MEETING NOTICE

TUALATIN ARCHITECTURAL REVIEW BOARD
June 10, 2015, 6:30 PM
POLICE TRAINING ROOM
8650 SW TUALATIN RD
TUALATIN, OR 97062

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1. **CALL TO ORDER**

   Members: Ed Truax, Skip Stanaway, John Howorth, Robert Perron, Chris Goodell, Terry Novak, and Michael Ward.

   Alternates: John Medvac

   Staff: Aquilla Hurd-Ravich, Planning Manager; Clare Fuchs, Senior Planner

2. **APPROVAL OF MINUTES**

   A. Approval of August 13, 2014 Minutes.

3. **COMMUNICATIONS FROM THE PUBLIC (NOT ON THE AGENDA)**

4. **PUBLIC HEARINGS**

   A. Koch Manufacturing Expansion Project Recommendation and Staff Report for AR-15-05.

5. **COMMUNICATIONS FROM BOARD MEMBERS**

6. **ADJOURNMENT**

MEMORANDUM
CITY OF TUALATIN

Architectural Review Board **2.**
Meeting Date: 06/10/2015
FROM: Lynette Sanford, Office Coordinator
Department: Community Development

Information

SUBJECT:
APPROVAL OF MINUTES

Attachments

No file(s) attached.

MEMORANDUM
CITY OF TUALATIN

Architectural Review Board **2. A.**
Meeting Date: 06/10/2015
FROM: Lynette Sanford, Office Coordinator
Department: Community Development

Information

SUBJECT:
Approval of August 13, 2014 Minutes.

Attachments

ARB Minutes 8.13.14

City of Tualatin

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UNOFFICIAL

ARCHITECTURAL REVIEW BOARD - MINUTES OF August 13, 2014

MEMBERS PRESENT:
Ed Truax, Chair
John Howorth (arrived after agenda item 2)
Terry Novak
Skip Stanaway
Robert Perron

STAFF PRESENT:
Aquilla Hurd-Ravich
Colin Cortes
Clare Fuchs
Tony Doran
Lynette Sanford

MEMBER ABSENT: John Medvec, Chris Goodell, Michael Ward

GUESTS: Lloyd Hill, Andrew Caulk, Kirsten Van Loo, Scott Miller, Steve Koch

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1. CALL TO ORDER AND ROLL CALL:

Chairman Truax called the meeting to order at 6:34 pm.

2. APPROVAL OF MINUTES:

Chairman Truax asked for review and approval of the April 9, 2014 ARB Minutes. MOTION by Stanaway SECONDED by Perron to approve the minutes. MOTION PASSED unanimously. (4-0).

3. COMMUNICATION FROM THE PUBLIC (NOT ON THE AGENDA):

None

4. PUBLIC HEARINGS:

A. Marquis Tualatin Cottages & Community Center Recommendation and Staff Report for AR-14-07.

Chairman Truax read the script for Quasi-Judicial Hearings.

Colin Cortes, Assistant Planner, presented the staff report for the Marquis Tualatin Cottages and Community Center, AR-14-07, which included a PowerPoint presentation. Mr. Cortes explained the this project is being brought to the Architectural Review Board for approval to develop a 9.34 acre site with a community building and 66 townhouses/duplexes which the applicant refers to these as cottages or “duettes”. This

is the second phase of Tualatin Marquis development of which the first phase is under construction. The elements under review include architecture, bike parking landscaping, lighting, parking, trash and recycling storage, tree preservation, and walkways and accessways.

Mr. Cortes explained that this project is being brought to the ARB because the proposal includes multi-family units adjacent to a Low Density Residential (RL) Planning District per Tualatin Develop Code (TDC) 73.020(2). The ARB is a final decision maker on Architectural Review's but the decision can be appealed to the City Council. Mr. Cortes added that the application was submitted June 20, 2014 and deemed complete June 30, 2014. The 120-day statutory review period, including appeal scenario, ends October 28, 2014.

Mr. Cortes went through the slides which detailed the accessways, lighting, side elevations, conditions, outdoor areas, exterior enclosed storage, landscaping, tree preservation and bike parking. Mr. Cortes explained that at least one of the trees on the property is a heritage tree which needs protection and will require additional processes through the parks division. Mr. Cortes added that the options of the ARB are to approve with staff recommended findings and conditions of approval, approve with amended findings and conditions of approval, or deny the application.

Kirstin Van Loo, Emerio Design
Ms. Van Loo stated that they have been working on the property for over seven years and that Mr. Cortes has been working diligently on the upgrades. Ms. Van Loo added that they have resolved many of the conditions of approval, but have two minor exceptions. The first exception is regarding outdoor storage. She stated that these design standards apply to multi-family projects and the code states that garages cannot be used for storage. The reason is in typical garages, the residents use these as a mini-storage facility. This is not the intent for this development. Ms. Van Loo acknowledged that these garages meet the standards of the code due to the extra storage areas and added that they are designed for people over the age of 55 who want to scale down. There is also no need for lawn maintenance and many of them may not own a vehicle.

Ms. Van Loo stated that the second condition they're questioning is the requirement that they have 25 feet of landscaping in the driveway of the entrance to the community building. The 25 feet is measured behind the property line. Ms. Van Loo is concerned that if they push back the landscaping, they will lose two parking spaces.

Chairman Truax stated he is conflicted about the site plans and it looks like the houses are on their own lots. Mr. Truax asked if the requirements would be different if the units were being sold individually on their own lots. Mr. Cortes responded that the application states that this development is considered multifamily and townhouse, so the requirements are the same. Mr. Truax brought up storage requirements and garage space. Discussion followed regarding garage space, storage requirements, and garbage containers. Mr. Stanaway asked how the garbage is handled. Ms. Loo responded that it is handled the same as single-family homes; they will have their own

garbage roll carts.

Lloyd Hill, Hill Architects, 1950 Blankenship Rd, West Linn
Mr. Hill stated that as an architect he has designed many complexes in other jurisdictions and has never had an outside storage requirement or any issues with storage. Mr. Perron asked if the occupants are required to park in the garage. Scott Miller, from Marquis Companies, stated that there is nothing in the CC & R's that require them to park in the garage. Mr. Cortes acknowledged that the off-street sparking and vehicular circulation areas shall be set back a minimum of 10 feet from any public right-of-way or properly line. The setback for townhouses shall be determined in the Architectural Review process (page 6 of the staff report).

Lara Lafontaine, an architect working on the project, stated due to additional to the additional ADA requirements in this development, there is additional clearances needed which is one of factors of the tight spaces. Discussion continued regarding the different garage sizes in the units and the garbage storage accommodations.

Mr. Stanaway brought up that there is a lack of diversity in paint colors and suggested that a materials board would be helpful. There was also discussion regarding flow throughout the development.

Chairman Truax asked the ARB members if they would like to add a condition, continue the hearing at a later date, or deny the application. It was decided among the members to approve with the following language:

- Regarding AR-2D, the ARB recommended that the applicant improve the proposed architecture and landscaping to be more diverse, including architectural features such as fenestration, exterior materials, roof planes, windows, while also making such improved architecture compatible with the design of other developments in the same general vicinity, in order to better meet the objectives of TDC 73.020(2)(a) and (b) and 73.120(14). In response to ARB direction, staff added Condition AR-2D3.

- Regarding AR-2J, the ARB recommended reducing the minimum front setback to garages from 20 feet (ft) to 18 ft to accommodate within garages storage areas required by 73.190(2)(a) while permitting a typical vehicle to park within a driveway. In response to ARB direction staff renumbered the proposed condition to AR-2J1 and added Condition AR-2J2.

- Regarding AR-2K, the ARB recommended that the units have mixed solid waste and source separated recyclables enclosures, positioned to not block garage entrances, and that the applicant provide private covenants, conditions and restrictions (CC&Rs) that regulate occupants of such storage, in order to better meet the objectives of TDC 73.226. In response to ARB direction, staff renumbered and revised the proposed condition to AR-2K1 and added AR-2K2, 3, and 4.

- Regarding AR-2S, the ARB recommended that because the purpose of the requirement is to provide on-site vehicle queuing length that is unlikely to block pedestrians or vehicles in the right-of-way, and that the future likely characteristics of SW Nasoma Lane together with the proposed parking lot site plan is sufficient to meet such intent, the proposed Community Center site plan complies with the requirement. In response to ARB direction, staff struck Condition AR-2S.

- Regarding AR-2Z, the ARB recommended that pedestrian ways connect the ends of the proposed shared driveways to the existing Tualatin Marquis Phase 1, the assisted living and skilled nursing facility, in order to better meet the objectives of TDC 73.120(16)-(18). In response to ARB direction, staff added Condition AR-2Z.

MOTION to approve the application subject to the conditions outlined in the staff report except as amended with new conditions and modifications from tonight's discussion. MOTION by Howorth, SECONDED by Stanaway to approve. MOTION PASSED unanimously 7-0.

B. River Ridge Apartment Complex Recommendation and Staff Report for AR-14-10 including Addendum.

Clare Fuchs, Senior Planner, presented the staff report on the River Ridge Apartment Complex which included a PowerPoint presentation. This application is to allow a 180 unit apartment complex in 15 separate buildings along with a clubhouse and pool. This is coming before the ARB because over 100 units are proposed pursuant to Tualatin Development Code (TDC) 73.030(2).

Ms. Fuchs went through the slides which detailed a vicinity map, existing conditions, elevations, and a site plan. Ms. Fuchs noted the property is on approximately 12 acres. One of the key issues that came up is the recreational area requirement. The applicant recently resubmitted an application which shows 81,000 square feet of recreational area, which is in excess of the requirement. Other key issues noted were parking requirements, landscaping minimum, and access stubs. The applicant has revised these issues. Staff has received no public comments on this application. Ms. Fuchs stated that staff recommends the approval of the application with conditions. The ARB has the option of approving with staff recommended findings and conditions, approve with amended findings and conditions, or deny the application.

Mr. Perron inquired about access from the 124th intersection and that the primary access should be at that point. Mr. Truax stated he was present at the hearings at the annexation and the access point was significant part of that.

Lloyd Hill, Hill Architects, 1950 Blankenship Rd, West Linn, OR
Mr. Hill, representing Mt. West Investments, presented drawings and site plans for review. Mr. Hill acknowledged that this site was a challenge with the Tualatin River and,

steep embankments, and erosion at the bank. Part of the area is also in a flood plain, which limits development. Mr. Hill interpreted the drawings which showed elevations, grading, landscaping, connections, and pathways. He also discussed the greenway trail along the river, which will ultimately have a connection from 99W and with a wide sidewalk connecting from the complex. Once the trail is connected, there will be a connection from the city park and Romer's Rest RV Park.

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Steve Koch, 1621 NE 2nd Ave, Portland, OR

Mr. Koch, the landscape architect for the project, presented an overview of the landscaping which included diverse trees planned the property. He also showed drawings of the proposed playground, sports court, and pool area. Mr. Howorth inquired about the connection access areas. Mr. Hill showed the connection access point on the drawings. Mr. Lloyd also discussed the different trash areas and provided the locations for those. Mr. Perron inquired about the elevation on the 100 year flood. Mr. Hill responded that it is 131.1 feet.

Mr. Stanaway inquired about access and view points to the river. Mr. Hill responded that a majority of the units in the project will have territorial views, especially the middle and upper floors. There are also many open recreation areas with views. Mr. Stanaway asked about architecture and the color options. Mr. Hill responded that there are six different building types and there will be at least two different color schemes. Discussion continued regarding access connections and parking spaces.

Chairman Truax asked to close the hearing. Mr. Stanaway stated he was concerned about the color scheme and would like an updated materials board that showed more than one color scheme. The members also agreed to approve the application with the following added conditions:

- The applicant shall provide three varied color palettes to use on the buildings to break up and individualize the construction

- Three access stubs shall be physically constructed and paved to the neighboring properties shown on Exhibit A (submitted August 8, 2014) connecting to tax lots 1400, 2203, and 2200 at a minimum 22-foot width no more than five feet away from the property line so off-site access easements are not needed. The access stub to tax lot 1800 shall be constructed and paved with a 2.1 slope to the property line. Construction access easements shall be provided to tax lots 1400, 2203, 1800, 2190, and 2192 until such time as physical cross drive aisles can be constructed and completed at a minimum 22-foot width. Gates or bollards shall be provided at each stub to prevent use until such time the neighboring property redevelops. A sign shall be placed at each stub that states, "future abutting property connection."

MOTION by Truax to approve the application subject to the conditions of the staff report as amended tonight with added conditions. MOVED by Stanaway, SECONDED by Howorth. MOTION PASSED 5-0.

5. COMMUNICATION FROM BOARD MEMBERS:

None

6. FUTURE ACTION ITEMS

Ms. Hurd-Ravich stated that there are no future meetings scheduled.

7. ADJOURNMENT

MOTION by Truax to adjourn the meeting at 10:29 pm.

_____ Lynette Sanford, Office Coordinator

MEMORANDUM
CITY OF TUALATIN

Architectural Review Board **4. A.**

Meeting Date: 06/10/2015

THROUGH: Aquilla Hurd-Ravich, Planning Manager

FROM: Clare Fuchs, Senior Planner

Department: Community Development

Information

SUBJECT:

Koch Manufacturing Expansion Project Recommendation and Staff Report for AR-15-05.

ISSUE BEFORE ARCHITECTURAL REVIEW BOARD:

Consideration of a request for Architectural Review AR-15-05 approval to develop an approximately 310,000 square foot industrial expansion to the existing Koch industrial campus in three buildings in three phases. One shell building will have to have buildings permits issued every two years from the date of this decision if approved.

Pacific Realty Associates, LP, (PacTrust) represented by Eric Sporre, proposes to develop five platted lots totaling 20-acres. These are Koch lots 1, 2, 3, 5, and 8. The property is currently undeveloped. The applicant requests to develop it into three speculative multi-tenant industrial park buildings totaling approximately 310,000 square feet (sq ft) with related site improvements in phased plan. The phasing would require one building permit for each of the three shell buildings to be issued every two years from the decision of this decision (June 10, 2015), if approved. All three shell buildings would need to start construction 6 years from the date of this decision, if approved.

The project is large enough to necessitate Architectural Review Board (ARB) review and decision pursuant to Tualatin Development Code (TDC) 73.030(2). An ARB decision is required because an industrial building over 150,000 square feet is proposed.

The site is bound another undeveloped Koch expansion lot to the north, SW 115th Avenue to the west, and developed industrial private properties to the south and east.

The applicant had a pre-application meeting on December 29, 2014. The neighborhood/developer meeting was held on January 29, 2015. In response to either the notice of application or notice of public hearing, staff received no letters of comment from property owners within 1,000 ft of the subject property, including pursuant to Tualatin Development Code (TDC) 31.064(1) within any residential subdivisions platted through the City, for inclusion in this staff report as of May 25, 2015.

EXECUTIVE SUMMARY:

Staff recommends the ARB consider the attached staff report with analysis and findings as well as the applicant's proposal and approve with conditions. There are three key issues of focus on the application according to staff.

1. SW 115th Avenue is a Collector Street in the City's Functional Classification plan, TDC 73.160(1)(b) requires an access between the on-site pedestrian walkway and any current bike lane.

2. TDC 73.160(3) requires windows and lighting so that tenants, employees, and police can watch over parking and loading areas. This proposal does not have sufficient windows to meet this requirement. Staff has recommended the applicant suggest a way to mitigate for this.

3. The third issue is show to provide a safe area south of Building 1 for employees to put trash. TDC 73.227(6)(a)(v) requires the trash enclosure to be centrally located and viewable from the building. Staff recommends the applicant to come up with some mitigation to make sure these trash enclosure locations are safe and visible to people inside the building.

DISCUSSION:

1. TDC 73.160(1)(b) requires an access between the on-site pedestrian walkways and any current bike lane. Staff suggests that the applicant provide an 8-foot wide accessway at one of the already proposed pedestrian walkway locations along the west side of Building 1. This link will need to be extended past the sidewalk and ramp into the existing bike lane.

2. TDC 73.160(3) requires windows and lighting so that tenants, employees, and police can watch over parking and loading areas. Staff has not received an adequate lighting plan, so staff has recommended a condition to revise the lighting plan to show all lighting labels, so staff can determine if adequate lighting is being provided all over the site. In addition, staff recommends that the applicant propose a way to keep watch over the parking and loading areas. If future tenants of this building do not propose adequate windows, perhaps a security camera plan could be reviewed and approved instead.

3. The third issue is to provide for a safe area south of Building 1 for employees to put trash to meet TDC 73.227(6)(a)(v). Staff recommends the applicant to come up with some mitigation to make sure these trash enclosure locations are safe. This could include a security camera plan or a window plan to be conditioned prior to Certificate of Occupancy. This plan would need to be reviewed and approved by staff that it provided adequate safety and security for Building 1's trash enclosure locations.

RECOMMENDATION:

Staff recommends the ARB consider the three key issues and formulate acceptable conditions of approval along with staff and the applicant. The Architectural Review Board has four options:

1. Approve with staff recommended findings and conditions of approval.
2. Approve with amended findings and conditions of approval.
3 Deny the application.
4. Continue the Hearing.

Attachments

Attachment 101 - Recommendation and Staff Report

Attachment 102 - Draft Public Facilities Report

Attachment 103 - Clean Water Services Memorandum

Attachment 104 - TVF&R Letter

Attachment 105 - Application with Site Plan and Elevations

Attachment 106 - Washington County Comment Letter
Attachment 107 - Community Services Comment Letter
Attachment 108 - Figure 11-1 Functional Classification and Traffic Signal Plan
Attachment 109 - Figure 2 Major Collector Street Design Standard
Attachment 110 - Guidelines for Good Exterior Lighting Plans

City of Tualatin

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REVISED

June 10, 2015

STAFF REPORT

RECOMMENDATION TO THE ARCHITECTURAL REVIEW BOARD

Case #: AR-15-05
Project: Koch Expansion
Location: SW 115th Avenue and SW Itel Street (Tax Map 2S1 27DB Lots 200, 300, and 400; Tax Map 2S1 27AC Lots 300 and 600)
Applicant: Mark Person, Planner, Mackenzie (503-224-9560)
Property Owner: PacTrust

Table of Contents

Attachment 101 - Recommendation and Staff Report

I. INTRODUCTION

Pacific Realty Associates, LP, (PacTrust) represented by Eric Sporre, proposes to develop five platted lots totaling 20-acres. These are Koch lots 1, 2, 3, 5, and 8. The property is currently undeveloped. The applicant requests to develop it into three speculative multi-tenant industrial park buildings totaling approximately 310,000 square feet (sq ft) with related site improvements in phased plan. The phasing would require one building permit for each of the three shell buildings to be issued every two years from the decision of this decision (June 10, 2015), if approved. All three shell buildings would need to start construction 6 years from the date of this decision, if approved.

The project is large enough to necessitate Architectural Review Board (ARB) review and decision pursuant to Tualatin Development Code (TDC) 73.030(2). An ARB decision is required because an industrial building over 150,000 square feet is proposed.

The site is bound another undeveloped Koch expansion lot to the north, SW 115th Avenue to the west, and developed industrial private properties to the south and east.

The applicant had a pre-application meeting on December 29, 2014. The neighborhood/developer meeting was held on January 29, 2015. In response to either the notice of application or notice of public hearing, staff received no letters of comment from property owners within 1,000 ft of the subject property, including pursuant to Tualatin Development Code (TDC) 31.064(1) within any residential subdivisions platted through the City, for inclusion in this staff report as of May 25, 2015.

II. APPLICABLE STANDARDS

A. City of Tualatin Community Plan, which is Chapters 1-30 of the TDC
B. City of Tualatin Development Code (TDC) Chapters 31-75
C. City of Tualatin Transportation System Plan (TSP) (Public Facilities Report, Attachment **102**)
D. City of Tualatin Public Works Construction Code (PWCC) (Public Facilities Report, Attachment **102**)
E. Clean Water Services (CWS) Design and Construction Standards, Resolution and Order 07-20. (Clean Water Services Memorandum, Attachment **103**)
F. Washington County Community Development Code (CDC) and Road Standards (Attachment **106**)
G. Oregon Fire Code (OFC) (Tualatin Valley Fire &Rescue [TVF&R] Letter, Attachment **104**)

III. ARCHITECTURAL REVIEW RECOMMENDED ANALYSIS & FINDINGS

A. Previous Land Use Actions

- SB-11-01 Subdivision
- AR-12-05 two approved industrial buildings

B. Tualatin Community Plan

The Tualatin Community Plan is the City comprehensive plan and exists as Chapters 1-30 of the TDC. When built in conformance with the conditions of approval, the project will be in compliance with the Tualatin Community Plan.

C. Planning Districts and Adjacent Land Uses

The subject property is located in the General Manufacturing (MG) Planning District where manufacturing, warehousing/distribution, and wholesaling uses are permitted pursuant to 61.020. Adjacent planning districts and land uses clockwise from north are:

N:	MG	undeveloped, future Koch expansion lot, owned by PacTrust.
E:	MG	Tri-County Industrial Park
S:	MG	McLane Food Service
W:	MG	Milgard Windows and Doors, La Z Boy Furniture Warehouse, Tualatin Indoor Soccer, Cargill, and Pacific Motion

D. Setback Requirements

61.060 Setback Requirements

(1) Front yard The minimum setback is 30 feet. When the front yard is across the street from a residential or Manufacturing Park (MP) District, a front yard setback of 50' is required.

(2) Side yard. The minimum setback is 0 to 50 feet, as determined through the Architectural Review process.

(3) Rear yard. The minimum setback is 0 to 50 feet as determined through the Architectural Review process. When the rear yard is adjacent to a property line or across the street from a residential or Manufacturing Park (MP) district, a rear yard setback of 50 feet is required.

(4) Corner lot yards. The minimum setback is the maximum setback prescribed for each yard for a sufficient distance from the street intersections and driveways to provide adequate sight distance for vehicular and pedestrian traffic at intersections and driveways, as determined through the Architectural Review process.

(5) The minimum parking and circulation area setback is 5 feet, except when a yard is adjacent to public streets or Residential or Manufacturing Park District, the minimum setback is 10 feet.

(6) No spur rail trackage shall be permitted within 200 feet of an adjacent residential district.

(7) No setbacks are required at points where side or rear property lines abut a rail-road right-of-way or spur track.

(8) No fence shall be constructed within 10 feet of a public right-of-way.

Based on the above definitions and the overall site plan (Sheet C2.1&2), meet all the

requirements above.

The subject site does not adjoin a residential or MP Planning District.

The setbacks exceed the minimum requirements of (1)-(4).

The site plans illustrate parking and circulation area setbacks of at least 10 ft along SW 115th Avenue and 5 ft elsewhere, meeting the requirement of (5).

The applicant proposes no spur rail tracks and none of the lots abut a rail line, the requirement of (6&7) is not applicable.

Because the site plans illustrate and note no fence along SW 115th Avenue and SW Itel Street and imply removal of the existing fencing along these public ROWs, the requirement of (8) is not applicable. The only fence proposed is for the water quality area, which meets the 10-foot setback.

E. Structure Height

61.080

(1) Except as provided in subsection (2), (3) or (4) of this Section, no structure within an MG District shall exceed a height of 60 feet and flagpoles which display the flag of the United States of America either alone or with the State of Oregon flag shall not exceed 100 feet above grade provided that the setbacks are not less than a distance equal to one and one-half times the flagpole height.

All elevations for all buildings show structure height of no higher than 42 feet. This standard is met.

F. Noise Mitigation

61.075 Sound Barrier Construction

(1) Sound barrier construction shall be used to intercept all straight-line lateral paths of 450 feet or less between a residential property within a residential planning district and any side edge of an overhead door or other doorway larger than 64 square feet, at a minimum height of eight feet above the floor elevation of the doorway.

Because there exists no straight-line lateral path of 450 or fewer feet between a residential property within a residential planning district and any side edge of an overhead door or other doorway larger than 64 square feet (sq ft), the requirement is not applicable.

63.051(1) Except as otherwise provided in this section, all industrial development shall comply with the Oregon State Department of Environmental Quality standards relating to noise. From 9:00 p.m. to 7:00 a.m., a dBA reading from an industrial development, whether new or existing, shall not exceed an L-max of 60 dBA when measured from a noise sensitive property.

Because staff cannot determine compliance until after approval of this AR, staff recommends iteration of the requirement as a condition of approval.

G. Site Planning

73.050 Criteria and Standards.

73.050(1)(a) The proposed site development, including the site plan, architecture, landscaping and graphic design, conforms to the standards of this and other applicable City ordinances, insofar as the location, height, appearance, etc. of the proposed development are involved.

This project has been reviewed based on TDC standards and other applicable general ordinances of the City of Tualatin. The proposed location, height, appearance, etc., of the development comply with the TDC and other applicable City ordinances as identified in this report and with applicable conditions of approval will be in compliance.

73.160 Standards.

(1)(b) For Industrial Uses:

(i) a concrete or asphalt paved pedestrian walkway shall be provided from the main building entrance to sidewalks in the public right-of-way and other on-site buildings and accessways. The walkway shall be a minimum of 5 feet in width.

The overall site plan (Sheet C2.1) indicates that each of the buildings has a walkway connection from the building entrance to a sidewalk in a public ROW and that each connection varies from five (5) to eight (8) ft wide, meeting the requirement.

(ii) walkways through parking areas, drive aisles and loading areas shall have a different appearance than the adjacent paved vehicular areas.

The overall site plan (Sheet C2.1) indicates that each walkway crossing has a different appearance than the adjacent paved vehicular areas by using concrete and striping, meeting the requirement.

(iii) accessways shall be provided as a connection between the development's walkway and bikeway circulation system and an adjacent bike lane.
(31.060 Accessway. A non-vehicular, paved pathway designed for pedestrian and bicycle use and providing convenient linkages between a development and adjacent residential and commercial properties and areas intended for public use such as schools, parks, and adjacent collector and arterial streets where transit stops or bike lanes are provided or designated. An accessway is not a sidewalk.)

The Functional Classification System shows SW 115th Avenue as containing a bike lane at full build out. Therefore, staff recommends a condition that the proposed accessway to SW 115th Avenue be extended and ramped into the existing lane pavement for bicycles.

The site plans illustrate that each of the buildings have accessways from building perimeter walkways to public sidewalks.

(iv) Accessways may be gated for security purposes

The applicant has chosen not to exercise this option.

(v) Outdoor Recreation Access Routes shall be provided between the development's walkway and bikeway circulation system and parks, bikeways and greenways where a bike or pedestrian path is designated. (31.060 Outdoor Recreational Access Route. A pedestrian path that provides access to a recreation trail. These trails are on City-owned property, exclusive

rights-of-way or easements, but are not necessarily located in a designated greenway. They are typically 1/4 mile or less in length.)

The applicant is providing a connection to the future Ice Age Tonquin trail on the east side of the property via the SW Itel Street. Additionally, the applicant is providing a 6-foot wide pedestrian walkway at the eastern end of the building connecting a building entrance so SW Itel Street.

73.160(1)(c) Curb ramps shall be provided wherever a walkway or accessway crosses a curb.
The site plans illustrate that all walkway and accessways between buildings and public sidewalks that cross curbs have curb ramps. Staff recommends this as a condition of approval.

(d) Accessways shall be a minimum of 8 feet wide and constructed in accordance with the Public Works Construction Code if they are public accessways, and if they are private access-ways they shall be constructed of asphalt, concrete or a pervious surface such as pervious asphalt or concrete, pavers or grasscrete, but not gravel or woody material, and be ADA compliant, if applicable.

The site plan shows an 8-foot pedestrian link to public sidewalk on the northeast side of Building 1 that can serve as the accessway to the trail. Staff recommends the applicant be conditioned to construct this as proposed.

(g) Accessways shall be constructed, owned and maintained by the property owner.

Staff acknowledges this.

73.160(3)
(a) Locate windows and provide lighting in a manner which enables tenants, employees and police to watch over pedestrian, parking and loading areas

(b) In commercial, public and semi-public development and where possible in industrial development, locate windows and provide lighting in a manner which enables surveillance of interior activity from the public right-of-way.

The applicant needs to provide cutoff information regarding the wall-mounted fixtures proposed on each building and around the site. Staff recommends the applicant revise the lighting plans based the Guidelines for Good Exterior Lighting Plans (Attachment 110).

Each proposed building lacks windows (all sides except south side of Building 1, and all sides of Buildings 5 and. Staff recommends the applicant propose an acceptable method to the Architectural Review Board of allowing police, employees, and tenants to watch over loading areas.

(c) Locate, orient and select on-site lighting to facilitate surveillance of on-site activities from the public right-of-way.

The site photometric plan (Sheet SL1.1) are inadequate to determine lighting measurements as the labels are too small and difficult to read. Staff recommends the applicant provide a revised photometric scatter plan with labels on each reading large enough to be read on a 24 x 36 plan sheet and a safety plan for monitoring trash enclosure areas.

(d) Provide an identification system which clearly locates buildings and their entries for patrons and emergency services.

Staff has recommended a condition for a system plan that meets this requirement.

73.160(4)(a) On and above grade electrical and mechanical equipment such as transformers, heat pumps and air conditioners shall be screened with sight obscuring fences, walls or landscaping.

The site and landscape plans illustrate at-grade electrical transformers for all buildings. Because the site plans might not include all intended at-grade equipment and do not include roof plans indicating placement and height of rooftop mechanical equipment, staff recommends iteration of the requirement as a condition of approval, adding that the applicant provide indication that if the applicant were to propose additional such equipment, that the applicant would comply with the requirement. Staff recommends a condition that the Planning Division will not sign off on future tenant improvement for this project that does not contain full opaque screening for ground and roof equipment.

73.160(4)(b) Outdoor storage, excluding mixed solid waste and source separated recyclables storage areas listed under TDC 73.227, shall be screened with a sight obscuring fence, wall, berm or dense evergreen landscaping.

Because the proposal involves no outdoor storage, excluding mixed solid waste and source separated recyclables storage areas listed under TDC 73.227, the requirement is not applicable. Future tenants will have to comply with this code section and could be subject to Architectural Review prior to installation of screening.

H. Structure Design

Section 73.050(1)
(b) The proposed design of the development is compatible with the design of other developments in the same general vicinity.
(c) The location, design, size, color and material of the exterior of all structures are compatible with the proposed development and appropriate to the design character of other development in the same vicinity.

The vicinity around the subject site is largely industrial or undeveloped. Most buildings are painted with two-tone neutral color schemes, and some are metal-sided sheds. The elevations illustrate two colors, the requirements are met.

73.100(2) All building exterior improvements approved through the Architectural Review Process shall be continually maintained including necessary painting and repair so as to remain substantially similar to original approval through the Architectural Review Process, unless subsequently altered with Community Development Director approval.

Staff recommends iteration of the requirement as a condition of approval.

I. Mixed Solid Waste and Source Separated Recyclables Storage Areas for New or Expanded Multi-Unit Residential, Commercial, Industrial, Public and Semi-Public Development

73.227(2)(a) The size and location of the storage area(s) shall be indicated on the site plan. Compliance with the requirements set forth below are reviewed through the Architectural Review process.

The applicant has chosen the option to have the trash and pick-up reviewed and approved by Republic Services, an approval letter has been submitted with this application. This requirement has been met.

73.227(6)(a)(i) To encourage its use, the storage area for source separated recyclables may be co-located with the storage area for mixed solid waste.
The applicant has chosen to exercise this option.

(iii) Storage area space requirements can be satisfied with a single location or multiple locations, and can combine both interior and exterior locations.

The applicant has chosen to exercise this option.

(iv) Exterior storage areas shall not be located within a required front yard setback or in a yard adjacent to a public or private street.

The trash enclosures are located on the south side of building 1 and the non-street side of buildings 5 and 8 meeting this requirement.

(v) Exterior storage areas shall be located in central and visible locations on the site to enhance security for users.

There is no non-street location to place the enclosures for building 1 that are also centrally located. Staff recommends that proposed location for the enclosures for Building 1 be approved with security cameras for each of the enclosures.

(vii) Storage areas shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on site or on public streets adjacent to the site.

The site plans illustrate enclosures placed in the interior of the site away from the public streets and the drive aisles closest to and paralleling the public streets. The requirement is met.

(iii)Exterior storage areas shall be enclosed by a sight obscuring fence or wall at least 6 feet in height. In multi-family, commercial, public and semi-public developments evergreen plants shall be placed around the enclosure walls, excluding the gate or entrance openings. Gate openings for haulers shall be a minimum of 10 feet wide and shall be capable of being secured in a closed and open position. A separate pedestrian access shall also be provided in multi-family, commercial, public and semi-public developments.

The trash enclosure details illustrate and note each enclosure with 8-ft high concrete walls. Staff recommends the trash plans be revised to show doors opening at least 180-degrees, evergreen plants around the walls, and with cane bolts capable of securing the gates in a closed or open position, an opening for pedestrian access, and door specifications that show doors will fullly screened trash dumpsters not to be constructed with chain link and vinyl slats.

(iv)Exterior storage areas shall have either a concrete or asphalt floor surface.

The trash enclosure details illustrate concrete floor surface, meeting the requirement.

(v)Storage areas and containers shall be clearly labeled to indicate the type of material accepted.

The proposed storage areas will have containers for different types of materials. Metro, the Portland metropolitan area regional government, provides that different materials are accepted in differently colored receptacles, and this is implemented by regional waste haulers, meeting the requirement.

73.227(6)(c)
(i) Access to storage areas can be limited for security reasons. However, the storage areas shall be accessible to users at convenient times of the day, and to hauler personnel on the day and approximate time they are scheduled to provide hauler service.

According to Republic Services standards, trash enclosures will have gates that open 120 to 180 degrees and have locking mechanisms (some, at full opening overlap, low landscaped areas and curbs; this is allowed by the hauler). Gates can be latched when closed, but storage areas will be accessible to haulers and pedestrians through gates and the pedestrian/cart access openings.

The requirement is met.

(iii)Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius shall be provided to allow vehicles to safely exit the site in a forward motion.

The site plans illustrate that no garbage truck backing out of a driveway onto a public street is necessary for hauler access to the enclosures, and more than one access point is available for each enclosure, meeting the requirement.

J. Landscaping

73.100(1) All landscaping approved through the Architectural Review Process shall be continually maintained, including necessary watering, weeding, pruning and replacement, in a manner substantially similar to that originally approved through the Architectural Review Process, unless subsequently altered with Community Development Director approval.

Staff recommends iteration of the requirement as a condition of approval.

73.160(3)(e) Shrubs in parking areas must not exceed 30 inches in height. Tree canopies must not extend below 8 feet measured from grade.

Staff recommends iteration of the requirement as a condition of approval.

73.240(3) The minimum area requirement for landscaping for uses in CO, CR, CC, CG, ML and MG Planning Districts shall be fifteen (15) percent of the total area to be developed, except within the Core Area Parking District, where the minimum area requirement for landscaping shall be 10 percent. When a dedication is granted on the subject property for a greenway or natural area, the minimum area requirement for landscaping may be reduced by 2.5 percent from the minimum area requirement as determined through the AR process.

Because neither Lot 1200 nor any of Lots A-D is within the Core Area Parking District, and the applicant proposes no dedication for a greenway or natural area, the minimum area requirement for landscaping for any of these lots is 15%. The applicant shows 28.1% landscaping for the subject site. This requirement is met.

73.240(8) Developments not in a Low Density Residential (RL) or Manufacturing Park (MP) Planning district but which abut an RL or MP Planning District shall provide and perpetually

maintain dense, evergreen landscaped buffers between allowed uses in the district and the adjacent Low Density Residential (RL) or Manufacturing Park (MP) Planning District as approved through the Architectural Review process.

Because the subject site does not abut an RL or MP Planning District, the requirement is not applicable.

73.240(9) Yards adjacent to public streets, except as described in 73.240(7), shall be planted to lawn or live groundcover and trees and shrubs and shall be perpetually maintained in a manner providing a park-like character to the property as approved through the Architectural Review process.

The landscape plans illustrate the yards adjacent to SW 115th Avenue and SW Itel Street planted to lawn or live groundcover and trees and shrubs.

73.240(10) Yards not adjacent to public streets or Low Density Residential (RL) or Manufacturing Park (MP) Planning Districts shall be planted with trees, shrubs, grass or other live groundcover, and maintained consistent with a landscape plan indicating areas of future expansion, as approved through the Architectural Review process.

The landscape plans illustrate the yards not adjacent to public streets planted with trees, shrubs, grass or other live groundcover, meeting the requirement.

73.240(11) Any required landscaped area shall be designed, constructed, installed, and maintained so that within three years the ground shall be covered by living grass or other plant materials. (The foliage crown of trees shall not be used to meet this requirement.) A maximum of 10% of the landscaped area may be covered with unvegetated areas of bark chips, rock or stone.

The landscape plans illustrate landscaped areas designed so that within three years the ground shall be covered by living grass or other plant materials and that no more than 10% of the landscaped area is covered with unvegetated areas of bark chips, rock or stone, meeting the requirement.

73.260(1)(a) Deciduous shade and ornamental trees shall be a minimum one and one-half inch (1 1/2") caliper measured six inches (6") above ground, balled and burlapped. Bare root trees will be acceptable to plant during their dormant season. Trees shall be characteristically shaped specimens.

73.260(1)(b) Coniferous trees shall be a minimum five feet (5') in height above ground, balled and burlapped. Bare root trees will be acceptable to plant during their dormant season. Trees shall be well branched and characteristically shaped specimens.

Staff recommends the landscaping plans be revised to meet this minimum requirement as a condition of approval as it is unclear which trees are deciduous and which are coniferous on the landscaping plans. Also some trees are listed as 4 to 5-feet high. If those are coniferous trees, they need to be at least 5-feet high. Staff also recommends conditioning the applicant to the larger vegetation sizes they have proposed.

73.260(1)(c) Evergreen and deciduous shrubs shall be at least 1 to 5 gallon size. Shrubs shall be characteristically branched. Side of shrub with best foliage shall be oriented to public view.

Shrubbery species of one (1) to five (5) gallon size at planting are noted, meeting the requirement. Staff recommends conditioning the applicant to the larger vegetation sizes they have proposed.

73.260(1)(d) Groundcovers shall be fully rooted and shall be well branched or leafed. English ivy (Hedera helix) is considered a high maintenance material, which is detrimental to other landscape materials and buildings and is therefore prohibited.

The plans list groundcover species other than English ivy, meeting the requirement.

73.260 (1)(e) Lawns shall consist of grasses, including sod, or seeds of acceptable mix within the local landscape industry. Lawns shall be 100 percent coverage and weed free.

The plans list seeded lawn among groundcovers, meeting the requirement.

73.280 Landscaped areas shall be irrigated with an automatic underground or drip irrigation system.

The plans indicate all new landscape areas to be irrigated with a fully automatic underground irrigation system providing 100% coverage, meeting the requirement.

73.310(1) A minimum 5-foot-wide landscaped area must be located along all building perimeters, which are viewable by the general public from parking lots or the public right-of-way, excluding loading areas, bicycle parking areas and pedestrian egress/ingress locations. Pedestrian amenities such as landscaped plazas and arcades may be substituted for this requirement. This requirement shall not apply where the distance along a wall between two vehicle or pedestrian access openings (such as entry doors, garage doors, carports and pedestrian corridors) is less than 8 feet.

The planting plans illustrate 5-ft building perimeter landscaping beyond loading areas and pedestrian egress/ingress locations, meeting the requirement.

73.310(2) Areas exclusively for pedestrian use that are developed with pavers, bricks, etc., and contain pedestrian amenities, such as benches, tables with umbrellas, children's play areas, shade trees, canopies, etc., may be included as part of the site landscape area requirement.

The applicant has chosen not to exercise this option.

73.310(3) All areas not occupied by buildings, parking spaces, driveways, drive aisles, pedestrian areas or undisturbed natural areas shall be landscaped.

The planting plans illustrate as landscaped all areas not occupied by buildings, parking spaces, driveways, drive aisles, pedestrian areas or undisturbed natural areas, meeting the requirement.

73.340(1) A clear zone shall be provided for the driver at ends of on-site drive aisles and at driveway entrances, vertically between a maximum of 30 inches and a minimum of 8 feet as measured from the ground level, except for parking structures and under-ground parking, where this provision shall not apply.

The planting plans delineate and note vision clearance triangles at the intersections of driveways and public streets and landscaping that respects horizontal and vertical clearances, meeting the requirement.

73.340(2) Perimeter site landscaping of at least 5 feet in width shall be provided in all off-street parking and vehicular circulation areas (including loading areas).
(a) The landscape area shall contain:
(i) Deciduous trees an average of not more than 30 feet on center. The trees shall meet the requirements of 73.360(7).
(ii) Plantings which reach a mature height of 30 inches in 3 years which provide screening of vehicular headlights year round.
(iii) Shrubs or ground cover, planted so as to achieve 90 percent coverage within three years.

The planting plans illustrate landscaping at least 5 ft deep onto the property along all off-street parking and vehicular circulation areas (including loading areas) containing deciduous trees, plantings which reach a mature height of 30 inches in 3 years which provide screening of vehicular headlights year round, and shrubs and ground cover planted so as to achieve 90 percent coverage within three years, meeting the requirement.

73.360
(1) A minimum of 25 square feet per parking stall shall be improved with landscape island areas, which are protected from vehicles by curbs. These landscape areas shall be dispersed throughout the parking area [see 73.380(3)].

Staff recommends a condition to show and illustrate the calculation on the landscaping plans that there are at least 25 square feet of landscaped islands for each parking space.

(2) All landscaped island areas with trees shall be a minimum of 5 feet in width (60 inches from inside of curb to curb) and protected with curbing from surface runoff and damage by vehicles. Landscaped areas shall contain groundcover or shrubs and deciduous shade trees.

The landscaping plans show that this subsection has been met.

(3) Provide a minimum of one deciduous shade tree for every four (4) parking spaces to lessen the adverse impacts of glare from paved surfaces and to emphasize circulation patterns. Required shade trees shall be uniformly distributed throughout the parking lot. The trees shall meet the requirements of 73.360(7).

Staff recommends a condition to illustrate the calculation on the landscaping plans to show there is at least one deciduous tree for every four parking spaces.

(4) Landscaped islands shall be utilized at aisle ends to protect parked vehicles from moving vehicles and emphasize vehicular circulation patterns.

The planting plans calculate the minimum required amount of landscaping and illustrate landscaped islands at all aisle ends to protect parked vehicles from moving vehicles and emphasize vehicular circulation patterns, meeting the requirement of (4).

73.360(5) Required landscaped areas shall be planted so as to achieve 90 percent coverage within three years.

The planting plans list plant materials and illustrate landscaping that can achieve 90% coverage within three years, meeting the requirement.

73.360(6)(a) Site access from the public street shall be defined with a landscape area not less than 5 feet in width on each side and extend 25 feet back from the property line for commercial, public, and semi-public development with 12 or more parking spaces and extend 30 feet back from the property line for industrial development.

The planting plans illustrate all driveways from the public streets defined with landscape areas no less than 5 ft wide on each side and extending 30 ft back from the property line for industrial development.

73.360(7) Deciduous shade trees shall meet the following criteria:

(a) Reach a mature height of 30 feet or more
(b) Cast moderate to dense shade in summer
(c) Long lived, i.e., over 60 years
(d) Do well in an urban environment
(i) Pollution tolerant
(ii) Tolerant of direct and reflected heat
(e) Require little maintenance
(i) Mechanically strong
(ii) Insect and disease resistant
(iii) Require little pruning
(f) Be resistant to drought conditions
(g) Be barren of fruit production.

The plans lists deciduous tree species with the above characteristics, meeting the requirement.

74.765 All trees, plants or shrubs planted in the right-of-way of the City shall conform in species and location and in accordance with the street tree plan in Schedule A. If the Operations Director determines that none of the species in Schedule A is appropriate or finds appropriate a species not listed, the Director may substitute an unlisted species.

Staff recommends a condition that all street trees are approved by The Operations Division prior to planting.

K. Tree Preservation

All tree cutting and preservation was addressed and approved through two previous land use files, SB-11-01 and AR-12-05. No trees exist on the subject site.

L. Grading

73.270(1) After completion of site grading, topsoil is to be restored to exposed cut and fill areas to provide a suitable base for seeding and planting.

The planting plan and planting details indicate topsoil placement in landscaped areas, meeting the requirement.

73.270(4) Impervious surface drainage shall be directed away from pedestrian walkways, dwelling units, buildings, outdoor private and shared areas and landscape areas except where the landscape area is a water quality facility.

The grading plans show that the drainage system directs stormwater away from walkways, buildings and landscape areas that are not WQFs, meeting the requirement.

M. Bicycle Parking, Off-Street Parking and Loading

73.370(2)(a) Industrial (i&ii) Manufacturing & Warehousing. Required bicycle parking is 2, or 0.1 spaces per 1,000 gross square feet, whichever is greater, of which the first 5 spaces or 30%, whichever is greater, shall be covered.

While the quantity exceeds the minimum requirement, however information about whether the first 5 bike spaces or 30%, whichever is greater, is covered could not be found. The applicant needs to revise the site plans to indicate for each of the buildings, where and how the first 5 bike spaces or at least 30%, whichever is

greater, is covered. Staff recommends a condition of approval to this effect.

73.370(1)
(n) Bicycle parking facilities shall either be lockable enclosures in which the bicycle is stored, or secure stationary racks, which accommodate a bicyclist's lock securing the frame and both wheels.
(o) Each bicycle parking space shall be at least 6 feet long and 2 feet wide, and overhead clearance in covered areas shall be at least 7 feet, unless a lower height is approved through the Architectural Review process.

Regarding (n), the site plans propose 61 bike parking spaces in the form of 11 racks across Buildings A-D, meeting the requirement.

Regarding (o), because the application materials lack in the narrative or on the site plans information about the physical characteristics of the site, staff cannot determine compliance. The applicant needs to provide notation on the site plans or a revised site details sheet indicating bike stall length, width, and overhead clearance of covered stalls. Staff recommends iteration of the requirement as a condition of approval.

73.370(1)
(r) Required bicycle parking shall be located in convenient, secure, and well lighted locations approved through the Architectural Review process.
(s) Bicycle parking facilities may be provided inside a building in suitable secure and accessible locations.
(u) Bicycle parking areas and facilities shall be identified with appropriate signing as specified in the *Manual on Uniform Traffic Control Devices* (MUTCD) (latest edition). At a minimum, bicycle parking signs shall be located at the main entrance and at the location of the bicycle parking facilities.

Because the application materials lack in the narrative or on the site plans information about the requirements, staff cannot determine compliance. The applicant needs to provide notation on the site plans or a revised site details sheet indicating bike parking locations and signage.

73.370(2)(a) Industrial [minimum motor vehicle parking requirement]
(i) manufacturing requires 1.6 parking spaces per 1,000 square feet.
(ii) warehousing requires 0.3 parking spaces per 1,000 square feet.
(iii) wholesale establishment requires 3.0 parking spaces per 1,000 square feet.

The applicant is able to meet the parking requirement on each lot by assuming 70% warehouse and 30% manufacturing. 378 spaces are being provided for the project.

This analysis and finding doesn't exempt the applicant, succeeding owners, or tenants from 73.370(1)(a) that specifies the City may reexamine parking supply at the time of establishment of a new structure or use, or change in use, or change in use of an existing structure.

73.370(3) The minimum number of off-street Vanpool and Carpool parking for commercial, institutional, and industrial uses is as follows:

Number of Required Parking Spaces	Number of Vanpool or Carpool Spaces

0 to 10	**1**
10 to 25	**2**
26 and greater	**1 for each 25 spaces**

Staff recommends a condition that the applicant illustrate where the 15 required vanpool and carpool parking will be. Signing and striping plans shall give specifications on the required carpool/vanpool signing and striping.

73.380
(1) Off-street parking lot design shall comply with the dimensional standards set forth in Figure 73-1 of this section.
(2) Parking stalls for sub-compact vehicles shall not exceed 35 percent of the total parking stalls required by Section 73.370(2).
(3) Off-street parking stalls shall not exceed eight continuous spaces in a row without a landscape separation.

The overall site plan lists up to 30% compact parking spaces and no parking aisles exceed 8 continuous spaces in a row without a landscaped island, meeting the requirements.

73.380
(4) Areas used for standing or maneuvering of vehicles shall have paved asphalt or concrete surfaces maintained adequately for all-weather use and so drained as to avoid the flow of water across sidewalks.
(6) Artificial lighting, which may be provided, shall be so deflected as not to shine or create glare in any residential planning district or on any adjacent dwelling, or any street right-of-way in such a manner as to impair the use of such way.
(7) Groups of more than 4 parking spaces shall be so located and served by driveways that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.
(9) Parking bumpers or wheel stops or curbing shall be provided to prevent cars from encroaching on the street right-of-way, adjacent landscaped areas, or adjacent pedestrian walkways.
(11) On-site drive aisles without parking spaces, which provide access to parking areas with regular spaces or with a mix of regular and sub-compact spaces, shall have a minimum width of 22 feet for two-way traffic and 12 feet for one-way traffic. On-site drive aisles without parking spaces, which provide access to parking areas with only sub-compact spaces, shall have a minimum width of 20 feet for two-way traffic and 12 feet for one-way traffic.

Regarding (4), the site plans illustrate that driveways, drive aisles, and parking are asphalt, meeting the requirement. Regarding (6), no residential districts or dwellings abut the site.

Regarding (7), the site plans illustrate that groups of more than 4 parking spaces located and served by driveways and drive aisles such that their use requires no backing movements or other maneuvering within either public street, meeting the requirement.

Regarding (9), the site plans illustrate curbing that prevents parked cars from encroaching on ROW, or adjacent landscaped areas or pedestrian walkways, meeting the requirement.

Regarding (11), the site plans illustrate that the narrowest drive aisle is 24 ft,

exceeding the minimum requirement.

73.390
(1) The minimum number of off-street loading berths for commercial, industrial, public and semi-public uses is as follows:

Square Feet of Floor Area	Number of Berths
Less than 5,000	0
5,000 - 25,000	1
25,000 - 60,000	2
60,000 and over	3

(2) Loading berths shall conform to the following minimum size specifications:
(a) Industrial uses - 12' x 60'
(c) Berths shall have an unobstructed height of 14'
(d) Loading berths shall not use the public right-of-way as part of the required off-street loading area.
(3) Required loading areas shall be screened from public view from public streets and adjacent properties by means of sight-obscuring landscaping, walls or other means, as approved through the Architectural Review process.

The number for each building exceeds the minimum requirement.

P. Vision Clearance

Vision clearance requirements at the driveways and street intersection shall comply with the requirements of 73.400(16).

The planting plans (Sheets L2.1-L2.5) delineate and note vision clearance triangles at the intersections of driveways and public streets and landscaping and buildings that respect these areas, meeting the requirement.

N. Signs

The applicant shall separately from this AR submit sign permit applications for any proposed signage.

O. Public Comment Received

Staff received no public comment on the application.

P. Time Limit on Approval

73.056 Architectural Review approvals shall expire after two years unless:
(1)A building, or grading permit submitted in conjunction with a building permit application, has been issued and substantial construction pursuant thereto has taken place and an inspection performed by a member of the Building Division; or
(2)The Architectural Review (AR) applicant requests in writing an extension and the City approves it. If the Community Development Director and City Engineer or their designees approved the AR. then the Community Development Director and City Engineer shall decide upon the extension request. If the Architectural Review Board (ARB) approved the AR. then the ARB shall decide upon the extension request. The applicant shall provide notice of extension request to past recipients of the AR notice of application and post a sign pursuant to TDC 31.064. Before approving an extension, the deciding party shall find the request meets these criteria:

(a)The applicant submitted a written extension request prior to the original expiration date.
(b)There have been no significant changes in any conditions, ordinances, regulations or other standards of the City or applicable agencies that affect the previously approved project so as to warrant its resubmittal for AR.
(c)If the previously approved application included a special study, the applicant provided with the extension a status report that shows no significant changes on the site or within the vicinity of the site. A letter from a recognized professional also would satisfy this criterion if it states that conditions have not changed after the original approval and that no new study is warranted.
(d)If the AR applicant neglected site maintenance and allowed the site to become blighted, the deciding party shall factor this into its decision.
(e)The deciding party shall grant no more than a single one-year extension for an AR approval.
(f) If the Community Development Director and City Engineer or their designees are the deciding party, then they shall decide within thirty (30) days of receipt of the request. If the ARB is the deciding party. then the ARB shall decide within sixty (60) days of receipt of the request. If the deciding party fails to decide within the applicable time period, the decision shall default to approval.

Pacific Realty Associates, LP, (PacTrust) represented by Eric Sporre, proposes to develop five platted lots totaling 20-acres. These are Koch lots 1, 2, 3, 5, and 8. The property is currently undeveloped. The applicant requests to develop it into three speculative multi-tenant industrial park buildings totaling approximately 310,000 square feet (sq ft) with related site improvements in phased plan. The TDC does not include any requirements or restrictions on phasing. The phasing would require one building permit for each of the three shell buildings to be issued every two years from the decision of this decision (June 10, 2015), if approved. All three shell buildings would need to start construction 6 years from the date of this decision, if approved. Staff recommends a condition consistent with these findings.

IV. ARCHITECTURAL REVIEW RECOMMENDED CONDITIONS OF APPROVAL

Based on the Findings and Conclusions presented in the staff report, staff recommends that AR-15-05 be approved, subject to the following Architectural Review Conditions of Approval:

AR-1 Prior to issuance of any grading permit(s) or on-site work, comply with Clean Water Services (CWS) and Tualatin Valley Fire & Rescue (TVF&R) requirements. A copy of the grading permit plans shall be forwarded to the Planning Division for review and approval of all conditions that affect the grading plans prior to grading permit issuance.

A. A Clean Water Services (the District) Storm Water Connection Permit Authorization must be obtained. Application for the District's Permit Authorization must be in accordance with the requirements of the Design and Construction Standards, Resolution and Order No. 07-20, (or current R&O in effect at time of Engineering plan submittal), and is to include:

1. Detailed plans prepared in accordance with Chapter 2, Section 2.04.2.b-l.

2. Detailed grading and erosion control plan. An Erosion Control Permit will be required. Area of Disturbance must be clearly identified on submitted construction plans. If site area and any offsite improvements required for this development exceed one-acre of disturbance, project will require a 1200-CN Erosion Control Permit. If site area and any offsite improvements required for this development exceed five-acres of disturbance, project will require a 1200-C Erosion Control Permit.

3. Detailed plans showing each lot within the development having direct access by gravity to public storm and sanitary sewer.

4. Provisions for water quality in accordance with the requirements of the above named design standards. Water Quality is required for all new development and redevelopment areas per R&O 07-20, Section 4.05.5, Table 4-1. Access shall be provided for maintenance of facility per R&O 07-20, Section 4.02.4.

5. If use of an existing, offsite or regional Water Quality Facility is proposed, it must be clearly identified on plans, showing its location, condition, capacity to treat this site and, any additional improvements and/or upgrades that may be needed to utilize that facility.

6. If private lot LIDA systems proposed, must comply with the current CWS Design and Construction Standards. A private maintenance agreement, for the proposed private lot LIDA systems, needs to be provided to the City for review and acceptance.

7. Show all existing and proposed easements on plans. Any required storm sewer, sanitary sewer, and water quality related easements must be granted to the City.

8. Any proposed offsite construction activities will require an update or amendment to the current Service Provider Letter for this project.

NOTE: This Land Use Review does not constitute the District's approval of storm or sanitary sewer compliance to the NPDES permit held by the District. The District, prior to issuance of any connection permits, must approve final construction plans and drainage calculations.

B. **TVF&R**: Submit to the City of Tualatin Building, Engineering, and Planning Divisions copies of TVF&R permit(s) to show compliance with the attached letter from the TVF&R Deputy Fire Marshal (Attachment 104)

AR-2 Prior to obtaining the first building or grading permit on the subject site, the applicant shall submit 3 revised paper plan sets – 24 x 36 and a paper narrative/document booklet and electronically in Adobe PDF file format – for review and approval to the Planning Division that meet the conditions of approval below. The narrative shall explain how and on what page each condition of approval has been met. The submittal shall contain page numbers and a table of contents. No piecemeal submittals will be accepted. Each submittal will be reviewed in 2 weeks.

Noise

A. 63.051(1) Except as otherwise provided in this section, all industrial development shall comply with the Oregon State Department of Environmental Quality standards relating to noise. From 9:00 p.m. to 7:00 a.m., a dBA reading from an industrial development, whether new or existing, shall not exceed an L-max of 60 dBA when measured from a noise sensitive property.

Walkways & Accessways

B. 73.160(1)(b)(iii) Accessways shall be provided as a connection between the development's walkway and bikeway circulation system and an adjacent bike lane.

- One of the proposed accessways from Building 1 to SW 115th Avenue shall be widened to 8-feet and be extended and ramped into the existing lane pavement for bicycles.

C. 73.160(1)(c) Curb ramps shall be provided wherever a walkway or accessway crosses a curb.

- Construct the 8-foot wide accessway from Building 1 to SW Itel Street as proposed on sheet C2.2 of the plans.

Lighting

D. 73.160(3)(a) ***Locate windows and provide lighting in a manner which enables tenants, employees and police to watch over pedestrian, parking and loading areas.***

- The applicant shall provide clarification about the wall-mounted fixtures and the angles of bulb visibility revise the proposal if needed based on the Guidelines for Good Exterior Lighting Plans (Attachment 110), specifically information that relates to the "Acceptable" lighting fixtures and "Full-cutoff fixture" lighting angle diagrams in the guidelines on pages 2 and 4 respectively.

E. ***(c) Locate, orient and select on-site lighting to facilitate surveillance of on-site activities from the public right-of-way.***

- Provide a revised photometric scatter plan with labels on each reading large enough to be read on a 24 x 36 plan sheet.

F. ***73.380(6) Artificial lighting, which may be provided, shall be so deflected as not to shine or create glare in any residential planning district or on any adjacent dwelling, or any street right-of-way in such a manner as to impair the use of such way.***

- Because the application materials imply that pole-mounted lighting might shine or create glare on the avenue or street ROW, the applicant shall provide revise plans or provide "cut sheets" to show that light levels at SW 115th Avenue and SW Itel Street shall not exceed 0.1 (fc) and be "full cutoff."

Address Numerals, Equipment Screening, & Fireproofing Waste Containers

G. **73.160(3)(d)** Provide an identification system plan which clearly locates buildings and their entries for patrons and emergency services.

H.

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Landscaping

I. **73.160(3)(e)** Shrubs in parking areas shall not exceed 30 inches in height. Tree canopies must not extend below 8 feet measured from grade.

J. **73.240(9)** Yards adjacent to public streets, except as described in 73.240(7), shall be planted to lawn or live groundcover and trees and shrubs and shall be perpetually maintained in a manner providing a park-like character to the property as approved through the Architectural Review process.

K. **73.290(1)** Where natural vegetation has been removed or damaged through grading in areas not affected by the landscaping requirements and that are not to be occupied by structures or other improvements, such areas shall be replanted.

L. **73.360(2)** All landscaped island areas with trees shall be a minimum of 5 feet in width (60 inches from inside of curb to curb) and protected with curbing from surface runoff and damage by vehicles. Landscaped areas shall contain groundcover or shrubs and deciduous shade trees.

M. All street trees shall be approved by The Operations Division prior to planting.

N. **73.260(1)(b)** landscaping plans shall be revised to meet the tree planting size minimum of 1.5-inch caliper DBH for deciduous and 5-feet high for

coniferous. All vegetation proposed larger than the required minimum shall remain as proposed.

O. Show the **TDC 73.360(1)** calculation on the landscaping plans to show there are at least 25 square feet of landscaped islands for each parking space.

P. Show the **TDC 73.360(3)** calculation on the landscaping plans to show there is at least one deciduous tree for every four parking spaces.

Auto & Bike Parking

Q. Illustrate where 15 vanpool and carpool parking spaces will be. Signing and striping plans shall be submitted for review and approval and shall give specifications on the required carpool/vanpool signing and striping.

R. 73.370(2)(a) Industrial (i&ii)

- The applicant shall revise the site plans to indicate for each of Buildings where and how the first 5 bike spaces or at least 30%, whichever is greater, is covered.

S. 73.370(1)(o)

- The applicant shall provide revised site details sheet indicating bike stall length, width, and overhead clearance of covered stalls.

T. 73.370(1)

- The applicant shall provide signing and striping plans indicating required bike parking locations and signage.

Safety

U. Propose an acceptable method to the Architectural Review Board of allowing police, employees, and tenants to watch over loading, parking, and trash enclsoure areas to meet 73.160.

Washington County Road Requirements

V. Perform for Washington County:

1. Obtain a Facility Permit for public improvements on SW Tualatin-Sherwood Road as required per City Casefile SB-11-01.

2. Submit to **Washington County** Public Assurance Staff, 503-846-3843:

   a. Completed "Design Option" form.

   b. **$3,735.00** Administration Deposit.

NOTE: *The Administration Deposit is a cost-recovery account used to pay for County services provided to the developer, including plan review and approval, field inspections, as-built approval, and project administration. The Administration Deposit amount noted above is an estimate of what it will cost to provide these services. If, during the course of the project, the Administration Deposit account is running low, additional funds will be requested to cover the estimated time left on the project (at then-current rates per the adopted Washington County Fee Schedule). If there are any unspent funds at project close out, they will be refunded to the applicant. Any point of contact with County staff can be a chargeable cost. If project plans are not complete or do not comply with County standards and codes, costs will be higher. There is a charge to cover the cost of every field inspection. Costs for enforcement actions will also be charged to the applicant.*

c. A copy of the City's Land Use Approval with Conditions and County's letter, signed and dated.

d. Three (3) sets of complete engineering plans for construction of the following public improvements:

i. Construct a second westbound left-turn lane at the intersection of SW 115th Avenue/SW Tualatin-Sherwood Road to County Standards.

3. Obtain a Washington County **Facility Permit** upon completion of the following:

a. Obtain Engineering Division approval and provide a financial assurance for the construction of the public improvements listed in condition **AR-2.V.2.d.**

NOTE: The Public Assurance staff (503-846-3843) will send the required forms to the applicant's representative **after** submittal and approval of items listed under **AR-2.V.2.**

The Facility Permit *allows construction work within County rights-of-way and permits site access only after the developer first submits plans and obtains Washington County Engineering approval, obtains required grading and erosion control permits, and satisfies various other requirements of Washington County's Assurances Section including but not limited to execution of financial and contractual agreements. This process ensures that the developer accepts responsibility for construction of public improvements, and that improvements are closely monitored, inspected, and built to standard in a timely manner.* ***Access will only be permitted under the required Washington County Facility Permit, and only following submittal and County acceptance of all materials required under the facility permit process.***

Community Services

W. The applicant shall grant and record an easement with Washington County and the City of Tualatin to accommodate a 14-foot public bike and pedestrian shared use pathway. The easement areas shall vary in width between 14 and 20 feet along the eastern property boundary as shown on the applicant's plans Sheets "Building 5, L-1"; "Building 5&8 C2.1"; and

"Building 8, L-1". The language of the easement requires review and approval by the City Attorney and the Community Services Department prior obtaining the first building permit on-site.

Trash

X. Revise specifications for the trash enclosures that show the following (TDC 73.227):

1. Doors will not be constructed of chain link and vinyl slats.
2. Doors will fully and opaquely screen trash dumpsters.
3. Door will be at least 8-feet in height.
4. Doors will be lockable in the open and closed positions.
5. Doors will be capable of opening at least 180-degrees unless otherwise approved by Republic Services.
6. Signature of Approval on final trash plans by Republic Services.
7. Trash enclosure walls will be constructed with 8-foot high concrete as proposed.
8. Evergreen plants around the walls.
9. Clear gate opening width shall be approved by Republic Services.
10. An opening for pedestrian access.
11. Evidence that doors and walls will fully and opaquely screen the trash dumpster size ordered.

AR-3 Washington County Road improvements required along site frontage shall apply to frontage of <u>all</u> land within the subject site that abuts the County roadway. **The subject site shall be considered to include:** any lot or parcel to be partitioned or otherwise subdivided (regardless of whether it contains existing structures or not); **and** any contiguous lots or parcels that constitute phases of the currently proposed development.

If the applicant proposes to develop the project in phases, all County-required frontage improvements must be constructed with the first phase. In addition, off-site improvements **warranted by** the first phase must also be completed with the first phase.

AR-4 Prior to each building permit for each tenant improvement:

A. The applicant shall show all ground and rooftop equipment fully and opaquely screened from all adjacent public streets and from all vantage points on-site.

B. **73.370(1)(l)** To provide more certainty for the applicant, succeeding owners, tenants, and the City, regarding (iii) the applicant shall submit legal documentation, to the satisfaction of the City Attorney, verifying permanent shared use of parking and use of any excess parking area on one lot by patrons of any uses deficient in required parking area on a lot. This

condition shall be met at time of every tenant building permit.

AR-5 Prior to the first Certificate of Occupancy (CO) on the project site and each CO thereafter:

A. **73.227(6)(b)(ii)** Storage containers shall meet Fire Code standards and be made and covered with waterproof materials or situated in a covered area.

B. **73.095** (1) Except as allowed by Subsection (2), all landscaping and exterior improvements required as part of the Community Development Director's, Architectural Review Board's or City Council's approval shall be completed in addition to Fire and Life Safety, and Engineering/Building Department requirements prior to the issuance of any certificate of occupancy.

C. All conditions of approval, except where otherwise stated, shall be subject to field inspection prior to Certificate of Occupancy.

D. There is no non-street location to place the trash enclosures for Building 1 that are also centrally located. Staff recommends that proposed location for the enclosures for building 1 be approved with security cameras for each of the enclosures.

E. Obtain a Finaled Washington County Facility Permit, contingent upon the following:

1. The road improvements required in Condition AR-2.V.2.d. shall be completed and accepted by Washington County.

2. Obtain a Finaled Facility Permit for public improvements (half-street) on SW Tualatin Sherwood Road (per City casefile SB-11-01).

AR-6 The applicant shall comply with these standard requirements:

A. The applicant shall separately from this AR submit sign permit applications for any proposed signage.

B. **31.075 Effective Date of Decision.**
(1) The decisions of the Community Development Director and the City Engineer on the Architectural Features and Utility Facilities respectively or the Architectural Review Board, where the plan is initially reviewed by the Architectural Review Board shall each become final 14 calendar days after the date the notice of the decision is given unless written request for review of the Architectural Features or Utility Facilities decision is sought and submitted on a form provided by the City for that purpose.

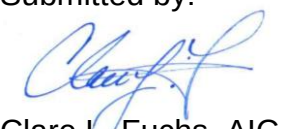
C. The first shell building shall have an issued building permit for vertical construction by 2 years from the date of this decision (June 10, 2017). The second shell building shall have an issued building permit for vertical construction 4 years from the date of this decision (June 10, 2019). The third shell building shall have an issued building permit for vertical construction 6 years from the date of this decision (June 10, 2021). If this schedule is not met, the land use approval shall expire. A request for extension may be considered under TDC 73.056.

D. **73.100(1)** All landscaping approved through architectural review (AR) shall be continually maintained, including necessary watering, weeding, pruning and replacement, in a manner substantially similar to that originally approved by the AR decision, unless subsequently altered through AR.

E. **73.100(2)** All building exterior improvements approved through the Architectural Review Process shall be continually maintained including necessary painting and repair so as to remain substantially similar to original approval through the Architectural Review Process, unless subsequently altered with Community Development Director approval, as a condition of approval.

F. **63.051(1)** Except as otherwise provided in this section, all industrial development shall comply with the Oregon State Department of Environmental Quality standards relating to noise. From 9:00 p.m. to 7:00 a.m., a dBA reading from an industrial development, whether new or existing, shall not exceed an L-max of 60 dBA when measured from a noise sensitive property.

Submitted by:



Clare L. Fuchs, AICP
Senior Planner

Attachments:
101: Recommendation and Staff Report
102: Draft Public Facilities Report
103. CWS Memorandum
104. TVF&R Letter
105. Site Plans and Other Application Materials
106. Washington County Memorandum
107: Community Services Comments

Attachment 101 - Recommendation and Staff Report

108. Fig. 11-1 Functional Classification and Traffic Signal Plan
109. Fig. 2 Street Design Standards: Major Collector
110. Guidelines for Good Exterior Lighting Plans

c:
Mark Person, Planner, Mackenzie
Eric Sporre, Vice President, PacTrust
file AR-15-05

CITY ENGINEER'S DRAFT PUBLIC FACILITIES FINDINGS & RECOMMENDED DECISION

** APPROVAL WITH CONDITIONS **

xx, 2015

INTRODUCTION

Pacific Realty Associates, LP, (PacTrust) represented by Eric Sporre, proposes to develop five platted lots totaling 20-acres. These are Koch lots 1, 2, 3, 5, and 8. The property is currently undeveloped. The applicant requests to develop it into three speculative multi-tenant industrial park buildings totaling 310,000 square feet (sq ft) with related site improvements.

The project is large enough to necessitate Architectural Review Board (ARB) review and decision pursuant to Tualatin Development Code (TDC) 73.030(2). An ARB decision is required because an industrial building over 150,000 square feet is proposed.

The site is bound another undeveloped Koch expansion lot to the north, SW 115th Avenue to the west, and developed industrial private properties to the south and east.

The applicant had a pre-application meeting on December 29, 2014. The neighborhood/developer meeting was held on January 29, 2015. In response to either the notice of application or notice of public hearing, staff received no letters of comment from property owners within 1,000 ft of the subject property, including pursuant to Tualatin Development Code (TDC) 31.064(1) within any residential subdivisions platted through the City, for inclusion in this staff report as of May 25, 2015.

The following are the Public Facilities findings for AR 15-05, Koch Corporate Center Expansion. All references are to sections in the Tualatin Development Code (TDC) or Tualatin Municipal Code (TMC) unless otherwise noted.

TDC 74.120 ...No work shall be undertaken on any public improvement until after the construction plans have been approved by the City Engineer and a Public Works Permit issued and the required fees paid.

TDC 74.140 (1) All the public improvements required under this chapter shall be completed and accepted by the City prior to issuance of a Certificate of Occupancy.

TDC 74.330 Utility Easements

(1) Utility easements for water, sanitary sewer and storm drainage facilities, telephone, television cable, gas, electric lines and other public utilities shall be granted to the City.

(4) ...For both on-site and off-site easement areas, a utility easement shall be granted to the City; Building Permits shall not be issued for the development prior to acceptance of the easement by the City.

(5) The width of the public utility easement shall meet the requirements of the Public Works Construction Code.

TMC 4-1.010 This development is subject to all applicable building code requirements and all applicable building and development fees.

FINDINGS
These comments are a result of site investigation, developer comments, and review of the submitted plan sheets dated February 27, 2015.

1. Fire and Life Safety:
   TMC 4-2.010 (1) Every application for a building permit and accompanying plans shall be submitted to the Building Division for review of water used for fire protection, the approximate location and size of hydrants to be connected, and the provisions for access and egress for firefighting equipment. If upon such review it is determined that the fire protection facilities are not required or that they are adequately provided for in the plans, the Fire and Life Safety Reviewer shall recommend approval to the City Building Official.

   Three public fire hydrants exist near this development on SW Itel Street and two on SW 115th Avenue. The submitted plans show six proposed private fire hydrants onsite surrounding Building 1 plus three existing and four proposed surrounding Buildings 5 and 8. During the review of Building Permits the Building Official may determine that additional fire protection devices may be necessary upon recommendation of Tualatin Valley Fire & Rescue (TVF&R). The applicant will need to submit plans that comply with fire protection requirements as determined through the Building Division and Tualatin Valley Fire & Rescue (TVF&R).

   Note: any new fire hydrants will be private onsite.

Prior to issuance of a Building Permit:
- *The applicant shall submit plans that comply with fire protection requirements as determined through the Building Division and Tualatin Valley Fire & Rescue (TVF&R).*

2. Transportation:
   TDC 11.610 Transportation Goals and Objectives (2) (e) For development applications, including, but not limited to subdivisions and architectural reviews, a LOS of at least D and E are encouraged for signalized and unsignalized intersections, respectively.

   TDC 73.400 (5)…a sidewalk shall be constructed along all street frontage, prior to use or occupancy of the building or structure proposed for said property. The sidewalks required by this section shall be constructed to City standards,...

   TDC 74.420 (6) All required street improvements shall include curbs, sidewalks, storm drainage, streetlights, street signs, street trees, and, where designated, bikeways and transit facilities.

TDC 74.660 Underground.
(1) All utility lines including, but not limited to, those required for gas, electric, communication, lighting and cable television services and related facilities shall be placed underground. Surface-mounted transformers, surface-mounted connection boxes and meter cabinets may be placed above ground. Temporary utility service facilities, high capacity electric and communication feeder lines, and utility transmission lines operating at 50,000 volts or above may be placed above ground. The applicant shall make all necessary arrangements with all utility companies to provide the underground services. The City reserves the right to approve the location of all surface-mounted transformers.

TDC 75.060 Existing Driveways and Street Intersections (2) The City Engineer may restrict existing driveways and street intersections to right-in and right-out by construction of raised median barriers or other means.

TDC 74.120 ...No work shall be undertaken on any public improvement until after the construction plans have been approved by the City Engineer and a Public Works Permit issued and the required fees paid.

TDC 74.140 (1) All the public improvements required under this chapter shall be completed and accepted by the City prior to issuance of a Certificate of Occupancy.

Under previous permits the applicant has constructed SW 115th Avenue adjacent to Buildings 1 and 8 plus SW Itel Street adjacent to Buildings 1 and 5. This is acceptable. The applicant has submitted a Transportation Impact Analysis that recommends off-site mitigation in the form of adding a second westbound left-turn pocket at SW 115th Avenue / SW Tualatin-Sherwood Road to met jurisdictional operational requirements in the weekday AM and PM peak hours. The City Engineer generally agrees with the Transportation Impact Analysis.

Washington County submitted a memorandum in response to this Architectural Review concurring with the traffic mitigation measures with conditions. The applicant will need to obtain a County Facility Permit.

The construction of an access on the south portion of the SW Itel Street cul-de-sac will require relocation of an existing street tree. The plans do not show tree relocation. The applicant will need to submit revised plans that show the existing street tree within the area of a new access to the south portion of the SW Itel Street cul-de-sac relocated to the west, for review and approval.

Prior to the Issuance of a Public Works Permit:

- *The applicant shall obtain a County Facility Permit.*
- *The applicant shall submit revised plans that show the existing street tree within the area of a new access to the south portion of the SW Itel Street cul-de-sac relocated to the west, for review and approval.*

Prior to the Issuance of a Building Permit:

- *The applicant shall obtain a Public Works Permit for work within the right-of-way and a Water Quality Permit for onsite facilities.*

3. Access:

73.400 Access

(2) Owners of two or more uses, structures or parcels of land may agree to utilize jointly the same ingress and egress when the combined ingress and egress of both uses, structures, or parcels of land satisfies their combined requirements as designated in this code; provided that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases or contracts to establish joint use.

(10) Minimum access requirements for residential uses: (b) Ingress and egress for multi-family residential uses shall not be less than the following:…for 50-499 parking spaces a minimum of one 32-foot wide access or two 24-foot wide accesses are required.

(11) Minimum Access Requirements for Commercial, Public and Semi-Public Uses. If 1-99 parking spaces are required, only one access is required. If 100-249 parking spaces are required, two accesses are required. Ingress and egress shall not be less than 32 feet wide for the first 50 feet from the right-of-way and 24 feet thereafter.

(12) Minimum Access Requirements for Industrial Uses. If 1-250 parking spaces are required, only one access is required. Ingress and egress shall not be less than 36 feet wide for the first 50 feet from the right-of-way and 24 feet thereafter.

(14) (a) Unless otherwise herein provided, maximum driveway widths shall not exceed 40 feet.

(15) Distance between Driveways and Intersections. Distances listed shall be measured from the stop bar at the intersection. (a) At the intersection of collector or arterial streets, driveways shall be located a minimum of 150 feet from the intersection.

The plans show for Building 1 one existing 36-foot wide access to SW Itel Street and two proposed 30-foot wide accesses, one to SW 115th Avenue and one to SW Itel Street. There are 150 proposed parking spaces and three accesses are proposed, greater than the minimum of one. For Building 5 one 36-foot wide access exists and one 30-foot wide access is proposed to SW Itel Street. Building 5 and 8's accesses are shared along with existing developed lots to the west. There are 126 parking spaces proposed for Building 5 and 102 for Building 8. The two proposed shared accesses to SW Itel Street and an existing shared access to SW 115th Avenue exceed the area's requirement of two. This is acceptable. The applicant will need to submit final plans that show for Building 1 one existing 36-foot wide access to SW Itel Street and two proposed 30-foot wide accesses, one to SW 115th Avenue and one to SW Itel Street, and for Building 5 one 36-foot wide access and one proposed 30-foot wide access to SW Itel Street, for review and approval. The applicant will need to submit a copy of the recorded private access agreement, for review and approval.

Prior to the Issuance of a Public Works Permit:

- *The applicant shall submit final plans that show for Building 1 one existing 36-foot wide access to SW Itel Street and two proposed 30-foot wide accesses, one to SW 115th Avenue and one to SW Itel Street, and for Building 5 one 36-foot wide access and one proposed 30-foot wide access to SW Itel Street, for review and approval.*

Prior to Issuance of a Certificate of Occupancy:

- *The applicant shall submit a copy of the recorded private access agreement, for review and approval.*

4. Water:

TDC 74.610 (1) Water lines shall be installed to serve each property in accordance with the Public Works Construction Code. Water line construction plans shall be submitted to the City Engineer for review and approval prior to construction.

TMC 3-3.040 (2) For nonresidential uses, separate meters shall be provided for each structure.

TMC 3-3.120 (2) The owner of property to which City water is furnished for human consumption shall install in accordance with City standards an appropriate backflow prevention device on the premises where any of the following circumstances exist: (b) Where there is a fire protection service, and irrigation service or a nonresidential service connection which is two inches or larger in size;

TMC 3-3.120 (4) requires all irrigation systems to be installed with a double check valve assembly.

TDC74.610 (3) As set forth in TDC Chapter 12, Water Service, the City has three water service levels. All development applicants shall be required to connect the proposed development site to the service level in which the development site is located.

The plans show for Building 1 a connection to an existing water lateral from SW Itel Street with DCVA vault serving domestic and fire and for Buildings 5 and 8 connection to an existing onsite private system looping with the adjacent properties to the west also providing domestic and fire service. This is acceptable. For Buildings 5 and 8 private water easements are needed to cross an adjacent lots. The applicant will need to submit a copy of the private water easements for Buildings 5, 8, and the two lots to the west, for review and approval. The applicant will need to submit revised water plans that show reduced pressure backflow devices for domestic water services if needed, for review and approval.

Prior to Issuance of a Public Works Permit:

- *The applicant shall submit a copy of the private water easements for Buildings 5, 8, and the two lots to the west, for review and approval.*
- *The applicant shall submit revised water plans that show reduced pressure backflow devices for domestic water services if needed, for review and approval.*

Prior to Issuance of a Certificate of Occupancy:

- *The applicant shall submit a copy of the private water easements for Buildings 5, 8, and the two lots to the west, for review and approval.*

5. Sanitary Sewer:

TDC 74.620 (1) Sanitary sewer lines shall be installed to serve each property in accordance with the Public Works Construction Code. Sanitary sewer construction plans and calculations shall be submitted to the City Engineer for review and approval prior to construction.

TDC 74.330 Utility Easements (1) Utility easements for water, sanitary sewer and storm drainage facilities, telephone, television cable, gas, electric lines and other public utilities shall be granted to the City.

The plans show sanitary sewer connections to existing laterals in SW Itel Street for Buildings 1 and 5 and to an existing lateral from a public sanitary sewer line in a public easement for Building 8. There are currently three lots within the area of Building 1. Each lot is required to directly connect to the public sanitary sewer system. A property line adjustment, PLA 15-01, has been approved to consolidate these three lots. The applicant will need to either consolidate the three lots within Building 1's footprint or submit revised plans showing separate direct connections to the public sanitary sewer system, for review and approval.

The connections for Buildings 1 and 5 have cleanouts at the right-of-way. Building 8 doesn't have a cleanout at the edge of the public easement. Cleanouts are required at the edge of right-of-way and public sanitary sewer easements. The applicant will need to submit revised sanitary sewer plans that show a cleanout at the edge of the public sanitary sewer easement for Building 8, for review and approval.

Prior to Issuance of a Public Works Permit:

- *The applicant shall either consolidate the three lots within Building 1's footprint or submit revised plans showing separate direct connections to the public sanitary sewer system, for review and approval.*
- *The applicant shall submit revised sanitary sewer plans that show a cleanout at the edge of the public sanitary sewer easement for Building 8, for review and approval.*

6. Storm Drainage & Water Quality:

TDC 74.630 Storm Drainage System

(1) Storm drainage lines shall be installed to serve each property in accordance with City standards. Storm drainage construction plans and calculations shall be submitted to the City Engineer for review and approval prior to construction.

(2) The storm drainage calculations shall confirm that adequate capacity exists to serve the site. The discharge from the development shall be analyzed in accordance with the City's Storm and Surface Water Regulations (TMC 3-5).

TDC 74.650 Water Quality, Storm Water Detention and Erosion Control

(2) On all other development applications, prior to issuance of any building permit, the applicant shall arrange to construct a permanent on-site water quality facility and storm water detention facility and submit a design and calculations indicating that the requirements of the Surface Water Management Ordinance will be met and obtain a Stormwater Connection Permit from Clean Water Services.

(3) For on-site private and regional non-residential public facilities, the applicant shall submit a stormwater facility agreement, which will include an operation and maintenance plan provided by the City, for the water quality facility for the City's review and approval. The applicant shall submit an erosion control plan prior to issuance of a Public Works Permit. No construction or disturbing of the site shall occur until the erosion control plan is approved by the City and the required measures are in place and approved by the City.

TMC 3-5-220 Criteria for Requiring On-Site Detention to be Constructed.

(1) There is an identified downstream deficiency, as defined in TMC 3-5.210, and detention rather than conveyance system enlargement is determined to be the more effective solution.

(2) There is an identified regional detention site within the boundary of the development.

TMC 3-5-330 Permit Required. Except as provided in TMC 3-5.310, no person shall cause any change to improved or unimproved real property that will, or is likely to, increase the rate or quantity of run-off or pollution from the site without first obtaining a permit from the City and following the conditions of the permit.

TMC 3-5-380 Criteria for Granting Exemptions to Construction of On-Site Water Quality Facilities. A regional public facility may be constructed to serve private non-residential development provided:

(1) The facility serves more than one lot; and

(2) All owners sign a stormwater facility agreement; and

(3) Treatment accommodates reasonable worst case impervious area for full build-out, stormwater equivalent to existing or proposed roof area is privately treated in LIDA facilities, and any detention occurs on each lot.

The plans show Building 1's stormwater conveyed to a treatment and detention pond prior to releasing into an existing stormwater lateral in SW Itel Street. There are currently three lots within the area of Building 1. Each lot is required to separately treat, detain, and directly connect to the public stormwater system. A property line adjustment, PLA 15-01, has been approved to consolidate these three lots. The applicant will need to either consolidate the three lots within Building 1's footprint or submit revised plans showing separate treatment, detention, and direct connection to the public stormwater system, for review and approval.

The plans show for Building 5 and 8 a portion of stormwater treated and detained in LIDA facilities prior to connecting to existing laterals. These laterals connect to public stormwater lines in public easements that convey stormwater to a regional public stormwater treatment and detention pond that was previously constructed as part of a subdivision. The amount of stormwater required for treatment on each lot prior to the public facility is equivalent to the building's footprint. Building 8 provides adequate treatment while Building 5 provides a 2,987 square feet of treatment, less than the 3,600 required. The applicant will need to submit revised plans that show Building 5 with adequate LIDA treatment, for review and approval.

The applicant has submitted preliminary stormwater calculations, but has indicated that the treatment will change. Detention, treatment, and conveyance calculations are needed to evaluate the proposed stormwater system. The applicant will need to submit final stormwater detention, treatment, and conveyance calculations, for review and approval.

Prior to the issuance of a Water Quality Permit:

- *The applicant shall either consolidate the three lots within Building 1's footprint or submit revised plans showing separate treatment, detention, and direct connection to the public stormwater system, for review and approval.*
- *The applicant shall submit revised plans that show Building 5 with adequate LIDA treatment, for review and approval.*
- *The applicant shall submit final stormwater detention, treatment, and conveyance calculations, for review and approval.*

7. Grading:

TDC 74.640 (1) Development sites shall be graded to minimize the impact of storm water runoff onto adjacent properties and to allow adjacent properties to drain as they did before the new development. (2) A development applicant shall submit a grading plan showing that all lots in all portions of the development will be served by gravity drainage from the building crawl spaces; and that this development will not affect the drainage on adjacent properties. The City Engineer may require the applicant to remove all excess materials from the development site.

The submitted plans appear to minimize the impact of stormwater runoff to adjacent properties and allow adjacent properties to drain as they did before the development. This requirement is met.

8. Erosion Control:

TDC 74.650 (3) ..the applicant shall submit an erosion control plan prior to issuance of a Public Works Permit. No construction or disturbing of the site shall occur until the erosion control plan is approved by the City and the required measures are in place and approved by the City. In order to reduce the amount of sediment discharged into the public storm system, erosion control measures are required during construction. If the site is over 1 acre in size a NPDES Erosion Control Permit is required.

If the development's disturbed area during construction is between 1 and 5 acres in size, a 1200-CN NPDES Erosion Control Permit is required. If it is over 5 acres, a 1200-C NPDES Erosion Control Permit is required. The proposed disturbed area of the development site is a total of approximately 20 acres. A NPDES Erosion Control Permit is required. The applicant has not obtained a NPDES Erosion Control Permit. The applicant will need to obtain a NPDES Erosion Control Permit.

A City of Tualatin erosion control permit is required if there is construction or disturbing of the site. The applicant has not obtained a City of Tualatin erosion control permit. The applicant will need to obtain a City of Tualatin erosion control permit.

Prior to the issuance of a Building Permit:
- *The applicant shall obtain a NPDES Erosion Control Permit.*
- *The applicant shall obtain a City of Tualatin erosion control permit.*

9. Stormwater Connection Permit:
TDC 74.650 Water Quality, Storm Water Detention and Erosion Control (2) On all other development applications, prior to issuance of any building permit, the applicant shall arrange to construct a permanent on-site water quality facility and storm water detention facility and submit a design and calculations indicating that the requirements of the Surface Water Management Ordinance will be met and obtain a Stormwater Connection Permit from the Unified Sewerage Agency.

The applicant has submitted a CWS Service Provider Letter (SPL) indicating that Sensitive Areas do not exist on-site. In the SPL the applicant has received an initial response indicating that their proposed development meets CWS requirements. CWS has submitted a Memorandum dated April 17, 2015, with review comments. CWS will indicate final approval of activities relating to wetlands & buffers after final permit plans are submitted prior to issuance of associated permits. Any vegetated corridor mitigation required in the SPL will need to be included in the Water Quality Permit. The applicant will need to submit final plans that comply with the Service Provider Letter and CWS Memorandum comments, for review and approval.

Prior to the issuance of a Water Quality Permit:
- *The applicant shall submit final plans that comply with the Service Provider Letter conditions and Clean Water Services Memorandum comments, for review and approval.*

10. Community Services:

Code Section

Discussion

Ice Age Tonquin Trail Shared Use Path Easement

The applicant will need to grant an easement to accommodate a 14 foot shared use pathway varying in width between 14 and 20 feet along the eastern property boundary as shown on attached Site Plans L-1, L-1.1 and unnamed (3 pages), for review and approval.

Prior to the issuance of a Building Permit:

- *The applicant shall grant an easement to accommodate a 14 foot shared use pathway varying in width between 14 and 20 feet along the eastern property boundary as shown on attached Site Plans L-1, L-1.1 and unnamed (3 pages), for review and approval.*

PUBLIC FACILITIES REQUIREMENTS

The following are the Public Facilities requirements for AR 15-05, Koch Corporate Center Expansion:

PRIOR TO ISSUANCE OF A WATER QUALITY PERMIT:

PFR-1 The applicant shall either consolidate the three lots within Building 1's footprint or submit revised plans showing separate treatment, detention, and direct connection to the public stormwater system, for review and approval.

PFR-2 The applicant shall submit revised plans that show Building 5 with adequate LIDA treatment, for review and approval.

PFR-3 The applicant shall submit final stormwater detention, treatment, and conveyance calculations, for review and approval.

PFR-4 The applicant shall submit final plans that comply with the Service Provider Letter conditions and Clean Water Services Memorandum comments, for review and approval.

PRIOR TO ISSUANCE OF A PUBLIC WORKS PERMIT:

PFR-5 The applicant shall obtain a County Facility Permit.

PFR-6 The applicant shall submit revised plans that show the existing street tree within the area of a new access to the south portion of the SW Itel Street cul-de-sac relocated to the west, for review and approval.

PFR-7 The applicant shall submit final plans that show for Building 1 one existing 36-foot wide access to SW Itel Street and two proposed 30-foot wide accesses, one to SW 115th Avenue and one to SW Itel Street, and for Building 5 one 36-foot wide access and one proposed 30-foot wide access to SW Itel Street, for review and approval.

PFR-8 The applicant shall submit a copy of the private water easements for Buildings 5, 8, and the two lots to the west, for review and approval.

PFR-9 The applicant shall submit revised water plans that show reduced pressure backflow devices for domestic water services if needed, for review and approval.

PFR-10 The applicant shall either consolidate the three lots within Building 1's footprint or submit revised plans showing separate direct connections to the public sanitary sewer system, for review and approval.

PFR-11 The applicant shall submit revised sanitary sewer plans that show a cleanout at the edge of the public sanitary sewer easement for Building 8, for review and approval.

PRIOR TO ISSUANCE OF A BUILDING PERMIT:

PFR-12 The applicant shall submit plans that comply with fire protection requirements as determined through the Building Division and Tualatin Valley Fire & Rescue (TVF&R).

PFR-13 The applicant shall obtain a Public Works Permit for work within the right-of-way and a Water Quality Permit for onsite facilities.

PFR-14 The applicant shall obtain a NPDES Erosion Control Permit.

PFR-15 The applicant shall obtain a City of Tualatin erosion control permit.

PFR-16 The applicant shall grant an easement to accommodate a 14 foot shared use pathway varying in width between 14 and 20 feet along the eastern property boundary as shown on attached Site Plans L-1, L-1.1 and unnamed (3 pages), for review and approval.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY:

PFR-17 The applicant shall submit a copy of the recorded private access agreement, for review and approval.

PFR-18 The applicant shall submit a copy of the private water easements for Buildings 5, 8, and the two lots to the west, for review and approval.

PFR-19 The applicant shall complete all the public improvements and have them accepted by the City.

APPEAL
The Public Facilities Review portion of this decision is final after the expiration of 14 calendar days from the date of this decision, unless a written appeal is received on or before 5:00 p.m., on xx, 2015 by the Engineering Division at 18880 SW Martinazzi Avenue, Tualatin, Oregon 97062. The appeal must be signed by the appellant, contain the information required by TDC 31.078 on the City appeal form, and contain the $135 appeal filing fee. The plans and appeal forms are available at the Tualatin Library and at the City offices. Public Facilities appeals are reviewed by City Council.

Typed on behalf of the City Engineer,

Tony Doran, EIT
Engineering Associate

Clean Water Services

MEMORANDUM

Date: April 17, 2015

To: Clare Fuchs, Senior Planner, City of Tualatin

From: Jackie Sue Humphreys, Clean Water Services (the District)

Subject: Koch Expansion Lots 1-3, 5 and 8, AR-15-05,
2S127DB00200, 00300, 00400, 2S127AC00300, 00600

Please include the following comments when writing your conditions of approval:

PRIOR TO ANY WORK ON THE SITE

A Clean Water Services (the District) Storm Water Connection Permit Authorization must be obtained. Application for the District's Permit Authorization must be in accordance with the requirements of the Design and Construction Standards, Resolution and Order No. 07-20, (or current R&O in effect at time of Engineering plan submittal), and is to include:

a. Detailed plans prepared in accordance with Chapter 2, Section 2.04.2.b-l.

b. Detailed grading and erosion control plan. An Erosion Control Permit will be required. Area of Disturbance must be clearly identified on submitted construction plans. If site area and any offsite improvements required for this development exceed one-acre of disturbance, project will require a 1200-CN Erosion Control Permit. If site area and any offsite improvements required for this development exceed five-acres of disturbance, project will require a 1200-C Erosion Control Permit.

c. Detailed plans showing each lot within the development having direct access by gravity to public storm and sanitary sewer.

d. Provisions for water quality in accordance with the requirements of the above named design standards. Water Quality is required for all new development and redevelopment areas per R&O 07-20, Section 4.05.5, Table 4-1. Access shall be provided for maintenance of facility per R&O 07-20, Section 4.02.4.

2550 SW Hillsboro Highway • Hillsboro, Oregon 97123
Phone: (503) 681-3600 • Fax: (503) 681-3603 • cleanwaterservices.org

e. If use of an existing, offsite or regional Water Quality Facility is proposed, it must be clearly identified on plans, showing its location, condition, capacity to treat this site and, any additional improvements and/or upgrades that may be needed to utilize that facility.

f. If private lot LIDA systems proposed, must comply with the current CWS Design and Construction Standards. A private maintenance agreement, for the proposed private lot LIDA systems, needs to be provided to the City for review and acceptance.

g. Show all existing and proposed easements on plans. Any required storm sewer, sanitary sewer, and water quality related easements must be granted to the City.

h. Any proposed offsite construction activities will require an update or amendment to the current Service Provider Letter for this project.

CONCLUSION

This Land Use Review does not constitute the District's approval of storm or sanitary sewer compliance to the NPDES permit held by the District. The District, prior to issuance of any connection permits, must approve final construction plans and drainage calculations.

Tualatin Valley Fire & Rescue

April 17, 2015

Claire Fuchs
Senior Planner
18880 SW Martinazzi Ave.
Tualatin, OR 97062

Re: AR-15-05, Koch Corporate Center

Dear Claire,

Thank you for the opportunity to review the proposed site plan surrounding the above named development project. Tualatin Valley Fire & Rescue endorses this proposal predicated on the following criteria and conditions of approval:

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROAD DISTANCE FROM BUILDINGS AND FACILITIES:** Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1)
2. **ACCESS ROAD EXCEPTIONS:** The requirements for fire apparatus access may be modified as approved by the fire code official where any of the following apply: (OFC 503.1.1)
   - **Exception 1:** Buildings are equipped throughout with an approved automatic fire sprinkler system (the approval of this alternate method of construction shall be accomplished in accordance with the provisions of ORS 455.610(5).
   - **Exception 2:** Fire apparatus access roads cannot be installed because of location on property, topography, waterways, non-negotiable grades, or other similar conditions, and an approved alternative means of fire protection is provided.
3. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)
4. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)
5. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)
6. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Code Official), measured in a straight line between accesses. (OFC D104.3)
   Exception: Buildings equipped throughout with an approved automatic fire sprinkler system (the approval of this alternate method of construction shall be accomplished in accordance with the provisions of ORS 455.610(5).
7. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

8. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)
9. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)
10. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the fire code official. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)
11. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)
25. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Code Official. See Application Guide Appendix A for further information. (OFC 503.4.1). Traffic calming devices on public and private roadways built under municipal road standards are recommended to comply with Appendix A.
26. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
    1) 20-26 feet road width – no parking on either side of roadway
    2) 26-32 feet road width – parking is allowed on one side
    3) Greater than 32 feet road width – parking is not restricted
27. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, “No Parking” signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read “NO PARKING - FIRE LANE” and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

BUILDING ACCESS AND FIRE SERVICE FEATURES

28. **KNOX BOX:** A Knox Box for building access is required for this building. Please contact the Fire Marshal’s Office for an order form and instructions regarding installation and placement. (OFC 506.1)
29. **UTILITY IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as “Fire Control Room.” Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)
30. **FIRE ALARM VERIFICATION:** Supervisory Stations shall not retransmit alarm signals to Public Fire Service Dispatch and Communication Centers until an attempt is made to verify the accuracy of the alarm signal at the protected premise. The verification attempt shall be made within 90 seconds of the receipt of the alarm signal. If the protected premise is contacted and can confirm that no fire or emergency condition exists, then the alarm signal shall not be retransmitted. In all other situations, the alarm signal shall be retransmitted immediately. (OFC 907.7.6)
    Exception: Water flow and manual pull station alarms shall be immediately retransmitted without verification.
31. **EMERGENCY RESPONDER RADIO COVERAGE:** The Oregon Fire Code (OFC) requires that certain newly constructed buildings have approved levels of emergency radio signal strength per OFC 510.2 (relative to existing levels of public radio coverage available at the exterior). Where the design of the building reduces the level of coverage inside of the building below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided. See Appendix for Policy. (OFC 510)

FIREFIGHTING WATER SUPPLIES

32. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration for buildings other than one- and two-family dwellings shall be determined in accordance with residual pressure (OFC Table B105.2). The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi.
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    1) In areas where the water system is already developed, the maximum needed fire flow shall be either 3,000 GPM or the available flow in the system at 20 psi, whichever is greater.
    2) In new developed areas, the maximum needed fire flow shall be 3,000 GPM at 20 psi.
    3) Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1
33. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)
34. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS

35. **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. (OFC 507.5.1)
    1) This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
    2) The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.
36. **FIRE HYDRANT NUMBER AND DISTRIBUTION:** The minimum number and distribution of fire hydrants available to a building shall not be less than that listed in Table C 105.1.

TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d]
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.

b. Where streets are provided with median dividers which can be crossed by firefighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.

c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
d. Reduce by 50 feet for dead-end streets or roads.
e. One hydrant for each 1,000 gallons per minute or fraction thereof.

37. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
    1) Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    2) Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the fire code official.
    3) Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the fire code official.
    4) Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the fire code official.
38. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the fire code official. (OFC C102.1)
39. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)
40. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)
41. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)
42. **FIRE DEPARTMENT CONNECTIONS (FDCs):** A fire hydrant shall be located within 100 feet of a fire department connection (FDC) or as approved. Fire hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle. (OFC 912 & NFPA 13)
43. **FIRE DEPARTMENT CONNECTION LOCATIONS:** FDCs shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1)
    1) Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
    2) FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants (as diagramed below).

If you have questions or need further clarification, please feel free to contact me at (503) 649-8577.

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal II

Cc: file

HELPFUL LINKS:
Oregon Fire Code:
http://ecodes.biz/ecodes_support/free_resources/Oregon/14_Fire/14_ORFire_main.html
Oregon Structural Specialty Code:
http://ecodes.biz/ecodes_support/free_resources/Oregon/14_Structural/14_ORStructural_main.html

"NECESSARY PARTIES" MARKED BELOW

NOTICE OF APPLICATION SUBMITTAL

☐ ANNEXATION ☐ CONDITIONAL USE PERMIT ☐ PLAN TEXT AMENDMENT
☒ ARCHITECTURAL REVIEW ☐ PLAN MAP AMENDMENT ☐ OTHER:

CASE/FILE: AR-15-05 (Community Development Dept.: Planning Division)

PROPOSAL	
	To An approximately 400,00 square foot pahsed expansion to the Koch Corporate Center in three buildings

PROPERTY					
☐ n/a	**Name of Application**	KOCH EXPANSION LOTS 1-3, 5 AND 8			
	Street Address	20850, 20950, 21000, 21100, 21200 SW 115th Ave			
	Tax Map and Lot No(s).	2S1 27DB 200, 300, 400 and 2S1 27AC 300, 600			
	Planning District	General Manufacturing (MG)	**Overlays** ☐	**NRPO** ☒	**Flood Plain** ☐
	Previous Applications	AR-09-02	**Additional Applications:** AR-09-09	**CIO** N/A	

DATES				CONTACT	
Receipt of application	3/4/2015	**Deemed Complete**	4/7/2015		**Name:** Clare Fuchs
Notice of application submittal			4/13/2015		**Title:** Senior Planner
Project Status / Development Review meeting			4/30/2015		**E-mail:** cfuchs@ci.tualatin.or.us
Comments due for staff report			4/27/2015		**Phone:** 503-691-3027
Public meeting: ☒ **ARB** ☐ **TPC** ☐ **n/a**			TBD		**Notes:** NRPO is Open Space Preservation only
City Council (CC) ☐ **n/a**					

City Staff
☒ City Manager
☒ Building Official
☒ Chief of Police
☒ City Attorney
☒ City Engineer
☒ Community Dev. Director
☒ Community Services Director
☒ Economic Dev. liaison
☒ Engineering Associate*
☒ Finance Director
☒ GIS technician(s)
☒ IS Manager
☒ Operations Director*
☒ Parks and Recreation Coordinator
☒ Planning Manager
☒ Street/Sewer Supervisor
☒ Water Supervisor

Neighboring Cities
☐ Durham
☐ King City Planning Commission
☐ Lake Oswego
☐ Rivergrove PC
☒ Sherwood Planning Dept.
☐ Tigard Community Dev. Dept.
☐ Wilsonville Planning Div.

***Paper Copies**

Counties
☐ Clackamas County Dept. of Transportation and Dev.
☒ Washington County Dept. of Land Use and Transportation (AR's)
☐ Washington County LRP (Annexations)

Regional Government
☒ Metro

School Districts
☐ Lake Oswego School Dist. 7J
☐ Sherwood SD 88J
☒ Tigard-Tualatin SD 23J (TTSD)
☐ West Linn-Wilsonville SD 3J

State Agencies
☐ Oregon Dept. of Aviation
☐ Oregon Dept. of Land Conservation and Development (DLCD) (via proprietary notice)
☐ Oregon Dept. of State Lands: Wetlands Program
☒ Oregon Dept. of Transportation (ODOT) Region 1
☐ ODOT Maintenance Dist. 2A
☐ ODOT Rail Div.

Utilities
☒ Republic Services
☒ Clean Water Services (CWS)
☒ Comcast [cable]*
☒ Frontier Communications [phone]
☒ Northwest Natural [gas]
☒ Portland General Electric (PGE)
☒ TriMet
☒ Tualatin Valley Fire & Rescue (TVF&R)
☒ United States Postal Service (USPS) (Washington; 18850 SW Teton Ave)
☐ USPS (Clackamas)
☒ Washington County Consolidated Communications Agency (WCCCA)

Additional Parties
☒ Tualatin Citizen Involvement Organization (CIO)
☐
☐

Attachment 105 - Application with Site Plans & Elevations

☒ *1.032: Burden of Proof*

☒ *31.071 Architectural Review Procedure*

☒ *31.074 Architectural Review Application Review Process*

☒ *31.077 Quasi-Judicial Evidentiary Hearing Procedures*

☐ *Metro Code 3.09.045 Annexation Review Criteria*

☐ *32.030 Criteria for Review of Conditional Uses*

☐ *33.020 Conditions for Granting a Variance that is not a Sign or a Wireless Communication Facility*

☐ *33.022 Criteria for Granting a Sign Variance*

☐ *33.024 Criteria for Granting a Minor Variance*

☐ *33.025 Criteria for Granting a Variance*

☐ *34.200 Tree Cutting on Private Property without Architectural Review, Subdivision or Partition Approval, or Tree Removal Permit Prohibited*

☒ *34.210 Application for Architectural Review, Subdivision or Partition Review, or Permit*

☐ *34.230 Criteria (tree removal)*

☐ *35.060 Conditions for Granting Reinstatement of Nonconforming Use*

☐ *36.160 Subdivision Plan Approval*

☐ *36.230 Review Process (partitioning)*

☐ *36.330 Review Process (property line adjustment)*

☐ *37.030 Criteria for Review (IMP)*

☐ *40.030 Conditional Uses Permitted (RL)*

☐ *40.060 Lot Size for Conditional Uses (RL)*

☐ *40.080 Setback Requirements for Conditional Uses (RL)*

☐ *41.030 Conditional Uses Permitted (RML)*

☐ *41.050 Lot Size for Conditional Uses (RML)*

☐ *41.070 Setback Requirements for Conditional Uses (RML)*

☐ *42.030 Conditional Uses Permitted (RMH)*

☐ *42.050 Lot Size for Conditional Uses (RMH)*

☐ *42.070 Setback Requirements for Conditional Uses (RMH)*

☐ *43.030 Conditional Uses Permitted (RH)*

☐ *43.060 Lot Size for Conditional Uses (RH)*

☐ *43.090 Setback Requirements for Conditional Uses (RH)*

☐ *44.030 Conditional Uses Permitted (RH-HR)*

☐ *44.050 Lot Size for Conditional Uses (RH-HR)*

☐ *44.070 Setback Requirements for Conditional Uses (RH-HR)*

☐ *49.030 Conditional Uses (IN)*

☐ *49.040 Lot Size for Permitted and Conditional Uses (IN)*

☐ *49.060 Setback Requirements for Conditional Uses (IN)*

☐ *50.020 Permitted Uses (CO)*

☐ *50.030 Central Urban Renewal Plan – Additional Permitted Uses and Conditional Uses (CO)*

☐ *50.040 Conditional Uses (CO)*

☐ *52.030 Conditional Uses (CR)*

☐ *53.050 Conditional Uses (CC)*

☐ *53.055 Central Urban Renewal Area – Conditional Uses (CC)*

☐ *54.030 Conditional Uses (CG)*

☐ *56.030 Conditional Uses (MC)*

☐ *56.045 Lot Size for Conditional Uses (MC)*

☐ *57.030 Conditional Uses (MUCOD)*

☐ *60.040 Conditional Uses (ML)*

☐ *60.041 Restrictions on Conditional Uses (ML)*

☐ *61.030 Conditional Uses (MG)*

☐ *61.031 Restrictions on Conditional Uses (MG)*

☐ *62.030 Conditional Uses (MP)*

☐ *62.031 Restrictions on Conditional Uses (MP)*

☐ *64.030 Conditional Uses (MBP)*

☐ *64.050 Lot Size for Permitted and Conditional Uses (MBP)*

☐ *64.065 Setback Requirements for Conditional Uses (MBP)*

☐ *68.030 Criteria for Designation of a Landmark*

☐ *68.060 Demolition Criteria*

☐ *68.070 Relocation Criteria*

☒ *68.100 Alteration and New Construction Criteria*

☒ *68.110 Alteration and New Construction Approval Process*

☒ *73.130 Standards*

☒ *73.160 Standards*

☐ *73.190 Standards – Single-Family and Multi-Family Uses*

☒ *73.220 Standards*

☒ *73.227 Standards*

☒ *73.230 Landscaping Standards*

☐ *73.300 Landscape Standards – Multi-Family Uses*

☒ *73.310 Landscape Standards – Commercial, Industrial, Public and Semi-Public Uses*

☒ *73.320 Off-Street Parking Lot Landscaping Standards*

☒ *73.470 Standards*

☒ *73.500 Standards*

City of Tualatin
www.tualatinoregon.gov

APPLICATION FOR ARCHITECTURAL REVIEW

Direct Communication to:		
Name: Mark Person	Title: Planner	
Company Name: Mackenzie		
Current address: 1515 SE Water Avenue, Suite 100		
City: Portland	State: Oregon	ZIP Code: 97214
Phone: 503-224-9560	Fax:	Email: mperson@mcknze.com

Applicant		
Name: Eric Sporre	Company Name: PacTrust	
Address: 15350 SW Sequoia Parkway, Suite 300		
City: Portland	State: Oregon	ZIP Code: 97224
Phone: 503-603-5492	Fax:	Email: erics@pactrust.com
Applicant's Signature:	Date: 4/6/15	

Property Owner		
Name: PacTrust, Attn: Eric Sporre		
Address: 15350 SW Sequoia Parkway, Suite 300		
City: Portland	State: Oregon	ZIP Code: 97224
Phone: 503-603-5492	Fax:	Email: erics@pactrust.com
Property Owner's Signature:	Date 4/6/15	
(Note: Letter of authorization is required if not signed by owner)		

Architect		
Name: Dennis Woods and Adam Solomonson - Mackenzie		
Address: 1515 SE Water Avenue, Suite 100		
City: Portland	State: Oregon	ZIP Code: 97214
Phone: 503-224-9560	Fax:	Email: dwoods@mcknze or asolomonson@mcknze.com

Landscape Architect		
Name: Beighley & Associates, Inc.		
Address: 12840 NW Cornell Road		
City: Portland	State: Oregon	ZIP Code: 97229
Phone: 503-643-4798	Fax:	Email:

Engineer		
Name: Bob Frentress, Jr. - Mackenzie		
Address: 1515 SE Water Avenue, Suite 100		
City: Portland	State: Oregon	ZIP Code: 97214
Phone: 503-224-9560	Fax:	Email: bfrentress@mcknze.com

Project		
Project Title: Koch Corporate Center Lots 1, 2 and 3 and 5 and 8		
Address: 11340 SW Tualatin Sherwood Road		
City: Tualatin	State: Oregon	ZIP Code: 97062
Brief Project Description: Architectural Review for three buildings to be phased per future market demands, proposed buildings		
Proposed Use: will be 46,875 SF, 60,000 SF and 200,000 SF as shown on the development plans included with this application.		

Attachment 105 - Application with Site Plans & Elevations

Value of Improvements:

AS THE PERSON RESPONSIBLE FOR THIS APPLICATION, I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE INFORMATION ABOVE, ON THE FACT SHEET, AND THE SURROUNDING PERTY OWNER MAILING LIST IS CORRECT. I AGREE TO COMPLY WITH ALL APPLICABLE CITY AND COUNTY ORDINANCES AND STATE LAWS REGARDING BUILDING CONSTRUCTION AND LAND USE.	
Applicant's Signature:	Date: 4/6/15

Office Use		
Case No:	Date Received:	Received by:
Fee: Complete Review ($115-$5040):	Receipt No:	
Application Complete as of:	ARB hearing date (if applicable):	
Posting Verification:	6 copies of drawings (folded)	
1 reproducible 8 ½" X 11" vicinity map	1 reproducible 8 ½" X 11" site, grading, LS, Public Facilities plan	
Neighborhood/Developer meeting materials		

PACTRUST REALTY, INC.

AUTHORITY & INCUMBENCY CERTIFICATE

The undersigned, Terry L. O'Toole, certifies that she is the duly elected and qualified Secretary of PacTrust Realty, Inc., a Delaware corporation ("Company"), and that, as such, she is authorized to execute this Certificate on behalf of the Company, which is the General Partner of Pacific Realty Associates, L.P., and she further certifies that the persons named below are duly elected, qualified and acting officers of the Company, holding on the date hereof the respective office set forth opposite his/her name:

Name	Office
Peter F. Bechen	President & Chief Executive Officer
David W. Ramus	Vice President & Chief Operating Officer
John C. Hart	Chief Financial Officer
Andrew R. Jones	Vice President
Eric A. Sporre	Vice President
John C. Wiitala	Vice President

Furthermore, each of the above officers and/or agents of the Company is authorized and empowered to execute and deliver any and all documents or other pertinent instruments related the operation and disposition of real property and improvements thereon owned by the Company.

IN WITNESS WHEREOF, the undersigned has hereunto set her hand this 6th day of April 2015.

Terry L. O'Toole
Secretary

GENERAL INFORMATION	
Site Address:	SW 115th Avenue and SW Itel Street
Assessor's Map and Tax Lot #:	2S127DB00200, 2S127DB00300, 2S127DB00400,
Planning District: MG	2S127AC00300, and 2S127AC00600
Parcel Size:	Site size: 871,262 SF (20.00 AC)
Property Owner:	Pacific Realty Co
Applicant:	Mackenzie - Mark Person
Proposed Use:	Manufacturing and manufacturing/warehouse buildings

ARCHITECTURAL REVIEW DETAILS	
☐ Residential ☐ Commercial ☒ Industrial	
Number of parking spaces:	378
Square footage of building(s):	306,875 SF total
Square footage of landscaping:	227,532 SF total
Square footage of paving:	336,294 SF total
Proposed density (for residential): N/A	

For City Personnel to complete:

Staff contact person:

CITY OF TUALATIN FACT SHEET

General

Proposed use: Manufacturing, warehouse					
Site area:	20.00	acres	Building footprint:	306,875	sq. ft.
Development area:	20.00	acres	Paved area:	336,294	sq. ft.
	871,262	Sq. ft.	Development area coverage:	73.82	%

Parking

Spaces required (see TDC 73.400) see C2.1 sheets *(example: warehouse @ 0.3/1000 GFA)* _____ @ ____/1000 GFA = ____ _____ @ ____/1000 GFA = ____ _____ @ ____/1000 GFA = ____ Total parking required: 309 spaces Handicapped accessible = Van pool = Compact = *(max. 35% allowed)* = Loading berths =	Spaces provided: Total parking provided: 378 spaces Standard = 361 Handicapped accessible = 17 Van pool = 13 Compact = 0 Loading berths = 64

Bicycles

Covered spaces required: 10	Covered spaces provided: 10

Landscaping

Landscaping required: 15 % of dvpt. area 130,689 Square feet	Landscaping provided: 28.1 % of dvpt. area 227,532 Square feet
Landscaped parking island area required: %	Landscaped parking island area provided: %
9,450 SF	18,903 SF

Trash and recycling facility

Minimum standard method:		See narrative and plans	
Other method: N/A			square feet

For commercial/industrial projects only

Total building area:	306,875	sq. ft.	2nd floor:		sq. ft.
Main floor:	306,875	sq. ft.	3rd floor:		sq. ft.
Mezzanine:		sq. ft.	4th floor:		sq. ft.

For residential projects only N/A

Number of buildings:	Total sq. ft. of buildings: sq. ft.
Building stories:	

ARCHITECTURAL REVIEW CERTIFICATION OF SIGN POSTING

NOTICE

ARCHITECTURAL REVIEW AR-[YY]-__

For more information call 503-691-3026 or visit www.tualatinoregon.gov

18"

24"

The applicant shall provide and post a sign pursuant to Tualatin Development Code (TDC) 31.064(2). Additionally, the 18" x 24" sign must contain the application number, and the block around the word "NOTICE" must remain **primary yellow** composed of the **RGB color values Red 255, Green 255, and Blue 0.** Additionally, the potential applicant must provide a flier (or flyer) box on or near the sign and fill the box with brochures reiterating the meeting info and summarizing info about the potential project, including mention of anticipated land use application(s). Staff has a Microsoft PowerPoint 2007 template of this sign design available through the Planning Division homepage at < www.tualatinoregon.gov/planning/land-use-application-sign-templates>.

NOTE: For larger projects, the Community Development Department may require the posting of additional signs in conspicuous locations.

As the applicant for the Koch Corporate Center - Buildings 1, 5, & 8 project, I hereby certify that on this day, 4 sign(s) was/were posted on the subject ~~property~~ site in accordance with the requirements of the Tualatin Development Code and the Community Development Department - Planning Division.

Applicant's Name: Suzannah Stanley
(PLEASE PRINT)

Applicant's Signature: [signature]

Date: 3/4/15

Clean Water Services

Clean Water Services File Number
15-000054

Sensitive Area Pre-Screening Site Assessment

1. **Jurisdiction:** Tualatin

2. **Property Information** *(example 1S234AB01400)*
Tax lot ID(s): 2S127AC00300, 2S127AC00600, 2S127DB00200, 2S127DB00300, 2S127DB00400
Site Address:
City, State, Zip: Tualatin, Oregon, 97062
Nearest Cross Street: Itel and SW 115th

3. **Owner Information**
Name:
Company: PacTrust
Address:
City, State, Zip:
Phone/Fax:
E-Mail:

4. **Development Activity** *(check **all** that apply)*
- ☐ Addition to Single Family Residence (rooms, deck, garage)
- ☐ Lot Line Adjustment
- ☐ Minor Land Partition
- ☐ Residential Condominium
- ☐ Commercial Condominium
- ☐ Residential Subdivision
- ☐ Commercial Subdivision
- ☐ Single Lot Commercial
- ☐ Multi Lot Commercial

Other Architectural Review for new industrial buildings

5. **Applicant Information**
Name: Mark Person
Company: Mackenzie
Address: 1515 SE Water Avenue, Suite 100
City, State, Zip: Portland, Oregon 97214
Phone/Fax: 503-224-9560
E-Mail: mperson@mcknze.com

6. **Will the project involve any off-site work?** ☐ Yes ☐ No ☐ Unknown
Location and description of off-site work

7. **Additional comments or information that may be needed to understand your project**

This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/Type Name Mark Person **Print/Type Title** Planner

ONLINE SUBMITTAL **Date** 1/8/2015

FOR DISTRICT USE ONLY

☐ Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.

☐ Based on review of the submitted materials and best available information Sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 07-20, Section 3.02.1. All required permits and approvals must be obtained and completed under applicable local, State, and federal law.

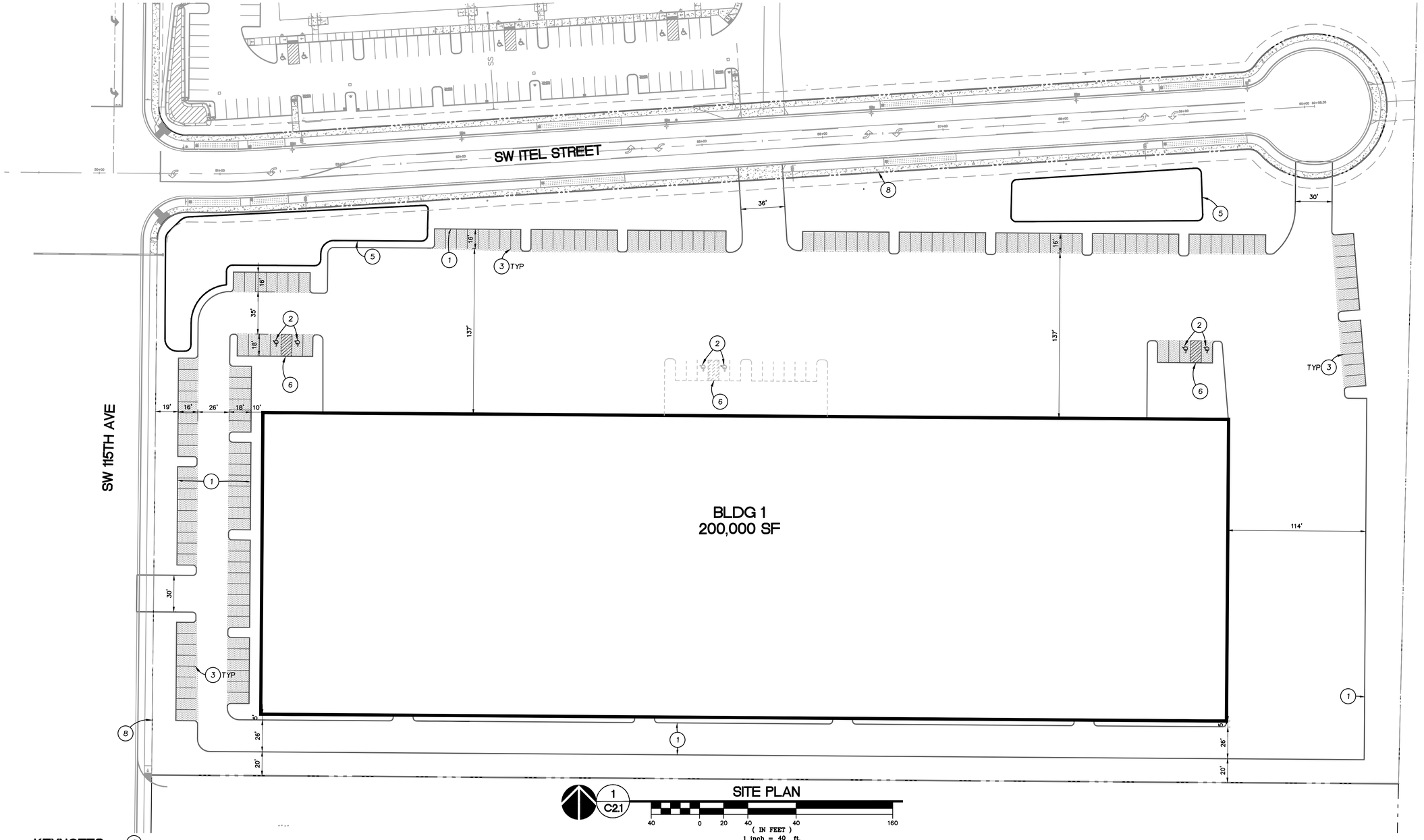
☐ Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 07-20, Section 3.02.1. All required permits and approvals must be obtained and completed under applicable local, state and federal law.

☐ **This Service Provider Letter is not valid unless _____ CWS approved site plan(s) are attached.**

☒ The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.

Reviewed by Laurie Harris Koch Corporate Center Koch Corporate Center No. 2 Date 01/12/15

Attachment 105 - Application with Site Plans & Elevations



1 C2.1 SITE PLAN

40 0 20 40 40 160

(IN FEET)

1 inch = 40 ft.

KEYNOTES

1. VERTICAL CURB, SEE DETAIL
2. ADA COMPLIANT PARKING STALL, SEE DETAIL
3. 4" WHITE PARKING STRIPE (2 COATS OF PAINT)
4. CONCRETE SIDEWALK
5. STORMWATER POND
6. ADA COMPLIANT CURB RAMP

SITE DATA

BUILDING XXXXX

LOT	515,315 SF (11.83 AC)
TOTAL IMPERVIOUS AREA	x SF (x AC, x%)
BUILDING FOOTPRINT	200,000 SF (4.59 AC, x%)
DRIVE AISLE/PARKING/SIDEWALK AREA	x SF (x AC, x%)
PARKING LOT AREA	x SF (x AC, x%)
PARKING LANDSCAPE AREA	x SF (x AC, x%)
LANDSCAPE AREA	x SF (x AC, x%)

PARKING PROVIDED

BUILDING XXXX

PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	154	SPACES (x VAN/CAR POOL SPACES)
PROPOSED COMPACT	x	SPACES (0%)
TOTAL PARKING PROVIDED	160	(1.25/1,000 SF)
BICYCLE PARKING	x	SPACES (x COVERED IN BUILDING)

PAVEMENT SECTIONS

CAR PARKING AREA = x SF (x AC)
CAR PARKING AREA 2.5" AC
(2 LIFTS) OVER 6" CRUSHED ROCK

HEAVY DUTY AREA = x SF (x AC)
HEAVY DUTY AREA 4" AC
(2 LIFTS) OVER 11" CRUSHED ROCK

CONCRETE PAVING AREA = x SF (x AC)
REFER TO SIDEWALK DETAIL 2/C8.2

FOR REFERENCE ONLY. REFER TO GEOTECHNICAL REPORT PREPARED BY GEODESIGN FOR MINIMUM REQUIREMENTS.

SITE LEGEND

- PROJECT DISTURBANCE AREA, LIMITS OF WORK
- PROPERTY LINE
- EASEMENT
- VERTICAL CURB PER DETAIL 1/C8.1
- 6" EXTRUDED CURB
- FIRE LANE STRIPED CURB, COORD. W/ FIRE MARSHAL
- SITE FENCE PER SPEC.
- CATCH BASIN
- FIRE HYDRANT
- WATER METER
- DDCV
- FDC
- PROPOSED RETAINING WALL (LOCATION SHOWN REPRESENTS FACE OF BOTTOM ROW OF WALL)
- 10S — NUMBER OF STANDARD STALLS IN PARKING BAY
- 2HC — NUMBER OF H.C. STALLS IN PARKING BAY
- LID BASIN
- LINER

CURB NOTE

ALL ON-SITE CURB RADII ARE 2.5' UNLESS OTHERWISE NOTED ON THE PLANS

PRELIMINARY

2140561\00\CIVIL\561 C2.1.DWG AJS 12/29/14 13:48 1:40

M.
Architecture ▪ Interiors
Planning ▪ Engineering

Portland, OR
503.224.9560
Vancouver, WA
360.695.7879
Seattle, WA
206.749.9993
www.mcknze.com

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DESIGN DRIVEN | CLIENT FOCUSED

Client
PacTrust

A PACTRUST PROPERTY

Project
Koch Corporate Center

LOTS 1,2, AND 3

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

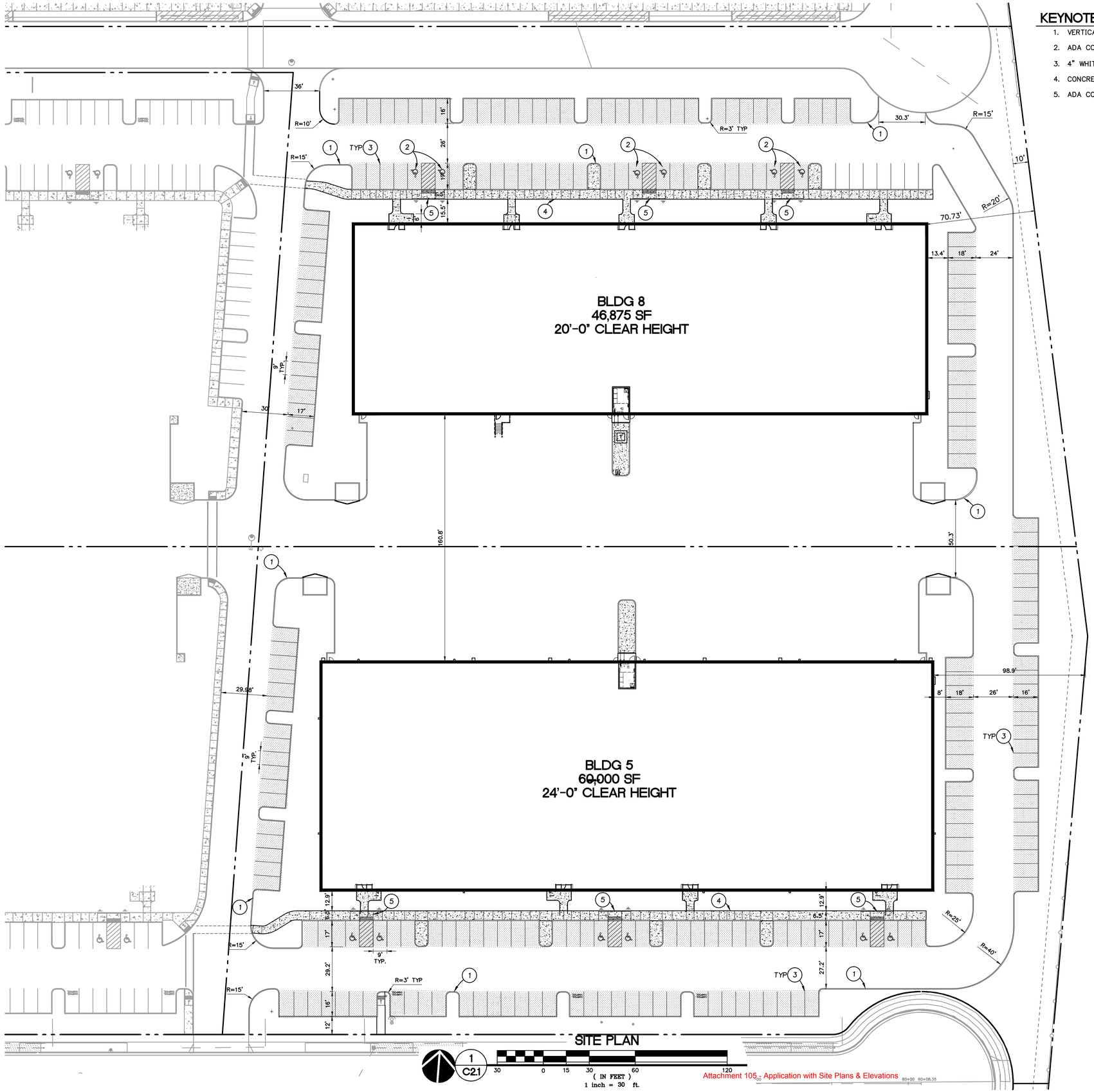
SHEET TITLE:
SITE PLAN

DRAWN BY:

CHECKED BY:

SHEET:
C2.1

JOB NO. 2140561.00



KEYNOTES

1. VERTICAL CURB, SEE DETAIL
2. ADA COMPLIANT PARKING STALL, SEE DETAIL
3. 4" WHITE PARKING STRIPE (2 COATS OF PAINT)
4. CONCRETE SIDEWALK
5. ADA COMPLIANT CURB RAMP

SITE DATA

BUILDING 5	
LOT 5	171,460 SF (3.94 AC)
TOTAL IMPERVIOUS AREA	x SF (3.05 AC, 83.2%)
BUILDING FOOTPRINT	60,000 SF (1.29 AC, 35.3%)
DRIVE AISLE/PARKING/SIDEWALK AREA	x SF (1.76 AC, 48.0%)
PARKING LOT AREA	x SF (0.83 AC, 22.6%)
PARKING LANDSCAPE AREA	x SF (0.15 AC)
LANDSCAPE AREA	x SF (0.61 AC, 16.8%)

BUILDING 8	
LOT 8	184,519 SF (4.24 AC)
TOTAL IMPERVIOUS AREA	x SF (X AC, X%)
BUILDING FOOTPRINT	46,875 SF (X AC, X%)
DRIVE AISLE/PARKING/SIDEWALK AREA	x SF (X AC, X%)
PARKING LOT AREA	x SF (X AC, X%)
PARKING LANDSCAPE AREA	x SF (X AC)
LANDSCAPE AREA	x SF (X AC, X%)

PARKING PROVIDED

BUILDING 5		
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	97	SPACES (5 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	103	(2.1/1,000 SF)
BICYCLE PARKING	6	SPACES (6 COVERED IN BUILDING)

BUILDING 8		
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	121	SPACES (5 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	127	(2.8/1,000 SF)
BICYCLE PARKING	6	SPACES (6 COVERED IN BUILDING)

PAVEMENT SECTIONS

CAR PARKING AREA = X SF (X AC)
CAR PARKING AREA 2.5" AC
(2 LIFTS) OVER 6" CRUSHED ROCK

HEAVY DUTY AREA = X SF (X AC)
HEAVY DUTY AREA 4" AC
(2 LIFTS) OVER 11" CRUSHED ROCK

CONCRETE PAVING AREA = X SF (X AC)
REFER TO SIDEWALK DETAIL 2/C8.2

FOR REFERENCE ONLY. REFER TO GEOTECHNICAL REPORT PREPARED BY GEODESIGN FOR MINIMUM REQUIREMENTS.

SITE LEGEND

- PROJECT DISTURBANCE AREA, LIMITS OF WORK
- PROPERTY LINE
- EASEMENT
- VERTICAL CURB PER DETAIL 1/C8.1
- 6" EXTRUDED CURB
- FIRE LANE STRIPED CURB, COORD. W/ FIRE MARSHAL
- SITE FENCE PER SPEC.
- CATCH BASIN
- FIRE HYDRANT
- WATER METER
- DDCV
- FDC
- PROPOSED RETAINING WALL (LOCATION SHOWN REPRESENTS FACE OF BOTTOM ROW OF WALL)
- 10S — NUMBER OF STANDARD STALLS IN PARKING BAY
- 2HC — NUMBER OF H.C. STALLS IN PARKING BAY
- LID BASIN
- LINER

CURB NOTE

ALL ON-SITE CURB RADII ARE 2.5' UNLESS OTHERWISE NOTED ON THE PLANS

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Planning ▪ Engineering

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www.mcknze.com

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DESIGN DRIVEN | CLIENT FOCUSED

Client
PacTrust

A PACTRUST PROPERTY

Project
Koch Corporate Center

LOTS 5 AND 8

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
SITE PLAN

DRAWN BY:

CHECKED BY:

SHEET:
C2.1

JOB NO. 2140559.00

PRELIMINARY

2140559\00\CIVIL\559 C2.1.DWG AJS 12/29/14 13:44 1:30

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

January 8, 2015

Re: **Koch Corporate Center – Architectural Review Application**
Neighborhood Meeting
Project Number 2140561.00

Dear Interested Party:

You are cordially invited to attend a meeting on Thursday, January 29, 2015, from 5:00 to 6:00 p.m. at the Heritage Center located at 8700 SW Sweek Drive (see attached for a detailed location map).

The purpose of this meeting is to discuss three new industrial buildings located at SW 115th Avenue and Itel Street, more specifically on tax lots 200, 300, and 400 of map 2S 1 27DB and tax lots 300 and 600 of 2S 1 27AC. The property owner, PacTrust, is proposing one new building on tax lots 200, 300, and 400 to the south of Itel Street. Additionally, PacTrust is proposing one building on tax lot 300 and one building on 600 north of Itel Street. Please see the attached map for reference.

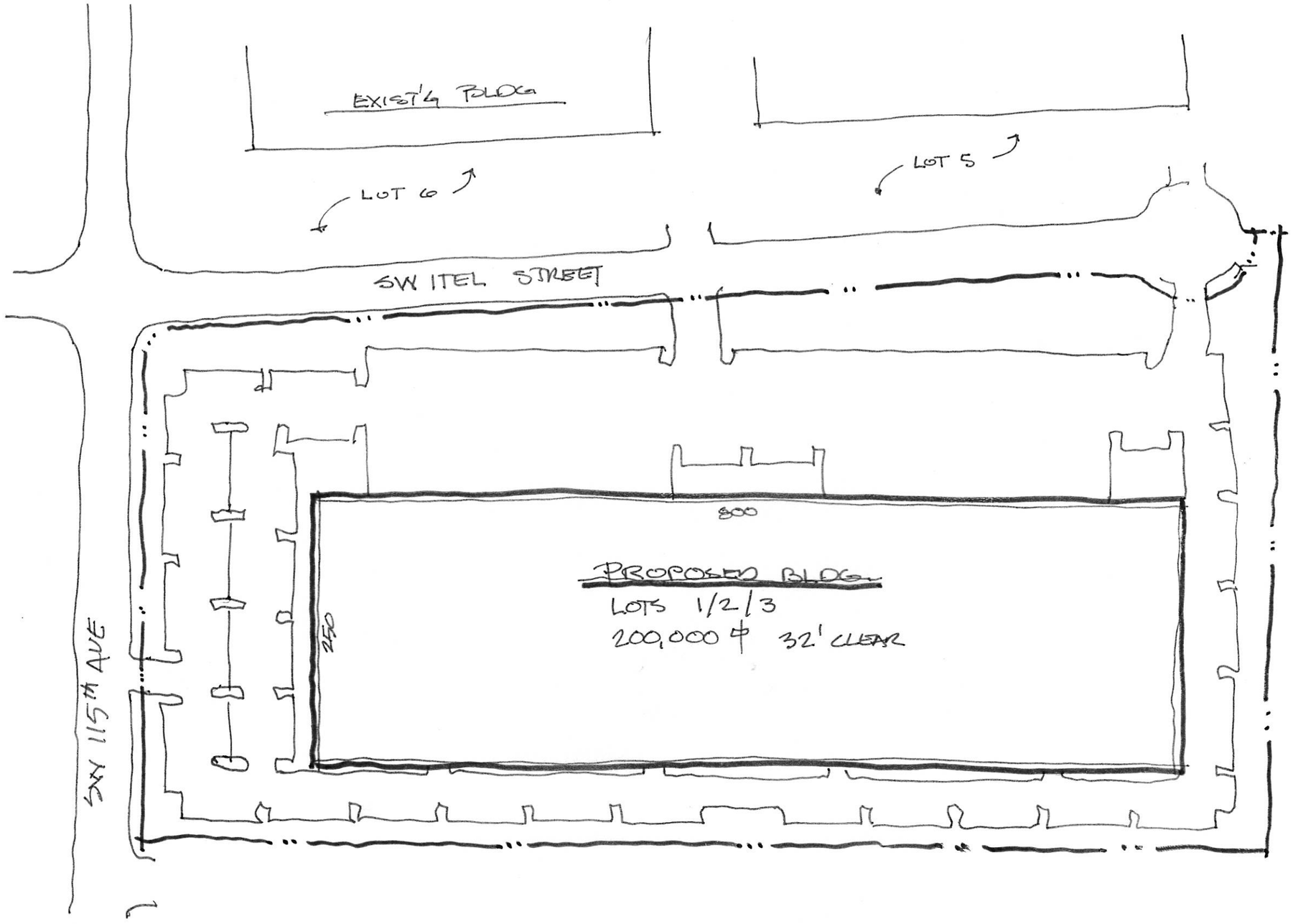
The purpose of this meeting is to review preliminary plans and provide a means for the applicant/owner and surrounding property owners to meet and discuss this proposal. If you have any questions, please feel free to contact me at (503) 224-9560.

Sincerely,

Mark Person, AICP
Planner

Enclosures: Conceptual Site Plan
Vicinity Map
Heritage Center Location Map

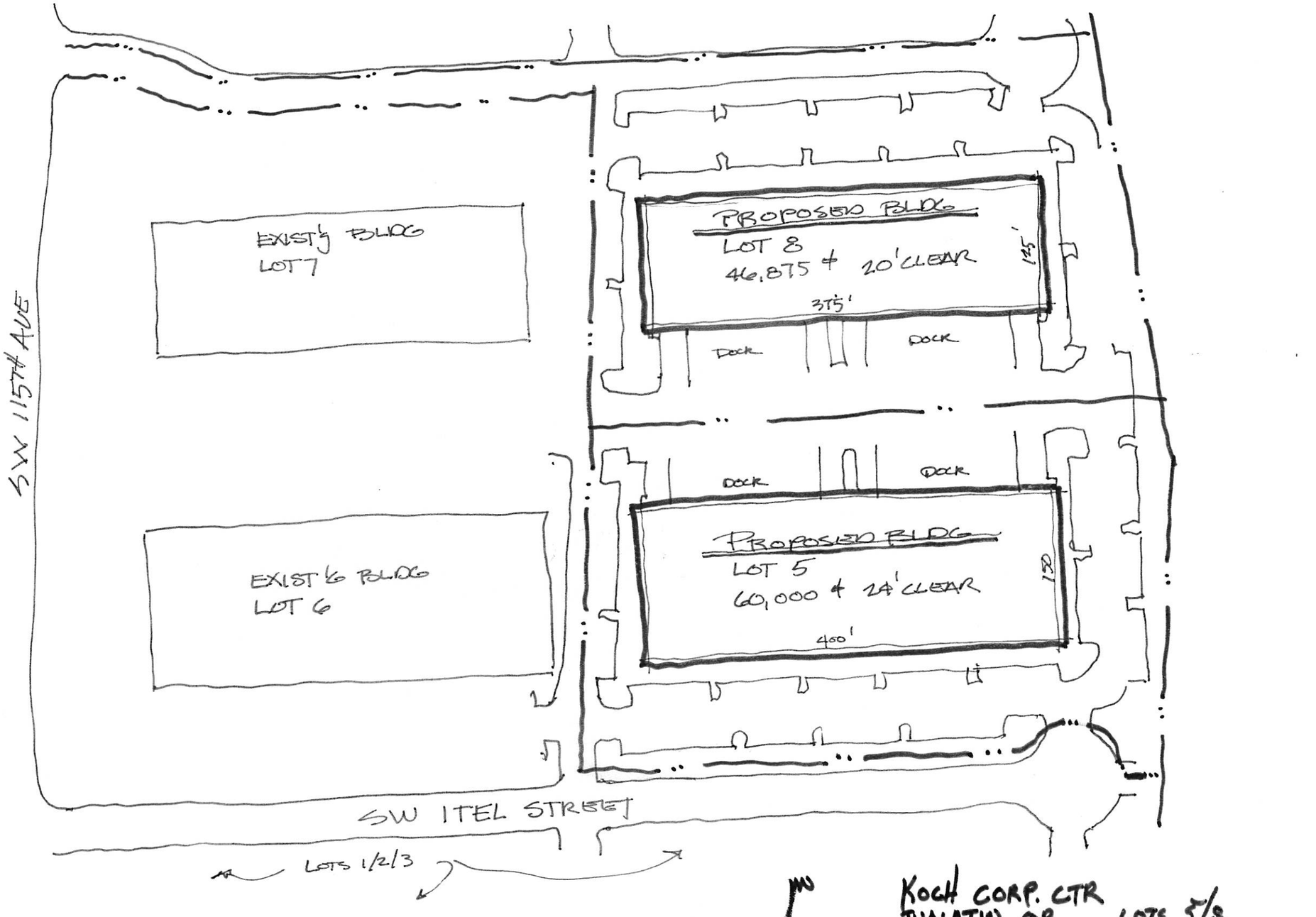
c: Matt Oyen – PacTrust
Adam Solomonson, Dennis Woods – Mackenzie



KOCH CORP. CTR
TUALATIN OR LOTS 1/2/3

12/8/14 MACKENZIE ARCHITECTS 1:100'

A PACTRUST PROPERTY



KOCH CORP. CTR
TUALATIN OR LOTS 5/8

12/8/14 MACKENZIE ARCHITECTS 1:100'

A PACTRUST PROPERTY

KOCH CORPORATE CENTER

Tualatin, Oregon

LEGEND

- Site
- Urban Growth Boundary (UGB)

0 370 740 1,480 Feet

1 inch = 833 feet

N

SOURCE DATA:
Metro RLIS Lite Base Data, Aug 2014

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

Date: 1/6/2015
File: Vicinity_8x11

Map Created By: MDP
Project No:

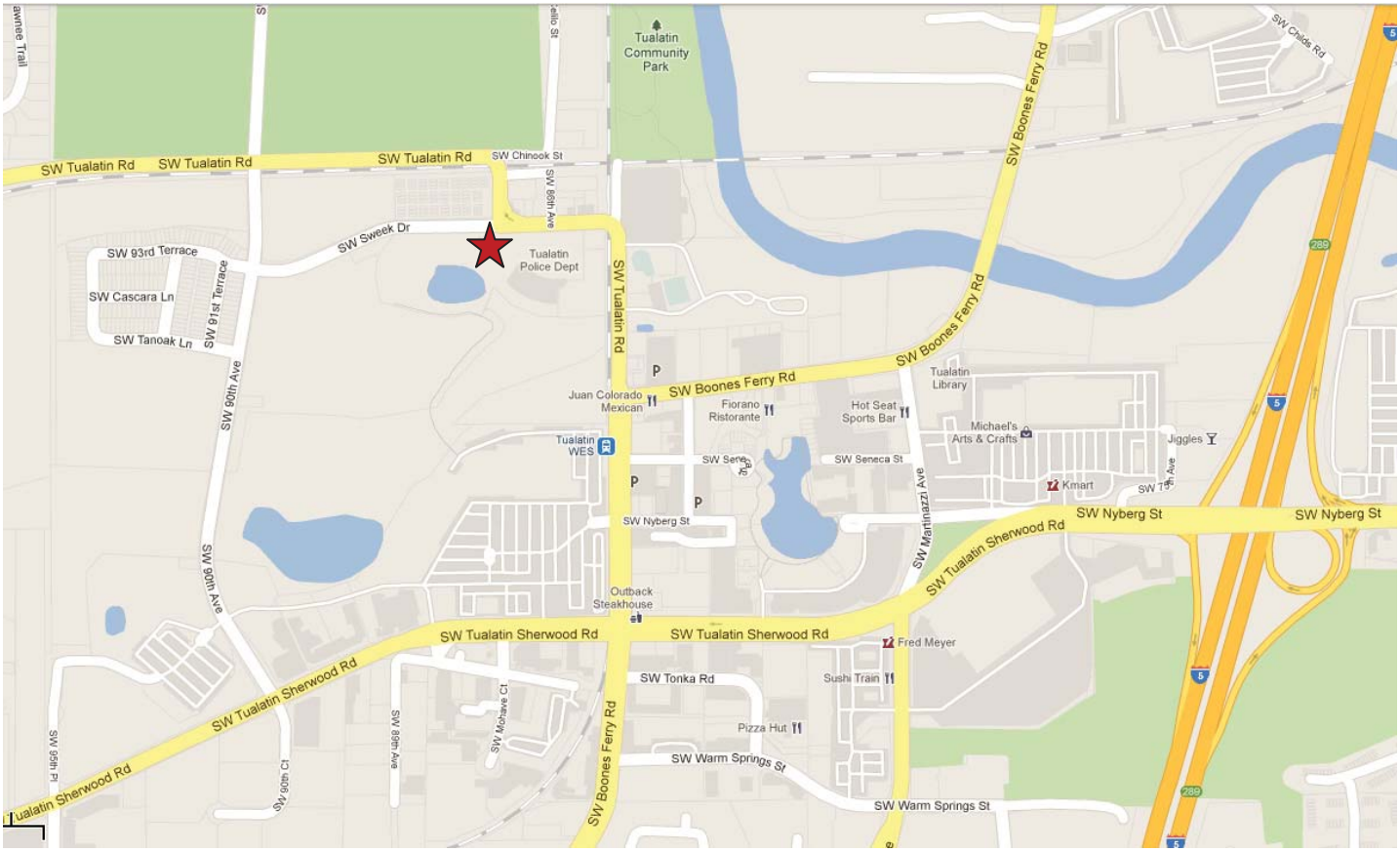
MACKENZIE.

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

Attachment 105 - Application with Site Plans & Elevations

TUALATIN HERITAGE CENTER
8700 SW Sweek Drive



Attachment 105 - Application with Site Plans & Elevations

NEIGHBORHOOD/DEVELOPER MEETING
AFFIDAVIT OF MAILING

STATE OF OREGON)
) SS
COUNTY OF WASHINGTON)

I, Mark Person, being first duly sworn, depose and say:

That on the 8th day of January, 2015, I served upon the persons shown on Exhibit "A," attached hereto and by this reference incorporated herein, a copy of the Notice of Neighborhood/Developer meeting marked Exhibit "B," attached hereto and by this reference incorporated herein, by mailing to them a true and correct copy of the original hereof. I further certify that the addresses shown on said Exhibit "A" are their regular addresses as determined from the books and records of the Washington County and/or Clackamas County Departments of Assessment and Taxation Tax Rolls, and that said envelopes were placed in the United States Mail with postage fully prepared thereon.

Signature

SUBSCRIBED AND SWORN to before me this 9th day of January, 20 15.

OFFICIAL SEAL
REBECCA LYNN BRANDT
NOTARY PUBLIC-OREGON
COMMISSION NO. 469805
MY COMMISSION EXPIRES JULY 08, 2016

Rebecca L. Brandt
Notary Public for Oregon
My commission expires: 07/08/2016

RE: Koch Corporate Lots 1-3 and 5 and 8

NEIGHBORHOOD / DEVELOPER MEETING
CERTIFICATION OF SIGN POSTING

In addition to the requirements of TDC 31.064(2) quoted earlier in the packet, the 18" x 24" sign that the applicant provides must display the meeting date, time, and address and a contact phone number. The block around the word "NOTICE" must remain **orange** composed of the **RGB color values Red 254, Green 127, and Blue 0**. Additionally, the potential applicant must provide a flier (or flyer) box on or near the sign and fill the box with brochures reiterating the meeting info and summarizing info about the potential project, including mention of anticipated land use application(s). Staff has a Microsoft PowerPoint 2007 template of this sign design available through the Planning Division homepage at < www.tualatinoregon.gov/planning/land-use-application-sign-templates >.

As the applicant for the

Koch Corporate Development project, I hereby certify that on this day, Jan 8th 2015 sign(s) was/were posted on the subject property in accordance with the requirements of the Tualatin Development Code and the Community Development Department - Planning Division.

Applicant's Name: Mark Person
(PLEASE PRINT)

Applicant's Signature: _____

Date: 1/9/15

MACKENZIE. SIGN-IN SHEET

DESIGN DRIVEN I CLIENT FOCUSED

PROJECT NUMBER: 2140561.00

PROJECT NAME: Koch Lots 1-3 and 5 and 8

SUBJECT: **(Neighborhood Meeting / January 29, 2015)**

Name	Address	Email	Representing
Clare Fuchs	[redacted]		
Tony Doran			
Dennis Woods			
Eric Sporre			
Matt Olsen			
Mark Peron			

MEETING NOTES

PROJECT NUMBER:	2140561.00	ISSUE DATE:	March 3, 2015
PROJECT NAME:	Koch 1-3/5 and 8		

RECORDED BY:	Mark Person, Land Use Planner
TO:	FILE
PRESENT:	Clare Fuchs – City of Tualatin Tony Doran – City of Tualatin Eric Sporre – PacTrust Matt Oyen – PacTrust Mark Person – Mackenzie Dennis Woods – Mackenzie Adam Solomonson – Mackenzie
SUBJECT:	**Architectural Review Neighborhood Meeting**

INFORMATION ITEMS

The Neighborhood/Developer Meeting for Koch Lots 1-3 and Lots 5 and 8 was held at the Heritage Center in Tualatin, located at 8700 SW Sweek Drive. The meeting was held from 5 – 6 PM on January 29, 2015. No neighbors showed up at the neighborhood meeting. The only people present at the meeting were either employees of City of Tualatin, PacTrust, or Mackenzie. The meeting ended at 6:05 PM.

Washington County, Oregon
12/06/2007 03:07:12 PM
D-DW Cnt=1 Stn=8 C PFEIFER
$15.00 $5.00 $11.00 - Total = $31.00

2007-125587

01193969200701255870030034

I, Richard Hobernicht, Director of Assessment and Taxation and Ex-Officio County Clerk for Washington County, Oregon, do hereby certify that the within instrument of writing was received and recorded in the book of records of said county.

Richard Hobernicht, Director of Assessment and Taxation, Ex-Officio County Clerk

1015
2-20-08
26

FATCO. NO. 962562-351

First American Title Accommodation
Recording Assumes No Liability

Grantor's Name and Address:
PRA KOCH X, LLC
C/o First American Exchange
222 SW Columbia St., #400
Portland,OR 97201
Grantee's Name and Address:
Pacific Realty Associates, L.P.
15350 SW Sequoia Parkway, Suite 300
Portland, OR 97224

After recording return to:
Pacific Realty Associates, L.P.
15350 SW Sequoia Parkway, Suite 300
Portland, OR 97224
Attn: General Counsel

Until a change is requested all tax statements shall be sent to the following address:
Pacific Realty Associates, L.P.
15350 SW Sequoia Parkway, Suite 300
Portland, OR 97224

Form No. 762 - Special Warranty Deed

SPECIAL WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS That **PRA KOCH X, LLC**, an Oregon limited liability company, hereinafter called grantor, for the consideration hereinafter stated, does hereby grant, bargain, sell and convey unto **Pacific Realty Associates, L.P.**, a Delaware limited partnership, hereinafter called grantee, and unto grantee's heirs, successors and assigns all of that certain real property with the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining, situated in the County of Washington, State of Oregon, described as follows, to-wit:

LEGAL DESCRIPTION ATTACHED HERETO AS EXHIBIT "A"

To Have and to Hold the same unto the said grantee and grantee's heirs, successors and assigns forever.

And the grantor hereby covenants to and with the said grantee and grantee's heirs, successors and assigns that said real property is free from encumbrances created or suffered thereon by grantor and that grantor will warrant and defend the same and every part and parcel thereof against the lawful claims and demands of all person claiming by, through, or under the grantor. The true and actual consideration paid for this transfer, **IS GIVEN AS PART OF AN IRC §1031 EXCHANGE OF LIKE-KIND PROPERTY**.

However, the actual consideration consists of or includes other property or value given or promised which is the whole consideration.

In construing this deed and where the context so requires, the singular includes the plural and all grammatical changes shall be implied to make the provisions hereto apply equally to corporations and to individuals,

In Witness Whereof, the grantor has executed this instrument this 6th day of December, 2007; if a corporate grantor, it has caused its name to be signed and seal affixed by its officers, duly authorized thereto by order of its board of directors.

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

PRA KOCH X, LLC, an Oregon limited liability company
By: First American Exchange Company, LLC, sole member

By: [signature]
Louise Hottel, Senior Exchange Officer

State of Oregon }
County of Multnomah } *SS:*

This instrument was acknowledged before me on December 6, 2007, by Louise Hottel, as Senior Exchange Officer of First American Exchange Company, LLC, sole member of PRA KOCH X, LLC

[signature]
Notary Public for the State of Oregon
Residing at: Sandy, OR
My commission expires: 11-29-2008

OFFICIAL SEAL
LINDA S WHITNEY
NOTARY PUBLIC-OREGON
COMMISSION NO. 386592
MY COMMISSION EXPIRES NOV. 29, 2008

EXHIBIT A

Legal Description

PARCEL I

Beginning South at a stake on the legal subdivision line 22.50 chains from the Northwest corner of the Southwest quarter of the Northeast quarter of Section 27, Township 2 South of Range 1 West of the Willamette Meridian, in the County of Washington and State of Oregon; and running thence North 63° East 17.93 chains to a stake from which a yellow fir tree 28 inches in diameter bears South 3-1/2° East 23 links; thence North 11° West 24 rods or so far as may be necessary to make a lot containing 10 acres; thence Westerly to a stake at an opposite point on the equal subdivision line; thence South by way of said subdivision line to the place of beginning.

ALSO, the following described real property, to-wit:

Beginning at a point 4.25 chains East of the Southwest corner of the Northwest quarter of the Southeast quarter of Section 27, Township 2 South, Range 1 West of the Willamette Meridian, in the County of Washington and State of Oregon; thence North 19.75 chains to a stake; thence North 63° East 13.18 chains to a stake; thence South 25.62-1/2 chains to a stake; thence West 11.50 chains to the place of beginning.

ALSO, the following described real property, to-wit:

Beginning 20 chains North of the quarter section corner on the South line of Section 27, Township 2 South, Range 1 West of the Willamette Meridian; thence North 17.50 chains; thence North 63° East 4.75 chains; thence South 19.75 chains; thence West 4.25 chains to the place of beginning.

PARCEL II

That portion of the following described property lying South of SW Tualatin-Sherwood Road:

Part of the Southwest one-quarter of the Northeast one-quarter of Section 27, Township 2 South, Range 1 West of the Willamette Meridian, in the City of Tualatin, County of Washington and State of Oregon, being described as follows:

Beginning at the Northwest corner of the Southwest one-quarter of the Northeast one-quarter of Section 27, Township 2 South, Range 1 West of the Willamette Meridian; thence South, along the legal subdivision line, 22.50 chains; thence North 63° East, 17.93 chains to a stake; thence North 11° West, 13.67 chains to a stake; thence East 1.65 chains; thence North 1 chain; thence West 15.15 chains to the place of beginning;

EXCEPTING THEREFROM that certain 10-acre tract described as follows:

Beginning at a stake on the legal subdivision line, 22.50 chains South from the Northwest corner of the Southwest one-quarter of the Northeast one-quarter of said Section 27; thence North 63° East, 17.93 chains to a stake from which a yellow fir tree 28 inches in diameter bears South 3°30' East, 23 links; thence North 11° West, 23 rods or so far as may be necessary to make a lot containing 10 acres; thence Westerly to a stake on the opposite point on the equal subdivision line; thence South by way of said division line to the place of beginning.

TOGETHER WITH those portions of vacated SW Tualatin-Sherwood Road inuring thereto by reason of Ordinance No. 94-46, Washington County Board of Commissioners, recorded May 9, 1994, Fee No. 94045181.

EXCEPTING THEREFROM any portions thereof lying within SW Tualatin-Sherwood Road as it now exists, including but not limited to those portions dedicated to the public for road purposes by Deed recorded September 10, 1990, Fee No. 90-48908 and by Deed recorded April 30, 2002, Fee No. 2002-051260.

Washington County, Oregon 2011-038795
06/27/2011 11:19:07 AM
D-DBS Cnt=1 Stn=7 K GRUNEWALD
$20.00 $8.00 $11.00 $16.00 - Total = $51.00

01601309201100387950040041

I, Richard Hobernicht, Director of Assessment and Taxation and Ex-Officio County Clerk for Washington County, Oregon, do hereby certify that the within instrument of writing was received and recorded in the book of records of said county.

Richard Hobernicht, Director of Assessment and Taxation, Ex-Officio County Clerk

20
31

01-2010000 7535

After recording return to:

Perkins Coie LLP
1120 NW Couch St., 10th Floor
Portland, OR 97209
Attn: Andrew H. Solomon

Until a change is requested, all tax statements shall be sent to the following address:

No Change

Pacific Realty Associates, L.P.
15350 SW Sequoia Pkwy.
Suite 300
Portland, OR 97224

The above space is reserved for recorder's use.

BARGAIN AND SALE DEED

PACIFIC REALTY ASSOCIATES, L.P., a Delaware limited partnership ("**Grantor**"), conveys to PACIFIC REALTY ASSOCIATES, L.P., a Delaware limited partnership ("**Grantee**"), that certain real property located in Washington County, Oregon and more particularly described on Exhibit A attached hereto and by this reference incorporated herein (the "**Property**").

The true and actual consideration for this transfer in terms of dollars is $0.00, but consists of other good and valuable consideration. The purpose of this deed is to place of record the new legal description resulting from the adjustment of a property line of the Property in accordance with (i) that certain Bargain and Sale Deed for Property Line Adjustment recorded in the official records of Washington County, Oregon, on May 26, 2011 as 2011-038580 and (ii) that certain Bargain and Sale Deed for Property Line Adjustment recorded in the official records of Washington County, Oregon, on May 26, 2011 as 2011-038581

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS

INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

DATED: May 13, 2011.

GRANTOR:

PACIFIC REALTY ASSOCIATES, L.P.,
a Delaware limited partnership

By: David W Ra
Name: David W. Ramus
Title: Vice President and Chief Operating Officer

STATE OF OREGON)
) ss.
COUNTY OF Washington)

The foregoing instrument was acknowledged before me this 13th day of May, 2011, by David W. Ramus as Vice President and Chief Operating Officer of PACIFIC REALTY ASSOCIATES, L.P., a Delaware limited partnership, on behalf of said partnership.

Notary Public for Oregon
My commission expires:_____

OFFICIAL SEAL
TERRY L O'TOOLE
NOTARY PUBLIC-OREGON
COMMISSION NO. 430474
MY COMMISSION EXPIRES AUG. 9, 2012

37881-0028/LEGAL20594337.1

WEDDLE SURVEYING INC.
Excellence is our benchmark.

REGISTERED
PROFESSIONAL
LAND SURVEYOR
OREGON
JULY 13, 2004
ANTHONY B. RYAN
58833
RENEWAL DATE DEC. 31, 10

6950 SW Hampton Street, Suite 170
Tigard, OR 97223
Phone: (503) 595-8702
Fax: (503) 595-8705
office@weddlesurveying.com
www.weddlesurveying.net

October 19, 2010
Job No. 4348TRACT2_PLA6

PROPERTY LINE ADJUSTMENT – TRACT 2 (Pacific Realty)

LEGAL DESCRIPTION:

EXHIBIT "A"

A portion of that tract of land described as Exhibit "A-1" in Deed to Pacific Realty Associates, L.P., a Delaware limited partnership, recorded as Document Number 2010-050158, Deed Records of Washington County, Oregon, together with a portion of that tract of land described as "Tract 2" in Deed to Powin Pacific Properties, LLC, an Oregon limited liability company, recorded as Document Number 2010-066745, said Deed Records, in the North Half of Section 27, Township 2 South, Range 1 West of the Willamette Meridian, City of Tualatin, Washington County, Oregon, the combined whole being more particularly described as follows:

Commencing at a 2 inch brass disk marking the North Quarter corner of said Section 27; thence along the North-South centerline of said Section 27, as shown on Partition Plat No. 2002-066, Washington County plat records, South 01°36'49" West, 2636.43 feet to a 5/8 inch iron rod with a yellow plastic cap marked "WRG Design, Inc." at the intersection of said North-South centerline and the East-West centerline of said Section 27; thence along said East-West centerline, South 88°31'20" East, 25.50 feet to a 5/8" iron rod with a yellow plastic cap marked "WRG Design Inc."; thence along a line parallel with and 25.50 feet Easterly of said North-South centerline, being the Easterly line of right-of-way dedication per Deed Document Number 2007-106263 South 01°36'49" West, 488.53 feet to the Point of Beginning; thence leaving said parallel line South 89°35'20" East, 1032.86 feet to the Easterly line of said Exhibit "A-1" in Deed Document Number 2010-050158; thence along said Easterly line North 02°21'48" East, 524.36 feet to a 5/8 inch iron rod with a yellow plastic cap marked "WRG Design, Inc."; thence continuing North 02°21'48" East, 335.48 feet to an angle point on said line marked by a railroad iron; thence North 09°42'43" West, 386.18 feet to a 3/4 inch iron pipe; thence North 09°42'43" West, 518.10 feet to a point; thence South 87°24"13" East, 108.90 feet to a 5/8 inch iron rod with a yellow plastic cap marked "WRG Design, Inc."; thence North 02°10'50" East, 66.00 feet to a railroad iron; thence along the Northerly line of said "Exhibit "A-1" North 88°43'16" West, 511.36 feet to the most Southerly Southeast corner of said Tract

(Tract 2 – Legal description, continued)

2 in Document Number 2010-066745; thence leaving said Northerly line and along the Easterly line of said Tract 2 North 11°03'22" West, 104.58 feet to a point on the Southerly right-of-way line of S.W. Tualatin-Sherwood Road (County Road No. 2737), 37.00 feet from centerline; thence along said Southerly right-of-way line South 54°13'25" West, 0.75 feet to the beginning of a 4037.00 foot
(Tract 2 – legal description, continued)

radius curve to the right; thence along the arc of said curve 559.56 feet through a central angle of 7°56'30" (the long chord bears South 58°11'40" West, 559.12 feet) to said North-South centerline of said Section 27; thence leaving said right-of-way line and along said North-South centerline South 01°36'49" West, 1116.40 feet to the intersection of said East-West centerline; thence South 88°31'20" East, 25.50 feet to a 5/8" iron rod with a yellow plastic cap marked "WRG Design, Inc."; thence South 01°36'49" West, 488.53 feet to the Point of Beginning.

(Containing therein a combined area of 41.534 acres more or less.)

EXCEPTING THEREFROM those areas dedicated to the public for public use as recorded in Document Number 2010-045630, Washington County, Oregon Deed Records.

The basis of bearings for this description is Survey Number 31523, Washington County Survey Records.

KOCH CORPORATE CENTER

Tualatin, Oregon

LEGEND

- Site
- Tax Lots

Feet
0 112.5 225 450

N

1 inch = 225 feet

SOURCE DATA:
Metro RLIS Lite Base Data, Aug 2014

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

Date: 1/22/2015
File: Aerial Map

Map Created By: <ACP> shs</ACP>
Project No: 2130561.00 & 2140559.00

MACKENZIE.
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

REPUBLIC SERVICES

10295 SW Ridder Road, Wilsonville, OR 97070
O: 503.570.0626 F: 503.982.9307 republicservices.com

Susannah Hamlin Stanley
Land Use Planner
Mackenzie Design
RiverEast Center
1515SE Water Ave
Suite 100
Portland, OR 97214

Re: Koch bldgs. Trash enclosures 1,5,8

Dear Susannah;

Thank you, for sending us your site plans for these building development's in Tualatin.

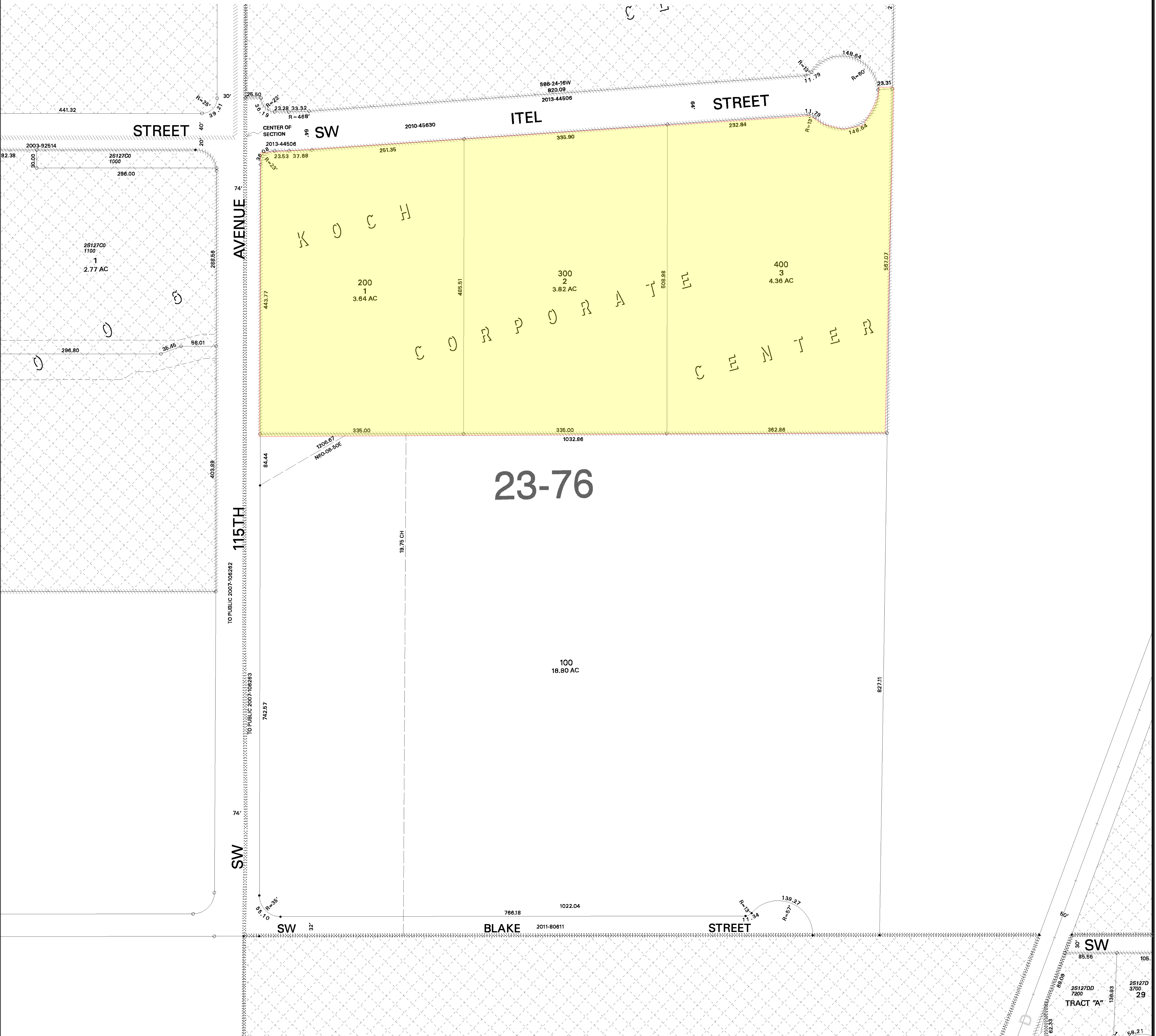
My Company: Republic Services of Clackamas & Washington Counties has the franchise agreement to service this area with the City of Tualatin. We provide complete commercial waste removal and recycling services as needed on a weekly basis for this location.

It looks like the locations of the enclosures, and size of the enclosures will be fine for us to service them.

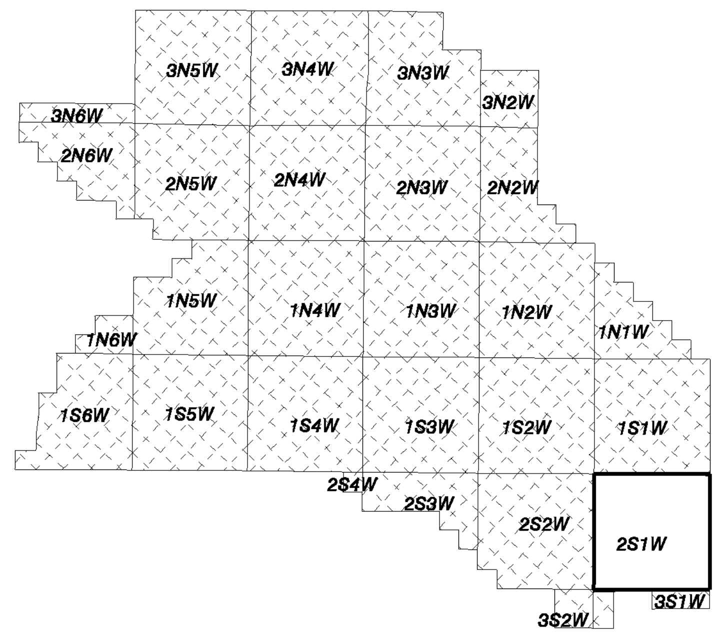
Thank you Suzannah; for your help and concerns for our services prior to this project being developed.

Sincerely,

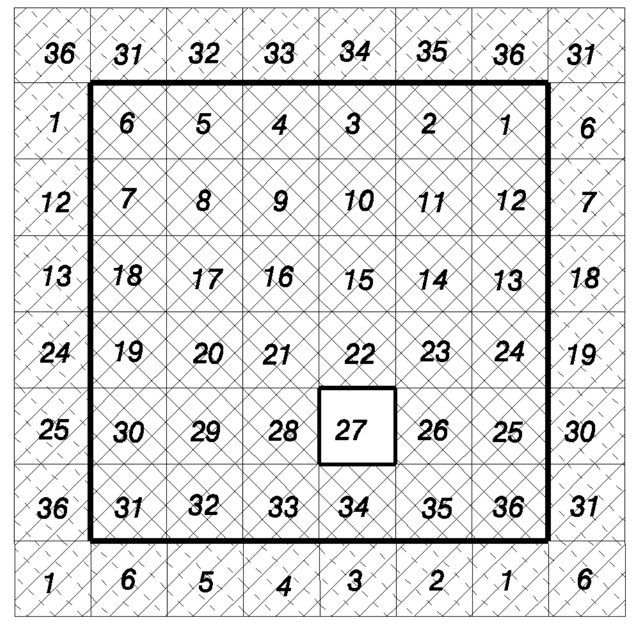
Frank J. Lonergan
Operations Manager
Republic Services Inc.



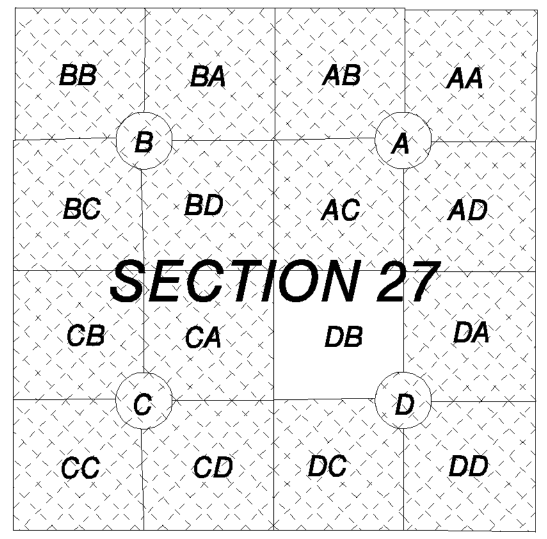
2S 1 27DB



WASHINGTON COUNTY OREGON
NW1/4 SE1/4 SECTION 27 T2S R1W W.M.
SCALE 1" = 100'



FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.washington.or.us



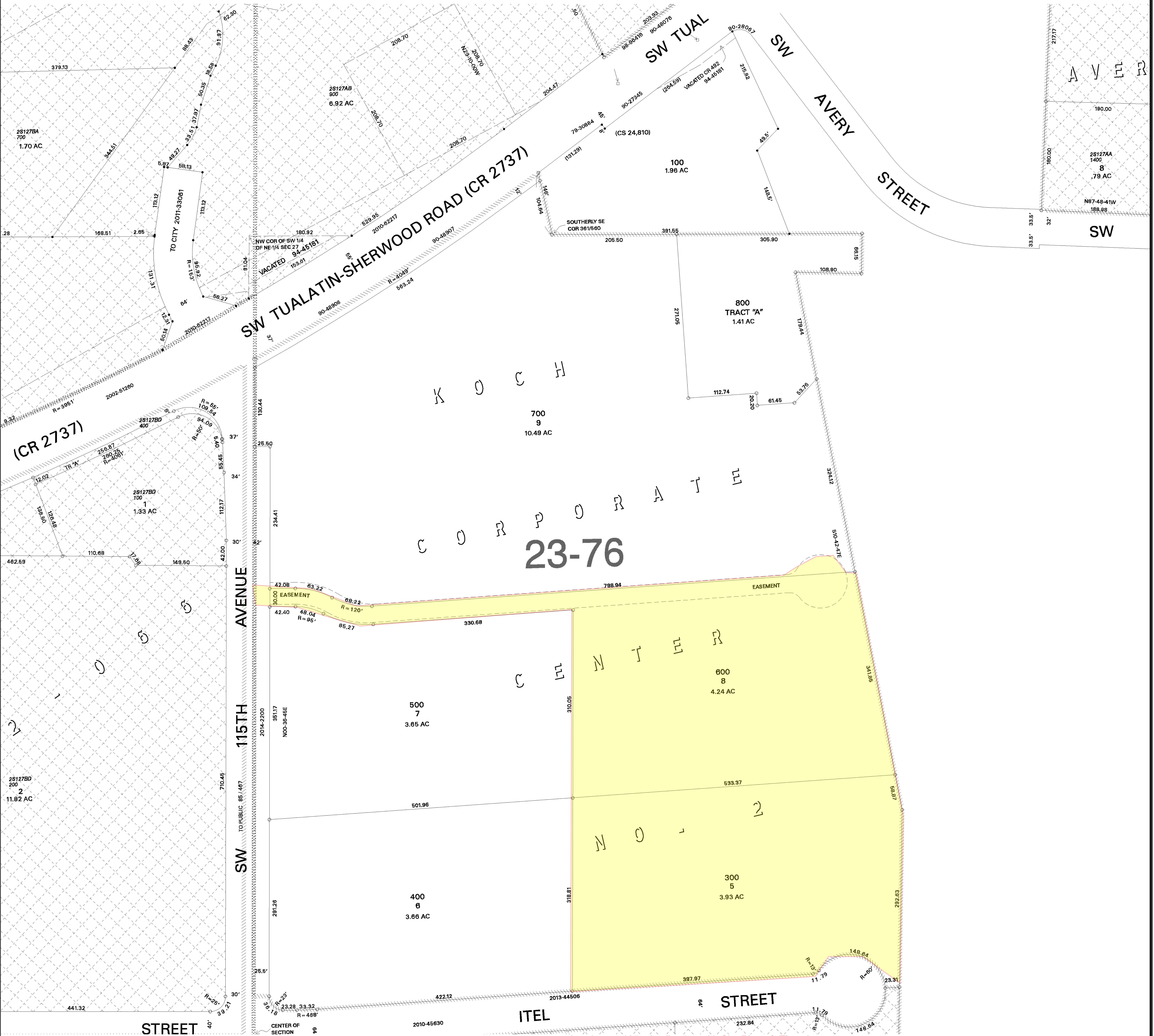
SCALE 1" = 100'
0 50 100 200 300

Assessment
CARTOGRAPHY
Taxation

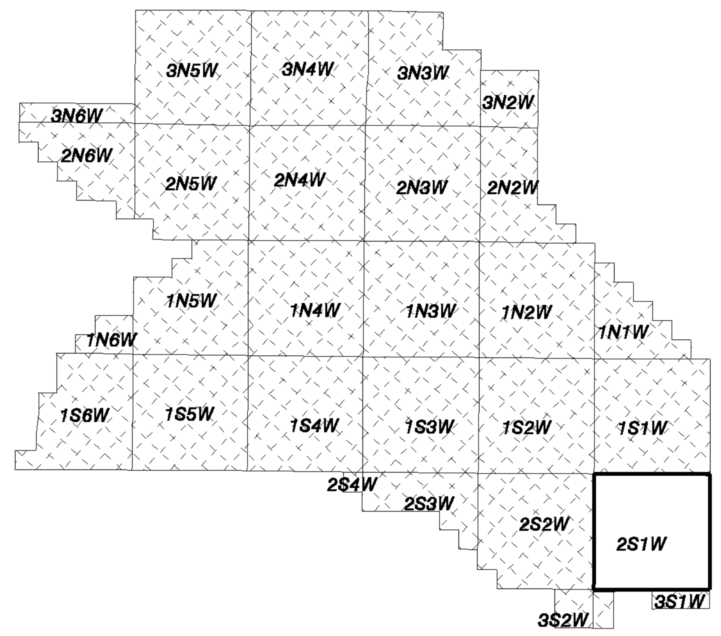
PLOT DATE: September 10, 2013

FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

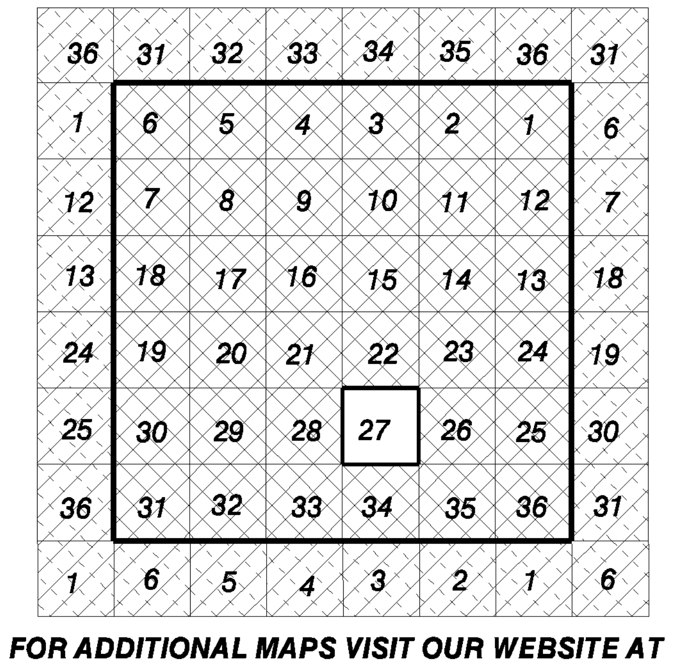
Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.


SW TUALATIN-SHERWOOD ROAD (CR 2737)
SW TUAL
SW AVERY STREET
SW 115TH AVENUE
ITEL STREET
KOCH CORPORATE CENTER NO. 2
23-76
100
1.96 AC
800
TRACT "A"
1.41 AC
700
9
10.49 AC
600
8
4.24 AC
500
7
3.65 AC
400
6
3.66 AC
300
5
3.93 AC
2S127AB
900
6.92 AC
2S127BA
700
1.70 AC
2S127BD
100
1
1.33 AC
2S127BD
200
2
11.82 AC
2S127AA
1400
8
.79 AC
EASEMENT
TO CITY 2011-33061
VACATED 94-45181
NW COR OF SW 1/4 OF NE 1/4 SEC 27
SOUTHERLY SE COR 361/560
(CS 24,810)
VACATED CR 452 94-45181
CENTER OF SECTION
TO PUBLIC 85 / 467
(CR 2737)
STREET

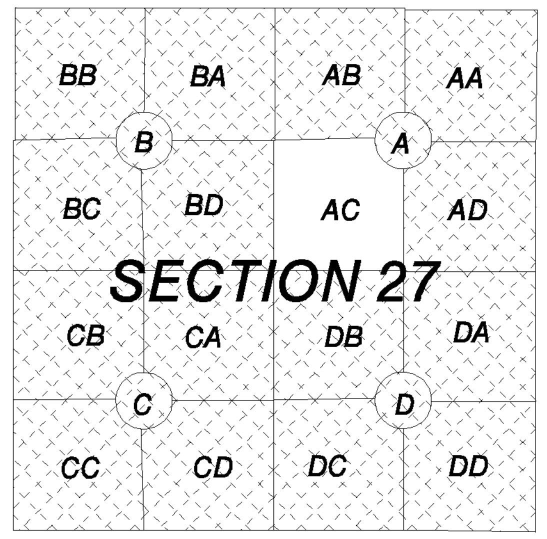
2S 1 27AC



WASHINGTON COUNTY OREGON
SW1/4 NE1/4 SECTION 27 T2S R1W W.M.
SCALE 1" = 100'



FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.washington.or.us



Cancelled Taxlots For: 2S127AC
200,

SCALE 1" = 100'

Assessment CARTOGRAPHY Taxation

PLOT DATE: April 25, 2014
FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

dig2s1w27

Attachment 105 - Application with Site Plans & Elevations

TUALATIN
2S 1 27AC

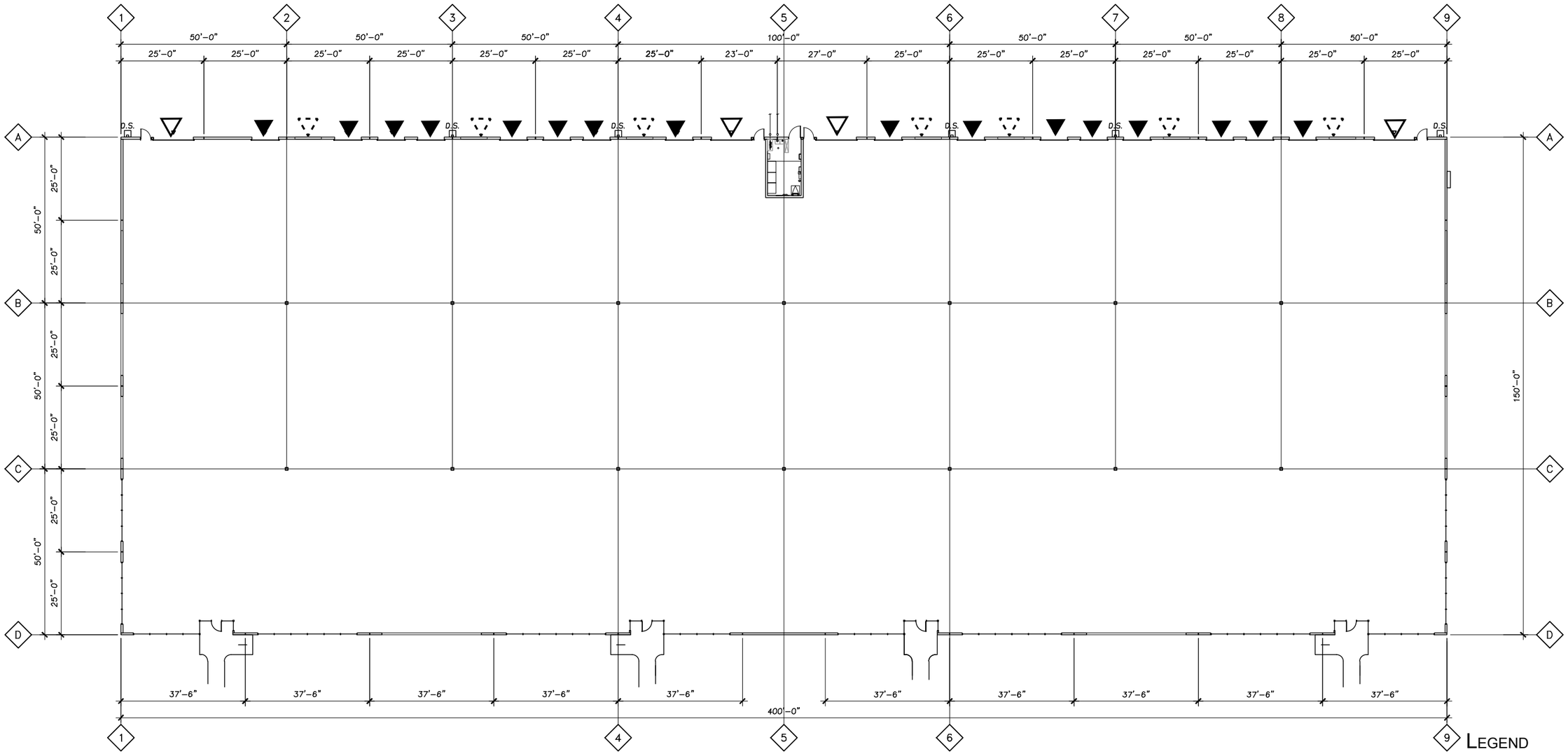
JOB # 2140559.00
MARCH 3, 2015

North

KOCH CORPORATE CENTER

0 75 150 300

PACTRUST
Pacific Realty Associates, L.P.

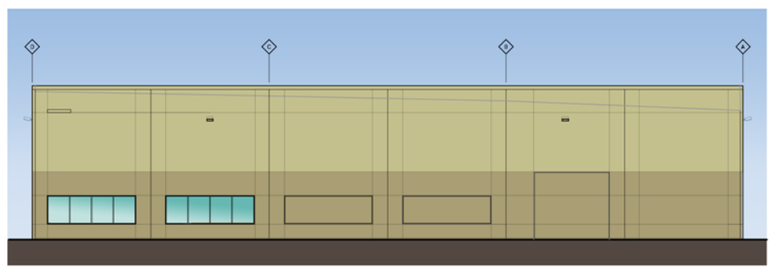


60,000 SF

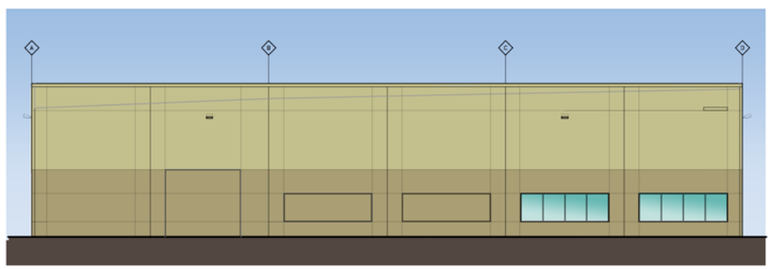
LEGEND

- On-grade Door
- Dock Door
- Future Door

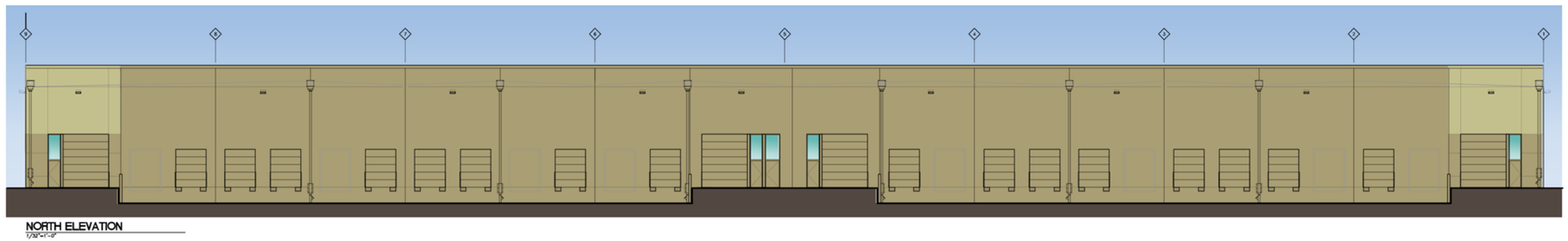
SOUTH ELEVATION
1/32"=1'-0"



EAST ELEVATION
1/32"=1'-0"



WEST ELEVATION
1/32"=1'-0"



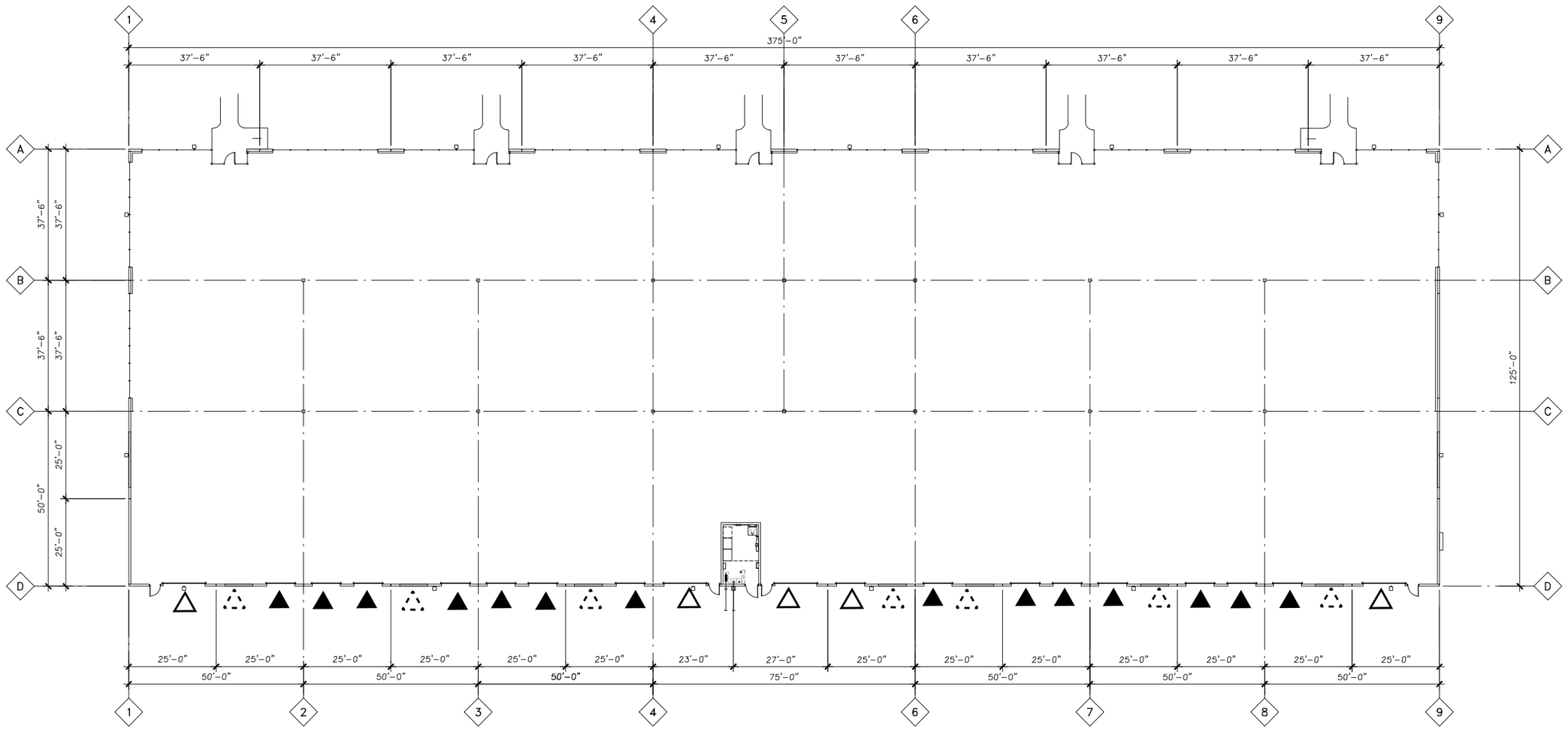
NORTH ELEVATION
1/32"=1'-0"

COLOR 1
MILLER PAINT CO.
DARK GOAT/ P-1

COLOR 2
MILLER PAINT CO.
GOAT/ P-2

GLASS
PPG Solarcool
Azuria

24' CLEAR

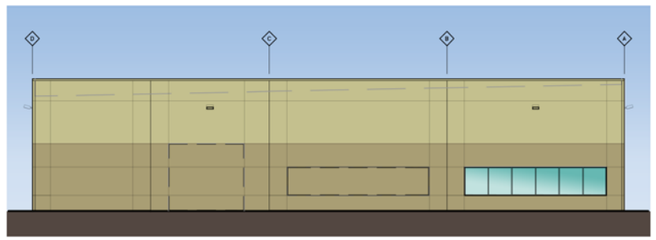


46, 875 SF

LEGEND

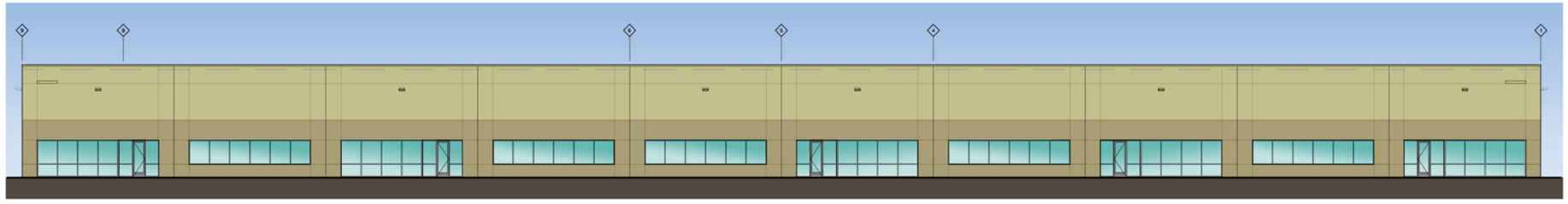
- On-grade Door
- Dock Door
- Future Door

SOUTH ELEVATION
1/32"=1'-0"



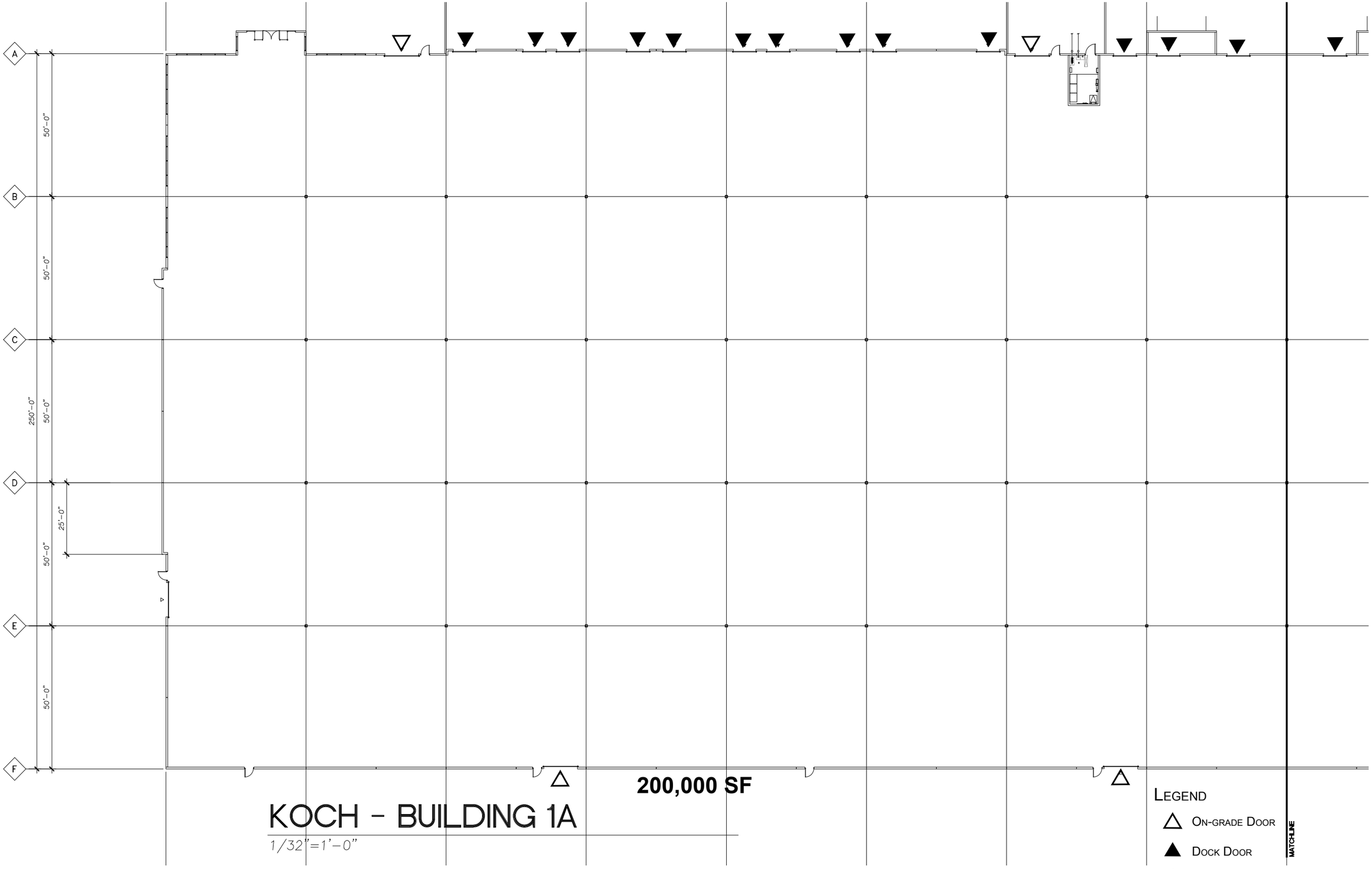
EAST ELEVATION
1/32"=1'-0"

WEST ELEVATION
1/32"=1'-0"



NORTH ELEVATION
1/32"=1'-0"

20' CLEAR



200,000 SF

KOCH - BUILDING 1A

1/32"=1'-0"

LEGEND

- ON-GRADE DOOR
- DOCK DOOR
- FUTURE DOOR

MATCHLINE

KOCH - BUILDING 1B

200,000 SF

1/32"=1'-0"

LEGEND

- ON-GRADE DOOR
- DOCK DOOR
- FUTURE DOOR

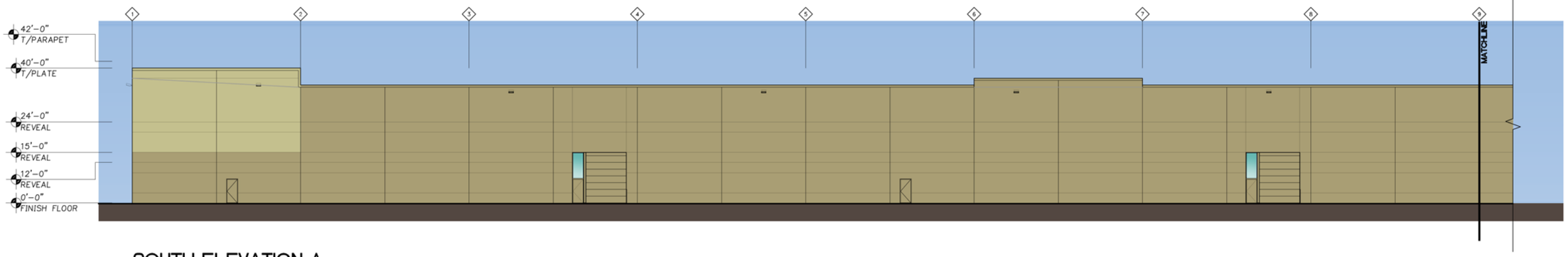
JOB # 2140559.00
MARCH 3, 2015

North

BUILDING 1B
KOCH CORPORATE CENTER

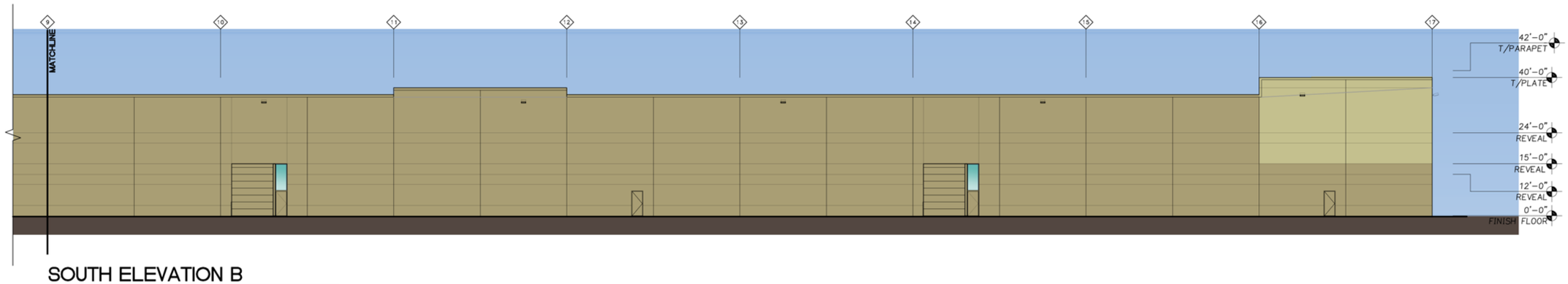
0 16 32 64

PACTRUST
Pacific Realty Associates, L.P.



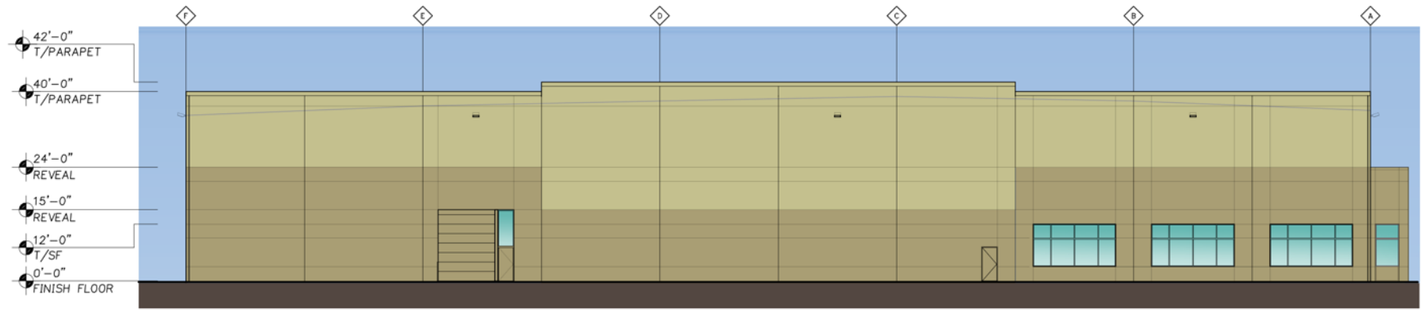
SOUTH ELEVATION A

1/32"=1'-0"



SOUTH ELEVATION B

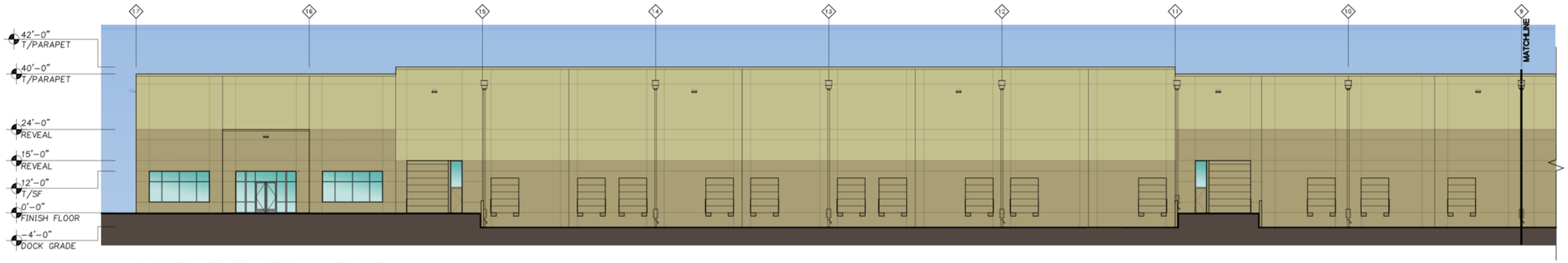
1/32"=1'-0"



EAST ELEVATION

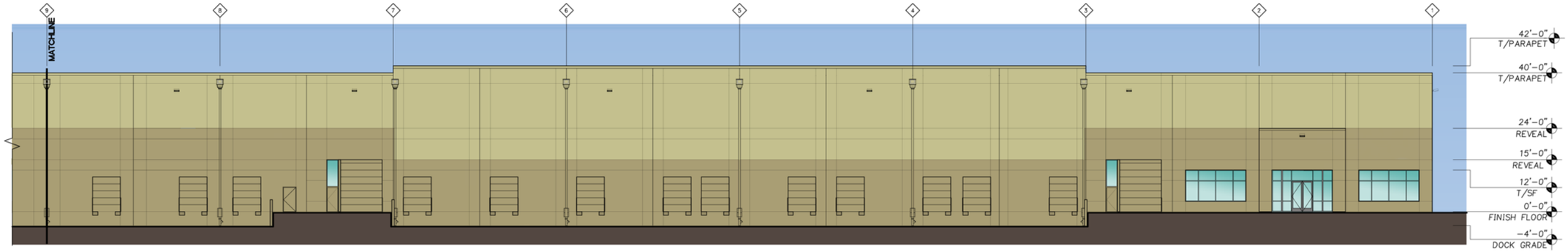
1/32"=1'-0"

32' CLEAR



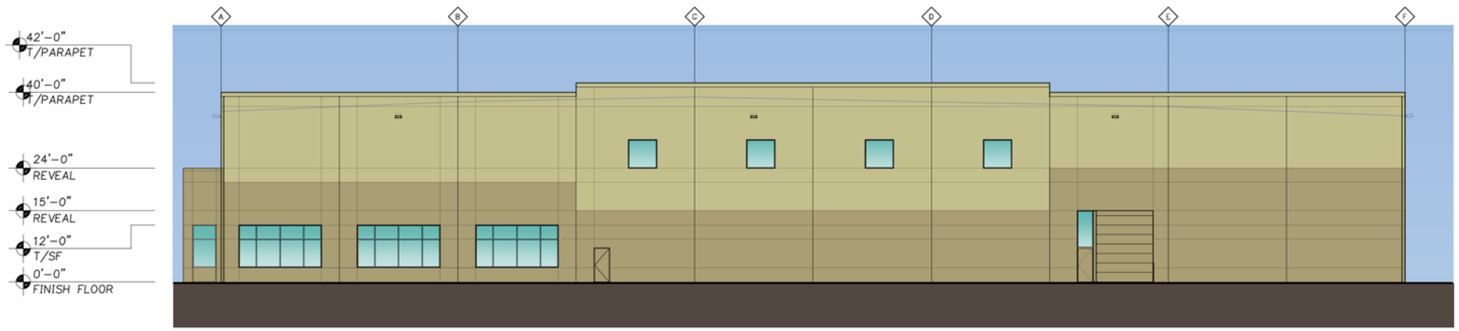
NORTH ELEVATION - EAST

1/32"=1'-0"



NORTH ELEVATION - WEST

1/32"=1'-0"



WEST ELEVATION

1/32"=1'-0"

COLOR 1
MILLER PAINT CO.
DARK GOAT/ P-1

COLOR 2
MILLER PAINT CO.
GOAT/ P-2

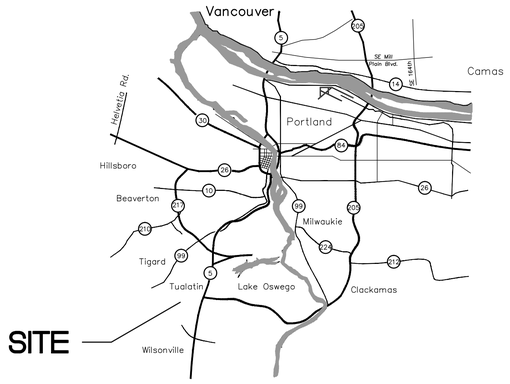
GLASS
PPG Solarcool
Azuria

32' CLEAR

Koch Corporate Center

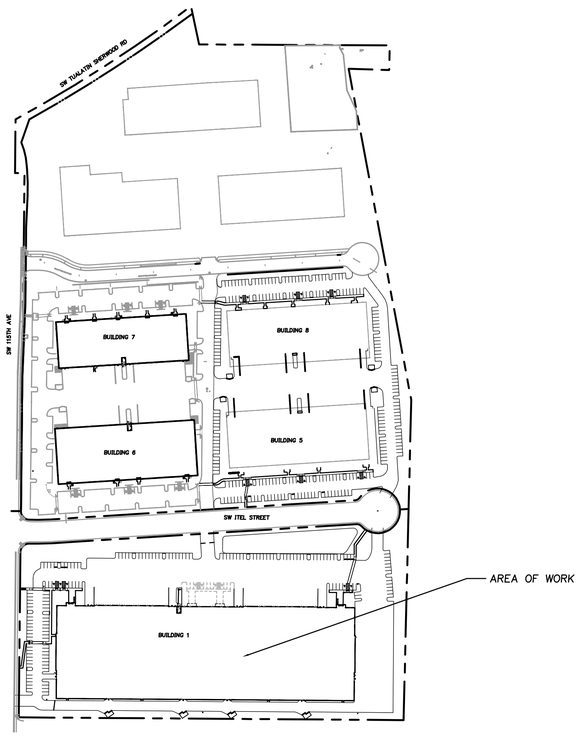
Lot 1, 2 and 3 - Tualatin, OR

SW 115th Ave.



VICINITY MAP

N.T.S.



SITE MAP

N.T.S.

BUILDING CODE DATA

BASED ON THE 2014 OREGON STRUCTURAL SPECIALTY CODE

GENERAL CODE ANALYSIS

CONSTRUCTION TYPE: III–B

SINGLE STORY

FIRE PROTECTION: FULLY SPRINKLERED

OCCUPANCY: (F–1)
THE BUILDING TO BE UNOCCUPIED UNDER THIS PERMIT. FUTURE OCCUPANCIES MAY CONSIST OF B, S–1 AND/OR F–1 GROUPS. THE BUILDING AREA HAS BEEN CALCULATED BASED UPON F–1 OCCUPANCY (MOST RESTRICTIVE USE) BASED ON TABLE 503 – ALLOWABLE AREAS

AREA	SQUARE FEET	OCCUPANCY
BUILDING SHELL	200,000 SF	F–1

NOTE: SEE SHEET T1.1 FOR COMPLETE FIRE AND LIFE SAFETY CODE ANALYSIS

TEAM MEMBERS

OWNERS

PACIFIC REALTY ASSOCIATES, LP

15350 SW Sequoia Parkway, Suite 300
Portland, Oregon 97224

Phone: (503) 624–6300
Fax: (503) 624–7755

Contact: Matt Oyen

ARCHITECT

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Dennis Woods

CIVIL ENGINEER

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Bob Frentress

STRUCTURAL ENGINEER

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Ryan Baker

LANDSCAPE ARCHITECT

BEIGHLEY & ASSOCIATES

12840 N.W. CORNELL RD.
Portland, OR 97229

tel: (503) 643–4796
fax: (503) 643–4798

Contact: Hal Beighley

INDEX OF DRAWINGS

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LOTS 1,2, AND 3

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CODE

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CHECKED BY:

SHEET:

T1.0

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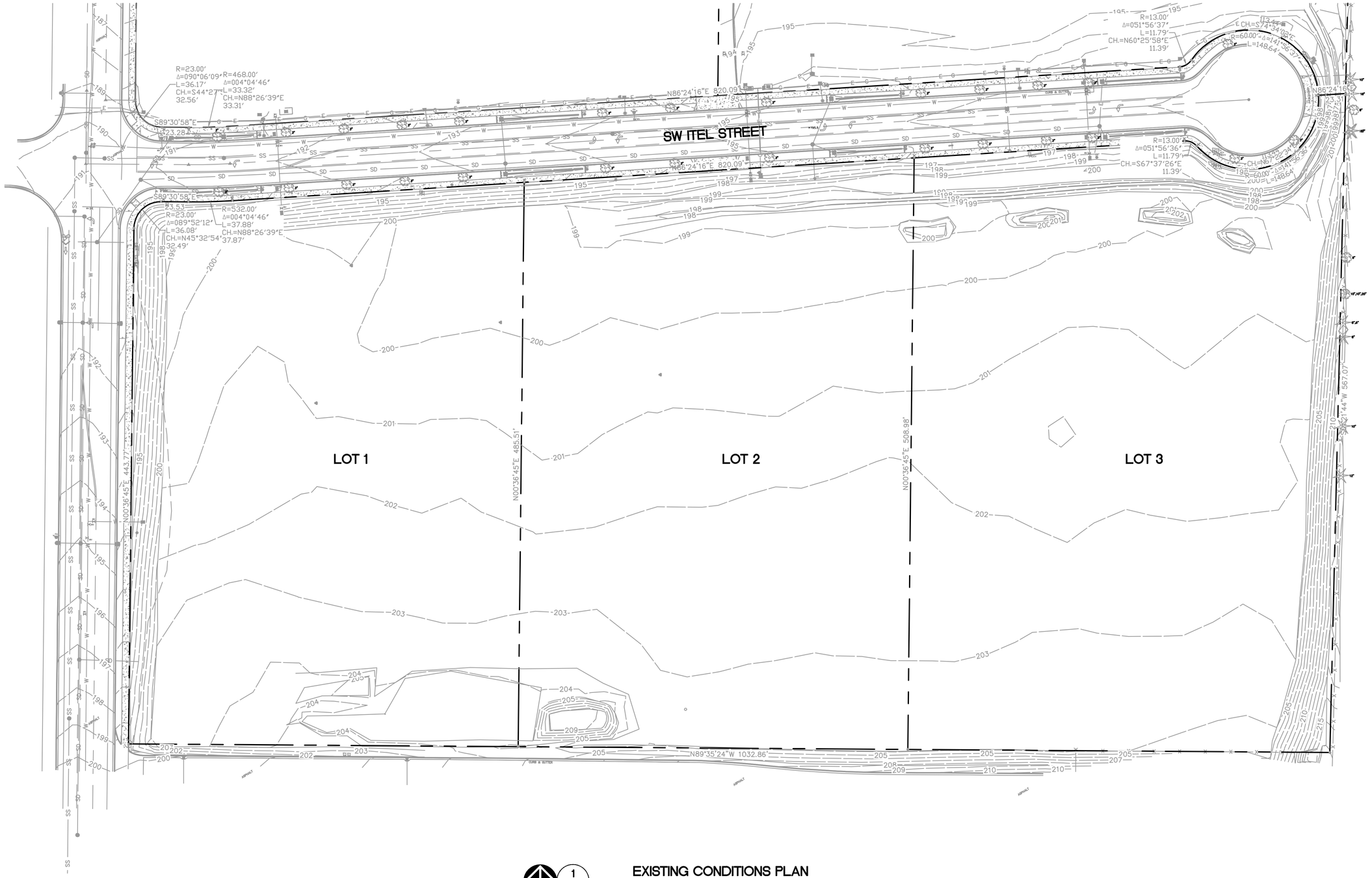

1 C1.0 EXISTING CONDITIONS PLAN

40 0 20 40 40 160
(IN FEET)
1 inch = 40 ft.

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C1.0

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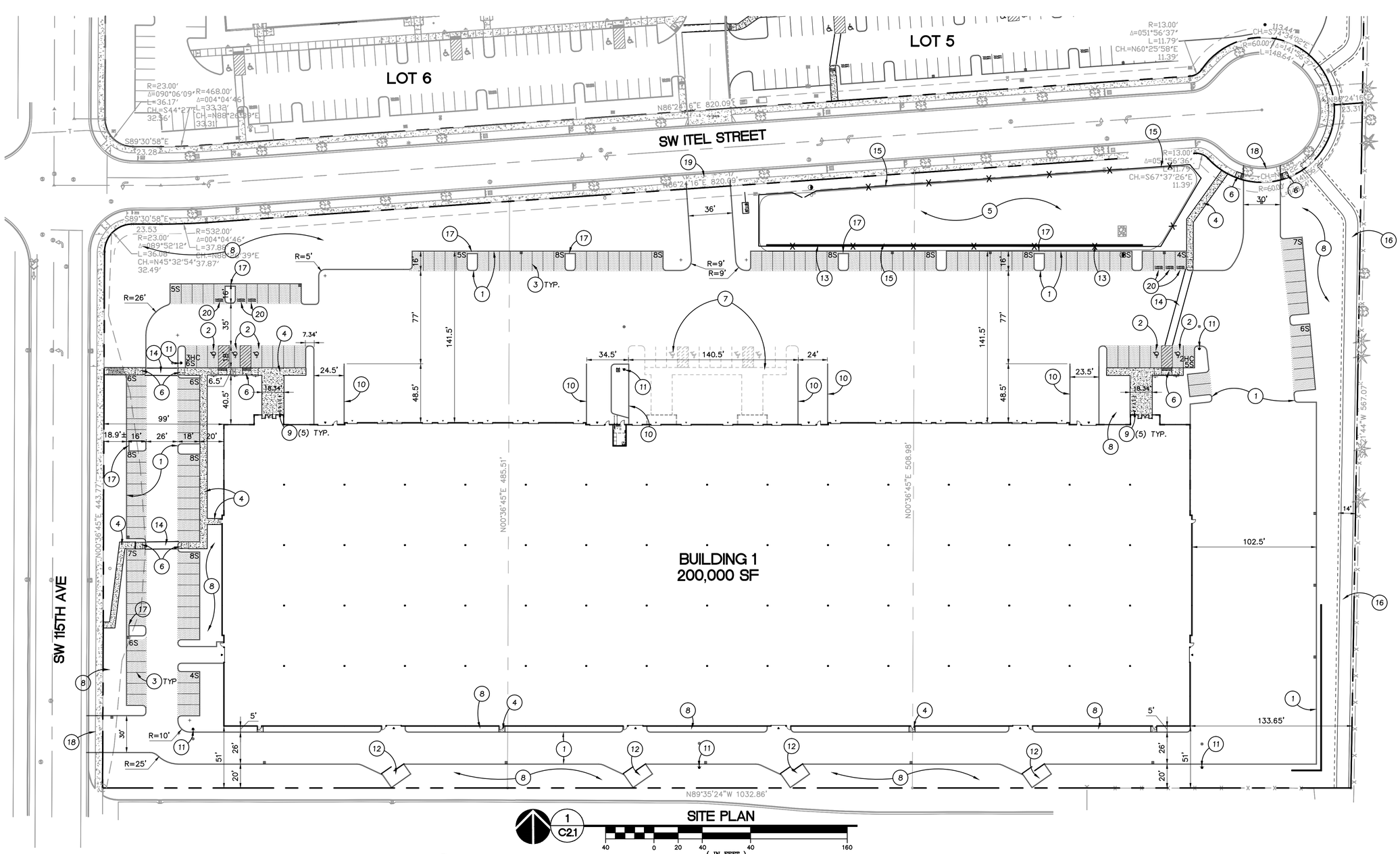

KEYNOTES

1. VERTICAL CURB
2. ADA COMPLIANT PARKING STALL
3. 4" WHITE PARKING STRIPE (2 COATS OF PAINT)
4. CONCRETE SIDEWALK
5. WATER QUALITY/DETENTION POND
6. ADA COMPLIANT CURB RAMP
7. FUTURE PARKING
8. LANDSCAPE AREA
9. 2 BICYCLE PARKING SPACES
10. DOCK RETAINING WALL
11. PROPOSED FIRE HYDRANT
12. TRASH ENCLOSURE
13. 2' HIGH MODULAR BLOCK RETAINING WALL
14. 6' WIDE STRIPED CROSSWALK
15. 4' BLACK VINYL CHAINLINK FENCE
16. FUTURE TRAIL
17. 1.5' CURB BREAK FOR DRAINAGE
18. CITY OF TUALATIN STD. COMMERCIAL DRIVEWAY
19. EXISTING DRIVEWAY
20. 1' HIGH WHITE PAINTED LETTERS: "CARPOOL" "VANPOOL"

1 C2.1 SITE PLAN

40 0 20 40 40 160
(IN FEET)
1 inch = 40 ft.

SITE DATA

BUILDING 1	
LOT	515,100 SF (11.82 AC)
TOTAL IMPERVIOUS AREA	398,694 SF (9.33 AC, 78.9%)
BUILDING FOOTPRINT	200,000 SF (4.59 AC, 38.8%)
DRIVE AISLE/PARKING/SIDEWALK AREA	198,694 SF (4.74 AC, 40.1%)
PARKING LOT AREA	51,840 SF (1.19 AC, 10.1%)
REQUIRED PARKING LANDSCAPE	3,750 SF (0.22 AC, 18.5%)
PARKING LANDSCAPE AREA	9,612 SF (25 SF/STALL)
LANDSCAPE AREA	116,000 SF (2.66 AC, 22.5%)

PAVEMENT SECTIONS

CAR PARKING AREA
CAR PARKING AREA 2.5" AC
(2 LIFTS) OVER 6" CRUSHED ROCK

HEAVY DUTY AREA
HEAVY DUTY AREA 4" AC
(2 LIFTS) OVER 11" CRUSHED ROCK

CONCRETE PAVING AREA

SITE LEGEND

- PROJECT DISTURBANCE AREA, LIMITS OF WORK
- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- FIRE LANE STRIPED CURB, COORD. W/ FIRE MARSHAL
- SITE FENCE PER SPEC.
- CATCH BASIN
- FIRE HYDRANT
- WATER METER
- DDCV
- FDC
- 10S — NUMBER OF STANDARD STALLS IN PARKING BAY
- 2HC — NUMBER OF H.C. STALLS IN PARKING BAY

PARKING DATA

REQUIRED PARKING

(BASED ON 30% MANUFACTURING AND 70% WAREHOUSE USE)

MANUFACTURING		
MINIMUM (1.6/1,000)	96	SPACES
MAXIMUM	NONE	
WAREHOUSE		
MINIMUM (0.3/1,000)	42	SPACES
MAXIMUM (0.5/1,000)	50	SPACES
TOTAL		
MINIMUM	138	SPACES
MAXIMUM	NONE	SPACES

PROVIDED PARKING

PROPOSED HANDICAP	5	SPACES
PROPOSED STANDARD	145	SPACES (6 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES
TOTAL PARKING PROVIDED	150	SPACES (0.75/1,000 SF)
BICYCLE PARKING	20	SPACES (10 COVERED IN BUILDING – NOT SHOWN)

CURB NOTE

ALL ON-SITE CURB RADII ARE 3.0' UNLESS OTHERWISE NOTED ON THE PLANS.

M.
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SITE PLAN

DRAWN BY: BTS
CHECKED BY: RLF
SHEET:
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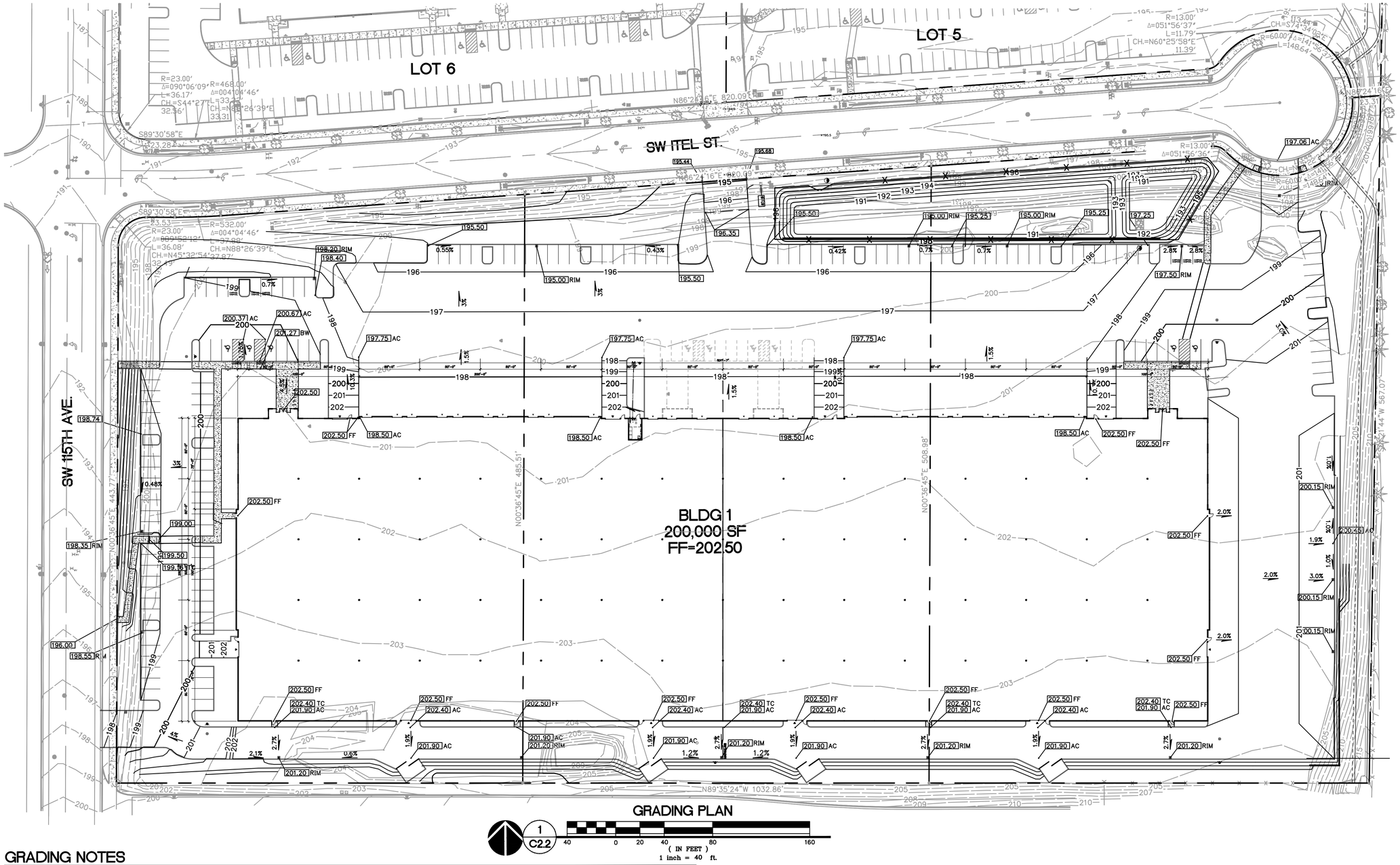

GRADING PLAN

1 / C2.2

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

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 AND CLEAN WATER SERVICES 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 LANDSCAPE AREAS TO EXCAVATED TO 12" BELOW FINISHED GRADE BY SITE WORK CONTRACTOR. ALL TOPSOIL EXCAVATED AS PART OF THIS EFFORT TO BE REMOVED FROM SITE IN ACCORDANCE WITH THE SPECIFICATIONS, ALL IMPORT TOPSOIL TO BE PLACED BY LANDSCAPE CONTRACOR.
6. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY WESTLAKE CONSULTANTS, INC., 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 HANDICAP PARKING SPACES.
9. 5% MAX LONGITUDINAL AND 2% MAX CROSS SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
10. IF GROUNDWATER IS PRESENT IN UTILITY TRENCH EXCAVATIONS, IT IS RECOMMENDED THAT 12"-18" OF TRENCH STABILIZATION ROCK BE PLACED AT THE BASE OF THE EXCAVATION. TRENCH STABILIZATION ROCK SHOULD MEET THE REQUIREMENTS OUTLINED IN THE "STRUCTURAL FILL" SECTION OF THE GEOTECHNICAL REPORT AND SHOULD BE PLACED IN ONE LIFT AND COMPACTED UNTIL IT IS FIRM AND UNYIELDING. GROUNDWATER SHOULD BE PUMPED OUT OF THE TRENCH FROM A SUMP EXCAVATED BELOW THE TRENCH STABILIZATION ROCK. THE CONTRACTOR WILL BE RESPONSIBLE FOR TEMPORARY DRAINAGE OF SURFACE WATER AND GROUNDWATER AS NECESSARY TO PREVENT STANDING WATER AND/OR EROSION AT THE WORKING SURFACE.

TABLE 1704.7

REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIUONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	--	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER COMPACTION	--	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	--	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILLS	X	--
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	--	X

SITE LEGEND

- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- 34 — 1-FT CONTOUR
- 35 — 5-FT CONTOUR
- CATCH BASIN
- 187.13 — SPOT ELEVATION

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GRADING PLAN

DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C2.2

JOB NO. 2140561.00

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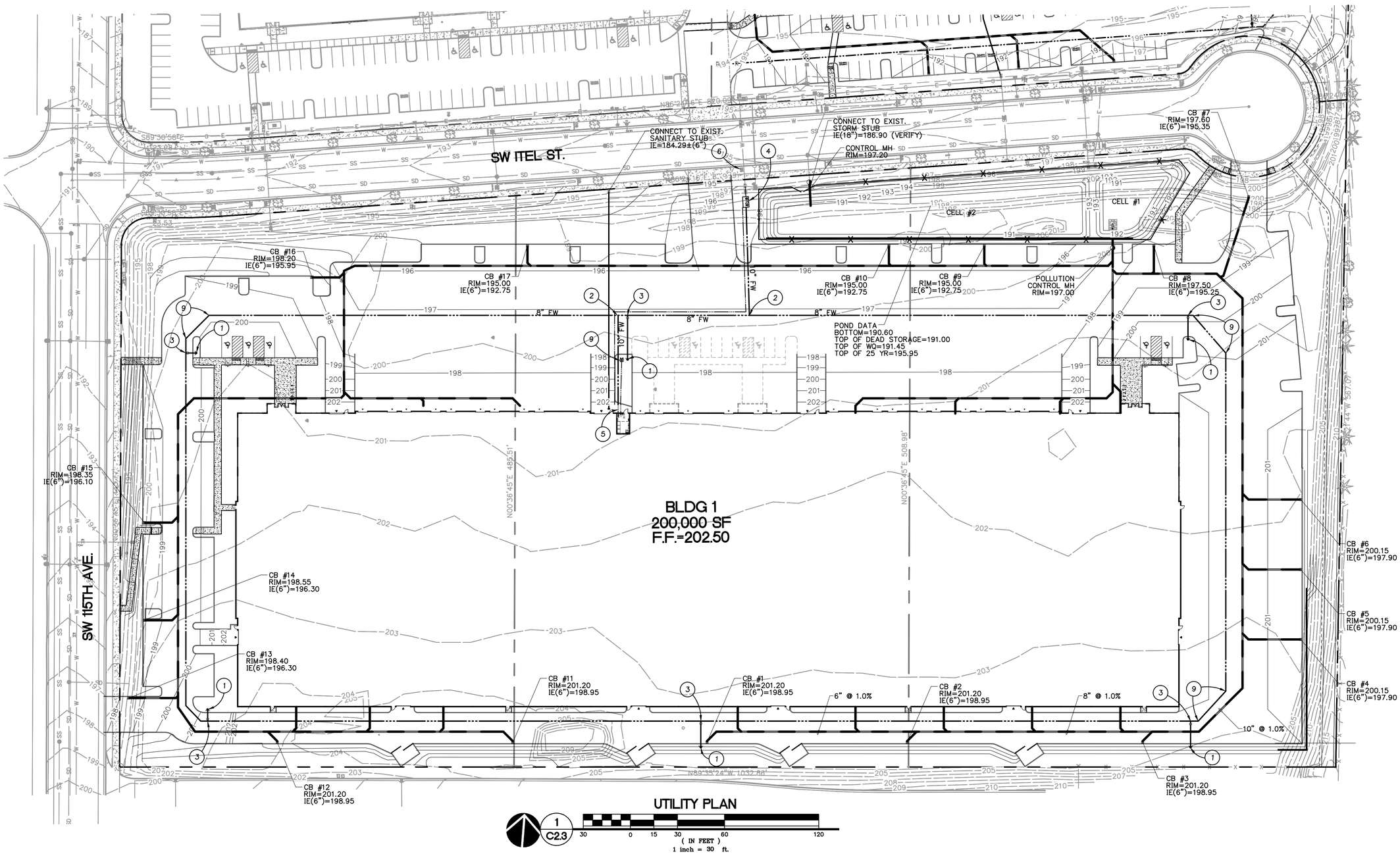

UTILITY PLAN

1 C2.3

30 0 15 30 60 120

(IN FEET)

1 inch = 30 ft.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF TUALATIN, CLEAN WATER SERVICES, 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
3. JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
4. 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.
5. 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.
6. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
7. ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. PROVIDE 2" PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2" PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH ¾ INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS.
9. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WESTLAKE CONSULTANTS, INC. DATED JANUARY 30, 2015.
10. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
11. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
12. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.
13. 30 MIL LINER TO BE INSTALLED AT BOTTOM OF ALL LIDA BASINS WITHIN 10 LINEAL FEET OF FOOTING.

RESTRAINED JOINT NOTES

TEST PRESSURE:	200 PSI
DEPTH TO BURY:	3 FT
PIPE MATERIAL:	PVC C-900
SAFETY FACTOR:	1 TO 1.5
LENGTH OF RESTRAINT ALONG MAIN ON TEES, Lr:	20 FT

NOTIFY ENGINEER IF DEVIATING FROM ABOVE SPECIFICATIONS. LENGTH OF PIPE REQUIRING RESTRAINED JOINTS

	8"	10"
11¼° BEND	3'	4'
22½° BEND	6'	8'
45° BENDS	13'	15'
90° BEND	31'	36'
TEE	1'	4'
DEAD ENDS	70'	84'

CITY RETAINS AUTHORITY TO MODIFY AND/OR ADD JOINT RESTRAINTS AT THE DISCRETION OF THE CITY ENGINEER.

KEYNOTES

1. FIRE HYDRANT ASSEMBLY PER DETAIL 101, SHEET C8.3
2. 10" x 10" TEE– (2) 10" x 8" REDUCERS
3. 8" X 6" TEE
4. 10" DOUBLE DETECTOR CHECK VALVE IN VAULT, SUPPLY POWER FOR SUMP PUMP
5. INSTALL 1½" RP BACFLOW DEVICE SIZED FOR FUTURE 2" IN FIRE RISER ROOM
6. INSTALL 2" WATER METER IN EXISTING METER BOX
7. 2½" IRRIGATION DOUBLE CHECK VALVE IN METER BOX
8. INSTALL FDC, W/ 6" LINE BACK TO RISER
9. INSTALL 8" 45° BEND
10. 4'x4'x4" THICK CONCRETE SPLASH PAD ABUTTING ASPHALT/ FOUNDATION, PROVIDE CLASS 50 RIP-RAP TO PREVENT EROSION

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LOTS 1,2, AND 3

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UTILITY PLAN

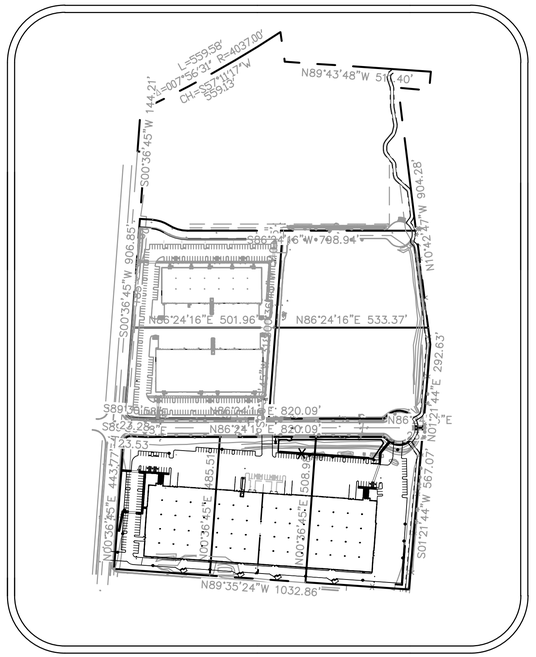
DRAWN BY: CTL, BTS

CHECKED BY: RLF

SHEET:
C2.3

JOB NO. 2140561.00

KOCH LOTS 1, 2 AND 3
EROSION AND SEDIMENT CONTROL PLANS
1200-C PLANS



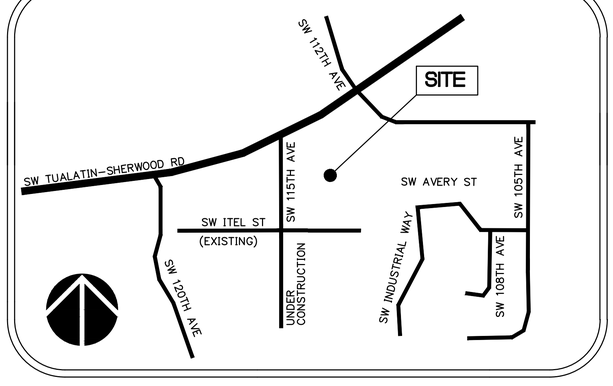
SITE MAP

1 / C5.0

250 0 125 250 500 1000

(IN FEET)

1 inch = 250 ft.



VICINITY MAP

NOT TO SCALE

PROJECT LOCATION:

SW 115TH AVE / SW ITEL STREET INTERSECTION
TUALATIN, OREGON 97062
LATITUDE = 45°21'59", LONGITUDE = -122°47'47"

PROPERTY DESCRIPTION:

TAX LOT 6 AND 7, A REPLAT OF TAX LOT 4 KOCH CORPORATE CENTER (ID 2S127A000200) LOCATED IN THE NORTHEAST AND SOUTHEAST 1/4 OF SECTION 27, TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON

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.

DEVELOPER

PACIFIC REALTY ASSOCIATES, LP
CONTACT: MATT OYAN
15350 SW SEQUOIA PARKWAY, #300 - WMI
TUALATIN, OR 97224
PHONE: (503) 624-6300
FAX:

CIVIL ENGINEER

MACKENZIE
CONTACT: BOB FRENTRESS
1515 SE WATER AVE
PORTLAND, OR 97239
PHONE: 503-224-9560
FAX: 503-228-1285

SURVEYOR

WESTLAKE CONSULTANTS, INC.
CONTACT:
15115 SW SEQUOIA PARKWAY, SUITE 150
TIGARD, OR 97224
PHONE: (503) 684-0652

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* PREVIOUSLY MASS GRADED SITE (SURCHARGE HAS BEEN REMOVED)

DEVELOPED CONDITIONS

* WAREHOUSE PARK AND ACCESS ROADWAYS

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (JUNE 15, 2012 - JULY 15, 2012)
* UTILITY INSTALLATION (APRIL 1, 2014 - JULY 30, 2014)
* STREET INSTALLATION (JULY 1, 2013 - MAY 15, 2014)
* FINAL STABILIZATION (OCT 1, 2013 - OCTOBER 30, 2015)

TOTAL SITE AREA = 515,100 SF = 11.82 ACRES

TOTAL DISTURBED AREA = 515,100 SF = 11.82 ACRES

SITE SOIL CLASSIFICATION:

21A - HILLSBORO LOAM, 0 TO 3 PERCENT SLOPES
21B - HILLSBORO LOAM, 3 TO 7 PERCENT SLOPES
21C - HILLSBORO LOAM, 7 TO 12 PERCENT SLOPES
21D - HILLSBORO LOAM, 12 TO 20 PERCENT SLOPES
22 - HUBERLY SILT LOAM

ON-SITE SOILS HAVE A SLIGHT EROSION POTENTIAL. ALL FILL MATERIAL SHALL BE GENERATED ON-SITE FROM GRADING EXCAVATION AND UTILITY TRENCH SPOILS.

RECEIVING WATER BODIES:

PUBLIC STORM SYSTEM, AND HEDGES CREEK

PERMITTEE'S SITE INSPECTOR:

COMPANY/AGENCY: PACTRUST
PHONE:
FAX:
E-MAIL:
DESCRIPTION OF EXPERIENCE:

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING
2. PRIOR TO SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECCESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE
3. INACTIVE PERIODS GREATER THAN (7) CONSECUTIVE CALENDAR DAYS	ONCE EVERY (2) TWO WEEKS
4. PERIODS AT WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER	IF PRATICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

* 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)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. 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)
2. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE MEASURES AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS. (SCHEDULE A.8.C.II.(1)(C))
3. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT. (SCHEDULE A.12.C.III)
4. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A 8.C.II.(1)(D))
5. IDENTIFY, MARK, AND PROTECT (BY FENCING OFF 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 THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
6. 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.B.III(1) AND A.7.B.III(3))
7. 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. (SCHEDULE A.7.D.I AND A.8.C)
8. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
9. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(2))
10. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
11. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: 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.(1) AND A.8.C.I(4))
12. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(3))
13. 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, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
14. 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. (SCH A 7.E.III.)
15. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A 7.B.II)
16. 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)
17. IF A STORMWATER 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)
18. 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 EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
19. AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A 7.E.II.(2))
20. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
21. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
22. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT. AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.II)
23. 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)
24. 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 CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
25. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
26. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
27. 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 A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
28. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. HOWEVER, DO REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS. (SCHEDULE A.7.B.III(2) AND A.8.C.III).

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.

BMP MATRIX FOR CONSTRUCTION PHASES

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

	MASS GRADING	UTILITY INSTALLATION	BUILDING CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	X	X		X	X
GROUND COVER					X
HYDRAULIC APPLICATIONS					X
PLASTIC SHEETING					X
MATTING				X	X
DUST CONTROL	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING			X	X	X
BUFFER ZONE					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	X*	X	X	X	X
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES					
FILTER BERM					
INLET PROTECTION	X	X	X	X	X
DEWATERING					
SEDIMENT TRAP					
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	X*	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION		X	X	X	X
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X
CONCRETE WASHOUT AREA		X	X	X	X
OTHER:					

X SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

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 ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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SHEET TITLE:
EROSION AND SEDIMENT CONTROL COVER SHEET

DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C5.0

JOB NO. 2140561.00

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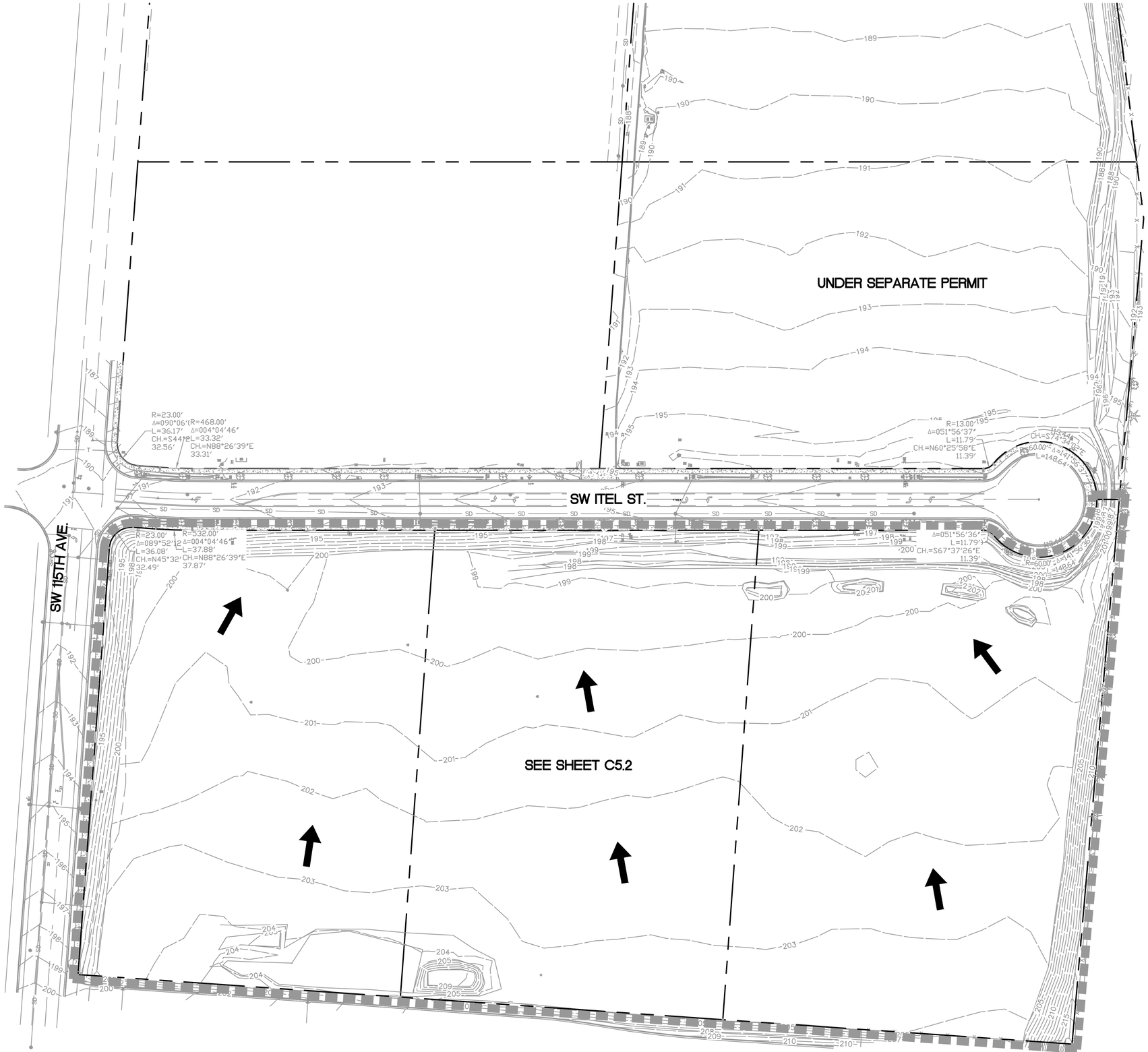

1 C5.1 EXISTING CONDITIONS PLAN

50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

DUST CONTROL NOTES:
DUST CONTROL MEASURE OF SPRAYING WATER OVER AREAS OF EXPOSED SOIL TO BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION UNTIL ALL EXPOSED SOILS HAVE BEEN COVERED OR PLANTED.

NOTES:
THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1 AND MAY 31.

PRE-DEVELOPED RUN-OFF ON THE SITE SHEET FLOWS NORTH AND IS COLLECTED BY DIVERSION SWALES. THE SWALES FLOW EAST AND ARE COLLECTED IN A MAIN DIVERSION SWALE THAT RUNS NORTH TO AN EXISTING SEDIMENT POND.

IF ANY WELLS OR SEPTIC FIELDS ARE FOUND ON SITE, ABANDON IN ACCORDANCE WITH DEQ REQUIREMENTS.

ON SITES WHERE VEGETATION AND GROUND COVER ARE REMOVED, VEGETATIVE GROUND COVER SHALL BE PLANTED AND ESTABLISHED BY OCTOBER 1 AND CONTINUE TO FUNCTION THROUGH MAY 31 OF THE FOLLOWING YEAR, OR AS APPROVED BY THE DISTRICT. IF GROUND COVER IS NOT ESTABLISHED BY OCTOBER 1, THE OPEN AREAS SHALL BE PROTECTED THROUGH MAY 31 OF THE FOLLOWING YEAR WITH STRAW MULCH, EROSION BLANKETS, OR OTHER METHODS APPROVED BY THE DISTRICT OR CITY.

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 INSURE 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.

TREE PRESERVATION

ALL EXISTING TREES TO REMAIN. TREES TO BE REMOVED WERE DONE SO UNDER THE MASS GRADING ACTIVITY.

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- OUTLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- ROCK FILTER BERM
- CONSTRUCTION ENTRANCE
- TEMPORARY SLOPE STABILIZATION MEASURES
- LONG-TERM SLOPE STABILIZATION MEASURES
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- NEW IMPERVIOUS SURFACE
- DRAINAGE FLOW DIRECTION
- EXISTING TREE
- 50' VEGETATED CORRIDOR PLUS 15' TOP OF BANK SETBACK

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EXISTING CONDITIONS PLAN

DRAWN BY: CTL,BTS

CHECKED BY: RLF

SHEET:
C5.1

JOB NO. 2140561.00

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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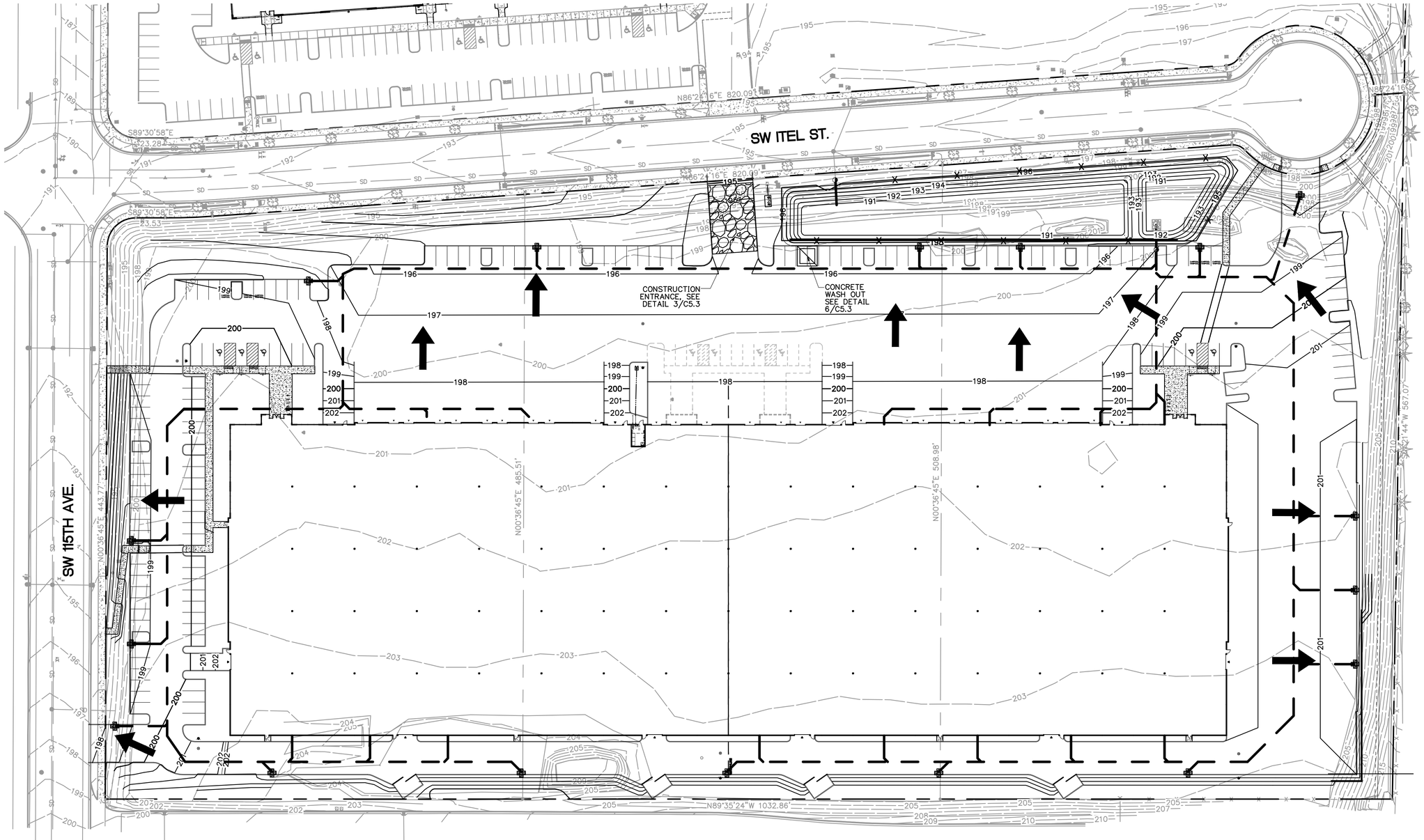

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- CONSTRUCTION ENTRANCE
- NEW IMPERVIOUS SURFACE
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- DRAINAGE FLOW DIRECTION

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. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.

4. THE STORM FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO ROAD PAVING.

5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

EROSION AND SEDIMENT CONTROL PLAN

1 / C5.2

40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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EROSION AND SEDIMENT CONTROL PLAN

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SHEET:
C5.2

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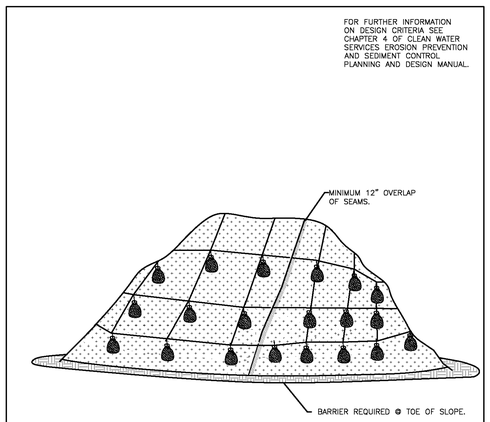
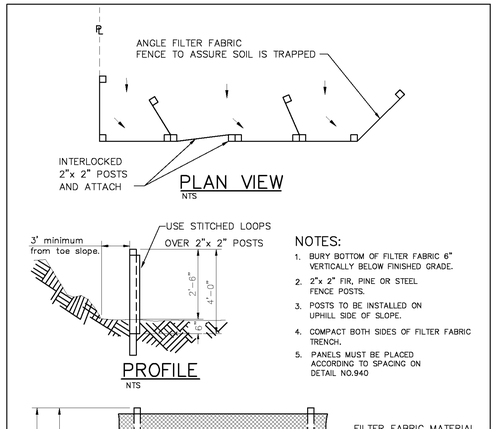


1 C5.3 CLEAN WATER SERVICES DWG. 810
N.T.S.



2 C5.3 CLEAN WATER SERVICES DWG. 875
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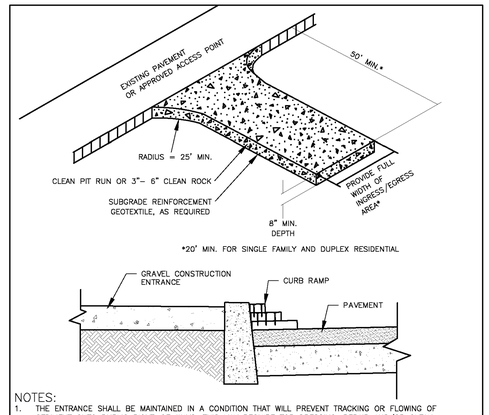

3 C5.3 CLEAN WATER SERVICES DWG. 855
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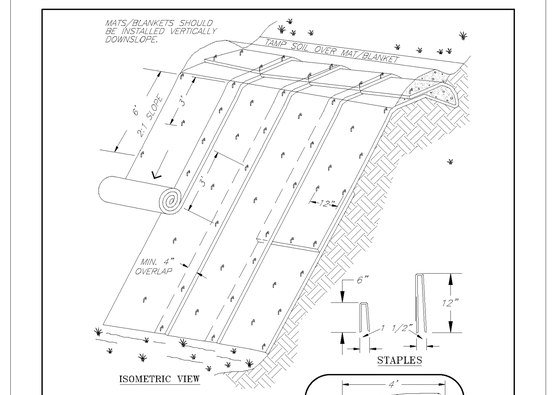

4 C5.3 CLEAN WATER SERVICES DWG. 805
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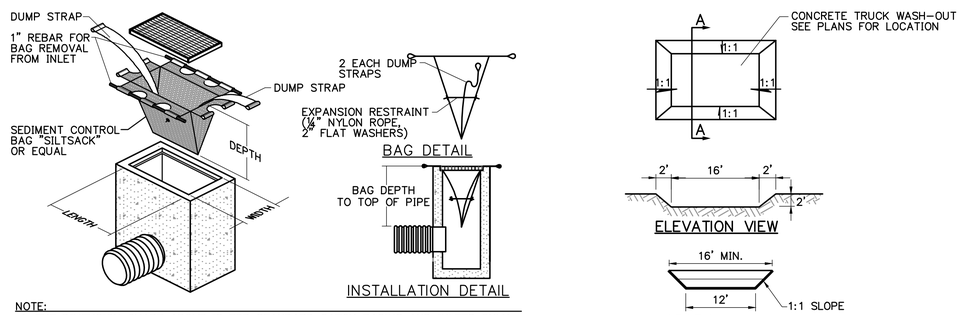

5 C5.3 CATCH BASIN SEDIMENT FILTER BAG
N.T.S.
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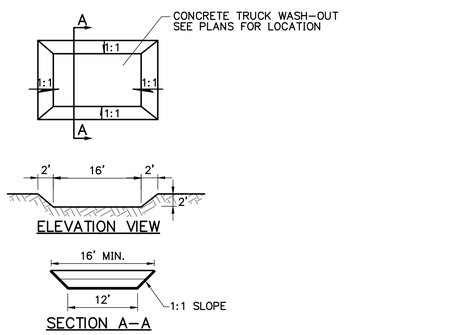


6 C5.3 CONCRETE WASHOUT
N.T.S.
CONCRETE WASHOUT

SEDIMENT FENCE CONSTRUCTION NOTES

1) SELECTION OF FILTER FABRIC TENSILE AND BURSTING STRENGTH DEPENDS ON THE SLOPE CHARACTERISTICS. THE USE OF STANDARD OR HEAVY DUTY FILTER FABRIC SHALL MEET DESIGN STANDARDS. SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES TO 120 DEGREES. SELECTION SHALL BE BASED ON STANDARD ENGINEERING PRINCIPLES FOR DESIGN.

2) STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"X2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP-HILL SIDE OF THE SLOPED AREA, WITH POSTS SPACED A MAXIMUM OF 6 FEET APART.

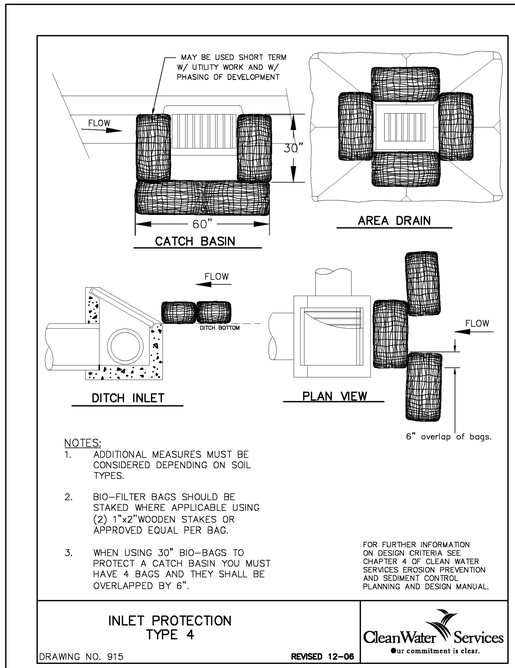
3) FILTER FABRIC FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES DOWNHILL OF POSTS ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION SHALL BE FIRMLY REDEPOSITED ALONG THE ENTIRE TRENCHED AREA ON THE DOWNHILL SIDE OF THE FENCE.

4) THE PHYSICAL INTEGRITY OF ALL MATERIALS SHALL BE SUFFICIENT TO MEET THE REQUIREMENTS OF THEIR INTENDED USE AND WITHSTAND NORMAL WEAR AND TEAR.

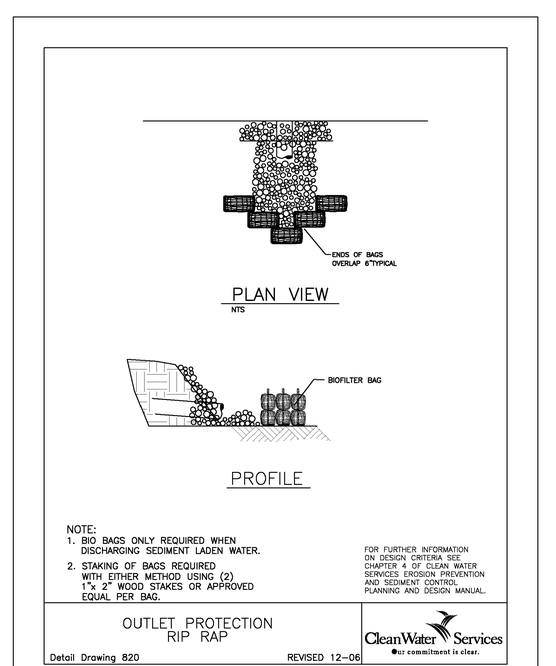
5) WHERE PRACTICAL THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, 2"X2" POSTS SHALL BE INTERLOCKED WITH EACH OTHER AND BE ATTACHED SECURELY.

6) SEDIMENT FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS, RELOCATIONS OR ADDITIONS SHALL BE MADE IMMEDIATELY.

7) AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE GREATER THAN 1/3 THE HEIGHT OF THE SEDIMENT FENCE ABOVEGROUND. SEDIMENT SHOULD BE REMOVED OR REGRADED INTO SLOPES, AND THE SEDIMENT FENCES REPAIRED AND RE-ESTABLISHED AS NEEDED.



7 C5.3 CLEAN WATER SERVICES DWG. 915
N.T.S.



8 C5.3 CLEAN WATER SERVICES DWG. 820
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LOTS 1,2, AND 3

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EROSION AND SEDIMENT CONTROL DETAILS

DRAWN BY: CTL
CHECKED BY: RLF
SHEET:
C5.3
JOB NO. 2140561.00

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3 Red Flowering Currant
8 Vine Maple
Taiwan Creeping Berry Typ.
5 Kelsey Dogwood
5 Oregon Grape

8 Snowberry
8 Kelsey Dogwood
1 Northern Red Oak
Spring Bouquet Viburnum
3 Incense Cedar

9 Oregon Grape
11 Snowberry

7 Sword Fern
Hedge of Yellowtwig &
Redtwig Dogwood

Future Trail Location

Existing Tree To Remain
Taiwan Creeping Berry @ 30"O.C.
11 Sword Fern
7 Compact Winged Euonymus
8 Red Flowering Currant

Typical: (4 Planters)
3 Compact Winged Euonymus
3 Blue Fescue
1 Northern Red Oak

11 Vine Maple
5 Oregon Grape

Existing Steet Tree To Be Removed

5 Red Flowering Currant
9 Hogan Cedar
3 Green Arrow Cypress

7 David Viburnum
Taiwan Creeping Berry
7 Sword Fern
7 Blue Fescue
3 Incense Cedar
5 Oregon Grape
5 Compact Winged Euonymus
5 Vine Maple

9 Kelsey Dogwood
8 Snowberry
Taiwan Creeping Berry
@ 30" O.C. Typ.
7 Sword Fern

3 Blue Fescue
3 Norwegian Sunset Maple
6 Compact Winged Euonymus
Spring Bouquet Viburnum

3 Flame Forest Pieris
Vinca @ 24" O.C. Typ.
3 Green Arrow Cypress
3 Unique Rhododendron
9 David Viburnum

6 Sword Fern

3 Daylily

8 Little Bunny Grass

7 Sword Fern
5 Vine Maple
3 Uniques Rhododendron
3 Hogan Cedar
5 Flame Forest Pieris
6 Spring Bouget Viburnum

POND — To Meet
Clean Water Services
Requirements

Taiwan Creeping Berry
8 Oregon Grape
15 Compact Winged Euonymus
6 Karl Foerster Grass
Compact Winged Euonymus
Arborvitae

11 Kelsey Dogwood
5 Blue Fescue

Arborvitae

3 Blue Fescue
1 Northern Red Oak
2 Compact Winged Euonymus

12 Repens Oregon
Grape

Spring Bouquet Viburnum Hedge
Silver King Euonymus Hedge
3 Northern Red Oak

3 Daylily
4 Sword Fern

6 Karl Foerster Grass
3 Red Flowering Currant

NOTE: AUTOMATIC IRRIGATION WILL BE PROVIDED

MATCHLINE SEE SHEET L2.3

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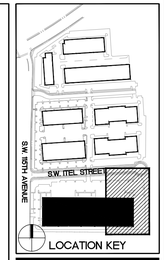
2140561.00

LANDSCAPE PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'



BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

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KOCH CORPORATE CENTER
BUILDING 001
TUALATIN, OREGON

Revisions

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CHECKED	HSB
DATE	02/27/15
JOB NO.	1506

L-1.1

OF 4

MATCHLINE SEE SHEET L2.2

Existing Street Tree to Remain

6 Kelsey Dogwood
Taiwan Creeping Berry @ 30" O.C.

5 Blue Fescue

9 Repens Oregon Grape

POND – To Meet Clean Water Services Requirements

Typical: (2 Planters)
2 Compact Winged Euonymus
1 Northern Red Oak
3 Blue Fescue

5 Little Bunny Grass
9 Sword Fern
3 Unique Rhododendron

3" Cal.

3 Vine Maple
8 Daylily
5 David Viburnum
9 Snowberry
8 Admiration Barberry

3 David Viburnum
5 Admiration Barberry
9 Daylily

3" Cal.

3 Blue Fescue
4 Northern Red Oak
6 Compact Winged Euonymus
3 Redtwig Dogwood

5 Sword Fern
5 Blue Fescue
7 Unique Rhododend.
3 Vine Maple
9 Kelsey Dogwood
9 Doublefile Viburnum
Taiwan Creeping Berry @ 30" O.C.

Spring Bouquet Viburnum Hedge
Silver King Euonymus Hedge

3" Cal.

3" Cal.

3 Virescens Cedar
7 Little Bunny Grass

11 Compact Winged Euonymus
6 Repens Oregon Grape
8 Red Flowering Currant

3 Sword Fern
3 Green Arrow Cypress
Vinca @ 24" O.C.
3 Flame Forest Pieris

10 Hogan Cedar
3 Red Flowering Currant
Taiwan Creeping Berry

11 Oregon Grape
16 Green Arrow Cypress

6 Karl Foerster Grass
Arborvitae
6 Vine Maple
Hedge of Yellowtwig and Redtwig Dogwood

Compact Winged Euonymus

Arborvitae
14 Compact Winged Euonymus
Arborvitae
Taiwan Creeping Berry

Arborvitae

8 Oregon Grape

6 Karl Foerster Grass
Taiwan Creeping Berry

MATCHLINE SEE SHEET L2.4

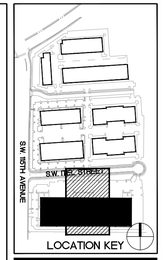
ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

2140561.00

LANDSCAPE PLAN

NORTH

0 20 40 60 feet
SCALE: 1" = 20'



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L-1.2

OF 4

MATCHLINE SEE SHEET L2.3

3 Repens Oregon Grape
3 Green Arrow Cypress
8 Compact Winged Euonymus
5 Blue Fescue
2 Vine Maple
Existing Street Tree to Remain Typ.
5 Sword Fern
5 Hogan Cedar
3 Daylily
5 Oregon Grape
13 Doublefile Viburnum
3 Vine Maple
5 Kelsey Dogwood
2 Virescens Cedar
5 Little Bunny Grass
5 Oregon Grape
8 Red Flowering Currant
9 Compact Winged Euonymus
7 Sword Fern
3 Hogan Cedar
5 Oregon Grape
8 Blue Fescue
10 Green Arrow Cypress
9 Repens Oregon Grape
7 Vine Maple
1 Red Flowering Currant
Typical: (4 Planters)
2 Compact Winged Euonymus
1 Northern Red Oak
3 Blue Fescue
10 Oregon Grape
8 Redtwig Dogwood
Silver King Euonymus Hedge
Spring Bouquet Viburnum Hedge
3 Blue Fescue
6 Admiration Barberry
3 Unique Rhododendron
6 Spring Bouquet Viburnum
5 Flame Forest Pieris
3 Hogan Cedar
Vinca @ 24" O.C. Typ.
5 David Viburnum
3 Unique Rhododendron
8 Vine Maple
8 Sword Fern
6 Elizabeth Rhododendron
3 Little Bunny Grass
Vinca @ 24" O.C. Typ.
5 Nikko Deutzia
3 Hino Crimson Azalea
8 David Viburnum
1 Hogan Cedar
3 Blue Fescue
1 Norwegian Sunset Maple
3 Compact Winged Euonymus
1 Norwegian Sunset Maple
3 Blue Fescue
8 Little Bunny Grass
8 Nikko Deutzia
Vinca @ 24" O.C. Typ.
3 Green Arrow Cypress
6 Blue Fescue
2 Vine Maple
3 David Viburnum
3 Compact Winged Euonymus
5 Oregon Grape
9 Vine Maple
Hedge of Yellowtwig and Redtwig Dogwood
6 Red Flowering Currant
8 Hogan Cedar
Arborvitae
Compact Winged Euonymus
Arborvitae
6 Green Arrow Cypress
9 Compact Winged Euonymus
6 Karl Foerster Grass
Taiwan Creeping Berry
6 Oregon Grape
5 Gracilis Hinoki Cypress
Blue Princess Holly Hedge
6 Unique Rhododendron
5 Nikko Deutzia
3 Hino Crimson Azalea
5 Blue Fescue
6 Compact Winged Euonymus
Vinca @ 24" O.C. Typ.
7 Doublefile Viburnum
2 Norwegian Sunset Maple
11 Sword Fern
3 Incense Cedar
3 Compact Winged Euonymus
3 Kelsey Dogwood
3 Daylily
20 Compact Winged Euonymus
17 Doublefile Viburnum
3 Virescens Cedar
9 Daylily
Landscape Rock Typ.
3 Redtwig Dogwood
3 Sword Fern
12 Repens Oregon Grape
3 Redtwig Dogwood
Taiwan Creeping Berry @ 30" O.C. Typ.
11 Repens Oregon Grape
11 Northern Red Oak
6 Doublefile Viburnum
Taiwan Creeping Berry @ 30" O.C. Typ.
5 Green Arrow Cypress
Spring Bouquet Viburnum
5 Kelsey Dogwood
Taiwan Creeping Berry @ 30" O.C.
3 David Viburnum
5 Repens Oregon Grape
5 Blue Fescue
Taiwan Creeping Berry @ 30" O.C. Typ.
Turf Area Typ.
15 New Street Trees as Required
Taiwan Creeping Berry @ 30" O.C. Typ.
5 Daylily
CAMPUS DRIVE WEST
CAMPUS DRIVE WEST

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

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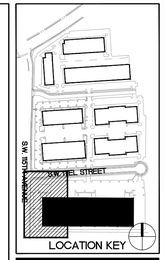
LANDSCAPE PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'



BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

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KOCH CORPORATE CENTER BUILDING 001
TUALATIN, OREGON

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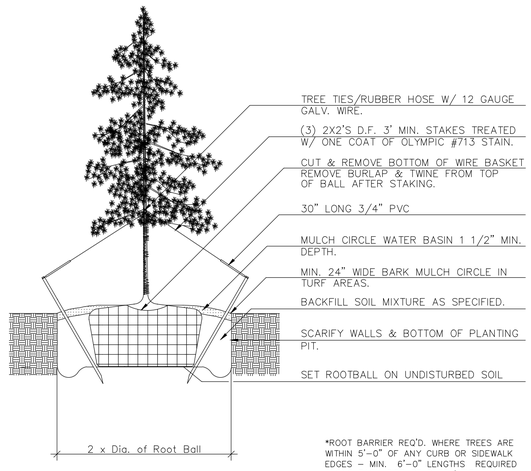
OF 4

PLANT MATERIALS LISTING FOR LOT 1:

BOTANICAL NAME / COMMON NAME	QTY.	SIZE	CONDITION	REMARKS
TREES				
Acer circinatum / Vine Maple	64	4–5'	B&B	Multi–Trunk
Acer truncatum x A. platanoides 'Keithsform' / Norwegian Sunset Maple	8	1 1/2" Cal.	B&B	
Calocedrus decurrens / Incense Cedar	9	8–9'	B&B	
Chamaecyparis nootkatensis 'Green Arrow' / Green Arrow Cypress	52	6–7'	B&B	
Chamaecyparis obtusa 'Gracilis' / Gracilis Hinoki Cypress	5	4–5'	B&B	
Quercus rubra / Northern Red Oak	28	1 1/2" Cal.	B&B	
Thuja plicata 'Fastigiata' / Hogan Cedar	42	8–9'	B&B	
Thuja plicata 'Virescens' / Virescens Cedar	8	7–8'	B&B	
Required Street Trees:	15	1 1/2" Cal.	B&B	
SHRUBS				
Berberis thunbergii 'Bagatelle' / Bagatelle Barberry	1 Gal.	Can	10–12"	
Cornus stolonifera / Redtwig Dogwood	5 Gal.	Can	30–36	
Cornus stolonifera 'Kelseyi' / Kelsey Dogwood Dogwood	1 Gal.	Can	10–12"	
Deutzia gracilis 'Nikko' / Nikko Deutzia	1 Gal.	Can	10–12"	
Euonymus alatus 'Compact' / Compact Winged Euonymus	5 Gal.	Can	18–24"	
Euonymus japonicus 'Silver King' / Silver King Euonymus	5 Gal.	Can	18–24"	
Festuca ovina 'Elija' / Blue Fescue	1 Gal.	Can	10–12"	
Gaultheria shallon / Salal	2 Gal.	Can	12–15"	
Ilex meserveae 'Blue Princess' / Blue Princess Holly	18–21"	B&B		
Mahonia aquifolium 'Orange Flame' / Orange Flame Oregon Grape	2 Gal.	Can	12–15"	
Nandina domestica 'Moon Bay' / Moon Bay Nandina	5 Gal.	Can	15–18"	
Pennisetum alopecuroides 'Little Bunny' / Little Bunny Grass	1 Gal.	Can	10–12"	
Polystichum munitum / Sword Fern	1 Gal.	Can	10–12"	
Rhododendron varieties:				
Elizabeth	12–15"	B&B		
Unique	18–24"	B&B		
Symphoricarpus alba / Snowberry	2 Gal.	Can	12–15"	
Viburnum davidi / David Viburnum	2 Gal.	Can	12–15"	
Viburnum plicatum tomentosum 'Watanabe' / Watanabe Doublefile Viburnum	5 Gal.	Can	18–24"	
Viburnum tinus 'Spring Bouquet' / Spring Bouquet Viburnum	5 Gal.	Can	15–18"	
GROUNDCOVER & VINES				
Rubus pentalobus 'Emerald Carpet' / Taiwan Creeping Berry	4"	Pots	Triangular Spaced	
Vinca minor / Vinca	4"	Pots	Triangular Spaced	
Landscape Rocks / Native Basalt	3–5 cu.ft.			

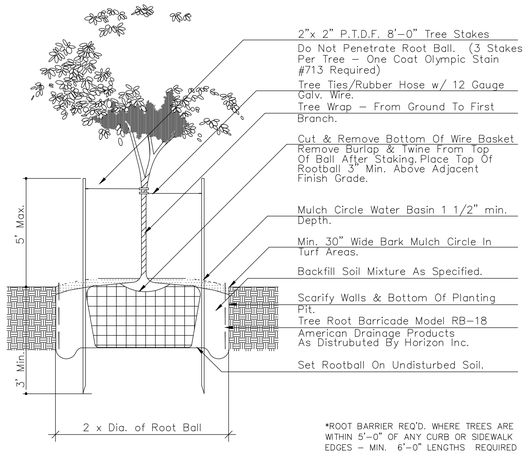
PLANTING DETAILS



•ROOT BARRIER REQ'D. WHERE TREES ARE WITHIN 5'–0" OF ANY CURB OR SIDEWALK EDGES – MIN. 6'–0" LENGTHS REQUIRED ALONG EACH SIDE OF CURB/SIDEWALK.

CONIFER PLANTING DETAIL

NTS



•ROOT BARRIER REQ'D. WHERE TREES ARE WITHIN 5'–0" OF ANY CURB OR SIDEWALK EDGES – MIN. 6'–0" LENGTHS REQUIRED ALONG EACH SIDE OF CURB/SIDEWALK.

TREE PLANTING DETAIL – SHRUB PLANTING SIMILAR

NOTES

1. B&B STOCK MAY BE SUBSTITUTED WITH CONTAINER STOCK OF EQUAL GRADE.
2. CONTAINER STOCK MAY BE SUBSTITUTED WITH B&B STOCK OF EQUAL GRADE.
3. PLANT MATERIAL SHALL CONFORM WITH AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, 1986 EDITION.
4. ALL TREES SHALL BE BRANCHED.
5. MULCH ALL PLANTING BEDS WITH 3" MIN. LAYER OF SPECIFIED MULCH.
6. IN THE EVENT OF A DISCREPANCY BETWEEN THIS MATERIAL LISTING AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN THE PLANT SPECIES AND QUANTITIES REQ.
7. IN THE EVENT OF QUESTION OR LACK OF CLARITY ON DRAWINGS, LANDSCAPE CONTRACTOR IS TO CALL LANDSCAPE ARCHITECT BEFORE PROCEEDING.
8. LANDSCAPE CONTRACTOR IS TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIAL / GREEN SIDE UP.
9. ADJUST PLANT LAYOUT AS REQUIRED TO FIT IRRIGATION COVERAGE PATTERN.

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

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LANDSCAPE DETAILS

BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643–4796
FAX: 503 643–4798

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KOCH CORPORATE CENTER BUILDING 007 TUALATIN, OREGON

Revisions

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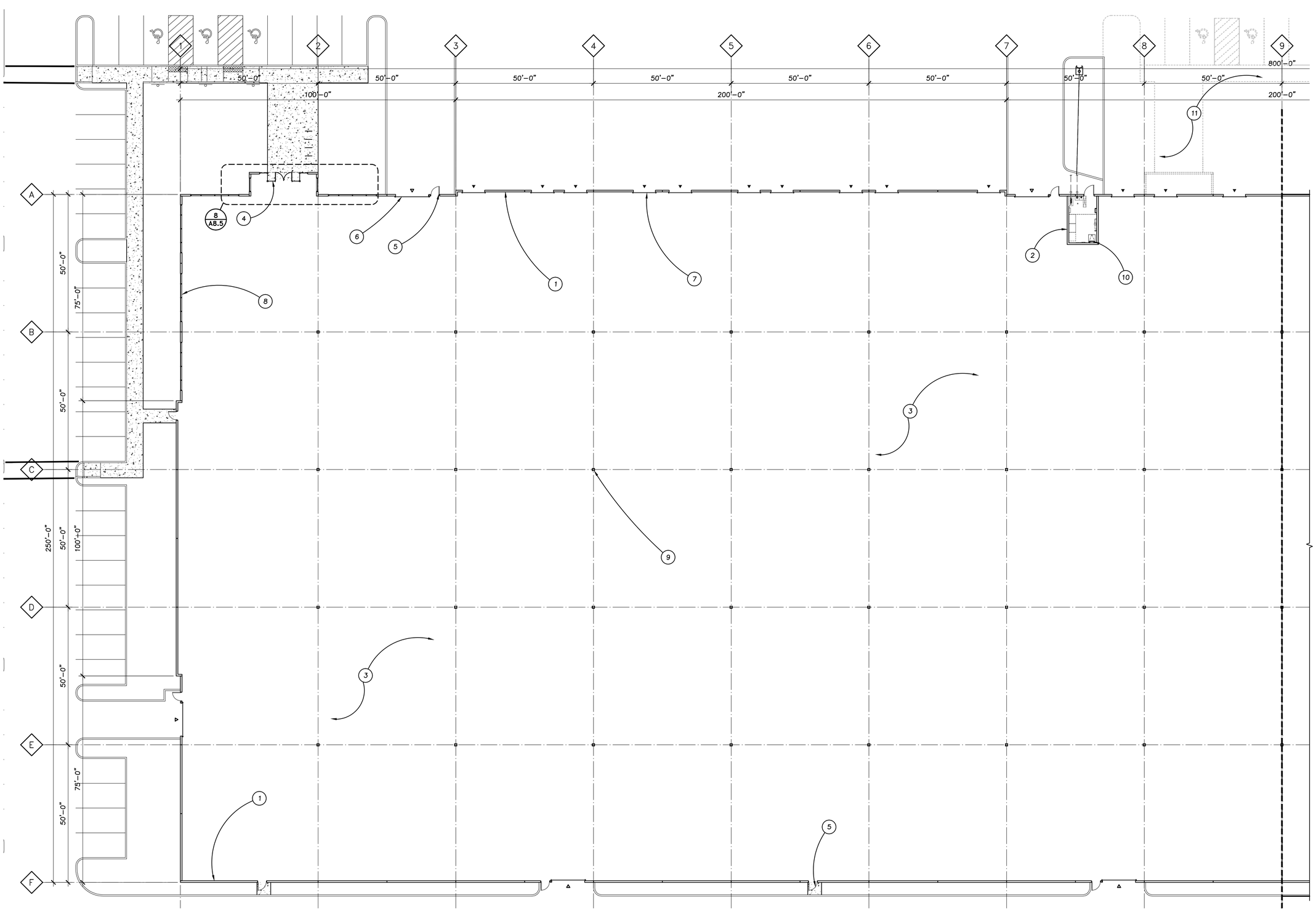
OF 4



FLOOR PLAN - WEST

1/16"=1'-0"

GENERAL NOTES

A. PROVIDE MECHANICAL VENTILATION AS REQUIRED BY 2014 WASHINGTON STATE ENERGY CODE.
B. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
C. SEE CIVIL FOR ADDITIONAL SITE INFORMATION.

KEYNOTES

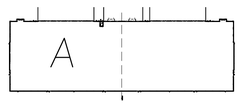
1. CONCRETE PANEL
2. FULL HEIGHT METAL STUD WALL
3. CONCRETE SLAB
4. STOREFRONT ENTRY DOOR
5. HOLLOW METAL DOOR
6. ON GRADE DOOR
7. DOCK HIGH DOOR
8. STOREFRONT WINDOW SYSTEM
9. STEEL COLUMN
10. ROOF ACCESS LADDER
11. FUTURE ENTRY AND PARKING

LEGEND

CONCRETE TILT WALL
DOCK-HIGH O.H. DOOR
DRIVE-IN O.H. DOOR

KEY PLAN

N.T.S



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FLOOR PLAN - WEST (WEST)

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SHEET:
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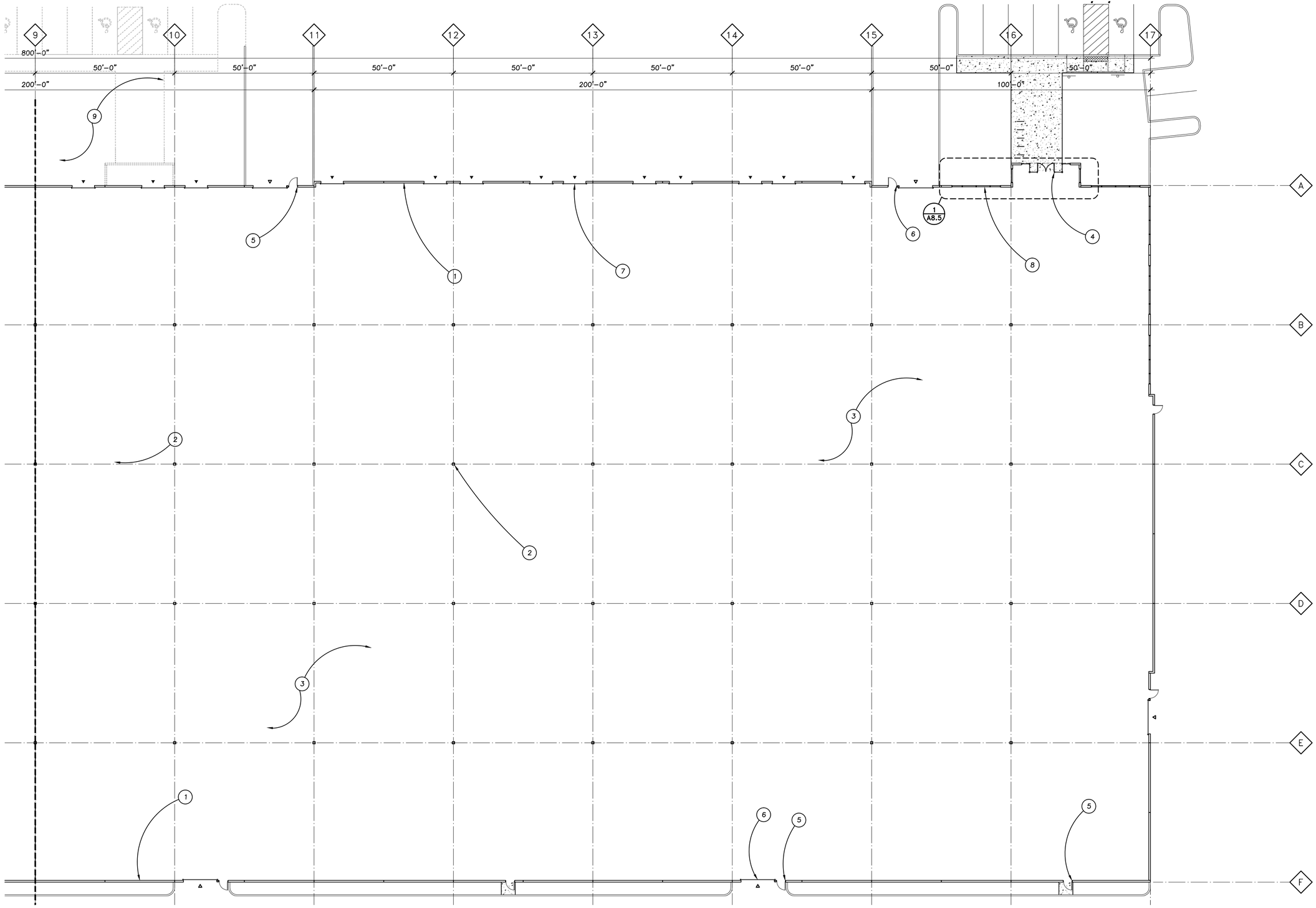


FLOOR PLAN - EAST

1/16"=1'-0"

GENERAL NOTES

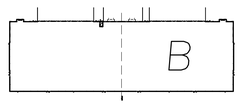
A. PROVIDE MECHANICAL VENTILATION AS REQUIRED BY 2014 WASHINGTON STATE ENERGY CODE.
B. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
C. SEE CIVIL FOR ADDITIONAL SITE INFORMATION.

KEYNOTES

1. CONCRETE PANEL
2. STEEL COLUMN
3. CONCRETE SLAB
4. STOREFRONT ENTRY DOOR
5. HOLLOW METAL DOOR
6. ON GRADE DOOR
7. DOCK HIGH DOOR
8. STOREFRONT WINDOW SYSTEM
9. FUTURE ENTRY AND PARKING

LEGEND

CONCRETE TILT WALL
DOCK-HIGH O.H. DOOR
DRIVE-IN O.H. DOOR



KEY PLAN

N.T.S

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FLOOR PLAN - EAST

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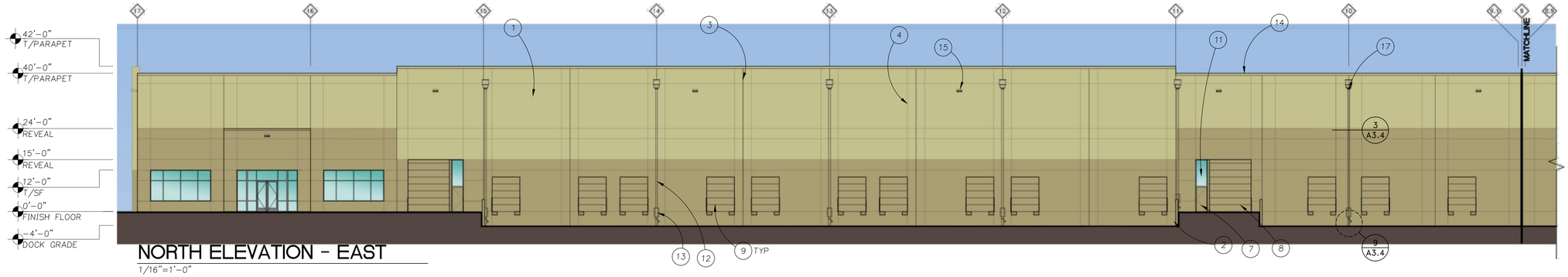
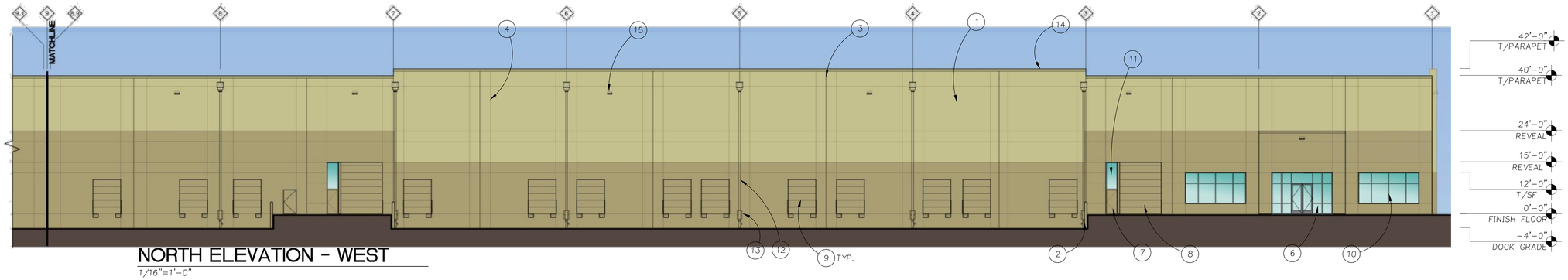
SHEET:
A2.1B

JOB NO. 2140561.00



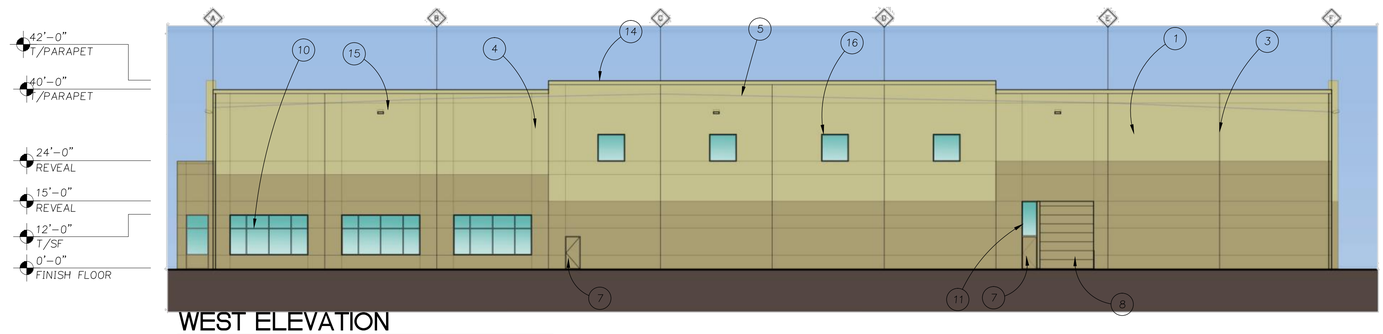
NORTH ELEVATION - EAST

1/16"=1'-0"



NORTH ELEVATION - WEST

1/16"=1'-0"



WEST ELEVATION

1/16"=1'-0"

COLOR 1
MILLER PAINT CO.
DARK GOAT/ P-1

COLOR 2
MILLER PAINT CO.
GOAT/ P-2

GLASS
PPG Solarcool
Azuria

KEYNOTES

1. PAINTED CONCRETE PANEL
2. 42" TALL RETAINING WALL
3. PANEL JOINT
4. REVEAL
5. ROOF BEYOND
6. STOREFRONT ENTRY DOOR
7. HOLLOW METAL DOOR
8. ON GRADE DOOR
9. DOCK HIGH DOOR
10. STOREFRONT WINDOW SYSTEM
11. TRANSOM WINDOW
12. SCUPPER & DOWNSPOUT
13. DOWNSPOUT GUARD & CLEAN OUT
14. CAP FLASHING
15. YARD LIGHT
16. 6'-0"X6'-0" WINDOW, CENTERED ON PANEL
17. EXPANSION JOINT, SEE SHEET A3.4

GENERAL NOTES

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. SEE STRUCTURAL DRAWINGS FOR PANEL THICKNESS

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SHEET TITLE:
ELEVATIONS
- NORTH
- WEST

DRAWN BY: MNT

CHECKED BY: AJS

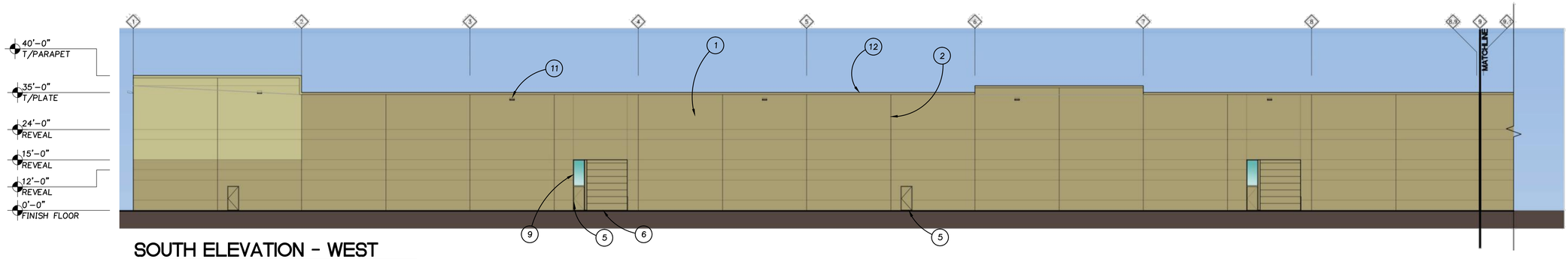
SHEET:

A3.1A

JOB NO. 2140561.00

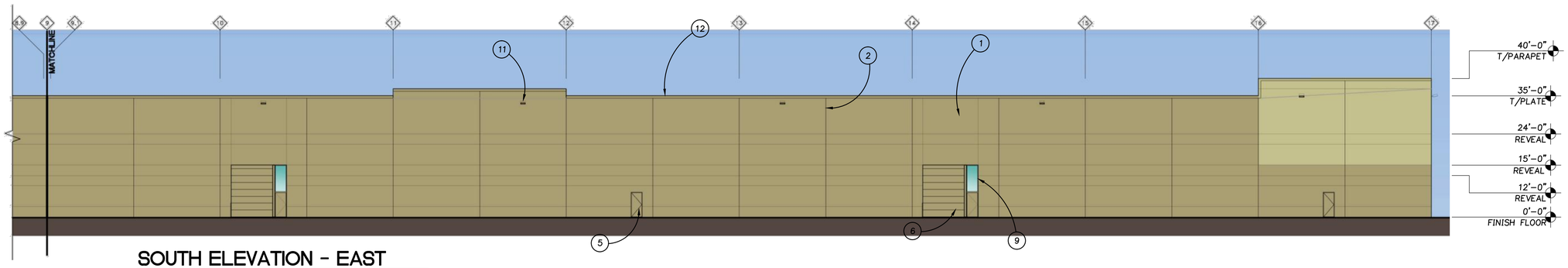
REVISION: APRIL 6, 2015
ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

2140561.00\ARCH\561-A3.1A.DWG MNT 04/06/15 15:36 1:192.00



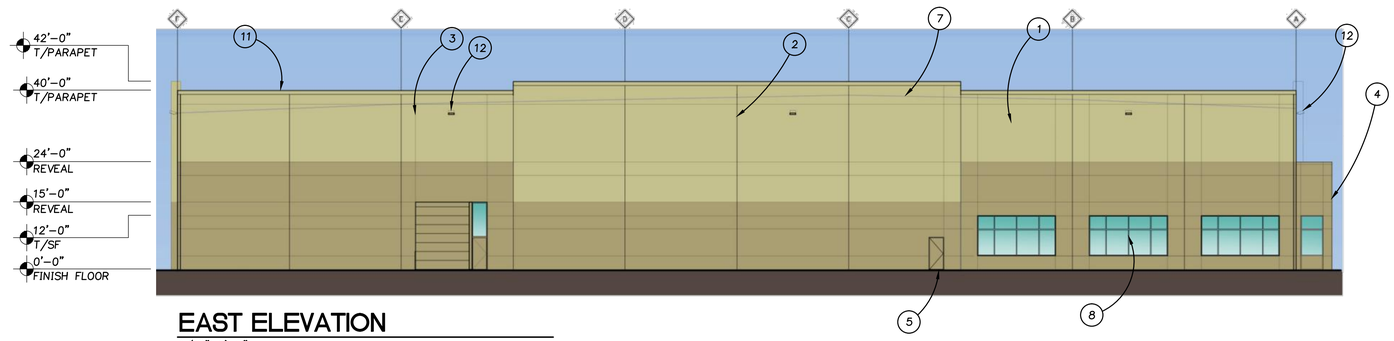
SOUTH ELEVATION - WEST

1/16"=1'-0"



SOUTH ELEVATION - EAST

1/16"=1'-0"



EAST ELEVATION

1/16"=1'-0"

COLOR 1
MILLER PAINT CO.
DARK GOAT/ P-1

COLOR 2
MILLER PAINT CO.
GOAT/ P-2

GLASS
PPG Solarcool
Azuria

KEYNOTES

1. PAINTED CONCRETE PANEL
2. PANEL JOINT
3. REVEAL
4. STOREFRONT ENTRY DOOR
5. HOLLOW METAL DOOR
6. ON GRADE DOOR
7. ROOF BEYOND
8. STOREFRONT WINDOW SYSTEM
9. TRANSOM WINDOW
10. SCUPPER & DOWNSPOUT
11. CAP FLASHING
12. YARD LIGHT

GENERAL NOTES

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. SEE STRUCTURAL DRAWINGS FOR PANEL THICKNESS

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SHEET TITLE:
ELEVATIONS
- SOUTH
- EAST

DRAWN BY: MNT

CHECKED BY: AJS

SHEET:

A3.1B

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REVISION: APRIL 6, 2015
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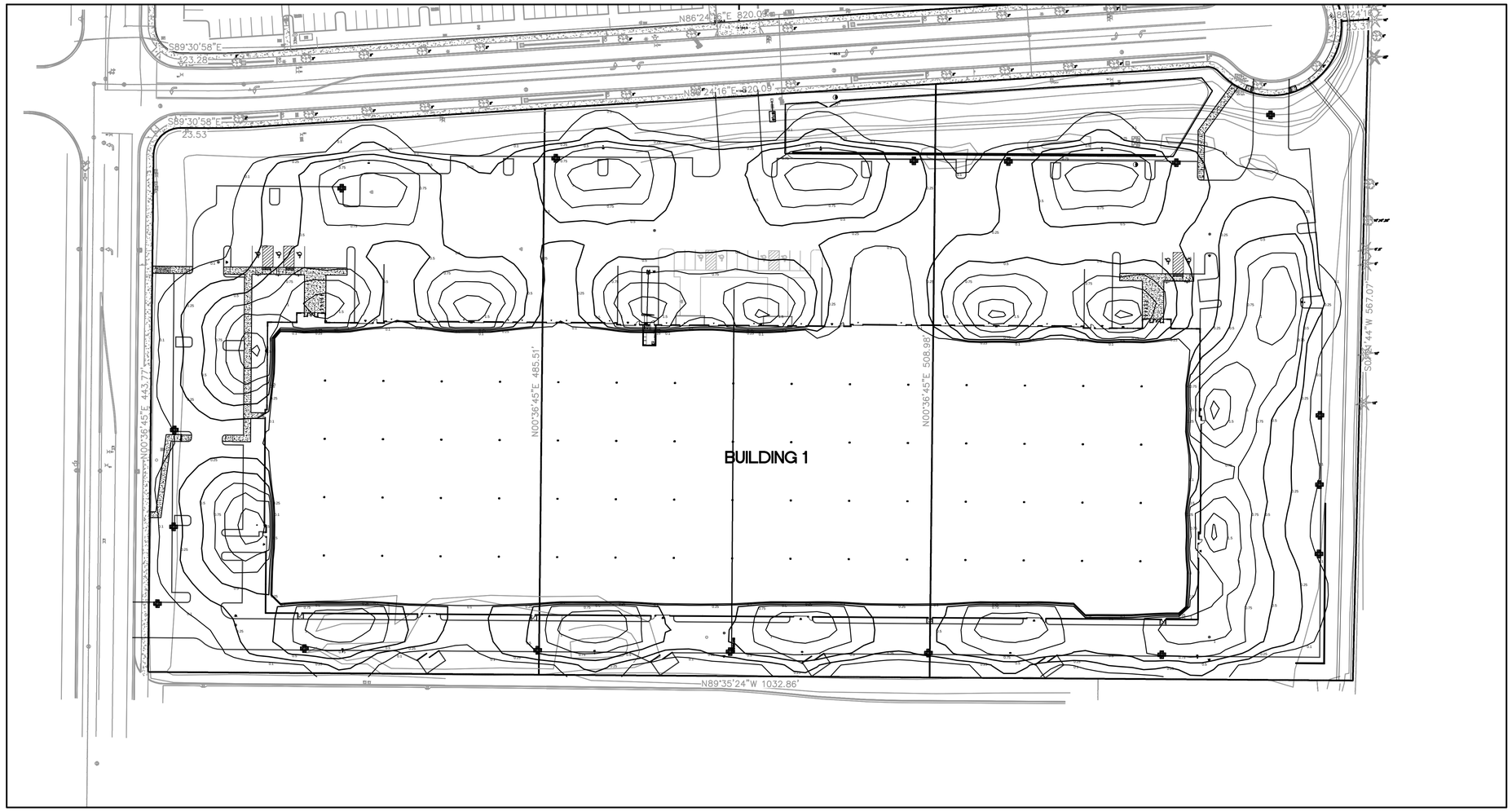

STATISITICS							
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN	AVG/MAX
BEYOND PROPERTY LINE	+	0.0	0.2 fc	0.0 fc	N/A	N/A	0.0

LUMINAIRE SCHEDULE					
SYMBOL	LABEL	QTY	CATALOG NUMBER	DESCRIPTION	WATTAGE
⌂	A	10	DSXW2 LED 30C 1000 40K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINE, 30 LED'S, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC	109
▭ •	C-T3M	10	DSXO LED 40C 1000 40K T3M MVOLT HS	DSXO LED WITH (2) 20 LED LIGHT ENGINE, TYPE T3M OPTIC, 4000K, @ 1000mA WITH HOUSE SIDE SHEILD	138

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

Attachment 105 - Application with Site Plans & Elevations

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SHEET TITLE:
BUILDING 1
LIGHTING ANALYSIS

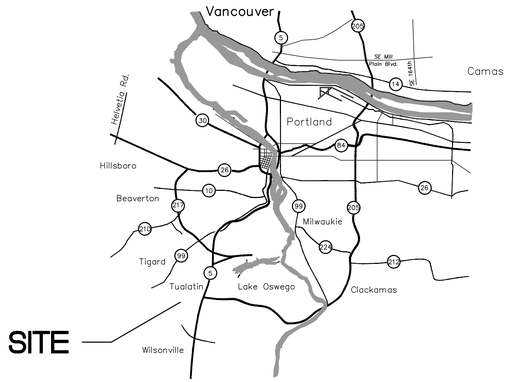
DRAWN BY: BMR

CHECKED BY:

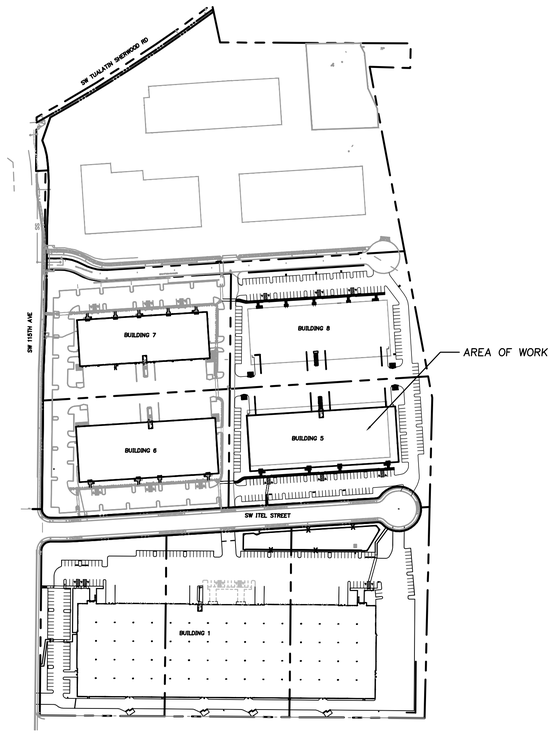
SHEET:
SL1.2

JOB NO. 2140561.00

Koch Corporate Center
Lot 5 - Tualatin, OR



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

BUILDING CODE DATA

BASED ON THE 2014 OREGON STRUCTURAL SPECIALTY CODE

GENERAL CODE ANALYSIS

CONSTRUCTION TYPE: III–B

SINGLE STORY

FIRE PROTECTION: FULLY SPRINKLERED

OCCUPANCY: (F–1)
THE BUILDING TO BE UNOCCUPIED UNDER THIS PERMIT. FUTURE OCCUPANCIES MAY CONSIST OF B, S–1 AND/OR F–1 GROUPS. THE BUILDING AREA HAS BEEN CALCULATED BASED UPON F–1 OCCUPANCY (MOST RESTRICTIVE USE) BASED ON TABLE 503 – ALLOWABLE AREAS

AREA	SQUARE FEET	OCCUPANCY
BUILDING SHELL	43,750 SF	F–1

NOTE: SEE SHEET T1.1 FOR COMPLETE FIRE AND LIFE SAFETY CODE ANALYSIS

TEAM MEMBERS

OWNERS

PACIFIC REALTY ASSOCIATES, LP

15350 SW Sequoia Parkway, Suite 300
Portland, Oregon 97224

Phone: (503) 624–6300
Fax: (503) 624–7755

Contact: Matt Oyen

ARCHITECT

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Dennis Woods

CIVIL ENGINEER

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Bob Frentress

LANDSCAPE ARCHITECT

BEIGHLEY & ASSOCIATES

12840 N.W. CORNELL RD.
Portland, OR 97229

tel: (503) 643–4796
fax: (503) 643–4798

Contact: Hal Beighley

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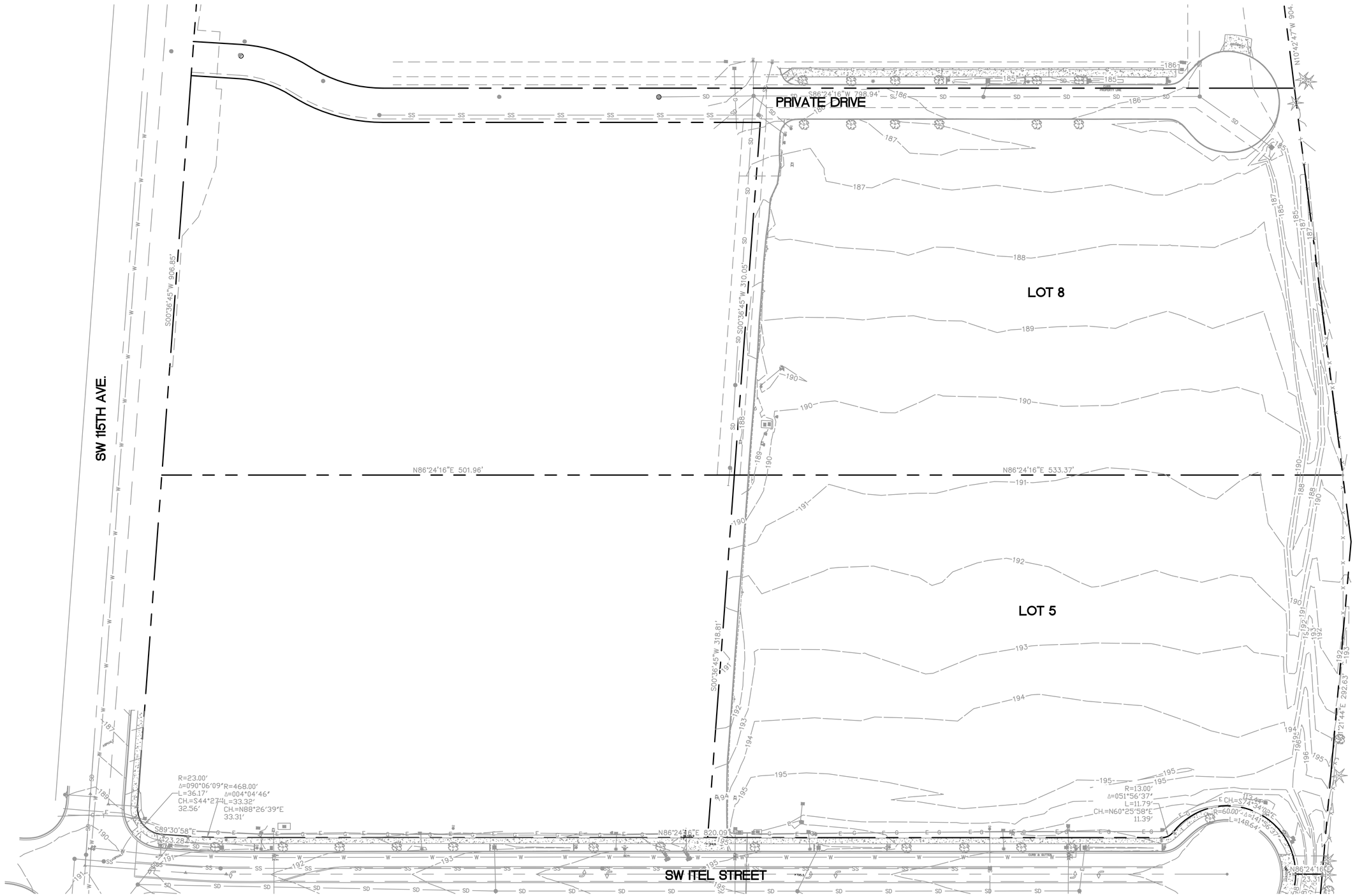

EXISTING CONDITIONS PLAN

1 / C1.0

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

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LOTS 5 AND 6

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EXISTING CONDITIONS PLAN

DRAWN BY: CTL

CHECKED BY: RLF

SHEET:

C1.0

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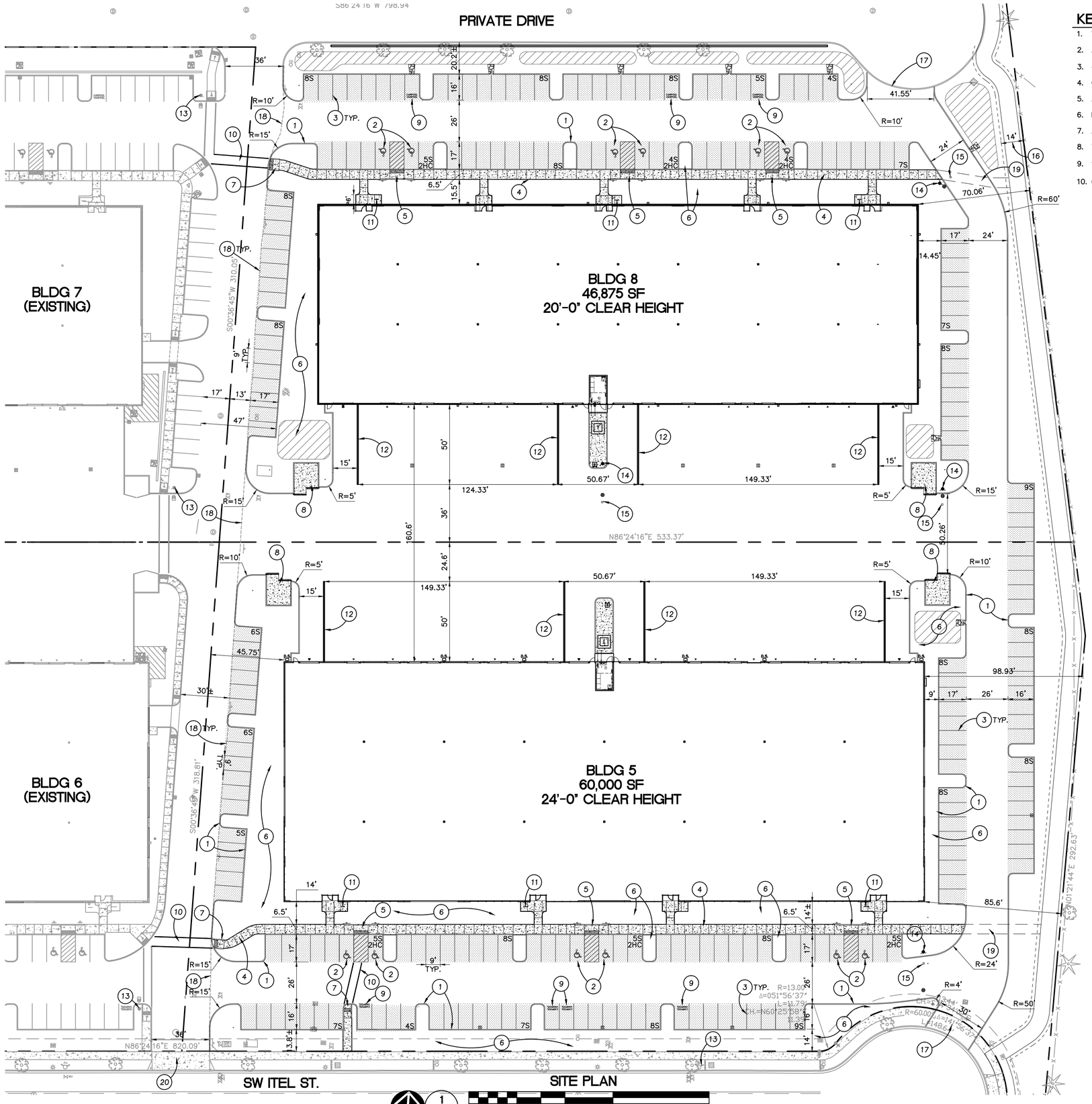

KEYNOTES

1. VERTICAL CURB
2. ADA COMPLIANT PARKING STALL
3. 4" WHITE PARKING STRIPE (2 COATS OF PAINT)
4. CONCRETE SIDEWALK
5. ADA COMPLIANT CURB RAMP
6. LANDSCAPE AREA
7. ADA COMPLIANT CURB RAMP
8. TRASH ENCLOSURE PER ARCHITECTURAL PLANS
9. 1' HIGH WHITE PAINTED LETTERS: "CARPOOL" "VANPOOL"
10. 6' WIDE STRIPED CROSSWALK
11. 2 BICYCLE PARKING SPACES
12. DOCK RETAINING WALL, SEE ARCHITECTURAL PLANS
13. EXISTING FIRE HYDRANT
14. PROPOSED FIRE HYDRANT
15. BLUE HYDRANT REFLECTOR
16. FUTURE TRAIL BY OTHERS
17. CITY STANDARD COMMERCIAL DRIVEWAY
18. MATCH EXISTING ASPHALT
19. FUTURE CONNECTION TO FUTURE TRAIL
20. EXISTING DRIVEWAY

SITE DATA

BUILDING 5	
LOT 5	171,460 SF (3.94 AC)
TOTAL IMPERVIOUS AREA	138,897 SF (3.19 AC, 81.0%)
BUILDING FOOTPRINT	60,000 SF (1.38 AC, 35.0%)
DRIVE AISLE/PARKING/SIDEWALK AREA	78,897 SF (1.81 AC, 46.0%)
PARKING LOT AREA	40,088 SF (0.92 AC, 23.4%)
REQUIRED PARKING LANDSCAPE	3,150 SF (25 SF/STALL)
PARKING LANDSCAPE AREA	4,366 SF (0.11 AC, 10.9%)
LANDSCAPE AREA	32,473 SF (0.74 AC, 18.9%)
BUILDING 8	
LOT 8	184,702 SF (4.24 AC)
TOTAL IMPERVIOUS AREA	105,578 SF (2.42 AC, 57.2%)
BUILDING FOOTPRINT	46,875 SF (1.08 AC, 25.4%)
DRIVE AISLE/PARKING/SIDEWALK AREA	58,703 SF (1.34 AC, 31.8%)
PARKING LOT AREA	32,414 SF (0.74 AC, 17.5%)
REQUIRED PARKING LANDSCAPE	2,550 SF (25 SF/STALL)
PARKING LANDSCAPE AREA	4,925 SF (0.11 AC, 15.2%)
LANDSCAPE AREA	79,059 SF (1.81 AC, 42.8%)

PARKING DATA

BUILDING 5		
REQUIRED PARKING (BASED ON MANUFACTURING USE)		
MINIMUM (1.6/1,000)	96	SPACES
MAXIMUM	NONE	SPACES
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	120	SPACES (4 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	126	(2.1/1,000 SF)
BICYCLE PARKING	6	SPACES
BUILDING 8		
REQUIRED PARKING (BASED ON MANUFACTURING USE)		
MINIMUM (1.6/1,000)	75	SPACES
MAXIMUM	NONE	SPACES
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	96	SPACES (3 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	102	(2.2/1,000 SF)
BICYCLE PARKING	6	SPACES

PAVEMENT SECTIONS

CAR PARKING AREA 2.5" AC
(2 LIFTS) OVER 6" CRUSHED ROCK

HEAVY DUTY AREA 4" AC
(2 LIFTS) OVER 11" CRUSHED ROCK

REFER TO SIDEWALK DETAIL

SITE LEGEND

- PROJECT DISTURBANCE AREA, LIMITS OF WORK
- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- FIRE LANE STRIPED CURB, COORD. W/ FIRE MARSHAL
- SITE FENCE PER SPEC.
- CATCH BASIN
- FIRE HYDRANT
- WATER METER
- DDCV
- FDC
- PROPOSED RETAINING WALL (LOCATION SHOWN REPRESENTS FACE OF BOTTOM ROW OF WALL)
- 10S — NUMBER OF STANDARD STALLS IN PARKING BAY
- 2HC — NUMBER OF H.C. STALLS IN PARKING BAY
- LID BASIN

CURB NOTE

ALL ON-SITE CURB RADII ARE 3.0' UNLESS OTHERWISE NOTED ON THE PLANS

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LOTS 5 AND 6

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DRAWN BY: BTS

CHECKED BY: RLF

SHEET:
C2.1

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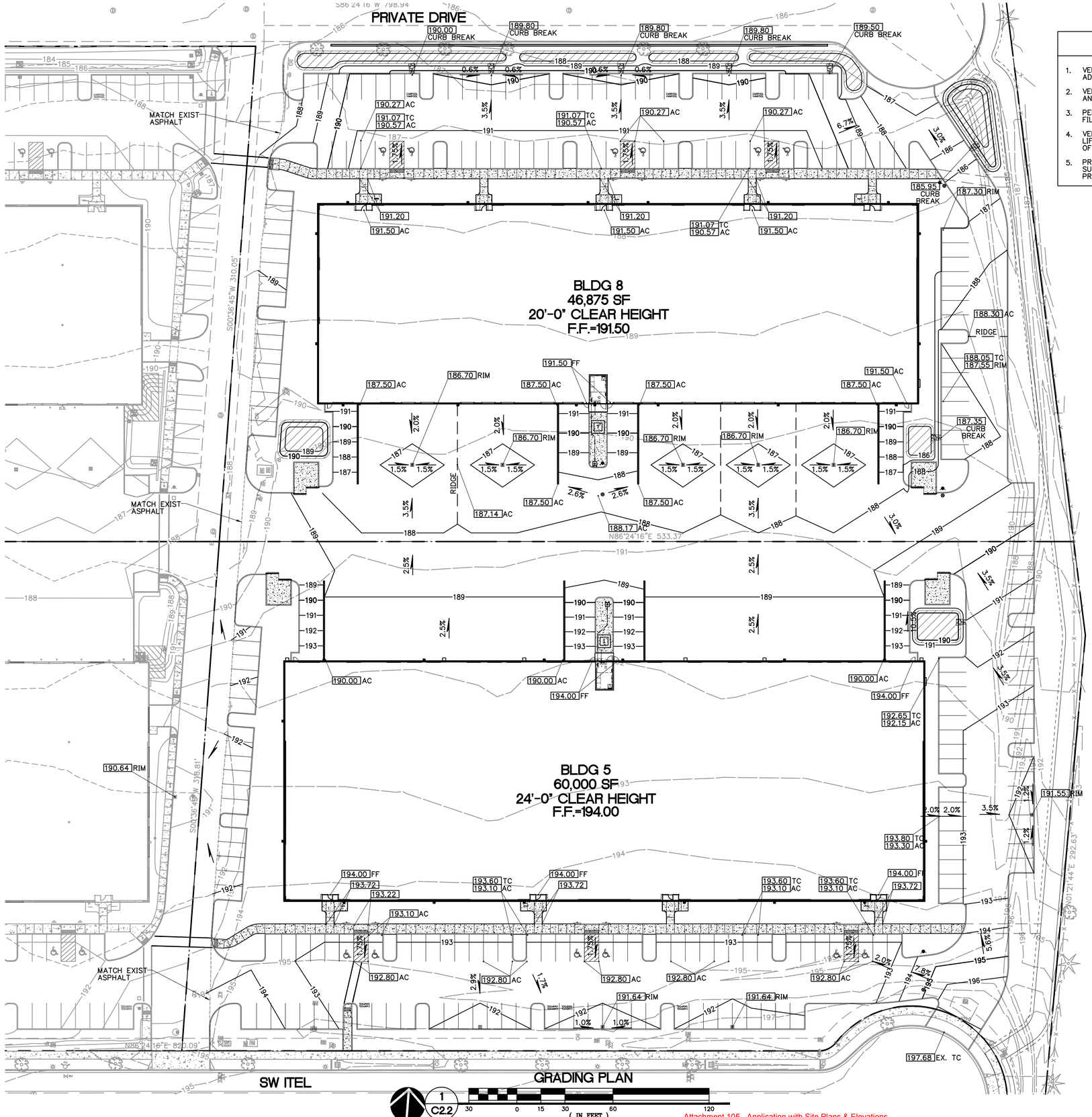

TABLE 1704.7

REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIUONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	--	X
2. VERUFT EXCAVATUIBS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER COMPACTION	--	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	--	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILLS	X	--
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	--	X

GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS 1. 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 2. 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. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION 3. CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY AND CLEAN WATER SERVICES REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
3. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE 4. 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.
4. SITE LANDSCAPE AREAS TO EXCAVATED TO 12" BELOW FINISHED GRADE BY 5. SITE WORK CONTRACTOR. ALL TOPSOIL EXCAVATED AS PART OF THIS EFFORT TO BE REMOVED FROM SITE IN ACCORDANCE WITH THE SPECIFICATIONS, ALL IMPORT TOPSOIL TO BE PLACED BY LANDSCAPE CONTRACTOR.
5. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY WESTLAKE CONSULTANTS, INC., AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL 7. PLANS PRIOR TO CONSTRUCTION.
6. 2% MAXIMUM SLOPE AT ALL HANDICAP PARKING SPACES.
7. 5% MAX LONGITUDINAL AND 2%% MAX CROSS SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
8. IF GROUNDWATER IS PRESENT IN UTILITY TRENCH EXCAVATIONS, IT IS RECOMMENDED 10. THAT 12"–18" OF TRENCH STABILIZATION ROCK BE PLACED AT THE BASE OF THE EXCAVATION. TRENCH STABILIZATION ROCK SHOULD MEET THE REQUIREMENTS OUTLINED IN THE 'STRUCTURAL FILL' SECTION OF THE GEOTECHNICAL REPORT AND SHOULD BE PLACED IN ONE LIFT AND COMPACTED UNTIL IT IS FIRM AND UNYIELDING. GROUNDWATER SHOULD BE PUMPED OUT OF THE TRENCH FROM A SUMP EXCAVATED BELOW THE TRENCH STABILIZATION ROCK. THE CONTRACTOR WILL BE RESPONSIBLE FOR TEMPORARY DRAINAGE OF SURFACE WATER AND GROUNDWATER AS NECESSARY TO PREVENT STANDING WATER AND/OR EROSION AT THE WORKING SURFACE.

SITE LEGEND

- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- 34 — 1-FT CONTOUR
- 35 — 5-FT CONTOUR
- CATCH BASIN
- LID BASIN
- INSTALL 30 MIL LINER WITHIN 10 OF BUILDING FOOTING
- 187.13 — SPOT ELEVATION

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DRAWN BY: CTL, BTS

CHECKED BY: RLF

SHEET:
C2.2

JOB NO. 2140559.00

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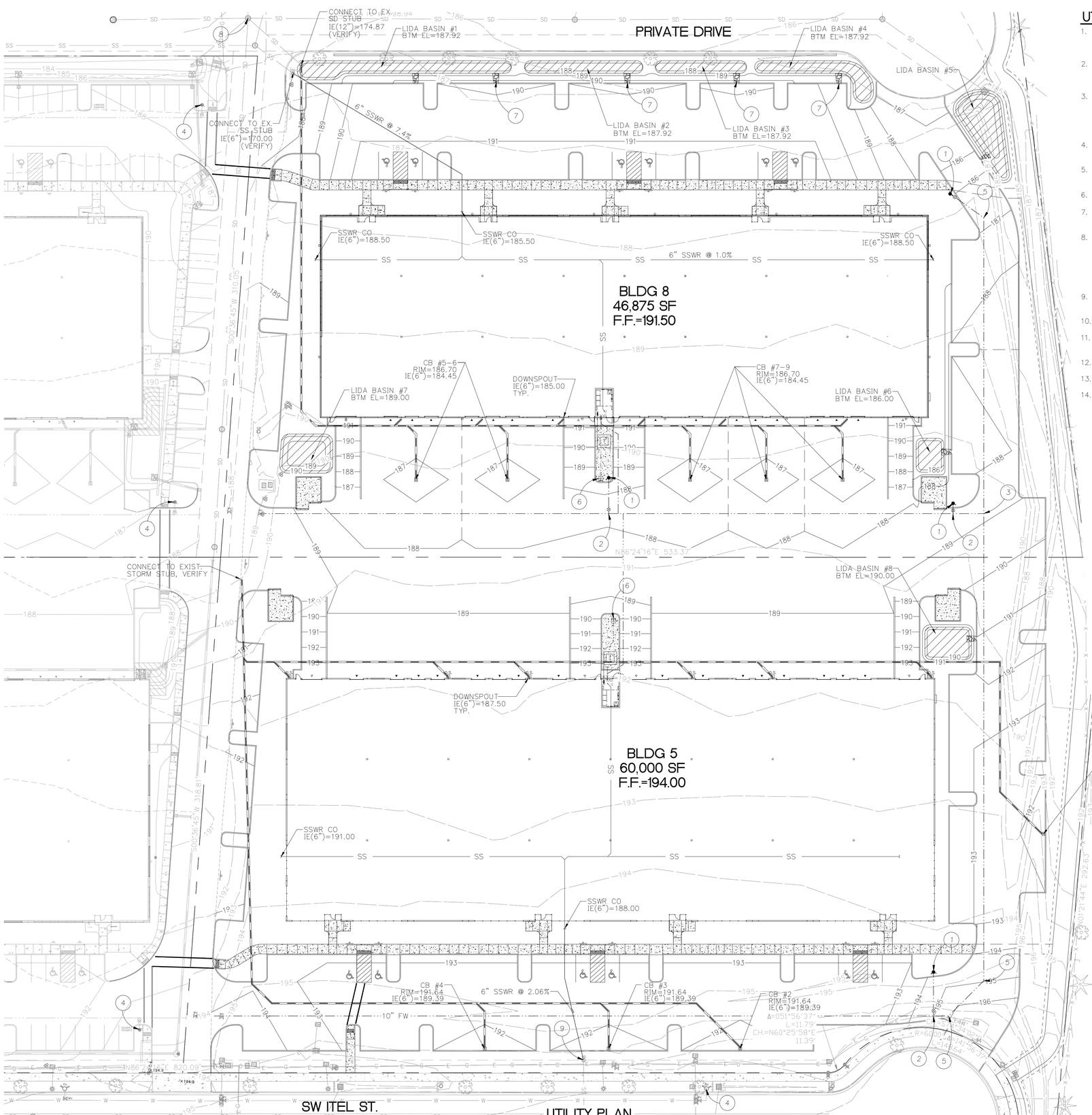

UTILITY PLAN

1 C2.3

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF TUALATIN, CLEAN WATER SERVICES, 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.
3. 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.
4. 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.
5. 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.
6. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
7. ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. PROVIDE 2" PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2" PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH ¾ INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS.
9. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WESTLAKE CONSULTANTS, INC. DATED JANUARY 30, 2015.
10. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
11. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
12. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.
13. 30 MIL LINER TO BE INSTALLED AT BOTTOM OF ALL LIDA BASINS WITHIN 10 LINEAL FEET OF FOOTING.
14. NO WATER VALVES ALLOWED ON SITE EXCEPT FOR HYDRANT VALVES ON FIRE SYSTEM.

KEYNOTES

(#)

1. FIRE HYDRANT ASSEMBLY
2. 10" X 6" TEE
3. 10" X 10" TEE
4. EXISTING FIRE HYDRANT
5. INSTALL 10" 45° BEND
6. INSTALL FDC WITH 6" LINE BACK TO RISER
7. 6' X 4' CLASS 50 RIP-RAP
8. EXISTING STORM MH RIM=185.09 IE(18"S)=175.00, IE(12"SW)=174.90, IE(12"N)=171.40, IE(12"SE)=174.00, IE(24"E)=171.10, IE(12"W)=170.80
9. CONNECT TO EXISTING SSWR STUB IE(6")=186.30 (VERIFY)

LIDA DATA

ROOF AREA BUILDING 5	=	60,000 SF
ROOF AREA BUILDING 8	=	46,875 SF
LIDA COVERAGE REQ'D BLDG 5 @ 6%	=	3,600 SF
LIDA COVERAGE REQ'D BLDG 8 @ 6%	=	2,812 SF
TOTAL REQUIRED	=	6,412 SF
TOTAL PROVIDED	=	7,922 SF

BUILDING 5

LIDA BASIN	SIZE (SF)	CONTRIBUTING AREA (SF)	COVERAGE
8	563	2,987	18.85%

LIDA COVERAGE PROVIDED LOT 5 = 2,987 SF

BUILDING 8

LIDA BASIN	SIZE (SF)	CONTRIBUTING AREA (SF)	COVERAGE
1	1,115	9,850	11.32%
2	555	4,930	11.26%
3	425	3,334	12.75%
4	720	2,479	29.04%
5	1,010	2,345	43.07%
6	350	3,670	9.54%
7	760	1,380	55.07%

LIDA COVERAGE PROVIDED LOT 8 = 4,935 SF

RESTRAINED JOINT NOTES

TEST PRESSURE:	200 PSI
DEPTH TO BURY:	3 FT
PIPE MATERIAL:	PVC C-900
SAFETY FACTOR:	1 TO 1.5
LENGTH OF RESTRAINT ALONG MAIN ON TEES, Lr:	20 FT

NOTIFY ENGINEER IF DEVIATING FROM ABOVE SPECIFICATIONS. LENGTH OF PIPE REQUIRING RESTRAINED JOINTS

	8"	10"
11¼° BEND	3'	4'
22½° BEND	6'	8'
45° BENDS	13'	15'
90° BEND	31'	36'
TEE	1'	4'
DEAD ENDS	70'	84'

CITY RETAINS AUTHORITY TO MODIFY AND/OR ADD JOINT RESTRAINTS AT THE DISCRETION OF THE CITY ENGINEER.

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LOTS 5 AND 6

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
UTILITY PLAN

DRAWN BY: CTL

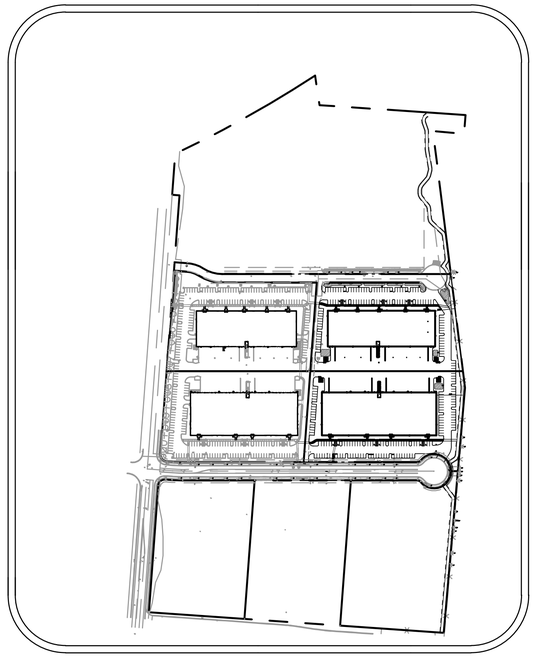
CHECKED BY: RLF

SHEET:
C2.3

JOB NO. 2140559.00

PRELIMINARY

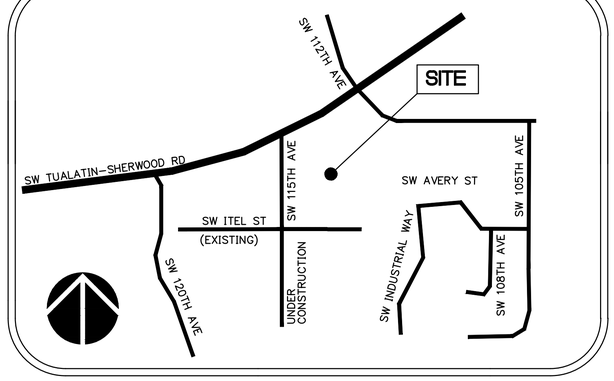
KOCH LOTS 5 AND 8
EROSION AND SEDIMENT CONTROL PLANS
1200-C PLANS



SITE MAP

1 / C5.0

250 0 125 250 500 1000
(IN FEET)
1 inch = 250 ft.



VICINITY MAP NOT TO SCALE

DEVELOPER
PACIFIC REALTY ASSOCIATES, LP
CONTACT: MATT OYAN
15350 SW SEQUOIA PARKWAY, #300 - WMI
TUALATIN, OR 97224
PHONE: (503) 624-6300
FAX:

CIVIL ENGINEER
MACKENZIE
CONTACT: BOB FRENTRESS
1515 SE WATER AVE
PORTLAND, OR 97239
PHONE: 503-224-9560
FAX: 503-228-1285

SURVEYOR
WESTLAKE CONSULTANTS, INC.
CONTACT:
15115 SW SEQUOIA PARKWAY, SUITE 150
TIGARD, OR 97224
PHONE: (503) 684-0652

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* PREVIOUSLY MASS GRADED SITE (SURCHARGE HAS BEEN REMOVED)

DEVELOPED CONDITIONS

* WAREHOUSE PARK AND ACCESS ROADWAYS

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (JUNE 15, 2012 - JULY 15, 2012)
* UTILITY INSTALLATION (APRIL 1, 2014 - JULY 30, 2014)
* STREET INSTALLATION (JULY 1, 2013 - MAY 15, 2014)
* FINAL STABILIZATION (OCT 1, 2013 - OCTOBER 30, 2015)

TOTAL SITE AREA = 356,162 SF = 8.18 ACRES

TOTAL DISTURBED AREA = 356,162 SF = 8.18 ACRES

SITE SOIL CLASSIFICATION:

21A - HILLSBORO LOAM, 0 TO 3 PERCENT SLOPES
21B - HILLSBORO LOAM, 3 TO 7 PERCENT SLOPES
21C - HILLSBORO LOAM, 7 TO 12 PERCENT SLOPES
21D - HILLSBORO LOAM, 12 TO 20 PERCENT SLOPES
22 - HUBERLY SILT LOAM

ON-SITE SOILS HAVE A SLIGHT EROSION POTENTIAL. ALL FILL MATERIAL SHALL BE GENERATED ON-SITE FROM GRADING EXCAVATION AND UTILITY TRENCH SPOILS.

RECEIVING WATER BODIES:

PUBLIC STORM SYSTEM, AND HEDGES CREEK

PERMITTEE'S SITE INSPECTOR:
COMPANY/AGENCY: PACTRUST
PHONE:
FAX:
E-MAIL:
DESCRIPTION OF EXPERIENCE:

PROJECT LOCATION:
SW 115TH AVE / SW ITEL STREET INTERSECTION
TUALATIN, OREGON 97062
LATITUDE = 45°21'59", LONGITUDE = -122°47'47"

PROPERTY DESCRIPTION:
TAX LOT 6 AND 7, A REPLAT OF TAX LOT 4 KOCH CORPORATE CENTER (ID 2S127A000200) LOCATED IN THE NORTHEAST AND SOUTHEAST 1/4 OF SECTION 27, TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON

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.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING
2. PRIOR TO SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECCESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE
3. INACTIVE PERIODS GREATER THAN (7) CONSECUTIVE CALENDAR DAYS	ONCE EVERY (2) TWO WEEKS
4. PERIODS AT WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER	IF PRATICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

* 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)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. 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)
2. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE MEASURES AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS. (SCHEDULE A.8.C.II.(1)(C))
3. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT. (SCHEDULE A.12.C.III)
4. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A 8.C.II.(1)(D))
5. IDENTIFY, MARK, AND PROTECT (BY FENCING OFF 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 THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
6. 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.B.III(1) AND A.7.B.III(3))
7. 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. (SCHEDULE A.7.D.I AND A.8.C)
8. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
9. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(2))
10. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
11. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: 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.(1) AND A.8.C.I(4))
12. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(3))
13. 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, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
14. 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. (SCH A 7.E.III.)
15. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A 7.B.II)
16. 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)
17. IF A STORMWATER 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)
18. 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 EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
19. AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A 7.E.II.(2))
20. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
21. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
22. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT. AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.II)
23. 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)
24. 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 CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
25. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
26. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
27. 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 A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
28. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. HOWEVER, DO REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS. (SCHEDULE A.7.B.III(2) AND A.8.C.III).

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.

BMP MATRIX FOR CONSTRUCTION PHASES

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

	MASS GRADING	UTILITY INSTALLATION	BUILDING CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	X	X		X	X
GROUND COVER					X
HYDRAULIC APPLICATIONS					X
PLASTIC SHEETING					X
MATTING				X	X
DUST CONTROL	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING			X	X	X
BUFFER ZONE					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	X*	X	X	X	X
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES					
FILTER BERM					
INLET PROTECTION	X	X	X	X	X
DEWATERING					
SEDIMENT TRAP					
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	X*	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION		X	X	X	X
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X
CONCRETE WASHOUT AREA		X	X	X	X
OTHER:					

x SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

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 ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

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LOT 5

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EROSION AND SEDIMENT CONTROL COVER SHEET

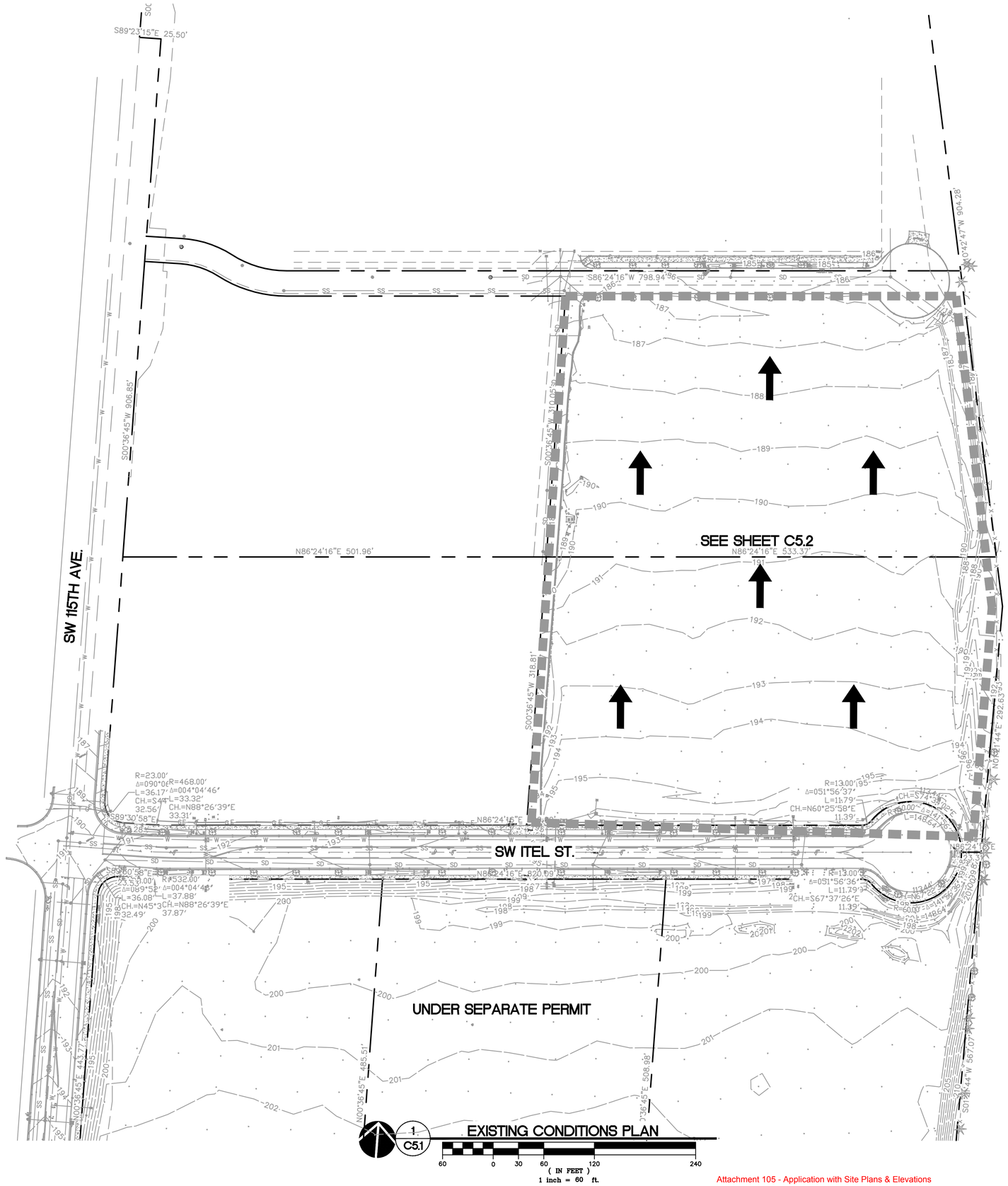
DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C5.0

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015



DUST CONTROL NOTES:
DUST CONTROL MEASURE OF SPRAYING WATER OVER AREAS OF EXPOSED SOIL TO BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION UNTIL ALL EXPOSED SOILS HAVE BEEN COVERED OR PLANTED.

NOTES:
THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1 AND MAY 31.

PRE-DEVELOPED RUN-OFF ON THE SITE SHEET FLOWS NORTH AND IS COLLECTED BY DIVERSION SWALES. THE SWALES FLOW EAST AND ARE COLLECTED IN A MAIN DIVERSION SWALE THAT RUNS NORTH TO AN EXISTING SEDIMENT POND.

IF ANY WELLS OR SEPTIC FIELDS ARE FOUND ON SITE, ABANDON IN ACCORDANCE WITH DEQ REQUIREMENTS.

ON SITES WHERE VEGETATION AND GROUND COVER ARE REMOVED, VEGETATIVE GROUND COVER SHALL BE PLANTED AND ESTABLISHED BY OCTOBER 1 AND CONTINUE TO FUNCTION THROUGH MAY 31 OF THE FOLLOWING YEAR, OR AS APPROVED BY THE DISTRICT. IF GROUND COVER IS NOT ESTABLISHED BY OCTOBER 1, THE OPEN AREAS SHALL BE PROTECTED THROUGH MAY 31 OF THE FOLLOWING YEAR WITH STRAW MULCH, EROSION BLANKETS, OR OTHER METHODS APPROVED BY THE DISTRICT OR CITY.

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 INSURE 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.

TREE PRESERVATION

ALL EXISTING TREES TO REMAIN. TREES TO BE REMOVED WERE DONE SO UNDER THE MASS GRADING ACTIVITY.

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- OUTLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- ROCK FILTER BERM
- CONSTRUCTION ENTRANCE
- TEMPORARY SLOPE STABILIZATION MEASURES
- LONG-TERM SLOPE STABILIZATION MEASURES
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- NEW IMPERVIOUS SURFACE
- DRAINAGE FLOW DIRECTION
- EXISTING TREE
- 50' VEGETATED CORRIDOR PLUS 15' TOP OF BANK SETBACK

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LOT 5

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EXISTING CONDITIONS PLAN

DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C5.1

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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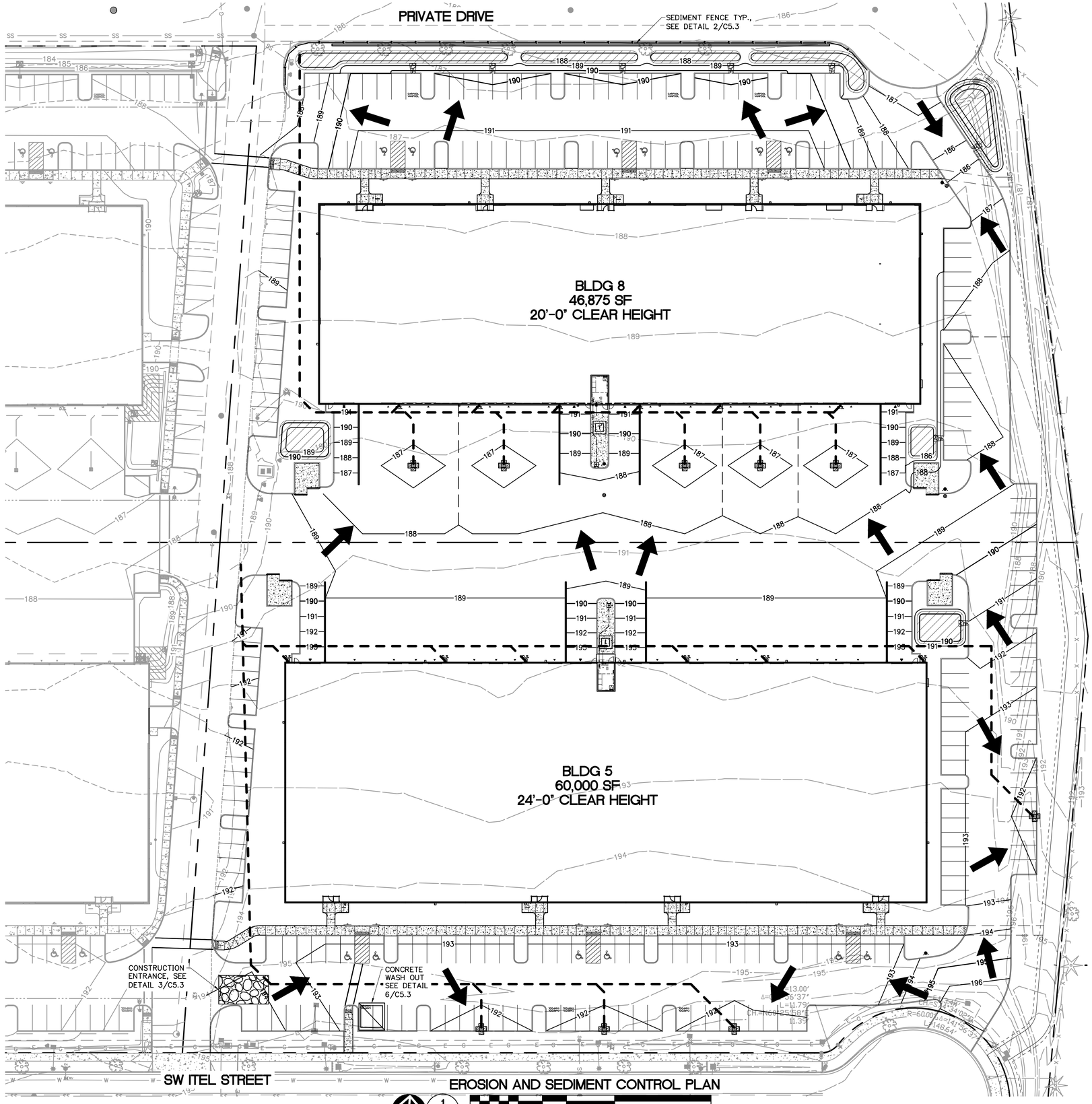

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

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. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.

4. THE STORM FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO ROAD PAVING.

5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- CONSTRUCTION ENTRANCE
- NEW IMPERVIOUS SURFACE
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- DRAINAGE FLOW DIRECTION

1 C5.2

EROSION AND SEDIMENT CONTROL PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN

DRAWN BY: CTL

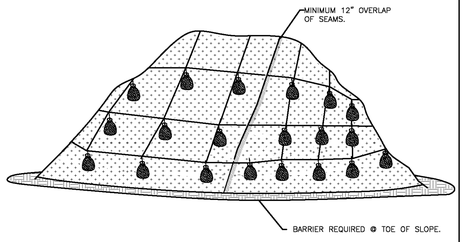
CHECKED BY: RLF

SHEET:
C5.2

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.



PLASTIC SHEETING

NOTES:
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

PLASTIC SHEETING
DRAWING NO. 810 REVISED 12-06
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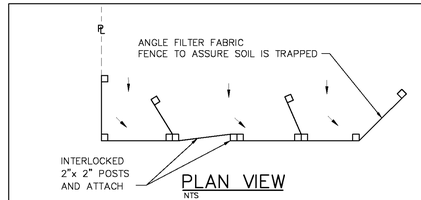
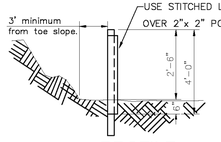
1 C5.3 CLEAN WATER SERVICES DWG. 810
N.T.S.

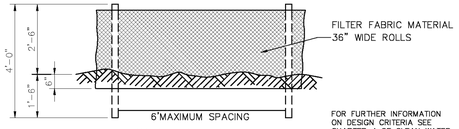


PLAN VIEW
NTS



PROFILE
NTS

NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
3. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
5. PANELS MUST BE PLACED ACCORDING TO SPACING ON DETAIL NO.940



FRONT VIEW
NTS

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SEDIMENT FENCE
DRAWING NO. 875 REVISED 12-06
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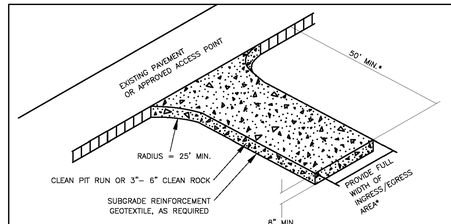
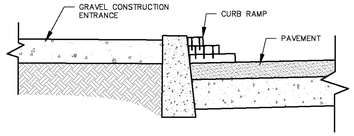
2 C5.3 CLEAN WATER SERVICES DWG. 875
N.T.S.



*20' MIN. FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF- WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY
   20' LONG BY 20' WIDE 8" DEEP OF ¾" MINUS CLEAN ROCK.
   COMMERCIAL
   50' LONG BY 20' WIDE 3-6" CLEAN ROCK, GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

CONSTRUCTION ENTRANCE
Detail Drawing 855 REVISED 12-06
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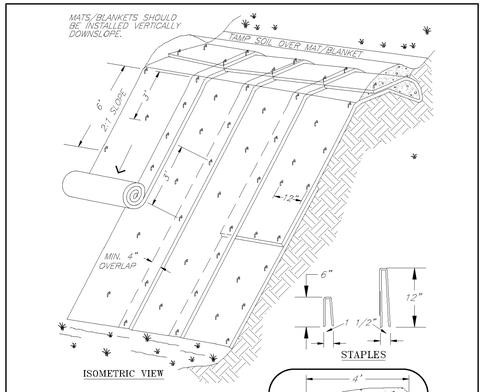
3 C5.3 CLEAN WATER SERVICES DWG. 855
N.T.S.



ISOMETRIC VIEW

TYPICAL SLOPE SOIL STABILIZATION

NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.

NOT TO SCALE

FILE: BLANKTSP

MATTING SLOPE INSTALLATION
DRAWING NO. 805 REVISED 12-06
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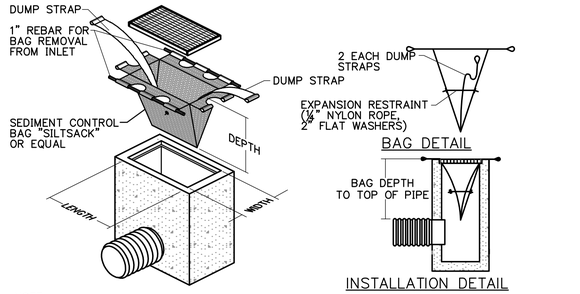
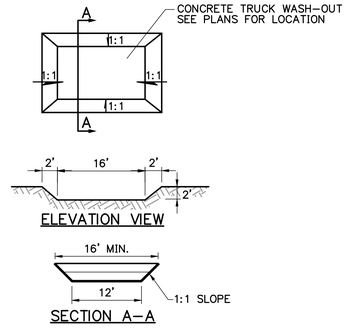
4 C5.3 CLEAN WATER SERVICES DWG. 805
N.T.S.



INSTALLATION DETAIL

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 HIGH FLOW DESIGN (200 GAL/MIN/SF), AS PER THE MANUFACTURER'S SPECS.
4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT.
5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.

5 C5.3 CATCH BASIN SEDIMENT FILTER BAG
N.T.S. CBSACK3



NOTES:
1. CONCRETE WASHOUT AREA. LOCATED SO RUNOFF CANNOT ENTER STORM SYSTEM. IF WASH-OUT CANNOT BE LOCATED MINIMUM OF 50' FROM ENTRY TO STORM SYSTEM, THAN SECONDARY MEASURES SUCH AS BERMS AND TEMPORARY SETTLING PITS MAY BE REQUIRED.
2. CONTRACTOR SHALL CLEAN OUT CONCRETE TRUCK WASH-OUT AREA WHEN WHEN DEPTH REACHES 1'.

6 C5.3 CONCRETE WASHOUT
N.T.S. CONCRETE WASHOUT

SEDIMENT FENCE CONSTRUCTION NOTES

1) SELECTION OF FILTER FABRIC TENSILE AND BURSTING STRENGTH DEPENDS ON THE SLOPE CHARACTERISTICS. THE USE OF STANDARD OR HEAVY DUTY FILTER FABRIC SHALL MEET DESIGN STANDARDS. SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES TO 120 DEGREES. SELECTION SHALL BE BASED ON STANDARD ENGINEERING PRINCIPLES FOR DESIGN.

2) STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"X2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP-HILL SIDE OF THE SLOPED AREA, WITH POSTS SPACED A MAXIMUM OF 6 FEET APART.

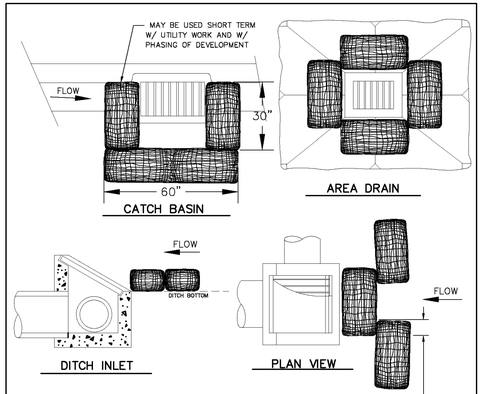
3) FILTER FABRIC FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES DOWNHILL OF POSTS ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION SHALL BE FIRMLY REDEPOSITED ALONG THE ENTIRE TRENCHED AREA ON THE DOWNHILL SIDE OF THE FENCE.

4) THE PHYSICAL INTEGRITY OF ALL MATERIALS SHALL BE SUFFICIENT TO MEET THE REQUIREMENTS OF THEIR INTENDED USE AND WITHSTAND NORMAL WEAR AND TEAR.

5) WHERE PRACTICAL THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, 2"X2" POSTS SHALL BE INTERLOCKED WITH EACH OTHER AND BE ATTACHED SECURELY.

6) SEDIMENT FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS, RELOCATIONS OR ADDITIONS SHALL BE MADE IMMEDIATELY.

7) AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE GREATER THAN 1/3 THE HEIGHT OF THE SEDIMENT FENCE ABOVEGROUND. SEDIMENT SHOULD BE REMOVED OR REGRADED INTO SLOPES, AND THE SEDIMENT FENCES REPAIRED AND RE-ESTABLISHED AS NEEDED.



NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2"WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU MUST HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

INLET PROTECTION TYPE 4
DRAWING NO. 915 REVISED 12-06
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7 C5.3 CLEAN WATER SERVICES DWG. 915
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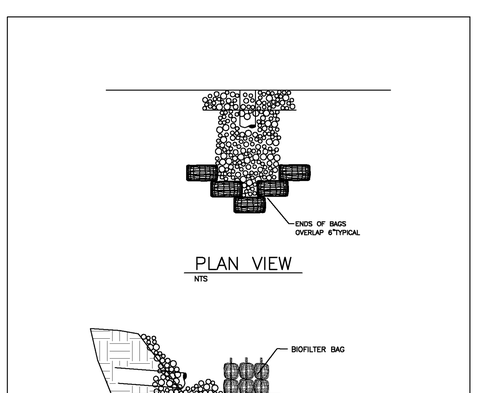

PLAN VIEW
NTS

PROFILE

NOTE:
1. BIO BAGS ONLY REQUIRED WHEN DISCHARGING SEDIMENT LADEN WATER.
2. STAKING OF BAGS REQUIRED WITH EITHER METHOD USING (2) 1"x 2" WOOD STAKES OR APPROVED EQUAL PER BAG.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

OUTLET PROTECTION RIP RAP
Detail Drawing 820 REVISED 12-06
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8 C5.3 CLEAN WATER SERVICES DWG. 820
N.T.S.

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SHEET TITLE:
EROSION AND SEDIMENT CONTROL DETAILS

DRAWN BY: CTL
CHECKED BY: RLF
SHEET:
C5.3
JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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MATCH SHEET L2.2

5 Compact Winged Euonymus
22 Arborvitae
5 Redtwig Dogwood
7 Snowberry
7 Hogan Cedar
Taiwan Creeping Berry

3 Green Arrow Cypress
22 Arborviae
3 Redtwig Dogwood
LIDA Raingarden – To Meet
LIDA Requirements
12 Sword Fern
1 Norwegian Sunset Maple
1 Hogan Cedar
3 Compact Winged Euonymus

3 Vine Maple
3 Green Arrow Cypress
Taiwan Creeping Berry
13 Repens Oregon Grape

6' CHAIN LINK FENCE W/BARBED WIRE

Typical Planter (7):
3 Blue Fescue
1 Norwegian Sunset Maple
3 Compact Winged Euonymus

3 Sword Fern

NOTE: AUTOMATIC IRRIGATION WILL BE PROVIDED

LOT 5

Typical Planter (5):
3 Compact Winged Euonymus
1 Northern Red Oak
3 Blue Fescue

Silver King Euonyums Hedge
3 Gracilis Hinoki Cypress
Spring Bouquet Viburnum Hedge
Blue Princess Holly Hedge

3 Green Arrow Cypress
Landscape Rock Typ.

7 Nikko Deutzia
Taiwan Creeping Berry @ 30"O.C.
Blue Princess Holly
4 Gracilis Hinoki Cypress
3 Elizabeth Rhododendron
5 Hino Crimson Azalea
5 Unique Rhododendron
3 David Viburnum
8 Vine Maple

7 Comp. Winged Euonymus
3 Little Bunny Grass
1 Virescens Cedar
5 Spring Bouquet Viburnum

3 Bagatelle Barberry
Vinca @ 24" O.C.
3 Nikko Deutzia
3 Green Arrow Cypress
33 Moon Bay Nandina
3 Elizabeth Rhododendron
5 Little Bunny Grass

3 Hino Crimson Azalea
3 Compact Winged Euonymus
Vinca @ 24" O.C.
3 Nikko Deutzia
22 Moon Bay Nandina
5 David Viburum

3 Unique Rhododendron
3 Bagatelle Barberry
Vinca @ 24" O.C.
34 Moon Bay Nandina
3 Nikko Deutzia
7 Elizabeth Rhododendron
3 Green Arrow Cypress

3 Compact Winged Euonymus
2 Virescens Cedar
8 Blue Fescue
8 Little Bunny Grass
6 Spring Bouquet Viburnum
3 Unique Rhododendron

1 Northern Red Oak
7 Redtwig Dogwood

12" 5 Spring Bouquet Viburnum
1 Norwegian Sunset Maple
5 David Viburnum
Taiwan Creeping Berry

30"

Taiwan Creeping Berry
5 Oregon Grape
8 Sword Fern
7 Blue Fescue

5 Vine Maple
3 Oregon Grape
Taiwan Creeping Berry
3 Kelsey Dogwood

10"
18"
8"
10"

3 Comp. Winged Euonymus
1 Norwegian Sunset Maple
8 David Viburnum
3 Blue Fescue

PROPERTY LINE

194.9

7 Daylily
5 David Viburnum
Taiwan Creeping Berry
Existing ROW Trees to Remain
3 Kelsey Dogwood

6 Blue Fescue
3 Compact Winged Euonymus
7 Northern Red Oak

5 Compact Winged Euonymus
6 Blue Fescue
3 Daylily
5 Kelsey Dogwood
1 Vine Maple

3 Compact Winged Euonymus
5 Daylily
Taiwan Creeping Berry
3 David Viburnum
5 Blue Fescue

3 Blue Fescue
5 Kelsey Dogwood
1 Vine Maple
3 Compact Winged Euonymus

6 Blue Fescue
9 David Viburnum
3 Compact Winged Euonymus
3 Daylily
1 Vine Maple

SW ITEL ST

3"

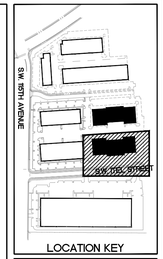
ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

2140559.001

LANDSCAPE PLAN

NORTH

0 20 40 60 feet
SCALE: 1" = 20'



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LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

REGISTERED 31
HAROLD S. BEIGHLEY JR.
OREGON
LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER
BUILDING 005
TUALATIN, OREGON

Revisions

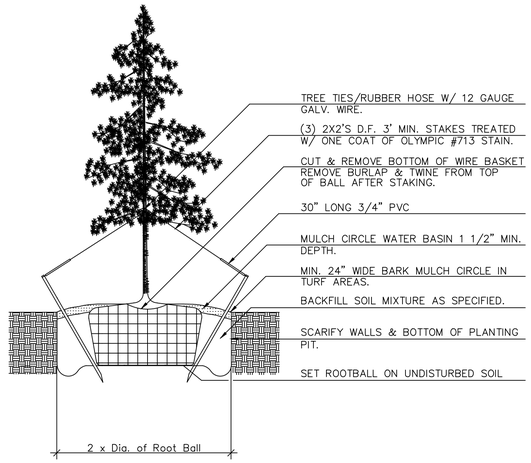
DRAWN	AMM
CHECKED	HSB
DATE	02/27/15
JOB NO.	1507

L-1
OF 2

PLANT MATERIALS LISTING FOR LOT 5:

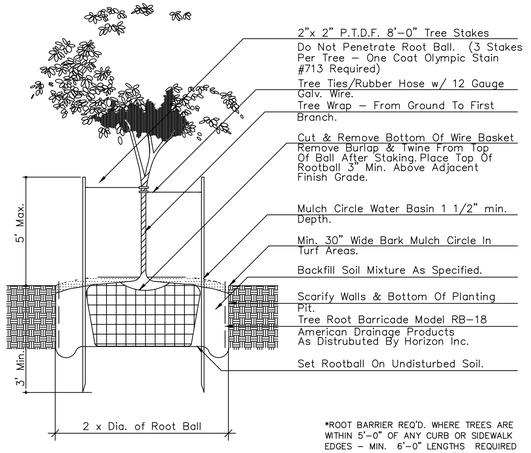
BOTANICAL NAME / COMMON NAME	QTY.	SIZE	CONDITION	REMARKS
TREES				
Acer circinatum Vine Maple	19	4–5'	B&B	Multi–Trunk
Acer truncatum x A. platanoides 'Keithsform' Norwegian Sunset Maple	10	1 1/2" Cal.	B&B	
Chamaecyparis nootkatensis "Green Arrow" Green Arrow Cypress	15	6–7'	B&B	
Chamaecyparis obtusa "Gracilis" Gracilis Hinoki Cypress	7	4–5'	B&B	
Quercus rubra Northern Red Oak	13	1 1/2" Cal.	B&B	
Thuja plicata 'Fastigiata' Hogan Cedar	8	8–9'	B&B	
Thuja plicata 'Virescens' Virescens Cedar	3	7–8'	B&B	
SHRUBS				
Azalea 'Hino Crimson' Hino Crimson		1 Gal.	Can	10–12"
Berberis thunbergii 'Bagatelle' Bagatelle Barberry		1 Gal.	Can	10–12"
Cornus stolonifera Redtwig Dogwood		5 Gal.	Can	30–36
Cornus stolonifera 'Kelseyi' Kelsey Dogwood Dogwood		1 Gal.	Can	10–12"
Choysia ternata 'Sundance' Sundance Mexican Orange		5 Gal.	Can	18–21"
Deutzia gracilis 'Nikko' Nikko Deutzia		1 Gal.	Can	10–12"
Euonymus alatus 'Compact' Compact Winged Euonymus		5 Gal.	Can	18–24"
Euonymus japonicus 'Silver King' Silver King Euonymus		5 Gal.	Can	18–24"
Festuca ovina 'Elija' Blue Fescue		1 Gal.	Can	10–12"
Ilex meserveae 'Blue Princess' Blue Princess Holly		18–21"	B&B	
Mahonia aquifolium 'Orange Flame' Orange Flame Oregon Grape		2 Gal.	Can	12–15"
Pennisetum alopecuroides 'Little Bunny' Little Bunny Grass		1 Gal.	Can	10–12"
Polystichum munitum Sword Fern		1 Gal.	Can	10–12"
Rhododendron varieties: Elizabeth Unique		 12–15" 18–24"	 B&B B&B	
Symphoricarpus alba Snowberry		2 Gal.	Can	12–15"
Viburnum davidi David Viburnum		2 Gal.	Can	12–15"
Viburnum plicatum tomentosum 'Watanabe' Watanabe Doublefile Viburnum		5 Gal.	Can	18–24"
Viburnum tinus 'Spring Bouquet' Spring Bouquet Viburnum		5 Gal.	Can	15–18"
GROUNDCOVER & VINES				
Rubus pentalobus 'Emerald Carpet' Taiwan Creeping Berry		4"	Pots	Triangular Spaced
Vinca minor Vinca		4"	Pots	Triangular Spaced
Landscape Rocks Native Basalt		3–5 cu.ft.		

PLANTING DETAILS



CONIFER PLANTING DETAIL

NTS



TREE PLANTING DETAIL – SHRUB PLANTING SIMILAR

NOTES

1. B&B STOCK MAY BE SUBSTITUTED WITH CONTAINER STOCK OF EQUAL GRADE.
2. CONTAINER STOCK MAY BE SUBSTITUTED WITH B&B STOCK OF EQUAL GRADE.
3. PLANT MATERIAL SHALL CONFORM WITH AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, 1986 EDITION.
4. ALL TREES SHALL BE BRANCHED.
5. MULCH ALL PLANTING BEDS WITH 3" MIN. LAYER OF SPECIFIED MULCH.
6. IN THE EVENT OF A DISCREPANCY BETWEEN THIS MATERIAL LISTING AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN THE PLANT SPECIES AND QUANTITIES REQ.
7. IN THE EVENT OF QUESTION OR LACK OF CLARITY ON DRAWINGS, LANDSCAPE CONTRACTOR IS TO CALL LANDSCAPE ARCHITECT BEFORE PROCEEDING.
8. LANDSCAPE CONTRACTOR IS TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIAL / GREEN SIDE UP.
9. ADJUST PLANT LAYOUT AS REQUIRED TO FIT IRRIGATION COVERAGE PATTERN.

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

2140559.001

LANDSCAPE DETAILS

BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643–4796
FAX: 503 643–4798

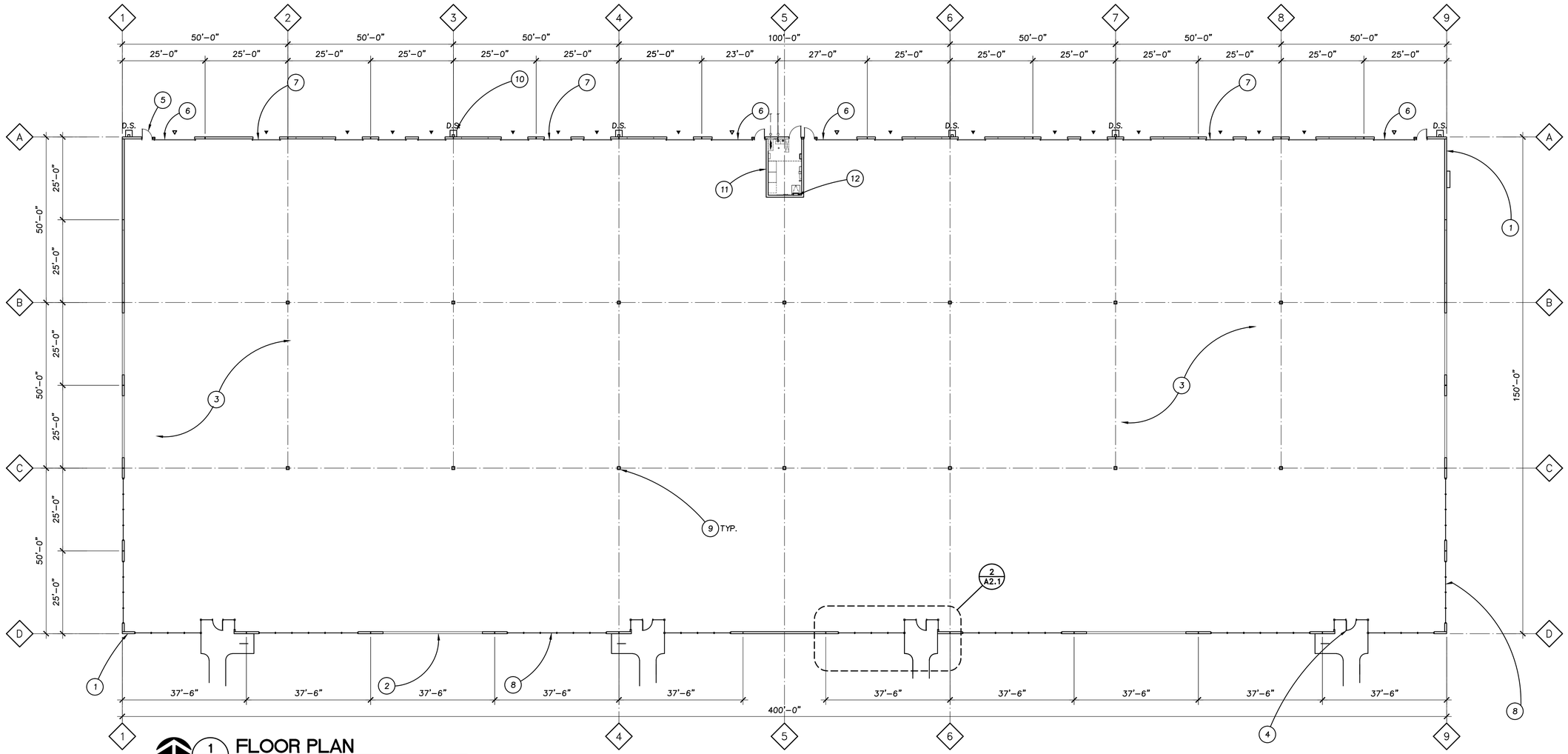
REGISTERED 31
HAROLD S. BEIGHLEY JR.
OREGON
LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER
BUILDING 005
TUALATIN, OREGON

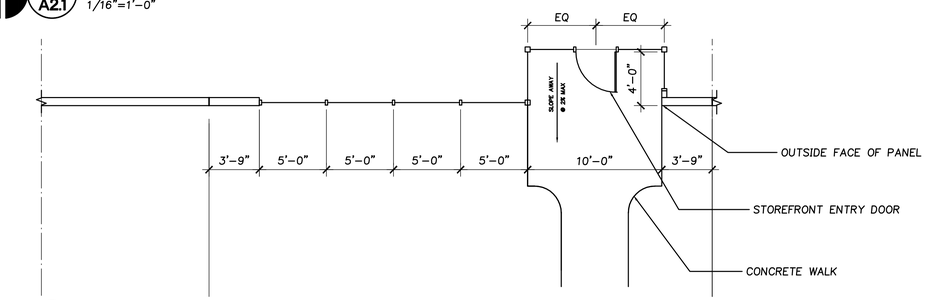
Revisions

DRAWN	AMM
CHECKED	HSB
DATE	02/27/15
JOB NO.	1507

L–2
OF 2



1 A2.1 **FLOOR PLAN**
1/16"=1'-0"



2 A2.1 **ENLARGED PLAN**
1/16"=1'-0"

GENERAL NOTES

A. PROVIDE MECHANICAL VENTILATION AS REQUIRED BY 2012 WASHINGTON STATE ENERGY CODE.
B. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
C. SEE STRUCTURAL PANEL ELEVATIONS FOR PANEL THICKNESS.
D. SEE STRUCTURAL DRAWINGS FOR FRAMING INFORMATION.
E. SEE CIVIL FOR ADDITIONAL SITE INFORMATION.

KEYNOTES

1. CONCRETE PANEL
2. FUTURE OPENING
3. CONCRETE SLAB
4. STOREFRONT ENTRY DOOR
5. HOLLOW METAL DOOR
6. ON GRADE DOOR
7. DOCK HIGH DOOR
8. STOREFRONT WINDOW SYSTEM
9. STEEL COLUMN
10. DOWNSPOUT
11. FULL HEIGHT METAL STUD WALL
12. ROOF ACCESS LADDER

LEGEND

▬	CONCRETE TILT WALL
▭	FUTURE OPENING
▼	DOCK-HIGH O.H. DOOR
▽	DRIVE-IN O.H. DOOR
D.S.	DOWN SPOUT

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SHEET TITLE:
FLOOR PLAN

DRAWN BY:
CHECKED BY:
SHEET:
A2.1

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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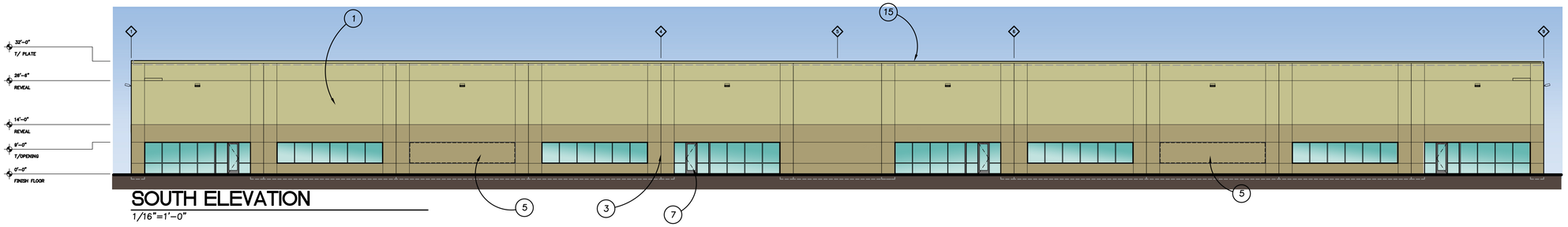
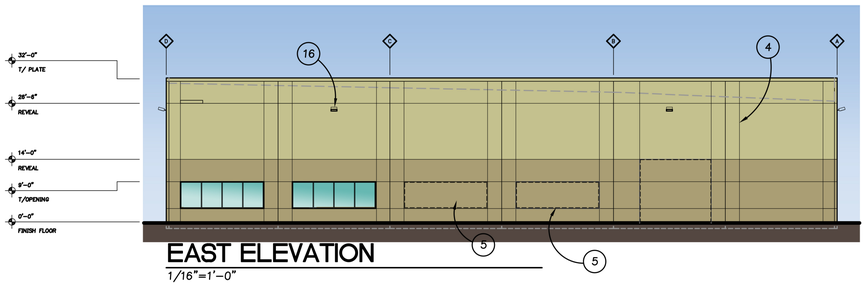
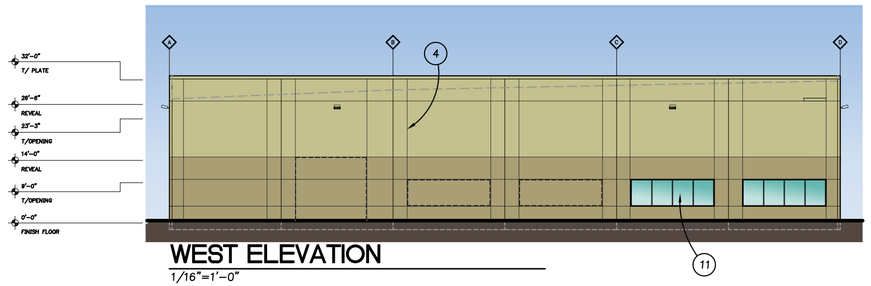


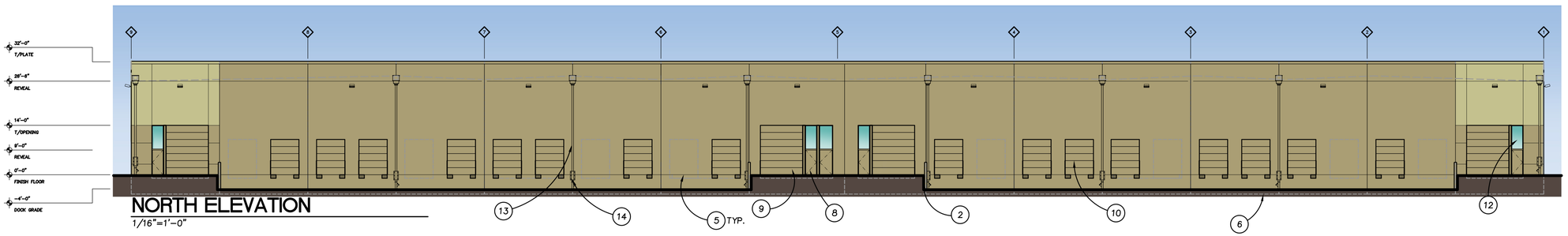
SOUTH ELEVATION
1/16"=1'-0"



EAST ELEVATION
1/16"=1'-0"



WEST ELEVATION
1/16"=1'-0"



NORTH ELEVATION
1/16"=1'-0"

GENERAL NOTES

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. SEE STRUCTURAL DRAWINGS FOR PANEL THICKNESS

KEYNOTES

1. PAINTED CONCRETE PANEL
2. 42" TALL RETAINING WALL
3. PANEL JOINT
4. REVEAL
5. FUTURE OPENING
6. PANEL BELOW GRADE
7. STOREFRONT ENTRY DOOR
8. HOLLOW METAL DOOR
9. ON GRADE DOOR
10. DOCK HIGH DOOR
11. STOREFRONT WINDOW SYSTEM
12. TRANSOM WINDOW
13. SCUPPER & DOWNSPOUT
14. DOWNSPOUT GUARD & CLEAN OUT
15. CAP FLASHING
16. YARD LIGHT

COLOR 1	COLOR 2	GLASS
MILLER PAINT CO. DARK GOAT/ P-1	MILLER PAINT CO. GOAT/ P-2	PPG Solarcool Azuria

REVISION: APRIL 6, 2015
ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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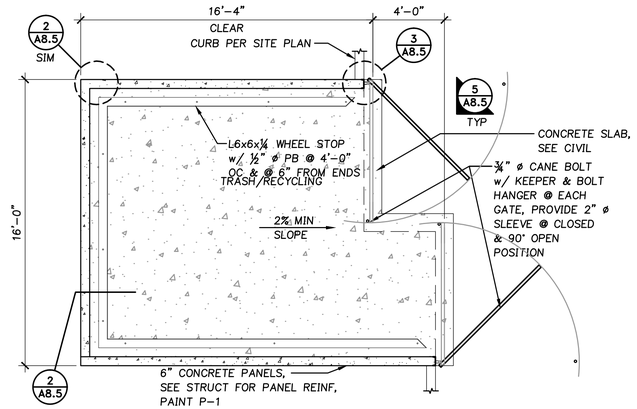
AJS
CHECKED BY:

SHEET:
A3.1

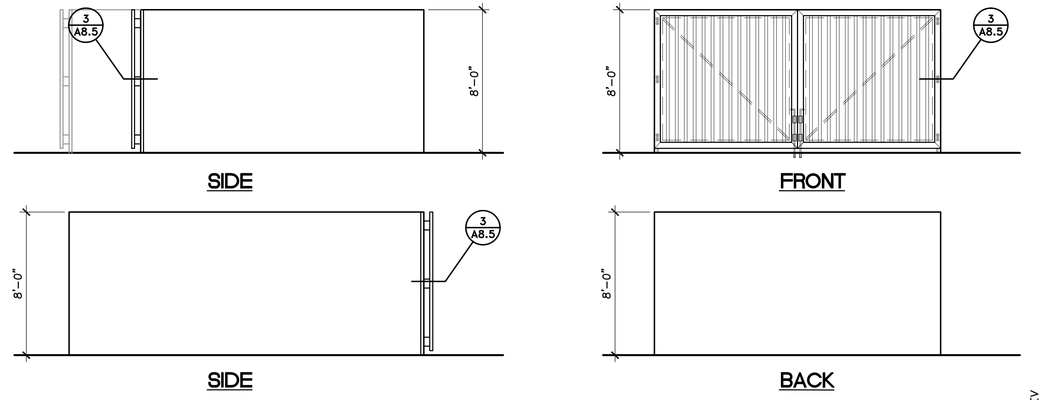
JOB NO. 2140559.01



NOTE:
ALL STEEL TO BE GALVANIZED AND PAINTED P1

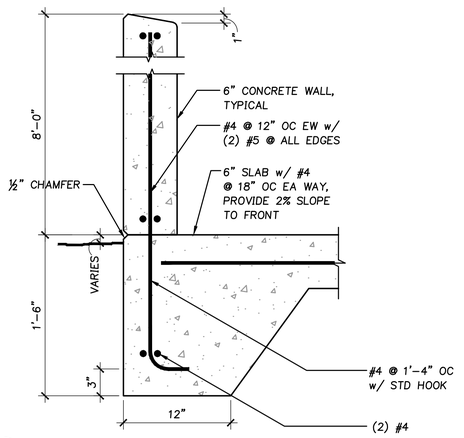
1 A8.5 TRASH ENCLOSURE

1/4"=1'-0" TRASH1



2 A8.5 TRASH ENCLOSURE - ELEVATIONS

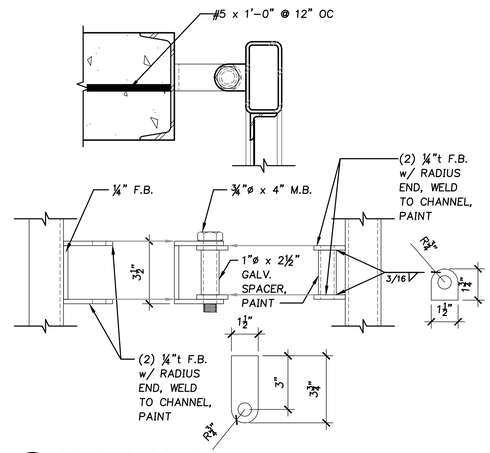
1/4"=1'-0" TRASH-ELEV



3 A8.5 CONCRETE WALL

AT TURNDOWN SLAB

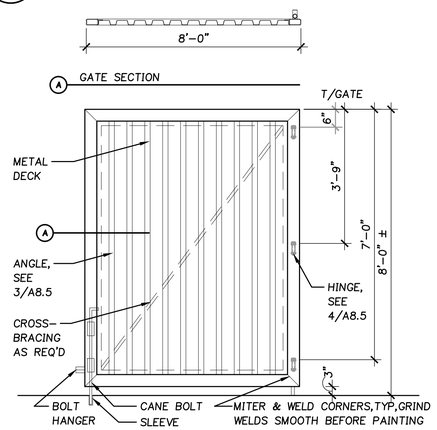
1 1/2"=1'-0" TRASH2



4 A8.5 HINGE DETAIL

(3) PER GATE, TYPICAL

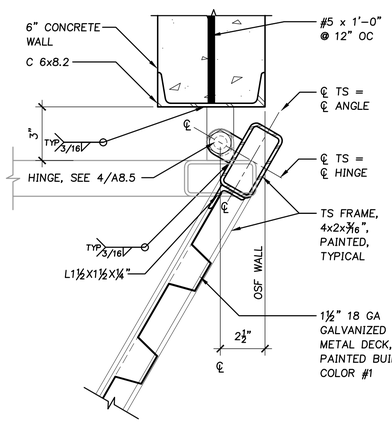
3"=1'-0" TRASH4



5 A8.5 TYPCIAL GATE ELEVATION

AT TRASH ENCLOSURE

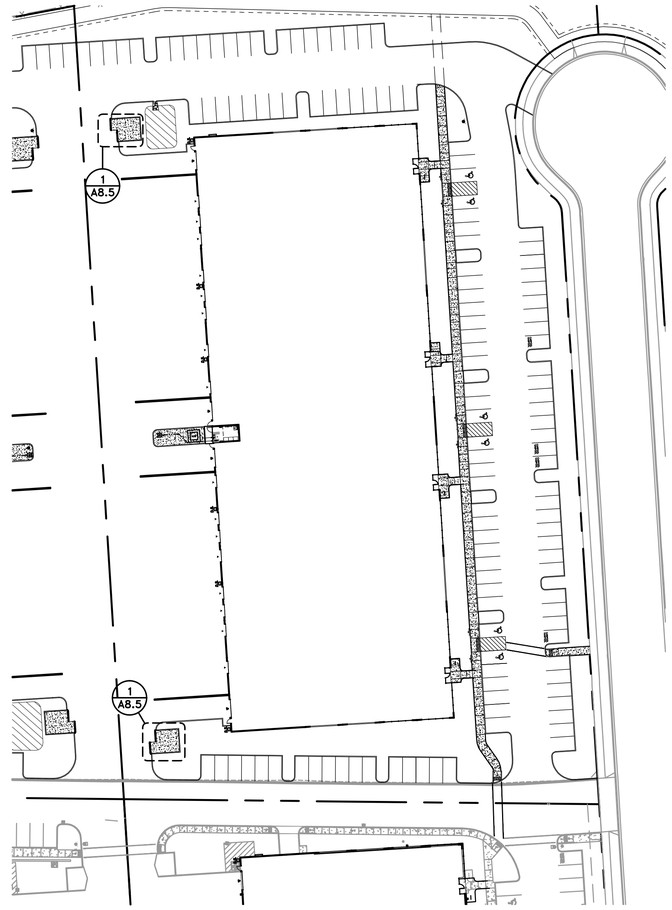
1/2"=1'-0" TRASH5



6 A8.5 GATE DETAIL

AT TRASH ENCLOSURE

3"=1'-0" TRASH3



7 A8.5 SITE PLAN

NTS

SEE CIVIL PLAN FOR MORE INFORMATION

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CHECKED BY: AJS

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JOB NO. 2140559.01

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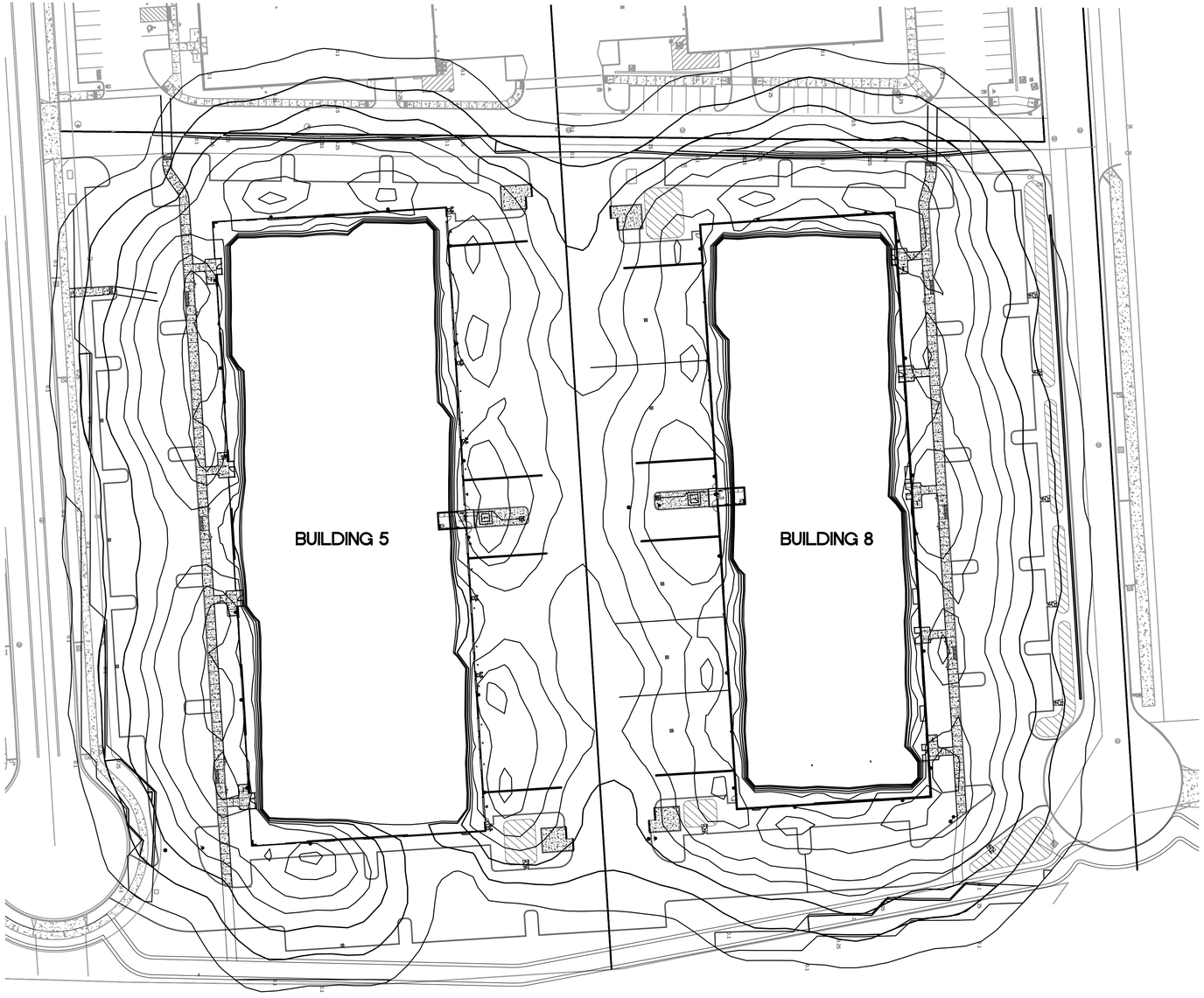

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

STATISITICS							
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN	AVG/MAX
BEYOND PROPERTY LINE	+	0.1	0.9 fc	0.0 fc	N/A	N/A	1.0:9

LUMINAIRE SCHEDULE					
SYMBOL	LABEL	QTY	CATALOG NUMBER	DESCRIPTION	WATTAGE
⌂	A	32	DSXW2 LED 30C 1000 40K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINE, 30 LED'S, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC	109
▭ •	C-T3M	0	DSXO LED 40C 1000 40K T3M MVOLT HS	DSXO LED WITH (2) 20 LED LIGHT ENGINE, TYPE T3M OPTIC, 4000K, @ 1000mA WITH HOUSE SIDE SHEILD	138

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 DATE: MAY 6, 2010
UPDATED TOPO ONLY JUNE 21, 2011

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BUILDINGS 5 AND 8 LIGHTING ANALYSIS

DRAWN BY: BMR

CHECKED BY:

SHEET:

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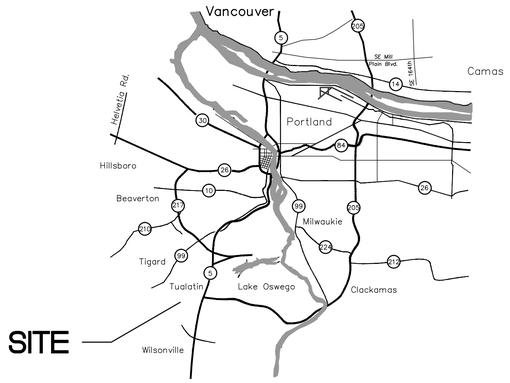
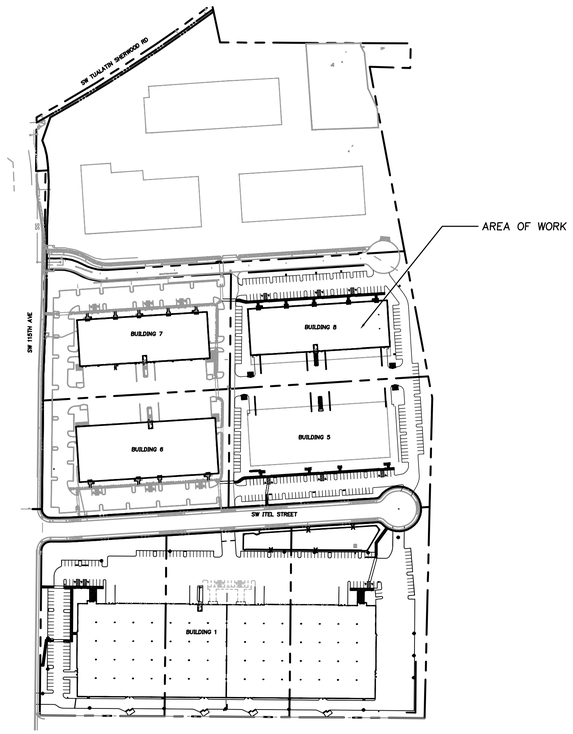
Koch Corporate Center
Lot 8 - Tualatin, OR



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

BUILDING CODE DATA

BASED ON THE 2014 OREGON STRUCTURAL SPECIALTY CODE

GENERAL CODE ANALYSIS

CONSTRUCTION TYPE: III–B

SINGLE STORY

FIRE PROTECTION: FULLY SPRINKLERED

OCCUPANCY: (F–1)
THE BUILDING TO BE UNOCCUPIED UNDER THIS PERMIT. FUTURE OCCUPANCIES MAY CONSIST OF B, S–1 AND/OR F–1 GROUPS. THE BUILDING AREA HAS BEEN CALCULATED BASED UPON F–1 OCCUPANCY (MOST RESTRICTIVE USE) BASED ON TABLE 503 – ALLOWABLE AREAS

AREA	SQUARE FEET	OCCUPANCY
BUILDING SHELL	43,750 SF	F–1

NOTE: SEE SHEET T1.1 FOR COMPLETE FIRE AND LIFE SAFETY CODE ANALYSIS

TEAM MEMBERS

OWNERS

PACIFIC REALTY ASSOCIATES, LP

15350 SW Sequoia Parkway, Suite 300
Portland, Oregon 97224

Phone: (503) 624–6300
Fax: (503) 624–7755

Contact: Matt Oyen

ARCHITECT

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Dennis Woods

CIVIL ENGINEER

MACKENZIE

RiverEast Center
1515 SE Water Avenue, # 100
Portland, Oregon 97214

P.O. Box 14310
Portland OR 97293

Phone: (503) 224–9560
Fax: (503) 228–1285

Contact: Bob Frentress

LANDSCAPE ARCHITECT

BEIGHLEY & ASSOCIATES

12840 N.W. CORNELL RD.
Portland, OR 97229

tel: (503) 643–4796
fax: (503) 643–4798

Contact: Hal Beighley

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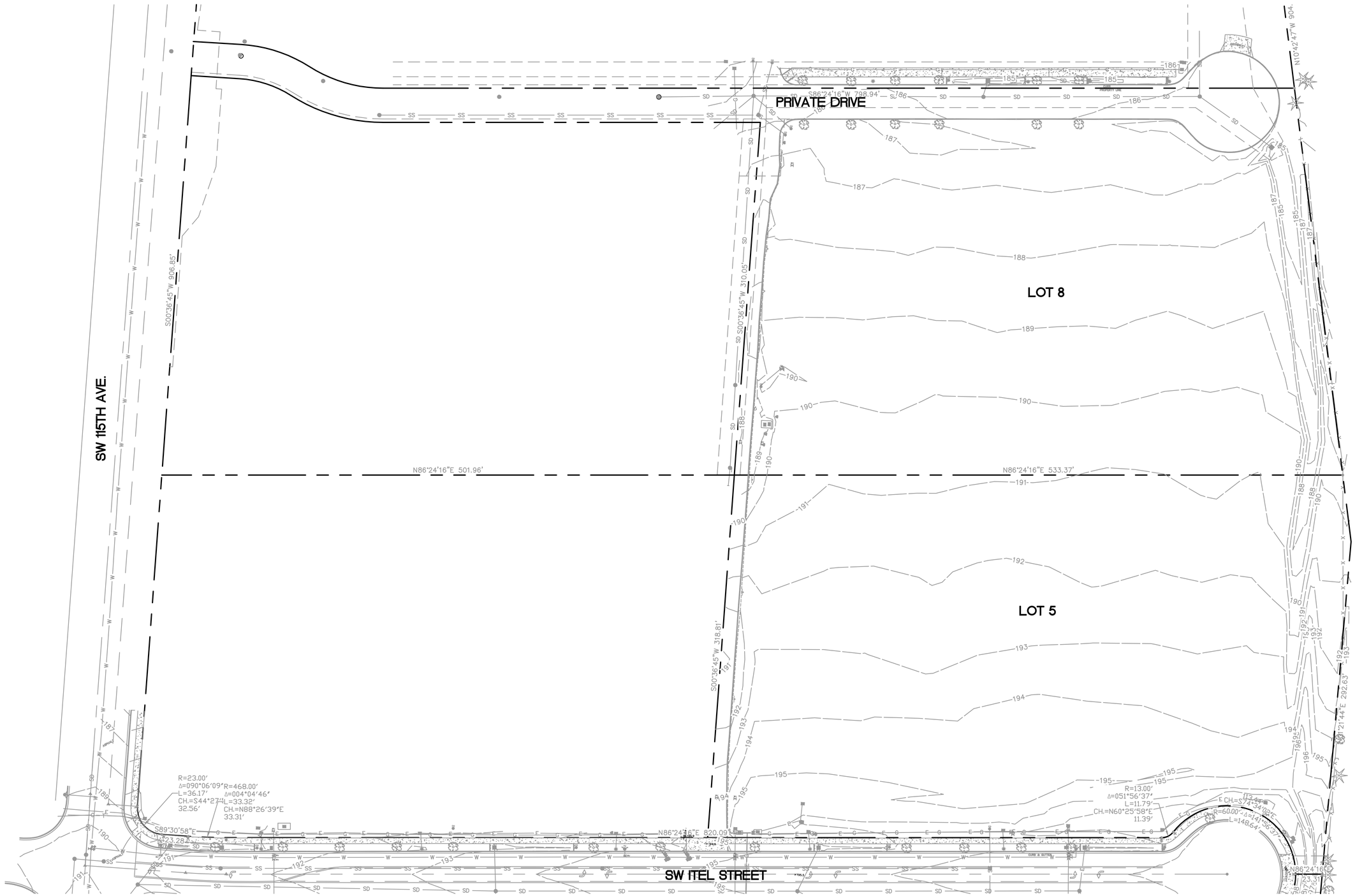

EXISTING CONDITIONS PLAN

1 / C1.0

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

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LOTS 5 AND 6

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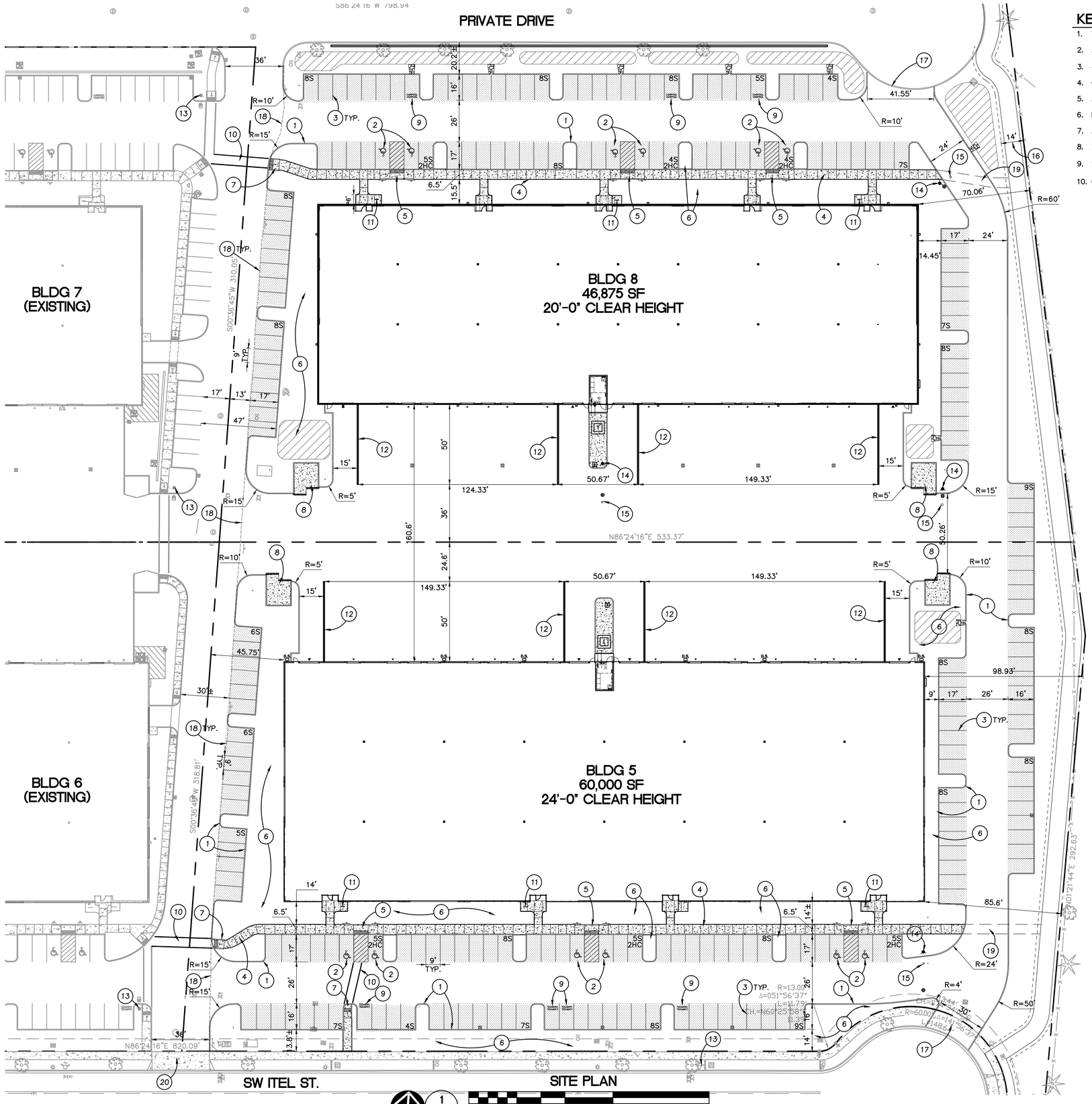

KEYNOTES

1. VERTICAL CURB
2. ADA COMPLIANT PARKING STALL
3. 4" WHITE PARKING STRIPE (2 COATS OF PAINT)
4. CONCRETE SIDEWALK
5. ADA COMPLIANT CURB RAMP
6. LANDSCAPE AREA
7. ADA COMPLIANT CURB RAMP
8. TRASH ENCLOSURE PER ARCHITECTURAL PLANS
9. 1' HIGH WHITE PAINTED LETTERS: "CARPOOL" "VANPOOL"
10. 6' WIDE STRIPED CROSSWALK
11. 2 BICYCLE PARKING SPACES
12. DOCK RETAINING WALL, SEE ARCHITECTURAL PLANS
13. EXISTING FIRE HYDRANT
14. PROPOSED FIRE HYDRANT
15. BLUE HYDRANT REFLECTOR
16. FUTURE TRAIL BY OTHERS
17. CITY STANDARD COMMERCIAL DRIVEWAY
18. MATCH EXISTING ASPHALT
19. FUTURE CONNECTION TO FUTURE TRAIL
20. EXISTING DRIVEWAY

SITE DATA

BUILDING 5	
LOT 5	171,460 SF (3.94 AC)
TOTAL IMPERVIOUS AREA	138,897 SF (3.19 AC, 81.0%)
BUILDING FOOTPRINT	60,000 SF (1.38 AC, 35.0%)
DRIVE AISLE/PARKING/SIDEWALK AREA	78,897 SF (1.81 AC, 46.0%)
PARKING LOT AREA	40,088 SF (0.92 AC, 23.4%)
REQUIRED PARKING LANDSCAPE	3,150 SF (25 SF/STALL)
PARKING LANDSCAPE AREA	4,366 SF (0.11 AC, 10.9%)
LANDSCAPE AREA	32,473 SF (0.74 AC, 18.9%)
BUILDING 8	
LOT 8	184,702 SF (4.24 AC)
TOTAL IMPERVIOUS AREA	105,578 SF (2.42 AC, 57.2%)
BUILDING FOOTPRINT	46,875 SF (1.08 AC, 25.4%)
DRIVE AISLE/PARKING/SIDEWALK AREA	58,703 SF (1.34 AC, 31.8%)
PARKING LOT AREA	32,414 SF (0.74 AC, 17.5%)
REQUIRED PARKING LANDSCAPE	2,550 SF (25 SF/STALL)
PARKING LANDSCAPE AREA	4,925 SF (0.11 AC, 15.2%)
LANDSCAPE AREA	79,059 SF (1.81 AC, 42.8%)

PARKING DATA

BUILDING 5		
REQUIRED PARKING (BASED ON MANUFACTURING USE)		
MINIMUM (1.6/1,000)	96	SPACES
MAXIMUM	NONE	SPACES
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	120	SPACES (4 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	126	(2.1/1,000 SF)
BICYCLE PARKING	6	SPACES
BUILDING 8		
REQUIRED PARKING (BASED ON MANUFACTURING USE)		
MINIMUM (1.6/1,000)	75	SPACES
MAXIMUM	NONE	SPACES
PROPOSED HANDICAP	6	SPACES
PROPOSED STANDARD	96	SPACES (3 VAN/CAR POOL SPACES)
PROPOSED COMPACT	0	SPACES (0%)
TOTAL PARKING PROVIDED	102	(2.2/1,000 SF)
BICYCLE PARKING	6	SPACES

PAVEMENT SECTIONS

CAR PARKING AREA 2.5" AC
(2 LIFTS) OVER 6" CRUSHED ROCK

HEAVY DUTY AREA 4" AC
(2 LIFTS) OVER 11" CRUSHED ROCK

REFER TO SIDEWALK DETAIL

SITE LEGEND

- PROJECT DISTURBANCE AREA, LIMITS OF WORK
- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- FIRE LANE STRIPED CURB, COORD. W/ FIRE MARSHAL
- SITE FENCE PER SPEC.
- CATCH BASIN
- FIRE HYDRANT
- WATER METER
- DDCV
- FDC
- PROPOSED RETAINING WALL (LOCATION SHOWN REPRESENTS FACE OF BOTTOM ROW OF WALL)
- 10S — NUMBER OF STANDARD STALLS IN PARKING BAY
- 2HC — NUMBER OF H.C. STALLS IN PARKING BAY
- LID BASIN

CURB NOTE

ALL ON-SITE CURB RADII ARE 3.0' UNLESS OTHERWISE NOTED ON THE PLANS

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LOTS 5 AND 6

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JOB NO. 2140559.00

PRELIMINARY

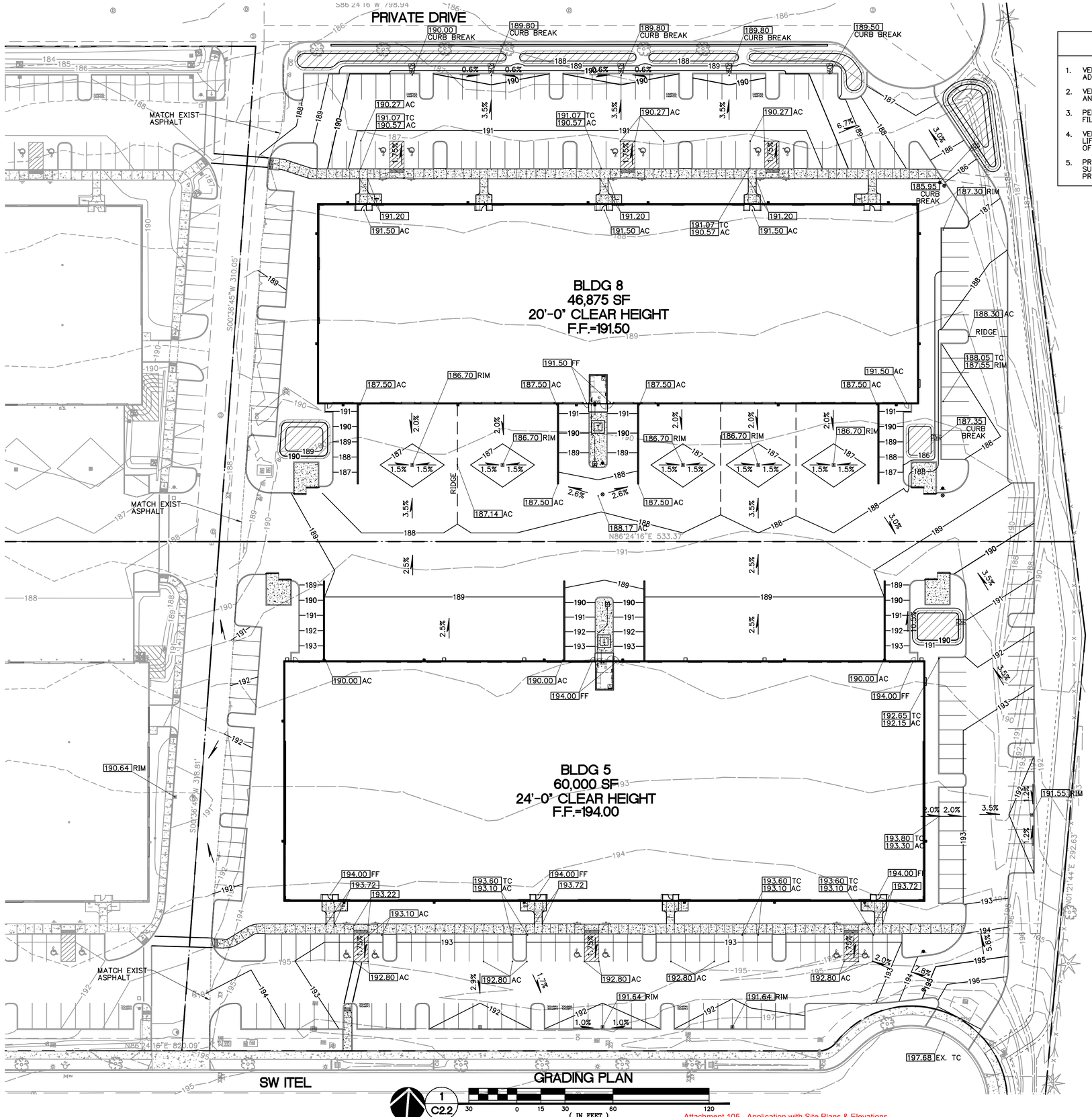

TABLE 1704.7

REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIUONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	--	X
2. VERUFT EXCAVATUIBS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER COMPACTION	--	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	--	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILLS	X	--
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY	--	X

GRADING NOTES

1. ROUGH GRADING: BRING ALL FINISH GRADES TO APPROXIMATE LEVELS 1. 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 2. 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. EFFECTIVE EROSION PREVENTION AND SEDIMENT CONTROL IS REQUIRED. EROSION 3. CONTROL DEVICES MUST BE INSTALLED AND MAINTAINED MEETING THE CITY AND CLEAN WATER SERVICES REQUIREMENTS. THE GOVERNING JURISDICTION MAY, AT ANY TIME, ORDER CORRECTIVE ACTION AND STOPPAGE OF WORK TO ACCOMPLISH EFFECTIVE EROSION CONTROL.
3. EFFECTIVE DRAINAGE CONTROL IS REQUIRED. DRAINAGE SHALL BE 4. 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.
4. SITE LANDSCAPE AREAS TO EXCAVATED TO 12" BELOW FINISHED GRADE BY 5. SITE WORK CONTRACTOR. ALL TOPSOIL EXCAVATED AS PART OF THIS EFFORT TO BE REMOVED FROM SITE IN ACCORDANCE WITH THE SPECIFICATIONS, ALL IMPORT TOPSOIL TO BE PLACED BY LANDSCAPE CONTRACTOR.
5. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY BY WESTLAKE CONSULTANTS, INC., AND IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS WITH HIS OWN RESOURCES PRIOR TO START OF ANY CONSTRUCTION. CONTRACTOR TO COORDINATE GRADES AT ENTRANCE WITH ARCHITECTURAL 7. PLANS PRIOR TO CONSTRUCTION.
6. 2% MAXIMUM SLOPE AT ALL HANDICAP PARKING SPACES.
7. 5% MAX LONGITUDINAL AND 2%% MAX CROSS SLOPE (EXCLUDING RAMPS) AT PEDESTRIAN SIDEWALK CONNECTIONS BETWEEN PUBLIC R.O.W. AND BUILDING ENTRANCES.
8. IF GROUNDWATER IS PRESENT IN UTILITY TRENCH EXCAVATIONS, IT IS RECOMMENDED 10. THAT 12"–18" OF TRENCH STABILIZATION ROCK BE PLACED AT THE BASE OF THE EXCAVATION. TRENCH STABILIZATION ROCK SHOULD MEET THE REQUIREMENTS OUTLINED IN THE 'STRUCTURAL FILL' SECTION OF THE GEOTECHNICAL REPORT AND SHOULD BE PLACED IN ONE LIFT AND COMPACTED UNTIL IT IS FIRM AND UNYIELDING. GROUNDWATER SHOULD BE PUMPED OUT OF THE TRENCH FROM A SUMP EXCAVATED BELOW THE TRENCH STABILIZATION ROCK. THE CONTRACTOR WILL BE RESPONSIBLE FOR TEMPORARY DRAINAGE OF SURFACE WATER AND GROUNDWATER AS NECESSARY TO PREVENT STANDING WATER AND/OR EROSION AT THE WORKING SURFACE.

SITE LEGEND

- PROPERTY LINE
- EASEMENT
- VERTICAL CURB
- 6" EXTRUDED CURB
- 34 — 1-FT CONTOUR
- 35 — 5-FT CONTOUR
- CATCH BASIN
- LID BASIN
- INSTALL 30 MIL LINER WITHIN 10 OF BUILDING FOOTING
- 187.13 — SPOT ELEVATION

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LOTS 5 AND 6

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
GRADING PLAN

DRAWN BY: CTL, BTS

CHECKED BY: RLF

SHEET:
C2.2

JOB NO. 2140559.00

PRELIMINARY

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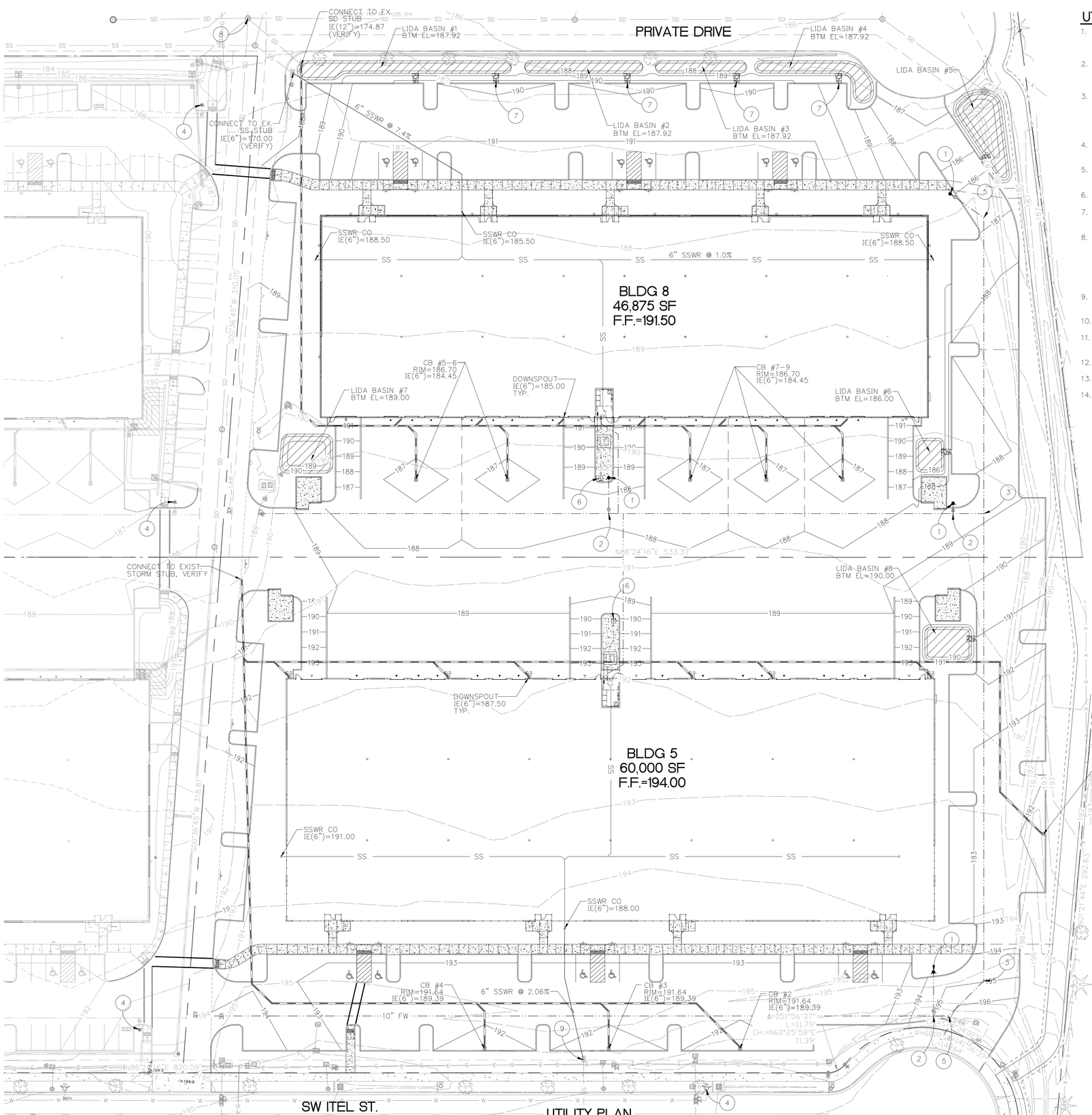

UTILITY PLAN

1 C2.3

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF TUALATIN, CLEAN WATER SERVICES, 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.
3. 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.
4. 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.
5. 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.
6. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
7. ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. PROVIDE 2" PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2" PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH ¾ INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS.
9. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY WESTLAKE CONSULTANTS, INC. DATED JANUARY 30, 2015.
10. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
11. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
12. CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.
13. 30 MIL LINER TO BE INSTALLED AT BOTTOM OF ALL LIDA BASINS WITHIN 10 LINEAL FEET OF FOOTING.
14. NO WATER VALVES ALLOWED ON SITE EXCEPT FOR HYDRANT VALVES ON FIRE SYSTEM.

KEYNOTES

(#)

1. FIRE HYDRANT ASSEMBLY
2. 10" X 6" TEE
3. 10" X 10" TEE
4. EXISTING FIRE HYDRANT
5. INSTALL 10" 45° BEND
6. INSTALL FDC WITH 6" LINE BACK TO RISER
7. 6' X 4' CLASS 50 RIP-RAP
8. EXISTING STORM MH RIM=185.09 IE(18"S)=175.00, IE(12"SW)=174.90, IE(12"N)=171.40, IE(12"SE)=174.00, IE(24"E)=171.10, IE(12"W)=170.80
9. CONNECT TO EXISTING SSWR STUB IE(6")=186.30 (VERIFY)

LIDA DATA

ROOF AREA BUILDING 5	=	60,000 SF
ROOF AREA BUILDING 8	=	46,875 SF
LIDA COVERAGE REQ'D BLDG 5 @ 6%	=	3,600 SF
LIDA COVERAGE REQ'D BLDG 8 @ 6%	=	2,812 SF
TOTAL REQUIRED	=	6,412 SF
TOTAL PROVIDED	=	7,922 SF

BUILDING 5

LIDA BASIN	SIZE (SF)	CONTRIBUTING AREA (SF)	COVERAGE
8	563	2,987	18.85%

LIDA COVERAGE PROVIDED LOT 5 = 2,987 SF

BUILDING 8

LIDA BASIN	SIZE (SF)	CONTRIBUTING AREA (SF)	COVERAGE
1	1,115	9,850	11.32%
2	555	4,930	11.26%
3	425	3,334	12.75%
4	720	2,479	29.04%
5	1,010	2,345	43.07%
6	350	3,670	9.54%
7	760	1,380	55.07%

LIDA COVERAGE PROVIDED LOT 8 = 4,935 SF

RESTRAINED JOINT NOTES

TEST PRESSURE:	200 PSI
DEPTH TO BURY:	3 FT
PIPE MATERIAL:	PVC C-900
SAFETY FACTOR:	1 TO 1.5
LENGTH OF RESTRAINT ALONG MAIN ON TEES, Lr:	20 FT

NOTIFY ENGINEER IF DEVIATING FROM ABOVE SPECIFICATIONS. LENGTH OF PIPE REQUIRING RESTRAINED JOINTS

	8"	10"
11¼° BEND	3'	4'
22½° BEND	6'	8'
45° BENDS	13'	15'
90° BEND	31'	36'
TEE	1'	4'
DEAD ENDS	70'	84'

CITY RETAINS AUTHORITY TO MODIFY AND/OR ADD JOINT RESTRAINTS AT THE DISCRETION OF THE CITY ENGINEER.

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LOTS 5 AND 6

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
UTILITY PLAN

DRAWN BY: CTL

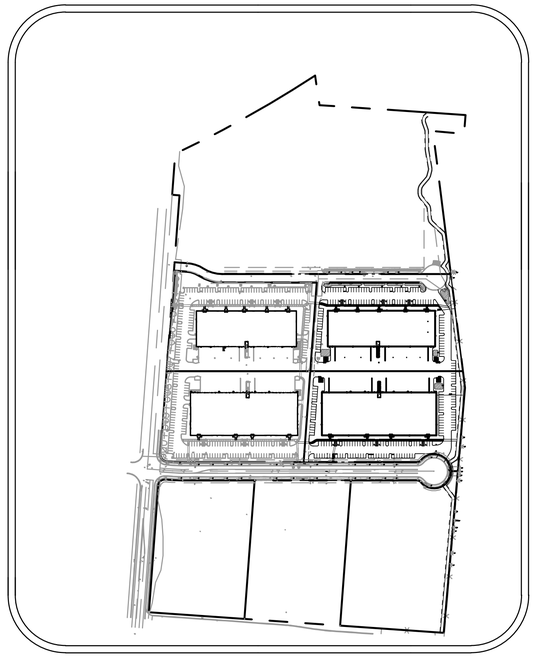
CHECKED BY: RLF

SHEET:
C2.3

JOB NO. 2140559.00

PRELIMINARY

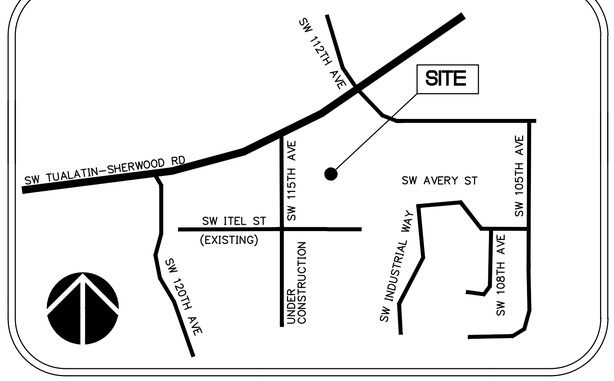
KOCH LOTS 5 AND 8
EROSION AND SEDIMENT CONTROL PLANS
1200-C PLANS



SITE MAP

1 / C5.0

250 0 125 250 500 1000
(IN FEET)
1 inch = 250 ft.



VICINITY MAP NOT TO SCALE

DEVELOPER
PACIFIC REALTY ASSOCIATES, LP
CONTACT: MATT OYAN
15350 SW SEQUOIA PARKWAY, #300 - WMI
TUALATIN, OR 97224
PHONE: (503) 624-6300
FAX:

CIVIL ENGINEER
MACKENZIE
CONTACT: BOB FRENTRESS
1515 SE WATER AVE
PORTLAND, OR 97239
PHONE: 503-224-9560
FAX: 503-228-1285

SURVEYOR
WESTLAKE CONSULTANTS, INC.
CONTACT:
15115 SW SEQUOIA PARKWAY, SUITE 150
TIGARD, OR 97224
PHONE: (503) 684-0652

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* PREVIOUSLY MASS GRADED SITE (SURCHARGE HAS BEEN REMOVED)

DEVELOPED CONDITIONS

* WAREHOUSE PARK AND ACCESS ROADWAYS

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

* CLEARING (JUNE 15, 2012 - JULY 15, 2012)
* UTILITY INSTALLATION (APRIL 1, 2014 - JULY 30, 2014)
* STREET INSTALLATION (JULY 1, 2013 - MAY 15, 2014)
* FINAL STABILIZATION (OCT 1, 2013 - OCTOBER 30, 2015)

TOTAL SITE AREA = 356,162 SF = 8.18 ACRES

TOTAL DISTURBED AREA = 356,162 SF = 8.18 ACRES

SITE SOIL CLASSIFICATION:

21A - HILLSBORO LOAM, 0 TO 3 PERCENT SLOPES
21B - HILLSBORO LOAM, 3 TO 7 PERCENT SLOPES
21C - HILLSBORO LOAM, 7 TO 12 PERCENT SLOPES
21D - HILLSBORO LOAM, 12 TO 20 PERCENT SLOPES
22 - HUBERLY SILT LOAM

ON-SITE SOILS HAVE A SLIGHT EROSION POTENTIAL. ALL FILL MATERIAL SHALL BE GENERATED ON-SITE FROM GRADING EXCAVATION AND UTILITY TRENCH SPOILS.

RECEIVING WATER BODIES:

PUBLIC STORM SYSTEM, AND HEDGES CREEK

PERMITTEE'S SITE INSPECTOR:
COMPANY/AGENCY: PACTRUST
PHONE:
FAX:
E-MAIL:
DESCRIPTION OF EXPERIENCE:

PROJECT LOCATION:
SW 115TH AVE / SW ITEL STREET INTERSECTION
TUALATIN, OREGON 97062
LATITUDE = 45°21'59", LONGITUDE = -122°47'47"

PROPERTY DESCRIPTION:
TAX LOT 6 AND 7, A REPLAT OF TAX LOT 4 KOCH CORPORATE CENTER (ID 2S127A000200) LOCATED IN THE NORTHEAST AND SOUTHEAST 1/4 OF SECTION 27, TOWNSHIP 2 SOUTH, RANGE 1 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON

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.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING
2. PRIOR TO SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECCESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE
3. INACTIVE PERIODS GREATER THAN (7) CONSECUTIVE CALENDAR DAYS	ONCE EVERY (2) TWO WEEKS
4. PERIODS AT WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER	IF PRATICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.

* 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)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. 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)
2. THE ESCP MEASURES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE MEASURES AS NEEDED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL EROSION AND SEDIMENT CONTROL REGULATIONS. (SCHEDULE A.8.C.II.(1)(C))
3. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT. (SCHEDULE A.12.C.III)
4. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A 8.C.II.(1)(D))
5. IDENTIFY, MARK, AND PROTECT (BY FENCING OFF 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 THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
6. 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.B.III(1) AND A.7.B.III(3))
7. 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. (SCHEDULE A.7.D.I AND A.8.C)
8. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
9. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(2))
10. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
11. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: 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.(1) AND A.8.C.I(4))
12. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(3))
13. 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, LEFTOVER PAINTS, SOLVENTS, AND GLUES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
14. 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. (SCH A 7.E.III.)
15. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A 7.B.II)
16. 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)
17. IF A STORMWATER 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)
18. 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 EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.B)
19. AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A 7.E.II.(2))
20. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
21. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
22. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT. AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.II)
23. 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)
24. 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 CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
25. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
26. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
27. 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 A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
28. PROVIDE PERMANENT EROSION CONTROL MEASURES ON ALL EXPOSED AREAS. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. HOWEVER, DO REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AS EXPOSED AREAS BECOME STABILIZED, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. PROPERLY DISPOSE OF CONSTRUCTION MATERIALS AND WASTE, INCLUDING SEDIMENT RETAINED BY TEMPORARY BMPS. (SCHEDULE A.7.B.III(2) AND A.8.C.III).

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.

BMP MATRIX FOR CONSTRUCTION PHASES

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

	MASS GRADING	UTILITY INSTALLATION	BUILDING CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1 - MAY 31ST)
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	X	X		X	X
GROUND COVER					X
HYDRAULIC APPLICATIONS					X
PLASTIC SHEETING					X
MATTING				X	X
DUST CONTROL	X	X	X	X	X
TEMPORARY/ PERMANENT SEEDING			X	X	X
BUFFER ZONE					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	X*	X	X	X	X
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES					
FILTER BERM					
INLET PROTECTION	X	X	X	X	X
DEWATERING					
SEDIMENT TRAP					
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	X*	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION		X	X	X	X
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X
CONCRETE WASHOUT AREA		X	X	X	X
OTHER:					

x SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

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 ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

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SHEET TITLE:
EROSION AND SEDIMENT CONTROL COVER SHEET

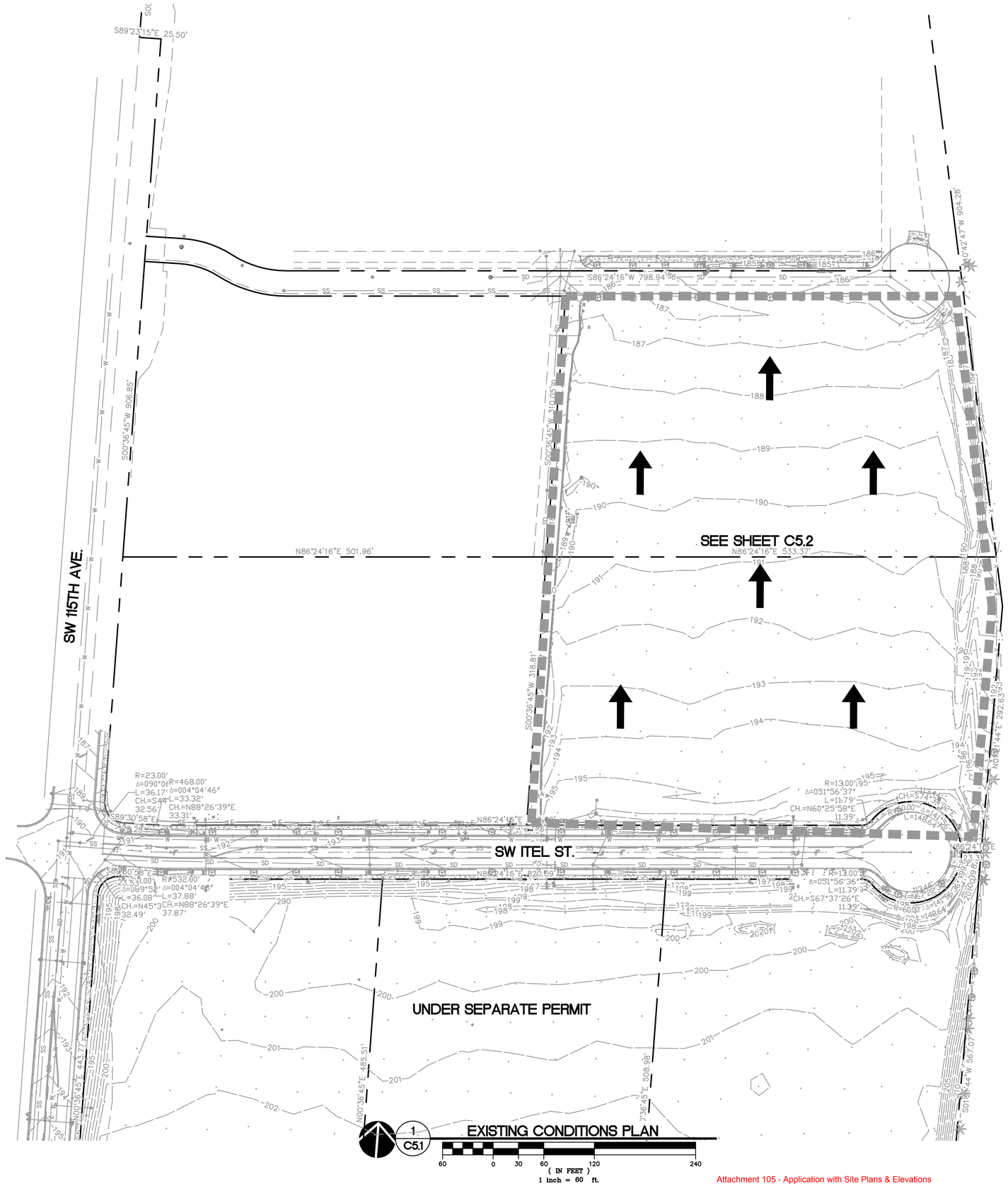
DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C5.0

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015



DUST CONTROL NOTES:
DUST CONTROL MEASURE OF SPRAYING WATER OVER AREAS OF EXPOSED SOIL TO BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION UNTIL ALL EXPOSED SOILS HAVE BEEN COVERED OR PLANTED.

NOTES:
THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1 AND MAY 31.

PRE-DEVELOPED RUN-OFF ON THE SITE SHEET FLOWS NORTH AND IS COLLECTED BY DIVERSION SWALES. THE SWALES FLOW EAST AND ARE COLLECTED IN A MAIN DIVERSION SWALE THAT RUNS NORTH TO AN EXISTING SEDIMENT POND.

IF ANY WELLS OR SEPTIC FIELDS ARE FOUND ON SITE, ABANDON IN ACCORDANCE WITH DEQ REQUIREMENTS.

ON SITES WHERE VEGETATION AND GROUND COVER ARE REMOVED, VEGETATIVE GROUND COVER SHALL BE PLANTED AND ESTABLISHED BY OCTOBER 1 AND CONTINUE TO FUNCTION THROUGH MAY 31 OF THE FOLLOWING YEAR, OR AS APPROVED BY THE DISTRICT. IF GROUND COVER IS NOT ESTABLISHED BY OCTOBER 1, THE OPEN AREAS SHALL BE PROTECTED THROUGH MAY 31 OF THE FOLLOWING YEAR WITH STRAW MULCH, EROSION BLANKETS, OR OTHER METHODS APPROVED BY THE DISTRICT OR CITY.

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 INSURE 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.

TREE PRESERVATION

ALL EXISTING TREES TO REMAIN. TREES TO BE REMOVED WERE DONE SO UNDER THE MASS GRADING ACTIVITY.

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- OUTLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- ROCK FILTER BERM
- CONSTRUCTION ENTRANCE
- TEMPORARY SLOPE STABILIZATION MEASURES
- LONG-TERM SLOPE STABILIZATION MEASURES
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- NEW IMPERVIOUS SURFACE
- DRAINAGE FLOW DIRECTION
- EXISTING TREE
- 50' VEGETATED CORRIDOR PLUS 15' TOP OF BANK SETBACK

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SHEET TITLE:
EXISTING CONDITIONS PLAN

DRAWN BY: CTL

CHECKED BY: RLF

SHEET:
C5.1

JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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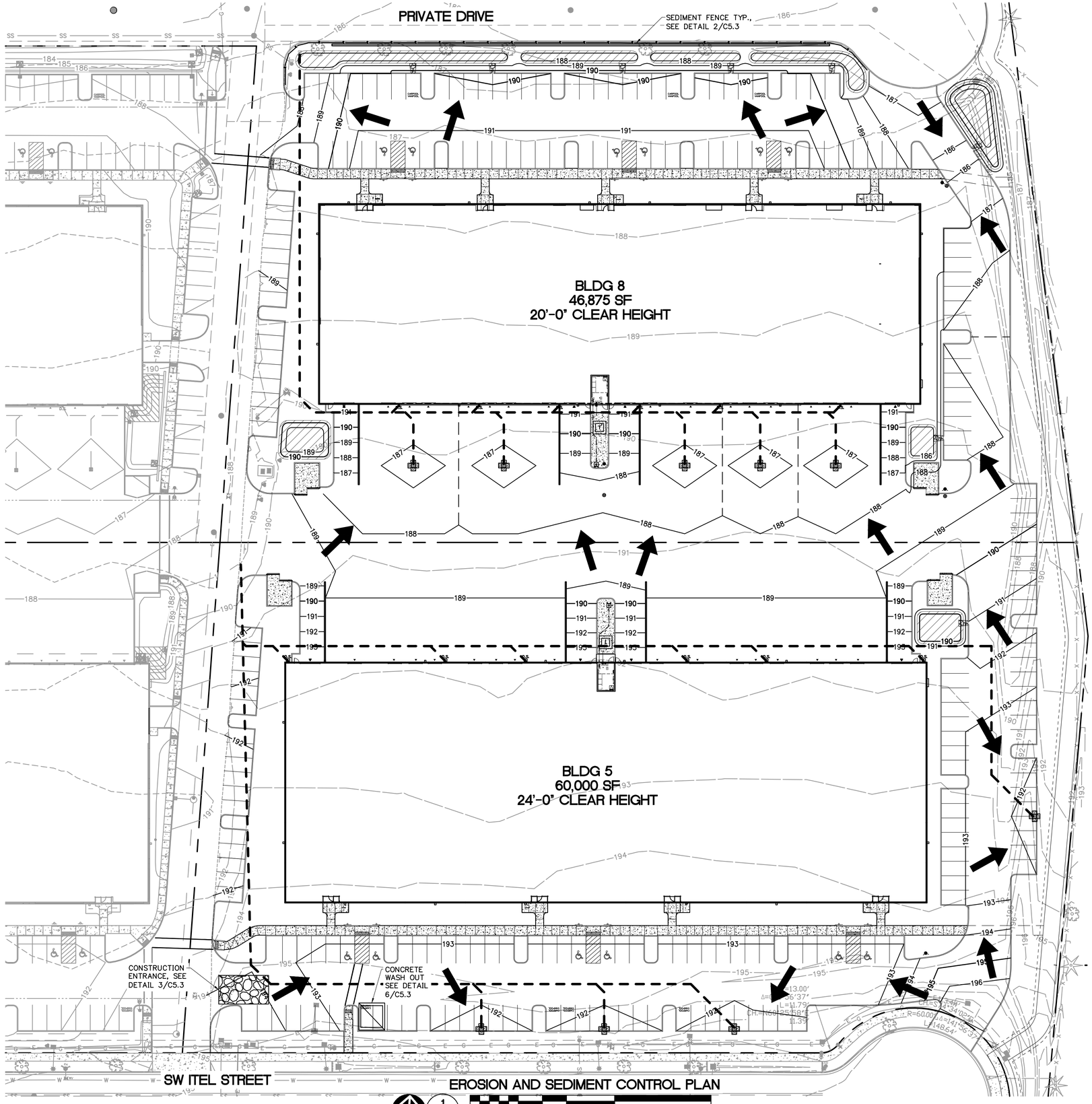

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

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. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.

4. THE STORM FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO ROAD PAVING.

5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

LEGEND

- CONCRETE WASH AREA
- INLET PROTECTION
- SEDIMENT BARRIER (EXTERIOR)
- SEDIMENT BARRIER (INTERIOR)
- ORANGE CONSTRUCTION FENCE
- CONSTRUCTION ENTRANCE
- NEW IMPERVIOUS SURFACE
- MATTING (GREENFIX STRAW/ COCONUT MAT TYPE: CFS072R)
- DRAINAGE FLOW DIRECTION

1 C5.2

EROSION AND SEDIMENT CONTROL PLAN

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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EROSION AND SEDIMENT CONTROL PLAN

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C5.2

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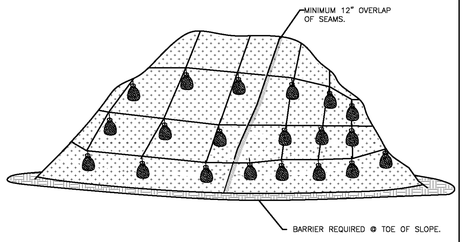
FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.



PLASTIC SHEETING

NOTES:
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
2. BARRIER REQUIRED @ TOE OF STOCK PILE.
3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.

PLASTIC SHEETING
DRAWING NO. 810 REVISED 12-06
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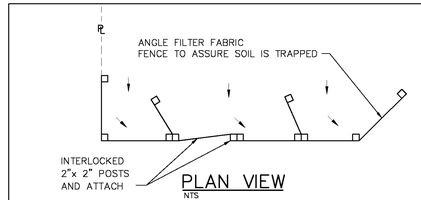
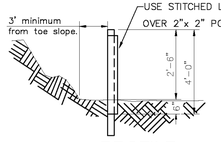
1 C5.3 CLEAN WATER SERVICES DWG. 810
N.T.S.

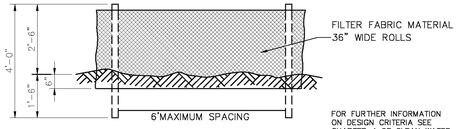


PLAN VIEW
NTS



PROFILE
NTS

NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
3. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
5. PANELS MUST BE PLACED ACCORDING TO SPACING ON DETAIL NO.940



FRONT VIEW
NTS

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

SEDIMENT FENCE
DRAWING NO. 875 REVISED 12-06
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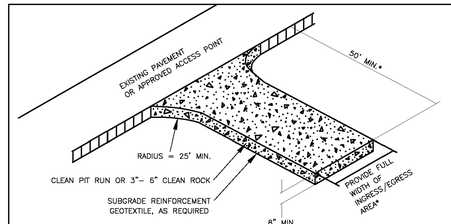
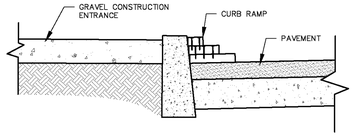
2 C5.3 CLEAN WATER SERVICES DWG. 875
N.T.S.



*20' MIN. FOR SINGLE FAMILY AND DUPLEX RESIDENTIAL



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF- WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY
   20' LONG BY 20' WIDE 8" DEEP OF ¾" MINUS CLEAN ROCK.
   COMMERCIAL
   50' LONG BY 20' WIDE 3-6" CLEAN ROCK, GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

CONSTRUCTION ENTRANCE
Detail Drawing 855 REVISED 12-06
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3 C5.3 CLEAN WATER SERVICES DWG. 855
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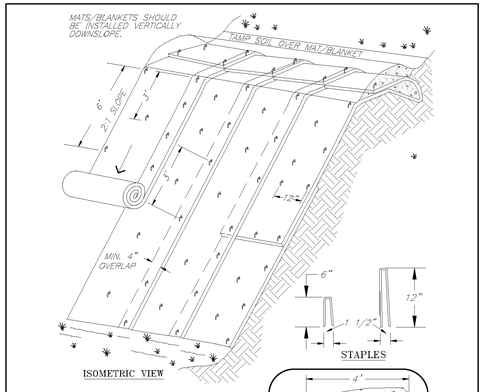

ISOMETRIC VIEW

TYPICAL SLOPE SOIL STABILIZATION

NOTES:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.

NOT TO SCALE

FILE: BLANKTSP

MATTING SLOPE INSTALLATION
DRAWING NO. 805 REVISED 12-06
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4 C5.3 CLEAN WATER SERVICES DWG. 805
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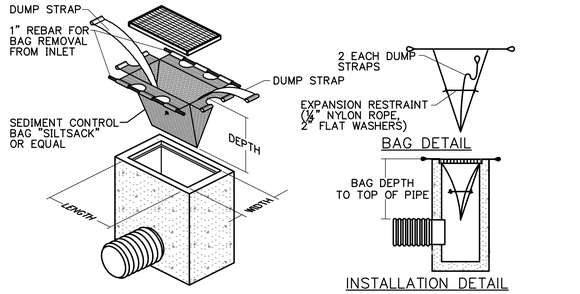
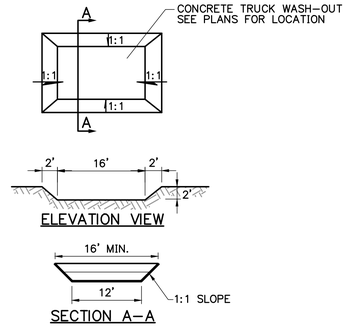


INSTALLATION DETAIL

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 HIGH FLOW DESIGN (200 GAL/MIN/SF), AS PER THE MANUFACTURER'S SPECS.
4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT.
5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.

5 C5.3 CATCH BASIN SEDIMENT FILTER BAG
N.T.S. CBSACK3



NOTES:
1. CONCRETE WASHOUT AREA. LOCATED SO RUNOFF CANNOT ENTER STORM SYSTEM. IF WASH-OUT CANNOT BE LOCATED MINIMUM OF 50' FROM ENTRY TO STORM SYSTEM, THAN SECONDARY MEASURES SUCH AS BERMS AND TEMPORARY SETTLING PITS MAY BE REQUIRED.
2. CONTRACTOR SHALL CLEAN OUT CONCRETE TRUCK WASH-OUT AREA WHEN WHEN DEPTH REACHES 1'.

6 C5.3 CONCRETE WASHOUT
N.T.S. CONCRETE WASHOUT

SEDIMENT FENCE CONSTRUCTION NOTES

1) SELECTION OF FILTER FABRIC TENSILE AND BURSTING STRENGTH DEPENDS ON THE SLOPE CHARACTERISTICS. THE USE OF STANDARD OR HEAVY DUTY FILTER FABRIC SHALL MEET DESIGN STANDARDS. SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES TO 120 DEGREES. SELECTION SHALL BE BASED ON STANDARD ENGINEERING PRINCIPLES FOR DESIGN.

2) STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"X2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP-HILL SIDE OF THE SLOPED AREA, WITH POSTS SPACED A MAXIMUM OF 6 FEET APART.

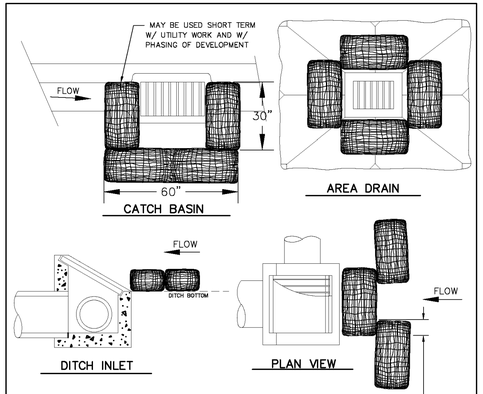
3) FILTER FABRIC FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES DOWNHILL OF POSTS ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION SHALL BE FIRMLY REDEPOSITED ALONG THE ENTIRE TRENCHED AREA ON THE DOWNHILL SIDE OF THE FENCE.

4) THE PHYSICAL INTEGRITY OF ALL MATERIALS SHALL BE SUFFICIENT TO MEET THE REQUIREMENTS OF THEIR INTENDED USE AND WITHSTAND NORMAL WEAR AND TEAR.

5) WHERE PRACTICAL THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, 2"X2" POSTS SHALL BE INTERLOCKED WITH EACH OTHER AND BE ATTACHED SECURELY.

6) SEDIMENT FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS, RELOCATIONS OR ADDITIONS SHALL BE MADE IMMEDIATELY.

7) AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE GREATER THAN 1/3 THE HEIGHT OF THE SEDIMENT FENCE ABOVEGROUND. SEDIMENT SHOULD BE REMOVED OR REGRADED INTO SLOPES, AND THE SEDIMENT FENCES REPAIRED AND RE-ESTABLISHED AS NEEDED.



NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2"WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU MUST HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

INLET PROTECTION TYPE 4
DRAWING NO. 915 REVISED 12-06
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7 C5.3 CLEAN WATER SERVICES DWG. 915
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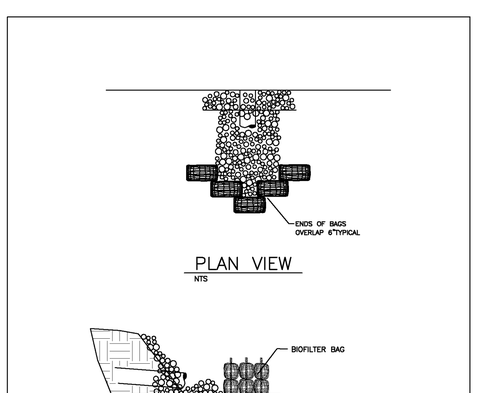

PLAN VIEW
NTS

PROFILE

NOTE:
1. BIO BAGS ONLY REQUIRED WHEN DISCHARGING SEDIMENT LADEN WATER.
2. STAKING OF BAGS REQUIRED WITH EITHER METHOD USING (2) 1"x 2" WOOD STAKES OR APPROVED EQUAL PER BAG.

FOR FURTHER INFORMATION ON DESIGN CRITERIA SEE CHAPTER 4 OF CLEAN WATER SERVICES EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

OUTLET PROTECTION RIP RAP
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8 C5.3 CLEAN WATER SERVICES DWG. 820
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LOT 5

REVISIONS:

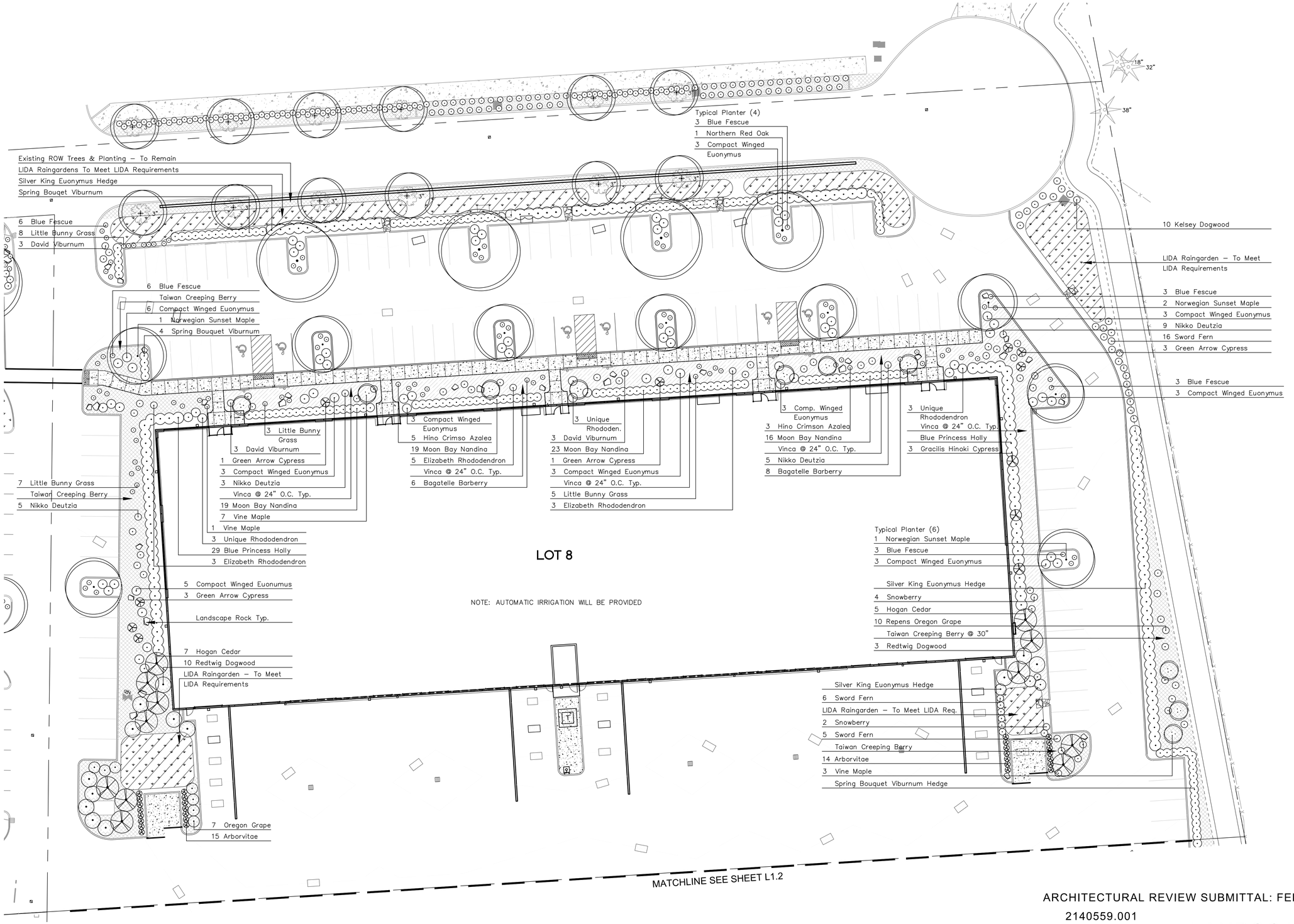
REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
EROSION AND SEDIMENT CONTROL DETAILS

DRAWN BY: CTL
CHECKED BY: RLF
SHEET:
C5.3
JOB NO. 2140559.01

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

2140559\00\CIVIL\559-C5.3.DWG RLF 03/03/15 13:44 1:1



ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

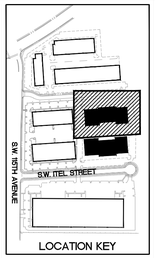
2140559.001

LANDSCAPE PLAN

NORTH

0 20 40 60 feet

SCALE: 1" = 20'



LOCATION KEY

BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

REGISTERED 31
HAROLD S. BEIGHLEY JR.
OREGON
LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER
BUILDING 008
TUALATIN, OREGON

Revisions

DRAWN	AMM
CHECKED	HSB
DATE	02/27/15
JOB NO.	1508

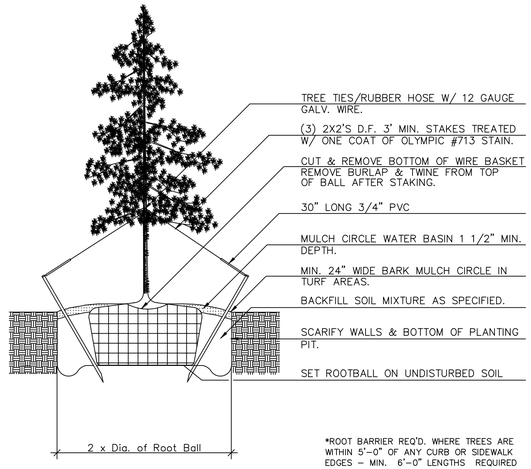
L-1

OF 2

PLANT MATERIALS LISTING FOR LOT 8:

BOTANICAL NAME / COMMON NAME	QTY.	SIZE	CONDITION	REMARKS
TREES				
Acer circinatum Vine Maple	10	4–5'	B&B	Multi–Trunk
Acer truncatum x A. platanoides 'Keithsform' Norwegian Sunset Maple	9	1 1/2" Cal.	B&B	
Chamaecyparis nootkatensis 'Green Arrow' Green Arrow Cypress	8	6–7'	B&B	
Chamaecyparis obtusa 'Gracilis' Gracilis Hinoki Cypress	3	4–5'	B&B	
Quercus rubra Northern Red Oak	4	1 1/2" Cal.	B&B	
Thuja plicata 'Fastigiata' Hogan Cedar	12	8–9'	B&B	
SHRUBS				
Berberis thunbergii 'Bagatelle' Bagatelle Barberry		1 Gal.	Can	10–12"
Cornus stolonifera Redtwig Dogwood		5 Gal.	Can	30–36
Cornus stolonifera 'Kelseyi' Kelsey Dogwood Dogwood		1 Gal.	Can	10–12"
Deutzia gracilis 'Nikko' Nikko Deutzia		1 Gal.	Can	10–12"
Euonymus alatus 'Compact' Compact Winged Euonymus		5 Gal.	Can	18–24"
Euonymus japonicus 'Silver King' Silver King Euonymus		5 Gal.	Can	18–24"
Festuca ovina 'Elija' Blue Fescue		1 Gal.	Can	10–12"
Gaultheria shallon Salal		2 Gal.	Can	12–15"
Ilex meserveae 'Blue Princess' Blue Princess Holly		18–21"	B&B	
Mahonia aquifolium 'Orange Flame' Repens Oregon Grape		2 Gal.	Can	12–15"
Nandina domestica 'Moon Bay' Moon Bay Nandina		5 Gal.	Can	15–18"
Pennisetum alopecuroides 'Little Bunny' Little Bunny Grass		1 Gal.	Can	10–12"
Polystichum munitum Sword Fern		1 Gal.	Can	10–12"
Rhododendron varieties: Elizabeth Unique		12–15" 18–24"	B&B B&B	
Symphoricarpus alba Snowberry		2 Gal.	Can	12–15"
Viburnum davidi David Viburnum		2 Gal.	Can	12–15"
Viburnum plicatum tomentosum 'Watanabe' Watanabe Doublefile Viburnum		5 Gal.	Can	18–24"
Viburnum tinus 'Spring Bouquet' Spring Bouquet Viburnum		5 Gal.	Can	15–18"
GROUNDCOVER & VINES				
Rubus pentalobus 'Emerald Carpet' Taiwan Creeping Berry		4"	Pots	Triangular Spaced
Vinca minor Vinca		4"	Pots	Triangular Spaced
Landscape Rocks Native Basalt		3–5 cu.ft.		

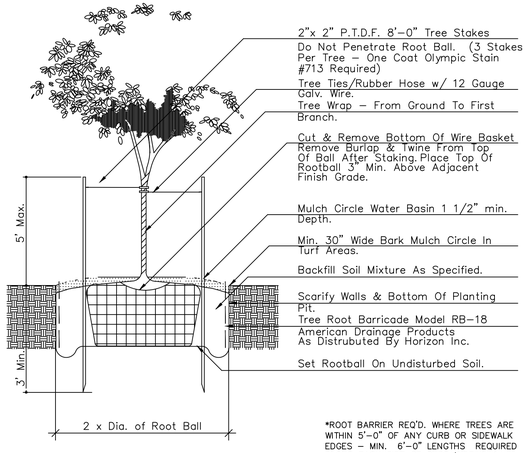
PLANTING DETAILS



*ROOT BARRIER REQ'D. WHERE TREES ARE WITHIN 5'–0" OF ANY CURB OR SIDEWALK EDGES – MIN. 6'–0" LENGTHS REQUIRED ALONG EACH SIDE OF CURB/SIDEWALK.

CONIFER PLANTING DETAIL

NTS



*ROOT BARRIER REQ'D. WHERE TREES ARE WITHIN 5'–0" OF ANY CURB OR SIDEWALK EDGES – MIN. 6'–0" LENGTHS REQUIRED ALONG EACH SIDE OF CURB/SIDEWALK.

TREE PLANTING DETAIL – SHRUB PLANTING SIMILAR

NOTES

1. B&B STOCK MAY BE SUBSTITUTED WITH CONTAINER STOCK OF EQUAL GRADE.
2. CONTAINER STOCK MAY BE SUBSTITUTED WITH B&B STOCK OF EQUAL GRADE.
3. PLANT MATERIAL SHALL CONFORM WITH AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, 1986 EDITION.
4. ALL TREES SHALL BE BRANCHED.
5. MULCH ALL PLANTING BEDS WITH 3" MIN. LAYER OF SPECIFIED MULCH.
6. IN THE EVENT OF A DISCREPANCY BETWEEN THIS MATERIAL LISTING AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN THE PLANT SPECIES AND QUANTITIES REQ.
7. IN THE EVENT OF QUESTION OR LACK OF CLARITY ON DRAWINGS, LANDSCAPE CONTRACTOR IS TO CALL LANDSCAPE ARCHITECT BEFORE PROCEEDING.
8. LANDSCAPE CONTRACTOR IS TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIAL / GREEN SIDE UP.
9. ADJUST PLANT LAYOUT AS REQUIRED TO FIT IRRIGATION COVERAGE PATTERN.

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27,2015

2140559.001

LANDSCAPE DETAILS

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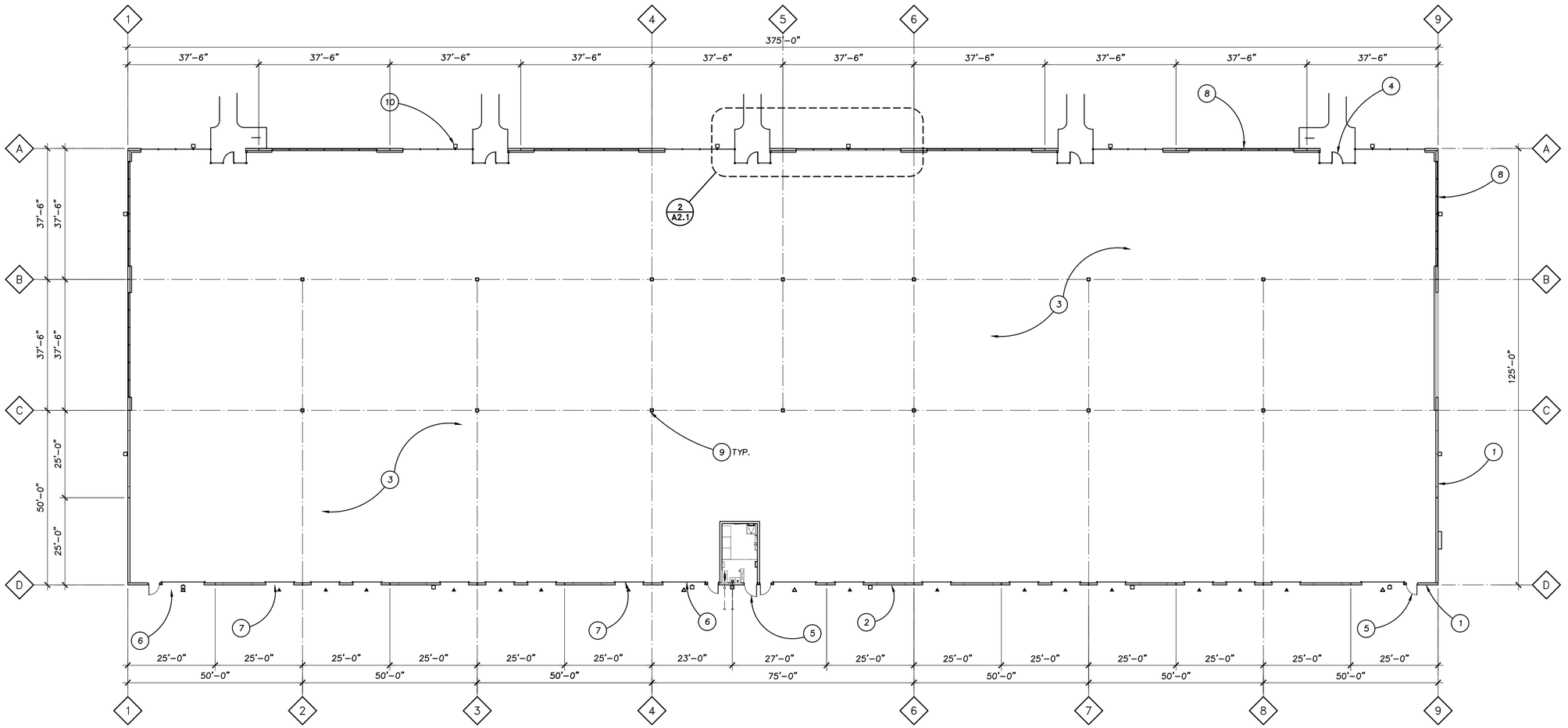
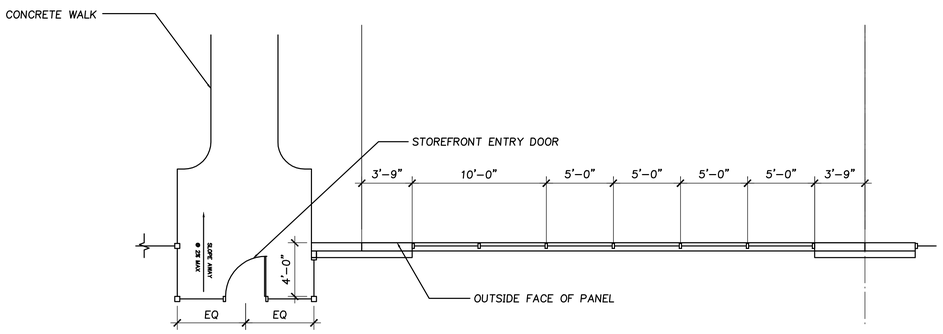
L–2
OF 2



1 A2.1 FLOOR PLAN

1/16"=1'–0"



2 A2.1 ENLARGED PLAN

1/16"=1'–0"

GENERAL NOTES

A. PROVIDE MECHANICAL VENTILATION AS REQUIRED BY 2012 WASHINGTON STATE ENERGY CODE.
B. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
C. SEE STRUCTURAL PANEL ELEVATIONS FOR PANEL THICKNESS.
D. SEE STRUCTURAL DRAWINGS FOR FRAMING INFORMATION.
E. SEE CIVIL FOR ADDITIONAL SITE INFORMATION.

KEYNOTES

1. CONCRETE PANEL
2. FUTURE OPENING
3. CONCRETE SLAB
4. STOREFRONT ENTRY DOOR
5. HOLLOW METAL DOOR
6. ON GRADE DOOR
7. DOCK HIGH DOOR
8. STOREFRONT WINDOW SYSTEM
9. STEEL COLUMN
10. DOWNSPOUT
11. FULL HEIGHT METAL STUD WALL
12. ROOF ACCESS LADDER

LEGEND

- CONCRETE TILT WALL
- FUTURE OPENING
- DOCK–HIGH O.H. DOOR
- DRIVE–IN O.H. DOOR
- D.S. DOWN SPOUT

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FLOOR PLAN

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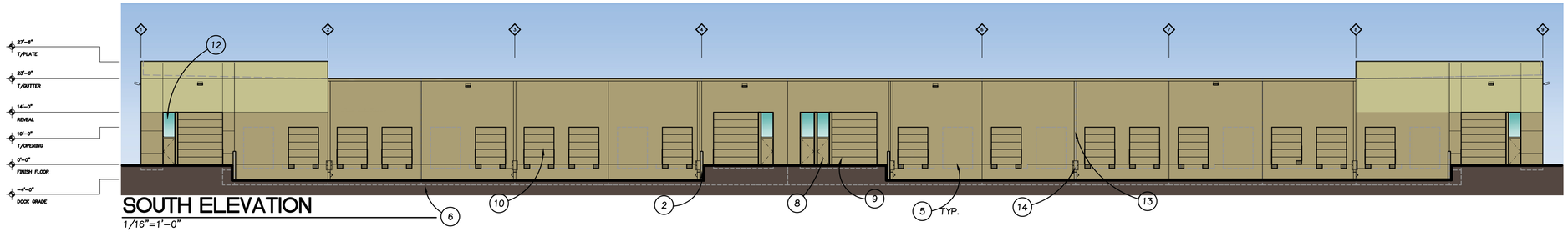
CHECKED BY:

SHEET:
A2.1

JOB NO. 2140559.02

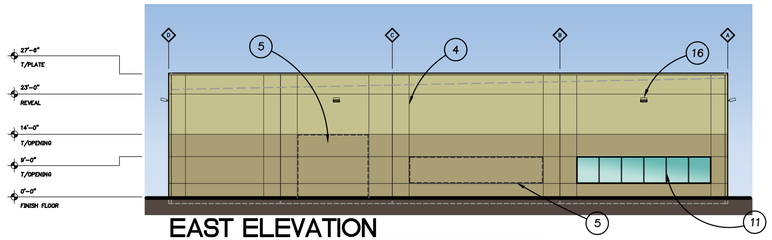
PRELIMINARY

2140559\02\4_DRAWINGS\ARCHITECTURAL\08–A2.1.DWG AJS 03/03/15 12:13 1:192.00



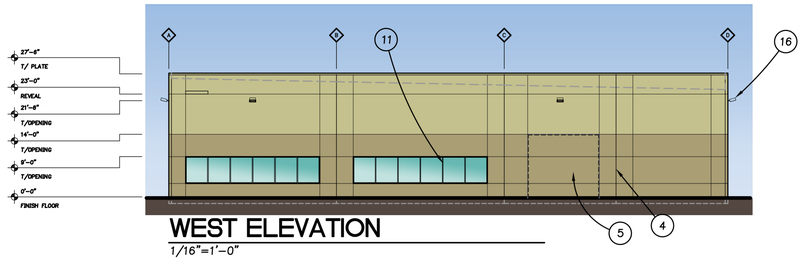
SOUTH ELEVATION

1/16"=1'-0"



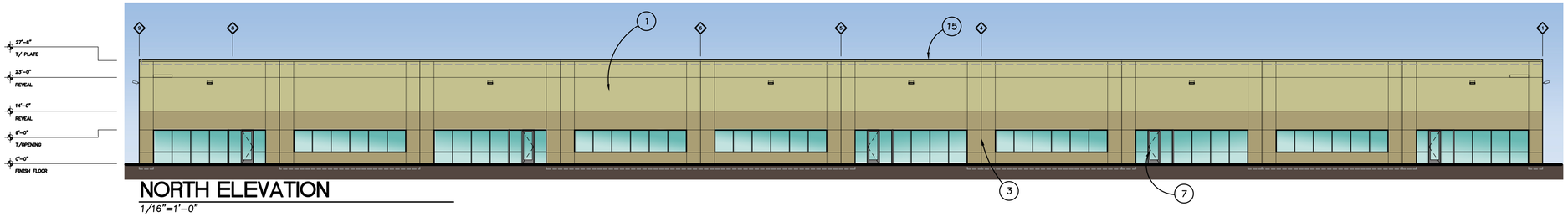
EAST ELEVATION

1/16"=1'-0"



WEST ELEVATION

1/16"=1'-0"



NORTH ELEVATION

1/16"=1'-0"

GENERAL NOTES

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
B. SEE STRUCTURAL DRAWINGS FOR PANEL THICKNESS

KEYNOTES

1. PAINTED CONCRETE PANEL
2. 42" TALL RETAINING WALL
3. PANEL JOINT
4. REVEAL
5. FUTURE OPENING
6. PANEL BELOW GRADE
7. STOREFRONT ENTRY DOOR
8. HOLLOW METAL DOOR
9. ON GRADE DOOR
10. DOCK HIGH DOOR
11. STOREFRONT WINDOW SYSTEM
12. TRANSOM WINDOW
13. SCUPPER & DOWNSPOUT
14. DOWNSPOUT GUARD & CLEAN OUT
15. CAP FLASHING
16. YARD LIGHT

COLOR 1	COLOR 2	GLASS
MILLER PAINT CO. DARK GOAT/ P-1	MILLER PAINT CO. GOAT/ P-2	PPG Solarcool Azuria

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SHEET TITLE:
ELEVATIONS

DRAWN BY: MNT

CHECKED BY: AJS

SHEET:

A3.1

JOB NO. 2140559.02

REVISION: APRIL 6, 2015
ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

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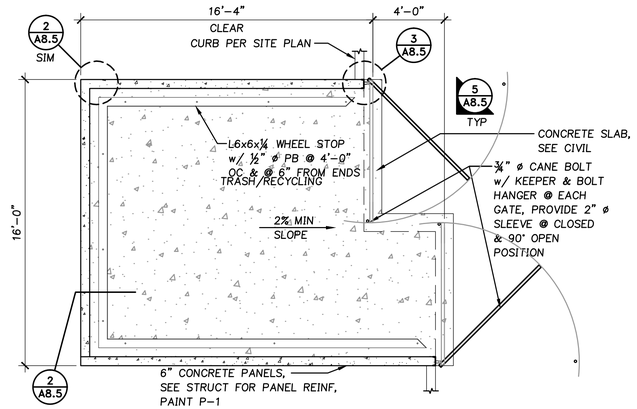
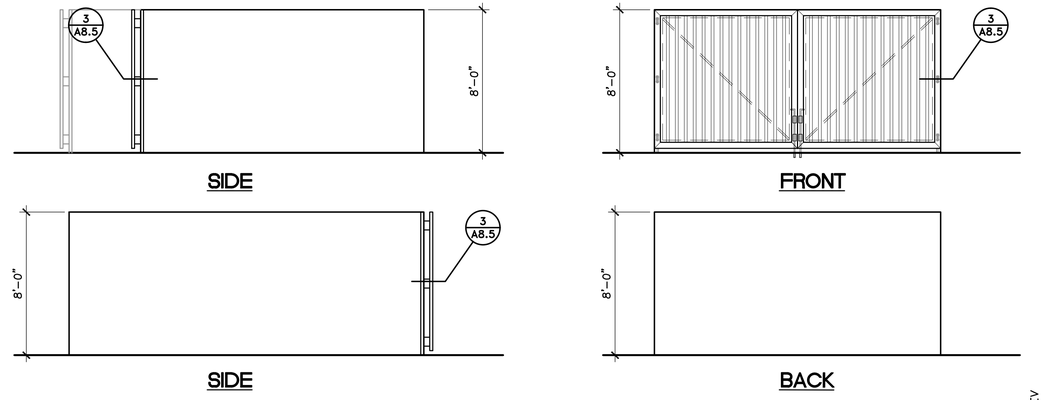


NOTE:
ALL STEEL TO BE GALVANIZED AND PAINTED P1

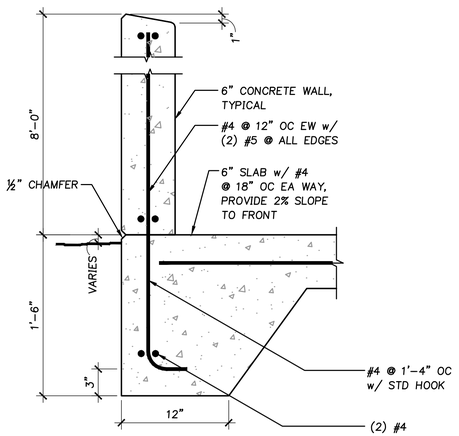
1 A8.5 TRASH ENCLOSURE

1/4"=1'-0" TRASH1



2 A8.5 TRASH ENCLOSURE - ELEVATIONS

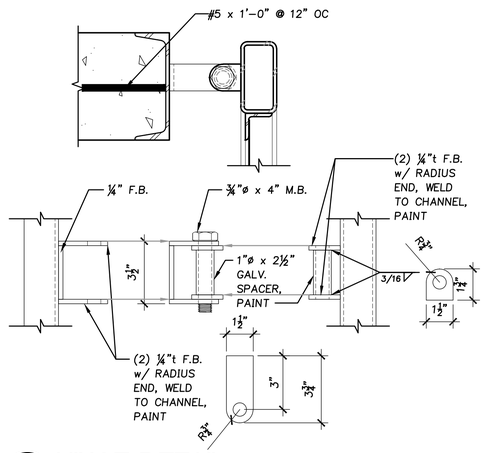
1/4"=1'-0" TRASH-ELEV



3 A8.5 CONCRETE WALL

AT TURNDOWN SLAB

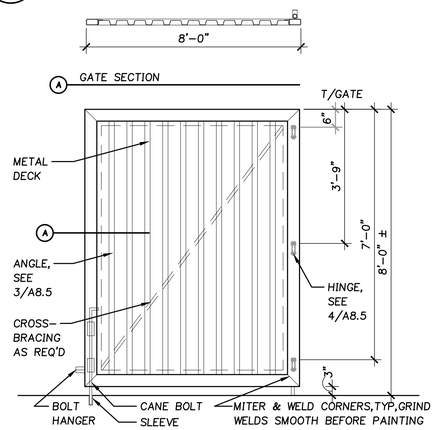
1 1/2"=1'-0" TRASH2



4 A8.5 HINGE DETAIL

(3) PER GATE, TYPICAL

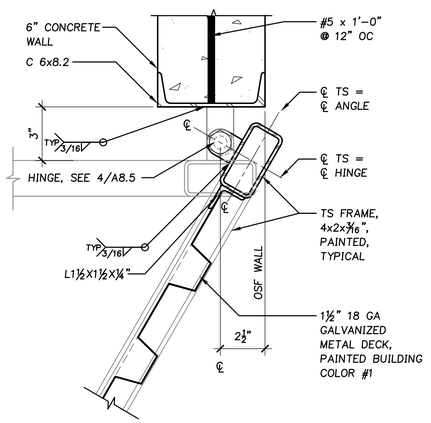
3"=1'-0" TRASH4



5 A8.5 TYPCIAL GATE ELEVATION

AT TRASH ENCLOSURE

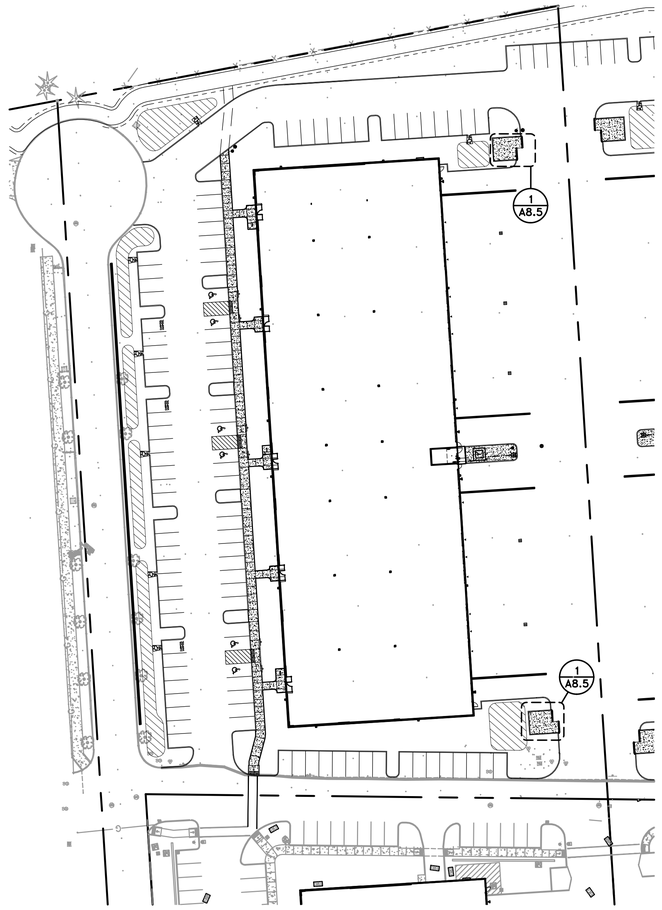
1/2"=1'-0" TRASH5



6 A8.5 GATE DETAIL

AT TRASH ENCLOSURE

3"=1'-0" TRASH3



7 A8.5 SITE PLAN

NTS

SEE CIVIL PLAN FOR MORE INFORMATION

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TRASH ENCLOSURE DETAILS

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CHECKED BY: AJS

SHEET:
A8.5

JOB NO. 2140559.02

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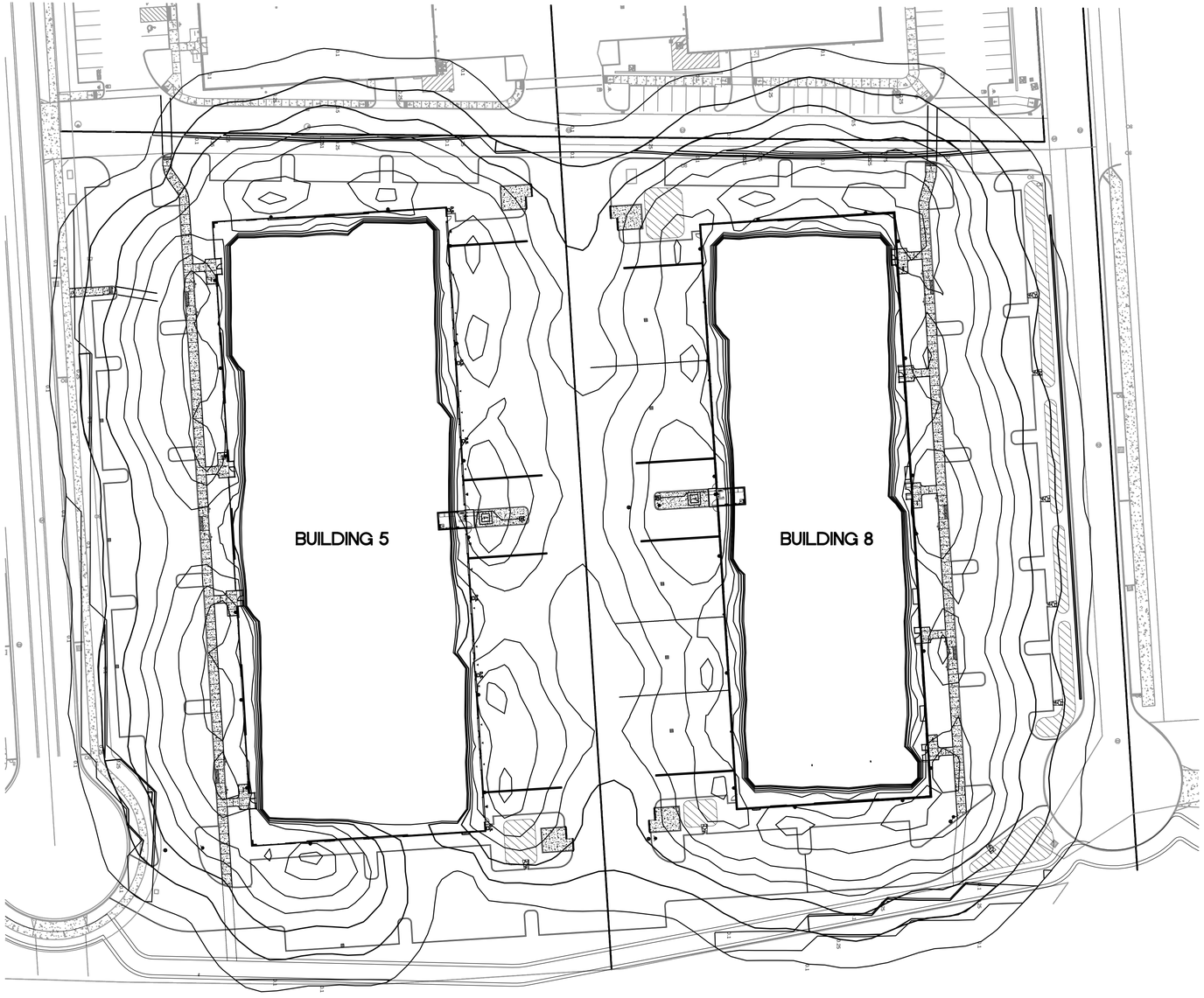

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

STATISITICS							
DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN	AVG/MAX
BEYOND PROPERTY LINE	+	0.1	0.9 fc	0.0 fc	N/A	N/A	1.0:9

LUMINAIRE SCHEDULE					
SYMBOL	LABEL	QTY	CATALOG NUMBER	DESCRIPTION	WATTAGE
⌂	A	32	DSXW2 LED 30C 1000 40K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINE, 30 LED'S, 1000mA DRIVER, 4000K LED, TYPE FORWARD THROW MEDIUM OPTIC	109
▭ •	C-T3M	0	DSXO LED 40C 1000 40K T3M MVOLT HS	DSXO LED WITH (2) 20 LED LIGHT ENGINE, TYPE T3M OPTIC, 4000K, @ 1000mA WITH HOUSE SIDE SHEILD	138

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 DATE: MAY 6, 2010
UPDATED TOPO ONLY JUNE 21, 2011

ARCHITECTURAL REVIEW SUBMITTAL: FEBRUARY 27, 2015

M.
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LOT 5

REVISIONS:

REVISION DELTA	REVISIONS THIS SHEET	REVISION DELTA CLOSING DATE

SHEET TITLE:
BUILDINGS 5 AND 8 LIGHTING ANALYSIS

DRAWN BY: BMR

CHECKED BY:

SHEET:

SL1.1

JOB NO. 2140559.01

D-Series Size 0
LED Area Luminaire

d-series

Catalog Number

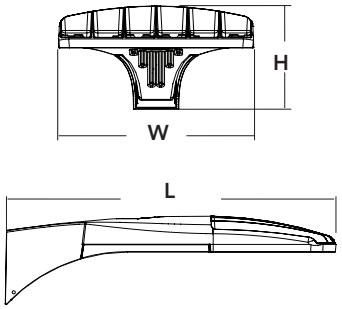
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.8 ft² (.07 m²)
Length:	26″ (66.0 cm)
Width:	13″ (33.0 cm)
Height:	7″ (17.8 cm)
Weight (max):	16 lbs (7.25 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 65% and expected service life of over 100,000 hours.

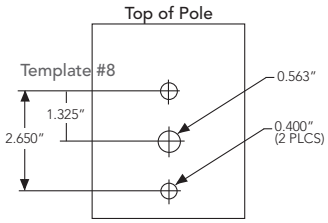
Ordering Information

EXAMPLE: DSX0 LED 40C 1000 40K T3M MVOLT SPA DDBXD

DSX0 LED

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish *(required)*
DSX0 LED	**Forward optics** 20C 20 LEDs (one engine) 40C 40 LEDs (two engines) **Rotated optics**[1] 30C 30 LEDs (one engine)	530 530 mA 700 700 mA 1000 1000 mA (1 A)[2]	30K 3000 K 80 CRI min.) 40K 4000 K (70 CRI min.) 50K 5000 K (70 CRI) AMBPC Amber phosphor converted[3]	T1S Type I short T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium T5VS Type V very short T5S Type V short T5M Type V medium T5W Type V wide	MVOLT[4] 120[4] 208[4] 240[4] 277[4] 347[5] 480[5]	**Shipped included** SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor[6] RPUMBA Round pole universal mounting adaptor[6] **Shipped separately**[7] KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)	**Shipped installed** PER NEMA twist-lock receptacle only (no controls)[8] DMG 0-10V dimming driver (no controls)[9] DCR Dimmable and controllable via ROAM® (no controls)[10] PIR Motion sensor, 8-15′ mounting height[11] PIRH Motion sensor, 15-30′ mounting height[11] BL30 Bi-level switched dimming, 30%[12] BL50 Bi-level switched dimming, 50%[12]	**Shipped installed** HS House-side shield[13] SF Single fuse (120, 277, 347V)[14] DF Double fuse (208, 240, 480V)[14] L90 Left rotated optics[1] R90 Right rotated optics[1] DDL Diffused drop lens[13]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Drilling



DSX0 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

DM19AS	Single unit	**DM29AS**	2 at 90° *
DM28AS	2 at 180°	**DM39AS**	3 at 90° *
DM49AS	4 at 90° *	**DM32AS**	3 at 120° **

Example: SSA 20 4C **DM19AS** DDBXD

Visit Lithonia Lighting's POLES CENTRAL to see our wide selection of poles, accessories and educational tools.

*Round pole top must be 3.25″ O.D. minimum.

**For round pole mounting (RPA) only.

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V)[15]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V)[15]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V)[15]
SC U	Shorting cap[15]
DSX0HS 20C U	House-side shield for 20 LED unit[13]
DSX0HS 30C U	House-side shield for 30 LED unit[13]
DSX0HS 40C U	House-side shield for 40 LED unit[13]
DSX0DDL U	Diffused drop lens (polycarbonate)[13]
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish)[7]

For more control options, visit DTL and ROAM online.

Tenon Mounting Slipfitter**

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8″	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8″	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4″	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

NOTES

1. 30 LEDs (30C option) and rotated options (L90 or R90) only available together.
2. 1000mA is not available with AMBPC.
3. AMBPC only available with 530mA or 700mA.
4. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
5. Not available with single-board, 530 mA product (20C 530 or 30C 530). Not available with DCR, BL30, or BL50.
6. Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
7. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8″ mast arm (not included).
8. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories.
9. DMG option for 347v or 480v requires 1000mA.
10. Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net. N/A BL30, BL50, PIR, or PIRH.
11. PIR specifies the SensorSwitch SBGR-10-ODP control; PIRH specifies the SensorSwitch SBGR-6-ODP control; see Motion Sensor Guide for details. Dimming driver standard. Not available with DCR.
12. Requires an additional switched circuit. Dimming driver standard. MVOLT only. Not available with DCR.
13. Also available as a separate accessory; see Accessories information. HS and DDL are not available together.
14. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
15. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Controls.

LITHONIA LIGHTING

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Attachment 105 - Application with Site Plans & Elevations

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 85 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
20C (20 LEDs)	530 mA	35W	T1S	2,904	1	0	1	83	3,655	1	0	1	104	3,941	1	0	1	113
			T2M	2,902	1	0	1	83	3,652	1	0	1	104	3,937	1	0	1	112
			T2S	2,959	1	0	1	85	3,723	1	0	1	106	4,014	1	0	1	115
			T3M	2,952	1	0	1	84	3,715	1	0	1	106	4,005	1	0	1	114
			T3S	2,923	1	0	1	84	3,679	1	0	1	105	3,966	1	0	1	113
			T4M	2,937	1	0	1	84	3,696	1	0	1	106	3,984	1	0	1	114
			T5M	3,037	2	0	1	87	3,823	2	0	1	109	4,121	3	0	1	118
			T5S	3,074	2	0	0	88	3,869	2	0	0	111	4,171	2	0	0	119
			T5VS	3,028	2	0	0	87	3,811	2	0	0	109	4,109	2	0	0	117
			T5W	3,044	2	0	1	87	3,831	3	0	1	109	4,130	3	0	1	118
			TFTM	2,903	1	0	1	83	3,653	1	0	1	104	3,939	1	0	2	113
	700 mA	45 W	T1S	3,599	1	0	1	80	4,524	1	0	1	101	4,902	1	0	1	109
			T2M	3,596	1	0	1	80	4,520	1	0	1	100	4,898	1	0	1	109
			T2S	3,667	1	0	1	81	4,608	1	0	1	102	4,994	1	0	1	111
			T3M	3,658	1	0	1	81	4,598	1	0	1	102	4,983	1	0	2	111
			T3S	3,623	1	0	1	81	4,554	1	0	1	101	4,935	1	0	1	110
			T4M	3,639	1	0	1	81	4,574	1	0	2	102	4,957	1	0	2	110
			T5M	3,764	2	0	1	84	4,731	3	0	1	105	5,127	3	0	1	114
			T5S	3,810	2	0	0	85	4,788	2	0	0	106	5,189	2	0	0	115
			T5VS	3,753	2	0	0	83	4,717	2	0	0	105	5,112	2	0	0	114
			T5W	3,772	3	0	1	84	4,741	3	0	1	105	5,138	3	0	1	114
			TFTM	3,598	1	0	1	80	4,522	1	0	2	100	4,900	1	0	2	109
	1000 mA	72 W	T1S	4,654	1	0	1	65	6,206	2	0	2	86	6,640	2	0	2	92
			T2M	4,650	1	0	1	65	6,200	2	0	2	86	6,634	2	0	2	92
			T2S	4,741	1	0	1	66	6,322	2	0	2	88	6,764	2	0	2	94
			T3M	4,730	1	0	2	66	6,307	2	0	2	88	6,749	2	0	2	94
			T3S	4,685	1	0	1	65	6,246	1	0	2	87	6,684	2	0	2	93
			T4M	4,706	1	0	2	65	6,275	1	0	2	87	6,714	2	0	2	93
			T5M	4,868	3	0	1	68	6,490	3	0	1	90	6,945	3	0	1	96
			T5S	4,926	2	0	0	68	6,568	2	0	0	91	7,028	2	0	0	98
			T5VS	4,853	2	0	0	67	6,471	2	0	0	90	6,924	3	0	0	96
			T5W	4,878	3	0	1	68	6,504	3	0	2	90	6,959	3	0	2	97
			TFTM	4,652	1	0	2	65	6,203	1	0	2	86	6,637	1	0	2	92
40C (40 LEDs)	530 mA	68W	T1S	5,579	1	0	1	82	7,019	2	0	2	103	7,565	2	0	2	111
			T2M	5,574	2	0	2	82	7,012	2	0	2	103	7,558	2	0	2	111
			T2S	5,683	1	0	1	84	7,150	2	0	2	105	7,706	2	0	2	113
			T3M	5,670	1	0	2	83	7,133	2	0	2	105	7,688	2	0	2	113
			T3S	5,615	1	0	2	83	7,065	2	0	2	104	7,614	2	0	2	112
			T4M	5,641	1	0	2	83	7,097	2	0	2	104	7,649	2	0	2	112
			T5M	5,835	3	0	1	86	7,340	3	0	1	108	7,912	3	0	2	116
			T5S	5,905	2	0	0	87	7,429	3	0	0	109	8,007	3	0	1	118
			T5VS	5,817	2	0	0	86	7,318	3	0	0	108	7,888	1	0	2	116
			T5W	5,847	3	0	1	86	7,355	3	0	2	108	7,928	3	0	2	117
			TFTM	5,576	1	0	2	82	7,015	1	0	2	103	7,561	2	0	2	111
	700 mA	91 W	T1S	7,074	2	0	2	78	8,930	2	0	2	98	9,619	2	0	2	106
			T2M	7,068	2	0	2	78	8,922	2	0	2	98	9,610	2	0	2	106
			T2S	7,207	2	0	2	79	9,097	2	0	2	100	9,798	2	0	2	108
			T3M	7,190	2	0	2	79	9,076	2	0	2	100	9,776	2	0	2	107
			T3S	7,121	2	0	2	78	8,988	2	0	2	99	9,682	2	0	2	106
			T4M	7,153	2	0	2	79	9,029	2	0	2	99	9,726	2	0	2	107
			T5M	7,399	3	0	2	81	9,339	3	0	2	103	10,060	3	0	2	111
			T5S	7,488	3	0	0	82	9,452	3	0	1	104	10,181	3	0	1	112
			T5VS	7,377	3	0	0	81	9,311	3	0	1	102	10,030	3	0	1	110
			T5W	7,414	3	0	2	81	9,359	4	0	2	103	10,080	4	0	2	111
			TFTM	7,071	1	0	2	78	8,926	2	0	3	98	9,614	2	0	3	106
	1000 mA	138W	T1S	9,557	2	0	2	69	12,020	2	0	2	87	12,957	3	0	3	94
			T2M	9,548	2	0	2	69	12,009	3	0	3	87	12,946	3	0	3	94
			T2S	9,735	2	0	2	71	12,245	3	0	3	89	13,199	3	0	3	96
			T3M	9,713	2	0	2	70	12,217	2	0	3	89	13,169	3	0	3	95
			T3S	9,619	2	0	2	70	12,099	2	0	2	88	13,042	2	0	2	95
			T4M	9,663	2	0	2	70	12,154	2	0	3	88	13,102	2	0	3	95
			T5M	9,995	3	0	2	72	12,571	4	0	2	91	13,552	4	0	2	98
			T5S	10,115	3	0	1	73	12,723	3	0	1	92	13,715	3	0	1	99
			T5VS	9,965	3	0	1	72	12,534	3	0	1	91	13,511	3	0	1	98
			T5W	10,015	4	0	2	73	12,597	4	0	2	91	13,579	4	0	2	98
			TFTM	9,552	2	0	3	69	12,015	2	0	3	87	12,951	1	0	2	94

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.99

Electrical Load

			Current (A)					
Number of LEDs	Drive Current (mA)	System Watts	120	208	240	277	347	480
20C	530	35	0.34	0.22	0.21	0.20	--	--
	700	45	0.47	0.28	0.24	0.22	0.18	0.14
	1000	72	0.76	0.45	0.39	0.36	0.36	0.26
30C	530	52	0.51	0.31	0.28	0.25	--	--
	700	70	0.72	0.43	0.37	0.34	0.25	0.19
	1000	104	1.11	0.64	0.56	0.49	0.47	0.34
40C	530	68	0.71	0.41	0.36	0.33	0.25	0.19
	700	91	0.94	0.55	0.48	0.42	0.33	0.24
	1000	138	1.45	0.84	0.73	0.64	0.69	0.50

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

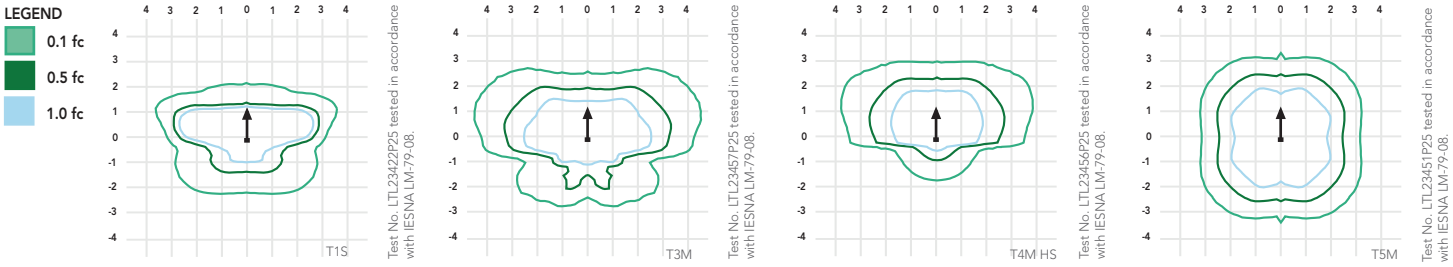
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX0 LED 20C 1000			
	1	0.97	0.94	0.90
	DSX0 LED 40C 1000			
	1	0.94	0.90	0.84
	DSX0 LED 40C 700			
	1	0.99	0.98	0.96

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area homepage.

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').



FEATURES & SPECIFICATIONS

INTENDED USE
The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION
Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.8 ft^2) for optimized pole wind loading.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 4000 K (70 minimum CRI) or optional 3000 K (80 minimum CRI) or 5000 K (70 CRI) configurations. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV or 6kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION
Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 0 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 0 utilizes the AERIS™ series pole drilling pattern. Optional terminal block, tool-less entry, and NEMA photocontrol receptacle are also available.

LISTINGS
UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five-year limited warranty. Full warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

d⁞⁞series

D-Series Size 2
LED Wall Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

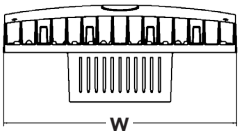
Specifications

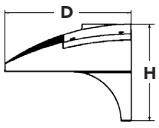
Luminaire

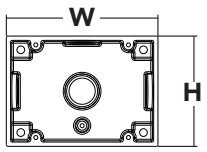
Width:	18-1/2" (47.0 cm)	**Weight:**	21 lbs (9.5 kg)
Depth:	10" (25.4 cm)		
Height:	7-5/8" (19.4 cm)		

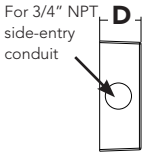
Back Box (BBW)

Width:	5-1/2" (14.0 cm)	**BBW Weight:**	1 lbs (0.5 kg)
Depth:	1-1/2" (3.8 cm)		
Height:	4" (10.2 cm)		









Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 76% in energy savings over comparable 400W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW2 LED 30C 700 40K T3M MVOLT DDBTXD

DSXW2 LED									
Series	**LEDs**	**Drive Current**	**Color temperature**	**Distribution**	**Voltage**	**Mounting**	**Control Options**	**Other Options**	**Finish** *(required)*
DSXW2 LED	20C 20 LEDs (two engines) 30C 30 LEDs (three engines)	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium ASYDF Asymmetric diffuse	MVOLT [1] 120 [1] 208 [1] 240 [1] 277 [1] 347 [2] 480 [2]	**Shipped included** (blank) Surface mounting bracket **Shipped separately** [3] BBW Surface-mounted back box (for conduit entry)	**Shipped installed** PE Photoelectric cell, button type [4] PER NEMA twist-lock receptacle only (no controls) DMG 0–10V dimming driver (no controls) DCR Dimmable and controllable via ROAM® (no controls) [5] PIRH 180° motion/ambient light sensor, 15–30' mtg ht [6]	**Shipped installed** SF Single fuse (120, 277, 347V) [7] DF Double fuse (208, 240, 480V) [7] HS House-side shield [3] SPD Separate surge protection [8] **Shipped separately** [3] BSW Bird-deterrent spikes WG Wire guard VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

NOTES

1 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
2 Available with 30 LED/700mA options only (DSXW2 LED 30C 700). DMG option not available.
3 Also available as a separate accessory; see Accessories information.
4 Photocontrol (PE) requires 120, 208, 240 or 277 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
5 Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347V, 480V or PIRH. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net.
6 Specifies the Sensor Switch SBGR-6-ODP control; see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocell) or DCR. Dimming driver standard.
7 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
8 See the electrical section on page 2 for more details.
9 Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [9]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [9]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [9]
SC U	Shorting cap [9]
DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW2WG U	Wire guard accessory
DSXW2VG U	Vandal guard accessory
DSXW2BBW DDBXD U	Back box accessory (specify finish)

LITHONIA LIGHTING
One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
20C (20 LEDs)	530	36 W	T2S	3,876	1	0	1	108	3,429	1	0	1	95
			T2M	3,694	1	0	1	103	3,267	1	0	1	91
			T3S	3,833	1	0	1	106	3,390	1	0	1	94
			T3M	3,794	1	0	1	105	3,356	1	0	1	93
			T4M	3,717	1	0	2	103	3,288	1	0	1	91
			TFTM	3,864	1	0	1	107	3,418	1	0	1	95
			ASYDF	3,454	1	0	2	96	3,056	1	0	2	85
	700	47 W	T2S	4,776	1	0	1	102	4,794	1	0	1	102
			T2M	4,552	1	0	1	97	4,569	1	0	1	97
			T3S	4,723	1	0	2	100	4,741	1	0	2	101
			T3M	4,675	1	0	2	99	4,693	1	0	2	100
			T4M	4,581	1	0	2	97	4,598	1	0	2	98
			TFTM	4,761	1	0	2	101	4,779	1	0	2	102
			ASYDF	4,257	1	0	2	91	4,273	1	0	2	91
	1000	74 W	T2S	6,327	1	0	1	84	6,351	1	0	1	85
			T2M	6,029	1	0	2	80	6,052	1	0	2	81
			T3S	6,256	1	0	2	83	6,280	1	0	2	84
			T3M	6,193	1	0	2	83	6,216	1	0	2	83
			T4M	6,067	1	0	2	81	6,090	1	0	2	81
			TFTM	6,307	1	0	2	84	6,330	1	0	2	84
			ASYDF	5,638	2	0	2	75	5,660	2	0	2	75
30C (30 LEDs)	530	54 W	T2S	5,280	1	0	1	98	5,769	1	0	1	107
			T2M	5,137	1	0	2	95	5,613	1	0	2	104
			T3S	5,214	1	0	1	97	5,696	1	0	1	105
			T3M	5,298	1	0	2	98	5,789	1	0	2	107
			T4M	5,228	1	0	2	97	5,712	1	0	2	106
			TFTM	5,223	1	0	2	97	5,707	1	0	2	106
	700	71 W	T2S	6,513	1	0	1	92	7,118	2	0	2	100
			T2M	6,337	2	0	2	89	6,925	2	0	2	98
			T3S	6,431	1	0	2	91	7,028	1	0	2	99
			T3M	6,536	1	0	2	92	7,143	2	0	3	101
			T4M	6,449	1	0	2	91	7,047	1	0	2	99
			TFTM	6,444	1	0	2	91	7,042	1	0	2	99
	1000	109 W	T2S	8,697	2	0	2	80	9,501	2	0	2	87
			T2M	8,462	2	0	2	78	9,244	2	0	2	85
			T3S	8,588	1	0	2	79	9,381	2	0	2	86
			T3M	8,728	2	0	3	80	9,534	2	0	3	87
			T4M	8,611	1	0	2	79	9,407	2	0	2	86
			TFTM	8,604	2	0	2	79	9,399	2	0	2	86

Note:
Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000K lumen values and photometric files.

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.98

Electrical Load

			Current (A)					
LEDs	Drive Current (mA)	System Watts	120	208	240	277	347	480
20C	350	25 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	-	-
	1000	73 W	0.68	0.39	0.34	0.29	-	-
30C	350	36 W	0.33	0.19	0.17	0.14	-	-
	530	54 W	0.50	0.29	0.25	0.22	-	-
	700	71 W	0.66	0.38	0.33	0.28	0.23	0.16
	1000	109 W	1.01	0.58	0.50	0.44	-	-

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW2 LED 30C 1000** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

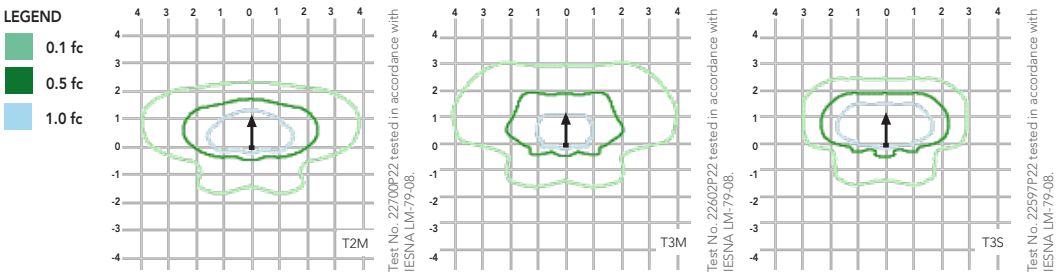
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

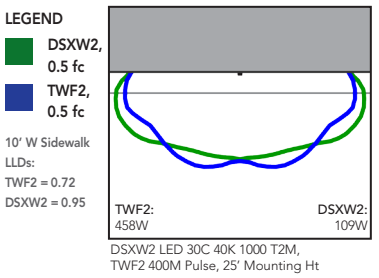
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 2 homepage.

Isofootcandle plots for the DSXW2 LED 30C 1000 40K. Distances are in units of mounting height (25').



Distribution overlay comparison to 400W metal halide.



DSXW2 LED 30C 40K 1000 T2M, TWF2 400M Pulse, 25' Mounting Ht

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the D-Series Wall Size 2 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (80 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 CRI) configurations.

ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

EXHIBIT A

APPLICATION FORM & FACT SHEET

EXHIBIT B

AFFIDAVIT OF POSTING AR NOTICE

EXHIBIT C

CLEAN WATER SERVICES SERVICE PROVIDER LETTER (PRE-SCREEN)

1. Mailing List
2. Meeting Notice
3. Affidavit of Mailing & Certification of Sign Posting
4. Sign-In Sheet
5. Meeting Notes

EXHIBIT D

NEIGHBORHOOD/ DEVELOPER MEETING MATERIALS

EXHIBIT D.1.

MAILING LIST

EXHIBIT D.2.

MEETING NOTICE

EXHIBIT D.3.

AFFIDAVIT OF MAILING & CERTIFICATION OF SIGN POSTING

EXHIBIT D.4.

SIGN-IN SHEET

EXHIBIT D.5.

MEETING NOTES

EXHIBIT E

LEGAL DESCRIPTIONS

EXHIBIT F

AERIAL MAP

EXHIBIT G

REPUBLIC SERVICES APPROVAL LETTER

EXHIBIT H

TAX MAPS

EXHIBIT I

COLORED PERSPECTIVES

EXHIBIT J

PLANS

Submitted 3/4/15

Attachment 105 - Application with Site Plans & Elevations

EXHIBIT K

LIGHTING CUT SHEETS

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

April 6, 2015

City of Tualatin
Attention: Clare Fuchs
18880 SW Martinazzi Avenue
Tualatin, OR 97062-7092

Re: **Koch Corporate Expansion**
Tualatin AR-15-5
Project Number 2140561.00 and 2140559.00

Dear Ms. Fuchs:

This letter is in response to your notice of incomplete application dated April 3, 2015, for the Koch Corporate AR application. The items below are listed in the same order as they appear in your letter.

1. A revised application has been submitted with Eric Sporre's signature as both the applicant and property owner. A letter of authorization showing that Mr. Sporre has the authority to sign is also included.

2. Three paper copies of the certification of application have been submitted along with a revised CD that includes this document.

3. Color plans, size 24 x 36, showing materials and building elevations are included with this resubmittal.

4. The landscape architect for Koch is Harold S. Beighley and Associates, Inc. Their address is 12840 NW Cornell Road, Portland, OR 97229. They can be reached by phone at 503-643-4796 or via email at anne@bai-la.org.

With this updated and additional information, we believe the application is complete, and we look forward to obtaining a staff report and presenting the development to the Architectural Review Board for approval. If you have any questions or require any additional information, please do not hesitate to contact me.

Sincerely,

Mark Person, AICP
Planner

Enclosure(s): Revised application
Three copies of the certification of application
Three copies of updated color plans (24 x 36)
CD with updated submittal information

c: Matt Oyen - PacTrust
Adam Solomonson, Dennis Woods, Suzannah Stanley – Mackenzie

ARCHITECTURAL REVIEW

To
City of Tualatin

For
PacTrust
Koch Lots 1-3 and 5 and 8

Submitted
March 4, 2015

Project Number
2130561.00 and 2140559.00

TABLE OF CONTENTS

EXHIBITS

ATTACHED SEPARATELY:

(1) Original Application Form and Check
(1) Mailing Labels
(5) Transportation Impact Analysis
(1) 8.5"x11" Plans
(5) 11"x17" Plans – folded
(5) 24"x36" Plans – folded

I. PROJECT SUMMARY

Applicant:
PacTrust
Attention: Matt Oyen
15350 SW Sequoia Parkway, Suite 300
Portland, OR 97224

Applicant's Representative/ Project Contact:
Mackenzie
Mark Person, Planner
mperson@mcknze.com

1515 SE Water Avenue, Suite 100
Portland, OR 97214
(503) 224-9560

Plan District Designation: MG (General Manufacturing)

Site Address:
SW 115th Avenue and SW Itel Street
Tualatin, Oregon

Site Size:
871,262 SF (20.00 acres)
- Building 1 Lot: 515,100 SF (11.82 AC)
- Building 5 Lot: 171,460 SF (3.94 AC)
- Building 8 Lot: 184,702 SF (4.24 AC)

Tax Map/Lots: 2S127DB00200, 2S127DB00300, 2S127DB00400, 2S127AC00300, and 2S127AC00600

Request: Architectural Review for three new manufacturing/warehouse buildings at Koch Corporate Center

Applicable Criteria:
TDC Chapter 61: General Manufacturing Planning District
- 61.020 Permitted Uses
- 61.050 Lot Size
- 61.060 Setback Requirements

TDC Chapter 73: Community Design Standards
- Architectural Review Approval
  - 73.050 Criteria and Standards
- Design Standards
  - 73.150 Objectives
  - 73.160 Standards
  - 73.210 Objectives
  - 73.220 Standards
  - 73.226 Objectives
  - 73.227 Standards
- Landscaping
  - 73.240 Landscaping General Provisions
  - 73.250 Tree Preservation
  - 73.260 Tree and Plant Specifications

73.270 Grading
73.280 Irrigation System Required
73.290 Re-vegetation in Un-landscaped Areas
73.310 Landscape Standards – Commercial, Industrial, Public and Semi-Public Uses

Off-Street Parking Lot Landscaping

73.320 Off-Street Parking Lot Landscaping Standards
73.340 Off-Street Parking Lot and Loading Area Landscaping - Commercial, Industrial, Public and Semi-Public Uses, and Residential and Mixed Use Residential Uses within the Central Design District
73.360 Off-Street Parking Lot Landscape Islands - Commercial, Industrial, Public, and Semi-Public Uses
73.370 Off-Street Parking and Loading
73.380 Off-Street Parking Lots (6)
73.390 Off-Street Loading Facilities
73.400 Access

II. INTRODUCTION AND PROPOSAL

This application package includes narrative, plans, drawings, and additional documentation in support of an Architectural Review (AR) for three speculative industrial buildings at Koch Corporate Center near SW 115th and SW Itel Street in Tualatin. Pacific Realty Associates, L.P. (PacTrust) is the applicant and developer.

Site Description

The subject site is specifically described as map 2S127AC, lots 300 and 600, and map 2S127DB, lots 200, 300, and 400. The subject lots and surrounding properties are industrially zoned MG – General Manufacturing Planning District. Surrounding properties are a mix of undeveloped and developed parcels.

The overall Koch Corporate Center is bound by SW Tualatin Sherwood Road to the north and SW 115th Avenue to the west; SW Itel Street bisects the property east to west. Existing industrial development abuts the site to the south and east. The street frontages of SW 115th Avenue and SW Itel Street have been designed and constructed to meet or exceed the intent of City of Tualatin Public Works standards.

Previous Permits

The site was previously subdivided through SB-11-01. Architectural review for the two buildings under construction at the northwest corner of Itel and 115th Avenue was previously completed under AR-12-05.

Proposal

The three buildings (1, 5, and 8) will be 200,000 SF, 60,000 SF, and 46,875 SF, respectively. They are speculative buildings at this time; specific tenants are not yet determined. This proposal is for a phased development. The applicant requires the flexibility to phase the proposed development as market needs and demand dictate in which order the buildings are constructed. Each lot and building will be designed and constructed with the ability to be developed individually. As shown in the attached plans, Building 1 will exist on what are currently three separate tax lots; these lots are proposed to be consolidated through the Property Line Adjustment requested separately through City of Tualatin Engineering. Buildings 5 and 8 will each be located on their own tax lots. This application addresses the applicable development standards for the existing and proposed lots and proposed three buildings.

The proposed development will be an aesthetic asset to the area. The landscape design and architectural features will create a business park feel. The buildings will be painted, scored concrete tilt-up and will have windows and storefront details to provide an office appearance along the front and side facades. The entryways will be recessed, and the entry feature will be protruded for articulation along the front façades. The overall appearance for this industrial development will be businesslike.

A scoping meeting for this project was held with the City of Tualatin on December 16, 2014, and a pre-application conference was held on December 29, 2014. A neighborhood/developer meeting was held on January 29, 2015; mailing labels, invitation letter, affidavit of mailing, certification of posting, and meeting sign-in sheet are attached to this application as Exhibit D.

Figure II.1 Aerial Map of Subject Site and Existing Lot Configuration

III. DEVELOPMENT CODE COMPLIANCE OVERVIEW

The proposed development complies with City of Tualatin Development Code standards, as shown below. As mentioned above, this application requests AR approval for a new 306,875 SF warehouse/manufacturing/office (buildings are speculative at this time) development on the 20-acre site. There will be three separate buildings; the following table summarizes the specific lots and buildings:

Table III.1 Site Analysis

	Building 1	Building 5	Building 8	Site Total or Average
Lot Area (SF)	515,100	171,460	184,702	**871,262**
Building Area (SF)	200,000	60,000	46,875	**306,875**
Building Coverage On Lot (%)	38.8%	35.0%	25.4%	**33.1%**
Landscape Area (SF)	116,000	32,473	79,059	**227,532**
Landscape %	22.5%	18.9%	42.8%	**28.1%**
Total Parking	150	126	102	**378**
Accessible Parking	5	6	6	**17**
Van/Carpool Parking	6	4	3	**13**
Bicycle Parking	4	8	6	**18**

On-Site Development

This application proposes three buildings: 200,000 SF, 60,000 SF, and 46,875 SF. No specific tenants are known at this time. The buildings are designed for warehouse and manufacturing uses (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8 for specific breakdowns of uses for each building). The site is zoned MG – General Manufacturing and the proposed uses are permitted outright.

The buildings will range from 27.5' to 42' tall and will all be tilt-up concrete with a decorative scoring pattern and paint scheme (see attached colored perspectives). Storefront entrance systems and windows are proposed along the building façades to help break up the scale of the buildings and provide articulation facing the abutting streets. Loading docks will be located between buildings 5 and 8 and north of Building 1 buffered by landscaping. The location and design of the trash and recycling areas for each building have been approved by Republic Services, the solid waste hauler (see Exhibit G, letter from Frank Lonergan).

As shown in the table above, 378 parking spaces will be provided to serve the building users, with 17 of these being ADA compliant. Parking lot landscaping and perimeter landscape materials are proposed in accordance with City code standards.

Stormwater

- Buildings 5 and 8: LIDA basins are proposed at various locations on the lots and are designed to provide water quality for approximately 6% of the impervious area created by the construction of buildings 5 and 8. A series of pipes and catch basins will collect the remainder of the impervious area. Building 8's stormwater will connect to an existing stub in the private drive to the north, and Building 5's to a storm stub located at the NW corner between buildings 5 and 8.

- Building 1: Stormwater from all new impervious areas created by the construction of Building 1 will be discharged into the pond along SW Itel Street, which will provide both detention and water quality for the entire lot. A control manhole will control the release rate from the pond to predeveloped rates and will be connected to an existing storm stub in SW Itel Street.

Public Facilities

Stormwater System

No public facilities are proposed for any of the proposed buildings. LIDA basins for buildings 5 and 8, as well as the detention/water quality pond for Building 1, will be provided on-site.

See attached utility plans (C2.3 for Building 1 and C2.3 for buildings 5 and 8) for details.

Sanitary Sewer System

- Building 1: The sanitary sewer connection will be made to an existing stub south of SW Itel Street.
- Buildings 5 and 8: Building 5 will connect to an existing sanitary stub in SW Itel Street, and Building 8 will connect to an existing sanitary stub at the northwest corner of the lot (from the private drive).

All three buildings will use gravity drains, and no pumps will be required. See attached utility plans (C C2.3 for Building 1 and C2.3 for buildings 5 and 8) for details.

Streets

- Vehicle access for Building 1 will come from SW Itel Street. Truck access can be made from either of the two driveways off SW Itel, which will both be constructed of heavy duty paving.
- Vehicle access for Building 5 will come from SW Itel Street. Truck access can be made from either of the two driveways off SW Itel, which will both be constructed of heavy duty paving.
- Vehicle access for Building 8 will come made from the private drive. Truck access can be made from either of the two driveways off the Drive, which are both heavy-duty paving.

IV. ARCHITECTURAL REVIEW APPROVAL CRITERIA

This application addresses the necessary approval standards of the Tualatin Development Code relevant to Architectural Review for industrial development. As described in the following narrative, the proposal meets the standards of TDC *Chapter 61: General Manufacturing Planning District (MG)* and TDC *Chapter 73: Community Design Standards*.

The following tables identify applicable development standards and how the proposed development satisfies each (see the complete tables on the attached site plans (C2.1 for Building 1 and C2.1 for buildings 5 and 8) for full calculations).

Table IV.2 Development Standards

	City of Tualatin (MG District)	Proposed (Bldgs 1, 5, 8)
Setback Requirements Front Yard Side Yard Rear Yard	 30' 0' 0'	(from property line to building) 67' minimum 70' minimum 0' minimum (trash enclosures)
Parking and Circulation	10' (adjacent to 115th and Itel) 5' (when internal)	24' minimum
Maximum Structure Height	60'	42'
Landscaping	15% of total site area	28.1% of total site area
Minimum Parking (per 1,000 GSF) Warehousing Manufacturing	 0.3 1.6	Warehousing: Cannot be calculated Manufacturing: Cannot be calculated Average: 1.23
Maximum Parking (per 1,000 GSF) Warehousing Manufacturing	<u>Zone B</u> 0.5 None	
Minimum Bicycle Parking	Warehousing/Manufacturing: 2, or 0.1 per 1,000 GSF, whichever is greater	32
Percentage of Bicycle Parking to be Covered	First 5 spaces or 30% of parking spaces, whichever is greater	31.3%

For the purposes of determining parking ratios, the future tenant spaces of Building 1 have been estimated based on a likely mix of uses (warehousing and manufacturing). The minimum parking ratio has been met and exceeded to ensure that the development can serve its future tenants and allow for flexibility, since the tenants are unknown at this time. Buildings 5 and 8 are expected to serve primarily manufacturing use tenants.

Chapter 61: General Manufacturing Planning District

Section 61.020 Permitted Uses

No building, structure or land shall be used, except for the following uses as restricted in TDC 61.021.

(1) All uses permitted by TDC 60.020 in the Light Manufacturing Planning District.

Response: The future proposed uses associated with this development are manufacturing and warehousing; these uses are allowed in the MG district. While future tenants have not been identified, it is known that the development will serve warehousing and manufacturing uses. This standard is met.

Section 61.050 Lot Size

Except for lots for public utility facilities, natural gas pumping stations and wireless communication facility which shall be established through the Subdivision, Partition or Lot Line Adjustment process, the following requirements shall apply:

(1) The minimum lot area shall be 20,000 square feet.
(2) The minimum lot width shall be 100 feet.
(3) The minimum average lot width at the building line shall be 100 feet.
(4) The minimum lot width at the street shall be 100 feet.
(5) For flag lots, the minimum lot width at the street shall be sufficient to comply with at least the minimum access requirements contained in TDC 73.400(8) to (12).
(6) The minimum lot width at the street shall be 50 feet on a cul-de-sac street.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), all lots meet the current dimensional standards for the MG zone. A separate Property Line Adjustment will be submitted through City of Tualatin Engineering for the consolidation of the three lots for Building 1; this future lot will also meet the lot size requirements. This standard is met.

Section 61.060 Setback Requirements

(1) Front yard. The minimum setback is 30 feet. When the front yard is across the street from a residential or Manufacturing Park (MP) district, a front yard setback of 50 feet is required. When a fish and wildlife habitat area is placed in a Tract and dedicated to the City at the City's option, dedicated in a manner approved by the City to a non-profit conservation organization or is retained in private ownership by the developer, the minimum setback is 10 – 30 feet, as determined in the Architectural Review process, with the exception of front yards across the street from a residential or MP District, provided the buildings are located farther away from fish and wildlife habitat areas.

Response: This proposal is for an Architectural Review. Front yard setbacks will be determined by this process. This standard is met.

(2) Side yard. The minimum setback is 0 to 50 feet, as determined through the Architectural Review process. When the side yard is adjacent to a property line or across the street from a residential or Manufacturing Park (MP) District, a side yard setback of 50 feet is required.

Response: This proposal is for an Architectural Review. Side yard setbacks will be determined by this process. This standard is met.

(3) Rear yard. The minimum setback is 0 to 50 feet, as determined through the Architectural Review process. When the rear yard is adjacent to a property line or across the street from a residential or Manufacturing Park (MP) District, a rear yard setback of 50 feet is required.

Response: This proposal is for an Architectural Review. Rear yard setbacks will be determined by this process. This standard is met.

(4) Corner lot yards. The minimum set-back is the maximum setback prescribed for each yard for a sufficient distance from the street intersections and driveways to provide adequate sight distance for vehicular and pedestrian traffic at intersections and driveways, as determined through the Architectural Review process.

Response: This proposal is for an Architectural Review. The corner lot yard setbacks (for Building 1, located on a corner lot) will be determined by this process. This standard is met.

(5) The minimum parking and circulation area setback is 5 feet, except when a yard is adjacent to public streets or Residential or Manufacturing Park District, the minimum setback is 10 feet. No setback is required from lot lines within ingress and egress areas shared by abutting properties in accordance with TDC 73.400(2).

Response: As shown in the attached plans, the minimum proposed parking and circulation area setback is 13.8'. This standard is met.

(6) No spur rail trackage shall be permitted within 200 feet of an adjacent residential district.

Response: The proposed development does not include rail spur trackage. This standard does not apply.

(7) No setbacks are required at points where side or rear property lines abut a rail-road right-of-way or spur track.

Response: The property lines do not abut a rail right-of-way or spur track. This standard does not apply.

(8) No fence shall be constructed within 10 feet of a public right-of-way.

Response: No fences are proposed in the proposed development. This standard does not apply.

(9) Setbacks for a wireless communication facility shall be established through the Architectural Review process, shall consider TDC 73.510, shall be a minimum of 5 feet, and shall be set back from an RL District, or an RML District with an approved small lot subdivision, no less than 175 feet for a monopole that is no more than 35 feet in height and the setback shall increase five feet for each one foot increase in height up to 80 feet in height, and the setback shall increase 10 feet for each one foot increase in height above 80 feet.

Response: The proposed development does not include a wireless communication facility. This standard does not apply.

Chapter 73: Community Design Standards

Architectural Review Approval

Section 73.050 Criteria and Standards

(1) In exercising or performing his or her powers, duties, or functions, the Planning Director shall determine whether there is compliance with the following:

(a) The proposed site development, including the site plan, architecture, landscaping, parking and graphic design, is in conformance with the standards of this and other applicable City ordinances insofar as the location, height, and appearance of the proposed development are involved;

(b) The proposed design of the development is compatible with the design of other developments in the general vicinity; and

(c) *The location, design, size, color and materials of the exterior of all structures are compatible with the proposed development and appropriate to the design character of other developments in the vicinity.*

Response: The proposed development is consistent with the existing industrial development on all sides, all zoned MG and similarly developed. The proposed development has been designed as a high-quality and long lasting development, similar to other PacTrust properties. The development will be compatible with future surrounding industrial properties. As shown below and on the enclosed plans, the proposed development meets the applicable standards of the City of Tualatin Development Code. This standard is met.

(2) *In making his or her determination of compliance with the above requirements, the Planning Director shall be guided by the objectives and standards set forth in this chapter. If the architectural review plan includes utility facilities or public utility facilities, then the City Engineer shall determine whether those aspects of the proposed plan comply with applicable standards.*

Response: This application includes architectural features as well as utility facilities and public improvements. Mackenzie has worked closely with the City of Tualatin to plan utilities in a manner consistent with City code and beneficial for both the subject site and the surrounding area. This standard is met.

(3) *In determining compliance with the requirements set forth, the Planning Director shall consider the effect of his or her action on the availability and cost of needed housing...*

Response: The proposed development does not include housing. This standard does not apply.

(4) *As part of Architectural Review, the property owner may apply for approval to cut trees in addition to those allowed in TDC 34.200. The granting or denial of a tree cutting permit shall be based on the criteria in TDC 34.230.*

Response: The development will make use of a previously developed site that has been mass graded and improved as part of the Koch Corporate Development. There are no existing trees on the development site except for the six 3" caliper trees along the private drive north of proposed Building 8, which will be preserved if possible, but which may need to be removed and replaced. It is assumed that no tree cutting permit or Architectural Review approval will be required for these trees if they are required to be removed, since they are smaller than the 8" caliper size regulated by TDC Chapter 34. This standard does not apply.

(5) *Conflicting Standards. In addition to the MUCOD requirements, the requirements in TDC Chapter 73 (Community Design Standards) and other applicable Chapters apply…*

Response: The subject site is not within the MUCOD. This standard does not apply.

Design Standards

Section 73.150 Objectives

All commercial, industrial, public and semi-public projects should strive to meet the following objectives to the maximum extent practicable. Architects and developers should consider these elements in designing new projects. In the Central Design District, the Design Guidelines of TDC 73.610 shall be considered. In the case of conflicts between objectives, the proposal shall provide a desirable balance between the objectives. Site elements shall be placed and designed, to the maximum extent practicable, to:

(1) Provide convenient walkways and crosswalks which separate pedestrians from vehicles and link primary building entries to parking areas, other on-site buildings and the public right-of-way.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 5' to 6.5' wide concrete and striped walkways will be provided between primary building entries, parking areas, sidewalks on both sides of SW Itel Street and SW 115th Avenue, and the abutting private drive (some connections via existing sidewalks and walkways on adjacent property on the same site). This objective is met.

(2) Avoid barriers to disabled individuals.

Response: As shown in the attached plans, barriers to disabled individuals will be avoided and ADA and local codes will be met to provide adequate facilities. This objective is met.

(3) Locate and design drive-through facilities in a manner which does not conflict with pedestrian routes or other vehicular circulation and minimizes adverse impacts on adjacent properties.

Response: The proposed development does not include drive-through facilities. This objective does not apply.

(4) Break up parking areas with landscaping (trees, shrubs and walkways) and buildings to lessen the overall impact of large paved areas.

Response: As shown in the attached Civil and Landscape plans, parking areas will be broken up by landscaping and walkways across the three lots. This objective is met.

(5) Utilize landscaping in parking areas to direct and control vehicular movement patterns, screen headlights from adjacent properties and streets, and lessen the visual dominance of pavement coverage.

Response: As shown in the attached Civil and Landscape plans, landscaping shapes in parking areas will provide structure and direction for vehicular movement, as well as screening from headlights, across the three lots. This objective is met.

(6) Provide vehicular connections to adjoining sites.

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), convenient vehicular connections will be available between proposed buildings 5 and 8 and existing buildings 6 and 7. This objective is met.

(7) Emphasize entry drives into commercial complexes and industrial park developments with special design features, such as landscaped medians, water features and sculptures.

Response: As shown in the attached plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), landscaping will emphasize the entries to all three lots. This objective is met.

(8) Locate, within parking lots, pedestrian amenities and/or landscaping in areas which are not used for vehicle maneuvering and parking.

Response: As shown in the attached Civil and Landscape plans, parking areas will be broken up by landscaping and walkways across the three lots. This objective is met.

(9) Encourage outdoor seating areas which provide shade during summer and sun during winter, trash receptacles and other features for pedestrian use. Plantings with a variety of textures and color are encouraged.

Response: This proposal is for industrial development, and no areas for pedestrian lingering are safe or proposed. However, as shown in the attached plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for

Building 5, and L-1 for Building 8), plantings with a variety of textures will be included. This objective does not apply but is met as much as practical.

(10) Create opportunities for, or areas of, visual and aesthetic interest for occupants and visitors to the site.

Response: This proposal is for industrial development, and no areas for pedestrian visiting are safe or proposed. This objective does not apply.

(11) Conserve, protect and restore fish and wildlife habitat areas, and maintain or create visual and physical corridors to adjacent fish and wildlife habitat areas.

Response: There are no fish or wildlife habitat areas on any of the lots. This objective does not apply.

(12) Provide safe pathways for pedestrians to move from parking areas to building entrances.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 5' to 6.5' wide concrete and striped walkways will be provided between primary building entries, parking areas, sidewalks on both sides of SW Itel Street and SW 115th Avenue, and the abutting private drive (some connections via existing sidewalks and walkways on adjacent property on the same site). This objective is met.

(13) Design the location of buildings and the orientation of building entrances for commercial, public and semi-public uses such as churches, schools and hospitals to provide adequate pedestrian circulation between buildings and to provide preferential access for pedestrians to existing or planned transit stops and transit stations.

Response: The proposed development does not include commercial, public, or semi-public uses. This objective does not apply.

(14) Provide accessways between commercial, public and semi-public development and publicly-owned land intended for general public use; arterial and collector streets where a transit stop and/or a bike lane is provided or designated; and abutting residential, commercial and semi-public property.

Response: The proposed development does not include commercial, public, or semi-public uses. This objective does not apply.

(15) Provide accessways between industrial development and abutting greenways where a bikeway or pedestrian path is provided or designated.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), accessways will be provided between the proposed industrial buildings and the future trail when it is developed by others. Exact locations can be identified at that time, but potential locations are shown on the site plans. This objective is met.

(16) Accessways should be designed and located in a manner which does not restrict or inhibit opportunities for developers of adjacent properties to connect with an accessway, and provide continuity from property to property for pedestrians and bicyclists to use the accessway.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), accessways will be provided between the proposed industrial buildings and the future trail when it is developed by others. Exact locations can be identified at that time, but potential locations are shown on the site plans and will not affect, restrict, or inhibit development opportunities for adjacent properties. This objective is met.

(17) Provide preferential parking for carpool and vanpools to encourage employees to participate in carpools and vanpools.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), carpool/vanpool will be provided. These spaces will be provided at the rates required by 73.370.3., as addressed in that section of this narrative. This objective is met.

(18) Screen elements such as mechanical and electrical equipment, above ground sewer or water pump stations, pressure reading stations and water reservoirs from view.

Response: As shown on the attached plans, no on-grade electrical or mechanical equipment is proposed. This portion of this objective (and 73.160.4.a.) does not apply. The proposed development does not include any pump stations, reading stations, or water reservoirs; this portion of this objective (and 73.160.4.c.) does not apply.

(19) Parking structure exteriors and underground parking should be designed to be harmonious with surrounding buildings and architecturally compatible with the treatment of buildings they serve.

Response: The proposed development does not include any parking structures or underground parking. This objective does not apply.

(20) When a fish and wildlife habitat area abuts or is on the subject property the applicant and decision authority for a development application should consider locating buildings farther away from the fish and wildlife habitat area.

Response: No fish and wildlife habitat area abuts or is on the subject property. This objective does not apply.

Section 73.160 Standards

(1) Pedestrian and Bicycle Circulation:

(b) For Industrial Uses:

(i) a walkway shall be provided from the main building entrance to sidewalks in the public right-of-way and other on-site buildings and accessways. The walkway shall be a minimum of 5 feet wide and constructed of concrete, asphalt, or a pervious surface such as pavers or grasscrete, but not gravel or woody material, and be ADA compliant, if applicable.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 5' to 6.5' wide concrete and striped walkways will be provided between primary building entries, parking areas, sidewalks on both sides of SW Itel Street and SW 115th Avenue, and the abutting private drive (some connections via existing sidewalks and walkways on adjacent property on the same site). Walkways will be ADA compliant. This standard is met.

(ii) Walkways through parking areas, drive aisles and loading areas shall have a different appearance than the adjacent paved vehicular areas.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 6' to 6.5' wide striped walkways will be provided where the route crosses drive aisles. This standard is met.

(iii) Accessways shall be provided as a connection between the development's walkway and bikeway circulation system and an adjacent bike lane;

Response: There is a bike lane on SW 115th Avenue. As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), access for bicycle riders is available via the proposed vehicle driveways or pedestrian walkways. This standard is met.

(iv) Accessways may be gated for security purposes;
Response: Accessways are not proposed to be gated.

(v) Outdoor Recreation Access Routes shall be provided between the development's walkway and bikeway circulation system and parks, bikeways and greenways where a bike or pedestrian path is designated.
Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), accessways will be provided between the proposed industrial buildings and the future trail when it is developed by others. Exact locations can be identified at that time, but potential locations are shown on the site plans. This standard is met.

(c) Curb ramps shall be provided wherever a walkway or accessway crosses a curb.
Response: Curb ramps will be provided where the walkway crosses a curb or drive aisle, as shown on the attached site plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8). This standard is met.

(d) Accessways shall be a minimum of 8 feet wide and constructed in accordance with the Public Works Construction Code if they are public accessways, and if they are private access-ways they shall be constructed of asphalt, concrete or a pervious surface such as pervious asphalt or concrete, pavers or grasscrete, but not gravel or woody mate-rial, and be ADA compliant, if applicable.
Response: No public accessways are proposed. As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 5' to 6.5' wide concrete and striped walkways will be provided between primary building entries, parking areas, sidewalks on both sides of SW Itel Street and SW 115th Avenue, and the abutting private drive (some connections via existing sidewalks and walkways on adjacent property on the same site).This standard is met.

(e) Accessways to undeveloped parcels or undeveloped transit facilities need not be constructed at the time the subject property is developed. In such cases the applicant for development of a parcel adjacent to an undeveloped parcel shall enter into a written agreement with the City guaranteeing future performance by the applicant and any successors in interest of the property being developed to construct an accessway when the adjacent undeveloped parcel is developed. The agreement shall be subject to the City's re-view and approval.
Response: No accessways to undeveloped parcels or transit facilities are required or proposed. This standard does not apply.

(f) Where a bridge or culvert would be necessary to span a designated greenway or wetland to provide a connection to a bike or pedestrian path, the City may limit the number and location of accessways to reduce the impact on the greenway or wetland.
Response: There are no wetlands on the site. This standard does not apply.

(g) Accessways shall be constructed, owned and maintained by the property owner.
Response: All accessways will be constructed, owned, and maintained by the applicant. This standard is met.

(2) Drive-up Uses

Response: The use proposed does not include a drive-up facility. This section does not apply.

(3) Safety and Security

(a) Locate windows and provide lighting in a manner which enables tenants, employees and police to watch over pedestrian, parking and loading areas.

Response: In order to create a safe environment, the proposed development includes exterior building lighting as well as parking lot lighting (see attached site plans C2.1 for Building 1 and C2.1 for buildings 5 and 8 and lighting cut sheets). As shown in the attached architectural plans (A3.1 for Building 1 and A3.1 for buildings 5 and 8), windows will be located on at least three elevations of all buildings, thus facing all parking areas and facing as many pedestrian, drive aisle, and loading areas as possible. This standard is met.

(b) In commercial, public and semi-public development and where possible in industrial development, locate windows and provide lighting in a manner which enables surveillance of interior activity from the public right-of-way.

Response: The proposed industrial development will be oriented to the street and public rights-of-way along SW 115th Avenue and SW Itel Street, and to the private street to the north; on building frontages along these streets, additional storefront window systems will allow building users the ability to view abutting pedestrian and parking areas. Windows will be visible from the sidewalks. In addition (see lighting plans (SL1 for Building 1 and SL1 for buildings 5 and 8), site lighting will illuminate the building frontages and the parking area in between the building and right-of-way. This standard is met.

(c) Locate, orient and select on-site lighting to facilitate surveillance of on-site activities from the public right-of-way without shining into public rights-of-way or fish and wildlife habitat areas.

Response: No fish or wildlife habitat areas exist near the site. As shown on the lighting plan (SL1 for Building 1 and SL1 for buildings 5 and 8), site lighting will illuminate the buildings, loading areas, and parking areas, allowing these areas to be seen from the right-of-way. This standard is met.

(d) Provide an identification system which clearly locates buildings and their entries for patrons and emergency services.

Response: As shown in the attached plans (see A2.1 for Building 1 and A2.1 for buildings 5 and 8), building addresses will be mounted at building corners near entrances, clearly visible for building users and from the adjacent rights of way. Building and site signage (through separate applications) will clearly identify tenant entrances for visitors and site users. This standard is met.

(e) Shrubs in parking areas must not exceed 30 inches in height. Tree canopies must not extend below 8 feet measured from grade.

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), landscaping in the parking areas will meet these standards. No trees will be planted in clear vision areas, and shrub species in vision clearance areas of the parking area will be no higher than 30". This standard is met.

(f) Above ground sewer or water pumping stations, pressure reading stations, water reservoirs, electrical substations, and above ground natural gas pumping stations shall provide a minimum 6' tall security fence or wall.

Response: The proposed development does not include any of these elements. This standard does not apply.

(4) Service, Delivery and Screening

(a) On and above grade electrical and mechanical equipment such as transformers, heat pumps and air conditioners shall be screened with sight obscuring fences, walls or landscaping.

Response: As shown in the attached plans, no on-grade electrical or mechanical equipment is proposed. As shown on the attached plans (see A2.1 for Building 1 and A2.1 for buildings 5 and 8), all mechanical units will be placed at least 20' back from the edge of the roof, concealed from the line of sight from the street level. This standard does not apply, but is met.

(b) Outdoor storage, excluding mixed solid waste and source separated recyclables storage areas listed under TDC 73.227, shall be screened with a sight obscuring fence, wall, berm or dense evergreen landscaping.

Response: The proposed development does not include any outdoor storage except trash and recycling enclosures. This standard does not apply.

(c) Above ground pumping stations, pressure reading stations, water reservoirs; electrical substations, and above ground natural gas pumping stations shall be screened with sight-obscuring fences or walls and landscaping.

Response: The proposed development does not include any of these elements. This standard does not apply.

(5) The Federal Americans with Disabilities Act (ADA) applies to development in the City of Tualatin. Although TDC, Chapter 73 does not include the Oregon Structural Specialty Code' s (OSSC) accessibility standards as requirements to be reviewed during the Architectural Review process, compliance with the OSSC is a requirement at the Building Permit step. It is strongly recommended all materials submitted for Architectural Review show compliance with the OSSC.

Response: The site plan and building are generated with the knowledge that ADA and OSSC standards must be met during the building permit process. This standard is met.

(6) (a) All industrial, institutional, retail and office development on a transit street designated in TDC Chapter 11 (Figure 11-5) shall provide either a transit stop pad on-site, or an on-site or public sidewalk connection to a transit stop along the subject property's frontage on the transit street.

Response: The proposed project is not on a transit street. This standard does not apply.

(b) In addition to (a) above, new retail, office and institutional uses abutting major transit stops as designated in TDC Chapter 11 (Figure 11-5) shall…

Response: The site is not abutting a major transit stop shown in the figure. This standard does not apply.

Section 73.210 Objectives

All commercial, industrial, public and semi-public projects should strive to meet the following objectives to the maximum extent practicable. Architects and developers should consider these elements in designing new projects. In the Central Design District, the Design Guidelines of TDC 73.610 shall be considered. In case of conflicts between objectives, the proposal shall provide a desirable balance between the objectives. Buildings shall be designed, to the maximum extent practicable, to:

(1) Minimize disruption of natural site features such as topography, trees and water features.

Response: The site has been mass graded and improved as part of the Koch Corporate Development. There are no natural features such as water features or trees on the site. The site's natural features were disturbed during the original development of previous phases of the site's development, and no further disruption will occur. This objective is met.

(2) Provide a composition of building elements which is cohesive and responds to use needs, site context, land form, a sense of place and identity, safety, accessibility and climatic factors. Utilize functional building elements such as arcades, awnings, entries, windows, doors, lighting, reveals, accent features and roof forms, whenever possible, to accomplish these objectives.

Response: Generous glazing along the street-facing façades, in combination with extruded storefront entrance systems, will clearly highlight the main entrances for the buildings. Additional windows will be provided along the corner façades to emphasize corners and provide visual interest where potential office areas may occur. All proposed window areas will allow building users to view the abutting parking areas. Other building elements, such as reveals, roof forms, and parapets, will be consistent among the Koch Corporate Center and similar to other industrial buildings in Tualatin, and will create a cohesive design. The reveals will be spaced to create a human scale, align with building elements, create an overall balanced façade, and will be consistent between the three buildings. The roof forms will be screened by the parapets; that look will be cohesive amongst other tilt concrete buildings in the area. This objective is met.

(3) Where possible, locate loading and service areas so that impacts upon surrounding areas are minimized. In industrial development loading docks should be oriented inward to face other buildings or other loading docks. In commercial areas loading docks should face outward towards the public right-of-way or perimeter of the site or both.

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), the loading areas for Building 1 will be located along the north side of the building, with access to SW Itel Street. The loading and service areas for Buildings 5 and 8 will be oriented toward each other, internal to the development. Loading docks will be accessed primarily via SW Itel Street and the private street to the north of Building 8. This objective is met.

(4) Enhance energy efficiency in commercial and industrial development through the use of landscape and architectural elements such as arcades, sunscreens, lattice, trellises, roof overhangs and window orientation.

Response: The provided landscape will improve energy efficiency for the three buildings; where possible, trees will be located on the south and west sides of the buildings to provide shade. Modern, efficient insulation will be used in all buildings according to the ComCheck energy modeling tool, in compliance with the Oregon Energy Code. This objective is met.

(5) Locate and design entries and loading/service areas in consideration of climatic conditions such as prevailing winds, sun and driving rains.

Response: As shown in the attached plans, entries and loading/service areas will be located along the wide sides of buildings for function and accessibility, screened from view by landscaping and/or other buildings. This objective is met.

(6) Give consideration to organization, design and placement of windows as viewed on each elevation having windows. Surveillance over parking areas from the inside, as well as visual surveillance from the outside in, should be considered in window placement.

Response: As shown in the attached architectural plans, in order to create a safe environment, windows will be located on at least three elevations of all buildings, thus facing all parking areas and facing as

many pedestrian, drive aisle, and loading areas as possible. Windows will be visible from walkways. This objective is met.

(7) Select building materials which contribute to the project's identity, form and function, as well as to the surrounding environment.

Response: The building materials (concrete tilt-up with reveals, storefront window glazing, and decorative elements such as paint schemes emphasizing the entrances and storefront) are typical of and suitable for similar industrial buildings in the region and area. The materials contribute to the industrial identity of the area with the surrounding industrial uses while providing an attractive site to future warehouse and manufacturing tenants and users. See attached colored perspectives (Exhibit I) for renderings. This objective is met.

(8) Select colors in consideration of lighting conditions and the context under which the structure is viewed, the ability of the material to absorb, reflect or transmit light and the color's functional role (e.g., to identify and attract business, aesthetic reasons, image-building).

Response: The warm tan color scheme selected for the proposed buildings will create a visually appealing development. The color selection and placement will create a visual balance and add emphasis to the entrances and storefronts of the three buildings. See attached colored perspectives (Exhibit I) for renderings. This objective is met.

(9) Where possible, locate windows and provide lighting in a manner which enables tenants, employees and police to watch over pedestrian, parking and loading areas.

Response: As shown in the attached architectural plans, in order to create a safe environment, windows will be located on at least three elevations of all buildings, thus facing all parking areas and facing as many pedestrian, drive aisle, and loading areas as possible. Windows will be visible from walkways. This objective is met.

(10) Where practicable locate windows and provide lighting in a manner which enables surveillance of interior activity from the public right-of-way or other public areas.

Response: As shown in the attached architectural plans, in order to create a safe environment, windows will be located on at least three elevations of all buildings, thus facing all parking areas and facing as many pedestrian, drive aisle, and loading areas as possible. Windows will be visible from walkways. In addition, exterior lighting will be located around the buildings at strategic locations to provide lighting at walkways and near building windows, allowing pedestrians and other users of the right-of-way to clearly view the buildings and dock areas (see attached lighting plans, SL1 for Building 1 and SL1 for buildings 5 and 8). This objective is met.

Section 73.220 Standards

(1) Safety and Security

(a) Locate, orient and select on-site lighting to facilitate surveillance of on-site activities from the public right-of-way or other public areas without shining into public rights-of-way or fish and wildlife habitat areas.

Response: As shown in the attached plans, all buildings will be oriented toward street frontages. In order to create a safe environment, the proposed development includes exterior building lighting as well as parking lot lighting (see attached lighting plan (SL1 for Building 1 and SL1 for buildings 5 and 8) and lighting cut sheets). Site lighting will illuminate the building frontages and the parking area in between the building and right-of-way. No fish or wildlife habitat areas exist near the site. This standard is met.

(b) Provide an identification system which clearly identifies and locates buildings and their entries.

Response: Building addresses will be mounted at building corners near entrances, clearly visible for building users and from the adjacent rights of way. Separate applications for building and site signage will clearly identify tenant entrances for visitors and site users. This standard is met.

(c) Shrubs in parking areas shall not exceed 30 inches in height, and tree canopies must not extend below 8 feet measured from grade, …

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), landscaping in the parking areas will meet these standards. Tree canopies will be maintained to be no lower than 8' at grade, and shrub species in vision clearance areas of the parking area will be no higher than 30". This standard is met.

Section 73.226 Objectives

All new or expanded multi-family, including townhouses, commercial, industrial, public and semi-public projects should strive to meet the following objectives to the maximum extent practicable. Architects and developers should consider these elements in designing new projects. In the Central Design District, the Design Guidelines of TDC 73.610 shall be considered. In the case of conflicts between objectives, the proposal shall provide a desirable balance between the objectives. Townhouses may necessitate a different balancing than multi-family developments such as apartments. Mixed solid waste and source separated recyclable storage areas shall be designed to the maximum extent practicable, to:

(1) Screen elements such as garbage and recycling containers from view.

Response: As shown on the attached plans, six trash/recycling areas are proposed for the buildings (two per building or one per potential future tenant space), providing easy access and maneuverability for the solid waste hauler. These will be placed to the interior of the lots within the loading and maneuvering areas or to the rear of the building (Building 1) and will be screened by sight-obscuring painted concrete tilt-up walls and metal gates as well as sight-obscuring evergreen shrubs (in accordance with 73.227(6)(b)(iii), as addressed in that section of this narrative). This objective is met.

(2) Ensure storage areas are centrally located and easy to use.

Response: As shown on the attached plans, trash enclosures will be located across the lots, two per building or one per potential future tenant space, providing convenient access for both building users and the trash hauler. The trash enclosures will be located near entrance doors, loading areas, and parking areas and drive aisles, and have been approved by Republic Services (see Exhibit G, letter from Frank Lonergan). This objective is met.

(3) Meet dimensional and access requirements for haulers.

Response: Republic Services, the trash hauler for the proposed development, requires 20'x10' enclosures with no center posts, in addition to 35"–40" openings for glass carts and user access. Trash containers will be typically 3–4 cubic yard size and be 8' wide and 4'–5' deep. As shown on the attached plans (see details on A8.5 for Building 1 and A8.5 for buildings 5 and 8), trash enclosures will be 14' by 20', and will include 4' wide openings for carts and pedestrian users. These have been approved by Republic Services (see Exhibit G, letter from Frank Lonergan). This objective is met.

(4) Designed to mitigate the visual impacts of storage areas.

Response: As shown on the attached plans, trash enclosures will be placed to the interior or rear of the lots within the loading and maneuvering areas and will be screened by sight-obscuring painted concrete tilt-up walls and metal gates as well as sight-obscuring evergreen shrubs. This objective is met.

(5) Provide adequate storage for mixed solid waste and source separated recyclables.

Response: As shown, the trash enclosures will accommodate both recycling, glass recycling, and garbage containers. All trash enclosures will accommodate typical Republic Services trash and recycling containers (trash containers will be typically 8' wide and 4'–5' deep). This objective is met. Per City standards, 10 SF of garbage storage per 1,000 SF of building will be provided for each building, as described in Section 73.227.(2)(a)(v) , and have been approved by Republic Services (see Exhibit G, letter from Frank Lonergan). This objective is met.

(6) Improve the efficiency of collection of mixed solid waste and source separated recyclables.

Response: According to Republic Services and City standards, the trash enclosures are designed to efficiently accommodate both trash and recycling containers, and allow convenient access by hauler vehicles. These have been approved by Republic Services (see Exhibit G, letter from Frank Lonergan). This objective is met.

Section 73.227 Standards

(1) The mixed solid waste and source separated recyclables storage standards shall apply to all new or expanded multi-family residential developments containing five or more units and to new or expanded commercial, industrial, public and semi-public development.

Response: The project is a new industrial development. These standards apply and are addressed below. The applicant chose to implement the minimum standards method to demonstrate compliance.

(2) Minimum Standards Method.

(a) The size and location of the storage area(s) shall be indicated on the site plan. Compliance with the requirements set forth below are reviewed through the Architectural Review process.

(i) The storage area requirement is based on the area encompassed by predominant use(s) of the building (e.g., residential, office, retail, wholesale/warehouse/ manufacturing, educational/institutional or other) as well as the area encompassed by other distinct uses. If a building has more than one use and that use occupies 20 percent or less of the gross leasable area (GLA) of the building, the GLA occupied by that use shall be counted toward the floor area of the predominant use(s). If a building has more than one use and that use occupies more than 20 percent of the GLA of the building, then the storage area requirement for the whole building shall be the sum of the area of each use.

Response: As shown on the attached plans, each building is expected to contain tenants of a mix of uses, although no specific tenants are yet known. The calculation below in section 73.227(2)(a)(v) explains the required solid waste storage area for each building. This standard is met.

(ii) Storage areas for multiple uses on a single site may be combined and shared.

Response: While no tenants are proposed at this time, it is anticipated that buildings 5 and 8 will house primarily manufacturing users and Building 1 will contain a mix of warehouse and manufacturing users. Two to four trash enclosures are proposed for each building. This standard is met.

(iii) The specific requirements are based on an assumed storage area height of 4 feet for mixed solid waste and source separated recyclables. Vertical storage higher than 4 feet, but no higher than 7 feet may be used to accommodate the same volume of storage in a reduced floor space (potential reduction of 43 percent of specific

requirements). Where vertical or stacked storage is proposed, submitted plans shall include drawings to illustrate the layout of the storage area and dimensions for containers.

Response: No stacked or vertical storage is proposed. This standard does not apply.

(iv) Multi-family residential developments containing 5-10 units shall provide a minimum storage area of 50 square feet. Multi-family residential developments containing more than 10 units shall provide 50 square feet plus an additional 5 square feet per unit for each unit above 10.

Response: The project does not include any multi-family residential development. This standard does not apply.

(v) Commercial, industrial, public and semi-public developments shall provide a minimum storage area of 10 square feet plus: Office - 4 square feet/1000 square feet gross leasable area (GLA); Retail - 10 square feet/1000 square feet GLA; Wholesale/ Warehouse/ Manufacturing - 6 square feet/1000 square feet GLA; Educational and institutional - 4 square feet/1000 square feet GLA; and other - 4 square feet/1000 square feet GLA.

Response: As shown in the table below and in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8 and details on A8.5 for Building 1 and A8.5 for buildings 5 and 8), trash enclosure requirements vary by building and use, but tenants of each building will share trash enclosures. The enclosures proposed will be more than adequate and are far more than are required for each building and use. This standard is met.

Trash Enclosure Requirements			
	Use	Trash Enclosures (SF)	
		Required: 6 SF per 1,000 SF Building Area	Provided
Building 1	Warehouse/ Manufacturing	1,200	1,200
Building 5	Manufacturing	360	460
Building 8	Manufacturing	281	460
Additional 10 SF		10	
	Total	**1,851**	**2,120**

Trash/recycling areas will be 230 SF to 300 SF in size and will provide easy access and maneuverability for the solid waste hauler. These will be placed to the interior or rear of the lots within the loading and maneuvering areas and will be screened by sight-obscuring painted concrete tilt-up walls and metal gates as well as sight-obscuring arborvitae evergreen shrubs. The local garbage hauler, Republic Services, has reviewed and approved the proposed design (see Exhibit G, letter from Frank Lonergan). This standard is met.

(6) Location, Design and Access Standards for Storage Areas.

(a) Location Standards

(i) To encourage its use, the storage area for source separated recyclables may be co-located with the storage area for mixed solid waste.

Response: As shown in the attached plans (see details on A8.5 for Building 1 and A8.5 for buildings 5 and 8), the trash enclosure areas will include space for recyclables as well as trash. This standard is met.

(ii) Indoor and outdoor storage areas shall comply with Building and Fire Code requirements.

Response: As shown in the attached plans (see details on A8.5 for Building 1 and A8.5 for buildings 5 and 8), the trash enclosure areas will comply with Building and Fire Code requirements and will be constructed entirely of non-combustible materials. This standard is met.

(iii) Storage area space requirements can be satisfied with a single location or multiple locations, and can combine both interior and exterior locations.

Response: As shown in the attached plans and described above, eight trash enclosures will be provided to serve the three buildings; these will all be located in exterior locations. This standard is met.

(iv) Exterior storage areas shall not be located within a required front yard setback or in a yard adjacent to a public or private street.

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), all trash enclosure areas will be located in the loading and drive areas; none are located in the required setbacks or in yards between buildings and the public streets. In addition, all trash enclosures will be screened with evergreen arborvitae shrubs, as shown on the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8). Locations have been approved by Republic Services, as shown in Exhibit G. This standard is met.

(v) Exterior storage areas shall be located in central and visible locations on the site to enhance security for users.

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), all trash enclosure areas will be located in easily accessible, central locations for building users including up to four potential tenants of Building 1. This standard is met.

(vi) Exterior storage areas can be located in a parking area, if the proposed use provides parking spaces required through the Architectural Review process. Storage areas shall be appropriately screened according to TDC 73.227(6)(b)(iii).

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), all trash enclosure areas will be located in the loading and drive areas adjacent to parking areas. All required parking spaces will be provided in the parking lots. Trash enclosures will be screened by sight-obscuring painted concrete tilt-up walls and metal gates as well as sight-obscuring evergreen shrubs. This standard does not apply and is met.

(vii) Storage areas shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on site or on public streets adjacent to the site.

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), all trash enclosure areas will be located in easily accessible locations along internal maneuvering areas; use of these areas will not obstruct the required drive aisle width and no pedestrian paths cross their access areas. According to Republic Services standards, all trash enclosures have at least 50' clearance, so trucks can maneuver easily. This standard is met.

(b) Design Standards

(i) The dimensions of the storage area shall accommodate containers consistent with current methods of local collection at the time of Architectural Review approval.

Response: As shown on the attached plans, and discussed in this narrative, all trash enclosures meet the size requirements of the City and hauler, Republic Services. The proposed development will meet the Minimum Standards method for trash storage, as discussed in this narrative's response to Section 73.227.(2)(A). This standard is met.

(ii) Storage containers shall meet Fire Code standards and be made and covered with water proof materials or situated in a covered area.

Response: Storage containers will be provided by Republic Services and will be standard trash and recyclable storage receptacles, made of and covered with waterproof metal and/or plastic. This standard is met.

(iii) Exterior storage areas shall be enclosed by a sight obscuring fence or wall at least 6 feet in height. In multi-family, commercial, public and semi-public developments evergreen plants shall be placed around the enclosure walls, excluding the gate or entrance openings. Gate openings for haulers shall be a minimum of 10 feet wide and shall be capable of being secured in a closed and open position. A separate pedestrian access shall also be provided in multi-family, commercial, public and semi-public developments.

Response: As shown on the attached plans, trash/recycling areas will be screened by sight-obscuring painted concrete tilt-up walls and metal gates as well as sight-obscuring evergreen shrubs surrounding the trash and recycling units. Gate openings will be 25' wide. The project is not a multi-family, commercial, public, or semi-public development. This standard is met.

(iv) Exterior storage areas shall have either a concrete or asphalt floor surface.

Response: As shown in the attached plans (see details on A8.5 for Building 1 and A8.5 for buildings 5 and 8), the trash enclosures will have concrete footings and concrete slab bases. This standard is met.

(v) Storage areas and containers shall be clearly labeled to indicate the type of material accepted.

Response: Storage containers will be provided by Republic Services and will be standard trash and recyclable storage receptacles, clearly labeled. This standard is met.

(c) Access Standards

(i) Access to storage areas can be limited for security reasons. However, the storage areas shall be accessible to users at convenient times of the day, and to hauler

personnel on the day and approximate time they are scheduled to provide hauler service.

Response: In accordance with Republic Services standards, trash enclosures will have gates that open by up to 180 degrees. Gates can be latched when closed, but storage areas will be accessible to haulers and pedestrians through gates and the pedestrian/cart access openings (staggered closures). This standard is met.

(ii) Storage areas shall be designed to be easily accessible to hauler trucks and equipment, considering paving, grade, gate clearance and vehicle access. A minimum of 10 feet horizontal clearance and 8 feet vertical clearance is required if the storage area is covered.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), the trash enclosure areas will be placed to the interior or rear of the lots within the loading and maneuvering areas and will provide easy access and maneuverability for the solid waste hauler. Trash enclosures will not be covered. This standard is met.

(iii) Storage areas shall be accessible to collection vehicles without requiring backing out of a driveway onto a public street. If only a single access point is available to the storage area, adequate turning radius shall be provided to allow vehicles to safely exit the site in a forward motion.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), no use of the public street will be required for access to any of the trash enclosures. Adequate turning radius will be available for each. This standard is met.

Landscaping

Section 73.240 Landscaping General Provisions

(3) The minimum area requirement for landscaping for uses in CO, CR, CC, CG, ML and MG Planning Districts shall be fifteen (15) percent of the total land area to be developed, except within the Core Area Parking District, where the minimum area requirement for landscaping shall be 10 percent. When a dedication is granted in accordance with the planning district provisions on the subject property for a fish and wildlife habitat area, the minimum area requirement for landscaping may be reduced by 2.5 percent from the minimum area requirement as determined through the AR process.

Response: As shown in the table below and in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), on average across the three lots, 28.1% of the proposed development will be landscaped. This standard is met.

Landscape Coverage				
Use	Warehouse/Distribution/Supporting Office			
	Building 1	Building 5	Building 8	Site Total or Average
Lot Area (SF)	515,100	171,460	184,702	**871,262**
Landscape Area (SF)	116,000	32,473	79,059	**227,532**
Landscape %	22.5%	18.9%	42.8%	**28.1%**

(11) Any required landscaped area shall be designed, constructed, installed, and maintained so that within three years the ground shall be covered by living grass or other plant materials. (The

foliage crown of trees shall not be used to meet this requirement.) A maximum of 10% of the landscaped area may be covered with un-vegetated areas of bark chips, rock or stone. Disturbed soils are encouraged to be amended to an original or higher level of porosity to regain infiltration and stormwater storage capacity.

Response: All landscaped areas will be covered with living plant materials, including trees, shrubs, and groundcover. Bark mulch will cover ground in the landscaped areas between plantings, suppressing weeds and retaining moisture. There are no disturbed soils on the site that need to be amended. This standard is met or does not apply.

(13) Landscape plans for required landscaped areas that include fences should carefully integrate any fencing into the plan to guide wild animals toward animal crossings under, over, or around transportation corridors.

Response: No new fences are proposed for the project. This standard does not apply.

Section 73.250 Tree Preservation

(1) Trees and other plant materials to be retained shall be identified on the landscape plan and grading plan.

Response: No trees, shrubs, groundcover, or vegetation or plant material of any kind will be retained as part of this AR application. This standard does not apply.

(2) During the construction process:

- *(a) The owner or the owner's agents shall provide above and below ground protection for existing trees and plant materials identified to remain.*
- *(b) Trees and plant materials identified for preservation shall be protected by chain link or other sturdy fencing placed around the tree at the drip line.*
- *(c) If it is necessary to fence within the drip line, such fencing shall be specified by a qualified arborist as defined in TDC 31.060.*
- *(d) Neither top soil storage nor construction material storage shall be located within the drip line of trees designated to be preserved.*
- *(e) Where site conditions make necessary a grading, building, paving, trenching, boring, digging, or other similar encroachment upon a preserved tree's drip-line area, such grading, paving, trenching, boring, digging, or similar encroachment shall only be permitted under the direction of a qualified arborist. Such direction must assure that the health needs of trees within the preserved area can be met.*
- *(f) Tree root ends shall not remain exposed.*

Response: No existing trees or plant materials will remain part of this AR application. This standard does not apply.

(3) Landscaping under preserved trees shall be compatible with the retention and health of said tree.

Response: No existing trees or plant materials will remain part of this AR application. This standard does not apply.

(4) When it is necessary for a preserved tree to be removed in accordance with TDC 34.210 the landscaped area surrounding the tree or trees shall be maintained and replanted with trees that relate to the present landscape plan, or if there is no landscape plan, then trees that are complementary with existing, nearby landscape materials. Native trees are encouraged

Response: No existing trees or plant materials will remain part of this AR application. This standard does not apply.

(5) Pruning for retained deciduous shade trees shall be in accordance with National Arborist Association "Pruning Standards For Shade Trees," revised 1979.

Response: There are no existing trees on the site. This standard does not apply.

(6) Except for impervious surface areas, one hundred percent (100%) of the area preserved under any tree or group of trees retained in the landscape plan (as approved through the Architectural Review process) shall apply directly to the percentage of landscaping required for a development.

Response: There are no existing trees on the site. This standard does not apply.

Section 73.260 Tree and Plant Specifications

(1) The following specifications are minimum standards for trees and plants:

(a) Deciduous Trees:
Deciduous shade and ornamental trees shall be a minimum one and one-half inch (1 1/2") caliper measured six inches (6") above ground, balled and burlapped. Bare root trees will be acceptable to plant during their dormant season. Trees shall be characteristically shaped specimens.

(b) Coniferous Trees.
Coniferous trees shall be a minimum five feet (5') in height above ground, balled and burlapped. Bare root trees will be acceptable to plant during their dormant season. Trees shall be well branched and characteristically shaped specimens.

(c) Evergreen and Deciduous Shrubs.
Evergreen and deciduous shrubs shall be at least one (1) to five (5) gallon size. Shrubs shall be characteristically branched. Side of shrub with best foliage shall be oriented to public view.

(d) Groundcovers.
*Groundcovers shall be fully rooted and shall be well branched or leafed. English ivy (*Hedera helix*) is considered a high maintenance material which is detrimental to other landscape materials and buildings and is therefore prohibited.*

(e) Lawns.
Lawns shall consist of grasses, including sod, or seeds of acceptable mix within the local landscape industry. Lawns shall be 100 percent coverage and weed free.

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), the proposed development includes a variety of appropriate landscaping elements including deciduous trees, coniferous trees, evergreen and deciduous shrubs, and groundcovers. No lawns are proposed. As described on the landscape plans, the proposed tree, shrub, and groundcover varieties will meet the dimensional standards and care described above. These standards are met.

(2) Landscaping shall be installed in accordance with the provisions of Sunset New Western Garden Book *(latest edition), Lane Publishing Company, Menlo Park, California or the American Nurserymen Association Standards (latest edition).*

Response: Landscaping will be installed in accordance with the *Sunset New Western Garden Book* standards and has been designed by a professional landscape architect. This standard is met.

(3) The following guidelines are suggested to ensure the longevity and continued vigor of plant materials:

(a) Select and site permanent landscape materials in such a manner as to produce a hardy and drought-resistant landscaped area.

(b) Consider soil type and depth, spacing, exposure to sun and wind, slope and contours of the site, building walls and overhangs, and compatibility with existing native vegetation preserved on the site or in the vicinity.

Response: Hardy, drought-resistant plants, appropriate to the proposed development and region, have been selected. The project contractor will test and amend the soil as needed. These guidelines are addressed.

(4) All trees and plant materials shall be healthy, disease-free, damage-free, well-branched stock, characteristic of the species.

Response: All plant materials will be new and healthy. This standard is met.

(5) All plant growth in landscaped areas of developments shall be controlled by pruning, trimming or otherwise so that:

(a) It will not interfere with designated pedestrian or vehicular access; and

(b) It will not constitute a traffic hazard because of reduced visibility.

Response: The selected plant materials are appropriate for the proposed development and climate and will not interfere with visibility or movement. In clear vision areas, no trees will exist within the 30" to 8' clear area. Responsibility for maintenance of landscaping is accepted by the property owner. This standard is met.

Section 73.270 Grading

(1) After completion of site grading, top-soil is to be restored to exposed cut and fill areas to provide a suitable base for seeding and planting.

Response: Topsoil will be stockpiled during excavation to be used for backfill of landscape areas. Additionally, amendments will be added to the topsoil at that time. This standard is met.

(2) All planting areas shall be graded to provide positive drainage.

Response: As shown on the attached grading plans (see C2.2 for Building 1 and C2.2 for buildings 5 and 8), the proposed development is designed to provide positive drainage to the storm conveyance system or the LIDA basins. Planting areas will be graded consistently with the rest of the lots. This standard is met.

(3) Neither soil, water, plant materials nor mulching materials shall be allowed to wash across roadways or walkways.

Response: All soil, plant, and mulching materials will be contained in landscape areas and surrounded by curbing, and will not cross roadways or walkways. Water on the proposed development's impervious areas will drain directly to storm drains. (See attached plans, C2.2 for Building 1 and C2.2 for buildings 5 and 8.) This standard is met.

(4) Impervious surface drainage shall be directed away from pedestrian walkways, dwelling units, buildings, outdoor private and shared areas and landscape areas except where the landscape area is a water quality facility.

Response: As shown on the attached grading plans (see C2.2 for Building 1 and C2.2 for buildings 5 and 8), drainage on impervious surfaces will be directed to proposed storm drain systems. Catch basins and entry points into the LIDA basins have been placed to minimize overland flow in areas of designated walkways. This standard is met.

Section 73.280 Irrigation System Required

Except for townhouse lots, landscaped areas shall be irrigated with an automatic underground or drip irrigation system.
Response: As shown in the attached plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), the landscaped areas will be irrigated. This standard is met.

Section 73.290 Re-vegetation in Un-landscaped Areas

The purpose of this section is to ensure erosion protection, and in appropriate areas to encourage soil amendment, for those areas not included within the landscape percentage requirements so native plants will be established, and trees will not be lost.

(1) Where vegetation has been removed or damaged in areas not affected by the landscaping requirements and that are not to be occupied by structures or other improvements, vegetation shall be replanted.
Response: The proposed project will make use of a previously developed site; the area was recently mass graded as part of the Koch Corporate Center development. This standard does not apply.

(2) Plant materials shall be watered at intervals sufficient to ensure survival and growth for a minimum of two growing seasons.
Response: No replanted vegetation is proposed as part of this AR application. Any existing vegetation on the site will be removed through the previous demolition and erosion control permits (except the six trees along the private drive, which will be preserved if possible). This standard does not apply.

(3) The use of native plant materials is encouraged to reduce irrigation and maintenance demands.
Response: No replanted vegetation is proposed as part of this AR application. Any existing vegetation on the site will be removed through the previous demolition and erosion control permits (except the six trees along the private drive, which will be preserved if possible). This standard does not apply.

(4) Disturbed soils should be amended to an original or higher level of porosity to regain infiltration and stormwater storage capacity.
Response: There are no disturbed soils on the site that need to be amended. This standard does not apply.

Section 73.310 Landscape Standards – Commercial, Industrial, Public and Semi-Public Uses

(1) A minimum 5'-wide landscaped area must be located along all building perimeters which are viewable by the general public from parking lots or the public right-of-way, excluding loading areas, bicycle parking areas and pedestrian egress/ingress locations…
Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), a minimum 5' wide landscaped area will be constructed around all building perimeters facing the right-of-way and parking lots. This standard is met.

(2) Areas exclusively for pedestrian use that are developed with pavers, bricks, etc., and contain pedestrian amenities, such as benches, tables with umbrellas, children's play areas, shade trees, canopies, etc., may be included as part of the site landscape area requirement.
Response: The provided walkways will be exclusively for pedestrian use, and will contain amenities such as shade trees. These are included in the landscape area requirement. This standard is understood.

(3) All areas not occupied by buildings, parking spaces, driveways, drive aisles, pedestrian areas or undisturbed natural areas shall be landscaped.

Response: As shown on the attached plans, all areas not identified above are proposed to be landscaped with a variety of materials. This standard is met.

Off-Street Parking Lot Landscaping

Section 73.320 Off-Street Parking Lot Landscaping Standards

(2) Application. Off-street parking lot landscaping standards shall apply to any surface vehicle parking or circulation area.

Response: As shown on the attached landscape plans, all vehicle parking and circulation areas will be landscaped to off-street parking lot landscaping standards and meet the above goals. This standard is met.

Section 73.340 Off-Street Parking Lot and Loading Area Landscaping - Commercial, Industrial, Public and Semi-Public Uses, and Residential and Mixed Use Residential Uses within the Central Design District

(1) A clear zone shall be provided for the driver at ends of on-site drive aisles and at driveway entrances, vertically between a maximum of 30 inches and a minimum of 8 feet as measured from the ground level, ….

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), landscaping in the parking areas will meet these standards. No trees will be planted in the vision clearance area, and shrub species in vision clearance areas of the parking area will be no higher than 30". This standard is met.

(2) Perimeter site landscaping of at least 5 feet in width shall be provided in all off-street parking and vehicular circulation areas (including loading areas). For conditional uses in multifamily residential planning districts the landscape width shall be at least 10 feet except for uses allowed by TDC 40.030(3), 40.030(5)(j), 40.030(5)(m), 40.030(5)(n) and 41.030(2).

Response: As shown in the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), perimeter landscape areas of more than 13' to more than 80’ will be provided around all parking, circulation, and loading areas. This standard is met.

(a) The landscape area shall contain:

(i) Deciduous trees an average of not more than 30 feet on center. The trees shall meet the requirements of TDC 73.360(7).

(ii) Plantings which reach a mature height of 30 inches in three years which provide screening of vehicular headlights year round.

(iii) Shrubs or ground cover, planted so as to achieve 90 percent coverage within three years.

(iv) Native trees and shrubs are encouraged.

Response: As shown on the attached landscape plans, landscape areas will contain a mix of all of the above plantings. Deciduous trees will be planted in every landscape island. Shrubs (of a variety that will reach a mature height of 30" or more in three years) and ground cover will be spaced appropriately to achieve at least 90% coverage within three years. Plantings will include a mixture of native and drought-tolerant appropriate plants to achieve biodiversity and longevity. This standard is met.

(b) *Where off-street parking areas on separate lots are adjacent to one another and are connected by vehicular access, the landscaped strips required in subsection (2) of this section are not required.*

Response: The site currently comprises five lots. The three lots on the Building 1 site will be consolidated through the Property Line Adjustment requested separately through City of Tualatin Engineering. Buildings 5 and 8 will be located on their own lots, adjacent to one another, and will be connected by vehicular access. According to this section, no landscape strips will be required between the lots for buildings 5 and 8. This standard is met.

Section 73.360 Off-Street Parking Lot Landscape Islands - Commercial, Industrial, Public, and Semi-Public Uses

(1) *A minimum of 25 square feet per parking stall shall be improved with landscape island areas which are protected from vehicles by curbs. These landscape areas shall be dispersed through-out the parking area [see 73.380(3)]. Landscape square footage requirements shall not apply to parking structures and underground parking.*

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 378 parking spaces are proposed; therefore, 9,450 SF of landscape island areas are required. This standard is met through the standard 16' to 18' long landscape islands located every eight or fewer parking spaces, as well as through the landscaped areas at the ends of parking bays. Across all lots, 18,903 SF of "landscape island areas" will be provided in the parking lot. This standard is met.

(2) *All landscaped island areas with trees shall be a minimum of 5 feet in width (60 inches from inside of curb to curb) and protected with curbing from surface runoff and damage by vehicles. Landscaped areas shall contain groundcover or shrubs and deciduous shade trees.*

Response: As shown in the attached plans, all areas considered toward the landscape island area requirement exceed 5' in width; all provide ample room for the proposed trees and plantings. As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), all landscape island areas will be covered with trees, shrubs, and groundcover. This standard is met.

(3) *Provide a minimum of one deciduous shade tree for every four (4) parking spaces to lessen the adverse impacts of glare from paved surfaces and to emphasize circulation patterns…*

Response: For the 378 parking spaces proposed, 95 deciduous shade trees are required. As shown on the landscape plan, 119 large trees will be planted within the parking area. Additional trees will be planted in the large LIDA basins in accordance with Clean Water Services standards. This standard is met.

(4) *Landscaped islands shall be utilized at aisle ends to protect parked vehicles from moving vehicles and emphasize vehicular circulation patterns. …*

Response: As shown on the attached plans, typical landscape islands are proposed spaced every eight or fewer parking spaces, as well as through landscaped areas at the ends of parking bays. This standard is met.

(5) *Required landscaped areas shall be planted so as to achieve 90 percent coverage within three years.*

Response: Shrubs and ground cover will be spaced appropriately to achieve at least 90% coverage within three years. This standard is met.

Section 73.370 Off-Street Parking and Loading

(2) Off-Street Parking Provisions.

(a) The following are the minimum and maximum requirements for off-street motor vehicle parking in the City…

USE	MINIMUM MOTOR VEHICLE PARKING REQUIREMENT	MAXIMUM MOTOR VEHICLE PARKING REQUIREMENT	BICYCLE PARKING REQUIREMENT	PERCENTAGE OF BICYCLE PARKING TO BE COVERED
Industrial				
(i) Manufacturing	1.60 spaces per 1,000 sq. ft. of gross floor area	None	2, or 0.10 spaces per 1,000 gross sq. ft., whichever is greater	First 5 spaces or 30%, whichever is greater
(ii) Warehousing	0.30 spaces per 1,000 sq. ft. of gross floor area	Zone A: 0.4 spaces per 1,000 sq. ft. gross floor area Zone B: 0.5 spaces per 1,000 sq. ft. gross floor area	2, or 0.10 spaces per 1,000 gross sq. ft., whichever is greater	First 5 spaces or 30%, whichever is greater
(iii) Wholesale establishment	3.00 spaces per 1,000 sq. ft. of gross floor area	None	2, or 0.50 spaces per 1,000 gross sq. ft., whichever is greater	First 5 spaces or 30%, whichever is greater

Response: While no tenants have been identified, the proposed buildings will accommodate a mix of manufacturing and warehousing uses (see the table on sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8 for full details and uses by building). This assumption provides a flexible amount of parking spaces for likely future users. The proposed parking (378 spaces across the site) exceeds minimum requirements (309 spaces), in order to provide adequate parking for likely future users. Additionally, 32 bicycle parking spaces are proposed, 32.3% of which (20) will be located inside the building, meeting the 30% coverage requirement. This standard is met.

(3) Off-Street Vanpool and Carpool Parking Provisions.

The minimum number of off-street Vanpool and Carpool parking for commercial, institutional and industrial uses is as follows:

Number of Required Parking Spaces	Number of Vanpool or Carpool Spaces
0 to 10	1
10 to 25	2
26 and greater	1 for each 25 spaces

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 13 carpool/vanpool spaces will be provided across the site, distributed proportionately by building (exceeding the requirement of 15.1 stalls). This standard is met.

73.380 Off-Street Parking Lots

(1) Off-street parking lot design shall comply with the dimensional standards set forth in Figure 73-1 of this section….

Response: Of the proposed 378 parking spaces, most will be larger-than-standard 9'x19.5' parking stalls (9' wide, 17' long striped pervious area plus a 2.5' landscaped overhang protected by bumper). In some areas, stalls will be 9'x18.5' (16' stripes with a 2.5' overhang). This standard is met.

(2) Parking stalls for sub-compact vehicles shall not exceed 35 percent of the total parking stalls required by TDC 73.370(2).

Response: No sub-compact stalls are proposed. This standard is met.

(3) Off-street parking stalls shall not exceed eight continuous spaces in a row without a landscape separation…

Response: As shown on the attached plans, typical landscape islands are proposed to be spaced every 8 or fewer parking spaces, as well as through landscaped areas at the ends of parking bays. This standard is met.

(4) Areas used for standing or maneuvering of vehicles shall have paved asphalt or concrete surfaces maintained adequately for all-weather use and so drained as to avoid the flow of water across sidewalks.

Response: As shown in the attached grading and utility plans (the C2.2 and C2.3 plans for all three buildings), water from the paved vehicle areas will drain to storm drains in order to avoid the flow of water across pedestrian walkways; storm lines will flow into the on-site water quality and detention facilities. This standard is met.

(5) Except for parking to serve residential uses, parking areas adjacent to or within residential planning districts or adjacent to residential uses shall be designed to minimize disturbance of residents.

Response: The site does not abut any residential uses. This standard does not apply.

(6) Artificial lighting, which may be pro-vided, shall be deflected to not shine or create glare in a residential planning district, an adjacent dwelling, street right-of-way in such a manner as to impair the use of such way or a Natural Resource Protection Overlay District, Other Natural Areas identified in Figure 3-4 of the Parks and Recreation Master Plan, or a Clean Water Services Vegetated Corridor.

Response: The project site does not abut residential uses. Site lighting is designed to not impair drivers along the abutting streets. As shown on the attached lighting plan (SL1 for Building 1 and SL1 for

buildings 5 and 8), foot-candle levels will be low at the edges of parking and drive areas abutting the property line and right-of-way. This standard is met.

(8) Service drives to off-street parking areas shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress, and maximum safety f or pedestrians and vehicular traffic on the site.

Response: Service drives are designed to facilitate the flow of traffic and provide maximum safety on this site. This standard is met.

(9) Parking bumpers or wheel stops or curbing shall be provided to prevent cars from encroaching on the street right-of-way, adjacent landscaped areas, or adjacent pedestrian walkways.

Response: As shown on the attached plans, curbing will be provided in front of all parking stalls to protect pedestrians and landscape material. This standard is met.

(10) Disability parking spaces and accessibility shall be provided in accordance with applicable federal and state requirements.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), 17 ADA parking spaces will be provided in conformance with applicable standards. This standard is met.

(11) On-site drive aisles without parking spaces, which provide access to parking areas with regular spaces or with a mix of regular and sub-compact spaces, shall have a minimum width of 22 feet for two-way traffic and 12 feet for one-way traffic. On-site drive aisles without parking spaces, which provide access to parking areas with only sub-compact spaces, shall have a minimum width of 20 feet for two-way traffic and 12 feet for one-way traffic.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), drive aisles on the site will provide access to parking areas with regular parking spaces. Drive aisles will range from 24' to more than 50' wide; most of them will be 26' wide to accommodate the site's expected truck traffic, as well as vehicles and the garbage hauler's trucks. This standard is met.

Section 73.390 Off-Street Loading Facilities

(1) The minimum number of off-street loading berths for commercial, industrial, public and semi-public uses is as follows:

Square Feet of Floor Area	Number of Berths
Less than 5,000	0
5,000 - 25,000	1
25,000 - 60,000	2
60,000 and over	3

Response: Three off-street loading berths are required for industrial uses with floor area of 60,000 SF or more; the project includes more than 300,000 SF of building floor area. As shown on the attached plans, each building will have dedicated concrete dock aprons and loading berths; the site total is 46 loading docks and 18 on-grade loading doors (26 docks and 10 drive-in doors on Building 1, 16 docks and 4 on-grade doors on Building 5, and 14 docks and 4 on-grade doors on Building 8). This standard is met.

(2) Loading berths shall conform to the following minimum size specifications.

(a) Commercial, public and semi-public uses of 5,000 to 25,000 square feet shall be 12' x 25' and uses greater than 25,000 shall be 12' x 35'

(b) Industrial uses - 12' x 60'

(c) Berths shall have an unobstructed height of 14'

(d) Loading berths shall not use the public right-of-way as part of the required off-street loading area.

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), the loading berths will be a minimum of 12.5' wide by 60' long. The heavy duty area of the loading spaces will be constructed of heavy duty pavement over a 4" crushed rock base, to provide a strong support for the truck pads to rest on. The 60' long loading spaces will be separated by more than 50' of drive aisle between buildings. This standard is met.

(3) Required loading areas shall be screened from public view from public streets and adjacent properties by means of sight-obscuring landscaping, walls or other means, as approved through the Architectural Review process.

Response: As shown on the attached plans (see landscape plans), all loading areas will be screened with landscape areas at their ends (not obscuring clear vision areas), planted with sight-obscuring evergreen arborvitae trees and shrubs. Loading docks of buildings 5 and 8 will be located between the two buildings, completely hidden from SW Itel Street. The loading docks of Building 1 will be screened from SW Itel Street by parking lot landscaping and up to 75' of planted stormwater treatment facilities. This standard is met.

(4) Required loading facilities shall be installed prior to final building inspection and shall be permanently maintained as a condition of use.

Response: This standard is accepted as a condition of use. This standard is met.

(5) A driveway designed for continuous forward flow of passenger vehicles for the purpose of loading and unloading children shall be located on the site of a school or child day care center having a capacity greater than 25 students.

Response: The proposed development does not include a school or day care. This standard does not apply.

(6) The off-street loading facilities shall in all cases be on the same lot or parcel as the structure they are intended to serve. In no case shall the required off-street loading spaces be part of the area used to satisfy the off-street parking requirements.

Response: The off-street loading spaces are not part of the off-street parking areas. This standard is met.

(7) Subject to Architectural Review approval, the Community Development Director may allow the standards in this Section to be relaxed within the Central Design District…

Response: The property is not located within the Central Design District. No adjustments to the loading standards are requested. This standard does not apply.

Section 73.400 Access

(1) The provision and maintenance of vehicular and pedestrian ingress and egress from private property to the public streets as stipulated in this Code are continuing requirements for the use of any structure or parcel of real property in the City of Tualatin. Access management and spacing standards are provided in this section of the TDC and TDC Chapter 75. No building or

other permit shall be issued until scale plans are presented that show how the ingress and egress requirement is to be fulfilled. If the owner or occupant of a lot or building changes the use to which the lot or building is put, thereby increasing ingress and egress requirements, it shall be unlawful and a violation of this code to begin or maintain such altered use until the required increase in ingress and egress is provided.

Response: The provision and maintenance of vehicular and pedestrian accesses on the site will be maintained throughout construction. This standard is understood and is met.

(2) Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same ingress and egress when the combined ingress and egress of both uses, structures, or parcels of land satisfies their combined requirements as designated in this code; provided that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases or contracts to establish joint use. Copies of said deeds, easements, leases or contracts shall be placed on permanent file with the City Recorder.

Response: All five existing lots (three of which will be consolidated through a separate Property Line Adjustment submitted to City of Tualatin Engineering) are owned by the same owner. This standard does not apply.

(3) Joint and Cross Access.

(a) Adjacent commercial uses may be required to provide cross access drive and pedestrian access to allow circulation between sites.

Response: There are no commercial uses adjacent to the site. This standard does not apply.

(b) A system of joint use driveways and cross access easements may be required and may incorporate the following:

(i) a continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with the access management classification system and standards.

(ii) a design speed of 10 mph and a maximum width of 24 feet to accommodate two-way travel aisles designated to accommodate automobiles, service vehicles, and loading vehicles;

(iii) stub-outs and other design features to make it visually obvious that the abutting properties may be tied in to provide cross access via a service drive;

(iv) a unified access and circulation system plan for coordinated or shared parking areas.

Response: All five existing lots (three of which will be consolidated through a separate Property Line Adjustment submitted to City of Tualatin Engineering) are owned by the same owner. This standard does not apply.

(c) Pursuant to this section, property owners may be required to:

(i) Record an easement with the deed allowing cross access to and from other properties served by the joint use driveways and cross access or service drive;

(ii) Record an agreement with the deed that remaining access rights along the roadway will be dedicated to the city and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;

(iii) Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners;

(iv) If (i-iii) above involve access to the state highway system or county road system, ODOT or the county shall be contacted and shall approve changes to (i-iii) above prior to any changes.

Response: All five existing lots (three of which will be consolidated through a separate Property Line Adjustment submitted to City of Tualatin Engineering) are owned by the same owner. This standard does not apply.

(4) Requirements for Development on Less than the Entire Site.

(a) To promote unified access and circulation systems, lots and parcels under the same ownership or consolidated for the purposes of development and [comprising] more than one building site shall be reviewed as one unit in relation to the access standards. The number of access points permitted shall be the minimum number necessary to provide reasonable access to these properties, not the maximum available for that frontage. All necessary easements, agreements, and stipulations shall be met. This shall also apply to phased development plans. The owner and all lessees within the affected area shall comply with the access requirements.

Response: This application addresses the portion of the Koch Corporate Center site to be developed with unknown phasing (order of buildings to be constructed). However, as shown in the attached plans, access will be provided for the first, second, and third buildings constructed at all times. This standard is met.

(b) All access must be internalized using the shared circulation system of the principal commercial development or retail center. Driveways should be designed to avoid queuing across surrounding parking and driving aisles.

Response: This project does not include a commercial development or retail center. This standard does not apply.

(5) Lots that front on more than one street may be required to locate motor vehicle accesses on the street with the lower functional classification as determined by the City Engineer.

Response: As shown on the attached plans, the lots for Building 1 will have access from SW 115th Avenue and SW Itel Street. The lots for buildings 5 and 8 will have access from SW Itel Street to the south. Many of these driveway accesses were previously approved: the existing SW Itel Street accesses were approved through the construction of that street and the existing access points off the private drive were approved/constructed at the time of development of the lots for building 6 and 7 of the Koch Corporate Center. The new driveways will be provided on the SW Itel Street cul-de-sac and private drive as discussed at the City scoping meeting, pre-application conference, and recommendations. This standard is understood.

(6) Except as provided in TDC 53.100, all ingress and egress shall connect directly with public streets.

Response: The subject site is not in the Central Commercial Planning District. TDC 53.100 does not apply. As shown on the attached plans, the subject site (all lots proposed for development) has access via consecutively owned lots to connect directly with public streets. This standard is met.

(7) Vehicular access for residential uses shall be brought to within 50 feet of the ground floor entrances or the ground floor landing of a stairway, ramp or elevator leading to dwelling units.

Response: The project does not include any residential uses. This standard does not apply.

(8) To afford safe pedestrian access and egress for properties within the City, a sidewalk shall be constructed along all street frontage, prior to use or occupancy of the building or structure proposed for said property. The sidewalks required by this section shall be constructed to City standards, except in the case of streets with inadequate right-of-way width or where the final street design and grade have not been established, in which case the sidewalks shall be constructed to a design and in a manner approved by the City Engineer. Sidewalks approved by

the City Engineer may include temporary sidewalks and sidewalks constructed on private property; provided, however, that such sidewalks shall provide continuity with sidewalks of adjoining commercial developments existing or proposed. When a sidewalk is to adjoin a future street improvement, the sidewalk construction shall include construction of the curb and gutter section to grades and alignment established by the City Engineer.

Response: The subject lots front improved streets and the private drive. Sidewalks exist on SW Itel Street and SW 115th Avenue, as approved through construction permits for those streets. This standard is met.

(9) The standards set forth in this Code are minimum standards for access and egress, and may be increased through the Architectural Review process in any particular instance where the standards provided herein are deemed insufficient to protect the public health, safety, and general welfare.

Response: This standard is understood.

(10) Minimum access requirements for residential uses:

Response: The proposed project is for an industrial use. This standard does not apply.

(11) Minimum Access Requirements for Commercial, Public and Semi-Public Uses.

Response: The proposed project is for an industrial use. This standard does not apply.

(12) Minimum Access Requirements for Industrial Uses.

Ingress and egress for industrial uses shall not be less than the following:

Required Parking Spaces	**Minimum Number Required**	**Minimum Pavement Width**	**Minimum Pavement Walkways, Etc.**
1-250	1	36 feet for first 50' from ROW, 24' thereafter	No curbs or walkway required
Over 250	As required by City Engineer	As required by City Engineer	As required by City Engineer

Response: More than 250 parking spaces are proposed (378). The project includes multiple vehicular accessways into the site for cars and trucks; this configuration was discussed with the City Engineer in the project scoping meeting, pre-application conference, and follow-up communication. This standard is met.

(13) One-way Ingress or Egress.

When approved through the Architectural Review process, one-way ingress or egress may be used to satisfy the requirements of Subsections (7), (8), and (9). However, the hard surfaced pavement of one-way drives shall not be less than 16 feet for multi-family residential, commercial, or industrial uses.

Response: Neither one-way ingress nor egress is proposed. This standard does not apply.

(14) Maximum Driveway Widths and Other Requirements.

(a) Unless otherwise provided in this chapter, maximum driveway widths shall not exceed 40 feet.

Response: As shown in the attached plans (see dimensions sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), driveway openings from public streets to the subject lots will range from 30' to 36' as measured by the City of Tualatin Approach Private Driveway diagram. This standard is met.

(b) *Except for townhouse lots, no driveways shall be constructed within 5 feet of an adjacent property line, except when two adjacent property owners elect to provide joint access to their respective properties, as provided by Subsection (2).*

Response: As shown on the attached plans, no driveways will be within 5' of adjacent property lines. This standard is met.

(c) *There shall be a minimum distance of 40 feet between any two adjacent driveways on a single property unless a lesser distance is approved by the City Engineer.*

Response: As shown on the attached plans, all driveways will be located at least approximately 360' from one another. This standard is met.

(15) *Distance between Driveways and Intersections.*

Except for single-family dwellings, the minimum distance between driveways and intersections shall be as provided below. Distances listed shall be measured from the stop bar at the intersection.

(a) *At the intersection of collector or arterial streets, driveways shall be located a minimum of 150 feet from the intersection.*

Response: The site is not located at the intersection of two collector or arterial streets. This standard does not apply.

(b) *At the intersection of two local streets, driveways shall be located a minimum of 30 feet from the intersection.*

Response: As shown on the attached plans (see sheet C2.1 for Building 1 and C2.1 for buildings 5 and 8), driveways on the site are located a minimum of 400' from the intersection of SW 115th Avenue and SW Itel Street, both local commercial industrial roadways. This standard is met.

(c) *If the subject property is not of sufficient width to allow for the separation between driveway and intersection as provided, the driveway shall be constructed as far from the intersection as possible, while still maintaining the 5-foot setback between the driveway and property line as required by TDC 73.400(14)(b).*

Response: The driveways on the site meet the driveway and intersection separation standards. This standard does not apply.

(d) *When considering a public facilities plan that has been submitted as part of an Architectural Review plan in accordance with TDC 31.071(6), the City Engineer may approve the location of a driveway closer than 150 feet from the intersection of collector or arterial streets, based on written findings of fact in support of the decision. The written approval shall be incorporated into the decision of the City Engineer for the utility facilities portion of the Architectural Review plan under the process set forth in TDC 31.071 through 31.077.*

Response: No driveways on the site will be less than 150' from an intersection. This standard does not apply.

(16) *Vision Clearance Area.*

(a) *Local Streets - A vision clearance area for all local street intersections, local street and driveway intersections, and local street or driveway and railroad intersections shall be that triangular area formed by the right-of-way lines along such lots and a straight line joining the right-of-way lines at points which are 10 feet from the intersection point of the right-of-way lines, as measured along such lines (see Figure 73-2 for illustration).*

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), no landscaping between 30" and 8' high will exist in the clear vision areas (10' back from the property lines at the local streets). This standard is met.

(b) Collector Streets - A vision clearance area for all collector/arterial street intersections, collector/arterial street and local street intersections, and collector/arterial street and railroad intersections shall be that triangular area formed by the right-of-way lines along such lots and a straight line joining the right-of-way lines at points which are 25 feet from the intersection point of the right-of-way lines, as measured along such lines. Where a driveway intersects with a collector/arterial street, the distance measured along the driveway line for the triangular area shall be 10 feet (see Figure 73-2 for illustration).

Response: The site does not abut any collector streets. This standard does not apply.

(c) Vertical Height Restriction - Except for items associated with utilities or publicly owned structures such as poles and signs and existing street trees, no vehicular parking, hedge, planting, fence, wall structure, or temporary or permanent physical obstruction shall be permitted between 30 inches and 8 feet above the established height of the curb in the clear vision area (see Figure 73-2 for illustration).

Response: As shown in the attached landscape plans (see L-1.1, L-1.2, and L-1.3 for Building 1, L-1 for Building 5, and L-1 for Building 8), landscaping in the driveway entrances and ends of parking aisles will meet these standards. No trees will be planted in clear vision areas, and shrub species in vision clearance areas of the parking area will be no higher than 30". This standard is met.

(17) Major driveways, as defined in 31.060, in new residential and mixed-use areas are required to connect with existing or planned streets except where prevented by topography, rail lines, freeways, pre-existing development or leases, easements or covenants, or other barriers.

Response: The project is not in a new residential or mixed-use area. This standard does not apply.

V. PROPERTY LINE ADJUSTMENT

The lot consolidation required for the project meets the necessary approval standards of the Tualatin Development Code for property line adjustments and for the MG zone. As described in the application and requested separately through City of Tualatin Engineering, the proposal meets the standards of TDC *Chapter 36: Subdividing, Partitioning and Property Line Adjustments*.

VI. SUMMARY

The proposed three industrial buildings meet all applicable Architectural Review standards. The development will be compatible with current and existing surrounding uses, and is designed to comply with the zoning requirements of the General Manufacturing District. This application complies with City requirements, will result in economic growth for the area, and merits approval as requested.

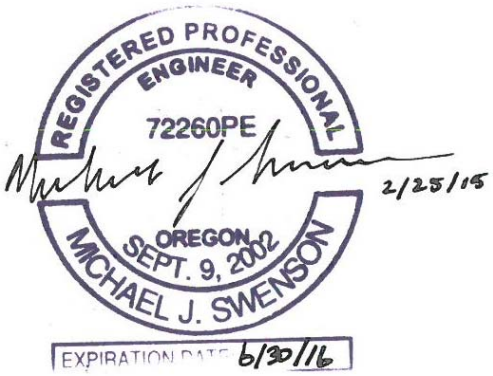
Transportation Impact Analysis

KOCH CORPORATE CENTER (PHASE II)

Prepared for:
PacTrust

February 2015

Prepared by:



11730 118th Avenue NE, Suite 600
Kirkland, WA 98034-7120
Phone: 425-821-3665
Fax: 425-825-8434
www.transpogroup.com

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Chapter 1. Frequently Asked Questions

This section provides an executive summary of the Transportation Impact Analysis through a set of frequently asked questions (FAQs).

Where is the project located?

The site is located along the southeast quadrant of SW Tualatin Sherwood Road / 115th Avenue SW intersection in Tualatin, Oregon.

What is the project land use and trip generation?

The project includes the construction of three light industrial buildings totaling approximately 307,000 gsf. The project is estimated to generate 282 trips during the weekday AM peak hour and 298 trips during the weekday PM peak hour utilizing ITE land use 110.

What are the existing and future without-project conditions in the study area?

The study area was defined through coordination with Washington County and the City of Tualatin and includes the intersections of SW 115th Avenue / SW Tualatin Sherwood Road and SW Avery St / SW Tualatin Sherwood Road. Under existing conditions, during both the weekday AM and PM peak hours, both intersections are anticipated to operate within the County standards. After the addition of forecast background growth and pipeline project traffic, the SW 115th Avenue / SW Tualatin Road intersection is anticipated to operate at a volume-to-capacity ratios if 1.06 during the weekday AM peak hour, which exceeds the County standards.

Would the project have any transportation impacts?

With the addition of project related traffic, the intersection volume-to-capacity ratio is anticipated to exceed the 0.99 volume-to-capacity ratio operational standard at both intersections during the weekday AM and PM peak hours.

What mitigation measures are recommended?

A second westbound left-turn lane at the SW 115th Avenue / SW Tualatin Sherwood Road intersection is proposed to mitigate the project impact at the off-site study intersections.

Chapter 2. Introduction

This Transportation Impact Analysis (TIA) summarizes the potential transportation-related impacts associated with the proposed Koch Corporate Center (Phase II) located in the City of Tualatin. The analysis was conducted to evaluate the project's impacts on roadways and intersections within the vicinity of the site and to recommend, if necessary, mitigation measures that would reduce or otherwise offset these impacts. This scope of this analysis has been prepared in coordination with both the City of Tualatin and Washington County staff.

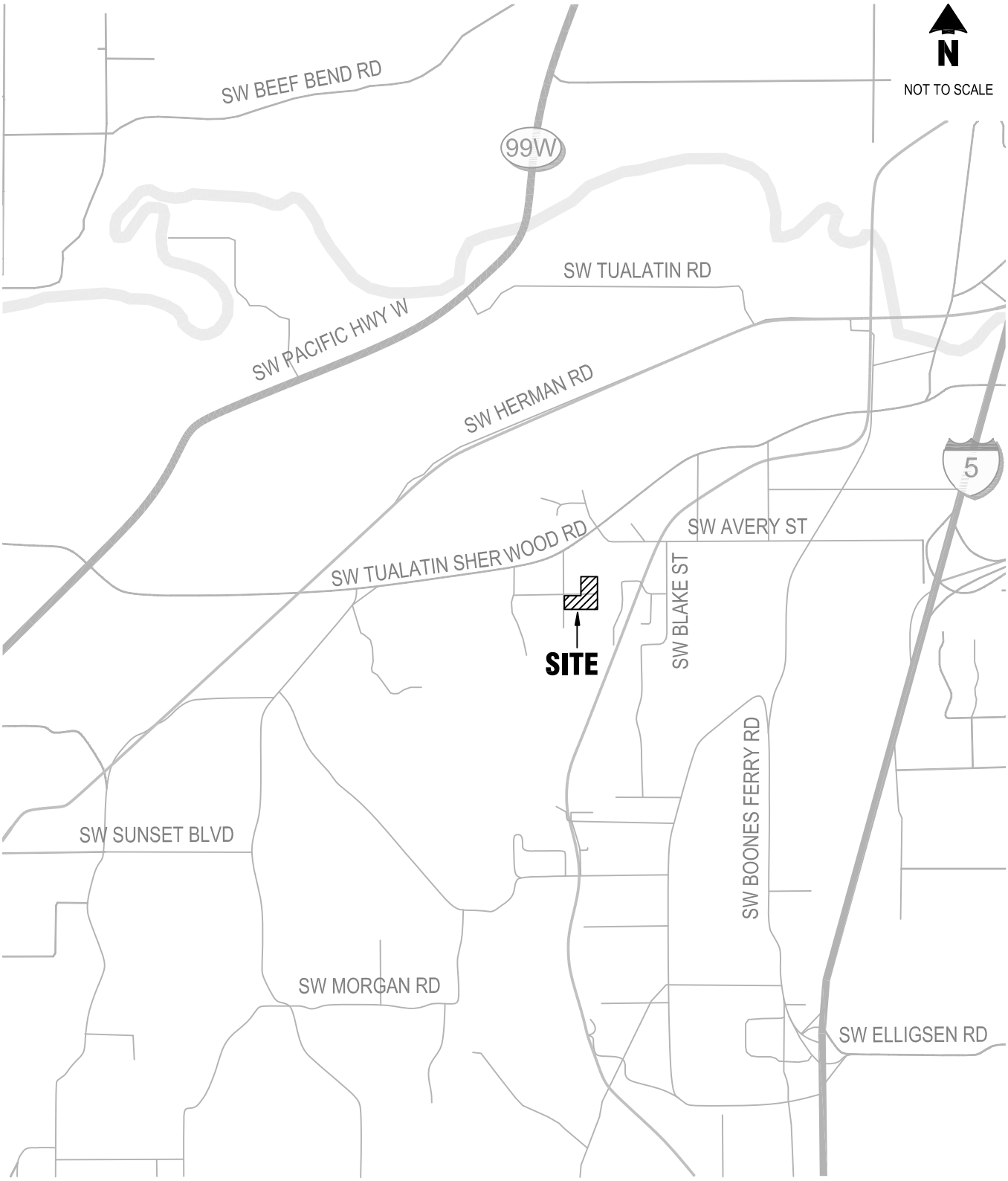
Project Description

The project site is located along the southeast quadrant of the SW 115th / SW Tualatin Sherwood Road intersection in Tualatin, Oregon. The project's site vicinity is shown in Figure 1. The primary access to the project will be via the SW 115th Avenue / SW Tualatin Sherwood Road intersection. The project includes the construction of three industrial buildings totaling 306,875 gross square feet (gsf). Currently, two buildings associated with the first phase of the Koch Corporate Center are being constructed and are anticipated to be completed and occupied by the project horizon year. A preliminary site plan showing the subject project and access points are included in Figure 2. The project is anticipated to be built and fully occupied by 2018.

Analysis Approach and Study Area

The scope of this analysis was coordinated with City of Tualatin and Washington County staff and is consistent with the City's and Washington County's road standard requirements. The study area includes two intersections, SW 115th Street / SW Tualatin Sherwood Road and SW Avery Street / SW Tualatin Sherwood Road. Since SW Tualatin Sherwood Road is maintained by the County, the potential "Impact Area" of the project was reviewed based on the projected average daily traffic (ADT). The intersection is operated by Washington County; therefore Washington County standards were used for analysis.

Intersection operations are evaluated for the existing, without-project and with-project weekday AM and PM peak hour conditions. Site-generated impacts are determined by comparing without- and with-project traffic conditions.



Site Vicinity

FIGURE 1

Koch Corporate Center (Phase II)

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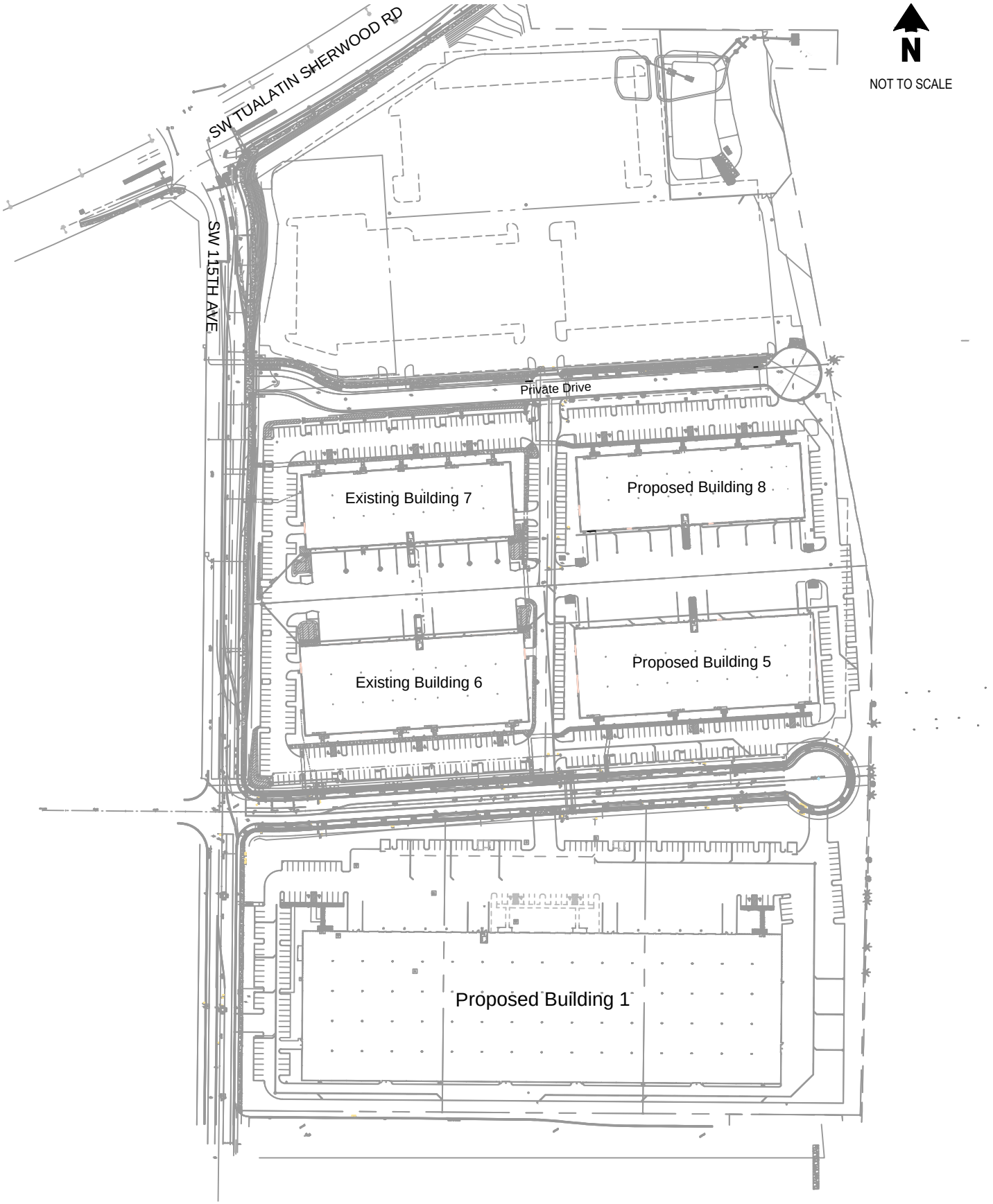


Preliminary Site Plan

FIGURE **2**

Koch Corporate Center (Phase II)

Chapter 3. Existing and Baseline Conditions

This section describes both existing conditions and 2018 without-project conditions within the identified study area. Study area characteristics are provided for the roadway network, planned improvements, existing and forecasted without-project volumes, traffic operations, and non-motorized facilities.

Roadway Network

The primary roadways within the vicinity of the site include the following:

SW Tualatin Sherwood Road is a two-lane major arterial with a posted speed limit of 45 miles per hour (mph). Traffic signals exist at major intersections near the site including SW 115th Street / SW Tualatin Sherwood Road and SW Avery Road / SW Tualatin Sherwood Road. Bike lanes are provided near the project site. Sidewalks are provided where development has occurred.

SW 115th Avenue is a two-lane local commercial industrial roadway with a posted speed limit of 25 mph. Sidewalks are located where development has occurred.

SW Avery Street is a two-lane local commercial industrial roadway with a posted speed limit of 25 mph. Sidewalks are located where development has occurred. Bike lanes exist on both sides of the roadway.

Planned Improvements

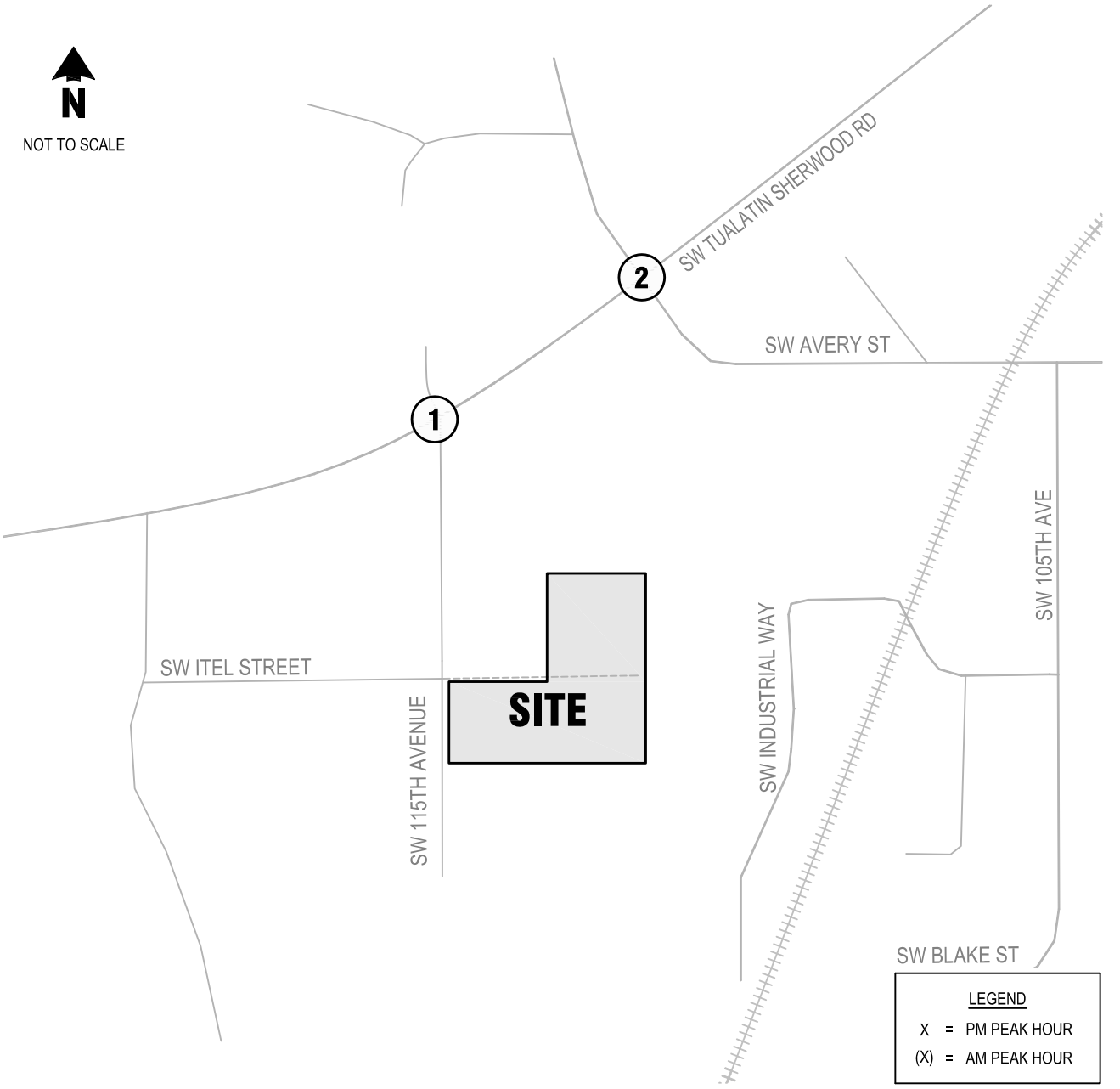
The City of Tualatin *Transportation System Plan* (February 2014) was reviewed to identify any planned improvements within the 2018 horizon year. No improvements were identified in the study area that would be constructed by the project horizon year.

One capacity improvement was identified City of Tualatin *Transportation System Plan* and includes the widening of SW Avery Street to a three lane cross-section between SW Teton Avenue and SW Tualatin Sherwood Road. The existing intersection at SW Tualatin Sherwood / SW Avery Street already reflects this planned improvement with left turn lanes on SW Avery Street. This improvement is anticipated to be constructed in 2019, after the project horizon year. An additional transit improvement was identified in the study area which would fund a fixed-route bus service on SW Avery Street and SW Tualatin Sherwood Road within the next 5 to 10 years.

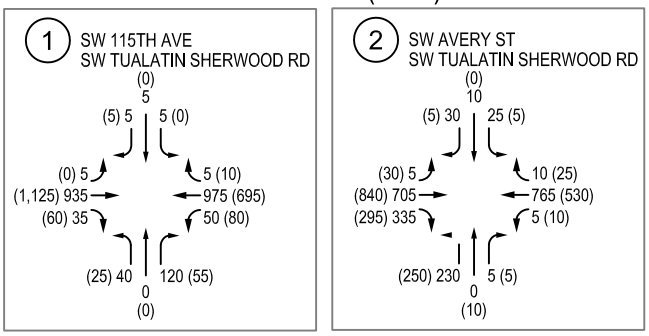
Traffic Volumes

Weekday AM and PM peak hour traffic volumes at the study intersection were collected in January 2015. The existing weekday AM and PM peak hour traffic volumes are illustrated in Figure 3. The detailed traffic count worksheets are provided in Appendix A.

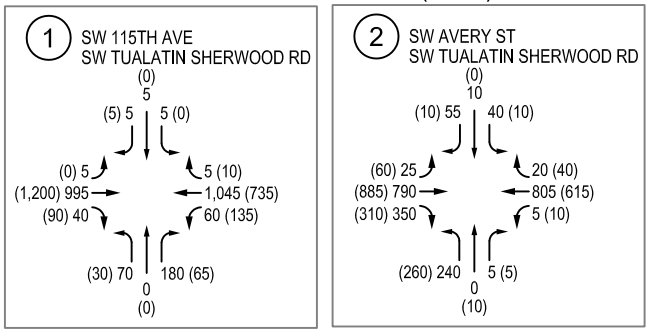
Consistent with other studies in the area, and approved by the City and County, an annual growth rate of 1.5 percent was utilized for estimating future without-project traffic volumes. In addition to an annual growth rate, two pipeline projects were included in the 2018 without-project weekday AM and PM peak hour traffic volumes. The pipeline projects include: Hedges Business Park and Koch Corporate Center – Buildings 5 & 6. Figure 3 illustrates the resulting 2018 without-project weekday AM and PM peak hour traffic volumes.



EXISTING (2015)



WITHOUT PROJECT (2018)



Existing and 2018 Without-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE 3

Koch Corporate Center (Phase II)

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Traffic Operations

A level of service (LOS) analysis was conducted for the study area intersections for the weekday AM and PM peak hour. The signalized intersections were analyzed using *Synchro 8*. This software program provides an analysis based on methodologies presented in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2000 Edition).

LOS values range from LOS A, which indicates good operating conditions with little or no delay, to LOS F, which indicates extreme congestion and long vehicle delays. LOS is measured in terms of total average intersection delay for signalized and all-way stop-controlled intersections. A more detailed explanation of LOS criteria is provided in Appendix B.

Existing and without-project (2018) LOS results are summarized in Table 1 and LOS worksheets are provided in Appendix C. The signal timing splits and offsets were optimized during the without-project weekday AM and PM peak hour.

The study intersections are under Washington County jurisdiction. Washington County has identified their operational standard as a volume-to-capacity (V/C) ratio equal to or less than 0.98 for the overall intersection. Since SW Tualatin Sherwood Road is a County facility, the Washington County standard is being considered in the operations analysis. Based on discussions with County staff, the use of the peak hour volumes satisfies the first and second hour operational standards defined by the County.

Table 1. Existing and Without-Project AM and PM Peak Hour LOS Summary

	2015 Existing			2018 Without-Project		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS**	**Delay**	**V/C**
Weekday AM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	B	18.9	0.88	D	44.4	1.06
2. SW Avery St / SW Tualatin Sherwood Rd	C	23.4	0.84	C	21.3	0.94
Weekday PM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	B	17.2	0.75	C	21.7	0.85
2. SW Avery St / SW Tualatin Sherwood Rd	C	22.7	0.76	C	20.5	0.88

1. Level of Service
2. Average vehicle delay in seconds per vehicle.
3. Volume-to-capacity ratio reported for the worst movement at signalized intersections

As shown in Table 1, all intersections currently operate with a volume-to-capacity ratio less than 0.98 during both the weekday AM and PM peak hours. With the addition of background traffic growth and traffic anticipated from the pipeline projects, the eastbound through movement at the SW 115th Ave / SW Tualatin Sherwood Road intersection is anticipated to operate with a volume-to-capacity of 1.06 during the weekday AM peak hour. This does not meet the County's operational standard.

Non-Motorized Facilities

Non-motorized facilities exist within the study area in the form of sidewalks and bike lanes. Bike lanes are provided along SW Tualatin Sherwood Road and SW Avery Street.

Traffic Safety

Collision data was reviewed and summarized at SW 115th Avenue / SW Tualatin Sherwood Road and SW Avery Street / SW Tualatin Sherwood Road. This includes complete data between 2011 and 2013 and is shown in Table 2. Accident data received from the Oregon Department of Transportation is shown in Appendix D.

Table 2. Collision Data Summary

Location	2011	2012	2013	Total Collisions	Collisions/ Year[1]
1. SW 115th Ave / SW Tualatin Sherwood Rd	1	2	3	6	2
2. SW Avery St / SW Tualatin Sherwood Rd	6	6	3	15	5

1. Collisions per year based on average between 2011 and 2013.

As shown in Table 2, collisions at the intersection of SW 115th Avenue / SW Tualatin Sherwood Road and SW Avery Street / SW Tualatin Sherwood Road total approximately two and five collisions per year respectively. For both intersections, the collision types consisted of rear-ends or turning movements.

Chapter 4. Project Impacts

This section of the report documents the site-generated impacts of the proposed project on the surrounding roadway network, including impacts to traffic volumes and intersection operations. Project-generated weekday AM and PM peak hour traffic volumes are estimated, distributed, and assigned to the surrounding roadway network. Future with-project traffic volumes are projected and intersection peak hour operations are evaluated. 2018 without- and with-project conditions are compared in order to identify transportation impacts associated with the project.

Trip Generation

The following trip generation estimates were developed using rates identified in the ITE *Trip Generation Manual*, 9th Edition. The trip generation rates used for the proposed site are based on ITE Land Use #110 (General Light Industrial). Trip generation estimates for the weekday AM and PM peak hour and average daily conditions are noted in Table 3.

Table 3. Trip Generation

			Project Trips		
Land Use	**Size**	**Rate[1]**	**Total**	**In**	**Out**
Light Industrial (LU # 110)	306,875 gsf				
Weekday AM Peak Hour		0.92	282	248	34
Weekday PM Peak Hour		0.97	298	36	262
Weekday Daily		6.97	2140	1070	1070

1. Trips rates from ITE Trip Generation Manual, 9th Edition.

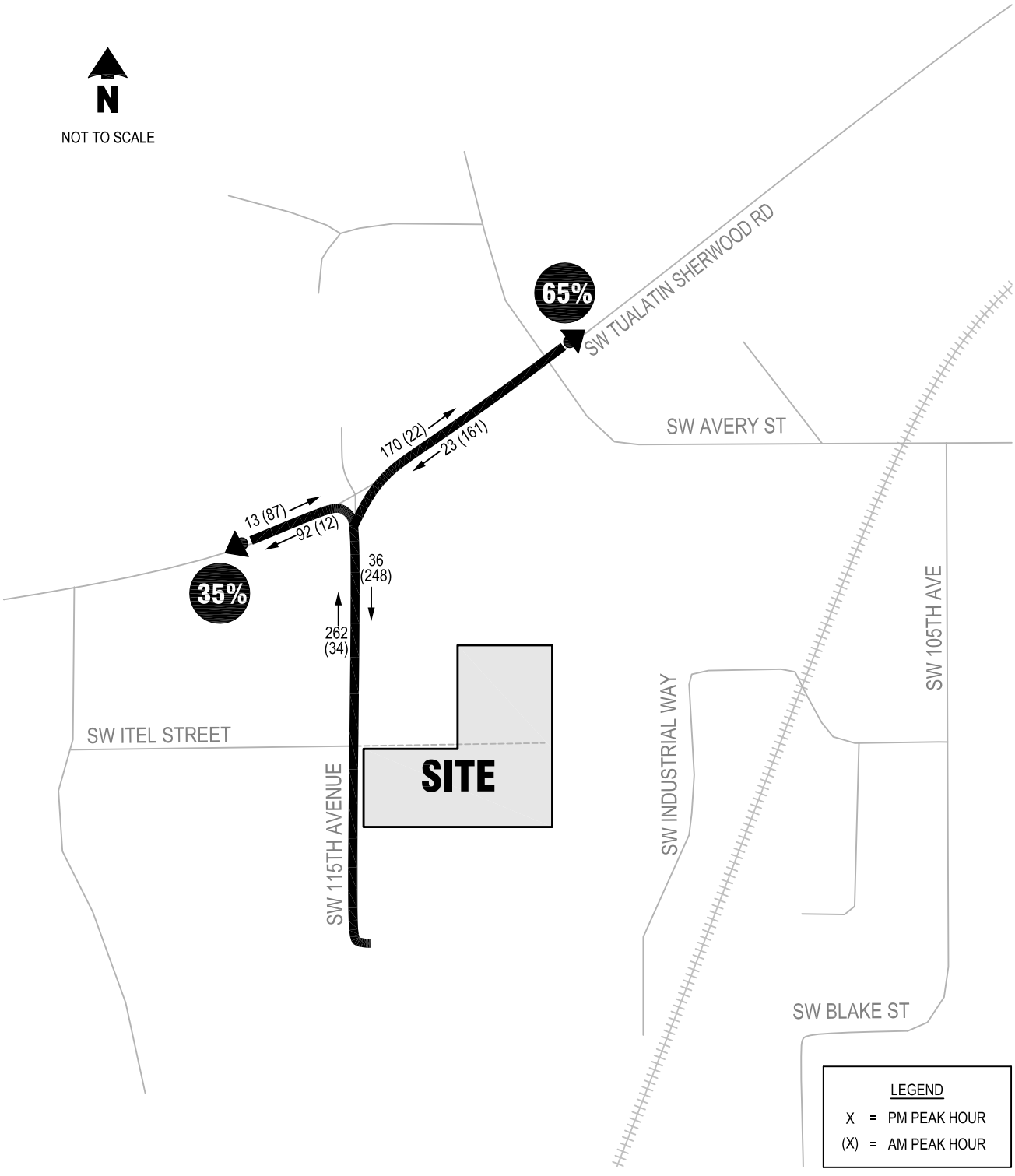
As shown in Table 3, based on ITE rates the weekday AM and PM peak hour trip generation totals 282 and 298 net new trips, respectively.

Trip Distribution

A review of the existing turning movement counts and the trip distribution from the first phase of the Koch Corporate Center was conducted to estimate the anticipated travel patterns to/from the site. In general, 35 percent of the trips are oriented to/from the west and 65 percent of the trips are oriented to/from the east. Figure 4 illustrates the trip distribution and assignment of project trips within the study area and at the study intersections for both the weekday AM and PM peak hours.

Traffic Volumes

Future (2018) with-project traffic volumes were estimated by adding site-generated traffic volumes and future without-project traffic volumes. The resulting weekday AM and PM peak hour future with-project traffic volumes are illustrated in Figure 5.



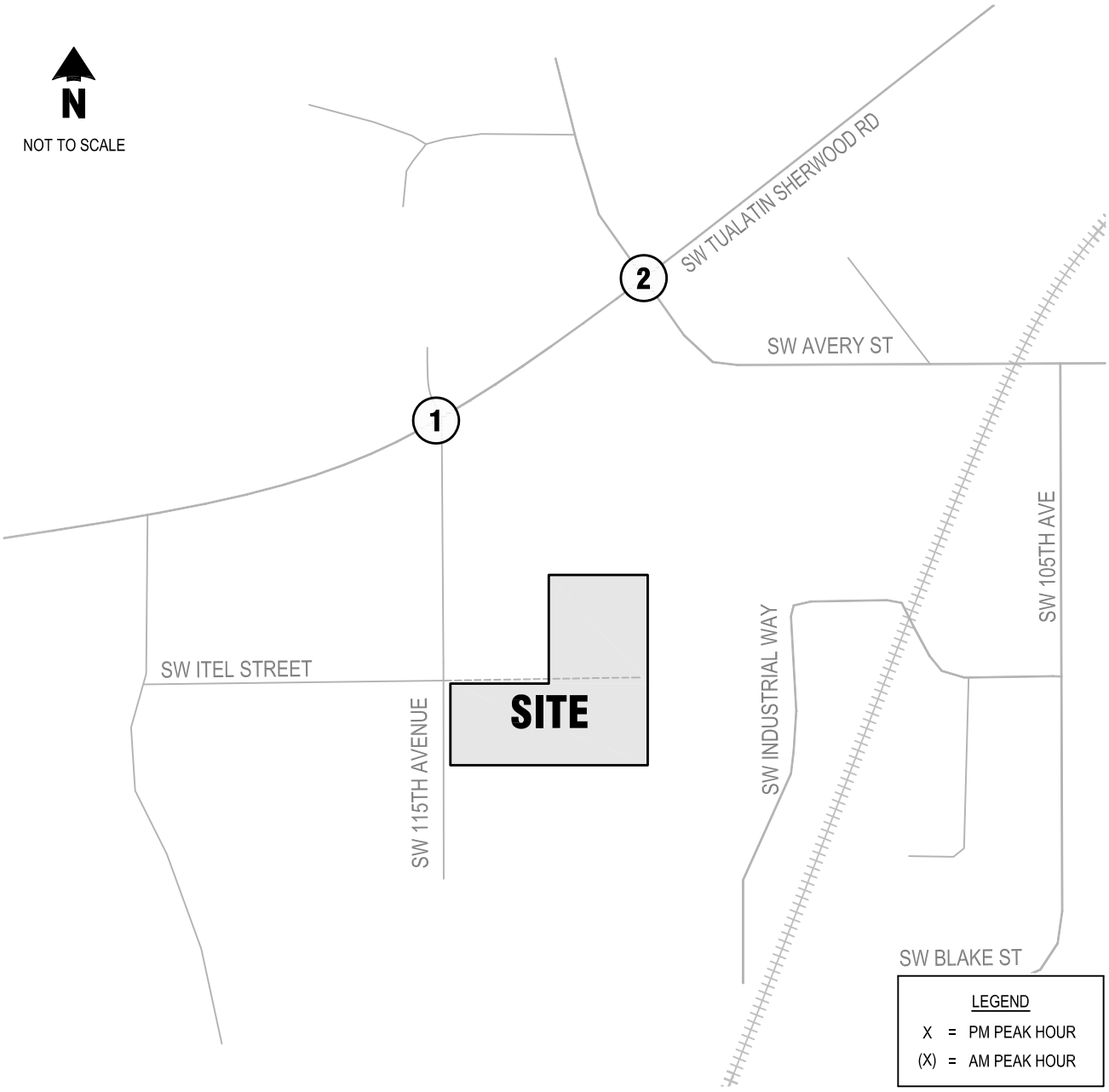
Trip Distribution & Assignment

FIGURE 4

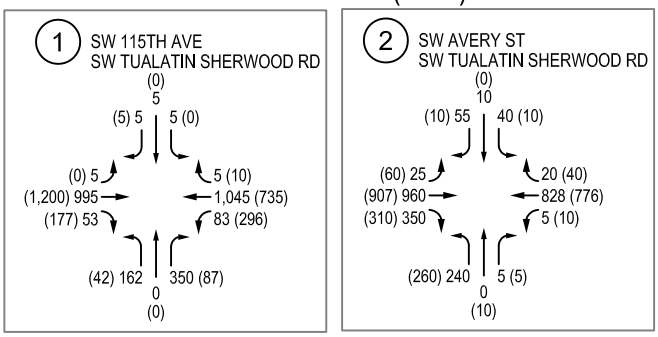
Koch Corporate Center (Phase II)

\\srv-dfs-wa\MM_Projects\Projects\14\14402.00 Koch Corporate Center (Phase II)\Graphics\Drawing1 <Fig4 Trip Assign> kyles 02/18/15 12:39

transpogroup WHAT TRANSPORTATION CAN BE.



WITH PROJECT (2018)



2018 With-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE 5

Koch Corporate Center (Phase II)

transpogroup WHAT TRANSPORTATION CAN BE.

Traffic Operations

The with-project analysis reflects the project impacts of the additional project related trips at the study intersections. The results of the LOS analysis are summarized in Table 4. The results of the 2018 without-project analyses have also been included for comparison. Due to the actuated operations of the two signals, the signal phase splits were optimized for the without- and with-project weekday AM and PM peak hour. Levels of service worksheets for 2018 with-project traffic conditions are included in Appendix C of this report.

Table 4. Without-Project and With-Project LOS Summary

	2018 Without-Project			2018 With-Project		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS**	**Delay**	**V/C**
Weekday AM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	D	44.4	1.06	F	123.4	1.44
2. SW Avery St / SW Tualatin Sherwood Rd	C	21.3	0.94	C	22.8	0.94
Weekday PM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	C	21.7	0.85	D	35.8	1.00
2. SW Avery St / SW Tualatin Sherwood Rd	C	20.5	0.88	C	24.9	0.87

1. Level of Service
2. Average vehicle delay in seconds per vehicle.
3. Volume-to-capacity ratio for worst movement at signalized intersections

As shown in Table 4, with the addition of project related traffic, the intersection V/C ratio is anticipated to exceed the County's operational standard at both the SW 115th Avenue / Tualatin Sherwood Road intersection as well as the SW Avery Street / SW Tualatin Sherwood Road intersection. The maximum V/C at the SW 115th Avenue / SW Tualatin Sherwood Road intersection is 1.44 during the weekday AM peak hour on the eastbound through approach. At the SW Avery Street / SW Tualatin Sherwood Road intersection, the maximum V/C is anticipated to be 0.94 on the northbound left-turn movement during the weekday PM peak hour.

Chapter 5. Project Mitigation

As the project does not meet the jurisdictional volume-to-capacity standard during future with-project conditions, potential mitigation measures were evaluated. Intersections that operated at a volume-to-capacity ratio below 0.99 during future without-project conditions are required to operate below a 0.99 volume-to-capacity ratio with the proposed project. Similarly, intersections that operated at 0.99 or above during future without-project conditions are required to be returned to volume-to-capacity ratios that are less than or equal to the without-project conditions.

Mitigation

Potential mitigations were evaluated at the study intersections. At the SW 115th Avenue / SW Tualatin Sherwood Road intersection, the operational impact of adding a second westbound to southbound left-turn lane was evaluated. By constructing the improvement, the phase timing for westbound left-turn movement can be reduced with more green time given to the eastbound through and westbound through movements. The traffic signal phase timing and signal offsets were optimized at both intersections during both weekday AM peak hour and weekday PM peak hour to account for the increase in capacity at the SW 115th Avenue / SW Tualatin Sherwood Road intersection.

By constructing the second westbound left-turn lane, the volume-to-capacity ratio at the SW 115th Avenue / SW Tualatin Sherwood Road intersection is anticipated to 1.05 on the eastbound through movement decrease during the weekday AM peak hour, which is below the volume-to-capacity ratio of 1.06 anticipated during future without-project conditions. During the weekday PM peak hour, the intersection is anticipated to operate with a maximum volume-to-capacity ratio of 0.84.

Results of the operations analyses for the proposed mitigations are shown in Table 5 with the unmitigated with-project operations shown for comparison. Detailed level of service worksheets are included in Appendix C of this report.

Table 5. Without-Project and Mitigation LOS Summary

	2018 With-Project			2018 Mitigated		
Intersection	**LOS[1]**	**Delay[2]**	**V/C[3]**	**LOS**	**Delay**	**V/C**
Weekday AM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	D	44.4	1.06	D	38.4	1.05
2. SW Avery St / SW Tualatin Sherwood Rd	C	21.3	0.94	C	22.0	0.94
Weekday PM Peak Hour						
1. SW 115th Ave / SW Tualatin Sherwood Rd	C	21.7	0.85	C	28.0	0.84
2. SW Avery St / SW Tualatin Sherwood Rd	C	20.5	0.88	C	24.5	0.93

1. Level of Service
2. Average vehicle delay in seconds per vehicle.
3. Volume-to-capacity ratio for worst movement at signalized intersections

Queuing Analysis

A queuing analysis focusing on the dual westbound left-turn lanes was performed at the SW 115th Avenue / SW Tualatin Sherwood Road intersection for the weekday AM and PM peak hour with-project mitigation conditions using Poisson queuing methodology. Since the volume to capacity ratio for the westbound left-turn lane is less than 1.0, the use of the Poisson methodology is appropriate and meets Washington County standards. An average vehicle length of 25 feet was assumed in the calculations. This vehicle length is representative of the mix of cars and trucks anticipated during the weekday AM and PM peak hours.

The existing turn pocket length for the westbound left-turning movements is approximately 290 feet and it was assumed the second left-turn lane would be the same length. Table 6 shows the results of the queuing analysis for the westbound-left turning movement at 115th Avenue SW / SW Tualatin Sherwood Road under the mitigation scenario. Detailed worksheets are shown in Appendix E.

Table 6. Poisson Queuing Analysis (Mitigation Scenario)

SW 115th Avenue / SW Tualatin Sherwood Road	Approach Volume	Length of Red Interval (sec)	Average Arrival Rate	95th Percentile Queue (feet)[1]
AM Peak Hour	296	105	4.80	190’
PM Peak Hour	83	110	1.41	75’

1. Queues rounded to five feet.

As shown in Table 6, the 95th percentile queues at the SW 115th Avenue / SW Tualatin Road intersection are anticipated to be shorter than the provided 290 foot storage pockets at the intersection. The 95th percentile queue is anticipated to be 190 feet during the weekday AM peak hour and 75 feet during the weekday PM peak hour. Based on this information, the queuing for the westbound left-turn pockets are not anticipated to spill out of the turn pocket and block the westbound through movement.

Safety Analysis

The capacity improvement considered for SW 115th Avenue / SW Tualatin Sherwood Road was an additional westbound left. The benefit to cost ratio was calculated using the following formula:

B/C = (Annual Benefits)(Series Present Worth Factor (20 yrs @ 10%) / Estimated Improvement Cost*

Of the 6 collisions reported at the SW 115th Ave SW / SW Tualatin Sherwood Rd intersection over the 3 year period, 2 were reported as property-damage only while the remaining 4 collisions resulted in 6 injuries. This results in an annual benefit average cost of $20,186.67 during the analysis period.

An additional westbound left-turn lane at the intersection has been identified as a possible capacity improvement for consideration. Preliminary design work for the second left-turn lane was previously conducted with the *Koch Corporate Center (Building 5 and 6)* TIA which estimated the cost of construction to be approximately $200,000. This value is used in the calculation of the benefit to cost analysis.

*B/C = (Annual Benefits) * (Series Present Worth Factor (20 yrs @ 10%)) / Estimated Improvement Cost*

*B/C = ($20,186.67) * (8.5136) / $200,000*

B/C = 0.86

Based on the benefit to cost ratio of less than 1.0, no improvement is triggered at the SW 115th Avenue / SW Tualatin Sherwood Road intersection through a review of the safety analysis.

Chapter 6. Findings and Recommendations

This transportation impact study summarizes the project traffic impacts of the proposed Koch Corporate Center development. The following outlines the general findings of the study.

- The project includes the construction of three industrial buildings totaling approximately 306,875 gsf.
- The project is estimated to generate 282 weekday AM peak hour trips and 298 weekday PM peak hour trips.
- Under existing roadway channelization, both study intersections are anticipated to exceed the Washington County operational standard.
- Off-site mitigation, in the form of adding a second westbound left-turn pocket at SW 115th Avenue / SW Tualatin Sherwood Road is recommended. With the proposed mitigation, both intersections would meet jurisdictional operational requirements in the weekday AM and PM peak hours.
- The 95th percentile queue for the westbound left-turn lane at SW 115th Avenue / SW Tualatin Sherwood Road is anticipated to be accommodated in the available turn pocket storage during both the weekday AM and PM peak hours.

Appendix A: Traffic Counts

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 115th Ave -- SW Tualatin-Sherwood Rd

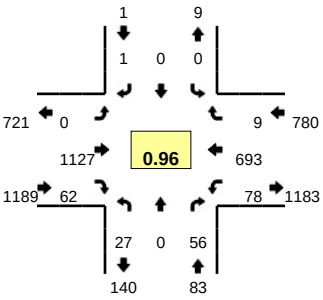
CITY/STATE: Tualatin, OR

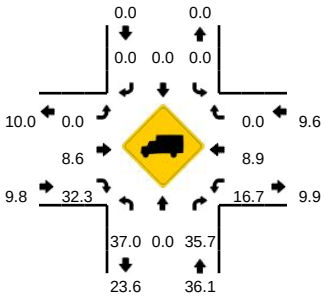
QC JOB #: 13177003

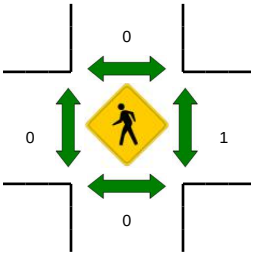
DATE: Thu, Jan 08 2015

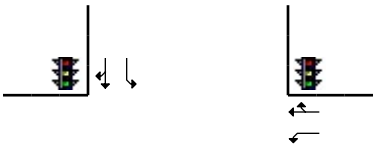
Peak-Hour: 7:05 AM -- 8:05 AM

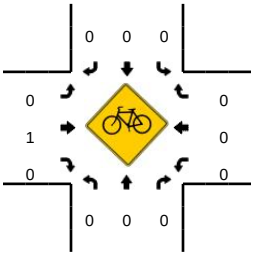
Peak 15-Min: 7:40 AM -- 7:55 AM

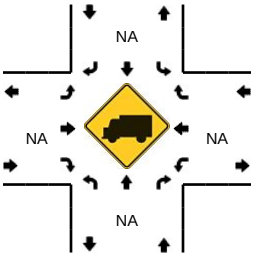


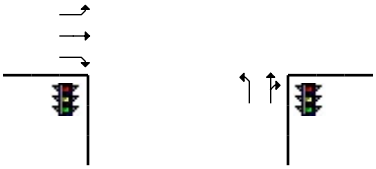


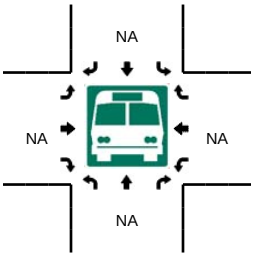












5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	7	0	1	0	0	0	0	97	7	0	5	49	0	0	166	
7:05 AM	2	0	2	0	0	0	0	0	0	90	6	0	7	53	0	0	160	
7:10 AM	4	0	9	0	0	0	0	0	0	90	6	0	9	52	0	0	170	
7:15 AM	1	0	3	0	0	0	0	0	0	105	6	0	3	51	0	0	169	
7:20 AM	1	0	6	0	0	0	0	0	0	92	3	0	9	62	0	0	173	
7:25 AM	2	0	4	0	0	0	0	0	0	105	3	0	2	64	1	0	181	
7:30 AM	5	0	4	0	0	0	0	0	0	88	7	0	9	49	0	0	162	
7:35 AM	3	0	5	0	0	0	0	0	0	96	5	0	6	50	0	0	165	
7:40 AM	1	0	5	0	0	0	0	0	0	108	1	0	4	55	1	0	175	
7:45 AM	2	0	3	0	0	0	0	0	0	97	4	0	8	65	2	0	181	
7:50 AM	3	0	5	0	0	0	0	0	0	84	8	0	4	72	2	0	178	
7:55 AM	1	0	4	0	0	0	0	0	0	83	12	0	10	61	1	0	172	2052
8:00 AM	2	0	6	0	0	0	1	0	0	89	1	0	7	59	2	0	167	2053
8:05 AM	2	0	10	0	0	0	0	0	0	73	8	0	4	51	0	0	148	2041
8:10 AM	2	0	2	0	0	0	0	0	1	92	5	0	11	49	2	0	164	2035
8:15 AM	8	0	13	0	0	0	0	0	1	70	6	0	7	55	0	0	160	2026
8:20 AM	7	0	7	0	0	0	0	0	0	68	6	0	7	54	1	0	150	2003
8:25 AM	1	0	3	0	0	0	0	0	0	68	3	0	5	62	2	0	144	1966
8:30 AM	2	0	7	0	0	0	0	0	0	80	5	0	6	56	0	0	156	1960
8:35 AM	4	0	7	0	1	0	0	0	0	70	4	0	3	54	0	0	143	1938
8:40 AM	1	1	3	0	0	0	0	0	0	72	5	0	2	49	0	0	133	1896
8:45 AM	2	0	6	0	0	0	0	0	1	69	8	0	5	55	0	0	146	1861
8:50 AM	2	0	4	0	0	0	0	0	2	70	3	0	5	78	1	0	165	1848
8:55 AM	3	0	6	0	1	0	0	0	0	66	6	0	2	51	2	0	137	1813

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	52	0	0	0	0	0	0	1156	52	0	64	768	20	0	2136
Heavy Trucks	4	0	16		0	0	0		0	84	12		12	84	0		212
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/13/2015 2:47 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment 105 - Application with Site Plans & Elevations

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW 112th Ave -- SW Tualatin-Sherwood Rd

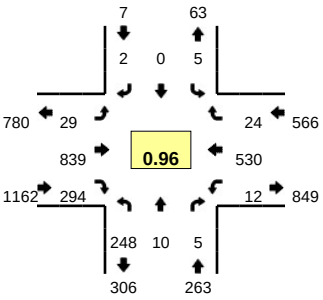
CITY/STATE: Tualatin, OR

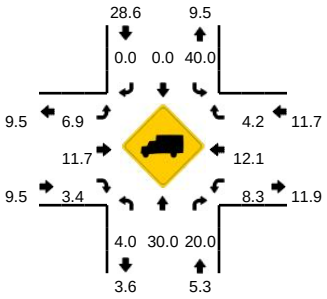
QC JOB #: 13177001

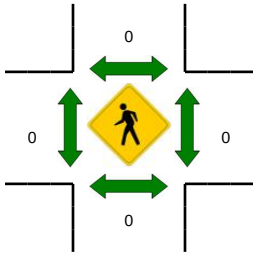
DATE: Thu, Jan 08 2015

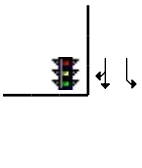
Peak-Hour: 7:05 AM -- 8:05 AM

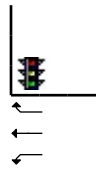
Peak 15-Min: 7:40 AM -- 7:55 AM

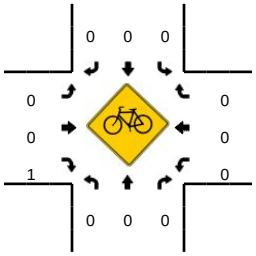


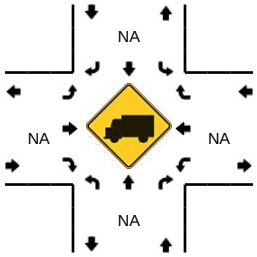


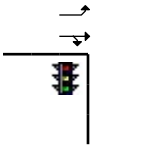


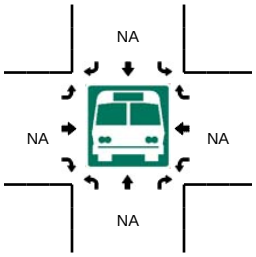












5-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	9	1	0	0	0	0	0	0	1	86	18	0	1	45	1	0	162	
7:05 AM	14	0	1	0	0	0	0	0	4	68	13	0	0	46	3	0	149	
7:10 AM	18	1	0	0	1	0	0	0	2	77	22	0	0	45	0	0	166	
7:15 AM	22	0	1	0	0	0	0	0	1	73	29	0	0	33	0	0	159	
7:20 AM	22	0	0	0	0	0	0	0	2	68	23	0	1	46	1	0	163	
7:25 AM	17	2	0	0	0	0	0	0	2	86	23	0	1	52	2	0	185	
7:30 AM	20	0	0	0	0	0	0	0	1	63	28	0	1	39	3	0	155	
7:35 AM	13	1	0	0	0	0	0	0	1	70	30	0	2	45	1	0	163	
7:40 AM	26	0	2	0	0	0	0	0	3	72	33	0	0	31	4	0	171	
7:45 AM	31	2	0	0	2	0	0	0	3	71	27	0	0	48	5	0	189	
7:50 AM	27	2	0	0	1	0	1	0	2	56	25	0	1	47	0	0	162	
7:55 AM	13	0	1	0	1	0	1	0	4	68	17	0	5	54	2	0	166	1990
8:00 AM	25	2	0	0	0	0	0	0	4	67	24	0	1	44	3	0	170	1998
8:05 AM	19	0	0	0	4	0	0	0	0	68	14	0	2	51	1	0	159	2008
8:10 AM	7	0	0	0	1	0	1	0	1	71	24	0	2	39	1	0	147	1989
8:15 AM	20	0	0	0	0	2	1	0	2	65	16	0	0	43	0	0	149	1979
8:20 AM	13	0	0	0	0	0	1	0	0	59	17	0	1	51	6	0	148	1964
8:25 AM	12	1	1	0	2	0	2	0	0	56	15	0	0	56	1	0	146	1925
8:30 AM	14	0	0	0	1	0	1	0	2	57	26	0	1	42	1	0	145	1915
8:35 AM	7	0	1	0	0	0	0	0	0	62	15	0	1	49	2	0	137	1889
8:40 AM	13	0	1	0	0	0	1	0	3	61	14	0	1	39	1	0	134	1852
8:45 AM	9	0	1	0	1	0	0	0	0	63	9	0	0	54	1	0	138	1801
8:50 AM	19	1	1	0	0	0	2	0	1	62	14	0	0	58	1	0	159	1798
8:55 AM	12	0	0	0	1	0	0	0	4	50	19	0	0	45	5	0	136	1768

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	336	16	8	0	12	0	4	0	32	796	340	0	4	504	36	0	2088
Heavy Trucks	16	4	4		4	0	0		0	76	16		0	76	4		200
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/13/2015 2:47 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment 105 - Application with Site Plans & Elevations

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

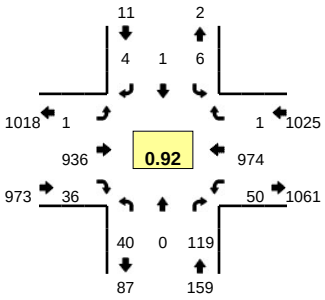
LOCATION: SW 115th Ave -- SW Tualatin-Sherwood Rd

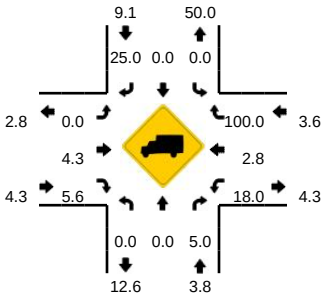
CITY/STATE: Tualatin, OR

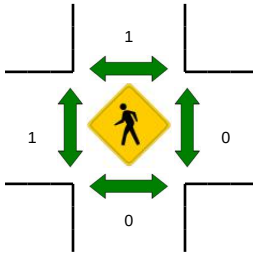
QC JOB #: 13177004

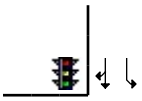
DATE: Thu, Jan 08 2015

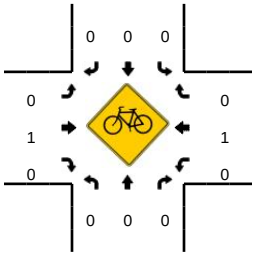
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

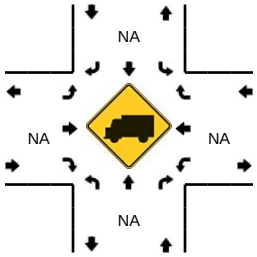


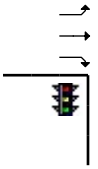


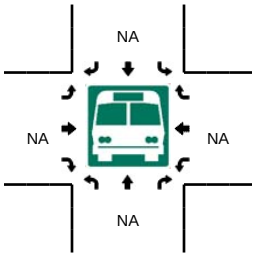












5-Min Count Period Beginning At	SW 115th Ave (Northbound)				SW 115th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	5	0	1	1	0	0	0	58	1	0	0	74	1	0	143	
4:05 PM	0	0	8	0	2	0	0	0	0	92	1	0	0	98	1	0	202	
4:10 PM	0	0	9	0	1	0	0	0	0	62	4	0	2	62	0	0	140	
4:15 PM	0	0	4	0	0	0	0	0	0	68	5	0	0	76	0	0	153	
4:20 PM	3	0	7	0	0	0	0	0	0	64	7	0	7	74	0	0	162	
4:25 PM	7	0	3	0	0	0	0	0	0	71	3	0	1	75	0	0	160	
4:30 PM	1	0	12	0	0	0	0	0	0	71	3	0	1	82	0	0	170	
4:35 PM	7	0	7	0	0	0	0	0	0	81	7	0	7	92	0	0	201	
4:40 PM	3	0	7	0	1	0	0	0	0	68	2	0	4	73	1	0	159	
4:45 PM	2	0	9	0	0	0	0	0	0	65	5	0	3	85	0	0	169	
4:50 PM	5	0	13	0	0	0	0	0	0	50	3	0	3	58	0	0	132	
4:55 PM	3	0	9	0	0	0	0	0	0	90	2	0	6	72	0	0	182	1973
5:00 PM	5	0	15	0	0	0	0	0	0	71	4	0	2	56	0	0	153	1983
5:05 PM	3	0	16	0	1	0	0	0	0	87	2	0	5	99	0	0	213	1994
5:10 PM	6	0	9	0	0	0	0	0	0	83	6	0	3	76	0	0	183	2037
5:15 PM	4	0	10	0	2	0	1	0	0	75	1	0	4	94	1	0	192	2076
5:20 PM	2	0	8	0	1	0	0	0	0	68	4	0	5	75	0	0	163	2077
5:25 PM	3	0	9	0	0	1	0	0	0	79	1	0	4	86	0	0	183	2100
5:30 PM	3	0	12	0	1	0	0	0	0	79	4	0	5	90	0	0	194	2124
5:35 PM	7	0	5	0	0	0	0	0	0	78	4	0	2	83	0	0	179	2102
5:40 PM	2	0	12	0	1	0	0	0	0	66	1	0	5	71	0	0	158	2101
5:45 PM	2	0	10	0	0	0	1	0	1	86	4	0	4	98	0	0	206	2138
5:50 PM	0	0	4	0	0	0	2	0	0	74	3	0	5	74	0	0	162	2168
5:55 PM	5	0	9	0	0	0	0	0	0	76	3	0	6	71	0	0	170	2156

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	0	140	0	12	0	4	0	0	980	36	0	48	1076	4	0	2352
Heavy Trucks	0	0	8		0	0	4		0	48	4		8	32	4		108
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/14/2015 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment 105 - Application with Site Plans & Elevations

Type of peak hour being reported: System Peak

Method for determining peak hour: Total Entering Volume

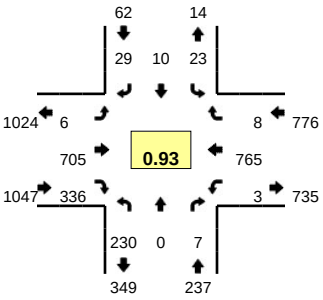
LOCATION: SW 112th Ave -- SW Tualatin-Sherwood Rd

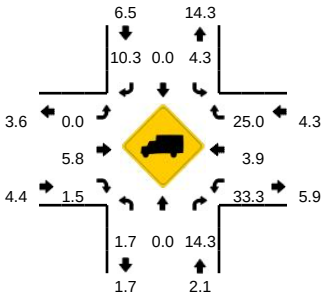
CITY/STATE: Tualatin, OR

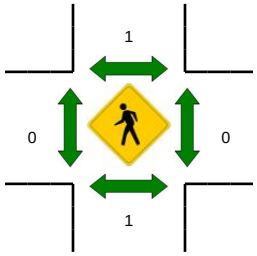
QC JOB #: 13177002

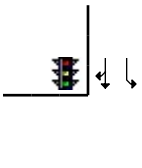
DATE: Thu, Jan 08 2015

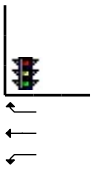
Peak-Hour: 4:55 PM -- 5:55 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

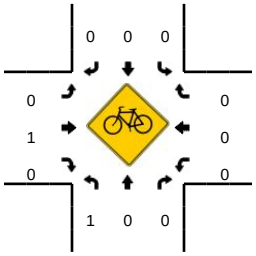


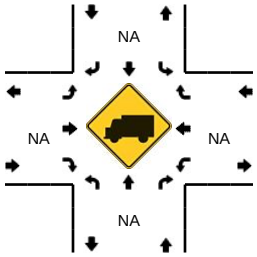


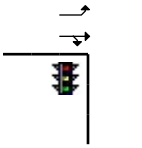


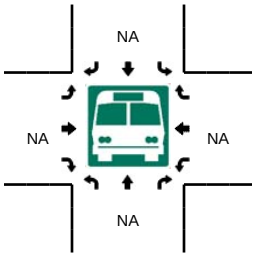












5-Min Count Period Beginning At	SW 112th Ave (Northbound)				SW 112th Ave (Southbound)				SW Tualatin-Sherwood Rd (Eastbound)				SW Tualatin-Sherwood Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	17	0	2	0	1	1	4	0	0	38	24	0	0	58	1	0	146	
4:05 PM	14	0	1	0	1	2	6	0	0	65	32	0	1	70	1	0	193	
4:10 PM	18	2	1	0	6	2	4	0	0	41	25	0	2	40	2	0	143	
4:15 PM	21	0	2	0	3	0	2	0	1	60	22	0	0	55	1	0	167	
4:20 PM	20	0	2	0	6	3	0	0	0	51	17	0	0	62	0	0	161	
4:25 PM	8	1	0	0	1	1	0	0	0	50	21	0	0	66	0	0	148	
4:30 PM	24	0	2	0	1	0	1	0	0	46	29	0	0	63	0	0	166	
4:35 PM	22	0	0	0	3	2	1	0	0	64	36	0	0	77	0	0	205	
4:40 PM	20	0	0	0	1	3	1	0	0	47	27	0	0	52	1	0	152	
4:45 PM	15	0	1	0	0	0	0	0	0	50	25	0	0	69	1	0	161	
4:50 PM	14	0	0	0	4	0	5	0	1	43	20	0	0	53	0	0	140	
4:55 PM	13	0	1	0	3	1	0	0	1	56	37	0	0	60	0	0	172	1954
5:00 PM	25	0	1	0	1	1	4	0	0	52	32	0	0	42	0	0	158	1966
5:05 PM	15	0	0	0	3	1	6	0	0	67	34	0	2	67	0	0	195	1968
5:10 PM	29	0	3	0	7	1	2	0	0	56	39	0	0	50	1	0	188	2013
5:15 PM	17	0	0	0	1	1	3	0	0	63	22	0	0	79	2	0	188	2034
5:20 PM	26	0	0	0	3	2	1	0	1	53	26	0	0	68	0	0	180	2053
5:25 PM	19	0	1	0	0	1	0	0	0	58	20	0	0	61	1	0	161	2066
5:30 PM	19	0	1	0	0	0	4	0	0	64	27	0	1	76	0	0	192	2092
5:35 PM	17	0	0	0	2	0	1	0	0	69	23	0	0	59	1	0	172	2059
5:40 PM	26	0	0	0	1	1	2	0	0	52	26	0	0	55	1	0	164	2071
5:45 PM	12	0	0	0	0	1	3	0	1	71	23	0	0	85	1	0	197	2107
5:50 PM	12	0	0	0	2	0	3	0	3	44	27	0	0	63	1	0	155	2122
5:55 PM	10	0	0	0	1	0	2	0	0	73	18	0	0	64	0	0	168	2118

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	244	0	12	0	44	12	44	0	0	744	380	0	8	784	12	0	2284
Heavy Trucks	0	0	0		0	0	8		0	44	12		4	32	4		104
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/14/2015 4:16 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Attachment 105 - Application with Site Plans & Elevations

Appendix B: LOS Criteria

Highway Capacity Manual, 2000

Signalized intersection level of service (LOS) is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. Specifically, LOS criteria are stated in terms of average delay per vehicle during a specified time period (for example, the PM peak hour). Vehicle delay is a complex measure based on many variables, including signal phasing (i.e., progression of movements through the intersection), signal cycle length, and traffic volumes with respect to intersection capacity. Table 1 shows LOS criteria for signalized intersections, as described in the *Highway Capacity Manual* (Transportation Research Board, Special Report 209, 2000).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (sec/veh)	General Description (Signalized Intersections)
A	≤10	Free Flow
B	>10 - 20	Stable Flow (slight delays)
C	>20 - 35	Stable flow (acceptable delays)
D	>35 - 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 - 80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop-controlled and two-way stop-controlled. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way, stop-controlled intersection LOS is defined in terms of the average vehicle delay of an individual movement(s). This is because the performance of a two-way, stop-controlled intersection is more closely reflected in terms of its individual movements, rather than its performance overall. For this reason, LOS for a two-way, stop-controlled intersection is defined in terms of its individual movements. With this in mind, total average vehicle delay (i.e., average delay of all movements) for a two-way, stop-controlled intersection should be viewed with discretion. Table 2 shows LOS criteria for unsignalized intersections (both all-way and two-way, stop-controlled).

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Appendix C: LOS Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1125	60	80	695	10	25	0	55	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.85			0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1727	1438	1641	1724		1337	1180			1615	
Flt Permitted		1.00	1.00	0.13	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1727	1438	216	1724		1337	1180			1615	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1125	60	80	695	10	25	0	55	0	0	5
RTOR Reduction (vph)	0	0	16	0	0	0	0	49	0	0	5	0
Lane Group Flow (vph)	0	1125	44	80	705	0	25	6	0	0	0	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	35%	35%	35%	0%	0%	0%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2								
Actuated Green, G (s)		103.6	103.6	110.1	114.1		4.5	15.9			7.4	
Effective Green, g (s)		103.6	103.6	110.1	114.1		4.5	15.9			7.4	
Actuated g/C Ratio		0.74	0.74	0.79	0.81		0.03	0.11			0.05	
Clearance Time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Vehicle Extension (s)		3.5	3.5	1.5	3.5		1.5	1.5			1.5	
Lane Grp Cap (vph)		1277	1064	236	1405		42	134			85	
v/s Ratio Prot		c0.65		0.02	c0.41		c0.02	c0.01			0.00	
v/s Ratio Perm			0.03	0.25								
v/c Ratio		0.88	0.04	0.34	0.50		0.60	0.05			0.00	
Uniform Delay, d1		13.6	4.9	31.3	4.1		66.9	55.3			62.8	
Progression Factor		1.00	1.00	1.27	1.38		1.00	1.00			1.00	
Incremental Delay, d2		8.9	0.1	0.3	1.1		14.2	0.1			0.0	
Delay (s)		22.5	5.0	39.9	6.7		81.0	55.3			62.8	
Level of Service		C	A	D	A		F	E			E	
Approach Delay (s)		21.6			10.1			63.4			62.8	
Approach LOS		C			B			E			E	

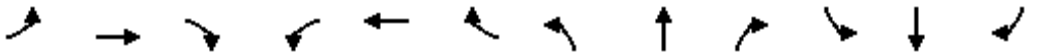
Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	840	295	10	530	25	250	10	5	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	840	295	10	530	25	250	10	5	5	0	5
RTOR Reduction (vph)	0	0	61	0	0	9	0	4	0	0	5	0
Lane Group Flow (vph)	30	840	234	10	530	16	250	11	0	5	0	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	5%	5%	5%	29%	29%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	4.8	95.0	95.0	1.3	91.5	91.5	24.2	24.0		1.2	1.0	
Effective Green, g (s)	4.8	95.0	95.0	1.3	91.5	91.5	24.2	24.0		1.2	1.0	
Actuated g/C Ratio	0.03	0.68	0.68	0.01	0.65	0.65	0.17	0.17		0.01	0.01	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	56	1171	975	14	1108	942	297	294		11	8	
v/s Ratio Prot	c0.02	c0.49		0.01	0.31		c0.15	c0.01		0.00	0.00	
v/s Ratio Perm			0.16			0.01						
v/c Ratio	0.54	0.72	0.24	0.71	0.48	0.02	0.84	0.04		0.45	0.00	
Uniform Delay, d1	66.5	14.1	8.6	69.2	12.2	8.5	56.0	48.4		69.1	69.0	
Progression Factor	0.94	0.88	1.45	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	2.1	0.3	87.8	1.5	0.0	18.3	0.0		10.5	0.1	
Delay (s)	65.0	14.5	12.9	157.0	13.7	8.5	74.3	48.4		79.5	69.1	
Level of Service	E	B	B	F	B	A	E	D		E	E	
Approach Delay (s)		15.4			16.0			72.8			74.3	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

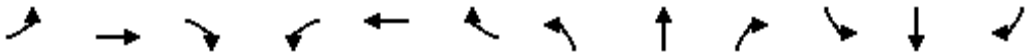
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	935	35	50	975	5	40	0	120	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1521	1736	1825		1736	1553		1656	1595	
Flt Permitted	0.19	1.00	1.00	0.18	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	340	1827	1521	325	1825		1736	1553		1656	1595	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	935	35	50	975	5	40	0	120	5	5	5
RTOR Reduction (vph)	0	0	11	0	0	0	0	107	0	0	5	0
Lane Group Flow (vph)	5	935	24	50	980	0	40	13	0	5	5	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	9%	9%	9%
Turn Type	D.P+P	NA	Perm	D.P+P	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2								
Actuated Green, G (s)	88.1	81.4	81.4	88.1	86.8		5.9	12.8		1.1	8.0	
Effective Green, g (s)	88.1	81.4	81.4	88.1	86.8		5.9	12.8		1.1	8.0	
Actuated g/C Ratio	0.73	0.68	0.68	0.73	0.72		0.05	0.11		0.01	0.07	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5		1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	264	1239	1031	317	1320		85	165		15	106	
v/s Ratio Prot	0.00	0.51		c0.01	c0.54		c0.02	c0.01		0.00	0.00	
v/s Ratio Perm	0.01		0.02	0.11								
v/c Ratio	0.02	0.75	0.02	0.16	0.74		0.47	0.08		0.33	0.05	
Uniform Delay, d1	18.4	12.7	6.3	21.1	9.9		55.5	48.3		59.1	52.4	
Progression Factor	1.00	1.00	1.00	0.92	0.87		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	4.3	0.0	0.1	2.9		1.5	0.1		4.7	0.1	
Delay (s)	18.4	17.0	6.3	19.4	11.5		57.0	48.4		63.8	52.5	
Level of Service	B	B	A	B	B		E	D		E	D	
Approach Delay (s)		16.6			11.9			50.5			56.3	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

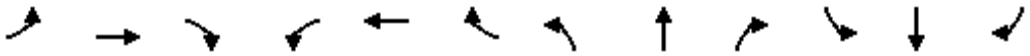
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	705	335	5	765	10	230	0	5	25	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1516	1736	1827	1517	1770	1583		1687	1576	
Flt Permitted	0.22	1.00	1.00	0.26	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	409	1827	1516	477	1827	1517	1770	1583		1687	1576	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	705	335	5	765	10	230	0	5	25	10	30
RTOR Reduction (vph)	0	0	111	0	0	4	0	4	0	0	28	0
Lane Group Flow (vph)	5	705	224	5	765	6	230	1	0	25	12	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2		6						
Actuated Green, G (s)	73.8	72.8	72.8	73.8	72.8	72.8	20.5	19.1		8.6	7.2	
Effective Green, g (s)	73.8	72.8	72.8	73.8	72.8	72.8	20.5	19.1		8.6	7.2	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.61	0.61	0.17	0.16		0.07	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	262	1108	919	303	1108	920	302	251		120	94	
v/s Ratio Prot	c0.00	0.39		0.00	c0.42		c0.13	0.00		0.01	c0.01	
v/s Ratio Perm	0.01		0.15	0.01		0.00						
v/c Ratio	0.02	0.64	0.24	0.02	0.69	0.01	0.76	0.00		0.21	0.13	
Uniform Delay, d1	12.5	15.1	10.9	11.5	16.0	9.3	47.4	42.4		52.5	53.4	
Progression Factor	1.34	0.87	1.47	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.1	0.5	0.0	3.5	0.0	9.8	0.0		0.3	0.2	
Delay (s)	16.8	15.3	16.5	11.5	19.5	9.3	57.2	42.4		52.8	53.6	
Level of Service	B	B	B	B	B	A	E	D		D	D	
Approach Delay (s)		15.7			19.3			56.9			53.3	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	90	135	735	10	30	0	65	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.85			0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1727	1438	1641	1724		1337	1180			1615	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1727	1438	1641	1724		1337	1180			1615	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1200	90	135	735	10	30	0	65	0	0	5
RTOR Reduction (vph)	0	0	31	0	0	0	0	57	0	0	5	0
Lane Group Flow (vph)	0	1200	59	135	745	0	30	8	0	0	0	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	35%	35%	35%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)		78.5	78.5	13.0	95.5		3.1	14.5			7.4	
Effective Green, g (s)		78.5	78.5	13.0	95.5		3.1	14.5			7.4	
Actuated g/C Ratio		0.65	0.65	0.11	0.80		0.03	0.12			0.06	
Clearance Time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Vehicle Extension (s)		3.5	3.5	1.5	3.5		1.5	1.5			1.5	
Lane Grp Cap (vph)		1129	940	177	1372		34	142			99	
v/s Ratio Prot		c0.69		c0.08	0.43		c0.02	c0.01			0.00	
v/s Ratio Perm			0.04									
v/c Ratio		1.06	0.06	0.76	0.54		0.88	0.06			0.00	
Uniform Delay, d1		20.8	7.5	52.0	4.4		58.3	46.7			52.8	
Progression Factor		1.00	1.00	0.99	1.03		1.00	1.00			1.00	
Incremental Delay, d2		45.2	0.1	12.3	1.2		104.6	0.1			0.0	
Delay (s)		65.9	7.6	63.6	5.7		162.9	46.7			52.8	
Level of Service		E	A	E	A		F	D			D	
Approach Delay (s)		61.9			14.6			83.4			52.8	
Approach LOS		E			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

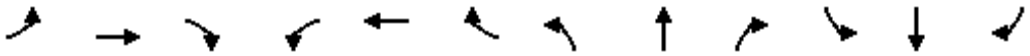
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	885	310	10	615	40	260	10	5	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	885	310	10	615	40	260	10	5	10	0	10
RTOR Reduction (vph)	0	0	69	0	0	16	0	4	0	0	10	0
Lane Group Flow (vph)	60	885	241	10	615	25	260	11	0	10	0	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	5%	5%	5%	29%	29%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	7.6	79.8	79.8	1.3	73.5	73.5	19.4	19.1		1.3	1.0	
Effective Green, g (s)	7.6	79.8	79.8	1.3	73.5	73.5	19.4	19.1		1.3	1.0	
Actuated g/C Ratio	0.06	0.66	0.66	0.01	0.61	0.61	0.16	0.16		0.01	0.01	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	103	1148	956	17	1038	883	277	273		15	10	
v/s Ratio Prot	c0.04	c0.51		0.01	0.36		c0.15	c0.01		0.01	0.00	
v/s Ratio Perm			0.17			0.02						
v/c Ratio	0.58	0.77	0.25	0.59	0.59	0.03	0.94	0.04		0.67	0.01	
Uniform Delay, d1	54.7	13.8	8.1	59.1	14.1	9.2	49.7	42.7		59.1	59.0	
Progression Factor	1.36	0.38	0.03	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	1.5	0.2	29.3	2.5	0.1	37.1	0.0		62.4	0.1	
Delay (s)	75.9	6.7	0.4	88.3	16.6	9.2	86.8	42.7		121.5	59.1	
Level of Service	E	A	A	F	B	A	F	D		F	E	
Approach Delay (s)		8.5			17.3			84.4			90.3	
Approach LOS		A			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	995	40	60	1045	5	70	0	180	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1521	1736	1825		1736	1553		1656	1595	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1827	1521	1736	1825		1736	1553		1656	1595	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	995	40	60	1045	5	70	0	180	5	5	5
RTOR Reduction (vph)	0	0	13	0	0	0	0	163	0	0	5	0
Lane Group Flow (vph)	5	995	27	60	1050	0	70	17	0	5	5	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	9%	9%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	1.1	81.7	81.7	7.7	88.3		5.7	11.6		1.0	6.9	
Effective Green, g (s)	1.1	81.7	81.7	7.7	88.3		5.7	11.6		1.0	6.9	
Actuated g/C Ratio	0.01	0.68	0.68	0.06	0.74		0.05	0.10		0.01	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5		1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	15	1243	1035	111	1342		82	150		13	91	
v/s Ratio Prot	0.00	0.54		c0.03	c0.58		c0.04	c0.01		0.00	0.00	
v/s Ratio Perm			0.02									
v/c Ratio	0.33	0.80	0.03	0.54	0.78		0.85	0.12		0.38	0.06	
Uniform Delay, d1	59.1	13.4	6.2	54.4	9.9		56.7	49.5		59.2	53.5	
Progression Factor	1.00	1.00	1.00	0.96	0.87		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	5.5	0.0	2.0	3.3		52.2	0.1		6.8	0.1	
Delay (s)	63.8	18.9	6.3	54.5	11.8		108.9	49.6		66.0	53.6	
Level of Service	E	B	A	D	B		F	D		E	D	
Approach Delay (s)		18.6			14.2			66.2			57.7	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

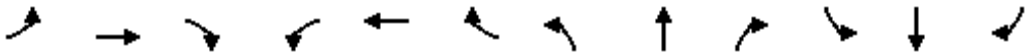
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	790	350	5	805	20	240	0	5	40	10	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1516	1736	1827	1517	1770	1583		1687	1550	
Flt Permitted	0.19	1.00	1.00	0.22	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	355	1827	1516	395	1827	1517	1770	1583		1687	1550	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	790	350	5	805	20	240	0	5	40	10	55
RTOR Reduction (vph)	0	0	104	0	0	8	0	4	0	0	51	0
Lane Group Flow (vph)	25	790	246	5	805	12	240	1	0	40	14	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2		6						
Actuated Green, G (s)	75.1	74.1	74.1	75.1	72.0	72.0	18.6	13.3		13.1	7.8	
Effective Green, g (s)	75.1	74.1	74.1	75.1	72.0	72.0	18.6	13.3		13.1	7.8	
Actuated g/C Ratio	0.63	0.62	0.62	0.63	0.60	0.60	0.16	0.11		0.11	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	257	1128	936	258	1096	910	274	175		184	100	
v/s Ratio Prot	c0.00	0.43		0.00	c0.44		c0.14	0.00		0.02	c0.01	
v/s Ratio Perm	0.06		0.16	0.01		0.01						
v/c Ratio	0.10	0.70	0.26	0.02	0.73	0.01	0.88	0.00		0.22	0.14	
Uniform Delay, d1	13.3	15.5	10.5	12.3	17.2	9.7	49.6	47.5		48.8	52.9	
Progression Factor	0.42	0.36	0.07	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	2.6	0.5	0.0	4.4	0.0	24.6	0.0		0.2	0.2	
Delay (s)	5.7	8.1	1.3	12.3	21.5	9.7	74.2	47.5		49.0	53.1	
Level of Service	A	A	A	B	C	A	E	D		D	D	
Approach Delay (s)		6.0			21.2			73.7			51.6	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	177	296	735	10	42	0	87	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes		1.00	0.98	1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	0.85			0.85	
Flt Protected		1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1727	1438	1641	1724		1337	1180			1615	
Flt Permitted		1.00	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1727	1438	1641	1724		1337	1180			1615	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1200	177	296	735	10	42	0	87	0	0	5
RTOR Reduction (vph)	0	0	64	0	0	0	0	76	0	0	5	0
Lane Group Flow (vph)	0	1200	113	296	745	0	42	11	0	0	0	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	35%	35%	35%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)		57.8	57.8	32.6	94.4		4.2	15.6			7.4	
Effective Green, g (s)		57.8	57.8	32.6	94.4		4.2	15.6			7.4	
Actuated g/C Ratio		0.48	0.48	0.27	0.79		0.04	0.13			0.06	
Clearance Time (s)		5.5	5.5	4.0	5.5		4.0	4.5			4.5	
Vehicle Extension (s)		3.5	3.5	1.5	3.5		1.5	1.5			1.5	
Lane Grp Cap (vph)		831	692	445	1356		46	153			99	
v/s Ratio Prot		c0.69		c0.18	0.43		c0.03	c0.01			0.00	
v/s Ratio Perm			0.08									
v/c Ratio		1.44	0.16	0.67	0.55		0.91	0.07			0.00	
Uniform Delay, d1		31.1	17.5	38.8	4.8		57.7	45.9			52.8	
Progression Factor		1.00	1.00	0.91	1.07		1.00	1.00			1.00	
Incremental Delay, d2		206.6	0.5	1.8	1.0		98.1	0.1			0.0	
Delay (s)		237.7	18.0	37.2	6.1		155.9	45.9			52.8	
Level of Service		F	B	D	A		F	D			D	
Approach Delay (s)		209.5			15.0			81.7			52.8	
Approach LOS		F			B			F			D	

Intersection Summary			
HCM 2000 Control Delay	123.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	907	310	10	776	40	260	10	5	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	907	310	10	776	40	260	10	5	10	0	10
RTOR Reduction (vph)	0	0	67	0	0	16	0	4	0	0	10	0
Lane Group Flow (vph)	60	907	243	10	776	24	260	11	0	10	0	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	5%	5%	5%	29%	29%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	9.5	79.8	79.8	1.3	71.6	71.6	19.4	19.1		1.3	1.0	
Effective Green, g (s)	9.5	79.8	79.8	1.3	71.6	71.6	19.4	19.1		1.3	1.0	
Actuated g/C Ratio	0.08	0.66	0.66	0.01	0.60	0.60	0.16	0.16		0.01	0.01	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	129	1148	956	17	1011	860	277	273		15	10	
v/s Ratio Prot	c0.04	c0.53		0.01	0.46		c0.15	c0.01		0.01	0.00	
v/s Ratio Perm			0.17			0.02						
v/c Ratio	0.47	0.79	0.25	0.59	0.77	0.03	0.94	0.04		0.67	0.01	
Uniform Delay, d1	52.8	14.2	8.1	59.1	18.0	9.9	49.7	42.7		59.1	59.0	
Progression Factor	1.27	0.43	0.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5	0.1	29.3	5.6	0.1	37.1	0.0		62.4	0.1	
Delay (s)	67.0	6.6	0.1	88.3	23.6	10.0	86.8	42.7		121.5	59.1	
Level of Service	E	A	A	F	C	A	F	D		F	E	
Approach Delay (s)		7.9			23.7			84.4			90.3	
Approach LOS		A			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	995	53	83	1045	5	162	0	350	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1521	1736	1825		1736	1553		1656	1595	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1736	1827	1521	1736	1825		1736	1553		1656	1595	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	995	53	83	1045	5	162	0	350	5	5	5
RTOR Reduction (vph)	0	0	21	0	0	0	0	180	0	0	5	0
Lane Group Flow (vph)	5	995	32	83	1050	0	162	170	0	5	5	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	9%	9%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									
Actuated Green, G (s)	1.1	72.2	72.2	11.0	82.1		11.2	17.8		1.0	7.6	
Effective Green, g (s)	1.1	72.2	72.2	11.0	82.1		11.2	17.8		1.0	7.6	
Actuated g/C Ratio	0.01	0.60	0.60	0.09	0.68		0.09	0.15		0.01	0.06	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.0	4.5		4.0	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5		1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	15	1099	915	159	1248		162	230		13	101	
v/s Ratio Prot	0.00	c0.54		c0.05	c0.58		c0.09	c0.11		0.00	0.00	
v/s Ratio Perm			0.02									
v/c Ratio	0.33	0.91	0.03	0.52	0.84		1.00	0.74		0.38	0.05	
Uniform Delay, d1	59.1	20.9	9.7	52.0	14.1		54.4	48.9		59.2	52.8	
Progression Factor	1.00	1.00	1.00	0.93	0.79		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.7	12.2	0.1	1.1	5.4		70.7	10.6		6.8	0.1	
Delay (s)	63.8	33.1	9.8	49.3	16.5		125.1	59.5		66.0	52.9	
Level of Service	E	C	A	D	B		F	E		E	D	
Approach Delay (s)		32.1			18.9			80.3			57.2	
Approach LOS		C			B			F			E	

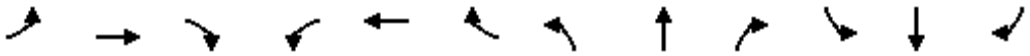
Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	960	350	5	828	20	240	0	5	40	10	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1516	1736	1827	1517	1770	1583		1687	1550	
Flt Permitted	0.17	1.00	1.00	0.10	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	307	1827	1516	184	1827	1517	1770	1583		1687	1550	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	960	350	5	828	20	240	0	5	40	10	55
RTOR Reduction (vph)	0	0	74	0	0	8	0	5	0	0	51	0
Lane Group Flow (vph)	25	960	276	5	828	12	240	0	0	40	14	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2		6						
Actuated Green, G (s)	73.3	72.3	72.3	73.3	70.2	70.2	20.2	7.7		20.5	8.0	
Effective Green, g (s)	73.3	72.3	72.3	73.3	70.2	70.2	20.2	7.7		20.5	8.0	
Actuated g/C Ratio	0.61	0.60	0.60	0.61	0.59	0.59	0.17	0.06		0.17	0.07	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	224	1100	913	125	1068	887	297	101		288	103	
v/s Ratio Prot	c0.00	c0.53		0.00	0.45		c0.14	0.00		0.02	c0.01	
v/s Ratio Perm	0.07		0.18	0.02		0.01						
v/c Ratio	0.11	0.87	0.30	0.04	0.78	0.01	0.81	0.00		0.14	0.13	
Uniform Delay, d1	15.1	20.0	11.6	19.2	18.9	10.4	48.0	52.6		42.3	52.7	
Progression Factor	0.96	0.67	0.79	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	5.8	0.5	0.0	5.5	0.0	14.0	0.0		0.1	0.2	
Delay (s)	14.6	19.3	9.7	19.3	24.4	10.4	62.1	52.6		42.3	52.9	
Level of Service	B	B	A	B	C	B	E	D		D	D	
Approach Delay (s)		16.7			24.1			61.9			48.9	
Approach LOS		B			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1200	177	296	735	10	42	0	87	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5	5.5	4.0	5.5			4.5	4.0		4.5	
Lane Util. Factor		1.00	1.00	0.97	1.00			1.00	1.00		1.00	
Frpb, ped/bikes		1.00	0.99	1.00	1.00			1.00	0.99		1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt		1.00	0.85	1.00	1.00			1.00	0.85		0.85	
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00		1.00	
Satd. Flow (prot)		1727	1450	3183	1724			1337	1190		1615	
Flt Permitted		1.00	1.00	0.95	1.00			0.75	1.00		1.00	
Satd. Flow (perm)		1727	1450	3183	1724			1062	1190		1615	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1200	177	296	735	10	42	0	87	0	0	5
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	50	0	5	0
Lane Group Flow (vph)	0	1200	148	296	745	0	0	42	37	0	0	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	35%	35%	35%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases			2				8		8	4		
Actuated Green, G (s)		79.7	79.7	15.7	99.4			10.6	26.3		10.6	
Effective Green, g (s)		79.7	79.7	15.7	99.4			10.6	26.3		10.6	
Actuated g/C Ratio		0.66	0.66	0.13	0.83			0.09	0.22		0.09	
Clearance Time (s)		5.5	5.5	4.0	5.5			4.5	4.0		4.5	
Vehicle Extension (s)		3.5	3.5	1.5	3.5			1.5	1.5		1.5	
Lane Grp Cap (vph)		1147	963	416	1428			93	260		142	
v/s Ratio Prot		c0.69		c0.09	0.43				0.02		0.00	
v/s Ratio Perm			0.10					c0.04	0.01			
v/c Ratio		1.05	0.15	0.71	0.52			0.45	0.14		0.00	
Uniform Delay, d1		20.1	7.5	50.0	3.1			51.9	37.8		49.9	
Progression Factor		1.00	1.00	1.02	1.10			1.00	1.00		1.00	
Incremental Delay, d2		39.5	0.3	3.0	0.9			1.3	0.1		0.0	
Delay (s)		59.6	7.9	54.0	4.3			53.2	37.9		49.9	
Level of Service		E	A	D	A			D	D		D	
Approach Delay (s)		53.0			18.4			42.9			49.9	
Approach LOS		D			B			D			D	

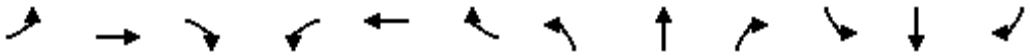
Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	907	310	10	776	40	260	10	5	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1641	1727	1438	1612	1696	1442	1719	1719		1399	1252	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	907	310	10	776	40	260	10	5	10	0	10
RTOR Reduction (vph)	0	0	67	0	0	16	0	4	0	0	10	0
Lane Group Flow (vph)	60	907	243	10	776	24	260	11	0	10	0	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	10%	10%	10%	12%	12%	12%	5%	5%	5%	29%	29%	29%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Actuated Green, G (s)	9.5	79.8	79.8	1.3	71.6	71.6	19.4	19.1		1.3	1.0	
Effective Green, g (s)	9.5	79.8	79.8	1.3	71.6	71.6	19.4	19.1		1.3	1.0	
Actuated g/C Ratio	0.08	0.66	0.66	0.01	0.60	0.60	0.16	0.16		0.01	0.01	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	129	1148	956	17	1011	860	277	273		15	10	
v/s Ratio Prot	c0.04	c0.53		0.01	0.46		c0.15	c0.01		0.01	0.00	
v/s Ratio Perm			0.17			0.02						
v/c Ratio	0.47	0.79	0.25	0.59	0.77	0.03	0.94	0.04		0.67	0.01	
Uniform Delay, d1	52.8	14.2	8.1	59.1	18.0	9.9	49.7	42.7		59.1	59.0	
Progression Factor	1.32	0.20	0.06	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.5	0.2	29.3	5.6	0.1	37.1	0.0		62.4	0.1	
Delay (s)	70.0	4.3	0.6	88.3	23.6	10.0	86.8	42.7		121.5	59.1	
Level of Service	E	A	A	F	C	A	F	D		F	E	
Approach Delay (s)		6.5			23.7			84.4			90.3	
Approach LOS		A			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	995	53	83	1045	5	162	0	350	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.0	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00			1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1827	1534	3367	1825			1732	1553	1656	1595	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.75	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1827	1534	3367	1825			1369	1553	1656	1595	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	995	53	83	1045	5	162	0	350	5	5	5
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	135	0	4	0
Lane Group Flow (vph)	5	995	34	83	1050	0	0	162	215	5	6	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	9%	9%	9%
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2				8		8			
Actuated Green, G (s)	1.0	77.4	77.4	6.3	82.7			17.3	23.6	1.0	22.3	
Effective Green, g (s)	1.0	77.4	77.4	6.3	82.7			17.3	23.6	1.0	22.3	
Actuated g/C Ratio	0.01	0.65	0.65	0.05	0.69			0.14	0.20	0.01	0.19	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5			4.5	4.0	4.0	4.5	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5			1.5	1.5	1.5	1.5	
Lane Grp Cap (vph)	14	1178	989	176	1257			197	305	13	296	
v/s Ratio Prot	0.00	0.54		0.02	c0.58				c0.04	c0.00	0.00	
v/s Ratio Perm			0.02					c0.12	0.10			
v/c Ratio	0.36	0.84	0.03	0.47	0.84			0.82	0.71	0.38	0.02	
Uniform Delay, d1	59.2	16.6	7.7	55.2	13.7			49.9	45.0	59.2	39.9	
Progression Factor	1.00	1.00	1.00	0.95	0.82			1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.6	7.5	0.1	0.5	4.7			22.3	5.9	6.8	0.0	
Delay (s)	64.8	24.1	7.8	52.8	15.9			72.2	50.9	66.0	39.9	
Level of Service	E	C	A	D	B			E	D	E	D	
Approach Delay (s)		23.5			18.6			57.6			48.6	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	960	350	5	828	20	240	0	5	40	10	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1827	1516	1736	1827	1517	1770	1583		1687	1550	
Flt Permitted	0.19	1.00	1.00	0.12	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	340	1827	1516	221	1827	1517	1770	1583		1687	1550	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	25	960	350	5	828	20	240	0	5	40	10	55
RTOR Reduction (vph)	0	0	83	0	0	8	0	5	0	0	51	0
Lane Group Flow (vph)	25	960	268	5	828	12	240	0	0	40	14	0
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	7%	7%	7%
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6		2	2		6						
Actuated Green, G (s)	76.0	75.0	75.0	76.0	72.9	72.9	17.5	6.4		19.1	8.0	
Effective Green, g (s)	76.0	75.0	75.0	76.0	72.9	72.9	17.5	6.4		19.1	8.0	
Actuated g/C Ratio	0.63	0.62	0.62	0.63	0.61	0.61	0.15	0.05		0.16	0.07	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	4.0	5.0		4.0	5.0	
Vehicle Extension (s)	1.5	3.5	3.5	1.5	3.5	3.5	1.5	1.5		1.5	1.5	
Lane Grp Cap (vph)	251	1141	947	152	1109	921	258	84		268	103	
v/s Ratio Prot	c0.00	c0.53		0.00	0.45		c0.14	0.00		0.02	c0.01	
v/s Ratio Perm	0.06		0.18	0.02		0.01						
v/c Ratio	0.10	0.84	0.28	0.03	0.75	0.01	0.93	0.00		0.15	0.13	
Uniform Delay, d1	13.4	17.8	10.2	17.0	16.9	9.3	50.6	53.8		43.5	52.7	
Progression Factor	0.63	0.66	0.38	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	4.7	0.4	0.0	4.6	0.0	37.2	0.0		0.1	0.2	
Delay (s)	8.5	16.4	4.4	17.0	21.5	9.3	87.9	53.8		43.5	52.9	
Level of Service	A	B	A	B	C	A	F	D		D	D	
Approach Delay (s)		13.1			21.2			87.2			49.4	
Approach LOS		B			C			F			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix D: Collision Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Road & SW 115th Avenue
January 1, 2011 through December 31, 2013

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
06976	N	N	N			12/09/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT											07
NONE						Fri	0	SW 115TH AVE	SE		TRF SIGNAL	N	DRY	REAR		UNKN	SW NE										000	00
						11A			06	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	M	OR-Y		026	000		07
																							UNK					
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		000	000		00
																							OR<25					
02414	N	N	N			05/10/2013	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Fri	0	SW 115TH AVE	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE										000	00
						9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	31	F	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	27	M	OTH-Y		000	000		00
																							OR<25					
00809	N	N	N	N	N	02/15/2013	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						Fri	0	SW 115TH AVE	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW										022	00
						1P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	32	F	OR-Y		043,026	022		07
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	NE SW									000		00
																PSNGR CAR		01	DRVR	INJC	37	F	OR-Y		043,026	000		07
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	NE SW									022		00
																PSNGR CAR		01	DRVR	NONE	37	M	OR-Y		000	022		00
																							OR<25					
06202	N	N	N			11/09/2012	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 0	TURN-R											08
NO RPT						Fri	0	SW 115TH AVE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW S										000	00
						12P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	31	M	OTH-Y		006	000		08
																							N-RES					
															02	NONE 0	STRGHT											
																PRVTE	SW NE									000		00
																PSNGR CAR		01	DRVR	INJC	21	M	OR-Y		000	000		00
																							OR<25					
04799	N	N	N	N	N	08/29/2013	16	SW TUALATIN-SHERWOOD	INTER	3-LEG	N	N	RAIN	O-1TURN	01	NONE 0	TURN-L											04
CITY						Thu	0	SW 115TH AVE	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NE S										000	00
						6A			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	44	M	OR-Y		020,004	000		04
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	SW NE									000		00
																PSNGR CAR		01	DRVR	INJC	50	F	OR-Y		000	000		00
																							OR<25					

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Road & SW 115th Avenue
January 1, 2011 through December 31, 2013

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
06982	N	N	N	N	N	12/07/2012	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	07
CITY						Fri	0	SW 115TH AVE	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	W E										000		00
						11A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	43	F	OR-Y		043,026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	W E									011	013	00
																PSNGR CAR		01	DRVR	NONE	41	F	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	W E									022		00
																MOTRHOME		01	DRVR	NONE	80	M	OR-Y		000	000		00
																							OR<25					

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Road & SW Avery Street /SW 112th Avenue
January 1, 2011 through December 31, 2013

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
06996	N	N	N	N	N	12/02/2013	16	SW AVERY ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						Mon	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW										000		00
						12P			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		043,026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	INJC	38	F	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJC	04	M			000	000		00
																		03	PSNG	INJC	12	M			000	000		00
02516	N	N	N			05/16/2011	16	SW AVERY ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						Mon	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									001		00
						9A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	54	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	31	M	OR-Y		000	000		00
																							OR<25					
01838	N	N	N	N	N	04/11/2012	16	SW AVERY ST	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
CITY						Wed	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW NE									000		00
						9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	20	F	OR-Y		043,026	000		07
																							OR>25					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJA	26	F	OR-Y		000	000		00
																							OR>25					
																		02	PSNG	INJA	65	F			000	000		00
02166	Y	N	N			04/28/2012	16	SW AVERY ST	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											01
NO RPT						Sat	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	UNK	REAR		PRVTE	SW NE									000		00
						6A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	26	F	OTH-Y		047,026	000		01
																							N-RES					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	54	F	OR-Y		000	000		00
																							OR<25					
03641	N	N	N			06/12/2012	17	SW AVERY ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Tue	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	DRY	REAR		UNKN	SW NE									000		00
						4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		000	000		00
																							OR<25					

CITY OF TUALATIN, WASHINGTON COUNTY

SW Tualatin-Sherwood Road & SW Avery Street /SW 112th Avenue

January 1, 2011 through December 31, 2013

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05347	N	N	N	N	N	10/07/2012	16	SW AVERY ST	INTER	UNKNOWN	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,07
CITY						Sun	0	SW TUALATIN-SHERWOOD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE										000		00
						12P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	47	M	OR-Y		016,026	038		27,07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	40	M	OTH-Y		000	000		00
																							N-RES					
02207	N	N	N	N	N	05/01/2013	16	SW AVERY ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R											02
CITY						Wed	0	SW TUALATIN-SHERWOOD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW SE										000		00
						12P			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	83	F	OR-Y		028	000		02
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	NW SE									000		00
																PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		000	000		00
																							OR<25					
02423	N	N	N			05/11/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						Wed	0	SW 112TH AVE	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE SW									001		00
						4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		026	000		07
																							OR>25					
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	NONE	79	M	OR-Y		000	000		00
																							OR<25					
02518	N	N	N			05/16/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Mon	0	SW 112TH AVE	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
						5P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	F	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	INJC	24	F	OR-Y		000	000		00
																							OR<25					
06867	N	N	N			11/28/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Mon	0	SW 112TH AVE	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
						4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		026	000		07
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	NONE	54	M	OR-Y		000	000		00
																							OR<25					
81002	N	N	N			03/17/2012	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sat	0	SW 112TH AVE	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
						8A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000		07
																							UNK					

CITY OF TUALATIN, WASHINGTON COUNTY — SW Tualatin-Sherwood Road & SW Avery Street /SW 112th Avenue

January 1, 2011 through December 31, 2013

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0 / PRVTE / PSNGR CAR	STOP / NE SW									011		00
																		01	DRVR	NONE	59	M	OR-Y / OR<25		000	000		00
00663	N	N	N			02/06/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											013	27
NONE						Sun	0	SW 112TH AVE	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
						4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y / OR<25		016,026	038		27
															02	NONE 0	STOP											
																PRVTE	E W									011	013	00
																PSNGR CAR		01	DRVR	INJC	34	M	OR-Y / OR<25		000	000		00
																		02	PSNG	INJC	32	F			000	000		00
																		03	PSNG	INJC	08	F			000	000		00
															03	NONE 0	STOP											
																PRVTE	E W									022		00
																PSNGR CAR		01	DRVR	NONE	64	M	OTH-Y / N-RES		000	000		00
02935	N	N	N			06/08/2012	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												07
NO RPT						Fri	0	SW 112TH AVE	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
						5P			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y / OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	NE SW									011		00
																PSNGR CAR		01	DRVR	INJC	33	M	OTH-Y / N-RES		000	000		00
																		02	PSNG	INJC	28	F			000	000		00
																		03	PSNG	INJC	04	F			000	000		00
															03	NONE 0	STRGHT											
																PRVTE	NE SW									022		00
																PSNGR CAR		01	DRVR	INJC	66	M	OR-Y / OR<25		026	000		07
																		02	PSNG	INJC	69	F			000	000		00
05414	N	N	N	N	N	10/03/2011	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	RAIN	O-1TURN	01	NONE 0	TURN-L												02
CITY						Mon	0	SW 112TH AVE	CN		TRF SIGNAL	N	WET	TURN		RENTL	SW NW									000		00
						6A			02	0		N	DLIT	PDO		TRUCK		01	DRVR	NONE	34	M	OR-Y / OR<25		004,028	000		02
															02	NONE 0	STRGHT											
																PRVTE	NE SW									000		00
																PSNGR CAR		01	DRVR	NONE	30	M	OR-Y / OR>25		000	000		00
01760	N	N	N	N	N	04/10/2013	16	SW TUALATIN-SHERWOOD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L												04
CITY						Wed	0	SW 112TH AVE	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NW NE									000		00
						11A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	47	M	OTH-Y / OR>25		020	000		04

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST CLOTHING NOT VISIBLE
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1TURN	FROM OPPOSITE DIRECTION - ONE TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAYON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix E: Queuing Worksheets

QUEUE LENGTH PROBABILITIES - AM Peak Hour (Mitigated)

Approach volume (vph): 296
Length of red interval (sec): 105
Number of turning lanes: 2

Average arrival rate = 4.796296

Number of vehicles arriving during the red interval (N)	Prob. of Arrivals >= N	Queue Length (ft)		Factorial	Prob. of N Arrivals
0	1.000	0		1	0.00826
1	0.992	25		1	0.039619
2	0.952	50		2	0.095012
3	0.857	75		6	0.151901
4	0.705	100	**50th Percentile**	24	0.182141
5	0.523	125	**128.2 feet**	120	0.17472
6	0.348	150		720	0.139669
7	0.209	175		5040	0.095699
8	0.113	200	**95th Percentile**	40320	0.057375
9	0.056	225	**189.9 feet**	362880	0.030576
10	0.025	250		3628800	0.014665
11	0.010	275		39916800	0.006394
12	0.004	300		4.79E+08	0.002556
13	0.001	325		6.23E+09	0.000943
14	0.000	350		8.72E+10	0.000323
15	0.000	375		1.31E+12	0.000103
16	0.000	400		2.09E+13	3.1E-05
17	0.000	425		3.56E+14	8.74E-06
18	0.000	450		6.4E+15	2.33E-06
19	0.000	475		1.22E+17	5.88E-07
20	0.000	500		2.43E+18	1.41E-07
21	0.000	525		5.11E+19	3.22E-08
22	0.000	550		1.12E+21	7.02E-09
23	0.000	575		2.59E+22	1.46E-09
24	0.000	600		6.2E+23	2.92E-10
25	0.000	625		1.55E+25	5.61E-11
26	0.000	650		4.03E+26	1.03E-11
27	0.000	675		1.09E+28	1.84E-12
28	0.000	700		3.05E+29	3.15E-13
29	0.000	725		8.84E+30	5.21E-14
30	0.000	750		2.65E+32	8.33E-15

QUEUE LENGTH PROBABILITIES - PM Peak Hour (Mitigated)

Approach volume (vph): 83
Length of red interval (sec): 110
Number of turning lanes: 2

Average arrival rate = 1.408951

Number of vehicles arriving during the red interval (N)	Prob. of Arrivals >= N	Queue Length (ft)		Factorial	Prob. of N Arrivals
0	1.000	0		1	0.2444
1	0.756	25		1	0.344347
2	0.411	50		2	0.242584
3	0.169	75		6	0.11393
4	0.055	100	**50th Percentile**	24	0.04013
5	0.015	125	**43.6 feet**	120	0.011308
6	0.003	150		720	0.002655
7	0.001	175		5040	0.000534
8	0.000	200	**95th Percentile**	40320	9.41E-05
9	0.000	225	**76.2 feet**	362880	1.47E-05
10	0.000	250		3628800	2.08E-06
11	0.000	275		39916800	2.66E-07
12	0.000	300		4.79E+08	3.12E-08
13	0.000	325		6.23E+09	3.38E-09
14	0.000	350		8.72E+10	3.41E-10
15	0.000	375		1.31E+12	3.2E-11
16	0.000	400		2.09E+13	2.82E-12
17	0.000	425		3.56E+14	2.33E-13
18	0.000	450		6.4E+15	1.83E-14
19	0.000	475		1.22E+17	1.36E-15
20	0.000	500		2.43E+18	9.55E-17
21	0.000	525		5.11E+19	6.41E-18
22	0.000	550		1.12E+21	4.1E-19
23	0.000	575		2.59E+22	2.51E-20
24	0.000	600		6.2E+23	1.48E-21
25	0.000	625		1.55E+25	8.31E-23
26	0.000	650		4.03E+26	4.51E-24
27	0.000	675		1.09E+28	2.35E-25
28	0.000	700		3.05E+29	1.18E-26
29	0.000	725		8.84E+30	5.75E-28
30	0.000	750		2.65E+32	2.7E-29

AR-15-05

To lessen the bulk of the notice of application and to address privacy concerns, this sheet substitutes for the photocopy of the mailing labels. A copy is available upon request.

WASHINGTON COUNTY, OREGON
Department of Land Use and Transportation, Land Development Services
155 North First Avenue, Suite 350-13, Hillsboro, Oregon 97124
(503) 846-8761 · FAX: (503) 846-2908

May 12, 2015

Clare Fuchs, AICP
City of Tualatin
18880 SW Martinazzi Avenue
Tualatin, OR 97062-7092
No. of pages: 3 (via Email)

RE: **KOCH Corporate Center – Lots 1,2,5 & 8**
City File Number: **AR-15-05**
Tax Map and Lot Number: **2S1-27DB 200**
Location: **SW 115th Avenue/SW Itel Street**

Washington County Department of Land Use and Transportation has received notice of the above noted application. The submitted Traffic Impact Analysis (TIA) dated February 2015 was forwarded to Washington County Traffic Engineer for review of potential impacts to our nearby roadways, specifically SW Tualatin-Sherwood Road. The following conditions are required for access to SW Tualatin-Sherwood Road, a County maintained Arterial.

COMMENTS

1. ***Washington County Traffic Engineering staff reviewed the Traffic Impact Analysis (transpogroup – February, 2015) submitted for this development proposal as required by R&O 86-95. The County concurs with the traffic mitigation measures included in the applicant's Traffic Impact Analysis (page 14).***

2. ***Issuance of a County Facility Permit for the public improvements conditioned on SW Tualatin-Sherwood Road via City Casefile SB-11-01 is required prior to a building permit approval for this site.***

REQUIRED CONDITIONS OF APPROVAL

IMPORTANT:

Road improvements required along site frontage shall apply to frontage of all land within the subject site that abuts the County roadway. ***The subject site shall be considered to include:*** *any lot or parcel to be partitioned or otherwise subdivided (regardless of whether it contains existing structures or not);* ***and*** *any contiguous lots or parcels that constitute phases of the currently proposed development.*

If the applicant proposes to develop the project in phases, all County-required frontage improvements must be constructed with the first phase. In addition, off-site improvements ***warranted by*** *the first phase must also be completed with the first phase.* ***Refer to the following link to access Washington County Road Design and Construction Standards:***

I. PRIOR TO ISSUANCE OF A BUILDING PERMIT BY THE CITY OF TUALATIN:

A. Obtain a Facility Permit for public improvements on SW Tualatin-Sherwood Road as required per City Casefile SB-11-01.

B. Submit to **Washington County** Public Assurance Staff, 503-846-3843:

1. Completed "Design Option" form.

2. **$3,735.00** Administration Deposit.

NOTE: The Administration Deposit is a cost-recovery account used to pay for County services provided to the developer, including plan review and approval, field inspections, as-built approval, and project administration. The Administration Deposit amount noted above is an estimate of what it will cost to provide these services. If, during the course of the project, the Administration Deposit account is running low, additional funds will be requested to cover the estimated time left on the project (at then-current rates per the adopted Washington County Fee Schedule). If there are any unspent funds at project close out, they will be refunded to the applicant. Any point of contact with County staff can be a chargeable cost. If project plans are not complete or do not comply with County standards and codes, costs will be higher. There is a charge to cover the cost of every field inspection. Costs for enforcement actions will also be charged to the applicant.

3. A copy of the City's Land Use Approval with Conditions and County's letter, signed and dated.

4. Three (3) sets of complete engineering plans for construction of the following public improvements:

   a. Construct a second westbound left-turn lane at the intersection of SW 115th Avenue/SW Tualatin-Sherwood Road to County Standards.

C. Obtain a Washington County **Facility Permit** upon completion of the following:

1. Obtain Engineering Division approval and provide a financial assurance for the construction of the public improvements listed in conditions **I.B.5.**

NOTE: The Public Assurance staff (503-846-3843) will send the required forms to the applicant's representative **after** submittal and approval of items listed under **I.B.**

The Facility Permit *allows construction work within County rights-of-way and permits site access only after the developer first submits plans and obtains Washington County Engineering approval, obtains required grading and erosion control permits, and satisfies various other requirements of Washington County's Assurances Section including but not limited to execution of financial and contractual agreements. This process ensures that the developer accepts responsibility for construction of public improvements, and that improvements are closely monitored, inspected, and built to standard in a timely manner.* ***Access will only be permitted under the required Washington County Facility Permit, and only following submittal and County acceptance of all materials required under the facility permit process.***

II. PRIOR TO OCCUPANCY:

Obtain a Finaled Washington County **Facility Permit**, contingent upon the following:

A. The road improvements required in condition **I.B.5.** above shall be completed and accepted by Washington County.

B. Obtain a Finaled Facility Permit for public improvements (half-street) on SW Tualatin-Sherwood Road (per City Casefile SB-11-01).

Thank you for the opportunity to comment. If you have any questions, please contact me at 503-846-7639.

Naomi Vogel
Associate Planner

Cc: Rob Saxton, P.E. – Design Review Services
Jinde Zhu, P.E., - Traffic Engineer
Paul Seitz – Assurances Division

MEMORANDUM
CITY OF TUALATIN

TO: Clare Fuchs, Senior Planner
Tony Doran, Engineering Associate

THROUGH: Paul Hennon, Community Services Director

FROM: Kelsey Lewis, Community Services Management Analyst

DATE: April 27, 2015

SUBJECT: ARCHITECTURAL REVIEW 15-05 – KOCH CORP. EXPANSION
(20850, 20950, 21100, 21200 115TH AVE)
Lots 1-3, 5 & 8
Tax Map 2S1 27DB Tax Lots 200, 300, 400 and 2S1 27AC 300, 600

The Community Services Department has reviewed the materials provided with the Application and has the following comments.

Conditions of Approval- Prior to Obtaining Building Permits:

Ice Age Tonquin Trail Shared Use Path Easement
The applicant shall grant an easement to accommodate a 14 foot shared use pathway. The easement area shall vary in width between 14 and 20 feet along the eastern property boundary as shown on attached Site Plans L-1, L-1.1 and unnamed (3 pages).

8 Vine Maple
Taiwan Creeping Berry Typ.
5 Oregon Grape
5 Kelsey Dogwood

5 Snowberry
8 Kelsey Dogwood
1 Northern Red Oak
Spring Bouquet Viburnum
3 Incense Cedar

9 Oregon Grape
11 Snowberry

5 Sword Fern
Hedge of Yellowtwig &
Redtwig Dogwood

Future Trail Location

Existing Tree To Remain
15 Sword Fern
7 Compact Winged Euonymus
11 Red Flowering Currant

Typical: (4 Planters)
3 Compact Winged Euonymus
3 Blue Fescue
1 Northern Red Oak

11 Vine Maple
5 Oregon Grape

Existing Steet Tree To Be Removed

5 Red Flowering Currant
9 Hogan Cedar
3 Green Arrow Cypress

7 David Viburnum
Taiwan Creeping Berry
7 Sword Fern
7 Blue Fescue
3 Incense Cedar
5 Oregon Grape
5 Compact Winged Euonymus
5 Vine Maple

9 Kelsey Dogwood
8 Snowberry
Taiwan Creeping Berry @ 30" O.C. Typ.
7 Sword Fern

3 Blue Fescue
3 Norwegian Sunset Maple
6 Compact Winged Euonymus
Spring Bouquet Viburnum

3 Flame Forest Pieris
Vinca @ 24" O.C. Typ.
3 Green Arrow Cypress
3 Unique Rhododendron
9 David Viburnum

8 Little Bunny Grass

7 Sword Fern
5 Vine Maple
3 Uniques Rhododendron
3 Hogan Cedar
5 Flame Forest Pieris
6 Spring Bouget Viburnum

6 Sword Fern

3 Daylily

POND – To Meet Clean Water Services Requirements

Taiwan Creeping Berry
8 Oregon Grape
15 Compact Winged Euonymus
6 Karl Foerster Grass
Compact Winged Euonymus
Arborvitae

11 Kelsey Dogwood
5 Blue Fescue

3 Blue Fescue
1 Northern Red Oak
2 Compact Winged Euonymus

Arborvitae

12 Repens Oregon Grape

Spring Bouquet Viburnum Hedge
Silver King Euonymus Hedge

3 Daylily
4 Sword Fern

NOTE: AUTOMATIC IRRIGATION WILL BE PROVIDED

6 Karl Foerster Grass
3 Red Flowering Currant

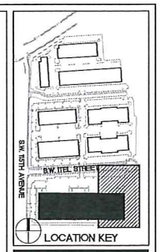
MATCHLINE SEE SHEET L2.3

SUBMITTED FOR PERMIT: MAY 1, 2015
2140561.00

LANDSCAPE PLAN

NORTH

0 20 40 60 feet
SCALE: 1" = 20'



BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

REGISTERED 31 HAROLD S. BEIGHLEY OREGON LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER BUILDING 001
TUALATIN, OREGON

Revisions

DRAWN	AMM
CHECKED	HSB
DATE	05/01/15
JOB NO.	1506

L-1.1
OF 4

MATCH SHEET L2.2

5 Compact Winged Euonymus
20 Arborvitae
5 Redtwig Dogwood
7 Snowberry
7 Hogan Cedar
Taiwan Creeping Berry

Typical Planter (7):
3 Blue Fescue
1 Norwegian Sunset Maple
3 Compact Winged Euonymus

3 Sword Fern

3 Green Arrow Cypress
Landscape Rock Typ.

7 Nikko Deutzia
Taiwan Creeping Berry @ 30"O.C.
Blue Princess Holly
4 Gracilis Hinoki Cypress
3 Elizabeth Rhododendron
5 Hino Crimson Azalea
5 Unique Rhododendron
3 David Viburnum
8 Vine Maple

7 Comp. Winged Euonymus
3 Little Bunny Grass
1 Virescens Cedar
5 Spring Bouquet Viburnum

3 Comp. Winged Euonymus
Norwegian Sunset Maple
8 David Viburnum
3 Blue Fescue

7 Daylily
5 David Viburnum
Taiwan Creeping Berry
Existing ROW Trees to Remain
3 Kelsey Dogwood

6 Blue Fescue
3 Compact Winged Euonymus
7 Northern Red Oak

3 Bagatelle Barberry
Vinca @ 24" O.C.
3 Nikko Deutzia
3 Green Arrow Cypress
33 Moon Bay Nandina
3 Elizabeth Rhododendron
5 Little Bunny Grass

5 Compact Winged Euonymus
6 Blue Fescue
3 Daylily
5 Kelsey Dogwood
1 Vine Maple

3 Hino Crimson Azalea
3 Compact Winged Euonymus
Vinca @ 24" O.C.
3 Nikko Deutzia
22 Moon Bay Nandina
5 David Viburum

3 Compact Winged Euonymus
5 Daylily
Taiwan Creeping Berry
3 David Viburnum
5 Blue Fescue

3 Unique Rhododendron
3 Bagatelle Barberry
Vinca @ 24" O.C.
32 Moon Bay Nandina
3 Nikko Deutzia
7 Elizabeth Rhododendron
3 Green Arrow Cypress

3 Blue Fescue
5 Kelsey Dogwood
1 Vine Maple
3 Compact Winged Euonymus

3 Green Arrow Cypress
22 Arborvitae
3 Redtwig Dogwood
LIDA Raingarden – To Meet
LIDA Requirements
5 Oregon Grape
12 Sword Fern
1 Norwegian Sunset Maple
1 Hogan Cedar
3 Compact Winged Euonymus

3 Vine Maple
3 Green Arrow Cypress
Taiwan Creeping Berry
13 Repens Oregon Grape

Typical Planter (5):
3 Compact Winged Euonymus
1 Northern Red Oak
3 Blue Fescue

NOTE: AUTOMATIC IRRIGATION WILL BE PROVIDED

LOT 5

Silver King Euonyums Hedge
3 Gracilis Hinoki Cypress
Spring Bouquet Viburnum Hedge
Blue Princess Holly Hedge

3 Compact Winged Euonymus
8 Blue Fescue
8 Little Bunny Grass
4 Spring Bouquet Viburnum
3 Unique Rhododendron

6 Blue Fescue
9 David Viburnum
3 Compact Winged Euonymus
3 Daylily
1 Vine Maple

6' CHAIN LINK FENCE W/BARBED WIRE

FUTURE TRAIL LOCATION

1 Northern Red Oak
7 Redtwig Dogwood

5 Spring Bouquet Viburnum
12" Taiwan Creeping Berry
2 Norwegian Sunset Maple
8 David Viburnum
Taiwan Creeping Berry

Taiwan Creeping Berry
5 Oregon Grape
8 Sword Fern
7 Blue Fescue

6 Kelsey Dogwood
3 Oregon Grape
5 Vine Maple
Taiwan Creeping Berry

SW 11TH ST

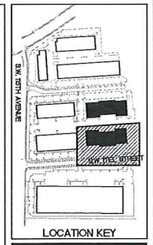
PROPERTY LINE

SUBMITTED FOR PERMIT: MAY 1,2015
2140559.001

LANDSCAPE PLAN

NORTH

SCALE: 1" = 20'



LOCATION KEY

BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12540 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

REGISTERED
31
HAROLD S. BEIGHLEY JR.
OREGON
LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER
BUILDING 005
TUALATIN, OREGON

Revisions

DRAWN	AMM
CHECKED	HSB
DATE	05/01/15
JOB NO.	1507

L-1
OF 2

Existing ROW Trees & Planting – To Remain
LIDA Raingardens To Meet LIDA Requirements
Repens Oregon Grape Hedge

6 Blue Fescue
8 Little Bunny Grass
3 David Viburnum

6 Blue Fescue
Taiwan Creeping Berry
6 Compact Winged Euonymus
1 Norwegian Sunset Maple
4 Spring Bouquet Viburnum

Typical Planter (4)
3 Blue Fescue
1 Northern Red Oak
3 Compact Winged Euonymus

1 Vine Maple
10 Kelsey Dogwood

LIDA Raingarden – To Meet LIDA Requirements

3 Blue Fescue
2 Norwegian Sunset Maple
3 Compact Winged Euonymus
9 Nikko Deutzia
16 Sword Fern
3 Green Arrow Cypress

3 Blue Fescue
3 Compact Winged Euonymus

FUTURE TRAIL LOCATION

7 Little Bunny Grass
Taiwan Creeping Berry
5 Nikko Deutzia

3 Little Bunny Grass
3 David Viburnum
1 Green Arrow Cypress
3 Compact Winged Euonymus
3 Nikko Deutzia
Vinca @ 24" O.C. Typ.
19 Moon Bay Nandina
7 Vine Maple
1 Vine Maple
3 Unique Rhododendron
29 Blue Princess Holly
3 Elizabeth Rhododendron

3 Compact Winged Euonymus
5 Hino Crimso Azalea
19 Moon Bay Nandina
5 Elizabeth Rhododendron
Vinca @ 24" O.C. Typ.
6 Bagatelle Barberry

3 Unique Rhododen.
3 David Viburnum
22 Moon Bay Nandina
1 Green Arrow Cypress
3 Compact Winged Euonymus
Vinca @ 24" O.C. Typ.
5 Little Bunny Grass
3 Elizabeth Rhododendron

3 Comp. Winged Euonymus
3 Hino Crimson Azalea
16 Moon Bay Nandina
Vinca @ 24" O.C. Typ.
5 Nikko Deutzia
8 Bagatelle Barberry

3 Unique Rhododendron
Vinca @ 24" O.C. Typ.
Blue Princess Holly
3 Gracilis Hinoki Cypress

LOT 8

NOTE: AUTOMATIC IRRIGATION WILL BE PROVIDED

Typical Planter (6)
1 Norwegian Sunset Maple
3 Blue Fescue
3 Compact Winged Euonymus

Silver King Euonymus Hedge
4 Snowberry
5 Hogan Cedar
10 Repens Oregon Grape
Taiwan Creeping Berry @ 30"
7 Redtwig Dogwood

5 Compact Winged Euonumus
3 Green Arrow Cypress

Landscape Rock Typ.

7 Hogan Cedar
10 Redtwig Dogwood
LIDA Raingarden – To Meet
LIDA Requirements

3 Snowberry
5 Sword Fern
LIDA Raingarden – To Meet LIDA Req.

5 Snowberry
Taiwan Creeping Berry
20 Arborvitae
3 Vine Maple
Spring Bouquet Viburnum Hedge

7 Oregon Grape
22 Arborvitae

MATCHLINE SEE SHEET L1.2

SUBMITTED FOR PERMIT: MAY 1,2015
2140559.001

LANDSCAPE PLAN

NORTH
SCALE: 1" = 20'
0 20 40 60 feet

LOCATION KEY

BEIGHLEY & ASSOCIATES INC.
LANDSCAPE ARCHITECTURE AND PLANNING
12840 N.W. CORNELL RD.
PORTLAND, OR 97229
PHONE: 503 643-4796
FAX: 503 643-4798

REGISTERED
31
HAROLD S. BEIGHLEY JR.
OREGON
LANDSCAPE ARCHITECT

KOCH CORPORATE CENTER
BUILDING 008
TUALATIN, OREGON

Revisions

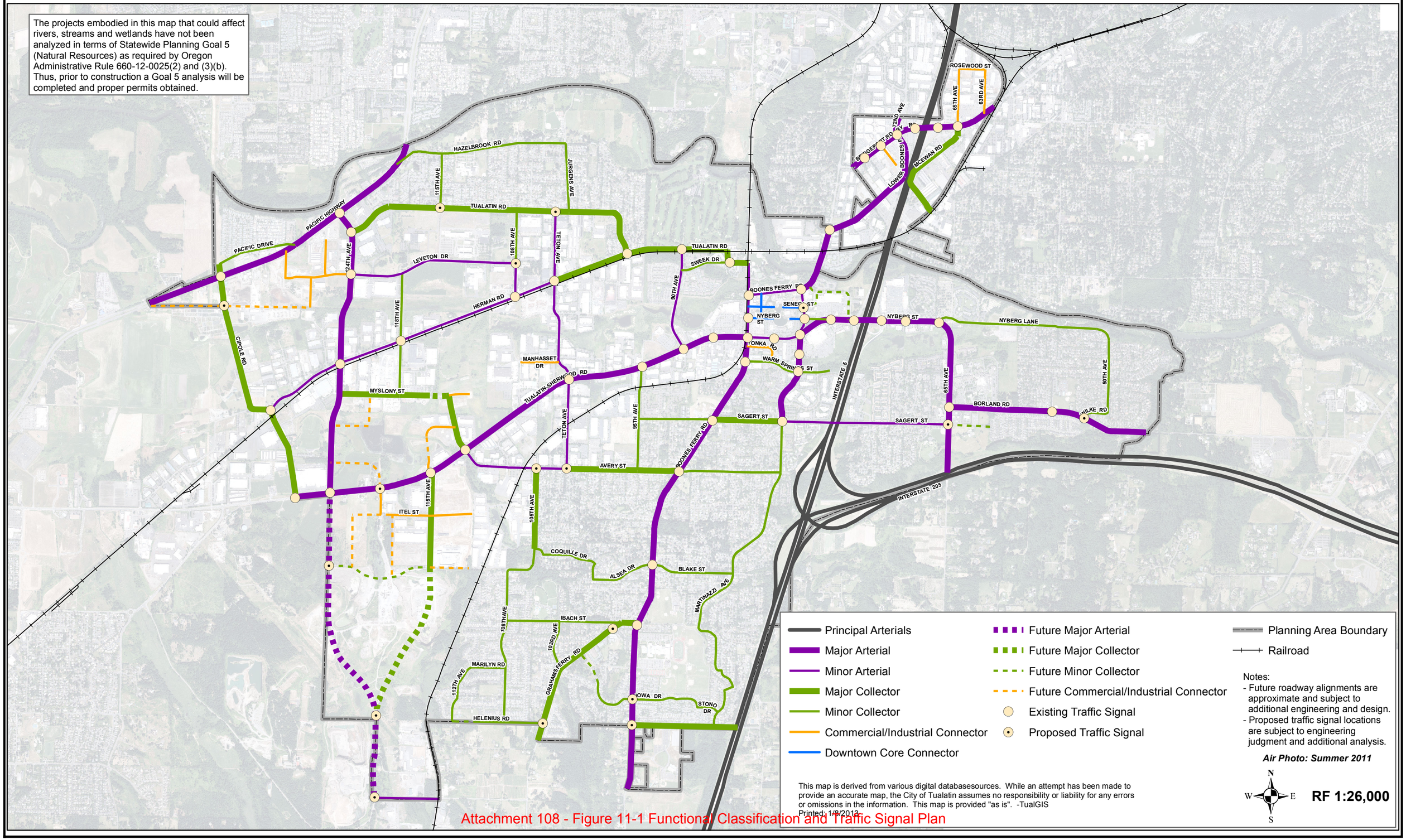
DRAWN	AMM
CHECKED	HSB
DATE	05/01/15
JOB NO.	1508

L-1
OF 2

Figure 11-1: Functional Classification and Traffic Signal Plan

TUALGIS

The projects embodied in this map that could affect rivers, streams and wetlands have not been analyzed in terms of Statewide Planning Goal 5 (Natural Resources) as required by Oregon Administrative Rule 660-12-0025(2) and (3)(b). Thus, prior to construction a Goal 5 analysis will be completed and proper permits obtained.



- Principal Arterials
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Commercial/Industrial Connector
- Downtown Core Connector
- Future Major Arterial
- Future Major Collector
- Future Minor Collector
- Future Commercial/Industrial Connector
- Existing Traffic Signal
- Proposed Traffic Signal
- Planning Area Boundary
- Railroad

Notes:
- Future roadway alignments are approximate and subject to additional engineering and design.
- Proposed traffic signal locations are subject to engineering judgment and additional analysis.

Air Photo: Summer 2011

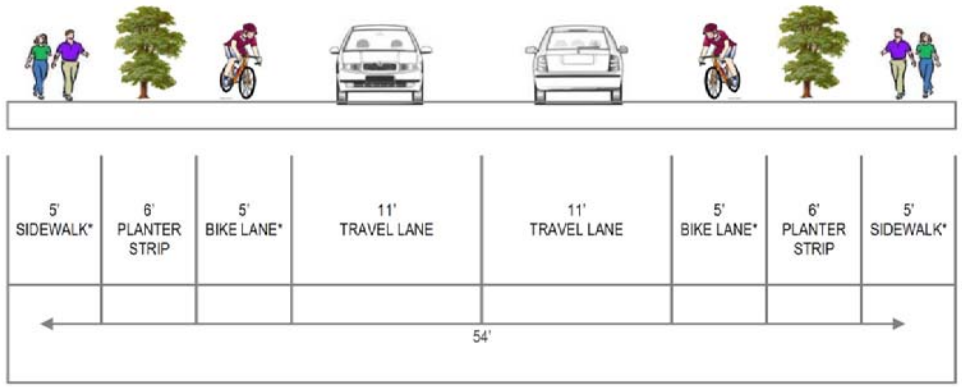
N W E S

RF 1:26,000

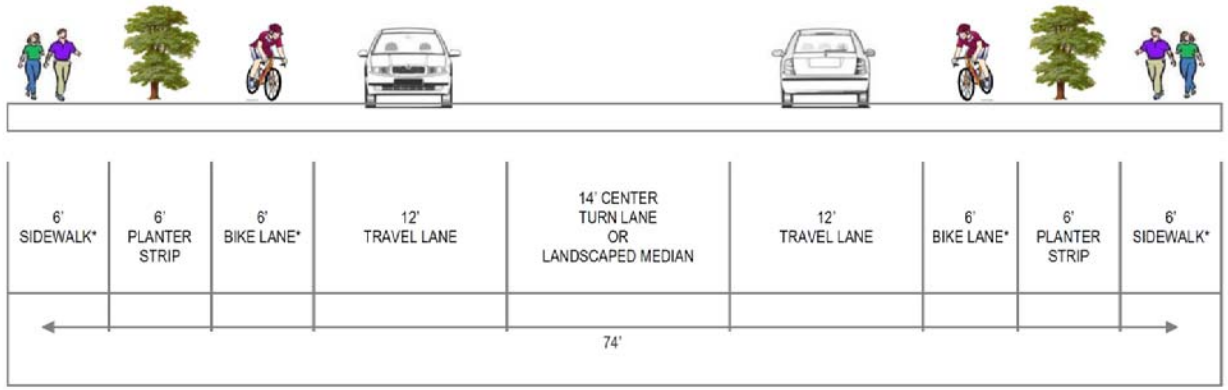
Attachment 108 - Figure 11-1 Functional Classification and Traffic Signal Plan

Figure 2. Street Design Standards, cont.
Major Collector

Minimum



Preferred



*The City of Tualatin may allow a 12' multi-use path to be substituted for the sidewalk and bicycle lane on either or both sides. If allowed, the planter strip must be installed between the travel lane and the multi-use path.

Attachment 109 - Figure 2 Major Collector Street Design Standard

GUIDELINES FOR GOOD EXTERIOR LIGHTING PLANS

Prepared by: The Dark Sky Society (http://www.darkskysociety.org/) 2009

These guidelines have been developed in consultation with lighting professionals (with experience in developing good lighting plans) to aid communities wishing to control light pollution and preserve the night sky.

Outdoor lighting should be carefully designed with regard to placement, intensity, timing, duration, and color. Good lighting will:

- **Promote Safety**
  "More light" is not necessarily" better". If not designed and installed correctly, unsafe glare can result, reducing the effect of lighting which can contribute to accidents and hinder visibility. Lighting that is too bright interferes with the eye's ability to adapt to darker areas.

- **Save Money**
  Adhering to professionally recommended light levels provides adequate illumination. Shielded fixtures with efficient light bulbs are more cost-effective because they use less energy by directing the light toward the ground. See this website for cost comparisons: http://www.netacc.net/~poulsen/lightcost.html

- **Conserve Natural Resources**
  Inappropriate or excessive lighting wastes our limited natural resources and pollutes the air and water by unnecessarily burning our limited supply of fossil fuels.

- **Be Better Neighbors**
  Excessive or misdirected lighting can intrude on the privacy of others when light or glare trespasses over property lines.

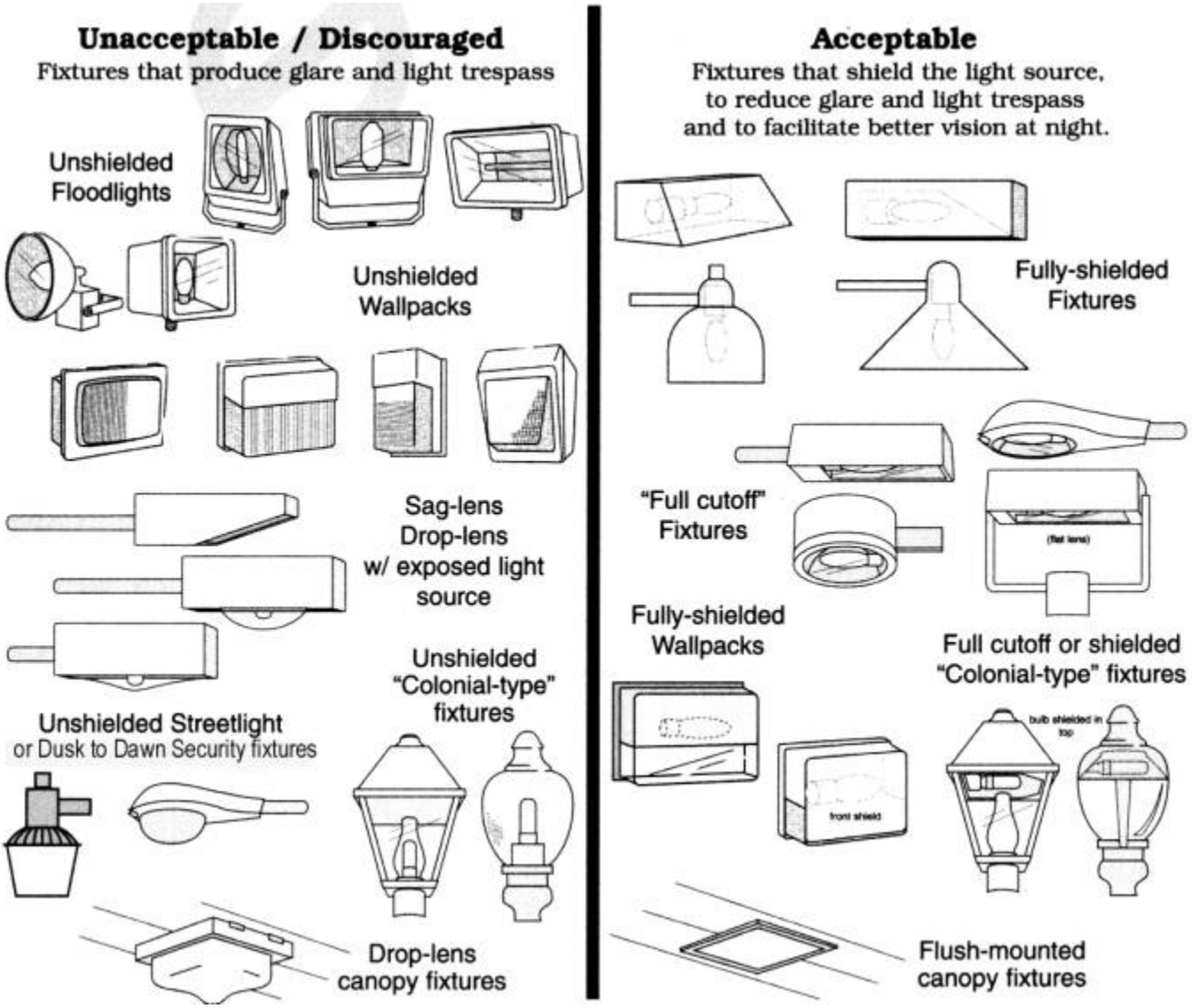
- **Retain Community's Character and Reduce Skyglow**
  Our clear view of the dark starry night sky is a resource to be preserved and protected. Stray and excessive lighting contributes to "light pollution", clutter, and unnatural "sky glow".

- **Protect Ecology of Flora and Fauna**
  Research studies indicate that artificial night lighting disrupts the migrating, feeding, and breeding habits of many wildlife species, as well as growth patterns of trees. See references in The Ecological Consequences of Artificial Night Lighting.

- **Reduce Health Risks**
  Light at night not only disrupts your sleep but also interferes with your circadian rhythms. Recent research indicates that intrusive lighting may reduce the production of melatonin, a beneficial hormone, and a resulting raise in the rates of breast and other cancers.

Included:
1. **Diagrams of Acceptable/Unacceptable Lighting Fixtures**
2. **How to Develop an Acceptable Lighting Plan**
3. **Definitions of Full Cut Off, Shielded, and RLM sign lighting Fixtures**
4. **Lighting Plan Submissions**
5. **Recommended Illumination Levels for various tasks**

UNSHIELDED FIXTURES **Full Cutoff and Fully Shielded Fixtures**



Diagrams courtesy of Bob Crelin

*****Ask your local electrical suppliers for "full-cut off" or “fully shielded” light fixtures. Once you have selected fixtures which are compatible with your architecture and community, contact the manufacturer’s representative to see a sample of the fixture(s) and to ask for a free lighting plan. If you have a CAD file, the plan can be easily provided in a short period of time. *****

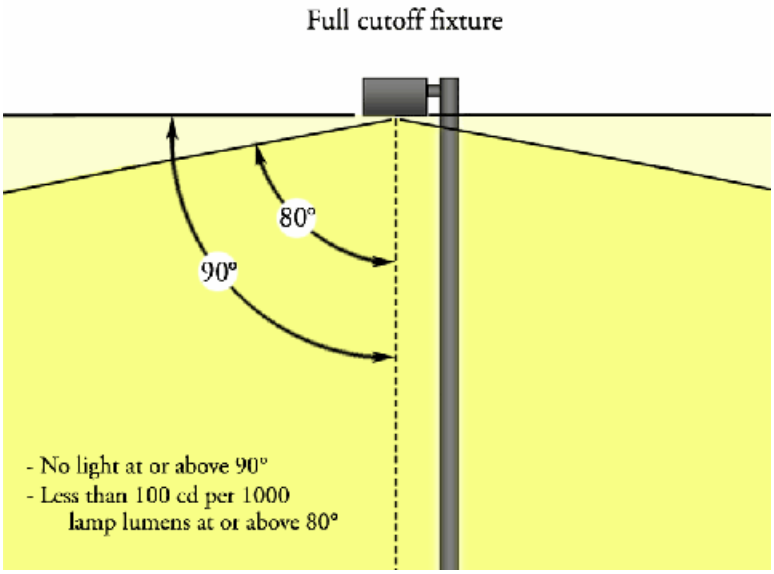
Most lighting manufacturers have Application Departments which will execute free lighting plans to meet local lighting codes.

See this website for links to manufacturers:
http://www.darksky.org/mc/page.do?sitePageId=56422&orgId=idsa
Sample of Web retailers:
www.starrynightlights.com and www.greenearthlighting.com

How to Develop an Acceptable Lighting Plan

1. Identify where as well as when lighting is needed. Confine and minimize lighting to the extent necessary to meet safety purposes**.** Plans should define the areas for which illumination is planned. Itemizing each area (e.g. parking lot, doorways, walkways, signage, foliage) with the anticipated hours of use. Commercial outdoor lighting should be used for safe pedestrian passage and property identification, and lit during active business hours and shut off afterward.
2. Direct light downward by choosing the correct type of light fixtures**.** (See Appendix 3). Specify IES (Illuminating Engineering Society) "Full Cut Off" designated or “fully shielded” fixtures, so that no light is emitted above the lowest light emitting part of the fixture. Top mounted sign lighting is recommended with "RLM" (dish) type shields, and aimed so that the light falls entirely on the sign and is positioned so that the light source (bulb) is not visible from any point off the property or into the roadway to reduce glare. For each one square foot of sign, usually no more than 200 lumens is necessary for good visibility.
3. Select the correct light source (bulb type). Compact fluorescent (2300K) or High Pressure Sodium is recommended unless the light is motion sensor activated, in which case incandescent or the instant start compact fluorescent bulbs can be used. Metal Halide (due to its higher costs, energy use, impact on the environment, and greater contribution to "sky glow") is discouraged, as well as light sources rated over 3000 Kelvin; and outdated Mercury Vapor bulbs are prohibited.
4. Utilize "shut off" controls such as sensors, timers, motion detectors, etc**.** Automatic controls turn off lights when not needed. All lights should be extinguished no later than one half hour after the close of business. Additional motion sensor activated lighting can be used for emergency access. Avoid "dusk-to-dawn" sensors without a middle of the night shut off control. Lights alone will not serve to "protect" property and are a poor "security" device. Examine other means of protecting property and to discourage criminal activity. Let your local police know that you have a “lights out” policy so that they can investigate if they see lights or activity after hours.
5. Limit the height of fixtures**.** Locate fixtures no closer to the property line than four times the mounting height of the fixture, and not to exceed the height of adjacent structures. (Exceptions may be made for larger parking areas, commercial zones adjacent to highways, or for fixtures with greater cut off shielding behind the pole mount in commercial zones.)
6. Limit light crossing property lines, i.e. “light trespass”**.** Limit light to spill across the property lines. Light levels at the property line should not exceed 0.1 footcandles (fc) adjacent to business properties, and 0.05 fc at residential property boundaries. Utility leased floodlight fixtures mounted on public utility poles in the public right-of-way should not be used.
7. Use the correct amount of light. Light levels and uniformity ratios should not exceed recommended values, per IESNA RP-33 or 20. (See Appendix 5, Recommended Illumination Levels for various tasks.) "Lumen cap" recommendations for areas to be illuminated are as follows: commercial properties in non-urban commercial zones = 25,000 lumens per acre; for projects in residential and LBO zones = 10,000 lumens per acre. For residential properties: for suburban: 50,000 lumens per acre cap, and in urban areas: 100,000.
8. Ask for Assistance Your Planning Department and local lighting sales representatives can assist you in obtaining the necessary information for good lighting. For large projects over 15,000 lumens: greater energy conservation and control of light pollution, light trespass and glare, may be achieved with the help of a professional lighting designer with "dark sky" lighting plan experience.
9. A post installation inspection should be conducted to check for compliance. Substitutions by electricians and contractors are common and should not be accepted. Final Approved Site Plans will not allow additional exterior fixtures or substitutes without reviews.
10. Design interior lighting so that it does not illuminate the outdoors. Provide interior lighting photometrics for the building’s perimeter areas, demonstrating that the interior lighting falls substantially within the building and not through the windows. After closing, interior lighting that extends outdoors needs to be extinguished by the use of shut off timers.

Definition of Acceptable Fixtures:
"Full Cut Off", "Fully Shielded", and RLM shield.



- "Full Cut Off" fixtures are independently certified by the manufacturers, and do not allow light to be emitted above the fixture and the fixture reduces glare by limiting the light output to less than 10% at and below 10 degrees below the horizontal.
- If the manufacturer is unable to provide the "cut off" characteristics for a fixture (also called a "luminaire"), the following definition needs to be met, which can usually be determined by a visual inspection:

"Fully Shielded": a fixture constructed and installed in such a manner that all light emitted by it, either directly from the lamp (bulb) or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal. This can be determined by a "field test" or a visual assessment of an operating sample.

- Manufacturers and their representatives can provide photographs of light fixtures as "cut sheets" as well as literature confirming the independently tested "cut off" characteristics of their products. These IES files may be assessed for compliance in a computer program: http://www.3dop.com/index1.html
- Photometric layouts for different heights, light sources, and wattages, are also available as "IES" files, upon request or through manufacturers' websites.
- Fixtures must be installed properly, so that the bottom of the fixture is level with the ground. Exceptions are often given for sign lighting which requires vertical lighting:

"RLM" sign lighting shield:

Lighting Plan Submissions

The following information needs to be provided to your municipality's review board which will enable them to evaluate the Site Plan for proper exterior lighting:

The Lighting Plan should be depicted on a site plan, indicating the location of each current and proposed outdoor lighting fixture with projected hours of use. This plan will need to be stamped and certified by a licensed professional, such as an architect or engineer. Many lighting manufacturers can provide free photometric layouts on prepared site plans, to conform to your local requirements.

(1) The lighting plan should include a KEY to the proposed lighting that provides the following information:

- Type and number of luminaire equipment (fixtures), including the "cut off characteristics", indicating manufacturer and model number(s).
- Lamp source type (bulb type, i.e. high pressure sodium), lumen output, and wattage.
- Mounting height with distance noted to the nearest property line for each luminaire.
- Types of timing devices used to control the hours set for illumination, as well as the proposed hours when each fixture will be operated.
- Total Lumens for each fixture, and total square footage of areas to be illuminated. For projects that are in commercial zones, the lumens per net acre to be lit, need not exceed 25,000 lumens. For projects in residential or LBO zones: 10,000 lumens.
- For all plans of more than three fixtures: A Calculation Summary indicating footcandle levels on the lighting plan, noting the maximum, average and minimum, as well as the uniformity ratio of maximum to minimum, and average to minimum levels*.

(2) Lighting manufacturer-supplied specifications ("cut sheets") that include photographs of the fixtures, indicating the certified "cut off characteristics" of the fixture.

(3) Footcandle Distribution, plotting the light levels in footcandles on the ground, at the designated mounting heights for the proposed fixtures. Maximum illuminance levels should be expressed in footcandle measurements on a grid of the site showing footcandle readings in every five or ten-foot square. The grid shall include light contributions from all sources (i.e. pole mounted, wall mounted, sign, and street lights.) Show footcandle renderings five feet beyond the property lines.*

(4) If requested by the reviewing agency, a statement from a lighting professional that a plan, other than that set forth, is needed to meet the intent of these standards.

(5) An environmental impact statement may be required as to the impact of the exterior lighting proposed on flora, fauna, and the night sky. Location of species sensitive to light at night or the proximity to nature preserves or astronomical observatories or "Dark Sky Parks", needs to be indicated.

(6) On the Approved Plan it should be noted that no substitutions, additions, or changes may be made without prior approval by the governing authority.

* This information can be obtained from the manufacturer, your lighting supplier, or the manufacturer's representative.

Recommended Illumination Levels for various tasks*

I. Table of Limits of Illumination, measured in footcandles (fc) at ground level unless noted:

Task Area	Avg.	Not to exceed:
1. Active Building Entrance	2.0 fc	5 fc
Approach	0.2 fc	
2. Gas Station Approach		2 fc
3. Gas Station Pump Area		avg: 5 fc
4. Gas Station Service Area		avg. 3 fc
5. Sidewalks	0.2 fc	5 fc
6. Surface of signs		2 fc

II. Average/Minimum/Uniformity Ratio Limits for Parking Lots:

I. Public Parking Lots -- not to exceed:

Average	Minimum	Uniformity Ratio (Max to Min/Avg to Min)
0.8	0.2	20:1 / 4:1

II. Private Parking Lots -- not to exceed:

Average	Minimum	Uniformity Ratio (Max to Min / Avg to Min)
0.5	0.13	20:1 / 4:1

OR:

III. If illuminance grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2000 lumens, use these guidelines:

1. Pole shall be no greater in height than four times the distance to the property line.
2. Maximum Lumen Levels for different fixture heights:

Mounting Height (Feet)	Recommended Lumen Maximums
6	500 - 1000 lumens
8	600 - 1,600 lumens
10	1,000 - 2,000 lumens
12	1,600 - 2,400 lumens

FOOTCANDLE: ("FC") – Is the basic unit of illuminance (the amount of light falling on a surface). Footcandle measurement is taken with a hand held light meter. One footcandle is equivalent to the illuminance produced on one square foot of surface area by a source of one candle at a distance of one foot. Horizontal footcandles measure the illumination striking a horizontal plane. Footcandle values can be measured directly with certain handheld incident light meters.

LUMEN – A unit used to measure the actual amount of light that is produced by a bulb. The lumen quantifies the amount of light energy produced by a lamp at the lamp, not by the energy input, which is indicated by the "wattage". For example, a 75-watt incandescent lamp can produce 1000 lumens while a 70-watt high-pressure sodium lamp produces 6000 lumens. Lumen output is listed by the manufacturer on the packaging.

* IES, Recommended Practices, (RP-33-99): Lighting for Exterior Environments; and (RP-20): Parking Lots. The Illuminating Engineering Society of North America (IES or IESNA), is an organization that establishes updated standards and illumination guidelines for the lighting industry.
http://www.iesna.org/shop/item-detail.cfm?ID=RP-33-99&storeid=1
http://www.iesna.org/shop/item-detail.cfm?ID=RP-20-98&storeid=1