OREGON

BACKGROUND

Day Wireless Systems plans to build a new warehouse and office facility near the intersection of SE 37th and Highway 224. The proposed facility will have a total floor area of ±10,080 SF. The proposed structure will have concrete tilt-up exterior panels, a wood-frame roof system and a concrete floor. Considering the soil conditions, steel pile foundation support and a structural floor should replace the originally proposed spread footing and slab-on-grade floor. The schematic site plan provided to us indicates that the new building would have a parking lot on the east and south sides and a landscaped area to the north. A wetland area has been delineated along the north property line. A slope along the south property boundary will be excavated and the material will be used to raise the lot ±1 to 4 feet. A retaining wall is planned for the south and southwest sides of the lot. A site plan showing the proposed construction features and exploration locations is shown in Figure 1.

SUBSURFACE INVESTIGATION

Test Pits

We excavated five exploratory test pits within the foundation area using a conventional rubber-tired backhoe on August 30, 2000. The exploration examined the foundation conditions to a depth of ±10 to 12 feet. Soil samples were obtained during the exploration and retained for possible laboratory testing. Torvane measurements were made on the side walls of the test pits to estimate the shear strength of the soils. Ground water infiltration, where encountered, was noted. The test pit logs describing the soils and conditions encountered are attached in Appendix A.

Three test pits were excavated along the east side of the proposed structure and two test pits were dug along the west side. Test pits TP-1 and TP-4, located along the south side of the proposed structure, were excavated into an existing slope. These test pits encountered ±5 to 7 feet of predominately silt fill over sandy silt and silty sand alluvium. TP-2, TP-3, and TP-5, located on the north and east sides of the building, encountered ±4 to feet of fill over ±5 to over 8 feet of organic silt. This organic silt is highly compressible and subject to long-term settlement, even under relatively light foundation loads.

Borings

Borehole BH-1 was drilled to a maximum depth of ±26 feet. Samples were obtained at 2½-foot intervals to a depth of 15 feet and at 5-foot intervals thereafter. BH-2 was drilled to a maximum depth of ±26 feet with sampling at

2½-foot intervals to a depth of 15 feet and at 5-foot intervals thereafter. BH-3 was drilled to a depth of ±11 feet to collect Shelby tube samples at 7 and 9 feet.

The boreholes were continually logged by an geotechnical engineer from our office. The final logs (Appendix A) were prepared based on a review of the field logs and an examination of the soil samples in our laboratory.

SITE CONDITIONS

Local Geology and Topography

The site is located on the west side of 37th Avenue near the base of a gentle slope. The north side of the building site is bordered by a wetland area and a small rise borders the south side. Local geologic mapping shows the site bordered on the north by peat deposits and underlain by interbedded sand and silt alluvium (Schlicker and Finlayson, 1979). This is consistent with the alluvial material encountered in the exploration of the south side of the site and the organic material encountered under the north part of the site.

Subsurface Conditions

Under the north half of the site, the test pit excavations and borings found peat and organic silt extending below the existing site fill to a depth of ±18 feet. Under the south half of the site, the explorations encountered interbedded silt, sand, and minor alluvial gravel. BH-1 encountered auger drilling refusal on dense gravel and cobbles at a depth of ±26 feet and BH-2 encountered similar material at ±26 feet. BH-3 was drilled to obtain additional samples of the organic material and did not extend to the gravel.

The subsurface conditions underlying the site change substantially from south to north. The north half of the site is underlain by very low density organic soils which grade into alluvial silt and sand on the south half of the site. The site is covered by 4 to 6 feet of fill. An interpretive subsurface profile across the site is shown in Figure 2.

Ground Water

Ground water levels in the boreholes were recorded during drilling. We observed ground water during drilling at a depth of ±4 feet in BH-1 and ±6 feet in BH-2. This elevation corresponds to the base of the fill near the elevation of the water in the nearby wetlands area. We expect the ground water will rise to within 2 feet of the ground surface during the winter.

SEISMICITY

Regional Tectonics

Western Oregon is located near where the Juan de Fuca Plate is subducted beneath the North American Plate. This subduction zone may generate earthquakes within the descending plate (interslab), at the inclined interface between the two plates (interface) and within the upper (crustal) North American Plate.

Crustal and intraslab earthquakes have been recorded, but no subduction zone event has been recorded in Oregon during the 150 years of record. Subduction zone interface earthquakes are estimated to have an average return period of ±500 to 700 years, with the last event possibly occurring ±300 years ago.

Local Seismic History

Crustal earthquakes dominate Oregon's seismic history with three major events having reached $M_L = 6$. The majority are in the $M_L = 4$ to 5 range. In the greater Portland metropolitan area, six $M_L = 5$ earthquakes have been recorded in the last 150 years. Magnitude $M_L = 6$ earthquakes in the local area have a postulated return interval of 300 to 350 years (Wong, Silva, and Madin, 1993).

Peak Ground Accelerations

Detailed seismic design maps of Oregon developed by Geomatrix (1995) suggest a peak ground acceleration of 0.19g on rock at the site with 0.3-second and 1.0-second spectral accelerations of 0.37g and 0.14g, respectfully. These accelerations assume a return period of 500 years (annual probability of exceedance = 0.002). The 1997 Unified Building Code (UBC) characterizes Western Oregon as a Seismic Zone 3 and recommends a peak ground acceleration of 0.30g (assuming a return period of 475 years). Local faulting is not expected to produce large magnitude earthquakes and have a relatively low rate of seismic activity. Therefore, a Seismic Source Type C with a 1.0 Near-Source Factor has been selected as appropriate for the site (UBC, 1997).

We have characterized the site as being underlain by 20 feet of soft soil over greater than 80 feet of dense gravel. The average soil properties within the top 100 feet corresponds to a UBC soil profile type S_d. Based on UBC (1997) for a Seismic Zone 3, the Seismic Zone Factor (Z) equals 0.3, and Seismic Coefficients, C_a and C_v, equal 0.36 and 0.54, respectively.

LABORATORY TESTING

The water content of some samples was over 100%, indicating a high organic content in the soil. Results of the natural water content tests are shown on the attached test pit and boring logs.

Organic content, unit weight, and Atterberg limit tests were also run on selected samples. The following table lists the results of this testing.

Table 1. Laboratory Test Results

Boring	Sample	Dry Unit Wt. (pcf)	Liquid Limit (%)	Plasticity Index (%)	Organic Content (%)
BH - 1	SH-1-3	16.8			42
BH - 3	SH-3-1	37.8	Non-plastic		9
BH - 3	SH-3-2	19.5	126	46	17

The high organic content and low unit weight indicate the soil is susceptible to long term settlement even under relatively light loads. Two, one dimensional consolidation tests were conducted on relatively undisturbed samples to help evaluate the compressibility of soils at the site. A soil sample of peat was obtained from a depth of ±10.5 feet in BH-1. Consolidation testing of this sample indicated a coefficient of consolidation (C_c) of 0.50 and a preconsolidation pressure of 0.7 ksf. A second soil sample of organic silt was obtained from a depth of ±10.5 feet in BH-3. Consolidation testing of this sample indicated a coefficient of consolidation (C_c) of 0.41 and a preconsolidation pressure of 0.8 ksf. The results of this testing indicates the soils are highly compressible and the primary compression is expected to occur relatively rapidly. Coefficients of secondary compression (C_α) equal to 0.04 and 0.018 were estimated for peat and organic silt respectively. Values in this range indicate a high potential for long term settlement. Detailed results of the consolidation testing are provided in Appendix B.

ENGINEERING ANALYSIS AND CONCLUSIONS

Settlement

Settlement analysis was performed using our field and laboratory data. The consolidation curve was used to estimate the compressibility properties of the foundation soils. The ground water table was assumed to be 6 feet below the ground surface, representing a worst case scenario. Settlement was calculated for a soil profile representative of the north side of the site. Settlement on the south side of the site is expected to be minor.

We calculated (initial) primary settlement of ±6 inches for an additional load of 500 psf. The primary settlement would be expected to occur within 2 to 3 months and the long term settlement (20 years) would be expected to be add an additional ±6 to 7 inches. Long term (secondary) settlement commonly equals or exceeds the initial (primary) settlement in highly organic soil. Also, in highly organic soils conventional creep analysis of long term settlement may under predict settlement.

We assumed piles will be used to support the structure, but the surrounding parking area will be subject to settlement. To reduce the differential settlement between the pile supported building and the surrounding fill areas, we calculated settlements

using several preloading alternatives. Table 2 lists the preloading alternatives and the calculated long term settlement.

Table 2. Settlement Estimates

Surcharge Depth (feet)	Surcharge Period (days)	Initial Settlement (inches)	Post Construction Settlement 5 year period (inches)	Post Construction Settlement 20 year period (inches)
0	-	-	7 - 9	9 - 12
5	14	8	3 - 5	5 - 8
5	30	11.5	1 - 3	2 - 5
10	14	12.5	1 - 3	2 - 5

Based on this analysis, 5 to 10 feet of surcharge left for 2 to 3 weeks is expected to reduce the differential settlement during the first 5 years to less than ±3 inches. The surcharge will help to reduce the post-construction settlement, but maintenance should be anticipated within the first ±5 years and again in ±10 to 20 years. Surcharge site to reduce settlement of parking area.

The surcharge should be constructed to maximize the site preloading near the east building entrance where the differential settlement is most critical. Near the northwest corner of the structure, differential settlement between the structure and the surrounding landscaped area is less critical. The surcharge should be sloped from a maximum height near the east side of the building towards the street and toward wetlands area to the north. This is intended to reduce the disruption to the ground surface near the street due to settlement during the preload phase and to reduce potential lateral movement of the ditch in the wetland area.

Settlement may result in displacement of underground utilities below the structure and down drag loads on the piles. Existing underground utilities should be relocated from under the proposed fill area. New utility connections should be routed along the south side, away from the northern end of the building where the organic deposits are present and the largest differential settlement is expected.

Pile Foundation Support

Because of the large settlement potential of the organic soils, we recommend that the building be supported on steel pipe piles driven to the underlying dense gravel and cobbles. Allowable axial capacities were calculated as ultimate axial capacities divided by a factor-of-safety (FS) of 3. The capacities assume the pipe piles will be driven closed ended and will develop their axial capacity through end-bearing resistance. We expect the ultimate structural capacity of the steel pile can be achieved by driving to refusal. We calculated an ultimate pile capacity assuming maximum driving stresses of 0.9 F_y and allowable loads using a factor of safety of 3.

We expect the existing and proposed site fill will result in settlement that will mobilized negative shaft resistance or downdrag on the piles. We calculated the expected shaft resistance for the overlying fill and compressible organic materials. Table 3 summarizes the results of the pile analysis and the allowable loads for 10.75 and 12.75 inch pipe piles.

Table 3. Pile Capacity Analysis

Pile Type	Area (in^2)	Grade 2 f_y (ksi)	Ultimate (Kips)	Downdrag (Kips)	Allowable (Kips)
10.75X0.365	11.9	36	428	10	118
12.75X0.375	14.6	36	525	12	157

We used the ODOT modified Gates equation to estimate a range of hammer field energies required to drive the pile sections to ultimate capacity with a final driving resistance of 10 blows per inch. The analysis indicated that a hammer field energy of 23,000 foot-pounds is needed for the 10.75 piles and a hammer field energy of 32,000 foot-pounds is needed for the 12.75 piles. Final driving criteria will be based on evaluation of the contractor's pile hammer submittal and the piles used in construction.

Based on BH-1 and BH-3, we expect to encounter a pile bearing stratum (Gravel) at an elevation of ±El. 77 to 79 feet. We expect the piles will penetrate between ±2 and 7 feet into this material. 30'-90' depths

Retaining Wall

A retaining wall is proposed for the south and southwest side of the site. The wall is expected to be up to 8 feet tall and will likely be a Keystone or similar Mechanically Stabilized Earth (MSE) style retaining wall. Our subsurface exploration indicated that this side of the site is underlain by deposits of alluvial sand, silt and gravel and the organics observed in BH-1 are not present.

Bearing Capacity. Analysis to estimate bearing capacity assumed the foundation would be embedded at least 18 inches below adjacent grades and bear on a 6-inch thick layer of compacted, crushed aggregate. We assumed a 32° angle of internal friction for the silty and sandy silt foundation conditions. Table 4 shows the allowable bearing capacity values calculated for infinite strip footings with a range of widths using a factor of safety of 3.0.

Table 4. Allowable Bearing Capacities

Effective Footing Width, B (ft.)	Allowable Bearing Capacity (ksf)
2	1.55
4	1.85
6	2.15
8	2.45

Earth Pressure. We recommend the retaining wall be backfilled with compacted crushed aggregate or similar material as recommended by the wall system manufacturer. Assuming a minimum friction angle of 32°, we calculate an active earth pressure coefficient (K_a) of 0.30. For a moist unit weight of the back fill material equal to 130 pcf, the earth pressure may be calculated using an equivalent fluid density of 39 pcf.

RECOMMENDATIONS

We have assumed (and recommended) that the earthwork will be completed during dry weather. We should be contacted in the event that the work occurs in the winter or late spring so that we can provide additional recommendations for wet weather construction. Compaction of the subgrade under the building pad or parking lots will not be practical during the winter or when the subgrade is wet of optimum. Stripping may have to be done with a hoe, operating outside of the foundation area, to prevent the subgrade from pumping. A geotextile may also be required to prevent subgrade intrusion into the fill. The contractor may still experience pumping problems in the summer if the surficial soils have not adequately dried. Therefore, we recommend an on-site conference with the contractor prior to the grading work to review site conditions.

General Earthwork Specifications

1. Strip the existing ground ±6 inches or as required to remove roots and sod. Dispose of all strippings outside of construction areas, including pavements.

2. Crushed aggregate (as defined in this report) should consist of ¼-1 inch clean, well-graded, free-draining, crushed gravel or rock with no more than 2% passing the #200 sieve. We should be provided a sample of the intended fill for approval, prior to delivery to the site.

3. Site fill should consist of silt, sand, or gravel, free of plastic clay, organics and construction debris. After clearing, grubbing and removal of organics, the material excavated from the south side of the site is expected to be suitable for dry weather construction.

4. Compact all crushed aggregate and site fill in loose lifts not exceeding 12 inches. Compact all fill to a minimum of 95% relative compaction, unless otherwise specified. The maximum dry density of ASTM D 698 should be used as the standard for estimating relative compaction, unless otherwise

specified. Field density tests should be run frequently to confirm adequate compaction.

Site Preparation and Surcharge

5. Install two settlement monitoring plates within the footprint of the surcharge area at the locations shown in Figure 3. The contractor should be responsible for any damage to the settlement plates. The elevation of the settlement plates should be read daily during the placement of fill and every three days after the surcharge fill is in place. The settlement data should be reviewed by FEI to judge when the settlement is complete and the surcharge can be removed.

6. Place surcharge soil above the proposed subgrade elevations as shown in Figure 3. Up to 1-foot of settlement is anticipated during the surcharge period, so the first foot of surcharge material placed, should be compacted as recommended for the site fill. We estimate that the soil will need to remain in place for at least 14 days. The final decision regarding the duration for the surcharge should be based on our interpretation of the settlement plate data. Site work and installation of piles should not take place until the surcharge is removed.

Foundation Design

7. Support the office/warehouse structure and floor on piles driven to the underlying dense gravel and cobbles. Anticipate up to 6 inches of long term, post-construction settlement of the surrounding ground surface. Settlement is expected along the north side of the building and should taper off to the south.

8. Use the following design capacities for the pile foundation:

Pile Type	Area (in^2)	Grade 2 f_y (ksi)	Ultimate (Kips)	Downdrag (Kips)	Allowable (Kips)
10.75X0.365	11.9	36	428	10	118
12.75X0.375	14.6	36	525	12	157

9. Drive piles closed ended to an anticipate final tip elevation of between ±El. 72 and 77 feet.

10. Specify a minimum a hammer field energy of 23,000 foot-pounds for the 10.75 piles and 32,000 foot-pounds for the 12.75 piles. We should review the contractors pile hammer submittal and develop final driving criteria.

11. Lateral loads may be resisted with passive earth pressures against the grade beams and pile caps. Use an passive earth pressure coefficient of $K_p = 3.2$ for embedded grade beams and pile caps. Backfill excavation for the grade beams and pile caps with compacted crushed aggregate.

12. Design the building using a Seismic Zone Factor, Z, of 0.3, and an S_d Soil Profile Type with corresponding values for Seismic Coefficients C_a and C_v of 0.36 and 0.54, respectively. The 1997 Uniform Building Code (UBC) states the maximum spectral acceleration for design is 2.5 x C_a (i.e., ±0.75g). A Seismic Source Type C with a corresponding Near-Source Factor (N_V) of 1.0 is appropriate for the site.

13. Provide ventilation for any crawl spaces or air gaps below the floor. This is intended to reduce the potential build up of methane gas from the organic soil.

Retaining Wall Construction

14. Temporary cut slopes may be constructed as steep as 1(H):1(V). Protect the temporary cut slopes from surface water runoff or from drying by covering with plastic sheeting.

15. Design the retaining wall for an active earth pressure based on an equivalent fluid density of 40 pcf.

16. Construct the base of the retaining wall at least 1.5 feet below the surrounding grade. Place at least 6 inches of compacted crushed aggregate below the base of the retaining wall. Design the retaining wall using the following allowable bearing capacity values.

Effective Footing Width, B (ft.)	Allowable Bearing Capacity (ksf)
2	1.55
4	1.85
6	2.15
8	2.45

16. Backfill the retaining wall with compacted crushed aggregate or similar material as recommended by the wall system manufacturer/designer. Install a drainage system behind the wall to prevent hydrostatic pressure build up. The drain should be connected to a solid drainpipe that terminates at a suitable location beyond the limits of the wall.

Subgrade Preparation and Pavement Construction

17. Compact the subgrade to a depth of at least 12 inches. Compaction may not be practical if the soils are too wet of optimum. Therefore, the site work should not be attempted during wet weather and should be delayed until the subgrade soils are sufficiently dry or until weather permits efficient aeration.

18. Maintain the moisture in the subgrade to prevent excessive drying and cracking. Immediately backfill the prepared subgrade with crushed aggregate and compact as described above.

19. Overexcavate and replace any areas of base rock and/or subgrade pumping with compacted crushed aggregate. Overexcavate test pits located within the structure or pavement areas and replace with compacted crushed aggregate.

20. Use crushed aggregate as base rock under all pavements and compact as specified. Do not allow loaded trucks or heavy construction equipment on the finished base rock prior to paving.

21. Provide a minimum flexible pavement section of 3 inches of asphalt over 8 inches of base rock. A 1½ inch overlay should be anticipated after ±5 years. Anticipate that additional pavement overlay, releveling or maintenance will be required again in ±10 to 20 years.

22. Compact the asphalt cement pavement, to a minimum of 91% relative compaction according to the theoretical maximum density calculated from the Rice specific gravity.

23. Inform contractors that utility construction will require dewatering for any excavations below about 3 feet and monitoring for methane gas. Shoring will be needed in all trenches to protect workers from sloughing or caving soils. Additional ventilation should be provided for all excavations due to possible build up of methane gas. **Trench excavations in organic soils may be very hazardous.** Therefore, utility trenching for the building should be located along the south side of the site to avoid the organic soils.

DESIGN REVIEW/CONSTRUCTION OBSERVATION/TESTING

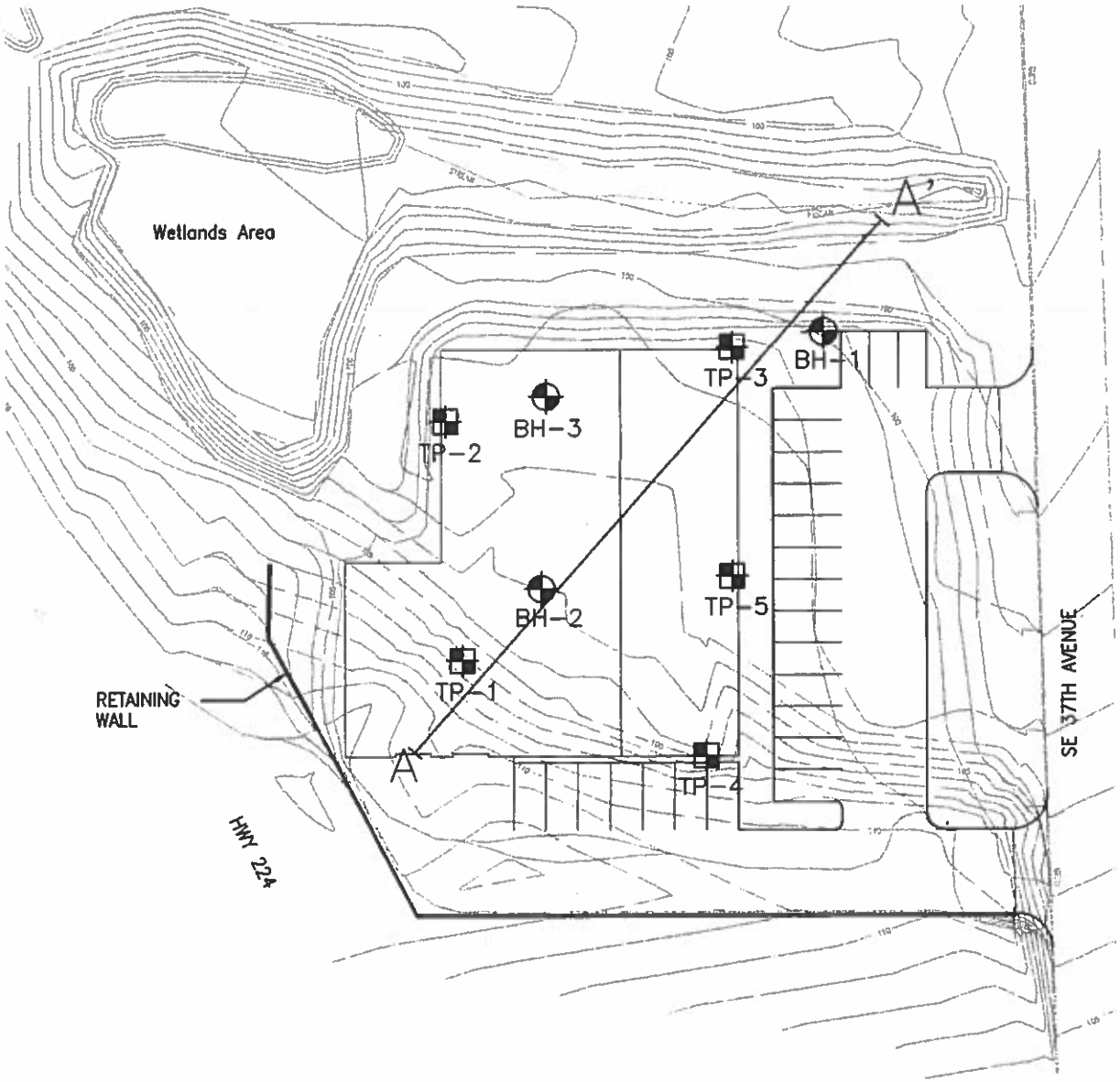
We should be provided the opportunity to review all drawings and specifications that pertain to site preparation, and foundation and retaining wall construction. Site preparation will require field confirmation of excavation conditions and settlement monitoring. Mitigation of any subgrade pumping will also require engineering review and judgment. We should analyze the settlement plate data and recommend the time to remove the surcharge. This judgment should be provided by one of our representatives. We recommend that we be retained to establish the final pile driving criteria based on the pile hammer selection and to observe the installation of the piles. Frequent field density tests should be run on all engineered fill, subgrade and base rock.

VARIATION OF SUBSURFACE CONDITIONS, USE OF THIS REPORT AND WARRANTY

The analysis, conclusions and recommendations contained herein are based on the assumption that the soil profiles and the ground water levels encountered in the test pits and borings are representative of overall site conditions. The above recommendations assume that we will have the opportunity to review final drawings and be present during construction to confirm assumed foundation conditions. No changes in the enclosed recommendations should be made without our approval. We will assume no responsibility or liability for any engineering judgment, inspection or testing performed by others.

This report was prepared for the exclusive use of Day Wireless, Inc. and their design consultants for the Day wireless office/warehouse project in Milwaukee, Oregon. Information contained herein should not be used for other sites or for unanticipated construction without our written consent. This report is intended for planning and design purposes. Contractors using this information to estimate construction quantities or costs do so at their own risk. Our services do not include any survey or assessment of potential surface contamination or contamination of the soil or ground water by hazardous or toxic materials. We assume that those services, if needed, have been completed by others.

Our work was done in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.



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DATE 12/1/00
DWN. AR
APPR.
REVIS.
PROJECT NO.
2002035

FOUNDATION ENGINEERING INC.
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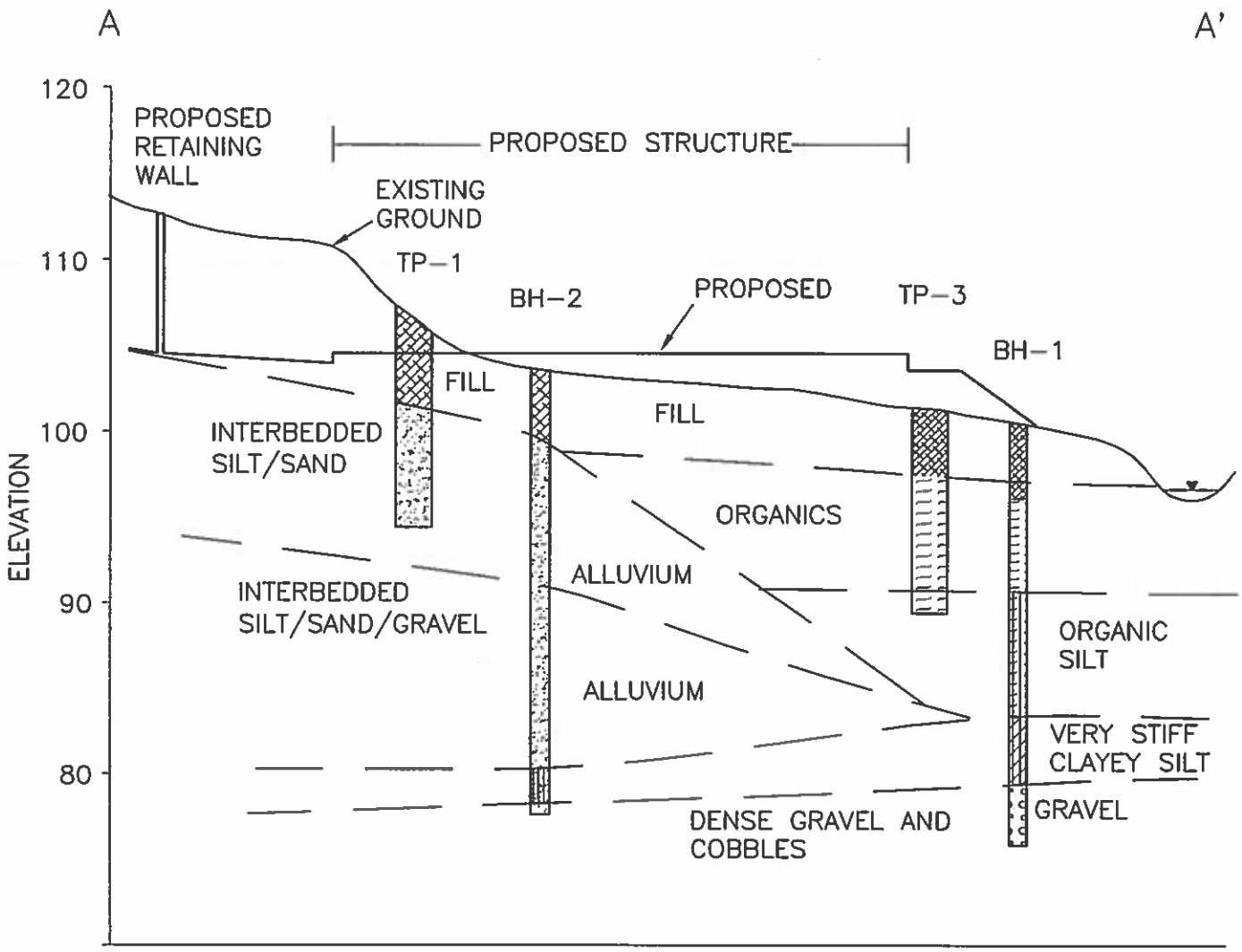
SITE PLAN

DAY WIRELESS
MILWAUKIE, OREGON

FIGURE NO.
1

FILE NAME: fig1.dwg



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HORIZ. SCALE: 1" = 50'

DATE DEC 2000
DWN. NMC
APPR.
REVIS.
PROJECT NO.
200-2-035

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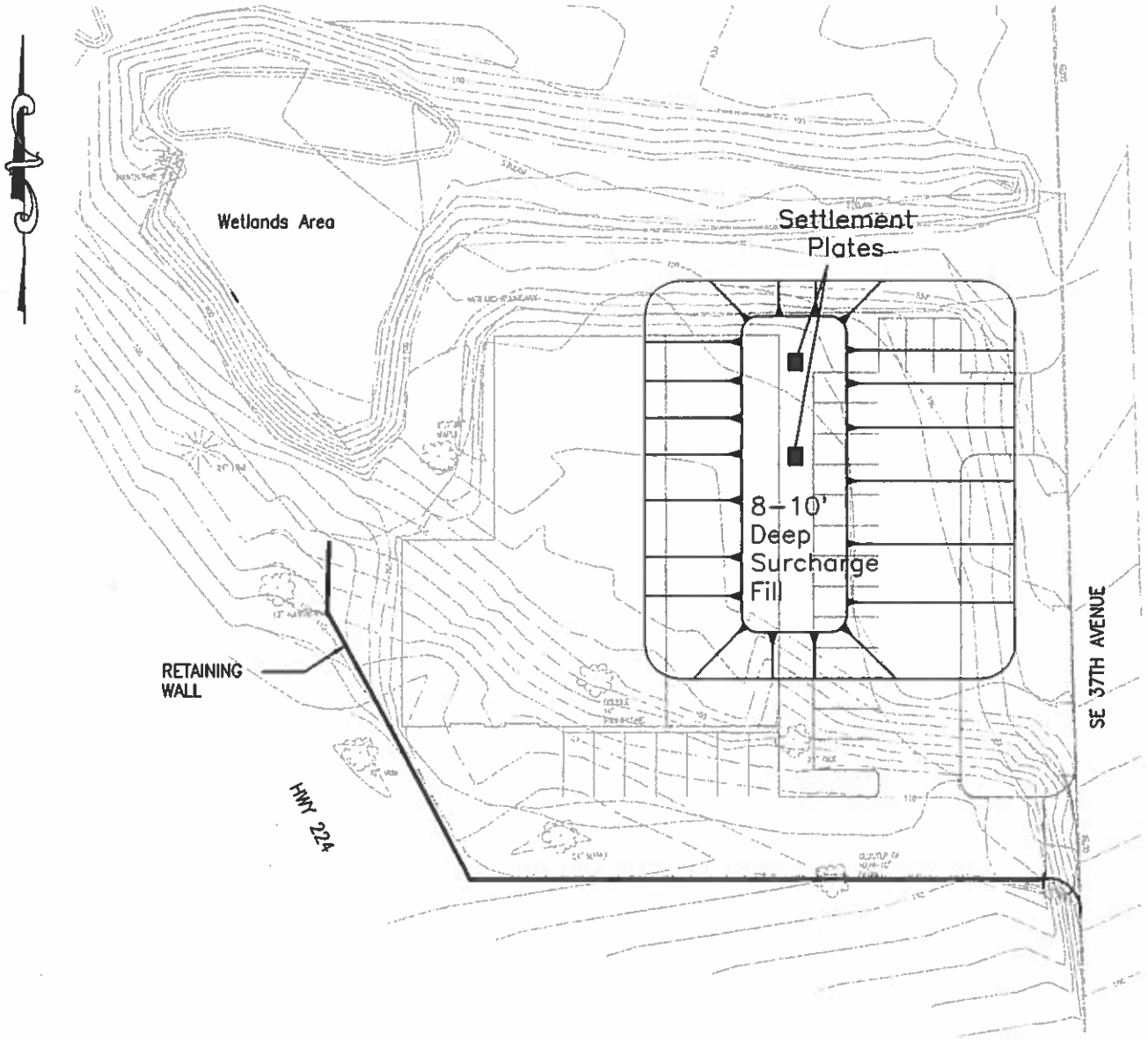
INTERPRETIVE CROSS-SECTION

A - A'

DAY WIRELESS
MILWAUKIE, OREGON

FIGURE NO.
2

FILE NAME: FIG2.dwg



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DATE 12/1/00
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SITE PLAN

DAY WIRELESS
MILWAUKIE, OREGON

FIGURE NO.
3

FILE NAME: fia1.dwg

Appendix A

Boring Logs

Professional Geotechnical Services

Foundation Engineering, Inc.

SYMBOL KEY
FOR
BORING AND TEST PIT LOGS

DISTINCTION BETWEEN FIELD LOGS AND FINAL LOGS

A field log is prepared for each boring or test pit by our field representative. The log contains information concerning sampling depths, and the presence of various materials such as gravel, cobbles, and fill, and observations of ground water. It also contains our interpretation of the soil conditions between samples. The final logs presented in this report represent our interpretation of the contents of the field logs, site geology and the results of the laboratory examinations and tests. Our recommendations are based on the contents of the final logs and the information contained therein and and not on the field logs.

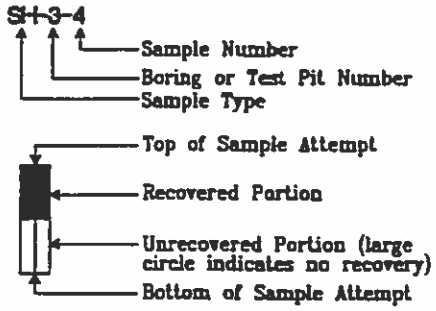
VARIATION IN SOILS BETWEEN TEST PITS AND BORINGS

The final log and related information depict subsurface conditions only at the specific location and on the date indicated. Those using the information contained herein should be aware that soil conditions at other locations or on other dates may differ. Actual foundation or subgrade conditions should be confirmed by us during construction.

TRANSITION BETWEEN SOIL OR ROCK TYPES

The lines designating the interface between soil, fill or rock on the final logs and on subsurface profiles presented in the report are determined by interpolation and are therefore approximate. The transition between the materials may be abrupt or gradual. Only at boring or test pit locations should profiles be considered as reasonably accurate and then only to the degree implied by the notes thereon.

SAMPLE OR TEST SYMBOLS



SS – Standard Penetration Test Sample (split-spoon)
SH – Thin-walled Shelby Tube Sample
C – Core Sample
CS – Continuous Sample

▲ Standard Penetration Test Resistance equals the number of blows a 140-lb weight falling 30 in. required to drive a standard split-spoon sampler 1 ft. Practical refusal – 50 or more blows per 5 in. of sampler penetration.

● Water Content (%).

UNIFIED SOIL CLASSIFICATION SYMBOLS

G – Gravel	W – Well Graded
S – Sand	P – Poorly Graded
M – Silt	L – Low Plasticity
C – Clay	H – High Plasticity
Pt – Peat	O – Organic

FIELD SHEAR STRENGTH TEST

Shear strength measurements on test pit side walls, blocks of soil or Shelby tube samples are typically made with Torvane or pocket penetrometer devices.

TYPICAL SOIL/ROCK SYMBOLS

Sand
Silt
Clay
Gravel
Basalt
Siltstone

WATER TABLE

Water Table Location
(1/31/94) Date of Measurement
Piezometer Tip Location (if used)

Explanation of Common Terms Used in Soil Descriptions

Field Identification	Cohesive Soils			Granular Soils	
	SPT	S_u* (tsf)	Term	SPT	Term
Easily penetrated several inches by fist.	0 – 1	< 0.125	Very Soft	0 – 4	Very Loose
Easily penetrated several inches by thumb.	2 – 4	0.125–0.25	Soft	5 – 10	Loose
Can be penetrated several inches by thumb with moderate effort.	5 – 8	0.25 – 0.50	Medium Stiff (Firm)	11 – 30	Medium Dense
Readily indented by thumb but penetrated only with great effort.	9 – 15	0.50 – 1.0	Stiff	31 – 50	Dense
Readily indented by thumbnail.	16 – 30	1.0 – 2.0	Very Stiff	> 50	Very Dense
Indented with difficulty by thumbnail.	31 – 60	> 2.0	Hard		

* Undrained shear strength

Term	Soil Moisture Field Description
Dry	Absence of moisture. Dusty. Dry to the touch.
Damp	Soil has moisture. Cohesive soils are below plastic limit and usually moldable.
Moist	Grains appear darkened, but no visible water. Silt/clay will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grain surfaces. Sand and cohesionless silt exhibit dilatancy. Cohesive silt/clay can be readily remolded. Soil leaves wetness on the hand when squeezed. "Wet" indicates that the soil is wetter than the optimum moisture content and above the plastic limit.

Term	PI	Plasticity Field Test
Nonplastic	0 – 3	Cannot be rolled into a thread.
Low Plasticity	3 – 15	Can be rolled into a thread with some difficulty.
Medium Plasticity	15 – 30	Easily rolled into thread.
High Plasticity	> 30	Easily rolled and rerolled into thread.

Term	Soil Structure Criteria
Stratified	Alternating layers at least 1 inch thick – describe variation.
Laminated	Alternating layers at less than 1 inch thick – describe variation.
Fissured	Contains shears and partings along planes of weakness.
Slickensides	Partings appear glossy or striated.
Blocky	Breaks into lumps – crumbly.
Lensed	Contains pockets of different soils – describe variation.

Term	Soil Cementation Criteria
Weak	Breaks under light finger pressure.
Moderate	Breaks under hard finger pressure.
Strong	Will not break with finger pressure.

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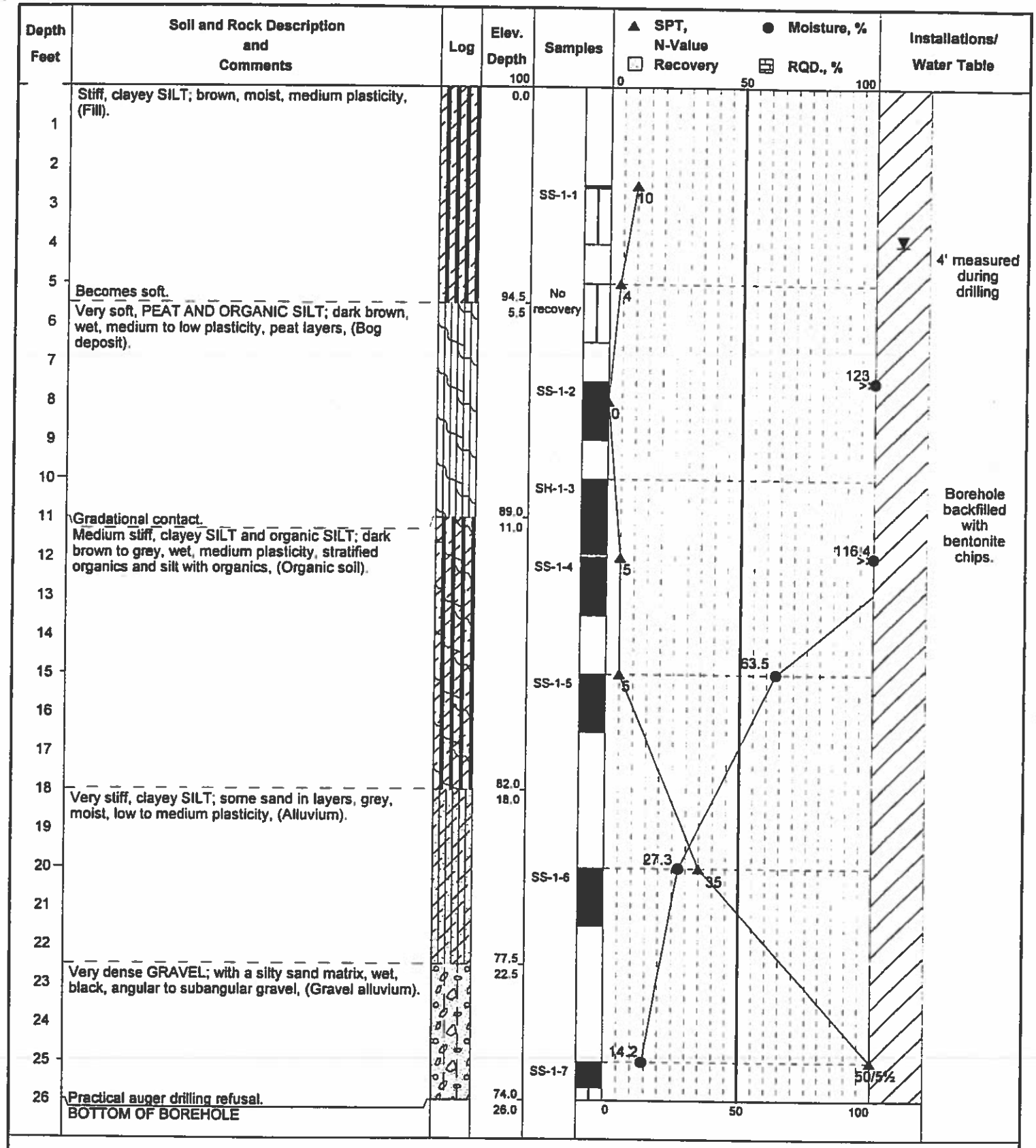
COMMON TERMS
SOIL DESCRIPTIONS



Project No.: 2002035

Surface Elevation: 100.0 feet (Approx.)

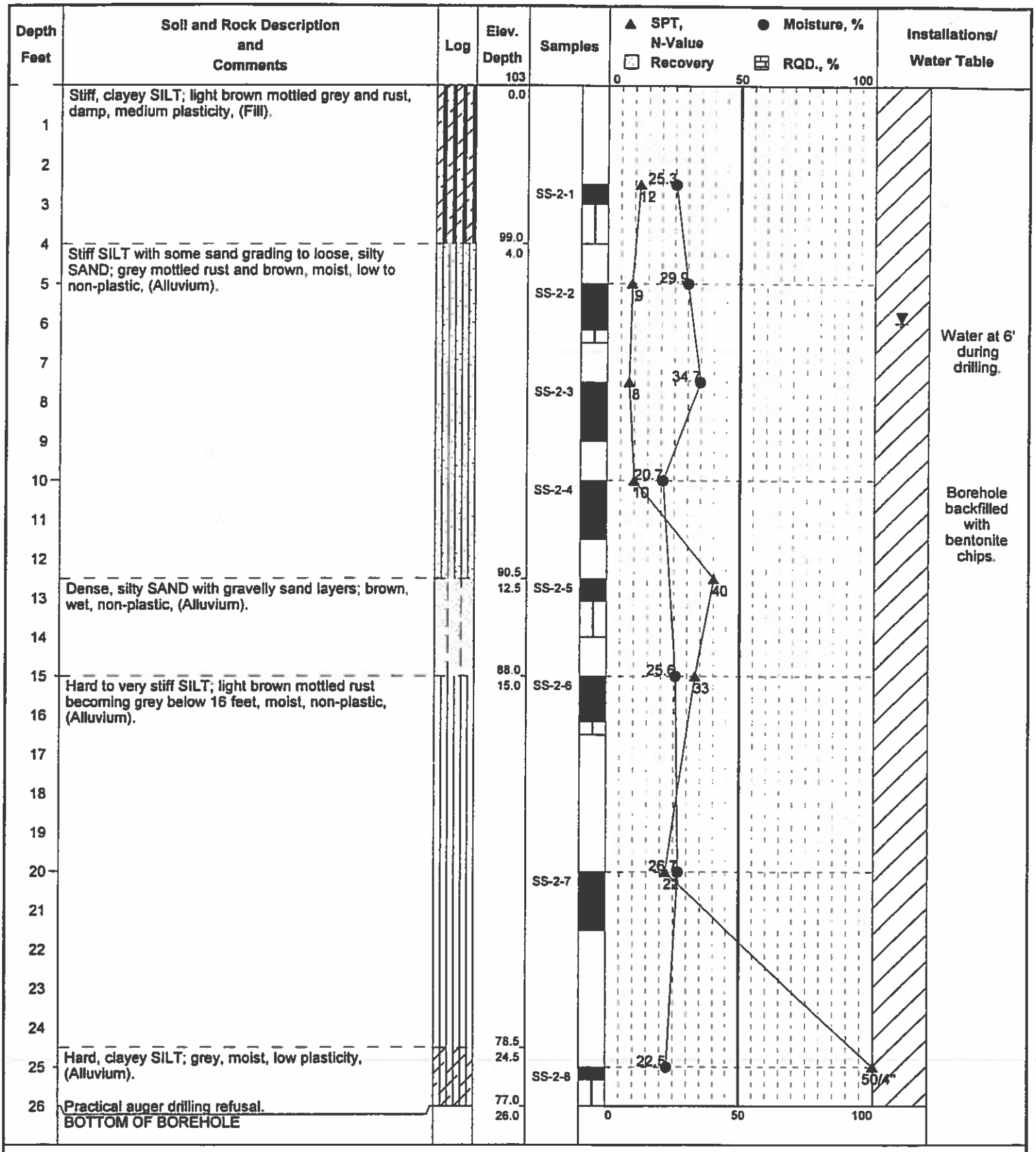
Date of Boring: October 23, 2000

Boring Log: BH-1

Day Wireless

Milwaukie, Oregon

Foundation Engineering, Inc.



Project No.: 2002035

Surface Elevation: 103.0 feet (Approx.)

Date of Boring: October 23, 2000

Boring Log: BH-2

Day Wireless

Milwaukie, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	▲ SPT, N-Value / □ Recovery	● Moisture, % / ⊞ RQD., %	Installations/ Water Table
			101		0 50 100		
1	Stiff clayey SILT with some gravel; brown, moist, medium plasticity, (Fill).		0.0				
2							
3							
4			97.0				
5	Very soft peat and organic SILT; dark brown, wet, medium plasticity, peat and organic silt in layers, (Bog deposits).		4.0				
6							
7				SH-3-1		108	
8							
9				SH-3-2		284	
10							
11	BOTTOM OF BOREHOLE		90.0 11.0		0 50 100		

Project No.: 2002035

Surface Elevation: 101.0 feet (Approx.)

Date of Boring: October 23, 2000

Boring Log: BH-3

Day Wireless

Milwaukie, Oregon

Foundation Engineering, Inc.

Comments	Depth, Feet	Sample #	Location	Class Symbol	Water Table	C, TSF	Symbol	Soil and Rock Description
	1-	S-1-1				0.40		Medium stiff SILT; trace fine to coarse sand, brown to grey-brown, dry, low plasticity, scattered organics in upper 10 inches, (fill).
	2-					0.90		Medium stiff to stiff SILT; trace fine sand, orange-brown mottled light grey, dry, low plasticity, (Fill).
	3-	S-1-2						
	4-							
	5-							Stiff SILT; some fine sand, brown mottled grey, moist, low plasticity, (Alluvium).
wc=23.4%	6-	S-1-3						
	7-							Medium dense silty SAND; grey brown mottled orange, moist, fine to medium sand, non-plastic, (Alluvium).
	8-	S-1-4						
	9-							
	10-							Medium dense SAND; some silt, grey brown, moist, fine to medium sand, (Alluvium).
	11-							
	12-	S-1-5						BOTTOM OF TEST PIT
	13-							
	14-							
	15-							
	16-							

Project No.: 2002035

Surface Elevation: 108.0 feet

Date of Test Pit: August 30, 2000

Test Pit Log: TP-1

Day Wireless

Milwaukie, Oregon

Comments	Depth, Feet	Sample #	Location	Class Symbol	Water Table	C, TSF	Symbol	Soil and Rock Description
	1-							Medium stiff SILT; some fine to coarse sand, scattered fine to coarse subrounded gravel, brown-grey, dry, scattered debris and organics, low plasticity, (fill).
	2-	S-2-1						
	3-							
	4-							Medium stiff to stiff clayey SILT; some organics, dark grey mottled red brown, moist, medium plasticity, organic odor, blocky structure, grades to black at 6 feet, (Alluvium).
wc=66.8%	5-	S-2-2				0.45 to 0.70		
	6-							
	7-							
	8-							Soft clayey SILT; trace organics, blue grey, low to medium plasticity, wet, grades from soft clayey silt to medium stiff silt, (Alluvium).
	9-							
wc=43.0%	10-	S-2-3						
	11-							
	12-							
wc=35.0%	13-	S-2-4						Soft sandy SILT to loose silty SAND; blue grey, wet, non-plastic, scattered organics, rapid dilatancy, interbedded layers of sandy silt and silty sand, (Alluvium).
	14-							BOTTOM OF TEST PIT
	15-							
	16-							

Project No.: 2002035

Surface Elevation: 101.0 feet

Date of Test Pit: August 30, 2000

Test Pit Log: TP-2

Day Wireless

Milwaukie, Oregon

Comments	Depth, Feet	Sample #	Location	Class Symbol	Water Table	C, TSF	Symbol	Soil and Rock Description
	1-							Medium stiff SILT; trace fine to coarse sand and gravel, grey to orange, dry, low plasticity, rounded to subrounded gravel, scattered organics, (fill).
	2-	S-3-1						
	3-							
	4-							
wc=129.7%	5-	S-3-2						Medium stiff gravelly SILT; some fine to coarse sand, dark brown, moist, low plasticity, subrounded gravel, scattered organics, (fill).
	6-							Medium stiff to soft organic SILT; black, moist, low plasticity, organic odor, graces to soft at 6 feet, blocky structure, very low density, (organics).
	7-							
	8-							
	9-							
	10-							
	11-							
wc=112.4%	12-	S-3-3						Soft organic SILT; dark brown, wet, low plasticity, fibrous texture, (organics).
	13-							BOTTOM OF TEST PIT
	14-							
	15-							
	16-							

Project No.: 2002035

Surface Elevation: 100.0 feet

Date of Test Pit: August 30, 2000

Test Pit Log: TP-3

Day Wireless

Milwaukie, Oregon

Comments	Depth, Feet	Sample #	Location	Class Symbol	Water Table	C, TSF	Symbol	Soil and Rock Description
	1-							Soft to medium stiff SILT; some gravel and sand, light brown, dry, low plasticity, scattered organics, (fill).
	2-							Stiff SILT; light brown, dry, low plasticity, scattered gravel and debris (metal and glass), scattered organics, (fill).
	3-	S-4-1				0.65		
	4-							
	5-							
	6-							
	7-							Medium stiff to stiff clayey SILT; yellow to brown mottled orange, moist, medium plasticity, (Alluvium).
	8-	S-4-2				1.20		
	9-							Stiff sandy SILT; grey brown, moist, nonplastic to low plasticity, fine to medium sand, medium plasticity gradational contact, (Alluvium).
wc=36.8%	10-	S-4-3						
	11-							
	12-							SAND; some silt, grey brown, wet, non-plastic, interbedded layers of sandy silt, (Alluvium).
	13-							
	14-	S-4-4						
Seepage noted at 14.5 feet.	15-							
	16-							BOTTOM OF TEST PIT

Project No.: 2002035

Surface Elevation: 107.0 feet

Date of Test Pit: August 30, 2000

Test Pit Log: TP-4

Day Wireless

Milwaukie, Oregon

Comments	Depth, Feet	Sample #	Location	Class Symbol	Water Table	C, TSF	Symbol	Soil and Rock Description
	1- 2- 3- 4-							Medium stiff SILT; some fine to coarse sand, occasional gravel and cobbles, upper 1 foot dry, scattered organics, (fill).
wc=92.3%	5- 6- 7- 8-	S-5-1						Soft to medium stiff organic SILT; dark grey to black, moist, low to medium plasticity, organic odor, (organics).
	9- 10- 11-							Soft SILT; trace organics, blue grey, wet, low plasticity, organic odor, (Alluvium).
	12- 13- 14- 15- 16-							BOTTOM OF TEST PIT

Project No.:	2002035	**Test Pit Log: TP-5**
Surface Elevation:	101.0 feet	**Day Wireless**
Date of Test Pit:	August 30, 2000	**Milwaukie, Oregon**

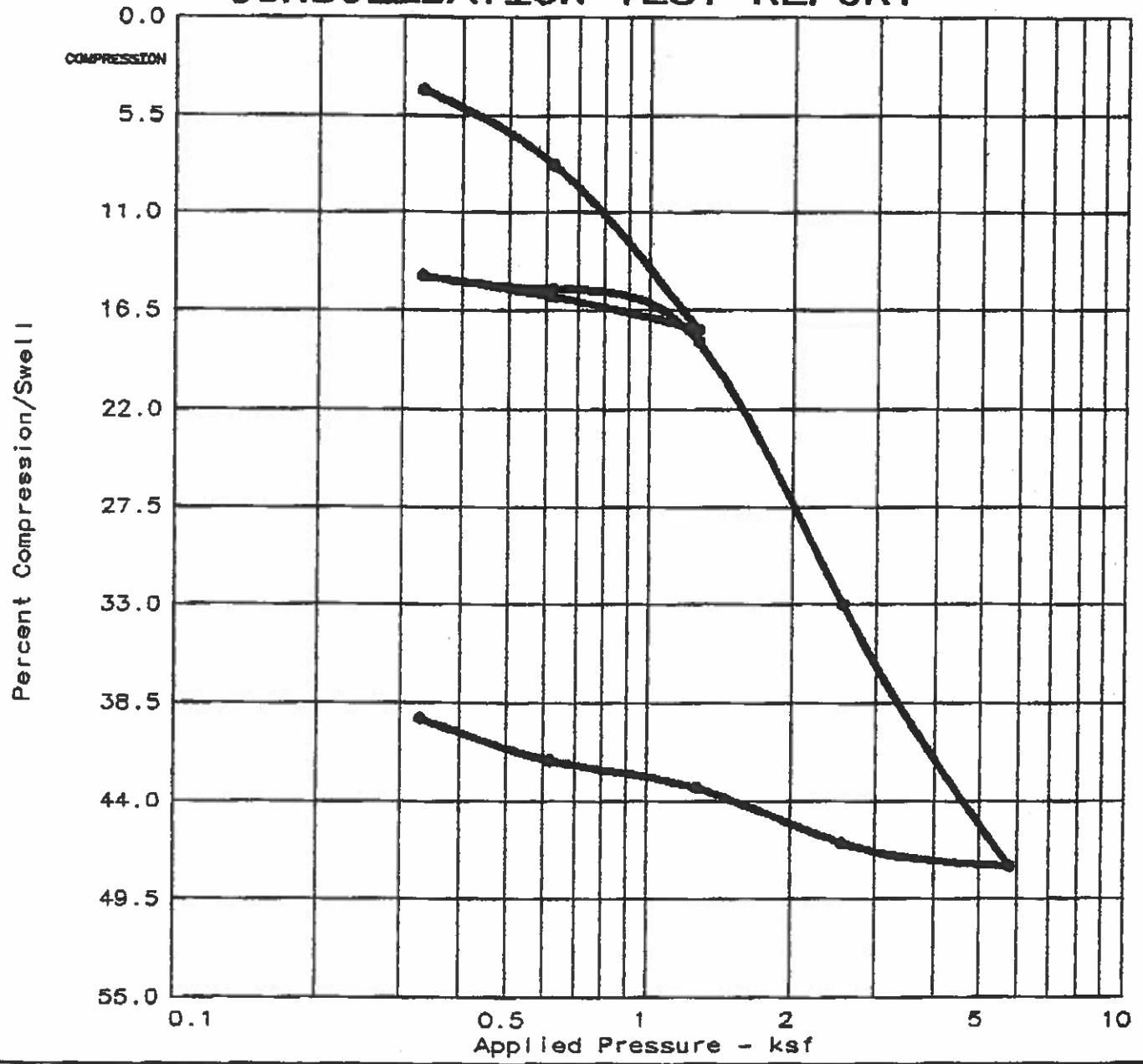
Appendix B

Laboratory Testing Results

Professional Geotechnical Services

Foundation Engineering, Inc.

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp.Gr.	Initial void ratio
75.4 %	284.2 %	16.9			2.650	9.9822

TEST RESULTS	MATERIAL DESCRIPTION
	Peat

Project No.: 2006020-662
Project: Day Wireless
Location: Portland, Oregon

Date: 11-17-00

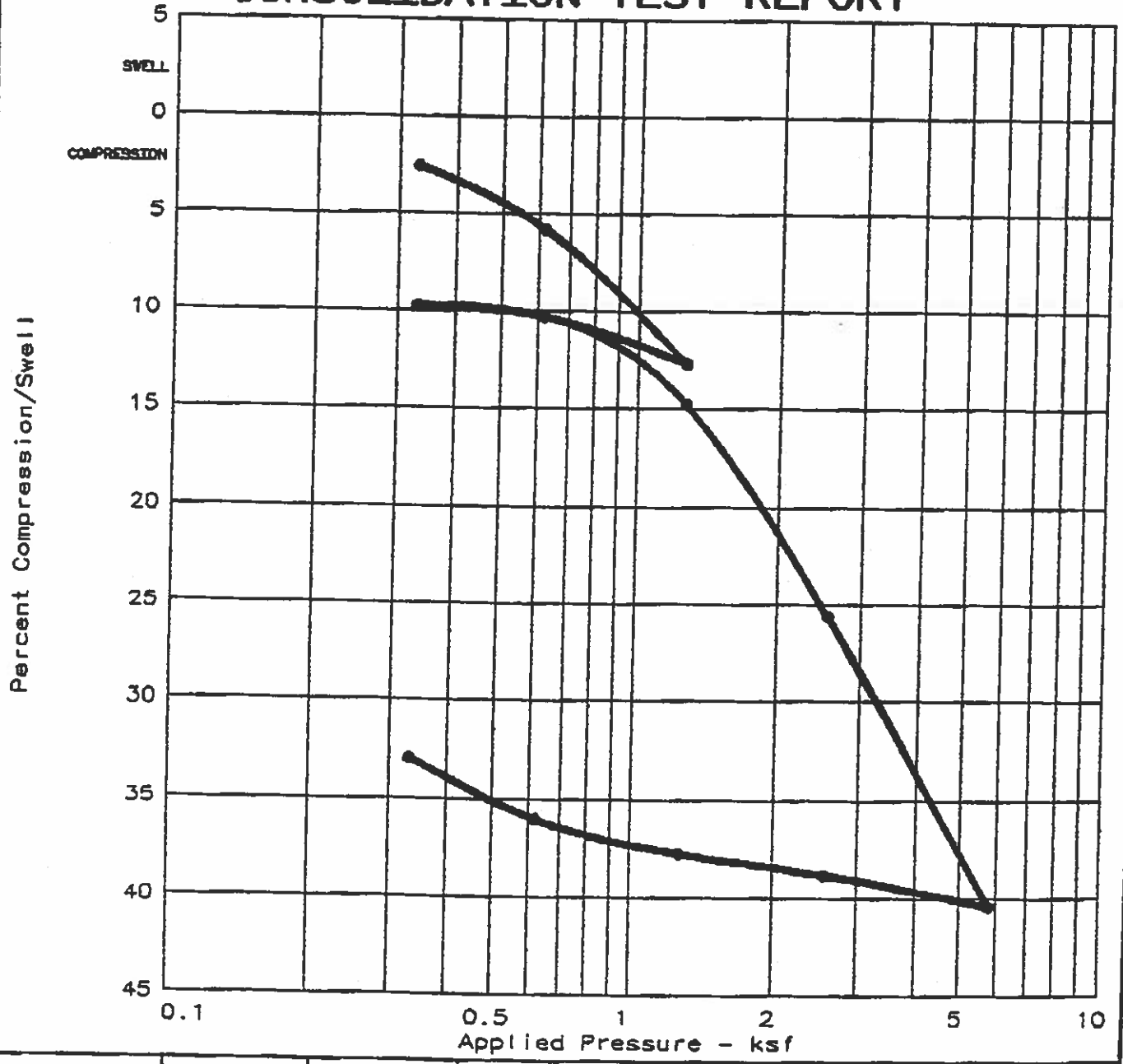
Remarks:
Sample: SH-1-3
Depth: 10.5 feet

CONSOLIDATION TEST REPORT

FEI TESTING AND INSPECTION, INC.

Fig. No. 1

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp.Gr.	Initial void ratio
79.5 %	248.4 %	19.5			2.650	8.2857

TEST RESULTS

MATERIAL DESCRIPTION

Brown organic SILT

Project No.: 2006020-662
Project: Day Wireless
Location: Portland, Oregon

Date: 11-16-00

Remarks:

Sample: SH-3-2
Depth: 9.5 feet

CONSOLIDATION TEST REPORT

FEI TESTING AND INSPECTION, INC.

Fig. No. 2

APPENDIX E

NRCS WEB SOIL SURVEY HYDROLOGIC SOIL GROUP SUMMARY

Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Clackamas County Area, Oregon (OR610)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
42	Humaquepts, ponded	C/D	0.1	11.5%
91B	Woodburn silt loam, 3 to 8 percent slopes	C	1.0	88.5%
Totals for Area of Interest			**1.1**	**100.0%**

Description — Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options — Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

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H:\Projects\216064200\4_Drawings\Civil\Exhibits\Soils Data.dwg NKL 6/28/2017 7:18 AM

DAY WIRELESS SYSTEMS

PROJECT:
DAY WIRELESS
11405 SE 37TH AVENUE
MILWAUKIE, OR

SHEET TITLE:
NRCS WEB SOIL SURVEY
HYDROLOGIC SOILS GROUP SUMMARY

DATE: 06.28.17
DRAWN BY: NKL
CHECKED BY: MWB

JOB NO:
2160462.00

SHEET:
EX 1

APPENDIX F

PAC REPORT

PAC Report

Project Name 2160642.00 - Day Wireless Milwaukie	Permit No.	Created 6/19/17 3:15 PM
Project Address 11405 SE 37th Ave Milwaukie, OR 97222	Designer NKL	Last Modified 6/29/17 7:46 AM
	Company Mackenzie	Report Generated 6/29/17 7:46 AM

Project Summary

Public & Private Improvements

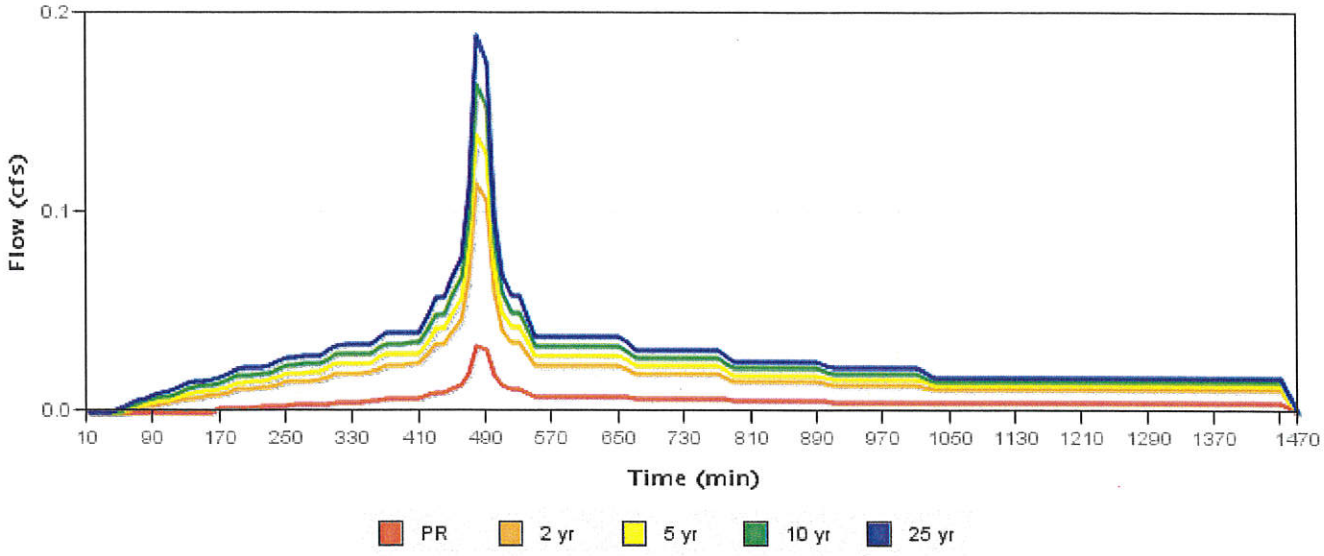
Catchment Name	Impervious Area (sq ft)	Native Soil Design Infiltration Rate	Hierarchy Category	Facility Type	Facility Config	Facility Size (sq ft)	Facility Sizing Ratio	PR Results	Flow Control Results
South Basin	8072	0.00	3	Basin	D	121	2.5%	Pass	Fail
North Basin	15663	0.00	3	Basin	D	293	2.4%	Pass	Fail

Catchment South Basin

Site Soils & Infiltration Testing Data	Infiltration Testing Procedure	**Open Pit Falling Head**
	Native Soil Infiltration Rate (I_{test})	**0.00** ⚠
Correction Factor	CF_{test}	**2**
Design Infiltration Rates	Native Soil (I_{dsgn})	**0.00 in/hr** ⚠
	Imported Growing Medium	**2.00 in/hr**
Catchment Information	Hierarchy Category	**3**
	Disposal Point	**B**
	Hierarchy Description	**Off-site flow to drainageway, river, or storm-only pipe system**
	Pollution Reduction Requirement	**Pass**
	10-year Storm Requirement	**N/A**
	Flow Control Requirement	**If discharging to an overland drainage system or to a storm sewer that discharges to an overland drainage system, including streams, drainageways, and ditches, the 2-year post-development peak flow must be equal or less than half of the 2-year pre-development rate and the 5, 10, and 25-year post-development peak rate must be equal or less than the pre-development rates for the corresponding design storms.**
	Impervious Area	**8072 sq ft** **0.185 acre**
	Time of Concentration (Tc)	**5**
	Pre-Development Curve Number (CN_{pre})	**72**
	Post-Development Curve Number (CN_{post})	**98**

⚠ Indicates value is outside of recommended range

SBUH Results



	Pre-Development Rate and Volume		Post-Development Rate and Volume	
	Peak Rate (cfs)	Volume (cf)	Peak Rate (cfs)	Volume (cf)
PR	0	0.465	0.033	421.785
2 yr	0.01	321.204	0.114	1460.595
5 yr	0.023	503.996	0.139	1795.144
10 yr	0.038	710.369	0.164	2130.194
25 yr	0.055	935.278	0.189	2465.56

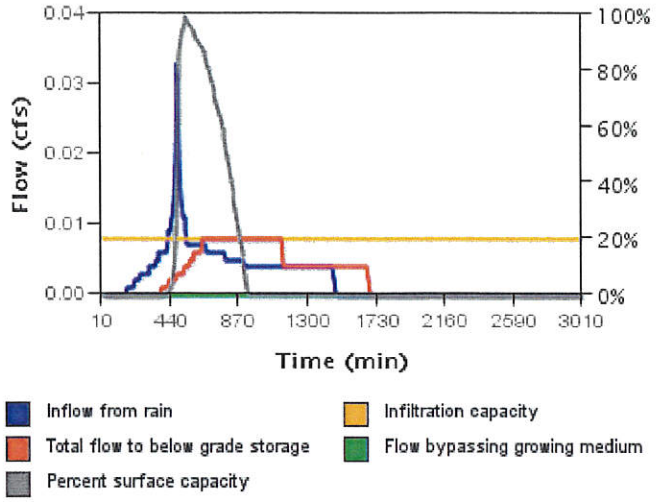
Facility South Basin

Facility Details	Facility Type	**Basin**
	Facility Configuration	**D: Lined Facility with RS and Ud**
	Facility Shape	**User Defined**
	Above Grade Storage Data	
	Bottom Area	**121 sq ft**
	Surface Area at Storage Depth 1	**198 ft**
	Storage Depth 1	**4.0 in** ⚠
	Growing Medium Depth	**24 in**
	Surface Capacity at Depth 1	**53.2 cu ft**
	Design Infiltration Rate for Native Soil	**0.000 in/hr**
	Infiltration Capacity	**0.008 cfs**
Facility Facts	Total Facility Area Including Freeboard	**198.00 sq ft**
	Sizing Ratio	**2.5%**
Pollution Reduction Results	Pollution Reduction Score	**Pass**
	Overflow Volume	**421.277 cf**
	Surface Capacity Used	**99%**
Flow Control Results	Flow Control Score	**Fail**
	Overflow Volume	**2132.438 cf**
	Surface Capacity Used	**100%**

⚠ Indicates value is outside of recommended range

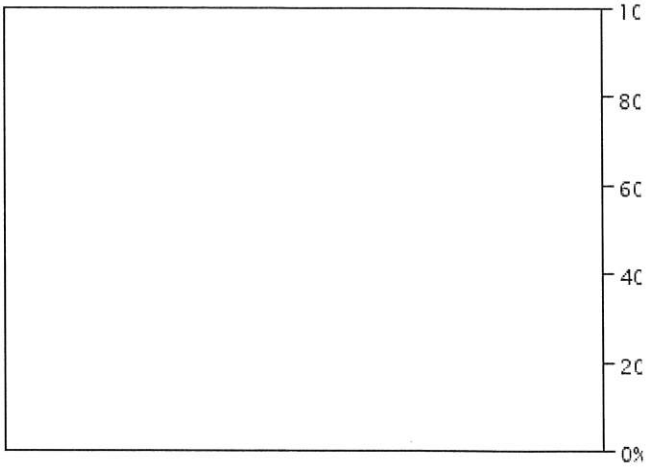
	Post-development outflow (cfs)		Pre-development inflow (cfs)	
2 year	0.114	≤ ½ of	0.01	**Fail**
5 year	0.139	≤	0.023	**Fail**
10 year	0.164	≤	0.038	**Fail**
25 year	0.189	≤	0.055	**Fail**

Pollution Reduction Event Surface Facility Modeling

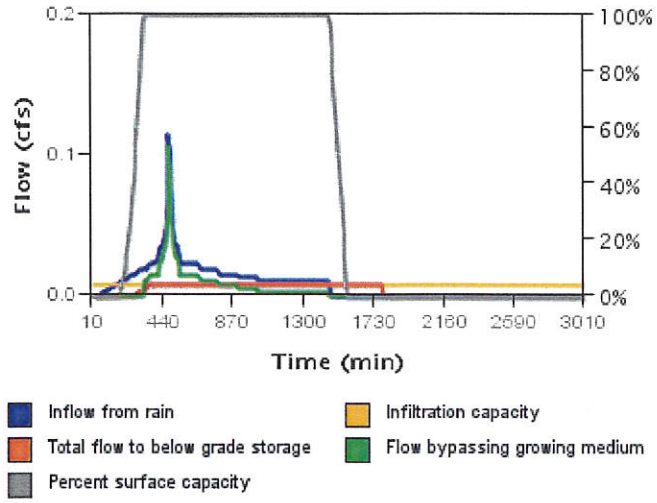


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

Pollution Reduction Event Below Grade Modeling

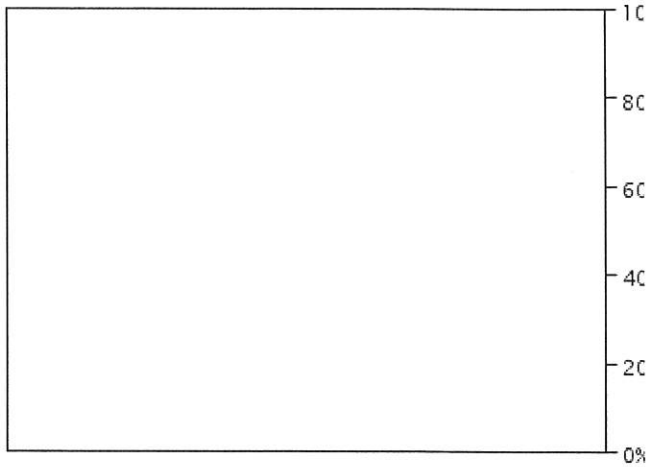


2 Year Event Surface Facility Modeling

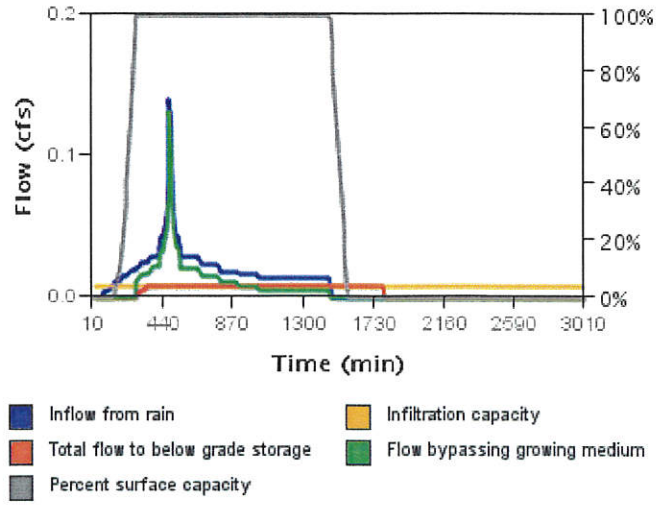


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

2 Year Event Below Grade Modeling

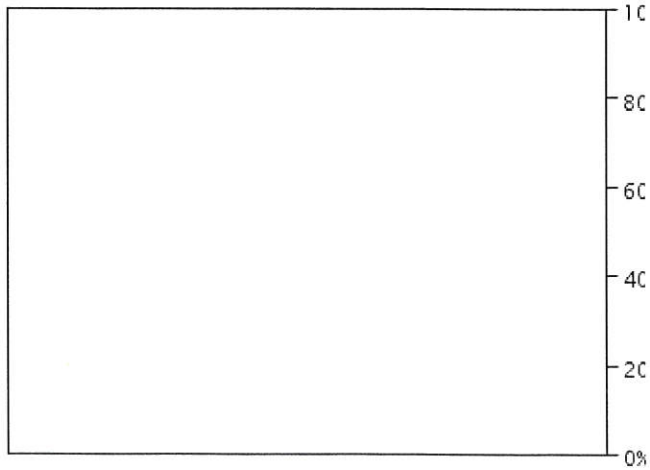


5 Year Event Surface Facility Modeling

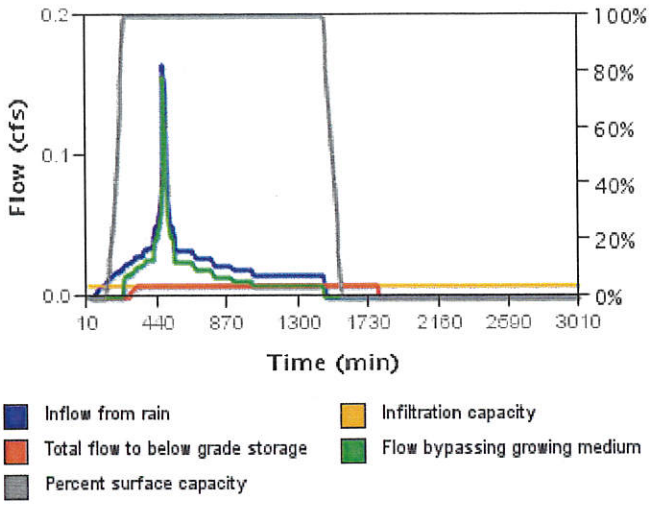


Inflow from rain
Total flow to below grade storage
Percent surface capacity
Infiltration capacity
Flow bypassing growing medium

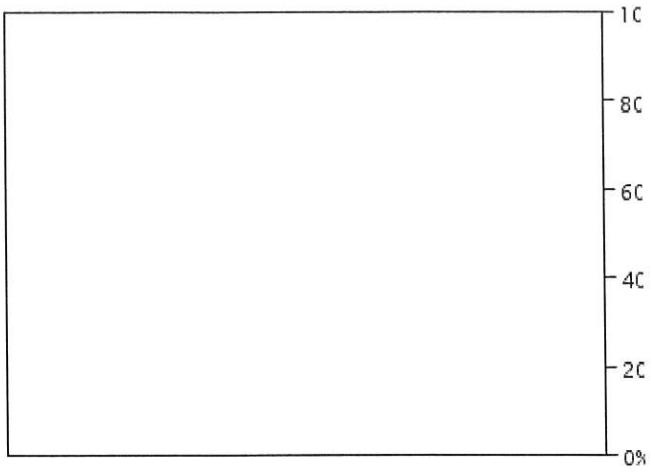
5 Year Event Below Grade Modeling



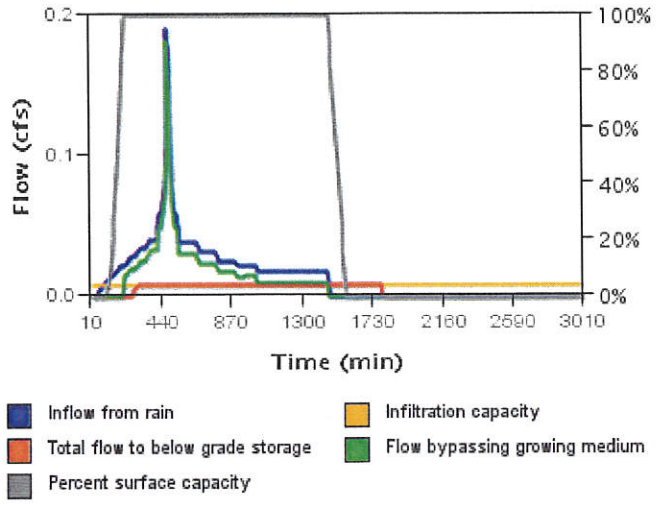
10 Year Event Surface Facility Modeling



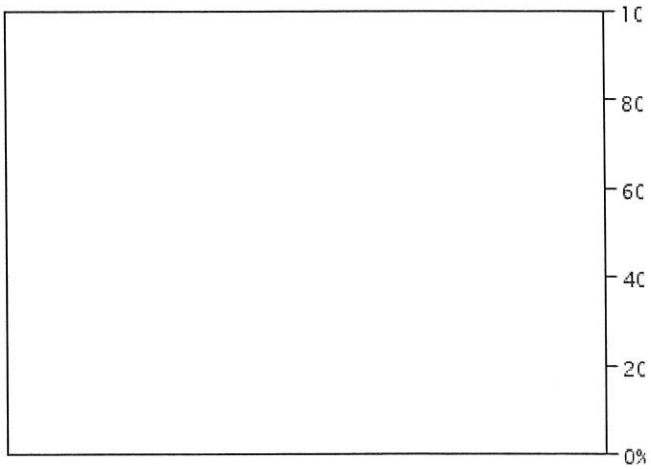
10 Year Event Below Grade Modeling



25 Year Event Surface Facility Modeling



25 Year Event Below Grade Modeling

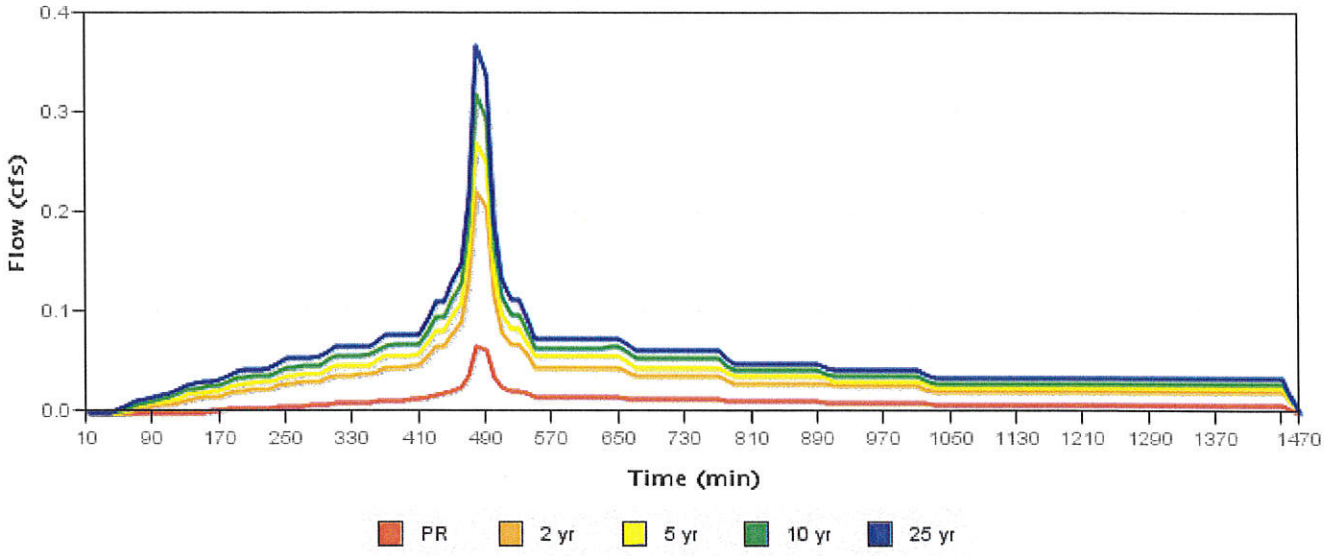


Catchment North Basin

Site Soils & Infiltration Testing Data	Infiltration Testing Procedure	**Open Pit Falling Head**
	Native Soil Infiltration Rate (I_{test})	**0.00** ⚠
Correction Factor	CF_{test}	**2**
Design Infiltration Rates	Native Soil (I_{dsgn})	**0.00 in/hr** ⚠
	Imported Growing Medium	**2.00 in/hr**
Catchment Information	Hierarchy Category	**3**
	Disposal Point	**B**
	Hierarchy Description	**Off-site flow to drainageway, river, or storm-only pipe system**
	Pollution Reduction Requirement	**Pass**
	10-year Storm Requirement	**N/A**
	Flow Control Requirement	**If discharging to an overland drainage system or to a storm sewer that discharges to an overland drainage system, including streams, drainageways, and ditches, the 2-year post-development peak flow must be equal or less than half of the 2-year pre-development rate and the 5, 10, and 25-year post-development peak rate must be equal or less than the pre-development rates for the corresponding design storms.**
	Impervious Area	**15663 sq ft** **0.360 acre**
	Time of Concentration (Tc)	**5**
	Pre-Development Curve Number (CN_{pre})	**72**
	Post-Development Curve Number (CN_{post})	**98**

⚠ Indicates value is outside of recommended range

SBUH Results



	Pre-Development Rate and Volume		Post-Development Rate and Volume	
	Peak Rate (cfs)	Volume (cf)	Peak Rate (cfs)	Volume (cf)
PR	0	0.903	0.065	818.436
2 yr	0.02	623.269	0.221	2834.155
5 yr	0.045	977.959	0.27	3483.319
10 yr	0.074	1378.407	0.319	4133.453
25 yr	0.107	1814.824	0.367	4784.201

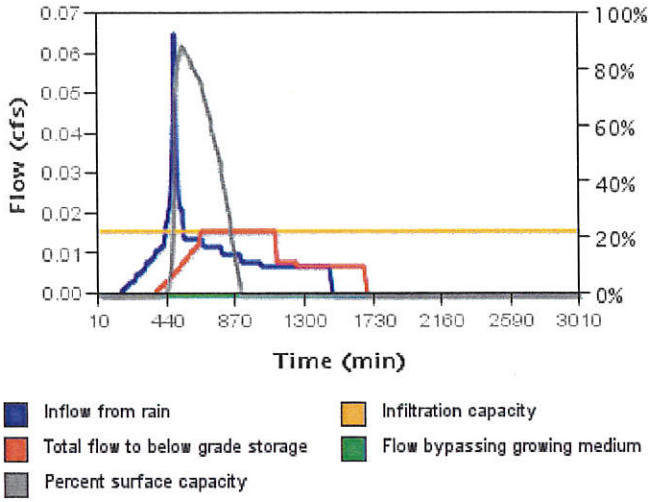
Facility North Basin

Facility Details	Facility Type	**Basin**
	Facility Configuration	**D: Lined Facility with RS and Ud**
	Facility Shape	**User Defined**
	Above Grade Storage Data	
	Bottom Area	**293 sq ft**
	Surface Area at Storage Depth 1	**376 ft**
	Storage Depth 1	**4.0 in** ⚠
	Growing Medium Depth	**24 in**
	Surface Capacity at Depth 1	**111.5 cu ft**
	Design Infiltration Rate for Native Soil	**0.000 in/hr**
	Infiltration Capacity	**0.016 cfs**
Facility Facts	Total Facility Area Including Freeboard	**376.00 sq ft**
	Sizing Ratio	**2.4%**
Pollution Reduction Results	Pollution Reduction Score	**Pass**
	Overflow Volume	**815.066 cf**
	Surface Capacity Used	**89%**
Flow Control Results	Flow Control Score	**Fail**
	Overflow Volume	**4138.425 cf**
	Surface Capacity Used	**100%**

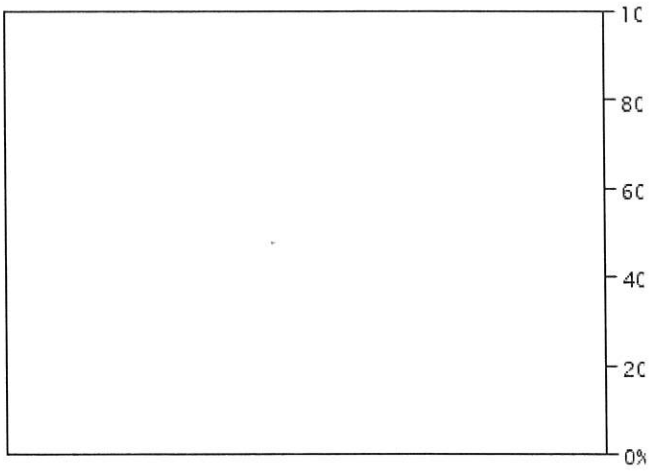
⚠ Indicates value is outside of recommended range

	Post-development outflow (cfs)		Pre-development inflow (cfs)	
2 year	0.221	≤ ½ of	0.02	**Fail**
5 year	0.27	≤	0.045	**Fail**
10 year	0.319	≤	0.074	**Fail**
25 year	0.367	≤	0.107	**Fail**

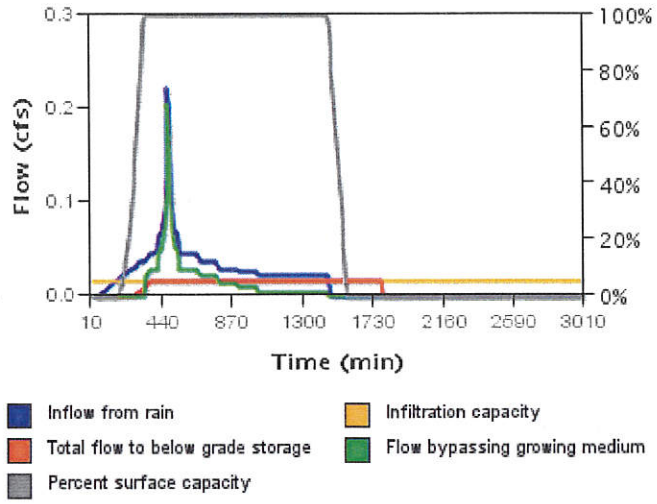
Pollution Reduction Event Surface Facility Modeling



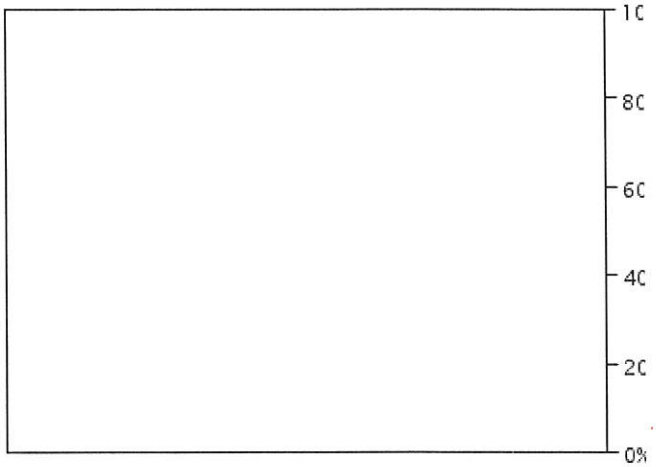
Pollution Reduction Event Below Grade Modeling



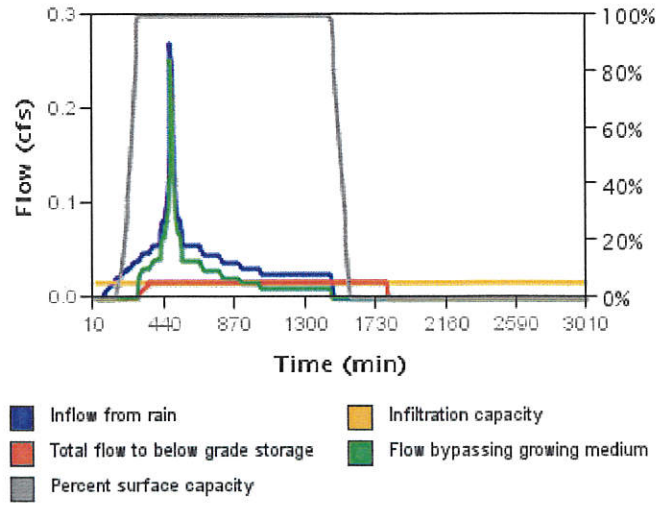
2 Year Event Surface Facility Modeling



2 Year Event Below Grade Modeling



5 Year Event Surface Facility Modeling



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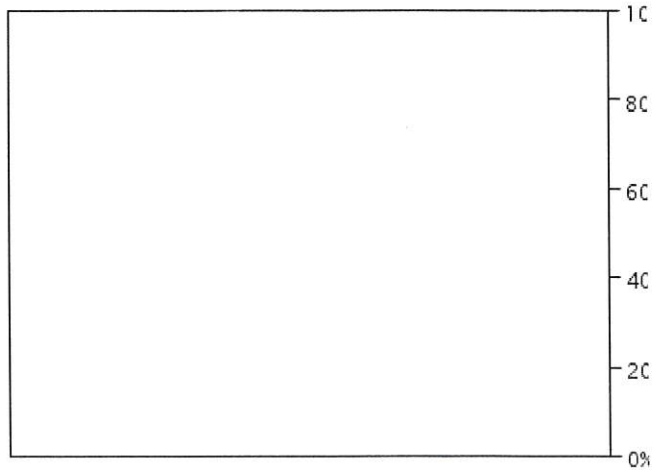

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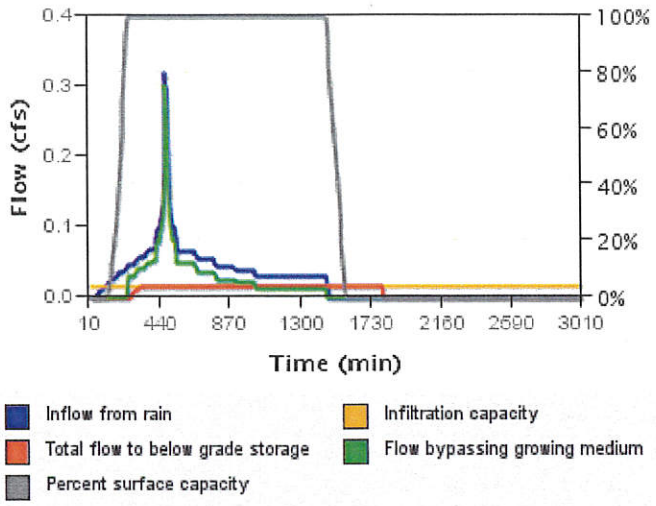
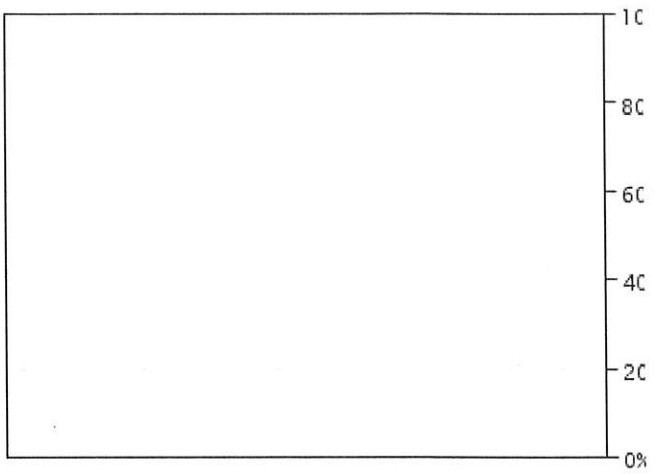
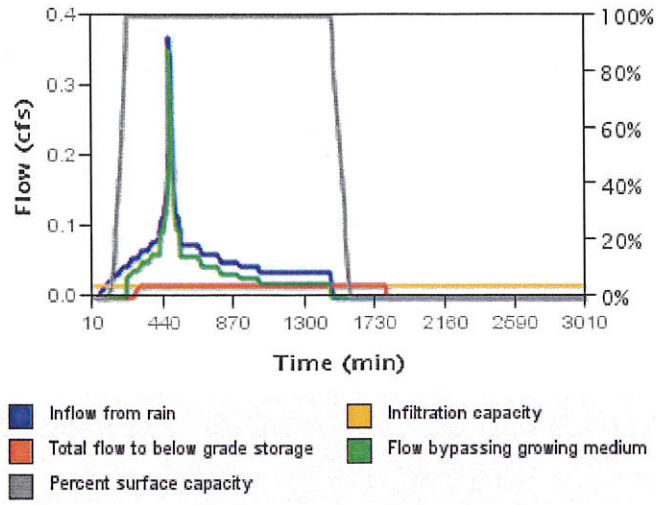


10 Year Event Below Grade Modeling



25 Year Event Surface Facility Modeling



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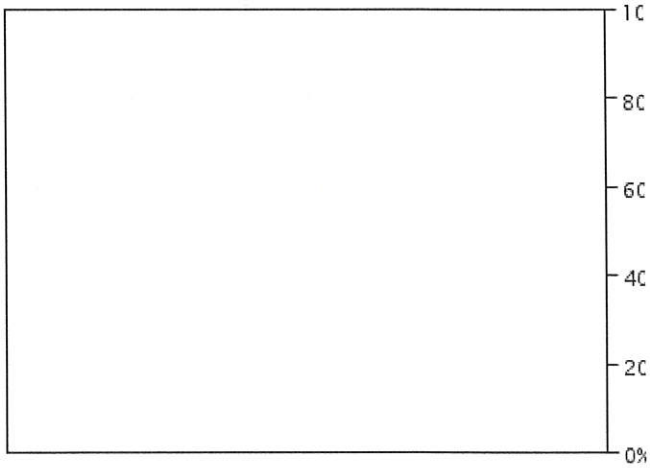

APPENDIX G

CONVEYANCE CALCULATIONS

Project name: **Day Wireless - 37th Milwaukie** **Project number:** **2160642.00**

100 year/24-hour storm event

By: NKL Checked:

Date: 6/26/17 Date:

n = 0.013

RD = Roof Drain MH = Manhole

CI = Curb Inlet MWS= Modular Wetland

AD= Area Drain OV= Overflow

Pipe Link	Drainage Basin	Time of Concentration (min)	Total Time(min)	100-yr Storm Intensity(in/hr)	Incr. Area(Ac)	Coef. Of Runoff	Incr. Equiv.(CxA)	Total Equiv. Area	**Runoff (cfs)**	Slope(%)	Diameter (in)	Pipe Area (sf)	Hydraulic Radius^2/3	Capacity (cfs)	Velocity at Design Flow (fps)	**Runoff/Capacity (ratio)**	Length(ft)	Incr. Time(min)
	OV1	5.00	5.00	4.14	0.185	0.9	0.17	0.17	**0.69**	1.00	8	0.349	0.303	1.20	3.53	**0.57**	100	0.47
	OV2	5.00	5.00	4.14	0.360	0.9	0.32	0.32	**1.34**	1.25	8	0.349	0.303	1.35	4.33	**1.00**	4	0.02
1		0.47	5.47	4.02				0.49	**1.97**	0.55	12	0.785	0.397	2.63	3.64	**0.75**	6	0.03
2									**0.30**	0.55	8	0.349	0.303	0.89	2.28	**0.33**	18	0.13

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

August 4th, 2016

Tara Lund
CIDA, Inc
15895 SW 72nd Ave #200
Portland Oregon 97224

Re: Preapplication Report

Dear Tara:

Enclosed is the Preapplication Report Summary from your meeting with the City on July 21, 2016, concerning your proposal for action on property located at 11405 SE 37th Avenue.

A preapplication conference is required prior to submittal of certain types of land use applications in the City of Milwaukie. Where a preapplication conference is required, please be advised of the following:

- Preapplication conferences are valid for a period of 2 years from the date of the conference. If a land use application or development permit has not been submitted within 2 years of the conference date, the Planning Director may require a new preapplication conference.

- If a development proposal is significantly modified after a preapplication conference occurs, the Planning Director may require a new preapplication conference.

If you have any questions concerning the content of this report, please contact the appropriate City staff.

Sincerely,

Joyce B Stahly

Joyce B. Stahly
Administrative Specialist II

Enclosure

cc: Travis King
Justin James
Suvi Wesa
Jeff McArther
File

CITY OF MILWAUKIE

PreApp Project ID #: 16-019PA

PRE-APPLICATION CONFERENCE REPORT

This report is provided as a follow-up to a meeting that was held on 7/21/2016 at 10:00AM

Applicant Name:	**TARA LUND**
Company:	**CIDA INC**
Applicant 'Role':	Architect
Address Line 1:	15895 SW 72ND AVE
Address Line 2:	
City, State Zip:	PORTLAND OR 97224
Project Name:	**BUILDING AND SITE IMPROVEMENTS**
Description:	**10,000 SF BUILDING AND ASSOCIATED SITE IMPROVEMENTS**
ProjectAddress:	**11405 SE 37TH AVE**
Zone:	Business Industrial BI
Occupancy Group:	
ConstructionType:	
Use:	Industrial
Occupant Load:	
AppsPresent:	Travis King, Justin James, Suvi Wesa, Tara Lund, Jeff McArthur
Staff Attendance:	Vera Kolias, Alex Roller, Claire Lust, Matt Amas

BUILDING ISSUES

ADA:

Structural:

Mechanical:

Plumbing:

Plumb Site Utilities:

Electrical:

Notes: NONE NOTED

Please note all drawings must be individually rolled. If the drawings are small enough to fold they must be individually folded.

FIRE MARSHAL ISSUES

Fire Sprinklers:

Fire Alarms:

Fire Hydrants:

Turn Arounds:

Addressing:

Fire Protection:

Fire Access:

Hazardous Mat.:

Fire Marshal Notes: SEE ATTACHED LETTER

PUBLIC WORKS ISSUES

Water: A City of Milwaukie water main on SE 37th provides service to property. The water System Development Charge (SDC) is based on the size of water meter serving the property. The corresponding water SDC will be assessed with installation of a water meter. Water SDC credit will be provided based on the size of any existing water meter serving the property removed from service. The water SDC will be assessed and collected at the time the building permits are issued.

Sewer: A City of Milwaukie 10-inch wastewater main on SE 37th Avenue provides service to property. Currently, the wastewater System Development Charge (SDC) is comprised of two components. The first component is the City's SDC charge of $894.00 and the second component is the County's SDC for treatment of $6,130 that the City collects and forwards to the County. Both SDC charges are per connection unit. The wastewater SDC is assessed using a plumbing fixture count from Table 7-3 of the Uniform Plumbing Code. The wastewater SDC connection units are calculated by dividing the fixture count of new plumbing fixtures by sixteen. The wastewater SDC will be assessed and collected at the time the building permits are issued.

Storm: Submission of a storm water management plan by a qualified professional engineer is required as part of the proposed development. The plan shall conform to Section 2 - Stormwater Design Standards of the City of Milwaukie Pubic Works Standards.
The storm water management plan shall demonstrate that the post-development runoff does not exceed the pre-development, including any existing storm water management facilities serving the development property. Also, the plan shall demonstrate compliance with water quality standards. The City of Milwaukie has adopted the City of Portland 2008 Stormwater Management Manual for design of water quality facilities.
All new impervious surfaces, including replacement of impervious surface with new impervious surfaces, are subject to the water quality standards. See City of Milwaukie Public Works Standards for design and construction standards and detailed drawings.

The storm SDC is based on the amount of new impervious surface constructed at the site. One storm SDC unit is the equivalent of 2,706 square feet of impervious surface. The storm SDC is currently $844 per unit. The storm SDC will be assessed and collected at the time the building permits are issued

Street: The proposed development fronts the west side of SE 37th Avenue, a collector. The portion of SE 37th Avenue fronting the proposed development has a right-of-way width of 60 feet and a paved width of 42 feet with curb on both sides. Sidewalk is present on portion of east side of 37th.

Frontage: Chapter 19.700 of the Milwaukie Municipal Code, hereafter referred to as "Code", applies to partitions, subdivisions, and new construction.

Transportation Facility Requirements, Code Section 19.708, states that all rights-of-way, streets, sidewalks, necessary public improvements, and other public transportation facilities located in the public right-of-way and abutting the development site shall be adequate at the time of development or shall be made adequate in a timely manner.

SE 37th Avenue
According to Code Table 19.708.2 and the Transportation Design Manual, the collector street cross section includes the following:

- 12-foot travel lanes
- 14-foot turn lane
- 3.5-foot landscape strips
- 6-foot setback sidewalks

The applicant is responsible for constructing a 6' wide set back sidewalk along the entire 37th Avenue frontage.

Applicant shall also construct ADA compliant ramp on 37th frontage for existing crosswalk.

Right of Way: The existing right-of-way on SE 37th Avenue fronting the proposed development is of adequate width and no right-of-way dedication is required.

Driveways: 12.16.040.B.1.b requires minimum 300 feet between driveways on a collector street. This spacing requirement is for spacing between driveways (including adjacent property's driveways), as well as spacing from driveway to intersection. This may be modified through 12.16.040.B.2 "submission of an access study prepared and certified by a registered professional traffic engineer..." This is not applicable to the combination driveway that is proposed. The split driveway will be considered one driveway for spacing purposes.

Code Section 12.16.040.A states that access to private property shall be permitted with the use of driveway curb cuts and driveways shall meet all applicable guidelines of the Americans with Disabilities Act (ADA). Driveway approaches shall be improved to meet the requirements of Milwaukie's Public Works Standards. If approaches do not conform to City standards, an alternate design may be submitted for potential approval.

Erosion Control: Per Code Section 16.28.020(C), an erosion control permit is required prior to placement of fill, site clearing, or land disturbances, including but not limited to grubbing, clearing or removal of ground vegetation, grading, excavation, or other activities, any of which results in the disturbance or exposure of soils exceeding five hundred square feet.

Code Section 16.28.020(E) states that an erosion control permit is required prior to issuance of building permits or approval of construction plans. Also, Section 16.28.020(B) states that an erosion control plan that meets the requirements of Section 16.28.030 is required prior to any approval of an

erosion control permit

Traffic Impact Study: Code Section 19.704.1(A) states that the City will determine whether a transportation impact study (TIS) is required. In the event the proposed development will significantly increase the intensity of use, a transportation impact study will be required. The City of Milwaukie Engineering Director will make this determination based on proposed preliminary subdivision design and the number of lots created.

Applicant shall provide a narrative indicating expected trip counts (including trucks) to/from the property. Narrative must address truck turning movements both on site and in the right-of-way and potential vehicle stacking in the center turn lane. It is on this narrative that the Milwaukie Engineering Director bases their decision on the need for the traffic impact study.

If required, the transportation impact study triggers a Transportation Facilities Review (TFR) Land Use Application to be filed concurrent with the land use application. Once the scope of the proposed development is determined and a deposit of $1000.00 is paid, the City of Milwaukie will provide a detailed transportation impact study scope for the traffic study. When the traffic impact study is completed in accordance with the TIS scope, the applicant shall schedule a second pre-application meeting with Milwaukie Engineering Staff. The second pre-application meeting will allow Engineering staff to review and comment on the applicant's traffic impact study prior to submission of any land use applications. The fee for the second pre-application meeting is $100.00 and a deposit of $2500.00. Upon completion of the second pre-application meeting, the applicant may submit their land use applications

PW Notes:

TRANSPORTATION SDC
The Transportation SDC will be based on the increase in trips generated by the new use per the Trip Generation Handbook from the Institute of Transportation Engineers. The SDC for transportation is $1,921 per trip generated. Credits will be given for any demolished structures, which shall be based upon the existing use of the structures.

PARKS & RECREATION SDC
The parks & recreation System Development Charge (SDC) is triggered when application for a building permit on a new dwelling is received. Commercial properties are accessed fees based on employee counts that correspond to the use of the building. Currently, the parks and recreation SDC for each employee is $60.00. SDC will be assessed and collected at the time the building permits are issued.

REQUIREMENTS AT FINAL PLAT
- Engineered plans for public improvements (street, sidewalk, and utility) are to be submitted and approved prior to start of construction. Full-engineered design is required along the frontage of the proposed development.

- The applicant shall pay an inspection fee of 5.5% of the cost of public improvements prior to start of construction.

- The applicant shall provide a payment and performance bond for 100% of the cost of the public improvements prior to the start of construction.

- The applicant shall provide a final approved set of Mylar "As Constructed" drawings to the City of Milwaukie prior to the final inspection.

- The applicant shall provide an 18 month maintenance bond for 100% of the cost of the public improvements prior to the final inspection

On site ADA accessible routes are required between the front door and the street sidewalk.

PLANNING ISSUES

Setbacks: Business Industrial Zone BI: Front yard 20 ft. All other yards are 0 ft/ no setback required.

Landscape: Business Industrial Zone BI: 15% of the site must be landscaped, except for sites adjacent to Hwy. 224, which shall provide landscaping to 20% of the site. This should consist of a variety of lawn, trees, shrubbery, and ground cover. Street trees must be provided along street frontages and within required off-street parking lots to help delineate entrances, provide shade, and permeable areas for stormwater runoff. A bond or financial guarantee for landscape completion shall be required.

Parking: (MMC 19.600) Warehousing uses - 0.5 space per 1,000 sq ft floor area minimum, 1 space per 1,000 sq ft floor area maximum.
Retail uses - 2 spaces per 1,000 sq ft floor area minimum, 5 spaces per 1,000 sq ft floor area maximum
Office uses - 2 spaces per 1,000 sq ft floor area minimum, 3.4 spaces per 1,000 sq ft floor area maximum

The applicant is encouraged to review MMC 19.606 to ensure that the proposed parking area conforms to code requirements for design and landscaping.

Transportation Review: The City's transportation requirements are located in MMC 19.700. See 'Public Works' for additional information.

Application Procedures: The proposed development is an approximately 10,300 SF building for a tool sales, tool repair, and parts distribution operation. This proposal requires both Development Review and Natural Resources review as follows:

1. Type II Development Review

2. Natural Resources

The notes describe the application procedures for each request below. A combination of requests would require submittal of the applications listed for each.

The following applications must be submitted and approved prior to submittal of a development permit:

1. Development Review (Type II):
New construction of over 1,000 sq ft in the Manufacturing Zone within 120 ft of areas zoned for residential uses or within any part Business Industrial Zone is subject to Type II Development Review per MMC 19.906. The subject property is in the BI Zone and is for proposed development of approximately 10,300 SF. Therefore, the application would be reviewed through a Type II review per MMC 19.1005; the application fee for Type II review is $1,000.
The following sections of the Milwaukie Municipal Code apply to a Development Review for the proposed project: MMC 19.310 Business Industrial Zone BI; MMC 19.906.4 Approval Criteria; MMC 19.400 Natural Resources; MMC 19.500 Supplementary Development Regulations; MMC 19.600 Off-Street Parking and Loading; and MMC 19.700 Public Facility Improvements.

The proposed development includes warehouse, office, and retail uses. Warehouse and office uses are permitted outright in the BI Zone per 19.310. Retail uses are included in MMC 19.301.4 as limited

uses provided that they occupy no greater than 25 percent of total floor area. A limited use that is to be located in a building and exceeds 25 percent of the building's square footage shall be reviewed as a conditional use under the Type III procedure described in 19.1006. The application will need to confirm the mix of uses in order to determine the appropriate review type.

2. Natural Resources:
As shown on the Natural Resources map, the site contains HCA and WQR. With respect to HCA locations, the NR Administrative Map is assumed to be correct unless demonstrated otherwise. If required due to the extent of the proposed development, MMC 19.402.15 provides the process by which the applicant could challenge the accuracy of the NR Administrative Map through a Type I boundary verification process.

MMC 19.402.11.D describes the non-discretionary standards for activities in the HCA. To avoid or minimize impacts to HCAs, activities that would disturb an HCA are subject to area limitations. For the proposed project, a net disturbance area of 10% of the HCA (less the area of the WQR) on the site is allowed by right through a Type I process, subject to the mitigation requirements described in MMC 19.402.11.D.2.

During development of the site, development standards as identified in MMC 19.402.11 apply.

For any work in the WQR: if less than 150 sf of area will be disturbed in conjunction with the proposed project, a construction management plan shall be submitted according to the provisions of MMC 19.402.9 (Type I). If more than 150 sf of area will be disturbed, then the proposal will be subject to Type II or Type III review, per MMC 19.402.7 and MMC 19.402.8 respectively. The same requirements for general discretionary review per MMC 19.402.12 apply as well as the development standards in MMC 19.402.11.

Verification of the location of the pond and stream that are proximate to the subject property, and confirmation of whether or not they are a protected water feature will be necessary. Table 19.402.15 describes how the width of the vegetated corridor around a protected water feature is determined. If the slope adjacent to the feature is less than 25%, the buffer is 50 ft from the top of the bank. Confirmation of the extent of work and disturbance will be necessary as part of the natural resources review.

Application fees are based on the current fee schedule. Fees are typically updated on July 1st of each year. Current application fees are as follows: Type I = $200; Type II = $1,000; Type III = $2,000. For concurrent applications, a 25% discount is applied (no discount for the most expensive application).

For the City's initial review, the applicant should submit 5 complete copies of the application, including all required forms and checklists. A determination of the application's completeness will be issued within 30 days. If deemed incomplete, additional information will be requested. If deemed complete, additional copies of the application will be required for referral to other departments, the Neighborhood District Association (NDA), and other relevant parties and agencies. City staff will inform the applicant of the total number of copies needed.

Land use application submission materials are listed below for your convenience. Land use applications and submittal requirements information can be found at: http://www.milwaukieoregon.gov/planning/land-use-application .

1. All applicable land use applications forms with signatures of property owners.

2. All applicable land use application fees.
3. Completed and signed "Submittal Requirements" form.
4. 5 copies of an existing conditions and a proposed conditions site plan, both to scale. These two site plans can be combined onto one site plan.

Once the application is deemed complete, additional copies will be requested for distribution to City departments, applicable governmental agencies, and the neighborhood district association for review.

Type I applications are reviewed by the Planning Director and do not require public notice. Staff will determine completeness within 14 days of the application being submitted, and will provide written notice of the decision to the applicant and property owner within 14 days from when the application was deemed complete. A Type I decision may be appealed within 15 days from the date that the notice of decision was mailed.

For Type II review, public notice of the application will be mailed to property owners and residents within 300 ft of the subject property no later than 7 days after the application is deemed complete, with 14 days allowed for comments in response. Within 7 days of being deemed complete, a sign giving notice of the application must also be posted on the subject property, to remain until the decision is issued. A decision by the Planning Director will not be issued before the end of the 14-day comment period.

Type III applications are quasi-judicial in nature and are decided by the Planning Commission at a public hearing. The Planning Commission hears land use applications on the second and fourth Tuesdays of every month, and completed applications need to be submitted to the Planning Department no later than 45 days prior to the target Planning Commission hearing. In general, staff recommends that applications be submitted one to two weeks before the 45-day deadline in order to ensure that there is time to make the applications complete if they are initially deemed incomplete. Once the Planning Commission renders a decision, there is a fifteen calendar-day appeal period. Building permits will be accepted for review only after the appeal period for all land use decisions has expired.

Concurrent applications are reviewed together and follow the review procedure of the highest level of review.

Natural Resource Review: The western portion of the site includes a Habitat Conservation Area (HCA) and Water Quality Resource area (WQR). See Application Procedures above for a description of the natural resources review process.

Lot Geography: The property is a roughly trapezoidal lot and is 45,894 sf in area. The lot fronts on SE 37th Avenue.

Planning Notes: 1. The preapplication conference is valid for purposes of submitting future land use applications as described in MMC 19.1002.4. A preapplication conference is valid for 2 years.

2. Information was requested regarding fire flow testing. The Water Department has records of flow tests on several hundred hydrants in the City, which may include those on site. There is an existing 4" fire line at the site fitted with a 4" Double Detector Check valve. If a flow test is required, the requestor is responsible to perform the test using their own calibrated gauges and flow equipment. The Water Department monitors the test and operates the valves to prevent damage to the system or to surrounding property, and to ensure proper elimination of any chlorine residual. Testing takes place on weekdays between 8am and 2pm, and test results must be provided to the Water Department to update their records. Tampering with a hydrant, or testing without notice or City supervision will result in a $500 fine as well as fees for any and all damage.

Typically a request for fire flow information comes from a fire system contractor, engineering firm, or

insurance company. The Water Department can provide a list of fire service contractors certified for fire systems. There is not an application process or fee. The City is pleased to assist with flow testing as it also provides valuable data for the City. For more information please contact Don Simenson, Water Quality Coordinator at (503) 786-7622, simensond@milwaukieoregon.gov or Michael Cunningham at (503) 786-7686, cunninghamm@milwaukieoregon.gov.

3. For information regarding regulations for signs, the sign ordinance can be found here: http://www.qcode.us/codes/milwaukie/view.php?topic=14&frames=on.

4. The full Milwaukie Municipal Code is located online at http://www.qcode.us/codes/milwaukie/.

5. Land use application forms and submittal requirements are located online at http://www.milwaukieoregon.gov/planning/land-use-application.

ADDITIONAL NOTES AND ISSUES

County Health Notes:

Other Notes:

This is only preliminary preapplication conference information based on the applicant's proposal and does not cover all possible development scenarios. Other requirements may be added after an applicant submits land use applications or building permits. City policies and code requirements are subject to change. If you have any questions, please contact the City staff that attended the conference (listed on Page 1). Contact numbers for these staff are City staff listed at the end of the report.

Sincerely,

City of Milwaukie Development Review Team

BUILDING DEPARTMENT

Sam Vandagriff - Building Official - 503-786-7611

Bonnie Lanz - Permit Specialist - 503-786-7613

ENGINEERING DEPARTMENT

Chuck Eaton - Engineering Director - 503-786-7605

Rick Buen - Civil Engineer - 503 -786-7609

Vacant - Engineering Tech II - 503-786-7610

Geoff Nettleton - Civil Engineer - 503-786-7609

Alex Roller - Engineering Tech II - 503-786-7695

COMMUNITY DEVELOPMENT DEPARTMENT

Alma Flores - Com Dev Director - 503-786-7652

Joyce B Stahly - Admin Specialist - 503-786-7600

Avery Pickard - Admin Specialist - 503-786-7600

Alicia Martin -Admin Specialist - 503-786-7600

PLANNING DEPARTMENT

Denny Egner - Planning Director - 503-786-7654

David Levitan - Senior Planner - 503-786-7627

Brett Kelver - Associate Planner - 503-786-7657

Vera Kolias - Associate Planner - 503-786-7653

CLACKAMAS FIRE DISTRICT

Mike Boumann - Lieutenant Deputy Fire Marshal - 503-742-2673

Matt Amos - Fire Inspector - 503-742-2661

Clackamas County Fire District #1
Fire Prevention Office

E-mail Memorandum

To: City of Milwaukie Planning Department

From: Matt Amos, Fire Inspector, Clackamas Fire District #1

Date: 8/5/2016

Re: New Building at Vacant Lot south of 11086 SE 37th. 16-019PA

This review is based upon the current version of the Oregon Fire Code (OFC), as adopted by the Oregon State Fire Marshal's Office. The scope of review is typically limited to fire apparatus access and water supply, although the applicant must comply with all applicable OFC requirements. When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access and water supply may be modified as approved by the fire code official. The following items should be addressed by the applicant:

COMMENTS:

Fire Access:

1) No part of a building may be more than 150 feet from an approved fire department access road.
2) The inside turning radius and outside turning radius for a 20' wide road shall not be less than 28 feet and 48 feet respectively, measured from the same center point.

Water Supply:

1) Fire Hydrants, Commercial Buildings: Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. Note: This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
2) Storage of commodities in excess of 12 feet in height shall comply with the high pile storage provisions of the Fire Code.

A Fire Access and Water Supply plan is required for subdivisions and commercial buildings over 1000 square feet in size or when required by Clackamas Fire District #1. The plan shall show fire apparatus access, fire lanes, fire hydrants, fire lines, available fire flow, FDC location (if applicable), building square footage, and type of construction. The applicant shall provide fire flow tests per NFPA 291, and shall be no older than 12 months. Work to be completed by experienced and responsible persons and coordinated with the local water authority.

2930 S.E. Oak Grove Blvd. • Milwaukie, OR 97267 • 503-742-2660