

#### PLANNING COMMISSION AGENDA April 14, 2016 7:00 PM NEWBERG PUBLIC SAFETY BUILDING 401 EAST THIRD STREET

#### I. CALL MEETING TO ORDER

#### II. ROLL CALL

**III. PUBLIC COMMENTS** (5-minute maximum per person – for items not on the agenda)

#### IV. CONSENT CALENDAR

- 1. Approval of the 2/25/16 Planning Commission meeting minutes
- 2. Approval of the 3/10/16 Planning Commission meeting minutes
- V. QUASI-JUDICIAL PUBLIC HEARING (complete registration form to give testimony 5 minute maximum per person except for principals, unless otherwise set by majority motion of the Planning Commission). No new public hearings after 10 p.m. except by majority vote of the Planning Commissioners.
  - Chehalem Aquatic & Fitness Center Conditional Use Permit/Design Review/Code Adjustment application to build a 40,390 square foot addition with two pools next to the existing building, remodel the existing building into a gym, reconfigure the site for new parking, park and landscape areas; and to reduce the amount of required off-street parking. APPLICANT: Chehalem Park & Recreation District LOCATION: 1802 Haworth Avenue TAX LOT: 3217CA-1200 FILE NO.: CUP-16-001/DR2-16-001/ADJC-16-001 ORDER: 2016-20 CRITERIA: Newberg Development Code Sections 15.225.060, 15.220.050(B), 15.210.020(C).
- **VI. LEGISLATIVE PUBLIC HEARING** (complete registration form to give testimony 5 minute maximum per person, unless otherwise set by majority motion of the Planning Commission)
  - Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers: Consider a proposal to amend the Newberg Development Code Chapter 15.05.030 Definitions; 15.305 Zoning Use Tables; 15.342.110 Stream Corridor Overlay; 15.350.030 Civic Corridor Overlay; 15.356.050 Bypass Interchange Overlay; and 15.358.030 and 15.358.050 Interim Industrial overlay for regulations on recreational marijuana wholesalers, laboratories, research certificates and retailers as either permitted, conditional or prohibited uses. FILE NO.: DCA-16-001 RESOLUTION NO.: 2016-314
- VII. NEW BUSINESS: Presentation of the draft Economic Development Strategy

#### VIII. ITEMS FROM STAFF

- 1. Update on Council items
- 2. Other reports, letters or correspondence

#### 3. Next Planning Commission meeting: May 12, 2016

#### IX. ITEMS FROM COMMISSIONERS

#### X. ADJOURNMENT

FOR QUESTIONS, PLEASE STOP BY THE COMMUNITY DEVELOPMENT DEPT. AT 414 E. FIRST STREET, OR CALL 503-537-1240

ACCOMMODATION OF PHYSICAL IMPAIRMENTS: In order to accommodate persons with physical impairments, please notify the Community Development Department Office Assistant II of any special physical or language accommodations you may need as far in advance of the meeting as possible as and no later than 48 business hours prior to the meeting. To request these arrangements, please contact the Office Assistant at (503) 537-124083. For TTY services please dial 711.

#### NEWBERG PLANNING COMMISSION MINUTES February 25, 2016, 7:00 PM PUBLIC SAFETY BUILDING (401 E. THIRD STREET)

Chair Allyn Edwards called the meeting to order at 7:00 p.m.

#### **ROLL CALL**

Members Present:	Patrick Johnson Philip Smith Luis Saavedra, Student	Jason Dale Allyn Edwards, Chair Cathy Stuhr
Members Absent:	Gary Bliss	
Staff Present:	Doug Rux, Community Development Director Bobbie Morgan, Planning Secretary	

#### **PUBLIC COMMENTS:**

None

#### CONSENT CALENDAR: None

#### **NEW BUSINESS:**

1. Development Code Amendment – Recreational Marijuana Producers and Processors. File No. DCA-15-003, Planning Commission Resolution No. 2016-313

Chair Allyn Edwards asked if any Commissioner had a conflict of interest to declare. There was none.

Community Development Director Doug Rux gave a PowerPoint presentation regarding recreation marijuana producers and processors. The marijuana subcommittee recommended recreational producers be a conditional use indoors in R1, R2, and their subdistricts and prohibited indoors and outdoors in R3, AR, RP, SD, MMR, and their subdistricts. Producers would be permitted indoors in M1, M2, M3, M4, M1SP, SD/E, and I/I. It would be conditional outdoor use in M1, M2, M3, M4, M1SP, SD/E, and I/I. For processors, the subcommittee recommended permitting indoors in the M1, M2, M3, M4, and SD/E. Processors would be prohibited in residential, commercial, community facility, institutional, and miscellaneous districts. There would be definitions added to the Code for recreational producer and processor. This was not about whether marijuana should be legal or not, did not address medical marijuana, and did not address recreational marijuana wholesalers, laboratories, research certificates, or retailers. He gave a background on Measure 91, the marijuana subcommittee recommendations, and OLCC administrative rules. OLCC would start issuing licenses for producers and processors in the second quarter of 2016. The City was trying to complete the local review before April 1. Public notice had been given about these recommended changes to the Development Code. No written comments had been received. He explained cities could regulate place, time, and manner for recreational marijuana producers and processors. The OLCC had a requirement that a local jurisdiction had to sign off on a land use compatibility statement. OLCC would not issue a license for a producer or processor if they were on federal property, same location or address as a medical marijuana grow site, processing site, or dispensary, same location or address as a liquor licensee, on public land, and a producer could not be on the same lot or parcel as another producer. Processors with an endorsement for mechanical or chemical extracts were not allowed in areas that were exclusively residential. There was a question about what exclusively meant, as Newberg did not have any

exclusively residential land that only allowed housing and no other uses. There were indoor and outdoor producers. Indoor producers used artificial grow lights. Outdoor producers had to have an eight foot tall wall or fence so the public could not see it, however the Code said they could not have an eight foot tall fence at the property line and would have to go in five feet of the property. Marijuana was a crop for farming practices, but they could not sell it from a farm stand. Medical marijuana grow sites could opt into being recreational producers. There were no time limit regulations, but there were many manner regulations regarding security, signs, and where the public could and could not be.

There was discussion regarding what groups could sell to each other and where the public was allowed.

CDD Doug Rux continued by discussing the grow canopy limits. Grow canopies were measured by the outside perimeter of the space the mature plants were occupying. There had to be a ten foot space between grow canopies and there could be multiple grow canopies at the same site. Processors could do edibles, topicals, concentrates, and extracts and required an endorsement from OLCC. All marijuana products had to be tested. The regulations for edibles were through the Department of Agriculture, and edible processing could not be done in restaurants. Several edible processors could use the same location, only at different times. He explained the requirements for concentrates, extracts, and topicals. Processing had to be done indoors. The subcommittee recommended processors to be permitted in industrial zones M1, M2, M3, M4, and SD/E and prohibited in Airport Industrial and Airport Industrial Overlay. Processors could not be in residential, commercial, community facility, institutional, miscellaneous districts, and their subdistricts. For producers, they would be conditional use indoors in residential and residential subdistricts. They were prohibited in commercial, community facility, institutional, and their subdistricts and permitted indoors in the M1, M2, M3, M4, SD/E, SP, and I/I. They were conditional use outdoors in the industrial districts, prohibited in the AI and AI Overlay, historic, stream corridors, and bypass interchange subdistricts. At the time the marijuana subcommittee was doing its review, there was some language in the Administrative Rule that talked about premises. There was a question about producers in residential areas and he asked OLCC to clarify. OLCC said they would not issue a license for any use in a location within a primary residence. The subcommittee had recommended producers be conditional uses in the R1 and R2, but it could not be in a primary residence but in an accessory structure to be considered indoors and had to have electrical lighting. He explained the definition of marijuana processor and producer. A table had been created for the subdistricts explaining what was prohibited and what was allowed. He clarified the typo on Attachment 2 and discussed the added provisions that prohibited marijuana uses in the stream corridor overlay, civic corridor, bypass interchange overlay, and interim industrial overlay subdistricts. He then discussed the findings. If a local jurisdiction banned one or more of the categories, they would not be able to share in the State revenues from marijuana taxes. Staff recommended adoption of the resolution.

#### MOTION: PC Philip Smith/PC Jason Dale moved to adopt Resolution No. 2016-313.

PC Cathy Stuhr was concerned about allowing processors and producers in residential districts.

PC Philip Smith said they would not be in homes, but in accessory dwellings.

PC Patrick Johnson said those growing it on their property would get a double use out of the property. He was concerned about safety and having it in a neighborhood. He thought putting it in an industrial zone made sense, but did not think it would be fair to only allow it in industrial zones.

Chair Allyn Edwards commented that it was a conditional use in residential zones, and people would have to come before the Planning Commission to present their case.

There was no public comment.

Chair Allyn Edwards closed the public comment portion of the meeting.

PC Jason Dale thought the way it was written was good as there were many rules to follow to keep the safety in the neighborhood. He was in favor with keeping it in the R1 and R2 zones.

Student Lois Saavedra asked about the eight foot fence requirement. CDD Rux responded that was required for an outdoor producer operation.

PC Philip Smith said that was the State law to have an eight foot wall or fence for an outdoor grow.

PC Jason Dale asked if they could come back later and change the regulations if it became a problem in the residential zones. CDD Rux replied it would require another Development Code amendment and operations already in place would be grandfathered in.

PC Cathy Stuhr asked what kind of review conditional uses had. CDD Rux responded conditional uses always came to the Planning Commission. He explained the process a person had to go through if they wanted to use an accessory structure for an indoor marijuana production facility.

PC Cathy Stuhr asked if the Commission wanted to deal with angry neighbors on these applications, and had to tell them that if it met the criteria, they had to approve the conditional use.

**AMENDMENT TO THE MOTION: PC Cathy Stuhr/PC Patrick Johnson** moved to amend the motion to remove the conditional use and prohibit producers and processors in the R1 and R2 districts.

PC Philip Smith thought this was a clean amendment and would avoid problems in the residential districts. It could be amended at a later date.

PC Jason Dale concurred that it was easier to go back and amend the Code to allow it rather than to prohibit it at a later time.

PC Patrick Johnson said this was a livability issue for neighborhoods. If there was a challenge, he would be open to hearing it.

Chair Allyn Edwards asked for clarification on the difference between R1 and R2 zones. CDD Doug Rux explained how it was based on the lot size.

Vote on the Amendment:	Motion carried (5 Yes/ 0 No).

Vote on the Motion: Motion carried (5 Yes/ 0 No).

#### **ITEMS FROM STAFF:**

1. Update on Council items

CDD Doug Rux gave an update on the bypass and Wilsonville Road. There had been discussion to have Wilsonville Road aligned with Highway 219 south of Wynooski Road. Wilsonville Road would be left as it was until the realignment was constructed and would be open with a median in Springbrook Road to limit the Wilsonville Road connection to a right in, right out. When the realignment was done, Wilsonville Road would be turned into a cul-de-sac with a length appropriate to serve the properties. The parties had verbally indicated their agreement, and a written agreement was being drafted.

There was discussion regarding how this was an important example that tough land use livability issues could be resolved without litigation. There was further discussion regarding the turn lanes going southbound and northbound onto the bypass, Highway 219, and Wynooski during construction.

- 2. Other reports, letters or correspondence: None
- 3. Next Planning Commission meeting: March 10, 2016, 7:00 PM

#### ITEMS FROM COMMISSIONERS: None

Chair Allyn Edwards adjourned the meeting at 8:17 p.m.

Approved by the Newberg Planning Commission this \_\_\_\_\_ day of \_\_\_\_\_\_, 2016.

Allyn Edwards, Planning Commission Chair

Bobbie Morgan, Office Assistant II

#### NEWBERG PLANNING COMMISSION MINUTES March 10, 2016, 7:00 PM PUBLIC SAFETY BUILDING (401 E. THIRD STREET)

Chair Allyn Edwards called the meeting to order at 7:00 p.m.

Chair Edwards welcomed new Planning Commissioner Ron Wolfe.

#### ROLL CALL

Members Present:	Allyn Edwards, Chair	Jason Dale
	Philip Smith	Luis Saavedra, Student
	Cathy Stuhr	Patrick Johnson
	Ron Wolfe	
Members Absent:	Gary Bliss	
Staff Present:	Doug Rux, Community Developme Bobbie Morgan, Planning Secretary Jessica Pelz, Associate Planner	

#### **PUBLIC COMMENTS:**

None

#### **CONSENT CALENDAR:**

Approval of the February 11, 2016 Planning Commission Meeting Minutes

**MOTION: PC Philip Smith/PC Patrick Johnson** moved to approve the February 11, 2016, Planning Commission Minutes. Motion carried (6 Yes/ 0 No).

#### **QUASI-JUDICIAL PUBLIC HEARING:**

#### 1. REQUEST: Annexation of 2.29 acres of property into Newberg city limits.

**APPLICANT:** J. William Rourke, Jr. & Myrlene J. Rourke LOCATION: Directly north of the current Newberg city limits on the east side of College Street/Highway 219, 4016 N. College Street TAX LOT: 3208-2900 FILE NO.: ANX-14-002 RESOLUTION NO.: 2016-316 CRITERIA: Newberg Development Code Sections 15.250.030 & 15.250.030

Chair Allyn Edwards opened the public hearing at 7:02 p.m. and read the quasi-judicial hearing statement.

#### Call for Abstentions, Bias, Ex Parte Contact, and Objections to Jurisdiction:

PC Philip Smith was sitting by Bill Rourke at a baseball game and he mentioned he would be coming to the Planning Commission to discuss an annexation. That was as far as the conversation went.

PC Patrick Johnson said the water pump station mentioned in the staff report served his house.

**Staff Report**: Associate Planner Jessica Pelz gave a PowerPoint presentation. This was a request to annex 2.29 acres into Newberg and change the zoning from Yamhill County low density residential one acre minimum to Newberg R-1. The Comprehensive Plan designation was low density residential which was consistent with the R-1 zoning. It was located 4016 N College Street directly north of Newberg city limits on the east side of College Street/Highway 219. She explained the subject site and gave a summary of the criteria. The property was in the

UGB and was contiguous to Newberg city limits along the southern boundary. Staff recommended adding a condition for the applicant to revise the legal description of the property to include the area to the center line of the right-of-way. This would provide continuity of the city limits so if the properties across the right-of-way wanted to annex they were contiguous. The proposal complied with the Comprehensive Plan designation and an adequate level of services was available within three years. Staff asked the applicant to review the pump station to see what upgrades might be necessary to serve this future development and North Valley Friends Church and Veritas School. The applicant hired AKS Engineering to do an analysis and determined what upgrades were needed and a cost estimate. After reviewing it, staff was confident that service could be made available. There was a sewer line that ran across the property that had adequate capacity. Future development of the property would require right-of-way dedication along Highway 219 and College Street and would require street improvements. Police, fire, parks, and school services were available. The proposal was consistent with the Comprehensive Plan, Development Code, and Transportation Planning Rule. Currently there was a single family residence on the property. Staff recommended approval of the resolution.

#### **Public Testimony**:

#### Proponents:

Bill Rourke, applicant, had lived in Newberg for 51 years and built the house that was currently on the property. At that time there were many fields and orchards that separated the property from the City, but he knew the City would be expanding in his direction. A subdivision went in contiguous to his property and he moved to a retirement community in 2010. In 2014 he began the process of applying for annexation and hoped to use the resources from the property to supplement his retirement income. He was working with a local developer to develop the site. The property was in the Urban Growth Boundary and contiguous with the City on the southern border. Also in 2014 he granted an easement across the property for water and sewer to North Valley Friends Church and Veritas School. Because part of the site was at a 300 foot elevation, the pump station needed to be utilized to supply the water. AKS Engineering was hired to evaluate the pump station and in the report it described the upgrades needed to supply water to his development. The application met all of the requirements in the Code and he requested the Commission recommend approval to the Council. He would like to put the annexation on the November ballot.

Opponents and Undecided: None

#### **Staff Summary of written testimony:**

AP Jessica Pelz read written testimony that had been recently received. It was from Robert Soppe who thought one of the criteria had not been met, availability of police, fire, parks, and schools. He thought the staff report was incomplete and the Commission needed more information before making the decision on this application.

AP Jessica Pelz clarified the City used to do a calculation for the level of public safety and annexed properties. She thought it was too simplistic to say single family homes would generate revenue for more police officers. That was an equity based analysis where multi-family might not generate revenue, and did that mean it should not be brought into the City. A more appropriate place for the analysis was at the Urban Growth Boundary level looking out 20 years. The City had stopped doing those kinds of findings and did a more simple finding that there was police and fire services.

Community Development Director Doug Rux agreed that the analysis was better for the Urban Growth Boundary process where you look at whether it was a positive or a negative to the General Fund and other taxing districts. If it was a negative, the land use pattern could be reanalyzed to balance it out. He explained the different values for the type of land and assessed value vs. real market value. Schools only received a portion of their funding from property taxes. Staff had talked with the School District about future growth and possible need for additional facilities, but the School District said they had enough capacity to accommodate what was anticipated in the next

five years. The City sent out notices to all the organizations to get their feedback. If the organizations did not comment, staff took that as there was no issue. If there was a concern, it would be in the staff report.

PC Philip Smith said the Planning Commission's decisions did have an effect on the City's budget, but it was getting the right balance in the larger picture not looking at a single piece. AP Jessica Pelz responded the decision was when property was placed in the Urban Growth Boundary for what was needed.

PC Patrick Johnson asked if this was like calculating an ROI for each annexation? CDD Doug Rux responded yes, but it did not give the full picture. It was only a snapshot of one development at a point in time.

PC Patrick Johnson said they were a community and there needed to be a balance of housing options and fiscal impact. It was a regularity across the state when the fire, police, or schools had no comment.

Close of public testimony: Chair Allyn Edwards closed testimony at 7:33PM

#### **Final comments from staff:**

AP Jessica Pelz said staff recommended the Planning Commission adopt the resolution.

#### **Deliberation of commission:**

MOTION: PC Cathy Stuhr/PC Jason Dale moved to approve Resolution No. 2016-316.

PC Philip Smith thought this was an easy decision.

PC Cathy Stuhr said since PC Ron Wolfe had not been sworn in, could he vote on this issue? CDD Doug Rux said it was not a requirement that PC Ron Wolfe be sworn in.

PC Patrick Johnson had a concern regarding speeding that was occurring after Foothills Drive over the hill. He was concerned about the access to this parcel at the point where there was speeding.

#### Motion carried (6 Yes/ 0 No).

#### **ITEMS FROM STAFF:**

1. Update on Council items

CDD Doug Rux gave an update on Council items including the Agreement of Understanding for the Bypass, Intergovernmental Agreement between the City and Tualatin Valley Fire and Rescue, approval of the water rates and stormwater rates and remand to the CRRC for the sewer rates, and revised materials for the Bypass/Wilsonville Road realignment.

AP Jessica Pelz gave an update on the Urban Growth Boundary amendment process where a community vision, buildable lands inventory, new study boundary area, and action plan would be done.

CDD Doug Rux said the next community visioning workshop for the Newberg Downtown Improvement Plan would be held on March 15. The historic grant RFP to do additional survey work in the downtown area would soon be awarded. The Economic Development Strategy process was almost complete.

PC Cathy Stuhr asked for an update on the bill regarding voter approved annexations. CDD Doug Rux said the bill was passed and that if there was a City Charter provision for annexations requiring a vote, it was no longer required. Staff would be meeting with legal counsel to get further guidance. It was a provision in the Newberg's Charter to require voter annexations.

- 2. Other reports, letters or correspondence: none
- 3. Next Planning Commission meeting: April 14, 2016

#### **ITEMS FROM COMMISSIONERS:**

None

Chair Allyn Edwards adjourned the meeting at 7:49 p.m.

Approved by the Newberg Planning Commission this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

Allyn Edwards, Planning Commission Chair

Bobbie Morgan, Planning Secretary

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#### PLANNING COMMISSION STAFF REPORT CHEHALEM AQUATIC & FITNESS CENTER CONDITIONAL USE PERMIT/DESIGN REVIEW/CODE ADJUSTMENT

HEARING DATE:	April 14, 2016	
FILE NO:	CUP-16-001/DR2-16-001/ADJC-16-001	
REQUEST:	Conditional use permit/design review/code adjustment request to approve the remodel and expansion of the Chehalem Aquatic and Fitness Center, and a code adjustment to reduce the amount of required parking.	
LOCATION:	1802 Haworth Avenue	
TAX LOT:	3217CA-1200	
APPLICANT/OWNER: Chehalem Park & Recreation District (CPRD)		
ZONE:	R-1 (low density residential)	
PLAN DISTRICT:	P (parks) and LDR (low density residential)	
OVERLAYS:	none	

#### **ATTACHMENTS:**

Order 2016-20 with

- Exhibit "A": Findings
- Exhibit "B": Conditions
- 1. Aerial Photo
- 2. Zoning map
- 3. Site Plan
- 4. Public Comments
- 5. Application



A. **DESCRIPTION OF APPLICATION:** A Conditional Use Permit application to expand a Community Service Facility in an R-1 (low density residential) zone; a Design Review application to construct a 40,390 square foot aquatics facility with two pools, to remodel the existing facility into a gym, to expand the parking on the site, and rebuild the existing park area; a Code Adjustment application to reduce the amount of required parking from 197 spaces to 143 spaces in order to preserve trees and park space on the site.

#### **B. SITE INFORMATION:**

- 1. Location: 1802 Haworth Avenue
- 2. Size: 5.4 acres
- 3. Topography: Slight slope to the south east
- 4. Current Land Uses: Existing CPRD pool facility
- 5. Natural Features: Many mature trees on the northeast part of the site

"Working Together For A Better Community-Serious About Service" Z:\WP5FILES\FILES\CUP2016\CPRD Pool expansion\Final -CUP.DR.ADJC CPRD Pool expansion staff report.doc

- 6. Adjacent Land Uses:
  - a. North: Primarily single-family homes, with a health clinic
  - b. East: Single-family homes
  - c. South: Primarily an assisted living facility, with some single-family homes
  - d. West: Single-family homes
- 7. Access and Transportation: The site takes access from Haworth Avenue, and also has some frontage on Villa Road and Cherry Street. Villa Road and Haworth Avenue are major collectors under the jurisdiction of the City. Cherry Street is a local city street.
- 8. Utilities:
  - a. Wastewater: There is a 10-inch public wastewater line along Haworth Avenue that could be used for the site. There is an 8-inch public wastewater line along Sitka Avenue that could be extended into Cherry Street.
  - b. Water: There is a 6-inch public water line on Sitka Avenue and an 8-inch public water line on Haworth Avenue that could be used to serve the site.
  - c. Stormwater: There is a 12-inch public stormwater line on Haworth Avenue that could be extended to serve the site. There is a 10-inch public stormwater line on Sitka Avenue that could be extended into Cherry Street to serve the site.
- C. **PROCESS:** The conditional use permit request is a Type III application and follows the procedures in Newberg Development Code 15.100.050. The Planning Commission will hold a quasi-judicial hearing on the application. The Commission is to make a decision on the application based on the criteria listed in the attached findings. The Planning Commission's decision is final unless appealed. Important dates related to this application are as follows:

1.	3/16/16:	The Community Development Director deemed the application complete.
2.	3/11/16:	The applicant mailed notice to the property owners within 500 feet of the site.
3.	3/16/16:	The applicant posted notice on the site.
4.	3/30/16:	The <i>Newberg Graphic</i> published notice of the Planning Commission hearing.
5.	4/14/16:	The Planning Commission will hold a quasi-judicial hearing to consider the application.

**D. CRITERIA:** The Planning staff has determined that the following criteria apply to the subject proposal. Some of the criteria are summarized; the full criteria are listed in the

Findings section:

#### NDC 15.225.060 General conditional use permit criteria – Type III:

A conditional use permit may be granted through a Type III procedure only if the proposal conforms to all the following criteria:

A. The location, size, design and operating characteristics of the proposed development are such that it can be made reasonably compatible with and have minimal impact on the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage and density; to the availability of public facilities and utilities; to the generation of traffic and the capacity of surrounding streets, and to any other relevant impact of the development.

B. The location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping or civic environment, and will be as attractive as the nature of the use and its location and setting warrants. C. The proposed development will be consistent with this code. [Ord. 2451, 12-2-96. Code 2001 § 151.210.]

#### NDC 15.220.050 (B) – Design Review Criteria (summarized):

- (1) Design compatibility.
- (2) Parking and on-site circulation.
- (3) Setbacks and general requirements.
- (4) Landscaping requirements.
- (5) Signs.
- (6) Manufactured home, mobile home and RV parks.
- (7) Zoning district compliance
- (8) Sub-district compliance.
- (9) Alternative circulation, roadway frontage improvements and utility improvements
- (10) Traffic study improvements.

#### NDC 15.210.020 Type I adjustments and approval criteria.

The director may authorize adjustments from the following requirements through a Type I procedure subject to the following:

C. Dimensional Standards and Minimum Number of Off-Street Parking Spaces. 1. The director may approve adjustments to the dimensional standards of offstreet parking spaces; standards for minimum number of off-street parking spaces; and required spaces to be used for compact cars excepting handicapped parking requirements.

2. Approval Criteria. The director shall find that approval will provide adequate off-street parking in relation to user demands. The following factors may be considered in granting an adjustment:

a. Special characteristics of users which indicate low demand for off-street parking (e.g., low income, elderly).

b. Opportunities for joint use of nearby off-street parking facilities. c. Availability of public transit. d. Natural features of the site (topography, vegetation and drainage) which would be adversely affected by application of required parking standards. e. Possible conversion of the site to other uses in the future. f. No adjustment shall be greater than 25 percent of the requirement from which the exception is granted.

- **E. AGENCY COMMENTS:** The application was routed to several public agencies for review and comment. Comments and recommendations from city departments have been incorporated into the findings and conditions. As of the writing of this report, the city received the following agency comments:
  - 1. PGE: Reviewed, no conflict.
  - 2. Newberg School District: Reviewed, no conflict.
- **F. PUBLIC COMMENTS:** As of the writing of this report, the city has received three written comments on the application. The major issues are summarized below, and the comments are included in Attachment 4.
  - 1. **Coordination with adjoining site to the south:** Prestige Care owns the site south of the CPRD site, and submitted an email confirming that they do not object to the pool expansion project, and are working with CPRD on easement and right-of-way dedications.
  - 2. **Newberg High School:** The high school submitted a letter stating that they agree to allow the Chehalem Aquatic Center to use at least 20 parking spaces in the school's south parking lot for overflow parking needs.
  - 3. **Neighbor on Sitka Avenue**: Shirley Cooper submitted a letter expressing concern that the playground and basketball court were too close to residential neighbors, that they would increase noise and negatively impact neighbors, and that some of the mature trees on site were potential hazards. She requested that the playground be moved west, that more tall trees close to the residential property lines be removed, and that buffer landscaping be added along the eastern edge of the park property.
  - 4. **Other issues expressed verbally by citizens:** Two citizens expressed support for the project but mentioned some concerns that should be addressed.
    - a. Overflow parking on Sitka Avenue and other local streets currently occurs during events.
    - b. Will the increased traffic trigger a need for a traffic signal at the Villa Road/Haworth Avenue intersection.
    - c. Constructions impacts: How will overflow parking from construction workers be addressed. The workers on the GFU dorm project have made Villa Road difficult to drive down for several months. How will construction noise be

addressed, and how will potential damage to local streets from trucks be addressed. How will the chlorine treatment equipment be removed (is there any danger from chlorine gas?)

#### G. ANALYSIS:

- 1. **Parking adjustment:** The applicant has requested a reduction from 197 spaces to 143 parking spaces, in order to minimize the number of trees which need to be removed on the site. They pointed out that the 197 spaces are a peak need, not an everyday need, and that there are steps they can take to reduce parking demand on-site. They plan to supply 10 additional bicycle parking spaces, and have arranged a shared parking agreement with Newberg High School for at least 20 spaces during peak times (major meets). The applicant can also apply to the city for permission to park along the Haworth Avenue street frontage during peak times (major meets, anticipated 4-5 times per year), which can supply 20 additional spaces. As part of the code adjustment analysis, it was determined that the site would need to have at least 148 parking spaces. A code adjustment cannot reduce the parking requirement by more than 25%. The parking requirement is 197 spaces, so if a 25% reduction is approved that would lower the parking requirement to 148 spaces. Reducing the parking to 143 spaces would require a 27% reduction, which is more than allowed.
- 2. **Traffic issues:** The traffic study found that nearby intersections would continue to perform adequately, that there were no safety concerns, and did not recommend any transportation improvements.
- 3. **Compatibility:** The applicant's lighting plan meets the city light trespass limits along most of the property lines, but will need to be revised in the SW and NE corners to protect residential properties from light trespass. The applicant is adding landscape buffers along the west and south property lines, and has a park area buffering the eastern property line. The request to move the playground area to the west has some tradeoffs; while it would move the playground farther from residential properties, it would remove approximately 8 mature trees and put the playground near a busy parking lot.
- 4. **Right-of-way dedications**: Haworth Avenue dips to the south on the western part of the site, but it does not appear that right-of-way was ever dedicated for part of the street. CPRD will dedicate right-of-way along the western part of Haworth Avenue so the right-of-way includes the public street and sidewalk. CPRD and Prestige Care (the property south of the pool site) will jointly dedicate public right-of-way to create a culde-sac at the end of Cherry Street. The cul-de-sac will be constructed by CPRD, and will provide access to both sites.
- 5. **Construction impacts**: The applicant will be required to provide parking on-site for contractors. Construction work is limited to between 7 AM and 7 PM, which will limit the impact of construction noise on neighbors. The applicant is required to repair any city infrastructure, including streets, which are damaged by construction activities. The applicant will be required to supply a decommissioning plan for the existing chlorine treatment equipment, and verify if the Oregon Dept. of Environmental Quality or

Yamhill County Health Dept. have any requirements for the equipment.

**H. PRELIMINARY STAFF RECOMMENDATION:** The preliminary staff recommendation is made in the absence of public hearing testimony, and may be modified subsequent to the close of the public hearing. At this writing, staff recommends the following motion:

Move to adopt Planning Commission Order 2016-20, which approves the requested conditional use permit/design review/code adjustment with the attached conditions.

"Working Together For A Better Community-Serious About Service" Z:\WP5FILES\FILES\CUP2016\CPRD Pool expansion\Final-CUP.DR.ADJC CPRD Pool expansion staff report.doc



PLANNING COMMISSION ORDER 2016-20

#### AN ORDER APPROVING CONDITIONAL USE PERMIT/DESIGN REVIEW/CODE ADJUSTMENT CUP-16-001/DR2-16-001/ADJC-16-001 FOR AN EXPANSION OF THE CHEHALEM AQUATIC AND FITNESS CENTER AT 1802 HAWORTH AVENUE, YAMHILL COUNTY TAX LOT 3217CA-1200

#### RECITALS

- 1. The Chehalem Park and Recreation District (CPRD) submitted an application for a conditional use permit/design review/code adjustment for an expansion of the Chehalem Aquatic and Fitness Center at 1802 Haworth Avenue, Yamhill County tax lot 3217CA-1200.
- 2. After proper notice, the Newberg Planning Commission held a hearing on April 14, 2016, took public testimony, and deliberated on the application.
- 3. The Newberg Planning Commission finds that the application meets the applicable criteria as conditioned and shown in the findings in Exhibit "A".

#### The Newberg Planning Commission orders as follows:

- 1. Conditional Use Permit/Design Review/Code Adjustment Application CUP-16-001/DR2-16-001/ADJC-16-001 is hereby approved, subject to the conditions contained in Exhibit "B". Exhibit "B" is hereby adopted and by this reference incorporated.
- 2. The findings shown in Exhibit "A" are hereby adopted. Exhibit "A" is hereby adopted and by this reference incorporated.
- 3. This order shall be effective April 29, 2016 unless appealed prior to that date.
- 4. This order shall expire one year after the effective date above if the applicant does not obtain a building permit pursuant to this application by that time, unless an extension is granted per Newberg Development Code 15.225.100.

#### Adopted by the Newberg Planning Commission this 14<sup>th</sup> day of April, 2016.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

List of Exhibits: Exhibit "A": Findings Exhibit "B": Conditions

> "Working Together For A Better Community-Serious About Service" Z:\WP5FILES\FILES\CUP\2016\CPRD Pool expansion\Final-CUP.DR.ADJC CPRD Pool expansion staff report.doc

#### Exhibit "A" to Planning Commission Order 2016-20 Findings –File CUP-16-001/DR2-16-001/ADJC-16-001 Chehalem Aquatic and Fitness Center

#### I. Conditional Use Permit Criteria That Apply - Newberg Development Code 15.225.060.

A. The location, size, design and operating characteristics of the proposed development are such that it can be made reasonably compatible with and have minimal impact on the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage and density; to the availability of public facilities and utilities; to the generation of traffic and the capacity of surrounding streets, and to any other relevant impact of the development.

**Finding:** The site is in the R-1 (low density residential) district, and contains an existing 21,280 square foot aquatic center. It is owned and operated by the Chehalem Park & Recreation District (CPRD). This is a Community Service Facility use, which is a conditional use in the R-1 zone. The proposed expansion therefore requires a conditional use permit application, in addition to the design review application which is required for new buildings. The design review criteria will be addressed in a later section of the findings. The applicant has also applied for a code adjustment application to reduce the amount of required off-street parking from 197 spaces to 143 spaces. The code adjustment criteria will be addressed in a later section of the findings.

The proposed aquatic and fitness center addition will include a 40,390 square foot building which will include a leisure pool, a competition pool, seating, locker rooms and event spaces. The proposal includes a 143 space parking lot, 45,000 square foot park area with basketball court and playground, new sidewalk and driveways off Haworth Avenue, and a new cul-de-sac and service drive off Cherry Street. The project will remove some mature trees on site, but will retain over 60 mature trees. Construction will be phased so the existing aquatic center can remain open while the addition is constructed. Once the addition is complete and depending on the funds available, the applicant intends to remodel the existing aquatic center into a gym (options include a full court gym, second floor running track, weight and fitness rooms, restrooms, staff offices, and a 2,200 square foot outdoor pool).

The new addition will be 30 feet tall, which meets the R-1 height limit and is approximately one foot taller than the existing building. The new addition is setback far from Haworth Avenue and is in the center of the site, so it is separated from the residential properties west of the site by the existing building, and separated from the residential properties east of the site by a large park area. It is relatively close to the Prestige Care site to the south, who has indicated support for the project design. The building mass, scale and location are therefore reasonably compatible with surrounding development.

The peak parking demand for the site is estimated to be 197 parking spaces during large events, based on the Lancaster Engineering parking study. The applicant has applied for a code adjustment to reduce the amount of required off-street parking to 143 spaces. A code adjustment can reduce a requirement by a maximum of 25%. A 25% reduction of the 197-space requirement would lower the requirement to 148 spaces. So, if the parking code adjustment is approved then the site would need to

have at least 148 off-street parking spaces, not 143 spaces as proposed.

The applicant has applied for the parking code adjustment because building 197 parking spaces for the proposed project would require the removal of most of the mature trees and park area on the site. The applicant's argument for the parking reduction is based on the observation that the peak demand only occurs occasionally during large meets (4-5 times per year), and that the applicant can take certain steps (traffic demand management) to address potential parking overflow onto nearby streets. The applicant has provided additional bicycle parking spaces, has arranged a shared-parking agreement with Newberg High School, and can apply to the City to use on-street parking along the Haworth Avenue frontage during large events. If the parking code adjustment is approved based on the traffic demand management steps then the proposed project's parking will be considered to be compatible with the surrounding development.

The applicant had Lancaster Engineering, a professional engineering firm, prepare a traffic impact study for the project. Traffic patterns and volumes were observed at key intersections near the site, sight distance and crash data were analyzed, and an operational analysis was performed to determine the impact of the project. All of the study intersections (Portland Road at Villa Road, Villa Road at Fulton Street, Villa Road at Haworth Avenue, and Haworth Avenue at Sitka Avenue) currently operate at an acceptable level of service, and will continue to operate acceptably with the addition of trips due to the new addition. No significant safety concerns were identified, and sight distance was found to be adequate, and would be improved by this project. Accordingly, the traffic engineer did not recommend any traffic mitigation improvements.

Operating characteristics: The hours of operation are expected to remain essentially the same, and the number of employees is expected to double (from 5-15 staff on site to 10-30 staff, depending on schedules). No odor impacts are expected from the site.

Light trespass: The applicant's lighting plan shows that the fixtures will be shielded and will meet the light trespass standard (cannot exceed 0.5 foot-candles) along most of the property lines, except in the NE and SW corners. <u>Submit a revised lighting plan that meets the 0.5 foot-candle light trespass</u> standard along all of the property lines, including the NE and SW corners.

A neighbor on Sitka Avenue, Shirley Cooper, submitted a letter expressing concern that the playground and basketball court were too close to residential neighbors, that they would increase noise and negatively impact neighbors, and that some of the mature trees on site were potential hazards. She requested that the playground be moved west, that more tall trees close to the residential property lines be removed, and that buffer landscaping be added along the eastern edge of the park property.

The existing basketball court is approximately 200 feet from the east property line, and the proposed basketball court is approximately 100 feet from the east property line. The existing playground is over 200 feet from the east property line, and the proposed playground is approximately 50 feet from the east property line. The proposed playground could potentially be moved about 60 feet to the west. There would be tradeoffs, however. The move would require removing approximately 8 mature trees, and would place the playground next to a busy parking lot. The mature trees have value for the neighborhood and the community, so losing more of them would be a negative consequence for the livability of the area. Placing the playground close to a busy parking lot would raise safety concerns,

since the playground will typically attract small children. Moving the playground 60 feet to the west would also do little to reduce noise impacts; noise decreases slowly with distance, and landscaping does not effectively block noise. The only design approach that effectively blocks noise is a masonry wall, which would be an expensive requirement and is not appropriate here. This site was already used as a public park with a playground and basketball court and has been for many years; the only significant difference is that the proposed playground and basketball court are closer to the eastern property line. These facilities are not right next to the property line, however; the basketball court is 100 feet from the eastern property line, and the eastern edge of the playground is 50 feet from the eastern property line. The eastern property line has a chain-link fence on the CPRD side and wooden fences on the residential neighbors' side, which does provide a visual block. The applicant is removing an old asphalt pad near the east property line (former basketball court), which will reduce potential noise issues from that spot. The applicant shall submit a revised landscape plan that adds a landscape buffer along the eastern property line, where there is room between the existing path and the fence, which will grow over time to provide additional visual buffering for the residential neighbors. The landscape buffer shall consist of deciduous trees (spaced 30 feet apart on center, with a minimum trunk diameter of 1.5 inches, an anticipated mature height of at least 20 feet and an anticipated mature spread of at least 15 feet).

Arborist report/tree preservation: The applicant plans to retain over 60 mature trees on the site. Any trees the arborist deems hazardous (based on the health of the tree, not the distance to neighboring properties) should be removed, and any dead or broken branches should be removed. The arborist report Tree Care and Preservation Guidelines state that if some trees are to be preserved then there must be a qualified project arborist on-site or on-call for the entire project, especially during any excavation near the preserved trees. Submit a report from the project arborist verifying that any hazardous trees have been removed, broken or dead branches have been pruned, and that the Tree Care and Preservation guidelines have been followed; the arborist report is due before occupancy will be approved for the building. These conditions will make the development reasonably compatible with abutting properties.

The applicant also moved the grass volleyball court from the southwest corner, which was next to residential properties, eastward so it would be farther from most residential properties. It will have a fence and evergreen hedge as a buffer. The outdoor pool, if built, will have a fence and 5 foot landscape buffer along the property line.

<u>Construction impacts: The applicant will be required to provide parking on-site for contractors to</u> <u>minimize on-street parking impacts. Construction work is limited to between 7 AM and 7 PM</u>, which will limit the impact of construction noise on neighbors. <u>The applicant is required to repair any city</u> <u>infrastructure, including streets, which are damaged by construction activities. The applicant will be</u> <u>required to supply a decommissioning plan for the existing chlorine treatment equipment, and verify</u> <u>if the Oregon Dept. of Environmental Quality or Yamhill County Health Dept. have any</u> <u>requirements for the equipment.</u>

The location, size, design and operating characteristics of the proposed development are therefore such that, as conditioned, it can be made reasonably compatible with and have minimal impact on the livability or appropriate development of abutting properties and the surrounding neighborhood.

## B. The location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping or civic environment, and will be as attractive as the nature of the use and its location and setting warrants.

**Finding:** The location is near the center of the city, and is a convenient location for most of its users. It is also in a walkable residential neighborhood and within biking distance of the high school, so some users will not need to drive to the facility. The site has been designed to be as functional and space-efficient as possible, in order to minimize the loss of mature trees and park space, and be compatible with neighboring properties. The final site design adds significant number of trees in the parking areas and buffer areas, which will soften the appearance of the large parking area. The building has been designed to match the existing building in scale, and has a modern, attractive design.

The proposal therefore meets this criterion because the location, design and site planning will provide a convenient and functional park/recreation center environment, and will be as attractive as the nature of the use and its location and setting warrants.

#### C. The proposed development will be consistent with this code.

**Finding:** The design review findings below review the development code standards that apply to this project. As conditioned, the proposed development will be consistent with the development code.

#### II. Design Review Criteria That Apply - Newberg Development Code 15.220.050(B):

# (1) Design compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design, and signage.

**Finding:** The proposed aquatic and fitness center addition will include a 40,390 square foot building which will have a leisure pool, a competition pool, seating, locker rooms and event spaces. The proposal includes a 143 space parking lot, 45,000 square foot park area with basketball court and playground, new sidewalk and driveways off Haworth Avenue, and a new cul-de-sac and service drive off Cherry Street. The project will remove many mature trees on site, but will retain over 60 mature trees. Construction will be phased so the existing aquatic center can remain open while the addition is constructed. Once the addition is complete and depending on the funds available, the applicant intends to remodel the existing aquatic center into a gym (options include a full court gym, second floor running track, weight and fitness rooms, restrooms, staff offices, and a 2,200 square foot outdoor pool).

The new addition will be 30 feet tall, which meets the R-1 height limit and is approximately one foot taller than the existing building. The new addition is setback over 160 feet from Haworth Avenue and is in the center of the site (from an east-west perspective), so it is separated from the residential properties west of the site by the existing building, and separated from the residential properties east of the site by a large park area. It is relatively close to the Prestige Care site to the south, who has indicated support for the project design. The addition has been designed to have a modern

rectangular form, similar to the existing building. It will be constructed from ground face concrete block, metal panels, and cement stucco, with extensive window area facing north. Large window graphics ("swim" and "play") will provide visual interest. The site will retain many existing mature trees in the northeast park area, and will add a large number of trees and landscape buffers on the remainder of the site.

Light trespass: The applicant's lighting plan shows that the fixtures will be shielded and will meet the light trespass standard (cannot exceed 0.5 foot-candles) along most of the property lines, except in the NE and SW corners. <u>Submit a revised lighting plan that meets the 0.5 foot-candle light trespass</u> standard along all of the property lines, including the NE and SW corners.

<u>Construction impacts: The applicant will be required to provide parking on-site for contractors to</u> <u>minimize on-street parking impacts. Construction work is limited to between 7 AM and 7 PM,</u> which will limit the impact of construction noise on neighbors. <u>The applicant is required to repair any city</u> <u>infrastructure, including streets, which are damaged by construction activities. The applicant will be</u> <u>required to supply a decommissioning plan for the existing chlorine treatment equipment, and verify</u> <u>if the Oregon Dept. of Environmental Quality or Yamhill County Health Dept. have any</u> <u>requirements for the equipment.</u>

The overall design of the building addition and the site will be compatible with the existing pool building and the landscaping will make the design blend with surrounding properties.

(2) Parking and On-Site Circulation. Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in NMC 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

**Finding:** The parking lot has been designed so that vehicles can efficiently enter and exit the site with minimum impact on the function of the public street. The design does not rely on public streets as part of the parking lot circulation pattern. The Development Code does not have a specific parking requirement for a community recreation center like the proposed aquatics and fitness center. The applicant's traffic engineer performed a parking study and concluded that the facility had a peak parking demand of 197 spaces. This was based on the Parking Generation Manual, fourth edition, published by the Institute of Transportation Engineers, which is accepted as an authoritative neutral source. The applicant's proposed site plan includes 143 spaces, and they believe this is all the parking they can efficiently fit on the site without removing most of the remaining mature trees and the park. The applicant believes this amount of parking will be adequate except on the occasions when there are large swim meets (4-5 times per year), and has applied for a code adjustment to reduce the amount of required off-street parking. They have proposed some methods to reduce parking demand during peak events, such as swim meets. If the code adjustment is approved then the proposed project will be found to comply with the Development Code.

The Fire Marshal commented that the project must meet all Fire Code standards.

#### (3) Setbacks and General Requirements. The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and 15.410.010 through 15.410.070 dealing with setbacks, coverage, vision clearance, and yard requirements.

**Finding:** The R-1 zone limits the building height to 30 feet, does not have a lot coverage limit for institutional uses, requires a 25 foot setback for buildings from all property lines, a 15 foot front yard setback for parking, and a 5 foot interior yard setback. The proposed building does not exceed the 30 foot height limit, and projects meets the required setbacks. The project meets vision clearance standards at the driveways. The site has public access from Haworth Avenue and Cherry Street. Following compliance with design review conditions, the proposed project will meet the height restrictions and public access requirements, setback, coverage, vision clearance and yard requirements of the Code.

### (4) Landscaping requirements. The proposal shall comply with 15.420.010 dealing with landscape requirements and landscape screening.

**Finding:** The landscaping plan shows that over 33% of the site will be landscaped, which exceeds the 15% minimum requirement. As noted in the conditional use permit finding, the applicant will be adding some landscaping on the eastern edge of the property. The applicant shall submit a revised landscape plan that adds a landscape buffer along the eastern property line, where there is room between the existing path and the fence, which will grow over time to provide additional visual buffering for the residential neighbors. The landscape buffer shall consist of deciduous trees (spaced 30 feet apart on center, with a minimum trunk diameter of 1.5 inches, an anticipated mature height of at least 20 feet and an anticipated mature spread of at least 15 feet).

As previously noted in the conditional use findings, <u>the applicant plans to retain over 60 mature trees</u> on the site. Any trees the arborist deems hazardous (based on the health of the tree, not the distance to neighboring properties) should be removed, and any dead or broken branches should be removed. The arborist report Tree Care and Preservation Guidelines state that if some trees are to be preserved then there must be a qualified project arborist on-site or on-call for the entire project, especially during any excavation near the preserved trees. Submit a report from the project arborist verifying that any hazardous trees have been removed, broken or dead branches have been pruned, and that the Tree Care and Preservation guidelines have been followed; the arborist report is due before occupancy will be approved for the building.

The applicant has provided landscape buffers along the property lines and front yards as required by the Development Code, and has provided street trees and parking lot trees as required. As previously noted in the conditional use findings, additional landscaping shall be added along the east property line to provide an additional visual buffer. All areas subject to the final design review plan and not otherwise improved are landscaped. Following compliance with the conditions of approval, the landscape plan and parking lot complies with 15.420.010.

#### (5) Signs. Signs shall comply with 15.435.010 et seq. dealing with signs.

Finding: The large graphics on the building that say "play" and "swim" are allowed because they do

not cover more than 50% of the window area. The two proposed major freestanding signs on the Haworth Avenue frontage are allowed because the site has over 600 feet of frontage, and the signs are both under 50 square feet. The short 2'9" sign is not required to be setback from the front property line. Submit a revised sign plan to the Planning Division for review and approval. The 7'6" sign needs to be moved back slightly so it is setback 10 feet from the front property line after the right-of-way dedication along Haworth Avenue. The electronic message center must be equipped with dimming technology that automatically varies the brightness of the display according to ambient light conditions. The major freestanding sign on the Villa Road frontage is allowed because it meets the required 5 foot setback, and is less than the 15 square feet maximum size for that frontage. The 48-square foot attached wall sign on the building is allowed because it is less than 50 square feet in size.

(6) Manufactured Dwelling, Mobile Home and RV Parks. Manufactured dwelling and mobile home parks shall also comply with the standards listed in NMC 15.445.075 through 15.445.100 in addition to the other clear and objective criteria listed in this section. RV parks also shall comply with NMC15.445.170 in addition to the other criteria listed in this section.

Finding: Not applicable - not a manufactured home, mobile home or RV park.

(7) Zoning District Compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.305.010 through 15.336.020. Through this site review process, the director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.

**Finding:** The site is zoned R-1. The existing aquatic center is a Community Service Facility, which is allowed as a conditional use in R-1. The expansion of the facility therefore requires a conditional use permit, which the applicant has applied for as part of this application.

### (8) Sub-district compliance. Properties located within subdistricts shall comply with the provisions of those subdistricts located in NMC 15.340.010 through 15.348.060.

Finding: The site is not within a subdistrict.

9) Alternative circulation, roadway frontage improvements and utility improvements. Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with city street standards and the standards contained in the transportation plan. At the discretion of the city, these improvements may be deferred through use of a deferred improvement agreement or other form of security.

#### NDC 15.505.060 Street width and design standards (summarized).

- A. All design streets shall conform with the standards contained in Table 15.505.060.
- C. Bike Lanes. Striped bike lanes shall be a minimum of five feet wide. Bike lanes shall be provided where shown in the Newberg Transportation System Plan.
- G. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.
- H. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets.

#### **Findings:**

Right of way width on Haworth Avenue: The western Haworth Avenue frontage does not appear to be built in public right-of-way. The applicant is dedicating additional right-of-way along Haworth to conform to the existing public street improvements.

Setback sidewalks: The applicant's property has an existing curb-tight sidewalk along part of its Haworth Avenue frontage and the applicant is proposing to construct a curb-tight sidewalk along the remaining Haworth Avenue frontage and the Villa Road frontage. NDC 15.505.060 requires setback sidewalks except where including a planter strip would be infeasible. The City Engineer may allow curb-tight sidewalks to preserve major trees (PW Design and Construction Standards Section 5.14), however the applicant is proposing to remove a majority of the mature trees to provide adequate sight distance for the proposed east driveway. The applicant must provide a revised site plan showing setback sidewalks with planter strips along the Haworth Avenue and Villa Road frontages when submitting the construction plans for review and approval.

Sidewalk ramps: PW Design and Construction Standards (Section 5.14) states that new sidewalk intersections shall provide sidewalk ramps (for access) that meet the requirement of the Americans with Disabilities Act (ADA and that a retrofit of existing ramps within the project limit may be required. The applicant is proposing to upgrade the property's current east driveway intersection and construct a second driveway to comply with ADA requirements. The applicant is proposing to create a cul-de-sac in Cherry Street however ADA-compliant sidewalks are not shown on the site plan. The applicant must provide a revised site plan showing ADA-compliant sidewalks on Cherry Street when construction plans are submitted to the City for review and approval.

Bike lane: PW Design and Construction Standards (Section 5.14) states that applicants must comply with the specifications in the "Newberg ADA/Pedestrian/Bike Route Improvement Plan". Haworth Avenue is a major collector and requires a 5-ft striped bike lane. The applicant is proposing to create the 5-ft striped bike lane. This requirement is met.

Villa Road is a major collector and requires a 5-ft striped bike lane. <u>As conditioned, the applicant</u> <u>must coordinate with the City during the Villa Road Improvement Project to ensure that bike lanes</u> <u>along Villa Road are complete.</u> Sight distance: PW Design and Construction Standards (Section 5.23) states that sight distances for intersections shall have a minimum intersection sight distance of 280 ft for a design speed of 25 mph. The traffic impact study indicated that the proposed east driveway would provide a sight distance of 85 feet to the west and 475 feet to the east with the current landscape configuration. The sight distance for the proposed west driveway was 355 feet to the west and 320 feet to the east. The applicant is proposing to remove the existing trees that are minimizing the sight distance for the proposed eastern driveway and the proposed site plan indicates removal of the obstructing landscape. This requirement is met.

Cul-de-sac: The Development Code only allows cul-de-sacs in certain circumstances, such as when existing development precludes the extension of a street. The Prestige Care building and site development (on the site south of the CPRD site) effectively preclude the extension of Cherry Street through the site for future development, so a cul-de-sac at the end of Cherry Street is allowable. The cul-de-sac cannot be more than 400 feet long, cannot serve more than 18 single-family dwellings, and must have a circular end with a minimum diameter of 90 feet, curb to curb, with a minimum 103 foot diameter right-of-way. PW Design and Construction Standards (Section 5.18) states that a standard cul-de-sac turnaround shall be provided at the end of a permanent dead-end street that does not provide looped circulation. The applicant is proposing to upgrade the current dead-end street at Cherry Street and Sitka Avenue with a cul-de-sac to provide additional access to the proposed facility. The cul-de-sac will not exceed 400 ft in length, will not serve more than 18 single-family dwellings, and has a circular end with a diameter of 96 feet curb to curb, with a 116 foot diameter right-of-way. This requirement has been met.

Right-of-way dedications: Submit draft right-of-way dedications to the City Engineer for review and approval for the Haworth Avenue frontage and the Cherry Street cul-de-sac (part by CPRD, part by Prestige Care). After approval, record the right-of-way dedications and return a copy of the recorded document to the City Engineer.

Driveway spacing: The Development Code requires driveways on major collectors to be at least 100 feet from intersecting streets, and requires at least 150 feet of frontage in order to have two driveways. The proposed development will move the existing western driveway to the east, farther from the Villa Road/Haworth Avenue intersection. This is a positive change for traffic flow. The site has over 600 feet of frontage, so two driveways are allowed on Haworth Avenue. PW Design and Construction Standards (Section 5.16) states that, on major collector streets, the maximum number of driveways per site frontage is one unless it is found that no eminent traffic hazard would result and that impacts on traffic would be minimal. The current site has two driveways and the applicant is proposing two driveways for the re-developed site. The Traffic Impact Study submitted by the applicant shows a level of service of B for the driveways. This requirement is met.

#### *Water criteria (summarized): Lots and parcels within the city must be served by the water* system of the city as required by NDC 15.510.040 and NMC 13.15.045.

**Findings:** PW Design and Construction Standards (Section 3.2.2) states that the minimum size for permanently dead-ended mains supplying fire hydrants with a fire flow less than 1,500 gpm and for primary feeder mains in residential subdivision is 8-inches. The applicant is proposing to construct a

6-inch public water line for the Cherry Street cul-de-sac which will be looped in the future with the 8-inch public water line on Fulton Street. <u>The applicant must provide a revised utility plan showing</u> an 8-inch public water line for the Cherry Street cul-de-sac and fire flow calculations showing that adequate pressures and flows will be available for the proposed redevelopment when submitting the construction plans for review and approval. PW Design and Construction Standards (Section 3.2.4) states that wastewater lines must be 10 horizontal feet from water lines. Stormwater lines and other utilities must be at least 3 horizontal feet from water lines. The applicant is proposing to provide water from the proposed Cherry Street public water line to the expanded facility. Based on the utility plan submitted by the applicant, the proposed water line does not meet the separation requirements. The applicant must submit a revised utility plan that provides the required separation distances between utility lines when submitting the construction plans for review and approval.

PW Design and Construction Standards (Section 3.3.9) states that water services lines can be in the following diameters: 0.75", 1", 2", 4", 6", 8", 10", and 12". The applicant is proposing to use a 3" water service line to connect the expanded facility to the Cherry Street public water line. <u>The</u> applicant must provide a revised utility plan that shows an approved line size for the water service line when submitting the construction plans for review and approval.

PW Design and Constructions Standards (Section 3.1) states that water system design shall provide adequate flow for fire protection and ultimate water system demand. Section 3.3.5 of the Public Works Design and Construction Standards lists the requirements for hydrant locations and spacing. The locations and fire flows of hydrants near the site must comply with the requirements of the Fire Code and the PW Design and Construction Standards.

Development Code section 15.430.010 requires that all new utility lines be installed underground. The utility plan must show that all new utility lines are installed underground.

The Fire Marshal commented that the project must meet all Fire Code standards.

### Wastewater criteria (summarized): Lots and parcels within the city must be served by the wastewater system of the city as required by NDC 15.510.050 and NMC 13.10.070.

**Finding:** PW Design and Construction Standards (Section 2.7) states that each individual building site shall be connected by a separate private building wastewater service line that is connected to the public wastewater system. The applicant is proposing to connect to the 10-inch public wastewater line on Haworth Avenue and to extend wastewater service from Sitka Avenue to Cherry Street for use by the expanded facility. The utility plan submitted by the applicant does not show a wastewater line size for the Cherry Street line. <u>The applicant must specify the size of the wastewater line being proposed for the Cherry Street cul-de-sac in a revised utility plan when submitting the construction plans for review and approval.</u>

Grading & stormwater criteria (summarized): Grading shall be completed to minimize flooding as per NDC 15.510.060; stormwater facilities must be constructed to provide proper volume control and to comply with water quality as per NDC 510.060 and NMC 13.25

**Findings**: PW Design and Construction Standards (Section 4.1) states that approved points of discharge for stormwater may include but are not limited to a stormdrain, existing open channel, creek, LIDA facility, detention pond, or retention pond as approved by the City Engineer. The utility plan submitted by the applicant does not show a discharge connection to the stormwater system for the rain garden on the south side of the expanded facility. <u>As a condition of approval, the applicant must provide a revised utility plan and a revised stormwater report for City review that incorporates the new connection to the stormwater system.</u>

PW Design and Construction Standards (Section 4.5) lists the required sections of the stormwater report which include but are not limited to a narrative, maps, calculations, downstream analysis, and a maintenance plan for private stormwater facilities. The stormwater report submitted by the applicant did not provide the information required by the Section 4.5. <u>As a condition of approval, the applicant must submit a stormwater report for City review and approval that contains all of the information required by PWDCS Section 4.5 specifically, the hydrological calculations, hydraulic calculations, delineated sub-basins for the stormwater facilities, site contours, downstream analysis, analysis on the effectiveness of the proposed facilities to achieve the stormwater quality and quantity requirements, and a maintenance plan.</u>

PW Design and Construction Standards (Section 4.6.8) provides a hierarchy for the selection of stormwater facilities. The applicant must provide an analysis and evaluation when moving down the hierarchy. LIDA, which includes site planning and green infrastructure components, is the first facility type to be considered by an applicant. The stormwater report submitted by the applicant concluded that the infiltration rates were too low for infiltration facilities and that flow-through facilities should be constructed at the site. A review of the infiltration tests showed that infiltration may be possible at the site. As a condition of approval, the applicant must complete infiltration tests in the six locations shown on the preliminary site plan as stormwater facilities. Depths should be at the infiltration depth (between 2.5 and 3 feet) and located in the approximate middle of the planned facility. As a condition of approval, the applicant must provide a revised stormwater report with the results of the new infiltration tests for City review and approval.

The applicant is proposing to connect a pool underdrain system that collects groundwater and discharges it directly to the stormwater system. As a condition of approval, the applicant must submit a revised stormwater report for City review and approval that includes the groundwater from the pool underdrain system in the hydrologic and hydraulic calculations required by Section 4 of the PW Design and Construction Standards.

PW Design and Construction Standards (Section 4.9.1) states that developers creating less than 2,877 square feet of impervious surface may use the LIDA Sizing Form, however projects creating more than 2,877 square feet of impervious area must be designed by a registered design professional in accordance with the PW Design and Construction Standards. The impervious area for the redeveloped site is 142,000 square feet which exceeds the maximum impervious area allowed for using the SIM form. As a condition of approval, the applicant must provide a revised stormwater report for City review and approval that includes engineering calculations to size the proposed stormwater facilities.

Erosion control: The size of the project site in the application exceeds 1 acre. The applicant must obtain a 1200-C permit from the Oregon Department of Environmental Quality and provide a copy of the approved permit and ESC plan, as required by PW Design and Construction Standards Section 1.8.7, to the City for review when submitting the construction plans.

NMC §13.25.190 requires that commercial or industrial operations or businesses not covered by a NPDES permit shall follow proper disposal and spill prevention practices. As a condition of approval, the applicant must submit a plan for City review and approval that specifies the steps for draining the old pool into the wastewater system along with a timeframe and a requirement that the city will monitor Hess Creek and the wastewater system during the draining activity.

### (10) Traffic study improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the Director.

**Finding:** The Development Code requires a traffic study for any project that generates more than 40 trips per PM peak hour. The applicant had Lancaster Engineering, a professional engineering firm, prepare a traffic impact study for the project. Traffic patterns and volumes were observed at key intersections near the site, sight distance and crash data were analyzed, and an operational analysis was performed to determine the impact of the project. The aquatic center, upon completion, will generate approximately 136 trips in the PM peak hour. All of the study intersections (Portland Road at Villa Road, Villa Road at Fulton Street, Villa Road at Haworth Avenue, and Haworth Avenue at Sitka Avenue) currently operate at an acceptable level of service, and will continue to operate acceptably with the addition of trips due to the new addition. No significant safety concerns were identified, and sight distance was found to be adequate, and would be improved by this project. Accordingly, the traffic engineer did not recommend any traffic mitigation improvements.

#### **III.** CODE ADJUSTMENT: NDC 15.210.020 Type I adjustments and approval criteria.

The director may authorize adjustments from the following requirements through a Type I procedure subject to the following:

C. Dimensional Standards and Minimum Number of Off-Street Parking Spaces. 1. The director may approve adjustments to the dimensional standards of offstreet parking spaces; standards for minimum number of off-street parking spaces; and required spaces to be used for compact cars excepting handicapped parking requirements.

 2. Approval Criteria. The director shall find that approval will provide adequate offstreet parking in relation to user demands. The following factors may be considered in granting an adjustment:

 a. Special characteristics of users which indicate low demand for off-street parking (e.g., low income, elderly).
 b. Opportunities for joint use of nearby off-street parking facilities.
 c. Availability of public transit.
 d. Natural features of the site (topography, vegetation and drainage) which would be adversely affected by application of required parking standards.
 e. Possible conversion of the site to other uses in the future.
 f. No adjustment shall be greater than 25 percent of the requirement from which the exception is granted.

**Finding:** The applicant has requested a reduction in the amount of required off-street parking from 197 spaces to 143 spaces, and believes that amount will be adequate in relation to user demands if some traffic demand management steps are taken.

As noted previously in the design review findings, the peak parking demand is expected to be 197 spaces. This peak demand is expected to occur 4-5 times per year during regional swim meets. The applicant believes 143 spaces will be adequate the remainder of the time.

Number of spaces: The maximum code adjustment allowed is a 25% reduction. 25% of 197 spaces is 49 spaces, so approval of a code adjustment could reduce the amount of required off-street parking to 148 spaces. The applicant is proposing 143 spaces, so if the code adjustment is approved then the applicant will need to add 5 parking spaces somewhere on the site so there are at least 148 spaces.

Special characteristics of users: Many of the children that use the facility are dropped off, and do not generate much demand for parking except at pick-up. Some of the users of the facility are nearby residents, high school students or George Fox University students that walk or run to the site. Newberg High School is half a mile from the Aquatic Center site. These factors would somewhat reduce the demand for on-site parking.

Bicycle parking: The development code requires the proposal to include at least 8 bicycle parking spaces, and the applicant has proposed building 10 bicycle parking spaces. The applicant is proposing to reduce automobile parking demand on the site by encouraging people to bike to the aquatic center. The applicant must add at least 10 additional bicycle parking spaces to provide enough bicycle parking spaces to encourage users to bike to the site. This step could reduce the parking demand by approximately 10 parking spaces.

Shared parking agreement: The applicant has a shared parking agreement with Newberg High School. The high school submitted a letter stating that they agree to allow the Chehalem Aquatic Center to use at least 20 parking spaces in the school's south parking lot for overflow parking needs.

On-street parking: Haworth Avenue is a major collector street, which requires bike lanes. The

applicant will add striping for bike lanes along their Haworth Avenue frontage, which will remove on-street parking along that frontage. <u>The City Engineer will allow the applicant to apply for</u> temporary on-street parking approval during major facility events (expected to be 4-5 times per year) to provide parking to event participants along the south side of Haworth Avenue. Parking in the bike lane would not be available at other times of the year. This step would provide approximately 20 additional parking spaces during peak periods.

Retaining natural features on-site: The existing site has many mature trees, and the applicant has tried to preserve as many as possible due to strong public demand to save the trees. If the applicant had to provide 49 additional parking spaces on the site then nearly all of the mature trees would need to be removed. Approving the code adjustment would help retain natural features on the site.

Approval of a code adjustment to reduce the amount of off-street parking from 197 spaces to 148 spaces will provide adequate off-street parking in relation to user demands as conditioned. <u>The</u> applicant must submit a revised site plan that provides at least 148 parking spaces on site and adds at least 10 additional bicycle parking spaces. During peak events, the applicant must make use of the shared parking agreement with the high school, and must apply to the City Engineer for on-street parking approval along the Haworth Avenue frontage.

#### IV. CONCLUSION:

Based on the above-mentioned findings, the application meets the required criteria within the Newberg Development Code, subject to completion of the attached conditions.

#### Exhibit "B" to Planning Commission Order 2016-20 Conditions –File CUP-16-001/DR2-16-001/ADJC-16-001 Chehalem Aquatic Facility and Fitness Center

#### A. CONDITIONAL USE PERMIT CUP-16-001 – CONDITIONS OF APPROVAL

- 1. Lighting plan: Submit a revised lighting plan that meets the 0.5 foot-candle light trespass standard along all of the property lines, including the NE and SW corners.
- 2. Landscape buffer: The applicant shall submit a revised landscape plan that adds a landscape buffer along the eastern property line, where there is room between the existing path and the fence, which will grow over time to provide additional visual buffering for the residential neighbors. The landscape buffer shall consist of deciduous trees (spaced 30 feet apart on center, with a minimum trunk diameter of 1.5 inches, an anticipated mature height of at least 20 feet and an anticipated mature spread of at least 15 feet).
- 3. Arborist report/tree preservation: The applicant plans to retain over 60 mature trees on the site. Any trees the arborist deems hazardous (based on the health of the tree, not the distance to neighboring properties) should be removed, and any dead or broken branches should be removed. The arborist report Tree Care and Preservation Guidelines state that if some trees are to be preserved then there must be a qualified project arborist on-site or on-call for the entire project, especially during any excavation near the preserved trees. Submit a report from the project arborist verifying that any hazardous trees have been removed, broken or dead branches have been pruned, and that the Tree Care and Preservation guidelines have been followed; the arborist report is due before occupancy will be approved for the building.
- 4. Construction impacts: The applicant will be required to provide an on-site parking plan for contractors during construction to minimize off-site impacts. Construction work is limited to between 7 AM and 7 PM. The applicant is required to repair any city infrastructure, including streets, which are damaged by construction activities. The applicant will be required to supply a decommissioning plan for the existing chlorine treatment equipment, and verify if the Oregon Dept. of Environmental Quality or Yamhill County Health Dept. have any requirements for the equipment.

#### B. CODE ADJUSTMENT ADJC-16-001 – CONDITIONS OF APPROVAL

- 1. The City Engineer will allow the applicant to apply for temporary on-street parking approval during major facility events (expected to be 4-5 times per year) to provide parking to event participants along the south side of Haworth Avenue. Parking in the bike lane would not be available at other times of the year.
- 2. The applicant must submit a revised site plan that provides at least 148 parking spaces on site and adds at least 10 additional bicycle parking spaces.
- 3. During peak events, the applicant must make use of the shared parking agreement

with the high school, and must apply to the City Engineer for on-street parking approval along the Haworth Avenue frontage.

#### C. DESIGN REVIEW DR2-16-001 – CONDITIONS OF APPROVAL

### THE FOLLOWING MUST BE COMPLETED BEFORE THE CITY WILL ISSUE A BUILDING PERMIT:

- 1. **Permit Submittal:** Submit a building permit application and two (2) complete working drawing sets of the proposed project. Show all the features of the plan approved through design review, including the following:
  - a. ADA accessible route
  - b. Existing and finish grade elevations
  - c. Grading plan & erosion control plan
  - d. Parking lot design, including ADA compliant spaces
- 2. **Conditions of Approval:** Either write or otherwise permanently affix the conditions of approval contained within this report onto the first page of the plans submitted for building permit review.
- 3. **Construction impacts**: Submit the following items to the Planning Division for review and approval:
  - a. Supply an on-site parking plan for contractors during construction that minimizes off-site impacts.
  - b. Supply a decommissioning plan for the existing chlorine treatment equipment, and verify if the Oregon Dept. of Environmental Quality or Yamhill County Health Dept. have any requirements for the equipment.
- 4. **Lighting Plan**: Submit a revised lighting plan that meets the 0.5 foot-candle light trespass standard along all of the property lines, including the NE and SW corners.

#### 5. Landscaping:

- a. The applicant shall submit a revised landscape plan that adds a landscape buffer along the eastern property line, where there is room between the existing path and the fence, which will grow over time to provide additional visual buffering for the residential neighbors. The landscape buffer shall consist of deciduous trees (spaced 30 feet apart on center, with a minimum trunk diameter of 1.5 inches, an anticipated mature height of at least 20 feet and an anticipated mature spread of at least 15 feet).
- **b.** Arborist report/tree preservation: The applicant plans to retain over 60 mature trees on the site. Any trees the arborist deems hazardous (based on the health of the tree, not the distance to neighboring properties) should be removed, and any dead or broken branches should be removed. The arborist report Tree Care

and Preservation Guidelines state that if some trees are to be preserved then there must be a qualified project arborist on-site or on-call for the entire project, especially during any excavation near the preserved trees. Submit a report from the project arborist verifying that any hazardous trees have been removed, broken or dead branches have been pruned, and that the Tree Care and Preservation guidelines have been followed; the arborist report is due before occupancy will be approved for the building.

#### 6. **Parking:**

- a. The applicant must submit a revised site plan that provides at least 148 parking spaces on site and adds at least 10 additional bicycle parking spaces.
- b. The City Engineer will allow the applicant to apply for temporary on-street parking approval during major facility events (expected to be 4-5 times per year) to provide parking to event participants along the south side of Haworth Avenue. Parking in the bike lane would not be available at other times of the year. During peak events, the applicant must make use of the shared parking agreement with the high school, and must apply to the City Engineer for on-street parking approval along the Haworth Avenue frontage.
- 7. **Signs:** Submit a revised sign plan to the Planning Division for review and approval. The 7'6" sign needs to be moved back slightly so it is setback 10 feet from the front property line after the right-of-way dedication along Haworth Avenue. The electronic message center must be equipped with dimming technology that automatically varies the brightness of the display according to ambient light conditions.
- 8. **Fire Marshal**: The project must meet all Fire Code standards.

#### 9. Engineering:

#### a. Utility Plan:

The locations of water, wastewater, stormwater, and utility lines must comply with the requirements of the PW Design and Construction Standards.

The locations and fire flows of hydrants near the site must comply with the requirements of the Fire Code and the PW Design and Construction Standards.

The utility plan must show that all new utility lines are installed underground including power, cable, and telephone lines.

#### b. Construction Plans:

For all utilities and public street improvements, detailed construction plans must be submitted to the Engineering Services Department for review and approval. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved and all necessary permits have been obtained. Please note that additional Engineering Services Department plan review application and fees apply for reviewing plans.

#### c. Water:

The applicant must provide a revised utility plan showing an 8-inch public water line for the Cherry Street cul-de-sac and fire flow calculations showing that adequate pressures and flows will be available for the proposed redevelopment when submitting the construction plans for review and approval.

The applicant must submit a revised utility plan that provides the required separation distances between utility lines when submitting the construction plans for review and approval.

The applicant must provide a revised utility plan that shows an approved line size for the water service line when submitting the construction plans for review and approval.

#### d. Wastewater:

The applicant must specify the size of the wastewater line being proposed for the Cherry Street cul-de-sac in a revised utility plan when submitting the construction plans for review and approval.

#### e. Stormwater:

The applicant must provide a revised utility plan and a revised stormwater report for City review that incorporates the new connection to the stormwater system.

The applicant must submit a stormwater report for City review and approval that contains all of the information required by PWDCS Section 4.5 specifically, the hydrological calculations, hydraulic calculations, delineated sub-basins for the stormwater facilities, site contours, downstream analysis, analysis on the effectiveness of the proposed facilities to achieve the stormwater quality and quantity requirements, and a maintenance plan.

The applicant must complete infiltration tests in the six locations shown on the preliminary site plan as stormwater facilities. Depths should be at the infiltration depth (between 2.5 and 3 feet) and located in the approximate middle of the planned facility. As a condition of approval, the applicant must provide a revised stormwater report with the results of the new infiltration tests for City review and approval.

The applicant must submit a revised stormwater report for City review and approval that includes the groundwater from the pool underdrain system in the hydrologic and hydraulic calculations required by Section 4 of the PW Design and Construction Standards.

The applicant must provide a revised stormwater report for City review and approval that includes engineering calculations to size the proposed stormwater facilities.

#### f. Street improvements:

Setback sidewalks: The applicant must provide a revised site plan showing setback sidewalks with planter strips along the Haworth Avenue and Villa Road frontages when submitting the construction plans for review and approval.

The applicant must provide a revised site plan showing ADA-compliant sidewalks on Cherry Street when construction plans are submitted to the City for review and approval.

Right-of-way dedications: Submit draft right-of-way dedications to the City Engineer for review and approval for the Haworth Avenue frontage and the Cherry Street cul-de-sac (part by CPRD, part by Prestige Care). After approval, record the right-of-way dedications and return a copy of the recorded document to the City Engineer.

The applicant must apply for and obtain a Public Improvements permit for all proposed street improvements prior to construction.

The applicant must submit a revised site plan showing ADA-compliant sidewalks on Cherry Street when submitting the construction plans for review and approval.

The applicant must coordinate with the City during the Villa Road Improvement Project to ensure that bike lanes along Villa Road are complete.

#### g. Erosion and Sediment Control (ESC):

The size of the project site in the application exceeds 1 acre. The applicant must obtain a 1200-C permit from the Oregon Department of Environmental Quality and provide a copy of the approved permit and ESC plan, as required by PW Design and Construction Standards Section 1.8.7, to the City for

review when submitting the construction plans.

### h. Other:

NMC §13.25.190 requires that commercial or industrial operations or businesses not covered by a NPDES permit shall follow proper disposal and spill prevention practices. As a condition of approval, the applicant must submit a plan for City review and approval that specifies the steps for draining the old pool into the wastewater system along with a timeframe and a requirement that the city will monitor Hess Creek and the wastewater system during the draining activity.

## D. THE FOLLOWING MUST BE ACCOMPLISHED PRIOR TO OCCUPANCY

- 1. **Fire Department Requirements:** This project is subject to compliance with all Fire Department standards relating to access and fire protection.
- 2. **Design Review Conditions:** Contact the Planning Division (503-537-1240) to verify that all design review conditions have been completed.
- 3. **Site Inspection:** Contact the Building Division (503-537-1240) for Building, Mechanical, and Plumbing final inspections. Contact the Fire Department (503-537-1260) for Fire Safety final inspections. Contact Yamhill County (503-538-7302) for electrical final inspections. Contact the Planning Division (503-537-1240) for landscaping final inspections. Contact Engineering Services (503-537-12373) for public improvement final inspections.
- 4. **Public Works Requirements.** All public improvements shall be completed and accepted prior to occupancy. The applicant shall be responsible for the repair and replacement of any off-site city infrastructure, including streets, which are damaged by construction activities.

# E. DEVELOPMENT NOTES

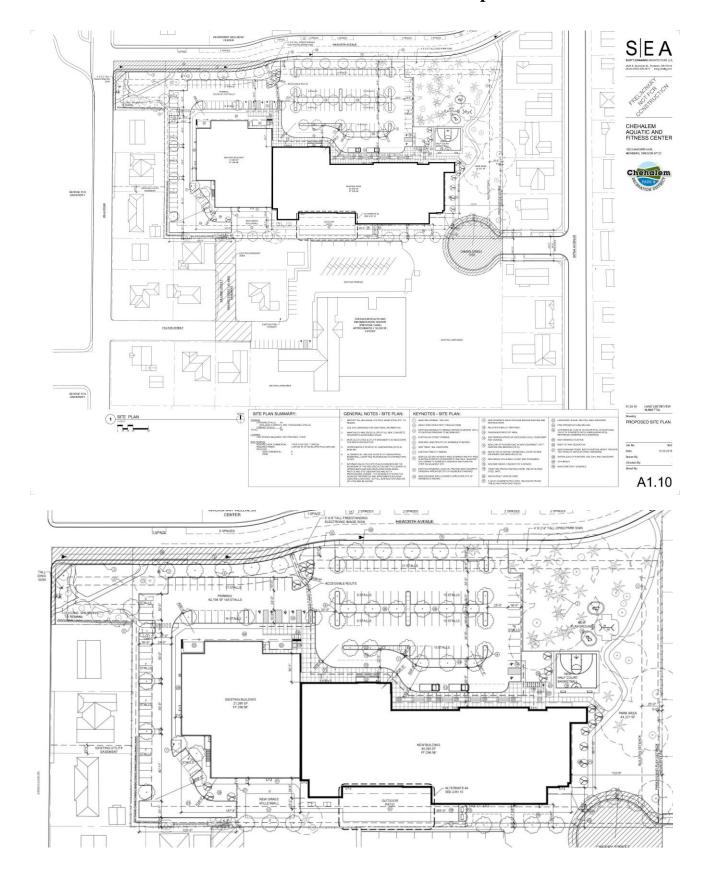
- 1. Construction hours: Note that construction work is limited to between 7 AM and 7 PM.
- 2. Systems development charges (SDCs) will be collected when building permits are issued. For questions regarding SDCs please refer to the Newberg fee packet and contact the Engineering Services Division.

# **Attachment 1: Aerial Photo**



# **Attachment 2: Zoning map**





Attachment 3: Site Plan – overall & up close

<sup>&</sup>quot;Working Together For A Better Community-Serious About Service" Z:\WPSFILES\FILES.CUP\2016\CPRD Pool expansion\Final -CUP.DR.ADJC CPRD Pool expansion staff report.doc 41 of 460

# **Attachment 4: Public Comment**



Newberg High School challenges student-athletes to expect excellence from themselves and others in the athletic arena, without ever compromising excellence in personal and academic pursuits.

March 29, 2015

To whom it may concern,

This is to certify that Newberg High School has reached an agreement with Chehalem Park and Recreation District. The agreement stipulates that the south parking lot at Newberg High School, which contains over 300 parking spaces will be open for at least twenty or more parking spaces, for any overflow parking needs of Chehalem Aquatic Center.

If you have any questions, please call me at 503-554-4407.

Thank you,

Tim Burke

Tim Burke Athletic Director Newberg High School Prestige Care comment

#### Jennifer Marsicek

From:	Jim McMaster <jmcmaster@cprdnewberg.org></jmcmaster@cprdnewberg.org>	
Sent:	Wednesday, February 17, 2016 2:35 PM	
To:	Steve Olson	
Cc:	Jennifer Marsicek	
Subject:	FW: Easement Confusion	*C
Attachments:	FW: Chehalem Aquatic Center - Right-of-Way Dedications	

Steve, here is the email supporting the Cul-de-sac by Prestige. I hope this will meet your requirements. Jim

-----Original Message-----From: April Wojcik [mailto:awojcik@prestigecare.com] Sent: Wednesday, February 17, 2016 2:24 PM To: Jim McMaster Subject: RE: Easement Confusion

Hi Jim,

I have attached the email with the legal description that you guys had drafted. This is for the new cul de sac to extend Cherry Street. Prestige does not object to the pool expansion project, and is working with CPRD on easement and ROW locations.

Please let me know if you need anything else.

Thank you.

April Wojcik Director of Project Management Prestige Care Inc. Cell: 360.921.3694 Office: 360.735.7155 ext 7260 7700 NE Parkway Drive, Suite 300 Vancouver, WA 98662 awojcik@prestigecare.com www.prestigecare.com

Confidentiality Notice:

Some or all of the content of this email may be subject to attorney-client privilege. If you are not the intended recipient of this message please delete this email immediately and notify me by replying or contacting me at the above telephone number and address.

2 Please consider the environment before printing this email

----Original Message-----

From: Jim McMaster [mailto:jmcmaster@cprdnewberg.org] Sent: Wednesday, February 17, 2016 2:19 PM To: April Wojcik

#### Prestige Care comment

Cc: Jennifer Marsicek Subject: FW: Easement Confusion

April, below is the response we received from the city concerning your previous email on the cul-de-sac easement. As Steve with the City of Newberg Planning Dept. states, he just needs comments like he mentions below. A quick response would be appreciated. When you respond, I will forward it on to Steve. Jim

----Original Message-----From: Steve Olson [mailto:steve.olson@newbergoregon.gov] Sent: Wednesday, February 17, 2016 9:49 AM To: 'Jennifer Marsicek' Cc: Jim McMaster Subject: RE: Easement

Hi Jennifer,

We are going to need something more - the email from April at Prestige says an easement is approved, but it isn't clear what that means (does this mean the cul-de-sac ROW location, or is it some other easement - maybe for fire access?). It is confusing.

We don't need a formal signed document, or a lengthy comment. We just need a simple comment like "Prestige is aware of the pool expansion project and does not object to it." Or "Prestige does not object to the pool expansion project, and is working with CPRD on easement and ROW locations." It doesn't have to be an official approval of anything, just an acknowledgement of the project and that they are working with CPRD.

Thanks, Steve Olson

I wonder if this will suffice for the city. It may take some time to get anything else from them. As you see they are working on it. Jim

-----Original Message-----From: April Wojcik [mailto:awojcik@prestigecare.com] Sent: Wednesday, February 3, 2016 3:30 PM To: jmcmaster@cprdnewberg.org Subject: Easement

Hi Jim,

I am sorry to have taken so long to respond. We have been going through some internal reorganization and things have been somewhat turned upside down.

That aside, we have reviewed the easement and it is approved. The only issue still remains is getting all of the owners to sign it. It seems someone is always gone. Our legal counsel is pushing to get this done and I will let you know as soon as we have it signed around.

Thank you. April

Prestige Care comment

Jennifer Marsicek	
From:	Jim McMaster <jmcmaster@cprdnewberg.org></jmcmaster@cprdnewberg.org>
Sent:	Wednesday, January 06, 2016 4:07 PM
To:	April Wojcik
Cc:	Sid Scott; Jennifer Marsicek; Erica Bryant; Don Clements
Subject:	FW: Chehalem Aquatic Center - Right-of-Way Dedications
Attachments:	LEGAL_ROW DEDICATION_1.doc; EXHBIT1_ROW DEDICATION.pdf; LEGAL_ROW DEDICATION_2.doc; EXHBIT2_ROW DEDICATION.pdf

April, attached is the information on the dedication of the property for the cul-de-sac that you requested along with the legal description. I believe I sent you the overall site plan, if you need me to re-send it I can. As you can see we are moving forward. We will be going to design review in the next few weeks. The size of the cul-de-sac may be a little larger or smaller dependent upon the city. The surveyor alluded to that in his attached comments. You are familiar that nothing is set in stone until they review it. We feel that we met their design criteria.

I am requesting a letter from the owner of the property (Prestige Care Inc.) that you agree with the dedication and are willing to move ahead. Since we will be going to design review having a letter in hand from the property owner is important. This new entrance to our properties will be an improvement for both sites. Please let me know if you have any questions, or need more information. Jim McMaster Park Supervisor Chehalem Park and Recreation District 503-209-2222

From: Darren [mailto:darren@terra-calc.com] Sent: Wednesday, January 6, 2016 8:48 AM To: Jim McMaster Subject: Chehalem Aquatic Center - Right-of-Way Dedications

#### Jim,

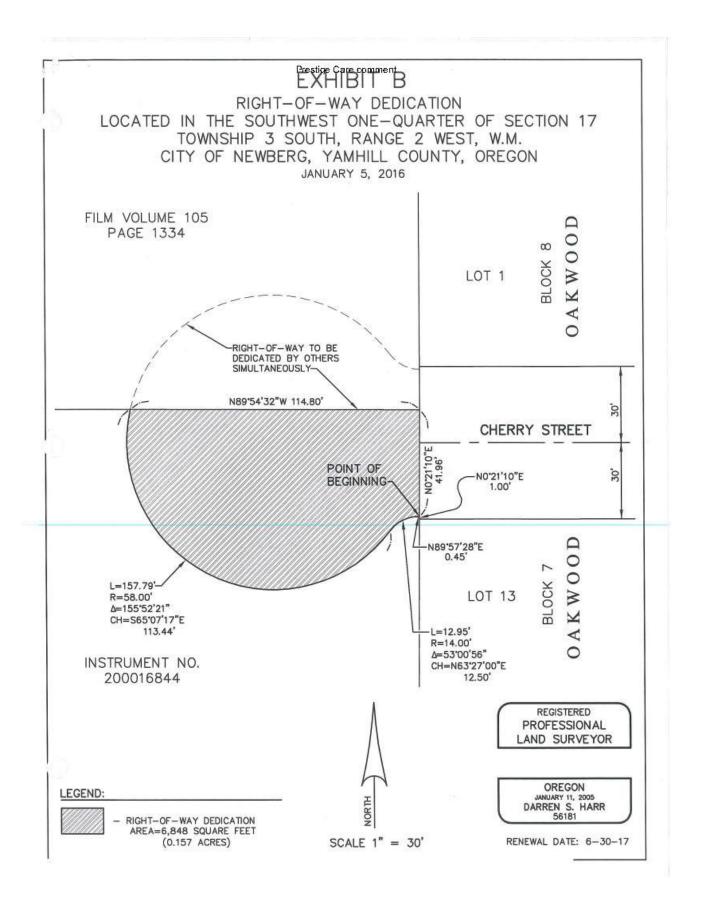
Attached are the legal descriptions and exhibit maps for the proposed right-of-way dedications on Cherry Street. If you could please forward the legal description and exhibit map for the neighboring property to the south to them for their review, that would be great. (The legal description and exhibit map for the neighboring property are the ones with number 2 in the name of the documents.) I did not include the deed document cover sheets on these yet because as Jennifer mentioned, there may need to be minor dimensional changes made to them during the site and building permit process. So we don't want to sign and record these right now. However, I at least wanted to get these completed and submit them to you so that you can give copies to the neighbors to review. If I do need to make slight changes to them, it won't take much work at all. I will contact Jennifer and confirm when I should know whether these dimensions are the final dimensions.

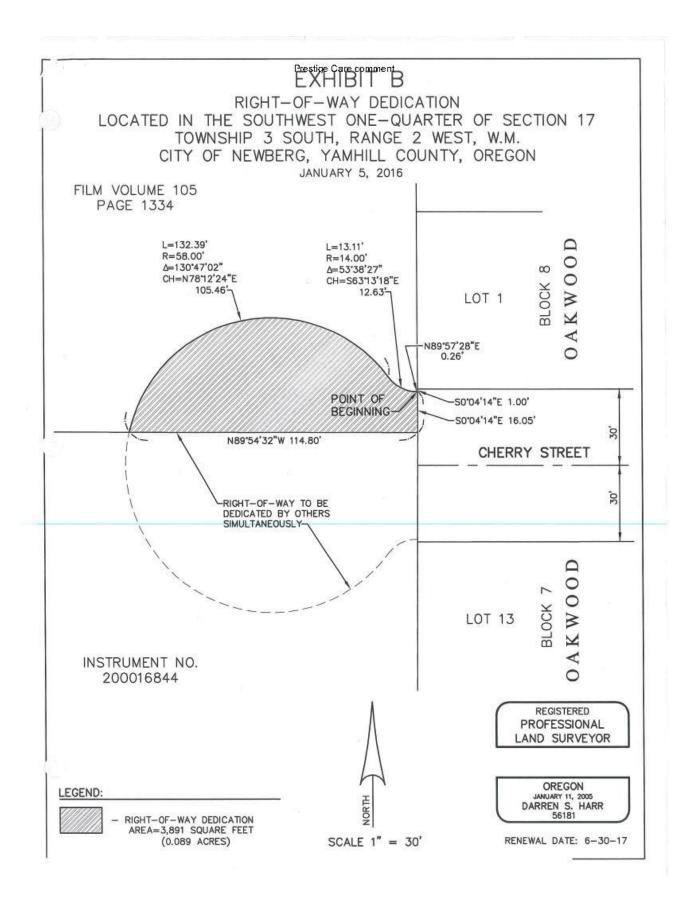
Please let me know if you have any questions.

Sincerely,

Darren S. Harr, P.L.S. Project Surveyor

TerraCalc Land Surveying, Inc.





April 5, 2016 City of Newberg Community Development Dept. Newberg Planning Commission PO 970 Newberg, Oregon...97132

RE: File no. CUP-16-001 / DRZ-16-001 /ADJC 16-001 CPRD – Application - Conditional Use Code Adj/Site Design Reviews - Newberg Fitness Center

In response to your notice of proposed development in my neighborhood, I submit the following observations / comments re several items shown in design plans that do meet applicable codes and w/have negative impacts on my adjoining property. These items are easily amendable and appropriate design amendments s/b required prior to approval.

Firstly, design shows two high use outdoor facilities....basketball court and playground areas;.. both to be located within the small remaining east portion of Babe Nicklous park that adjoins my property. This places these units much too close to adjoining residential homes.--this does not meet code criteria...' reasonably compatible with and having a minimal impact on the livability of abutting properties and surrounding neighborhood'. Those two units are high use outdoor faculties; used day &/or night; rain or shine; with noise levels that, at times, are continuous, obtrusive and not conducive to a residential living area, Placing both of these outdoor facilities so close to my and other residential properties, is unacceptable, and will have a negative impact on the livability of our adjoining residential homes, therefore this does not meet code criteria.

The basketball court was moved to present location from this east park area to alleviate negative impacts that existed when it was located right beside that east property fence line. This new site design shows that original court pad remaining intact, in that same place, leaving it as a high use attraction. The original playground in the east area was replaced by the larger current playground area. The new plan now shows a play area being placed in the same area where the previous one was located, much too close to our residential homes abutting that east property boundary. This is not acceptable and will have negative impact on those properties therefore, does not meet code criteria –.'negative impact' .......

Also shown added within that new smaller park area are new/extended 6ft width pathways to give access to//from parking lot, Haworth/Cherry streets, new building entrance and other facilities. A section of one path is directly next to my property fence line. Plan projects new facility use increasing by more than 50% and with the limited parking issues; CPRD plans implementation of a 'Transportation Demand Management Plan' 'strategic plan'; this to encourage biking and walking to the new facilities. Skateboarders will love these new wider, smother paths as existing paths have developed many rough areas. All these new amenities and attractions within that confined area of the 'new' park will bring to that east end more access and activity....certainly not conducive to residential living and will bring negative impact to those adjoining homes.

I appreciate the extra tall fencing that CPRD placed next to existing fencing along the abutting east properties.. CPRD officials have given me assurances that the tall fencing will remain in tact, which I greatly appreciate. That tall fence has been a good deterrent for access to our back yards...and did stop many beer & pop cans and other debris being tossed over our lower fences. Some barrier plantings and landscaping should be done along that fence line to help buffer sound and visual intrusion upon our adjoining properties from all the additional activities the new expanded facillty will bring.

Since the development requires the largest portion of the existing Babe Nicklous park area, leaves a much smaller new park area. To try to retain both outdoor recreational units and additional wider pathways all within that new smaller area so close to residential homes is not reasonable. There *will be* negative impact on my and all adjoining properties and most certainly will adversely affect the livability, enjoyment, and values of all of those adjoining homes and property. The code is very clear on this issue. This does not meet code criteria - 'made reasonable -w/ have negative impact on the livability of abutting properties and surrounding neighborhood'....especially when there are better options for the playground equipment areas.

#### i.e.....

The outdoor playground area is used more by children, therefore should be placed closer to the west end of the park; closer to the building for restroom /water fountain access and parking lot access for parental access. I have lived adjacent to that park for enuf years to be aware that tree bases are often used for bathroom relief.--(not only by children)...To add that high use outdoor facility so near homes is unacceptable and does not meet the code criteria for the negative impact upon our adjoining properties. With the much smaller remaining park area this would place this high activity area too close to residential homes and is not acceptable. They should be better located toward the west end of the remaining park area, and can be accomplished...if that require removing more trees.... that should be done.

Plan indicates 60 plus trees were 'saved' and are to remain in the reduced park area, Trying to save so many of the existing trees maybe an attempt to address concerns for 'saving' trees. I am aware of concerns as voiced at public meetings about 'saving' trees, however, an equal number spoke that they *did not consider removal of trees an issue in exchange for a the benefits of a much needed upgraded facility.* I support leaving trees where it can be done safely and properly, however, I also recognize removing trees when and where applicable for safety. Safety should also be a concern in this application.

Of those 60 retained trees, a dozen or more are extremely tall trees located extremely close to the east property line and adjacent homes. Some of those s/b removed, specifically nos. 32, 35/6, 61/8, 95/6. (nos. per arboriculture report). Many of those remaining trees are very tall Douglas fir trees, large pin and red oak trees. In the arboriculture assessment, park trees are 'generally in poor to average overall condition' with 'a long history of tree failure in grove with large Douglas firs blowing over during high wind events as well as large branches breaking'. As a resident adjacent to the park for many years, I have witnessed many high wind storm events that fell trees and large branches within the park. Several trees were topped and tethered together as a precaution in an effort to avoid hitting homes if and when they did topple during winter storms... These are very tall trees; are very close to the property line and homes. They are a potential hazard...leaving so many of those large trees in such close proximity to residential homes does not meet code for 'minimal negative impact '..those trees should be removed.

Buffering from adjacent properties w/landscaping and screening, including lining w/evergreen hedging and deciduous trees, has been designated in the plan for other areas within development ...i.e. outdoor pool area/volleyball court. There should also be buffering along the east boundary fences, albeit the playground unit be placed elsewhere. By adding some mature plantings and landscaping as visual and noise barriers directly next to the park side of the tall fence, would help create some barrier to the noise levels and help close some of the open visuals to my property and other adjoining residential properties from the increased activities the new extended paths w/bring. Buffering is needed along that eastern property line that abuts residential homes.

I love that park....have enjoyed the area in so many ways, for many years.. I fully understand the need for upgrading the faculties and I appreciate and know the benefits and good for the whole community, however, the development should not be allowed, and cannot be allowed to infringe upon enjoyment of my adjoining property, nor lessen nor deter the normal livability of our adjoining neighborhood homes along that east boundary of the park area. I feel it is clear that the issues I list do not meet the criteria of the applicable codes...and proper adjustments; corrections; and//or amendments be required prior to plan approval.......Consideration must be given to help alleviate these negative impacts upon my and other adjoining properties and homes.

I therefore respectfully request that-- (1) the high use playground faculty not be placed as planned within east park area; (2) more trees be removed from east park area as indicated; (3) barrier landscaping and plantings be added along the park side of the tall fencing on the east boundary of the park....Amendments and/or corrections s/b made to correct these issues for final approval.....

Respectfully submitted by

Shirley Cooper 1011 Sitka Avenue Newberg, Oregon 97132

Mailing address... 1616 Aldersgate Lane, Newberg, Oregon 97132 e mail cscoop500@msn.com

# **Attachment 5: Application**



# **TYPE II APPLICATION (LAND USE) -- 2016**

File #:

TYPES – PLEASE CHECK ONE:

X Design review

Tentative Plan for Partition Tentative Plan for Subdivision

\_ Type II Major Modification

Variance \_\_\_\_\_ Other: (Explain)

#### APPLICANT INFORMATION:

APPLICANT: Chehalem Parks and Recreation, Attn: Jim McMaster / Don C	Clements
ADDRESS: 125 South Elliott Road, Newberg, OR 97132	
EMAIL ADDRESS: jmcmaster@cprdnewberg.org	
PHONE: 503-537-2909 MOBILE: 503-209-	-2222 FAX:
OWNER (if different from above):	PHONE:
ADDRESS:	
ENGINEER/SURVEYOR: Scott Edwards Architecture, Attn: Jennifer Ma	PHONE: 503-226-3617
ADDRESS: 2525 E. Burnside Street, Portland, OR 97214	
GENERAL INFORMATION: PROJECT NAME: Chehalem Aquatic and Fitness Center PROJECT DESCRIPTION/USE: Remodel and addition to include a leis	PROJECT LOCATION: <u>1802</u> Haworth Ave., Newberg, OR 97132 sure pool, competition pool, gym and fitness spaces and site improvements.
	ZONE: R-1 SITE SIZE: 5.4 SQ. FT. ACRE
SURROUNDING USES: NORTH: Single family residential and commercial EAST: Single family residential	SOUTH: Single family residential and commercial WEST: Single family residential
SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTA	ACHED

General Checklist: Des Public Notice Information Current Title Report Written Criteria Response Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Design Review	n 12
Partition Tentative Plat	n 14
Subdivision Tentative Plat	n 17
Variance Checklist	

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature

Owner Signature Date

Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

Newberg	TYPE I APPLICATION 2016 (ADMINISTRATIVE REVIEW)
TYPES – PLEASE CHECK ONE:         X       Code Adjustment         Final Plat         Minor Design Review         Property Line Adjustment	File #: Property Line Consolidation Type I Extension or Type I Minor/Major Modification Type II or Type III Extension or Minor Modification Other: (Explain)
APPLICANT INFORMATION:	
APPLICANT: Chehalem Parks and Recreation, Attn: Jim McMaster / Don C ADDRESS: 125 South Elliott Road, Newberg, OR 97132 EMAIL ADDRESS: jmcmaster@cprdnewberg.org	Clements
PHONE: <u>503-537-2909</u> OWNER (if different from above):	2222 FAX: PHONE:
ADDRESS:	
GENERAL INFORMATION:	
PROJECT NAME: Chehalem Aquatic and Fitness Center PROJECT DESCRIPTION/USE: Remodel and addition to include a leis MAP/TAX LOT NO. (i.e. 3200AB-400): 3217CA 01200 COMP PLAN DESIGNATION: P. Park and LDR, Low Density Residential CURRENT USE: Aquatic and Fitness Center and Park	ZONE: R-1 SITE SIZE: 5.4 SQ. FT. ACRE
SURROUNDING USES: NORTH: Single family residential and commercial EAST: Single family residential SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTA	SOUTH: Single family residential and commercial WEST: Single family residential

ATTACHMENT 5: APPLICATION

1

General Checklist: E Fees E Current Title Report E Written Criteria Response E Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Code Adjustment Final Plat	p.4
Minor Design Review	p. 10
Property Line Consolidation	p. 11
Property Line Adjustment	p. 12

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature Date

816 **Owner Signature** 

Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

PROJECT NAME: Chehalem Aquatic and Fitness Center	PROJECT LOCATION:	1802 Ha	worth Ave	., Newberg, Ol	R 97132
PROJECT DESCRIPTION/USE: Remodel and addition to include a le	isure pool, competition pool	l, gym and	d fitness s	paces and site	improvements
MAP/TAX LOT NO. (i.e.3200AB-400): 3217CA 01200	ZONE: R-1 SITE	E SIZE:	5.4	SQ. FT. 🗆	
COMP PLAN DESIGNATION: P, Park and LDR, Low Density Residential	TOPOGRAPHY: gently	sloping to	the south	southeast	

CURRENT USE: Aquatic and Fitness Center and Park

City of

**Comprehensive Plan Amendment (site specific)** 

TYPES - PLEASE CHECK ONE:

Annexation

SURROUNDING USES:

NORTH: Single family residential and commercial EAST: Single family residential

SOUTH: Single family residential and commercial Single family residential WEST:

#### SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: D Fees D Public Notice Information D Current Title Report D Written Criteria Response D Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Annexation	n. 15
Comprehensive Plan / Zoning Map Amendment (site specific)	
Conditional Use Permit	
Historic Landmark Modification/Alteration	p. 23
Planned Unit Development	p.26

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

2816 Applicant Signature Date

Owner Signature Date

Print Name

Attachments: General Information, Fee Schedule, Noticing Procedures, Planning Commission Schedule, Criteria, Checklists

TYPE III	<b>APPLICATION - 2016</b>
(011/	

JUDICIAL REVIEW)

Zoning Amendment (site spec Historic Landmark Modificatio		Planned Unit I Other: (Explain	Development n)
APPLICANT INFORMATION:			
APPLICANT: Chehalem Parks and Recrea	ation, Attn: Jim McMa	ster / Don Clements	
ADDRESS: 125 South Elliott Road, Newbe	erg, OR 97132		
EMAIL ADDRESS: jmcmaster@cprdnew	berg.org		
PHONE: 503-537-2909	MOBILE: .	503-209-2222	FAX:
OWNER (if different from above):			PHONE:
ADDRESS:			
ENGINEER/SURVEYOR: Scott Edwards	Architecture, Attn: Je	ennifer Marsicek	PHONE: 503-226-3617
ADDRESS: 2525 E. Burnside S	Street, Portlan	d, OR 97214	
GENERAL INFORMATION:			

File #:

X. Conditional Use Permit

Type III Major Modification



First American

*First American Title Company of Oregon* 825 NE Evans Street McMinnville, OR 97128 Phn - (503)376-7363 Fax - (866)800-7294

YAMHILL COUNTY TITLE UNIT FAX (866)800-7294

> Title Officer: Larry Ball (503)376-7363 Iball@firstam.com

# **REVISED LOT BOOK SERVICE**

City of Newberg P.O. Box 970 Newberg, OR 97132 Order No.: 1039-2598963 February 19, 2016

Attn: Steve Olson Phone No.: (503)538-9421 - Fax No.: (503)537-1272 Email: steve.olson@newbergoregon.gov

Re:

Fee: \$0.00

We have searched our Tract Indices as to the following described property:

The land referred to in this report is described in Exhibit A attached hereto.

and as of February 16, 2016 at 8:00 a.m.

We find that the last deeds of record run to

Chehalem Park and Recreation District, a Municipal Corporation, as to Parcel 1; and Chehalem Park and Recreation District, a Quasi-Municipal Corporation, as to Parcel 2

We find the following apparent encumbrances within ten (10) years prior to the effective date hereof:

NONE

- 1. Taxes, including the current fiscal year, not assessed because of Public Exemption (ORS 307.090). If the exempt status is terminated an additional tax may be levied. Account No. 34643 and 421323.
- 2. City liens, if any, of the City of Newberg.
- 3. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads and highways.

NOTE: The above described property is benefited by an Easement for utility purposes, as disclosed in Contract recorded May 11, 1970 in Film Volume 79, Page 996.

We have also searched our General Index for Judgments and State and Federal Liens against the Grantee(s) named above and find:

#### NONE

We find the following unpaid taxes and city liens: NONE

THIS IS NOT a title report since no examination has been made of the title to the above described property. Our search for apparent encumbrances was limited to our Tract Indices, and therefore above listings do not include additional matters which might have been disclosed by an examination of the record title. We assume no liability in connection with this Lot Book Service and will not be responsible for errors or omissions therein. The charge for this service will not include supplemental reports, rechecks or other services.

#### Exhibit "A"

Real property in the County of Yamhill, State of Oregon, described as follows:

#### PARCEL 1:

Beginning at an iron pipe which is 607.50 feet South 0°20' West along the East line of the D. D. Deskins D.L.C. #54, and 120.00 feet South 89°48' East from the Northeast corner of the D. D. Deskins D.L.C., said pipe being 120.00 feet Easterly from the center line of Villa Road and lying on the South line of Haworth Street; thence South 89°48' East along the South line of Haworth Street 652.1 feet, more or less to an iron pipe at the Northeast corner of a tract conveyed to Bertha Perkins by deed recorded May 12, 1925 in Book 92, Page 116, Deed Records of Yamhill County, Oregon; thence South 0°22' East along the East line of said Perkins tract for 343.61 feet, more or less to iron pipe at the Southeast corner of a tract conveyed to Harold J. Davis and wife by deed recorded December 28, 1961 in Film Volume 20, Page 457, Deed and Mortgage Records, Yamhill County, Oregon; thence North 89°48' West along the North line of said Davis tract 656.30 feet, more or less to an iron pipe which is 120.00 feet Easterly from the center line of Villa Road; thence North 0°20' East 343.61 feet, more or less on a line parallel to Villa Road to the Place of Beginning.

#### PARCEL 2:

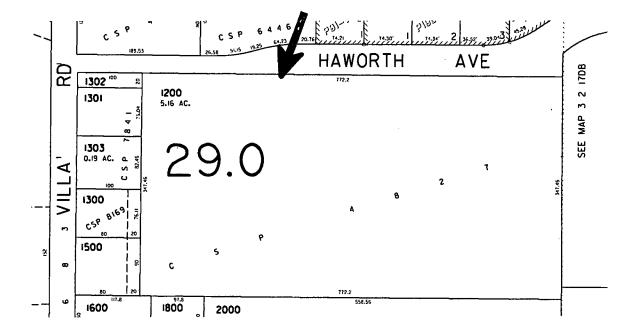
A tract of land in Section 17, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, being part of that certain tract of land described in deed to Harry A. Perkins, et ux., recorded in Book 92, Page 116, Yamhill County Deed Records, and being described as follows:

Beginning at a P-K Nail that is South 00°20' West 20.00 feet and South 89°48' East, 20.00 feet from the Northwest corner of said Perkins Tract, said P-K Nail being 20 feet East from the East line of the D.D. Deskins Donation Land Claim; thence South 89°48' East, 100.00 feet, parallel with the South line of Haworth Avenue, to the West line of that certain tract of land described in deed to Chehalem Park and Recreation District recorded in Film Volume 105, Page 1334, Yamhill County Deed Records; thence South 00°20' West, along said West line, (passing an iron rod at 1.09 feet) 75.28 feet to an iron rod; thence North 89°40' West, 100.00 feet to an iron rod that is East 20.00 feet from the East line of said Deskins Claim; thence North 00°20' East, 75.04 feet to the Point of Beginning.





This map is furnished for illustration and to assist in property location. The company assumes no liability for any variation in dimensions by location ascertainable by actual survey





First American

*First American Title Company of Oregon* 825 NE Evans Street McMinnville, OR 97128 Phn - (503)376-7363 Fax - (866)800-7294

YAMHILL COUNTY TITLE UNIT FAX (866)800-7294

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and as of February 16, 2016 at 8:00 a.m.

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We find the following apparent encumbrances within ten (10) years prior to the effective date hereof:

NONE

- 1. Taxes, including the current fiscal year, not assessed because of Public Exemption (ORS 307.090). If the exempt status is terminated an additional tax may be levied. Account No. 34643 and 421323.
- 2. City liens, if any, of the City of Newberg.
- 3. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads and highways.

NOTE: The above described property is benefited by an Easement for utility purposes, as disclosed in Contract recorded May 11, 1970 in Film Volume 79, Page 996.

We have also searched our General Index for Judgments and State and Federal Liens against the Grantee(s) named above and find:

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#### Exhibit "A"

Real property in the County of Yamhill, State of Oregon, described as follows:

#### PARCEL 1:

Beginning at an iron pipe which is 607.50 feet South 0°20' West along the East line of the D. D. Deskins D.L.C. #54, and 120.00 feet South 89°48' East from the Northeast corner of the D. D. Deskins D.L.C., said pipe being 120.00 feet Easterly from the center line of Villa Road and lying on the South line of Haworth Street; thence South 89°48' East along the South line of Haworth Street 652.1 feet, more or less to an iron pipe at the Northeast corner of a tract conveyed to Bertha Perkins by deed recorded May 12, 1925 in Book 92, Page 116, Deed Records of Yamhill County, Oregon; thence South 0°22' East along the East line of said Perkins tract for 343.61 feet, more or less to iron pipe at the Southeast corner of a tract conveyed to Harold J. Davis and wife by deed recorded December 28, 1961 in Film Volume 20, Page 457, Deed and Mortgage Records, Yamhill County, Oregon; thence North 89°48' West along the North line of said Davis tract 656.30 feet, more or less to an iron pipe which is 120.00 feet Easterly from the center line of Villa Road; thence North 0°20' East 343.61 feet, more or less on a line parallel to Villa Road to the Place of Beginning.

#### PARCEL 2:

A tract of land in Section 17, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, being part of that certain tract of land described in deed to Harry A. Perkins, et ux., recorded in Book 92, Page 116, Yamhill County Deed Records, and being described as follows:

Beginning at a P-K Nail that is South 00°20' West 20.00 feet and South 89°48' East, 20.00 feet from the Northwest corner of said Perkins Tract, said P-K Nail being 20 feet East from the East line of the D.D. Deskins Donation Land Claim; thence South 89°48' East, 100.00 feet, parallel with the South line of Haworth Avenue, to the West line of that certain tract of land described in deed to Chehalem Park and Recreation District recorded in Film Volume 105, Page 1334, Yamhill County Deed Records; thence South 00°20' West, along said West line, (passing an iron rod at 1.09 feet) 75.28 feet to an iron rod; thence North 89°40' West, 100.00 feet to an iron rod that is East 20.00 feet from the East line of said Deskins Claim; thence North 00°20' East, 75.04 feet to the Point of Beginning.

THIS CONTRACT, Made this 30 day of <u>April</u> 1970, between BERTHA PERKINS, MIDDW OF HORY A. PERKINS, decemand, <u>hereinefter celled</u> the effer, and ENEMALES PARM AND RECREATION DISTRICT, a municipal comparation.

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TOGETHER with an essement for utility purposes across and under the following described percel of real property, subject to the condition that any utility form lities shall be buried on said strip and shall not interfere with the surface of thereof:

Beginning at a point which is 851.11 feet South 0° 21' West and 20.00 feet South 89° 48' East from the Northear' corner of 0. Deskins D.L.C., said point being 20.00 feet esterly from the cente: line of Vills Road; thence South 89° 48' East for 100.00 feet; thence Fouth 0° 22' East for 10.03 feet; thence North 89° 48' West for 100.00 feet; thence North 0° 20' East for 10.00 feet to point of beginning.

ALSO, a temporary easement for access purposes over and across a strip of 20. feet in width adjacent to and along the northerly side of 10 foot purchas a strip of cuimeling pool construction that said easement is temporary in mature during parted of cuimeling pool construction only, and that buyer shall restore said 20 foot wirth as mearly as possible to its present condition.

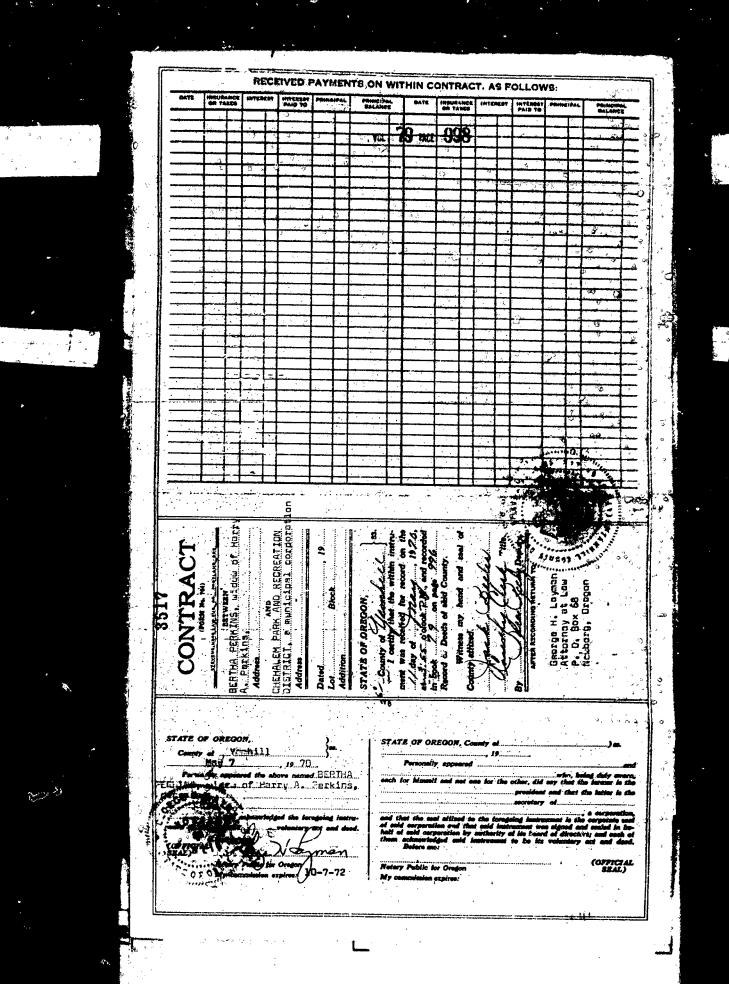
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ATTACHMENT 5: APPLICATION FILM 105 PASE 1335 STATE OF OREGON, County of Yamhill , 1975 April day of before me, the undersigned, a Notary Public in and for said County and State, personally appeared the within 199 BERTHA PERKINS, widow of Harry A. Perkins, deceased named known to me to be the identical individual described in and who executed the within instrument and acexecuted the same freely and voluntarily. knowledged to me that she IN TESTIMONY WHEREOF, I have defeunto set my hand affixed : 21. above written. and year last my official seal the Sparle and proved والمعر والإرادة المرازي والمع Notary Public for Ore of My Commission expires October 7, 1976 Normal or under the granter. ond then from all encarbrances clace with the placed, parates. ήB n litter sola of the litter of the structure general processing to them all encounters on the solar structure of t rend general heavith eiserants is and with with well breach and stands where is the and a same They will to Held the came wate the said strates and granters have reaces are with a more reaction South ISLONERS 1. IS ъ 5 D'TATE TROARD L 4NN00 111 Title. 8 the within instru-Deput Oregon 97132 boal CHEHALEM PARK AND RECREATION DISTRICT, a municipal cor-WARRANTY DEED 1923 Perkins, deceased 52.15 Washington ORE. County record and and Brhun-H. Layman WANDA CATT. COUNTY CLERK ы Attorney at Law AFTER RECORDING RETURN STEVENS-MESS LAW PUB. CO., PORTLAND. ..on page.. PERKINS, widow hand lor 35311 (FORM No. 703) STATE OF OREGON, g Newberg, county of Acres that 5 ny George ×. 5 certify 115 Witness County allixed W.85 1 ð CHEHALEM poration Å. BERTHA 1 Harry A book Record **at**..() à З. 1.02 1 1 1 We dend recorded for 12, 1900 in 1906 97, prop 116, Deed Ascords of Two 111 Operation that an entitie of the fact that the fact that the fact or leve to an from plan of the fortecout corner of a tract conversa to fort COLVE D Proinciting at our irrow of we would in O(0,10) for i loud: would show allows on the start is O(0,10) for i loud in O(0,10) with the start is O(0,10) for the start is the start is the start is O(0,10) for the start is observed and start is observed 2 16.2 มีการ และประวัตรณีของต่าง และการเรื่อง เมื่อไปเหลือเรื่อง เมื่อเป็นและและการเป็นก็ไปเป็นและการการไป และการเหลือ and the second state of the second term and the second state and the second state of the second states of the الدجل ويحوا للالبولا الأ 65 of 460 4 ನ್ನ-ಭಾಷಣೆ ನಡಬರಾಂಡಂತ್ರೆ\* in the latter second of 233 192 ···

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#### ATTACHMENT 5: APPLICATION

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66 of 460 http://tax.co.yamhill.or.us/Tax\_Agents/defaultajax.aspx

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OWNER: CHEHALEM PARK & RECREATION BUYER: AGENT: ADDRESS: NEWBERG OR	97132-	EXEMPTION-ORS #: EXEMPT: 1/4 %: SR CIT: DISABLED CIT:	
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# LAND USE REVIEW SUBMITTAL

# CHEHALEM AQUATIC & FITNESS CENTER

1802 Haworth Avenue Newberg, OR 97132



Project No. 1493 Issue Date: 1/29/2016





## TYPE II AND III APPLICATIONS CHEHALEM AQUATIC AND FITNESS CENTER (CAFC) JANUARY 29, 2016

Applications for: **TYPE III Conditional Use Review –** Chapter 15.305 Zoning Use Table – Community Service Facility in R-1 Zone Chapter 15.225 Conditional Use Procedures

**TYPE II Land Use Review –** Section 15.220.020.A.2 – Site Design Review

#### TYPE I Land Use Review -

Section 15.210.020.C – Code Adjustment for a reduction in the number of off-street parking spaces

Section 15.100.080.B Determination of proper procedure type – An application that involves two or more procedures may be processed collectively under the highest numbered procedure required for any part of the application.

#### Index

Application Documents (One set included separately) Type III Application – Conditional Use Review Type II Application – Site Design Review Type I Application – Code Adjustment Public Notice Information Current Title Report

#### A. Written Criteria Response

Introduction

Type III Conditional Use Criteria Response Type III Conditional Use Project Statement Type II Site Design Review Criteria Response Type I Code Adjustment Criteria Response Conclusion

#### B. Supplemental Information

Traffic Study (including Transportation Demand Management plan) Exterior Lighting Cut Sheets Arborist Report

#### C. Graphic Information

- G0.00 Cover Sheet
  - Site Survey
- C1.0 Preliminary Site Plan
- C2.0 Preliminary Grading Plan
- C3.0 Preliminary Utility Plan
- L1.0 Color Rendered Landscape Plan

#### TYPE I, II AND III APPLICATIONS | 2/25/2016

# S|E A

- L1.1 Landscape Details
- AD.01 Existing and Demolition Site Plan
- A1.10 Proposed Site Plan
- A2.10 First Level Plan Overall
- A2.40 Roof Plan Overall
- A3.10 Exterior Elevations Overall
- A3.11 Exterior Elevations North
- A3.12 Exterior Elevations East and West
- A3.13 Exterior Elevations South
- A3.14 Site and Building Perspectives
- A4.11 Building Sections
- A4.12 Building Sections
- A4.13 Building Sections
- E1.11 Site Lighting Plan



## TYPE I, II AND III APPLICATIONS CHEHALEM AQUATIC AND FITNESS CENTER (CAFC) JANUARY 29, 2016

# Introduction

With the passing of a nearly \$20 million bond measure in November of 2014 the residents of the City of Newberg resoundingly agreed that a new aquatic and fitness center to replace their 45year old facility was something they wanted and valued for their community. Once the design team was selected, community, neighbor and stakeholder meetings began and continued with frequency through April and May of 2015. Input and discussions were held over the desired uses in the remodeled building, the new aquatics addition and the park areas. The impact the expanded center would have on adjacent neighbors as well as the value of the existing park area and trees were also discussed often. This input in addition to the monthly or more meetings with the parks department and pool advisory committee has resulted in a site and building design that balances all the wants and expanded uses while mitigating any adverse impacts. In addition the CPRD website and eNewsletter have provided frequent project updates, preliminary renderings and site and building plans throughout the process as well as offering a place to comment and ask questions.

The proposed new center includes a 40,390 square foot aquatics addition with a 5,800 sf leisure pool, a 6,800 sf competition pool (114' length overall to include 8-lanes 25-yards long with an additional 5-lanes for warm up and additional teaching space) permanent and temporary seating for 300, locker rooms, lobby and event spaces as well as mechanical support spaces. Construction will be phased so the existing aquatics and fitness center can remain open while the addition is constructed. Once the addition is complete and depending on the funds available, the existing 21,280 sf aquatics and fitness center will be closed and remodeled to include some or all of the following: a new full court gymnasium, second floor running track, weights and fitness equipment areas, fitness classrooms, restrooms, staff office areas and a 2,200 sf outdoor pool. Site work includes a new 143 space parking lot, 45,000 sf park area with basketball court and playground, new sidewalk and driveways off Haworth Avenue and a new cul-de-sac and service drive off Cherry Street.

The project seeks approval for Type III Conditional Use, Type II Site Design Review and Type I Code Adjustment.

# **Type III Conditional Use Criteria Response**

(A) The location, size, design and operating characteristics of the proposed development are such that it can be made reasonably compatible with and have minimal impact on the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage and density; to the availability of public facilities and utilities; to the generation of traffic and the capacity of surrounding streets, and to any other relevant impact of the development.



#### **RESPONSE:**

#### Location, size and design:

The majority of the single family and commercial buildings in the area are one and two stories tall, with a few taller buildings on the George Fox campus along Villa Road. The existing aquatics and fitness building is just over 21,000 square feet and 28' tall at the pool and about 15' tall at the fitness and entry.

Cost analysis and structural review of the existing aquatics and fitness building determined that there was a better value in remodeling the existing structure versus tearing it down and building new. Studies were undertaken to determine the best fit for the new aquatics program which was to more than double the existing water area. Both the existing building and the area to the north would not accommodate it and the best fit was to the east of the existing building in what is now the main parking area and some park space. Parking and drop-off areas are then located in front to the north of the existing and new buildings. This site design also allowed for the largest park area and the ability to keep approximately 60 mature trees. The existing pool building will then be remodeled either in conjunction with the completion of the aquatics addition or at some point in the future to contain new gymnasium, fitness classrooms, weight and fitness equipment areas, restrooms and an indoor running track.

The overall size of the addition is just over 40,000 sf, nearly double the size of the existing building. Its bulk and height though have been kept to a minimum and is only a couple feet taller than the existing pool building and about the same width. Between the existing and new aquatics buildings is a one-story connector which matches the height of the one-story fitness building and houses the main entry, event spaces and main locker rooms.

The new addition is a composition of rectilinear forms similar to the existing building, comprised of ground face concrete block, metal panel and cement plaster stucco. Glazing, views and natural light are maximized on the north side of the building into the new lobby leisure and competition pool spaces. Window graphics expressing the center's main activities will also be utilized to add scale and visual interest. Glazing to the south is reduced due to glare issues with safety and competition swimming. A dark earthy palette for both the existing and new buildings links them visually and minimizes the perceived mass.

The view down Haworth heading east is of a long low building screened behind the layers of site landscaping, new and existing trees. Heading west on Haworth from the heavily residential side the view will be similar to what it is now with glimpses of the building through the heavily treed northeast corner of the site.

Reference Exterior Elevations Sheets A3.10-A3.13, Site and Building Perspective Sheet A3.14 and Preliminary Landscape Plan sheet L1.0.

#### **Operating characteristics:**

Hours of operation are expected to be essentially the same for the new facility. Child and adult swimming lessons, recreational swim, lap swim, water exercise and aqua Zumba will continue along with aquatic sports programs for both private and public swim and water polo teams and programs for kayaking. Program offerings and space for them will be expanded in the new facility with separate leisure and competition pools allowing for competitive activities to occur while lessons and leisure activities occur in the separate pool. Weights and fitness equipment will be available during normal open hours with the addition of fitness classes and gymnasium activities. The new aquatics and fitness center is not new to the area, but it is expanded in size and programming. Car and bike parking areas have been similarly expanded and strategies are in place to mitigate the impacts of larger events. Reference the Traffic Impact Study and Parking Analysis for further information on this topic.



#### Traffic and street capacity:

A Traffic Impact Study and Parking Analysis have been prepared by Lancaster Engineering for both the existing and new center. It has been included with this application.

### (B) The location, design and site planning of the proposed development will provide a convenient and functional living, working, shopping or civic environment and will be as attractive as the nature of the use and its location and setting warrants.

#### RESPONSE:

When the aquatics and fitness center was originally constructed in the early 70's the chosen site was derided for being too far out of town and away from where most residents lived. The opposite condition exists now as commercial, residential and institutional development has grown dense around the existing site.

The park and center have become convenient and essential fixtures for residents both near and farther away, the college students at George Fox, the high school students at Newberg high school as well as the senior citizen population in the area. It is such a vital fixture in the community that keeping the existing facility open for the duration of construction was a primary requirement for the district, pool committee and residents despite the fact that both construction cost and duration would be increased.

The site design has met and often expanded the required setbacks and existing and new landscape screening have been utilized to separate the building and residential uses. A series of paved paths connect the building to Villa, Cherry and Haworth, the accessible parking spaces and an extended drop-off area. Overall site safety is improved with well lit pathways, parking areas, sidewalks and passenger drop-off. The main tree and park space known as Babe Nicklous park needed to be reduced to accommodate the expanded building, parking and storm water facilities, but a significant continuous area has been maintained with both a basketball court and playground as the current park has. The new center will be open and inviting with more glazing and views to activity areas inside.

Efforts have been made to expand the facility while keeping any negative impacts to a minimum. Building height and width are similar to the existing; the two have been joined with common roof heights, massing, color and material; required setbacks have been met and in many cases increased; both existing and new landscaping and screening have been utilized to separate the building from residential areas and a Traffic Demand Management plan has been developed to accommodate increased parking demands.

Reference all attached drawing exhibits.

#### (C) The proposed development will be consistent with this code. RESPONSE:

The proposed development is in compliance with the base zoning standards in this code with the exception of parking. No required parking standard has been set for this type of use so a Traffic Impact Study and Parking Analysis was completed to determine an equivalent requirement. The resulting number of spaces cannot be accommodated on this site with the desired program, park and storm water facilities. A Type I Code Adjustment has been requested as part of this application.

Reference all attached drawing exhibits.



## **Type III Conditional Use Project Statement**

Provide a written statement that addresses the operational data for the project,<br/>including hours of operation, number of employees, traffic information, odor impacts<br/>and noise impacts.RESPONSE:<br/>Hours:Hours of operation in the existing aquatic and fitness center are from:<br/>Monday-Thursday5:15am – 10:00pm (no admission past 9:15pm)Friday5:15am – 8:30pm (no admission past 7:45pm)Saturday8:00am – 8:30pm (no admission past 4:15pm)Sunday12:00pm – 5:00pm (no admission past 4:15pm)

Hours of operation are expected to be roughly the same for the new facility.

#### Employees:

The existing center has approximately 15 full and part time staff. Depending on the schedule of lessons and activities the number of staff in the building at one time varies from 5-15. With the new center's increase in size, activity areas as well as seasonal fluctuation the total number of staff is expected to approximately double with the number of staff in the building ranging from 10-30 at one time.

#### Traffic:

A Traffic Impact Study and Parking Analysis have been prepared by Lancaster Engineering for both the existing and new center. It has been included with this application.

#### Odor Impacts:

There will be no odor impacts from the new aquatics and fitness center building or site.

#### Noise Impacts:

Noise at the existing center and park area comes primarily from the small playground area and the outdoor basketball court. There is also a grass volleyball court, two ping pong tables and some picnic tables in the southwest corner of the site behind the existing pool building. This area is used primarily in the summer and can be a loud area as sound bounces off the tall concrete walls of the building.

Other than the new outdoor pool no new outdoor uses are being proposed with the new construction although the existing activities will be relocated on the site. Through the several neighborhood and community meeting held over the last several months the design team and parks district have heard some comments primarily from neighbors directly adjacent to the site to the east and west regarding noise from the existing outdoor activities. To mitigate this the proposed location for the basketball court is setback 100' from the west property line and the playground area is just over 50', while the required setback for parking and play areas is 5'. These are still closer to the west property line than they had been previously, but due to the building addition area as well as new parking lot the available park area has decreased. The desire to keep as many existing trees and park space as possible has led to their current



location.

The grass volleyball court has been relocated to the east behind the existing pool building and away from the single family homes in the corner. It is setback 10' from the south property line which will be lined with a new fence, evergreen hedge and deciduous trees.

The proposed outdoor pool is located 5' from the south property line and will be buffered from the adjacent property with a site obscuring fence and landscaping. The pool's adjacent neighbor to the south is a nursing care facility which is about 120' from the property line to the south across a large parking lot. It will generate noise in the summer months when use will be heaviest, but its impact is lessoned by its distance from adjacent neighbors, limited duration of use and landscaping and screening.

New mechanical equipment for the building addition will be located on the roof over the locker rooms and over the pool mechanical rooms and will be entirely screened from view and to mitigate any sound by building walls to the east and west and metal panel screen walls to the north and south.

Reference Exterior Elevations, Building Sections, Site and Building Perspective and the Site and Landscape plans.

#### Type II Site Design Review Criteria Response

1. Design Compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design and signage.

#### **RESPONSE:**

The majority of the single family and commercial buildings in the area are one and two stories tall, with a few taller buildings on the George Fox campus along Villa Road. Common materials in the area include wood, cement and vinyl siding and composition shingle roofs. The institutional buildings on the George Fox campus include brick and concrete as common exterior materials. Residential roofs are generally pitched and gabled while institutional buildings have both pitched as well as flat roofs. There is not a predominant architectural style in the immediate area or on nearby Highway 99 other than a low scale residential character. The existing 21,000 square foot aquatic and fitness center building was constructed in the early 70's and consists of a one-story painted concrete block building facing Haworth and wrapping around the approximately three-story tall painted concrete pool building. It is set back nearly 100' from the street and 60' from the side and rear property lines. Its appearance from the street and adjacent residential properties was through parking and landscaped areas. The roofs of both buildings are flat while the top of the one-story building is wrapped with a parapet and sloped mansard of forest green standing seam metal about 6 feet tall.

The overall size of the addition is just over 40,000 sf, nearly double the size of the existing building. Its bulk and height though are kept to a minimum and are only a couple feet taller and about the same width as the existing pool building. Between the existing and new aquatics buildings is a one-story connector housing the main entry, event spaces and main locker rooms continuing the height of the existing one-story fitness building. Proposed changes to the existing exterior include removing the forest green mansard roof at the front, side and back and providing a new metal canopy and parapet to match the new entry canopy. The building will also be painted to match the aquatics addition.

The new addition is a composition of rectilinear forms similar to the existing building, comprised



of ground face concrete block, metal panel and cement stucco. Glazing, views and natural light are maximized on the north side of the building into the new lobby leisure and competition pool spaces. Window graphics expressing the center's main activities will also be utilized to add scale and visual interest. Glazing to the south is reduced due to glare issues with safety and competition swimming. A dark earthy palette for both the existing and new buildings links them visually and minimizes the perceived mass.

Signage on the site and building is relatively small in scale and consists of a 12 square foot freestanding sign on the corner of Villa and Haworth, a larger 37.5 sf freestanding sign at the west drive aisle off Haworth which will include a 9.3 sf electronic message center and a standard 7.2 sf park and recreation district sign at Babe Nicklous park. Attached building signage consists of a 48 sf cut metal letter sign continuously lit and mounted on the canopy above the new main entry. The two freestanding signs consist of a low concrete base with a metal cabinet matching the building panels and internally lit translucent letters. The electronic message center will include alternating messages and images.

The view down Haworth heading east is of a long low building screened behind the layers of site landscaping, new and existing trees. Heading west on Haworth from the heavily residential side the view will be similar to what it is now with glimpses of the building through the heavily treed northeast corner of the site.

Site landscaping consists of existing park areas of lawn and trees at both the northwest and east sides of the site. New sidewalks will be provided through these areas connecting the building and the streets as well as new basketball and playground areas. Existing lawns will be reseeded and repaired. New landscaping in parking areas, rain gardens and building and site perimeter consists of a mix of deciduous and coniferous trees, ornamental shrubs, grasses and ground covers. Plants selected are water efficient, suited to the climate area and complement the existing plantings. Water quality and rain garden areas mimic natural conditions and are planted in an irregular organic pattern.

Reference Exterior Elevations, Building Sections, Site and Building Perspectives.

2. Parking and on-site circulation. Parking areas shall meet the requirements of 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

#### **RESPONSE:**

No required parking standard has been set for this type of use per section 15.440.010 so a Traffic Impact Study and Parking Analysis was completed to determine an equivalent requirement. 197 spaces were determined to be needed at peak demand periods. This number cannot be accommodated on site with the desired program, park and storm water facilities. A request for a Type I Code Adjustment has been requested as part of this application. 143 parking stalls are proposed, 42 of which are compact stalls, 6 are dedicated for carpools and 7 are accessible stalls. Site circulation through the main parking and passenger drop-off areas is accessed off Haworth through two driveways, one at the location of the existing eastern drive and one 190' to the east. A service yard is proposed off a new cul-de-sac from Cherry Street at the southeast corner of the site 125' long by 23' wide allowing for two loading spaces to access pool mechanical and chemical rooms, the main electrical room, exterior pool storage and the trash and recycling area.



Reference Site and Landscape plans.

# 3. Setbacks and general requirements. The proposal shall comply with 15.415.010 through 15.415.060 dealing with height restrictions and public access; and 15.410.010 through 15.405.040 dealing with setbacks, coverage, vision clearance and yard requirements.

#### RESPONSE:

Height and public access requirements have been met per section 15.415. The height of the existing aquatics and fitness center building varies from about 15' to just over 28'. The height to the tallest point of the proposed aquatic is 30'. Public access to the site and building exists along Haworth Avenue as well as from a service drive off the new cul-de-sac extension off Cherry Street.

Setbacks, coverage and vision clearance requirements have been met per section 15.410. The front yard setback along Haworth is 15' and contains only landscaping and sidewalks. Interior setbacks on the remaining three sides where abutting residential properties is 5' for parking and play areas and 25' for buildings per section 15.410.040. Vision clearance requirements have been addressed within the Traffic Impact Study and Parking Analysis and shown on the Preliminary Site Plan sheet C1.0.

Reference Exterior Elevations, Building Sections, Site and Building Perspective and the Site and Landscape plans.

## 4. Landscaping requirements. The proposal shall comply with 15.420.010 dealing with landscape requirements and landscape screening.

#### RESPONSE:

Landscape requirements and landscape screening have been provided per section 15.420.010. Site landscaping accounts for 30% of the overall site area. Landscaping has been provided throughout the parking area in strips and islands not less than 5' in width. Parking along the north property line along Haworth has been set back from the property line 15' and on the south property line both parking and loading areas are set back from 5' to 11' and are screened from adjacent residential properties with a combination of fencing and landscaping. Parking is similarly set back and screened along the west property line where abutting residential properties. A portion of the landscaped area is made up of the existing park at the east side of the site containing lawn and existing mature trees. These areas will be reseeded and repaired including a new half-court basketball court, playground and walkways connecting the building and the street (both Haworth and Cherry). The existing park area at the northwest corner of the site at the intersection of Villa and Haworth will also remain essentially intact with the additional of new pathways.

Reference Landscape Plan sheet L1.0.

## 5. Signs. Signs shall comply with 15.435.010 et sep. dealing with signs. RESPONSE:

Signage on the site and building is relatively small in scale and consists of a 12 square foot freestanding sign on the corner of Villa and Haworth, a larger 37.5 sf freestanding sign at the west drive aisle off Haworth which will include a 9.3 sf electronic message center and a standard 7.2 sf park and recreation district sign at Babe Nicklous park. Attached building signage consists of a 48 sf cut metal letter sign continuously lit and mounted on the canopy above the new main entry. The two freestanding signs consist of a low concrete base with a metal cabinet matching the building panels and internally lit translucent letters. The electronic



message center will include alternating messages and images. All proposed signs comply with the size, location and display methods outlined with this code.

See Exterior Elevation Sheet A3.11 and Site and Building Perspective Sheet A3.14.

#### 6. Manufactured home, mobile home and RV parks.

#### RESPONSE:

The project is not a manufactured home, mobile home or RV park, this criteria is not applicable.

7. Zoning district compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in 15.302 through 15.370. Through this site review process, the Director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the Director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.

#### RESPONSE:

The existing and proposed use is a Community Service Facility in an R-1 zone requiring conditional use approval. See included Type III Conditional Use Application and documents.

## 8. Sub-district compliance. Properties located within sub-districts shall comply with the provisions of those sub-districts located in 15.334 through 15.354.

#### RESPONSE:

The property is not located within a sub-district, this criteria is not applicable.

9. Alternative circulation, roadway frontage improvements and utility improvements. Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with city street standards and the standards contained in the transportation plan. At the discretion of the city, these improvements may be deferred through use of a deferred improvement agreement or other form of security.

#### **RESPONSE:**

This criteria is not applicable although a new cul-de-sac off Cherry Street is proposed to serve a service drive to the new aquatic and fitness center. The parks district has worked throughout the project with the owner of the adjacent nursing care facility, Prestige Care, Inc. to attain their approval and make sure this access will work well for both properties. They can eventually provide their own driveway access if needed and will complete the sidewalk and planting area in their half of the cul-de-sac in the future. All utilities will be extended from Sitka Avenue into the cul-de-sac, and gas, storm water, domestic water and sanitary sewer connections will all be utilized for the aquatics addition.



# 10. Traffic study improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the Director.

#### RESPONSE:

A Traffic Impact Study and Parking Analysis have been prepared by Lancaster Engineering for both the existing and new center. It has been included with this application.

## Type I Code Adjustment Written Criteria Response

## Adjustment to (C) dimensional standards and minimum number of off-street parking spaces.

#### RESPONSE:

No required parking standard has been set for an aquatic and fitness center use per section 15.440.010 so a Traffic Impact Study and Parking Analysis was completed to determine an equivalent requirement. 197 spaces were determined to be needed at peak demand periods. An adjustment to reduce that required number of stalls to 143 is requested.

Reference the included Traffic Impact Study, Parking Analysis and Transportation Demand Management Plan along with response below.

## (a) Special characteristics of users which indicate low demand for off-street parking (e.g. low income, elderly).

#### **RESPONSE:**

The aquatic and fitness center is used by young and old alike and is arrived at through a variety of means. Many may drive on their own or in carpools, but children are driven to the center and either dropped off or waited on by a parent or guardian, high school students walk from nearby Newberg High School or are dropped off by busses, college students at George Fox walk from school housing and elderly users are also often bussed and dropped off at the center. The center's location in a residential area also gets many people coming on foot or bicycle.

#### (b) Opportunities for joint use of nearby off-street parking facilities. RESPONSE:

The 4-5 times a year the center hosts regional meets or competitions is when the greatest demand for parking exists. These events are often held on weekends allowing for shared parking opportunities with the nearby George Fox maintenance yard, the Riverspirit Wellness Center and Newberg High School. These three sites have roughly 40, 17 and over 200 parking spaces available.

There are also roughly 37 on-street parking spaces on Haworth, but these will be reduced by about half as a new striped bike lane instead of a shared car/bike lane has been required by the city's public works department. This will eventually improve the bike connection to the site once the bike lane is extended beyond the aquatic and fitness center but it will also remove a source of nearby overflow parking. Six additional on-street spaces will also be created when the culde-sac off Cherry is constructed.

#### (c) Availability of public transit.

#### RESPONSE:

Public transit is not generally available in the area. Users who are bussed to the site are either high school students or elderly residents of nearby retirement communities.



# (d) Natural features of the site (topography, vegetation, drainage) which would be adversely affected by application of required parking standards.

#### RESPONSE:

A major component of the site design and one discussed often in the public and stakeholder meetings held to date is the existing Babe Nicklous park. A reduction in its size to accommodate the desired building program, parking and storm water facilities was necessary, but not wanted. A mature stand of about 60 trees and continuous park area of about 45,000 square feet was able to be maintained however and still keep a basketball area, playground and open lawn space similar to the existing larger park. Providing the 54 additional required spaces on site would nearly obliterate all of the mature trees and significantly reduce the open park space. The park is a valuable piece of the community which has been reiterated to the district and design team at several public forums, the requested reduction in parking is a necessary trade-off to keep this vital entity intact.

#### (e) Possible conversion of the site to other uses in the future. RESPONSE:

As part of the Chehalem Parks System and with funding through a public bond for this specific use it is unlikely the site will be converted to another use in the future.

# (f) No adjustment shall be greater than 25% of the requirement from which the exception is granted.

#### RESPONSE:

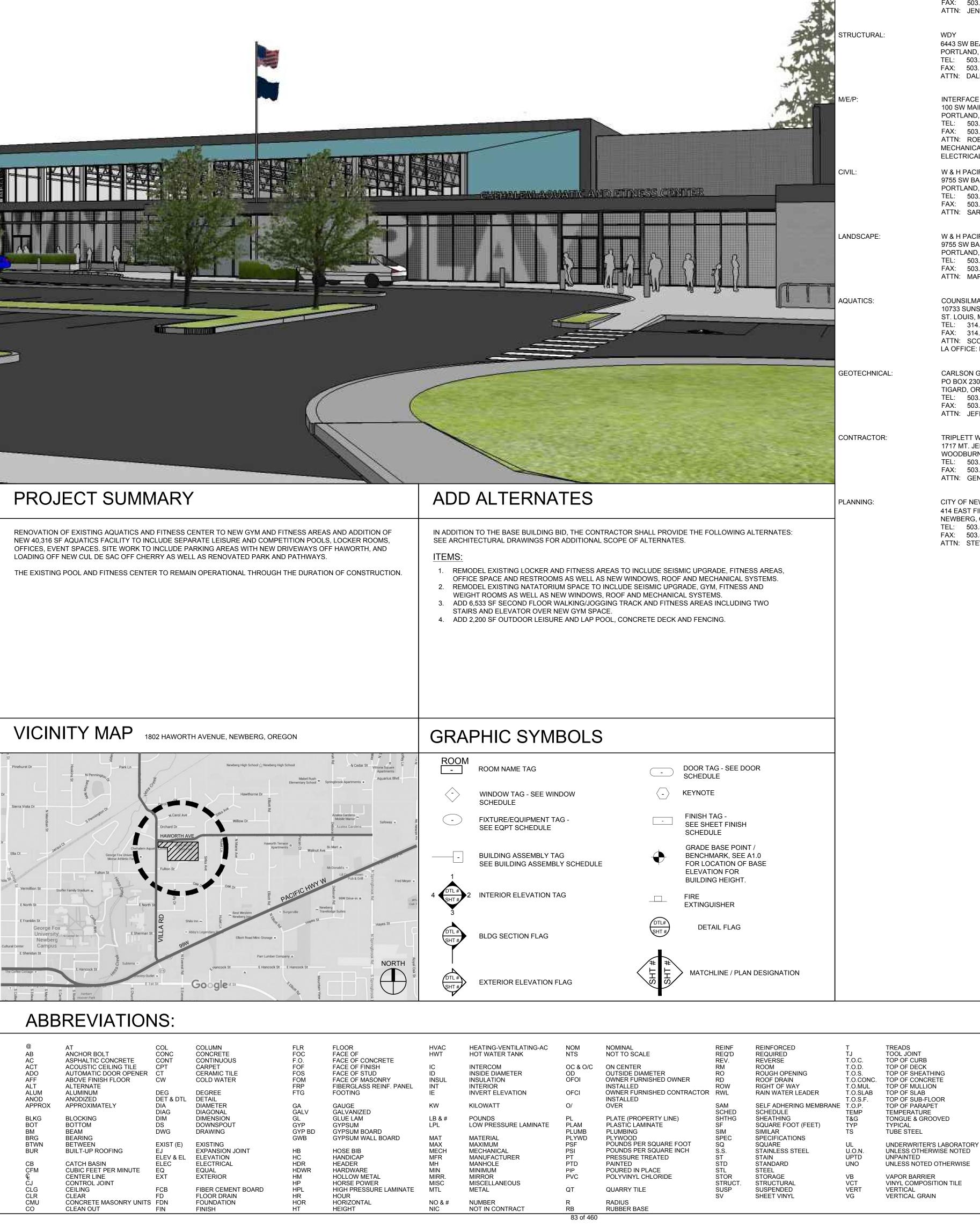
197 spaces were determined to be needed at peak demand periods. A 25% reduction results in 49 less spaces for a total required of 148. As part of the Traffic Impact Study and Parking Analysis, a Transportation Demand Management Plan was included to address the 25% parking reduction plus five additional space deficit on site. The goal of the plan is to reduce the number of single occupancy vehicle trips to the site in favor of other modes less taxing to available parking and surrounding streets. Many of these have been covered in response to the above criteria including carpooling, walking from the nearby high school and college, biking, walking and off-site shared parking with nearby businesses and schools. In addition the centers administrators will schedule classes and events to reduce overlap and therefore increased parking demand.

### Conclusion

The Chehalem Aquatic and Fitness Center has been a part of the Newberg community for 45 years. The parks district has maintained and upgraded it and the adjacent Babe Nicklous pool park throughout that time, but the time has come for it to be replaced. With the passing of the nearly \$20 million bond measure in 2014 the community agreed. Approval of these applications for Site Design and Conditional Use review and a Code Adjustment is part of the process and the eventual construction of the new center. The responses provided to the approval criteria for each review as well as the supporting drawings and studies have shown the project has met the requirements of each. The building and site design is compatible with the surrounding area; provides adequate parking and safe circulation for pedestrians, bicycles and vehicles; is landscaped for storm water management, visual interest and screening and to maintain Babe Nicklous park; and provides expanded aquatic and fitness uses in a state of the art facility.







# CHEHALEM AQUATIC AND FITNESS CENTER LAND USE REVIEW SUBMITTAL

	PROJECT D	IRECTORY:	INDE	XC	DF	DRAWINGS:
	OWNER:	CHEHALEM PARK & RECREATION DISTRICT 125 SOUTH ELLIOTT ROAD NEWBERG, OR 97132 TEL: 503.209.2222 FAX: 503.538.9669 ATTN: JIM MCMASTER	ISSUED :			LEGEND:
t	ARCHITECT:	SCOTT   EDWARDS ARCHITECTURE, LLP 2525 E BURNSIDE STREET PORTLAND, OREGON 97214 TEL: 503.226.3617 FAX: 503.226.3715 ATTN: JENNIFER MARSICEK, ERICA BRYANT			01-29-2016	G0.00 COVER SHEET SURVEY (REFERENCE ONLY)
	STRUCTURAL:	WDY 6443 SW BEAVERTON-HILLSDALE HWY, SUITE 210 PORTLAND, OR 97202 TEL: 503.203.8111 FAX: 503. ATTN: DALE DILORETO			00000	<ul> <li>C1.0 PRELIMINARY SITE PLAN</li> <li>C2.0 PRELIMINARY GRADING PLAN</li> <li>C3.0 PRELIMINARY UTILITY PLAN</li> <li>L1.0 PRELIMINARY LANDSCAPE PLAN</li> <li>L1.1 LANDSCAPE DETAILS</li> </ul>
	M/E/P:	INTERFACE ENGINEERING 100 SW MAIN STREET, SUITE 1600 PORTLAND, OR 97204 TEL: 503.382.2266 FAX: 503. ATTN: ROB MATTESON MECHANICAL: TROY LOWELL, PLUMBING: CHRIS SCOTT, ELECTRICAL: THOMAS PHUONG, MARK O'LEARY			000000	AD0.01EXISTING AND DEMOLITION SITE PLAN A1.10 PROPOSED SITE PLAN A2.10 FIRST LEVEL PLAN - OVERALL A2.20 SECOND LEVEL PLAN - OVERALL A2.40 ROOF PLAN - OVERALL
	CIVIL:	W & H PACIFIC 9755 SW BARNES ROAD, SUITE 300 PORTLAND, OR 97225 TEL: 503.626.0455 FAX: 503.526.0775 ATTN: SARAH JONES, BRADY BERRY			000000	<ul> <li>A3.10 EXTERIOR ELEVATIONS - OVERALL</li> <li>A3.11 EXTERIOR ELEVATIONS - NORTH</li> <li>A3.12 EXTERIOR ELEVATIONS - EAST AND WEST</li> <li>A3.13 EXTERIOR ELEVATIONS - SOUTH</li> <li>A3.14 SITE AND BUILDING PERSPECTIVES</li> <li>A4.11 BUILDING SECTIONS</li> </ul>
L	LANDSCAPE:	W & H PACIFIC 9755 SW BARNES ROAD, SUITE 300 PORTLAND, OR 97225 TEL: 503.372.3606 FAX: 503.526.0775 ATTN: MARK HADLEY, MATT SIMPSON			000000000000000000000000000000000000000	A4.12 BUILDING SECTIONS A4.13 BUILDING SECTIONS E1.11 SITE PLAN LIGHTING
	AQUATICS:	COUNSILMAN-HUNSAKER 10733 SUNSET OFFICE DRIVE, 4TH FLOOR ST. LOUIS, MO 63127 TEL: 314.894.1245 FAX: 314.894.0109 ATTN: SCOTT HESTER LA OFFICE: MICHAEL MOREHART, PH: 310.734.2282				
	GEOTECHNICAL:	CARLSON GEOTECHNICAL PO BOX 230997 TIGARD, OR 97281 TEL: 503.601.8250 FAX: 503.601.8254 ATTN: JEFF JONES				
	CONTRACTOR:	TRIPLETT WELLMAN 1717 MT. JEFFERSON AVE. WOODBURN, OR 97071 TEL: 503.982.4188 FAX: 503.982.0390 ATTN: GENE WELLMAN				
F	PLANNING:	CITY OF NEWBERG 414 EAST FIRST STREET NEWBERG, OR 97132 TEL: 503.537.1215 FAX: 503.537.1272 ATTN: STEVE OLSON				

WITH WATER CLOSET WATER RESISTANT WATER RESISTIVE BARRIER

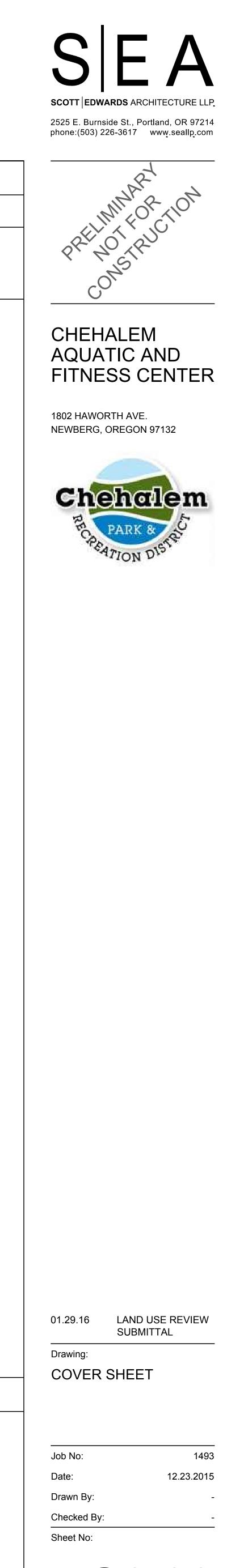
WC WD

W/O WP

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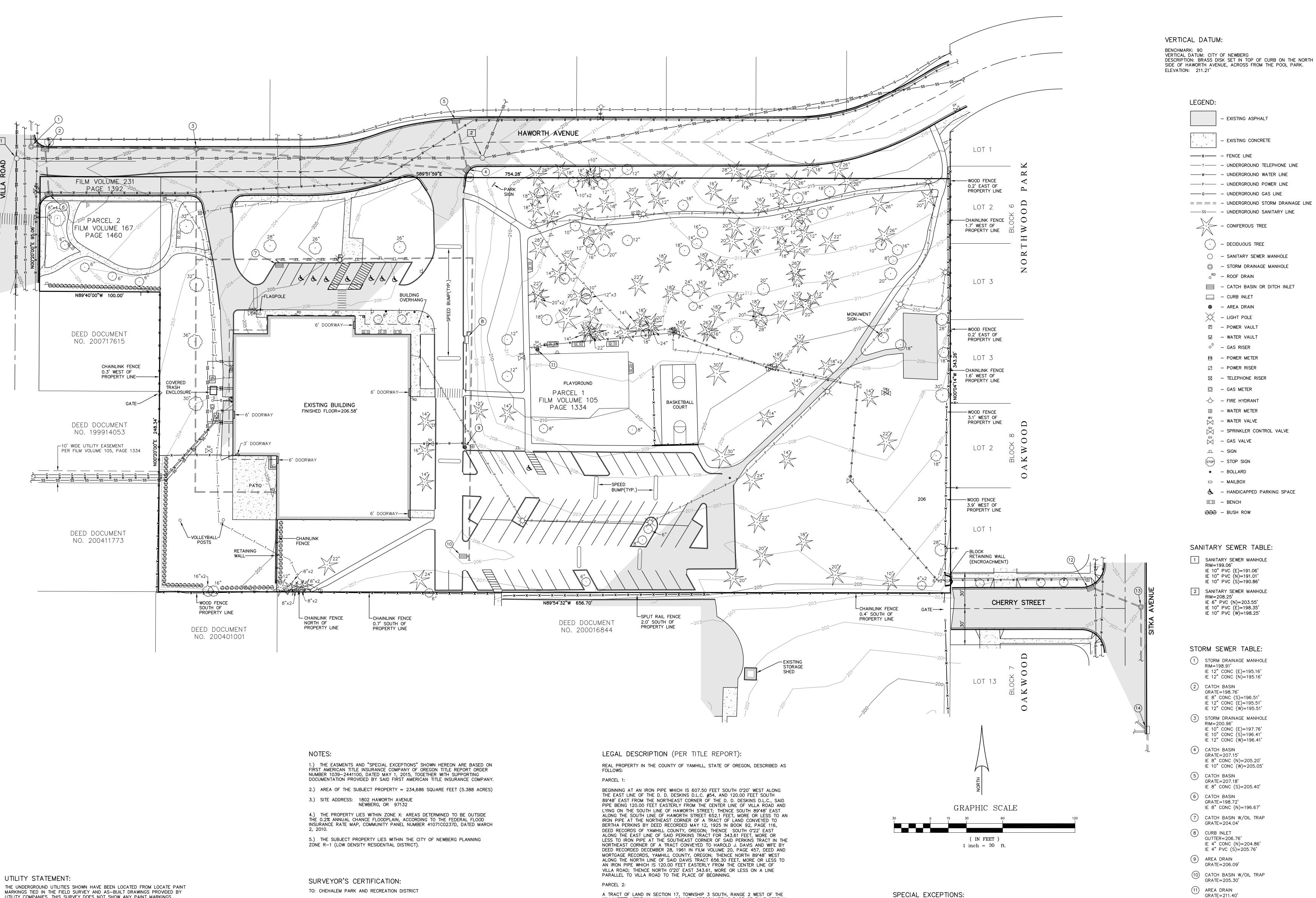
DARREN S. HARR, OREGON PLS NO. 56181

MARKINGS TIED IN THE FIELD SURVEY AND AS-BUILT DRAWINGS PROVIDED BY UTILITY COMPANIES. THIS SURVEY DOES NOT SHOW ANY PAINT MARKINGS PROVIDED AFTER THE FIELD SURVEY WAS COMPLETED. AS-BUILT DRAWING INFORMATION THAT WAS NOT PROVIDED IS NOT REFLECTED ON THIS SURVEY. AS-BUILT INFORMATION. IF PROVIDED, WAS USED TO IDENTIFY UNDERGROUND PIPE SIZE AND TYPE. IF NO LOCATE PAINT MARKINGS WERE PROVIDED, AS-BUILT INFORMATION WAS USED TO HORIZONTALLY LOCATE THE UNDERGROUND UTILITIES.

THIS SURVEY MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE OF ALL SUCH UTILITIES IN THE AREA. THE UNDERGROUND UTILITIES SHOWN MAY NOT BE IN THE EXACT LOCATION AS NOTED ON THIS SURVEY, BUT ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. MANHOLES OTHER THAN SANITARY AND STORM SEWER WERE IDENTIFIED BY MANHOLE LIDS AND MAY NOT BE LABELED CORRECTLY.

UTILITY LOCATIONS SHOULD BE VERIFIED BY OREGON UTILITIES NOTIFICATION CENTER IMMEDIATELY PRIOR TO ANY EXCAVATION.

2, 2010.



THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD

DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS. JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 4, 5, 6(A), 7(A), 7(B)(1), 8, 9, 11(A), 11(B), 14, 16 AND 19 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MAY 1, 2015.

MAY 6, 2015 DATE

A TRACT OF LAND IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN, YAMHILL COUNTY, OREGON, BEING PART OF THAT CERTAIN TRACT OF LAND DESCRIBED IN DEED TO HARRY A. PERKINS, ET UX., RECORDED IN BOOK 92, PAGE 116, YAMHILL COUNTY DEED RECORDS, AND BEING DESCRIBED

AS FOLLOWS: BEGINNING AT A P-K NAIL THAT IS SOUTH 00'20' WEST 20.00 FEET AND SOUTH 89'48' EAST 20.00 FEET FROM THE NORTHWEST CORNER OF SAID PERKINS TRACT, SAID P-K NAIL BEING 20 FEET EAST FROM THE EAST LINE OF THE D. D. DESKINS DONATION LAND CLAIM; THENCE SOUTH 89'48' EAST, 100.00 FEET, PARALLEL WITH THE SOUTH LINE OF HAWORTH AVENUE. TO THE WEST LINE OF THAT CERTAIN TRACT OF LAND DESCRIBED IN DEED TO CHEHALEM PARK AND RECREATION DISTRICT RECORDED IN FILM VOLUME 105, PAGE 1334, YAMHILL COUNTY DEED RECORDS; THENCE SOUTH 00°20' WEST, ALONG SAID WEST LINE, (PASSING AN IRON ROD AT 1.09 FEET) 75.28 FEET TO AN IRON ROD; THENCE NORTH 89'40' WEST, 100.00 FEET TO AN IRON ROD THAT IS EAST 20.00 FEET

FROM THE EAST LINE OF SAID DESKINS CLAIM; THENCE NORTH 00'20' EAST,

75.04 FEET TO THE POINT OF BEGINNING.

1.) TAXES, INCLUDING THE CURRENT FISCAL YEAR, NOT ASSESSED BECAUSE OF A PUBLIC EXEMPTION (ORS 307.090). IF THE EXEMPT STATUS IS TERMINATED AN ADDITIONAL TAX MAY BE LEVIED. ACCOUNT NO. 34643 AND 421323. [NOT A SURVEY LOCATION ITEM]

2.) THE RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE PREMISES HÉREIN DESCRIBED LYING WITHIN THE LIMITS OF STREETS, ROAD AND HIGHWAYS. [ADJOINING STREETS AS SHOWN HEREON]

NOTE: THE ABOVE DESCRIBED PROPERTY IS BENEFITED BY AN EASEMENT FOR UTILITY PURPOSES, AS DISCLOSED IN CONTRACT RECORDED MAY 11, 1970 IN FILM VOLUME 79, PAGE 996. [AS SHOWN HEREON]

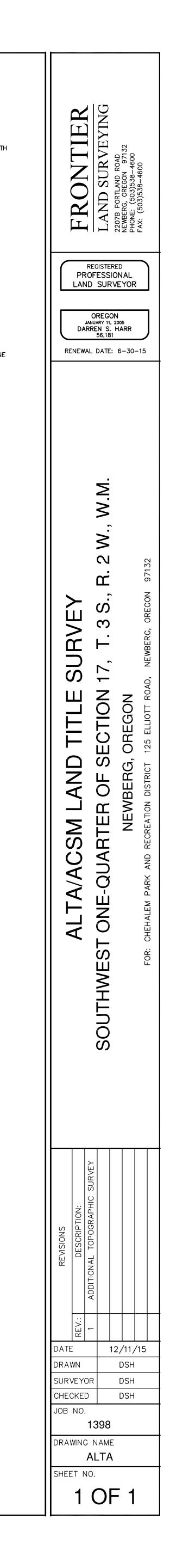
(13) STORM DRAINAGE MANHOLE RIM=202.13' IE 10" PVC (NW)=199.61' IE 10" PVC (S)=199.50'

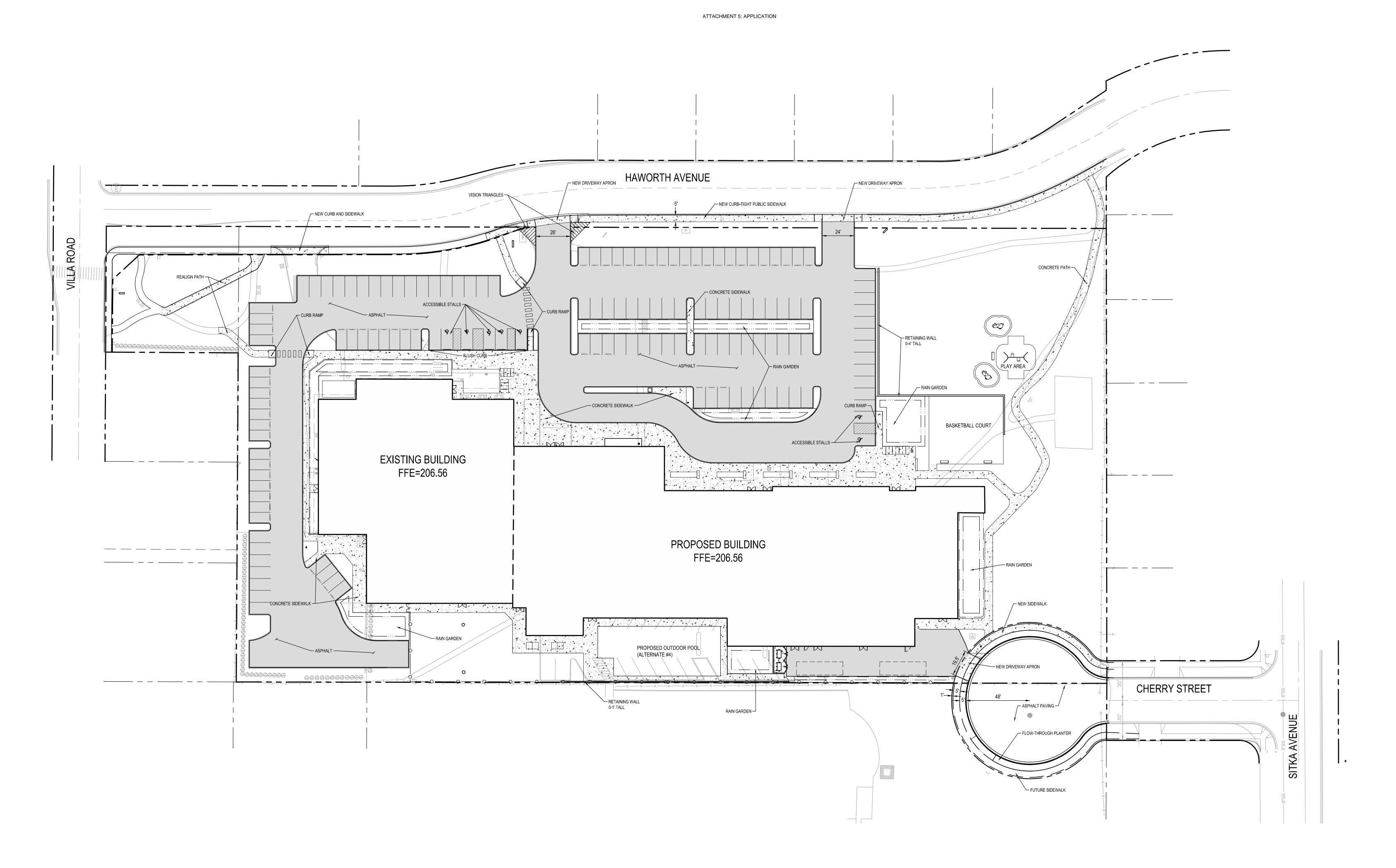
IE 10" PVC (SE)=200.10'

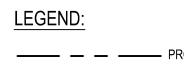
GRATE=202.05'

(12) CATCH BASIN

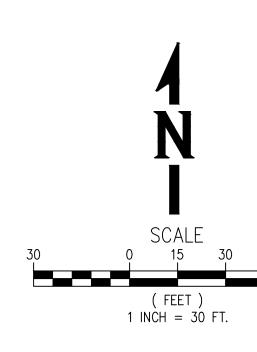
(14) CURB INLET GUTTER=198.68' IE 12" PVC (NW)=196.55' IE 12" PVC (W)=196.61' IE 12" PVC (S)=196.55' SUMP=196.55'







PROPERTY / ROW LINE







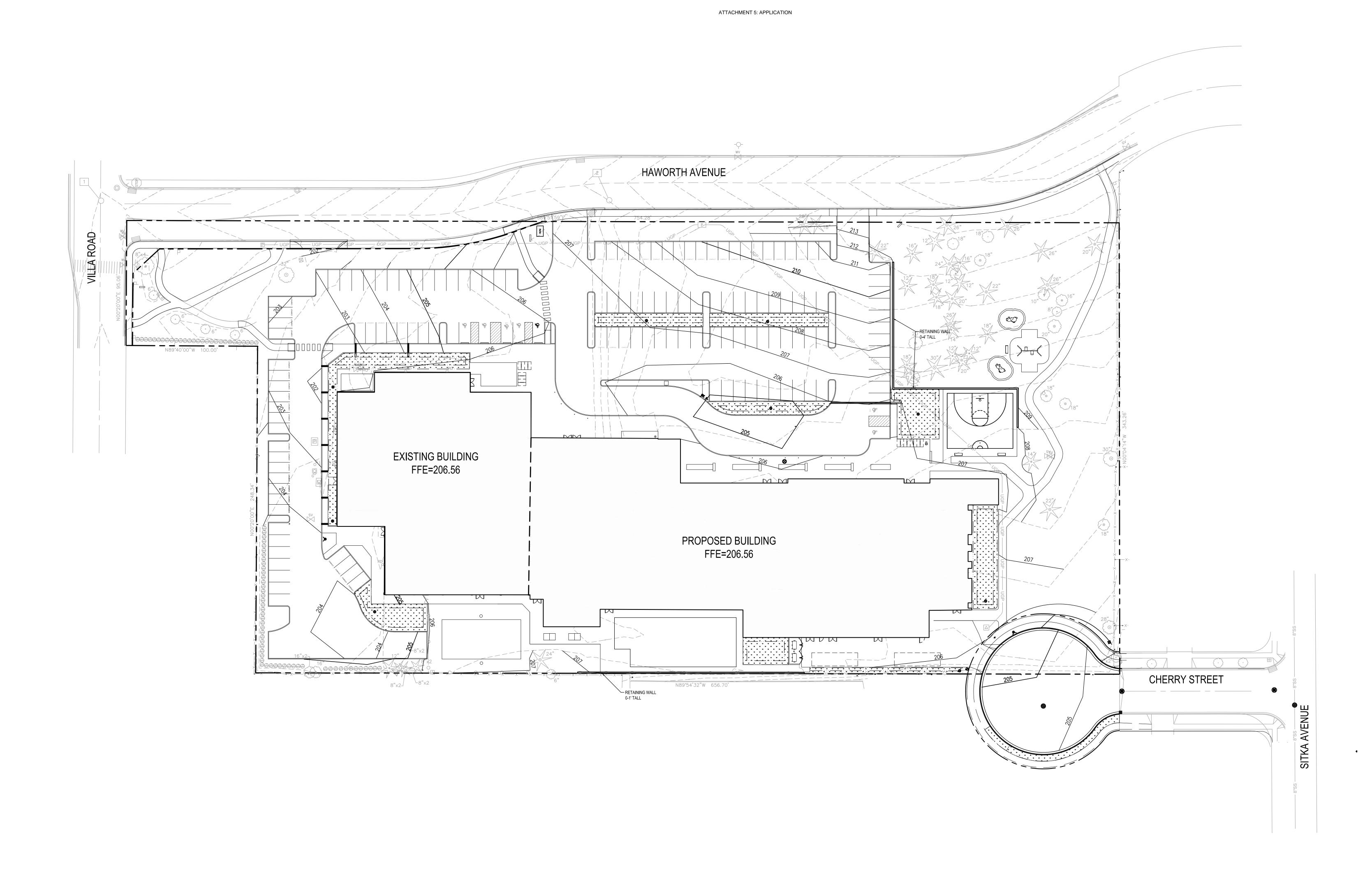


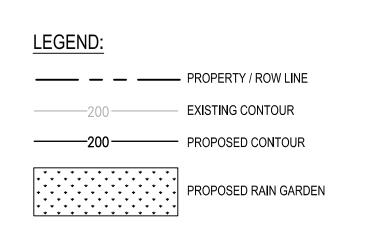


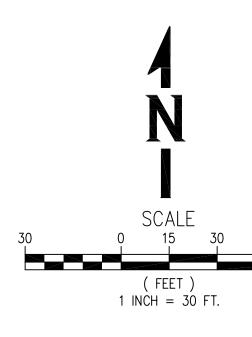
## Drawing: PRELIMINARY SITE PLAN

C1.0

Job No: Date: Drawn By: Checked By: Sheet No: 1493 WHP# 9297W 01.27.2016 SRJ -MAH -











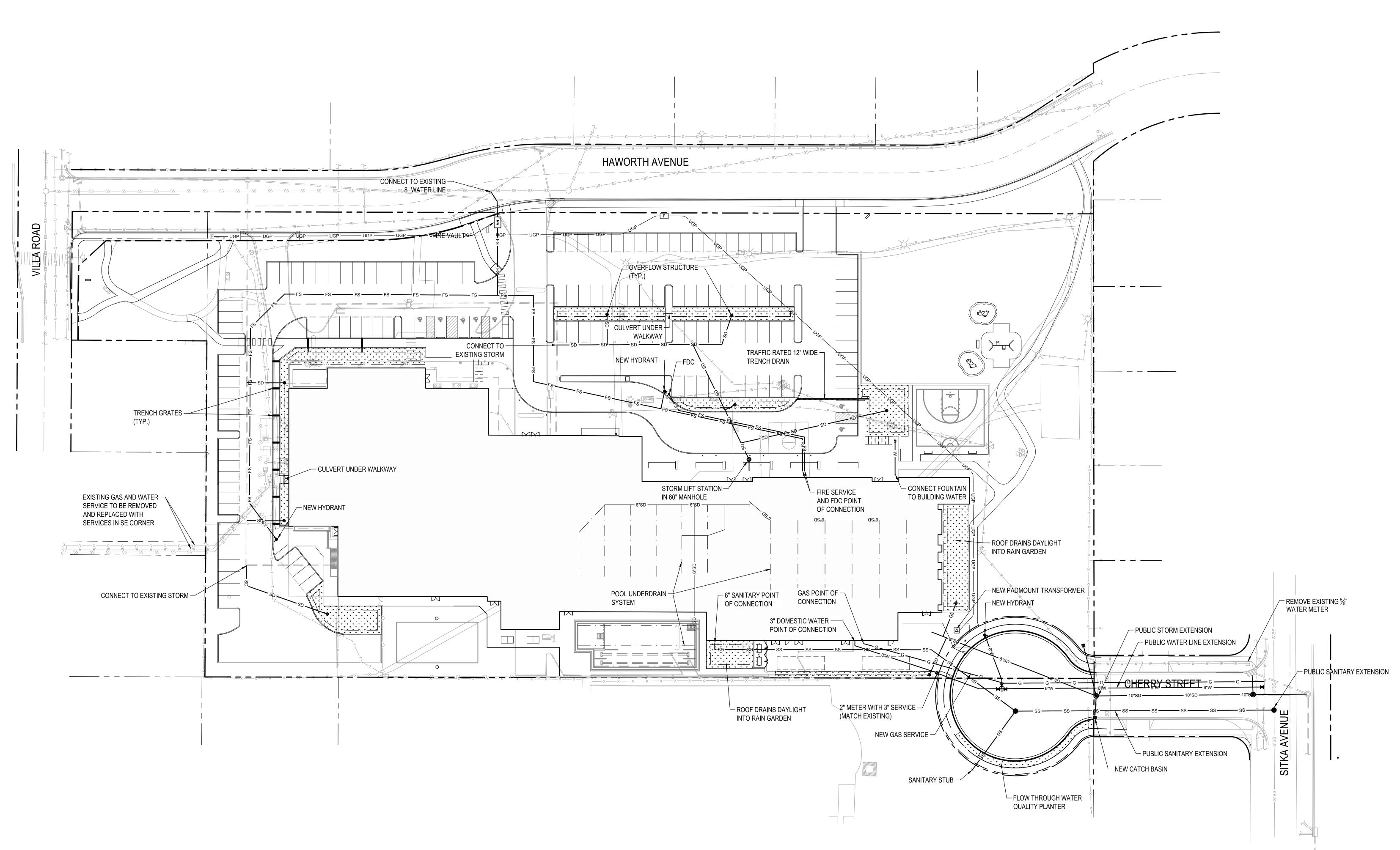




## Drawing: PRELIMINARY GRADING PLAN

Job No: Date: Drawn By: Checked By: Sheet No: 1493 WHP# 9297W 01.27.2016 SRJ -MAH -







## LEGEND:

		- PROPERTY / ROW LINE
— SD ——	SD	EXISTING STORM SEWER
— T —	T	EXISTING TELECOM
W	W	EXISTING WATER LINE
— SS —	SS	EXISTING SANITARY SEWER
— G —	—— G ———	EXISTING GAS SERVICE
— G —	— G ——	PROPOSED GAS SERVICE
<u> </u>		PROPOSED WATER SERVICE
— FS —	— FS ——	PROPOSED FIRE SERVICE
— SD —	SD	PROPOSED STORM DRAIN
— ss —	ss	PROPOSED SANITARY
<u> </u>	·	PROPOSED PERF. PIPE
		PROPOSED WATER QUALITY PLANTER

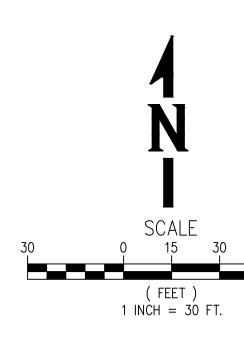
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 $\square$ 

PROPOSED OVERFLOW STRUCTURE

PROPOSED CATCH BASIN

-------- UGP --------- PROPOSED POWER CONDUIT







1802 HAWORTH AVE. NEWBERG, OREGON 97132





## Drawing: PRELIMINARY UTILITY PLAN

Job No: Date: Drawn By: Checked By: Sheet No: 1493 WHP# 9297W 01.27.2016 SRJ -MAH -





## WATER QUALITY / RAIN GARDEN FEATURE PLANT MATERIALS LISTING BOTTOM PLANTING = 4285 S F

BOLLOW N	LANTING = 4,285 S.F	•		
HERBACEOUS	4,285 HERBACIOUS PLA	NTS REQUIRED.		
	CAREX OPNUPTA	SLOUGH SEDGE	6" PLUG	12" O.C
	JUNCUS PATENS	SPREADING RUSH	6" PLUG	12" O.C
	SCIRPTUS AMERICANUS	AMERICAN BULRUSH	6" PLUG	12" O.C
SIDE SLOP	E PLANTING = 6,068	S.F.		
<u>TREES</u> ———	——1 TREE / 200SF = 30 T	REES REQUIRED		
	ACER CIRCINATUM	VINE MAPLE	6'-7' B&B	
LARGE SHRUBS		= 182 SHRUBS REQUIRED		
	SALIX PURPUREA 'NANA'	MOCK ORANGE BLUE ARCTIC WILLOW RED ELDERBERRY	3 GAL CAN.	72" O.C
MED/SM SHRUBS	— 4 MED/SM SHRUBS / 1	100 SF = 243 SHRUBS REQU	JIRED.	
		I' KELSEY DOGWOOD		
	MAHONIA AQUIFOLIUM		1 GAL CAN. 1 GAL CAN.	
	SYMPHORICARPOS ALBUS	SNOWBERRY	I GAL CAN.	30 0.0
<u>G.C.</u>	— 70 G.C. / 100 SF = 4,2	48 G.C. REQUIRED		
	ARCTOSTAPHYLOS UVA-UF	RSI KINNIKINNICK	1 GAL CAN	@ 12" O.C

WATER QUALITY / RAIN GARDEN SHRUB MIX GENERAL NOTE THE PLANTING DESIGN SHALL BE INSTALLED TO MIMIC NATURAL CONDITIONS. THEREFORE, TREES AND SHRUBS SHOULD NOT BE INSTALLED IN A GRID OR LINEAR PATTERN IN ORDER TO AVOID PLANTING IN AN UN-NATURAL



WATER QUALITY / RAIN GARDEN DESIGN IMAGERY IMAGE ILLUSTRATES LANDSCAPE DESIGN INTENT. FOR REFERENCE ONLY

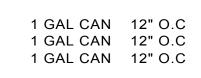
FLOW THROUGH PLANTER - TEMPLATE 2 PLANT MATERIALS LISTING PLANTER AREA = 630 S.F.



APPEARANCE.

CAREX OPNUPTA DESCHAMPSIA CESPITOSA TUFTED HAIR GRASS IRIS DOUGLASII

SLOUGH SEDGE DOUGLAS IRIS



CORNUS SERICEA 'KELSEYII' KELSEY DOGWOOD NOTE: SEE DETAIL SHEET FOR FLOW THROUGH PLANTER TEMPLATE 2 PLANT LAYOUT DESIGN.

1 GAL CAN. 24" O.C

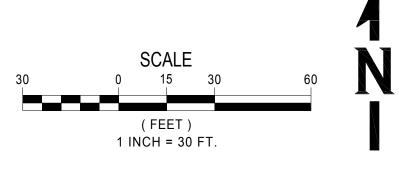
ECIDUOUS TREES		BOTANICAL NAME	COMMON NAME	SIZE / SP/	ACING
	— NS	NYSSA SYLVATICA 'TUPELO TOWER'	TUPELO TOWER BLACKGUM	2" CAL	B&B
	— QRF	QUERCUS ROBUR 'FASTIGIATA'	COLUMNAR RED OAK	2" CAL	B&B
	SP	STEWARTIA PSUEDOCAMELLIA	JAPANESE STEWARTIA	1.5" CAL	B&B
DRNAMENTAL DECIDUOUS	TREES				
· · · · · · · · · · · · · · · · · · ·	— APSK	ACER PALMATUM 'SANGO KAKU'	SANGO KAKU JAPANESE MAPLE	8'-10'	B&B
	— LIT	LAGERSTROEMIA INDICA 'TUSCARORA'	TUSCARORA CRAPE MYRTLE	1.5" CAL	B&B
ULTI-STEM SMALL ORNA	MENTAL TRE	<u>E</u>			
VERGREEN SCREEN TREE	— AC	ACER CIRCINATUM	VINE MAPLE	8'-10'	B&B, 3 STE
	CNP	CHAMAECYPARIS NOOTKENSIS 'PENDULA'	WEEPING ALASKAN CEDAR	7'-8	B&B B&B
ARGE / MEDIUM / SMALL	ORNAMENT	AL WATER EFFICIENT SHRUBS, GRASSES, AND			
	CV RV	CAMELLIA VARIETIES ROSA VARIETIES CISTUS 'SUNSET BRILLIANCY'	CAMELLIAS ROSE MAGENTA ROCK ROSE	3 GAL	CAN CAN CAN CAN

PROVIDE AND INSTALL NEW SEEDED LAWN AT NEW CONSTRUCTION AREAS. REPAIR ALL EXISTING LAWN AREAS DISTURBED DURING SITE CONSTRUCTION.

SITE LANDSCAPE DATA

PREPARED BY WHPACIFIC LANDSCAPE ARCHITECTS.

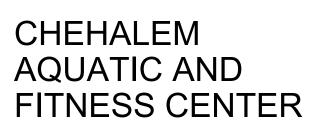
PROJECT SITE AREA	221,788 SQUARE FEET	(5.1 AC)
<ul> <li>SITE LANDSCAPE AREA (EXISTING &amp; PROPOSED)</li> </ul>	—— 73,817 SQUARE FEET	(1.69 AC)
SITE LANDSCAPE PROVIDED	33 %	





2525 E. Burnside St., Portland, OR 97214 phone:(503) 226-3617 www.seallp.com





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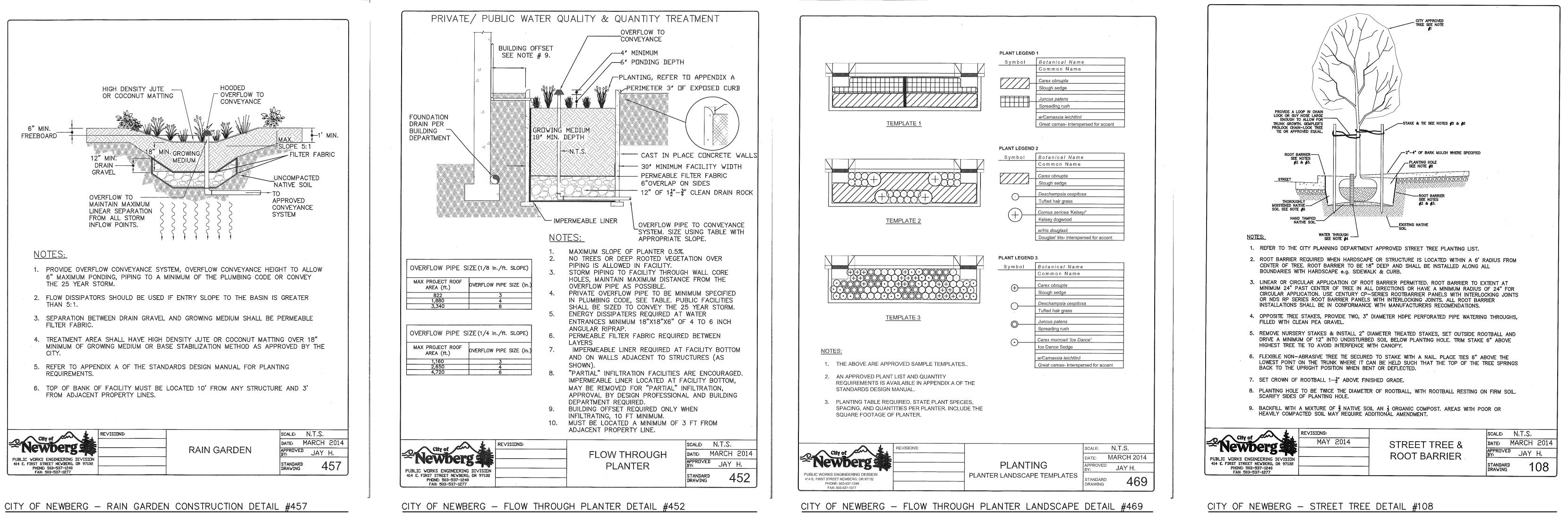


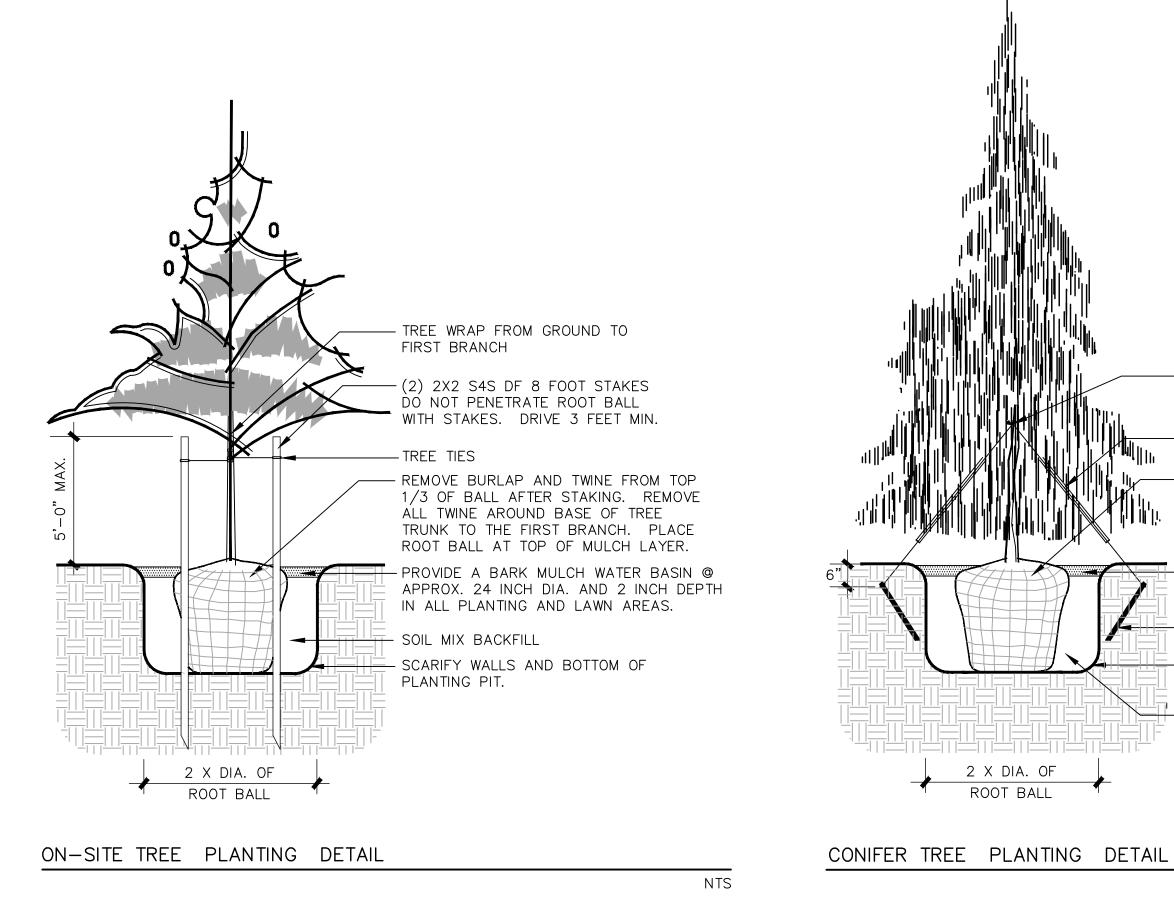


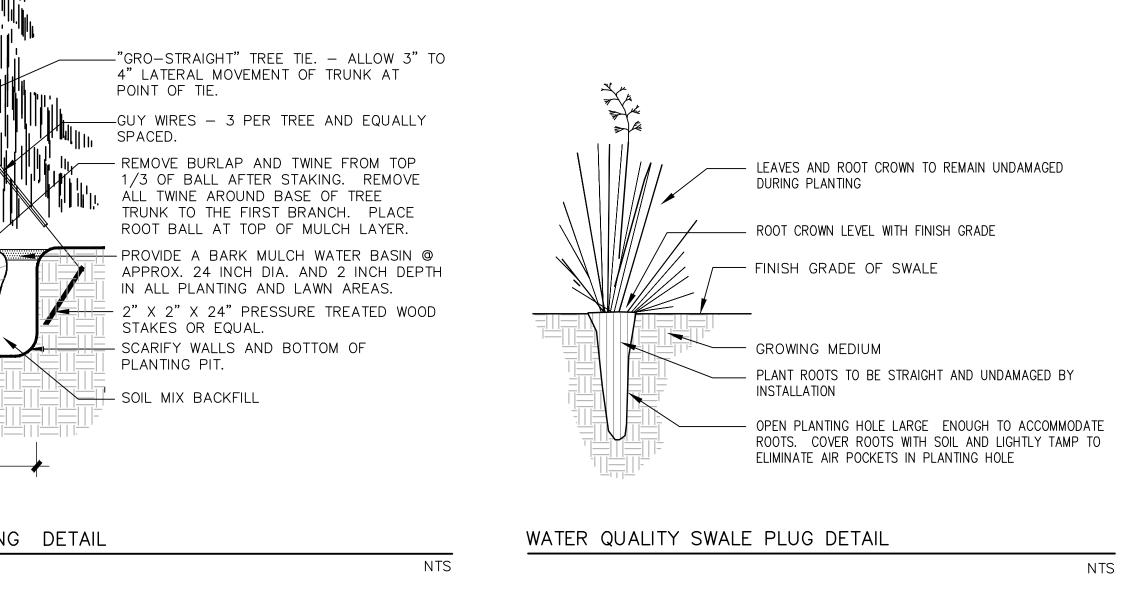
Drawing: PRELIMINARY LANDSCAPE PLAN

Job No: Date: Drawn By: Checked By: Sheet No:

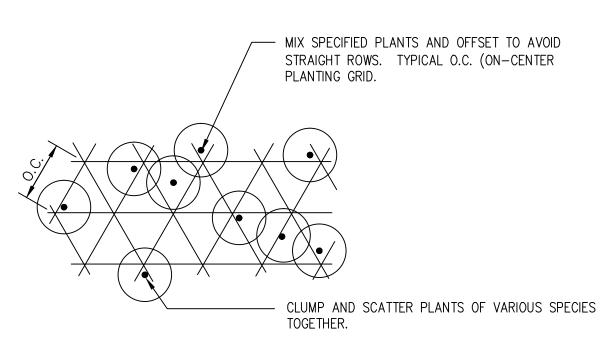
1493 WHP# 9297W 01.27.2016 MPS -MAH -



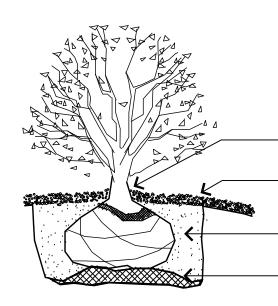




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WATER QUALITY SWALE PLANT SPACING DETAIL



SHRUB PLANTING DETAIL

NTS

# NOTE: DIG PLANTING HOLE TWICE THE DIAMETER OF THE ROOT BALL AND ONE-AND-ONE-HALF TIMES THE DEPTH OF THE ROOT BALL.

- SET ROOT CROWN 1" ABOVE SOIL LEVEL - SPECIFIED BARK MULCH

- COMPACTED NATIVE SOIL



**SCOTT EDWARDS** ARCHITECTURE LLP. 2525 E. Burnside St., Portland, OR 97214 phone:(503) 226-3617 www.seallp.com





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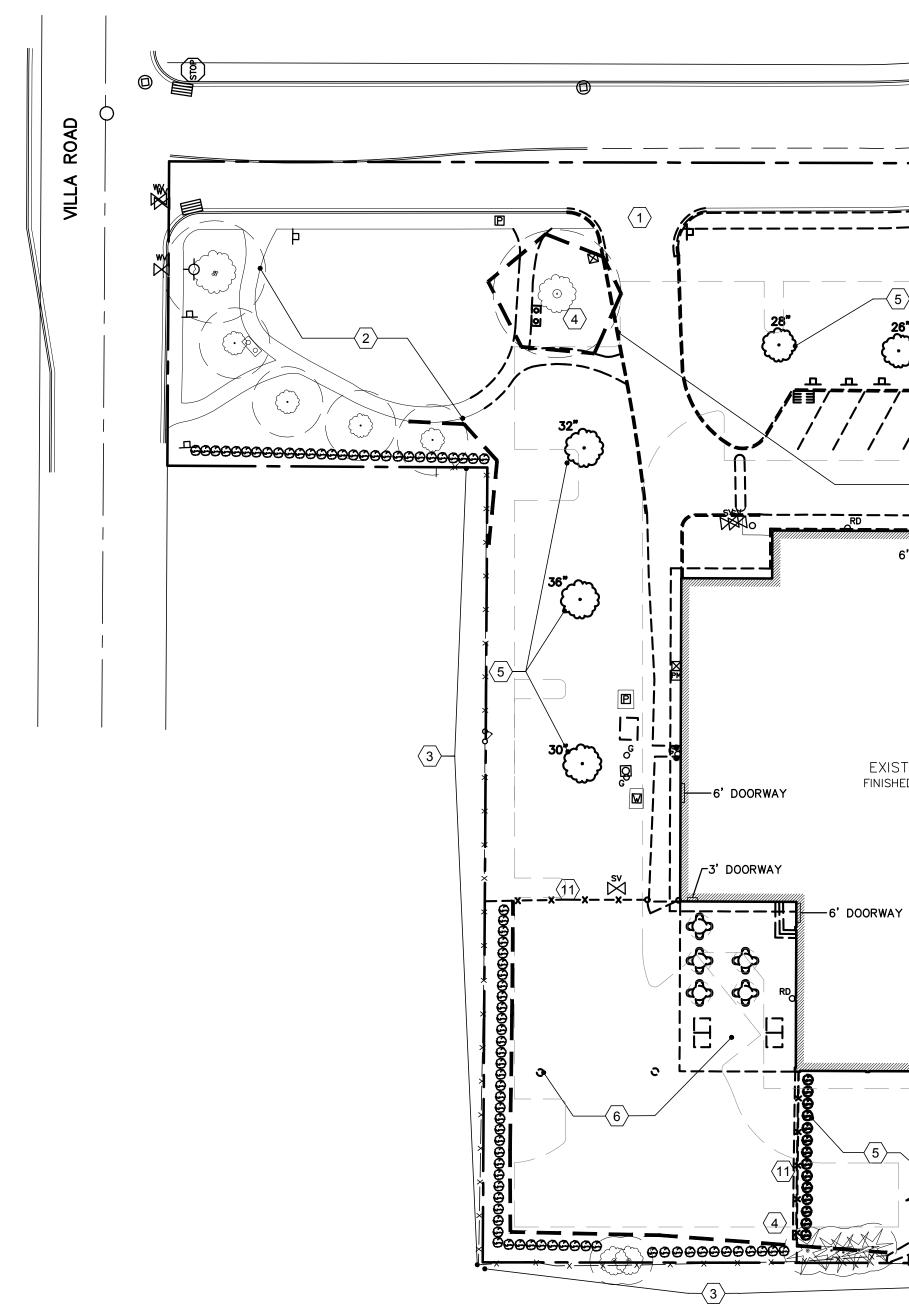


Drawing: LANDSCAPE DETAILS

Job No: Date: Drawn By: Checked By: Sheet No:

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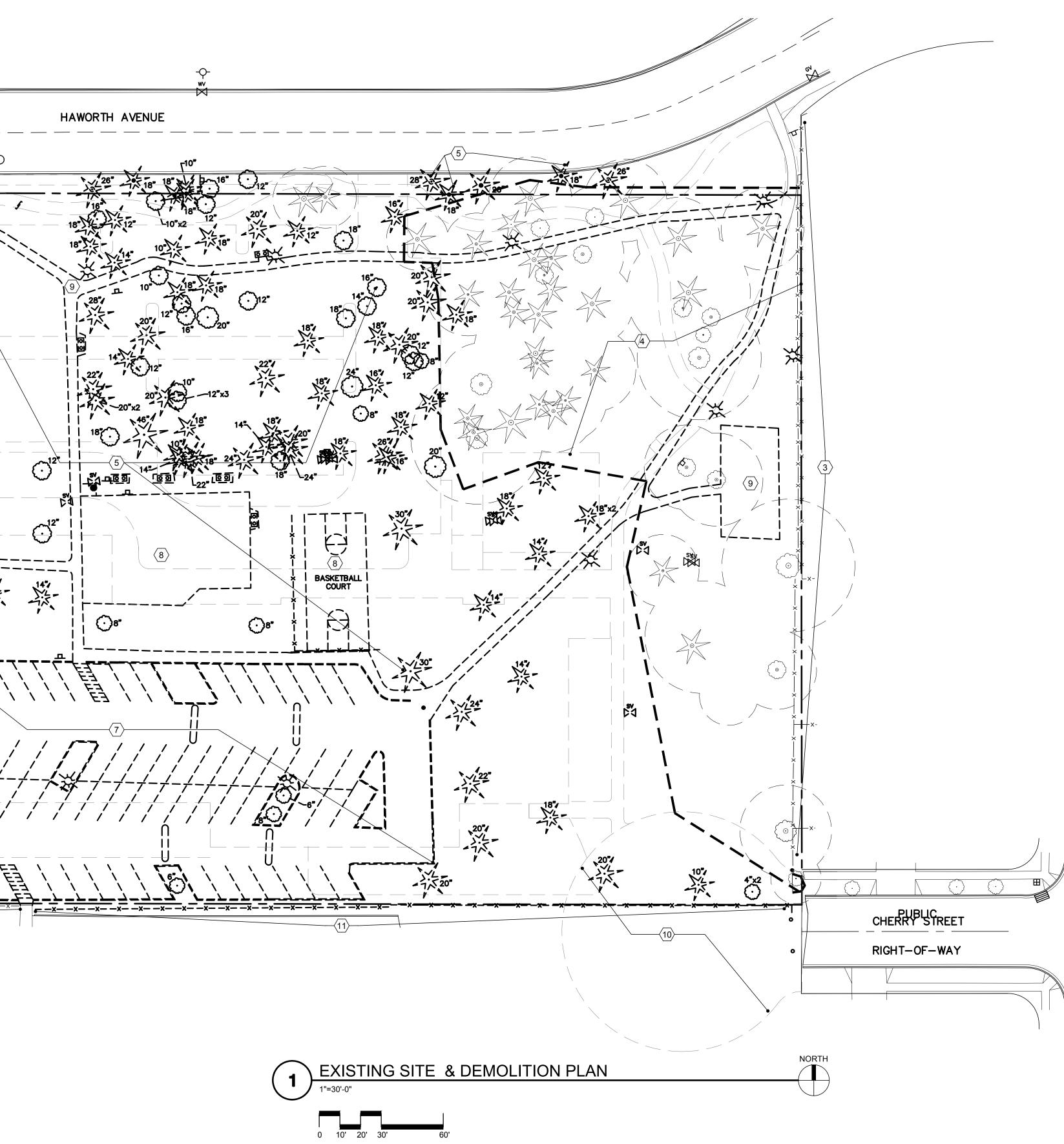
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HAWORTH AVENUE 7----------1 \_\_\_\_\_  $\simeq \simeq \simeq \supset$ 6' DOORWAY-۲ ـ ۲<u>۵۵</u> \_\_\_\_\_\_ ic=>i - <del>( · )</del> -**L**J  $\langle 8 \rangle$ 6' DOORWAY-----1 BASKETBALL 127 EXISTING BUILDING FINISHED FLOOR=206.58' 14"/ 14", 1.4 F------<u>()</u>8" <u>•</u>8\* \_\_\_\_\_  $|\subset = \supset$ 14% - — — — 6' DOORWAY------ -- -1012

ATTACHMENT 5: APPLICATION

-0-



## GENERAL NOTES:

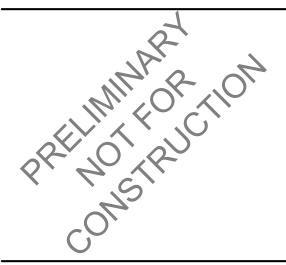
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- PROTECT ALL BUILDINGS, UTILITIES, SITE WORK, VEGETATION, ETC. TO REMAIN.
- SEE SITE PLAN FOR ADDITIONAL INFORMATION.
- SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- MOVE (E) UTILITIES & UTILITY MONUMENTS AS NECESSARY FOR NEW CONSTRUCTION.
- MAINTAIN EXISTING WALKS, PARKING, ADA ETC...AS NECESSARY FOR CONSTRUCTION PHASING. ALL DEMOLITION MAY NOT OCCUR AT ONCE.

DRAWING LEGEND:	KEYNOTES - DEMOLITION SITE PLAN:	
EXISTING BLDG TO REMAIN:	<ul> <li>(1) (E) CURB &amp; DRIVEWAY TO BE ABANDONED</li> <li>(2) EXISTING WALKWAYS, LANDSCAPING AND SITE FURNISHINGS TO REMAIN. REPAIR AS NECESSARY</li> <li>(3) EXISTING SITE FENCING TO REMAIN.</li> <li>(4) EXISTING TREES TO REMAIN, TYP. TREE DRIPLINES AND TREE PROTECTION AREA ARE APPROXIMATE, VERIFY WITH ARBORIST.</li> <li>(5) EXISTING TREES AND SHRUBS TO BE REMOVED, TYP. UNO.</li> <li>(6) REMOVE EXISTING VOLLEYBALL STANDARDS AND CONCRETE PATIO. PRESERVE AND PROTECT</li> </ul>	_
'OSTS 8' OC MAX.	EXISTING PATIO FURNITURE AND (2) CONCRETE PING PONG TABLES FOR USE IN NEW PATIO.	

8 REMOVE EXISITING PLAYGROUND, BASKETBALL COURT AND SITE FURNISHINGS.







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Drawing:

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Drawn By:

Checked By:

Sheet No:

Date:

EXISTING SITE AND

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DEMOLITION PLAN

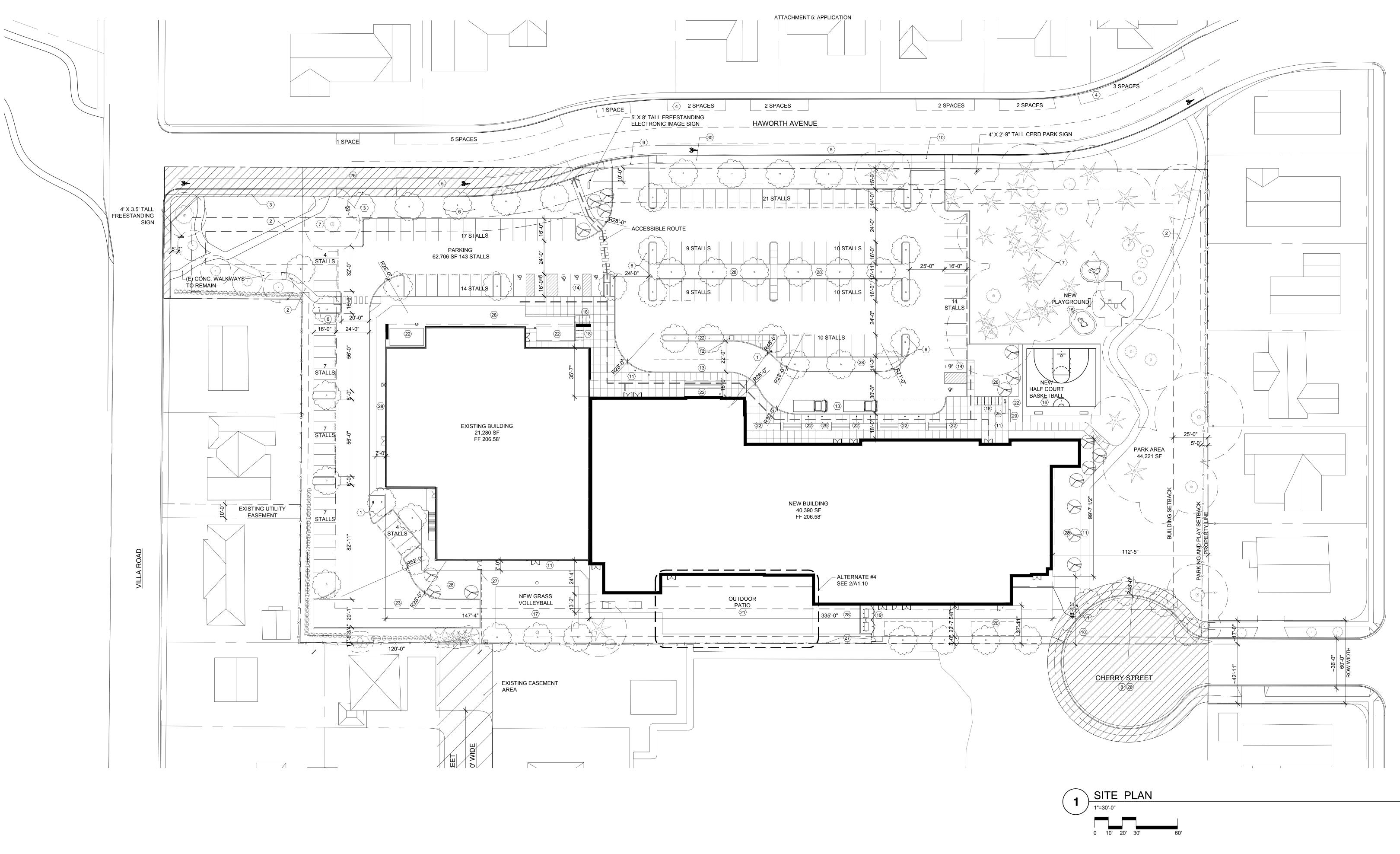
01.29.16 LAND USE REVIEW SUBMITTAL

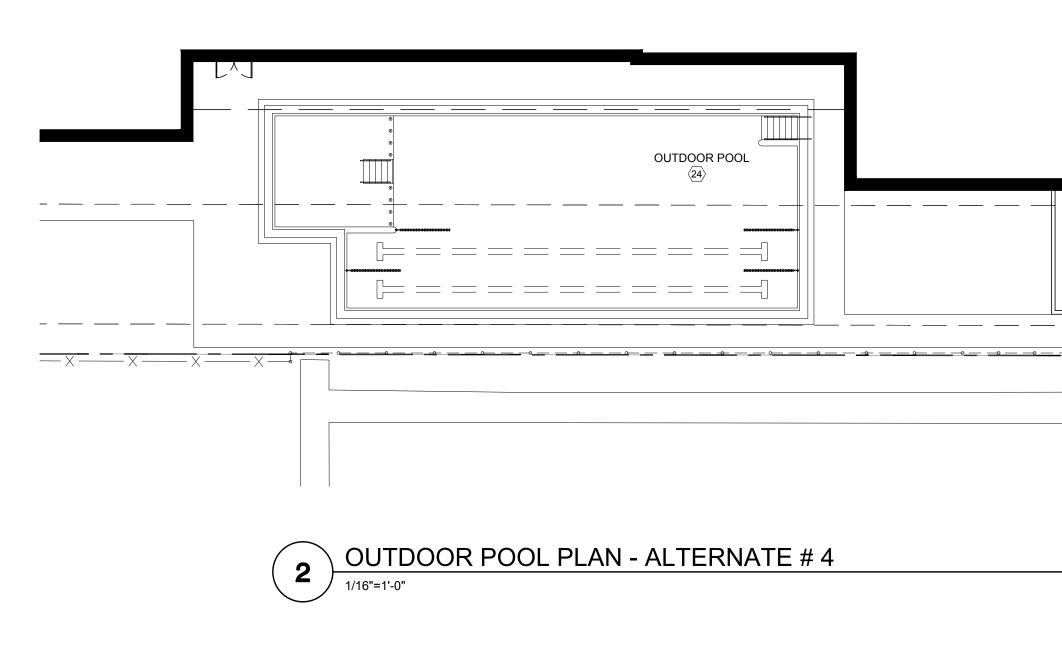
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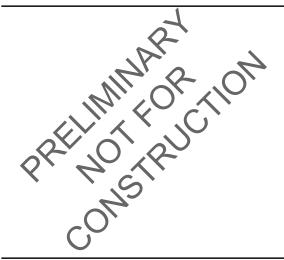
	SITE PLAN SUMMA	RY:	(	GENERAL NOTES - SITE PLAN:	KE	Ξϡ
NORTH	PARKING:         STANDARD STALLS:       101         (INCLUDES 6 CARPOOL AND 7) <u>COMPACT STALLS:</u> 42         TOTAL:       143 <u>LOADING:</u> TWO SPACES REQUIRED, TWO PR <u>BIKE PARKING:</u> REQUIRED NEW COMMERCIAL:         REQUIRED PARKS:         PROVIDED:         NEW COMMERCIAL:         PARK:		1. 2. 3. 4. 5. 6.	<ul> <li>PROTECT ALL BUILDINGS, UTILITIES, VEGETATION, ETC. TO REMAIN.</li> <li>SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.</li> <li>MAINTAIN 2% MAX CROSS SLOPE AT ALL NEW CONCRETE WALKWAYS &amp; ACCESSIBLE AISLES.</li> <li>MOVE (E) UTILITIES &amp; UTILITY MONUMENTS AS NECESSARY FOR NEW CONSTRUCTION.</li> <li>APPROXIMATELY 35,000 SF OF LANDSCAPING (OFOI) IN BASE BID</li> <li>ALTERNATE #5: INCLUDE 35,000 SF OF LANDSCAPING, BASKETBALL COURT AND PLAYGROUND IN CONTRACTOR'S SCOPE</li> </ul>	$ \begin{array}{c}             \bigcirc \\             \hline           $	NE

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 $\langle 11 \rangle$  NEW CONCRETE WALK OR PLAZA AROUND EXISTING AND  $\langle 22 \rangle$  LANDSCAPE ISLAND, SEE CIVIL AND LANDSCAPE. NEW FIRE HYDRANT, SEE CIVIL NEW BUILDINGS.  $\langle 23 \rangle$  FIRE APPARATUS TURN AROUND. NEW 6' WIDE PAVED PATH THROUGH PARK. (12) RELOCATED BALLOT DROP BOX. (24) ALTERNATE #4: 2,200 SF OUTDOOR POOL W/ ADDITIONAL EXISTING SIDEWALK TO REMAIN, REPAIR AS NEEDED. INFILL 700 SF OF CONCRETE PATIO SURROUNDING POOL, REFERENCE SWIMMING POOL DRAWINGS. AT EXISTING DRIVEWAY TO BE REMOVED.  $\langle 13 \rangle$  PASSENGER DROP OFF AREA. ADA PARKING SPACES W/ ACCESSIBLE AISLE, CURB RAMP AND SIGNAGE. EXISTING ON STREET PARKING.  $\langle 25 \rangle$  NEW DRINKING FOUNTAIN. NEW BIKE LANE PER CITY OF NEWBERG STANDARD. NEW 2,940 SF PLAYGROUND W/ NEW EQUIPMENT, SOFT (26) RIGHT OF WAY DEDICATION. 15 NEW TREES, SEE LANDSCAPE. SURFACE AND BENCHES (OFOI) 27 NEW CHAINLINK FENCE, MATCH EXISTING HEIGHT, PROVIDE TWO PAIRS OF GATES W/ PANIC HARDWARE. NEW 42' BY 50' ASPHALT BASKETBALL COURT W/ NEW EXISTING TREES TO REMAIN. EQUIPMENT AND BENCHES (OFOI) NEW CUL-DE-SAC W/ NEW 5' WIDE SIDEWALK AND 6'-6" WIDE  $\langle 28 \rangle$  WATER QUALITY PLANTERS, SEE CIVIL AND LANDSCAPE. PLANTING STRIP WITHIN PROPERTY LINE ONLY, ADJACENT (17) NEW GRASS VOLLEYBALL COURT AND STANDARDS. SITE OWNER TO COMPLETE SIDEWALK AND PLANTING (29) SITE BENCH. STRIP ON ADJACENT SITE (18) NEW BIKE RACKS; 5 RACKS FOR 10 SPACES.  $\langle 30 \rangle$  NEW CURB TIGHT SIDEWALK. EXISTING DRIVEWAY LOCATION, PROVIDE NEW CONCRETE  $|\langle 19 \rangle$  TRASH AND RECYCLING ENCLOSURE, CMU W/ SLIDING DRIVEWAY APRON PER CITY OF NEWBERG STANDARD. STEEL GATE. NEW DRIVEWAY WITH CONCRETE APRON PER CITY OF  $\langle 20 \rangle$  NEW ASPHALT SERVICE YARD. NEWBERG STANDARD. 21 5,140 SF CONCRETE PATIO WITH RELOCATED PICNIC TABLES AND PING PONG TABLES.

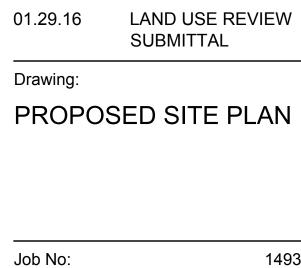






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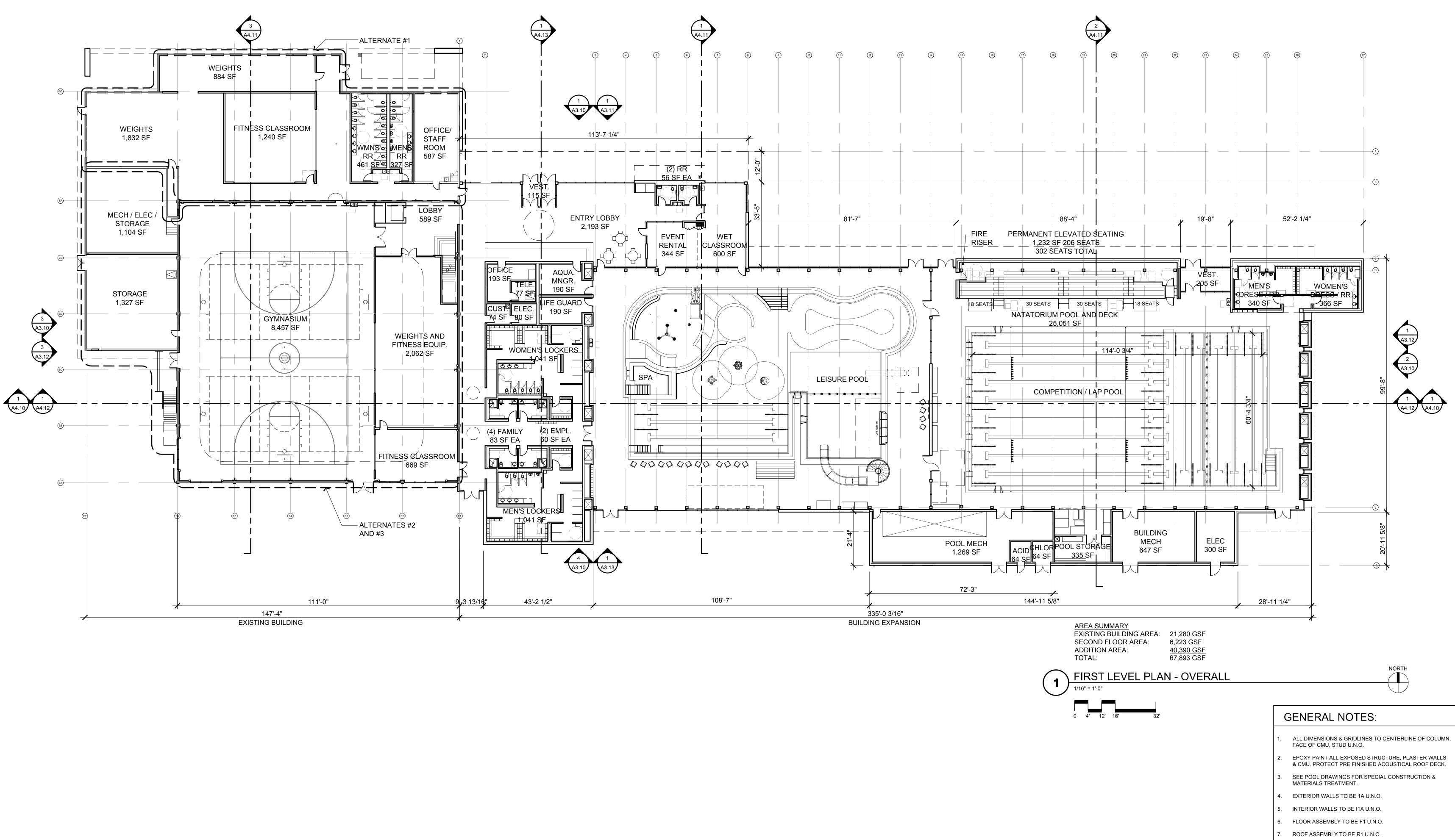




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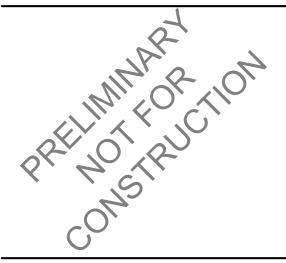
NORTH

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- 8. EXISTING EXTERIOR WALL IS 5A U.N.O.
- REF A4.11 BUILDING SECTIONS FOR ASSEMBLIES









Drawing: FIRST LEVEL PLAN -

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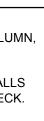
OVERALL

SUBMITTAL

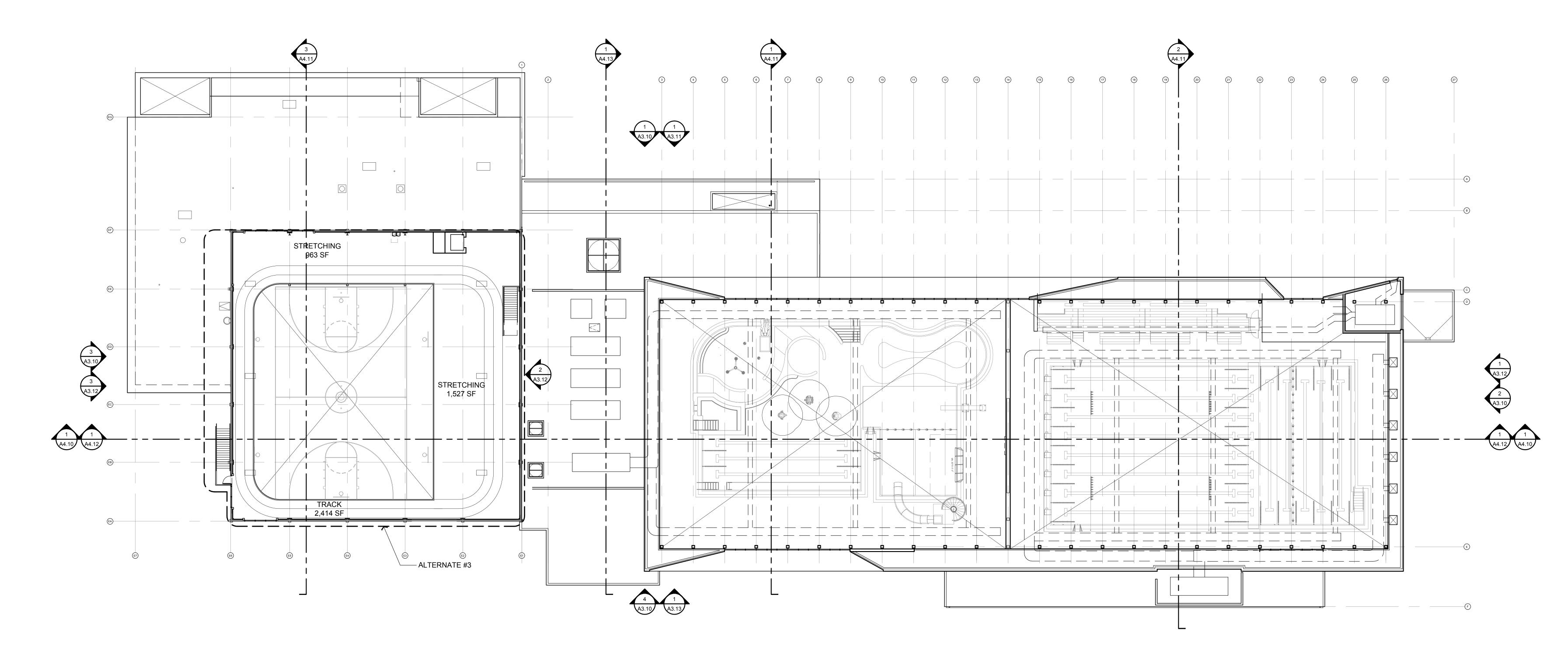
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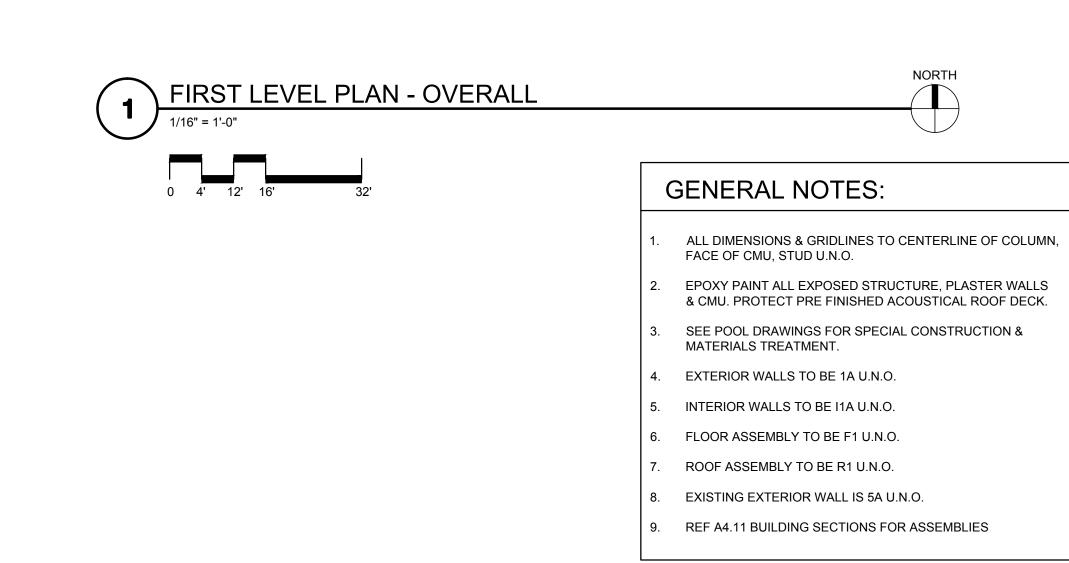
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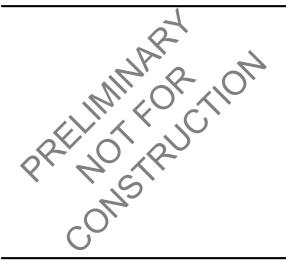


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LAND USE REVIEW SUBMITTAL

Drawing: SECOND LEVEL PLAN -OVERALL

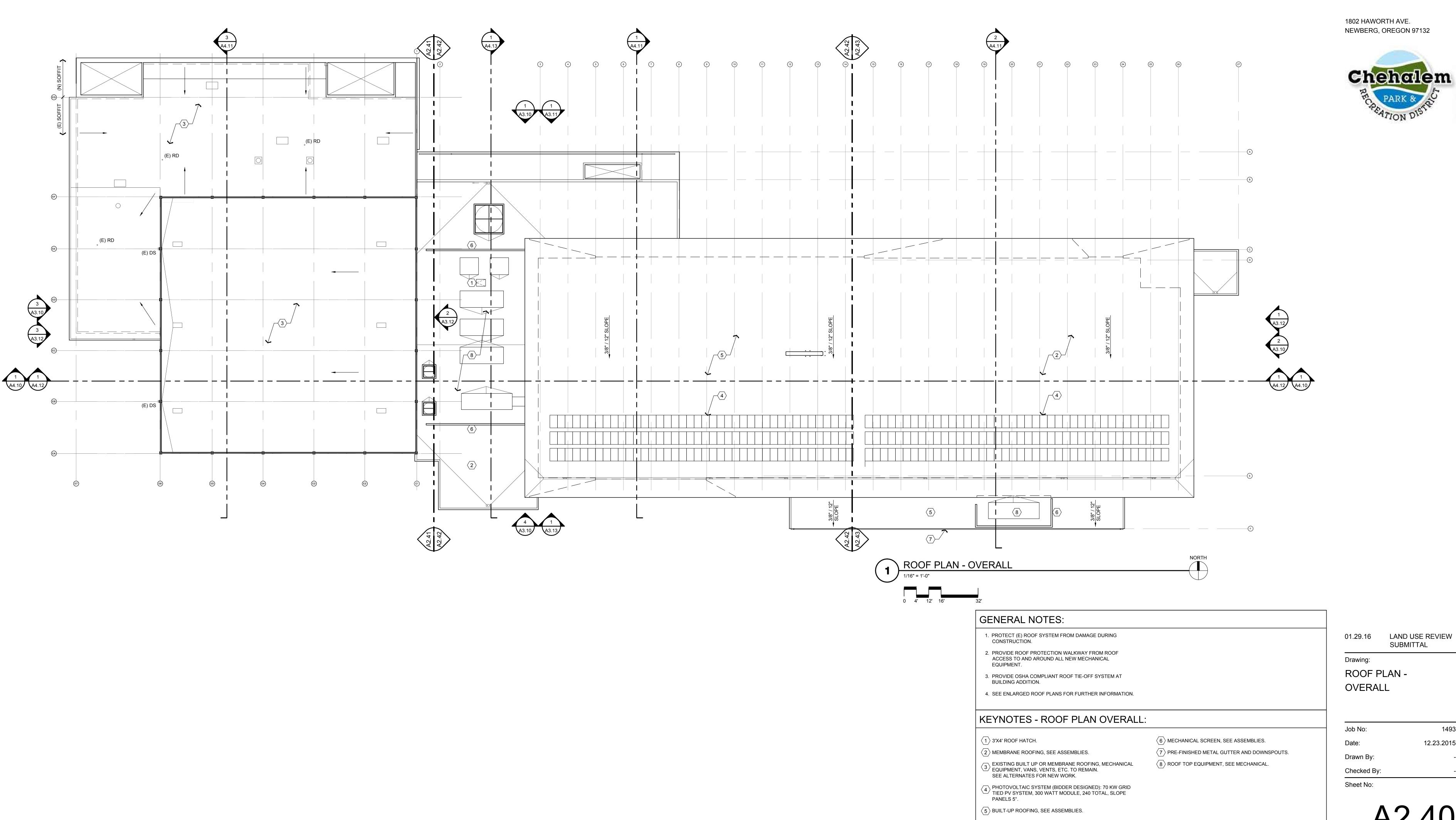
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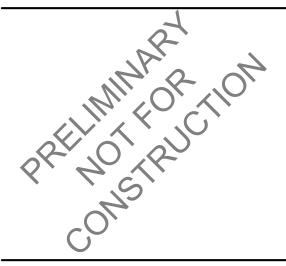
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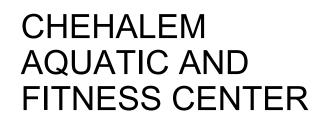
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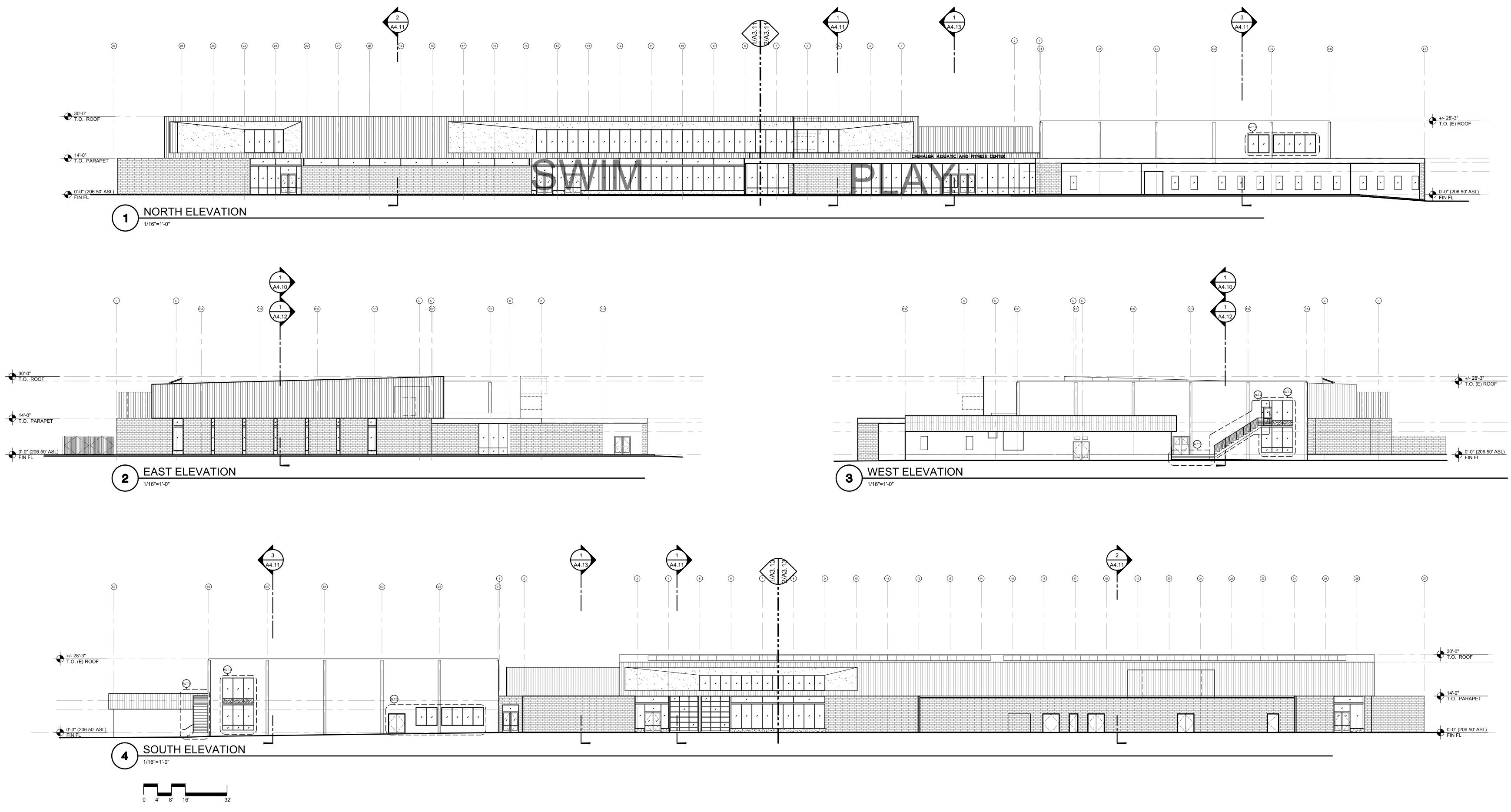


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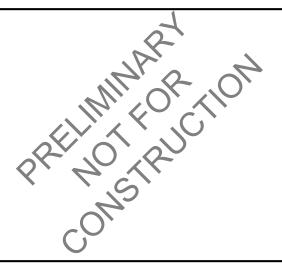


SUBMITTAL



	G	SENERAL NOTES - ELEVATION:				
	1.	ALL DIMENSIONS & GRIDLINES TO CENTERLINE OF COLUMN, FACE OF STUD U.N.O.				
	2.	ALL GLAZING TEMPERED BELOW 18" & WITHIN 12" TO DOOR.				
;	3.	SEE POOL DRAWINGS FOR SPECIAL CONSTRUCTION & MATERIALS TREATMENT.				
	LEGEND - ELEVATION :					









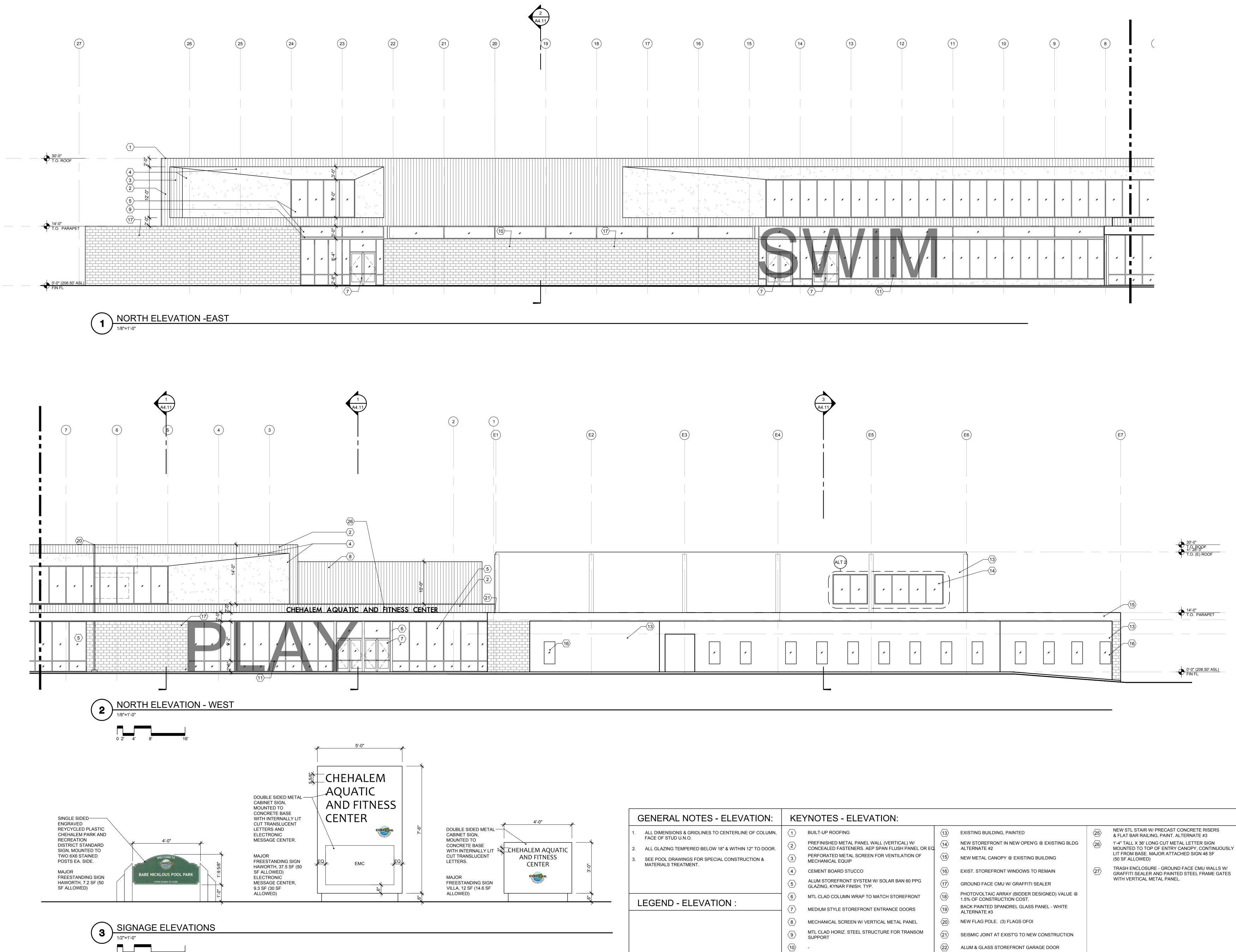
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Drawing: EXTERIOR ELEVATIONS OVERALL

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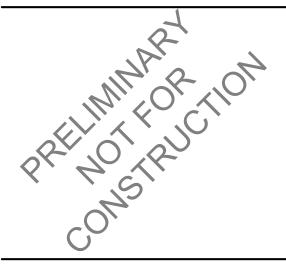


ATTACHMENT 5: APPLICATION

KE	YNOTES - ELEVATION:				
$\langle 1 \rangle$	BUILT-UP ROOFING	(13)	EXISTING BUILDING, PAINTED	25	NEW STL STAIR W/ PRECAST CONCRETE RISERS & FLAT BAR RAILING, PAINT. ALTERNATE #3
<b>(2)</b>	PREFINISHED METAL PANEL WALL (VERTICAL) W/ CONCEALED FASTENERS. AEP SPAN FLUSH PANEL OR EQ.	(14)	NEW STOREFRONT IN NEW OPEN'G @ EXISTING BLDG ALTERNATE #2	<b>26</b>	1'-4" TALL X 36' LONG CUT METAL LETTER SIGN MOUNTED TO TOP OF ENTRY CANOPY, CONTINUO
$\langle 3 \rangle$	PERFORATED METAL SCREEN FOR VENTILATION OF MECHANICAL EQUIP	(15)	NEW METAL CANOPY @ EXISTING BUILDING		LIT FROM BASE. MAJOR ATTACHED SIGN 48 SF (50 SF ALLOWED)
$\langle 4 \rangle$	CEMENT BOARD STUCCO	(16)	EXIST. STOREFRONT WINDOWS TO REMAIN	<b>(27)</b>	TRASH ENCLOSURE - GROUND FACE CMU WALLS V GRAFFITI SEALER AND PAINTED STEEL FRAME GAT
$\langle 5 \rangle$	ALUM STOREFRONT SYSTEM W/ SOLAR BAN 60 PPG GLAZING, KYNAR FINISH. TYP.	<b>(17)</b>	GROUND FACE CMU W/ GRAFFITI SEALER		WITH VERTICAL METAL PANEL.
$\langle 6 \rangle$	MTL CLAD COLUMN WRAP TO MATCH STOREFRONT	(18)	PHOTOVOLTAIC ARRAY (BIDDER DESIGNED) VALUE @ 1.5% OF CONSTRUCTION COST.		
$\langle 7 \rangle$	MEDIUM STYLE STOREFRONT ENTRANCE DOORS	(19)	BACK PAINTED SPANDREL GLASS PANEL - WHITE ALTERNATE #3		
<u>(8</u> )	MECHANICAL SCREEN W/ VERTICAL METAL PANEL	20	NEW FLAG POLE. (3) FLAGS OFOI		
<b>(9</b> )	MTL CLAD HORIZ. STEEL STRUCTURE FOR TRANSOM SUPPORT	<u>&lt;</u> 21>	SEISMIC JOINT AT EXIST'G TO NEW CONSTRUCTION		
(10)	-	<b>(22)</b>	ALUM & GLASS STOREFRONT GARAGE DOOR		
$\langle 11 \rangle$	VINYL WINDOW GRAPHIC	23	-		
(12)	CUT METAL SIGNAGE ON CONTINUOUS CHANNEL	<b>(24)</b>	NEW CIP CONCRETE STAIR W/ FLAT BAR RAILING, PAINT. ALTERNATE #2		

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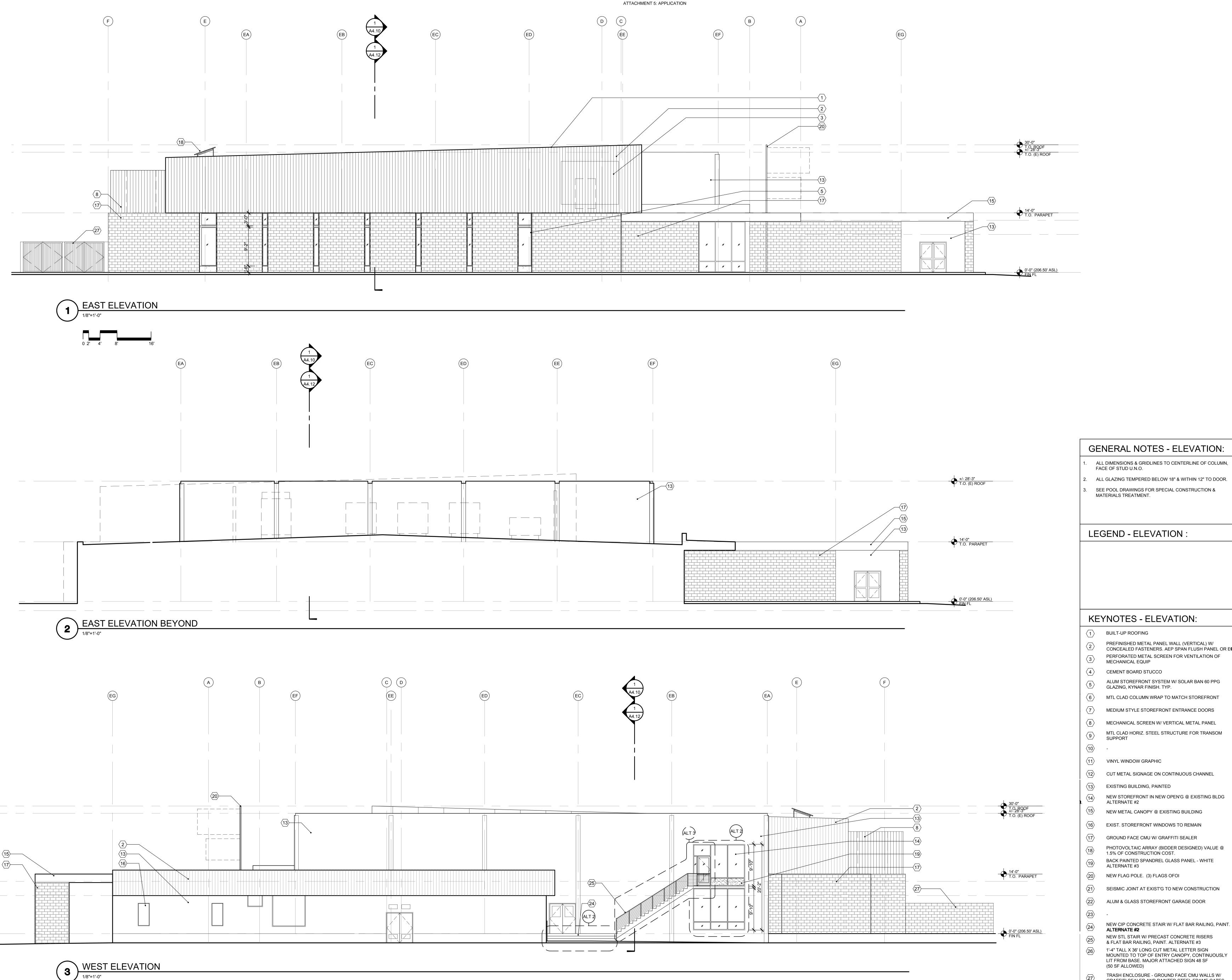
01.29.16 LAND USE REVIEW SUBMITTAL Drawing: EXTERIOR ELEVATIONS NORTH

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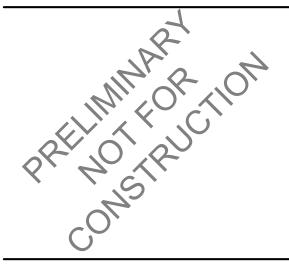
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TRASH ENCLOSURE - GROUND FACE CMU WALLS W/ GRAFFITI SEALER AND PAINTED STEEL FRAME GATES **(27)** WITH VERTICAL METAL PANEL.

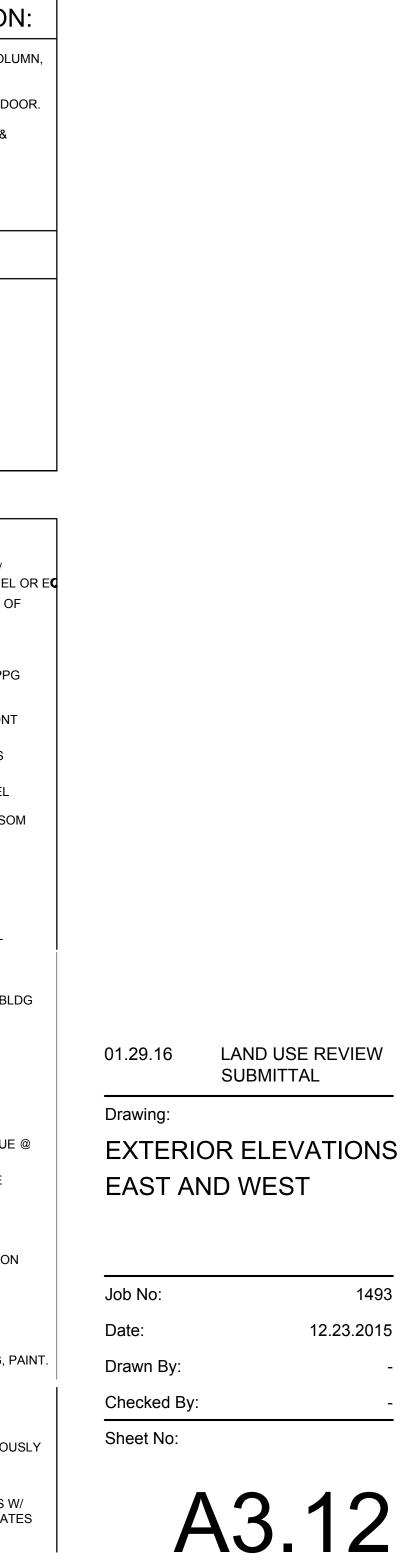


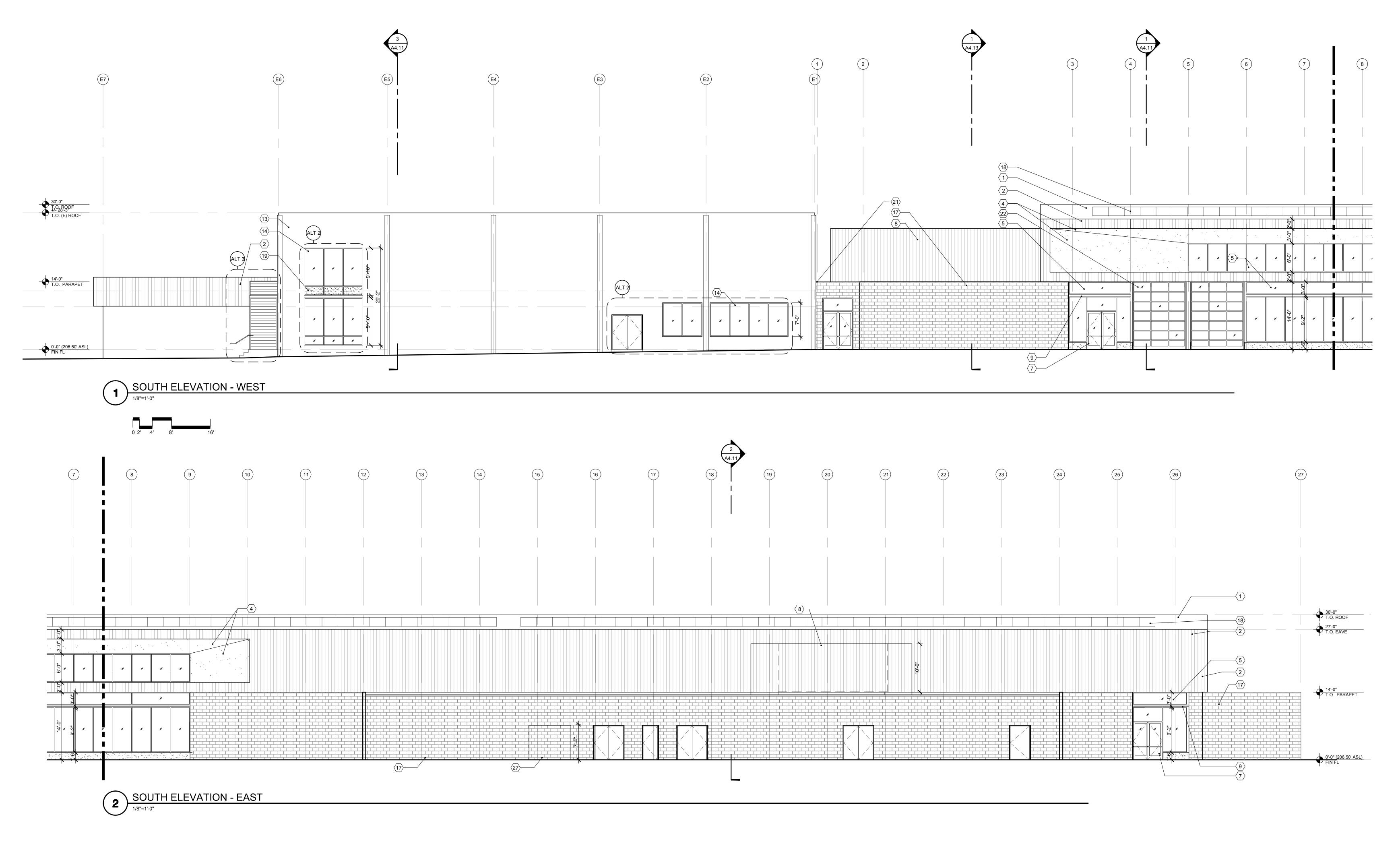




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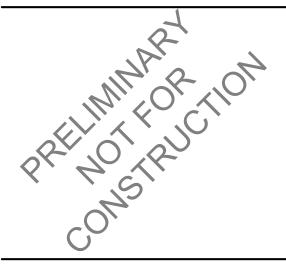




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GENERAL NOTES - ELEVATION:	KE	YNOTES - ELEVATION:				
1. ALL DIMENSIONS & GRIDLINES TO CENTERLINE OF COLUMN, FACE OF STUD U.N.O.	$\langle 1 \rangle$	BUILT-UP ROOFING	(13)	EXISTING BUILDING, PAINTED	<b>25</b>	NEW STL STAIR W/ PRECAST CONCRETE RISERS & FLAT BAR RAILING, PAINT. ALTERNATE #3
2. ALL GLAZING TEMPERED BELOW 18" & WITHIN 12" TO DOOR.	<b>2</b>	PREFINISHED METAL PANEL WALL (VERTICAL) W/ CONCEALED FASTENERS. AEP SPAN FLUSH PANEL OR EQ	(14)	NEW STOREFRONT IN NEW OPEN'G @ EXISTING BLDG ALTERNATE #2	<b>26</b>	1'-4" TALL X 36' LONG CUT METAL LETTER SIGN MOUNTED TO TOP OF ENTRY CANOPY, CONTINUOUSLY
3. SEE POOL DRAWINGS FOR SPECIAL CONSTRUCTION & MATERIALS TREATMENT.	$\langle 3 \rangle$	PERFORATED METAL SCREEN FOR VENTILATION OF MECHANICAL EQUIP	(15)	NEW METAL CANOPY @ EXISTING BUILDING		LIT FROM BASE. MAJOR ATTACHED SIGN 48 SF (50 SF ALLOWED)
	$\langle 4 \rangle$	CEMENT BOARD STUCCO	(16)	EXIST. STOREFRONT WINDOWS TO REMAIN	27	TRASH ENCLOSURE - GROUND FACE CMU WALLS W/ GRAFFITI SEALER AND PAINTED STEEL FRAME GATES
	$\langle 5 \rangle$	ALUM STOREFRONT SYSTEM W/ SOLAR BAN 60 PPG GLAZING, KYNAR FINISH. TYP.	(17)	GROUND FACE CMU W/ GRAFFITI SEALER		WITH VERTICAL METAL PANEL.
LEGEND - ELEVATION :	$\langle 6 \rangle$	MTL CLAD COLUMN WRAP TO MATCH STOREFRONT	(18)	PHOTOVOLTAIC ARRAY (BIDDER DESIGNED) VALUE @ 1.5% OF CONSTRUCTION COST.		
LEGEND - ELEVATION .	$\langle 7 \rangle$	MEDIUM STYLE STOREFRONT ENTRANCE DOORS	(19)	BACK PAINTED SPANDREL GLASS PANEL - WHITE ALTERNATE #3		
	$\langle 8 \rangle$	MECHANICAL SCREEN W/ VERTICAL METAL PANEL	20	NEW FLAG POLE. (3) FLAGS OFOI		
	<b>(9</b> )	MTL CLAD HORIZ. STEEL STRUCTURE FOR TRANSOM SUPPORT	<u>&lt;</u> 21>	SEISMIC JOINT AT EXIST'G TO NEW CONSTRUCTION		
	(10)	-	<b>(22)</b>	ALUM & GLASS STOREFRONT GARAGE DOOR		
	$\langle 11 \rangle$	VINYL WINDOW GRAPHIC	23	-		
	(12)	CUT METAL SIGNAGE ON CONTINUOUS CHANNEL	<u>\</u> 24	NEW CIP CONCRETE STAIR W/ FLAT BAR RAILING, PAINT. ALTERNATE #2		

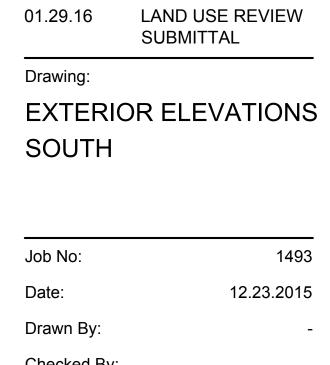






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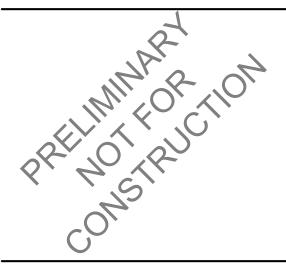
3 AERIAL VIEW LOOKING SOUTHWEST













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Drawing: PERSPECTIVES SITE AND BUILDING

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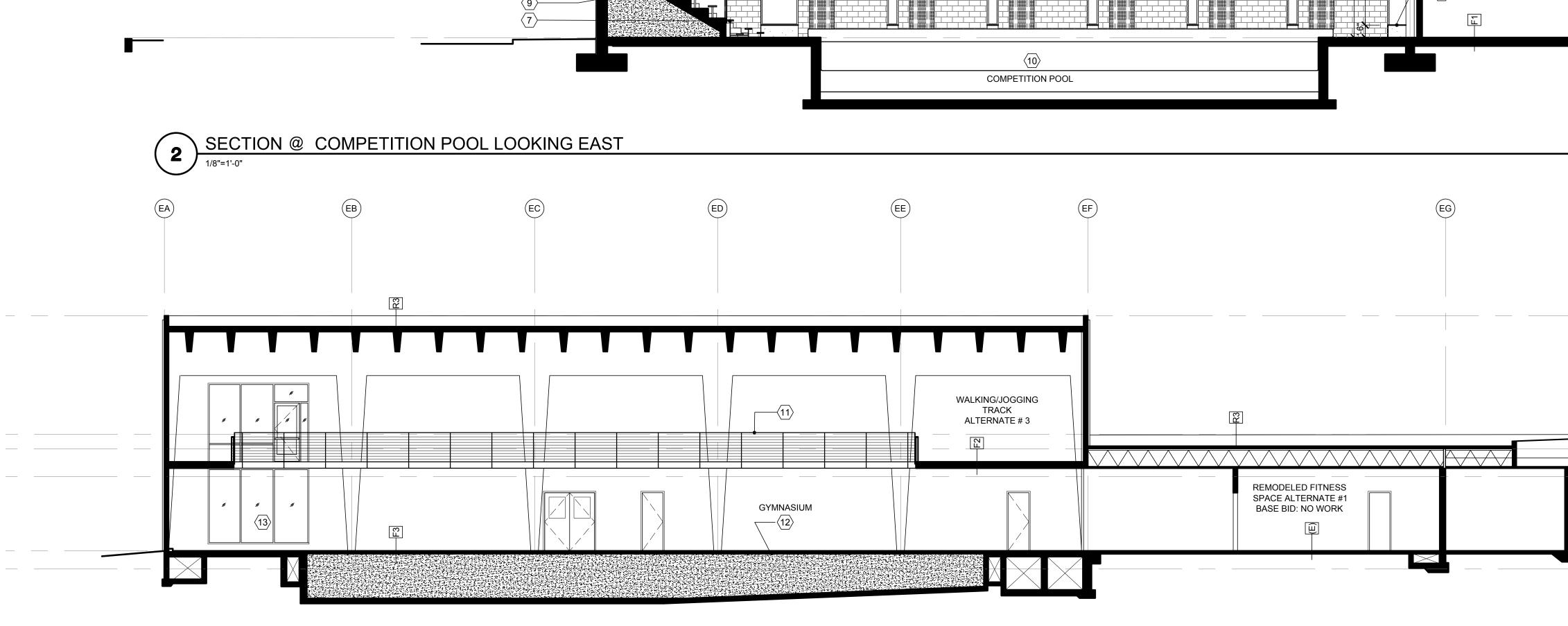


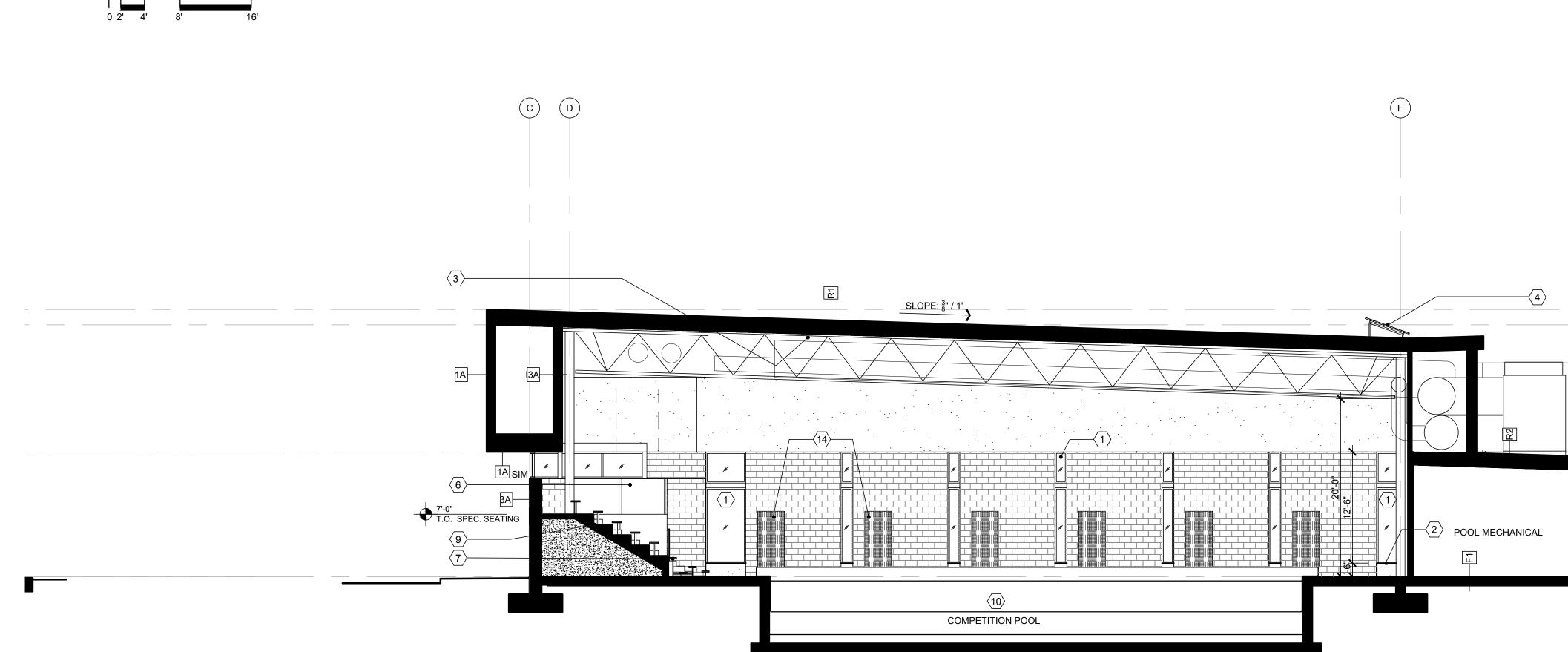


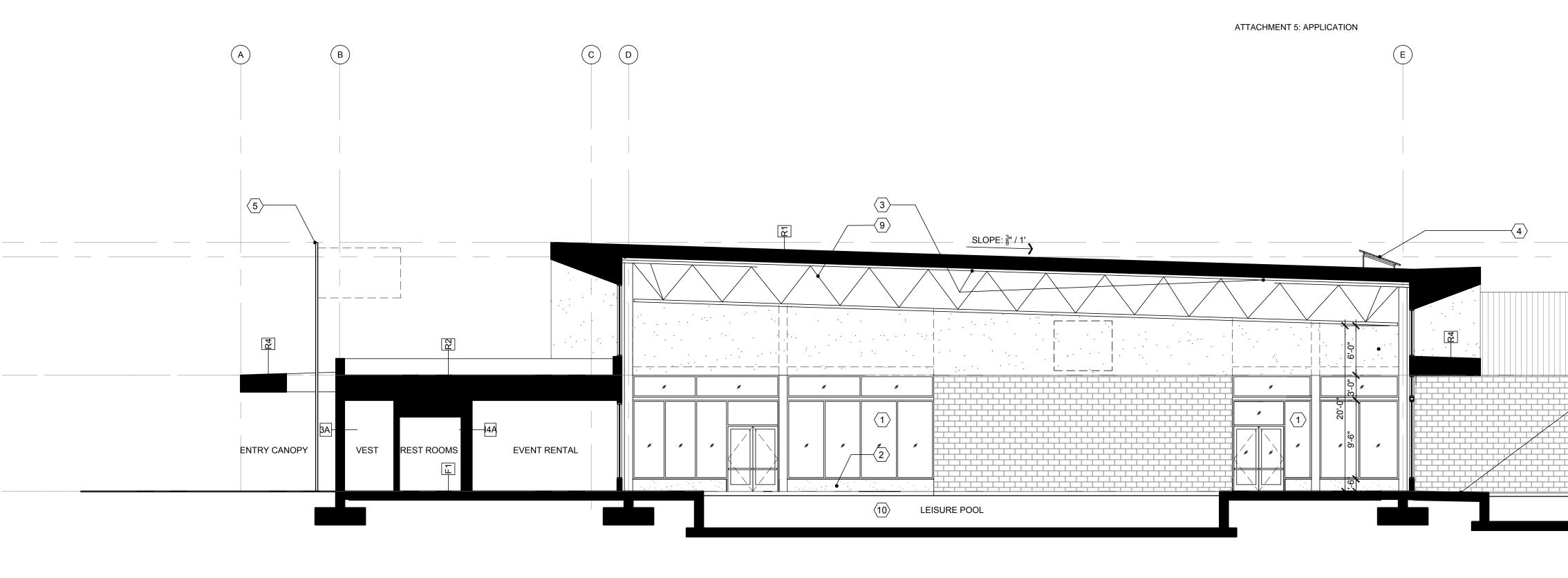
SECTION @ LEISURE POOL LOOKING EAST

1

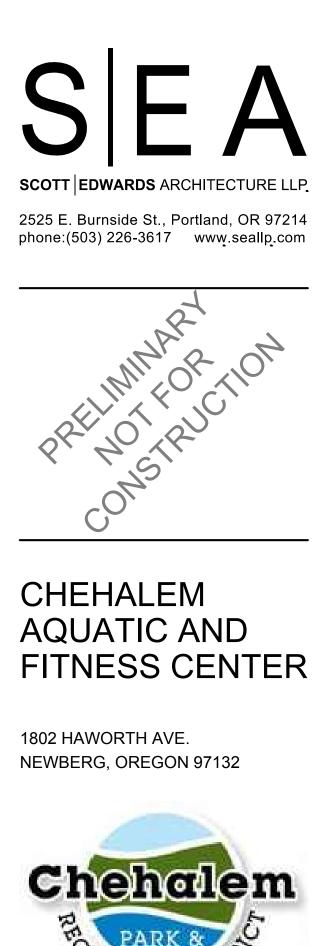
1/8"=1'-0"







	GENERAL NOTES - SECTIONS	
	1. ALL DIMENSIONS & GRIDLINES TO CENTERLINE OF COLUMN, FACE OF STUD U.N.O.	<ol> <li>EXTERIOR WALLS 1A U.N.O.</li> <li>INTERIOR WALLS 11A U.N.O.</li> </ol>
	2. EPOXY PAINT ALL EXPOSED STRUCTURE, PLASTER WALLS & CMU. PROTECT PRE FINISHED ACOUST ROOF DECK	8. FLOOR ASSEMBLY F1 U.N.O.
	3. ALL EXTERIOR STOREFRONT & CLERESTORY SYSTEM IS KAWNEER TRIFAB 601 T OR EQ. GLAZING IS SOLARBAN 60 PPG OR EQ. FINISH TO BE KYNAR, TYP	<ul><li>9. ROOF ASSEMBLY R1 U.N.O.</li><li>10. (E) EXTERIOR WALL 5A U.N.O.</li></ul>
	4. SEE POOL DRAWINGS FOR SPECIAL CONSTRUCTION &	LEGEND - SECTIONS :
	<ul><li>MATERIALS TREATMENT.</li><li>5. SEE NARRATIVES FOR STRUC, M.E.P.T FOR BALANCE OF</li></ul>	WALL TYPES: XX
30'-0" +- T.O. ROOF	INFORMATION.	FLOOR AND ROOF TYPES:
	TYPICAL ASSEMBLIES:	
	ROOF ASSEMBLIES: (DOES NOT INCLD CEILING FINISH)	EXTERIOR WALL ASSEMBLIES:
	TYPE DESCRIPTION         R1       TPO ROOF AT NATATORIUM	TYPE       DESCRIPTION         1A       EXTERIOR - MTL PANELS (AEP SPAN FLUSH PANEL
	80 MIL TPO FULLY ADHERED over COVER BOARD over	OR EQ) W/ MTL STUD PREFINISHED METAL PANEL (VERTICAL) with
OUTDOOR POOL &CONCRETE DECK -3A ALTERNATE # 4	4" NOM (R-20.ci) RIGID INSULATION over VAPOR RETARDER over GYPSUM SHEATHING over	CONCEALED FASTENERS PER MTL. PANEL MANUF. over 1 1/2" (R-7.5) CONTINUOUS RIGID INSULATION with METAL 'Z' CLIPS over
	STEEL PAN DECKING PER STRUCT. over STEEL FRAMING PER STRUCT.	3/8 " DRAIN MAT over LIQUID APPLIED WRB over 5/8" GYPSUM SHEATHING over
	*PROVIDE WALKING PATH FOR MECH ACCESS *PROVIED TAPERED INSUL FOR SLOPE WHERE REQ'D	10" 18 GA. METAL STUDS @ 16" O.C. with R-13 BATT INSULATION over
	R2 TPO ROOF	8" DENS GLASS GOLD over CEMENT BOARD STUCCO SYSTEM * EPOXY PAINT FINISH, TYP
	60 MIL TPO MECHANICALLY FASTENED over	1B @ 6" METAL FRAMING
	COVER BOARD over 4" NOM (R-20.ci) RIGID INSULATION over VAPOR RETARDER over	2A EXTERIOR - MTL PANELS (AEP SPAN FLUSH PANEL OR EQ) W/ MASONRY
	GYPSUM SHEATHING over STEEL PAN DECKING PER STRUCT. over STEEL FRAMING PER STRUCT.	PREFINISHED METAL PANEL (VERTICAL) with CONCEALED FASTENERS PER MTL. PANEL MANUF. over
	*PROVIDE WALKING PATH FOR MECH ACCESS *PROVIED TAPERED INSUL FOR SLOPE WHERE	2 1/2" (R-11.4) CONTINUOUS RIGID INSULATION with METAL 'Z' CLIPS over 3/8 " DRAIN MAT over
	REQ'D R3 @ EXISTING ROOF DECK over	LIQUID APPLIED WRB over 5/8" GYPSUM SHEATHING over 12" THICK CMU over
	EXISTING STRUCT.	$\frac{7}{8}$ " METAL HAT CHANNELS over $\frac{5}{8}$ " DENS GLASS GOLD over
	R4 ENTRY CANOPY ROOF W/ COMPOSITE MTL SOFFIT 4 PLY BUILT UP ROOFING over	VEMENT BOARD STUCCO SYSTEM * EPOXY PAINT FINISH, TYP
	COVER BOARD over 4" NOM (R-20.ci) RIGID INSULATION over GYPSUM SHEATHING over	3A EXTERIOR - GROUND FACE CMU VENEER W/ MASONRY WALL CONST.
	STEEL PAN DECKING PER STRUCT over STEEL FRAMING PER STRUCT. over COMPOSITE MTL PANEL SYSTEM with	GROUND FACE CMU (4") VENEER with ADJUSTABLE VENEER ANCHORS @ 16" O.C. EA WAY over $2\frac{1}{4}$ " AIR SPACE over
	CONCEALED FASTENERS PER MTL. PANEL MANUF.	$2\frac{1}{2}$ " NOM (R-11.4) CONTINUOUS RIGID INSULATION over LIQUID APPLIED WRB over
	FLOOR ASSEMBLIES: F1 SLAB ON GRADE FLOOR	8" CMU (CAVITY MAY OCCUR) over * EPOXY PAINT (MECHANICAL/STORAGE ROOMS) * CERAMIC WALL TILE @ LOCKER ROOMS
	FINISH FLOORING PER PLAN over	* GROUND FACE CMU W/ SEALER @ NATATORIUM 3B EXTERIOR - GROUND FACE CMU VENEER @
	CONC. S.O.G. PER STRUCTURAL over UNDER-SLAB VAPOR RETARDER / SOIL GAS RETARDER over COMPACTED ROCK BASE PER SOILS REPORT over	3C EXTERIOR - GROUND FACE CMU VENEER W/ 6"
	COMPACTED SUBGRADE * SEE PLAN FOR EXPOSED CONC SLAB AS FIN. FLOOR.	MTL STUD
30'-0" +- T.O. ROOF	POLISH AND SEAL	4A EXTERIOR - CEMENT BOARD STUCCO W/ MTL STUD
	F2 CONCRETE FLOOR OVER STEEL PAN FINISH FLOORING PER PLAN over	CEMENT BOARD STUCCO SYSTEM over 2 1/2" NOM(R-11.4ci) CONTINUOUS RIGID INSULATION with METAL 'Z' CLIPS over
٩	3.5" CONC. PER STRUCTURAL over STEEL PAN DECK PER STRUCT over STEEL FRAMING PER STRUCT over	3/8 " DRAIN MAT over LIQUID APPLIED WRB over 5/8" DENS GLASS GOLD over
נ	* RUNNING TRACK AT (E) GYM - ALTERNATE #3	6" 18 GA. METAL STUDS @ 16" O.C. with R-21 BATT INSULATION over VAPOR BARRIER
14'-0" T.O. PARAPET		5A EXTERIOR - EXISTING CONC WALL CONST (EXISTING GYM BUILDING)
1	F3 NEW SLAB @ EXISTING COND FINISH FLOORING PER PLAN over CONC. S.O.G. PER STRUCTURAL over	NEW ELASTOMERIC PAINT over EXIST'G CONCRETE/CMU WALL CONST over
	UNDER-SLAB VAPOR RETARDER / SOIL GAS RETARDER over COMPACTED ROCK BASE PER SOILS REPORT over COMPACTED SUBGRADE	$2\frac{1}{2}$ " (R-11.ci) RIGID INSULATION with 3" METAL 'Z' CLIPS over
	INTERIOR WALL ASSEMBLIES:	<ul><li>(1) LAYER 5/8" IMPACT RESISTANT GWB @ INTERIOR</li><li>6A EXTERIOR - MECHANICAL SCREEN WALL</li></ul>
0'-0" (206.50' ASL)	INTERIOR WALL ASSEMBLIES.	PREFINISHED MTL PANEL (VERTICAL) AEP SPAN BOX RIB OR EQUAL on
l'	8" CMU * GROUND FACE W/ CLEAR SEALER WHERE	STRUC STEEL FRAMING PER STRUC.
	EXPOSED TO VIEW * CERAMIC WALL TILE @ LOCKER ROOM	INTERIOR WALL ASSEMBLIES (CONT'D):
	I1B INTERIOR - 12" CMU WALL * GROUND FACE W/ CLEAR SEALER WHERE	I4A INTERIOR - 6" METAL STUD (1) LAYER 5/8" GWB over
	EXPOSED TO VIEW I1C INTERIOR - 6" CMU WALL	6" 18 GA. METAL STUDS @ 16" O.C. W/ ACOUSTIC BATT INSULATION over
	* GROUND FACE W/ CLEAR SEALER WHERE EXPOSED TO VIEW	(1) LAYER 5/8" GWB I4B @ 4" 20 GA MTL STUD
	I2A INTERIOR - FURRED CMU WALL	15A INTERIOR - FURRED METAL STUD
	INTERIOR OR EXTERIOR WALL over (2") ELEC, (6") PLUMB OR (14") TOILET CHASE over 6" CMU	4" 20 GA. METAL STUDS @ 16" O.C. over (1) LAYER 5/8" GWB with ACOUSTIC BATT INSULATION
	* GROUND FACE W/ CLEAR SEALER WHERE EXPOSED TO VIEW	I6A INTERIOR - 1-HR WALL
	* CERAMIC WALL TILE @ LOCKER ROOM I3A INTERIOR - PLASTER ON 6" MTL STUD	5" TYPE 'X' GYPSUM WALLBOARD over 6" 18 GA. STEEL STUDS @ 16" O.C. over
28'.77' +- T.O. (E) PARAPET	CEMENT BOARD STUCCO SYSTEM over	5" TYPE 'X' GYPSUM WALLBOARD GWB APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH
	5/8       DENS GLASS GOLD over         6" 18 GA. METAL STUDS @ 16" O.C. over         5/8       DENS GLASS GOLD over	SIDE OF STUDS WITH 1" TYPE S DRYWALL SCREWS 8" O.C. AT VERTICAL JOINTS AND 12" O.C. AT FLOOR AND CEILING RUNNERS AND INTERMEDIATE STUDS.
	CEMENT BOARD STUCCO SYSTEM over EPOXY PAINT CEMENT BOARD STUCCO	*STC 45 TO 49 WHEN INSTALLED WITH 3 $\frac{1}{2}$ " GLASS FIBER INSULATION FRICTION FIT IN STUD SPACE.
	I3B INTERIOR - CEMENT BOARD PLASTER W/ 12" CMU WALL	I6B @ 4" 20 GA MTL STUD
• 14'-0" +- T.O. PARAPET		
	KEY NOTES:	
	ALUMINUM STORE FRONT SYSTEM W/ CLEAR INSULATED GLAZING, KYNAR FINISH. TYP.	8 LONG SPAN STEEL TRUSS, EPOXY PAINT ALL EXPOSED SURFACES. SEE STRUCT FOR INFORMATION .
Δ'-0" (206 50' Δ SI )	2 18" CONCRETE CURB	(9) CONCRETE PLATFORM FOR BLEACHER SEATING. MED
0'-0" (206.50' ASL) FIN FL 0'-0" (204.33' ASL) (E) MECH LEVEL	3       ACOUSTIC DRAPED PANELS, CONTINUOUS LENGTH OF NATATORIUM EA WAY (BOTH POOL AREAS) JUST BELOW         DOOL DEDIC       DOOL DEDIC         DOOL DEDIC       DOOL DEDIC	BROOM FINISH (10) NO DIVING. WATER IN POOL IS DIAGRAMMATIC ONLY.
	ROOF DECK. G&S ACOUSTICS' BANNERS (BN) OR EQ.	CABLE RAILING W/ PAINTED STL MTL SUPPORT
	1.5% OF CONSTRUCTION COST.       5       NEW FLAG POLE	(12) NEW HARDWOOD GYM FLOOR @ NEW SLAB & INFILL @ (E) POOL
	(3)     NEW FLAG FOLL       (6)     ADA LIFT TO UPPER PLATFORM	(13) NEW STOREFRONT @ NEW OPEN'G IN (E) BUILDING. ALTERNATE #2
	(7) 'TIP AND ROLL' BLEACHER SEATING	36" X 80" HVAC RETURN
		$\langle 15 \rangle$ 1'-4" TALL X 36' LONG CUT METAL LETTER SIGN



SUBMITTAL
Drawing:
BUILDING SECTIONS

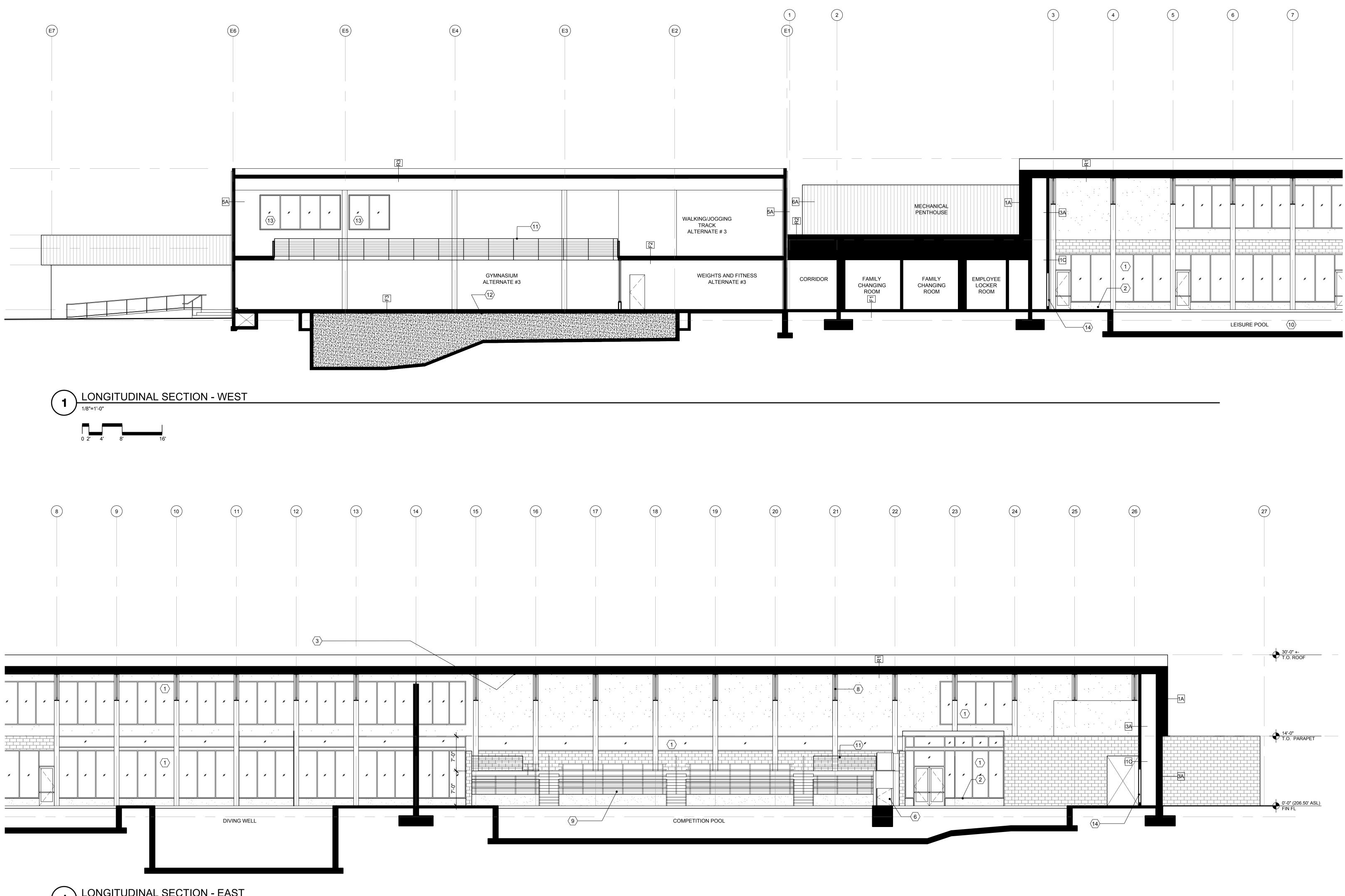
LAND USE REVIEW

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Job No: Date: Drawn By: Checked By: Sheet No:

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1493 12.23.2015 -



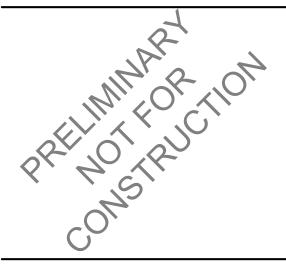
**1** LONGITUDINAL SECTION - EAST

## **GENERAL NOTES - SECTIONS**

1.	ALL DIMENSIONS & GRIDLINES TO CENTERLINE OF COLUMN, FACE OF STUD U.N.O.
2.	EPOXY PAINT ALL EXPOSED STRUCTURE, PLASTER WALLS & CMU. PROTECT PRE FINISHED ACOUST ROOF DECK
3.	ALL EXTERIOR STOREFRONT & CLERESTORY SYSTEM IS KAWNEER TRIFAB 601 T OR EQ. GLAZING IS SOLARBAN 60 PPG OR EQ. FINISH TO BE KYNAR, TYP
4.	SEE POOL DRAWINGS FOR SPECIAL CONSTRUCTION & MATERIALS TREATMENT.
5.	SEE NARRATIVES FOR STRUC, M.E.P.T FOR BALANCE OF INFORMATION.

	KEY NOTES:	
6.       EXTERIOR WALLS       1A U.N.O.         7.       INTERIOR WALLS       I1A U.N.O.         8.       FLOOR ASSEMBLY       F1 U.N.O.         9.       ROOF ASSEMBLY       R1 U.N.O.         10.       (E) EXTERIOR WALL       5A U.N.O.         WALL TYPES: (PLAN VIEW TYP)         FLOOR AND ROOF TYPES: (SECTION VIEW TYP)	<ul> <li>ALUMINUM STORE FRONT SYSTEM W/ CLEAR INSULATED GLAZING, KYNAR FINISH. TYP.</li> <li>18" CONCRETE CURB</li> <li>ACOUSTIC DRAPED PANELS, CONTINUOUS LENGTH OF NATATORIUM EA WAY (BOTH POOL AREAS) JUST BELOW ROOF DECK. G&amp;S ACOUSTICS' BANNERS (BN) OR EQ.</li> <li>PHOTOVOLTAIC ARRAY (BIDDER DESIGNED) VALUE @ 1.5% OF CONSTRUCTION COST.</li> <li>NEW FLAG POLE</li> <li>ADA LIFT TO UPPER PLATFORM</li> <li>'TIP AND ROLL' BLEACHER SEATING</li> </ul>	<ul> <li>(8) LONG SPAN STEEL TRUSS, EPOXY PAINT ALL EXPOSED SURFACES. SEE STRUCT FOR INFORMATION.</li> <li>(9) CONCRETE PLATFORM FOR BLEACHER SEATING. MED BROOM FINISH</li> <li>(10) NO DIVING. WATER IN POOL IS DIAGRAMMATIC ONLY.</li> <li>(11) CABLE RAILING W/ PAINTED STL MTL SUPPORT</li> <li>(12) NEW HARDWOOD GYM FLOOR @ NEW SLAB &amp; INFILL @ (E) POOL</li> <li>(13) NEW STOREFRONT @ NEW OPEN'G IN (E) BUILDING. ALTERNATE #2</li> <li>(14) 36" X 80" HVAC RETURN</li> </ul>
		(15) 1'-4" TALL X 36' LONG CUT METAL LETTER SIGN







1802 HAWORTH AVE. NEWBERG, OREGON 97132



01.29.16 LAND USE REVIEW SUBMITTAL

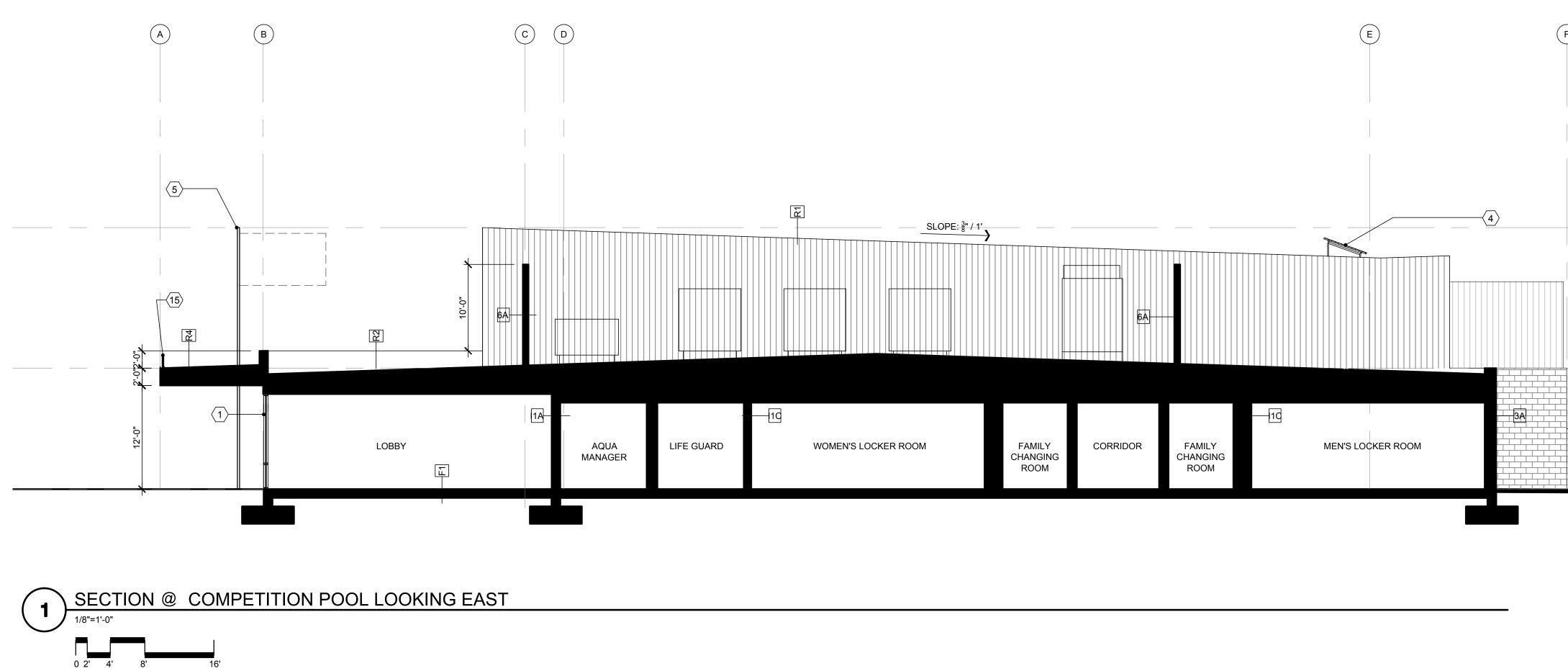
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Drawing: **BUILDING SECTIONS -**ENLARGED

Job No: Date: Drawn By: Checked By: Sheet No:

1493 12.23.2015

A4.12



	GENERAL NOTES - SECTIONS	
	1. ALL DIMENSIONS & GRIDLINES TO CENTERLINE OF COLUMN, FACE OF STUD U.N.O.	6. EXTERIOR WALLS 1A U.N.O.
	2. EPOXY PAINT ALL EXPOSED STRUCTURE, PLASTER WALLS	7. INTERIOR WALLS I1A U.N.O.
	<ul><li>&amp; CMU. PROTECT PRE FINISHED ACOUST ROOF DECK</li><li>3. ALL EXTERIOR STOREFRONT &amp; CLERESTORY SYSTEM IS</li></ul>	<ol> <li>FLOOR ASSEMBLY F1 U.N.O.</li> <li>ROOF ASSEMBLY R1 U.N.O.</li> </ol>
	KAWNEER TRIFAB 601 T OR EQ. GLAZING IS SOLARBAN 60 PPG OR EQ. FINISH TO BE KYNAR, TYP	9.ROOF ASSEMBLYRTU.N.O.10.(E) EXTERIOR WALL5A U.N.O.
F	4. SEE POOL DRAWINGS FOR SPECIAL CONSTRUCTION & MATERIALS TREATMENT.	LEGEND - SECTIONS :
	5. SEE NARRATIVES FOR STRUC, M.E.P.T FOR BALANCE OF	WALL TYPES: XX
	INFORMATION.	FLOOR AND ROOF TYPES:
	TYPICAL ASSEMBLIES:	(SECTION VIEW TYP)
	ROOF ASSEMBLIES: (DOES NOT INCLD CEILING FINISH)	EXTERIOR WALL ASSEMBLIES:
	TYPE DESCRIPTION	TYPE DESCRIPTION
	R1 TPO ROOF AT NATATORIUM	1A EXTERIOR - MTL PANELS (AEP SPAN FLUSH PANEL OR EQ) W/ MTL STUD
T.O. ROOF	80 MIL TPO FULLY ADHERED over COVER BOARD over 4" NOM (R-20.ci) RIGID INSULATION over	PREFINISHED METAL PANEL (VERTICAL) with CONCEALED FASTENERS PER MTL. PANEL MANUF. over
	VAPOR RETARDER over GYPSUM SHEATHING over	1 1/2" (R-7.5) CONTINUOUS RIGID INSULATION with METAL 'Z' CLIPS over
	STEEL PAN DECKING PER STRUCT. over STEEL FRAMING PER STRUCT.	3/8 " DRAIN MAT over LIQUID APPLIED WRB over 5/8" GYPSUM SHEATHING over
	*PROVIDE WALKING PATH FOR MECH ACCESS *PROVIED TAPERED INSUL FOR SLOPE WHERE REQ'D	10" 18 GA. METAL STUDS @ 16" O.C. with R-13 BATT INSULATION over
14'-0"		<sup>5</sup> <sup>™</sup> DENS GLASS GOLD over CEMENT BOARD STUCCO SYSTEM * EPOXY PAINT FINISH, TYP
$\begin{array}{c} \bullet \\ \bullet $		1B @ 6" METAL FRAMING
	60 MIL TPO MECHANICALLY FASTENED over COVER BOARD over 4" NOM (R-20.ci) RIGID INSULATION over	2A EXTERIOR - MTL PANELS (AEP SPAN FLUSH PANEL
	VAPOR RETARDER over GYPSUM SHEATHING over STEEL PAN DECKING PER STRUCT. over	OR EQ) W/ MASONRY PREFINISHED METAL PANEL (VERTICAL) with
	STEEL PAN DECKING PER STRUCT. STEEL FRAMING PER STRUCT. *PROVIDE WALKING PATH FOR MECH ACCESS	CONCEALED FASTENERS PER MTL. PANEL MANUF. over 2 1/2" (R-11.4) CONTINUOUS RIGID INSULATION with
PINTL	*PROVIED TAPERED INSUL FOR SLOPE WHERE REQ'D	METAL 'Z' CLIPS over 3/8 " DRAIN MAT over LIQUID APPLIED WRB over
_	R3 @ EXISTING ROOF DECK over EXISTING STRUCT.	5/8" GYPSUM SHEATHING over 12" THICK CMU over
	R4 ENTRY CANOPY ROOF W/ COMPOSITE MTL SOFFIT	<sup>7</sup> / <sub>8</sub> " METAL HAT CHANNELS over <sup>5</sup> / <sub>8</sub> " DENS GLASS GOLD over VEMENT BOARD STUCCO SYSTEM
	4 PLY BUILT UP ROOFING over	* EPOXY PAINT FINISH, TYP
	COVER BOARD over 4" NOM (R-20.ci) RIGID INSULATION over GYPSUM SHEATHING over	3A EXTERIOR - GROUND FACE CMU VENEER W/ MASONRY WALL CONST.
	STEEL PAN DECKING PER STRUCT over STEEL FRAMING PER STRUCT. over COMPOSITE MTL PANEL SYSTEM with	GROUND FACE CMU (4") VENEER with ADJUSTABLE VENEER ANCHORS @ 16" O.C. EA WAY over
	COMPOSITE MIL PANEL SYSTEM with CONCEALED FASTENERS PER MTL. PANEL MANUF.	2 <sup>1</sup> / <sub>4</sub> " AIR SPACE over 2 <sup>1</sup> / <sub>2</sub> " NOM (R-11.4) CONTINUOUS RIGID INSULATION over LIQUID APPLIED WRB_over
	FLOOR ASSEMBLIES:	8" CMU (CAVITY MAY OCCUR) over * EPOXY PAINT (MECHANICAL/STORAGE ROOMS)
	F1 SLAB ON GRADE FLOOR	* CERAMIC WALL TILE @ LOCKER ROOMS * GROUND FACE CMU W/ SEALER @ NATATORIUM
	FINISH FLOORING PER PLAN over CONC. S.O.G. PER STRUCTURAL over UNDER-SLAB VAPOR RETARDER / SOIL GAS RETARDER over	3B EXTERIOR - GROUND FACE CMU VENEER @ EXISTING MASONRY WALL
	COMPACTED ROCK BASE PER SOILS REPORT over COMPACTED SUBGRADE	3C EXTERIOR - GROUND FACE CMU VENEER W/ 6" MTL STUD
	* SEE PLAN FOR EXPOSED CONC SLAB AS FIN. FLOOR. POLISH AND SEAL	4A EXTERIOR - CEMENT BOARD STUCCO W/
	F2 CONCRETE FLOOR OVER STEEL PAN	MTL STUD CEMENT BOARD STUCCO SYSTEM over
	FINISH FLOORING PER PLAN over	2 1/2" NOM(R-11.4ci) CONTINUOUS RIGID INSULATION with METAL 'Z' CLIPS over
	3.5" CONC. PER STRUCTURAL over STEEL PAN DECK PER STRUCT over STEEL FRAMING PER STRUCT over	3/8 " DRAIN MAT over LIQUID APPLIED WRB over 5/8" DENS GLASS GOLD over
	* RUNNING TRACK AT (E) GYM - ALTERNATE #3	6" 18 GA. METAL STUDS @ 16" O.C. with R-21 BATT INSULATION over VAPOR BARRIER
		5A EXTERIOR - EXISTING CONC WALL CONST
	F3 NEW SLAB @ EXISTING COND FINISH FLOORING PER PLAN over	(EXISTING GYM BUILDING) NEW ELASTOMERIC PAINT over
	CONC. S.O.G. PER STRUCTURAL over UNDER-SLAB VAPOR RETARDER / SOIL GAS RETARDER over COMPACTED ROCK BASE PER SOILS REPORT over	EXIST'G CONCRETE/CMU WALL CONST over $2\frac{1}{2}$ " (R-11.ci) RIGID INSULATION with
	COMPACTED ROCK BASE PER SOILS REPORT OVER COMPACTED SUBGRADE	3" METAL 'Z' CLIPS over (1) LAYER 5/8" IMPACT RESISTANT GWB @ INTERIOR
	INTERIOR WALL ASSEMBLIES:	6A EXTERIOR - MECHANICAL SCREEN WALL
	11A INTERIOR - TYP CMU BEARING WALL	PREFINISHED MTL PANEL (VERTICAL) AEP SPAN BOX RIB OR EQUAL on STRUC STEEL FRAMING PER STRUC.
	8" CMU * GROUND FACE W/ CLEAR SEALER WHERE	
	EXPOSED TO VIEW * CERAMIC WALL TILE @ LOCKER ROOM	INTERIOR WALL ASSEMBLIES (CONT'D):
	I1B INTERIOR - 12" CMU WALL * GROUND FACE W/ CLEAR SEALER WHERE EXPOSED TO VIEW	I4A INTERIOR - 6" METAL STUD (1) LAYER 5/8" GWB over
	I1C INTERIOR - 6" CMU WALL	6" 18 GA. METAL STUDS @ 16" O.C. W/ ACOUSTIC BATT INSULATION over (1) LAYER 5/8" GWB
	* GROUND FACE W/ CLEAR SEALER WHERE EXPOSED TO VIEW	(1) LAYER 5/8" GWB I4B @ 4" 20 GA MTL STUD
	I2A INTERIOR - FURRED CMU WALL	I5A INTERIOR - FURRED METAL STUD
	INTERIOR OR EXTERIOR WALL over (2") ELEC, (6") PLUMB OR (14") TOILET CHASE over	4" 20 GA. METAL STUDS @ 16" O.C. over
	6" CMU * GROUND FACE W/ CLEAR SEALER WHERE EXPOSED TO	(1) LAYER 5/8" GWB with ACOUSTIC BATT INSULATION I6A INTERIOR - 1-HR WALL
	VIEW * CERAMIC WALL TILE @ LOCKER ROOM	I6A INTERIOR - 1-HR WALL §" TYPE 'X' GYPSUM WALLBOARD over
	I3A INTERIOR - PLASTER ON 6" MTL STUD	6" 18 GA. STEEL STUDS @ 16" O.C. over
	CEMENT BOARD STUCCO SYSTEM over	GWB APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE OF STUDS WITH 1" TYPE S DRYWALL SCREWS 8" O.C.
	6" 18 GA. METAL STUDS @ 16" O.C. over <sup>5</sup> / <sub>8</sub> " DENS GLASS GOLD over CEMENT BOARD STUCCO SYSTEM over	AT VERTICAL JOINTS AND 12" O.C. AT FLOOR AND CEILING RUNNERS AND INTERMEDIATE STUDS.
	EPOXY PAINT CEMENT BOARD STUCCO	*STC 45 TO 49 WHEN INSTALLED WITH 3 $\frac{1}{2}$ " GLASS FIBER INSULATION FRICTION FIT IN STUD SPACE.
	I3B INTERIOR - CEMENT BOARD PLASTER W/ 12" CMU WALL	I6B @ 4" 20 GA MTL STUD
	KEY NOTES:	
	ALUMINUM STORE FRONT SYSTEM W/ CLEAR INSULATED GLAZING, KYNAR FINISH. TYP.	8 LONG SPAN STEEL TRUSS, EPOXY PAINT ALL EXPOSED SURFACES. SEE STRUCT FOR INFORMATION .
	2 18" CONCRETE CURB	(9) CONCRETE PLATFORM FOR BLEACHER SEATING. MED
	(3) ACOUSTIC DRAPED PANELS, CONTINUOUS LENGTH OF NATATORIUM EA WAY (BOTH POOL AREAS) JUST BELOW	$\begin{array}{c} & \\ & \\ \hline \\$
	ROOF DECK. G&S ACOUSTICS' BANNERS (BN) OR EQ.	$\langle 11 \rangle \qquad \text{CABLE RAILING W/ PAINTED STL MTL SUPPORT}$
	4       PHOTOVOLTAIC ARRAY (BIDDER DESIGNED) VALUE @         1.5% OF CONSTRUCTION COST.	<ul><li>(12) NEW HARDWOOD GYM FLOOR @ NEW SLAB &amp; INFILL @</li><li>(E) POOL</li></ul>
	5 NEW FLAG POLE	(13) NEW STOREFRONT @ NEW OPEN'G IN (E) BUILDING.
	$ \begin{array}{ c c c } \hline & & & & & & \\ \hline & & & & & \\ \hline & & & &$	ALTERNATE #2

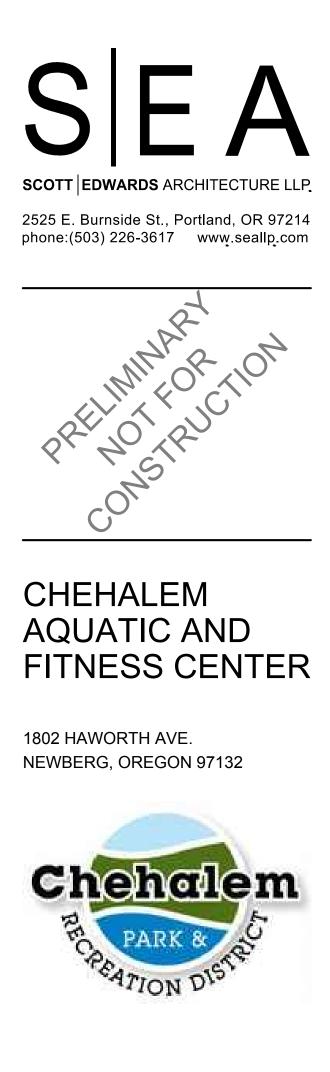
 $\langle 7 \rangle$ 

'TIP AND ROLL' BLEACHER SEATING

 $\langle 14 \rangle$ 

36" X 80" HVAC RETURN

(15) 1'-4" TALL X 36' LONG CUT METAL LETTER SIGN

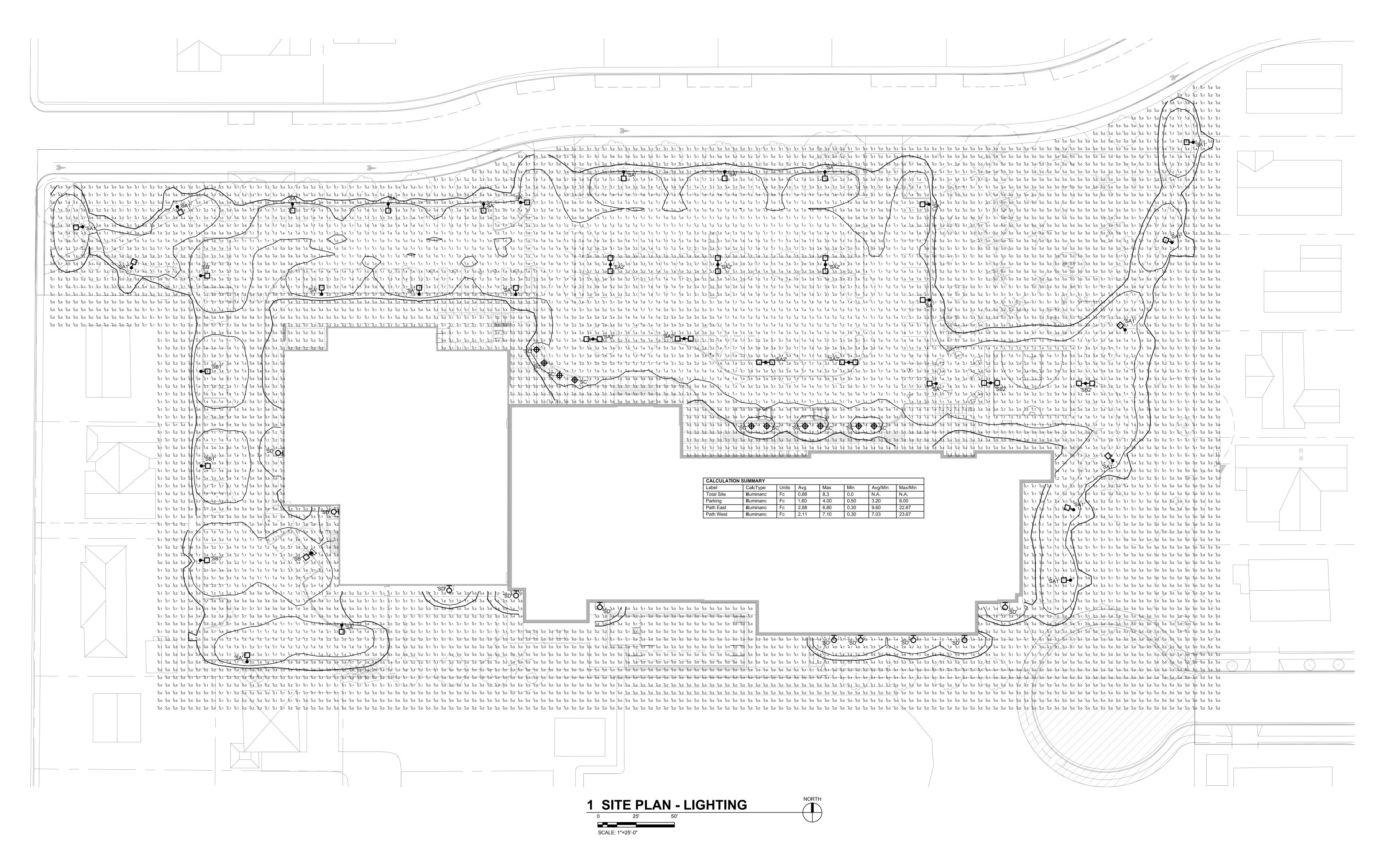


SUBMITTAL
Drawing:
BUILDING SECTIONS -

01.29.16 LAND USE REVIEW

Job No: Date: Drawn By: Checked By: Sheet No: 1493 12.23.2015 -





LAND USE LUMINAIRE SCHEDULE											
TYPE	DESCRIPTION	HOUSING	SHIELDING	MOUNTING	FINISH	UL/IP RATING	BALLAST	LAMP(S)	INPUT WATTS	MFG/CATALOG #	NOTES
SA	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE LUMINAIRE WITH TYPE III DISTRIBUTION	NOMINAL 40-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	20-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	55.5 WATT LED, 4000K	56 WATTS	LIGMAN LIGHTING ULI-21171, OR APPROVED	
SA1	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE LUMINAIRE WITH TYPE III DISTRIBUTION	NOMINAL 40-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	12-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	55.5 WATT LED, 4000K	56 WATTS	LIGMAN LIGHTING ULI-21171, OR APPROVED	
SA2	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE DOUBLE HEADED LUMINAIRE WITH TYPE III DISTRIBUTION	NOMINAL 82-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	20-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	TWO 55.5 WATT LED, 4000K	112 WATTS	LIGMAN LIGHTING ULI-21181, OR APPROVED	
SB	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE LUMINAIRE WITH TYPE IV DISTRIBUTION	NOMINAL 40-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	20-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	78 WATT LED, 4000K	78 WATTS	LIGMAN LIGHTING ULI-21173, OR APPROVED	
SB1	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE LUMINAIRE WITH TYPE IV DISTRIBUTION	NOMINAL 40-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	20-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	78 WATT LED, 4000K	78 WATTS	LIGMAN LIGHTING ULI-21173, OR APPROVED	PROVIDE HOUSE-SIDE SHIELD
SB2	EXTERIOR ARCHITECTURAL FULL-CUTOFF LED SITE DOUBLE HEADED LUMINAIRE WITH TYPE IV DISTRIBUTION	NOMINAL 82-INCH LONG BY 3.5-INCH HIGH BY 5.9-INCHES WIDE EXTRUDED ALUMINUM AND LOW COPPER.	TEMPERED GLASS LENS	20-FOOT HIGH, STRAIGHT STEEL SQUARE POLE. POLE TO WITHSTAND 100 MILE PER HOUR WINDS WITH A GUST FACTOR OF 1.3.	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	TWO 78 WATT LED, 4000K	156 WATTS	LIGMAN LIGHTING ULI-21183, OR APPROVED	
SD	EXTERIOR LED WALL WASHER WITH SYMETRIC DISTRIBUTION, SPECULAR ANODIZED ALUMINUM REFLECTOR	NOMINAL 9.5-INCH WIDE BY 4-INCH TALL WITH 8-INCH PROJECTION DIE-CAST ALUMINUM	TEMPERED GLASS LENS	COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS	AS SELECTED BY ARCHITECT	WET	ELECTRONIC DIMMING	25.3 WATT LED, 4000K	26 WATTS	BEGA 2392LED, OR APPROVED	



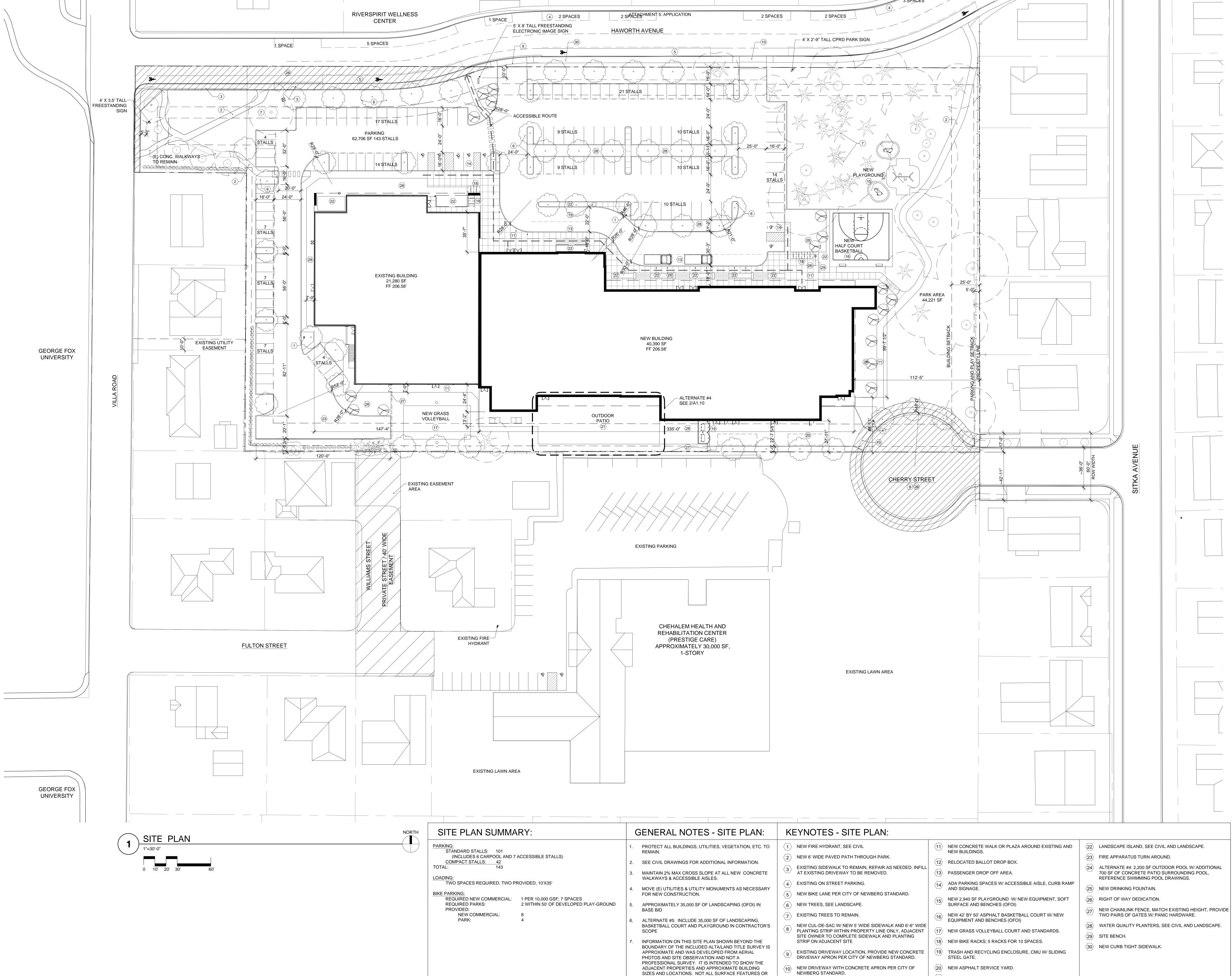








12.23.15 100% SCHEMATIC DESIGN Drawing: SITE PLAN LIGHTING 1493 Job No: 12.23.2015 Date: Drawn By: Checked By: Sheet No:

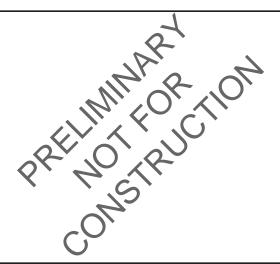


UTILITIES MAY BE SHOWN.

NEWBERG STANDARD.

- 21 5,140 SF CONCRETE PATIO WITH RELOCATED PICNIC TABLES AND PING PONG TABLES.







1802 HAWORTH AVE. NEWBERG, OREGON 97132



LAND USE REVIEW 01.29.16 SUBMITTAL Drawing: PROPOSED SITE PLAN

Job No: Date: Drawn By: Checked By: Sheet No:

1493 12.23.2015 -

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#### "Specialists in the Care and Preservation of Trees"

CONSULTANTS

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(503) 245-1383

December 17, 2015

Attn.: Mr. Jim McMasters Chehalem Park and Recreation District 125 S. Elliott Road Newberg, OR 97132 jmcmaster@cprdnewberg.org (503) 537-2909 (503) 209-2222

Reference: Tree Assessment ReportProject:Aquatic Center RenovationLocation:1802 Haworth Avenue, Newberg, OR 97132

With your approval, I have inspected the site located at 1802 Haworth Avenue, Newberg, OR 97132. The purpose of this inspection was to evaluate the condition of all trees having a trunk diameter (DBH) of six inches and larger measured at fifty-four inches above grade and provide guidelines for preservation of any trees to be preserved during and after the proposed construction.

There are a total of 169 trees with a DBH of over 6-inches on site. I have individually inspected, tagged, photographed and numbered the trees on site using tags numbered 1 through 169 for easy identification.

The first numbered tree is located at the NE corner of the project and continues initially in a westerly direction. I have attached a numbered tree location map per Scott/Edwards Architecture, LLP, and dated 10.30.15.

This study was completed in accordance with International Society of Arboriculture standards and methods as based on a level two visual inspection of each tree. All recommendations are based on good forestry practice according to the American National Standards Institute and the International Society of Arboriculture Standards.

I have included attached "Individual Tree Characteristic Form" field reports that will explain in detail the species, tree measurements and health and structural conditions.

Tree inspection criteria included: tree species, canopy structure, storm damage, insect and disease problems, overall structural integrity, root crown and root system development, wind throw potential and construction trauma resistance.

Page 2Reference: Tree Assessment ReportProject:Aquatic Center RenovationLocation:1802 Haworth Avenue, Newberg, OR 97132

#### Site Description

This is a large rectangular shaped property, laden with trees, bordered by Villa Road to the west, Haworth Road to the north and residential properties to the east and south. There is an Aquatic Center building located at the west portion of the project with a driveway and parking area located to the north and east respectively. Located at the eastern portion of the site there is a large park known as Babe Nicklous Pool Park. The park area of the project consists of a play structure area and a large native tree grove.

The large tree grove consists of mainly Douglas fir (Pseudotsuga menziesii) trees which is the most numerous, largest and mature of the trees species in the park. The other species of trees growing within the grove consists of a few big leaf maples (Acer macrophyllum), seedling cherry (Prunus avium) and Oregon white oak (Quercus garryana). There are a few non-native deodar cedars (Cedrus deodara) located at the SE area of the park.

Located around the aquatic center and parking areas there are mature landscape trees consisting of three very large pin oaks (Quercus palustris), four large red oaks (Quercus rubra), ornamental pears (Pyrus species), pines (Pinus species), red maples (Acer rubrum), Japanese maples (Acer palmatum), and two arborvitae clusters (Thuja occidentalis).

#### **Tree Assessment**

The trees are generally in poor to average overall condition due to a variety of factors but not limited to past storm damage, pathogenic activity, compacted/nutrient depleted soil conditions, the presence of large dead/broken/hanging limbs and over maturity (retrenchment).

The large native tree grove is under stress from several different factors such as soil compaction, lack of soil enrichment from natural organic composition and changes to the area soil hydrology to name a few of these stress factors. The grove is a monoculture with very little diversity in species and maturity. There has been a long history of tree failure in the grove with large Douglas firs blowing over during high wind events as well as large branch failure. We have documented active pathogens affecting the Douglas firs for the past 15 years consisting of bark beetles and brown trunk and root rots of the Phellinus/Phaeolus species.

It is my understanding that the proposed Aquatic Center renovation will require the removal and preservation of many trees. The removal of hazardous trees and those trees located within proposed construction limits will not adversely affect the remaining trees health and structural stability provided the following Tree Care and Preservation Guidelines outlined in this report are employed. The current condition of the trees to be preserved may be improved with proper arboricultural care.

Page 3Reference: Tree Assessment ReportProject:Aquatic Center RenovationLocation:1802 Haworth Avenue, Newberg, OR 97132

## TREE CARE AND PRESERVATION GUIDELINES

If there are trees to be preserved, there must be a qualified project arborist on-site and/or on-call for the entire project, especially during any excavating near the preserved trees. In this way, decisions can be made in the field that are only speculations in this writing.

#### **Pre-Construction Tree Preservation Meeting:**

Before the site clearing and construction begins, a pre-construction tree preservation conference will be held on-site with the general contractor, the project arborist, and those official representatives who have interest in the project.

The purpose of the on-site meeting will be to introduce all parties to the specifications and sensitivity needed in the protection and preservation of trees, their environment, and protected areas.

#### **Preparation/Tree Protection Fencing:**

Before any construction or excavation work begins on site, it is vital that a "Tree Protection Zone" be created to protect and safeguard the root systems of all preserved trees. The Root Protection Zone (RPZ) is established by having the project certified arborist locate/install tree protection fencing around the perimeter of the preserved tree's critical root zone, which is indentified within the attached detailed tree information sheets as a distance in feet of radius from the tree trunk.

The protection fencing will help to ensure that the tree root systems are not accidently compacted or damaged from personnel, equipment and construction machinery.

The type of fencing required must be six (6) foot tall, galvanized steel chain link fencing securely anchored to the ground using two (2) inch diameter galvanized steel posts and spaced every six (6) to eight (8) feet on center forming a protective line around the preserved trees.

Once the approved location of the fence has been established, it cannot be adjusted, moved or removed without the consent of the project arborist.

Page 4Reference: Tree Assessment ReportProject:Aquatic Center RenovationLocation:1802 Haworth Avenue, Newberg, OR 97132

#### Tree Protection Zone Signage:

To better communicate the need for tree protection measures, it is required that Tree Protection Zone Signage be displayed on all tree protection fencing within the project. Signage needs to state that the fencing protecting the trees is a Tree Protection Zone and the area is not to be entered or disturbed without prior approval of the project consulting arborist.

#### **Construction Activities WITHIN Tree Protection Zones:**

Before any construction work is completed within an established Tree Protection Zone, the project arborist needs to be notified of needed construction activities and likely impacts to the preserved trees. The project arborist is required to be present on-site while the work is occurring within the Tree Protection Zone.

Once the construction activities have been completed, the project arborist is to submit a summary report certifying that the work occurred and that the work did not significantly impact the health or structural stability of the preserved trees.

#### Tree Removals:

Those trees that are structurally unsound, unhealthy, or removed within the preservation areas, will need to be removed only under the direct supervision of the project arborist.

Tree removal will be done in such a way so as to not damage preserved trees and their root zones. Removal of these trees may require climbing the trees and taking them down in small pieces. Stumps of the removed trees, which are less than fifteen (15) feet from a preserved tree, will be groundout using a stump grinder.

#### **Therapeutic Care:**

Therapeutic care is described as those treatments that will be needed to increase the preserved trees chances for survival. Individual treatment is based on the trees needs, its root zone, and structural condition and health. Factors will be taken into consideration, such as species, soil composition and compaction, season in which construction is completed and percentage of root zone impacted. The trees will need to be monitored and inspected for a period of 3 years after project completion.

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 Reference: Tree Assessment Report

 Project:
 Aquatic Center Renovation

 Location:
 1802 Haworth Avenue, Newberg, OR 97132

# **ASSUMPTIONS & LIMITING CONDITIONS**

- Any legal description provided to the consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is evaluated as though free and clear, under responsible ownership and competent management.
- Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others, especially regarding property line determinations and project boundaries.
- The consultant shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.
- 4. Loss or alteration of any part of this report invalidates the entire report.
- 5. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant.
- 6. Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant; particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his gualifications.
- 7. This report and values expressed herein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated results, the occurrence of a subsequent event, nor upon any finding to be reported.
- 8. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
- 9. Unless expressed otherwise: (1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, and probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

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Reference: Tree Assessment ReportProject:Aquatic Center RenovationLocation:1802 Haworth Avenue, Newberg, OR 97132

# **CERTIFICATION OF PERFORMANCE**

I, Phillip L. Whitcomb, certify:

- I have personally inspected the trees and property referred to in this report and have stated my findings accurately. The extent of the evaluation is stated in the attached report.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the International Society of Arboriculture. I have been involved in the field of Arboriculture and the care and study of trees for a period of more than 30 years.

Signed: Date:

Phillip L. Whitcomb ISA Certified Arborist #0114A ISA Tree Risk Assessor Qualified ISA Member / ISA-PNW Member Halstead's Arboriculture Consultants, Inc.



Individual Tree Characteristics Form Chehalem Parks "Babe Nicklous" Park Inspection Date: 12/8/2015 Douglas Tree Number: Common Name: Fir Preservation Value: HO 70 DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: (Structure: - 0-40% poor/ 50-70% Average/ 80% + Good) comments: Rook damaging existing path Tree Number: Common Name: Fir Preservation Value: DBH: TN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health Structure 5 (0-40% poor/ 50-70% Average/ 80% + Good) comments: situated 3ft, from curb. Ave ) Tree Number: Common Name: Fir **Preservation Value:** DBH PIN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Detructure: 400-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy, Lean to North (Howorth) Comments: Mad been topped in past. Dead weed incurrent canopy Tree Number: Common Name: Fis **Preservation Value:** DBH: SIN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: Sp40% poor 50-70% Average 80% + Good) Asymptrical canopy. Lean to North (Howard Comments: Danage basal roots, no rot present Ave Evidence of insect activity Douglas Tree Number: Common Name: fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 490-40% poor 50-70% Average 80% + Good) Asymetrical canopy: Overhands Hawarth Ave, comments: Previously topped. 3f7, from curb.

Chehatem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8 Tree Number: Common Name: Air Preservation Value: DBH.<sup>19</sup> IN Height: FT Canopy Spread: 35FT Root Protection Zone: (RPZ) Slight asymetrical canopy, Previously topped comments: Damage to basal roots, no rot present Gall growth on branches, no branch die back Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: TFT Canopy Spread: 3PT Root Protection Zone (RPZ) RATING: Health & Structure: 10-40% poor/ 50-70% Average/ 80% + Good) Hoymetrical canopy, Lean to North, Comments: Most of canopy overhangs Haworth Ave. Less than 2ft from Curb. Evidence of insect activity Common Name: fit P Tree Number: Preservation Value: DBH: PIN Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: 5 Structure: 4 Jo-40% poor 50-70% Average 80% + Good) Asymetrical canopy. Past storm damage, tops are Insect activity. Tops averhang Haworth Ave. Tree Number Common Name: Tip p Preservation Value: DBH: 37 Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health! Structure: 490-40% poor! 50-70% Average! 80% + Good) Sweeping bow in trunk. Lean to NE. Comments: Co-dominant trunk removed in past, Sap bleed and insect activity Tree Number Common Name: 7 Preservation Value: DBH! IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: Structure: 40-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Lean to North (Haworth) Less than 18 inches from aurs Hee) multiple, calloused wounds to lower trunk and basal roots

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Individual Tree Characteristics Form Chetalen Parks Project: "Babe Nicklous" Park Inspection Date: 12/8/15 Tree Number: Common Name: Charry Preservation Value: DBH:<sup>17</sup>IN Height:<sup>3</sup>FT Canopy Spread:<sup>3</sup>FT Root Protection Zone: (RPZ) RATING: Health: Structure: 40-40% poor 50-70% Average 80% + Good) Asymetrical canopy with lean to North comments: over Hawardh Ave. 4.5ft from curb Co-dominant top gone, rotting. Multiple waends to basel nots Tree Number: Common Name: Cherry Preservation Value: DBH 13 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health 4 Structure: 400-40% poor/ 50-70% Average/ 80% + Good) comments: surrounding trees. Damage to basal flare and Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: SC (0-40% poor/ 50-70% Average/ 80% + Good) Lean to NE, Previously tepped. Less than 40th Comments: of carry remains, Tree Number: Common Name: Fit Preservation Value: DBH. IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: 4 Structure: 490-40% poor/ 50-70% Average/ 80% + Good) comments: Condominant trunk of #13, separates boken Surface. Less than 10% canopy remains Tree Number: Common Name: F. Preservation Value: DBH? IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: "Structure: "To 40% poor 50-70% Average 80% + Good) SSG of canopy remains. Lack of light due to Comments: surrounding trees, Canopy is thinning and dying back

Individual Tree Characteristics Form Chehalem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Plum Preservation Value: DBH! 3IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 40-40% poor 50-70% Average 80% + Good) Co-dominant trunks. Weakening seam-split comments: at base. Damage to basel roots Tree Number: 7 Common Name: Fir Preservation Value: DBH? IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health CO Structure: 45(0-40% poor/ 50-70% Average/ 80% + Good) RATING: Hearen: serviciones: Ju-auto pour our no novelager our sources, Asymetrical canopy overhands Hawarth Are. Bow in upper V3 of trunk towards North, Lower trunk leans west, 18 inches from curb Tree Number: Common Name: Fir Preservation Value: DBH: 4 IN Height FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: 55 structure: 55 (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Lean to North, Damage to basal roots FASECT ACTIVITY Daugks Tree Number! 7Common Name: fir Preservation Value: DBH/LGN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 450-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy. Top has beened lean to East, Damage to basal roots Comments: Tree Number: Common Name: Mapk Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health W structure: Solo 40% poor 50-70% Average 180% + Good) Comments: Asymetrical canopy + Secondary tops, Lean to West. Damage to base of trunk, no rot present

Chehalem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Fir Preservation Value: DBH: IN Height FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Demoge to basel norts, Insect activity, comments: Canopy in waper 2014 of trunk Tree Number: Common Name: Fir Preservation Value: DBH? IN Height FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health West, Asymetrical canapy. Lean to West, comments: Damage to basel roots, Insect activity Tree Number: Common Name: Fir Preservation Value: DBH. 7 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: HOstructure: 190-40% poor 50-70% Average 80% + Good) Asymetrical Canopy, Lean to SE, comments: Top broken out, Canopy is thin and dying back Dauglas Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread / FT Root Protection Zone (RPZ) RATING: Health: Hostructure: 10-40% poor 50-70% Average 80% + Good) Deg legged " top. Lean to North, Canopy is dying comments: back. 75 Daug las Tree Number: Common Name: Arr Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Constructure (0.40% poor/ 50-70% Average/ 80% + Good) Comments:

Bachalem Farks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Fir Preservation Value: DBH? IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 00(0-40% poor/ 50-70% Average/ 80% + Good) Comments: Tree Number? Common Name: Fit Preservation Value: DBH! IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Canopy is overshadowed and thinning Tree Number: Common Name: Wapy Preservation Value: DBH: IN Height: "FT Canopy Spread: 3 PT Root Protection Zone (RPZ) RATING: Health Structure: 55(0-40% poor 50-70% Average 80% + Good) Asymetrical canopy, Co-deminant tops, comments: Tree's rects damaging existing path Tree Number? Common Name: Fir Preservation Value: DBH: 17IN Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: "Structure: "Go-40% poor 50-70% Average 80% + Good) Secondary "dog legged" top. Asymetrical dancy y comments: 15% canopy remains, Lean to North Tree Number: Common Name: FIF Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: Ho-40% poor/ 50-70% Average/ 80% + Good) Comments: Insect activity. Damaging existing path

Individual Tree Characteristics Form Chehaten Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health Structure: (0 (0-40% poor/ 50-70% Average/ 80% + Good) Damaging existing path. Comments: Tree Number: Common Name: Ar Preservation Value: DBH: 3 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Hostructure 190-40% poor 50-70% Average 80% + Good) Asymetrical canopy. 15% of canopy remains, comments: Dominant top gone. Topped or storm damage Tree Number: Common Name: Rapic Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structures (0-40% poor/ 50-70% Average/ 80% + Good) comments: wound in trunk 414, from base, no rot. Tree Number Hommon Name: Wcopk Preservation Value: DBH? IN Height: FT Canopy Spread: 4FT Root Protection Zone (RPZ) RATING: Health: Structure: 10,040% poor 50-70% Average 80% + Good) Multiple as-dominant tops. Comments: Quity in old pruning wound into heartwood, Some rot in basal flare Tree Number 35 Common Name: Fil Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 49-40% poor 50-70% Average 80% + Good) Comments: Asymetrical canopy. Slight lean to East. Overhangs, Linear crack in lowest branch over path

Individual Tree Characteristics Form Project: Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Fir Preservation Value: DBH: 70 DBH: 71N Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 00 (0-40% poor 50-70% Average 80% + Good) Comments: and top 2/3 leans NE. Tree Number? Common Name Big Leaf Preservation Value: DBH: PIN Height: FT Canopy Spread: "PT Root Protection Zone (RPZ) RATING: Health: Astructure: 12(0-40% poor 50-70% Average 80% + Good) Co-dominant tops, Asymetrical rangey. Comments: Lean to SE. Cavity in base with not Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: "Structure: HQ0-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy, Less than 10% canopy remains comments: Dominant top gone. Topped or break but Tree Number: S Common Name: Preservation Value: DBH: 3 IN Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: Structure: 40.40% poor 50-70% Average 80% + Good) Comments: Multiple baws in trunk, Lean to Sw Canapy dying back. Tree Number: Common Name: Fight Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure S(0-40% poor/ 50-70% Average/ 80% + Good) Comments: Learn to SE, 18 inches off existing path

Individual Tree Characteristics Form Project: 'Babe Nicklaus" Inspection Date: 12/8/15 Douglas Tree Number: Common Name: Fir Preservation Value: DBH? IN Height FT Canopy Spread? FT Root Protection Zone: (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant trunk previously removed. Insect activity Tree Number: Common Name Big Log Preservation Value: DBH: 17IN Height: H FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 190-40% poor 50-70% Average 80% + Good) Comments: Asymetrical canapy, Bottom 1/3 of trunk Wound in trunk 199 from base baginning to rot Tree Number: Common Name: Fir Preservation Value: DBH? IN Height FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health Structure (19 90-40% poor 50-70% Average 80% + Good) comments: Less than 18 inches from existing path Tree Number: Common Name: Fift Preservation Value: DBH: IN Height OFT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: S90-40% poor 50-70% Average 80% + Good) Hymetrical canopy, Storm damage, comments: Insect activity and sep bleed Tree Number: Common Name: Cherr Y Preservation Value: DBH: N Height: FT Canopy Spread! FT Root Protection Zone (RPZ) RATING: Health (D) Structure: 590-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy. upper 1/2 of trunk Leans west.

Chehalem Parks Project: Babe Nicklaus "Park Inspection Date: 12/8/15 Hu Douglas Tree Number: Common Name: fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure (0,40% poor 50-70% Average 80% + Good) Comments: Aymetrical canopy. Lean to West Tree Number: Common Name: F:F Preservation Value: DBH. IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: "Structure: "All-40% poor 50-70% Average 80% + Good) Comments: Less than 10% of canopy remains. Asymetrical canopy. Wadpecker damage Insect activity Tree Number: Common Name: Preservation Value: DBH: N Height: FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health: Structure: 35(0-40% poor/ 50-70% Average/ 80% + Good) Storm Dampoor, Top 1/3 gone. Comments: Tree Number! Common Name: Cherry Preservation Value: DBH: N Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: Structure: 190-40% poor 50-70% Average 80% + Good) Lean to Si then top bous, leans to NG Comments: Tree Number: Common Name: Reg Peer Freservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health Structure: 90-40% poor/ 50-70% Average/ 80% + Good) comments: Asymptotical canopy, Co-dominant tops Lean to SE. History of prining

Individual Tree Characteristics Form Chehaten Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Cak Preservation Value: DBH! 4 IN Height: FT Canopy Spread PT Root Protection Zone: (RPZ) RATING: Health. Constructure: 0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Lean to NE Tree Number: Common Name: Mark Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: "Structure: 140-40% poor! 50-70% Average! 80% + Good) comments: Asymetrical canopy, Cavity in trunk with not, Tree Number: Common Name: Big Lea Preservation Value: DBH. SIN Height: SFT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health? Structure: 10 (0-40% poor/ 50-70% Average/ 80% + Good) Condeminant tops, Bowed lean to NE, Dauglar Tree Number: Common Name: Fir Preservation Value: DBH? IN Height? FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health (20) structure: \$40.40% poor/ 50-70% Average/ 80% + Good) Asymptrical canopy. Lean to NE. Comments: Insect activity. Tree Number: Common Name: Fir Preservation Value: DBH: JN Height FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Hostructure: 490-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy. 10% of canopy remains Comments: Insect activity. Bowed lean to 'NE

**Individual Tree Characteristics Form** Chehalen Parks Project: "Babe Nicklaus" Park Inspection Date: /3 Douglas Tree Number: Common Name: Preservation Value: DBH. SN Height SFT Canopy Spread FT Root Protection Zone: (RPZ) RATING: Health: Hostructure: 490-40% poor/ 50-70% Average/ 80% + Good) Storm damage, top gone. Canopy dying back, Comments: Tree Number: Common Name: Fir Preservation Value: DBH? IN Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: Hostructure: 10(0-40% poor 50-70% Average 80% + Good) comments: Asymetrical canapy. 15% of canapy remains, Trunk leans East, top leans NW Tree Number: Common Name: Fir Preservation Value: DBH? IN Height. FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health Structure: 550-40% poor/ 50-70% Average/ 80% + Good) Asymetrical canopy. Self-corrected lean to NW Douglas Tree Number: Common Name: FTF Preservation Value: DBIP IN Height: 7 FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health Structure 55 (0-40% poor 50-70% Average 80% + Good) Asymptrical canopy. Top 1/3 leans NE Tree Number: Common Name: FTF P Preservation Value: DBH: Hin Height: FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health: Structure 35 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Storm damage, top gene Canopy dying back

Chehalem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8 Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: 7 FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health. Structure: 50-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Tree Number Common Name: Oak Preservation Value: DBH: 13IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: Structure: 40-40% poor/ 50-70% Average/ 80% + Good) 4 Ft of lower trunk. dominant Comments: Da "Damage to 4ft of Asymetrical canopy. Tree Number: Common Name: Fir Preservation Value: DBH: TN Height: 7-FT Canopy Spread: 4PT Root Protection Zone (RPZ) RATING: Health Constructure (190-40% poor/ 50-70% Average/ 80% + Good) comments: Lean to East, Die back in lower canopy, Tree Number: Common Name: Cok Preservation Value: DBH: 19N Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 000-40% poor 50-70% Average 80% + Good) Asymetrical carepy, Lean to SE. Comments: Condaminant taps Tree Number: Common Name: COK Preservation Value: DBH IN Height: FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health: Structure: 190-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Severe lean to East over neighboring property. wound in lower 644 of trunk with rot

Individual Tree Characteristics Form Project: "Babe Nicklaus" Park Inspection Date: 12/ Tree Number: Common Name: Oak Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 50-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. warend in base no rot Lean to west present Tree Number: Common Name: White Preservation Value: DBH: Height: Canopy Spread: SPT Root Protection Zone (RPZ) RATING: Health Structure 0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Co-dominant tops. Evidence of movement of base Tree Number: Common Name: F; Pro Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. But tom 1/3 leans NE then bows, top 2/3 leans SE. Tree Number? Common Name: F, F Preservation Value: DBH N Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Dead Snag Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health & Structure? 5 (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymetrical canapy, Lean to North Insect activity,

Chehalen Parks Project: "Babe Nickkers" Park Inspection Date: /2/ Tree Number: Common Name: maple Preservation Value: DBH: 10 Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: "Structure: "(0-40% poor/ 50-70% Average/ 80% + Good) comments: Lean to North." Dag legged" top with lean to NE Stunted, minimal growth Tree Number: Common Name: Stage Preservation Value: DBH: IN Height: SPT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 10 (0.40% poor 50.70% Average 80% + Good) Co-dominant taps, Larger top "dag legged" near comments: 90°, Lean to SE. Asymetrical canopy Tree Number: Common Name: Maple Preservation Value: DBH IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: Comments: Top " dog legged leans to SE then back North Tree Number: 4 Common Name: Tip Preservation Value: DBH? IN Height FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40(0.40% poor 50.70% Average 80% + Good) 10% of canopy remains. Dominant top gone, comments: topped or storm damage. Insect activity Tree Number: Common Name: FIT Preservation Value: DBH? IN Height. FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: 40 Structure: 40-40% poor/ 50-70% Average/ 80% + Good) comments: Dominant top gone. Topped orstorn damage Asymetrical canopy that is dying back

Individual Tree Characteristics Form Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Douglas Tree Number: Common Name: Fir Preservation Value: DBH. IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health DO Structure: SS (0-40% poor 50-70% Average 80% + Good) comments: Insect activity, Sop bleed at base Tree Number? Common Name: Preservation Value: DBH! SIN Height: 4 FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health: 40 Structure: 30 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Bawed lean to SW History of extensive storm damage Tree Number: Common Name: Fir Preservation Value: DBH:<sup>17</sup>IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health Structure: 40,0-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymetrical Dancpy, Dominant top gone, Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health? Structure: 15(0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Storm damage throughout canopy, Requires immediate praning Tree Number Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: Solo 40% poor 50-70% Average 80% + Good) Comments: Co-dominant trunks, Smaller trunk hans to West Top broken eff. Larger trunk leans to East Asymetrical canopy to West Requires immediate of 460 pruning / cabling

Individual Tree Characteristics Form Project: "Babe Nickbus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Air Br Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure 5 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Lower canopy dying out Tree Number: Common Name: Maple Preservation Value: DBH! IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: 1 Structure: 45(0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant trunks x3. Weak scam split, Rotting would in canopy Tree Number: Common Name: Maple Preservation Value: DBH: 19 IN Height: FT Canopy Spread PT Root Protection Zone (RPZ) RATING: Health: Structure: 5 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Leans to North wound 3ft from base with datay Tree Number: Common Name: HT Preservation Value: DBH: IN Height: 75T Canopy Spread: 34T Root Protection Zone (RPZ) RATING: Health Structure (50-40% poor/ 50-70% Average/ 80% + Good) comments: Nothing of concern Tree Number: Common Name: Fill Preservation Value: DBH: PIN Height: TFT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 10(0-40% poor 50-70% Average 80% + Good) comments: 15% of canapy remains, Asymetrical canapy leans to North

Individual Tree Characteristics Form Project: "Babe Nicklaus" Inspection Date: 12 Tree Number: Common Name: Maple Preservation Value: DBH: IN Height: 55 FT Canopy Spread: 35 FT Root Protection Zone: (RPZ) RATING: Health: 55 Structure: 50-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Storm damage in canopy Tree Number: Common Name: Fir Preservation Value: DBH! AN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40(0-40% poor/ 50-70% Average/ 80% + Good) comments: Topped in past, storm damage. Lean to North Tree Number: Common Name: AT Preservation Value: DBH: IN Height: FT Canopy Spread! FT Root Protection Zone (RPZ) RATING: Health H Structure: H (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Leans to North, Topped in past. 10% of canopy remains Tree Number: Common Name: Sight Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health & Structure: Structure: Structure: Structure: Structure: Structure: Structure: Structure: Concept, Co-dominant top removed comments: Requires corrective pruning Tree Number: Common Name: Fit Preservation Value: DBH! SIN Height: FT Canopy Spread! FT Root Protection Zone (RPZ) RATING: Health: Structure: 30-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Top is gone, storm damag 10% of canopy remains

Individual Tree Characteristics Form Chehalem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8, Dought Tree Number: Common Name: Fir Preservation Value: DBH: 1 IN Height: 75 FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health - CStructure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canepy. Lean to East Tree Number: Common Name: Fir Preservation Value: DBH: 10 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health Lod Structure: 15 (0-40% poor 50-70% Average 80% + Good) Comments: Asymetrical canopy, Lean to East Top is gene. Tree Number: Common Name: Oak FELL IN STORM, 12.24.15 Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Multiple co-dominant tops. Severe lean to SE Comments: Overhands neighboring properties to East Preservation Value: Common Name: OQ FELL IN STORM, 12.24.15 DBH: 7 IN Height. FT Canopy Spread: 3 FT Root Protection Zone (RPZ) RATING: Health: Structure: 10-40% poor 50-70% Average/ 80% + Good) Comments: Asymetrical canopy overhangs property to East Tavity in trunk with sign Tree Number: Common Name: Cak Preservation Value: DBH. Height: 4 FT Canopy Spread: 3 FT Root Protection Zone (RPZ) RATING: Health: Structure: P(0-40% poor 50-70% Average 80% + Good) Comments: Multiple ad-dominant tops, Sead wood throughout Comments: Canopy. Lean to SE

Chehalen Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 Tree Number: Common Name: Reg Peaf Preservation Value: DBH:<sup>11</sup> IN Height:<sup>35</sup>FT Canopy Spread:<sup>35</sup>FT Root Protection Zone: (RPZ) RATING: Health Lostructure: 550-40% poor/ 50-70% Average/ 80% + Good) comments: Codominant tops. Tree Number: Common Name: Fir Preservation Value: DBH: 7 IN Height: 7 FT Canopy Spread: 3 FT Root Protection Zone (RPZ) RATING: Health Structure (9-40% poor/ 50-70% Average/ 80% + Good) commonts: Asymetrical canopy DBH: Sin Height: FT Canopy Spread: FT Root Protection Zone (RPZ) wound in thing RATING: Health: Structure: 5(0-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymetrical canopy, Severe Im. Comments: Asymetrical canopy, Severe lean to South Shared co-dominant base with #109 Tree Number: Preservation Value: DBI IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: 45 structure: 40(0.40% poor 50-70% Average/ 80% + Good) comments: Lean to North, Die-back in Gwer Canopy Insect activity, 10% of Canopy remains Tree Number: Common Name: F, Preservation Value: DBH? HIN Height: "FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: 45 Structure: 40 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Topped: 15% of canopy remains. Lean to North

Individual Tree Characteristics Form Project: "Babe Nicklaus"Park Inspection Date: 12/8 Tree Number: Common Name: Weple Preservation Value: DBH: 10 IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Scstructure: 450-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical aanopy. Lean to South Tree Number: Common Name: Fire Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: + Structure: + (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Lean to North Topped, 15% of canopy remains Tree Number: Common Name: Fir Preservation Value: DBH: 19 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 90-40% poor/ 50-70% Average/ 80% + Good) Comments: Multiple Sap bleed separate 8 ft from base, Insect activity bleed wations Tree Number! Common Name: Oak Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Brows near horizontal to South over playground Tree Number: Common Name: Map K Preservation Value: DBH: 13IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health. Structure (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant tops

Chehalem Parks Project: "Babe Nicklans" Park Inspection Date: 12/8/15 Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 100-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, severe lean to SW Subordanded top Tree Number: Common Name: 2, Preservation Value: DBH: IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: Structure: 10 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Aynetrical canopy, Top broken out Tree Number: Common Name: Fir P **Preservation Value:** DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 35 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Severe Lean to South over playground. Secondary growth top Tree Number: Common Name:  $f_i \in Preservation Value:$ DBH: SIN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Top is gene Sap bleed up trunk gene Tree Number: Common Name: Fir Preservation Value: DBH3 IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical caropy, Top is gone, Sap bleed from insect, fungal infection or storm damage

Chenatem Parks Project:"Babe Nicklauk"Park Inspection Date: 12/ 111 Doughs Tree Number: Common Name: Fir Preservation Value: DBH. IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Contracture: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Loss of top, Lean to South, Canopy is dying out Tree Number: Common Name: Congles Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 400-40% poor/ 50-70% Average/ 80% + Good) comments: Severe Lean to North. Tree Number: - Common Name: Cak Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Bends near horizantal 12ft from base comments: and 12ft then vertical. Overhands bench and basketball appurt 39/85 Tree Number: Common Name: Fire Preservation Value: DBH: IN Height: FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Loss of top, Die back of canopy dominant trunks Tree Number: Common Name: 776 Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Secondary growth top grows near 90°

Chehaken Farks Project: "Babe Nicklaus" Park Inspection Date: 12/8, Tree Number: Common Name: Fit Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant trunks, Smaller trunk has secondary-growth top and only 10% of canopy remains, Tree Number: Common Name: Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure! (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant tops, Lean to Sarth. Asymetrical canopy. Began to uproot in past storm Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymetrical canopy. Freet activity, Fungal growth on lower trunk Tree Number: Common Name: FIT Preservation Value: Preservation Value: DBH: 70 DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40.40% poor/ 50-70% Average/ 80% + Good) comments: 5% of canopy remains, Fingal growth on lower trunk 120 Doughs Tree Number: Common Name: F,7 Preservation Value: DBH? IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant trunks.

Chehatem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/15 121 Tree Number: Common Name: cark Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Lean to South, Canopy overhangs properties to East Tree Number: Common Name: Pirk Preservation Value: DBH: N Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Storm damage, Lean to South Pitch moth activity Tree Number: Common Name: Spruch Preservation Value: DBH! ON Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Co-dominant tops, Learn to South Comments: Sep breed at all cuts Tree Number: Common Name: FIT Preservation Value: DBH: IN Height. FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40-40% poor/ 50-70% Average/ 80% + Good) Continent trunks, Severe kean to South. Comments: Co-dominant tops Tree Number: Common Name: Fir Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Possible lightning scar, Lean to South over path "I" rest base

Chehahem Parks Project:" Babe Nicklaus" Park Inspection Date: 2/8 126 Decdar Tree Number: Common Name: Cedar Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Storm damage. Co-dominant tops. Bowed lean to North Tree Number: Common Name: Car Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy, Lean to SW Tree Number: Common Name: Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Growing into canopy of #129 Tree Number: Common Name: Cak Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 5(0-40% poor/ 50-70% Average/ 80% + Good) Comments: Co-dominant tops, Broken top, Overhangs properties to East, Needs pruning Tree Number: Common Name: Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Lean to South, wound in trunk, no vot

Chehakem Parks Project: "Babe Nicklaus" Bick Inspection Date: 12/8 13/ Derglas Tree Number: Common Name: Fit Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure. (0-40% poor/ 50-70% Average/ 80% + Good) comments: Storm damage, Lean to SW. Tree Number: Common Name: Codd Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure (0.40% poor/ 50-70% Average/ 80% + Good) comments: Storm damage, 133 December Tree Number: Common Name: Ceda/ Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Multiple condominant tops, Stam damage Hangers throughout canopy Tree Number: Common Name: Pine Preservation Value: DBH: IN Height: SFT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 0-40% poor/ 50-70% Average/ 80% + Good) Comments: Pitch moth activity 135 Decidar Tree Number: Common Name: Cedar Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Storm damage, Lean to South Sverhangs parking lot.

Chehokem Parks Project: "Babe Nicklaus" Brok Inspection Date: 1) 13Ce Dectar Tree Number: Common Name: Cectar Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: 100-40% poor/ 50-70% Average/ 80% + Good) Tree Number: Common Name: Spirit Preservation Value: DBHATN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant tops with weak seam, Deach Common Name: Cedar Preservation Value: Tree Number DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 40-40% poor/ 50-70% Average/ 80% + Good) Multiple and minant tops, Hangers and comments: Storm damage. Improper pruning Common Name: pear Preservation Value: Tree Number: DBH! IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 90-40% poor/ 50-70% Average/ 80% + Good) Comments: Ad-dominant tops Improper prophy Interfering with light pole Tree Number: Common Name: Secur Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 55 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Canopy grows low into drive

Chehaten Parks Project: "Babe Nicklaus" Park Inspection Date: 12 141 Tree Number: Common Name: Maple Preservation Value: DBH: IN Height. FT Canopy Spread. FT Root Protection Zone: (RPZ) RATING: Health: Structure: 10(0-40% poor/ 50-70% Average/ 80% + Good) Multiple - tops. History of improper pruning Comments: Co-dominant trunk previously removed peqinning to decay Tree Number: Common Name: Maple Preservation Value: II DBH: IN Height: FT Canopy Spread: PT Root Protection Zone (RPZ) RATING: Health Destructure 400-40% poor/ 50-70% Average/ 80% + Good) Comments: Coloninant tops. Would to lower trunk no rot Tree Number: Common Name: Maple Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: PStructure: 190-40% poor/ 50-70% Average/ 80% + Good) Comments: Wound to base flare with rot Tree Number: Common Name: Preservation Value: DBH: IN Height FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: 2 (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymptrical canopy, Tree grows horizontal comments: Aff from base over property to South Tree Number: Common Name: A Preservation Value: DBH. IN Height. FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health Structure 90-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant tops, Storm damage. Sap bleed on trunk

Chehalen Farks Project: "Babe Nicklaus" Park Inspection Date: 12/8 Tree Number: Common Name: Pine Preservation Value: DBK.34N Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: 40 Structure 30 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-dominant tops, Severe lean to North towards building. Pitch noth activity History of improper pruning Tree Number! Common Name: Cluster Preservation Value: DBH: IN Height: FT Canopy Spread: SFT Root Protection Zone (RPZ) RATING: Health: Structure? (0-40% poor/ 50-70% Average 80% + Good) Comments: Storm clamage1, Dying out on South Side Tree Number: Common Name: pine Preservation Value: DBH:/ IN Height: FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: Pstructure? (0-40% poor/ 50-70% Average/ 80% + Good) Co-dominant + Ap removed, Comments: p; toh moth activity 10ft from black Tree Number: Common Name: Pine Preservation Value: DBH IN Height: FT Canopy Spread 30FT Root Protection Zone (RPZ) RATING: Health: Structure: 10(0-40% poor 50-70% Average 80% + Good) Condeminant taps. Leans over roof, hits bkg, comments: Pitch moth activity Tree Number: Common Name: Pine Preservation Value: DBHBIN Height. FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: Structure: HD (0-40% poor 50-70% Average 80% + Good) comments: Co-dominant tops. Leans to North. Overhangs blog Pitch moth activity

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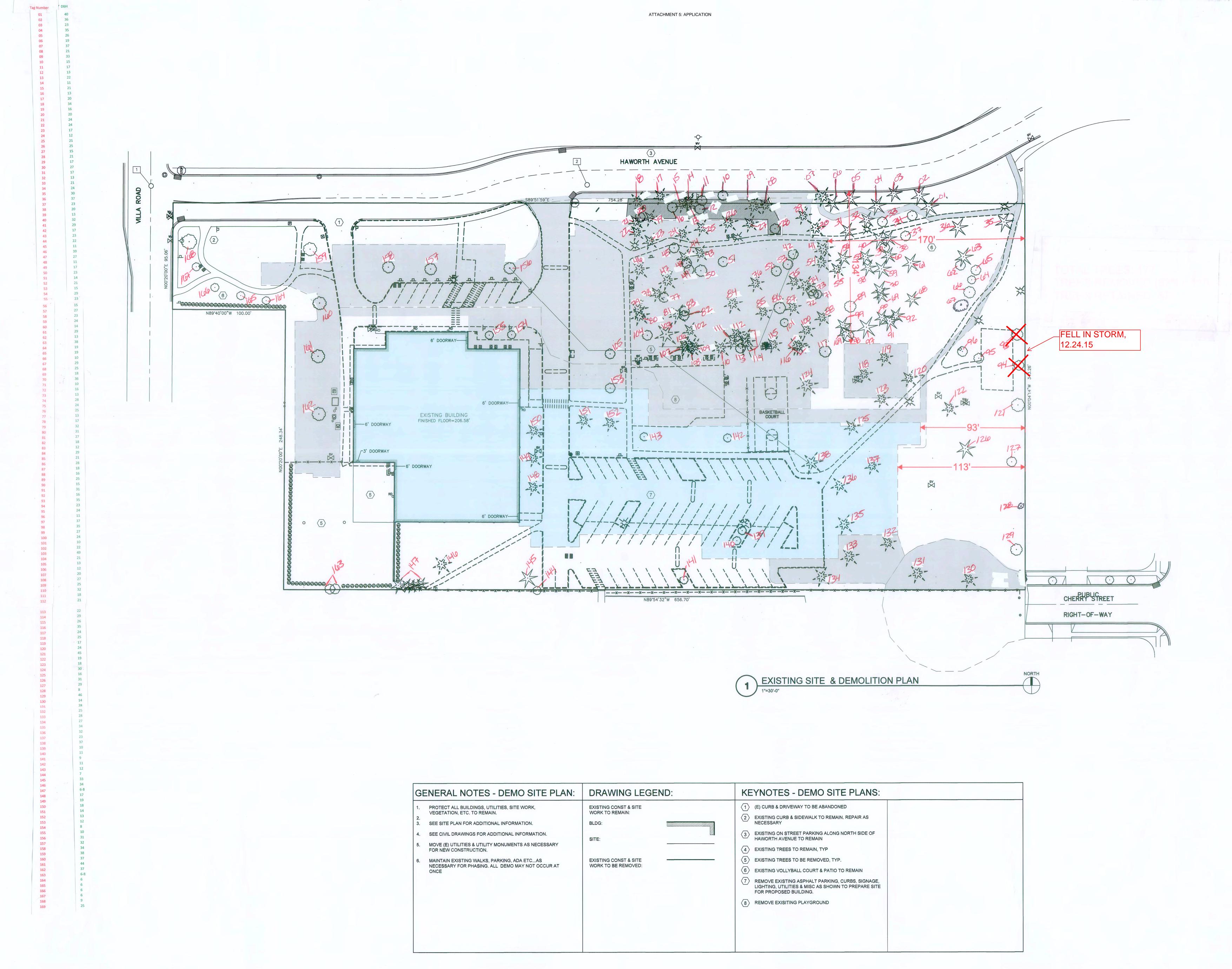
Individual Tree Characteristics Form Project:" Rabe Nicklaus" Inspection Date: 10/8/15 Tree Number: Common Name: Pine Preservation Value: DBH: 1/1N Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: 40 structure 35 (0-40% poor/ 50-70% Average/ 80% + Good) comments: Storm damage, Missing dominant top Severe lean to West toward driveway Tree Number: Common Name: Maple Preservation Value: DBH SIN Height ST Canopy Spread APT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Multiple and dominant tops. Lean to South. History of improper pruning Red Tree Number: Common Name: Wape Preservation Value: DBH: Height SFT Canopy Spread: HOT Root Protection Zone (RPZ) RATING: Health Structure (0-40% poor/ 50-70% Average/ 80% + Good) comments: Damage to basal flare, no rot. Tree Number: Common Name: Dear Preservation Value: DBHS IN Height? FT Canopy Spread SFT Root Protection Zone (RPZ) RATING: Health: "Structure: "10-40% poor 50-70% Average 80% + Good) Lean to North, Co-dominant tops. Comments: overhangs/mits bug. Vehicle damage to kwer History of improper pruning branche Tree Number: Common Name: Plan Preservation Value: DBH. IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health. Structure: 10 10-40% poor/ 50-70% Average/ 80% + Good) Comments: History of improper pruning Presence of blight disease Hitting blog.

Chehalem Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8 Tree Number: Common Name: Cok Preservation Value: DBH: IN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health? Structures (0-40% poor 50-70% Average 80% + Good) comments: Storm damage, hangers throughout canop Leans South toward blog. Tree Number: Common Name: Dak Preservation Value: DBH: IN Height. FT Canopy Spread: 55 Root Protection Zone (RPZ) RATING: Health Structure (0-40% poor/ 50-70% Average/ 80% + Good) Multiple co-dominant tops comments: Storm damage Tree Number: Common Name: Cak Preservation Value: DBHS IN Height: FT Canopy Spread. PT Root Protection Zone (RPZ) RATING: Health Structure 55(0-40% poor/ 50-70% Average/ 80% + Good) Co-dominant tops. Storm damac Comments: symetrical canopy. Leas Tree Number: Common Name: Cak Preservation Value: DBH: Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health: D structure: 5(0-40% poor/ 50-70% Average/ 80% + Good) Extensive storm damage, one top dead. Comments: Multiple co-dominant tops Tree Number: Common Name: Cock **Preservation Value:** DBN37IN Height: FT Canopy Spread FT Root Protection Zone (RPZ) RATING: Health Lestructure: 590-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical canopy. Co-dominant tops/trunks Lean to South. Extensive storm change

Chehalen Parks Project: "Babe Nicklaus" Park Inspection Date: 12/8/1. LOI Red Tree Number: Common Name: Cock Preservation Value: DBH: IN Height. FT Canopy Spread? FT Root Protection Zone: (RPZ) RATING: Health? Structure? (0-40% poor/ 50-70% Average/ 80% + Good) Comments: Multiple co-dominant tops. Lean to South Storm damage. Possible cavity in main union of tops Tree Number: Common Name: CK Preservation Value: DBH: 31N Height: SFT Canopy Spread: SFT Root Protection Zone (RPZ) RATING: Health? Structure? 5(0-40% poor/ 50-70% Average/ 80% + Good) Comments: Asymetrical canopy, Lean to South Storm Lanage. History of improper prining arborvitap Tree Number: Common Name: Cluster Preservation Value: DBH: IN Height: FT Canopy Spread: SFT Root Protection Zone (RPZ) RATING: Health: Ostructure: 190-40% poor/ 50-70% Average/ 80% + Good) Comments: Storm Janage, Campies dying back Tree Number: Common Name: Mapk Preservation Value: DBH. IN Height. FT Canopy Spread? FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor! 50-70% Average! 80% + Good) comments: Co-dominant trunks Tree Number: Common Name: Wape Preservation Value: DBH. IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Co-deminant trunks

Chehalem Individual Tree Characteristics Form Project: Bable Nickbus' Park Inspection Date: 12/5 Tree Number: Common Name: MPE Preservation Value: DBH: UN Height: FT Canopy Spread: FT Root Protection Zone: (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical and Tree Number: Common Name: Nople Preservation Value: DBH IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good) comments: Asymetrical campy, but setting in to all cut Tree Number: Common Name: Maple Preservation Value: DBH: IN Height: FT Canopy Spread. FT Root Protection Zone (RPZ) RATING: Health Structure (0.40% poor 50-70% Average 80% + Good) Multiple as-deminant frunks comments: Some storm bracks, Low over Street / Sidewalk Tree Number: Common Name: A: Preservation Value: DBH: IN Height FT Canopy Spread! FT Root Protection Zone (RPZ) RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good comments: Grans condominantly with the Tree Number: Common Name: **Preservation Value:** IN Height: FT Canopy Spread: FT Root Protection Zone (RPZ) DBH: RATING: Health: Structure: (0-40% poor/ 50-70% Average/ 80% + Good)

Comments:



GENERAL NOTES - DEMO SITE PLAN:	DRAWING LEGEND:	KEYNOTES - DEMO SITE PLANS:
<ol> <li>PROTECT ALL BUILDINGS, UTILITIES, SITE WORK, VEGETATION, ETC. TO REMAIN.</li> <li>SEE SITE PLAN FOR ADDITIONAL INFORMATION.</li> <li>SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.</li> <li>MOVE (E) UTILITIES &amp; UTILITY MONUMENTS AS NECESSARY FOR NEW CONSTRUCTION.</li> <li>MAINTAIN EXISTING WALKS, PARKING, ADA ETCAS NECESSARY FOR PHASING. ALL DEMO MAY NOT OCCUR AT ONCE</li> </ol>	EXISTING CONST & SITE WORK TO REMAIN: BLDG: SITE: EXISTING CONST & SITE WORK TO BE REMOVED:	<ul> <li>(E) CURB &amp; DRIVEWAY TO BE ABANDONED</li> <li>(E) EXISTING CURB &amp; SIDEWALK TO REMAIN. REPAIR AS NECESSARY</li> <li>(3) EXISTING ON STREET PARKING ALONG NORTH SIDE OF HAWORTH AVENUE TO REMAIN</li> <li>(4) EXISTING TREES TO REMAIN, TYP</li> <li>(5) EXISTING TREES TO BE REMOVED, TYP.</li> <li>(6) EXISTING VOLLYBALL COURT &amp; PATIO TO REMAIN</li> <li>(7) REMOVE EXISTING ASPHALT PARKING, CURBS, SIGNAGE, LIGHTING, UTILITIES &amp; MISC AS SHOWN TO PREPARE SITE FOR PROPOSED BUILDING.</li> <li>(8) REMOVE EXISITING PLAYGROUND</li> </ul>

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1802 HAWORTH AVE. NEWBERG, OREGON 97132



Drawing: **EXISTING SITE AND** DEMOLITION PLAN

10.30.15 SCHEMATIC DESIGN PROGRESS SET

Job No: Date: Drawn By: Checked By:

Sheet No:

1493 10.30.2015 --

A1.0

# Exterior Lighting Cut Sheets

Chehalem Aquatic and Fitness Center Renovation and Expansion 2015-0172 prepared for: Scott/Edwards Architecture

prepared by: Brianne Adams-Rice

January 26, 2016



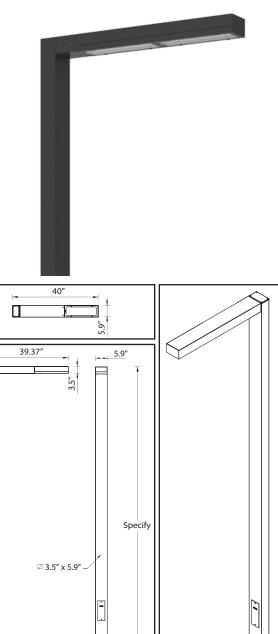


ULI-21171

Light Linear post top

Head Office: Tel: 503-645-0500 7144 NW Progress Ct Fax: 503-645-8100 Hillsboro, Oregon 97124 www.ligmanlightingusa.com

## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)



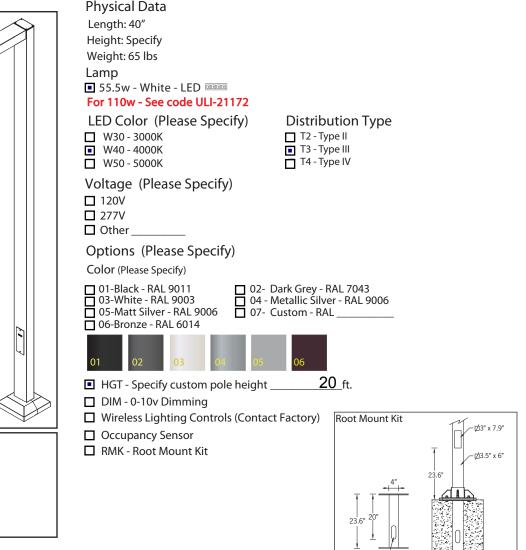
#### using energy optically controlled LED's. A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

Light Linear PT es an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort

These single head luminaires are available in Type II, Type III, and Type IV distributions using 55.5w or 78w LED options. Single or twin arm variations of these products are standard.

Please contact factory for dimming options.



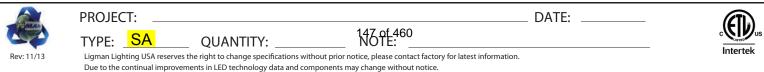
Ordering Example : ULI - 21171 - 55.5w - W30 - T2 - 120v - Options

8.34" 11.81"

0.86"x1.96

12.6'

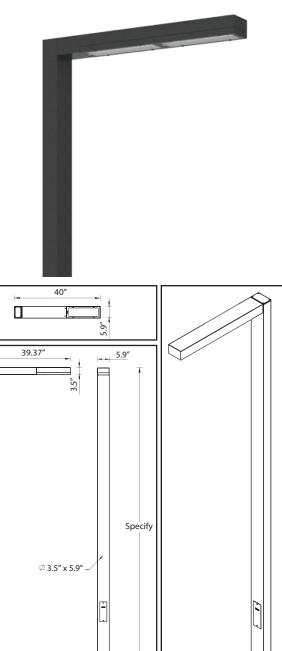
Mounting Detail

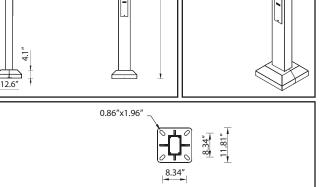




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## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)





11.81″

# ULI-21171

# Light Linear post top

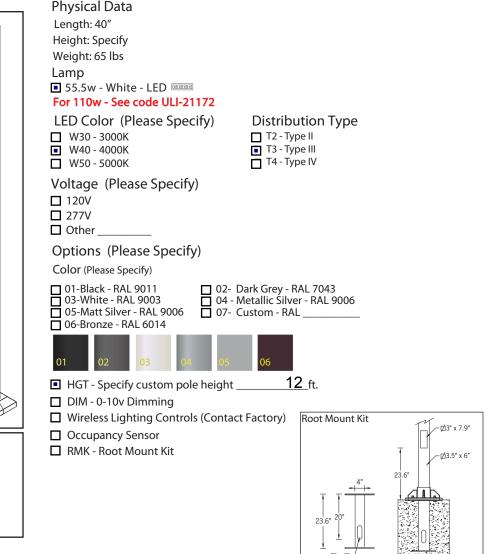
Light Linear PT es an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort using energy optically controlled LED's.

A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

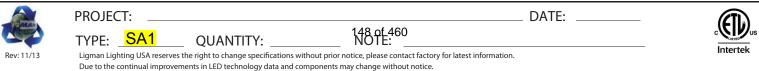
These single head luminaires are available in Type II, Type III, and Type IV distributions using 55.5w or 78w LED options. Single or twin arm variations of these products are standard.

Please contact factory for dimming options.



Ordering Example : ULI - 21171 - 55.5w - W30 - T2 - 120v - Options

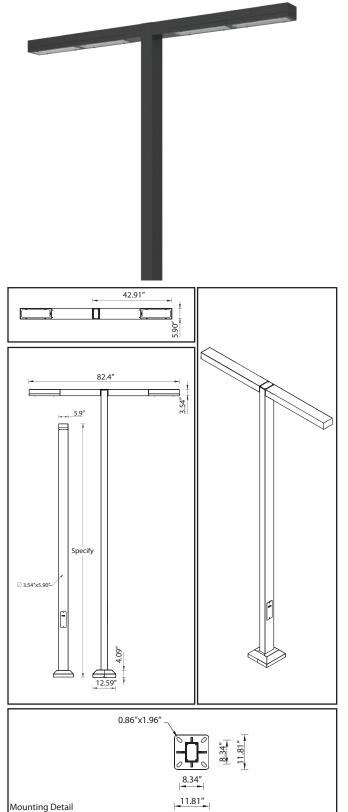
Mounting Detail





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## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)



# ULI-21181

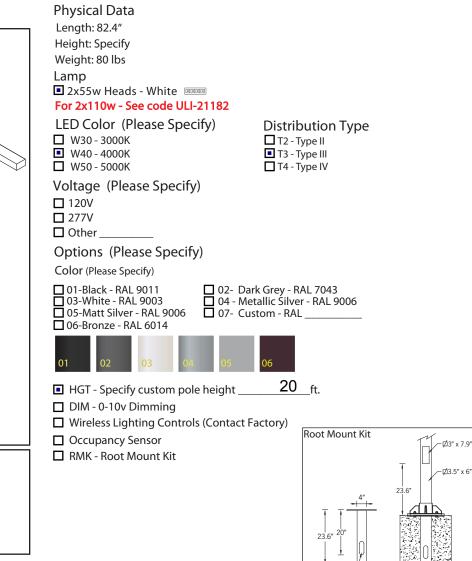
# Light Linear Double PT 5

Light Linear PT is an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort using energy optically controlled LEDs.

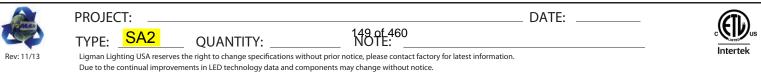
A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

These luminaires are available in Type II, Type III, and Type IV distributions using 2x55w or 2x78w LED options. Single or twin arm variations of these products are standard. Please contact factory for dimming options.



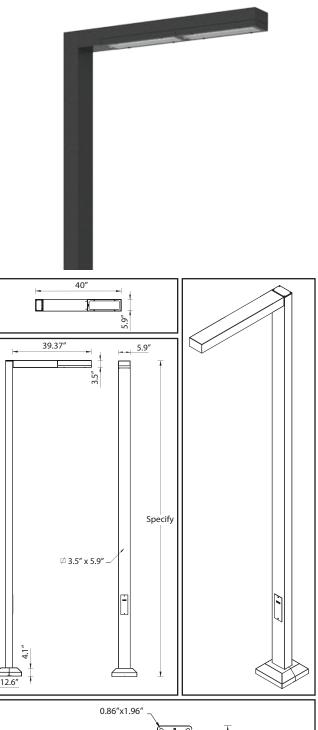
Ordering Example : ULI - 21181 - 2x55w - W30 - T2 - 120v - Options





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## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)



# ULI-21173

# Light Linear post top

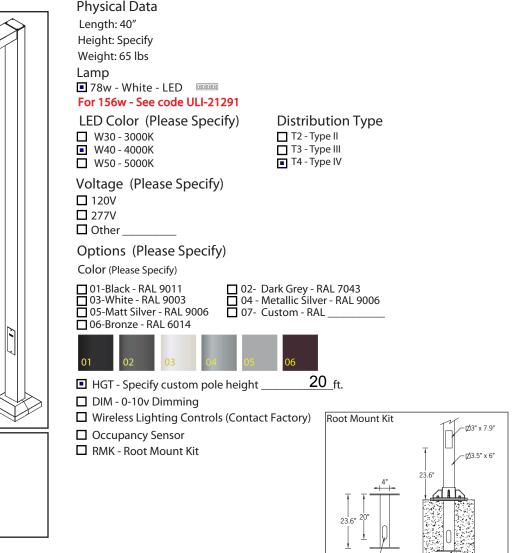
Light Linear PT es an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort using energy optically controlled LED's.

A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

These single head luminaires are available in Type II, Type III, and Type IV distributions using 55.5w or 78w LED options. Single or twin arm variations of these products are standard.

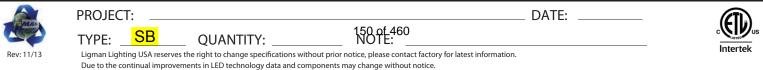
Please contact factory for dimming options.



Ordering Example : ULI - 21173 - 78w - W30 - T2 - 120v - Options

Mounting Detail

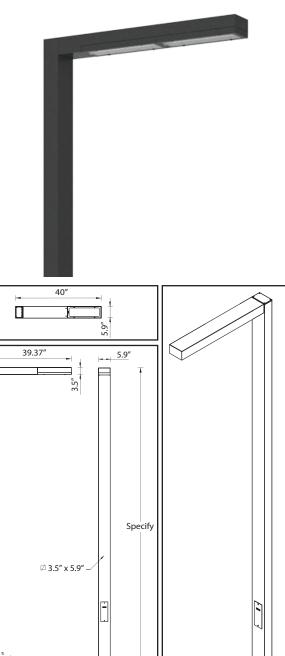
8.34" 11.81"

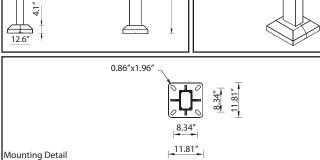




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## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)





# ULI-21173

# Light Linear post top

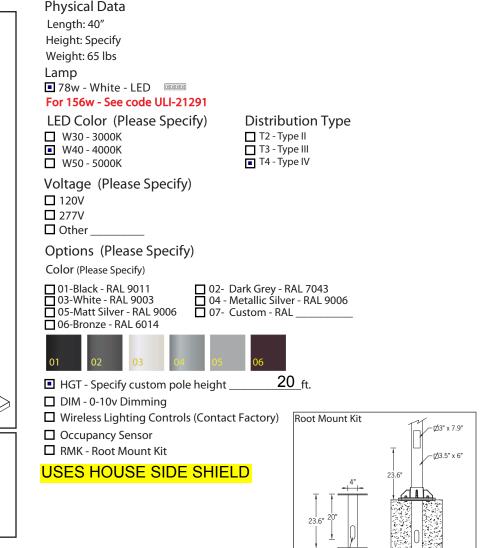
Light Linear PT es an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort using energy optically controlled LED's.

A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

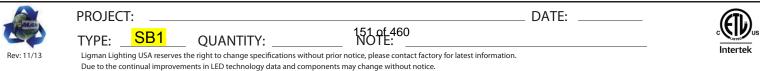
Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

These single head luminaires are available in Type II, Type III, and Type IV distributions using 55.5w or 78w LED options. Single or twin arm variations of these products are standard.

Please contact factory for dimming options.



Ordering Example : ULI - 21173 - 78w - W30 - T2 - 120v - Options



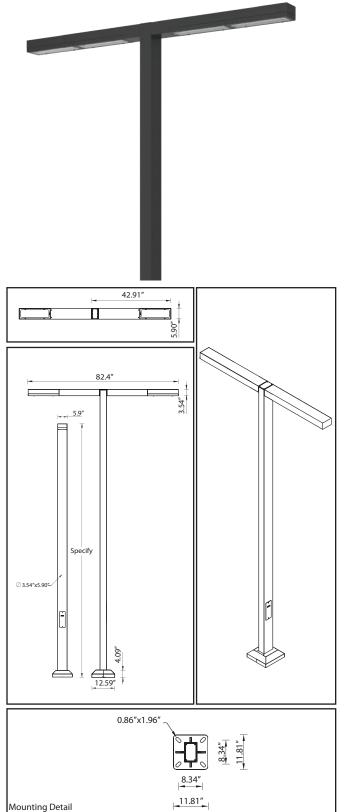


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⊠13" x 7.9

⊠Í3.5″ x 6

## IP65 : Suitable for Wet Locations IK07 : Impact Resistant (Vandal Resistant)



# ULI-21183

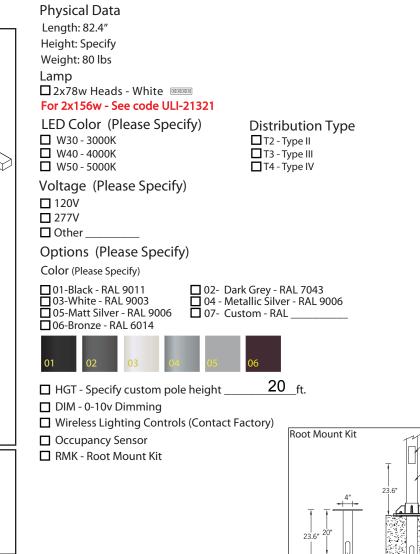
# Light Linear Double PT 5

Light Linear PT is an elegant lighting column that is suitable for both modern and classic architecture. Ideal for creating visual guidance with exceptional visual comfort using energy optically controlled LEDs.

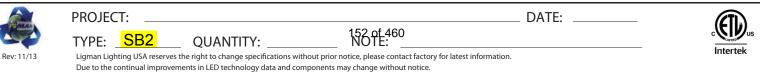
A sleek and minimalist shape provides distinctive lighting effects by night and decorative urban effect during the day. Suitable for pedestrian precincts, building surrounds, shopping centers, squares and parks

Extruded aluminum column and low copper content die cast luminaire with high corrosion resistance. Stainless steel screws. Durable silicone rubber gasket and impact resistant tempered glass lens. Housing is treated with a chemical chromatized protection before powder coating, ensuring high corrosion resistance. Available with a selection of integral electronic drivers and dimming electronic ballast ensures extended lamp life, energy saving capabilities and integration with building management systems. Easy access to the luminaire for maintenance. NOTE:

These luminaires are available in Type II, Type III, and Type IV distributions using 2x55w or 2x78w LED options. Single or twin arm variations of these products are standard. Please contact factory for dimming options.



#### Ordering Example : ULI - 21183 - 2x78w - W30 - T2 - 120v - Options



	SC	
QUOTE/OF	RDFR FOR	M

		QUOIE/OR
B LOCATION: _		COMPANY:
	PLEASE USE ADOBE READER OR ADOBE ACROBAT TO FILL OU	T AND SAVE FORM. USING OTHER PROGRAMS COULD RESULT IN UNSAVED DATA.
		MODEL
IANTITY	MODEL	
		es 500 - 5" diameter column, illuminated
		ies 600 - 6" diameter column, illuminated ies 500 - 5" diameter column, non-illuminated
		es 600 - 6" diameter column, non-illuminated
		OPTIONS
	FIG. 1 LIGHT COLUMN BOLLARD	
(180° pe	erforated shield shown - pattern not shown for clarity)	<u> </u>
		Finish Options
		Please select one option below.
	(2)	Standard Stainless Steel Finish
		Satin
		Standard Texture/Gloss from Forms+Surfaces Powdercoat Cha (Please call for pricing information)
	1	□ Aluminum Texture □ Evergreen Texture
		Argento Texture Fog Gloss
		Black Gloss Silver Texture
		Black Texture   Slate Gloss
		Bright Silver Gloss   Slate Texture
		Cobalt Texture  Cream Texture  White Texture
	FIG. 2 LIGHT COLUMN BOLLARD	Cream rexture     Winte rexture     Evergreen Gloss
	(non-illuminated bollard shown)	Premium Texture from Forms+Surfaces Powdercoat Chart (Please call for pricing information)
		Azure Texture
		□ Lime Texture □ Weathered Iron Texture
		□ Rust Texture
		Custom RAL Powdercoat Color (Please call for pricing information)
		RAL Color:

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	2			
Shield and Pattern Options (for illun	ninated bollards)			
Please select one option below. Please call for p	ricing information.			
<ul> <li>No shield</li> <li>180° shield with Kente*</li> <li>180° shield with Perforation</li> <li>180° shield with Scape</li> <li>*Kente shield is only available in Series</li> </ul>	<ul> <li>180° shield with Bubbles</li> <li>180° custom shield</li> <li>360° shield with Perforation</li> <li>360° shield with Scape</li> <li>600, 180° configuration.</li> </ul>	<ul> <li>360° shield with Bubbles</li> <li>360° custom shield</li> </ul>		
Lamp Options (for illuminated bolla	ds)	Driver (for LED lamps)		
Please select <u>one</u> option below. Please call for p	ricing information.	Please select <u>one</u> option below.		
Please select one option below. Please call for pricing information.         ■ 17W LED (17W custom LED light engine)         Please select one color temperature below.         □ 3000K       ■ 4000K         □ (2x) F14T5 (14W T5 linear fluorescent)		Dimmable Driver Yes No GFCI Outlet (for Series 600 illuminated, non-security bollards) Please select one option below. Please call for pricing information.		
(2x) F24T5/H0 (24W T5H0 line	ar fluorescent)	Yes No		
Mounting Options         Please select one option below. Please call for p         Surface Mount with J-bolts         Surface Mount with Removable         Embedded Security Core*         *Security core mounting is only available	Base			

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#### LED wall washers · wide spread light distribution

**Housing:** Constructed of marine grade, copper free die-cast aluminum alloy. The housing uses stainless steel inserts for enclosure attachement. Mounts over a standard 3 1/2" or 4" octagonal wiring box. Die castings are marine grade, copper free ( $\leq 0.3\%$  copper content) A360.0 aluminum alloy.

**Enclosure:** One piece die-cast aluminum cover frame secured by captive socket head, stainless steel screws threaded into stainless steel inserts. Semi-specular, anodized aluminum internal reflector. Safety glass lens installed flush with aluminum frame. Fully gasketed for weather tight operation using a molded silicone rubber gasket. Can be installed in upward or downward facing positions.

**Electrical:** 25.3W LED luminaire, 30 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver, 0-10V dimming. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with an >80 CRI. Available in 4000K (>80 CRI); add suffix K4 to order.

**Note:** LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

**Finish:** All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

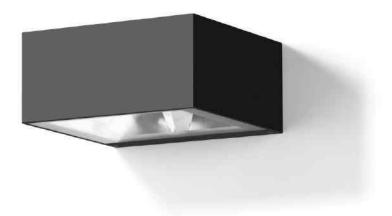
 $\ensuremath{\text{CSA}}$  certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 6.8 lbs.

Luminaire Lumens: 1926 Tested in accordance with LM-79-08



А



	с			
Wide spr	ead light distribution			
	Lamps	А	В	С
2383 LED	25.3W LED	91/2	4 ¼	7 1/8

Type: SD BEGA Product: Project: Voltage:

Color: Options: Modified: ATTACHMENT 5: APPLICATION

## CHEHALEM AQUATIC AND FITNESS CENTER TRAFFIC IMPACT STUDY

**NEWBERG, OREGON** 

DATE: January 7, 2016

**PREPARED FOR:** Chehalem Aquatic and Fitness Center

**PREPARED BY:** Gwen Shaw Todd Mobley, PE Michael Ard, PE





321 SW 4th Ave., Suite 400 | Portland, OR 97204 | 503.248.0313 | lancasterengineering.com 156 of 460



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## **Executive Summary**

- 1. The Chehalem Park and Recreation District has awarded a \$19.9 million bond to the Chehalem Aquatic and Fitness Center to expand its existing facility from 21,280 square feet to 61,670 square feet. The new space would include an indoor gymnasium, additional fitness rooms and equipment, a recreational pool, and a competitive lap pool. The facility is expected to complete construction in Spring 2017.
- 2. Traffic patterns and volumes were observed at key intersections in the surrounding area and on the existing site during typical weekdays in October and November 2015. Information gained through these counts and observations was analyzed and used to determine the trip generation and expected distribution of the expanded facility.
- 3. Access to the expanded facility is provided by two driveways: one in the location of the current site's eastern driveway and a new one located farther east. Intersection sight distance was measured on Haworth Avenue at both these locations and was found to be adequate in both directions. Full development of the site will only increase the available sight distance.
- 4. Based on the most recent five years of crash data at the study intersections, crash rates are not indicative of a significant safety concern, crash severity was relatively low, and no significant crash patterns area evident. Accordingly, no safety mitigations are recommended.
- 5. An operational analysis was conducted at the intersections of East Portland Road (OR-HWY99) at Villa Road, Villa Road at Fulton Street, Villa Road at Haworth Avenue, and Haworth Avenue at Sitka Avenue. All study intersections currently operate at an acceptable level of service and will continue to operate at an acceptable level of service with the addition of background and site generated trips.
- 6. A parking analysis was performed to determine the current and future parking supply and demand to ensure adequate parking is available. Current site plans propose parking supply to be slightly under the expected peak demand. Accordingly, a Transportation Demand Management Plan has been prepared to explore options to strategically reduce the number of single occupancy vehicle trips to the site.



## **Project Description**

#### INTRODUCTION

The Chehalem Aquatic and Fitness Center (CAFC), located at 1802 Haworth Avenue in Newberg, Oregon, has been awarded a \$19.9 million bond measure (M36-170) by the Chehalem Park and Recreation District for a renovation and expansion of their current facility. The current building is 21,280 square feet and the improvements will include the construction of a 40,390 square foot building to the east of the existing building, resulting in a total building footprint of 61,670 square feet.

This report assesses the traffic impacts of the proposed expansion on the nearby street system and provides recommendations regarding any mitigations to maintain safe and efficient operation. The analysis will include level of service and capacity calculations and examine parking conditions for the new facility.

A detailed site plan and information on traffic counts, trip generation calculations, and level of service calculations are included in the appendix to this report.

#### LOCATION DESCRIPTION

Located in the southeast corner of Villa Road and Haworth Avenue in Newberg, the current CAFC is a 21,280 square foot building that contains a pool and rooms for fitness classes and activities. The proposed concept plan, as of December 18, 2015, will convert the existing building into the new fitness center and construct a new building to the east that will become the aquatic center with a recreational pool and a separate competitive lap pool.

Access to the site will be through two driveways on Haworth Avenue, one existing and one new, located to the east of the existing two driveways. Service access will be available via a proposed culde-sac located on East Cherry Street in the southeast corner of the project site.

The City of Newberg's Public Work Standards state that the study area is defined as those roads, ramps, and intersections at which at peak hour site traffic makes up at least 5 percent of the existing capacity or where "accident character or residential traffic character is expected to be significantly impacted." Based on these standards, the following intersections and site access points have been identified for analysis of impacts related to the development:

- E Portland Road (OR-99W) at Villa Road;
- Villa Road at Fulton Street;
- Villa Road at Haworth Avenue;
- Haworth Avenue at Sitka Avenue;
- West Site Access at Haworth Avenue; and
- East Site Access at Haworth Avenue.

# 4

### VICINITY STREETS

East Portland Road (OR-99W) is under the jurisdiction of the Oregon Department of Transportation and is classified as a major arterial in the City of Newberg's Transportation System Plan. East of Villa Road, E Portland Road is generally a five lane arterial with two travel lanes in either direction and a center turn lane that acts as a dedicated left turn lane at major intersections. West of Villa Road, westbound travel continues onto E Hancock Road which forms a couplet with eastbound E 1<sup>st</sup> Street. Bike lanes and sidewalks are present in both directions along OR-99W in the study area.

Villa Road is under the jurisdiction of the City of Newberg and is classified as a major collector. It is generally a two-lane street with wide shoulders providing enough space for on-street parking. Side-walks are intermittent along Villa Road. In the area near the CAFC, they are present on the west side of the street along George Fox University's baseball field and on the east side of the street immediately south of Haworth Avenue. Bicycle sharrows are provided in both directions north of Fulton Street.

Fulton Street and Haworth Avenue are both under the jurisdiction of the City of Newberg and are classified as major collectors. Both streets are two-lane roads with wide shoulders allowing for onstreet parking when not marked otherwise. Bicycle sharrows are provided in both directions for both streets. Sidewalks are present on both sides of each street except along the site's Haworth Avenue frontage east of the site access driveways.

Sitka Avenue is under the jurisdiction of the City of Newberg and is classified as a local street. It is an unstriped two-way street with on-street parking on both sides. Sidewalks and curbs are present on both sides.

East Cherry Street is a cul-de-sac under the jurisdiction of City of Newberg and is classified as a local street. Currently it acts solely as access to two single family homes.

#### ANALYSIS INTERSECTIONS

The intersection of E Portland Road (OR-99W) and Villa Road is a four-legged intersection controlled by a traffic signal. The southbound approach on Villa Road contains a protected left turn lane, a through lane, a bike lane, and a dedicated right-turn lane. The northbound approach on Villa Road contains two protected left turn lanes and a shared through-right lane. A striped bike lane appears to be present to the right of the through/right lane, but there are no bicycle symbols in the immediate area. Both the eastbound and westbound approaches on E Portland Road (OR-99W) contain a protected left turn lane, a through lane, a shared through-right lane, and a bike lane. Marked crosswalks with pedestrian signals are in place crossing all four legs of the intersection.

The intersection of Villa Road and Fulton Street is an offset four-legged intersection that is controlled by STOP signs on the eastbound and westbound Fulton Street approaches. All approaches are single lane with the exception of the stop-controlled eastbound approach which contains separate right and left turn lanes. There is no outlet on the east leg of the intersection and it is primarily used as access to private single-family dwellings. Bicycle sharrows are present in the eastbound approach and continue north on Villa Road. A marked crosswalk is provided on the west side of the intersection. All other intersection crosswalks are unmarked.

# 4

The intersection of Villa Road and Haworth Avenue is a four-legged intersection that operates under stop control for the eastbound and westbound approaches. All approaches are single lane with the exception of the westbound approach which contains separate right and left turn lanes. The western leg is an access to a George Fox University building and athletic field and serves primarily parking. Bicycle sharrows are present at the three public-street approaches. A marked crosswalk is provided on the south side of the intersection, and the sidewalk extends across the west leg of the intersection to provide a marked crossing there. The other crosswalks at the intersection are unmarked.

The intersection of Haworth Avenue and Sitka Avenue is a four-legged intersection that is controlled by an all-way STOP. All approaches are single lane. Bicycle sharrows are present on both Haworth Avenue approaches. All four legs of the intersection have marked crosswalks in place.

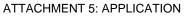
Figure 1 on page seven shows the project study area and the location of the site.

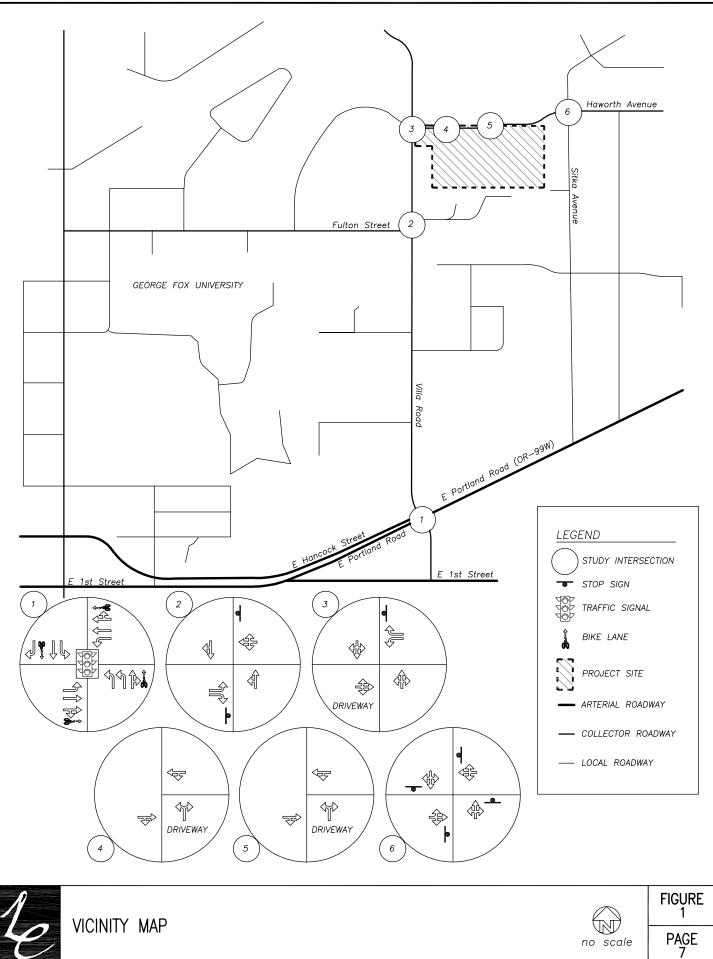
#### TRAFFIC COUNTS

Manual turning movement counts were made at each of the study intersections on Tuesday, September 29 for evening peak hours and Wednesday, September 30 for morning peak hours. Counts at both the east and west access points of the CAFC facility on Haworth Avenue were also collected.

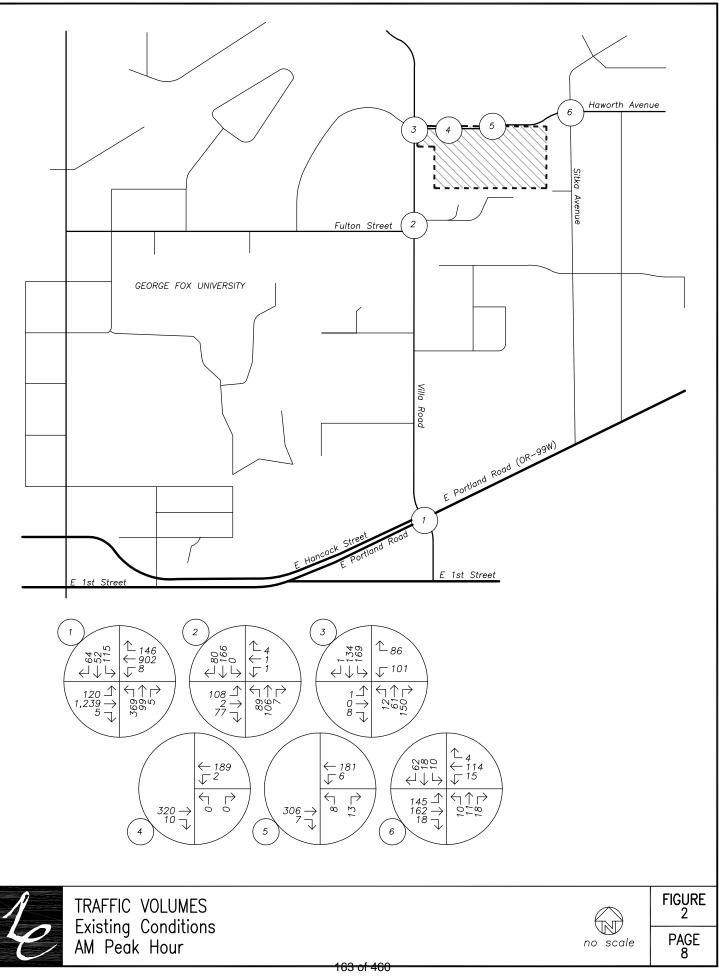
Located directly across from the east access point on Haworth Avenue is a parking lot access for the existing office building. Vehicle counts into and out of this facility were collected but were negligible and were therefore omitted from the analysis.

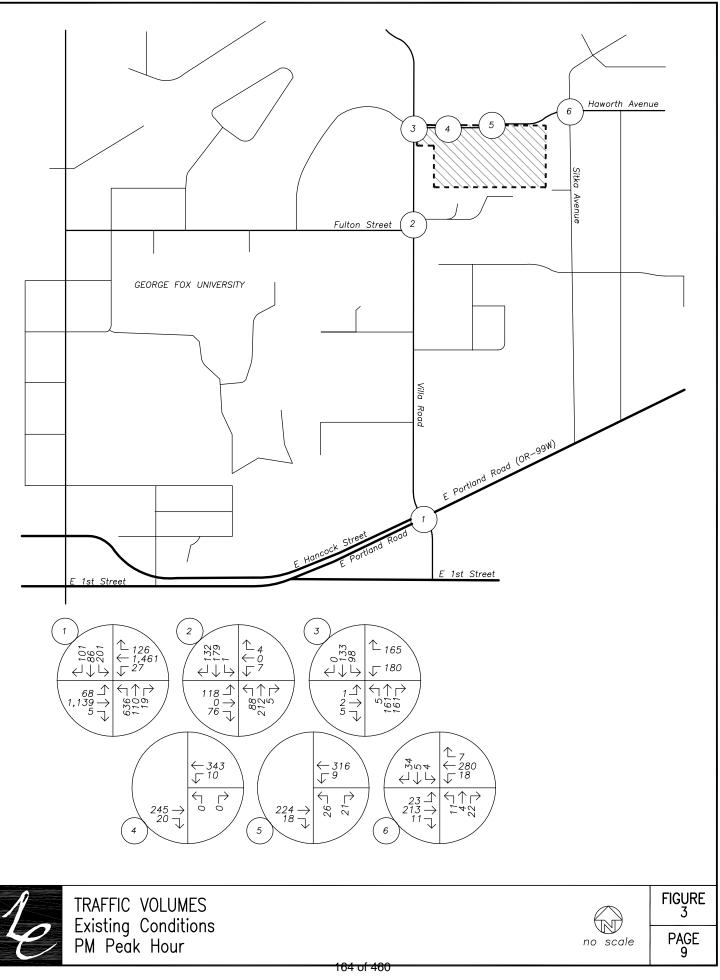
Figure 2 on page eight and Figure 3 on page nine show the existing traffic volumes at the study area intersections for the morning and evening peak hours, respectively. Detailed traffic count data is included in the appendix to this report.





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# 4

#### CITY OF NEWBERG IMPROVEMENTS

Based on conversations between the City of Newberg, Chehalem Park and Recreation District (CPRD), and Scott | Edwards Architecture (SEA) at two pre-application meetings on August 4 and August 19, a number of street and transportation improvements are necessary on the CAFC site to update existing conditions to the current standards.

As described above, there is an existing curb tight sidewalk along the south side of Haworth Avenue from Villa Road to the east approximately 320 feet. This sidewalk does not meet current width standards, but is in good condition and is proposed to remain. The remaining frontage is served by a curving internal asphalt path which varies from 50 to 20 feet off the existing curb face. Its condition is very poor and it is proposed to be replaced by a new sidewalk which varies from eurb tight to 25 feet off the existing cur face in order to preserve existing trees. As part of the proposed CAFC expansion, the City of Newberg is requiring the existing driveway and sidewalk ramps to be updated to meet current design standards and the new driveway needs to be constructed to the current standard.

Haworth Avenue is classified as a major collector but currently does not meet the design standards for that classification. The standards state that a major collector should have striped bike lanes and no on-street parking; however Haworth Avenue currently has sharrows and allows on-street parking. The addition of a bike lane and the removal of on-street parking on the south side of Haworth Avenue for the length of the CAFC site will be required as part of the expansion, per City of Newberg standards.

Similar to Haworth Avenue, Villa Road currently does not meet the City of Newberg design standards and a capital project led by the city to make the required updates is underway. Villa Road between Haworth Avenue and Crestview Drive, north of the CAFC site, will be getting bike lanes and sidewalks in addition to roadway surface improvements. Construction is scheduled to start in summer 2016 and will be concurrent with the construction of the proposed CAFC expansion. Final plans for the Villa Road Improvement Project have not been determined to date, but may include significant improvements to the intersection of Haworth Avenue and Villa Road. Coordination between construction projects will be required by the City of Newberg.

The analysis done in this report will discuss primarily the existing conditions, but these City of Newberg required improvements should not have any negative impact on the surrounding transportation system. The conclusions and recommendations resulting from this report will remain valid if and when these planned improvements take place.

curb tight sidewalk per City of Newberg Standards.

# 4

# **Trip Generation & Distribution**

### TRIP GENERATION

To evaluate the impacts of the proposed CAFC expansion, the generated trips for the current and new facilities were calculated and compared. To estimate the trip generation of this expansion, trip rates from the *TRIP GENERATION MANUAL*, Ninth Edition, published by the Institute of Transportation Engineers (ITE), were used. Trip rates for land-use code 495, *Recreational Community Center*, were used based on the gross floor area for the existing and proposed building footprints.

The trip generation calculations show that the proposed 61,670 square foot building will generate up to 178 trips in the morning peak period, 207 trips in the evening peak period, and 2,086 total trips on the typical weekday. Compared to the existing 21,280 square foot building, 117 additional trips are projected during the morning peak hour, 136 additional trips are projected during the evening peak hour, and 1,366 additional trips are projected during the typical weekday. Trip generation for the existing facilities as measured at the driveways was compared to the ITE *TRIP GENERATION MAN-UAL* data and found to correlate well. Accordingly, no adjustments to the standard trip generation data were necessary to account for local conditions.

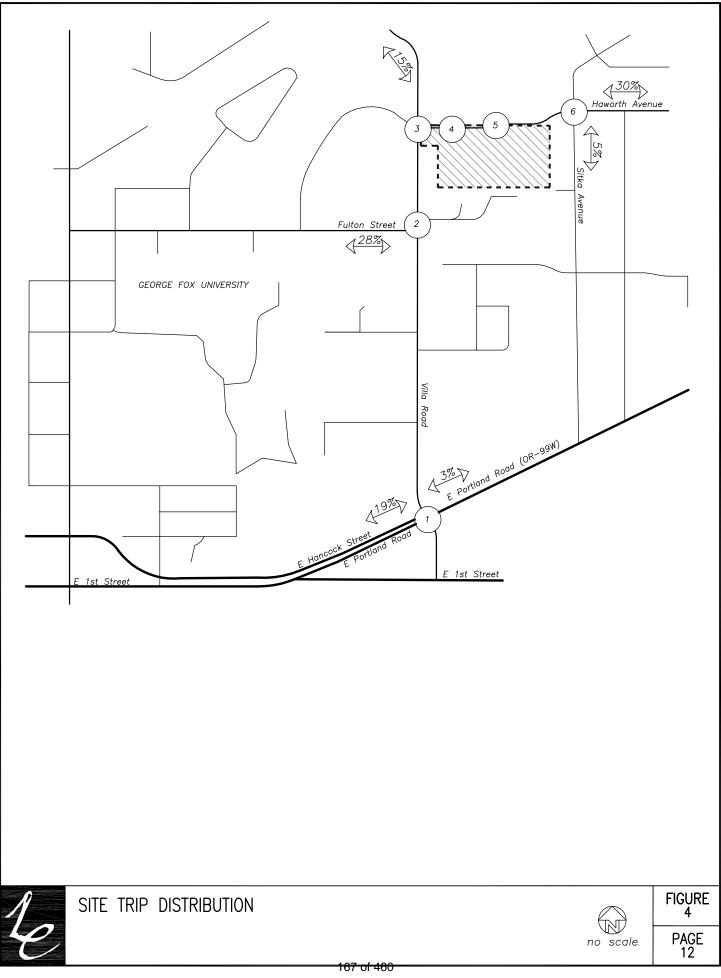
TRIP GENERATION SUMMARY								
	AM	AM Peak Hour PM Peak Hour						
	Entering	Exiting	Total	Entering	Exiting	Total	Total	
	<u>Trips</u>	<u>Trips</u>	<u>Trips</u>	<u>Trips</u>	<u>Trips</u>	<u>Trips</u>	<u>Trips</u>	
Existing Size								
21,280 sf	27	34	61	40	31	71	720	
<b>Proposed Size</b>								
61,670 sf	80	98	178	118	89	207	2,086	
Net New Trips	53	64	117	78	58	136	1,366	

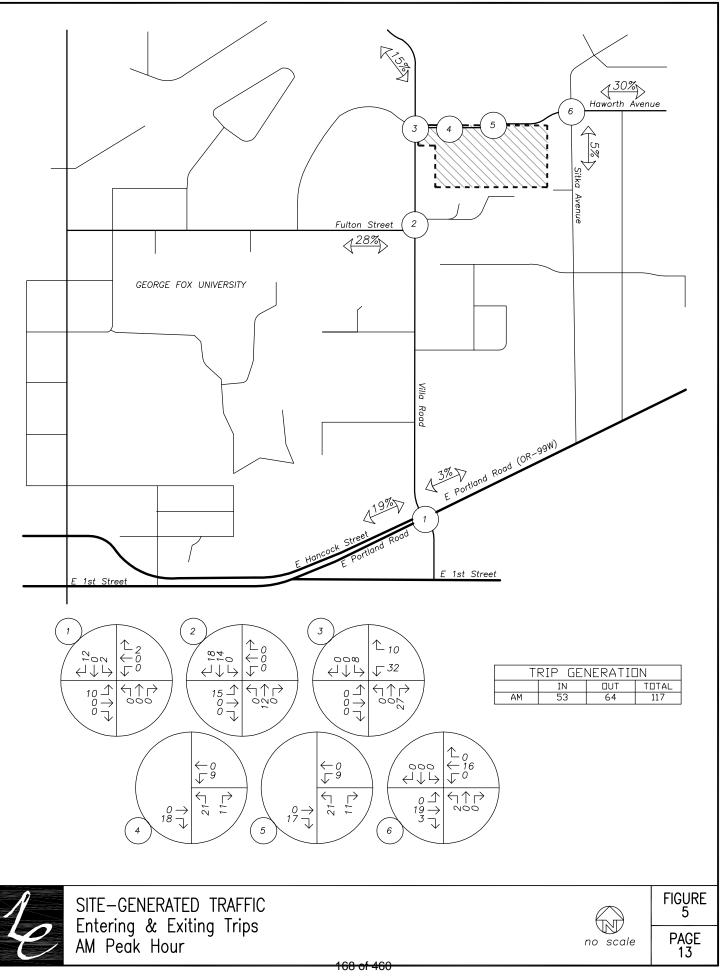
A summary of the trip generation calculations for the expansion is shown in the following table. Detailed trip generation calculations are included in the appendix to this report.

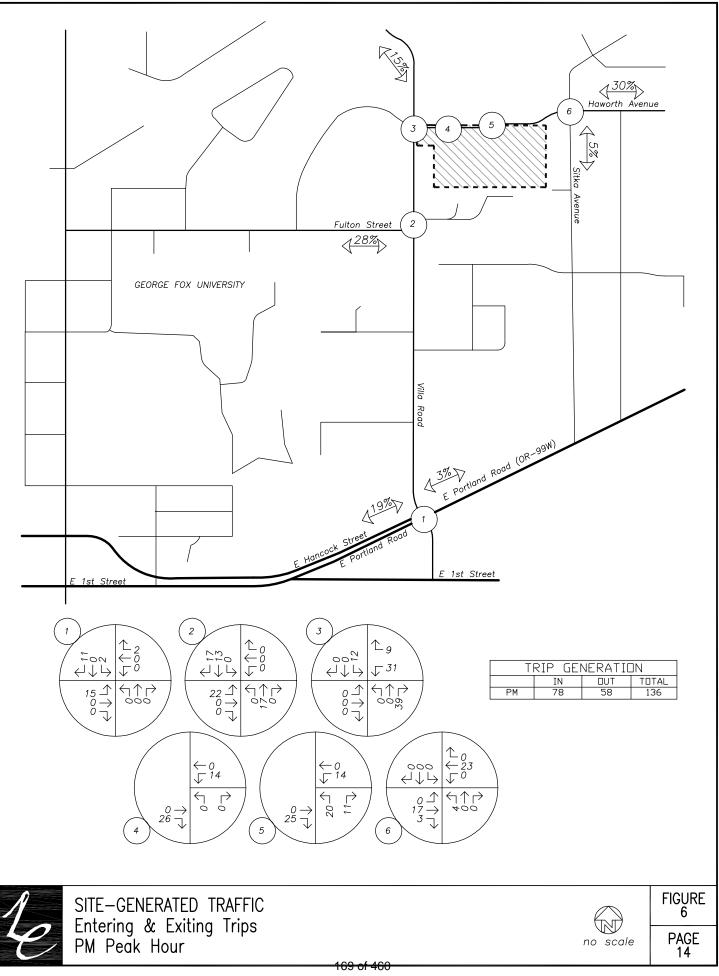
### TRIP DISTRIBUTION

The CAFC serves primarily residents of Newberg and nearby surrounding cities. Based on the counts taken during morning and evening peak hours at the site driveways, approximately 70 percent of vehicles entering the CAFC facility are coming from the west. Each driveway sees about half of the entering and exiting traffic. Figure 4 on page 12 shows the expected distribution of trips in the area surrounding the CAFC site.

Figures 5 on page 13 and Figure 6 on page 14 show the expected site generated trips at each study intersection for the morning and evening peak hours, respectively.









# **Safety Analysis**

#### SIGHT DISTANCE

The proposed CAFC expansion will include a relocation of the two existing driveways. Based on the site plan from December 18, 2015, the new west access will be in the location of the current east access and a new sidewalk and driveway will be added approximately 200 feet to the east.

Sight distance measurements were made along Haworth Avenue at the existing east driveway and the location of the proposed driveway. Required intersection sight distance was calculated from the equations given in *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*, published in 2011 by the American Association of State Highway and Transportation Officials (AASH-TO). The measurements are based on a driver's eye height of 3.5 feet above the roadway and an object height of 3.5 feet, with the driver's eye 15 feet behind the edge of the near side travel lane. Based upon the posted speed of 25 mph on Haworth Avenue, the intersection sight distance required is 280 feet in each direction.

Looking west on Haworth Avenue from the future west driveway location, intersection sight distance was measured to be 355 feet, reaching all the way to the intersection at Villa Road. Looking east on Haworth Avenue, intersection sight distance was measured to be 320 feet. Trees, a parked car, and an existing sign were the limiting factors. Thus, the proposed driveway location can meet the intersection sight distance requirements for both directions.

Looking west on Haworth Avenue from the future east driveway location, intersection sight distance was measured to be 85 feet. Looking east on Haworth Avenue, intersection sight distance was measured to be 475 feet. In the west direction, the limiting factor was primarily existing trees along the site frontage. With the proposed development, sidewalks, curbs, and a driveway will be built. The design of the site frontage including vegetation should be prepared in a configuration that provides at least 280 feet of intersection sight distance to the west. Based on the analysis, the proposed east driveway can also meet the required intersection sight distance for both directions.

As discussed previously, the City of Newberg is requiring that the existing driveway be brought up to current design standards and that the new driveway be built to current design standards. Based on the existing conditions and sight distance analysis described above, these new and improved driveways can meet the intersection sight distance standards.

#### CRASH HISTORY

A review of crashes occurring at the study area intersections was conducted using the most recent five years of available data (January 2010 to December 2014) obtained from the Oregon Department of Transportation's Crash Analysis and Reporting Unit. The crash data was evaluated based on the number of crashes, the types of collisions, the severity of the collisions, and the crash rate for the intersections. Crash rates allow comparison of safety risks at different intersections by accounting for both the number of crashes occurring and the number of vehicles that travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the PM peak period represents 10% of the average daily traffic (ADT) at the intersection. Crash rates in excess of



one to two crashes per million entering vehicles (CMEV) may be indicative of safety hazards that should be further investigated and mitigated.

The intersection of Villa Road and E Portland Road (OR-99W) had 49 reported crashes during the analysis period. Thirty-nine of the reported crashes were rear-end collisions, five crashes involved a turning movement, two were sideswipe-overtaking collisions, one was a fixed-object collision, and two were turning movement collisions involving a bicyclist. Of the reported crashes, 28 of the crashes resulted in property damage only, 19 resulted in possible injury or complaint of pain (*Injury-C*), and 2 crashes resulted in non-incapacitating injuries (*Injury-B*). The crash rate for the intersection was calculated to be 0.83 CMEV.

Of the crashes at the intersection involving a bicyclist, one resulted in property damage only and the other resulted in a non-incapacitating injury to the cyclist. The crash resulting in an injury occurred when a person riding a bicycle westbound through the intersection was struck by an eastbound driver turning left onto Villa Road who did not yield the right-of-way. The motorist sustained no injuries.

The intersection of Haworth Avenue and Villa Road had four reported crashes during the analysis period. Two of the reported crashes involved a turning movement, one was hitting a parked vehicle, and one was a turning movement involving a bicyclist. Two of the four crashes resulted in possible injury or complaint of pain (*Injury-C*), one resulted in a non-incapacitating injury (*Injury-B*), and one resulted in property damage only. The crash rate for the intersection was calculated to be 0.30 CMEV.

The crash involving a bicyclist occurred when a northbound vehicle on Villa Road and a left-turning bicyclist turning southbound off of Haworth Avenue collided. The bicyclist sustained a non-incapacitating injury (*Injury-B*) and the passenger vehicle driver was uninjured.

There were no reported crashes at the intersections of Villa Road at Fulton Street or Haworth Avenue at Sitka Avenue.

The area around the CAFC currently has no significant safety deficiencies for any mode of transportation, and will not be adversely affected by the proposed expansion.

#### PEDESTRIAN AND BICYCLE FACILITIES

As described previously, all of the vicinity streets have some kind of bicycle facility and sidewalks present. Gaps are present, including the poor conditioned internal walkway along the north side of the CAFC facility on Haworth Avenue. But, as discussed previously, many of these gaps will be filled with the City of Newberg requirements that came out of the August pre-application meetings or the City's Villa Road Improvement Project that is currently in the design phase.



## **Operational Analysis**

BACKGROUND TRAFFIC

To provide analysis of the impacts on the nearby transportation facilities for a full build-out scenario of the proposed project, an estimate of future traffic volumes is required. In order to calculate the future traffic volumes, a growth rate was applied to the measured existing traffic volumes.

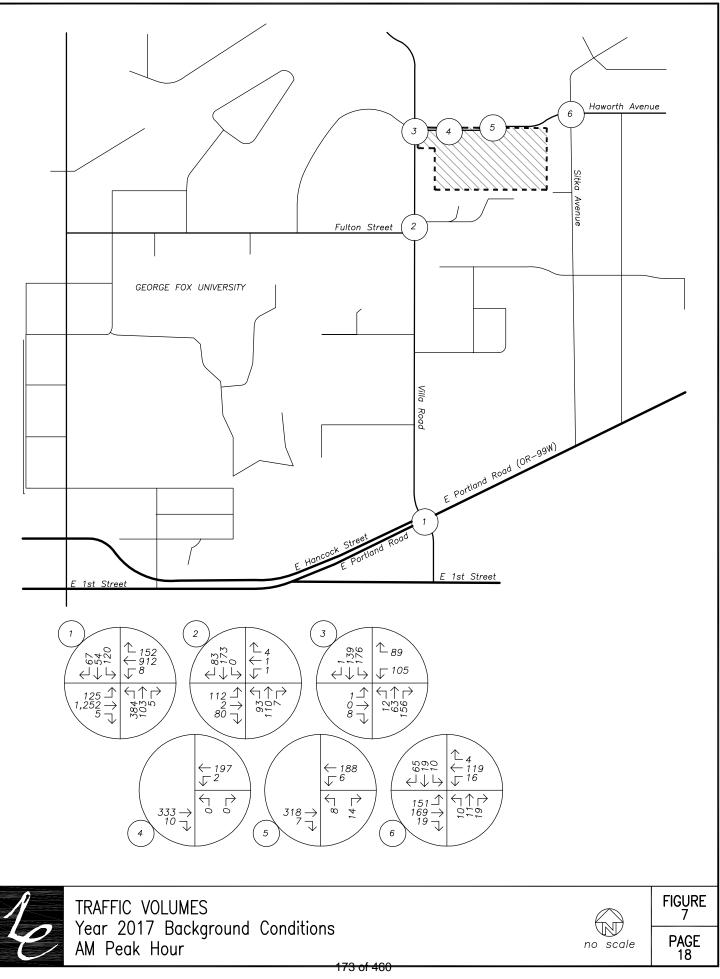
The CAFC expansion is currently scheduled to open in 2017. To determine the background traffic at the time of the project's end date, an exponential growth rate of 2.0 percent per year was used for the studied intersections.

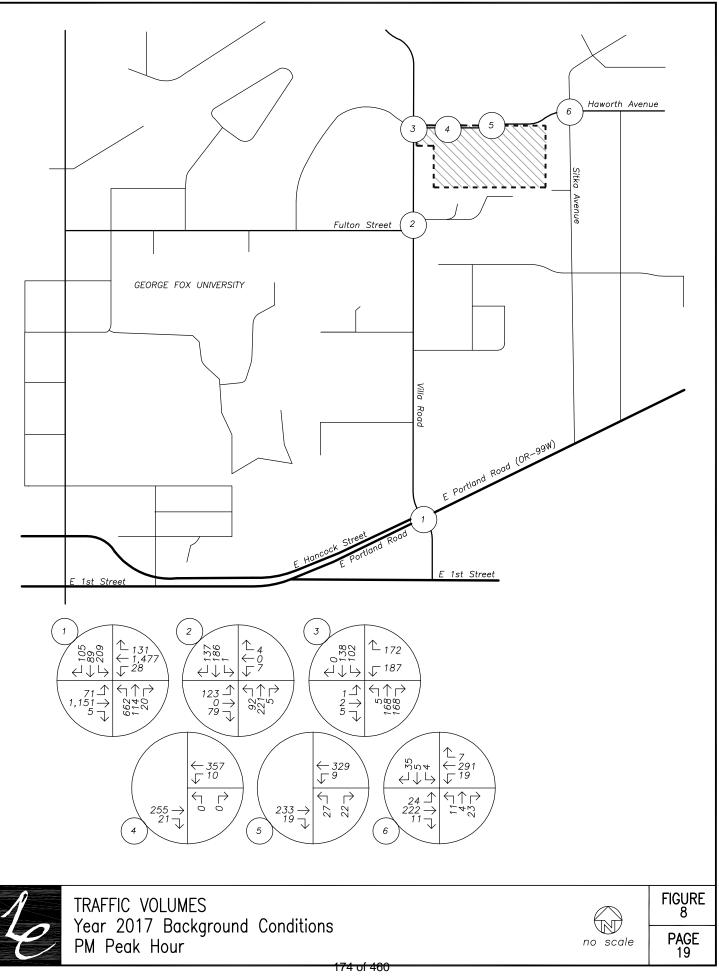
Since East Portland Road (OR-99W) is under the jurisdiction of Oregon Department of Transportation (ODOT) and is a state highway, a separate growth rate is required for the through movements. This growth rate is determined in accordance with the methodology detailed in ODOT's Analysis Procedures Manual, and is based off of values given in the 2033 Future Highway Volume Table. A linear growth rate of 0.53 percent was calculated using the year 2013 and 2033 traffic volumes at mile post 22.94 on OR-99W, approximately 0.05 miles west of Villa Road. This growth rate applies to the through movements along East Portland Road (OR-99W) only.

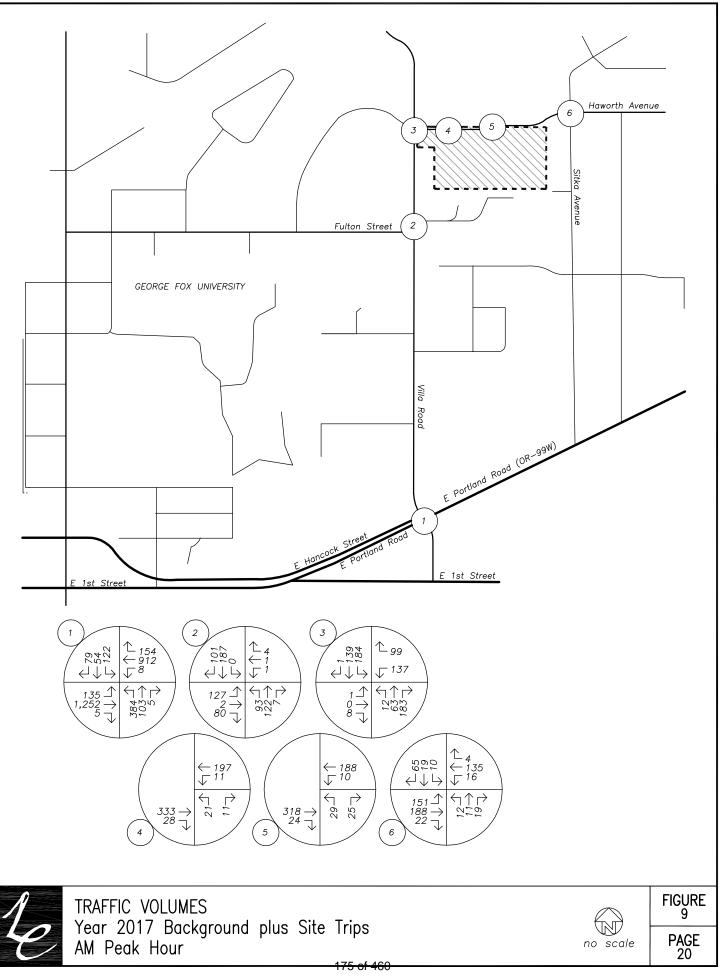
Figure 7 on page 18 and Figure 8 on page 19 show the background traffic for year 2017 at each of the study intersections for the morning and evening peak hours, respectively.

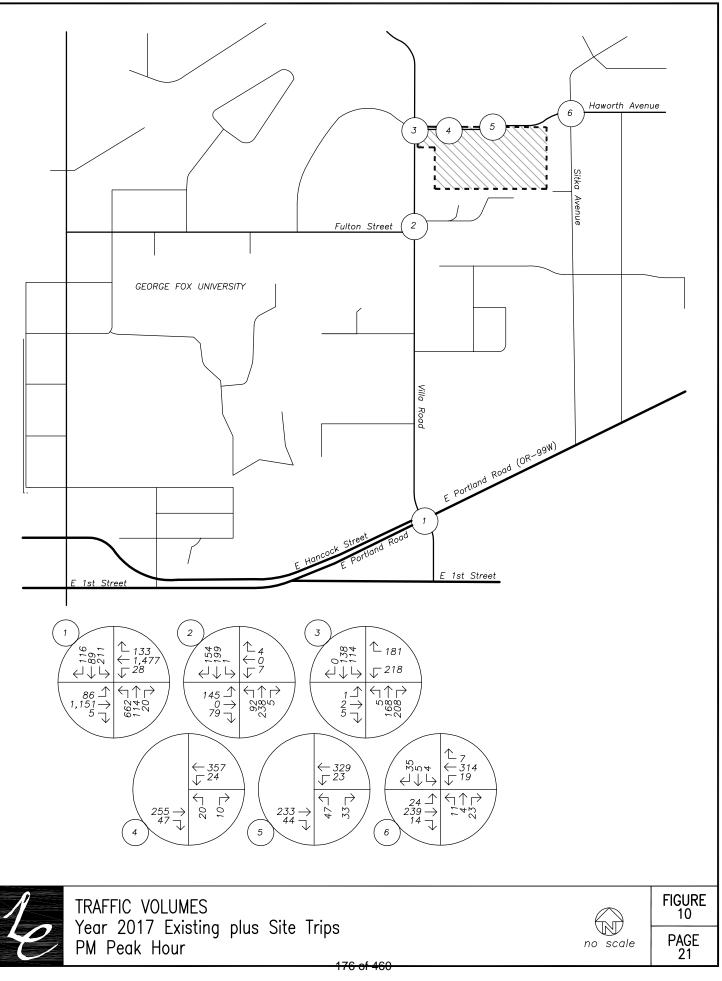
Peak hour trips calculated to be generated from the proposed development, as described earlier within the Trip Generation section, were added to the projected year 2017 background traffic volumes to obtain background plus site trips traffic volumes.

Figure 9 on page 20 and Figure 10 on page 21 show the combined background traffic and site generated traffic for the morning and evening peak hours, respectively.









# 4

## CAPACITY ANALYSIS

To determine the level of service at the study intersections, a capacity analysis was conducted. The analysis was conducted according to the signalized and unsignalized intersection analysis methodologies in the *HIGHWAY CAPACITY MANUAL* (HCM) published by the Transportation Research Board. Level of service can range from A, which indicates little or no delay, to F, which indicates a significant amount of congestion and delay. The City of Newberg requires that intersections operate at level of service D or better and with a volume-to-capacity ratio (v/c) of 0.90 or less. Detailed level of service descriptions are included in the appendix to this report.

The intersection of East Portland Road (OR-99W) at Villa Road currently operates at a level of service B during the morning peak hour and at a level of service C during the evening peak hour. Under year 2017 background conditions, the intersection is projected to operate at level of service C during the morning and evening peak hours. With the addition of site generated trips, the intersection is projected to continue to operate at a level of service C during the morning and evening peak hours.

The intersection of Villa Road at Fulton Street currently operates at a level of service B during the morning peak hour and a level of service C during evening peak hours. With the addition of back-ground traffic and site generated trips, the intersection will continue to operate at a level of service B during the morning peak hour and a level of service D during the evening peak hour.

The intersection of Villa Road at Haworth currently operates at a level of service C during the morning peak and evening peak hours. With the addition of background traffic and site generated trips, the intersection will decrease to a level of service D during the morning and evening peak hours.

The intersection of Haworth Avenue at Sitka Avenue currently operates at a level of service C during the morning peak hour and a level of service B during evening peak hours. With the addition of background traffic and site generated trips, the intersection will decrease to a level of service C during the morning peak hour and continue to operate at a level of service B during the evening peak hour.

Upon completion of the proposed development, the west site access driveway is projected to operate at a level of service B during both the morning and evening peak hours.

Upon completion of the proposed development, the east site access driveway is projected to operate at a level of service B during both the morning and evening peak hours.

The results of the capacity analysis, along with the Levels of Service (LOS) and delay are shown in the following table. Detailed capacity analysis results are included in the appendix to this report.



		2001		-			
	AM Peak Hour				PM Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C	
E Portland Road(OR-99W)/Villa Road							
Existing Conditions	С	20	0.61	С	26	0.64	
Background (2017)	С	21	0.63	С	27	0.69	
Background + Site Trips	С	21	0.63	С	28	0.67	
Villa Road/Fulton Street							
Existing Conditions	В	12	0.16	С	24	0.41	
Background (2017)	В	12	0.17	D	27	0.45	
Background + Site Trips	В	12	0.20	D	33	0.56	
Villa Road/Haworth Avenue							
Existing Conditions	С	19	0.33	С	21	0.49	
Background (2017)	C	21	0.38	C	23	0.53	
Background + Site Trips	D	28	0.53	D	32	0.68	
Haworth Avenue/Sitka Avenue							
Existing Conditions	С	19		В	12		
Background (2017)	C	21		B	12		
Background + Site Trips	D	25		B	13		
West Driveway on Haworth Avenue							
Existing Conditions	В	12		В	12		
Background + Site Trips	B	12		B	12		
	D	11		Б	11		
East Driveway on Haworth Avenue	D	10		D	10		
Existing Conditions	B	12		B	12		
Background + Site Trips	В	14		В	13		
LOS = Level of Service							
Delay = Average Delay per Vehicle in Se	conds						
V/C = Volume-to-Capacity ratio							
* *							

### LEVEL OF SERVICE SUMMARY

As shown in the table above, all study intersections currently operate acceptably during the morning and evening peak hours and will continue to operate acceptably with the expansion of the CAFC site. No operational mitigations are necessary or recommended.



## **Parking Analysis**

### FACILITY PARKING GENERATION

The parking demand that will be generated as a result of the proposed facility expansion was estimated using rates from *PARKING GENERATION*, Fourth Edition, published by the Institute of Transportation Engineers (ITE). The data utilized to determine the parking demand for the expanded facility were for land use #495, *Recreational Community Center*. Calculations were made for the existing and proposed building size. Based upon these data, the peak parking demand for the proposed facility size is projected to be 197 parking spaces, an increase of 129 needed parking spaces.

A summary of the parking generation calculations for the expansion is shown in the following table. Detailed parking generation calculations are included in the appendix to this report.

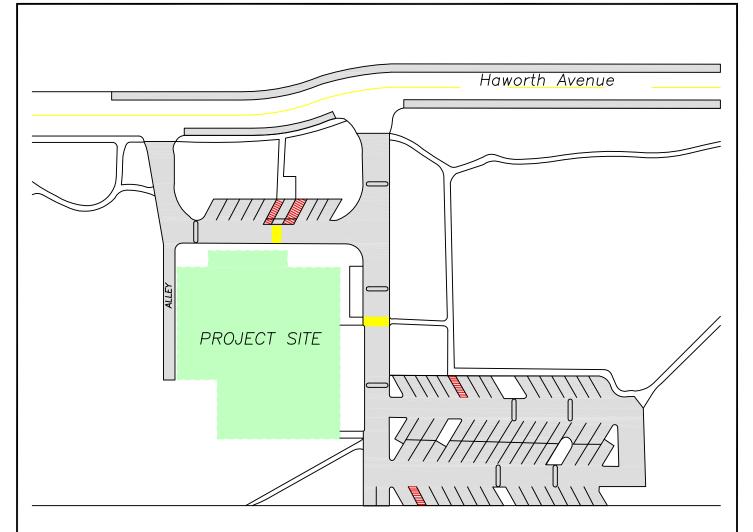
PARKING GENERATION SUMMARY				
	Peak Demand			
Existing Size				
21,280 sf	68			
<b>Proposed Size</b>				
61,670 sf	197			
Net New Demand	129			

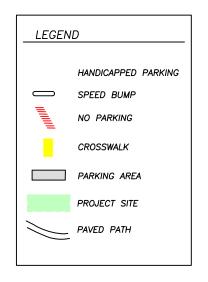
### EXISTING PARKING CONDITIONS

The current parking for the facility is made up of a small front lot consisting of two "15 Minute" spaces and seven handicapped spaces, a larger back lot consisting of four rows of angled parking making up a total of 61 spaces, and a small alley along the west side of the building consisting of 2 spaces. Additionally there is on-street parking along the north and south side of Haworth Avenue that is currently providing up to 37 spaces that are being used partially for the facility.

To determine the current demand and availability of parking for the site, field visits were conducted at different times of the day and the parking occupancy was observed. Visits were made on Wednesday, October 20 at 9:30 AM and then on Thursday, November 12 at 6:50 AM and 6:00 PM.

Figure 11 on page 25 shows the existing parking configuration for the facility. A table summarizing site visit observations is also shown in the figure. There is a total parking supply of 109 spaces and an observed peak parking demand of 67 spaces at 6:00 PM on Thursday, November 12.





	Street	Front	Alley	Back	TOTALS
PARKING SUPPLY	30	9 (7)	2	61 (1)	102
Wednesday, Oct. 20 9:30 AM	2	4	0	20	26
Thursday, Nov. 12 6:50 AM	6	9	2	10	27
Thursday, Nov. 12 5:49 PM	9	4	1	41	55
Thursday, Nov. 12 6:00 PM	12	5	1	49	67





FIGURE

PAGE 25

# 4

### PROPOSED FUTURE PARKING CONDITIONS

The most recent site plan for the expanded facility, dated December 18, 2015, shows 143 parking stalls in the new parking lot, and an additional 38 spaces of on-street parking available along the north and south sides of Haworth Avenue. Six additional spaces will be provided on the proposed new cul-de-sac in the southeastern corner of the lot. A new service drive is also proposed on the south side of the building to provide direct access to pool and building mechanical spaces as well as trash and recycling areas. Chemical and supply deliveries as well as trash and recycling pick-ups will take place there instead of using participant parking spaces and access aisles. This results in a total of 187 spaces, which is less than the ITE Parking Generation manual projects as the new peak demand.

As discussed previously, the City of Newberg is requiring that Haworth Avenue be brought up to the current design standards of a major collector as part of the CAFC expansion. They are required to remove the on-street parking and replace it with a bike lane along the south side of the roadway. The City would not remove on-street parking on the north side or continue the bike lane east of the CAFC site. This improvement would be completed at a later date when the City has funding and is ready to re-stripe the entire segment of Haworth Avenue between Villa Road and North Springbrook Road, as called out in the City of Newberg's Transportation System Plan.

With the removal of on-street parking on the south side of Haworth Avenue, 20 on-street parking spaces will be lost, leaving the facility with 167 spaces. Further, the remaining 18 on-street parking spaces would be removed at a later date, leaving the facility with even fewer spaces.

To mitigate this issue, a Transportation Demand Management (TDM) Plan was developed to explore options for the worst-case scenario of only 149 available parking spaces.

# 4

## **Transportation Demand Management Plan**

### INTRODUCTION

The goal of a transportation demand management (TDM) plan is to reduce the number of single occupancy vehicle trips to a site in favor of modes less taxing to the system. A robust TDM plan includes strategies to maximize all available transportation options, including ridesharing, transit, and active modes like biking and walking. For best results, this TDM plan should be periodically reviewed and adjusted to emphasize the measures and modes that are yielding the best results, while less successful measures can be revised or replaced.

The TDM plan presented below contains a number of strategies that could potentially reduce the number of vehicular trips to the CAFC and thus alleviate the potential shortage of available parking spaces. Reducing the vehicular trips also reduces traffic impacts to the neighborhood and the greater transportation system. The strategies below are not intended to be followed exhaustively or rigidly, but rather to present the facility with a menu of options from which to choose. Based upon discussions with staff and visitors, the facility may choose one or more of the strategies below, some combination or variation of the strategies, or other strategies not mentioned here.

### RIDESHARING

Being in a suburban area with limited transit and alternative travel options, driving to and from the facility is an inevitable choice for many employees and visitors of the CAFC. Ridesharing (or carpooling) can be an effective way to reduce trips by matching staff or visitors with comparable travel schedules and needs. By sharing transportation responsibilities, parents taking kids to swim classes, employees commuting to work, and fitness center or pool users can free up time in their schedules and reduce their gas expenditures. Additionally, high school aged students can carpool to practices and meets from the nearby high school.

The opening of the expanded facility represents an ideal time for the CAFC to support ridesharing opportunities. Since the class schedules and open hours will be adjusted with the newly added services, people travelling to the facility will be changing their travel behavior in most cases. The facility should work to actively match staff or visitors with similar travel routes and schedules. This can be accomplished by communicating the benefits of ridesharing and providing ways for visitors to identify and connect with potential ridesharing partners in their neighborhood.

Strategies to accomplish this may include:

- 1. Convert the parking stalls nearest to the entrances to "Carpool Only" parking. This will incentivize those that commit to ridesharing by guaranteeing them the most desirable parking spaces. It is recommended that CAFC set up a system such as placards to identify ridesharing vehicles and have enforcement in place for those parking in the space as a single occupant.
- 2. Provide resources to match visitors with others that live in their respective neighborhoods. CAFC could provide a blank map and let users indicate their interest in finding rideshare partners by adding a sticker to indicate their home location and desired timing of CAFC visits on the map. CAFC staff can connect interested families and individuals.



### WALKING & BIKING

Having staff and visitors walking and biking to the facility would reduce the overall demand of parking spaces. As described above, the suburban area is not ideal for these alternative modes of transportation and it is assumed that many visitors live outside of the immediate vicinity.

For those that are able to walk or bike, having safe and comfortable access onto the site is important. The current site plan shows a number of paved pedestrian paths leading from various corners of the site to the entrance. To encourage bicycling, the facility should install bicycle parking on the site at an easily accessible and convenient location.

With the City of Newberg's future upgrades to Villa Road and eventually Haworth Avenue to have dedicated bike lanes and no on-street parking, the immediate area will be much more accessible for bicycle commuting. Encouraging staff and visitors to use this option is recommended. Riding bicycles and walking may be excellent options for students from George Fox University and Newberg High School as well.

### OFF-SITE PARKING COORDINATION

With adequate transportation demand management, the proposed facility can provide the necessary parking availability on most days. However, for larger events like collegiate and regional swim meets as well as water polo tournaments parking demands may exceed the available supply, particularly where participants are not regular users of the CAFC facilities and have not been exposed to the carpooling program and other TDM measures implemented at the site. The owner of the facility has pointed out that numbers attending these events are not expected to change with the expansion of the facility. Several near-by sites have additional parking opportunities that could facilitate the parking demand, minimizing the impacts of such events on the surrounding community.

- 1. The George Fox University maintenance yard is located on the east side of Villa Road directly across from Haworth Avenue. This site is mainly used as parking for various George Fox needs, but could serve as an additional lot for the CAFC's larger events.
- 2. Riverspirit Wellness Center is a small natural health center located directly across Haworth Avenue from the CAFC site. A parking lot with 17 stalls and one handicapped stall is provided and could be used as a second additional lot for larger events.
- 3. Newberg High School is located just a quarter mile from the site and could serve as off-site bus parking. Participants will be dropped off at CAFC and busses go park at the high school until the event is finished and the busses are needed again.

A Memorandum of Understanding or a similar document between the CAFC and each respective facility outlining the coordination agreement should be created and approved upon.

#### EVENT SCHEDULING

In addition to the programs and coordination described above, the CAFC administration can strategically schedule classes and events to reduce overlap and therefore lower the parking demand. Regularly scheduled classes can be postponed or rescheduled to minimize conflicts with larger events.



### IMPLEMENTED PLAN

Based on draft recommendations and conversations with Scott | Edwards Architecture (SEA) staff and the property owner, some of the above recommendations have already begun to be implemented in the site design.

- The six parking stalls closest to the main entry have been designated as Carpool as shown on the attached site plan.
- Five new bike racks distributed between the two entries have been provided in the design for a total of 10 bike parking spaces.
- High school students attending practices or meets will be asked to park at Newberg High School and walk to the CAFC.
- The property owner will no longer allow RV parking on weekends or during large meets to allow for maximum use of the provided parking stalls.



## Conclusions

The Chehalem Aquatic and Fitness Center has been awarded a \$19.9 million bond measure by the Chehalem Park and Recreation District for an expansion of the facility. The proposed plan has the facility nearly tripling in size and an increase in traffic near the site will be present once construction is complete in 2017.

A capacity analysis was conducted at the intersections of East Portland Road (OR-HWY 99) at Villa Road, Villa Road at Fulton Street, Villa Road at Haworth Avenue, and Haworth Avenue at Sitka Avenue. All intersections are currently operating at an acceptable level of service during the morning peak hour. With the addition of site trips, all intersections will continue to operate at an acceptable level of service.

Intersection sight distance was measured at the existing eastern driveway and the location of the proposed new driveway east of the current one. At the existing driveway, intersection sight distance was measured as 355 feet and 320 feet to the west and east, respectively. At the proposed new driveway location, intersection sight distance was measured as 85 feet and 475 feet to the west and east, respectively. Based on the posted speed of 25 mph and the flat grade, the required intersection sight distance for both driveways is 280 feet in either direction. Currently the location of the proposed new driveway is filled with trees and has no development. With the planned removal of trees and construction of a driveway, intersection sight distance will be adequate.

The most recent five years of crash data at the study intersection show that there is no significant safety concern, as crash severity was relatively low and no apparent crash patterns are evident.

An exhaustive parking analysis was performed to determine the current and future parking supply and demand to ensure adequate parking is available. Current site plans propose parking supply to be slightly under the expected peak demand. Accordingly, a Transportation Demand Management Plan has been prepared to explore options to strategically reduce the number of single occupancy vehicle trips to the site. Several options have been recommended and CAFC administration can use any combination of the possible strategies to resolve any potential parking shortfalls:

- Publicize ridesharing and promote a robust carpool program for staff and visitors;
- Encourage biking by staff and visitors by providing convenient bicycle parking;
- Coordinate with George Fox University, Riverspirit Wellness Center, and Newberg High School to provide off-site overflow and bus parking during large events; and
- Schedule classes and events to reduce overlap in parking demand.

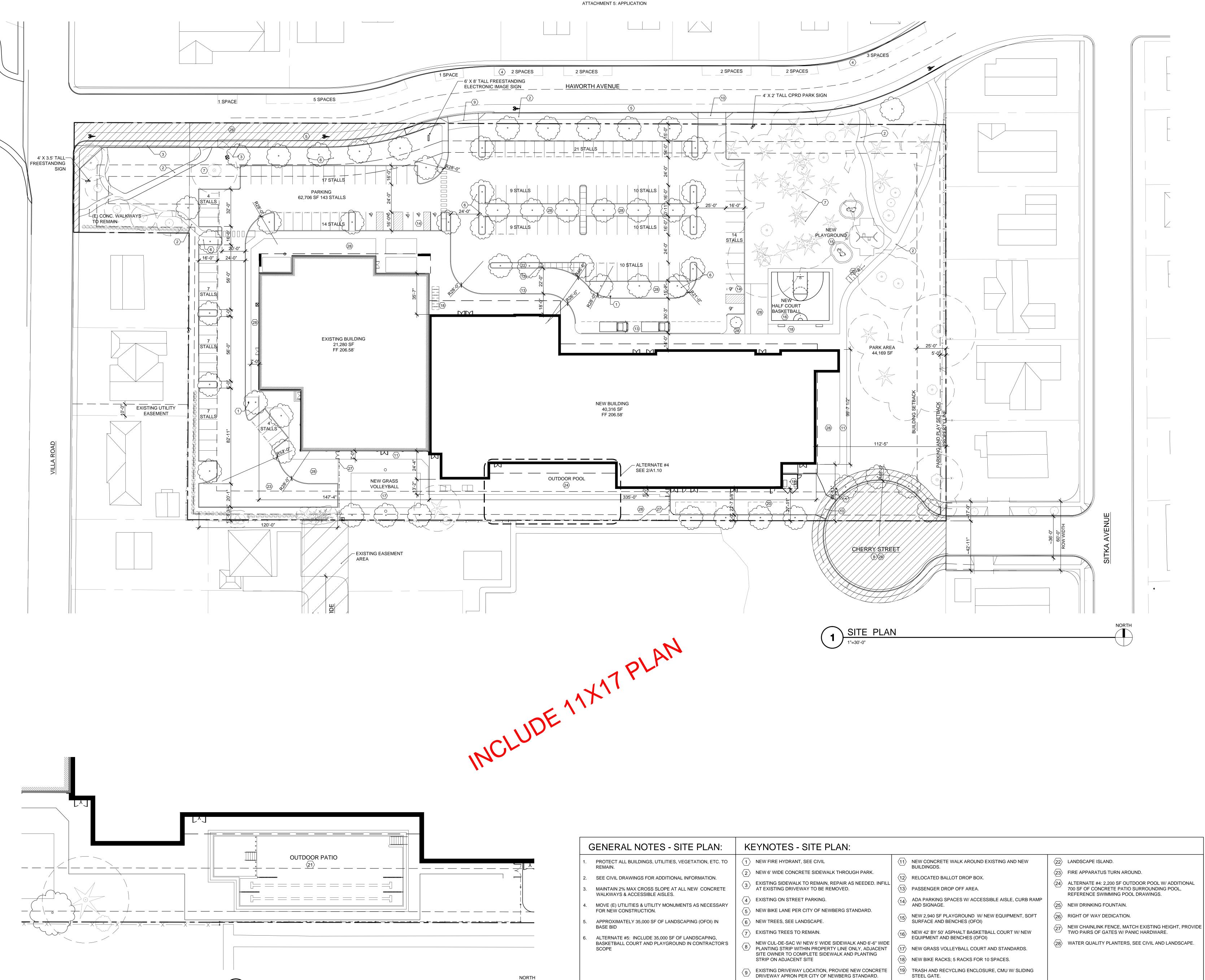
With implementation of the strategies within the TDM, excess parking demand at peak demand hours and special events can be mitigated without adverse effect to the surrounding neighborhood and roadways.

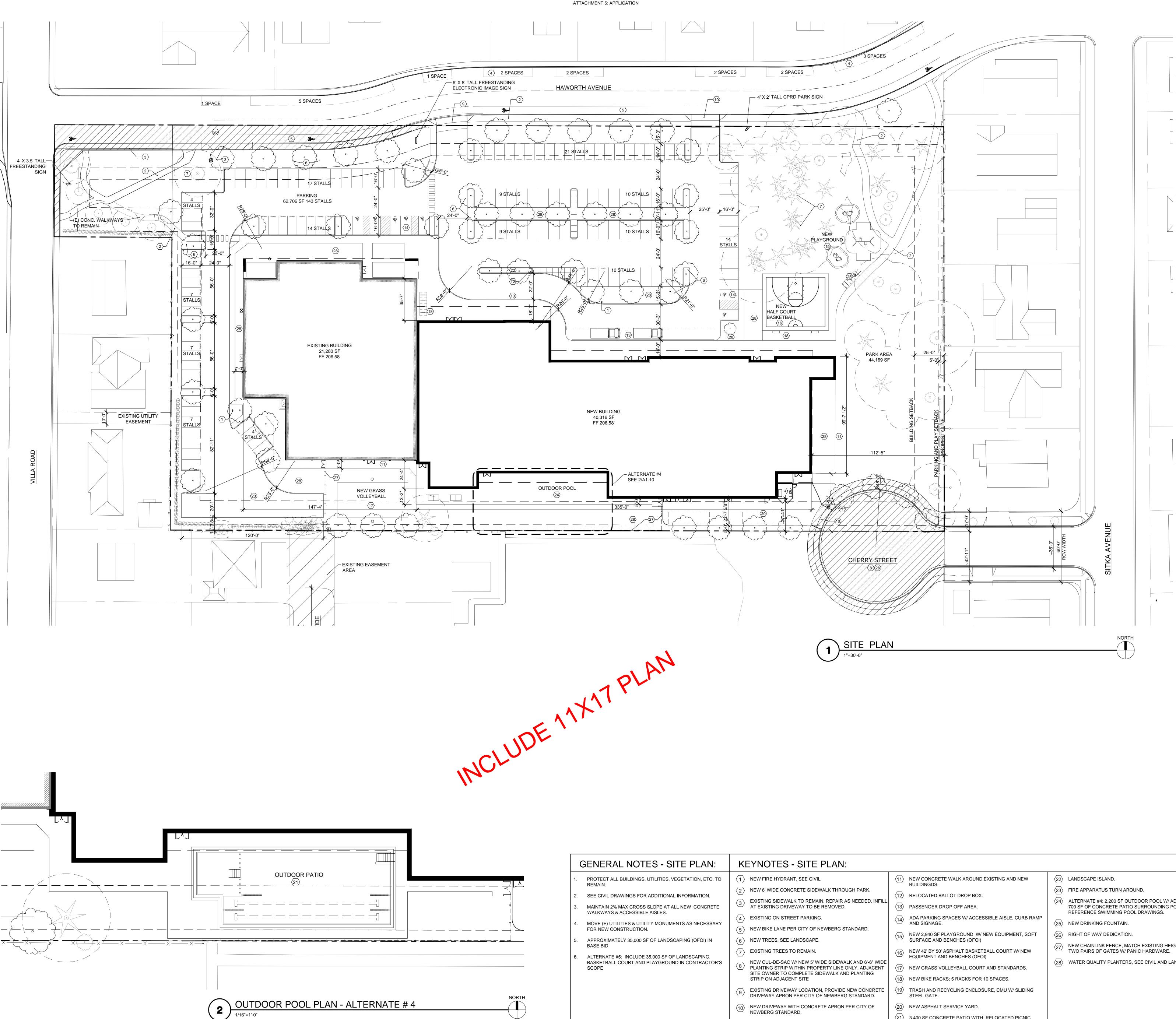


**APPENDIX** 



APPENDIX A: SITE PLAN





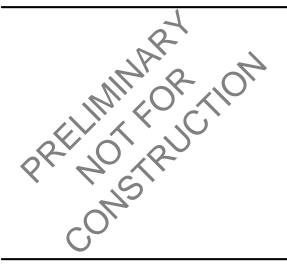
188 of 460

NOTES - SITE PLAN:				
EW FIRE HYDRANT, SEE CIVIL	$\langle 11 \rangle$	NEW CONCRETE WALK AROUND EXISTING AND NEW BUILDINGDS.	22	LANDSC
EW 6' WIDE CONCRETE SIDEWALK THROUGH PARK.	(12)	RELOCATED BALLOT DROP BOX.	23	FIRE APF
XISTING SIDEWALK TO REMAIN, REPAIR AS NEEDED. INFILL T EXISTING DRIVEWAY TO BE REMOVED.	<u>(13)</u>	PASSENGER DROP OFF AREA.	24	ALTERN 700 SF O REFERE
XISTING ON STREET PARKING.	(14)	ADA PARKING SPACES W/ ACCESSIBLE AISLE, CURB RAMP AND SIGNAGE.	25	NEW DRI
EW BIKE LANE PER CITY OF NEWBERG STANDARD.	(15)	NEW 2,940 SF PLAYGROUND W/ NEW EQUIPMENT, SOFT SURFACE AND BENCHES (OFOI)	26	RIGHT O
EW TREES, SEE LANDSCAPE. XISTING TREES TO REMAIN.	(16)	NEW 42' BY 50' ASPHALT BASKETBALL COURT W/ NEW	27	NEW CH
EW CUL-DE-SAC W/ NEW 5' WIDE SIDEWALK AND 6'-6" WIDE LANTING STRIP WITHIN PROPERTY LINE ONLY, ADJACENT	(17)	EQUIPMENT AND BENCHES (OFOI) NEW GRASS VOLLEYBALL COURT AND STANDARDS.	28	WATER
ITE OWNER TO COMPLETE SIDEWALK AND PLANTING TRIP ON ADJACENT SITE	(18)	NEW BIKE RACKS; 5 RACKS FOR 10 SPACES.		
XISTING DRIVEWAY LOCATION, PROVIDE NEW CONCRETE RIVEWAY APRON PER CITY OF NEWBERG STANDARD.	(19)	TRASH AND RECYCLING ENCLOSURE, CMU W/ SLIDING STEEL GATE.		
EW DRIVEWAY WITH CONCRETE APRON PER CITY OF EWBERG STANDARD.	20>	NEW ASPHALT SERVICE YARD.		
	<b>(21)</b>	3,400 SF CONCRETE PATIO WITH RELOCATED PICNIC TABLES AND PING PONG TABLES.		
			1	

- NATE #4: 2,200 SF OUTDOOR POOL W/ ADDITIONAL OF CONCRETE PATIO SURROUNDING POOL, RENCE SWIMMING POOL DRAWINGS.

- R QUALITY PLANTERS, SEE CIVIL AND LANDSCAPE.

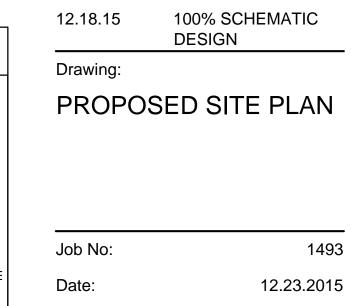






1802 HAWORTH AVE. NEWBERG, OREGON 97132





Drawn By: Checked By: Sheet No:

1493 -





**APPENDIX B: AM TRAFFIC COUNTS** 



## Villa Rd & Hwy 99W

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

#### 5-Minute Interval Summary 7:00 AM to 9:00 AM

		9:00 A																			
Interval		North					bound			Eastb				West						strians	
Start		Villa	a Rd			Villa	a Rd			Hwy	99W			Hwy	99W		Interval		Cros	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	20	5	0	0	13	1	3	0	8	104	0	0	0	51	4	0	209	0	0	0	0
7:05 AM	40	2	0	0	7	4	1	0	3	124	0	0	0	38	3	0	222	0	0	0	0
7:10 AM	22	7	1	0	10	6	3	0	2	107	0	1	0	43	5	0	206	0	0	0	1
7:15 AM	40	4	1	0	14	1	3	0	3	119	0	0	0	77	3	0	265	0	0	0	0
7:20 AM	35	4	0	0	5	4	5	0	4	114	0	0	1	65	2	0	239	0	0	0	0
7:25 AM	29	2	1	0	12	7	4	0	8	112	0	0	1	67	7	1	250	0	0	0	0
7:30 AM	49	10	3	0	15	4	6	0	4	81	0	0	0	84	8	0	264	0	0	0	0
7:35 AM	42	2	1	0	8	4	2	0	7	114	0	0	1	57	6	0	244	1	0	0	0
7:40 AM	30	8	1	0	8	0	6	0	6	88	0	0	1	75	8	0	231	0	0	1	0
7:45 AM	36	11	1	0	13	5	2	0	3	87	0	0	0	82	9	0	249	0	0	0	0
7:50 AM	47	16	1	4	8	5	6	0	7	100	1	0	0	74	10	0	275	0	2	1	0
7:55 AM	29	8	0	0	17	7	4	1	12	107	0	0	0	60	13	0	257	0	1	0	0
8:00 AM	23	9	0	0	13	5	5	0	8	96	0	0	0	60	7	0	226	0	2	1	0
8:05 AM	26	8	0	0	13	3	4	0	12	112	0	0	0	77	6	0	261	0	0	0	0
8:10 AM	32	9	1	0	8	5	4	0	11	90	0	0	2	71	12	0	245	0	0	0	0
8:15 AM	26	6	1	0	12	2	5	0	13	110	0	0	0	64	16	0	255	0	0	0	0
8:20 AM	30	4	0	0	8	5	6	0	18	119	1	0	1	73	14	0	279	0	0	0	0
8:25 AM	30	8	0	0	7	2	7	0	14	96	0	1	3	84	25	0	276	0	0	0	0
8:30 AM	24	5	1	0	5	5	6	0	13	121	0	0	0	83	17	0	280	0	0	0	0
8:35 AM	30	7	0	0	6	5	7	0	5	89	1	0	1	93	10	0	254	0	0	0	0
8:40 AM	36	8	0	0	5	3	8	0	4	112	2	0	1	81	7	0	267	1	1	1	0
8:45 AM	31	9	0	0	11	3	2	0	6	95	0	0	0	82	10	0	249	0	1	1	0
8:50 AM	34	15	2	0	11	4	6	0	6	89	1	0	1	84	17	0	270	0	0	1	0
8:55 AM	36	5	0	0	24	4	8	0	3	83	0	0	1	78	8	0	250	0	0	1	0
Total	777	172	15	4	253	94	113	1	180	2,469	6	2	14	1.703	227	1	6,023	2	7	7	1
Survey		112	.5		200	54	.15		100	2,403	0	2		1,703			0,020		1		

### 15-Minute Interval Summary

#### 7:00 AM to 9:00 AM

Interval Start			bound a Rd				<b>bound</b> a Rd			Eastb Hwy				Westt Hwv			Interval			strians	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
7:00 AM	82	14	1	0	30	11	7	0	13	335	0	1	0	132	12	0	637	0	0	0	1
7:15 AM	104	10	2	0	31	12	12	0	15	345	0	0	2	209	12	1	754	0	0	0	0
7:30 AM	121	20	5	0	31	8	14	0	17	283	0	0	2	216	22	0	739	1	0	1	0
7:45 AM	112	35	2	4	38	17	12	1	22	294	1	0	0	216	32	0	781	0	3	1	0
8:00 AM	81	26	1	0	34	13	13	0	31	298	0	0	2	208	25	0	732	0	2	1	0
8:15 AM	86	18	1	0	27	9	18	0	45	325	1	1	4	221	55	0	810	0	0	0	0
8:30 AM	90	20	1	0	16	13	21	0	22	322	3	0	2	257	34	0	801	1	1	1	0
8:45 AM	101	29	2	0	46	11	16	0	15	267	1	0	2	244	35	0	769	0	1	3	0
Total Survey	777	172	15	4	253	94	113	1	180	2,469	6	2	14	1,703	227	1	6,023	2	7	7	1

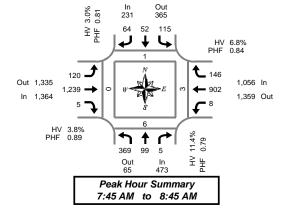
#### Peak Hour Summary 7:45 AM to 8:45 AM

By			bound				bound				ound			West			
-		Villa	a Rd			Villa	a Rd			Hwy	99W			Hwy	99W		Total
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	473	65	538	4	231	365	596	1	1,364	1,335	2,699	1	1,056	1,359	2,415	0	3,124
%HV		11.	4%		3.0% 0.81				3.	8%			6.8	3%		5.9%	
																	0.01
PHF		0.	79			0.8	81			0.	89			0.8	84		0.94
PHF By		North	bound			South	bound			Easth	ound			West	bound		
Ву		North	bound a Rd			South	<b>bound</b> a Rd			Easth	ound 99W				oound 99W		0.94 Total
Ву	L	North	bound	Total	L	South	bound	Total	L	Easth	ound	Total	L	West	oound 99W	Total	
Ву	L 369	North	bound Rd R	Total 473	L 115	South	<b>bound</b> a Rd	Total 231	L 120	Easth	ound 99W	Total 1,364	L 8	West	oound 99W R	Total 1,056	
By Movement	L 369 13.0%	North Villa T	bound Rd R 5		L 115 0.9%	South Villa T	<b>bound</b> a Rd R		L 120 3.3%	Eastt Hwy T	99W R		L 8 0.0%	Westt Hwy T	<b>oound</b> 99W R 146		Total

#### **Rolling Hour Summary**

#### 7:00 AM to 9:00 AM

Interval			bound			South				Eastb				West			Internet		Pedes		
Start		VIIIa	a Rd			Villa Rd L T R Bikes				Hwy	9977			Hwy	9977	,	Interval		Cros	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	419	79	10	4	130	48	45	1	67	1,257	1	1	4	773	78	1	2,911	1	3	2	1
7:15 AM	418	91	10	4	134	50	51	1	85	1,220	1	0	6	849	91	1	3,006	1	5	3	0
7:30 AM	400	99	9	4	130	47	57	1	115	1,200	2	1	8	861	134	0	3,062	1	5	3	0
7:45 AM	369	99	5	4	115	52	64	1	120	1,239	5	1	8	902	146	0	3,124	1	6	3	0
8:00 AM	358	93	5	0	123	46	68	0	113	1,212	5	1	10	930	149	0	3,112	1	4	5	0



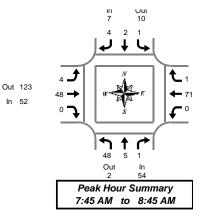
Pedestrians Crosswalk South East West 6

0



## Villa Rd & Hwy 99W

Wednesday, September 30, 2015 7:00 AM to 9:00 AM



Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start		North Villa	bound a Rd				<b>bound</b> a Rd				ound 99W				oound 99W		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	3	0	0	3	0	0	0	0	0	5	0	5	0	3	0	3	11
7:05 AM	8	0	0	8	0	0	0	0	0	1	0	1	0	2	0	2	11
7:10 AM	4	1	0	5	0	0	0	0	0	3	0	3	0	2	0	2	10
7:15 AM	7	0	0	7	0	0	0	0	0	6	0	6	0	4	0	4	17
7:20 AM	5	1	0	6	0	0	0	0	0	3	0	3	0	6	0	6	15
7:25 AM	4	0	0	4	0	0	0	0	0	5	0	5	0	2	1	3	12
7:30 AM	7	1	0	8	0	1	0	1	0	2	0	2	0	5	0	5	16
7:35 AM	1	1	0	2	0	0	0	0	0	3	0	3	0	5	0	5	10
7:40 AM	7	1	0	8	0	0	0	0	0	5	0	5	0	3	0	3	16
7:45 AM	3	0	1	4	0	0	0	0	0	3	0	3	0	5	0	5	12
7:50 AM	4	1	0	5	0	0	0	0	0	4	0	4	0	4	0	4	13
7:55 AM	3	0	0	3	0	0	0	0	0	4	0	4	0	4	0	4	11
8:00 AM	2	2	0	4	0	0	1	1	0	6	0	6	0	3	0	3	14
8:05 AM	6	0	0	6	0	0	2	2	0	3	0	3	0	6	0	6	17
8:10 AM	3	1	0	4	0	0	1	1	1	5	0	6	0	9	1	10	21
8:15 AM	5	1	0	6	0	0	0	0	0	4	0	4	0	3	0	3	13
8:20 AM	4	0	0	4	0	0	0	0	0	4	0	4	0	1	0	1	9
8:25 AM	10	0	0	10	0	0	0	0	1	1	0	2	0	8	0	8	20
8:30 AM	2	0	0	2	1	1	0	2	2	11	0	13	0	11	0	11	28
8:35 AM	3	0	0	3	0	0	0	0	0	1	0	1	0	10	0	10	14
8:40 AM	3	0	0	3	0	1	0	1	0	2	0	2	0	7	0	7	13
8:45 AM	2	0	0	2	0	0	0	0	1	5	0	6	0	9	0	9	17
8:50 AM	6	0	0	6	0	0	0	0	0	4	0	4	1	6	0	7	17
8:55 AM	4	1	0	5	1	0	0	1	1	1	0	2	1	9	2	12	20
Total Survey	106	11	1	118	2	3	4	9	6	91	0	97	2	127	4	133	357

## Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

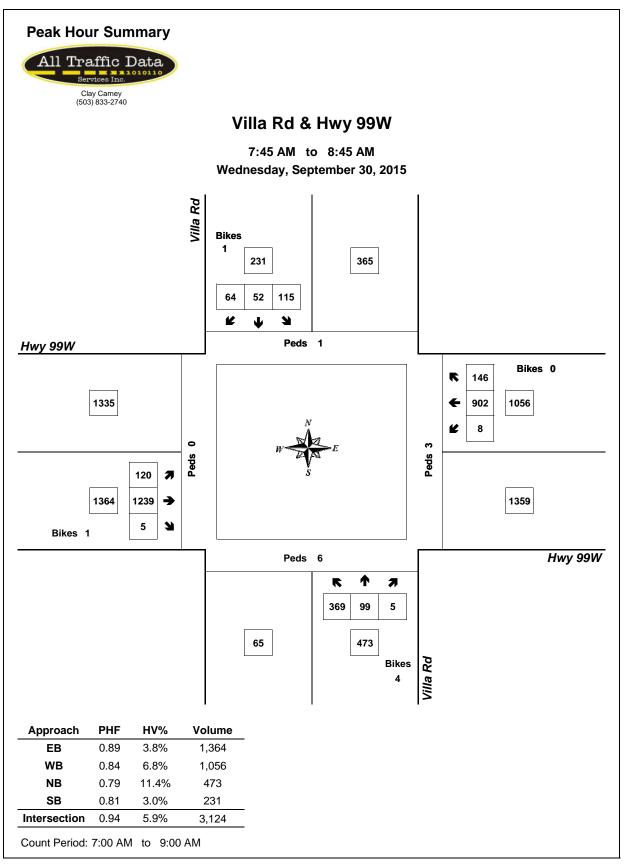
Interval Start		North Villa	<b>bound</b> a Rd				<b>bound</b> a Rd				ound 99W			Westl Hwy	oound 99W		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	15	1	0	16	0	0	0	0	0	9	0	9	0	7	0	7	32
7:15 AM	16	1	0	17	0	0	0	0	0	14	0	14	0	12	1	13	44
7:30 AM	15	3	0	18	0	1	0	1	0	10	0	10	0	13	0	13	42
7:45 AM	10	1	1	12	0	0	0	0	0	11	0	11	0	13	0	13	36
8:00 AM	11	3	0	14	0	0	4	4	1	14	0	15	0	18	1	19	52
8:15 AM	19	1	0	20	0	0	0	0	1	9	0	10	0	12	0	12	42
8:30 AM	8	0	0	8	1	2	0	3	2	14	0	16	0	28	0	28	55
8:45 AM	12	1	0	13	1	0	0	1	2	10	0	12	2	24	2	28	54
Total Survey	106	11	1	118	2	3	4	9	6	91	0	97	2	127	4	133	357

#### Heavy Vehicle Peak Hour Summary 7:45 AM to 8:45 AM

Bv		North	bound		South	bound		Easth	bound		West	oound	
,		Villa	a Rd		Villa	a Rd		Hwy	99W		Hwy	99W	Tot
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	54	2	56	7	10	17	52	123	175	72	50	122	18
PHF	0.68			0.44			0.68			0.62			0.7

By			<b>bound</b> a Rd				<b>bound</b> a Rd				ound 99W			Westl Hwy			Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	48	5	1	54	1	2	4	7	4	48	0	52	0	71	1	72	185
PHF	0.63	0.42	0.25	0.68	0.25	0.25	0.25	0.44	0.33	0.75	0.00	0.68	0.00	0.61	0.25	0.62	0.75

Interval		North	bound			South	bound			Easth	bound			West	bound		
Start		Villa	a Rd			Villa	a Rd			Hwy	99W			Hwy	99W		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	56	6	1	63	0	1	0	1	0	44	0	44	0	45	1	46	154
7:15 AM	52	8	1	61	0	1	4	5	1	49	0	50	0	56	2	58	174
7:30 AM	55	8	1	64	0	1	4	5	2	44	0	46	0	56	1	57	172
7:45 AM	48	5	1	54	1	2	4	7	4	48	0	52	0	71	1	72	185
8:00 AM	50	5	0	55	2	2	4	8	6	47	0	53	2	82	3	87	203





## Villa Rd & Fulton St

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

HV 2.0% PHF 0.79	In Out 246 218 80 166 0 4 4 5 4 PHF 0.33	
Out 170 2 → In 187 77 → HV 3.2% PHF 0.87	$ \begin{array}{c} N \\ W \\ \hline W \\ \hline W \\ \hline Z \\ \hline X \\ \hline S \\ \hline 0 \\ \hline 1 \\ \hline 0 \\ \hline 1 \\ \hline 0 \\ \hline S \\ 8 \\ \hline 8 \\ 8 \\ \hline 8 \\ \hline 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ 8 \\ \hline 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\ 8 \\$	6 In 9 Out
	$ \begin{array}{c} & & & & & & \\ \hline & & & & \\ 89 & 106 & 7 & & & \\ 0 & & & & \\ 244 & & 202 & & \\ 202 & & & & \\ 202 & & & & \\ 244 & & 202 & & \\ \hline & & & & \\ 244 & & & \\ 202 & & & & \\ 244 & & & & \\ 202 & & & & \\ 244 & & & \\$	

East West 0

## 5-Minute Interval Summary 7:00 AM to 9:00 AM

7:00 AM																					
Interval		North					bound				oound			West					Pedes		
Start		Villa				Villa				Fult	on St			Fulte	on St		Interval		Cros		
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	3	9	0	0	0	10	0	0	11	0	8	0	0	0	0	0	41	0	0	0	0
7:05 AM	2	2	1	0	0	8	1	0	6	0	5	0	0	0	0	0	25	0	0	0	0
7:10 AM	2	11	0	0	0	10	1	0	2	0	7	0	0	0	0	0	33	0	0	0	0
7:15 AM	1	8	0	0	0	11	1	0	4	0	6	1	0	0	0	0	31	0	0	0	0
7:20 AM	3	5	0	0	0	10	2	0	2	0	0	0	0	0	1	0	23	0	0	0	1
7:25 AM	0	6	0	0	0	14	3	0	8	0	9	0	0	0	0	0	40	0	0	0	0
7:30 AM	7	7	1	0	0	15	1	0	4	0	8	0	0	0	0	0	43	0	0	0	0
7:35 AM	3	4	0	0	0	13	2	0	7	0	6	1	1	0	1	0	37	0	0	0	0
7:40 AM	8	8	1	0	1	10	5	0	5	0	6	0	0	0	0	0	44	0	0	0	0
7:45 AM	9	2	0	1	1	9	9	0	4	0	5	0	1	0	0	0	40	0	0	0	1
7:50 AM	11	6	0	0	0	17	11	2	5	0	7	0	0	0	0	0	57	0	0	1	3
7:55 AM	10	12	0	1	0	12	6	2	12	0	9	0	0	0	0	0	61	0	0	0	0
8:00 AM	4	10	0	0	0	16	6	0	11	0	6	0	0	0	0	0	53	0	0	0	0
8:05 AM	3	10	0	0	0	13	5	0	9	0	7	0	0	0	0	0	47	0	0	0	0
8:10 AM	8	11	0	0	0	15	4	0	13	0	8	0	0	0	0	0	59	0	0	0	0
8:15 AM	3	10	0	0	0	13	4	0	9	0	7	1	0	0	0	0	46	0	0	0	0
8:20 AM	3	5	1	0	0	17	5	0	11	0	3	0	0	0	0	0	45	0	0	0	1
8:25 AM	8	7	0	0	0	13	2	0	17	0	5	1	0	0	0	0	52	0	0	0	1
8:30 AM	7	18	2	0	0	9	7	0	12	0	6	0	0	0	0	0	61	0	0	0	1
8:35 AM	9	6	1	0	0	9	17	3	3	1	5	0	0	0	2	0	53	0	0	0	0
8:40 AM	7	8	0	0	0	7	6	1	6	0	4	0	0	0	1	1	39	1	0	0	1
8:45 AM	8	8	0	0	0	14	12	0	4	1	8	0	0	0	1	0	56	0	0	0	0
8:50 AM	16	8	2	0	0	25	2	0	7	0	7	0	0	0	0	0	67	0	0	0	2
8:55 AM	13	5	1	0	0	15	10	0	6	0	11	1	1	1	0	0	63	0	0	0	1
Total Survey	148	186	10	2	2	305	122	8	178	2	153	5	3	1	6	1	1,116	1	0	1	12

## 15-Minute Interval Summary 7:00 AM to 9:00 AM

Interval			bound				bound				oound				bound				Pedes	trians	
Start		Villa	a Rd			Villa	a Rd			Fult	on St			Fulto	on St		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	7	22	1	0	0	28	2	0	19	0	20	0	0	0	0	0	99	0	0	0	0
7:15 AM	4	19	0	0	0	35	6	0	14	0	15	1	0	0	1	0	94	0	0	0	1
7:30 AM	18	19	2	0	1	38	8	0	16	0	20	1	1	0	1	0	124	0	0	0	0
7:45 AM	30	20	0	2	1	38	26	4	21	0	21	0	1	0	0	0	158	0	0	1	4
8:00 AM	15	31	0	0	0	44	15	0	33	0	21	0	0	0	0	0	159	0	0	0	0
8:15 AM	14	22	1	0	0	43	11	0	37	0	15	2	0	0	0	0	143	0	0	0	2
8:30 AM	23	32	3	0	0	25	30	4	21	1	15	0	0	0	3	1	153	1	0	0	2
8:45 AM	37	21	3	0	0	54	24	0	17	1	26	1	1	1	1	0	186	0	0	0	3
Total Survey	148	186	10	2	2	305	122	8	178	2	153	5	3	1	6	1	1,116	1	0	1	12

### Peak Hour Summary

8:00	АМ	to	9:00	АМ

By		North	bound			South	bound			Easth	ound			West	bound				Pedes	trians	Ī
Approach		Villa	a Rd			Villa	a Rd			Fulto	on St			Fulto	on St		Total		Cross	swalk	
Approach	In	Out	Total	Bikes		North	South	East													
Volume	202	244	446	0	246	218	464	4	187	170	357	3	6	9	15	1	641	1	0	0	
%HV		5.	9%			2.0	0%			3.	2%			33.	.3%		3.9%				Ī
PHF		0.	83			0.	79			0.	87			0.	38		0.86				
Bu		North	bound			South	bound			Easth	ound			West	bound						
By Movement		Villa	a Rd			Villa	a Rd			Fulto	on St			Fulto	on St		Total				
wovernent	L	Т	R	Total																	
Volume	89	106	7	202	0	166	80	246	108	2	77	187	1	1	4	6	641				
%HV	2.2%	7.5%	28.6%	5.9%	0.0%	2.4%	1.3%	2.0%	3.7%	0.0%	2.6%	3.2%	0.0%	#####	25.0%	33.3%	3.9%				
PHF	0.60	0.83	0.58	0.83	0.00	0.77	0.57	0.79	0.68	0.25	0.74	0.87	0.25	0.25	0.25	0.38	0.86				

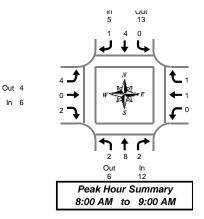
## Rolling Hour Summary 7:00 AM to 9:00 AM

Interval		North	bound			South	bound			East	ound			West	oound				Pedes	trians	
Start		Villa	Rd			Villa	Rd			Fult	on St			Fulto	on St		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	59	80	3	2	2	139	42	4	70	0	76	2	2	0	2	0	475	0	0	1	5
7:15 AM	67	89	2	2	2	155	55	4	84	0	77	2	2	0	2	0	535	0	0	1	5
7:30 AM	77	92	3	2	2	163	60	4	107	0	77	3	2	0	1	0	584	0	0	1	6
7:45 AM	82	105	4	2	1	150	82	8	112	1	72	2	1	0	3	1	613	1	0	1	8
8:00 AM	89	106	7	0	0	166	80	4	108	2	77	3	1	1	4	1	641	1	0	0	7



## Villa Rd & Fulton St

Wednesday, September 30, 2015 7:00 AM to 9:00 AM



## Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start		North Villa					<b>bound</b> a Rd				oound on St			Westl Fulto	oound on St		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:35 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:40 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
8:05 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
8:10 AM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
8:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	1	2	0	0	0	0	0	0	1	1	0	0	0	0	3
8:35 AM	1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	1	3
8:40 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
8:45 AM	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
8:50 AM	0	1	1	2	0	0	0	0	2	0	0	2	0	0	0	0	4
8:55 AM	1	2	0	3	0	0	0	0	0	0	1	1	0	1	0	1	5
Total Survey	2	14	2	18	0	4	1	5	4	0	2	6	0	1	1	2	31

#### Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

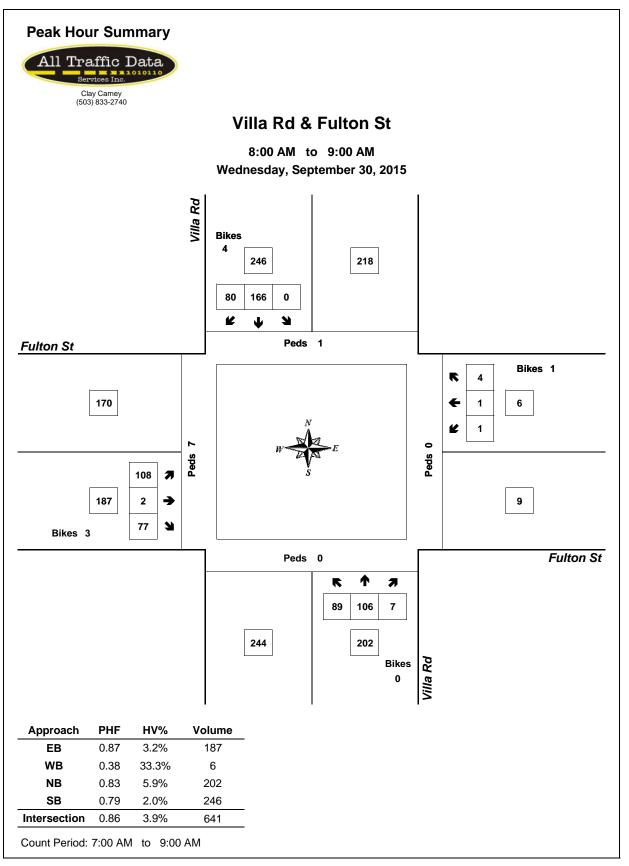
Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				ound on St				oound on St		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	2	0	2	0	2	0	2	1	0	0	1	0	0	0	0	5
8:15 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
8:30 AM	1	1	1	3	0	1	1	2	0	0	1	1	0	0	1	1	7
8:45 AM	1	4	1	6	0	0	0	0	3	0	1	4	0	1	0	1	11
Total Survey	2	14	2	18	0	4	1	5	4	0	2	6	0	1	1	2	31

#### Heavy Vehicle Peak Hour Summary 8:00 AM to 9:00 AM

Ву			<b>bound</b> a Rd			bound a Rd			oound on St			bound on St	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	rotar
Volume	12	6	18	5	13	18	6	4	10	2	2	4	25
PHF	0.50			0.63			0.38			0.50			0.57

By			bound a Rd				<b>bound</b> a Rd				ound on St			Westb Fulto	oound on St		Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	2	8	2	12	0	4	1	5	4	0	2	6	0	1	1	2	25
PHF	0.50	0.50	0.50	0.50	0.00	0.50	0.25	0.63	0.33	0.00	0.50	0.38	0.00	0.25	0.25	0.50	0.57

Interval		North					bound				ound				oound		
Start		Villa	a Rd			Villa	a Rd			Fulto	on St			Fulto	on St		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
7:15 AM	0	7	0	7	0	2	0	2	1	0	0	1	0	0	0	0	10
7:30 AM	0	7	0	7	0	3	0	3	1	0	0	1	0	0	0	0	11
7:45 AM	1	5	1	7	0	4	1	5	1	0	1	2	0	0	1	1	15
8:00 AM	2	8	2	12	0	4	1	5	4	0	2	6	0	1	1	2	25





## Villa Rd & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

#### 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start		Villa	<b>bound</b> a Rd			South Villa	Rd			Hawo	oound rth Ave			Hawo	bound rth Ave		Interval		Cros		
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	0	4	16	0	8	6	0	0	0	0	0	0	0	0	1	0	35	0	0	0	0
7:05 AM	0	3	6	0	6	9	0	0	0	0	0	0	3	0	4	0	31	0	0	0	0
7:10 AM	1	9	4	0	5	8	0	0	0	0	0	0	4	0	0	0	31	0	0	0	0
7:15 AM	0	5	4	0	2	7	1	0	0	0	0	0	4	0	0	0	23	0	0	0	0
7:20 AM	0	7	3	0	6	12	0	0	0	0	0	0	4	0	5	0	37	0	1	0	0
7:25 AM	1	5	8	0	10	14	0	0	1	0	0	0	0	0	5	0	44	0	0	0	0
7:30 AM	1	4	4	0	7	11	1	0	0	0	0	0	3	0	3	0	34	0	0	0	0
7:35 AM	2	3	9	1	4	14	1	0	0	0	0	0	6	0	2	0	41	0	0	0	0
7:40 AM	1	8	5	0	8	8	0	0	0	0	0	0	6	0	2	0	38	0	0	0	1
7:45 AM	1	0	5	0	9	17	1	0	0	0	0	0	7	0	1	0	41	0	0	1	1
7:50 AM	3	6	6	1	8	13	0	0	0	0	1	0	10	0	3	3	50	0	0	1	0
7:55 AM	3	6	14	0	11	17	0	1	0	0	1	0	4	0	7	0	63	0	0	0	0
8:00 AM	1	5	14	0	7	16	0	0	0	0	0	0	4	0	6	0	53	0	1	0	0
8:05 AM	2	6	9	0	16	9	0	0	0	0	2	0	8	0	6	0	58	0	2	0	0
8:10 AM	1	5	20	0	17	11	0	0	0	0	0	0	4	0	5	0	63	0	1	0	0
8:15 AM	1	4	15	0	22	9	0	0	0	0	0	0	9	0	5	0	65	0	3	3	1
8:20 AM	0	3	9	0	28	10	0	0	0	0	1	0	11	0	6	0	68	0	0	0	0
8:25 AM	1	4	26	0	28	7	0	0	0	0	1	0	7	0	14	0	88	0	0	0	1
8:30 AM	0	8	16	0	9	6	0	0	0	0	1	0	10	0	16	1	66	0	1	1	1
8:35 AM	0	5	3	0	10	4	0	0	0	0	0	0	20	0	6	2	48	0	0	0	0
8:40 AM	0	7	7	0	7	7	0	0	0	0	1	0	6	0	7	0	42	0	0	0	0
8:45 AM	1	3	9	0	7	13	0	0	1	0	1	0	12	0	2	0	49	0	0	0	0
8:50 AM	2	5	8	0	7	25	1	0	0	0	0	0	6	0	6	0	60	0	0	0	3
8:55 AM	1	6	5	0	7	10	0	0	0	1	3	0	9	0	2	0	44	0	0	0	0
Total Survey	23	121	225	2	249	263	5	1	2	1	12	0	157	0	114	6	1,172	0	9	6	8

## *15-Minute Interval Summary 7:00 AM to 9:00 AM*

Interval			bound			South				East	ound			West	bound				Pedes	trians	
Start		Villa	a Rd			Villa	ı Rd			Hawo	th Ave			Hawo	rth Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	1	16	26	0	19	23	0	0	0	0	0	0	7	0	5	0	97	0	0	0	0
7:15 AM	1	17	15	0	18	33	1	0	1	0	0	0	8	0	10	0	104	0	1	0	0
7:30 AM	4	15	18	1	19	33	2	0	0	0	0	0	15	0	7	0	113	0	0	0	1
7:45 AM	7	12	25	1	28	47	1	1	0	0	2	0	21	0	11	3	154	0	0	2	1
8:00 AM	4	16	43	0	40	36	0	0	0	0	2	0	16	0	17	0	174	0	4	0	0
8:15 AM	2	11	50	0	78	26	0	0	0	0	2	0	27	0	25	0	221	0	3	3	2
8:30 AM	0	20	26	0	26	17	0	0	0	0	2	0	36	0	29	3	156	0	1	1	1
8:45 AM	4	14	22	0	21	48	1	0	1	1	4	0	27	0	10	0	153	0	0	0	3
Total Survey	23	121	225	2	249	263	5	1	2	1	12	0	157	0	114	6	1,172	0	9	6	8

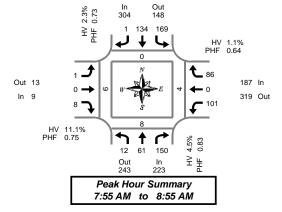
### Peak Hour Summary

By		North Villa	<b>bound</b> a Rd			South Villa	<b>bound</b> Rd				rth Ave			Westl Hawor			Total		Pedes Cross		
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	
Volume	223	243	466	0	304	148	452	1	9	13	22	0	187	319	506	3	723	0	8	4	
%HV		4.5	5%			2.3	3%			11	.1%			1.1	1%		2.8%				Ì
PHF		0.	83			0.	73			0.	75			0.	64		0.81				
_		North																			
		North	bound			South	bound			East	oound			West	oound						
Ву			a Rd			South Villa					rth Ave			Hawor			Total				
By Movement	L			Total	L			Total	L			Total	L			Total	Total				
	L 12		Rd R	Total 223	L 169		Rd	Total 304	L 1		rth Ave	Total 9	L 101		th Ave	Total 187	Total				
Movement	L 12 8.3%	Villa T	Rd R 150		L 169 2.4%	Villa T	Rd R 1		L 1 0.0%		rth Ave R	9	L 101 1.0%		th Ave R						

#### Rolling Hour Summary

#### 7:00 AM to 9:00 AM

Interval			bound			South					ound				oound				Pedes		
Start		Villa	a Rd			Villa	Rd			Hawoi	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	13	60	84	2	84	136	4	1	1	0	2	0	51	0	33	3	468	0	1	2	2
7:15 AM	16	60	101	2	105	149	4	1	1	0	4	0	60	0	45	3	545	0	5	2	2
7:30 AM	17	54	136	2	165	142	3	1	0	0	6	0	79	0	60	3	662	0	7	5	4
7:45 AM	13	59	144	1	172	126	1	1	0	0	8	0	100	0	82	6	705	0	8	6	4
8:00 AM	10	61	141	0	165	127	1	0	1	1	10	0	106	0	81	3	704	0	8	4	6



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Out 1

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## Heavy Vehicle Summary



## Villa Rd & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

	J	"7 0 <b>J</b>	3 <b>↓</b>	4 4	l
, ( 1	ר ר ( ר	*4		₽ E	€ 1 ← 0 € 1
	J	1 Out 5	<b>↑</b> 3	6 In 10	
	Peal 7:55	k Hoı AM			

Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval		North					bound				ound			West			
Start			a Rd				a Rd				th Ave	,		Hawor			Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:35 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:40 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
7:55 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	1	1	1	0	2	0	0	0	0	0	0	1	1	4
8:05 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
8:10 AM	0	0	2	2	1	0	0	1	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
8:20 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:25 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:35 AM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:50 AM	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
8:55 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Survey	1	11	6	18	4	3	0	7	0	0	1	1	1	0	2	3	29

#### Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

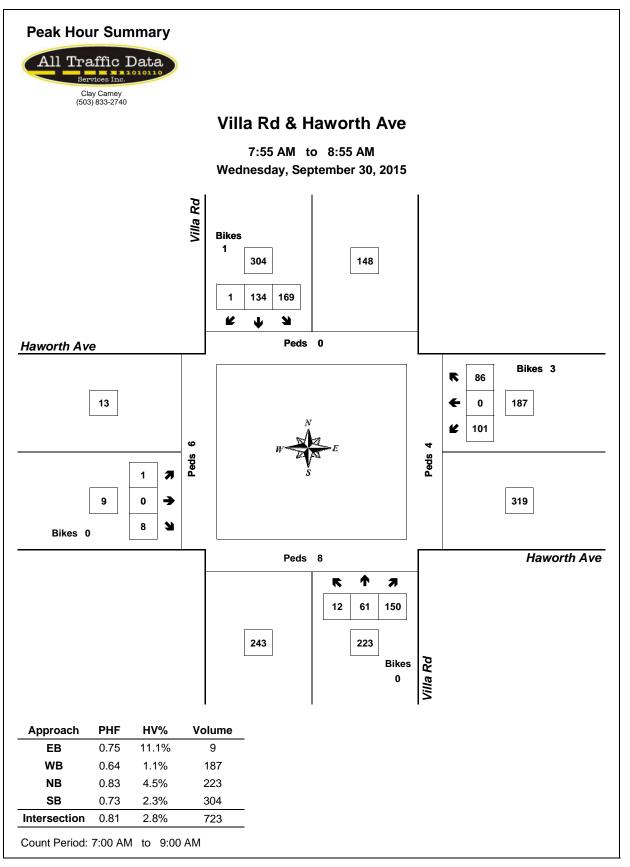
Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				ound th Ave				th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	1	1	3
8:00 AM	0	1	2	3	3	1	0	4	0	0	0	0	0	0	1	1	8
8:15 AM	0	1	1	2	1	0	0	1	0	0	1	1	0	0	0	0	4
8:30 AM	0	1	0	1	0	1	0	1	0	0	0	0	1	0	0	1	3
8:45 AM	1	2	3	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Total Survey	1	11	6	18	4	3	0	7	0	0	1	1	1	0	2	3	29

#### Heavy Vehicle Peak Hour Summary 7:55 AM to 8:55 AM

Bv		North	bound			bound		East	bound		West	bound	
		Villa	a Rd		Villa	a Rd		Hawo	rth Ave		Hawo	rth Ave	Tot
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	10	5	15	7	4	11	1	1	2	2	10	12	20
PHF	0.63			0.44			0.25			0.50			0.6

By			bound a Rd				<b>bound</b> a Rd				ound th Ave			Westa Hawor	th Ave		Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	1	3	6	10	4	3	0	7	0	0	1	1	1	0	1	2	20
PHF	0.25	0.38	0.50	0.63	0.33	0.38	0.00	0.44	0.00	0.00	0.25	0.25	0.25	0.00	0.25	0.50	0.63

Interval			bound				bound				ound				bound		
Start		Villa	a Rd			Villa	a Rd			Hawoi	th Ave			Hawo	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	T	R	Total	Total
7:00 AM	0	6	0	6	0	1	0	1	0	0	0	0	0	0	1	1	8
7:15 AM	0	6	2	8	3	2	0	5	0	0	0	0	0	0	2	2	15
7:30 AM	0	6	3	9	4	2	0	6	0	0	1	1	0	0	2	2	18
7:45 AM	0	4	3	7	4	3	0	7	0	0	1	1	1	0	2	3	18
8:00 AM	1	5	6	12	4	2	0	6	0	0	1	1	1	0	1	2	21



Out 189

In 330

Out 0

1 ŧ

0

In 0

Peak Hour Summary 7:55 AM to 8:55 AM HV 1.6% PHF 0.65

191 In

320 Out

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0.0% 0.00

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189

2

In 0

1

0

Out 12

0.0%

₽HF

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J 10

320 -

HV 3.0% PHF 0.65

## **Total Vehicle Summary**



## West Access & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

#### 5-Minute Interval Summary 7.00 AM to 9.00 AM

1:00 AM		Northboun	4		outhbou	nd		Eastb	ound			West	bound			1	Pedes	triane	
Start		West Acces	-	-	Vest Acce			Hawor					rth Ave		Interval		Cross		
Time	L	R	Bikes		1000	Bikes	1	T	R	Bikes	L	T		Bikes	Total	North	South	East	West
7:00 AM	0		0			0		22	1	0	0	0		0	23	0	0	0	0
7:05 AM	0		0			0		11	0	0	0	8		0	19	0	0	0	0
7:10 AM	0	0	0			0		11	0	0	0	3		0	14	0	1	1	0
7:15 AM	0	0	0			0		8	0	0	0	4		0	12	0	0	0	0
7:20 AM	0	0	0			0		6	0	0	0	10	ii	0	16	0	1	0	0
7:25 AM	0	0	0			0		21	0	0	0	5		0	26	0	0	0	0
7:30 AM	0	0	0			0		7	1	0	0	6		0	14	0	0	0	0
7:35 AM	0	0	0			0		13	2	1	0	6		0	21	0	1	0	0
7:40 AM	0	0	0			0		10	1	0	0	9		0	20	0	0	0	0
7:45 AM	0	0	0			0		14	0	0	2	7		0	23	0	0	0	0
7:50 AM	0	0	0			0		9	1	1	0	12		3	22	0	0	0	0
7:55 AM	0	0	0			0		26	2	1	0	14		0	42	0	0	0	0
8:00 AM	0	0	0			0		22	1	0	0	11	[	0	34	0	1	0	0
8:05 AM	0	0	0			0		24	1	0	0	14		0	39	0	2	0	0
8:10 AM	0	0	0	1		0		39	0	0	0	8		0	47	0	1	0	0
8:15 AM	0	0	0			0		29	2	1	0	15		0	46	0	0	0	0
8:20 AM	0	0	0			0		36	0	0	1	17		0	54	0	0	0	0
8:25 AM	0	0	0			0		56	0	0	0	22		0	78	0	0	0	0
8:30 AM	0	0	0			0		33	1	0	0	21		1	55	0	0	0	0
8:35 AM	0	0	0			0		11	1	0	1	30		2	43	0	0	0	0
8:40 AM	0	0	0			0		13	1	0	0	13		0	27	0	0	0	0
8:45 AM	0	0	0			0		14	1	0	0	14		0	29	0	1	0	0
8:50 AM	0	0	0			0		17	0	0	0	10		0	27	0	0	0	0
8:55 AM	0	0	0			0		11	0	0	0	12		0	23	0	0	0	0
Total Survey	0	0	0			0		463	16	4	4	271		6	754	0	8	1	0

#### 15-Minute Interval Summary

#### 7:00 AM to 9:00 AM

Interval		North	oound		Sout	hbound		bound			Westb					strians	
Start		West A	Access		West	Access	Hawo	rth Ave			Hawor	th Ave	Interval		Cros	swalk	
Time	L		R	Bikes		Bikes	T	R	Bikes	L	Т	Bikes	Total	North	South	East	West
7:00 AM	0		0	0		0	44	1	0	0	11	0	56	0	1	1	0
7:15 AM	0		0	0		0	35	0	0	0	19	0	54	0	1	0	0
7:30 AM	0		0	0		0	30	4	1	0	21	0	55	0	1	0	0
7:45 AM	0		0	0		0	49	3	2	2	33	3	87	0	0	0	0
8:00 AM	0		0	0		0	85	2	0	0	33	0	120	0	4	0	0
8:15 AM	0		0	0		0	121	2	1	1	54	0	178	0	0	0	0
8:30 AM	0		0	0		0	57	3	0	1	64	3	125	0	0	0	0
8:45 AM	0		0	0		0	42	1	0	0	36	0	79	0	1	0	0
Total Survey	0		0	0		0	463	16	4	4	271	6	754	0	8	1	0

## Peak Hour Summary

By		North	bound			South	bound			Easth	oound			West	oound			
Approach		West	Access			West	Access			Hawo	rth Ave			Hawor	th Ave		Total	
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		
Volume	0	12	12	0	0	0	0	0	330	189	519	2	191	320	511	3	521	
%HV		0.0	0%			0.0	0%			3.	0%			1.6	5%		2.5%	
DUE		0	00			0	00			0	65			0.0	65		0.70	-
PHF		0.	00			0.	00			0.	05			0.	00		0.70	1
			bound				bound				oound			West			0.70	ר ר
Ву			bound			South				East				West			Total	- 
Ву	L	North	bound	Total		South	bound	Total		East	bound	Total	L	West	bound	Total		]
Ву	L	North	bound Access R	Total 0		South	bound	Total 0		East	oound rth Ave	Total 330	L 2	West	bound	Total 191		
By Movement	L 0 0.0%	North	Access R 0		NA	South	bound	Total 0 0.0%	NA	Eastt Hawo	rth Ave R	330	L 2 0.0%	Westh Hawor T	bound		Total	

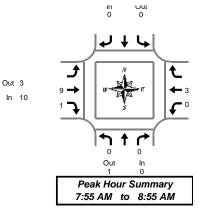
	Pedes	trians	
	Cross	swalk	
North	South	East	West
0	5	0	0

#### **Rolling Hour Summary**

7:00 AM to 9:00 AM

Interval		North	bound		Sc	uthbound			Eastbo	ound			Westb	ound			Pede	strians	
Start		West Access			W	est Access		H	lawort	h Ave			Hawor	th Ave	Interv	al	Cros	swalk	
Time	L		R	Bikes			Bikes		T	R	Bikes	L	Т	Bike	5 Tota	Nor	h South	East	West
7:00 AM	0		0	0			0		158	8	3	2	84	3	252	0	3	1	0
7:15 AM	0		0	0			0		199	9	3	2	106	3	316	0	6	0	0
7:30 AM	0		0	0			0		285	11	4	3	141	3	440	0	5	0	0
7:45 AM	0		0	0			0		312	10	3	4	184	6	510	0	4	0	0
8:00 AM	0		0	0			0		305	8	1	2	187	3	502	0	5	0	0





## West Access & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

Heavy Ve	hic	e 5-Minute Interval Summary
7:00 AM	to	9:00 AM

Interval Start		North West	bound Access		South West A		Eastb Hawor					<b>bound</b> rth Ave		Interval
Time	L		R	Total		Total	Т	R	Total	L	Т		Total	Total
7:00 AM	0		0	0		0	1	0	1	0	0		0	1
7:05 AM	0		0	0		0	0	0	0	0	0		0	0
7:10 AM	0		0	0		0	 0	0	0	0	0	1	0	0
7:15 AM	0		0	0		0	0	0	0	0	0		0	0
7:20 AM	0		0	0		0	 0	0	0	0	0		0	0
7:25 AM	0		0	0		0	0	0	0	0	0		0	0
7:30 AM	0		0	0		0	0	0	0	0	0		0	0
7:35 AM	0		0	0		0	0	0	0	0	0		0	0
7:40 AM	0		0	0		0	0	0	0	0	0		0	0
7:45 AM	0		0	0		0	 0	0	0	0	0	1	0	0
7:50 AM	0		0	0		0	0	0	0	0	0		0	0
7:55 AM	0		0	0		0	0	0	0	0	1		1	1
8:00 AM	0		0	0		0	 1	0	1	0	0		0	1
8:05 AM	0		0	0		0	1	0	1	0	1		1	2
8:10 AM	0		0	0		0	 2	0	2	0	0		0	2
8:15 AM	0		0	0		0	2	0	2	0	0		0	2
8:20 AM	0		0	0		0	0	0	0	0	0		0	0
8:25 AM	0		0	0		0	 0	0	0	0	0	l	0	0
8:30 AM	0		0	0		0	0	0	0	0	0		0	0
8:35 AM	0		0	0		0	0	0	0	0	1		1	1
8:40 AM	0		0	0		0	0	0	0	0	0		0	0
8:45 AM	0		0	0		0	1	1	2	0	0		0	2
8:50 AM	0		0	0		0	 2	0	2	0	0		0	2
8:55 AM	0		0	0		0	0	0	0	0	0		0	0
Total Survey	0		0	0		0	10	1	11	0	3		3	14

#### Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

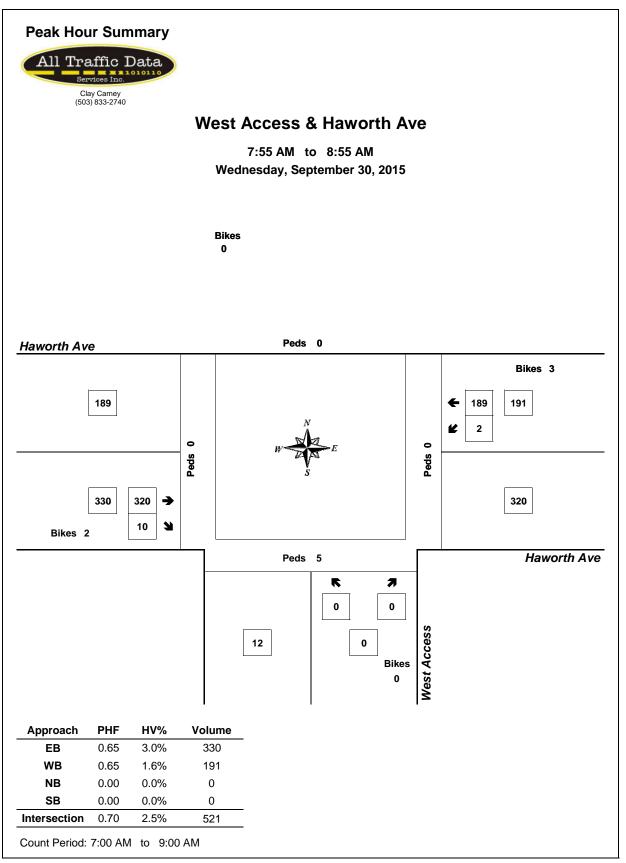
Interval		North				bound		Eastb					bound		1
Start		West A	Access		West /	Access		Hawor	th Ave			Hawo	rth Ave		Interval
Time	L		R	Total			Total	Т	R	Total	L	Т		Total	Total
7:00 AM	0		0	0			0	1	0	1	0	0		0	1
7:15 AM	0		0	0			0	0	0	0	0	0		0	0
7:30 AM	0		0	0			0	0	0	0	0	0		0	0
7:45 AM	0		0	0			0	0	0	0	0	1		1	1
8:00 AM	0		0	0			0	4	0	4	0	1		1	5
8:15 AM	0		0	0			0	2	0	2	0	0		0	2
8:30 AM	0		0	0			0	0	0	0	0	1		1	1
8:45 AM	0		0	0			0	3	1	4	0	0		0	4
Total Survey	0		0	0			0	10	1	11	0	3		3	14

#### Heavy Vehicle Peak Hour Summary 7:55 AM to 8:55 AM

Bv		North	bound			South	bound			Eastb	ound			West	bound	
,		West	Access			West	Access		H	Hawor	th Ave			Hawor	rth Ave	Total
Appioacii	pproach In Out	Total		In	Out	Total	In		Out	Total	h	n	Out	Total		
Volume	0	1	1		0	0	0	10		3	13	3	3	9	12	13
PHF	0.00	.00			0.00			0.5	)			0.3	38			0.54

By Movement		North West A				bound Access		Eastb Hawor	ound th Ave			West Hawor	bound th Ave		Total
wovernern	L		R	Total			Total	Т	R	Total	L	Т		Total	
Volume	0		0	0			0	9	1	10	0	3		3	13
PHF	0.00		0.00	0.00			0.00	0.45	0.25	0.50	0.00	0.38		0.38	0.54

Interval		North	bound			bound		Eastb	ound			West	bound		
Start		West A	Access		West	Access		Hawor	th Ave			Hawo	th Ave		Interval
Time	L R Tota						Total	Т	R	Total	L	Т		Total	Total
7:00 AM	0		0	0			0	1	0	1	0	1		1	2
7:15 AM	0		0	0			0	4	0	4	0	2		2	6
7:30 AM	0		0	0			0	6	0	6	0	2		2	8
7:45 AM	0		0	0	[		0	6	0	6	0	3	1	3	9
8:00 AM	0		0	0			0	9	1	10	0	2		2	12



Out 189

In 314

Out 1

Ā

13

In 21

♠

Peak Hour Summary 7:45 AM to 8:45 AM HV 1.1% PHF 0.66

Pedestrians

Crosswalk

North South East West

187 In

319 Out

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0.0% 0.53

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**-** 181

6

In 0

0 0 0

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8 0

Out 13

HV 0.0% PHF 0.00

1

306 🔶

7 J

HV 2.5% PHF 0.63

## **Total Vehicle Summary**



## East Access & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

#### 5-Minute Interval Summary 7:00 AM to 9:00 AM

	10																				
Interval			bound				bound			Easth					bound				Pedes		
Start		East A	Access			East A	Access			Hawo	th Ave			Hawo	rth Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	1	0	0	0	0	0	0	0	0	25	1	0	0	3	0	0	30	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	10	0	0	0	5	0	0	15	0	0	0	0
7:10 AM	1	0	0	0	0	0	0	0	0	4	2	0	0	4	0	0	11	0	0	0	1
7:15 AM	0	0	1	0	0	0	1	0	0	7	0	0	2	2	0	0	13	0	1	0	2
7:20 AM	0	0	0	0	0	0	0	0	0	15	1	0	0	8	0	0	24	0	0	0	0
7:25 AM	4	0	1	0	0	0	0	0	0	11	2	0	0	4	0	0	22	1	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	0	10	1	1	0	3	0	0	15	0	0	0	0
7:35 AM	1	0	0	0	0	0	0	0	0	9	0	0	0	7	0	0	17	0	1	0	1
7:40 AM	0	0	0	0	0	0	0	0	0	10	0	0	1	5	0	0	16	0	1	0	0
7:45 AM	0	0	2	0	0	0	0	0	0	14	1	0	0	12	0	2	29	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	11	2	1	2	11	0	2	26	0	0	0	0
7:55 AM	1	0	1	0	0	0	0	0	0	20	2	0	0	12	0	0	36	0	0	0	0
8:00 AM	0	0	2	0	0	0	0	0	0	21	1	0	0	12	0	0	36	0	1	0	0
8:05 AM	2	0	4	0	0	0	0	0	0	27	0	1	0	10	0	0	43	0	2	0	0
8:10 AM	0	0	0	0	0	0	0	0	0	40	1	1	0	9	0	0	50	1	2	0	0
8:15 AM	2	0	0	0	0	0	0	0	0	33	0	0	1	20	0	0	56	1	0	0	0
8:20 AM	1	0	1	0	0	0	0	0	0	46	0	0	2	13	0	0	63	0	0	0	0
8:25 AM	0	0	2	0	0	0	0	0	0	46	0	0	1	19	0	0	68	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	0	25	0	0	0	29	0	2	55	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	1	7	0	0	0	22	0	1	30	0	0	0	0
8:40 AM	1	0	1	0	0	0	0	0	0	16	0	0	0	12	0	0	30	0	0	0	0
8:45 AM	3	0	1	0	0	0	0	0	0	13	0	0	0	8	0	0	25	0	0	0	0
8:50 AM	2	0	1	0	0	0	0	0	0	14	0	0	0	10	0	0	27	0	0	0	0
8:55 AM	2	0	0	0	0	0	0	0	0	11	2	0	0	10	0	0	25	0	0	0	1
Total Survey	23	0	17	0	0	0	1	0	1	445	16	4	9	250	0	7	762	3	8	0	5

## *15-Minute Interval Summary 7:00 AM to 9:00 AM*

Interval		North	bound			South	bound			East	oound			West	oound				Pedes	strians	
Start		East A	Access			East A	Access			Hawo	rth Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	2	0	0	0	0	0	0	0	0	39	3	0	0	12	0	0	56	0	0	0	1
7:15 AM	4	0	2	0	0	0	1	0	0	33	3	0	2	14	0	0	59	1	1	0	2
7:30 AM	2	0	0	0	0	0	0	0	0	29	1	1	1	15	0	0	48	0	2	0	1
7:45 AM	1	0	3	0	0	0	0	0	0	45	5	1	2	35	0	4	91	0	0	0	0
8:00 AM	2	0	6	0	0	0	0	0	0	88	2	2	0	31	0	0	129	1	5	0	0
8:15 AM	3	0	3	0	0	0	0	0	0	125	0	0	4	52	0	0	187	1	0	0	0
8:30 AM	2	0	1	0	0	0	0	0	1	48	0	0	0	63	0	3	115	0	0	0	0
8:45 AM	7	0	2	0	0	0	0	0	0	38	2	0	0	28	0	0	77	0	0	0	1
Total Survey	23	0	17	0	0	0	1	0	1	445	16	4	9	250	0	7	762	3	8	0	5

Eastbound

#### Peak Hour Summary 7:45 AM to 8:45 AM

ſ	By		North	bound			South	bound		-
			East /	Access			East /	Access		1
	Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	1
ſ	Volume	21	13	34	0	0	1	1	0	
ľ	%HV		0.	0%			0.	0%		

By			Access				Access				th Ave				th Ave		Total
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	21	13	34	0	0	1	1	0	314	189	503	3	187	319	506	7	522
%HV		0.0	)%			0.0	)%			2.5	5%			1.1	1%		1.9%
PHF		0.	53			0.	00			0.	63			0.	66		0.70
Du		North	bound			South	bound			Eastb	ound			West	oound		
By			bound Access				bound				ound th Ave				th Ave		Total
By Movement	L			Total	L			Total	L			Total	L			Total	Total
	L 8		ccess	Total 21	L 0		ccess	Total 0	L 1		th Ave	Total 314	L 6		th Ave	Total 187	Total
Movement	L 8 0.0%		Access R		L 0 0.0%		R R R	Total 0 0.0%	L 1 0.0%	Hawor T	th Ave		L 6 0.0%	Hawor T	th Ave		

#### **Rolling Hour Summary**

7:00 AM to 9:00 AM

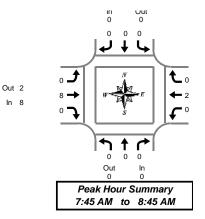
Interval		North	bound			South	bound			Eastb	ound			Westb	oound				Pedes	trians	
Start		East A	Access			East A	Access			Hawor	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time					L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	9	0	5	0	0	0	1	0	0	146	12	2	5	76	0	4	254	1	3	0	4
7:15 AM	9	0	11	0	0	0	1	0	0	195	11	4	5	95	0	4	327	2	8	0	3
7:30 AM	8	0	12	0	0	0	0	0	0	287	8	4	7	133	0	4	455	2	7	0	1
7:45 AM	8	0	13	0	0	0	0	0	1	306	7	3	6	181	0	7	522	2	5	0	0
8:00 AM	14	0	12	0	0	0	0	0	1	299	4	2	4	174	0	3	508	2	5	0	1

Westbound



## East Access & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM



#### Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start			bound Access				bound Access				oound rth Ave				th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
8:05 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:10 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:40 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
8:50 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	0	0	0	0	0	10	0	10	0	2	0	2	12

## Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

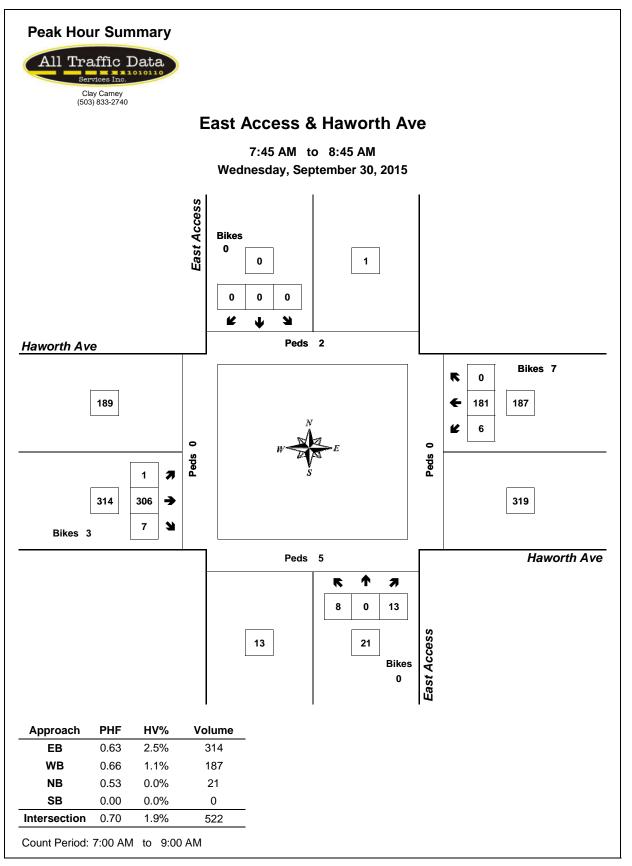
Interval Start			bound Access				bound Access				oound th Ave				bound rth Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	5	0	1	0	1	6
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total Survey	0	0	0	0	0	0	0	0	0	10	0	10	0	2	0	2	12

#### Heavy Vehicle Peak Hour Summary 7:45 AM to 8:45 AM

Ву			bound Access			bound Access			oound rth Ave			bound rth Ave	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	0	0	8	2	10	2	8	10	10
PHF	0.00			0.00			0.33			0.50			0.42

By Movement			bound Access				bound Access				oound th Ave			West Hawor	th Ave		Total
wovernent	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	0	0	0	0	0	0	0	0	0	8	0	8	0	2	0	2	10
PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.33	0.00	0.50	0.00	0.50	0.42

Interval		North	bound			South	bound			Easth	bound			West	bound		
Start		East A	Access			East A	Access			Hawor	rth Ave			Hawo	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	5	0	5	0	1	0	1	6
7:30 AM	0	0	0	0	0	0	0	0	0	7	0	7	0	1	0	1	8
7:45 AM	0	0	0	0	0	0	0	0	0	8	0	8	0	2	0	2	10
8:00 AM	0	0	0	0	0	0	0	0	0	10	0	10	0	2	0	2	12





## Sitka Ave & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM

5-Minute	Inte	rval Summary
7:00 AM	to	9:00 AM

Interval Start		Sitka	bound Ave			Sitka	<b>bound</b> a Ave				oound th Ave			Hawor	th Ave	_	Interval		Cros	strians swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	0	0	2	0	0	0	0	0	7	10	2	0	0	1	0	0	22	0	2	0	0
7:05 AM	1	0	0	0	0	1	1	0	5	8	0	0	2	4	0	0	22	1	3	0	0
7:10 AM	0	2	1	0	0	1	2	0	4	6	0	0	0	0	0	0	16	1	0	0	0
7:15 AM	0	3	0	0	0	1	1	0	2	5	0	1	1	3	0	0	16	0	0	0	1
7:20 AM	0	1	3	0	0	0	1	0	1	4	0	0	1	8	0	0	19	0	0	0	0
7:25 AM	0	0	3	0	0	0	0	0	5	13	0	0	1	3	0	0	25	0	0	0	0
7:30 AM	0	1	1	0	0	0	1	0	1	8	3	0	1	3	0	0	19	0	0	0	1
7:35 AM	0	1	0	0	0	0	3	0	3	8	2	0	0	2	0	0	19	0	0	0	0
7:40 AM	0	0	1	0	1	1	1	0	2	7	0	0	0	7	0	0	20	0	0	0	0
7:45 AM	2	1	2	0	4	2	2	0	0	13	0	1	0	6	0	0	32	0	0	0	2
7:50 AM	1	2	0	0	0	0	0	1	1	9	0	1	0	12	0	2	25	0	0	0	0
7:55 AM	0	0	1	1	1	0	1	0	3	16	2	1	1	11	0	0	36	0	0	1	0
8:00 AM	1	0	0	1	0	0	2	0	7	15	2	0	0	7	0	0	34	1	0	0	0
8:05 AM	0	1	1	0	0	1	3	0	8	18	0	0	0	10	0	0	42	0	0	0	0
8:10 AM	0	0	1	0	1	0	5	0	18	17	1	1	0	3	0	0	46	0	2	1	1
8:15 AM	2	1	3	0	0	0	6	0	16	13	1	1	1	8	2	0	53	1	0	0	0
8:20 AM	0	4	2	0	2	4	6	0	19	21	1	0	1	9	0	0	69	0	0	0	0
8:25 AM	0	1	2	0	2	5	11	0	31	14	3	0	1	13	0	0	83	0	0	0	2
8:30 AM	1	4	1	0	0	7	14	0	31	9	0	0	4	10	1	0	82	0	0	0	1
8:35 AM	1	0	3	0	2	1	9	0	6	6	1	0	1	17	0	1	47	0	1	1	0
8:40 AM	2	0	2	0	1	0	3	0	3	9	0	0	1	7	0	0	28	0	0	0	1
8:45 AM	2	0	2	0	0	0	2	0	3	10	2	0	1	8	0	0	30	0	0	0	1
8:50 AM	1	0	0	0	1	0	0	0	0	14	5	0	4	11	1	0	37	1	0	0	1
8:55 AM	0	0	0	0	0	0	1	0	0	8	0	0	0	7	0	0	16	0	0	0	0
Total Survey	14	22	31	2	15	24	75	1	176	261	25	6	21	170	4	3	838	5	8	3	11

## *15-Minute Interval Summary 7:00 AM to 9:00 AM*

Interval Start			bound a Ave				bound Ave				rth Ave			Westb Hawor			Interval			strians	
Time	L	T	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
7:00 AM	1	2	3	0	0	2	3	0	16	24	2	0	2	5	0	0	60	2	5	0	0
7:15 AM	0	4	6	0	0	1	2	0	8	22	0	1	3	14	0	0	60	0	0	0	1
7:30 AM	0	2	2	0	1	1	5	0	6	23	5	0	1	12	0	0	58	0	0	0	1
7:45 AM	3	3	3	1	5	2	3	1	4	38	2	3	1	29	0	2	93	0	0	1	2
8:00 AM	1	1	2	1	1	1	10	0	33	50	3	1	0	20	0	0	122	1	2	1	1
8:15 AM	2	6	7	0	4	9	23	0	66	48	5	1	3	30	2	0	205	1	0	0	2
8:30 AM	4	4	6	0	3	8	26	0	40	24	1	0	6	34	1	1	157	0	1	1	2
8:45 AM	3	0	2	0	1	0	3	0	3	32	7	0	5	26	1	0	83	1	0	0	2
Total Survey	14	22	31	2	15	24	75	1	176	261	25	6	21	170	4	3	838	5	8	3	11

#### Peak Hour Summary

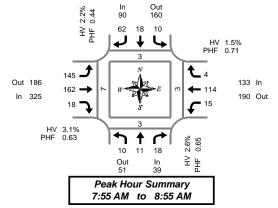
7:55 AM to 8:55 AM

Ву			bound a Ave				bound Ave				oound th Ave				th Ave		Total		Pedes Cross	
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East
Volume	39	51	90	2	90	160	250	0	325	186	511	3	133	190	323	1	587	3	3	3
%HV		2.6	6%			2.2	2%			3.	1%			1.5	5%		2.6%			
PHF		0.	65			0.4	44			0.	63			0.	71		0.63			
																		-		
Bv			bound				bound			East	ound				oound					
By			<b>bound</b> a Ave				<b>bound</b> Ave				ound th Ave				th Ave		Total			
By Movement	L			Total	L			Total	L			Total	L			Total	Total			
	L 10		Ave	Total 39	L 10		Ave	Total 90	L 145		th Ave	Total 325	L 15		th Ave	Total 133	Total			
Movement	L 10 0.0%		Ave R		L 10 0.0%	Sitka T	Ave R		L 145 1.4%	Hawor T	th Ave R		L 15 6.7%	Hawor T	th Ave					

#### **Rolling Hour Summary**

#### 7:00 AM to 9:00 AM

Interval Start		North Sitka	bound Ave			South Sitka	bound Ave				ound th Ave			West! Hawor	th Ave		Interval			<b>trians</b> swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	T	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
7:00 AM	4	11	14	1	6	6	13	1	34	107	9	4	7	60	0	2	271	2	5	1	4
7:15 AM	4	10	13	2	7	5	20	1	51	133	10	5	5	75	0	2	333	1	2	2	5
7:30 AM	6	12	14	2	11	13	41	1	109	159	15	5	5	91	2	2	478	2	2	2	6
7:45 AM	10	14	18	2	13	20	62	1	143	160	11	5	10	113	3	3	577	2	3	3	7
8:00 AM	10	11	17	1	9	18	62	0	142	154	16	2	14	110	4	1	567	3	3	2	7

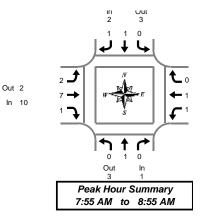


We



## Sitka Ave & Haworth Ave

Wednesday, September 30, 2015 7:00 AM to 9:00 AM



Heavy Vehicle 5-Minute Interval Summary 7:00 AM to 9:00 AM

Interval Start		North	bound Ave				bound Ave				oound th Ave			West Hawor	bound		Interval
Time	1	T	R	Total	1	T	R	Total	L	T	R	Total	L	T	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:35 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
7:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	2
8:05 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
8:10 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
8:20 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2
8:50 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	1	0	1	0	1	1	2	2	8	1	11	1	1	0	2	16

#### Heavy Vehicle 15-Minute Interval Summary 7:00 AM to 9:00 AM

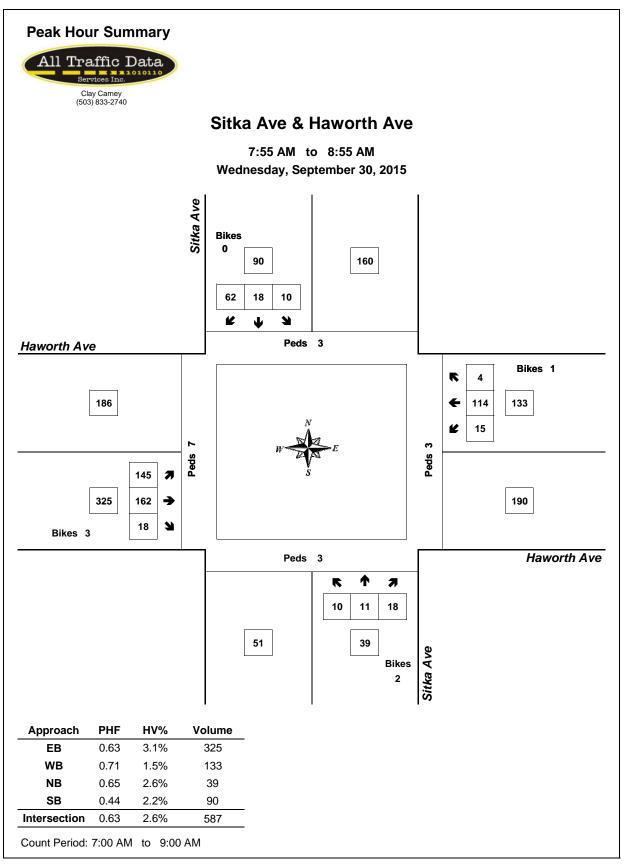
Interval Start			bound Ave				<b>bound</b> Ave				oound th Ave				<b>bound</b> th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	1	2	1	3	0	4	0	0	0	0	6
8:15 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
8:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	1	1	1	3	1	0	0	1	4
Total Survey	0	1	0	1	0	1	1	2	2	8	1	11	1	1	0	2	16

#### Heavy Vehicle Peak Hour Summary 7:55 AM to 8:55 AM

Bv		North	bound		South	bound		East	bound		West	bound	
,	pproach Sitka Ave		a Ave		Sitka	a Ave		Hawo	rth Ave		Hawo	rth Ave	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	1	3	4	2	3	5	10	2	12	2	7	9	15
PHF	0.25			0.25			0.50			0.2	5		 0.63

By			bound Ave				bound a Ave				oound th Ave			Westa Hawor	th Ave		Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	0	1	0	1	0	1	1	2	2	7	1	10	1	1	0	2	15
PHF	0.00	0.25	0.00	0.25	0.00	0.25	0.25	0.25	0.50	0.35	0.25	0.50	0.25	0.25	0.00	0.25	0.63

Interval			bound				bound				ound				oound		
Start		Sitka	a Ave			Sitka	a Ave			Hawoi	th Ave			Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	1	1	2	1	4	0	5	0	0	0	0	7
7:30 AM	0	0	0	0	0	1	1	2	1	7	0	8	0	0	0	0	10
7:45 AM	0	1	0	1	0	1	1	2	1	6	0	7	0	1	0	1	11
8:00 AM	0	1	0	1	0	1	1	2	2	7	1	10	1	1	0	2	15





**APPENDIX C: PM TRAFFIC COUNTS** 



## Villa Rd & Hwy 99W

Tuesday, September 29, 2015 4:00 PM to 6:00 PM

## 5-Minute Interval Summary

Interval Start		North Villa				South Villa	<b>bound</b> a Rd			Eastb Hwy				Westb Hwy			Interval		Pedes Cross		
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	48	9	7	0	15	11	7	0	4	85	0	0	1	124	9	0	320	0	0	0	0
4:05 PM	70	8	2	0	20	7	8	0	3	81	0	0	1	109	11	0	320	0	3	1	1
4:10 PM	25	12	1	0	6	9	7	0	7	86	1	0	1	144	8	0	307	0	2	5	0
4:15 PM	67	5	1	0	15	8	11	0	4	73	0	0	4	132	14	0	334	1	2	2	0
4:20 PM	36	8	3	0	14	14	9	0	6	124	0	0	1	115	11	0	341	1	1	0	0
4:25 PM	58	6	2	0	15	4	13	0	5	93	0	0	2	111	20	0	329	0	3	1	3
4:30 PM	38	8	2	0	6	8	13	0	3	103	0	0	0	105	11	0	297	0	0	1	0
4:35 PM	59	9	1	0	19	4	10	0	5	100	0	0	1	129	8	0	345	2	1	6	0
4:40 PM	44	14	2	0	9	8	7	0	11	116	0	1	2	117	11	0	341	0	2	0	0
4:45 PM	60	8	0	1	23	3	8	0	2	95	0	0	1	112	12	1	324	0	1	1	0
4:50 PM	42	8	1	0	10	9	9	0	4	96	1	1	0	93	12	0	285	0	2	3	1
4:55 PM	65	3	1	0	27	8	7	0	1	84	1	0	1	133	9	0	340	4	0	0	0
5:00 PM	41	10	1	0	15	11	9	0	7	106	1	0	1	104	12	0	318	0	2	4	0
5:05 PM	71	11	0	0	20	5	12	0	5	94	0	0	0	123	12	0	353	1	1	0	0
5:10 PM	50	12	2	0	9	9	6	1	6	97	0	0	1	117	12	0	321	0	0	0	0
5:15 PM	57	7	1	0	26	9	5	0	7	79	1	1	3	121	10	0	326	0	0	0	1
5:20 PM	34	16	2	0	10	9	8	0	5	121	0	0	3	144	11	0	363	2	1	0	1
5:25 PM	65	8	0	0	13	4	9	0	7	82	0	0	1	115	13	0	317	0	3	0	1
5:30 PM	63	11	1	0	15	11	6	0	1	86	2	0	1	107	7	0	311	1	0	3	0
5:35 PM	60	4	1	0	18	3	11	0	8	83	0	1	7	123	11	0	329	1	0	2	0
5:40 PM	32	15	2	1	13	9	10	0	8	125	0	0	2	127	10	0	353	1	0	2	1
5:45 PM	61	6	1	0	21	4	7	0	7	80	0	0	3	115	8	0	313	1	1	1	1
5:50 PM	37	7	7	0	14	4	11	0	6	102	0	0	4	132	11	0	335	2	3	1	0
5:55 PM	64	15	1	0	11	3	4	0	4	80	0	0	2	125	9	0	318	0	2	1	0
Total Survey	1,247	220	42	2	364	174	207	1	126	2,271	7	4	43	2,877	262	1	7,840	17	30	34	10

## *15-Minute Interval Summary 4:00 PM to 6:00 PM*

Interval Start			<b>bound</b> a Rd				bound Rd			Eastb Hwy	ound			Westt Hwv			Interval		Pedes Cross	trians	
Time	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
4:00 PM	143	29	10	0	41	27	22	0	14	252	1	0	3	377	28	0	947	0	5	6	1
4:15 PM	161	19	6	0	44	26	33	0	15	290	0	0	7	358	45	0	1,004	2	6	3	3
4:30 PM	141	31	5	0	34	20	30	0	19	319	0	1	3	351	30	0	983	2	3	7	0
4:45 PM	167	19	2	1	60	20	24	0	7	275	2	1	2	338	33	1	949	4	3	4	1
5:00 PM	162	33	3	0	44	25	27	1	18	297	1	0	2	344	36	0	992	1	3	4	0
5:15 PM	156	31	3	0	49	22	22	0	19	282	1	1	7	380	34	0	1,006	2	4	0	3
5:30 PM	155	30	4	1	46	23	27	0	17	294	2	1	10	357	28	0	993	3	0	7	1
5:45 PM	162	28	9	0	46	11	22	0	17	262	0	0	9	372	28	0	966	3	6	3	1
Total Survey	1,247	220	42	2	364	174	207	1	126	2,271	7	4	43	2,877	262	1	7,840	17	30	34	10

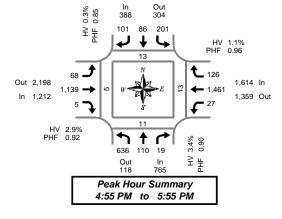
#### Peak Hour Summary 4:55 PM to 5:55 PM

By		North	bound			South	bound			East	ound			West	bound				Pedes	trians	
		Villa	a Rd			Villa	Rd			Hwy	99W			Hwy	99W		Total		Cross	swalk	
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	765	118	883	1	388	304	692	1	1,212	2,198	3,410	2	1,614	1,359	2,973	0	3,979	13	11	13	5
%HV		3.4	4%			0.3	3%			2.	9%			1.	1%		2.0%				
PHF		0.	90			0.8	35			0.	92			0.	96		0.98				
																		_			
By		North	bound			South	bound			East	ound			West	bound						
Movement		Villa	a Rd			Villa	Rd			Hwy	99W			Hwy	99W		Total				
wovement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total					
Volume	636	110	19	765	201	86	101	388	68	1,139	5	1,212	27	1,461	126	1,614	3,979				
%HV	3.8%	0.0%	10.5%	3.4%	0.0%	1.2%	0.0%	0.3%	0.0%	3.1%	0.0%	2.9%	3.7%	1.2%	0.0%	1.1%	2.0%				
PHF	0.85	0.79	0.48	0.90	0.81	0.80	0.90	0.85	0.74	0.93	0.63	0.92	0.56	0.96	0.88	0.96	0.98				

#### Rolling Hour Summary

#### 4:00 PM to 6:00 PM

Interval Start		Northl Villa				South Villa	<b>bound</b> a Rd			Eastb Hwv				Westt Hwv			Interval		Pedes Cross	s <b>trians</b> Swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
4:00 PM	612	98	23	1	179	93	109	0	55	1,136	3	2	15	1,424	136	1	3,883	8	17	20	5
4:15 PM	631	102	16	1	182	91	114	1	59	1,181	3	2	14	1,391	144	1	3,928	9	15	18	4
4:30 PM	626	114	13	1	187	87	103	1	63	1,173	4	3	14	1,413	133	1	3,930	9	13	15	4
4:45 PM	640	113	12	2	199	90	100	1	61	1,148	6	3	21	1,419	131	1	3,940	10	10	15	5
5:00 PM	635	122	19	1	185	81	98	1	71	1,135	4	2	28	1,453	126	0	3,957	9	13	14	5





## Villa Rd & Hwy 99W

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

Out 41 In 35	$\begin{array}{c} 0   \\ 35   \\ 0   \\ \end{array} \qquad \begin{array}{c} & & \\ &$
	$\begin{array}{c c} & & & \\ \hline & & & \\ 24 & 0 & 2 \\ Out & & \\ 2 & 26 \end{array}$
	Peak Hour Summary 4:55 PM to 5:55 PM

Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start			Rd			Villa	<b>bound</b> a Rd			Hwy	ound 99W	,		Westl Hwy	99W		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	2	0	0	2	0	1	0	1	0	3	0	3	0	2	0	2	8
4:05 PM	4	0	0	4	0	0	0	0	0	2	0	2	0	2	0	2	8
4:10 PM	1	0	0	1	0	0	0	0	0	6	0	6	0	4	0	4	11
4:15 PM	4	0	0	4	0	0	0	0	0	5	0	5	1	3	0	4	13
4:20 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:25 PM	4	0	0	4	0	0	0	0	0	4	0	4	0	1	0	1	9
4:30 PM	4	0	0	4	0	0	0	0	0	4	0	4	0	3	0	3	11
4:35 PM	2	0	0	2	0	0	0	0	0	3	0	3	0	4	0	4	9
4:40 PM	1	0	0	1	0	0	0	0	0	5	0	5	0	2	0	2	8
4:45 PM	3	0	0	3	0	0	1	1	0	2	0	2	1	2	1	4	10
4:50 PM	1	0	0	1	0	0	0	0	0	3	0	3	0	1	0	1	5
4:55 PM	1	0	0	1	0	0	0	0	0	6	0	6	0	0	0	0	7
5:00 PM	1	0	0	1	0	1	0	1	0	3	0	3	0	0	0	0	5
5:05 PM	2	0	0	2	0	0	0	0	0	3	0	3	0	2	0	2	7
5:10 PM	2	0	0	2	0	0	0	0	0	4	0	4	0	3	0	3	9
5:15 PM	3	0	1	4	0	0	0	0	0	1	0	1	1	0	0	1	6
5:20 PM	5	0	0	5	0	0	0	0	0	3	0	3	0	1	0	1	9
5:25 PM	2	0	0	2	0	0	0	0	0	4	0	4	0	1	0	1	7
5:30 PM	2	0	0	2	0	0	0	0	0	5	0	5	0	3	0	3	10
5:35 PM	2	0	0	2	0	0	0	0	0	0	0	0	0	3	0	3	5
5:40 PM	1	0	0	1	0	0	0	0	0	2	0	2	0	3	0	3	6
5:45 PM	3	0	1	4	0	0	0	0	0	2	0	2	0	0	0	0	6
5:50 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3
5:55 PM	5	0	0	5	0	0	0	0	0	2	0	2	1	2	0	3	10
Total Survey	55	0	2	57	0	2	1	3	0	75	0	75	4	43	1	48	183

## Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

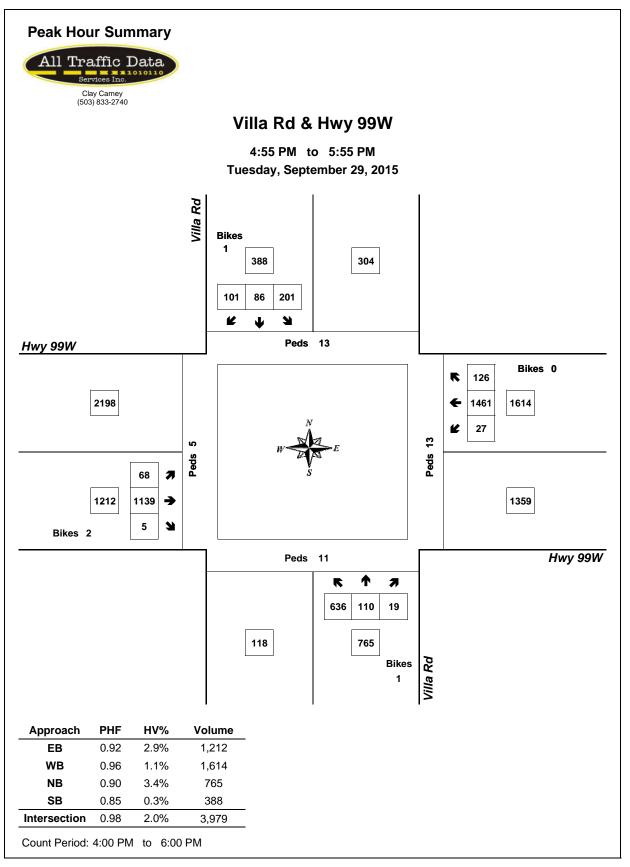
Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				ound 99W			Westl Hwy	oound 99W		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	7	0	0	7	0	1	0	1	0	11	0	11	0	8	0	8	27
4:15 PM	8	0	0	8	0	0	0	0	0	10	0	10	1	4	0	5	23
4:30 PM	7	0	0	7	0	0	0	0	0	12	0	12	0	9	0	9	28
4:45 PM	5	0	0	5	0	0	1	1	0	11	0	11	1	3	1	5	22
5:00 PM	5	0	0	5	0	1	0	1	0	10	0	10	0	5	0	5	21
5:15 PM	10	0	1	11	0	0	0	0	0	8	0	8	1	2	0	3	22
5:30 PM	5	0	0	5	0	0	0	0	0	7	0	7	0	9	0	9	21
5:45 PM	8	0	1	9	0	0	0	0	0	6	0	6	1	3	0	4	19
Total Survey	55	0	2	57	0	2	1	3	0	75	0	75	4	43	1	48	183

#### Heavy Vehicle Peak Hour Summary 4:55 PM to 5:55 PM

By			<b>bound</b> a Rd			bound a Rd			oound 99W			bound 99W	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	26	2	28	1	0	1	35	41	76	18	37	55	80
PHF	0.59			0.25			0.73			0.50			0.77

By			<b>bound</b> a Rd				<b>bound</b> a Rd			Eastb Hwy	ound 99W			Westa Hwy			Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	24	0	2	26	0	1	0	1	0	35	0	35	1	17	0	18	80
PHF	0.60	0.00	0.50	0.59	0.00	0.25	0.00	0.25	0.00	0.73	0.00	0.73	0.25	0.47	0.00	0.50	0.77

Interval		North					bound				oound			West			Internet
Start		VIIIa	a Rd			VIIIa	a Rd			Hwy	99W			Hwy	9977		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	27	0	0	27	0	1	1	2	0	44	0	44	2	24	1	27	100
4:15 PM	25	0	0	25	0	1	1	2	0	43	0	43	2	21	1	24	94
4:30 PM	27	0	1	28	0	1	1	2	0	41	0	41	2	19	1	22	93
4:45 PM	25	0	1	26	0	1	1	2	0	36	0	36	2	19	1	22	86
5:00 PM	28	0	2	30	0	1	0	1	0	31	0	31	2	19	0	21	83





## Villa Rd & Fulton St

Tuesday, September 29, 2015 4:00 PM to 6:00 PM

#### 5-Minute Interval Summary 4.00 PM to 6.00 PM

Interval		North	bound			South	bound			Fast	oound			West	bound			1	Pedes	trians	
Start		Villa				Villa					on St				on St		Interval			swalk	
Time	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
4:00 PM	8	10	0	0	0	13	9	0	10	0	5	2	1	0	0	0	56	0	0	0	0
4:05 PM	12	14	0	0	0	12	16	0	11	1	7	0	0	0	0	0	73	0	0	0	1
4:10 PM	6	10	1	0	0	13	12	0	13	0	8	0	0	1	0	0	64	0	0	0	2
4:15 PM	8	14	1	0	1	12	13	1	13	0	7	1	0	0	1	0	70	0	0	1	1
4:20 PM	5	15	0	0	0	14	12	0	10	0	13	0	0	0	0	0	69	0	0	0	0
4:25 PM	10	19	0	0	0	7	7	0	14	0	7	1	0	0	0	0	64	0	2	1	1
4:30 PM	6	16	0	0	0	13	15	1	3	0	8	0	1	0	0	0	62	0	0	0	1
4:35 PM	2	21	0	1	1	13	10	0	9	0	15	0	1	0	1	0	73	0	0	0	3
4:40 PM	2	12	1	0	0	4	9	0	10	0	5	1	0	0	0	0	43	1	0	0	2
4:45 PM	8	23	1	0	0	16	11	0	8	0	7	0	0	0	1	0	75	0	0	0	0
4:50 PM	12	12	0	0	1	16	9	0	9	0	9	0	0	0	1	2	69	0	1	1	2
4:55 PM	8	14	0	0	0	14	10	1	6	0	4	0	1	0	0	0	57	0	0	0	0
5:00 PM	10	18	0	0	0	13	6	0	11	0	7	0	0	0	0	2	65	0	0	0	1
5:05 PM	6	19	0	0	0	12	11	0	13	0	8	1	1	0	1	0	71	0	0	0	1
5:10 PM	10	22	1	0	0	15	8	0	8	0	6	0	2	0	0	0	72	0	0	0	0
5:15 PM	9	14	2	0	0	18	9	1	8	0	5	0	1	0	0	0	66	0	0	0	4
5:20 PM	4	23	0	0	0	9	10	0	9	0	8	0	1	0	0	0	64	0	0	0	0
5:25 PM	5	22	0	0	0	13	9	0	8	0	2	1	1	0	0	0	60	0	0	0	0
5:30 PM	6	11	1	0	0	16	17	0	14	0	6	0	0	0	1	0	72	0	0	0	1
5:35 PM	1	20	0	1	0	19	13	0	16	0	6	0	0	0	0	0	75	0	0	0	0
5:40 PM	9	14	0	0	0	18	19	1	8	0	8	0	0	0	0	0	76	1	0	0	0
5:45 PM	3	21	0	0	0	13	4	0	9	0	4	0	0	0	0	0	54	0	0	0	0
5:50 PM	6	12	0	0	0	13	13	0	14	0	11	1	0	0	0	0	69	0	0	0	0
5:55 PM	6	23	2	0	0	7	9	1	6	0	9	0	0	0	0	0	62	2	0	0	3
Total Survey	162	399	10	2	3	313	261	6	240	1	175	8	10	1	6	4	1,581	4	3	3	23

## *15-Minute Interval Summary 4:00 PM to 6:00 PM*

Interval		North	bound			South	bound			Easth	oound			West	oound				Pedes	trians	
Start		Villa	a Rd			Villa	a Rd			Fulto	on St			Fulto	on St		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	26	34	1	0	0	38	37	0	34	1	20	2	1	1	0	0	193	0	0	0	3
4:15 PM	23	48	1	0	1	33	32	1	37	0	27	2	0	0	1	0	203	0	2	2	2
4:30 PM	10	49	1	1	1	30	34	1	22	0	28	1	2	0	1	0	178	1	0	0	6
4:45 PM	28	49	1	0	1	46	30	1	23	0	20	0	1	0	2	2	201	0	1	1	2
5:00 PM	26	59	1	0	0	40	25	0	32	0	21	1	3	0	1	2	208	0	0	0	2
5:15 PM	18	59	2	0	0	40	28	1	25	0	15	1	3	0	0	0	190	0	0	0	4
5:30 PM	16	45	1	1	0	53	49	1	38	0	20	0	0	0	1	0	223	1	0	0	1
5:45 PM	15	56	2	0	0	33	26	1	29	0	24	1	0	0	0	0	185	2	0	0	3
Total Survey	162	399	10	2	3	313	261	6	240	1	175	8	10	1	6	4	1,581	4	3	3	23

## Peak Hour Summary

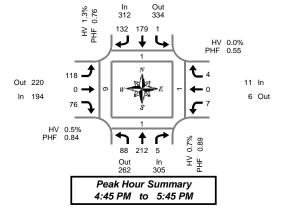
4:45 PM	το	5:45 PM	
P <sub>1</sub> /		Northbound	
Бу			

Ву			bound a Rd			South	bound Rd				oound			West	oound on St		Total			s <b>trians</b> swalk
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	TOtal	North	South	East
Volume	305	262	567	1	312	334	646	3	194	220	414	2	11	6	17	4	822	1	1	1
%HV		0.7	7%			1.3	3%			0.	5%			0.0	0%		0.9%			
PHF	0.89				0.	76			0.	84			0.	55		0.92				
By Movement	Northbound Southbound Villa Rd Villa Rd								ound on St				oound on St		Total					
wovernern	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total				
Volume	88	212	5	305	1	179	132	312	118	0	76	194	7	0	4	11	822			
%HV	1.1%	0.5%	0.0%	0.7%	0.0%	0.6%	2.3%	1.3%	0.0%	0.0%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.9%			
PHF	0.73	0.90	0.42	0.89	0.25	0.84	0.67	0.76	0.78	0.00	0.90	0.84	0.44	0.00	0.50	0.55	0.92			

#### Rolling Hour Summary

#### 4:00 PM to 6:00 PM

Interval		North					bound				ound			West			la ta mus l		Pedes		
Start Time			Rd	Bikes	1	Villa Rd           L         T         R         Bikes           2         147         122         2			1	T	on St	Bikes		Fuite	on St	Bikes	Interval Total	North	South	swalk East	West
4:00 PM	87	180	4	1	3	147	133	3	116	1	95	5	4	1	4	2	775	1	3	3	13
4:15 PM	87	205	4	1	3	149	121	3	114	0	96	4	6	0	5	4	790	1	3	3	12
4:30 PM	82	216	5	1	2	156	117	3	102	0	84	3	9	0	4	4	777	1	1	1	14
4:45 PM	88	212	5	1	1	179	132	3	118	0	76	2	7	0	4	4	822	1	1	1	9
5:00 PM	75	219	6	1	0	166	128	3	124	0	80	3	6	0	2	2	806	3	0	0	10



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East West a

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## Heavy Vehicle Summary



## Villa Rd & Fulton St

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

1 1 0 Out In 2 2
ak Hour Summary 5 PM to 5:45 PM

Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				oound on St			Westl Fulto	bound on St		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	2
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:10 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:50 PM	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	1	0	2	0	2	4	6	1	0	2	3	0	0	0	0	11

## Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

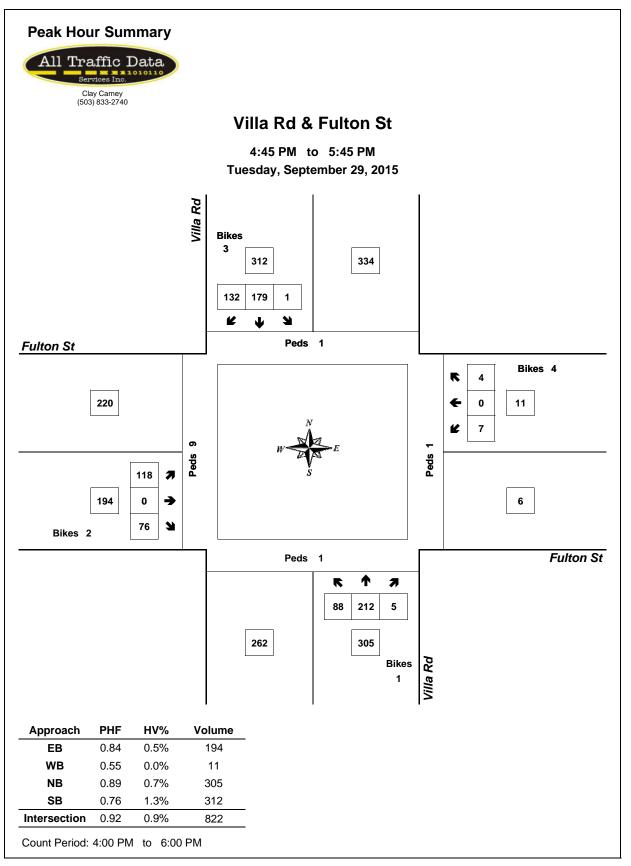
Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				ound on St				oound on St		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	1	1	0	2	0	1	2	3	0	0	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Survey	1	1	0	2	0	2	4	6	1	0	2	3	0	0	0	0	11

#### Heavy Vehicle Peak Hour Summary 4:45 PM to 5:45 PM

By			<b>bound</b> a Rd			<b>bound</b> a Rd			oound on St			bound on St	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	2	2	4	4	1	5	1	4	5	0	0	0	7
PHF	0.25			0.33			0.25			0.00			0.35

By			bound a Rd				<b>bound</b> a Rd				oound on St			Westb Fulto	oound on St		Total
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	1	1	0	2	0	1	3	4	0	0	1	1	0	0	0	0	7
PHF	0.25	0.25	0.00	0.25	0.00	0.25	0.38	0.33	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.35

Interval			bound				bound				ound				oound		
Start		Villa	a Rd			Villa	a Rd			Fulto	on St			Fulto	on St		Interval
Time	L	Т	R	Total	Total												
4:00 PM	1	1	0	2	0	2	3	5	1	0	0	1	0	0	0	0	8
4:15 PM	1	1	0	2	0	1	2	3	0	0	1	1	0	0	0	0	6
4:30 PM	1	1	0	2	0	1	3	4	0	0	1	1	0	0	0	0	7
4:45 PM	1	1	0	2	0	1	3	4	0	0	1	1	0	0	0	0	7
5:00 PM	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	3





## Villa Rd & Haworth Ave

Tuesday, September 29, 2015 4:00 PM to 6:00 PM

#### 5-Minute Interval Summary 4.00 PM to 6.00 PM

Interval Start		Villa	<b>bound</b> a Rd			South Villa	Rd			Hawo	oound rth Ave			Hawo	bound rth Ave		Interval		Cros		
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	0	11	10	2	4	10	0	0	0	0	0	0	18	0	12	0	65	0	1	0	1
4:05 PM	0	10	11	0	4	9	0	0	0	0	0	0	16	1	12	0	63	0	1	0	0
4:10 PM	0	15	14	0	8	14	0	0	0	0	0	0	12	0	10	0	73	0	0	0	0
4:15 PM	2	9	12	0	3	10	0	2	0	0	1	0	14	0	5	0	56	0	1	0	1
4:20 PM	0	12	18	0	7	6	0	0	0	0	1	0	13	0	11	0	68	0	2	0	0
4:25 PM	0	13	14	1	4	5	1	0	0	0	2	0	11	1	6	0	57	0	0	0	1
4:30 PM	0	18	6	0	6	10	0	0	0	0	2	0	13	2	7	1	64	0	0	1	1
4:35 PM	0	13	14	0	8	7	0	0	1	0	3	0	12	0	7	0	65	0	2	0	1
4:40 PM	2	12	15	1	14	7	0	0	0	0	2	0	9	0	9	0	70	0	0	0	0
4:45 PM	0	16	9	0	9	10	0	0	0	0	2	0	10	0	5	0	61	0	2	0	1
4:50 PM	1	10	13	1	9	14	0	0	0	0	1	0	16	0	10	1	74	0	1	0	1
4:55 PM	1	8	7	0	10	13	0	0	0	0	0	0	12	0	7	0	58	0	2	0	0
5:00 PM	1	14	14	0	4	5	0	0	0	0	1	0	11	0	21	0	71	0	1	0	0
5:05 PM	1	17	14	0	5	11	0	0	0	0	1	0	17	0	12	0	78	0	0	0	0
5:10 PM	0	18	15	0	9	13	0	0	0	1	0	0	10	0	14	0	80	0	3	3	0
5:15 PM	0	8	12	0	4	13	0	0	1	0	0	0	11	0	10	0	59	0	0	0	0
5:20 PM	0	22	12	0	11	10	0	0	0	0	0	0	8	0	16	0	79	1	0	0	1
5:25 PM	0	17	13	0	7	10	0	0	0	0	0	0	16	0	13	0	76	0	1	0	0
5:30 PM	0	9	17	0	12	11	0	0	0	0	0	0	23	0	17	0	89	0	0	0	0
5:35 PM	0	12	22	1	8	13	0	0	0	0	2	0	20	0	23	0	100	0	0	0	0
5:40 PM	0	12	16	0	10	11	0	1	0	0	0	0	19	0	13	0	81	0	0	0	0
5:45 PM	1	14	6	0	9	9	0	0	0	1	0	0	17	0	9	0	66	0	0	0	0
5:50 PM	1	9	18	1	9	4	0	0	0	0	0	0	8	0	8	1	57	0	0	0	0
5:55 PM	0	16	7	0	5	11	0	0	0	0	1	0	12	0	12	0	64	0	1	0	0
Total Survey	10	315	309	7	179	236	1	3	2	2	19	0	328	4	269	3	1,674	1	18	4	8

## *15-Minute Interval Summary 4:00 PM to 6:00 PM*

Interval		North	bound			South	bound			East	oound			West	bound				Pedes	strians	
Start		Villa	a Rd			Villa	Rd			Hawo	rth Ave			Hawo	rth Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	0	36	35	2	16	33	0	0	0	0	0	0	46	1	34	0	201	0	2	0	1
4:15 PM	2	34	44	1	14	21	1	2	0	0	4	0	38	1	22	0	181	0	3	0	2
4:30 PM	2	43	35	1	28	24	0	0	1	0	7	0	34	2	23	1	199	0	2	1	2
4:45 PM	2	34	29	1	28	37	0	0	0	0	3	0	38	0	22	1	193	0	5	0	2
5:00 PM	2	49	43	0	18	29	0	0	0	1	2	0	38	0	47	0	229	0	4	3	0
5:15 PM	0	47	37	0	22	33	0	0	1	0	0	0	35	0	39	0	214	1	1	0	1
5:30 PM	0	33	55	1	30	35	0	1	0	0	2	0	62	0	53	0	270	0	0	0	0
5:45 PM	2	39	31	1	23	24	0	0	0	1	1	0	37	0	29	1	187	0	1	0	0
Total Survey	10	315	309	7	179	236	1	3	2	2	19	0	328	4	269	3	1,674	1	18	4	8

East West

## Peak Hour Summary

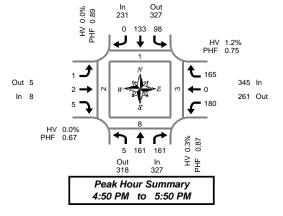
4:50 PIVI	το	5:50 PIVI	
Bu		Northbound	
БУ		Villa Rd	

Ву			<b>bound</b> a Rd				<b>bound</b> a Rd				oound th Ave				bound th Ave		Total		Pedes	s <b>trians</b> swalk
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	····	North	South	
Volume	327	318	645	2	231	327	558	1	8	5	13	0	345	261	606	1	911	1	8	3
%HV		0.3	3%			0.0	0%			0.	0%			1.2	2%		0.5%			
PHF		0.	87			0.	89			0.	67			0.	75		0.84			
By Movement			<b>bound</b> a Rd				<b>bound</b> a Rd				oound rth Ave				bound th Ave		Total			
wovernent	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total				
Volume	5	161	161	327	98	133 0		231	1	2	5	8	180	0	165	345	911			
%HV	0.0%	0.0%	0.6%	0.3%	0.3% 0.0% 0.0% 0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.6%	1.2%	0.5%			
PHF	0.42	0.82	0.73	161         327         98         133         0         2           0.6%         0.3%         0.0%         0.0%         0.0%         0				0.89	0.25	0.50	0.63	0.67	0.73	0.00	0.78	0.75	0.84			

#### Rolling Hour Summary

#### 4:00 PM to 6:00 PM

Interval		North				South					ound				bound				Pedes		
Start		Villa	a Rd			Villa	Rd			Hawoi	th Ave			Hawo	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	6	147	143	5	86	115	1	2	1	0	14	0	156	4	101	2	774	0	12	1	7
4:15 PM	8	160	151	3	88	111	1	2	1	1	16	0	148	3	114	2	802	0	14	4	6
4:30 PM	6	173	144	2	96	123	0	0	2	1	12	0	145	2	131	2	835	1	12	4	5
4:45 PM	4	163	164	2	98	134	0	1	1	1	7	0	173	0	161	1	906	1	10	3	3
5:00 PM	4	168	166	2	93	121	0	1	1	2	5	0	172	0	168	1	900	1	6	3	1



Out 0

ln 0

## Heavy Vehicle Summary



## Villa Rd & Haworth Ave

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

	·
$ \begin{array}{c} \bullet \\ \circ \\$	
0 0 1 Out In 3 1	7
Peak Hour Sun 4:50 PM to 5:	-

Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start		North Villa	bound a Rd				<b>bound</b> a Rd				oound th Ave			Westl Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
4:25 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:40 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	2
4:50 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	2	2	3	2	1	6	0	0	0	0	4	0	1	5	13

## Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

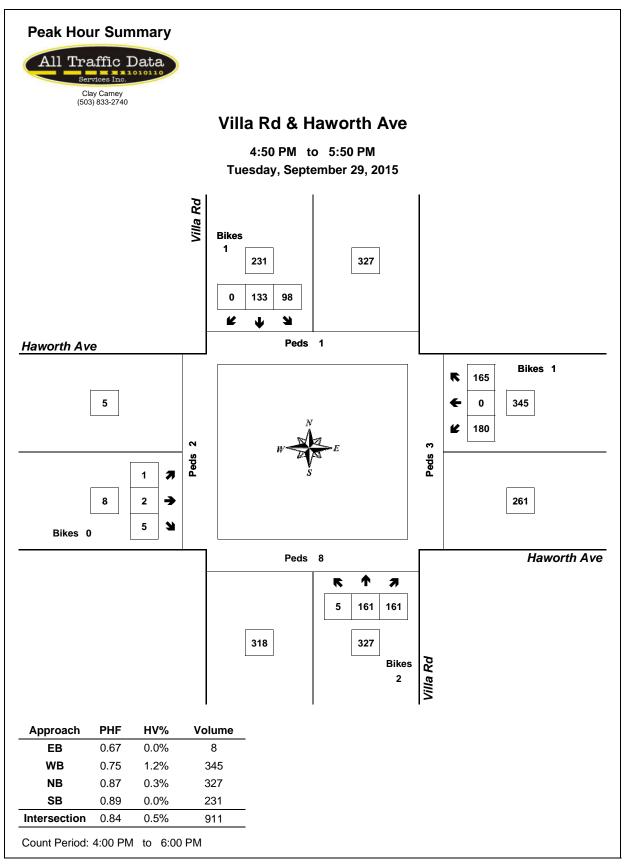
Interval Start			<b>bound</b> a Rd				<b>bound</b> a Rd				oound th Ave				bound th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
4:15 PM	0	0	1	1	1	0	1	2	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	1	1	1	0	2	0	0	0	0	2	0	0	2	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	2	2	3	2	1	6	0	0	0	0	4	0	1	5	13

#### Heavy Vehicle Peak Hour Summary 4:50 PM to 5:50 PM

By			<b>bound</b> a Rd			<b>bound</b> a Rd			rth Ave			bound rth Ave	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	1	3	4	0	1	1	0	0	0	4	1	5	5
PHF	0.25			0.00			0.00			0.50			0.42

By Movement			bound a Rd				<b>bound</b> a Rd				oound th Ave			West Hawor			Total
wovernerit	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	0	0	1	1	0	0	0	0	0	0	0	0	3	0	1	4	5
PHF	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.25	0.50	0.42

Interval		North	bound			South	bound				ound			West			
Start		Villa	a Rd			Villa	a Rd			Hawor	th Ave			Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	2	2	3	2	1	6	0	0	0	0	3	0	0	3	11
4:15 PM	0	0	2	2	3	1	1	5	0	0	0	0	3	0	0	3	10
4:30 PM	0	0	1	1	2	1	0	3	0	0	0	0	3	0	1	4	8
4:45 PM	0	0	1	1	1	1	0	2	0	0	0	0	3	0	1	4	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2



## **Total Vehicle Summary**



## West Access & Haworth Ave

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

#### 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start		Northbe West Ad	ccess		hbound Access		 Eastb Hawor	th Ave				bound th Ave		Interval		Pedes Cros	swalk	
Time	L		R	Bikes		Bikes	 Т	R	Bikes	L	Т		Bikes	Total	North	South	East	West
4:00 PM	0		0	0		0	15	1	1	0	25		0	41	0	1	0	0
4:05 PM	0		0	0		0	 15	2	0	1	33		0	51	0	1	0	0
4:10 PM	0		0	0		0	 15	1	0	1	24		0	41	0	0	0	0
4:15 PM	0		0	0		0	 20	0	0	4	17		0	41	0	0	0	0
4:20 PM	0		0	0		0	 13	4	1	0	27		0	44	0	3	0	0
4:25 PM	0		0	0	 	0	19	4	1	2	18		0	43	0	1	0	0
4:30 PM	0		0	0		0	 11	3	0	0	22		. 1	36	0	0	0	0
4:35 PM	0		0	0		0	 21	1	0	0	20		0	42	0	2	0	0
4:40 PM	0		0	0		0	 21	3	0	0	19		0	43	0	0	0	0
4:45 PM	0		0	0		0	22	0	0	0	15		0	37	0	2	0	0
4:50 PM	0		0	0		0	18	2	0	3	24		0	47	0	0	0	0
4:55 PM	0		0	0		0	20	0	0	0	21		1	41	0	2	0	0
5:00 PM	0		0	0		0	16	1	0	0	30		0	47	0	2	0	0
5:05 PM	0		0	0	 	0	 19	1	3	0	28		0	48	0	0	0	0
5:10 PM	0		0	0		0	22	0	0	0	26		0	48	0	0	0	0
5:15 PM	0		0	0		0	18	1	0	0	21		1	40	0	0	0	0
5:20 PM	0		0	0		0	17	1	0	2	24		0	44	0	1	0	0
5:25 PM	0		0	0		0	19	4	0	1	27		0	51	0	1	0	0
5:30 PM	0		0	0		0	30	0	0	1	39		0	70	0	0	0	0
5:35 PM	0		0	0		0	22	7	1	1	43		2	73	0	0	0	0
5:40 PM	0		0	0		0	19	0	0	1	35		0	55	0	0	0	0
5:45 PM	0		0	0		0	25	3	0	1	25		0	54	0	0	0	0
5:50 PM	0		0	0		0	 21	4	1	0	18		1	43	0	0	0	0
5:55 PM	0		0	0		0	13	2	0	4	23		0	42	0	2	0	0
Total Survey	0		0	0		0	451	45	8	22	604		6	1,122	0	18	0	0

#### 15-Minute Interval Summary

#### 4:00 PM to 6:00 PM

Interval		North	bound		Sout		bound			West					trians		
Start		West	Access		West	Access	Hawo	orth Ave			Hawor	th Ave	Interval		Cros	swalk	
Time	L		R	Bikes		Bikes	T	R	Bikes	L	Т	Bikes	Total	North	South	East	West
4:00 PM	0		0	0		0	45	4	1	2	82	0	133	0	2	0	0
4:15 PM	0		0	0		0	52	8	2	6	62	0	128	0	4	0	0
4:30 PM	0		0	0		0	53	7	0	0	61	1	121	0	2	0	0
4:45 PM	0		0	0		0	60	2	0	3	60	1	125	0	4	0	0
5:00 PM	0		0	0		0	57	2	3	0	84	0	143	0	2	0	0
5:15 PM	0		0	0		0	54	6	0	3	72	1	135	0	2	0	0
5:30 PM	0		0	0		0	71	7	1	3	117	2	198	0	0	0	0
5:45 PM	0		0	0		0	59	9	1	5	66	1	139	0	2	0	0
Total Survey	0		0	0		0	451	45	8	22	604	6	1,122	0	18	0	0

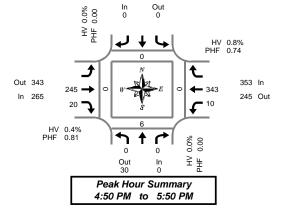
### Peak Hour Summary

By		North	bound			South	bound			Eastb	ound			West	oound		
Approach		West /	Access			West	Access			Hawor	th Ave			Hawor	th Ave		Total
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	0	30	30	0	0	0	0	0	265	343	608	4	353	245	598	4	618
%HV		0.0	0%			0.0% 0.4% 0.8%									0.6%		
PHF		0.	00			0.	00			0.	81			0.	74		0.78
			00 bound				00 bound			0.0	-			0. Westl			0.78
Ву		North				South				Eastb	-			West			0.78 Total
	L	North	bound Access	Total		South	bound	Total		Eastb	ound	Total	L	West	oound	Total	
Ву	L 0	North	bound Access R	Total 0		South	bound	Total 0		Eastb	ound th Ave	Total 265	L 10	West	oound	Total 353	
By Movement	L 0 0.0%	North	bound Access R 0		NA	South	bound	Total 0 0.0%	NA	Eastb Hawor T	ound th Ave R 20		L 10 0.0%	West Hawor T	th Ave		Total

#### **Rolling Hour Summary**

4:00 PM to 6:00 PM

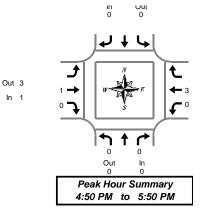
Interval Start		North West	bound Access		South West A			Eastb Hawor					th Ave		Interval		Pedes Cross	<b>trians</b> swalk	
Time	L		R	Bikes		Bikes		Т	R	Bikes	L	T		Bikes	Total	North	South	East	West
4:00 PM	0		0	0		0		210	21	3	11	265		2	507	0	12	0	0
4:15 PM	0		0	0		0		222	19	5	9	267		2	517	0	12	0	0
4:30 PM	0		0	0		0		224	17	3	6	277		3	524	0	10	0	0
4:45 PM	0		0	0		0		242	17	4	9	333		4	601	0	8	0	0
5:00 PM	0		0	0		0		241	24	5	11	339		4	615	0	6	0	0



Pedestrians Crosswalk South East West 6 0 0

## Heavy Vehicle Summary





# West Access & Haworth Ave

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

Heavy Vehicle	5-Minute Interval Summary
4:00 PM to 6:	00 PM

Interval Start		North West A				<b>bound</b> Access		Eastb Hawor				Hawo	bound rth Ave		Interval
Time	L		R	Total			Total	Т	R	Total	L	Т		Total	Total
4:00 PM	0		0	0			0	1	0	1	0	0		0	1
4:05 PM	0		0	0			0	0	0	0	0	0		0	0
4:10 PM	0		0	0			0	0	0	0	0	1		1	1
4:15 PM	0		0	0			0	0	0	0	0	0		0	0
4:20 PM	0		0	0			0	0	1	1	0	0	1	0	1
4:25 PM	0		0	0			0	0	0	0	0	0	1	0	0
4:30 PM	0		0	0			0	0	0	0	0	0		0	0
4:35 PM	0		0	0			0	0	0	0	0	0		0	0
4:40 PM	0		0	0			0	1	0	1	0	0		0	1
4:45 PM	0		0	0			0	 1	0	1	0	0	1	0	1
4:50 PM	0		0	0			0	1	0	1	0	1		1	2
4:55 PM	0		0	0			0	0	0	0	0	1		1	1
5:00 PM	0		0	0			0	 0	0	0	0	0	1	0	0
5:05 PM	0		0	0			0	0	0	0	0	0		0	0
5:10 PM	0		0	0			0	 0	0	0	0	0	1	0	0
5:15 PM	0		0	0			0	0	0	0	0	0		0	0
5:20 PM	0		0	0			0	0	0	0	0	1	1	1	1
5:25 PM	0		0	0	 		0	 0	0	0	0	0	1	0	0
5:30 PM	0		0	0			0	0	0	0	0	0		0	0
5:35 PM	0		0	0			0	0	0	0	0	0		0	0
5:40 PM	0		0	0			0	0	0	0	0	0		0	0
5:45 PM	0		0	0			0	0	0	0	0	0		0	0
5:50 PM	0		0	0			0	 0	0	0	0	0	1	0	0
5:55 PM	0		0	0			0	0	0	0	0	0		0	0
Total Survev	0		0	0			0	4	1	5	0	4		4	9

# Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start		Northbou West Acce				<b>bound</b> Access			rth Ave				<b>bound</b> rth Ave		Interval
Time	L	F	R Tota	1		Tot	al	T	R	Total	L	Т		Total	Total
4:00 PM	0	(	) 0			0		1	0	1	0	1		1	2
4:15 PM	0		0 0			0		0	1	1	0	0		0	1
4:30 PM	0	(	0 0			0		1	0	1	0	0	1	0	1
4:45 PM	0	(	0 0			0		2	0	2	0	2		2	4
5:00 PM	0	(	0 0			0		0	0	0	0	0		0	0
5:15 PM	0	(	0 0			0		0	0	0	0	1		1	1
5:30 PM	0		0 0		1	0		0	0	0	0	0	1	0	0
5:45 PM	0	(	0 0			0		0	0	0	0	0		0	0
Total Survey	0	(	0 0			0		4	1	5	0	4		4	9

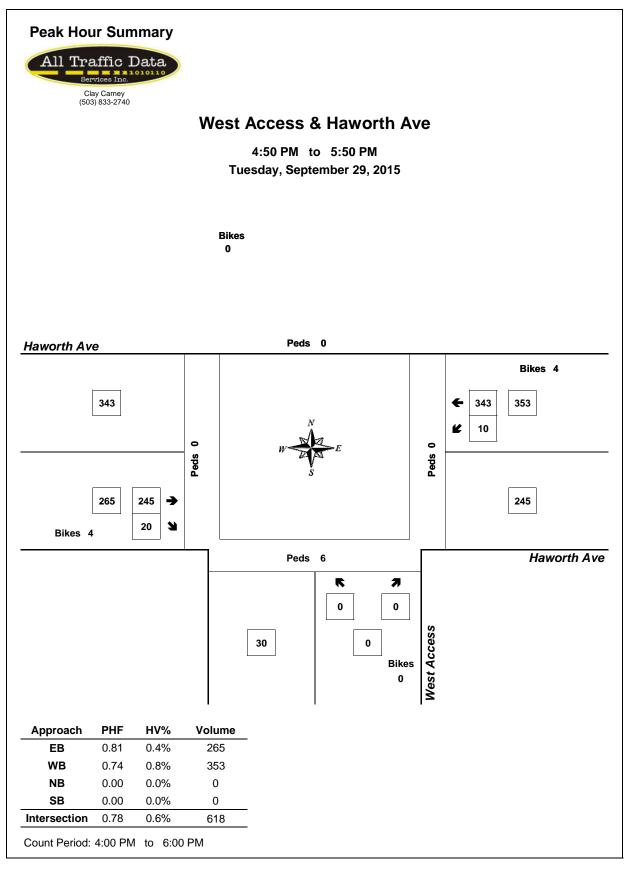
#### Heavy Vehicle Peak Hour Summary 4:50 PM to 5:50 PM

Bv		North	bound		South	bound		Eastk	oound		West	bound	
,		West	Access		West	Access		Hawor	rth Ave		Hawo	rth Ave	Total
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	0	0	0	1	3	4	3	1	4	4
PHF	0.00	0.00					0.25			0.38			0.33

By Movement		North West A	oound Access			<b>bound</b> Access			ound th Ave				th Ave		Total
wovement	L		R	Total			Total	Т	R	Total	L	Т		Total	
Volume	0		0	0			0	1	0	1	0	3		3	4
PHF	0.00		0.00	0.00		[	0.00	0.25	0.00	0.25	0.00	0.38		0.38	0.33

#### Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

Interval		North	bound			bound		Eastb	ound			West	bound		
Start		West A	Access		West	Access		Hawor	th Ave			Hawo	th Ave		Interval
Time	L		R	Total	 		Total	Т	R	Total	L	Т		Total	Total
4:00 PM	0		0	0			0	4	1	5	0	3		3	8
4:15 PM	0		0	0			0	3	1	4	0	2		2	6
4:30 PM	0		0	0			0	3	0	3	0	3		3	6
4:45 PM	0		0	0	 [		0	2	0	2	0	3	1	3	5
5:00 PM	0		0	0			0	0	0	0	0	1		1	1



Out 343

In 244

Out 2

Ā

21 0

In 47

⋪

Peak Hour Summary 4:50 PM to 5:50 PM HV 0.6% PHF 0.76

325 In

246 Out

€₀

2.1% 0.56

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**4** 316

9 ſ

In 2

1 0

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26

Out 27

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HV 0.0% PHF 0.25

2 **5** 

224 🔶

18 7

HV 0.4% PHF 0.81

## **Total Vehicle Summary**



# East Access & Haworth Ave

Tuesday, September 29, 2015 4:00 PM to 6:00 PM

#### 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start		East A	bound Access			South East A	ccess			Eastb Hawor	th Ave			West Hawor	th Ave		Interval		Cros		
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	0	0	0	0	0	0	0	0	0	12	0	1	0	35	0	0	47	0	1	0	0
4:05 PM	0	0	1	0	0	0	0	0	0	13	1	0	0	26	0	0	41	0	0	0	0
4:10 PM	1	0	1	0	0	0	0	0	0	18	2	0	1	22	0	0	45	1	0	0	0
4:15 PM	0	0	4	0	0	0	0	0	0	12	3	0	2	27	0	0	48	2	0	0	0
4:20 PM	1	0	1	0	0	0	0	0	0	16	1	1	2	20	0	0	41	0	0	0	2
4:25 PM	3	0	2	0	0	0	0	0	0	15	1	0	1	25	0	0	47	0	1	0	0
4:30 PM	0	0	6	0	0	0	0	0	0	11	0	0	1	16	0	1	34	0	0	0	0
4:35 PM	0	0	1	0	0	0	0	0	0	12	6	1	2	18	1	0	40	0	1	0	0
4:40 PM	0	0	0	0	0	0	1	0	0	24	2	0	0	17	1	0	45	0	1	0	0
4:45 PM	0	0	2	0	0	0	1	0	0	18	1	0	4	18	0	0	44	1	1	0	0
4:50 PM	2	0	0	0	0	0	0	0	0	18	1	0	0	24	0	1	45	0	0	0	0
4:55 PM	0	0	0	0	0	0	0	0	1	15	2	0	1	17	0	2	36	0	1	0	0
5:00 PM	3	0	0	0	0	0	0	0	0	19	0	0	0	28	0	0	50	0	1	1	0
5:05 PM	0	0	2	0	0	0	0	0	0	16	0	2	1	27	0	0	46	0	1	0	0
5:10 PM	1	0	3	0	0	0	0	0	0	23	1	0	0	21	0	1	49	1	0	0	0
5:15 PM	4	0	2	0	0	0	0	0	0	17	3	0	2	20	0	0	48	1	0	0	0
5:20 PM	1	0	1	0	0	0	0	0	0	17	0	0	0	25	0	0	44	0	0	0	1
5:25 PM	2	0	1	0	0	0	0	0	0	15	0	0	1	31	0	0	50	0	1	0	1
5:30 PM	3	0	1	0	0	0	0	0	0	27	1	0	1	42	0	1	75	0	0	0	0
5:35 PM	4	0	4	0	1	0	1	0	1	21	3	1	1	31	0	0	67	0	0	0	0
5:40 PM	3	0	3	0	0	0	0	0	0	19	3	0	1	23	0	0	52	0	0	0	0
5:45 PM	3	0	4	0	0	0	0	0	0	17	4	0	1	27	0	0	56	0	0	0	0
5:50 PM	5	0	5	0	0	0	0	0	0	15	7	0	0	12	0	1	44	0	1	0	0
5:55 PM	5	0	3	0	0	0	0	0	0	4	1	0	1	19	0	0	33	0	0	0	0
Total Survey	41	0	47	0	1	0	3	0	2	394	43	6	23	571	2	7	1,127	6	10	1	4

# 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval		North	bound			South	bound			Easth	ound			West	oound				Pedes	strians	
Start		East A	Access			East A	Access			Hawor	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	1	0	2	0	0	0	0	0	0	43	3	1	1	83	0	0	133	1	1	0	0
4:15 PM	4	0	7	0	0	0	0	0	0	43	5	1	5	72	0	0	136	2	1	0	2
4:30 PM	0	0	7	0	0	0	1	0	0	47	8	1	3	51	2	1	119	0	2	0	0
4:45 PM	2	0	2	0	0	0	1	0	1	51	4	0	5	59	0	3	125	1	2	0	0
5:00 PM	4	0	5	0	0	0	0	0	0	58	1	2	1	76	0	1	145	1	2	1	0
5:15 PM	7	0	4	0	0	0	0	0	0	49	3	0	3	76	0	0	142	1	1	0	2
5:30 PM	10	0	8	0	1	0	1	0	1	67	7	1	3	96	0	1	194	0	0	0	0
5:45 PM	13	0	12	0	0	0	0	0	0	36	12	0	2	58	0	1	133	0	1	0	0
Total Survey	41	0	47	0	1	0	3	0	2	394	43	6	23	571	2	7	1,127	6	10	1	4

# Peak Hour Summary 4:50 PM to 5:50 PM

4.50 F W	10 5	5.30 FI	VI																		
By		North	bound			South	bound			Easth	ound			West	oound				Pedes	strians	
		East A	Access			East A	Access			Hawor	th Ave			Hawor	th Ave		Total		Cross	swalk	
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	47	27	74	0	2	2	4	0	244	343	587	3	325	246	571	5	618	2	4	1	2
%HV		2.1% 0.56				0.0	0%			0.4	1%			0.6	5%		0.6%				
PHF		0.56				0.	25			0.	31			0.	76		0.80				
																		_			
By		Northbound				South	bound			Easth	ound			West	oound						
Movement		East Access				East A	Access			Hawor	th Ave			Hawor	th Ave		Total				
wovernern	L	T R Total L T			R	Total	L	Т	R	Total	L	Т	R	Total							
Volume	26	0	21	47	1 0 1 2			2	224	18	244	9	316	0	325	618					
%HV	3.8%	0.0%	0.0%	2.1%	0.0%				0.0%	0.4%	0.0%	0.4%	0.0%	0.6%	0.0%	0.6%	0.6%				
PHF	0.65	0.00	0.48	0.56	0.25	0.00	0.25	0.25	0.50	0.84	0.45	0.81	0.75	0.76	0.00	0.76	0.80				

#### Rolling Hour Summary

4:00 PM to 6:00 PM

Interval Start		Northbound           East Access           L         T         R         Bik           7         0         18         0           10         0         21         0           13         0         18         0					bound Access			Eastb Hawor	ound th Ave			Westh			Interval			strians	
Time	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total	North	South	East	West
4:00 PM	7	0	18	0	0	0	2	0	1	184	20	3	14	265	2	4	513	4	6	0	2
4:15 PM	10	0	21	0	0	0	2	0	1	199	18	4	14	258	2	5	525	4	7	1	2
4:30 PM	13	0	18	0	0	0	2	0	1	205	16	3	12	262	2	5	531	3	7	1	2
4:45 PM	23	0	19	0	1	0	2	0	2	225	15	3	12	307	0	5	606	3	5	1	2
5:00 PM	34	0	29	0	1	0	1	0	1	210	23	3	9	306	0	3	614	2	4	1	2

## Heavy Vehicle Summary



#### ın 0 Ουτ 0 0 0 0 ≁ ¥ 4 ₀ € t<sub>o</sub> Out 3 1 🔶 **4** 2 ln 1 **f** ° ∘ 7 **آ** ╋ 1 1 0 0 Out 0 In Peak Hour Summary 4:50 PM to 5:50 PM

# East Access & Haworth Ave

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 

Heavy Vehi	cle	5-Minute Interval Summary
4:00 PM to	6	:00 PM

Interval			bound				bound				ound				ound		
Start			Access				Access				rth Ave				th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
4:40 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:50 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	0	0	1	0	0	0	0	0	4	0	4	0	3	1	4	9

# Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval			bound				bound				ound			West			
Start		East A	Access			East A	Access			Hawor	th Ave			Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	1	0	0	1	0	0	0	0	0	4	0	4	0	3	1	4	9

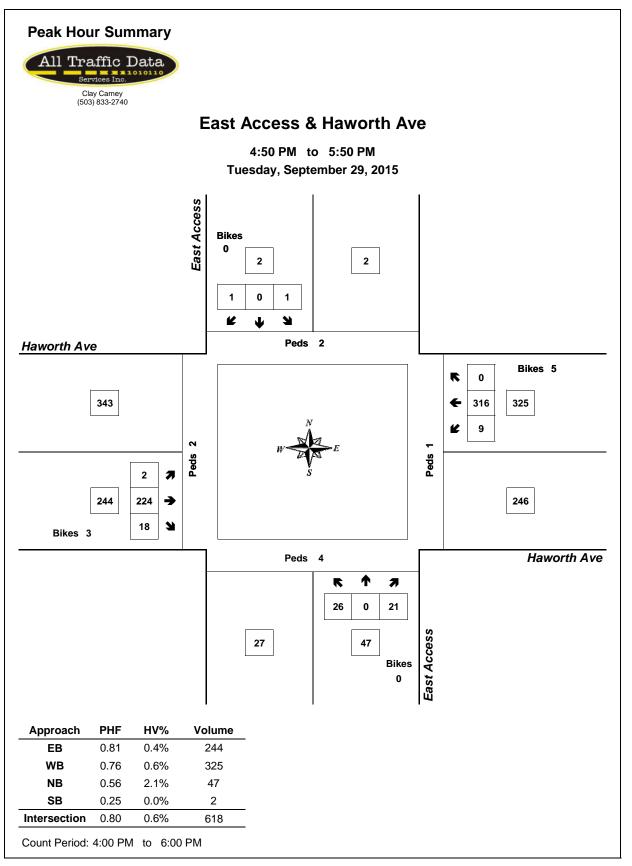
#### Heavy Vehicle Peak Hour Summary 4:50 PM to 5:50 PM

Bv		North	bound		South	bound		East	oound		West	bound	
-,		East A	Access		East /	Access		Hawo	rth Ave		Hawo	rth Ave	Total
Approach	In	In Out Total	In	Out	Total	In	Out	Total	In	Out	Total		
Volume	1	0	1	0	0	0	1	3	4	2	1	3	4
PHF	0.25			0.00			0.25			0.25			0.33

By Movement			bound Access				bound Access				oound th Ave			West Hawor	th Ave		Total
wovernent	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	1	0	0	1	0	0	0	0	0	1	0	1	0	2	0	2	4
PHF	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.00	0.25	0.00	0.25	0.33

#### Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

Interval		North	bound			South	bound			Easth	ound			West	oound		
Start		East Access				East /	Access			Hawor	th Ave			Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	3	1	4	8
4:15 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	2	1	3	6
4:30 PM	1	0	0	1	0	0	0	0	0	3	0	3	0	2	1	3	7
4:45 PM	1	0	0	1	0	0	0	0	0	2	0	2	0	2	0	2	5
5:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1



## **Total Vehicle Summary**



# Sitka Ave & Haworth Ave

Tuesday, September 29, 2015 4:00 PM to 6:00 PM

#### 5-Minute Interval Summary 4:00 PM to 6:00 PM

-																					
Interval			bound				bound			Easth				West					Pedes		
Start		Sitka	a Ave			Sitka	a Ave			Hawo	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	1	0	1	0	2	0	0	0	3	11	0	1	1	26	1	0	46	0	0	1	0
4:05 PM	4	0	1	0	0	0	5	0	1	10	1	0	2	25	0	0	49	1	2	0	2
4:10 PM	2	0	2	0	0	1	1	0	1	13	1	0	0	21	0	0	42	0	2	0	0
4:15 PM	2	0	2	0	1	0	4	0	1	16	1	0	1	18	0	1	46	3	0	0	3
4:20 PM	1	0	3	0	0	1	5	0	3	11	1	1	1	21	0	0	47	0	0	0	1
4:25 PM	3	0	1	0	0	1	2	0	1	17	0	1	0	16	1	0	42	0	2	0	0
4:30 PM	0	1	1	0	1	1	1	0	0	15	1	0	3	18	0	1	42	0	0	0	0
4:35 PM	0	1	0	0	0	0	1	1	2	14	0	0	2	20	0	0	40	0	0	0	1
4:40 PM	1	0	0	1	0	0	2	0	1	15	1	0	0	18	1	0	39	0	0	0	1
4:45 PM	0	1	0	0	0	2	1	0	1	22	1	0	2	19	1	0	50	1	0	0	0
4:50 PM	1	0	5	0	0	0	0	1	2	14	2	0	0	22	0	0	46	0	0	0	0
4:55 PM	1	0	0	0	0	0	2	0	3	11	0	0	4	17	0	2	38	0	2	0	0
5:00 PM	2	1	4	0	0	0	1	2	2	17	0	0	1	23	0	0	51	0	1	0	0
5:05 PM	1	0	3	0	2	2	4	0	1	20	0	0	0	24	0	0	57	1	0	0	1
5:10 PM	1	1	1	0	0	0	1	0	3	15	1	0	1	19	1	1	44	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	4	15	2	0	2	20	0	0	45	1	1	0	1
5:20 PM	2	0	0	0	0	0	3	0	0	16	3	0	1	23	3	0	51	0	0	0	1
5:25 PM	1	0	3	0	0	0	3	0	2	14	0	0	3	22	0	0	48	1	1	0	1
5:30 PM	0	0	1	0	0	0	6	0	2	26	0	0	1	36	1	1	73	0	0	0	0
5:35 PM	1	1	3	0	1	2	5	0	3	20	2	1	4	33	0	0	75	0	1	0	0
5:40 PM	0	1	1	0	0	0	3	0	0	19	1	0	1	24	1	0	51	1	0	0	1
5:45 PM	1	0	0	0	0	1	6	1	1	26	0	0	0	17	1	0	53	0	1	1	1
5:50 PM	1	0	3	0	0	0	1	0	1	18	1	0	1	14	0	1	40	0	0	0	0
5:55 PM	4	0	0	0	0	0	1	0	0	12	2	0	3	15	0	0	37	0	0	0	1
Total	20	7	26	1	0	4.4	50	E	20	207	21	4	24	514	11	7	1 150	0	12	2	15
Survey	30	1	36	1	8	11	58	5	38	387	21	4	34	511	11	'	1,152	9	13	2	15

# 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval			bound				bound			Eastb	ound				oound				Pedes	trians	
Start		Sitka	a Ave			Sitka	a Ave			Hawor	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	7	0	4	0	2	1	6	0	5	34	2	1	3	72	1	0	137	1	4	1	2
4:15 PM	6	0	6	0	1	2	11	0	5	44	2	2	2	55	1	1	135	3	2	0	4
4:30 PM	1	2	1	1	1	1	4	1	3	44	2	0	5	56	1	1	121	0	0	0	2
4:45 PM	2	1	5	0	0	2	3	1	6	47	3	0	6	58	1	2	134	1	2	0	0
5:00 PM	4	2	8	0	2	2	6	2	6	52	1	0	2	66	1	1	152	1	1	0	1
5:15 PM	3	0	4	0	1	0	6	0	6	45	5	0	6	65	3	0	144	2	2	0	3
5:30 PM	1	2	5	0	1	2	14	0	5	65	3	1	6	93	2	1	199	1	1	0	1
5:45 PM	6	0	3	0	0	1	8	1	2	56	3	0	4	46	1	1	130	0	1	1	2
Total Survey	30	7	36	1	8	11	58	5	38	387	21	4	34	511	11	7	1,152	9	13	2	15

#### Peak Hour Summary

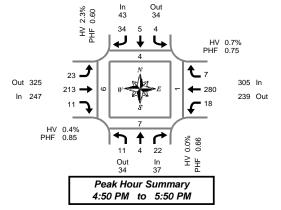
4:50 PM	to	5:50 PM
		Northbound

By Approach			<b>bound</b> a Ave				<b>bound</b> Ave				ound th Ave				<b>bound</b> rth Ave		Total		Pedes Cross	s <b>trians</b> swalk	
Approach	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	]
Volume	37	34	71	0	43	34	77	4	247	325	572	1	305	239	544	4	632	4	7	1	
%HV		37 34 71 0.0% 0.66 Northbound				2.3	3%			0.4	1%			0.	7%		0.6%				
PHF	0.66				0.	60			0.	85			0.	75		0.79					
By Movement	37         34         71           0.0%         0.66           Northbound Sitka Ave           L         T         R         Tit           11         4         22         33					bound Ave				ound th Ave				bound th Ave		Total					
wovernerit	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total					
Volume	11	4	22	37	4	5	34	43	23	213	11	247	18	280	7	305	632				
%HV	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	2.3%	4.3%	0.0%	0.0%	0.4%	0.0%	0.7%	0.0%	0.7%	0.6%	1			
70110	0.070	0.070																			

#### Rolling Hour Summary

4:00 PM to 6:00 PM

Interval		North	bound			South	bound			Eastb	ound			West	ound				Pedes	trians	
Start		Sitka	a Ave			Sitka	a Ave			Hawor	th Ave			Hawor	th Ave		Interval		Cross	swalk	
Time	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	L	Т	R	Bikes	Total	North	South	East	West
4:00 PM	16	3	16	1	4	6	24	2	19	169	9	3	16	241	4	4	527	5	8	1	8
4:15 PM	13	5	20	1	4	7	24	4	20	187	8	2	15	235	4	5	542	5	5	0	7
4:30 PM	10	5	18	1	4	5	19	4	21	188	11	0	19	245	6	4	551	4	5	0	6
4:45 PM	10	5	22	0	4	6	29	3	23	209	12	1	20	282	7	4	629	5	6	0	5
5:00 PM	14	4	20	0	4	5	34	3	19	218	12	1	18	270	7	3	625	4	5	1	7



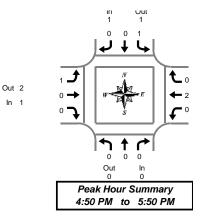
West

## Heavy Vehicle Summary



# Sitka Ave & Haworth Ave

*Tuesday, September 29, 2015 4:00 PM to 6:00 PM* 



Heavy Vehicle 5-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start		North	bound Ave				bound Ave				oound th Ave			West Hawor	bound		Interval
Time	1	T	R	Total	1	T	R	Total	L	T	R	Total	L	T	R	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:20 PM	0	0	0	0	0	Ö	0	0	0	0	0	0	0	0	0	0	0
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:35 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
4:40 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:50 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:05 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	1	0	1	2	1	3	0	4	0	3	0	3	9

# Heavy Vehicle 15-Minute Interval Summary 4:00 PM to 6:00 PM

Interval Start			bound Ave				<b>bound</b> Ave				th Ave		Westbound Haworth Ave				Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	2	0	2	4
5:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	1	0	1	2	1	3	0	4	0	3	0	3	9

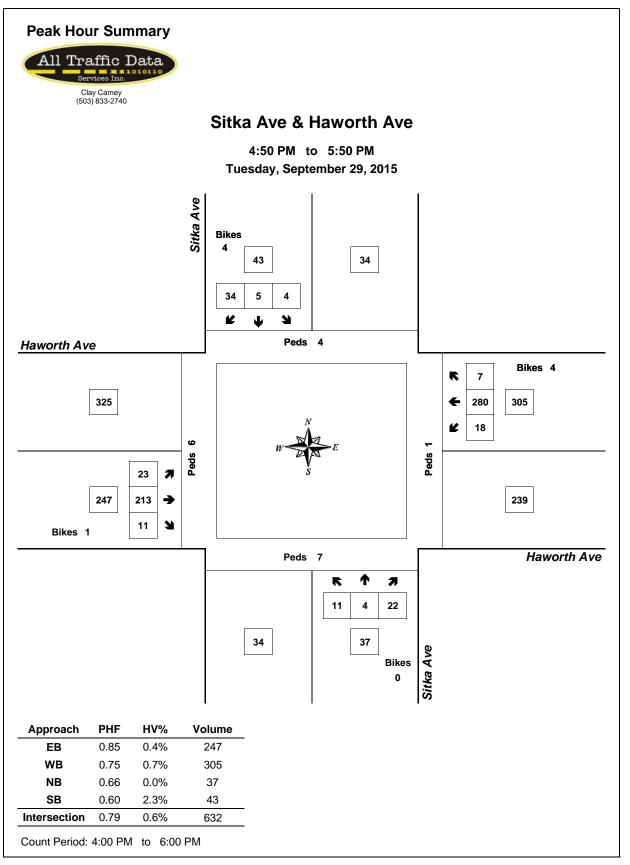
#### Heavy Vehicle Peak Hour Summary 4:50 PM to 5:50 PM

By		Northbound Sitka Ave		Sitka Ave		Eastbound Haworth Ave				Westbound Haworth Ave			
Approach	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	0	0	0	1	1	2	1	2	3	2	1	3	4
PHF	0.00			0.25			0.25			0.25			0.33

By		Northbound Sitka Ave			Southbound Sitka Ave		Eastbound Haworth Ave			Westbound Haworth Ave				Total			
Movement	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	
Volume	0	0	0	0	1	0	0	1	1	0	0	1	0	2	0	2	4
PHF	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25	0.25	0.00	0.00	0.25	0.00	0.25	0.00	0.25	0.33

#### Heavy Vehicle Rolling Hour Summary 4:00 PM to 6:00 PM

Interval			bound				bound				ound			West			
Start		Sitka	a Ave			Sitka Ave				Hawoi	th Ave			Hawor	th Ave		Interval
Time	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	L	Т	R	Total	Total
4:00 PM	0	0	0	0	0	0	1	1	1	3	0	4	0	3	0	3	8
4:15 PM	0	0	0	0	1	0	1	2	1	2	0	3	0	2	0	2	7
4:30 PM	0	0	0	0	1	0	1	2	1	2	0	3	0	2	0	2	7
4:45 PM	0	0	0	0	1	0	0	1	1	1	0	2	0	2	0	2	5
5:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1





# **APPENDIX D: TRIP GENERATION CALCULATIONS**

Chehalem Aquatic and Fitness Center – Traffic Impact Study



# TRIP GENERATION CALCULATIONS

Land Use: Recreational Community Center Land Use Code: 495 Variable: 1000 Square Feet Gross Floor Area Variable Quantity: 21.28

## **AM PEAK HOUR**

# Trip Rate: 2.89

	Enter	Exit	Total
Directional Distribution	45%	55%	
Trip Ends	27	34	61

## **PM PEAK HOUR**

## Trip Rate: 3.35

	Enter	Exit	Total
Directional Distribution	57%	43%	
Trip Ends	40	31	71

## WEEKDAY

*Trip Rate:* 33.82

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	360	360	720

## SATURDAY

Trip Rate: 9.10

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	97	97	194

Source: TRIP GENERATION, Ninth Edition



# TRIP GENERATION CALCULATIONS

Land Use: Recreational Community Center Land Use Code: 495 Variable: 1000 Square Feet Gross Floor Area Variable Quantity: 61.67

## **AM PEAK HOUR**

# Trip Rate: 2.89

	Enter	Exit	Total
Directional Distribution	45%	55%	
Trip Ends	80	98	178

## **PM PEAK HOUR**

## Trip Rate: 3.35

	Enter	Exit	Total
Directional Distribution	57%	43%	
Trip Ends	118	89	207

## WEEKDAY

*Trip Rate:* 33.82

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	1,043	1,043	2,086

## SATURDAY

Trip Rate: 9.10

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	281	281	562

Source: TRIP GENERATION, Ninth Edition



**APPENDIX E: LOS DESCRIPTIONS** 



# LEVEL OF SERVICE

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

*Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

*Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

*Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

Level of service D: Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

*Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

*Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.



# LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LEVEL	CONTROL DELAY
OF	PER VEHICLE
SERVICE	(Seconds)
А	<10
В	10-20
С	20-35
D	35-55
Е	55-80
F	>80

# LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL	CONTROL DELAY
OF	PER VEHICLE
SERVICE	(Seconds)
А	<10
В	10-15
С	15-25
D	25-35
Е	35-50
F	>50



APPENDIX F: AM CAPACITY ANALYSIS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	<b>∱</b> î,		ሻ	ተተኈ		ካካ	el 👘		٦	<b>†</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	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		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	3403		1702	4773		3294	1779		1699	1792	1512
Flt Permitted	0.19	1.00		0.15	1.00		0.54	1.00		0.69	1.00	1.00
Satd. Flow (perm)	341	3403		275	4773		1867	1779		1227	1792	1512
Volume (vph)	120	1239	5	8	902	146	369	99	5	115	52	64
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	1318	5	9	960	155	393	105	5	122	55	68
RTOR Reduction (vph)	0	0	0	0	14	0	0	2	0	0	0	56
Lane Group Flow (vph)	128	1323	0	9	1101	0	393	108	0	122	55	12
Confl. Peds. (#/hr)	1	00/	6	9	00/	4	6	00/	9	4	00/	1
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	pm+pt	-		pm+pt			pm+pt	-		pm+pt		om+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	2	70.0		6	00.4		8	10.0		4	11.0	4
Actuated Green, G (s)	75.6	70.3		64.2	63.4		30.4	16.6		20.6	11.3	19.0
Effective Green, g (s)	76.6	71.3		65.7	64.4		30.4	16.6		21.6	11.8	20.0
Actuated g/C Ratio	0.67	0.62		0.57	0.56		0.26	0.14		0.19	0.10	0.17
Clearance Time (s)	4.5	5.0		4.5	5.0		4.5	4.0		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	324	2110		173	2673		675	257		271	184	316
v/s Ratio Prot	c0.03	c0.39		0.00	0.23		c0.07	0.06		0.04	0.03	0.00
v/s Ratio Perm	0.23	0.00		0.03	0.44		c0.08	0.40		0.05	0.00	0.01
v/c Ratio	0.40	0.63		0.05	0.41		0.58	0.42		0.45	0.30	0.04
Uniform Delay, d1	8.3	13.6		11.9	14.5		35.4	44.8		40.9	47.8	39.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8 9.1	1.4 15.0		0.1 12.0	0.1 14.6		1.3 36.7	1.1 45.9		1.2 42.1	0.9 48.7	0.0 39.5
Delay (s) Level of Service	9.1 A	15.0 B		12.0 B	14.0 B		30.7 D	40.9 D		42.1 D	40.7 D	39.5 D
Approach Delay (s)	A	14.5		D	14.6		D	38.7		D	42.8	D
Approach LOS		B			B			D			42.0 D	
Intersection Summary												
HCM Average Control E			20.3	F	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capaci			0.61									
Actuated Cycle Length			115.0			ost time			12.0			
Intersection Capacity U	tilization		67.8%	](	CU Leve	el of Ser	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्च	1		4			\$			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	108	2	77	1	1	4	89	106	7	0	166	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	101	2	72	1	1	4	83	99	7	0	155	75
Pedestrians		8			1			7			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	482	474	208	470	508	111	238			107		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	482	474	208	470	508	111	238			107		
tC, single (s)	*6.5	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	*2.5	*2.5	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	100	91	100	100	100	94			100		
cM capacity (veh/h)	659	664	817	428	432	929	1309			1471		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	103	72	6	189	230							
Volume Left	101	0	1	83	0							
Volume Right	0	72	4	7	75							
cSH	659	817	670	1309	1471							
Volume to Capacity	0.16	0.09	0.01	0.06	0.00							
Queue Length 95th (ft)	14	7	1	5	0							
Control Delay (s)	11.5	9.8	10.4	3.8	0.0							
Lane LOS	В	А	В	А								
Approach Delay (s)	10.8		10.4	3.8	0.0							
Approach LOS	В		В									
Intersection Summary												
Average Delay			4.4									
Intersection Capacity Ut	ilization		43.9%	](	CU Lev	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	eî 👘			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	8	101	0	86	12	31	150	169	134	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	0	10	125	0	106	15	38	185	209	165	1
Pedestrians		12			12			12			6	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	868	860	190	778	768	149	179			235		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	868	860	190	778	768	149	179			235		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	67	100	88	99			84		
cM capacity (veh/h)	202	238	832	380	270	882	1377			1313		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	11	125	106	238	375							
Volume Left	1	125	0	15	209							
Volume Right	10	0	106	185	1							
cSH	618	380	882	1377	1313							
Volume to Capacity	0.02	0.33	0.12	0.01	0.16							
Queue Length 95th (ft)	1	35	10	1	14							
Control Delay (s)	10.9	19.0	9.6	0.6	5.2							
Lane LOS	В	С	А	А	А							
Approach Delay (s)	10.9	14.7		0.6	5.2							
Approach LOS	В	В										
Intersection Summary												
Average Delay			6.6									
Intersection Capacity Ut	ilization		51.6%	](	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									
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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	f.			स्	¥		
Sign Control	Stop			Stop	Stop		
Volume (vph)	320	10	2	189	0	0	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	
Hourly flow rate (vph)	457	14	3	270	0	0	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total (vph)	471	273	0				
Volume Left (vph)	0	3	0				
Volume Right (vph)	14	0	0				
Hadj (s)	0.02	0.04	0.00				
Departure Headway (s)	4.2	4.4	5.5				
Degree Utilization, x	0.55	0.33	0.00				
Capacity (veh/h)	850	800	582				
Control Delay (s)	12.2	9.6	8.5				
Approach Delay (s)	12.2	9.6	0.0				
Approach LOS	В	А	А				
Intersection Summary							
Delay			11.2				
HCM Level of Service			В				
Intersection Capacity Uti	lization		20.8%	IC	CU Leve	of Service	А
Analysis Period (min)			15				

	-	$\mathbf{i}$	-	-	1	1	
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	eî 🗍			નુ	- M		
Sign Control	Stop			Stop	Stop		
Volume (vph)	306	7	6	181	8	13	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	
Hourly flow rate (vph)	437	10	9	259	11	19	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total (vph)	447	267	30				
Volume Left (vph)	0	9	11				
Volume Right (vph)	10	0	19				
Hadj (s)	0.02	0.04	-0.26				
Departure Headway (s)	4.3	4.5	5.2				
Degree Utilization, x	0.53	0.33	0.04				
Capacity (veh/h)	829	782	608				
Control Delay (s)	12.0	9.7	8.4				
Approach Delay (s)	12.0	9.7	8.4				
Approach LOS	В	А	А				
Intersection Summary							
Delay			11.0				
HCM Level of Service			В				
Intersection Capacity Ut	ilization		26.5%	IC	CU Leve	el of Service	
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	145	162	18	15	114	4	10	11	18	10	18	62
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	230	257	29	24	181	6	16	17	29	16	29	98
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	516	211	62	143								
Volume Left (vph)	230	24	16	16								
Volume Right (vph)	29	6	29	98								
Hadj (s)	0.11	0.06	-0.17	-0.34								
Departure Headway (s)	4.9	5.3	5.9	5.5								
Degree Utilization, x	0.70	0.31	0.10	0.22								
Capacity (veh/h)	713	644	531	574								
Control Delay (s)	18.7	10.6	9.5	10.0								
Approach Delay (s)	18.7	10.6	9.5	10.0								
Approach LOS	С	В	А	В								
Intersection Summary												
Delay			14.9									
HCM Level of Service			В									
Intersection Capacity Uti	lization		39.5%	l	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	- ሽ	<b>≜</b> ⊅		- ሽ	<u>ተተ</u> ጮ		ካካ	ef 👘		<u>۲</u>	<b>↑</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	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 Elt Droto stad	1.00	1.00		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	3403		1702	4770		3294	1779		1699	1792	1512
Flt Permitted	0.19 333	1.00		0.15 269	1.00 4770		0.54	1.00 1779		0.68 1221	1.00	1.00
Satd. Flow (perm)		3403	F			150	1868		F		1792	1512
Volume (vph)	125	1252	5	8	912	152	384	103	5	120	54	67
Peak-hour factor, PHF	0.94	0.94	0.94 5	0.94 9	0.94 970	0.94	0.94 409	0.94	0.94	0.94 128	0.94 57	0.94 71
Adj. Flow (vph) RTOR Reduction (vph)	133 0	0	0	9	15		409	2	5 0	0	57 0	58
Lane Group Flow (vph)	133	1337	0	9	1117	0 0	409	113	0	128	57	13
Confl. Peds. (#/hr)	133	1337	6	9	1117	4	409	115	9	4	57	1
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	9 6%	6%	6%	6%
Turn Type		0 /0	0 /0		0 /0			0 /0				
Protected Phases	pm+pt 5	2		pm+pt 1	6		pm+pt 3	8		pm+pt 7	4	om+ov <mark>5</mark>
Permitted Phases	2	2		6	0		8	0		4	4	4
Actuated Green, G (s)	75.6	70.3		64.1	63.3		30.4	16.7		20.6	11.4	19.2
Effective Green, g (s)	76.6	71.3		65.6	64.3		30.4	16.7		21.6	11.9	20.2
Actuated g/C Ratio	0.67	0.62		0.57	0.56		0.26	0.15		0.19	0.10	0.18
Clearance Time (s)	4.5	5.0		4.5	5.0		4.5	4.0		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	321	2110		170	2667		674	258		270	185	318
v/s Ratio Prot	c0.03	c0.39		0.00	0.23		c0.08	0.06		0.04	0.03	0.00
v/s Ratio Perm	0.25	00.00		0.03	0.20		c0.08	0.00		0.05	0.00	0.01
v/c Ratio	0.41	0.63		0.05	0.42		0.61	0.44		0.47	0.31	0.04
Uniform Delay, d1	8.4	13.7		12.0	14.6		35.6	44.9		41.0	47.7	39.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.5		0.1	0.1		1.6	1.2		1.3	1.0	0.1
Delay (s)	9.3	15.1		12.1	14.7		37.2	46.1		42.3	48.7	39.4
Level of Service	А	В		В	В		D	D		D	D	D
Approach Delay (s)		14.6			14.7			39.1			42.9	
Approach LOS		В			В			D			D	
Intersection Summary												
HCM Average Control [			20.6	F	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capaci	ity ratio		0.63									
Actuated Cycle Length			115.0			ost time			12.0			
Intersection Capacity U	tilization		68.5%	10	CU Leve	el of Ser	vice		С			
Analysis Period (min)			15									
c Critical Lane Group												

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्च	1		4			4			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	112	2	80	1	1	4	93	110	7	0	173	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	2	75	1	1	4	87	103	7	0	162	78
Pedestrians		8			1			7			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	501	493	216	489	528	115	247			110		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	501	493	216	489	528	115	247			110		
tC, single (s)	*6.5	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	*2.5	*2.5	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	91	100	100	100	93			100		
cM capacity (veh/h)	639	643	809	412	419	925	1298			1466		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	107	75	6	196	239							
Volume Left	105	0	1	87	0							
Volume Right	0	75	4	7	78							
cSH	639	809	657	1298	1466							
Volume to Capacity	0.17	0.09	0.01	0.07	0.00							
Queue Length 95th (ft)	15	8	1	5	0							
Control Delay (s)	11.8	9.9	10.5	3.8	0.0							
Lane LOS	В	А	В	А								
Approach Delay (s)	11.0		10.5	3.8	0.0							
Approach LOS	В		В									
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Ut	ilization		44.8%	](	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	eî 👘			\$			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	8	105	0	89	12	63	156	176	139	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	0	10	130	0	110	15	78	193	217	172	1
Pedestrians		12			12			12			6	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	938	931	196	844	835	192	185			282		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	938	931	196	844	835	192	185			282		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	62	100	87	99			83		
cM capacity (veh/h)	177	213	826	340	243	834	1370			1262		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	11	130	110	285	390							
Volume Left	1	130	0	15	217							
Volume Right	10	0	110	193	1							
cSH	586	340	834	1370	1262							
Volume to Capacity	0.02	0.38	0.13	0.01	0.17							
Queue Length 95th (ft)	1	43	11	1	16							
Control Delay (s)	11.3	21.9	10.0	0.5	5.4							
Lane LOS	В	С	А	А	А							
Approach Delay (s)	11.3	16.4		0.5	5.4							
Approach LOS	В	С										
Intersection Summary												
Average Delay			6.8									
Intersection Capacity Uti	ilization		54.1%	[(	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	4			र्स	¥		
Sign Control	Stop			Stop	Stop		
Volume (vph)	333	10	2	197	0	0	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	
Hourly flow rate (vph)	476	14	3	281	0	0	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total (vph)	490	284	0				
Volume Left (vph)	0	3	0				
Volume Right (vph)	14	0	0				
Hadj (s)	0.02	0.04	0.00				
Departure Headway (s)	4.2	4.4	5.5				
Degree Utilization, x	0.57	0.35	0.00				
Capacity (veh/h)	848	797	574				
Control Delay (s)	12.7	9.7	8.5				
Approach Delay (s)	12.7	9.7	0.0				
Approach LOS	В	А	А				
Intersection Summary							
Delay			11.6				
HCM Level of Service			В				
Intersection Capacity Uti	lization		21.5%	IC	CU Leve	el of Service	
Analysis Period (min)			15				

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	¢Î,			र्भ	Y		
Sign Control	Stop			Stop	Stop		
Volume (vph)	318	7	6	188	8	14	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	
Hourly flow rate (vph)	454	10	9	269	11	20	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total (vph)	464	277	31				
Volume Left (vph)	0	9	11				
Volume Right (vph)	10	0	20				
Hadj (s)	0.02	0.04	-0.28				
Departure Headway (s)	4.3	4.5	5.2				
Degree Utilization, x	0.55	0.35	0.05				
Capacity (veh/h)	826	777	592				
Control Delay (s)	12.5	9.9	8.5				
Approach Delay (s)	12.5	9.9	8.5				
Approach LOS	В	А	А				
Intersection Summary							
Delay			11.4				
HCM Level of Service			В				
Intersection Capacity Uti	lization		27.2%	IC	CU Leve	el of Service	9
Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	151	169	19	16	119	4	10	11	19	10	19	65
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	240	268	30	25	189	6	16	17	30	16	30	103
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	538	221	63	149								
Volume Left (vph)	240	25	16	16								
Volume Right (vph)	30	6	30	103								
Hadj (s)	0.11	0.06	-0.18	-0.34								
Departure Headway (s)	5.0	5.3	6.0	5.6								
Degree Utilization, x	0.74	0.33	0.11	0.23								
Capacity (veh/h)	538	631	529	574								
Control Delay (s)	20.8	10.9	9.7	10.3								
Approach Delay (s)	20.8	10.9	9.7	10.3								
Approach LOS	С	В	А	В								
Intersection Summary												
Delay			16.2									
HCM Level of Service			С									
Intersection Capacity Uti	lization		45.6%	ŀ	CU Leve	el of Serv	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>≜</b> ⊅		ሻ	<u>ተተ</u> ኑ		ካካ	ef 👘		ሻ	<b>↑</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes Frt	1.00 1.00	1.00 1.00		1.00 1.00	1.00 0.98		1.00 1.00	1.00 0.99		1.00 1.00	1.00 1.00	<mark>1.00</mark> 0.85
Fit Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1703	3403		1702	4769		3294	1779		1699	1792	1512
Flt Permitted	0.19	1.00		0.15	1.00		0.54	1.00		0.68	1.00	1.00
Satd. Flow (perm)	332	3403		270	4769		1868	1779		1221	1792	1512
Volume (vph)	135	1252	5	8	912	154	384	103	5	122	54	79
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	144	1332	5	9	970	164	409	110	5	130	57	84
RTOR Reduction (vph)	0	0	0	0	15	0	0	2	0	0	0	58
Lane Group Flow (vph)	144	1337	0	9	1119	0	409	113	0	130	57	26
Confl. Peds. (#/hr)	1		6	9		4	6		9	4		1
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		om+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	75.6	70.3		63.9	63.1		30.4	16.7		20.6	11.4	19.4
Effective Green, g (s)	76.6	71.3		65.4	64.1		30.4	16.7		21.6	11.9	20.4
Actuated g/C Ratio	0.67	0.62 5.0		0.57	0.56 5.0		0.26	0.15 4.0		0.19	0.10	0.18
Clearance Time (s) Vehicle Extension (s)	4.5 3.0	5.0 3.0		4.5 3.0	3.0		4.5 3.0	4.0		4.5 3.0	4.5 3.0	4.5 3.0
	322	2110		170	2658		674	258		270	185	321
Lane Grp Cap (vph) v/s Ratio Prot	c0.03	c0.39		0.00	0.23		c0.08	0.06		0.04	0.03	0.01
v/s Ratio Perm	0.26	0.39		0.00	0.23		c0.08	0.00		0.04	0.03	0.01
v/c Ratio	0.20	0.63		0.05	0.42		0.61	0.44		0.03	0.31	0.01
Uniform Delay, d1	8.5	13.7		12.0	14.7		35.6	44.9		41.1	47.7	39.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	1.5		0.1	0.1		1.6	1.2		1.4	1.0	0.1
Delay (s)	9.5	15.1		12.1	14.8		37.2	46.1		42.4	48.7	39.6
Level of Service	А	В		В	В		D	D		D	D	D
Approach Delay (s)		14.6			14.8			39.1			42.9	
Approach LOS		В			В			D			D	
Intersection Summary												
HCM Average Control [			20.7	F	ICM Lev	vel of Se	ervice		С			
HCM Volume to Capaci			0.63									
Actuated Cycle Length	· · /		115.0			ost time			12.0			
Intersection Capacity U	tilization		68.5%	](	JU Leve	el of Ser	VICE		С			
Analysis Period (min)			15									
c Critical Lane Group												

15153 - CAFC Expansion TIS Background + Site Trips AM

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्च	1		\$			\$			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	127	2	80	1	1	4	93	122	7	0	187	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	119	2	75	1	1	4	87	114	7	0	175	94
Pedestrians		8			1			7			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	533	525	237	522	569	126	277			122		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	533	525	237	522	569	126	277			122		
tC, single (s)	*6.5	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	*2.5	*2.5	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	90	100	100	100	93			100		
cM capacity (veh/h)	608	612	787	390	396	912	1266			1452		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	121	75	6	208	269							
Volume Left	119	0	1	87	0							
Volume Right	0	75	4	7	94							
cSH	608	787	634	1266	1452							
Volume to Capacity	0.20	0.10	0.01	0.07	0.00							
Queue Length 95th (ft)	18	8	1	6	0							
Control Delay (s)	12.4	10.1	10.7	3.7	0.0							
Lane LOS	В	В	В	А								
Approach Delay (s)	11.5		10.7	3.7	0.0							
Approach LOS	В		В									
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Ut	ilization		47.3%	l	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

User Entered Value

15153 - CAFC Expansion TIS Background + Site Trips AM

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	eî 👘			4			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	0	8	137	0	99	12	63	183	184	139	1
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	0	10	169	0	122	15	78	226	227	172	1
Pedestrians		12			12			12			6	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	987	984	196	881	872	209	185			316		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	987	984	196	881	872	209	185			316		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	99	47	100	85	99			81		
cM capacity (veh/h)	158	195	826	319	228	817	1370			1226		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	11	169	122	319	400							
Volume Left	1	169	0	15	227							
Volume Right	10	0	122	226	1							
cSH	562	319	817	1370	1226							
Volume to Capacity	0.02	0.53	0.15	0.01	0.19							
Queue Length 95th (ft)	2	73	13	1	17							
Control Delay (s)	11.5	28.4	10.2	0.5	5.7							
Lane LOS	B	D	B	A	A							
Approach Delay (s)	11.5	20.8		0.5	5.7							
Approach LOS	B	C		0.0	0.7							
Intersection Summary			0.4									
Average Delay			8.4						-			
Intersection Capacity Uti	ilization		57.9%		U Leve	el of Ser	vice		В			
Analysis Period (min)			15									

User Entered Value

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EBT	EBR	WBL	WBT	NBL	NBR				
el 👘			<del>با</del>	Y					
Stop			Stop	Stop					
333	28	11	197	21	11				
0.70	0.70	0.70	0.70	0.70	0.70				
476	40	16	281	30	16				
EB 1	WB 1	NB 1							
516	297	46							
0	16	30							
40	0	16							
-0.01	0.04	-0.04							
4.4	4.6	5.6							
0.62	0.38	0.07							
817	756	551							
14.3	10.4	9.1							
14.3	10.4	9.1							
В	В	А							
		12.7							
		В							
lization		29.4%	IC	CU Leve	el of Service		А		
		15							
	<ul> <li>Stop</li> <li>333</li> <li>0.70</li> <li>476</li> <li>EB 1</li> <li>516</li> <li>0</li> <li>40</li> <li>-0.01</li> <li>4.4</li> <li>0.62</li> <li>817</li> <li>14.3</li> <li>14.3</li> <li>B</li> </ul>	h         Stop         333       28         0.70       0.70         476       40         EB1       WB1         516       297         0       16         40       0         -0.01       0.04         4.4       4.6         0.62       0.38         817       756         14.3       10.4         B       B         B       B	Image: step       Image: step         Stop       333       28       11         0.70       0.70       0.70         476       40       16         EB1       WB1       NB1         516       297       46         0       16       30         40       0       16         -0.01       0.04       -0.04         4.4       4.6       5.6         0.62       0.38       0.07         817       756       551         14.3       10.4       9.1         14.3       10.4       9.1         B       B       A         IZ.7       B         Iization       29.4%	Image: style styl	Stop         Stop         Stop         Stop           333         28         11         197         21           0.70         0.70         0.70         0.70         0.70           476         40         16         281         30           EB 1         WB 1         NB 1             516         297         46              0         16         30               -0.01         0.04         -0.04                 -0.01         0.04         -0.04	Image: stop         Stop         Stop         Stop           333         28         11         197         21         11           0.70         0.70         0.70         0.70         0.70         0.70           476         40         16         281         30         16           EB 1         WB 1         NB 1         Stop         Stop         Stop           516         297         46         40         16         30         16           0         16         30         40         0         16         30         40         0         16           -0.01         0.04         -0.04         -	Stop         Stop         Stop         Stop           333         28         11         197         21         11           0.70         0.70         0.70         0.70         0.70         0.70           476         40         16         281         30         16           EB 1         WB 1         NB 1         Stop         Stop         Stop           516         297         46         40         16         30         40         16         30         40         16         30         40         0         16         30         40         0         16         30         40         0         16         30         40         0         16         30         40         16         30         40         16         30         40         0         16         30         40         16         30         40         16         30         40         16         30         40         10         40         16         55         55         1         14.3         10.4         9.1         1         4         4         4         4         4         4         4         4         4         4	Stop         Stop         Stop         Stop           333         28         11         197         21         11           0.70         0.70         0.70         0.70         0.70         476           476         40         16         281         30         16           EB 1         WB 1         NB 1         Image: Constraint of the state of the st	Stop         Stop         Stop           333         28         11         197         21         11           0.70         0.70         0.70         0.70         0.70         0.70           476         40         16         281         30         16           EB 1         WB 1         NB 1         Image: colored system         Image: colored system

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Sign Control         Stop         Stop         Stop         Stop           Volume (vph)         318         24         10         188         29         25           Peak Hour Factor         0.70         0.70         0.70         0.70         0.70         0.70           Hourly flow rate (vph)         454         34         14         269         41         36           Direction, Lane #         EB 1         WB 1         NB 1         Volume Total (vph)         489         283         77           Volume Total (vph)         0         14         41         269         41         36           Direction, Lane #         EB 1         WB 1         NB 1         Volume Total (vph)         489         283         77           Volume Left (vph)         0         14         41         269         41         36           Hadj (s)         -0.01         0.04         -0.14         20	Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Sign Control         Stop         Stop         Stop         Stop           Volume (vph)         318         24         10         188         29         25           Peak Hour Factor         0.70         0.70         0.70         0.70         0.70         0.70           Hourly flow rate (vph)         454         34         14         269         41         36           Direction, Lane #         EB 1         WB 1         NB 1         Volume Total (vph)         489         283         77           Volume Total (vph)         489         283         77         Volume Left (vph)         0         14         41           Volume Right (vph)         0         14         41         Volume Right (vph)         34         0         36           Hadj (s)         -0.01         0.04         -0.14          Departure Headway (s)         4.4         4.7         5.5           Degree Utilization, x         0.60         0.37         0.12          Capacity (veh/h)         796         739         571           Control Delay (s)         13.9         10.4         9.2          Approach LOS         B         B         A           Intersection Su	Lane Configurations	ţ,			្ន	M		
Volume (vph)       318       24       10       188       29       25         Peak Hour Factor       0.70       0.70       0.70       0.70       0.70       0.70         Hourly flow rate (vph)       454       34       14       269       41       36         Direction, Lane #       EB 1       WB 1       NB 1             Volume Total (vph)       489       283       77              Volume Left (vph)       0       14       41  <						Stop		
Hourly flow rate (vph)       454       34       14       269       41       36         Direction, Lane #       EB 1       WB 1       NB 1       NB       NB       NB       NB         Volume Total (vph)       489       283       77       ND			24	10			25	
Direction, Lane #         EB 1         WB 1         NB 1           Volume Total (vph)         489         283         77           Volume Left (vph)         0         14         41           Volume Right (vph)         34         0         36           Hadj (s)         -0.01         0.04         -0.14           Departure Headway (s)         4.4         4.7         5.5           Degree Utilization, x         0.60         0.37         0.12           Capacity (veh/h)         796         739         571           Control Delay (s)         13.9         10.4         9.2           Approach Delay (s)         13.9         10.4         9.2           Approach LOS         B         B         A           Intersection Summary         12.3         HCM Level of Service         B           Intersection Capacity Utilization         28.2%         ICU Level of Service         A		0.70	0.70	0.70	0.70	0.70	0.70	
Volume Total (vph)         489         283         77           Volume Left (vph)         0         14         41           Volume Right (vph)         34         0         36           Hadj (s)         -0.01         0.04         -0.14           Departure Headway (s)         4.4         4.7         5.5           Degree Utilization, x         0.60         0.37         0.12           Capacity (veh/h)         796         739         571           Control Delay (s)         13.9         10.4         9.2           Approach Delay (s)         13.9         10.4         9.2           Approach LOS         B         B         A           Intersection Summary         12.3         HCM Level of Service         B           Intersection Capacity Utilization         28.2%         ICU Level of Service         A	Hourly flow rate (vph)	454	34	14	269	41	36	
Volume Left (vph)       0       14       41         Volume Right (vph)       34       0       36         Hadj (s)       -0.01       0.04       -0.14         Departure Headway (s)       4.4       4.7       5.5         Degree Utilization, x       0.60       0.37       0.12         Capacity (veh/h)       796       739       571         Control Delay (s)       13.9       10.4       9.2         Approach Delay (s)       13.9       10.4       9.2         Approach LOS       B       B       A         Intersection Summary         Delay       12.3         HCM Level of Service       B         Intersection Capacity Utilization       28.2%       ICU Level of Service       A	Direction, Lane #	EB 1	WB 1	NB 1				
Volume Right (vph)       34       0       36         Hadj (s)       -0.01       0.04       -0.14         Departure Headway (s)       4.4       4.7       5.5         Degree Utilization, x       0.60       0.37       0.12         Capacity (veh/h)       796       739       571         Control Delay (s)       13.9       10.4       9.2         Approach Delay (s)       13.9       10.4       9.2         Approach LOS       B       B       A         Intersection Summary         Delay       12.3         HCM Level of Service       B         Intersection Capacity Utilization       28.2%       ICU Level of Service       A	Volume Total (vph)	489	283	77				
Hadj (s)       -0.01       0.04       -0.14         Departure Headway (s)       4.4       4.7       5.5         Degree Utilization, x       0.60       0.37       0.12         Capacity (veh/h)       796       739       571         Control Delay (s)       13.9       10.4       9.2         Approach Delay (s)       13.9       10.4       9.2         Approach LOS       B       B       A         Intersection Summary       12.3       12.3         HCM Level of Service       B       Intersection Capacity Utilization       28.2%	Volume Left (vph)	0	14	41				
Departure Headway (s)         4.4         4.7         5.5           Degree Utilization, x         0.60         0.37         0.12           Capacity (veh/h)         796         739         571           Control Delay (s)         13.9         10.4         9.2           Approach Delay (s)         13.9         10.4         9.2           Approach LOS         B         B         A           Intersection Summary         12.3         12.3           HCM Level of Service         B         ICU Level of Service         A	Volume Right (vph)	34	0	36				
Degree Utilization, x         0.60         0.37         0.12           Capacity (veh/h)         796         739         571           Control Delay (s)         13.9         10.4         9.2           Approach Delay (s)         13.9         10.4         9.2           Approach LOS         B         B         A           Intersection Summary         12.3           Delay         12.3           HCM Level of Service         B           Intersection Capacity Utilization         28.2%         ICU Level of Service         A	Hadj (s)	-0.01	0.04	-0.14				
Capacity (veh/h)796739571Control Delay (s)13.910.49.2Approach Delay (s)13.910.49.2Approach LOSBBAIntersection SummaryDelay12.3HCM Level of ServiceBIntersection Capacity Utilization28.2%ICU Level of ServiceA	Departure Headway (s)	4.4	4.7	5.5				
Control Delay (s)13.910.49.2Approach Delay (s)13.910.49.2Approach LOSBBAIntersection SummaryDelay12.3HCM Level of ServiceBIntersection Capacity Utilization28.2%ICU Level of Service	Degree Utilization, x	0.60	0.37	0.12				
Approach Delay (s)13.910.49.2Approach LOSBBAIntersection SummaryIntersection SummaryDelay12.3HCM Level of ServiceBIntersection Capacity Utilization28.2%ICU Level of ServiceA	Capacity (veh/h)	796	739	571				
Approach LOS     B     B     A       Intersection Summary     Intersection Summary     Intersection Service       Delay     12.3       HCM Level of Service     B       Intersection Capacity Utilization     28.2%       ICU Level of Service     A	Control Delay (s)	13.9	10.4	9.2				
Intersection Summary         Delay       12.3         HCM Level of Service       B         Intersection Capacity Utilization       28.2%       ICU Level of Service       A	Approach Delay (s)	13.9	10.4	9.2				
Delay12.3HCM Level of ServiceBIntersection Capacity Utilization28.2%ICU Level of ServiceA	Approach LOS	В	В	А				
HCM Level of ServiceBIntersection Capacity Utilization28.2%ICU Level of ServiceA	Intersection Summary							
Intersection Capacity Utilization 28.2% ICU Level of Service A	Delay			12.3				
	HCM Level of Service			В				
Analysis Period (min) 15	Intersection Capacity Ut	ilization		28.2%	IC	CU Leve	l of Service	А
	Analysis Period (min)			15				

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		÷			÷			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	151	188	22	16	135	4	12	11	19	10	19	65
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Hourly flow rate (vph)	240	298	35	25	214	6	19	17	30	16	30	103
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	573	246	67	149								
Volume Left (vph)	240	25	19	16								
Volume Right (vph)	35	6	30	103								
Hadj (s)	0.10	0.06	-0.16	-0.34								
Departure Headway (s)	5.0	5.4	6.2	5.8								
Degree Utilization, x	0.80	0.37	0.11	0.24								
Capacity (veh/h)	699	624	519	560								
Control Delay (s)	25.1	11.6	10.0	10.6								
Approach Delay (s)	25.1	11.6	10.0	10.6								
Approach LOS	D	В	А	В								
Intersection Summary												
Delay			18.8									
HCM Level of Service			С									
Intersection Capacity Uti	lization		47.4%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									



APPENDIX G: PM CAPACITY ANALYSIS

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>≜</b> ⊅		ሻ	<u></u> ↑↑î≽		ሻሻ	eî 👘		ሻ	<b>↑</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.99	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1769	3536		1768	4998		3410	1813		1744	1863	1552
Flt Permitted	0.09	1.00		0.17	1.00		0.48	1.00		0.67	1.00	1.00
Satd. Flow (perm)	164	3536		325	4998		1732	1813		1236	1863	1552
Volume (vph)	68	1139	5	27	1461	126	636	110	19	201	86	101
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	69	1162	5	28	1491	129	649	112	19	205	88	103
RTOR Reduction (vph)	0	0	0	0	7	0	0	7	0	0	0	13
Lane Group Flow (vph)	69	1167	0	28	1613	0	649	124	0	205	88	90
Confl. Peds. (#/hr)	18		16	24		26	16		24	26		18
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	72.2	65.3		65.0	61.7		32.9	17.8		23.0	12.4	19.3
Effective Green, g (s)	73.7	66.3		66.5	62.7		32.9	17.8		24.0	12.9	20.3
Actuated g/C Ratio	0.64	0.58		0.58	0.55		0.29	0.15		0.21	0.11	0.18
Clearance Time (s)	4.5	5.0		4.5	5.0		4.5	4.0		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	208	2039		236	2725		729	281		307	209	328
v/s Ratio Prot	c0.02	c0.33		0.00	0.32		c0.12	0.07		0.06	0.05	c0.02
v/s Ratio Perm	0.19			0.06			c0.13			0.07		0.04
v/c Ratio	0.33	0.57		0.12	0.59		0.89	0.44		0.67	0.42	0.27
Uniform Delay, d1	11.5	15.4		11.8	17.6		37.3	44.1		40.8	47.6	41.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	1.2		0.2	0.3		13.1	1.1		5.4	1.4	0.5
Delay (s)	12.4	16.6		12.1	17.9		50.4	45.2		46.2	48.9	41.4
Level of Service	В	B		В	B		D	D		D	D	D
Approach Delay (s)		16.3			17.8			49.5			45.6	
Approach LOS		В			В			D			D	
Intersection Summary												
HCM Average Control [			26.2	F	ICM Le	vel of Se	ervice		С			
HCM Volume to Capaci			0.64			_						
Actuated Cycle Length			115.0			ost time			8.0			
Intersection Capacity U	tilization		80.6%	10	CU Leve	el of Ser	vice		D			
Analysis Period (min)			15									

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्भ	1		4			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	118	0	76	7	0	4	88	212	5	1	179	132
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	0	83	8	0	4	96	230	5	1	195	143
Pedestrians		10			2			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	717	708	286	705	777	245	348			238		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	717	708	286	705	777	245	348			238		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	100	89	97	100	99	92			100		
cM capacity (veh/h)	315	329	743	289	300	788	1206			1333		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	128	83	12	332	339							
Volume Left	128	0	8	96	1							
Volume Right	0	83	4	5	143							
cSH	315	743	375	1206	1333							
Volume to Capacity	0.41	0.11	0.03	0.08	0.00							
Queue Length 95th (ft)	48	9	2	6	0							
Control Delay (s)	24.0	10.5	14.9	2.9	0.0							
Lane LOS	C	B	B	A	A							
Approach Delay (s)	18.7		14.9	2.9	0.0							
Approach LOS	С		В		0.0							
Intersection Summary												
Average Delay			5.7									
Intersection Capacity Ut	ilization		54.7%	10	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									
			.0									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	el 🕺			\$			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	2	5	180	0	165	5	161	161	98	133	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	2	6	214	0	196	6	192	192	117	158	0
Pedestrians					11			11			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	892	798	169	720	702	302	158			394		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	892	798	169	720	702	302	158			394		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	51	100	73	100			90		
cM capacity (veh/h)	177	285	872	442	324	733	1434			1164		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	10	214	196	389	275							
Volume Left	1	214	0	6	117							
Volume Right	6	0	196	192	0							
cSH	435	442	733	1434	1164							
Volume to Capacity	0.02	0.49	0.27	0.00	0.10							
Queue Length 95th (ft)	2	65	27	0	8							
Control Delay (s)	13.5	20.6	11.7	0.2	4.1							
Lane LOS	В	С	В	A	А							
Approach Delay (s)	13.5	16.3		0.2	4.1							
Approach LOS	В	С										
Intersection Summary												
Average Delay			7.4									
Intersection Capacity Uti	ilization		58.2%	l	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									
_ ( )												

User Entered Value

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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	4Î			र्स	¥	
Sign Control	Stop			Stop	Stop	
Volume (vph)	245	20	10	343	0	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	314	26	13	440	0	0
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total (vph)	340	453	0			
Volume Left (vph)	0	13	0			
Volume Right (vph)	26	0	0			
Hadj (s)	-0.03	0.02	0.00			
Departure Headway (s)	4.3	4.3	5.6			
Degree Utilization, x	0.41	0.54	0.00			
Capacity (veh/h)	821	831	569			
Control Delay (s)	10.2	12.0	8.6			
Approach Delay (s)	10.2	12.0	0.0			
Approach LOS	В	В	А			
Intersection Summary						
Delay			11.3			
HCM Level of Service			В			
Intersection Capacity Uti	lization		29.4%	IC	CU Leve	el of Service
Analysis Period (min)			15			

	-	$\mathbf{r}$	4	+	1	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	4Î			र्भ	¥			
Sign Control	Stop			Stop	Stop			
Volume (vph)	224	18	9	316	26	21		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80		
Hourly flow rate (vph)	280	22	11	395	32	26		
Direction, Lane #	EB 1	WB 1	NB 1					
Volume Total (vph)	303	406	59					
Volume Left (vph)	0	11	33					
Volume Right (vph)	23	0	26					
Hadj (s)	-0.03	0.02	-0.14					
Departure Headway (s)	4.5	4.4	5.3					
Degree Utilization, x	0.38	0.50	0.09					
Capacity (veh/h)	785	796	589					
Control Delay (s)	10.1	11.7	8.8					
Approach Delay (s)	10.1	11.7	8.8					
Approach LOS	В	В	А					
Intersection Summary								
Delay			10.9					
HCM Level of Service			В					
Intersection Capacity U	tilization		33.9%	IC	CU Leve	of Service	А	
Analysis Period (min)			15					

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	213	11	18	280	7	11	4	22	4	5	34
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	29	270	14	23	354	9	14	5	28	5	6	43
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	313	386	47	54								
Volume Left (vph)	29	23	14	5								
Volume Right (vph)	14	9	28	43								
Hadj (s)	0.01	0.02	-0.28	-0.44								
Departure Headway (s)	4.6	4.5	5.3	5.1								
Degree Utilization, x	0.40	0.49	0.07	0.08								
Capacity (veh/h)	755	767	579	604								
Control Delay (s)	10.7	11.8	8.7	8.6								
Approach Delay (s)	10.7	11.8	8.7	8.6								
Approach LOS	В	В	А	А								
Intersection Summary												
Delay			11.0									
HCM Level of Service			В									
Intersection Capacity Uti	lization		33.2%	l	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>≜</b> †≱		ሻ	<u>ተተ</u> ጮ		ካካ	ef 👘		ሻ	<b>↑</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.99	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1769	3536		1768	4996		3411	1812		1744	1863	1552
Flt Permitted	0.08	1.00		0.17	1.00		0.48	1.00		0.67	1.00	1.00
Satd. Flow (perm)	157	3536		318	4996		1706	1812		1230	1863	1552
Volume (vph)	71	1151	5	28	1477	131	662	114	20	209	89	105
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	72	1174	5	29	1507	134	676	116	20	213	91	107
RTOR Reduction (vph)	0	0	0	0	7	0	0	7	0	0	0	11
Lane Group Flow (vph)	72	1179	0	29	1634	0	676	129	0	213	91	96
Confl. Peds. (#/hr)	18		16	24		26	16		24	26		18
Turn Type	pm+pt	_		pm+pt			pm+pt	_		pm+pt		pm+ov
Protected Phases	5	2		1	6		3	8		7	4	5
Permitted Phases	2	05.4		6	01.0		8	170		4	10.5	4
Actuated Green, G (s)	72.2	65.1		64.6	61.3		33.1	17.9		23.2	12.5	19.6
Effective Green, g (s)	73.7	66.1		66.1	62.3		33.1	17.9		24.2	13.0	20.6
Actuated g/C Ratio	0.64	0.57		0.57	0.54		0.29	0.16		0.21	0.11	0.18
Clearance Time (s)	4.5	5.0		4.5	5.0		4.5	4.0		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	207	2032		231	2707		730	282		309	211	332
v/s Ratio Prot	c0.02	0.33		0.00	c0.33		c0.13	0.07		0.07	0.05	c0.02
v/s Ratio Perm	0.20	0.50		0.07	0.00		c0.14	0.40		0.08	0.40	0.04
v/c Ratio	0.35	0.58		0.13	0.60		0.93	0.46		0.69	0.43	0.29
Uniform Delay, d1	11.9	15.6		12.1	17.9		37.8	44.1		40.9	47.6	40.9
Progression Factor	1.00 1.0	1.00		1.00 0.2	1.00 0.4		1.00 17.6	1.00 1.2		1.00 6.3	1.00 1.4	1.00 0.5
Incremental Delay, d2	12.9	16.8		12.3	18.3		55.4	45.3		47.1	49.0	41.3
Delay (s) Level of Service	12.9 B	-		-	_		_	-		47.1 D	49.0 D	41.3
Approach Delay (s)	D	В 16.6		В	В 18.2		E	D 53.7		U	46.0	U
Approach LOS		10.0 B			10.2 B			55.7 D			40.0 D	
		D			D			U			D	
Intersection Summary			07.4									
HCM Average Control E			27.4	ŀ	ICIM Lev	vel of Se	ervice		С			
HCM Volume to Capaci			0.69	-					10.0			
Actuated Cycle Length			115.0			ost time			12.0			
Intersection Capacity U	tilization		82.0%	[(	U Leve	el of Ser	vice		E			
Analysis Period (min)			15									

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्च	1		÷			\$			÷	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	123	0	79	7	0	4	92	224	5	1	186	137
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	0	86	8	0	4	100	243	5	1	202	149
Pedestrians		10			2			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	749	740	297	737	811	258	361			251		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	749	740	297	737	811	258	361			251		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	100	88	97	100	99	92			100		
cM capacity (veh/h)	299	314	733	272	285	775	1193			1318		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	134	86	12	349	352							
Volume Left	134	0	8	100	1							
Volume Right	0	86	4	5	149							
cSH	299	733	356	1193	1318							
Volume to Capacity	0.45	0.12	0.03	0.08	0.00							
Queue Length 95th (ft)	55	10	3	7	0							
Control Delay (s)	26.5	10.6	15.5	3.0	0.0							
Lane LOS	D	В	С	А	А							
Approach Delay (s)	20.2		15.5	3.0	0.0							
Approach LOS	С		С									
Intersection Summary												
Average Delay			6.1									
Intersection Capacity Uti	lization		56.6%	](	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		ሻ	4Î			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	2	5	187	0	172	5	168	168	102	138	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	2	6	223	0	205	6	200	200	121	164	0
Pedestrians					11			11			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	928	830	175	748	730	315	164			411		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	928	830	175	748	730	315	164			411		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	47	100	72	100			89		
cM capacity (veh/h)	163	272	865	421	310	721	1426			1148		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	10	223	205	406	286							
Volume Left	1	223	0	6	121							
Volume Right	6	0	205	200	0							
cSH	415	421	721	1426	1148							
Volume to Capacity	0.02	0.53	0.28	0.00	0.11							
Queue Length 95th (ft)	2	75	29	0	9							
Control Delay (s)	13.9	22.7	12.0	0.2	4.2							
Lane LOS	В	С	В	A	A							
Approach Delay (s)	13.9	17.6	_	0.2	4.2							
Approach LOS	В	C		0.2								
Intersection Summary												
Average Delay			7.9									
Intersection Capacity Ut	ilization		59.9%	](	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									
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User Entered Value

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Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	¢Î			र्स	¥		
Sign Control	Stop			Stop	Stop		
Volume (vph)	255	21	10	357	0	0	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	
Hourly flow rate (vph)	327	27	13	458	0	0	
Direction, Lane #	EB 1	WB 1	NB 1				
Volume Total (vph)	354	471	0				
Volume Left (vph)	0	13	0				
Volume Right (vph)	27	0	0				
Hadj (s)	-0.03	0.02	0.00				
Departure Headway (s)	4.3	4.3	5.6				
Degree Utilization, x	0.43	0.56	0.00				
Capacity (veh/h)	818	829	561				
Control Delay (s)	10.5	12.5	8.6				
Approach Delay (s)	10.5	12.5	0.0				
Approach LOS	В	В	А				
Intersection Summary							
Delay			11.7				
HCM Level of Service			В				
Intersection Capacity Uti	lization		30.2%	IC	CU Leve	el of Service	
Analysis Period (min)			15				

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Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations	ef 👘			નુ	Y				
Sign Control	Stop			Stop	Stop				
Volume (vph)	233	19	9	329	27	22			
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80			
Hourly flow rate (vph)	291	24	11	411	34	28			
Direction, Lane #	EB 1	WB 1	NB 1						
Volume Total (vph)	315	423	61						
Volume Left (vph)	0	11	34						
Volume Right (vph)	24	0	28						
Hadj (s)	-0.03	0.02	-0.14						
Departure Headway (s)	4.5	4.4	5.4						
Degree Utilization, x	0.39	0.52	0.09						
Capacity (veh/h)	780	792	581						
Control Delay (s)	10.4	12.2	8.9						
Approach Delay (s)	10.4	12.2	8.9						
Approach LOS	В	В	А						
Intersection Summary									
Delay			11.2						
HCM Level of Service			В						
Intersection Capacity Uti	lization		34.6%	IC	CU Leve	el of Service	i de la companya de l	А	
Analysis Period (min)			15						

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	24	222	11	19	297	7	11	4	23	4	5	35
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	30	281	14	24	376	9	14	5	29	5	6	44
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	325	409	48	56								
Volume Left (vph)	30	24	14	5								
Volume Right (vph)	14	9	29	44								
Hadj (s)	0.01	0.02	-0.29	-0.44								
Departure Headway (s)	4.7	4.6	5.4	5.2								
Degree Utilization, x	0.42	0.52	0.07	0.08								
Capacity (veh/h)	748	763	568	590								
Control Delay (s)	11.0	12.4	8.8	8.7								
Approach Delay (s)	11.0	12.4	8.8	8.7								
Approach LOS	В	В	А	А								
Intersection Summary												
Delay			11.4									
HCM Level of Service			В									
Intersection Capacity Uti	lization		34.4%	ŀ	CU Leve	el of Ser	vice		А			
Analysis Period (min)			15									

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>≜</b> ⊅		ሻ	<u></u> ↑↑₽		ካካ	eî 👘		ሻ	<b>↑</b>	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.91		0.97	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.99	1.00	1.00
Frt	1.00	1.00		1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1769	3536		1768	4995		3411	1812		1744	1863	1552
Flt Permitted	0.08	1.00		0.17	1.00		0.48	1.00		0.67	1.00	1.00
Satd. Flow (perm)	154	3536		319	4995	100	1706	1812	00	1230	1863	1552
Volume (vph)	86	1151	5	28	1477	133	662	114	20	211	89	116
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	88	1174	5	29	1507	136	676	116	20	215	91	118
RTOR Reduction (vph)	0	0	0	0	7	0	0	7	0	0	0	11
Lane Group Flow (vph)	88 18	1179	0 16	29 24	1636	0 26	676 16	129	0 24	215 26	91	107
Confl. Peds. (#/hr)												18
Turn Type	pm+pt	0		pm+pt	C		pm+pt	0		pm+pt	1. Sec.	pm+ov
Protected Phases Permitted Phases	5 2	2		1	6		3 8	8		7	4	5 4
Actuated Green, G (s)	72.4	65.0		6 64.2	60.9		33.2	18.0		23.2	12.5	4 19.9
Effective Green, g (s)	73.8	66.0		65.7	61.9		33.2	18.0		24.2	13.0	20.9
Actuated g/C Ratio	0.64	0.57		0.57	0.54		0.29	0.16		0.21	0.11	0.18
Clearance Time (s)	4.5	5.0		4.5	5.0		4.5	4.0		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	210	2029		230	2689		733	284		309	211	336
v/s Ratio Prot	c0.03	0.33		0.00	c0.33		c0.13	0.07		0.07	0.05	c0.02
v/s Ratio Perm	0.24	0.00		0.07	0.00		c0.14	0.07		0.07	0.05	0.02
v/c Ratio	0.42	0.58		0.13	0.61		0.92	0.46		0.70	0.43	0.32
Uniform Delay, d1	12.4	15.7		12.2	18.2		37.7	44.0		40.9	47.6	40.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.2		0.2	0.4		17.1	1.2		6.7	1.4	0.5
Delay (s)	13.8	16.9		12.4	18.6		54.7	45.2		47.6	49.0	41.4
Level of Service	B	B		В	В		D	D		D	D	D
Approach Delay (s)		16.7			18.5			53.1			46.2	
Approach LOS		В			В			D			D	
Intersection Summary												
HCM Average Control E	Delay		27.5	H	ICM Le	vel of Se	ervice		С			
HCM Volume to Capaci			0.67									
Actuated Cycle Length			115.0	S	Sum of I	ost time	(S)		8.0			
Intersection Capacity Ut			82.9%			el of Ser			E			
Analysis Period (min)			15									
o Critical Lana Group												

c Critical Lane Group

15153 - CAFC Expansion TIS Background + Site Trips PM

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		र्च	1		4			\$			\$	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	145	0	79	7	0	4	92	238	5	1	199	154
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	158	0	86	8	0	4	100	259	5	1	216	167
Pedestrians		10			2			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	788	778	320	776	859	273	394			266		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	788	778	320	776	859	273	394			266		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	44	100	88	97	100	99	91			100		
cM capacity (veh/h)	281	297	711	255	267	760	1161			1301		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1							
Volume Total	158	86	12	364	385							
Volume Left	158	0	8	100	1							
Volume Right	0	86	4	5	167							
cSH	281	711	336	1161	1301							
Volume to Capacity	0.56	0.12	0.04	0.09	0.00							
Queue Length 95th (ft)	79	10	3	7	0							
Control Delay (s)	33.0	10.8	16.1	2.9	0.0							
Lane LOS	D	В	С	А	А							
Approach Delay (s)	25.2		16.1	2.9	0.0							
Approach LOS	D		С									
Intersection Summary												
Average Delay			7.4									
Intersection Capacity Ut	ilization		60.3%	10	CU Leve	el of Ser	vice		В			
Analysis Period (min)			15									
( ·)			-									

15153 - CAFC Expansion TIS Background + Site Trips PM

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		- <b>4</b> >		ሻ	eî 👘			4			4	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	2	5	218	0	181	5	168	208	114	138	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	2	6	260	0	215	6	200	248	136	164	0
Pedestrians					11			11			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	991	906	175	801	782	339	164			459		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	991	906	175	801	782	339	164			459		
tC, single (s)	7.1	6.5	6.2	*6.5	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	*2.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	99	32	100	69	100			88		
cM capacity (veh/h)	140	241	865	384	284	699	1426			1103		
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	10	260	215	454	300							
Volume Left	1	260	0	6	136							
Volume Right	6	0	215	248	0							
cSH	377	384	699	1426	1103							
Volume to Capacity	0.03	0.68	0.31	0.00	0.12							
Queue Length 95th (ft)	2	120	33	0.00	10							
Control Delay (s)	14.8	31.9	12.4	0.1	4.6							
Lane LOS	B	D	B	A	A							
Approach Delay (s)	14.8	23.0	U	0.1	4.6							
Approach LOS	B	C		0.1	4.0							
Intersection Summary												
Average Delay			10.1									
Intersection Capacity Ut	ilization		64.8%	l	CU Leve	el of Ser	vice		С			
Analysis Period (min)			15									

User Entered Value

\*

	-	$\rightarrow$	4	-	1	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	eî 👘			र्स	- Y			
Sign Control	Stop			Stop	Stop			
Volume (vph)	255	47	24	357	20	10		
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78		
Hourly flow rate (vph)	327	60	31	458	26	13		
Direction, Lane #	EB 1	WB 1	NB 1					
Volume Total (vph)	387	488	38					
Volume Left (vph)	0	31	26					
Volume Right (vph)	60	0	13					
Hadj (s)	-0.08	0.03	-0.05					
Departure Headway (s)	4.5	4.5	5.7					
Degree Utilization, x	0.48	0.60	0.06					
Capacity (veh/h)	791	793	536					
Control Delay (s)	11.5	14.0	9.1					
Approach Delay (s)	11.5	14.0	9.1					
Approach LOS	В	В	А					
Intersection Summary								 
Delay			12.7					
HCM Level of Service			В					
Intersection Capacity Ut	ilization		48.5%	[(	CU Leve	of Service	А	
Analysis Period (min)			15					

	-	$\rightarrow$	4	-	1	1		
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	el 🕺			<del>با</del>	Y			
Sign Control	Stop			Stop	Stop			
Volume (vph)	233	44	23	329	47	33		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80		
Hourly flow rate (vph)	291	55	29	411	59	41		
Direction, Lane #	EB 1	WB 1	NB 1					
Volume Total (vph)	346	440	100					
Volume Left (vph)	0	29	59					
Volume Right (vph)	55	0	41					
Hadj (s)	-0.08	0.03	-0.11					
Departure Headway (s)	4.6	4.6	5.6					
Degree Utilization, x	0.44	0.56	0.15					
Capacity (veh/h)	746	758	566					
Control Delay (s)	11.3	13.4	9.6					
Approach Delay (s)	11.3	13.4	9.6					
Approach LOS	В	В	А					
Intersection Summary								
Delay			12.2					
HCM Level of Service			В					
Intersection Capacity Uti	ilization		47.5%	IC	CU Leve	el of Service	А	
Analysis Period (min)			15					

15153 - CAFC Expansion TIS Background + Site Trips PM

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			\$			\$			\$	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	24	239	14	19	314	7	11	4	23	4	5	35
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	30	303	18	24	397	9	14	5	29	5	6	44
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	351	430	48	56								
Volume Left (vph)	30	24	14	5								
Volume Right (vph)	18	9	29	44								
Hadj (s)	0.00	0.02	-0.29	-0.44								
Departure Headway (s)	4.7	4.6	5.5	5.3								
Degree Utilization, x	0.46	0.55	0.07	0.08								
Capacity (veh/h)	744	757	553	574								
Control Delay (s)	11.6	13.1	8.9	8.8								
Approach Delay (s)	11.6	13.1	8.9	8.8								
Approach LOS	В	В	А	А								
Intersection Summary												
Delay			12.0									
HCM Level of Service			В									
Intersection Capacity Uti	lization		35.5%	l	CU Leve	el of Serv	/ice		А			
Analysis Period (min)			15									



#### **APPENDIX H: PARKING GENERATION CALCULATIONS**



#### PARKING GENERATION CALCULATIONS

Land Use: Recreational Community Center Land Use Code: 495 Location: Suburban Variable: 1,000 sq. ft. GFA Variable Value: 21.28

#### Weekday

Peak Periods 6:00 PM to 8:00 PM

Number of Study Sites	7	
Avg. Size of Study Sites	38,000	sq. ft. GFA
Avg. Peak Period Parking Demand	3.2	vehicles per ksf GFA
Standard Deviation	2.2	
Coefficient of Variation	69%	
Range	1.40 - 7.38	vehicles per ksf GFA
85th Percentile Rate:	5.03	vehicles per ksf GFA
33rd Percentile Rate:	1.82	vehicles per ksf GFA

Peak Parking Demand	68
85th Percentile Parking Demand	107

Source: PARKING GENERATION, Fourth Edition



#### PARKING GENERATION CALCULATIONS

Land Use: Recreational Community Center Land Use Code: 495 Location: Suburban Variable: 1,000 sq. ft. GFA Variable Value: 61.67

#### Weekday

Peak Periods 6:00 PM to 8:00 PM

Number of Study Sites	7	
Avg. Size of Study Sites	38,000	sq. ft. GFA
Avg. Peak Period Parking Demand	3.2	vehicles per ksf GFA
Standard Deviation	2.2	
Coefficient of Variation	69%	
Range	1.40 - 7.38	vehicles per ksf GFA
85th Percentile Rate:	5.03	vehicles per ksf GFA
33rd Percentile Rate:	1.82	vehicles per ksf GFA

Peak Parking Demand	197
85th Percentile Parking Demand	310

Source: PARKING GENERATION, Fourth Edition

# Chehalem Aquatic & Fitness Center Newberg, Oregon

# **Preliminary Stormwater Drainage Report**

Prepared for:

# Scott | Edwards Architecture, LLP

Portland, Öregon

Prepared by:

# WHPacific

WHPacific 9755 SW Barnes Road, Suite 300 Portland, Oregon 97225

Project Engineer: Sarah Jones, P.E.

Original: February 16, 2016



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#### 1.1 Introduction and Purpose

The purpose of this report is to provide documentation for the stormwater management associated with site improvements for the Chehalem Aquatic and Fitness Center in the City of Newberg, Yamhill County, Oregon. It will evaluate the proposed stormwater conveyance, water quality, and water quantity design.

The calculations and storm water management methods contained in this report have been based on the City of Newberg's Public Works Design and Construction Standards, dated May 2015. Per City of Newberg staff, the design standards in this manual apply to private development as well as public. The analysis demonstrates that the proposed stormwater management methods and facilities are designed in conformance with City of Newberg standards.

#### 1.2 **Project Location and Description**

The proposed building site is located at 1802 Haworth Avenue in Newberg, Oregon. The total site area is 5.08 acres and the total disturbed area is approximately 4.2 acres.

The purpose of this project is to expand the existing building with new pedestrian hardscape, parking lot and associated stormwater facilities and landscape.

#### 1.3 Existing Conditions

The existing site is 5.08 acres. The west side of the site is currently occupied by an existing aquatic facility with parking lot. The east side is a park with trees. There is an existing 10-inch public storm pipe in Haworth that currently serves the site.

The soil is composed of:

 2300A Aloha Silt Loam, 0-3 percent slopes (Hydrologic soil group C/D)

See Appendix 3 for Yamhill County Web Soil Survey regarding soil groups and site composition.



#### 1.4 Drainage Design/Analysis

The proposed drainage analysis is based on the requirements contained in the City of Newberg's Public Works Design and Construction Standards, dated May 2015.

Per the geotechnical report, found in appendix 3, the infiltration rate has been measured at 0 to 0.63 in/hour. Because of this low rate, infiltration facilities were not considered for stormwater management.

Both quality and quantity of stormwater will be addressed through the use of raingardens spread throughout the site. The facilities have been designed with 6" minimum ponding depth, 18" of growing medium and a rock section with perforated pipe below that. In a water quality event, the runoff will filter through the growing medium and be conveyed off site through the perforated pipes in the rock section to the existing storm systems in Haworth and Sitka. Each facility will have an overflow structure to collect excess runoff during larger events.

Calculations will be provided in final report.

See Exhibit EX01 in Appendix 1 for the existing conditions and EX02 for proposed conditions.

#### 1.5 Pipe Sizing & Storm Hydrograph Design

The proposed storm pipe system is designed to have the capacity to convey the runoff from a 25-year return frequency storm event without ponding. The storm system was designed to convey all of the impervious area and contributing pervious areas for the entire site.

A minimum pipe slope of 0.5% will be maintained throughout the system. The intent is to maintain a minimum free flow velocity of 3.0 fps in all pipes. Pipe sizing calculations will be provided in final report.

#### 1.6 Water Quantity

The existing impervious area is 77,100 sf and new impervious area for the site is approximately 142,000 sf. The impervious area on site will be increased by 64,900 sf. Per section 4.6.1 of the Newberg Public Works Design and Construction Standards, "the size of the stormwater quality



facilities shall be based on the net impervious area created by the development, including structures, roads, and other impervious areas." Therefore, 64,900 sf of impervious area will be treated. This area will be all parking lot areas, as well as a portion of the new building roof. The required planter area to treat that area is 3,894 sf per the LIDA sizing for, (standard drawing 451).

Calculations will be provided in final report.

#### 1.7 Water Quality

Per section 4.7.1.III of the Newberg Public Works Design and Construction Standards, "stormwater quantity on-site detention facilities shall be designed to capture runoff so the post-development runoff rates from the site do not exceed pre-development runoff rates from the site, based on the 24-hour storm events ranging from ½ of the 2-year return storm to the 25-year return storm." To accommodate this, additional planter area, above what is required for quality, has been provided.

Calculations will be provided in final report.

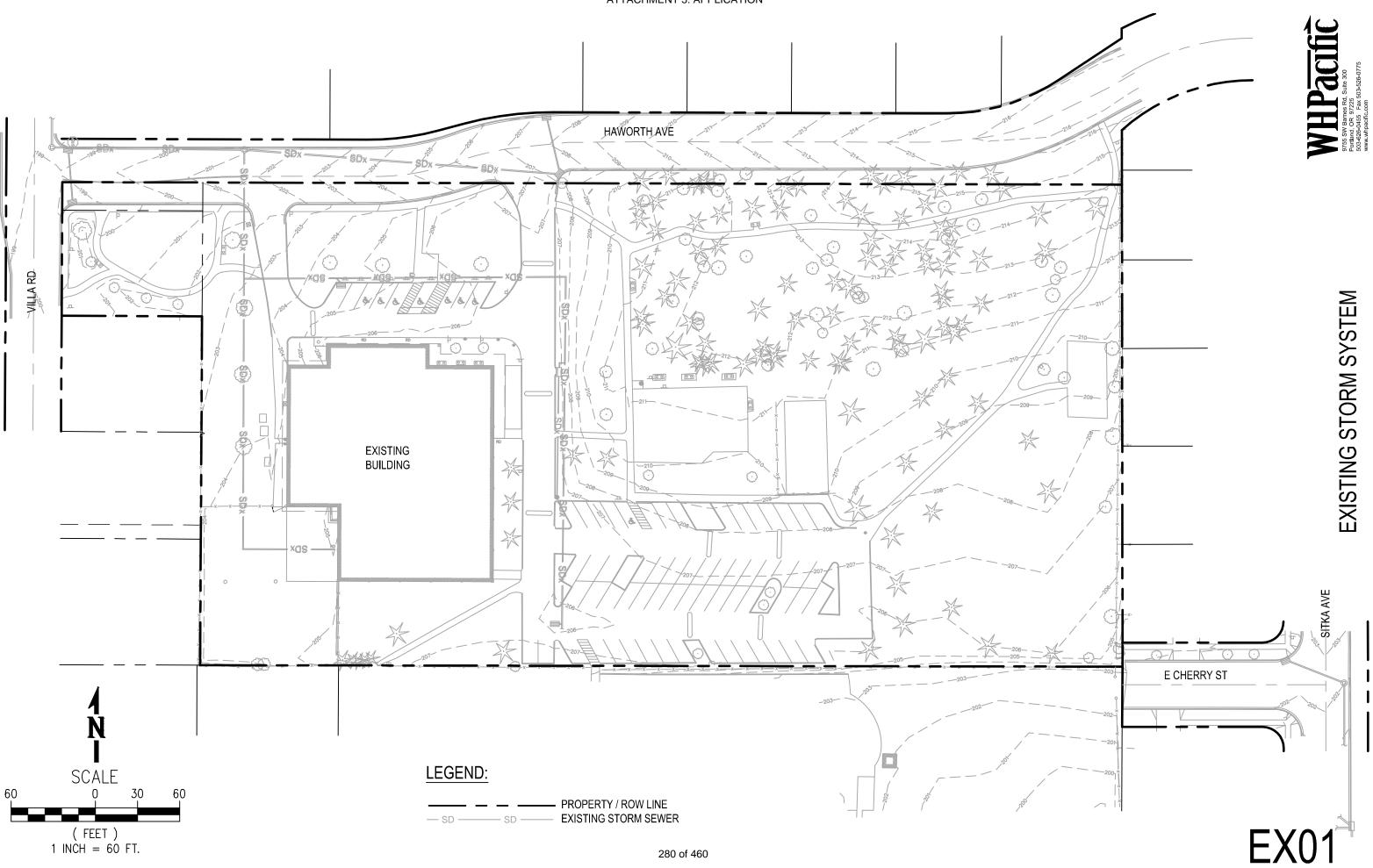
#### 1.8 Conclusion

The proposed development has appropriate stormwater facilities and a system that fulfills the required conveyance, water quality and water quantity based on City of Newberg requirements and standards.

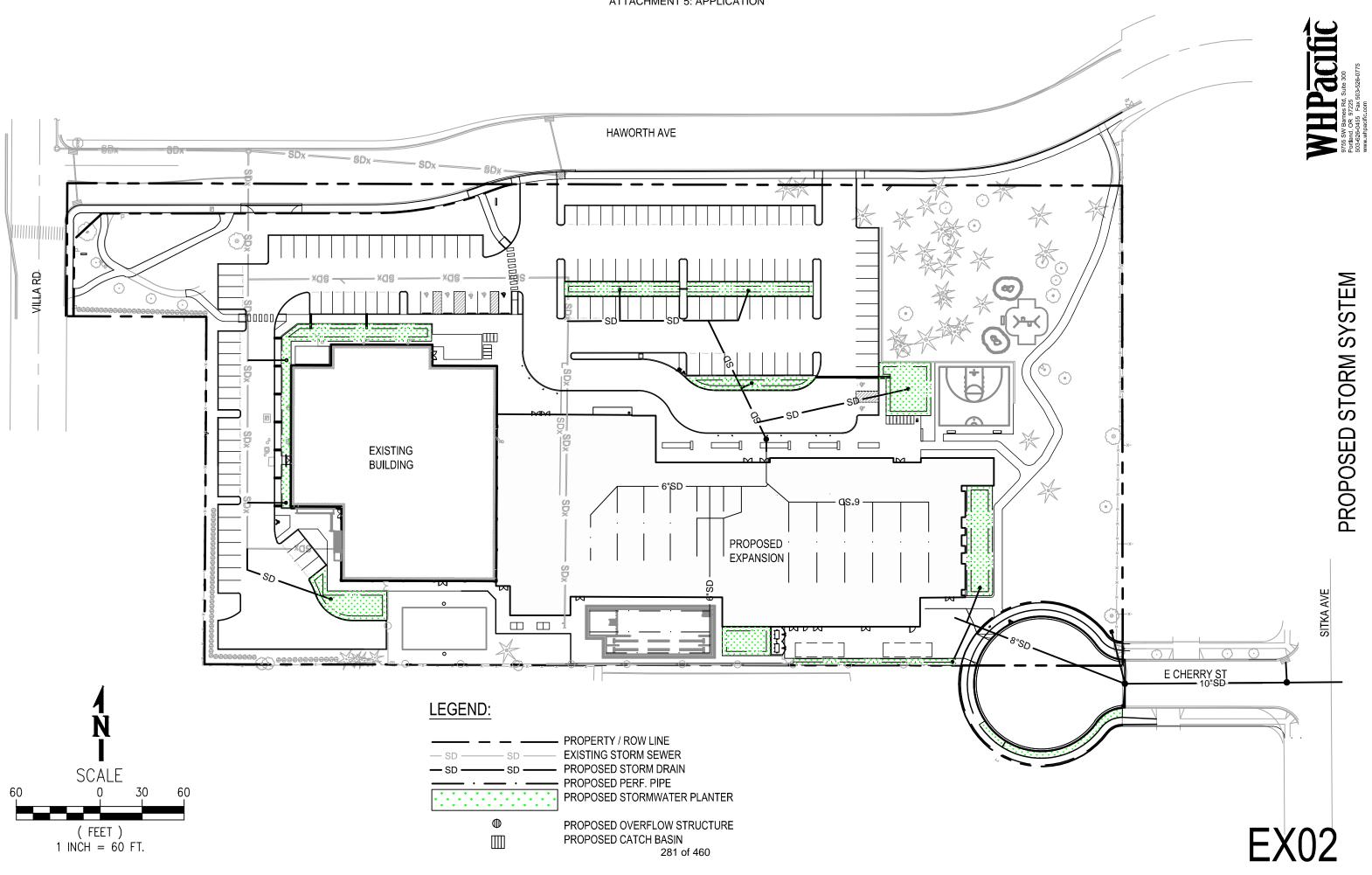


# Appendix 1 Site Exhibits

HAWORTHAVE SD, € ¢ 00 00 00 (D)



**ATTACHMENT 5: APPLICATION** 





## Appendix 2 Calculations and Hydrographs [TO BE PROVIDED WITH FINAL REPORT]

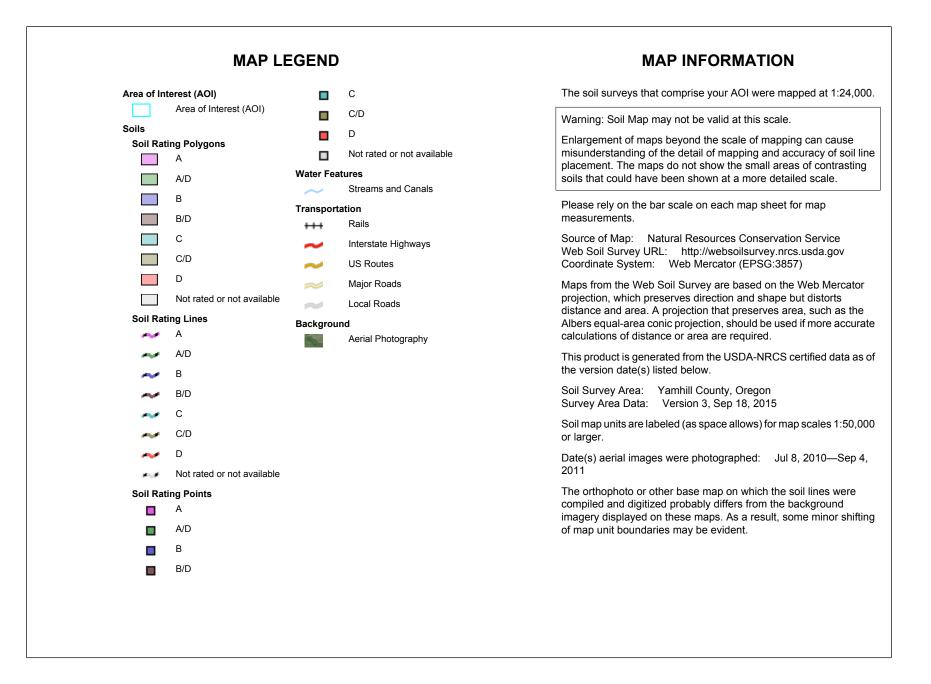


# Appendix 3 Supporting Documents



USDA Natural Resources Conservation Service W2845 oif 460/ey National Cooperative Soil Survey 11/2/2015 Page 1 of 4

#### ATTACHMENT 5: APPLICATION Hydrologic Soil Group—Yamhill County, Oregon



# Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Yamhill County, Oregon (OR071)										
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI						
2300A	Aloha silt loam, 0 to 3 percent slopes	C/D	4.5	99.1%						
2301A	Amity silt loam, 0 to 3 percent slopes	C/D	0.0	0.9%						
Totals for Area of Inter	rest		4.5	100.0%						

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

# **Rating Options**

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified Tie-break Rule: Higher Carlson Geotechnical ENT 5: APRICATORNE

A Division of Carlson Testing, Inc. Phone: (503) 601-8250 Fax: (503) 601-8254 Eugene Office Salem Office Tigard Office (541) 330-9155 (541) 345-0289 (503) 589-1252 (503) 684-3460



Report of Geotechnical Investigation, Infiltration Testing & Site-Specific Seismic Hazards Study Chehalem Aquatic & Fitness Center Improvements 1802 Haworth Avenue Newberg, Oregon

CGT Project Number G1504218

Prepared for

Chehalem Park and Recreation District Attn: Jim McMaster, Park Supervisor 125 Elliot Road Newberg, OR 97132

October 23, 2015

Carlson Geotechnical ENT 5: APRICATION

A division of Carlson Testing, Inc. Phone: (503) 601-8250 Fax: (503) 601-8254 Eugene Office Salem Office Tigard Office (541) 330-9155 (541) 345-0289 (503) 589-1252 (503) 684-3460



October 23, 2015

Chehalem Park and Recreation District Attn: Jim McMaster, Park Supervisor 125 Elliot Road Newberg, OR 97132

Report of Geotechnical Investigation, Infiltration Testing & Site-Specific Seismic Hazards Study Chehalem Aquatic & Fitness Center Improvements 1802 Haworth Avenue Newberg, Oregon

CGT Project Number G1504218

Dear Mr. McMaster:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation, infiltration testing, and site-specific seismic hazards study (SSSHS), for the proposed improvements to the Chehalem Aquatic and Fitness Center. The site is located 1802 Haworth Avenue in Newberg, Oregon. We performed our work in general accordance with CGT Proposals GP6718 (dated June 17, 2015, authorization received July 1, 2015) and GP6718.A (dated September 2, 2015, authorization received September 10, 2015).

We appreciate the opportunity to work with you on this project. Please contact us at 503-601-8250 if you have any questions regarding this report.

Respectfully Submitted, CARLSON GEOTECHNICAL



Jeff Jones, CEG Project Engineering Geologist jjones@carlsontesting.com



Jeffrey P. Quinn, P.E. Geotechnical Engineer jquinn@carlsontesting.com

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#### ATTACHMENT 5: APPLICATION

Chehalem Aquatic & Fitness Center Improvements Newberg, Oregon CGT Project Number G1504218 October 23, 2015

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# ATTACHMENTS

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Boring Logs	Figures 6 through 15
Retaining Wall Pressure Distribution	Figure 16
Retaining Wall Surcharge Loading	Figure 17
Results of Infiltration Testing	Appendix A
Site-Specific Seismic Hazards Study	

# 1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation, infiltration testing, and site-specific seismic hazards study (SSSHS), for the proposed improvements to the Chehalem Aquatic and Fitness Center. The site is located 1802 Haworth Avenue in Newberg, Oregon, as shown on the attached Site Location map, Figure 1.

# 1.1 **Project Description**

Based on the information provided, we understand the project will include the following.

- Construction of an approximate 36,000 square foot addition to the east side of the existing building. The addition will be single-story, ranging in height from about 35 to 50 feet, and likely be steel framed with a slab on grade floor. The addition will house three swimming pools, spa and play areas, stadium seating, locker rooms, classrooms, and various office, event, and mechanical rooms. The pools will range in depth from 1½ to 12 feet. Maximum column and wall loads will be less than 50 kips and 5 kips per lineal foot, respectively.
- The swimming pool bottom slabs may be designed as mat foundations and the pool walls may be designed as cantilevered, restrained retaining walls.
- Remodel of the existing aquatic center building located in the southwestern portion of the site. The
  remodel will include demolition and backfill of the existing swimming pool, which is up to 12 feet deep.
  A second floor may also be constructed within the existing building. New structural loads associated
  with the remodel will be carried by new and existing shallow foundations, with up to 80 kips on new
  columns and an additional 600 pounds per square foot on existing wall footings.
- Construction of passenger car parking and drive lanes in the northern portion and western margin of the site.
- Exterior grade changes at the site will be minimal, with cuts and fills less than about 3 feet anticipated.
- We understand the aquatic center will be classified as "Special Occupancy Structure" per Oregon Revised Statutes (ORS) 455.447. Accordingly, the building will be assigned as Risk Category III per Table 1604.5 of the 2014 Oregon Structural Specialty Code (OSSC), and a site-specific seismic hazard study (SSSHS) is required as part of the geotechnical report per Section 1803.2 of the OSSC.
- We understand the project civil engineer (WHPacific) is evaluating the feasibility of on-site stormwater infiltration for disposal of stormwater collected from hard surfaces. Accordingly, infiltration testing and piezometer installation was requested in select locations as part of our field exploration. Design of on-site stormwater infiltration facilities will rest with others.

# 1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 30-foot radius of our explorations at the site. CGT also subcontracted a private utility locating service to mark the locations of public and private utilities within a 30-foot radius of our explorations.
- Explore subsurface conditions at the site with the following field exploration program:

- Advance ten machine-drilled borings to depths ranging from about 4 to 51½ feet below ground surface (bgs).
- Perform five infiltration tests at the site in general accordance with the 1980 EPA Falling Head Test Method. Details and results of our infiltration testing are presented in the attached Appendix A.
- Install one open standpipe piezometer at the site, to a depth of about 20 feet bgs.
- Classify the materials encountered in the borings in general accordance with American Society for Testing and Materials (ASTM) D2488 (Visual-Manual Procedure).
- Collect representative, disturbed and relatively undisturbed samples of the soils encountered within the explorations in order to perform laboratory testing and to confirm our field classifications.
- Provide a technical narrative describing surface and subsurface deposits and local geology of the site based on the results of our explorations and review of geologic mapping.
- Provide geotechnical recommendations for site preparation and earthwork.
- Provide geotechnical recommendations for design and construction of shallow spread foundations, pool retaining walls, concrete floor slabs, and mat foundations.
- Provide preliminary geotechnical engineering recommendations for design and construction of flexible (asphaltic concrete) pavements.
- Conduct a Site-Specific Seismic Hazards Study (SSSHS) in general accordance with the requirements of Section 1803.3.2 of the 2014 Oregon Structural Specialty Code (OSSC). The results of the SSSHS are presented in the attached Appendix B.
- Provide this written report summarizing the results of our geotechnical investigation, infiltration testing, SSSHS and recommendations for the project.

# 2.0 SITE DESCRIPTION

# 2.1 Site Geology

As detailed in Appendix B, the geologic mapping for the area indicates the site is underlain by Pleistocene fine-grained flood deposits. The flood deposits are up to about 15 feet thick and are underlain by Pliocene sediments of the Troutdale Formation.

# 2.2 Site Surface Conditions

The approximate 5.4-acre site is bordered by Haworth Avenue to the north, residential development to the east, a rehabilitation center and residential development to the south, and residential development and Villa Road to the west. The site is relatively flat, with surface elevations varying from about 200 feet at the northwest corner, 205 feet at the south boundary, and 215 feet at the northeast corner.

The existing aquatic center building is located in the western half of the property, with existing parking lots in the northwest and southeast portions of the site. The northeastern portion of the site is occupied by Babe Nicklous Pool Park, with lawn areas, a stand of mature Douglas Fir trees, and a playground area. Site layout and surface conditions are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

# 3.0 FIELD INVESTIGATION

CGT completed the field investigation on October 1 and 2, 2015, with follow up visits on October 5 and 20 to record groundwater levels. The field investigation consisted of advancing ten drilled borings,

performing five infiltration tests, and installing one piezometer, the locations of which are shown on the attached Site Plan, Figure 2. The exploration locations shown therein were determined based on measurements from existing site features and are approximate.

# 3.1 Borings

Borings B-1 through B-5 were advanced to depths ranging from about 21½ to 51½ feet bgs using the mud rotary drilling technique. The track-mounted Diedrich D-50 drill rig was provided and operated by our subcontractor, Subsurface Technologies of North Plains, Oregon. Upon completion, the borings were backfilled with granular bentonite. Standard Penetration Tests (SPTs) were conducted at 2½- to 5-foot intervals to the termination depths of the borings. A description of the SPT is provided on the Exploration Key, attached as Figure 4.

# 3.2 Open Standpipe Piezometer

CGT observed the installation of an open standpipe piezometer (Well ID 113132) on October 1, 2015. The piezometer was installed in boring B-1 by our drilling subcontractor, Subsurface Technologies. Details of the piezometer installation are as follows:

- The bottom depth of the piezometer was approximately 20 feet bgs.
- The piezometer consisted of a 1-inch diameter, Schedule 40 PVC pipe. The PVC pipe was slotted between 10 and 20 feet bgs (screened interval).
- Backfill around the piezometer pipe consisted of Colorado silica sand filter pack between 8 and 20 feet bgs, capped with bentonite chips from 1 to 8 feet bgs.
- A flush-mount monument was installed to protect the head of the piezometer and the well was fitted with a locking cap.

# 3.3 Infiltration Testing

Five additional borings were advanced on October 1, 2015, using a hollow-stem auger and the referenced drill rig in order to perform infiltration tests (IT-1 through IT-5). The locations of the infiltration tests are shown on the Site Plan (Figure 2), and details and results of the infiltration tests are presented in the attached Appendix A.

#### 3.4 Soil Classification & Sampling

Soil samples were obtained at selected intervals within B-1 through B-5, using the referenced split-spoon (SPT) sampler and thin-walled, steel (Shelby) tube samplers. A qualified member of CGT collected the samples and logged the soils in general accordance with the Unified Soil Classification System (USCS). An explanation of the USCS is attached as Figure 5. All soil samples were stored in sealable plastic bags and transported to our laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

# 4.0 LABORATORY TESTING

Laboratory testing was performed on select soil samples to refine our initial field classifications and determine in-situ parameters. Laboratory testing included twenty-three moisture content determinations (ASTM D2216), four Atterberg limits (plasticity) tests (ASTM D4318), and three unit weight determinations (weight-volume measurement). Results of the laboratory tests are shown on the boring logs.

# 5.0 SUBSURFACE CONDITIONS

Logs of the borings are presented on the attached Boring Logs, Figures 6 through 15. Surface elevations indicated on the logs were estimated based on the provided site survey, shown on Figure 2, and are approximate.

#### 5.1 Soils/Materials

The following describes each of the subsurface materials encountered at the site.

*Pavement Section:* At the surface of borings B-1 through B-4 we encountered the existing pavement section. The section consisted of approximately 3 inches of asphaltic concrete (AC) over approximately 7 to 9 inches of base rock (GP Fill). The base rock consisted of angular gravel that resembled a 1-inch minus crushed rock product.

*Gravelly Silt Fill (ML Fill):* At the surface of IT-2 we encountered brown, damp, gravelly silt fill that extended to about 1<sup>1</sup>/<sub>2</sub> feet bgs.

Lean Clay (CL) – Missoula Flood Deposits: Beneath the pavement section and fill soils in B-1 through B-4 and IT-2, and at the surface of the remaining borings, we encountered native, lean clay alluvium. The lean clay was generally medium stiff to stiff, moist, brown with gray mottling, and exhibited moderate plasticity. This soil is consistent with the clay-phase of the Willamette Silt (Missoula Flood Deposits) mapped in the vicinity of the site and described in Appendix B. The lean clay extended to the full depths explored in IT-1 through IT-5 (4 feet bgs) and to depths of 8 to  $14\frac{1}{2}$  feet bgs in B-1 through B-5.

*Lean Clay (CL) – Troutdale Formation:* Beneath the lean clay alluvium in B-1 through B-5, we encountered red-brown to gray, medium stiff to very stiff, lean clay with varying amounts of sand-sized fragments of weathered to decomposed basalt and other lithics. This soil is consistent with the sediments of Troutdale formation mapped in the vicinity of the site and described in Appendix B, and extended to the full depth explored in borings B-1 through B-5, approximately  $21\frac{1}{2}$  to  $51\frac{1}{2}$  feet bgs.

#### 5.2 Groundwater

The borings were advanced using the mud rotary (wet) drilling method, which precludes direct observation of groundwater during advancement of the boring. As detailed above, standpipe piezometer was installed in boring B-1 on October 1, 2015. The water level upon completion of drilling was artificially elevated due to flushing of the borehole prior to installation of the piezometer. We allowed the water level to stabilize for several days then returned to the site and measured water levels within the piezometer. Water levels of 11½ feet and 13½ feet bgs were recorded on October 5 and 20, respectively.

We also reviewed well logs and water level data available at the Oregon Water Resources Department (OWRD) websites<sup>1,2</sup>. Our review indicated that groundwater levels typically ranged from about 5 to 20 feet bgs in the vicinity of the site. It should be noted that groundwater levels vary with local topography. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of

<sup>&</sup>lt;sup>1</sup> Oregon Water Resources Department, 2015. Water well logs available at <u>http://apps.wrd.state.or.us/apps/gw/well\_log</u>

<sup>&</sup>lt;sup>2</sup> Oregon Water Resources Department, 2015. Water Level Data and Hydrographs, available at <u>http://www.oregon.gov/owrd/pages/gw/well\_data.aspx</u>

the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental borings will often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors. Additionally, the on-site clay soils are conducive to formation of perched groundwater.

# 6.0 SITE SPECIFIC SEISMIC HAZARDS STUDY

#### 6.1 Overview

We performed a Site-Specific Seismic Hazards Study for the site in accordance with Section 1803 of the 2014 Oregon Structural Specialty Code (OSSC). The complete results of our hazards study are presented in the attached Appendix B. The following conclusions highlight the results of our SSSHS:

- We conclude that the soils encountered in the borings are non-liquefiable within the depths explored.
- We conclude there is a low risk of surface rupture from faulting.
- We conclude there is a negligible risk of surface rupture from lateral spread.
- We conclude there is a negligible risk of slope instability from a design-level earthquake.
- We conclude there is a negligible risk of seiche inundation at this site.

#### 6.2 Seismic Ground Motion Values

As detailed in Appendix B, we obtained earthquake ground motion parameters for the site based on the United States Geological Survey (USGS) Seismic Design Values for Buildings - Ground Motion Parameter Calculator<sup>3</sup>. The following table presents seismic ground motion values recommended for use in structural design of structures at this site.

	Parameter	Value
Mapped Acceleration	Spectral Acceleration, 0.2 second $(S_s)$	0.952g
Parameters	Spectral Acceleration, 1.0 second (S <sub>1</sub> )	0.435g
Coefficients	Site Coefficient, 0.2 sec. (Fa)	1.119
(Site Class D)	Site Coefficient, 1.0 sec. (F <sub>v</sub> )	1.565
Adjusted MCE Spectral	MCE Spectral Acceleration, 0.2 sec. ( $S_{MS}$ )	1.066g
Response Parameters	MCE Spectral Acceleration, 1.0 sec. (S <sub>M1</sub> )	0.681g
Design Spectral Response	Dectral Response Design Spectral Acceleration, 0.2 seconds (S <sub>DS</sub> )	
Accelerations	Design Spectral Acceleration, 1.0 second (S <sub>D1</sub> )	0.454g

Table 1
 Seismic Ground Motion Values (Section 1613.3.2 of 2014 OSSC)

<sup>&</sup>lt;sup>3</sup> United States Geological Survey, 2015. Seismic Design Parameters determined using: "U.S. Seismic Design Maps Web Application," from the USGS website <u>http://geohazards.usgs.gov/designmaps/us/application.php</u>.

# 7.0 PROPOSED REMODEL OF EXISTING AQUATIC CENTER BUILDING

We understand current plans for remodeling the existing aquatic center building include several new footings to carry new structural loads. The remodel will include demolition and backfill of the existing swimming pool, which is up to 12 feet deep. A second floor may also be constructed within the existing building. Based on information provided by the project structural engineer (WDY Structural + Civil Engineering), new structural loads associated with the remodel will be carried by new and existing foundations, with up to 80 kips on new columns and an additional 600 pounds per square foot on existing wall footings. We understand that several of the new columns are planned within the footprint of the existing swimming pool and will therefore be founded on the backfill placed during demolition of the pool. In addition, we understand that there will be new columns supported by shallow spread footings along the north wall of the existing structure.

No explorations were performed within or immediately adjacent to the existing building as part of this assignment, and no previous geotechnical report was available for our review. Based on the results of our nearby borings, soil conditions appear relatively uniform across the site and we assume this is the case beneath the existing building as well. Provided demolition and backfill of the existing features is performed in accordance with the recommendations presented later in this report, it is our opinion that suitable subgrade support for new foundations can be achieved on the proposed structural fill placed on native soils. Specific recommendations for design and construction of new foundations are presented in Section 9.5 below.

For the existing wall footings, we assume subgrade soil conditions are similar with those encountered in our explorations. Review of the 1970 as-built drawings provided by WDY indicates the existing wall footings that will be subjected to new structural loads are 5'3" wide. We assume these footings are founded on native soils and are of the opinion that the native soils can provide satisfactory subgrade support for the anticipated 600 psf increase in applied bearing pressure. Our analyses showed total settlements less than ½-inch under this anticipated 600 psf increase in applied bearing pressure.

We recommend CGT be provided the opportunity to observe soil conditions at the time of demolition/construction in order to confirm evaluate whether additional explorations or supplementary recommendations are warranted.

### 8.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the site may be developed as described in Section 1.1 of this report, provided the recommendations presented in this report are incorporated into the design and development. We conclude the primary geotechnical considerations at this site include:

- The presence of near-surface, moisture-sensitive soils that are susceptible to disturbance during wet weather.
- The presence of relatively shallow groundwater that may fluctuate seasonally.

These considerations are described in further detail in the following sections.

## 8.1 Shallow Groundwater

Groundwater was measured at depths ranging from approximately 11½ to 13½ feet bgs within the piezometer installed at the site in October 2015. Based on mottled coloration of the near-surface soils, we conclude the groundwater may fluctuate seasonally and/or perched groundwater may develop within a few feet of the site surface. Groundwater should be anticipated within deeper excavations at the site for construction of the new swimming pools and utilities. Geotechnical recommendations for dewatering of utility trenches and temporary excavations, as required, are presented in Section 9.2.4 of this report. Special considerations for dewatering during and following construction of the swimming pool excavation are provided in Section 9.9 of this report.

We recommend monitoring groundwater levels within the piezometer installed at the site over the coming wet season. This will assist in characterizing the seasonal fluctuations and help refine the design groundwater level, both considered useful for the design and construction of the proposed swimming pools. CGT would be pleased to perform periodic monitoring, upon request, for an additional fee.

#### 8.2 Moisture Sensitive Soils

The near-surface, lean clay (CL) soils are moisture sensitive and susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to the subgrade could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. If construction occurs during the wet season, we recommend measures be implemented to protect fine-grained subgrade in areas of repeated construction traffic and in foundation bearing areas. Recommendations for wet weather construction are presented in Section 9.3 of this report. Re-use of the on-site soils as structural fill during wet times of the year will require special consideration as discussed in Section 9.4.1.3 of this report.

#### 9.0 RECOMMENDATIONS

# 9.1 Site Preparation

#### 9.1.1 <u>Demolition & Stripping</u>

Demolition of existing site features (e.g. pavements, playground structures, swimming pools, etc.) should include removal of all remnants from within, and for a minimum 5-foot margin around, the footprint of the proposed building. Stripping of rooted topsoil and undocumented fill should similarly extend a minimum a 5 feet beyond the footprint of the proposed building. The geotechnical engineer or his representative should provide recommendations for actual stripping depths based on observations during site preparation. Stripped asphalt, base rock, and concrete or other non-organic rubble should be transported off-site for disposal or may stockpiled for re-use as structural fill. If re-used as structural fill, these materials should be processed in accordance with the recommendations provided in Section 9.4.1.1.

The geotechnical engineer or his representative should provide recommendations for actual stripping depths based on observations during site stripping.

# 9.1.2 <u>Grubbing</u>

Grubbing of trees and shrubs should include the removal of the root mass, and roots greater than 1 inch in diameter. Grubbed materials should be transported off-site for disposal. Where root masses are

removed, the resulting excavation should be properly backfilled with imported granular structural fill in conformance with Section 9.4.2 of this report.

#### 9.1.3 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath the new building and hardscaping features should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill in conformance with Section 9.4.2 of this report. Buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 9.4.2 of this report.

#### 9.1.4 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations regarding erosion control.

# 9.2 Temporary Excavations

# 9.2.1 <u>Overview</u>

Conventional earthmoving equipment in proper working condition should be capable of making necessary excavations for the anticipated site cuts as described earlier in this report. All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A "competent person", as defined by OR-OSHA, should be on-site during construction in accordance with regulations presented by OR-OSHA. CGT's current role on the project does <u>not</u> include review or oversight of excavation safety.

#### 9.2.2 <u>Utility Trenches</u>

Temporary trench cuts should stand near vertical to depths of approximately 4 feet in the native lean clay (CL). Some instability may occur in this soil if groundwater seepage is encountered. If seepage undermines the stability of the trench, or if sidewall caving is observed during excavation, the sidewalls should be flattened or shored. If groundwater is present at the base of utility excavations, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 9.4.4 of this report.

#### 9.2.3 OSHA Soil Type

For use in the planning and construction of temporary excavations up to 15 feet in depth, an OSHA soil type "B" may be used for the native, medium stiff to stiff, lean clay (CL).

# 9.2.4 <u>Dewatering</u>

Groundwater was measured at depths ranging from approximately 11½ to 13½ feet bgs within the piezometer installed at the site in October 2015. Based on mottled coloration of the near-surface soils, we conclude the groundwater may fluctuate seasonally and/or perched groundwater may develop within a few feet of the site surface. On-going monitoring of water levels within the piezometer over the coming winter and spring should provide useful insight into seasonal fluctuations. For preliminary planning

purposes, we recommend that groundwater be expected within deeper excavations at the site during construction of the new swimming pools and utilities.

Depending upon final design elevations and the time of year earthwork occurs, dewatering of excavations may be required in order to maintain dry working conditions during construction. Recognizing the relatively low transmissivity of the lean clay (CL) soils, we anticipate pumping from multiple sumps will be effective in removing groundwater and maintaining relatively dry working conditions within excavations at the site. The sumps should be installed to remove water to a depth of at least 2 feet below the lowest point of the excavation. Pumping from well points may be required for large excavations that extend below the groundwater level.

The geotechnical engineer should be consulted to provide specific recommendations related to excavation dewatering during excavation. Depending on several factors, the sumps or well points mentioned above could be installed permanently. The project civil engineer or architect should determine the appropriate size, number, and location of sump pumps and wells, if necessary.

# 9.2.5 <u>Excavations near Foundations</u>

Excavations near existing footings should <u>not</u> extend within a 1H:1V (horizontal to vertical) plane projected out and down from the outside, bottom edge of the footings. In the event that excavation needs to extend within the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

#### 9.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and the middle of September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer or his representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

#### 9.3.1 <u>General</u>

The on-site soils (CL) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. For construction that occurs during the wet season, site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. A geotechnical representative from CGT should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill in conformance with Section 9.4.2 of this report.

#### 9.3.2 <u>Geotextile Separation Fabric</u>

CGT recommends that a geotextile separation fabric be placed as a barrier between the prepared subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile

fabric should meet the requirements presented in the current Oregon Department of Transportation (ODOT) Standard Specification for Construction, Section 02320.

#### 9.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a <u>minimum</u> of 18 inches of imported granular material. For light staging areas, 12 inches of imported granular material should be sufficient. Additional granular material or geo-grid reinforcement may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 9.4.2 of this report and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, <u>non-vibratory</u> roller until well-keyed.

#### 9.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material should be placed over fine-grained, foundation subgrades in order to provide protection from foot traffic during inclement weather. The imported granular material should be in conformance with Section 9.4.2 of this report, contain a maximum particle size of 1 inch, and have less than 5 percent passing the U.S. Standard No. 200 Sieve. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using <u>non-vibratory</u> equipment until well-keyed.

#### 9.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill (prior to placement). The geotechnical engineer or his representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof roll tests with suitable equipment. Structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

#### 9.4.1 <u>On-Site Soils – General Use</u>

#### 9.4.1.1 Asphalt & Concrete Debris

Asphalt and concrete demolition debris can be re-used as structural fill if processed/crushed into material that is fairly well graded between coarse and fine. The processed/crushed concrete and/or asphalt should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 9.4.2 of this report.

#### 9.4.1.2 <u>Undocumented Gravel Fill (GP and GP-GM FILL)</u>

Re-use of the gravel fill materials (base rock underlying the existing pavements) as structural fill is feasible, provided they can be kept free of debris, deleterious materials, and particles larger than 4 inches in diameter. If used as structural fill, these materials should be prepared in conformance with Section 9.4.2 of this report.

# 9.4.1.3 Lean Clay (CL)

Re-use of the on-site lean clay as structural fill may be difficult because <u>this soil is sensitive to small</u> <u>changes in moisture content and difficult, if not impossible, to adequately compact during wet weather</u>. We anticipate the moisture content of this soil will be higher than the optimum moisture content for satisfactory compaction. Therefore, <u>moisture conditioning (drying) should be expected in order to achieve</u> <u>adequate compaction</u>. If used as structural fill, this soil should be free of organic matter, debris, and particles larger than 4 inches. When used as structural fill, this soil should be placed in lifts with a maximum thickness of about 8 inches at moisture contents within –1 and +3 percent of optimum, and compacted to not less than 92 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

If the on-site soils cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

#### 9.4.2 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½ inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

Compaction of granular fill materials with high percentages of particle sizes in excess of 1½-inches should be evaluated by periodic proof-roll observation or continuous observation by the geotechnical engineering representative during fill placement, since it cannot be tested conventionally using a nuclear densometer. Such materials should be "capped" with a minimum of 12 inches of ¾-inch-minus (or finer) granular fill under all structural elements (footings, concrete slabs, etc.).

#### 9.4.3 Floor Slab Base Rock

Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of <sup>3</sup>/<sub>4</sub> inch, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

#### 9.4.4 <u>Trench Base Stabilization Material</u>

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

#### 9.4.5 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of <sup>3</sup>/<sub>4</sub> inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Peekfill Zene	Recommended Minimum Relative Compaction									
Backfill Zone	Structural Areas <sup>1</sup>	Landscaping Areas								
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	88% ASTM D1557 or pipe manufacturer's recommendation								
Above Pipe Zone	92% ASTM D1557	90% ASTM D1557								
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557								

#### 9.4.6 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as "controlled density fill" or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, State of Oregon, Standard Specifications for Highway Construction. The geotechnical engineer's representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day's placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength. If CLSM is considered for use on this site, please contact the geotechnical engineer for site-specific recommendations.

#### 9.5 Shallow Foundations

#### 9.5.1 <u>Subgrade Preparation</u>

Satisfactory subgrade support for shallow foundations associated with the proposed building can be achieved on the native, medium stiff to stiff, lean clay (CL) soils, or structural fill that is properly placed and compacted on these soils during construction. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with structural fill in conformance with Section 9.4.2 of this report. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

#### 9.5.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the most recent, Oregon Structural Specialty Code (OSSC). As a guideline, we recommend individual spread footings have a minimum width of 24 inches. Subject to review of the project structural engineer, we recommend continuous wall footings have a minimum width of 18 inches. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade.

#### 9.5.3 <u>Bearing Pressure & Settlement</u>

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 2,000 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½-inch.

# 9.5.4 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 150 pounds per cubic foot (pcf) is recommended for design of footings confined by the native soils described above, or imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

- 1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
- 2. The adjacent grade must be level,
- 3. The static ground water level must remain below the base of the footings throughout the year.
- 4. Adjacent floor slabs, pavements, or the upper 12-inches of adjacent, unpaved areas should <u>not</u> be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.35 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

#### 9.5.5 <u>Subsurface Drainage</u>

Recognizing the fine-grained nature of the site soils, we recommend placing foundation drains at the exterior, base elevations of continuous wall footings. Foundation drains should consist of a minimum 4-inch-diameter, perforated, HDPE (High Density Polyethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile filter fabric in order to provide separation from the surrounding soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. A representative from CGT should be contacted to observe the drains prior to backfilling. Roof drains should <u>not</u> be tied into foundation drains.

#### 9.6 Mat Foundations

The recommendations presented within this section assume the swimming pool bottoms slabs are designed as mat foundations.

#### 9.6.1 <u>Subgrade Preparation</u>

We recommend mat foundations be founded on a minimum 6-inch-thick aggregate base placed on the native, medium stiff to stiff, lean clay (CL) soils. The aggregate base section is recommended to provide a more uniform surface for placing concrete and supporting the mat foundation. The aggregate base should be in conformance with Section 9.4.3 of this report and extend a minimum of 1-foot laterally beyond each side of the mat foundation.

Although not anticipated, in the event soft, loose, organic, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical engineer or his representative at the time of construction. The resulting excavation should be backfilled with imported granular structural fill in conformance with Section 9.4.2 of this report.

## 9.6.2 Minimum Embedment

To help mitigate potential frost action, mat foundations should be founded a <u>minimum</u> of 18 inches below the lowest, permanent, adjacent grade.

#### 9.6.3 <u>Bearing Pressure</u>

We anticipate the maximum uniform contact pressure (from dead and long-term live loads) acting on the swimming pool mat foundations will be on the order of 650 psf or less. This value may be considered the recommended maximum allowable soil bearing pressure for use in design. This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by <sup>1</sup>/<sub>3</sub> when considering transient (seismic or wind) loads. If an increased allowable soil bearing pressure is desired for design, the geotechnical engineer should be consulted.

#### 9.6.4 Modulus of Subgrade Reaction

For the mat foundation founded as recommended above, a modulus of subgrade reaction up to 75 pounds per cubic inch (pci) may be used for design (considering static loading). If a higher modulus of subgrade reaction value is desired for design, the geotechnical engineer should be consulted.

#### 9.6.5 Lateral Capacity

A maximum passive earth (equivalent fluid) pressure of 150 pounds per cubic foot (pcf) is recommended for design for mat foundations confined by the native soils described above or imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

- 1. Concrete must be poured neat in excavations or the foundation must be backfilled with imported granular structural fill,
- 2. The adjacent grade must be level,

- 3. The static ground water level must remain below the base of the foundation throughout the year.
- 4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should <u>not</u> be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for mat foundations founded as recommended.

# 9.6.6 <u>Post-Construction Settlement (Static Loading)</u>

For the recommended design bearing pressure, total post-construction settlement of the mat foundation is anticipated to be less than ½-inch. Similarly, differential settlement ("tilt") across the mat foundation should not exceed ¼-inch. These settlement estimates consider static (dead + long-term live) loads only.

# 9.7 Rigid Retaining Walls

The following sections pertain to the anticipated, rigid, cast-in-place swimming pool walls. CGT anticipates the swimming pool excavation will be laid-back in accordance with OSHA regulations as discussed in Section 9.2 of this report. Therefore, CGT anticipates the area between the excavation and the cast-in-place pool walls will be backfilled with imported granular structural fill.

# 9.7.1 Footings

Retaining wall footings should be designed and constructed in conformance with the recommendations presented for shallow or mat foundations in Sections 9.5 or 9.6 of this report, as applicable.

#### 9.7.2 <u>Backfill</u>

Retaining walls should be backfilled with imported granular structural fill in conformance with Section 9.4.2 and contain less than 5 percent passing the U.S. Standard No. 200 Sieve. The backfill should be compacted to a minimum of 90 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). When placing fill behind walls, care must be taken to minimize undue lateral loads on the walls. Heavy compaction equipment should be kept at least "H" feet from the back of the walls, where "H" is the height of the wall. Light mechanical or hand tamping equipment should be used for compaction of backfill materials within "H" feet of the back of the walls.

#### 9.7.3 Drainage Considerations

Where incorporated, we recommend retaining wall drains consist of a minimum 4-inch diameter, perforated, HDPE (High Density Poly-Ethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile fabric in order to provide separation from the surrounding soils. Retaining wall drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or his representative should be contacted to observe the drains prior to backfilling.

Deeper portions of the proposed swimming pools are expected to be located below the groundwater table for at least part of the year. Depending on preferences of the design team, the swimming pool walls may or may not be actively drained (i.e., sump pumped) full-time. If full-time, active drainage is not incorporated, then hydrostatic forces will need to be considered in the design of the retaining walls. We have presented design parameters for both scenarios below.

#### 9.7.4 Design Parameters

The following sections present design parameters for retaining walls with and without active drainage provisions.

#### 9.7.4.1 Design Case 1 – Swimming Pool Retaining Walls are Actively Drained

For rigid retaining walls founded, backfilled, and actively drained as recommended above, the following table presents parameters recommended for design.

Table 3	Design Parameters for Rigid Retaining Walls (Drained Conditions)									
Retaining Wall Condition	Modeled Backfill Condition	Static Equivalent Fluid Pressure (S <sub>A</sub> )	Additional Seismic Equivalent Fluid Pressure (SAE)	Surcharge from Uniform Load, q, Acting on Backfill Behind Retaining Wall						
Not Restrained from Rotation	on Level (i = 0)	29 pcf	12 pcf	0.22*q						
Restrained from Rotation	Level (i = 0)	52 pcf	5 pcf	0.38*q						

Note 1. Refer to the attached Figure 16 for a graphical representation of static and seismic loading conditions. Seismic component of active thrust acts at 0.6H above the base of the wall.

Note 2. Seismic (dynamic) lateral loads were computed using the Mononobe-Okabe Equation as presented in the 1997 Federal Highway Administration (FHWA) design manual.

The above design recommendations are based on the assumptions that:

- (1) the walls consist of concrete cantilevered retaining walls ( $\beta = 0$  and  $\delta = 24$  degrees, see Figure 16)
- (2) the walls are 15 feet or less in height
- (3) the backfill is drained and consists of imported granular structural fill ( $\phi$  = 38 degrees)
- (4) the swimming pool walls are actively drained (i.e., sump pumped)
- (5) no line load, point, or area load surcharges are imposed behind the walls
- (6) the grade behind the wall is level, or sloping down and away from the wall, for a distance of 10 feet or more from the wall
- (7) the grade in front of the walls is level or sloping up for a distance of at least 5 feet from the wall

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

#### 9.7.4.2 Design Case 2 – Swimming Pool Retaining Walls are NOT Actively Drained

For this design case, we anticipate the retaining walls will be backfilled with imported granular structural fill, but groundwater will not be actively pumped away. This design case considers hydrostatic forces behind the wall due to the presence of groundwater at a seasonal high level, and will be of importance primarily when water within the swimming pool is drained for maintenance. The following table presents parameters recommended for design of retaining walls for this case.

#### ATTACHMENT 5: APPLICATION

Chehalem Aquatic & Fitness Center Improvements Newberg, Oregon CGT Project Number G1504218 October 23, 2015

Table 4 De	Design Parameters for Rigid Retaining Walls (Undrained Conditions)									
Retaining Wall Condition	Assumed Backfill Condition	Lateral Earth Pressure, σ <sub>A</sub> 1,₂ (psf)	Additional Seismic Equivalent Fluid Pressure (S <sub>AE</sub> )	Surcharge from Uniform Load, q, Acting on Backfill Behind Retaining Wall						
Not Restrained from Rotation	Level (i = 0)	(30 pcf)*H + (49 pcf)*h	12 pcf	0.22*q						
Restrained from Rotation	Level (i = 0)	(54 pcf)*H + (38 pcf)*h	5 pcf	0.38*q						

1. H = full height of retaining wall (in feet).

2. h = modeled depth of groundwater behnd retaining wall (in feet). The most conservative approach is to model full hydrostatic loading conditions. In this model, h = H - t, where t is the thickness of the adjacent hardscaping element.

The above design recommendations are based on the assumptions that:

- (1) the walls consist of concrete cantilevered retaining walls ( $\beta = 0$  and  $\delta = 24$  degrees, see Figure 16)
- (2) the walls are 15 feet or less in height
- (3) the backfill is drained and consists of imported granular structural fill ( $\phi$  = 38 degrees)
- (4) the swimming pool walls are <u>not</u> actively drained (i.e., hydrostatic pressure considered)
- (5) no line load, point, or area load surcharges are imposed behind the walls
- (6) the grade behind the wall is level, or sloping down and away from the wall, for a distance of 10 feet or more from the wall
- (7) the grade in front of the walls is level or sloping up for a distance of at least 5 feet from the wall

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

#### 9.7.5 <u>Surcharge Loads</u>

Where present, surcharges from adjacent site features (i.e. foundations, slabs, pavements, etc.) should be evaluated in design of retaining walls at the site. Methods for calculating lateral pressures on rigid retaining walls from strip, line, and vertical point loads are presented on the attached Figure 17.

#### 9.8 Floor Slabs

#### 9.8.1 <u>Subgrade Preparation</u>

Satisfactory subgrade support for slabs constructed on grade, supporting up to 200 psf area loading, can be obtained from the native, medium stiff to stiff, lean clay (CL) soils, or structural fill that is properly placed and compacted on these materials during construction. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with structural fill in conformance with Section 9.4.2 of this report. The maximum particle size of over-excavation backfill should be limited to 1½ inches.

#### 9.8.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock) in conformance with Section 9.4.2 of this report.

#### 9.8.3 Design Considerations

For floor slabs constructed as recommended, a modulus of subgrade reaction of 75 pci is recommended for the design of the floor slab. Floor slabs constructed as recommended will likely settle less than ½-inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

#### 9.8.4 <u>Subgrade Moisture Considerations</u>

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

#### 9.9 Swimming Pool - Groundwater Considerations

Draining a swimming pool for cleaning or maintenance becomes problematic in areas of high groundwater due to the potential of "floating" the shell of the swimming pool, which can result in significant damage to the shell. One option for mitigating this risk includes installing an underslab drainage system, consisting of a series of perforated drain pipes embedded in the rock section beneath the swimming pool. The drainpipes should be located not more than 10 feet apart, run perpendicular to the long axis of the pool, and should consist of minimum 4-inch-diameter, perforated pipes. The drainpipes should be encased in a minimum of 12 inches of drain rock, with the base of the drain pipes located within the lower 1/3 of the rock section. The drain rock should be of uniform size, 1 to 11/2 inches in diameter, free of fines, and enveloped in a non-woven geotextile filter/separation fabric. The drainpipes should be graded to maintain positive drainage to a sump or other suitable discharge point. The system could be pumped or otherwise drained when draining of the swimming pool is needed. The overall approach for drainage and design will rest with the pool designer.

#### 9.10 Flexible Pavements

#### 9.10.1 <u>Subgrade Preparation</u>

Pavement subgrade preparation should be in conformance with Section 9.1 of this report. Pavement subgrade surfaces should be crowned (or sloped) for proper drainage in accordance with specifications provided by the project civil engineer.

# 9.10.2 Input Parameters

Design of the hot mixed asphaltic concrete (HMAC) pavement sections presented below was based on the parameters presented in the following table and the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual. If any of the items listed need revised, please contact us and we will reassess the provided design sections.

		MAC Pavement Design			
Design Value <sup>1</sup>	Inpu	Design Value <sup>1</sup>			
20 years	Resilient Modulus	Subgrade (Native Lean Clay) <sup>3</sup>	4,500 psi		
0 percent		Crushed Aggregate Base	22,500 psi		
4.2 initial, 2.5 terminal	Structural	Crushed Aggregate Base	0.10		
75 percent	Coefficient	Asphalt	0.42		
0.49	Vehicle Traffic <sup>4</sup> APAO Level I (Very Light)		Vehicle Traffic <sup>4</sup> APAO Level I (Very Light)		10,000
1.0	(ESALs)	APAO Level II (Light)	50,000		
	20 years 0 percent 4.2 initial, 2.5 terminal 75 percent 0.49	20 yearsResilient Modulus0 percent4.2 initial, 2.5 terminalStructural75 percentCoefficient0.49Vehicle Traffic4	20 years     Resilient Modulus     Subgrade (Native Lean Clay) <sup>3</sup> 0 percent     Crushed Aggregate Base       4.2 initial, 2.5 terminal     Structural       75 percent     Coefficient       0.49     Vehicle Traffic <sup>4</sup>		

<sup>1</sup> If any of the above parameters are incorrect, please contact us so that we may revise our recommendations, if warranted.

<sup>2</sup> Assumes good drainage away from pavement, base, and subgrade is achieved by proper crowning of subgrades.

<sup>3</sup> Values based on experience with similar soils in the region.

<sup>4</sup> ESAL = Total 18-Kip equivalent single axle load. Traffic levels taken from Table 3.1 of APAO manual. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

#### 9.10.3 Recommended Minimum Sections

The following table presents the minimum HMAC pavement sections for the design traffic levels indicated in Table 5 above, based on the referenced AASHTO procedures.

Table 6	Recommended Minimum HMAC Pavement Sections							
	Materia	Material Thickness (inches)						
Material	APAO Level I (Passenger Car Parking)	APAO Level II (Bus/Entrance/Service Drive Lanes)						
HMAC Pavement	3	4						
Aggregate Base <sup>1</sup>	7	9						
Subgrade Soils	Prepared in conform	ance with Section 9.1 of this report.						

<sup>1</sup> Thickness shown assumes <u>dry weather</u> construction. Increased base rock sections and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 9.3 for additional discussion.

#### 9.10.4 HMAC Pavement Materials

We recommend pavement aggregate base consist of dense-graded aggregate in conformance with Section 02630.10 of the most recent State of Oregon, Standard Specifications for Highway Construction (OSSC), with the following additional considerations. We recommend the material consist of crushed rock or gravel, have a maximum particle size of 1½ inches, and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

We recommend asphalt pavement consist of Level 2, ½-inch, dense-graded HMAC in conformance with the most recent OSSC. Asphalt pavement should be compacted to at least 91 percent of the material's theoretical maximum density as determined in general accordance with ASTM D2041 (Rice Specific Gravity).

# 9.11 Additional Considerations

#### 9.11.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site stormwater infiltration system (designed by others), or other suitable discharge point. Paved surfaces and grading near or adjacent to the building should be sloped to drain away from the building. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should <u>not</u> be directed into foundation drains.

#### 9.11.2 Expansive Potential

The near surface native soils consist of lean clay (CL). Based on experience with similar soils in the area of the site, these soils are not considered to be susceptible to appreciable movements from changes in moisture content. Accordingly, no special considerations are required to mitigate expansive potential of the near surface soils at the site.

#### 10.0 RECOMMENDED ADDITIONAL SERVICES

#### 10.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors. As indicated previously, we recommend the geotechnical engineer be consulted to provide specific geotechnical recommendations and supplemental recommendations for design and construction for the selected foundation system.

#### **10.2** Observation of Construction

Satisfactory earthwork, foundation, floor slab, retaining wall, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend the geotechnical engineer or their representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer or their representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping & Grubbing
- Subgrade Preparation for Structural Fills, Shallow Foundations, Retaining Walls, Floor Slabs & Pavements
- Compaction of Structural Fill, Retaining Wall Backfill, & Utility Trench Backfill

- Placement of Foundation, Retaining Wall, & Other Drains
- Compaction of Base Rock for Floor Slabs & Pavements
- Compaction of HMAC for Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

#### 11.0 LIMITATIONS

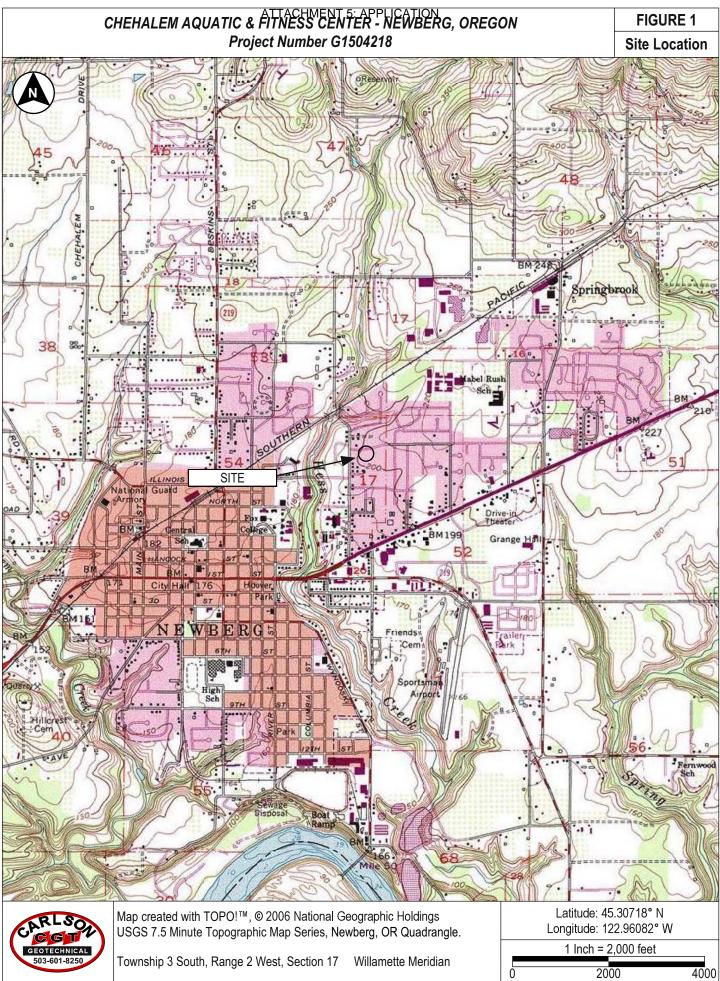
The conclusions and recommendations presented in this report are based on the information provided to us, results of the field investigation, laboratory data, and professional judgment. We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

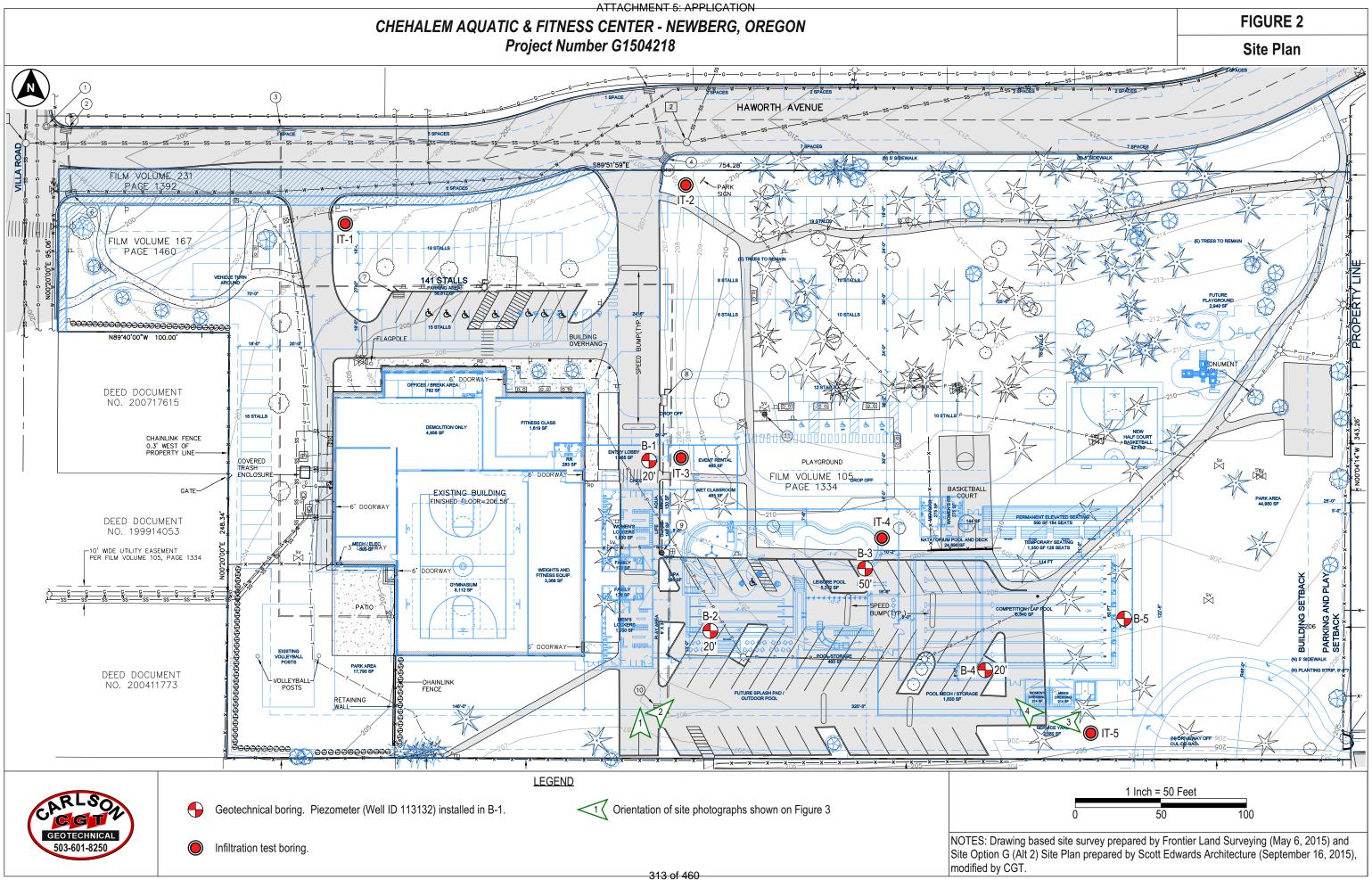
We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.





# CHEHALEM AQUATIC & FITNESS CENTER - NEWBERG, OREGON Project Number G1504218

FIGURE 3 Site Photographs



Photograph 1: Looking north along east side of existing building

Photograph 2: Looking northeast across parking lot



Photograph 3: Looking west across parking lot, existing building in background

Photograph 4: Looking northwest across parking lot, existing building in background



See Figure 2 for approximate photograph locations and directions. Photographs were taken at the time of our fieldwork.

CARLSON	CHEHALEM AQUATIC & FITNESS CENTER - NEWBERG, OREGON	FIGURE 4							
GEOTECHNICAL 503-601-8250	Project Number G1504218	EXPLORATION KEY							
	GEOTECHNICAL LABORATORY TESTING								
	Atterberg limits (plasticity) test results (ASTM D4318). PL = Plastic Limit. LL = Liqu MC= Moisture Content (ASTM D2216)	uid Limit.							
□ FINES CONTENT (%	Percentage passing the U.S. Standard No. 200 Sieve (ASTM D1140)								
	SAMPLING								
🖑 GRAB	Grab sample								
SPT	<b>Standard Penetration Test</b> (SPT), which consists of driving a 2-inch, outside-diam pler into the undisturbed formation with repeated blows of a 140-pound, automatic cal distance of 30 inches (ASTM D1586). The number of blows (N-value) requires the last 12 inches of an 18-inch sample interval is used to characterize the soil of density. The drill rig was equipped with an automatic hammer to conduct the SP ciency, "raw" (uncorrected) and $N_{60}$ (normalized) SPT N-values are noted on the box	hammer falling a verti- d to drive the sampler consistency or relative Ts. The hammer effi-							
мс	Modified California, a 3-inch, outside-diameter, split-spoon sampler.								
CORE	Rock Coring interval								
SH	<b>Shelby Tube</b> , a 3-inch, inner-diameter, thin-walled, steel tube push sampler (ASTI lect relatively undisturbed samples of fine-grained soils.	M D1587) used to col-							
WDCP	<b>Wildcat Dynamic Cone Penetrometer</b> (WDCP) test, which consists of driving 1.1-inch diameter, steel rods with a 1.4-inch diameter, cone tip into the ground using a 35-pound drop hammer with a 15-inch free-fall height. The number of blows required to drive the steel rods is recorded for each 10 centimeters (3.94 inches) of penetration. The blow count for each interval is then converted to the corresponding SPT $N_{60}$ values.								
DCP	<b>Dynamic Cone Penetrometer</b> (DCP) test, which consists of driving a 20-mm diameter, hardened stee cone on 16-mm diameter steel rods into the ground using a 10-kg drop hammer with a 460-mm free-fa height. The depth of penetration in millimeters is recorded for each drop of the hammer.								
POCKET PEN. (tsf)	<b>Pocket Penetrometer</b> test, which is a hand-held instrument that provides an unconfined compressive strength in tons per square foot (tsf) of cohesive, fine-grain								
	CONTACTS								
	<ul> <li>Observed (measured) contact between soil or rock units.</li> </ul>								
	<ul> <li>Inferred (approximate) contact between soil or rock units.</li> </ul>								
	<ul> <li>Transitional (gradational) contact between soil or rock units.</li> </ul>								

# CHEHALEM AQUATIC & FITNESS CENTER - NEWBERG, OREGON Project Number G1504218

_	Class	sification of Terms	and Conten	t		USCS Grain	n Size
NAME: MINOR Constituents (12-50%); MAJOR Constituents (>50%): Slightly (5-12%)					nes		<#200 (.075 mm)
Constituents (>50%); Slightly (5-12%) Relative Density or Consistency Color Moisture Content						Fine	#200 - #40 (.425 mm)
					and	Medium	#40 - #10 (2 mm)
						Coarse	#10 - #4 (4.75)
	Plasticity	Jonton		G	ravel	Fine	#4 - 0.75 inch
		nstituents (0-5%)				Coarse	0.75 inch - 3 inches
		ain Shape, Approximate G Cement, Structure, Odor.		C	obbles		3 to 12 inches; scattered <15% est.
		Name or Formation: Fill, V					numerous >15% est.
	etc.	, .	,		oulders		> 12 inches
				Relativ	e Density or Consi		
	Granular	r Material			Fine-Gra	ained (cohesive) Materials	
	PT	Density	SPT	Torvane tsf		Consistancy	Manual Penetration Test
N-\	/alue	Bonoky	N-Value	Shear Streng		d	
			<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
0	- 4	Very Loose	2 - 4	0.13 - 0.25	0.25 - 0.5		Thumb penetrates about 1 inch
4	- 10	Loose	4 - 8	0.25 - 0.50	0.50 - 1.0	0 Medium Stiff	Thumb penetrates about 1/4 inch
10	- 30	Medium Dense	8 - 15	0.50 - 1.00	1.00 - 2.0	0 Stiff	Thumb penetrates less than $rac{1}{4}$ inch
30	- 50	Dense	15 - 30	1.00 - 2.00	2.00 - 4.0	0 Very Stiff	Readily indented by thumbnail
>	50	Very Dense >30 >2.0			>4.00	Hard	Difficult to indent by thumbnail
		Mois	sture Conte	nt			Structure
amp	Some mois	ture but leaves no moistu				Laminated: Alternating layer	
amp: loist:	: Some mois Leaves mois Visible free w	ture but leaves no moistu sture on hand ater, likely from below wa	re on hand ter table	Dilatancy	Touchness	Laminated: Alternating layer Fissured: Breaks along defin Slickensided: Striated, polish	s < 6 mm thick nite fracture planes ned, or glossy fracture planes
amp: loist: Vet: N	: Some mois Leaves mois √isible free w <b>Plasti</b>	ture but leaves no moistur sture on hand ater, likely from below wa icity Dry Stree	re on hand ter table ngth	Dilatancy	Toughness	Laminated: Alternating layer Fissured: Breaks along defin	s < 6 mm thick nite fracture planes ned, or glossy fracture planes an be broken down into small
loist:	: Some mois Leaves mois Visible free w	ture but leaves no moistu sture on hand ater, likely from below wa icity Dry Stree Low Non to L	re on hand ter table ngth ow	Dilatancy Slow to Rapid None to Slow	Toughness Low, can't roll Medium	Laminated: Alternating layer Fissured: Breaks along defin Slickensided: Striated, polish Blocky: Cohesive soil that ca angular lumps which resist fu	s < 6 mm thick nite fracture planes ned, or glossy fracture planes an be broken down into small nther breakdown
ioist: loist: /et: \ ML CL MH	: Some mois Leaves mois Visible free w Plasti Non to Low to M Medium	ture but leaves no moistur sture on hand ater, likely from below wa icity Dry Stree Low Non to L Medium to Low to Me	re on hand ter table ngth ow High dium	Slow to Rapid None to Slow None to Slow	Low, can't roll Medium Low to Medium	Laminated: Alternating layer Fissured: Breaks along defin Slickensided: Striated, polish Blocky: Cohesive soil that ca angular lumps which resist fu Lenses: Has small pockets of	s < 6 mm thick nite fracture planes ned, or glossy fracture planes an be broken down into small rther breakdown of different soils, note thickness
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Additional References: ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes and ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

	RL	SOA	Carlson Geotechnical ATTACHMENT 5 7185 SW Sandburg St., Suite 110	: AF	PLIC	ATION				F	IGl	JRE 6		
C <sup>r</sup>	CG	NICAL	Tigard, OR 97281							В	ori	ng B-1		
	503-601-	8250	Telephone: 503-601-8250 Fax: 503-601-8254									-	GE 1	OF 1
CLIEN	IT _Cł	nehale	m Park and Recreation District	PR	OJEC	T NAME	Cheh	alem Aqua	atic & I	Fitnes	s Cen			
PROJ	ECT N	UMBE	R _G1504218	PR	OJEC	T LOCAT		1802 Hawa	orth Av	/e - Ne	wber	g, OR		
DATE	STAR	TED _	10/1/15         GROUND ELEVATION _ 206 ft	EL	EVAT		UM _C	ity of Newl	berg - :	See Fi	igure	2		
DRILL	ING C	ONTR	ACTOR Subsurface Technologies	LO	GGEE	<b>BY</b> <u>M</u> .	David	Irish	REVI	EWED	BY _	Jeff Jones		
EQUIF	MEN	Die	drich D-50 Track		SEEP	AGE								
DRILL	ING N	IETHO	D Mud Rotary					END						
NOTE	s			Ţ	GROL	INDWAT	ER 456	6 HOURS A	AFTER	DRIL	LING	13.5 ft / E	El. 192.8	5 ft
ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	o DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71%	DRY UNIT WT. (pcf)	□ F 0	SPT N <sub>SP</sub> PL M FINES COM 20 40	L C NTENT	L I
205	$\times$	GP	ASPHALT: Approximately 3 inches thick.										-	
		<u>Fill</u>	<b>GRAVEL FILL:</b> Gray. damp, angular, and up to 1 / inch in diameter (resembles 1"-0 crushed rock).		F -	1								
F -			<b>LEAN CLAY:</b> Medium stiff, light brown, damp, moderate plasticity. {Missoula Flood Deposits}		-	L			<u> </u>	-			-	
						SPT	89	2-5-4 (9)	8		•			
						/		(-)		-				
		CL			_ 5									
200						SH 2	100			92		• 32		
					L -	_						32		
					L _		100	2-3-3 (6)	5					
								(0)		-				
			LEAN CLAY: Medium stiff, brown to red-brown,		10									
195			moist, moderate plasticity, with sand-sized fragments of decomposed rock. {Troutdale			SPT	100	2-3-3	6	1		•		
_ 100			Formation}			4		(6)		-	IT	• 31		
				▼		SPT 5	100	3-3-4 (7)	7					
			Groundwater measured in piezometer at approximately 13½ feet bgs on October 20, 2015	-				(7)		-				
			Stiff below about 15 feet bgs.		_ 15					-	$\square$	· · ·		:
190		CL	Still below about 13 leet bys.		L -	SPT 6	100	2-4-5 (9)	9			29		
L _					L -	<u> </u>				-	$  \rangle$			
					L _						$  \rangle$			
														-
					20									
 185			Very stiff, mottled brown with gray below about 20			SPT	100	7-11-13	27					
			feet bgs.			7		(24)	21					
			<ul> <li>Boring terminated at a depth of about 21½ feet bqs.</li> </ul>											
			<ul> <li>No groundwater or caving observed in borehole.</li> <li>Piezometer (Well ID 113132) installed in</li> </ul>											
<u> </u>			borehole, screened interval between 10 and 20											
<u>-</u> -			feet bgs. Backfilled with silica sand, capped with quickrete grout and flushmount well monument.											
180														
· – – –			317 of	160	<u>۱</u>									

317 of 460

	0	RL.	SO	Carlson Geotechnical ATTACHMENT 5 7185 SW Sandburg St., Suite 110	: Al	PLIC	ATION				F	IGl	JRE 7		
	G	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	ori	ng B-2		
		503-601-8	250	Fax: 503-601-8254									PA	GE 1	OF 1
C	LIEN	IT _ Ch	ehale	m Park and Recreation District									nter Improv	ements	;
-				<b>R</b> _G1504218					1802 Hawo						
				10/2/15 GROUND ELEVATION 206.5 ft					-	-		-			
				ACTOR Subsurface Technologies											
				drich D-50 Track											
				Mud Rotary					END TER DRILL						
		3			-	GROC				-	1				
		0			GROUNDWATER		SAMPLE TYPE NUMBER	۲ %	с) E	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71%	DRY UNIT WT. (pcf)	4	SPT N <sub>SPT</sub>	VALU	E▲
	(ff)	PHIC	C.S.	MATERIAL DESCRIPTION	M	DEPTH (ft)		D ER	NTS NTS	ALU e =	GJ/		PL	L	Ļ
	1) 1	GRAPHIC LOG	U.S.	WATERIAE DESCRIPTION	NN		NUN	RECOVERY ( (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	Hamm	59		М		•
ļ	Ū	0			GRO		SAI	RE	ΞZ		R	F	FINES CON 20 40		
F	-	××××	GP	ASPHALT: Approximately 3 inches thick.		0						0	20 40	<u>60</u>	80 100
2	205		Fill	GRAVEL FILL: Gray. damp, angular, and up to 1 //inch in diameter (resembles 1"-0 crushed rock).											
				LEAN CLAY: Medium stiff, light brown, damp,											
Γ	_			moderate plasticity. {Missoula Flood Deposits}			SPT	100	3-4-5	8			•		
F	_						1		(9)		-	ΙT	<b>9</b> 29		
-	-		CL			_ 5						$\square$			
F	_			Mottled brown and gray below about 5 feet bgs.		L		100	2-3-3 (6)	5			•		
2	200						~ ~		(0)		-		39		
_	_										_				
	_			LEAN CLAY: Medium stiff, brown to red-brown,				100	2-2-3 (5)	4					
	_			moist, moderate plasticity, with sand-sized fragments of decomposed rock. {Troutdale					(-)		-				
				Formation}		_ 10 _			225		-	$\vdash$			
	195						SPT 4	100	2-3-5 (8)	8		♠	• 29		
											-				
F	_					L -	SPT	100	3-3-4	7	-				
-	-					L _	5	100	(7)						
F	_		CL			15									
-	_			Stiff below about 15 feet bgs.				100	3-5-7	12			•		
	190						6		(12)		-	[ ]	29		
L	_														
	_														
	_			Very stiff, mottled brown with gray below about 20		_ 20	1				-				
GL/27	- 185			feet bgs.			SPT	100	9-12-16 (28)	31			À		
Ĕ	100			Boring terminated at a depth of about 21½ feet	1		<i>V</i> N	1					· · ·		
- 19	-			bgs. • No groundwater or caving observed in borehole.											
	-			<ul> <li>Boring loosely backfilled with granular bentonite</li> </ul>											
	_			and capped with cold patch asphalt upon completion.											
131.6	-														
1204	180														
	_														
3				318 of	46	0 0									

	RL	SOA	Carlson Geotechnical ATTACHMENT 5 7185 SW Sandburg St., Suite 110	: AF	PPLIC	ATION				F	IGL	JRE	8	
	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	orir	ng B·	-3	
	503-601-8	8250	Fax: 503-601-8254											1 OF 2
			n Park and Recreation District					alem Aqua					rovem	ents
			R G1504218					1802 Hawo						
			10/1/15         GROUND ELEVATION _209 ft           ACTOR         Outburgford Technologies					-	-		-			
			ACTOR Subsurface Technologies					Irish	REVIE	WED	ВҮ _	Jett Jo	nes	
			drich D-50 Track D_Mud Rotary					END						
			D Mud Rotary						ING					
				ſ'n					_					
ELEVATION (ft)	GRAPHIC LOG	U.S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	o DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71%	DRY UNIT WT. (pcf)	□ F 0 2		MC CONTE	ALUE ▲ LL ENT (%) □ 0 80 100
	$\times$	GP	ASPHALT: Approximately 3 inches thick.											
-		<u>Fill</u>	<b>GRAVEL FILL:</b> Gray, moist, angular, and up to 1 (inch in diameter (resembles 1"-0 crushed rock).									•		
			<b>LEAN CLAY:</b> Medium stiff, light brown, damp, moderate plasticity. {Missoula Flood Deposits}							-				
							78	3-4-5 (9)	8			29 • • • 36	54	
_ 205						/ \		(-)		-				
			Mottled brown and gray below about 5 feet bgs.		5			2-4-5				26	46	
		0					100	(9)	8			26 • • • 34	Ť	
		CL				<u> </u>						•		
							100	2-3-3		-				
200					L _	<u> З</u>	100	(6)	5	-				
					10									
						SH								
F -					F -	4	100			102		<b>2</b> 6		
			LEAN CLAY: Stiff, brown to red-brown, moist,	1			89	3-5-6	10					
			moderate plasticity, with sand-sized fragments of decomposed rock. {Troutdale Formation}			5	89	(11)	10	-		•		
_ 195 _														
+ -					_ 15_			256		-		22	50	
							100	3-5-6 (11)	11			23 • • • 31	50	
						<u> </u>					$  \rangle$		· · ·	
					L _							1		
190					L _							1		
					20									
0			Very stiff, mottled brown and gray below about 20 feet bgs.				100	7-12-15	30					
		CL			F -	// /		(27)		-		30	· · ·	
2 2 185														
0													· · ·	
					_ 25_			7-10-12						
							100	(22)	25					
<u>_</u>						•				1				
180														
180														
2			310 ი	16	30									

EF	RL	SOA	Carlson Geotechnical ATTACHMENT 7185 SW Sandburg St., Suite 110	5: AI	PPLIC	ATION				F	IGUF	RE 8		
	СС ЕОТЕСН 503-601-	INICAL 8250	Tigard, OR 97281 Telephone: 503-601-8250 Fax: 503-601-8254							В	oring		GE 2	
			m Park and Recreation District	_				alem Aqua				Improve		
PROJ		IUMBE	R_G1504218	_	1			1802 Hawo	1	1		OR		
NO	<u>u</u>	v.		GROUNDWATER	-	ЧРЕ В	×۲%	NE)	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71%	DRY UNIT WT. (pcf)	<b>▲</b> S	SPT N <sub>SPT</sub>	VALU	E 🔺
ELEVATION (ft)	GRAPHIC LOG	U.S.C.S	MATERIAL DESCRIPTION		DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	VALL	UNIT (pcf)	P	L M	)	L 1
Ш	GR	, <u> </u>				SAMF	REC(		ETR <sub>Ha</sub>	DRY	🗆 FIN	ES CON		(%)
· _			<b>LEAN CLAY:</b> Stiff, brown to red-brown, moist, moderate plasticity, with sand-sized fragments of decomposed rock. {Troutdale Formation} (continued)		<u>30</u>  	SPT 9	100	5-8-11 (19)	21	-	0 20	40 ● 34	60	<u>80 10</u>
175					35	SPT	100	5-7-10 (17)	20	_			-	
- - 170														
-		CL			 	SPT 11	100	7-5-9 (14)	17	-		<b>4</b> 2		· · · · ·
<u>165</u> - -						SPT 12	100	4-7-10 (17)	20	_				
- - 160					  50									
-						SPT 13	100	5-8-10 (18)	21			• 36		
 	-		<ul> <li>Boring terminated at a depth of about 51½ feet bgs.</li> <li>No groundwater or caving observed in borehole.</li> <li>Boring loosely backfilled with granular bentonite and capped with cold patch asphalt upon completion.</li> </ul>											
- <u>150</u> -	-													
- - 145	-		320 0	of 46	0									

	RL	SOL	Carlson Geotechnical ATTACHMENT 5 7185 SW Sandburg St., Suite 110	: AF	PPLIC	ATION				F	IGl	JRE 9		
	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	ori	ng B-4		
	503-601-	8250	Fax: 503-601-8254									PAG	GE 1 OF 1	
CLIEN	NT _CI	nehale	m Park and Recreation District	PF	ROJEC	T NAME	Cher	nalem Aqua	atic & F	- itness	s Cen	iter Improve	ments	
PROJ		UMBE	<b>R</b> _G1504218	PF	ROJEC			1802 Haw	orth Av	/e - Ne	wber	g, OR		
DATE	STAR	TED	10/2/15 <b>GROUND ELEVATION</b> 206.5 ft	EL	.EVAT	ION DAT	<b>UM</b> _C	ity of Newl	berg - S	See Fi	gure	2		
DRILI		ONTR	ACTOR _Subsurface Technologies	LC	GGE	BY _Jet	ff Jone	S	REVIE	EWED	BY _	Jeff Jones		
EQUI	PMEN	Die	drich D-50 Track		SEEP	AGE								
DRILI	ING N	IETHO	D _Mud Rotary		GRO	JNDWAT	ER AT	END						
NOTE	s				GRO	JNDWAT	ER AF	TER DRILL	ING _					
ELEVATION (ft)	GRAPHIC LOG	S.C.S.	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	(RQD) BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71%	DRY UNIT WT. (pcf)	▲ SPT N <sub>SPT</sub> VALUE ▲ PL LL MC			
ELE	В В П	Ū.		GROU		SAMF NL	RECO (		ETR <sub>Ha</sub>	DRY			, TENT (%) □ 60 80 100	
		GP	ASPHALT: Approximately 3 inches thick.											
205		<u>Fill</u>	$\neg$ <b>GRAVEL FILL:</b> Gray. damp, angular, and up to 1 / inch in diameter (resembles 1"-0 crushed rock).	1	F -	1								
L .			<b>LEAN CLAY:</b> Medium stiff, mottled brown and gray, damp, moderate plasticity. {Missoula Flood											
			Deposits}			SPT 1	56	2-4-5 (9)	8	-		● 34		
					_ 5									
200						SH 2	0					● 35		
		CL	Brown below about 71/2 feet bgs.				100	2-4-4	7	-				
					10	3		(8)						
 195						SPT 4	100	2-3-3 (6)	6	_		• 31		
						SPT	100	2-2-3		-				
						5	100	(5)	5	_				
190			<b>LEAN CLAY:</b> Medium stiff, brown to red-brown, moist, moderate plasticity, with sand-sized fragments of decomposed rock. {Troutdale Formation}			SPT 6	100	2-3-5 (8)	8	-		• 24		
			i officiation?			-				-				
		CL												
			Very stiff, mottled brown with gray below about 20 feet bgs.		_ 20	SPT	100	5-15-19 (34)	38	_				
<u>185</u>			Boring terminated at a depth of about 21½ feet	1	1	V 1	1	. ,	1	L	1		: :	
	-		<ul> <li>bgs.</li> <li>No groundwater or caving observed in borehole.</li> <li>Boring loosely backfilled with granular bentonite and capped with cold patch asphalt upon</li> </ul>											
			completion.											
_ 180														
	-													
L -	4													
			321 of	46	0									

Carlson Geotechnical ATTACHMENT 5: APPLICATION 7185 SW Sandburg St., Suite 110										FI	GU	RE '	10	
	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	orii	ng B-	5	
	503-601-	ULUU	Fax: 503-601-8254											1 OF 1
			m Park and Recreation District					alem Aqua				-	roveme	nts
-			R G1504218					1802 Haw				-		
			10/2/15 GROUND ELEVATION 207 ft					-	-		-			
			ACTOR Subsurface Technologies											
			drich D-50 Track											
			D Mud Rotary					END						
NOT				1	1					1	1			
z				GROUNDWATER		SAMPLE TYPE NUMBER	%	Ξ	ПЕ 71%	Ŀ.		SPT	N <sub>SPT</sub> VA	LUE 🔺
ELEVATION (ft)	GRAPHIC LOG	C.S.		MA	H H	лт Л	RECOVERY ( (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE ETR <sub>Hammer</sub> = 71	DRY UNIT WT. (pcf)		PL		LL
EVA (ff	LO	S.	MATERIAL DESCRIPTION		DEPTH (ft)	UMI	NON NON		VP	N g		-	MC	— <b>I</b>
E	G	Ď		ROL		NAR	SEC SEC	S s	<sup>2</sup> Å	JRY	F	INES C	ONTE	NT (%) 🗆
	1////		LEAN CLAV. Stiff mottled light brown and group	G	0		-				0	20 4	0 60	80 100
L .			<b>LEAN CLAY:</b> Stiff, mottled light brown and gray, moist, moderate plasticity. {Missoula Flood		L -	-								
205			Deposits}									· · ·		
										-				
						SPT	78	5-5-7 (12)	11		♠	● 31		
						/				-				
					5						$\square$			
Ļ.						SH 2	100			90		• 31		
200					L -	2						31		
		CL					100	3-3-4	6					
						3		(7)		-				
						-								
					_ 10	Л SPT		335		-	$\vdash$			
							100	3-3-5 (8)	8		♠	• 35		
195					L -	<u> </u>				-				
L.						SPT		2-2-4		1				
						5	100	(6)	6		≜ _			
- ·			LEAN CLAY, Modium stiff to stiff motified brown	_	15									
- ·			<b>LEAN CLAY:</b> Medium stiff to stiff, mottled brown and gray, moist, moderate plasticity, with		_ 15	SPT		2-2-4		1	$\square$			
⊢ ·			sand-sized fragments of decomposed rock. {Troutdale Formation}			6	100	(6)	6					
190			(			-								
Ļ.		CL			L -	-								
L.														
					20									
[ .			Very stiff, mottled brown with gray below about 20			SPT	100	4-5-8	15	]				
-	¥////		feet bgs.			7		(13)						
185	1		<ul> <li>Boring terminated at a depth of about 21<sup>1</sup>/<sub>2</sub> feet bgs.</li> </ul>											
	-		• No groundwater or caving observed in borehole.											
Ļ .	-		<ul> <li>Boring loosely backfilled with granular bentonite and capped with cold patch asphalt upon</li> </ul>											
Ļ.			completion.											
180	1													
   180 	1													
<u>⊦</u> .	-													
	-													
				f AC	0									
			322 0	л 40	U									

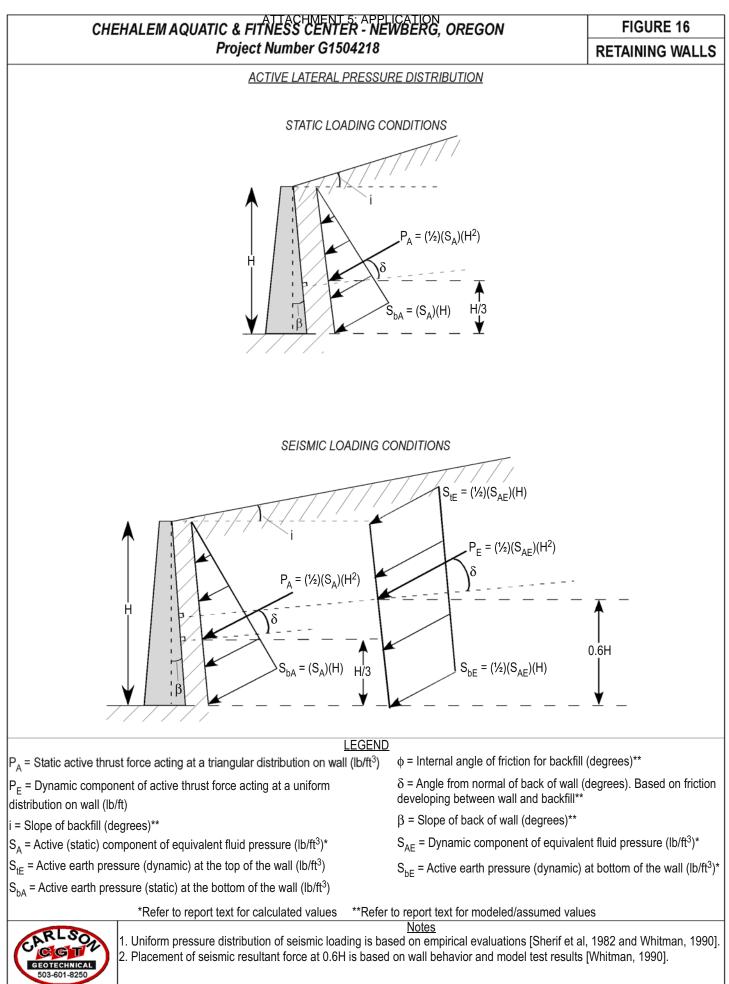
EF	RL.	SOA	Carlson Geotechnical ATTACHIVENT 7185 SW Sandburg St., Suite 110	J. AI		AHON				FI	GUR	E 11		
	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	oring	IT-1		
	503-601-8	8250	Fax: 503-601-8254										GE 1	OF 1
CLIEN	<b>IT</b> _Cł	nehalei	n Park and Recreation District	PR	OJEC	T NAME	Cheh	alem Aqua	atic &	Fitness	S Center I	mprov	ement	S
			<b>R</b> <u>G1504218</u>					1802 Haw				R		
			10/1/15         GROUND ELEVATION         203 ft											
			ACTOR Subsurface Technologies											
			Irich D-50 Track	-		AGE								
		IETHO	0 8" OD Hollow Stem Auger					END						
NOTE	.s			-	GRUL			TER DRILL						
z	0			TER	GROUNDWATER DEPTH (ft) SAMPLE TYPE NUMBER			с Ш	ш	۲. ۲	▲ SF	PT N <sub>SP</sub>		JE 🔺
ELEVATION (ft) GRAPHIC	HΔ	C.S.	MATERIAL DESCRIPTION	MM	DEPTH (ft)	Е Ту	(ER)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE	DRY UNIT WT. (pcf)	PL			LL
	3RA LC	U.S.C.	WATERIAL DESCRIPTION	INI	DEF (f	SAMPLE TYPE NUMBER	RECOVERY ( (RQD)	BL( SOU	e0 <	ڪ آ	MC			
				GRC		SAI	RE	ΓZ.	2	R				
			LEAN CLAY: Brown, moist, moderate plasticity,		0						0 20	40	60	80 100
			rootlets in upper 4 inches. {Missoula Flood Deposits}										-	
													-	
													-	
202					1	_								
													-	
F -														
201		CL			2	_								
													-	
													-	
200					3									
						_								
													-	
						არ GRAE	3							
b b			Infiltration test (IT-1) performed in borehole at 4			<sup>1</sup>							:	
199			feet bgs.		4									
			<ul> <li>Boring terminated at a depth of 4 feet bgs.</li> <li>No groundwater or caving observed in borehole.</li> </ul>											
			<ul> <li>Boring loosely backfilled with cuttings and</li> </ul>											
			granular bentonite.											
1														
198														
190	1		323 0	of 460	<b>)</b>									

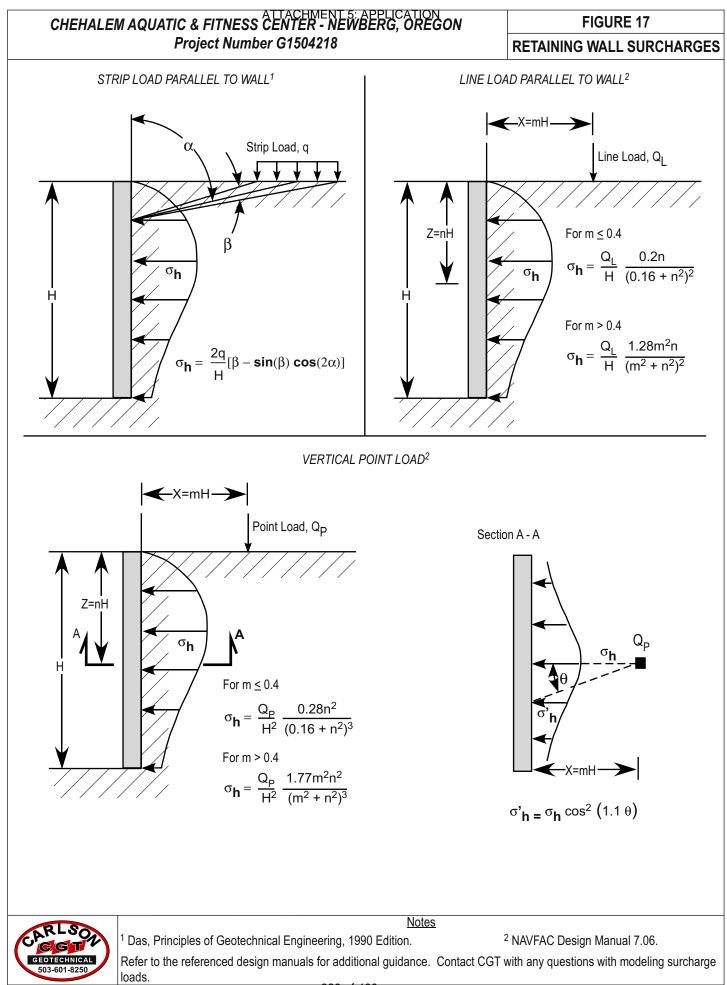
	RL.	SOA	Carlson Geotechnical ATTACHINENT 7185 SW Sandburg St., Suite 110	J. AI		AHON				FI	GUR	E 12		
	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	oring	IT-2		
	503-601-	8250	Fax: 503-601-8254								0		GE 1	OF 1
CLIEI	NT _Cł	nehale	n Park and Recreation District	PR	OJEC	T NAME	Cheh	alem Aqua	tic &	Fitness	s Center			
PRO.	IECT N	IUMBE	R _G1504218	PR	OJEC	T LOCAT		1802 Hawo	orth Av	ve - Ne	wberg, C	R		
DATE	STAR	TED	10/1/15         GROUND ELEVATION _ 208 ft	EL	EVATI	ON DATI	UM _C	ity of Newb	oerg -	See Fi	gure 2			
DRIL		ONTR	ACTOR Subsurface Technologies	LO	GGED	<b>BY</b> <u>M</u> .	David	Irish	REVI	EWED	BY _Jeff	Jones		
			drich D-50 Track	_		AGE								
			B 8" OD Hollow Stem Auger		GROU	INDWAT	ER AT	END						
NOTE	ES			-	GROU	INDWAT	ER AF	TER DRILL	ING _					
z				E R	E S			ω		Ŀ.	▲ SI			JE ▲
ELEVATION (ft)	GRAPHIC LOG	C.S.		GROUNDWATER	H H	SAMPLE TYPE NUMBER	RECOVERY 6 (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE	DRY UNIT WT. (pcf)	PL			LL
EVA (ft	LO	U.S.O	MATERIAL DESCRIPTION		DEPTH (ft)	IPLE	(RQ		_ < ⊿ <	Ng Ng	F	M	C	-1
	G			ROI		SAN N	REC	ري ت	z	DR		S CON	NTEN	T (%) 🗆
	XXXX		GRAVELLY SILT FILL: Brown, damp, moderate	0	0						0 20	40	60	80 100
			plasticity, with angular, fine (< <sup>3</sup> /-inch) gravel.										-	
L .					L _									
		ML FIII											-	
207					1									
207						_								
			LEAN CLAY, Drown moist moderate plasticity	_										
			<b>LEAN CLAY:</b> Brown, moist, moderate plasticity, rootlets in upper 3 inches. {Missoula Flood											
			Deposits}											
206					2									
						_								
													-	
		CL												
205					3	_							-	
											-		-	
2														
	V////				-									
						Mn GRAE	3							
			Infiltration test (IT-2) performed in borehole at 4			<sup>∨</sup> 1							-	
204	¥/////		feet bgs.		4									
			<ul> <li>Boring terminated at a depth of 4 feet bgs.</li> <li>No groundwater or caving observed in borehole.</li> </ul>											
			<ul> <li>Boring loosely backfilled with cuttings and</li> </ul>											
			granular bentonite.											
203			324 0	of 460	)									

P	Carlson Geotechnical ATTACHIVENT 7185 SW Sandburg St., Suite 110					5. APPLICATION			FIGURE 13				
G	EOTECH	NICAL	Tigard, OR 97281 Telephone: 503-601-8250							В	oring	T-3	
	503-601-8250 PAGE 1 OF 1							E 1 OF 1					
CLIEN	IT       Chehalem Park and Recreation District       PROJECT NAME       Chehalem Aquatic & Fitness Center Improvements												
		ECT NUMBERG1504218       PROJECT LOCATION1802 Haworth Ave - Newberg, OR											
			10/1/15         GROUND ELEVATION _ 208 ft										
			ACTOR Subsurface Technologies					Irish	REVI	EWED	BY Jeff	Jones	
			drich D-50 Track	_		AGE							
		IETHO	<b>D</b> 8" OD Hollow Stem Auger					END					;
NOTE	s			-	GROU	INDWAT		TER DRILL	_ING _				
z	~			GROUNDWATER		Щ	%	Ξ		5	▲ SP	T N <sub>SPT</sub>	VALUE 🔺
ELEVATION (ft)	GRAPHIC LOG	S.S.		MA	HL	SAMPLE TYPE NUMBER	RECOVERY ( (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE	DRY UNIT WT. (pcf)	PL		LL
EV∌ €	LO	U.S.C.	MATERIAL DESCRIPTION	ND	DEPTH (ft)	APL NUM	COV (RC		60 < /	۲ğ		МС	<b>I</b>
	0	_		SRO		SAN	RE(	Ű Ž	z	DR			TENT (%) 🗆
			LEAN CLAY: Brown, moist, moderate plasticity,		0						0 20	40	<u>60 80 100</u>
			rootlets in upper 4 inches. {Missoula Flood Deposits}										
			Depositoj										
					L _								
207					1								
						_							
206		CL			2	_							
-													
205					3	_							
					L _								
	\////											-	
							3						
204			Infiltration test (IT-3) performed in borehole at 4 feet bgs.		4								
204	<u>,,,,,,,,</u>		~	<u> </u>			1	I	1	1	ı :	<u>.</u>	
			<ul> <li>Boring terminated at a depth of 4 feet bgs.</li> </ul>										
			<ul> <li>No groundwater or caving observed in borehole.</li> <li>Boring loosely backfilled with cuttings and</li> </ul>										
			granular bentonite.										
203				-t + ~·	<u> </u>								
			325 (	JT 460	U								

P	RL.	SOA	Carlson Geotechnical ATTACHMENTS 7185 SW Sandburg St., Suite 110	J. 7 (i		AHON				FI	GURE	: 14	
G.	EOTECH	NICAL	Tigard, OR 97281							В	oring l	T-4	
	503-601-8	250	Telephone: 503-601-8250 Fax: 503-601-8254								5		1 OF 1
CLIEN	IT _Ch	ehalei	n Park and Recreation District	PR	ROJEC	T NAME	Cheh	alem Aqua	atic &	Fitness	s Center Ir		
PROJ	ECT N	UMBE	R G1504218	PF	ROJEC	T LOCAT		1802 Hawo	orth Av	ve - Ne	wberg, Of	२	
DATE	STAR	TED _	10/1/15         GROUND ELEVATION _ 209.5 ft		EVATI	ON DATI	UM _C	ity of Newl	berg -	See Fi	gure 2		
DRILL	ING C	ONTR	ACTOR Subsurface Technologies	LC	OGGED	<b>BY</b> <u>M</u> .	David	Irish	REVI	EWED	BY Jeff	Jones	
EQUIF	MENT	Die	drich D-50 Track	-	SEEP	AGE							
DRILL	ING M	ETHO	<b>D</b> 8" OD Hollow Stem Auger	-	GROL	INDWAT	ER AT	END					
NOTE	s			-	GROL	INDWAT	ER AF	TER DRILL	ING _				
١				ER		ЪЕ	%	(;		<u>–</u>	▲ SP	T N <sub>SPT</sub> VA	ALUE 🔺
ELEVATION (ft)	GRAPHIC LOG	S.		GROUNDWATER	E	SAMPLE TYPE NUMBER	RECOVERY ( (RQD)	BLOW COUNTS (N <sub>SPT</sub> VALUE)	N <sub>60</sub> VALUE	DRY UNIT WT. (pcf)	PL		LL
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## **Appendix A: Infiltration Testing**

**Chehalem Aquatic Center 1802 Haworth Avenue** Newberg, Oregon

CGT Project No. G1504218

October 23, 2015

Prepared For:

**Chehalem Park and Recreation District** Mr. Jim McMaster, Park Supervisor 125 Elliot Road Newberg, OR 97132

> Prepared By: **CARLSON GEOTECHNICAL**

Appendix A – Infiltration Testing Chehalem Aquatic Center Newberg, Oregon CGT Project Number G1504218 October 23, 2015

### A.1.0 CORRESPONDENCE WITH CIVIL ENGINEER

The project civil engineer (Mr. Mark Hadley of WHPacific) requested infiltration testing at five locations on a site map provided to CGT. Mr. Hadley requested the tests be conducted at depths of about 4 feet below ground surface (bgs). The approximate locations of the infiltration tests (designated as IT-1 through IT-5) are shown on the Site Plan, which is attached to the geotechnical report as Figure 2.

### A.2.0 TEST PROCEDURE

Five infiltration tests were performed within prepared machine-drilled borings on October 2, 2015, in general accordance with the 1980 EPA Falling Head Test Method.

The borings were advanced to the test depths using a D50 track-mounted drill rig with an 8-inch diameter hollow-stem auger. Each boring was cleaned out using a 6-inch diameter hand auger prior to inserting a 6-inch-inner-diameter PVC pipe, which was embedded several inches into the soil at the infiltration test depth. Approximately 2 inches of open-graded gravel was placed in the pipes to prevent scouring of the soils. Approximately 12 inches of water was poured into the pipes and the soils were allowed to soak overnight in accordance with the test method. After the soaking period, testing was initiated by recording the water level within the pipes at 30-minute intervals and calculating the change for each interval. Four trials were administered at each test location. Upon completion of infiltration testing, the pipes were removed and the holes were backfilled with bentonite pellets and the drill spoils (lightly compacted by hand tamping).

### A.3.0 TEST RESULTS

The following tables present the details, raw data, and calculated infiltration rates observed during testing. Please note that the calculated infiltration rates do <u>not</u> include any safety or correction factors.

	Table AT.	Results of Infinitation Tes	5111-1				
	f <b>est Depth</b> 4 feet bgs	<b>Soil T</b> Lean Cla					
Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)*				
1	30	0.06	0.125				
2	30	0.06	0.125				
3	30	0.06	0.125				
4	30	0.19	0.375				
	* Values calculated are raw (unfactored) rates.						

Table A1: Results of Infiltration Tes	st IT-1
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	Table Az:	Results of inilitration Tes	St 11-2
	<b>est Depth</b> 4 feet bgs	<b>Soil T</b> Lean Cla	
Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)*
1	30	0.06	0.125
2	30	0.06	0.125
3	30	0	0
4	30	0.06	0.125
	* Values o	calculated are raw (unfactored) rat	tes.

### Table A2: Results of Infiltration Test IT-2

Appendix A – Infiltration Testing Chehalem Aquatic Center Newberg, Oregon CGT Project Number G1504218 October 23, 2015

	Table A3: Test Depth 4 feet bgs	Results of Infiltration Tes Soil T Lean Cla	уре
Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)*
1	30	0.25	0.5
2	30	0.31	0.625
3	30	0.13	0.25
4	30	0.19	0.375
	* Values o	calculated are raw (unfactored) rat	tes.

. . . . . . .

* Values calculated are raw	(unfactored)	rates.

Describe of Infilmetics Test IT 4

	I able A4:	Results of Infiltration Tes	st 11-4				
	Test Depth 4 feet bgs	Soil Type Lean Clay (CL)					
Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)*				
1	30	0	0				
2	30	0.31	0.625				
3	30	0.13	0.25				
4	30	0.13	0.25				

\* Values calculated are raw (unfactored) rates.

	<b>est Depth</b> 4 feet bgs	<b>Soil T</b> Lean Cla	
Trial	Time Interval (minutes)	Drop in Water Level (inches)	Raw Infiltration Rate (inches per hour)*
1	30	0.06	0.125
2	30	0.06	0.125
3	30	0.06	0.125
4	30	0.06	0.125
•		ulated are raw (unfactored) rat	

### Table A5: Results of Infiltration Test IT-5

#### A.4.0 DISCUSSION

The observed infiltration rates varied over time during each test (with the exception of IT-5), with final rates ranging from  $\frac{1}{8}$ -inch to  $\frac{3}{8}$ -inch per hour. Note these infiltration rates do <u>not</u> include any safety or correction factors. Because final stormwater infiltration facility locations have not been determined as of the date of this report, the infiltration data presented in this report should be considered preliminary. We understand additional infiltration testing may be required once the civil engineer has determined the final locations of the stormwater infiltration facilities.

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# Appendix B: Site-Specific Seismic Hazards Study

Chehalem Aquatic Center 1802 Haworth Avenue Newberg, Oregon

CGT Project No. G1504218

October 23, 2015

Prepared For:

Chehalem Park and Recreation District Mr. Jim McMaster, Park Supervisor 125 Elliot Road Newberg, OR 97132

> Prepared by: CARLSON GEOTECHNICAL

Appendix B – Site Specific Seismic Hazards Study Chehalem Aquatic Center Newberg, Oregon CGT Project Number G1504218 October 23, 2015

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### **B.1.0 INTRODUCTION**

Based on the information provided, we understand the proposed building will be classified as a "Special Occupancy Structure" per Oregon Revised Statutes (ORS) 455.447. Accordingly, the building will be assigned as Risk Category III per Table 1604.5 of the 2014 Oregon Structural Specialty Code (OSSC). A Site-Specific Seismic Hazards Study (SSSHS) is required for the project in accordance with Section 1803.3.2 of the 2014 OSSC. This appendix presents the results of that study.

### B.2.0 GROUND MOTION HAZARD ANALYSIS

The geological and geotechnical data developed within the geotechnical report were used to evaluate the ground motion response of the project site to various earthquake sources and events. The ground motion hazard analysis addresses the following seismic hazards for the site in accordance with Section 1803.7 of the OSSC:

- Ground Shaking;
- Liquefaction;
- Lateral Spread;
- Earthquake-induced Landsliding;
- Inundation from Tsunami / Seiche; and
- Surface Rupture due to Fault Displacement.

The analysis was based on procedures presented in Section 1613.3.4 of the 2014 OSSC and Section 11.4 of American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures (ASCE 7-10).

### **B.2.1** Earthquake Sources and Seismicity

The site is located in a tectonically active area that may be affected by crustal earthquakes, large subduction zone earthquakes, or intraplate (deep) earthquakes on the Juan de Fuca plate. Damaging crustal earthquakes in this region may be derived from local sources such as the Helvetia fault, Beaverton fault zone, Canby-Molalla fault, Newberg fault, Gales Creek fault zone, Waldo Hills fault, Mount Angel fault, Bolton fault, Oatfield fault, East Bank fault, Portland Hills fault, Grant Butte fault, and the Damascus-Tickle Creek fault<sup>1</sup>. Crustal earthquakes typically occur at depths ranging from 15 to 40 kilometers bgs<sup>2</sup>. Large subduction zone (megathrust) earthquakes in this region are derived from the Cascadia Subduction Zone (CSZ) at depths up to about 30 kilometers. Intraplate (deep) earthquakes occur within the subducting Juan de Fuca Plate at depths ranging from approximately 30 to 60 kilometers bgs.

### B.2.1.1 Crustal Sources

The following mapped faults are considered active or potentially active and are located within about 50 kilometers of the site<sup>3</sup>. Refer to Table B3 presented in Section B.2.1.4 of this appendix for the approximate distance and direction to these faults from the project site.

<sup>&</sup>lt;sup>1</sup> U.S. Geologic Survey, 2015. Quaternary Fault and Fold Database, <u>http://earthquake.usgs.gov/qfaults/</u>

<sup>&</sup>lt;sup>2</sup> Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: unpublished report prepared for Oregon Department of Transportation, Personal Services Contract 11688, January 1995.

<sup>&</sup>lt;sup>3</sup> U.S. Geologic Survey, 2015. Quaternary Fault and Fold Database, <u>http://earthquake.usgs.gov/qfaults/</u>

### B.2.1.1.1 Helvetia fault (USGS 714)

The Helvetia fault is a north-northwest trending structure located on the northeastern margin of the Tualatin Basin<sup>4</sup>. There is no evidence for displacement of late Quaternary deposits along the fault; however, the most recent age of displacement is poorly constrained<sup>5</sup>. Therefore, the fault is considered active, but with a long recurrence interval.

### B.2.1.1.2 Beaverton fault zone (USGS 715)

The Beaverton fault zone<sup>6</sup> consists of an east-west striking normal fault that forms the southern margin of the Tualatin basin. This fault offsets Miocene Columbia River Basalt, but is covered by thick sequences of Pliocene to Pleistocene Missoula flood deposits. As a result, no fault scarp is present at the surface, and the Beaverton fault zone is not present on most geologic maps of the area. Yeats and others<sup>7</sup> indicate that the Beaverton Faults displace post-Columbia River Basalt sediments; however, the age and nature of deformation is not known. The Beaverton fault is considered active, but with a long recurrence interval.

### B.2.1.1.3 Canby-Molalla fault (USGS 716)

The Canby-Molalla fault is a right-lateral strike-slip fault located within the Willamette Valley<sup>8</sup>. The Canby-Molalla fault appears to offset Missoula flood deposits, and seismic reflection surveys suggest Holocene deformation of sediments. The fault has little geomorphologic expression, but is considered active, with a slip rate of less than 0.2 mm per year.

### B.2.1.1.4 <u>Newberg fault (USGS 717)</u>

The Newberg fault is a 5-kilometer-long portion of the Gales Creek-Mount Angel structural zone, which consists of a 73-kilometer-long zone of right-lateral strike-slip faults located within the Willamette Valley<sup>9</sup>. The fault zone offsets Miocene Columbia River basalts, but no unequivocal evidence for Quaternary displacement has been identified. The Newberg fault is recognized in the subsurface by vertical separation of the Columbia River Basalt, and offset seismic reflectors in overlying basin sediments<sup>10,11</sup>, with no definitive geomorphic evidence of faulting. The majority of the fault trace is covered with Holocene alluvium, which may have buried recent deformation. Due to the uncertainty in activity level, the fault has been classified as active.

### B.2.1.1.5 Gales Creek fault zone (USGS 718)

The Gales Creek fault zone is a 73-kilometer-long zone of northwest-trending right-lateral strike-slip faults located on the western margin of the Willamette Valley<sup>12</sup>. The fault zone offsets Miocene Columbia River

<sup>&</sup>lt;sup>4</sup> Personius, S.F., compiler, 2002. Fault number 714, Helvetia fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>5</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>6</sup> Personius, S.F., compiler, 2002. Fault number 715, Beaverton fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>7</sup> Yeats, R.S., Graven, E.P., Werner, K.S., Goldfinger, C., and Popowski, T., 1996. *Ibid.* 

<sup>&</sup>lt;sup>8</sup> Personius, S.F., compiler, 2002. Fault number 716, Canby-Molalla fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>9</sup> Personius, S.F., compiler, 2002. Fault number 717, Newberg fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>10</sup> Werner, K.S., Nabelek, J., Yeats, R.S., Malone, S., 1992. The Mount Angel fault: implications of seismic-reflection data and the Woodburn, Oregon, earthquake sequence of August, 1990: Oregon Geology, v. 54, p. 112-117.

<sup>&</sup>lt;sup>11</sup> Yeats, R.S., Graven, E.P., Werner, K.S., Goldfinger, C., and Popowski, T., 1996. *Ibid.* 

<sup>&</sup>lt;sup>12</sup> Personius, S.F., compiler, 2002. Fault number 718, Gales Creek fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

Appendix B – Site Specific Seismic Hazards Study Chehalem Aquatic Center Newberg, Oregon CGT Project Number G1504218 October 23, 2015

basalts, but no unequivocal evidence for Quaternary displacement has been identified. However, the majority of the faults are covered with very recent alluvium, which may have buried evidence of recent deformation. Estimates for the latest movements along the Gales Creek fault zone typically predate the late Pleistocene; in other words, the fault has not had activity within the last approximately 30,000 years. The recurrence interval for the Gales Creek fault zone is likely greater than 50,000 years, based on the information available.

### B.2.1.1.6 Waldo Hills fault (USGS 872)

The Waldo Hills fault is a 12-kilometer-long southeast-dipping reverse fault that is mapped on the northwestern front of the Waldo Hills<sup>13</sup>. The fault is recognized in the subsurface by vertical separation of the top of the Columbia River Basalt<sup>14</sup>. No evidence for middle or late Quaternary displacement on the Waldo Hills fault has been identified; however, Oregon State University geologists suggest that the Waldo Hills fault may have a long recurrence interval and is considered active<sup>15</sup>. Recurrence interval estimates for earthquake activity on the Waldo Hills fault are considered to be on the order of 700,000 years or more. Extensive erosion and degradation of the identified fault scarps supports a long recurrence interval.

### B.2.1.1.7 Mount Angel fault (USGS 873)

The Mount Angel fault is a northwest-trending, steeply northeast-dipping, oblique-slip reverse fault with a length of about 30 kilometers<sup>16</sup>. The fault is mapped in the subsurface based on geophysical data, water well logs, and historical seismicity<sup>17,18</sup>. It displaces Columbia River Basalt at depth, as well as younger, overlying sediments<sup>19</sup>. Surface indications of the fault are minimal. The Mount Angel fault is considered to be the source for a series of small earthquakes (<M3.5) that occurred in 1990 near the town of Woodburn, and a M5.6 earthquake that occurred in 1993 near the town of Scotts Mills<sup>20,21</sup>.

### B.2.1.1.8 Bolton fault (USGS 874)

The Bolton fault is a northwest-trending reverse fault, with a length of about 9 kilometers in the subsurface<sup>22</sup>. There is no evidence that the Bolton fault has been active since the late Pleistocene; however, the fault is classified as potentially active because of the limited exposures and uncertainties in the relationships between local scarps and late Pleistocene Missoula flood deposits<sup>23</sup>. On this basis, a long recurrence interval is assigned to the Bolton Fault.

<sup>&</sup>lt;sup>13</sup> Personius, S.F., compiler, 2002. Fault number 872, Waldo Hills fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>14</sup> Yeats, R.S., *et al.*, 1996. Tectonics of the Willamette Valley Oregon: in Assessing earthquake hazards and reducing risk in the Pacific Northwest, v. 1: U.S. Geological Survey Professional Paper 1560, p. 183-222, 5 plates, scale 1:100,000.

<sup>&</sup>lt;sup>15</sup> Geomatrix Consultants, 1995. *Ibid.* 

<sup>&</sup>lt;sup>16</sup> Personius, S.F., compiler, 2002. Fault number 873, Mount Angel fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>17</sup> Yeats, R., *et al.*, 1991. Tectonics of the Willamette Valley, Oregon. U.S. Geological Survey Open File Report 91-441-P, 47 p.

<sup>&</sup>lt;sup>18</sup> Werner, K.S., *et al.*, 1992. The Mount Angel Fault: Implications of Seismic-Refraction Data and the Woodburn, Oregon, Earthquake Sequence of August, 1990. Oregon Geology, v. 54, p. 112-117.

<sup>&</sup>lt;sup>19</sup> Unruh, J.R., et al., 1994. Seismotectonic Evaluation: Scoggins Dam, Tualatin Project, Northwestern Oregon: Final Report, prepared by William Lettis and Associates and Woodward Clyde Federal Services, Oaklan, Californai for the U.S. Bureau of Reclamation, Denver, Colorado.

<sup>&</sup>lt;sup>20</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>21</sup> Werner, K.S., *et al.*, 1992. *Ibid*.

Personius, S.F., compiler, 2002. Fault number 874, Bolton fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>23</sup> Geomatrix Consultants, 1995. *Ibid.* 

### B.2.1.1.9 Oatfield fault (USGS 875)

The Oatfield fault consists of a 29-kilometer-long steeply dipping reverse fault that forms escarpments in Miocene Columbia River Basalt in the Tualatin Mountains<sup>24</sup>. No fault scarps or displacement of surficial deposits have been described, but exposures within tunnels show offset of Boring Lava, indicating Quaternary activity. The slip rate for the Oatfield fault has been calculated to be about 0.1 mm per year based on the tunnel exposures. Given the very low slip rate and lack of displacement of surficial deposits, this fault is considered to have a very long recurrence interval.

### B.2.1.1.10 <u>East Bank fault (USGS 876)</u>

The East Bank fault<sup>25</sup> consists of a 29-kilometer-long steeply dipping reverse fault that parallels the Portland Hills fault. No Quaternary surficial fault scarps have been identified, and the fault is largely buried by thick sequences of Pleistocene Missoula flood deposits. Recent shallow seismic reflection data suggest subsurface displacement of the older Missoula flood deposits.

### B.2.1.1.11 Portland Hills fault (USGS 877)

The Portland Hills fault zone<sup>26</sup> is a series of northwest-trending faults forming the northeastern margin of the Tualatin Mountains. The faults associated with this structural zone vertically displace the Columbia River Basalt Group by 1,130 feet, and appear to control thickness changes in late Pleistocene sediment<sup>27</sup>. Geomorphic lineaments suggestive of Pleistocene deformation have been identified within the fault zone, but none of the fault segments has been shown to cut Holocene deposits<sup>28,29</sup>. The fact that the faults do not cut Holocene sediments is most likely a result of the faulting being related to a time of intense uplift of the Oregon Coast Range during the Miocene, and little to no movement along the faults during the Holocene.

Recent studies of this fault<sup>30</sup> concluded that the Portland Hills fault is active, based on contemporary seismicity in the vicinity of the fault, and seismic reflection data suggesting that the fault cuts late Pleistocene layered strata. Additionally, in May of 2000, while taking magnetic readings to map the fault, an Oregon Department of Geology and Mineral Industries (DOGAMI) geologist observed folded sediment in a retaining wall cut in North Clackamas Park south of Portland. The folded sediments consisted of sand and silt deposited by Pleistocene floods derived from glacial Lake Missoula approximately 12,800 to 15,000 years ago. An investigation of the folded strata by DOGAMI geologists and engineering consultants showed that the entire sequence of sediment layers is folded and they concluded that this

<sup>&</sup>lt;sup>24</sup> Personius, S.F., compiler, 2002. Fault number 875, Oatfield fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>25</sup> Personius, S.F., compiler, 2002. Fault number 876, East Bank fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>26</sup> Personius, S.F., compiler, 2002. Fault number 877, Portland Hills fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>27</sup> Mabey, M.A., Madin, I.P., Youd, T.L., Jones, C.F., 1993, Earthquake hazard maps of the Portland quadrangle, Multhomah and Washington Counties, Oregon, and Clark County, Washington: Oregon Department of Geology and Mineral Industries Geological Map Series GMS-79, Plate 2, 1:24,000.

<sup>&</sup>lt;sup>28</sup> Conforth and Geomatrix Consultants, 1992. Seismic hazard evaluation, Bull Run dam sites near Sandy, Oregon: unpublished report to City of Portland Bureau of Water Works.

<sup>&</sup>lt;sup>29</sup> Balsillie, J.J. and Benson, G.T., 1971. Evidence for the Portland Hills fault: The Ore Bin, Oregon Dept. of Geology and Mineral Industries, v. 33, p. 109-118.

<sup>&</sup>lt;sup>30</sup> Wong *et al.*, 2001. The Portland Hills Fault: An Earthquake Generator or Just Another Old Fault? Published by Oregon Geology, V63, number 2, Spring 2001.

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folding is evidence for an active fault beneath the site, and the fault is either the Portland Hills fault, or a closely related structure<sup>31</sup>.

### B.2.1.1.12 Grant Butte fault (USGS 878)

The Grant Butte fault<sup>32</sup> forms the southern margin of the Portland basin, and consists of a 10-kilometerlong normal fault. The Grant Butte fault offsets Plio-Pleistocene Springwater Formation and Boring Lava. No Quaternary surficial fault scarps have been identified, but the fault is largely buried by thick sequences of Pliocene to Pleistocene Missoula flood deposits. Based on radiometric age dating techniques, the fault has been active within the late Quaternary. Therefore, the Grant Butte fault is considered active with a long recurrence interval.

### B.2.1.1.13 Damascus-Tickle Creek fault zone (USGS 879)

The Damascus-Tickle Creek fault zone consists of numerous relatively short northeast and northwest trending forming a broad fault zone along the southern edge of the Portland basin<sup>33</sup>. The location of several eruptive vents of the Boring Lava suggest a direct relationship with the Damascus-Tickle Creek fault zone. The majority of the faults within the zone are buried by Pliocene to Pleistocene Missoula flood deposits, however, at least one fault strand may offset the flood deposits.

### B.2.1.2 Cascadia Subduction Zone Seismic Sources

The Cascadia Subduction Zone (CSZ) is a 1,100-kilometer-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continental plate at a rate of about 3 to 4 centimeters per year<sup>34</sup>. The fault trace is located off of the coast of southern British Columbia, Washington, Oregon, and northern California; approximately 190 kilometers west of the site (see attached Figure B1).

Two primary sources of seismicity are associated with the CSZ: relatively shallow earthquakes that occur on the interface between the two plates (Subduction Zone earthquakes), and deep earthquakes that occur along faults within the subducting Juan de Fuca plate (intraplate earthquakes).

### B.2.1.2.1 <u>Subduction Zone Earthquakes</u>

Subduction Zone earthquakes occur at depths up to approximately 30 kilometers along the interface (contact) between the two plates<sup>35</sup>. As the Juan de Fuca Plate subducts beneath the North American Plate through this zone, the plates are locked together by friction<sup>36</sup>. As the plates continue to converge, strain slowly builds within this locked zone until the frictional resistance is exceeded, and the plates rapidly slip past each other resulting in a "megathrust" earthquake. The United States Geologic Survey estimates megathrust earthquakes on the CSZ may have magnitudes up to M9.2.

<sup>&</sup>lt;sup>31</sup> Madin and Hemphill-Haley, 2001: The Portland Hills Fault at Rowe Middle School. Oregon Geology V63 p47.

<sup>&</sup>lt;sup>32</sup> Personius, S.F., compiler, 2002. Fault number 878, Grant Butte fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>33</sup> Personius, S.F., compiler, 2002. Fault number 879, Damascus-Tickle Creek fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/hazards/qfaults.

<sup>&</sup>lt;sup>34</sup> DeMets, C., Gordon, R.G., Argus, D.F., Stein, S., 1990. Current plate motions: Geophysical Journal International, v. 101, p. 425-478.

<sup>&</sup>lt;sup>35</sup> Pacific Northwest Seismic Network website, <u>http://pnsn.org/outreach/earthquakesources/</u>

<sup>&</sup>lt;sup>36</sup> Pacific Northwest Seismic Network website, http://pnsn.org/outreach/earthquakesources/

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Geologic evidence indicates a recurrence interval for major subduction zone earthquakes of 250 to 650 years, with the last major event occurring in 1700<sup>37,38,39</sup>. The eastern margin of the seismogenic portion of the Cascadia Subduction zone is located approximately 65 kilometers west of the site, as shown on Figure B1.

### B.2.1.2.2 Intraplate Earthquakes

Below about 30 kilometers, the plate interface does not appear to be locked by friction, and the plates slowly slide past each other. The curvature of the subducted plate increases as the advancing edge moves east, creating extensional forces within the plate. Normal faulting of the plate occurs in response to these extensional forces. This region of maximum curvature and faulting of the subducting plate is where large intraplate earthquakes are expected to occur, and is located at depths ranging from 30 to 60 kilometers<sup>40,41,42,43</sup>. Intraplate earthquakes within the Juan de Fuca plate generally have magnitudes less than M7.5<sup>44</sup>.

The 2001 M6.8 Nisqually earthquake near Olympia, Washington, occurred within this seismogenic zone at a depth of 52 kilometers. The site is located within the intraplate seismogenic zone, as shown on Figure B1.

### B.2.1.3 Characteristic Earthquake Magnitude

The maximum characteristic earthquake magnitude is defined as the largest earthquake that could be expected to be generated by a specific seismic source, independent of recurrence interval. CGT determined the magnitude of characteristic earthquakes from a review of historical earthquake records and empirical relationships.

### B.2.1.3.1 <u>Historical Earthquakes</u>

Magnitude estimates for the characteristic earthquake are based largely on the record of historical earthquakes in the region of interest. Table B1 lists earthquakes with magnitudes larger than M4.9 that have occurred within 250 kilometers of the site since 1873<sup>45</sup>. These earthquakes are also shown on Inset 1: Historical Earthquakes.

<sup>&</sup>lt;sup>37</sup> Atwater, B.F., 1992. Geologic evidence for earthquakes during the past 2,000 years along the Copalis River, southern coastal Washington: Journal of Geophysical Research, v. 97, p. 1901-1919.

<sup>&</sup>lt;sup>38</sup> Peterson, C.D., Darioenzo, M.E., Burns, S.F., and Burris, W.K., 1993. *Ibid.* 

<sup>&</sup>lt;sup>39</sup> Personius, S.F., and Nelson, A.R., compilers, 2005. Fault number 781, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.

<sup>&</sup>lt;sup>40</sup> Geomatrix Consultants, 1995. *Ibid.* 

<sup>&</sup>lt;sup>41</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>42</sup> Geomatrix Consultants, 1993. Seismic margin Earthquake For the Trojan Site: Final Unpublished Report For Portland General Electric Trojan Nuclear Plant, Rainier, Oregon, May 1993.

<sup>&</sup>lt;sup>43</sup> Kirby, Stephen H., Wang, Kelin, Dunlop, Susan, 2002, The Cascadia Subduction Zone and Related Subduction Systems— Seismic Structure, Intraslab Earthquakes and Processes, and Earthquake Hazards: U.S. Geological Survey Open-File Report 02-328, 182 pp.

<sup>&</sup>lt;sup>44</sup> Cascadia Region Earthquake Workshop, 2008. Cascadia Deep Earthquakes. Washington Division of Geology and Earth Resources, Open File Report 2008-1.

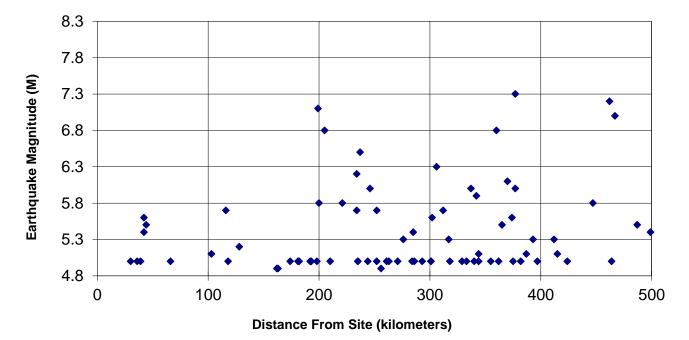
<sup>&</sup>lt;sup>45</sup> Wong et al, 2000. Wong, I. Silva, W. Bott, J., Wright, D., Thomas, P., Gregor, N., Li, S., Mabey, M., Sojourner, A., Wang, Y. IMS-15. Earthquake Scenario and Probabilistic Ground Shaking Maps for the Portland, Oregon, Metropolitan area. Portland Hills Fault M6.8 Earthquake, Peak Horizontal Acceleration at the Ground Surface.

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Magnitudes Greater than M4.9				
Date	Magnitude	Distance from Site	Location	
December 24, 1989	M4.9	163 km	16 km NE of Morton, WA	
July 12, 2004	M4.9	162 km	48 km SW of Newport, OR	
December 29, 1941	M5.0	36 km	1 km S of Portland, OR	
February 15, 1946	M5.0	181 km	1 km NW of Eatonville, WA	
February 23, 1946	M5.0	193 km	1 km SE of Olympia, WA	
May 28, 1981	M5.0	182 km	4 km ENE of Goat Rocks, WA	
December 07, 1944	M5.0	198 km	6 km W of Aberdeen, WA	
December 16, 1953	M5.0	30 km	7 km WSW of Portland, OR	
July 19, 1930	M5.0	39 km	15 km WNW of Salem, OR	
November 17, 1957	M5.0	66 km	18 km S of Tillamook, OR	
January 29, 1995	M5.0	235 km	18 km NNE of Tacoma, WA	
June 10, 2001	M5.0	210 km	18 km N of Satsop, WA	
May 15, 1954	M5.0	235 km	19 km NNW of Tacoma, WA	
December 31, 1931	M5.0	244 km	29 km WSW of Bremerton, WA	
October 07, 1958	M5.0	174 km	34 km SSW of Aberdeen, WA	
November 08, 1960	M5.0	192 km	115 km WNW of Newport, OR	
March - May, 1980	M4.9 - M5.2	118 km	27 events at Mt St Helens, WA	
September 17, 1961	M5.1	103 km	20 km SSE of Mt St Helens, WA	
February 14, 1981	M5.2	128 km	2 km N of Elk Lake, WA	
October 12, 1877	M5.4*	42 km	10 km ESE of Portland, OR	
November 06, 1962	M5.5	44 km	8 km NNE of Portland, OR	
March 25, 1993	M5.6	42 km	23 km ESE of Woodburn, OR (Scotts Mills)	
May 18, 1980	M5.7	116 km	1 km NNE of Mt St Helens, WA	
April 30, 1882	M5.7*	234 km	19 km S of Bremerton, WA	
July 03, 1999	M5.8	200 km	8 km N of Satsop, WA	
February 15, 1946	M5.8	221 km	28 km N of Olympia, WA	
December 12, 1880	M6.0*	246 km	12 km SE of Bremerton, WA	
November 13, 1939	M6.2	234 km	19 km S of Bremerton, WA	
April 29, 1965	M6.5	237 km	18 km N of Tacoma, WA	
February 28, 2001	M6.8	205 km	17 km NE of Olympia, WA (Nisqually)	
April 13, 1949	M7.1	199 km	12 km ENE of Olympia, WA	

Table B1Historical Earthquakes since 1873 within 250 kilometers of the site with<br/>Magnitudes Greater than M4.9

\* estimated from historical accounts.





Based on the historical record and crustal faulting models of the region, the maximum earthquake for crustal sources within the Pacific Northwest is estimated to be M5.75<sup>46</sup> (independent of recurrence interval). Similarly, the maximum earthquake for an intraplate source on the subducting Juan de Fuca plate is estimated to be M7.0 to 7.5<sup>47</sup>.

### B.2.1.3.2 Empirical Determination of Characteristic Earthquake

Another method for estimating the characteristic earthquake that a particular seismic source could generate is by using empirical relationships between earthquake magnitude and fault rupture length<sup>48</sup>. Based on these relationships, the size of historical earthquakes, and the thickness of seismogenic crust in the region, the maximum earthquake magnitude expected from crustal sources is M6.0 to M6.6<sup>49</sup>. Based on the likely thin nature of the Juan de Fuca Plate, and comparing the historic seismicity along the intraplate area with other similar intraplate regions, the estimated maximum magnitude earthquake for intraplate sources is M7.0 to M7.5<sup>50,51</sup>. Similarly, based on magnitude versus rupture area relationships for subduction zone earthquakes worldwide, the maximum magnitude of a CSZ earthquake is estimated to be M8.0 to M9.2<sup>52,53</sup>. These magnitudes are also reflected in the probabilistic analyses used by U.S. Geological Survey.

<sup>&</sup>lt;sup>46</sup> Geomatrix Consultants, 1995. *Ibid.* 

<sup>&</sup>lt;sup>47</sup> Pacific Northwest Seismic Network website, <u>http://pnsn.org/outreach/earthquakesources/</u>

<sup>&</sup>lt;sup>48</sup> Bonilla, M.G., R. K. Mark, and J.J. Lienkaemper, 1984, Statistical relations among earthquake magnitude, surface rupture length, and surface fault displacement: Bulletin of the Seismological Society of America, V. 74, p. 2379-2411.

<sup>&</sup>lt;sup>49</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>50</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>51</sup> Pacific Northwest Seismic Network website, <u>http://pnsn.org/outreach/earthquakesources/</u>

<sup>&</sup>lt;sup>52</sup> Geomatrix Consultants, 1995. *Ibid*.

<sup>&</sup>lt;sup>53</sup> Pacific Northwest Seismic Network website, <u>http://pnsn.org/outreach/earthquakesources/</u>

### B.2.1.3.3 <u>Code Specified Design Earthquake</u>

Section 1803.3.2.1 of the 2014 Oregon Structural Specialty Code (OSSC) indicates specific <u>minimum</u> requirements for earthquake magnitudes to be used in seismic analyses, which are summarized in the following table:

Seismic Source	<u>Minimum</u> Design Earthquake
Shallow Crustal Faults	6.0
Intraplate (Juan de Fuca plate)	7.0
Cascadia Subduction Zone	8.5

### Table B2 OSSC Minimum Design Earthquake

### B.2.1.4 Seismic Sources in the Vicinity of the Site

Table B3 shows the previously discussed faults (Section B.2.1.1), the characteristic earthquake magnitude for each, and the distance and direction of the fault from the site.

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USGS Fault No.	Earthquake Source	Char Mag	Type of Fault	USGS Fault Class <sup>1</sup>	Fault Orientation (strike & dip)	Approximate Earthquake depth (km)	Fault Trace Distance (km) & Direction from Site	Notes
717 / OR3	Newberg fault	6.85	Right Lateral Strike Slip	А	N42W 90 (vertical)	15 to 40 km	1 km SW	2
718 / OR1	Gales Creek fault zone	6.75	Right Lateral Strike Slip	A	N41W 90 (vertical)	15 to 40 km	12 km NW	2
873	Mount Angel fault	6.80	Thrust	А	N43E 60 to 70 N	15 to 40 km	17 km SSE	2
715	Beaverton fault zone	6.00	Normal	А	N86E Unknown Dip	15 to 40 km	18 km N	3,4
716	Canby-Molalla fault	6.00	Right Lateral Strike Slip	А	N34W 90 (vertical)	15 to 40 km	20 km E	3,4
874	Bolton fault	6.19	Reverse	В	N53W 60N	15 to 40 km	24 km NE	2
714	Helvetia fault	6.40	Normal	А	N26W SW	15 to 40 km	27 km N	2
875	Oatfield fault	6.00	Reverse	А	N41W 70S	15 to 40 km	27 km NE	3,4
877	Portland Hills fault	7.05	Reverse	А	N37W 70N	15 to 40 km	30 km NE	2
879	Damascus- Tickle Creek fault	6.00	Right Lateral Strike Slip	A	N-S 90 (Vertical)	15 to 40 km	33 km ENE	3,4
876	East Bank fault	6.00	Reverse	А	N46W 70N	15 to 40 km	34 km NE	3,4
878	Grant Butte fault	6.21	Normal	А	N90E 60N	15 to 40 km	37 km ENE	2
872	Waldo Hills fault	6.00	Reverse	А	N45E 60N	15 to 40 km	38 km SSW	3,4
	CSZ – Intraplate	7.0 – 7.5	Normal	A	N30W 10 to 20 E	30 to 60 km	30 km E to 65 km W (within seismogenic zone)	3
	CSZ	8.3 – 9.2	Mega-Thrust	A	N30W 10 to 20 E	<30 km	65 km W (to east edge of seismogenic zone)	3,5

### Table B3 Fault, Characteristic Earthquake Magnitude, and Distance from Site.

Class B: Fault that requires further study in order to confidently define their potential as possible sources of earthquake-induced ground motion (POTENTIALLY ACTIVE)

Class C: Fault with insufficient evidence for Quaternary activity (LOW POTENTIAL FOR ACTIVITY)

Characteristic earthquake magnitude from USGS Earthquake Hazards Program, 2008 National Seismic Hazard Maps – Fault Parameters

3 Characteristic earthquake magnitude from USGS Quaternary Fault and Fold Database of the United States

4 Characteristic earthquake magnitude from Section 1803.3.2.1 of the 2014 OSSC - Design Earthquake.

5 Models of earthquake magnitude assign variable magnitudes for different portions of the Cascadia Subduction Zone, so multiple magnitudes are provided.

2

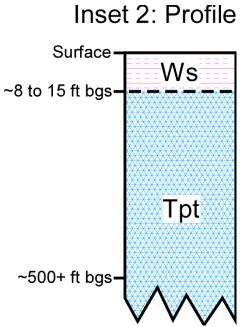
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### B.3.0 SEISMIC SITE CLASS

### **B.3.1** Site Profile to Bedrock

The estimated soil profile to bedrock is shown on Inset 2.

Willamette Silt (Ws): Based on drilled borings, available geologic mapping of the area<sup>54</sup>, and review of local water well logs, the site is underlain by approximately 8 to 15 feet of Willamette Silt. Subsequent to publication of the referenced map, the Willamette Silt has been interpreted as Pleistocene catastrophic flood deposits originating from glacial outburst floods of Lake Missoula. The Missoula Lake catastrophic flood deposits were produced by the periodic failure of glacial ice dams, which impounded Lake Missoula between 21,000 and 12,000 years ago<sup>55</sup>. Floodwaters raged through eastern Washington and the Columbia River Gorge. Near Rainier, Oregon, the river channel was restricted, causing floodwaters to back up the Willamette Valley as far as Eugene. Floodwaters in the Portland area were as much as 400 feet deep, leaving only the tops of the tallest hills dry. The flood deposits are typically split into three different facies; the coarse-grained facies, the fine-grained facies, and the channel facies, which consists of silts, sands, and gravels deposited within the flood channel.



Clay phase Willamette Silts are mapped in the vicinity of the site, which are consistent with the finegrained facies.

<u>Troutdale Formation (Tpt):</u> Geologic mapping indicates that the Willamette Silt is underlain by Pliocene Troutdale formation sediments. The Troutdale formation consists of poorly indurated silt and fine sand, with occasional layers of pebble conglomerate, deposited by ancestral rivers and reworked by later streams and rivers. The Troutdale formation sediments are in excess of 500 feet thick in the area of the site.

### B.3.2 Site Class Determination

Section 1613.3.2 of the 2014 OSSC requires that the determination of the seismic site class be based on subsurface data in accordance with Chapter 20 of the ASCE 7-10. CGT chose to use Standard Penetration Test (SPT) N-values for determination of the site classification for this project. The SPT subsurface exploration method is described in the geotechnical investigation report. Boring B-3 was advanced to a depth of about 51½ feet bgs and terminated in very stiff lean clay. Chapter 20 of ASCE 7-10 requires that the stiffness of the soils be measured or reasonably estimated for the upper

<sup>&</sup>lt;sup>54</sup> Schlicker, Herbert G. & Deacon, Robert J., Engineering Geology of the Tualatin Valley Region, Oregon. State of Oregon Department of Geology and Mineral Resources, Bulletin 60, 1967.

<sup>&</sup>lt;sup>55</sup> Ma, Madin, Duplantis, and Williams, 2012, Lidar-based Surficial Geologic Map and Database of the Greater Portland, Oregon, Area, Clackamas, Columbia, Marion, Multnomah, Washington, and Yamhill Counties, Oregon, and Clark County, Washington Oregon Department of Geology and Mineral Industries Open-File Report O-12-02.

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100 feet bgs. As discussed in Section B.3.1, Troutdale formation sediments are anticipated to extend to depths of at least 500 feet bgs. The materials encountered below about 12 feet bgs was consistent with the Troutdale formation sediments mapped in the area of the site. To satisfy code requirements, we averaged the SPT N-values encountered in the lower 20 feet of boring B-3 to extrapolate the results to a depth of 100 feet bgs. The results of the site class calculations are shown in the following table.

14	DIE B4 Calcu	liation for Determination		
Bottom Depth	Soil Type	Field SPT	Layer Thickness [d <sub>i</sub> ]	di/Ni
(feet)		(N <sub>i</sub> )	(feet)	
4	CL	9	4	0.44
6.5	CL	9	2.5	0.28
9	CL	6	2.5	0.42
13.5	CL	11	4.5	0.41
16.5	CL	11	3	0.27
21.5	CL	27	5	0.19
26.5	CL	22	5	0.23
31.5	CL	19	5	0.26
36.5	CL	17	5	0.29
41.5	CL	14	5	0.36
46.5	CL	17	5	0.29
51.5	CL	18	5	0.28
100	CL	16.5	48.5	2.94
TOTALS			100.0	6.66
(ASCE 7-10 S	ic Mean: Section 20.4.2 40.42)	$\overline{N} = \frac{\sum_{i=1}^{n} d_i}{\sum_{i=1}^{n} \frac{d_i}{N_i}} = 15.02$		

Based on the guidelines presented in Table 20.3-1 in Chapter 20 of the ASCE 7-10, the project site is designated as Site Class D.

### **B.4.0 SEISMIC GROUND MOTION VALUES**

Earthquake ground motion parameters for the site were obtained based on the United States Geological Survey (USGS) Seismic Design Values for Buildings - Ground Motion Parameter Calculator<sup>56</sup>. The following table shows the recommended seismic design parameters for the site.

Table B5	Seismic Ground Motion Values			
	Parameter			
Mapped Acceleration	Spectral Acceleration, 0.2 second ( $S_s$ )	0.952g		
Parameters	Spectral Acceleration, 1.0 second ( $S_1$ )	0.435g		
Coefficients	Site Coefficient, 0.2 sec. (F <sub>A</sub> )	1.119		
(Site Class D)	Site Coefficient, 1.0 sec. $(F_V)$	1.565		
Adjusted MCE Spectral	MCE Spectral Acceleration, 0.2 sec. ( $S_{MS}$ )	1.066g		
Response Parameters	MCE Spectral Acceleration, 1.0 sec. ( $S_{M1}$ )	0.681g		
Design Spectral Response	Design Spectral Acceleration, 0.2 seconds $(S_{DS})$	0.710g		
Accelerations	Design Spectral Acceleration, 1.0 second $(S_{D1})$	0.454g		

Based on Section 1613.3.5 of the 2014 OSSC, the site falls into a Seismic Design Category D.

The recommendations presented above were based on design procedures presented in Section 11.4 of ASCE 7-10. A site-specific response analysis could be performed to develop a site-specific design response spectrum at the owner's discretion, if desired, for an additional fee.

### **B.5.0 SEISMIC HAZARDS**

### **B.5.1** Liquefaction

### B.5.1.1 Overview

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil reduces to zero, and the soil deposit can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure.

The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs). For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and

<sup>56</sup> United States Geological Survey, 2015. Seismic Design Parameters determined using:, "U.S. Seismic Design Maps Web Application," from the USGS website http://geohazards.usgs.gov/designmaps/us/application.php.

plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice to identify non-liquefiable, fine-grained soils is based on plasticity characteristics of the soils, as follows: (1) liquid limit greater than 47 percent, (2) plasticity index greater than 20 percent, and (3) moisture content less than 85 percent of the liquid limit<sup>57</sup>. Soils identified as susceptible to liquefaction are analyzed using the industry standard "simplified procedure", originally published by Seed and Idriss<sup>58</sup> in 1971 and updated continually since that time.

Review of hazard mapping available at the Oregon Statewide Geohazards Viewer website<sup>59</sup> indicates the site and immediate vicinity are shown as having no hazard associated with soil liquefaction (non-liquefiable).

The soils encountered within our borings are considered non-liquefiable based on their plasticity characteristics.

### B.5.2 Slope Stability

Due to the relatively minimal planned changes in site grade and relatively level topography at the site, the risk of slope instability due to seismic activity is considered negligible.

### B.5.3 Surface Rupture

### B.5.3.1 Faulting

As discussed above, the site is situated in a region of the country characterized by extensive faulting and known for seismic activity. However, no known faults are mapped on or immediately adjacent to the site, the risk of surface rupture impacting the proposed development at the site due to faulting is considered low.

### B.5.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Given the lack of liquefiable soils at the site, the risk of surface rupture due to lateral spread is considered negligible.

### B.5.4 Tsunami/Seiche Inundation

The site is geographically remote to the Oregon coast and therefore not at risk of inundation from a tsunami occurring in the Pacific Ocean.

<sup>&</sup>lt;sup>57</sup> Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

<sup>&</sup>lt;sup>58</sup> Seed, H.B., and Idriss, I.M., 1971, Simplified Procedure for Evaluating Soil Liquefaction Potential, Journal of Geotechnical Engineering Division, ASCE, 97(9), 1249-1273.

<sup>&</sup>lt;sup>59</sup> Oregon HazVu: Statewide Hazards Viewer, 2015. Oregon Department of Geology and Mineral Industries: <u>http://www.oregongeology.org/hazvu</u>

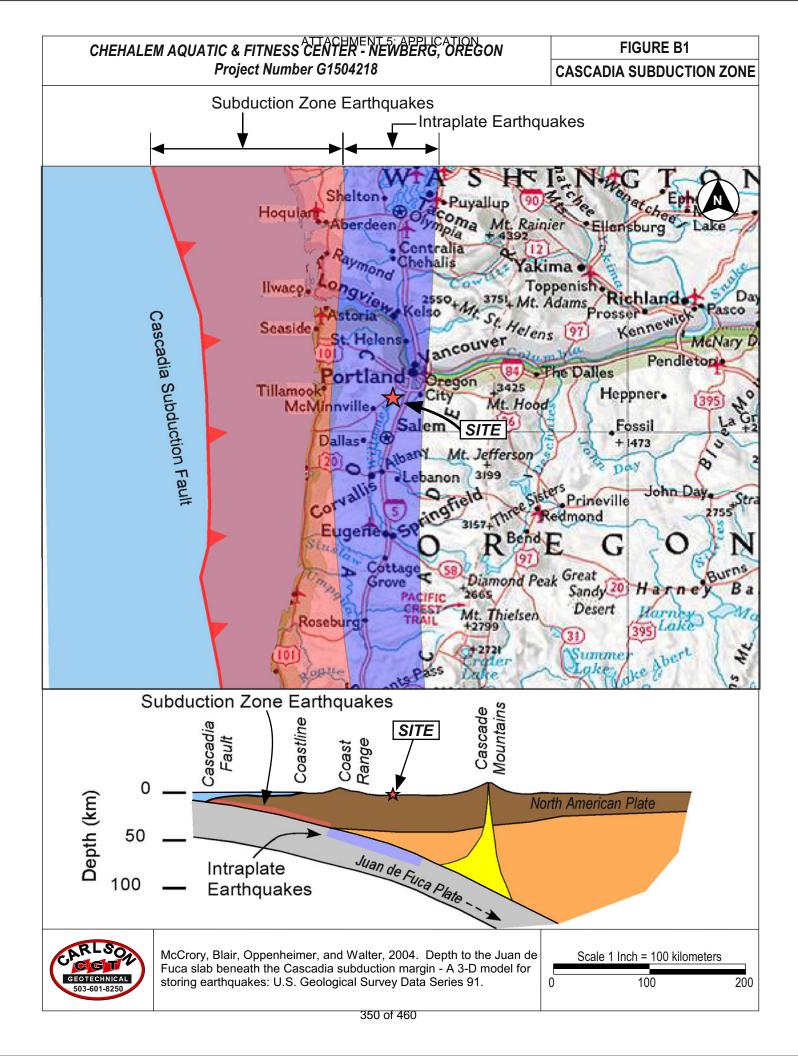
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The term seiche refers to oscillating standing waves that can produce dramatic changes in water level over relatively short periods of time and can cause inundation of nearby areas. A seiche can be generated in enclosed or partially enclosed bodies of water by atmospheric conditions or seismic activity. The site is not located near any large body of water that could produce a seismically-induced seiche. Accordingly, the hazard associated with seiche inundation at the site is generally considered negligible.

### B.6.0 REPORT SUBMITTAL

According to Section 1803.9 of the 2014 OSSC, the applicant should submit one copy of the Site-Specific Seismic Hazards Study to the building permit issuing agency (the jurisdiction), and one copy to the Oregon Department of Geology and Mineral Industries (DOGAMI). The DOGAMI report can be submitted to the following address:

DOGAMI – Site Specific Seismic Hazards Study Administrative Offices 800 NE Oregon Street #28, Suite 965 Portland, Oregon 97232





**Community Development Department** 

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## PLANNING COMMISSION STAFF REPORT - DEVELOPMENT CODE AMENDMENT

HEARING DATE: April 14, 2016

FILE NO: DCA-16-001

APPLICANT: Initiated by Newberg City Council on February 1, 2016

REQUEST: Amend the Newberg Development Code for recreational marijuana wholesalers, laboratories, research certificates and retailers as permitted, conditional or prohibited uses in districts and subdistricts within the City of Newberg

### ATTACHMENTS:

Resolution 2016-314 with

Exhibit "A": Proposed Development Code Text Amendment Exhibit "B": Findings

- 1. City Council Resolution 2015-3253
- 2. Public Comment from Leif Patterson
- 3. 1,000 foot Schools Buffer Map
- 4. 1,000 foot Parks Buffer Map
- 5. 1,000 foot Schools/Parks Buffer Map
- **A. SUMMARY:** The proposed Development Code amendments do the following:
  - Adds Recreational Marijuana Laboratories as a permitted use in C-1, C-2, C-3, C-4, C-1/SP, C-2/LU, C-2/PD, C-2/SP, C-3/LU, SD/V, SD/NC, SD/H, M-1, M-2, M-3, M-4-I, M-4-C, SD/E, M-1/SP, II, AIO and CC.
  - Adds Recreational Marijuana Research Certificates as a permitted use in C-1, C-2, C-3, C-4, C-1/SP, C-2/LU, C-2/PD, C-2/SP, C-3/LU, SD/V, SD/NC, SD/H, M-1, M-2, M-3, M-4-I, M-4-C, SD/E, M-1/SP, II, AIO and CC.
  - Adds Recreational Marijuana Retailers as a permitted use in C-1, C-2, C-3, C-4, C-1/SP, C-2/LU, C-2/PD, C-2/SP, C-3/LU, SD/V, SD/NC and SD/H with footnotes for a 1,000 foot buffer from parks and schools, and operating hours limited to the hours between 9 AM and 8 PM.
  - Adds Recreational Marijuana Wholesalers as a permitted use in R-1, R-2, R-3, R-4, RP, AR, R-1/PD, R-1/0.1, R-1/0.4, R-1/6.6, R-1/SP, R-2/PD, R-2/SP, SD/LDR, SD/MMR, R-3/PD, RP/SP, RP/LU and ARO with footnote of no product on premises.
  - Adds Recreational Marijuana Wholesalers as a conditional use in C-2 with footnotes allowed

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indoors only and 1,000 foot buffer from parks and schools.

• Adds Recreational Marijuana Wholesalers as a permitted use in M-1, M-2, M-3, M-4-I, M-1/SP, SD/E and II.

**BACKGROUND:** The Oregon voters passed Measure 91 on recreational marijuana in November 2014. The Oregon Legislature enacted four bills during the 2015 legislative session related to the Oregon Medical Marijuana Act and Measure 91. House Bill (HB) 3400 was the omnibus bill covering recreational marijuana and modifications to the medical marijuana program. HB 2014 was enacted addressing taxes on the sale of recreational marijuana, SB 460 related to limited retail sales of marijuana from medical marijuana dispensaries and SB 844 enacted a task force on researching the medical and public health properties of cannabis. In addition to the enacting of the four bills the Oregon Liquor Control Commission adopted temporary Oregon Administrative Rules (OAR's) on October 22, 2015 that were subsequently modified on November 20, 2015 for recreational marijuana under Chapter 845, Division 25.

On September 8, 2015 the Newberg City Council was provided background information on medical and recreational marijuana at its Work Session. At the City Council Business Session on September 8th they established the Marijuana Subcommittee (Subcommittee) comprised of Councilors Rourke, Bacon and McKinney along with non-voting member Mayor Andrews. The City Council also directed staff to bring back an ordinance with a ban of the sale of recreational marijuana from Medical Marijuana Dispensaries.

On September 21, 2015 the Newberg City Council passed Ordinance No. 2015-2787 declaring a ban on the early sale of recreational marijuana by marijuana dispensaries and declaring an emergency.

At the January 12, 2016 Marijuana Subcommittee (Subcommittee) meeting the Subcommittee passed a motion 3-0 directing staff to create a Request for Council Action (RCA) to initiate a Development Code amendment for recreational marijuana wholesale, laboratory, research certificate and retail regulations to bring forward for Council consideration on February 1. The City Council adopted Resolution No. 2015-3253 on February 1, 2016 initiating the Development Code amendment process (Attachment 1).

The Subcommittee met again on February 4, 2016 and developed recommendations on recreational marijuana wholesalers, laboratories, research certificates and retailers.

- **B. PROCESS:** A development code amendment is a Type IV application and follows the procedures in Newberg Development Code 15.100.060. The Planning Commission will hold a legislative hearing on the application. The Commission will make a recommendation to the Newberg City Council. Following the Planning Commission's recommendation, the Newberg City Council will hold a legislative hearing to consider the matter. Important dates related to this application are as follows:
  - 1.2/1/16:The Newberg City Council initiated the Development Code<br/>amendment.

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2.	3/30/16:	Planning staff placed notice on Newberg's website, and posted notice in four public buildings. <i>The Newberg Graphic</i> published notice of the Planning Commission hearing.
3.	4/14/16:	The Planning Commission will hold a legislative hearing to

- consider the application.
- C. **PUBLIC COMMENTS:** As of the writing of this report, the city has received one comment on the application. The comment indicates recreational marijuana sales should be allowed in Newberg (Attachment 2). If the city receives additional written comments by the comment deadline, Planning staff will forward them to the Commissioners.

### **D. ANALYSIS:**

### **PLACE**

Oregon Revised Statutes 475B.015 provides the following definitions:

(24)(a) "Premises" or "licensed premises" includes the following areas of a location licensed under ORS 475B.070, 475B.090, 475B.100 or 475B.110:
(A) All public and private enclosed areas at the location that are used in the business operated at the location, including offices, kitchens, rest rooms and storerooms;
(B) All areas outside a building that the commission has specifically licensed for the production, processing, wholesale sale or retail sale of marijuana items; and
(C) For a location that the commission has specifically licensed for the production of marijuana outside a building, the entire lot or parcel, as defined in ORS 92.010, that the licensee owns, leases or has a right to occupy.
(b) "Premises" or "licensed premises" does not include a primary residence.

Oregon Administrative Rule, Division 25 provides the following definitions:

## GENERAL REQUIREMENTS APPLICABLE TO ALL MARIJUANA LICENSES

### 845-025-1015 Definitions

(38) "Premises" or "licensed premises" includes the following areas of a location licensed under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015:
(a) All public and private enclosed areas at the location that are used in the business operated at the location, including offices, kitchens, rest rooms and storerooms;
(b) All areas outside a building that the Commission has specifically licensed for the production, processing, wholesale sale or retail sale of marijuana items; and

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(c) For a location that the Commission has specifically licensed for the production of marijuana outside a building, the entire lot or parcel, as defined in ORS 92.010, that the licensee owns, leases or has a right to occupy.

(d) "Premises" or "licensed premises" does not include a primary residence.

(39) "Primary Residence" means real property inhabited for the majority of a calendar year by an owner, renter or tenant, including manufactured homes and vehicles used as domiciles.

HB 3400, Section 33 (ORS 475B.340) allows local governments to regulate the location of recreational marijuana wholesale and retail operations. The law reads:

### (Land Use)

**SECTION 33.** Section 59, chapter 1, Oregon Laws 2015, is amended to read: **Sec. 59.** [(1) Cities and counties may adopt reasonable time, place and manner regulations of the nuisance aspects of establishments that sell marijuana to consumers if the city or county makes specific findings that the establishment would cause adverse effects to occur.]

[(2) The authority granted to cities and counties by this section is in addition to, and not in lieu

of, the authority granted to a city or county under its charter and the statutes and Constitution of this state.]

(1) For purposes of this section, "reasonable regulations" includes:

(a) Reasonable conditions on the manner in which a marijuana producer licensed under section 19, chapter 1, Oregon Laws 2015, may produce marijuana;
(b) Reasonable conditions on the manner in which a marijuana processor licensed

under section 20, chapter 1, Oregon Laws 2015, may process marijuana; (c) Reasonable conditions on the manner in which a marijuana wholesaler licensed under section 21, chapter 1, Oregon Laws 2015, may sell marijuana at wholesale;

(d) Reasonable limitations on the hours during which a marijuana retailer licensed under section 22, chapter 1, Oregon Laws 2015, may operate;
(e) Reasonable conditions on the manner in which a marijuana retailer licensed under section 22, chapter 1, Oregon Laws 2015, may sell marijuana items;
(f) Reasonable requirements related to the public's access to a premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015; and

(g) Reasonable limitations on where a premises for which a license may be issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, may be located.
(2) Notwithstanding ORS 633.738, the governing body of a city or county may adopt ordinances that impose reasonable regulations on the operation of businesses located at premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, if the premises are located in the area subject to the jurisdiction of the city or county, except that the governing body of a city or county may not adopt an ordinance that prohibits a premises for which a license has been issued under section

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from being located within a distance that is greater than 1,000 feet of another premises for which a license has been issued under section 22, chapter 1, Oregon Laws 2015. (3) Regulations adopted under this section must be consistent with city and county comprehensive plans and zoning ordinances and applicable provisions of public health and safety laws.

HB 3400, Section 15 (ORS 575B.100) allows local governments to regulate the location of recreational marijuana wholesale operations. The law reads:

### (License Holders)

**SECTION 15.** Section 21, chapter 1, Oregon Laws 2015, is amended to read: **Sec. 21.** (1) The wholesale sale of marijuana items is subject to regulation by the Oregon Liquor Control Commission.

(2) A marijuana wholesaler must have a wholesale license issued by the commission for the premises at which marijuana items are received, [*kept*,] stored[,] or delivered.

To hold a wholesale license under this section, a marijuana wholesaler: (a) Must apply for a license in the manner described in section 28, chapter 1, Oregon Laws 2015;

(b) Must, until January 1, 2020, provide proof that an applicant listed on an application submitted under section 28, chapter 1, Oregon Laws 2015, has been a resident of this state for two or more years, and must provide proof that the applicant is 21 years of age or older;

(c) May not be located in an area that is zoned exclusively for residential use; and (d) Must meet the requirements of any rule adopted by the commission under subsection (3) of this section.

(3) The commission shall adopt rules that:

(a) Require a marijuana wholesaler to annually renew a license issued under this section;

(b) Establish application, licensure and renewal of licensure fees for marijuana wholesalers;

(c) Require marijuana items received, stored or delivered by a marijuana wholesaler to be tested in accordance with section 92 of this 2015 Act; and

(d) Require a marijuana wholesaler to meet any public health and safety standards and industry best practices established by the commission by rule.

(4) Fees adopted under subsection (3)(b) of this section:

(a) May not exceed the cost of administering sections 3 to 70, chapter 1, Oregon Laws 2015, with respect to marijuana wholesalers; and

(b) Shall be deposited in the Marijuana Control and Regulation Fund established under section 32 of this 2015 Act.

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HB 3400, Sections 16 and 17 (ORS 475B.110) allows local governments to regulate the location of recreational marijuana retail operations. The law reads:

**SECTION 16.** Section 22, chapter 1, Oregon Laws 2015, is amended to read: **Sec. 22.** (1) The retail sale of marijuana items is subject to regulation by the Oregon Liquor Control Commission.

(2) A marijuana retailer must have a retail license issued by the commission for the premises at which marijuana items are sold. **To hold a retail license under this** section, a marijuana retailer:

(a) Must apply for a license in the manner described in section 28, chapter 1, Oregon Laws 2015;

(b) Must, until January 1, 2020, provide proof that an applicant listed on an application submitted under section 28, chapter 1, Oregon Laws 2015, has been a resident of this state for two or more years, and must provide proof that the applicant is 21 years of age or older;

(c) May not be located in an area that is zoned exclusively for residential use; (d) May not be located within 1,000 feet of:

(A) A public elementary or secondary school for which attendance is compulsory under ORS 339.020; or

(B) A private or parochial elementary or secondary school, teaching children as described in ORS 339.030 (1)(a); and

(e) Must meet the requirements of any rule adopted by the commission under subsection (3) of this section.

(3) The commission shall adopt rules that:

(a) Require a marijuana retailer to annually renew a license issued under this section;

(b) Establish application, licensure and renewal of licensure fees for marijuana retailers;

(c) Require marijuana items sold by a marijuana retailer to be tested in accordance with section 92 of this 2015 Act; and

(d) Require a marijuana retailer to meet any public health and safety standards and industry best practices established by the commission by rule.

(4) Fees adopted under subsection (3)(b) of this section:

(a) May not exceed the cost of administering sections 3 to 70, chapter 1, Oregon Laws 2015, with respect to marijuana retailers; and

(b) Shall be deposited in the Marijuana Control and Regulation Fund established under section 32 of this 2015 Act.

**SECTION 17.** If a school described in section 22 (2)(d), chapter 1, Oregon Laws 2015, that has not previously been attended by children is established within 1,000 feet of a premises for which a license has been issued under section 22, chapter 1, Oregon Laws 2015, the marijuana retailer located at that premises may remain at that location unless the Oregon Liquor Control Commission revokes the license of the marijuana retailer under section 30, chapter 1, Oregon Laws 2015.

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HB 3400, Section 34 (ORS 475B.370 and ORS 475B.063) establishes a requirement for a land use compatibility statement for recreational marijuana wholesale and retail uses. The law reads:

**SECTION 34.** (1) Notwithstanding any other provision of law, marijuana is: (a) A crop for the purposes of "farm use" as defined in ORS 215.203;

(b) A crop for purposes of a "farm" and "farming practice," both as defined in ORS 30.930;

(c) A product of farm use as described in ORS 308A.062; and

(d) The product of an agricultural activity for purposes of ORS 568.909.

(2) Notwithstanding ORS chapters 195, 196, 197 and 215, the following are not permitted uses on land designated for exclusive farm use:

(a) A new dwelling used in conjunction with a marijuana crop;

(b) A farm stand, as described in ORS 215.213 (1)(r) or 215.283 (1)(o), used in conjunction with a marijuana crop; and

(c) A commercial activity, as described in ORS 215.213 (2)(c) or 215.283 (2)(a), carried on in conjunction with a marijuana crop.

(3) A county may allow the production of marijuana as a farm use on land zoned for farm or forest use in the same manner as the production of marijuana is allowed in exclusive farm use zones under this section and ORS 215.213 and 215.283.

(4)(a) Prior to the issuance of a license under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, the Oregon Liquor Control Commission shall request a land use compatibility statement from the city or county that authorizes the land use. The land use compatibility statement must demonstrate that the requested license is for a land use that is allowable as a permitted or conditional use within the given zoning designation where the land is located. The commission may not issue a license if the land use compatibility statement shows that the proposed land use is prohibited in the applicable zone.

(b) A city or county that receives a request for a land use compatibility statement under this subsection must act on that request within 21 days of:

(A) Receipt of the request, if the land use is allowable as an outright permitted use; or

(B) Final local permit approval, if the land use is allowable as a conditional use. (c) A city or county action concerning a land use compatibility statement under this subsection is not a land use decision for purposes of ORS chapter 195, 196, 197 or 215.

Oregon Administrative Rule, Division 25 establishes a requirement for a land use compatibility statement for recreational marijuana wholesale and retail uses. The rule reads:

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### 845-025-1090 Application Review

(1) Once the Commission has determined that an application is complete it must review the application to determine compliance with chapter 1, Oregon Laws 2015, chapter 614, Oregon Laws 2015, and these rules.

(2) The Commission:

(a) Must, prior to acting on an application, request a land use compatibility statement from the city or county that authorizes land use in the city or county in which the applicant's proposed premises is located or request verification that a land use compatibility statement submitted by an applicant is valid and accurate

(b) May, in its discretion, prior to acting on an application:

(A) Contact any applicant or individual with a financial interest and request additional documentation or information; and

(B) Verify any information submitted by the applicant.

(3) The Commission must inspect the proposed premises prior to issuing a license.

(4) If during an inspection the Commission determines the applicant is not in compliance with these rules, the applicant will be provided with a notice of the failed inspection and the requirements that have not been met.

(a) An applicant that fails an inspection will have 15 calendar days from the date the notice was sent to submit a written response that demonstrates the deficiencies have been corrected.

(b) An applicant may request in writing one extension of the 15-day time limit in subsection (a) of this section, not to exceed 30 days.

(5) If an applicant does not submit a timely plan of correction or if the plan of correction does not correct the deficiencies in a manner that would bring the applicant into compliance, the Commission may deny the application.

(6) If the plan of correction appears, on its face, to correct the deficiencies, the Commission will schedule another inspection.

(7) If an applicant fails a second inspection, the Commission may deny the application unless the applicant shows good cause for the Commission to perform additional inspections.

Oregon Administrative Rule, Division 25 establishes requirements and limitations for denial of a license by the Oregon Liquor Control Commission for wholesale and retail recreational marijuana uses. The rule reads:

### 845-025-1115

### **Denial of Application**

(1) The Commission must deny an initial or renewal application if:

(a) An applicant is under the age of 21 or, until January 1, 2020, has not been a resident or Oregon for at least two years. If the Commission determines that an applicant is a non-resident the Commission will hold that application under review until 30 days after the 2016 Oregon Legislature adjourns.

(b) The applicant's land use compatibility statement shows that the proposed land use is prohibited in the applicable zone.

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(c) The proposed licensed premises is located:

(A) On federal property.

(B) At the same physical location or address as a:

(i) Medical marijuana grow site registered under ORS 475.304, unless the grow site is also licensed under section 116, chapter 614, Oregon laws 2015;

(ii) Medical marijuana processing site registered under section 85, chapter 614, Oregon Laws 2015; or

(iii) Medical marijuana dispensary registered under ORS 475.314.

(C) At the same physical location or address as a liquor licensee licensed under ORS chapter 471 or as a retail liquor agent appointed by the Commission.

(d) The proposed licensed premises of a producer applicant is:

(A) On public land; or

(B) On the same tax lot or parcel as another producer licensee under common ownership.

(e) The proposed licensed premises of a processor who has applied for an endorsement to process extracts is located in an area that is zoned exclusively for residential use.

(f) The proposed licensed premises of a retail applicant is located:

(A) Within 1,000 feet of:

(i) A public elementary or secondary school for which attendance is compulsory under ORS 339.020; or (ii) A private or parochial elementary or secondary school, teaching children as described in ORS 339.030.

(B) In an area that is zoned exclusively for residential use.

(g) The proposed licensed premises of a wholesaler applicant is in an area zoned exclusively for residential use.

(h) A city or county has prohibited the license type for which the applicant is applying, in accordance with sections 133 or 134, chapter 614, Oregon Laws 2015.

(2) The Commission may deny an initial or renewal application, unless the applicant shows good cause to overcome the denial criteria, if it has reasonable cause to believe that:

(a) The applicant:

(A) Is in the habit of using alcoholic beverages, habit-forming drugs, marijuana, or controlled substances to excess.

(B) Has made false statements to the Commission.

(C) Is incompetent or physically unable to carry on the management of the establishment proposed to be licensed.

(D) Is not of good repute and moral character.

(E) Does not have a good record of compliance with sections 3 to 70, chapter 1, Oregon Laws 2015, chapter 614, Oregon Laws 2015, or these rules, prior to or after licensure including but not limited to:

(i) The giving away of marijuana items as a prize, premium or consideration for a lottery, contest, game of chance or skill, or competition of any kind, in violation of section 49, chapter 614, Oregon Laws 2015; (ii) Providing marijuana items to an individual without checking that the individual is 21 or older;

(iii) Unlicensed transfer of marijuana items for financial consideration; or (iv)Violations of local ordinances adopted under section 33, chapter 614, Oregon Laws2015, pending or adjudicated by the local government that adopted the ordinance.

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(F) Is not possessed of or has not demonstrated financial responsibility sufficient to adequately meet the requirements of the business proposed to be licensed.

(G) Is unable to understand the laws of this state relating to marijuana or these rules, including but not limited to ORS 475.300 to 475.346 and sections 91 to 99, chapter 614, Oregon Laws 2015. Inability to understand laws and rules of this state related to marijuana may be demonstrated by violations documented by the Oregon Health Authority.

(b) Any individual listed on the application has been convicted of violating a general or local law of this state or another state, or of violating a federal law, if the conviction is substantially related to the fitness and ability of the applicant to lawfully carry out activities under the license, except as specified in Section 29(3), chapter 1, Oregon Laws 2015.

(c) Any applicant is not the legitimate owner of the business proposed to be licensed, or other persons have an ownership interest in the business have not been disclosed to the Commission.

(3) The Commission may refuse to issue a license to any license applicant or refuse to renew the license of any licensee when conditions exist in relation to any person having a financial interest in the business or in the place of business which would constitute grounds for refusing to issue a license or for revocation or suspension of a license if such person were the license applicant or licensee. However, in cases where the financial interest is held by a corporation, only the officers and directors of the corporation, any individual or combination of individuals who own a controlling financial interest in the business shall be considered persons having a financial interest within the meaning of this subsection.

(4) The Commission will not deny an application under subsections (1) (c) (B) of this rule if the applicant surrenders the registration issued by the Authority prior to being issued an OLCC license.

(5) If the Commission denies an application because an applicant submitted false or misleading information to the Commission, the Commission may prohibit the applicant from re-applying for five years.

(6) A notice of denial must be issued in accordance with ORS 183.

Oregon Administrative Rule, Division 25 establishes restrictions and requirements for wholesale and retail recreational marijuana uses. The rule reads:

### 845-025-1230

### **Licensed Premises Restrictions and Requirements**

(1) A licensed premises may not be located:

(a) On federal property; or

(b) At the same physical location or address as a:

(A) Medical marijuana grow site registered under ORS 475.304, unless the grow site is also licensed under section 116, chapter 614, Oregon Laws 2015;

(B) Medical marijuana processing site registered under section 85, chapter 614,

Oregon Laws 2015; or

(C) Medical marijuana dispensary registered under ORS 475.314.

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(D) Liquor licensee licensed under ORS Chapter 471 or as a retail liquor agent appointed by the Commission.

(2) The licensed premises of a producer applicant may not be on:

(a) Public land; or

(b) The same tax lot or parcel as another producer licensee under common ownership.

(3) The licensed premises of a retailer may not be located:

(a) Within 1,000 feet of:

(A) A public elementary or secondary school for which attendance is compulsory under ORS 339.020; or

(B) A private or parochial elementary or secondary school, teaching children as described in ORS 339.030.

(b) In an area that is zoned exclusively for residential use.

(4) The licensed premises of a processor who has an endorsement to process extracts may not be located in an area that is zoned exclusively for residential use.

(5) The licensed premises of a processor, wholesaler, laboratory and retailer must be enclosed on all sides by permanent walls and doors.

(6) A licensee may not permit:

(a) Any minor on a licensed premises except as described in section (7) and (8) of this rule; or

(b) On-site consumption of a marijuana item, alcohol, or other intoxicant by any individual, except that an employee who has a current registry identification card issued under ORS 475.309 may consume marijuana during his or her work shift on the licensed premises as necessary for his or her medical condition, if the employee is alone, in a closed room and not visible to others outside the room. An employee who consumes a marijuana item as permitted under this subsection may not be intoxicated while on duty.

(7) Notwithstanding section (6)(a) of this rule, a minor, other than a licensee's employee, who has a legitimate business purpose for being on the licensed premises, may be on the premises for a limited period of time in order to accomplish the legitimate business purpose. For example, a minor plumber may be on the premises in order to make a repair.

(8) Notwithstanding section (6)(a) of this rule, a minor who resides on the tax lot or parcel where a marijuana producer is licensed may be present on those portions of a producer's licensed that do not contain usable marijuana or cut and drying marijuana plants.

(9) A licensee must clearly identify all limited access areas in accordance with OAR 845-025- 1245.

(10) A licensee must keep a daily log of all employees, contractors and license representatives who perform work on the licensed premises. All employees, contractors and licensee representatives must wear clothing or a badge issued by the licensee that easily identifies the individual as an employee, contractor or licensee representative.

(11) The general public is not permitted in limited access areas on a licensed premises, except for the licensed premises of a retailer and as provided by section (14) of this rule. In addition to licensee representatives, the following individuals are permitted to

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be present in limited access areas on a licensed premises, subject to the requirements in section (12) of this rule:

(a) Laboratory personnel, if the laboratory is licensed by the Commission;

(b) A contractor, vendor or service provider authorized by a licensee representative to be on the licensed premises;

(c) Another licensee or that licensee's representative;

(d) Up to seven invited guests per week subject to requirements of section (12) of this rule; or

(e) Tour groups as permitted under section (14) of this rule.

(12) Prior to entering a licensed premises all visitors permitted by section (11) of this rule must be documented and issued a visitor identification badge from a licensee representative that must remain visible while on the licensed premises. A visitor badge is not required for government officials. All visitors described in subsection (11) of this rule must be accompanied by a licensee representative at all times.

(13) A licensee must maintain a log of all visitor activity. The log must contain the first and last name and date of birth of every visitor and the date they visited.

(14) A marijuana producer or research certificate holder may offer tours of the licensed premises, including limited access areas, to the general public if the licensee submits a control plan in writing and the plan is approved by the Commission.

(a) The plan must describe how conduct of the individuals on the tour will be monitored, how access to usable marijuana will be limited, and what steps the licensee will take to ensure that no minors are permitted on the licensed premises.

(b) The Commission may withdraw approval of the control plan if the Commission finds there is poor compliance with the plan. Poor compliance may be indicated by, for example, individuals on the tour not being adequately supervised, an individual on the tour obtaining a marijuana item while on the tour, a minor being part of a tour, or the tours creating a public nuisance.

(15) Nothing in this rule is intended to prevent or prohibit Commission employees or contractors, or other state or local government officials that have jurisdiction over some aspect of the licensed premises or licensee from being on the licensed premises.(16) A licensee may not sublet any portion of a licensed premises.

(17) A licensed premises may receive marijuana items only from a marijuana producer, marijuana processor, or marijuana wholesaler for whom a premises has been licensed by the Commission.

(18) A licensed wholesaler or retailer who sells or handles food, as that term is defined in ORS 616.695, or cannabinoid edibles must also be licensed by the Oregon Department of Agriculture under ORS 616.706.

Oregon Administrative Rule, Division 25 establishes restrictions on the location of recreational marijuana retail uses. The rule reads:

### 845-025-2840

### **Retailer Premises**

(1) The licensed premises of a retailer:(a) May not be located in an area that is zoned exclusively for residential use.

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(b) May not be located within 1,000 feet of:

(A) A public elementary or secondary school for which attendance is compulsory under ORS 339.020; or

(B) A private or parochial elementary or secondary school, teaching children as described in ORS 339.030.

(c) Must be enclosed on all sides by permanent walls and doors.

(2) A retailer must post in a prominent place signs at every:

(a) Point of sale that read:

(A) "No Minors Permitted Anywhere on the Premises"; and

(B) "No On-Site Consumption".

(b) Exit from the licensed premises that reads: "Marijuana or Marijuana Infused Products May Not Be Consumed In Public".

(3) A retailer must designate a consumer sales area on the licensed premises where consumers are permitted. The area shall include the portion of the premises where marijuana items are displayed for sale to the consumer and sold and may include other contiguous areas such as a lobby or a restroom. The consumer sales area is the sole area of the licensed premises where consumers are permitted.

(4) All inventory must be stored on the licensed premises.

(5) For purposes of determining the distance between a retailer and a school referenced in subsection (1)(b) of this rule, "within 1,000 feet" means a straight line measurement in a radius extending for 1,000 feet or less in any direction from the closest point anywhere on the boundary line of the real property comprising a school to the closest point of the licensed premises of a retailer. If any portion of the licensed premises is within 1,000 feet of a school as described subsection (1)(b) of this rule an applicant will not be licensed.

HB 3400 and Oregon Administrative Rule, Division 25 have no specific provisions for the location of testing laboratories and research certificate facilities. Research certificates can be issued to qualifying private and public researchers. The Planning Commission may want to consider limiting these two uses. One option is to allow testing laboratories as a permitted use in industrial districts. For research certificates an option is to allow the activity as a permitted use in industrial districts. The Planning Commission may also want to consider if research certificate activities should be allowed in the Institutional District. The rules for testing laboratories and research certificates reads as follows:

### MARIJUANA TESTING LABORATORIES

### 845-025-5000

### Laboratory License Privileges

A licensed marijuana testing laboratory may:

(1) Obtain samples of marijuana items from licensees for purposes of performing testing as provided in these rules and OAR 333-007-0300 to 333-007-0490;
(2) Transport and dispose of samples as provided in these rules; and

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(3) Perform testing on marijuana items in a manner consistent with the laboratory's accreditation by the Oregon Health Authority, these rules and OAR 333-007-0300 to 333-007-0490.

### 845-025-5030

### Laboratory Licensing Requirements

(1) General Requirements

(a) A laboratory that intends to test marijuana items for producer, processor, wholesale or retail licensees must be licensed by the Commission.

(b) An applicant for a license under this rule must comply with all applicable application requirements in OAR 845-025-1030 and pay the required application and license fees, except that a laboratory licensee is not subject to any residency requirements.

(c) A laboratory application is subject to the same application review procedures as other applicants.

(d) In addition to the denial criteria in OAR 845-025-1115, the Commission may refuse to issue a laboratory license for any violation of sections 91 to 99, chapter 614, Oregon Laws 2015, sections 3 to 70, chapter 1, Oregon Laws 2015, or these rules.
(e) Laboratory application and license fees are established in OAR 845-025-1060.

(2) Accreditation by the Oregon Health Authority

(a) In addition to the requirements listed in section (1) of this rule, an applicant for a laboratory license must be accredited by the Authority with a scope of accreditation that includes the sampling and testing analysis required in OAR 333-007-0300 to 333-007-0490 prior to exercising the licensed privileges in OAR 845-025-5000.

(b) An applicant for a license under this rule may apply for licensure prior to receiving accreditation, but the Commission will not issue a license until proof of accreditation is received. (c) The Commission may make efforts to verify or check on an applicant's accreditation status during the licensing process, but an applicant bears the burden of taking all steps needed to secure accreditation and present proof of accreditation to the Commission.

(d) In addition to the denial criteria in OAR 845-025-1115, the Commission may consider an application incomplete if the applicant does not obtain accreditation from the Authority within six months of applying for a license. The Commission shall give an applicant an opportunity to be heard if an application is declared incomplete under this section, but an applicant is not entitled to a contested case proceeding under ORS chapter 183. An applicant whose application is declared incomplete may reapply at any time.

(e) A licensed laboratory must maintain accreditation by the Authority at all times while licensed by the Commission. If a laboratory's accreditation lapses, is canceled or is suspended at any time for any reason while licensed by the Commission, the laboratory may not engage in any activities permitted under the license until accreditation is reinstated.

(f) Exercising license privileges while accreditation is suspended or canceled is a Category I violation and could result in license cancellation.

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(3) Renewal.

(a) A laboratory must renew its license annually and pay the required renewal fees in accordance with OAR 845-025-1190.

(b) A laboratory renewal application may be denied for any violation of sections 91 to 99, chapter 614, Oregon Laws 2015, sections 3 to 70, chapter 1, Oregon Laws 2015, or these rules.

### 845-025-5045

### Laboratory Tracking and Reporting

(1) A laboratory licensee is required to utilize CTS and follow all requirements established by OAR 845-025-7500 to OAR 845-025-7590.

(2) A laboratory licensee is responsible for tracking and entering the following information into CTS:

(a) Receipt of samples for testing, including:

(A) Size of the sample;

(B) Name of licensee from whom the sample was obtained;

(C) Date the sample was collected; and

(D) UID tag information associated with the harvest or process lot from which the sample was obtained.

(b) Tests performed on samples, including:

(A) Date testing was performed;

(B) What samples were tested for;

(C) Name of laboratory responsible for testing; and

(D) Results of all testing performed. (c) Disposition of any testing sample material.

### 845-025-5060

### Laboratory Transportation and Waste Disposal

(1) A laboratory licensee must follow all rules regarding transportation of marijuana items established in OAR 845-025-7700.

(2) A laboratory licensee must follow all rules regarding disposal of samples from marijuana items established in OAR 845-025-7750.

### 845-025-5075

### Laboratory Licensee Prohibited Conduct

(1) In addition to the prohibitions set forth in OAR 845-025-8520, a laboratory licensee may not: (a) Perform any required marijuana testing using any testing methods or equipment not permitted under the laboratory's accreditation through the Authority;
(b) Perform any required marijuana testing for any licensed marijuana producer, processor, wholesaler or retailer in which the laboratory licensee has a financial interest; or

(c) Engage in any activity that violates any provision of chapter 1, Oregon Laws 2015, chapter 614, Oregon Laws 2015, OAR 333-007-0300 through OAR 333-007-0490 or OAR 333, Division 64 as applicable or these rules.

(2) The Commission may suspend or cancel a laboratory license for any violation of sections 91 to 99, chapter 614, Oregon Laws 2015, or these rules. The licensee has a

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right to a hearing under the procedures of ORS chapter 183; OAR chapter 137, division 003; and OAR chapter 845, division 003.

(2) A violation of this rule is a Category I violation and could result in license revocation.

### **RESEARCH CERTIFICATE**

### 845-025-5300

### **Application for Marijuana Research Certificate**

(1) The Commission shall issue Marijuana Research Certificates to qualifying public and private researchers who present research proposals that demonstrate:

(a) The proposed research would benefit the state's cannabis industry, medical research or public health and safety; and

(b) The proposed operation and methodology complies with all applicable laws and administrative rules governing marijuana licensees and licensee representatives.

(2) The process for applying for, receiving and renewing a certificate shall be the same as the process for applying for, receiving and renewing a marijuana license under OAR 845-025-1030 to 845-025-1115 except that an applicant for a Marijuana Research Certificate is not subject to the residency requirements in OAR 845-025-1045(2)(b).

(3) In addition to the application requirements in OAR-025-1030 the applicant must also provide: (a) A clear description of the research proposal;

(b) A description of the researchers' expertise in the scientific substance and methods of the proposed research;

(c) An explanation of the scientific merit of the research plan, including a clear statement of the overall benefit of the applicant's proposed research to Oregon's cannabis industry, medical research, or to public health and safety;

(d) Descriptions of key personnel, including clinicians, scientists, or epidemiologists and support personnel who would be involved in the research, demonstrating they are adequately trained to conduct this research;

(e) A clear statement of the applicant's access to funding and the estimated cost of the proposed research;

(f) A disclosure of any specific conflicts of interest that the researcher or other key personnel have regarding the research proposal;

(g) A description of the research methods demonstrating an unbiased approach to the proposed research; and

(h) If the applicant intends to research the use of pesticides, an experimental use permit issued by Oregon Department of Agriculture pursuant to OAR 603-057-0160.

(4) Research certificates will be granted for up to a three-year term.

(5) The Commission may request that the research certificate holder submit information and fingerprints required for a criminal background check at any time within the research certificate term.

(6) A certificate holder may, in writing, request that the Commission waive one or more of these rules. The request must include the following information:

(a) The specific rule and subsection of a rule that is requested to be waived;

(b) The reason for the waiver;

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(c) A description of an alternative safeguard the licensee can put in place in lieu of the requirement that is the subject of the waiver, or why such a safeguard is not necessary; and

(d) An explanation of how and why the alternative safeguard or waiver of the rule protects public health and safety, prevents diversion of marijuana, and provides for accountability.

(7) The Commission may, in its discretion, and on a case-by-case basis, grant the waiver in whole or in part if it finds:

(a) The reason the certificate holder is requesting the waiver is because another state or local law prohibits compliance; or

(b) The certificate holder cannot comply with the particular rule, for reasons beyond the certificate holder's control or compliance with the rule is cost prohibitive; or (c) Because of the nature of the research, the Commissions finds that compliance with a particular rule is not necessary and that even with the waiver public health and safety can be protected, there is no increased opportunity for diversion of marijuana, and the certificate holder remains accountable.

(8) The Commission must notify the certificate holder in writing whether the request has been approved. If the request is approved the notice must specifically describe any alternate safeguards that are required and, if the waiver is time limited, must state the time period the waiver is in effect.

(9) The Commission may withdraw approval of the waiver at any time upon a finding that the previously approved waiver is not protecting public health and safety or the research certificate holder has other issues with compliance. If the Commission withdraws its approval of the waiver the certificate holder will be given a reasonable period of time to come into compliance with the requirement that was waived.

### 845-025-5350

### Marijuana Research Certificate Privileges and Prohibitions

(1) A certificate holder may receive marijuana items from a licensee or a registrant under ORS 475.300 to 475.346.

(2) A certificate holder may not sell or otherwise transfer marijuana items to any other person except when disposing of waste pursuant to OAR 845-025-7750, or transferring to another certificate holder.

(3) A certificate holder may not conduct any human subject research related to marijuana unless the certificate holder has received approval from an institutional review board that has adopted the Common Rule, 45 CFR Part 46.

(4) All administrative rules adopted by Commission for the purpose of administering and enforcing chapter 1, Oregon Laws 2015; chapter 614, Oregon Laws 2015; and any rules adopted thereunder with respect to licensees and licensee representatives apply to certificate holders except for those which are inconsistent with this rule.

The Newberg Municipal Code states the following regarding retail, wholesale and warehouse:

### 15.05.030 Definitions.

For the purpose of this title, the following definitions shall apply unless the context clearly indicates or requires a different meaning:

"**Retail sales – general category**" means a category of uses under Chapter 15.303 NMC that sell or rent goods to the general public. Items are sold indoors, or, if outdoors, are limited to small items that do not require machinery to load to customers. Most items for sale are stored on or picked up from the site. Operators may be commercial or nonprofit entities.

"Wholesale and industry sales category" means a category of uses under Chapter 15.303 NMC that sell goods or merchandise to retailers, to industrial, commercial, institutional, or other professional business users, or to other wholesalers and related subordinated services. Items are only occasionally sold directly to the general public.

"Warehouse, storage and distribution category" means a category of uses under Chapter 15.303 NMC that involve the storage or movement of goods for themselves or other firms. Goods are generally delivered to other firms or the final consumer, except for some will-call pickups. It includes data centers that store and distribute electronic data. There is little on-site sales activity with the customer present.

### **Use Categories**

### 15.303.421 Retail sales – General category.

A. Characteristics. General retail sales uses sell or rent goods to the general public. Items are sold indoors, or, if outdoors, are limited to small items that do not require machinery to load to customers. Most items for sale are stored on or picked up from the site. Operators may be commercial or nonprofit entities.

### 15.303.503 Wholesale and industry sales category.

A. Characteristics. Wholesale sales uses sell goods or merchandise to retailers, to industrial, commercial, institutional, or other professional business users, or to other wholesalers and related subordinated services. Items are only occasionally sold directly to the general public.

### 15.303.504 Warehouse, storage and distribution category.

A. Characteristics. Warehouse. Storage and distribution uses involve the storage, or movement of goods for themselves or other firms. Goods are generally delivered to other firms or the final consumer, except for some will-call pickups. It includes data

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	USES	R-1	R-2	R-3	R-4	RP	C-1	C-2	C-3	C-4	M-1	M-2	M-3	M-4-I	М-4-С	CF	I	AR	AI	Notes and Special Use Standards
400	COMMERCIAL USES																			
	Retail sales - General						P (20)	Р	P (15) (21)	Р		P (23)								
500	INDUSTRIAL USES																			
	Wholesale and industry sales							C (31)			P (31)	Р	Р	Р					P(33)	
	Warehouse, storage and distribution										P (32)	Р	Р	Р					P (33)	

centers that store and distribute electronic data. There is little on-site sales activity with the customer present.

Key:

P: Permitted use

S: Special use – Use requires a special use permit

C: Conditional use - Requires a conditional use permit

X: Prohibited use

(#): See notes for limitations

Notes.

(15) Facility over 40,000 square feet gross floor area requires a conditional use permit.

(20) Businesses in the C-1 zone that have hours of operation between 10:00 p.m. and 7:00 a.m. require a conditional use permit.

(21) Drive-up service windows accessory to an existing business on the site with walk-in customer service, such as a drive-up bank window, are allowed only with a conditional use permit. Otherwise, drive-up service windows, except those in service on April 1, 2002, are prohibited. Changes in use will not be allowed.

(23) Limited to secondhand stores.

(31) Allowed indoors only.

(32) Allowed indoors only. Outdoor use requires a conditional use permit.

(33) Must be aviation-related. See Chapter 15.332 NMC.

### TIME

HB 3400, Section 33 (ORS 475B.340) allows local governments to regulate the hours of operation (time) of marijuana retail operations. The law reads:

### (Land Use)

**SECTION 33.** Section 59, chapter 1, Oregon Laws 2015, is amended to read: **Sec. 59.** [(1) Cities and counties may adopt reasonable time, place and manner regulations of the nuisance aspects of establishments that sell marijuana to consumers

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*if the city or county makes specific findings that the establishment would cause adverse effects to occur.*]

[(2) The authority granted to cities and counties by this section is in addition to, and not in lieu of, the authority granted to a city or county under its charter and the statutes and Constitution of this state.]

(1) For purposes of this section, "reasonable regulations" includes:

(a) Reasonable conditions on the manner in which a marijuana producer licensed under section 19, chapter 1, Oregon Laws 2015, may produce marijuana;
(b) Reasonable conditions on the manner in which a marijuana processor licensed under section 20, chapter 1, Oregon Laws 2015, may process marijuana;
(c) Reasonable conditions on the manner in which a marijuana wholesaler licensed under section 21, chapter 1, Oregon Laws 2015, may sell marijuana at wholesale;

(d) Reasonable limitations on the hours during which a marijuana retailer licensed undersection 22, chapter 1, Oregon Laws 2015, may operate;

(e) Reasonable conditions on the manner in which a marijuana retailer licensed under section 22, chapter 1, Oregon Laws 2015, may sell marijuana items;
(f) Reasonable requirements related to the public's access to a premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015; and

(g) Reasonable limitations on where a premises for which a license may be issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, may be located.
(2) Notwithstanding ORS 633.738, the governing body of a city or county may adopt ordinances that impose reasonable regulations on the operation of businesses located at premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, if the premises are located in the area subject to the jurisdiction of the city or county, except that the governing body of a city or county may not adopt an ordinance that prohibits a premises for which a license has been issued under section 22, chapter 1, Oregon Laws 2015, from being located within a distance that is greater than 1,000 feet of another premises for which a license has been issued under section 22, chapter 1, Oregon Laws 2015.

(3) Regulations adopted under this section must be consistent with city and county comprehensive plans and zoning ordinances and applicable provisions of public health and safety laws.

Oregon Administrative Rule, Division 25 establishes hours of retail sales to consumers. The rule reads:

### 845-025-2820

**Retailer Operational Requirements** 

### (1) A retailer may:

(a) Only receive marijuana items from a producer, wholesaler, processor or laboratory;(b) Only sell marijuana items to a consumer from the licensed premises, unless sale is made pursuant to a bona fide order as described in OAR 845-025-2880;

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(c) Only sell up to the following amounts at any one time to a consumer within one day:

(A) One ounce of usable marijuana;

(B) 16 ounces of a cannabinoid product in solid form;

(C) 72 ounces of a cannabinoid product in liquid form;

(D) Five grams of cannabinoid extracts or concentrate, whether sold alone or contained in an inhalant delivery system;

(E) Four immature marijuana plants; and

(F) Ten marijuana seeds;

(d) Refuse to sell marijuana items to a consumer; and

(e) Only sell to consumers between the hours of 7:00 a.m. and 10 p.m. local time.

(2) A retailer may not:

(a) Provide free samples of a marijuana item to a consumer;

(b) Sell or give away pressurized containers of butane or other materials that could be used in the home production of marijuana extracts;

(c) Require a consumer to purchase other products or services as a condition of purchasing a marijuana item or receiving a discount on a marijuana item;

(d) Sell a marijuana item for less than the cost of acquisition;

(e) Provide coupons or offer discounts, except that uniform volume discounts are permitted;

(f) Permit consumers to be present on the licensed premises or sell to a consumer between the hours of 10:00 p.m. and 7:00 a.m. local time the following day; or (g) Sell any product derived from industrial hemp, as that is defined in ORS 571.300, that is intended for human consumption, ingestion, or inhalation, unless it has been tested, labeled and packaged in accordance with these rules.

(3) A retailer's pricing on marijuana items must remain consistent during each day.
(4) Prior to completing the sale of a marijuana item to a consumer, a retailer must verify that the consumer has a valid, unexpired government-issued photo identification and must verify that the consumer is 21 years of age or older by viewing the consumer's:

(a) Passport;

(b) Driver license, whether issued in this state or by any other state, as long as the license has a picture of the person;

(c) Identification card issued under ORS 807.400;

(d) United States military identification card; or

(e) Any other identification card issued by a state that bears a picture of the person, the name of the person, the person's date of birth and a physical description of the person.(5) Marijuana items offered for sale by a retailer must be stored in such a manner that the items are only accessible to authorized representatives until such time as the final sale to the consumer is completed.

(6) For purposes of this rule, "coupon" means any coupon, ticket, certificate token or any other material that a person may use to obtain a price reduction or rebate in connection with the acquisition or purchase of a marijuana item.

There are no additional provisions in ORS or OAR's regarding hours of operation for wholesalers, laboratories or research certificates. For laboratories and research facilities if they

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were permitted in industrial districts they could be considered to be similar to an industrial operation. The Development Code does not limit hours of operation for industrial type uses. For Medical Marijuana Dispensaries Council adopted operational hours of 9 AM - 8 PM.

### MANNER

HB 3400, Section 33 (ORS 475B.340) allows local governments to regulate the manner of recreational marijuana wholesale and retail uses. The law reads:

### (Land Use)

**SECTION 33.** Section 59, chapter 1, Oregon Laws 2015, is amended to read: **Sec. 59.** [(1) Cities and counties may adopt reasonable time, place and manner regulations of the nuisance aspects of establishments that sell marijuana to consumers if the city or county makes specific findings that the establishment would cause adverse effects to occur.]

[(2) The authority granted to cities and counties by this section is in addition to, and not in lieu of, the authority granted to a city or county under its charter and the statutes and Constitution of this state.]

(1) For purposes of this section, "reasonable regulations" includes:

(a) Reasonable conditions on the manner in which a marijuana producer licensed under section 19, chapter 1, Oregon Laws 2015, may produce marijuana;
(b) Reasonable conditions on the manner in which a marijuana processor licensed under section 20, chapter 1, Oregon Laws 2015, may process marijuana;
(c) Reasonable conditions on the manner in which a marijuana wholesaler licensed under section 21, chapter 1, Oregon Laws 2015, may sell marijuana at wholesale;

(d) Reasonable limitations on the hours during which a marijuana retailer licensed under section 22, chapter 1, Oregon Laws 2015, may operate;
(e) Reasonable conditions on the manner in which a marijuana retailer licensed under section 22, chapter 1, Oregon Laws 2015, may sell marijuana items;

(f) Reasonable requirements related to the public's access to a premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015; and

(g) Reasonable limitations on where a premises for which a license may be issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, may be located.
(2) Notwithstanding ORS 633.738, the governing body of a city or county may adopt ordinances that impose reasonable regulations on the operation of businesses located at premises for which a license has been issued under section 19, 20, 21 or 22, chapter 1, Oregon Laws 2015, if the premises are located in the area subject to the jurisdiction of the city or county, except that the governing body of a city or county may not adopt an ordinance that prohibits a premises for which a license has been issued under section 22, chapter 1, Oregon Laws 2015, from being located within a distance that is greater than 1,000 feet of another premises for which a license has been issued under section 22, chapter 1, Oregon

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Laws 2015.

(3) Regulations adopted under this section must be consistent with city and county comprehensive plans and zoning ordinances and applicable provisions of public health and safety laws.

HB 3400, Sections 19 and 20 (ORS 475B.215 and ORS 475B.218) establishes requirements for marijuana handlers in recreational marijuana retail operations. The law reads:

### (Marijuana Handlers)

<u>SECTION 19.</u> (1) An individual who performs work for or on behalf of a person who holds a license under section 22, chapter 1, Oregon Laws 2015, must have a valid permit issued by the Oregon Liquor Control Commission under section 20 of this 2015 Act if the individual participates in:

(a) The possession, securing or selling of marijuana items at the premises for which the license has been issued;

(b) The recording of the possession, securing or selling of marijuana items at the premises for which the license has been issued; or

(c) The verification of any document described in section 16, chapter 1, Oregon Laws 2015.

(2) A person who holds a license under section 22, chapter 1, Oregon Laws 2015, must verify that an individual has a valid permit issued under section 20 of this 2015 Act before allowing the individual to perform any work described in subsection (1) of this section at the premises for which the license has been issued.

<u>SECTION 20.</u> (1) The Oregon Liquor Control Commission shall issue permits to qualified applicants to perform work described in section 19 of this 2015 Act. The commission shall adopt rules establishing:

(a) The qualifications for performing work described in section 19 of this 2015 Act;

(b) The term of a permit issued under this section;

(c) Procedures for applying for and renewing a permit issued under this section; and

(d) Reasonable application, issuance and renewal fees for a permit issued under this section.

(2)(a) The commission may require an individual applying for a permit under this section to successfully complete a course, made available by or through the commission, through which the individual receives training on:

(A) Checking identification;

(B) Detecting intoxication;

(C) Handling marijuana items;

(D) The content of sections 3 to 70, chapter 1, Oregon Laws 2015, and rules adopted under sections 3 to 70, chapter 1, Oregon Laws 2015; and

(E) Any matter deemed necessary by the commission to protect the public health and safety.

(b) The commission or other provider of the course may charge a reasonable fee

for the course.

(c) The commission may not require an individual to successfully complete the course more than once, except that:

(A) As part of a final order suspending a permit issued under this section, the commission may require a permit holder to successfully complete the course as a condition of lifting the suspension; and

(B) As part of a final order revoking a permit issued under this section, the commission shall require an individual to successfully complete the course prior to applying for a new permit.

(3) The commission shall conduct a criminal records check under ORS 181.534 on an individual applying for a permit under this section.

(4) Subject to the applicable provisions of ORS chapter 183, the commission may suspend, revoke or refuse to issue or renew a permit if the individual who is applying for or who holds the permit:

(a) Is convicted of a felony, except that the commission may not consider a conviction for the manufacture or delivery of marijuana if the date of the conviction is two or more years before the date of the application or renewal;(b) Violates any provision of sections 3 to 70, chapter 1, Oregon Laws 2015, or

any rule adopted under sections 3 to 70, chapter 1, Oregon Laws 2015; or (c) Makes a false statement to the commission.

(5) A permit issued under this section is a personal privilege and permits work described under section 19 of this 2015 Act only for the individual who holds the permit.

Oregon Administrative Rule, Division 25 establishes requirements for handlers in recreational marijuana retail operations. The rule reads:

### MARIJUANA HANDLER PERMITS

### 845-025-5500

### Marijuana Handler Permit and Retailer Requirements

(1) A marijuana handler permit is required for any individual who performs work for or on behalf of a marijuana retailer if the individual participates in:

(a) The possession, securing or selling of marijuana items at the premises for which the license has been issued;

(b) The recording of the possession, securing or selling of marijuana items at the premises for which the license has been issued;

(c) The verification of any document described in section 16, chapter 1, Oregon Laws 2015; or

(d) The direct supervision of a person described in subsections (a) to (c) of this section.

(2) An individual who is required by section (1) of this rule to hold a marijuana handler permit must carry that permit on his or her person at all times when performing work on behalf of a marijuana retailer.

(3) A person who holds a marijuana handler permit must notify the Commission in writing within 10 days of any conviction for a misdemeanor or felony. (4) A marijuana

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retailer must verify that an individual has a valid marijuana handler permit issued in accordance with OAR 845-025-5500 to 845-025-5590 before allowing the individual to perform any work at the licensed premises.

### 845-025-5520

### Marijuana Handler Applications

(1) In order to obtain a marijuana handler permit an individual must submit an application on a form prescribed by the Commission. The application must contain the applicant's:

(a) Name;

(b) Mailing address;

(c) Date of birth;

(d) Signature; and

(e) Response to conviction history questions.

(2) In addition to the application an applicant must submit:

(a) A copy of a driver's license or identification card issued by one of the fifty states in the United States of America or a passport; (b) The applicable fee as specified in OAR 845-025-1060; and

(c) Proof of having completed a marijuana handler education course and passed the examination. (3) If an application does not contain all the information requested or if the information and fee required in section (2) of this rule is not provided to the Commission, the application will be returned to the individual as incomplete, along with the fee.

(4) If an application is returned as incomplete, the individual may reapply at any time.

### 845-025-5540

### Marijuana Handler Permit Denial Criteria

(1) The Commission must deny an initial or renewal application if the applicant:

(a) Is not 21 years of age or older; or

(b) Has not completed the marijuana handler education course and passed the examination.

(2) The Commission may deny a marijuana handler permit application, unless the applicant shows good cause to overcome the denial criteria, if the applicant:

(a) Has been convicted of a felony, except for a felony described in section 20(4)(a), chapter 614, Oregon Laws 2015;

(b) Has violated a provision of sections 3 to 70, chapter 1, Oregon Laws 2015, or these rules; or (c) Makes a false statement to the Commission.

(3) If the Commission denies an application under subsection (2)(b) or (c) of this rule the individual may not reapply within two years of the date the Commission received the application. (4) A Notice of Denial must be issued by the Commission in accordance with ORS 183. Stat.

### 845-025-5560 Marijuana Handler Course Education and Examination Requirements

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(1) An individual must, prior to applying for a marijuana handler permit, complete an approved marijuana handler education course, pass the required examination, and pay the fee specified in OAR 845-025-1060.

(2) An individual must score at least 70 percent on the marijuana handler course examination in order to pass.

(a) An individual who does not pass the examination may retake the examination up to two times within 90 days of the date the individual took the course. If the individual fails to pass both retake examinations the individual must retake the handler education course.

(3) An individual must take a marijuana handler education course at least every five years prior to applying for renewal of a marijuana handler permit.

(4) The Commission may require additional education or training for permit holders at any time, with adequate notice to permit holders.

### 845-025-5580

### Marijuana Handler Renewal Requirements

(1) An individual must renew his or her marijuana handler permit every five years by submitting a renewal application, on a form prescribed by the Commission and the applicable fee specified in OAR 845-025-1060.

(2) Renewal applications will be reviewed in accordance with OAR 845-025-5520 and 845-025-5540.

### 845-025-5590

### **Suspension or Revocation**

(1) The Commission may suspend or cancel the permit of any marijuana handler if the handler:

(a) Has been convicted of a felony, except for a felony described in section 20, chapter 614, Oregon Laws 2015(4)(a);

(b) Has violated a provision of sections 3 to 70, chapter 1, Oregon Laws 2015, or these rules; or (c) Makes a material false statement to the Commission.

(2) If an individual's permit is canceled under sections (1)(b) or (c) of this rule the individual may not reapply within two years from the date a final order of revocation is issued.

(3) A notice of suspension or revocation must be issued by the Commission in accordance with ORS 183.

There are a variety of other operational requirements for recreational marijuana retail operations. These include Bonds and Liability Insurance (HB 3400, Sections 21 and 22); Tracking system for sales (HB 3400, Section 23 and OAR 845-025-7500 thru 845-025-7590); Identification requirements (HB 3400, Section 24); Protect Individuals Under the Age of 21 (HB 3400, Sections 25 - 28); Testing of Marijuana Products (HB 3400, Sections 91- 99 and OAR 845-025-5700 thru 845-025-5740); Labeling and Packaging (HB 3400, Sections 100 – 112 and 845-025-7000 thru 845-025-760); Delivery (OAR 845-025-7700); Advertising (OAR 845-025-8000 thru 845-025-8080); Security and Alarm System (OAR 845-025-1400 thru 845-025-1460); Prizes and Giveaways (HB 3400, Section 49).

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**E. MARIJUANA SUBCOMMITTEE RECOMMENDATION:** The Subcommittee developed the following recommendations.

<u>Retail</u>

- 1. Not allow retail as a permitted use in residential districts R-1, R-2, R-3, R-4, AR, RP, and all residential sub-districts.
- 2. Allow retail as a permitted use in all commercial zones except Civic Corridor with a footnote regarding the 1,000 foot buffer from schools and parks as noted on the third map in the packet.
- 3. Not allow retail in industrial districts and sub-districts.
- 4. Not allow wholesale or retail in community facilities and institutional.
- 5. Change the hours of operation for retail to 9 am to 8 pm.

Wholesale

- 1. Allow wholesale as a permitted use in all residential categories including the subdistricts with no product allowed on the premises.
- 2. Allow wholesale as a conditional use in C-2 only with a footnote regarding indoor use only and new footnote regarding the 1,000 foot buffer from schools and parks.
- 3. Not allow wholesale or retail in community facilities and institutional.
- 4. Allow wholesale as a permitted use in all industrial districts and sub-districts, except Airport Industrial, with a footnote regarding the 1,000 foot buffer from schools and parks.
- 5. Not allow retail or wholesale in the other sub-districts.

### Laboratories and Research Certificates

- 1. Allow laboratories and research in all commercial districts and sub-districts, institutional districts, and all industrial districts and sub-districts, except AI. They are not allowed in all other districts, such as residential, community facilities, and other.
- **F. PRELIMINARY STAFF RECOMMENDATION:** The preliminary staff recommendation is made in the absence of public hearing testimony, and may be modified subsequent to the close of the public hearing.

The Planning Commission may want to consider if recreational marijuana wholesalers should be allowed as a permitted use with no product on site in the residential districts and residential subdistricts. The Oregon Liquor Control Commission definition of a premises and understanding that licenses will not be issued where a primary residence is located should be considered. A license may be issued in a residential area by the Oregon Liquor Control Commission if the wholesale activity was occurring in an accessory structure and all other Oregon Liquor Control Commission requirements are met.

Attachments 3 through 5 are maps depicting the 1,000 foot buffers from schools and parks recommended by the Subcommittee.

At this writing, staff recommends the following motion:

Move to adopt Planning Commission Resolution 2016-314, which recommends that the City Council adopt the requested amendments.

Newberg PLANNING COMMISSION RESOLUTION 2016-314

### A RESOLUTION RECOMMENDING THAT THE CITY COUNCIL AMEND THE NEWBERG DEVELOPMENT CODE REGARDING RECREATIONAL MARIJUANA WHOLESALERS, LABORATORIES, RESEARCH CERTIFICATES AND RETAILERS

### RECITALS

- 1. In November 2014 voters in Oregon approved Ballot Measure 91 related to recreational marijuana.
- 2. House Bill (HB) 3400 was passed in the 2015 Oregon Legislative session related to recreational marijuana and is now part of Oregon Revised Statutes Chapter 475B Cannabis Regulation.
- 3. The Oregon Liquor Control Commission adopted temporary Oregon Administrative Rules (OAR's) on October 22, 2015 that were subsequently modified on November 20, 2015 for recreational marijuana under Chapter 845, Division 25.
- 4. The Newberg City Council established the Marijuana Subcommittee on September 8, 2015 to review and provide recommendations on local place, time and manner regulations for recreational marijuana.
- 5. The Newberg City Council initiated a potential amendment to Newberg's Development Code regarding recreational marijuana wholesalers, laboratories, research certificates and retailers on February 1, 2016 by Resolution No. 2015-3253.
- 6. The Marijuana Subcommittee met on February 4, 2016 and developed recommendations to the Planning Commission on recreational marijuana wholesalers, laboratories, research certificates and retailers.
- 7. After proper notice, the Newberg Planning Commission held a hearing on April 14, 2016 to consider the amendment. The Commission considered testimony and deliberated.

### The Newberg Planning Commission resolves as follows:

- 1. The Commission finds that adding regulations for recreational marijuana wholesalers, laboratories, research certificates and retailers, and adding definitions for recreational marijuana wholesalers, laboratories and retailers, would be in the best interests of the city and recommends that the City Council adopt the amendments to the Newberg Development Code as shown in Exhibit "A". Exhibit "A" is hereby adopted and by this reference incorporated.
- 2. The findings shown in Exhibit "B" are hereby adopted. Exhibit "B" is by this reference incorporated.

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### Adopted by the Newberg Planning Commission this 14<sup>th</sup> day of April, 2016.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

List of Exhibits:

Exhibit "A": Development Code Text Amendments Exhibit "B": Findings

### Exhibit "A" to Planning Commission Resolution 2016-314 Development Code Amendments –File DCA-16-001 Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers

Section 1. The Newberg Development Code 15.05.030 shall be amended to read as follows:

### Note: Existing text is shown in regular font. Added text is shown in <u>double-underline</u> Deleted text is shown in <del>strikethrough</del>.

### 15.05.030 Definitions

For the purpose of this title, the following definitions shall apply unless the context clearly indicates or requires a different meaning:

"Marijuana Laboratory" means a laboratory certified by the Oregon Health Authority under ORS 438.605 to 438.620 and authorized to test marijuana items for purposes specified in these rules.

<u>"Marijuana Retailer" means a marijuana retailer licensed by the Oregon Liquor Control</u> <u>Commission.</u>

<u>"Marijuana Wholesaler" means a marijuana wholesaler licensed by the Oregon Liquor</u> <u>Control Commission.</u>

Section 2. Newberg Development Code, Zoning Use Table, Section 15.305.020 shall be amended to read as follows:

### See Exhibit A, Attachment 1

Section 3. Newberg Development Code, Zoning Use Table, Section 15.305.030 shall be amended to read as follows:

### See Exhibit A, Attachment 2

# Section 4. Newberg Development Code, Stream Corridor Overlay Subdistrict, Section 15.342.110 is amended to read as follows:

### 15.342.110 Prohibited uses and activities.

The following activities or uses are prohibited within this subdistrict:

A. Except as provided in NMC 15.342.040(R), the planting or propagation of any plant identified as a nuisance plant as determined by a qualified botanist or indicated as a nuisance plant on the Newberg plant list.

B. The removal of native trees that are greater than six inches in diameter at breast height, except as is otherwise permitted within this chapter.

C. Any use dealing with hazardous substances or materials, including but not limited to gas service stations.

D. Public pathways, except those in conjunction with public lands, public parks or public easements that have been acquired by other than eminent domain. [Ord. 2451, 12-2-96. Code 2001 § 151.475.]

E. Recreational Marijuana Producer and Recreational Marijuana Processor.

F. Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers.

# Section 5. Newberg Development Code, Civic Corridor Overlay Subdistrict, Section 15.350.030 is amended to read as follows:

### 15.350.030 Permitted buildings and uses.

All **uses** permitted in the underlying primary district are permitted within the CC subdistrict except as follows:

A. In addition to the **buildings** and **uses** permitted conditionally in NMC <u>15.305.020</u>, the **planning commission** may grant a **conditional use permit** for any of the following **buildings** and **uses** in accordance with a Type III procedure:

1. Facilities which exist for the purpose of providing for the temporary care and/or lodging of adult indigent **persons**.

2. Hospitals.

### B. The following **uses** are prohibited within the CC subdistrict:

1. Automobile sales, new and used.

2. Car washes, coin-operated or mechanical.

3. Garages, repair.

4. Service stations. [Amended during 11/13 supplement; Ord. <u>2561</u>, 4-1-02. Code 2001 § 151.526.3.]

5. Recreational Marijuana Producer and Recreational Marijuana Processor.

6. Recreational Marijuana Wholesalers and Retailers.

# Section 6. Newberg Development Code, Bypass Interchange Overlay, Section 15.356.050 is amended to read as follows:

### 15.356.050 Prohibited uses.

A. Several commercial types of **uses** are permitted outright or with conditional **use** approval in Newberg's industrial districts (M-1, M-2, and M-3). The area within the Newberg UGB near the Oregon 219 Interchange is generally planned for industrial **use**. To protect the interchange area from commercial development, the following **uses** are prohibited within the M-1, M-2, and M-3 districts within the boundaries of the bypass interchange overlay:

- 1. Automobile sales, new and used.
- 2. Billboards.
- 3. Car washes.
- 4. Convenience grocery stores.
- 5. Restaurants larger than 2,000 square feet or with drive-up service windows.
- 6. Service stations.
- 7. Drive-in theaters.
- 8. Auction sales.
- 9. Bakeries, retail.
- 10. **Building** material sales.
- 11. Driving ranges.
- 12. Feed and seed stores.

13. Miniature golf courses.

14. Skating rinks.

15. Recreational Marijuana Producer and Recreational Marijuana Processor.

<u>16. Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers.</u>

B. The industrial commercial subdistrict of the M-4 district shall not be applied within the boundaries of the BI overlay. [Ord. <u>2734</u> § 1 (Exh. B), 3-7-11; Ord. <u>2708</u> § 2, 12-1-08; Ord. <u>2602</u>, 9-20-04. Code 2001 § 151.531.4.]

# Section 7. Newberg Development Code, Interim Industrial Overlay, Section 15.358.030 is amended to read as follows:

### 15.358.030 Permitted uses.

All **uses** of land and water that are permitted in the underlying zoning district(s) are also permitted in the interim industrial overlay, with the exception of those **uses** listed in NMC <u>15.358.050</u>. In addition, the following are permitted:

- A. Contractor's equipment or storage.
- B. Construction material storage. [Ord. 2720 § 1(5), 11-2-09. Code 2001 § 151.532.2.]
- C. Recreational Marijuana Producer (indoor).
- D. Recreational Marijuana Wholesalers, Laboratories, Research Certificates.

# Section 8. Newberg Development Code, Interim Industrial Overlay, Section 15.358.050 is amended to read as follows:

### 15.358.050 Prohibited uses.

The following **uses** are prohibited in the interim industrial overlay:

A. Cemeteries.

- B. Garbage dumps, sanitary landfills.
- C. Parks.

### D. Permanent buildings.

E. Wrecking yards for motor vehicles, building materials, and other similar items. [Ord. <u>2720</u> § 1(5), 11-2-09. Code 2001 § 151.532.4.]

F. Recreational Marijuana Processor.

### G. Recreational Marijuana Retailers.

Exhibit "B" to Planning Commission Resolution 2016-314

### Findings –File DCA-16-001 Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers

### I. Statewide Planning Goals - relevant goals

**Goal 1, Citizen Involvement**, requires the provision of opportunities for citizens to be involved in all phases of the planning process.

**Finding:** The City Council initiated the potential development code amendment at a public meeting on February 1, 2016. The Marijuana Subcommittee meet on February 4, 2016 at a public meeting to review potential place, time and manner regulations for Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers. The Planning Commission, after proper notice, held a public hearing on April 14, 2016. The City Council will consider the recommendation of the Planning Commission at a future public hearing date, and decide whether or not to adopt the development code amendment. The development code amendment process provides opportunity for public comments throughout the planning process.

**Goal 2, Land Use Planning**, requires the development of a process and policy framework that acts as a basis for all land use decisions.

**Finding**: The Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers proposal is supportive of this goal because it was developed following city procedures for legislative action.

### II. Newberg Comprehensive Plan - relevant policies

**A. CITIZEN INVOLVEMENT GOAL**: To maintain a Citizen Involvement Program that offers citizens the opportunity for involvement in all phases of the planning process.

**Finding:** The City Council initiated the potential development code amendment at a public meeting on February 1, 2016. The Marijuana Subcommittee meet on February 4, 2016 at a public meeting to review potential place, time and manner regulations for Recreational Wholesalers, Laboratories, Research Certificates and Retailers. The Planning Commission, after proper notice, held a public hearing on April 14, 2016. The City Council will consider the recommendation of the Planning Commission at a future public hearing date, and decide whether or not to adopt the development code amendment. The development code amendment process provides opportunity for public comments throughout the planning process.

**B. LAND USE PLANNING GOAL**: To maintain an on-going land use planning program to implement statewide and local goals. The program shall be consistent with natural and cultural resources and needs.

**Finding**: The Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers proposal is supportive of this goal because it was developed following city procedures for legislative action.

H. THE ECONOMY GOAL: To develop a diverse and stable economic base.

1. General Policies

c. The City will encourage the creation of a diversified employment base, the strengthening of trade centers and the attraction of both capital and labor intensive enterprises.

g. The City shall encourage business and industry to locate within the Newberg City limits.

**Finding:** The city encourages new businesses to develop within the city. A Recreational Marijuana Wholesale, Laboratory, Research Certificate and Retail operations are a legal operation under State law. Allowing Recreational Marijuana Wholesale, Laboratory, Research Certificate and Retail operations as a permitted or conditional use as represented in Exhibit A, Attachments 1 and 2 is consistent with this Comprehensive Plan goal.

III. **Conclusion:** The proposed development code amendments meet the applicable requirements of the Statewide Planning Goals, and the Newberg Comprehensive Plan, and should be approved.

### Exhibit A, Attachment 1

Chapter
15.305
ZONING
USE

15.305.020 Zoning use table - Use Districts.

### Newberg Development Code – Zoning Use Table

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312       Day care       P       P       P       P       P       P       P       P       C       P	Def.	Family child care home	Ρ	Р	P(13)	P(13)	Ρ	P(13)	P(13)	P(13)	P(13)							Ρ	P(13)		Chapter 657AORS
Def.home (5 or fewer people)PPPP(13)P(13	312	Day care	Ρ	Р	Р	С	Р	Р	Ρ	Р		С	С	С	С	Ρ		Р		P(14)	Chapter 657AORS
Include care facility (6 - 15 people)II <th< td=""><td>Def.</td><td>home (5 or fewer</td><td>Ρ</td><td>Р</td><td>P(13)</td><td>P(13)</td><td>Ρ</td><td>P(13)</td><td>P(13)</td><td>P(13)</td><td>P(13)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ρ</td><td>P(13)</td><td></td><td><u>ORS 197.665</u></td></th<>	Def.	home (5 or fewer	Ρ	Р	P(13)	P(13)	Ρ	P(13)	P(13)	P(13)	P(13)							Ρ	P(13)		<u>ORS 197.665</u>
people)InI			С	Р	Р	С	Р		С	с								Р			<u>ORS 197.665</u>
Def.       Prison       I		people)																			
320       ASSEMBLY       Image: Constraint of the system of the s		-	С	С	С		С		Р	Р		С	С	С	С			Р			
place of worship																					
		place of worship	Ρ	Р	Р	Р	Р	Р	Ρ	Р	Р		P(29)				с	Р			
322     Private club, lodge, meeting hall     C     C     P     P     C     P       330     SCHOOLS     C     C     C     C     C     C     C	522				С	С			Р	Р	С							Р			

			1	1		1		1		-									1	1
000	School, primary or	Р	Р	Р		Р										С				
	secondary																			
331	College	Ρ	Р	Р		Р	Р	Р	P(15)							С	Р			
332	Commercial educational	С	с	с		С	Р	Р	Р								С			
	services PARKS AND OPEN																			
340	SPACEs																			
	Open space	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	
	Park	P	P	P	Р	Р	Р	Р	Р	Р				P(16)		P(17)	Р			
	Golf course PUBLIC SERVICES	Р	Р	Р												P(17)				
054		С	С	С	С	Р		Р	Р	Р						С	Р			
	Community services Emergency services	P	P	P	P	P	Р	P	P	P	Р	Р	Р	Р	Р	P	P	Р	Р	
	Pound, dog or cat							С	С		С	Р	Р	С	С					
	Cemetery	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	Chapter 97.46ORS
	TRANSPORTATION		-	-	-	-	-		-	-	-	-	-	-	-	-	-	-		
	Transportation facilities	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	
D.(	and improvements							Р	Р	Р	Р	Р	Р							
	Transit center			P		С	С	P	г Р(18)	F C	P	P	P		Р		Р			
	Parking facility			Г		C	C	Г	F(10)	C	Г				Г		Г			
	Airport, landing field											С	С						Р	
_	Heliport, helipad Marina	С	С	С	С	С	С	С	С	C C	С	С	С	С	С	С	С	С	Р	
2011																				
	Pilings, piers, docks, and									С										
	similar in- waterstructures																			
370	UTILITIES																			
Def.	Basic utilities	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	Р	
Def.	Utility distribution plant or yard											Р	Ρ	Р						
Def	Wastewater treatment											с	Р	С						
201.	plant											0		Ű						
	Telecommunication facility incorporated into																			
	existing structure/utility	С	С	С	С	С	S	S	S	S	S	S	S	S	S		S			<u>Chapter15.445 NMC,</u> Article IV
	pole and no taller than																			
	18 feet above existing structure/utility pole																			
	Telecommunication facility,																			
	including <b>radio</b> towers and transmitters, which are 100																			Chamber 15 445 NINAC
Def.	feet or less in height, except those incorporated						С	С	С		С	S(19)	S(19)	Р	С		С			<u>Chapter15.445 NMC,</u> <u>Article IV</u>
	into an existingstructure no																			
	taller than 18 feet above that structure.																			
	Telecommunication facility,																			Chapter15.445 NMC,
	including <b>radio</b> towers and transmitters, which are over						С	С	С		С	С	С	С	С		С			Article IV
	100 feet																			
	COMMERCIAL OFFICES			<u> </u>		P	B(20)	Р	P(24)								Р			
	Medical office			С		Р	P(20)		P(21)								Р —			
_	Local business office	_				P(22)	P(20)	Р	P(21)											
101	COMMERCIAL SALES AND	RENT	ALS					_	P(15)	_		<b>P</b> / -								
	Retail sales – General						P(20)	Р	(21)	Ρ		P(23)								
422	Retail sales – Bulk outdoor							Р	с			Ρ								
	Retail sales –						D (2-1	_	D/a ···	_		D/2 ···			D/2					
423	Convenience						P(20)	Р	P(21)	Р		P(24)			P(25)					
	Temporary merchant							S	S(21)					<b></b>						<u>NMC5.15.050 et seq.</u>
	Medical marijuana dispensary							P(35)	P(35)											
	Retail food and							~	_											Chapter15.445 NMC,
423	beverage production							S	S											Article VIII
	EATING AND DRINKING ES	TABLIS	SHMEN	TS																
430	Eating and drinking – Alcohol-related							Р	P(21)	Ρ										Requires liquor license
430	Eating and drinking – Non- alcohol-related						P(20)	Р	P(21)	Р	Р	Р							C(26)	
440	COMMERCIAL SERVICES																			
441	Personal services					Ρ	P(20)	Р	P(21)	Ρ										
442	Commercial services						P(20)	Р	P(21)											
113	Commercial vehicle service							Р	С		P(27)	Р			P(28)					
	Kennel, commercial							С	С	ļ	С	Р	Р	С	С					
	COMMERCIAL RECREATIO	N																		

451	Commercial recreation – Indoors							Ρ	P(15)		P(29)	P(29)								
452	Commercial recreation – Outdoors							Р				С								
453	Commercial recreation											с							C(33)	
	<ul> <li>Motor-vehicle-related</li> </ul>																			
460	COMMERCIAL LODGING																			
Def.	Vacation rental home	С	С	S	S	S	S(13)	S(13)	S(13)	S(13)										Chapter15.445 NMC, Article VII
Def.	Bed and breakfast(2 or fewer rooms)	С	S	S		S	S	S	S	S										NMC15.445.010
Def.	Bed and breakfast(3 or more rooms)	С	С	С		С	с	S	S	S										NMC15.445.010
	Hotel or motel							Р	P(15)	Р									C(26)	
Def	Recreational vehicle							С		С	С	С	С							NMC15.445.170
_	park INDUSTRIAL USES																			
	Traded sector industry office					P(30)	P(30)	Р	Р		Р	Р		Р					P(33)	
502	Industrial services							С				Р	Р	Р					P(33)	
503	Wholesale and industry sales							C(31)			P(31)	Ρ	Ρ	Ρ					P(33)	
	Warehouse, storage, and distribution										P(32)	Р	Ρ	Р					P(33)	
505	Self-service storage							Р			Р	Р	Р	Р						
506	Light manufacturing										Р	Р	Р	Р					P(33)	
	Heavy manufacturing											P(34)	Р	С						
-	Waste-related												С	С						
600	MISCELLANEOUS USES																			
Der.	Accessory buildingand use incidental to other permitted usesin the zone	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Р	Р	Ρ	
	Uses similar to permitted uses in the zone and not defined or categorized	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	Ρ	
	Uses similar to conditional uses in the zone and not defined or categorized	С	С	С	С	с	С	С	С	с	с	с	С	с	С	С	С	С	С	
	Medical Marijuana Processor										Р	Р	Р	Р						
	Medical Marijuana Grow Site	P(36)	P(36)	P(36)	С	с	С	С	С	с	С	с	С	с	С	С	с	с		
	Recreational Marijuana Processor	х	х	Х	х	х	х	C(38)	Х	х	P(37)	P(37)	P(37)	P(37)	Х	Х	х	х	х	
	Recreational Marijuana Producer (Indoor)	х	х	Х	х	х	х	х	Х	х	Р	Р	Р	Р	Х	Х	х	х	х	
	Recreational Marijuana Producer (Outdoor)	х	х	х	х	х	Х	Х	Х	х	С	С	С	С	Х	х	х	х	х	
	<u>Recreational Marijuana</u> <u>Retailer</u>	<u>x</u>	X	<u>×</u>	X	x	<u>P(38)/(</u> <u>40)</u>	<u>P(38)/</u> (40)	<u>P(38)</u> /(40)	<u>P(38)</u> /(40)	X	<u>×</u>	X	<u>×</u>	X	<u>×</u>	X	<u>x</u>	x	
	<u>Recreational Marijuana</u> <u>Wholesaler</u>	<u>P(39)</u>	<u>P(39)</u>	<u>P(39)</u>	<u>P(39)</u>	<u>P(39)</u>	X	<u>C(31)/</u> (38)	<u>×</u>	<u>×</u>	<u>P(38)</u>	<u>P(38)</u>	<u>P(38)</u>	<u>P(38)</u>	<u>×</u>	<u>×</u>	<u>×</u>	<u>P(38)</u>	<u>×</u>	
	Recreational Marijuana Laboratories	<u>×</u>	<u>x</u>	<u>×</u>	<u>×</u>	<u>×</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>×</u>	<u>P</u>	<u>×</u>	<u>×</u>	
	Recreational Marijuana																			

Notes.

(1) Limited to sites with preexisting agricultural uses, including at time of annexation.

(2) Limited to one per lot as a permitted use. More than one per lot allowed only through a conditional use permit or planned unit development, subject to density limits of NMC 15.405.010(B).

(3) Permitted on individual lots created prior to November 17, 1992. Homes on individual lots created on or after November 17, 1992, will only be permitted through the planned unit development process.

(4) The permitted density shall be stated on the conditional use permit.

(5) The dwelling units must front onto Hancock or Second Street. No more than 30 percent of a single street frontage of a block may be occupied by residential uses. Contiguous residential street frontage must be less than 60 lineal feet. Density and parking standards for allowable dwelling units must be met.

(6) One residence per lot with the addition of a tie-down or hangar for an airplane. At a minimum, a paved tie-down or hangar shall be provided on the property, or the property shall include permanent rights to a private hangar within the subdivision. See Chapter 15.336 NMC.

(7) The homes are not subject to the development standards set forth in NMC 15.445.050 through 15.445.070.

(8) The units must be located on the same lots as another use permitted or conditionally permitted in the C-3 zone and may not occupy the first floor storefront area (the portion of the building closest to the primary street). There shall be no density limitation. Private parking areas or garages are not required for dwelling units located within buildings in existence prior to and including June 30, 1999. Parking shall be provided for all new dwelling units within any building constructed after June 30, 1999, in private parking areas or garages on the basis of one parking space for each dwelling unit.

(9) Permitted on the ground floor, one per lot in conjunction with any other use permitted or conditional use in the C-1 zone. On upper floors, dwelling units are unlimited and one parking space per dwelling unit is required.

(10) Permitted above any permitted use in the C-2 zone. There shall be no density limitation. Parking shall be provided in private parking areas or garages on the basis of one parking space for each dwelling unit.

(11) Must be located above ground floor commercial uses.

(12) One residence of area not more than 40 percent of the area of the hangar floor, up to a maximum of 1,500 square feet, for an airport caretaker or security officer on each separate parcel.

(13) Permitted in existing dwelling units only. New dwelling units may not be created for this use unless the dwelling unit would otherwise be allowed.

(14) Allowed exclusively for employers or employees of businesses located within this district.

(15) Facility over 40,000 square feet gross floor area requires a conditional use permit.

(16) Allowed in areas designated in industrial area plans.

(17) Limited to facilities owned or operated by a public agency.

(18) Parking garages are a conditional use, and must have first floor street frontage of 40 feet or less for ingress or egress. First floor development must be commercial.

(19) A conditional use permit is required if the facility is less than 2,000 feet from the nearest telecommunication facility.

(20) Businesses in the C-1 zone that have hours of operation between 10:00 p.m. and 7:00 a.m. require a conditional use permit.

(21) Drive-up service windows accessory to an existing business on the site with walk-in customer service, such as a drive-up bank window, are allowed only with a conditional use

permit. Otherwise, drive-up service windows, except those in service on April 1, 2002, are prohibited. Changes in use will not be allowed.

(22) Retail sales of goods on site not allowed.

(23) Limited to secondhand stores.

(24) Store size is limited to 2,000 square feet gross floor area.

(25) Store size is limited to 5,000 square feet gross floor area.

(26) Use must demonstrate that it is compatible with airport operations.

(27) Limited to service stations.

(28) Limited to card lock fueling only. Retail services are limited to self-vending services.

(29) Permitted provided the structure is designed for easy conversion to industrial use, including not having fixed seating.

(30) Limited to 10,000 square feet maximum floor area.

(31) Allowed indoors only.

(32) Allowed indoors only. Outdoor use requires a conditional use permit.

(33) Must be aviation-related. See Chapter 15.332 NMC.

(34) Limited to expansion or change of existing heavy manufacturing uses.

(35) Shall not be located at the same address as a state-registered marijuana grow site, or within 1,000 feet of the real property comprising a public park, a public elementary or secondary school for which attendance is compulsory under ORS 339.020 or a private or parochial elementary or secondary school, teaching children as described in ORS 339.030 (1)(a). Distance is measured in a straight line in a radius extending for 1,000 feet or less in any direction from the closest point anywhere on the boundary line of the real property comprising an existing public park, public elementary or secondary school or a private or parochial elementary or secondary school to the closest point of the premises of a dispensary. The premises consist of the dispensary building, or the portion of the building used for a dispensary. Shall not be located within 1,000 feet of another medical marijuana dispensary. Operating hours are limited to the hours between 9:00 a.m. and 8:00 p.m.

(36) Allows up to 12 mature plants; indoor operations only.

(37) Indoor use only.

(38) The use is not allowed within 1,000 feet of the real property comprising a public park, a public elementary or secondary school for which attendance is compulsory under ORS 339.020 or a private or parochial elementary or secondary school, teaching children as described in ORS 339.030 (1)(a). Distance is measured in a straight line in a radius extending for 1,000 feet or less in any direction from the closest point anywhere on the boundary line of the real property comprising an existing public park, public elementary or secondary school to the closest point of the premises of a recreational processor. wholesaler or retailer. (39) No product on premises.

(40) Operating hours limited to the hours between 9:00 a.m. and 8:00 p.m.

1 Code reviser's note: Section 25 of Ordinance 2763 provides:

SECTION 25: Grace period for previously permitted or conditional uses. Where an applicant demonstrates that a particular use was a permitted or conditional use on a specific property immediately prior to adoption of this ordinance, but that the use is no longer either a permitted or conditional use on that property due to this ordinance, the applicant may establish the use as either a permitted or conditional use, as provided in the prior code, provided the use is legally commenced prior to January 1, 2018.

### Exhibit A, Attachment 2

### 15.305.030 Zoning use table - Use Subdistricts.

600	MISCELLANEOUS USES	R-1/PD	R-1/0.1	R-1/0.4	R-1/6.6	R-1/SP	R-2/PD	R-2/SP	SD/LDR	SD/MMR	R-3/PD	RP/SP	RP/LU	AO	ARO	C-1/SP	C-2/LU	C-2/PD	C-2/SP	C-3/LU	SD/V	SD/NC	SD/H	СС	CF/RF	RF		M-1/SP	SD/E	FHO	ш,		H SC
	Medical Marijuana Processor																									┍╴┦		Р	Р		Ŧ	T	
	Medical Marijuana Grow Site	с	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	С	с	С	С	С	С	С	с с
	Recreational Marijuana Processor	х	х	х	х	х	Х	х	Х	х	х	х	Х	х	х	х	Х	Х	х	Х	Х	х	х	х	Х	х	х	Х	Р	Х	х	x	x x
	Recreational Marijuana Producer (Indoor)	х	х	х	х	х	х	х	х	х	х	Х	Х	Х	х	х	Х	х	х	х	Х	х	Х	х	х	х	х	Р	Р	х	Р	x	x x
	Recreational Marijuana Producer (Outdoor)	х	х	х	х	х	Х	х	Х	Х	Х	х	Х	х	х	х	Х	Х	х	Х	Х	х	х	х	Х	х	х	С	С	х	С	x	x x
	<u>Recreational Marijuana</u> <u>Retailer</u>	<u>×</u>	<u>x</u>	<u>×</u>	<u>×</u>	<u>×</u>	<u>X</u>	<u>×</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>×</u>	<u>X</u>	X	X	<u>P(2)/(3)</u>	X	X	X	X	X	<u>X</u>	X	X	X	<u>x</u>							
	<u>Recreational Marijuana</u> Wholesaler	<u>P(1)</u>	X	<u>P(1)</u>	<u>x</u>	<u>×</u>	<u>×</u>	<u>x</u>	<u>×</u>	<u>x</u>	<u>×</u>	<u>x</u>	x	<u>x</u>	X	X	<u>P(2)</u>	<u>P(2)</u>	X	<u>P(2)</u>	X	<u>x</u>											
	<u>Recreational Marijuana</u> Laboratories	<u>×</u>	<u>x</u>	<u>×</u>	<u>×</u>	<u>×</u>	<u>X</u>	<u>×</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>×</u>	<u>X</u>	X	X	<u>P</u>	<u>P</u>	X	X	X	<u>P</u>	<u>P</u>	X	<u>P</u>	<u>P</u>	<u>x</u>							
	Recreational Marijuana Research Certificate	<u>×</u>	X	X	X	<u>X</u>	X	X	<u>X</u>	<u>X</u>	X	<u>×</u>	<u>X</u>	<u>x</u>	<u>x</u>	<u>P</u>	<u>P</u>	X	X	<u>P</u>	<u>P</u>	<u></u>	<u>x</u>	<u>P</u>	<u>P</u>	<u>x</u>							

Key:

P: Permitted use

S: Special use - Use requires a special use permit

C: Conditional use - Requires a conditional use permit

X: Prohibited use

(#): See notes for limitations

(1) No product on premises.

(2) The use is not allowed within 1,000 feet of the real property comprising a public park, a public elementary or secondary school for which attendance is compulsory under ORS 339.020 or a private or parochial elementary or secondary school, teaching children as described in ORS 339.030 (1)(a). Distance is measured in a straight line in a radius extending for 1,000 feet or less in any direction from the closest point anywhere on the boundary line of the real property comprising an existing public park, public elementary or secondary school or a private or parochial elementary or secondary school to the closest point of the premises of a recreational retailer or wholesaler. (3) Operating hours limited to the hours between 9:00 a.m. and 8:00 p.m.



A RESOLUTION INITIATING AN AMENDMENT TO THE NEWBERG MUNICIPAL CODE, TITLE 15 DEVELOPMENT CODE FOR PLACE, TIME AND MANNER REGULATIONS FOR RECREATIONAL MARIJUANA WHOLESALERS, LABORATORIES, RESEARCH CERTIFICATES AND RETAILERS

### **RECITALS:**

- The Oregon Legislature enacted four bills during the 2015 legislative session related to the Oregon Medical 1. Marijuana Act and Measure 91. House Bill (HB) 3400 was the omnibus bill covering recreational marijuana and modifications to the medical marijuana program.
- On September 8, 2015 the Newberg City Council was provided background information on medical and 2. recreational marijuana at its Work Session. At its Business Session on September 8th the City Council established the Marijuana Subcommittee (Subcommittee) comprised of Councilors Rourke, Bacon and McKinney along with non-voting member Mayor Andrews.
- The Subcommittee held its third meeting on January 12, 2016. A proposed timeline was included in their 3. packet of material to address recreational marijuana place, time and manner for recreational wholesalers, laboratories, research certificates and retailers. The Oregon Liquor Control Commission has indicated they will start issuing licenses for retailers in the 3<sup>rd</sup> Quarter of 2016.
- The Subcommittee subsequently passed a motion 3-0 directing staff to create a Request for Council Action to 4. initiate the Development Code amendment process for Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers to bring forward for Council consideration on February 1, 2016.

### THE CITY OF NEWBERG RESOLVES AS FOLLOWS:

- The City Council initiates an amendment to the Newberg Municipal Code, Title 15 Development Code for 1. Place, Time and Manner Regulations for Recreational Marijuana Wholesalers, Laboratories, Research Certificates and Retailers. This starts the public process to study the proposed amendments.
- By initiating this amendment, the council does not commit to taking any specific action on the proposal. It 2. only wishes to give the amendment full consideration in a public hearing.
  - $\triangleright$

EFFECTIVE DATE of this resolution is the day after the adoption date, which is: February 2, 2016 **ADOPTED** by the City Council of the City of Newberg, Oregon, this 1<sup>st</sup> day of February, 2016.

Sue Ryan, City Recorder

ATTEST by the Mayor this A day of February, 2016.

Bob Andrews, Mayor

## Attachment 2

### **Doug Rux**

From: Sent: To: Subject: Sue Ryan Tuesday, January 19, 2016 11:33 AM Doug Rux FW: Recreational sales

Please advise sue

From: Steve Rhodes Sent: Tuesday, January 19, 2016 11:29 AM To: Sue Ryan Subject: Re: Recreational sales

Check with Doug.

Sent from my iPad

On Jan 19, 2016, at 10:38 AM, Sue Ryan <<u>Sue.Ryan@newbergoregon.gov</u>> wrote:

Do you want me to forward this to Council ? Sue

Sue Ryan City Recorder City of Newberg <u>cityrecorder@newbergoregon.gov</u> (503) 537-1283

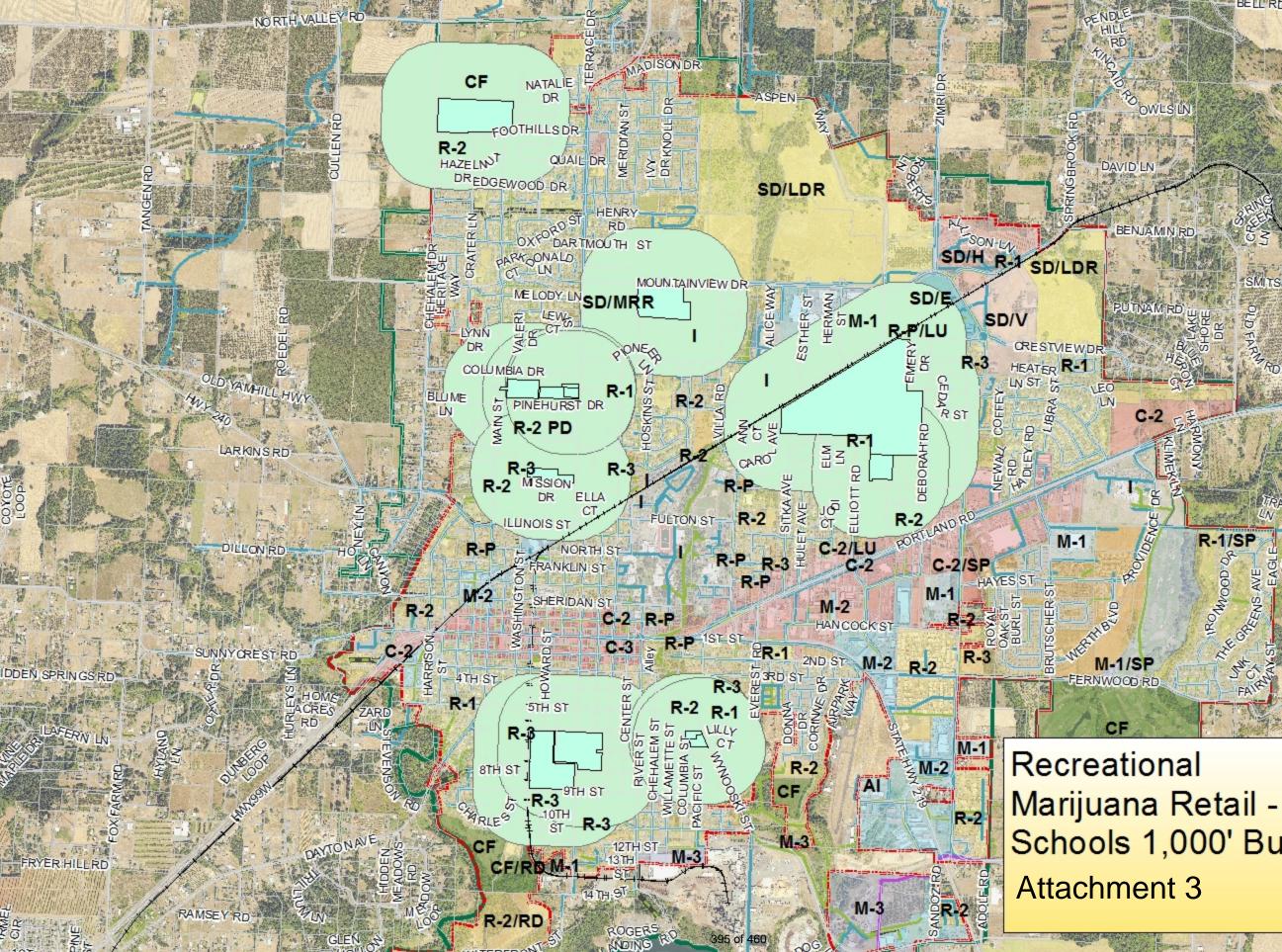
### OREGON PUBLIC RECORD

Messages to and from this email address may be subject to the Oregon Public Records Law.

From: Leif Patterson [mailto:leifer956@gmail.com] Sent: Monday, January 18, 2016 5:18 PM To: Sue Ryan Subject: Recreational sales

Hello, as a Newberg resident I feel compelled to offer my two cents that we should allow recreational marijuana sales. Most of the neighboring towns are benefiting from this program and the tax revenue it generates. Currently, I drive into Portland a few times a week to purchase products there. I spend money on food, gas etc that would all be spent in Newberg if rec sales were allowed. Lets stop sending revenue elsewhere and start keeping it here for our schools, roads and other public services.

Thanks for your time, Leif



WATERFROM

HAGEYRD

# Schools 1,000' Buffer

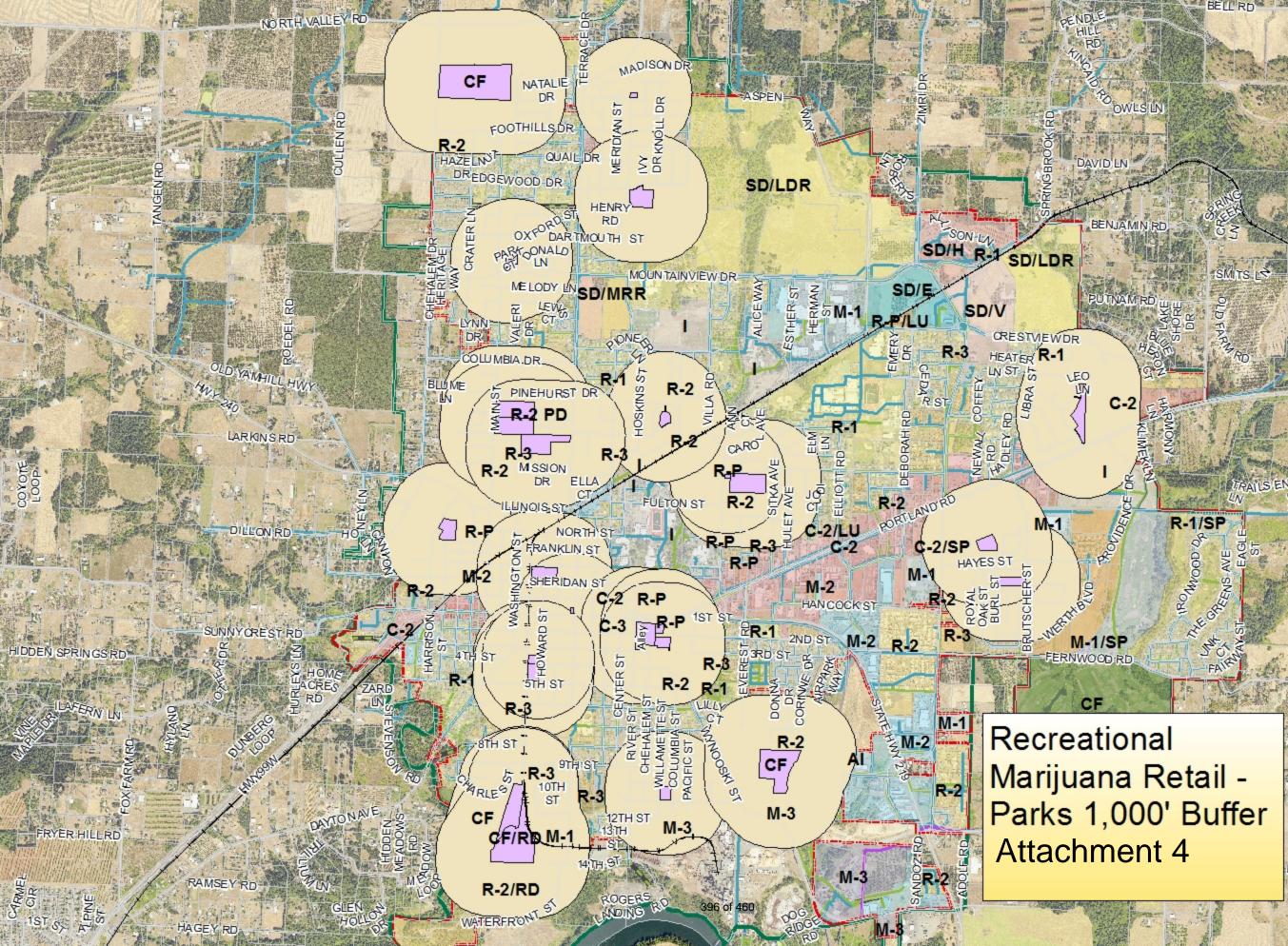
R-1/SP

BELL RD

SMITS 12

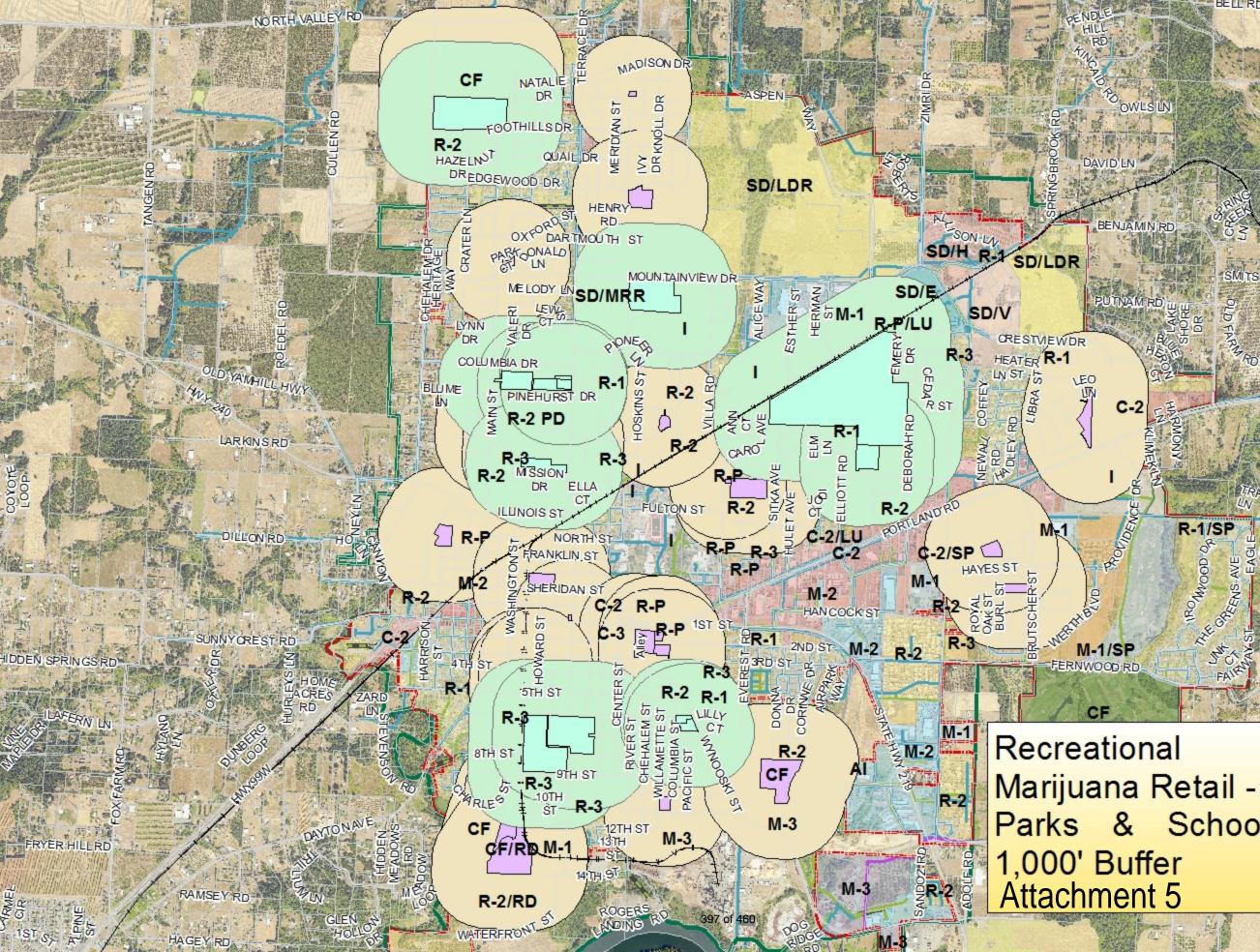
WILSONVILLE

CHAAD



WILSONVILLE RD

CHAAD



Schools

R-1/SP

BELL RD

SMITS 12

WILSONVILLE RD

GCHAAD

## **NEWBERG ECONOMIC**

## DEVELOPMENT STRATEGY

## **Executive Summary**

## March 31, 2016







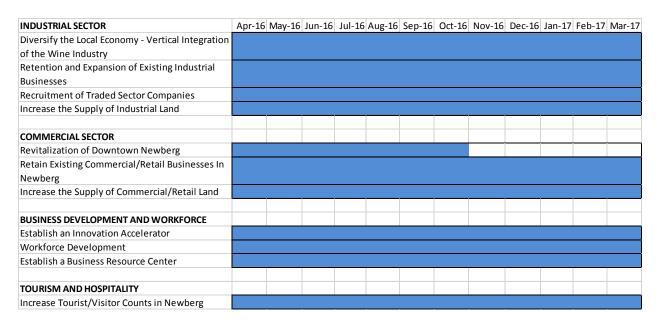


## THE STRATEGY

The Newberg Economic Development Strategy is based on four pillars of activity:

- 1. Industrial Sector
- 2. Commercial Sector
- 3. Business Development and Workforce
- 4. Tourism and Hospitality

Under each pillar there are identified strategies. The Industrial Sector has nine strategies, the Commercial Sector has seven strategies, Business Development and Workforce has eight strategies, and Tourism and Hospitability has three strategies. Based on the breath of activities the following have been identified as the top priorities over the next year.



## VISION

Newberg will build on its advantageous geographic location and the capacities of its business, education, government, and community partners to become a national leader for cross industry innovation in viticulture, wine production, and high-tech manufacturing. The City's business, educational, and built environment will support growing entrepreneurship for existing and new businesses of all types.

### MISSION

Promote economic health, a higher standard of living, and quality of life through partnerships, facilitation, collaboration and community. Ensure a qualified and educated workforce; an environment of openness to business investment; programs for retention, expansion and recruitment of businesses; public investment in critical infrastructure, education, recreation and cultural capacities; metrics to measure economic activity; sustainability. Embrace diversity of all types. Leverage our location to connect Portland and Salem with North Willamette Valley's riches.

### GOAL

Having a qualified and educated workforce; an environment of openness to business investment; programs for retention, expansion and recruitment of businesses; public investment in critical infrastructure; metrics to measure economic activity; all while being sustainable.

# NEWBERG ECONOMIC DEVELOPMENT STRATEGY

## March 31, 2016









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## THE STRATEGY

The Newberg Economic Development Strategy is based on four pillars of activity:

- 1. Industrial Sector
- 2. Commercial Sector
- 3. Business Development and Workforce
- 4. Tourism and Hospitality

Under each pillar there are identified strategies. The Industrial Sector has nine strategies, the Commercial Sector has seven strategies, Business Development and Workforce has eight strategies, and Tourism and Hospitability has three strategies. Based on the breath of activities the following have been identified as the top priorities over the next year.

INDUSTRIAL SECTOR	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Diversify the Local Economy - Vertical Integration of the Wine Industry												
Retention and Expansion of Existing Industrial Businesses												
Recruitment of Traded Sector Companies												
Increase the Supply of Industrial Land												
COMMERCIAL SECTOR												
Revitalization of Downtown Newberg												
Retain Existing Commercial/Retail Businesses In Newberg												
Increase the Supply of Commercial/Retail Land												
BUSINESS DEVELOPMENT AND WORKFORCE												
Establish an Innovation Accelerator												
Workforce Development												
Establish a Business Resource Center	L									1		
TOURISM AND HOSPITALITY												
Increase Tourist/Visitor Counts in Newberg								ľ				

## VISION

Newberg will build on its advantageous geographic location and the capacities of its business, education, government, and community partners to become a national leader for cross industry innovation in viticulture, wine production, and high-tech manufacturing. The City's business, educational, and built environment will support growing entrepreneurship for existing and new businesses of all types.

### MISSION

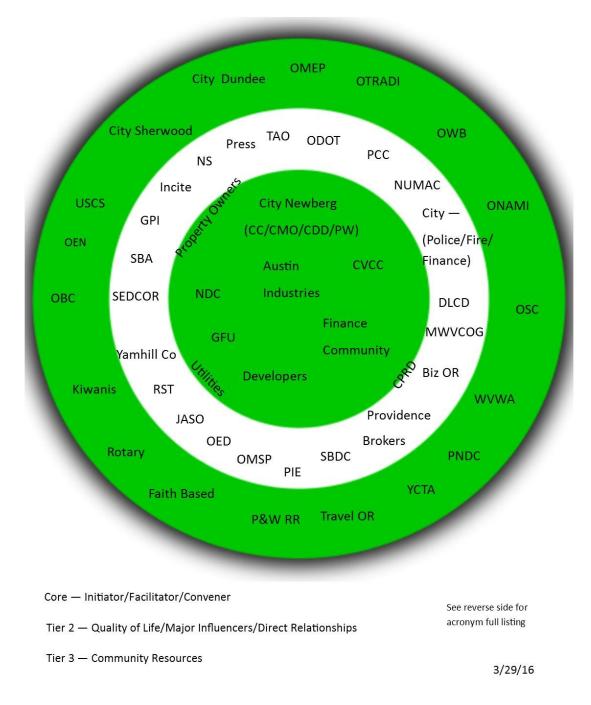
Promote economic health, a higher standard of living, and quality of life through partnerships, facilitation, collaboration and community. Ensure a qualified and educated workforce; an environment of openness to business investment; programs for retention, expansion and recruitment of businesses; public investment in critical infrastructure, education, recreation and cultural capacities; metrics to measure economic activity; sustainability. Embrace diversity of all types. Leverage our location to connect Portland and Salem with North Willamette Valley's riches.

### GOAL

Having a qualified and educated workforce; an environment of openness to business investment; programs for retention, expansion and recruitment of businesses; public investment in critical infrastructure; metrics to measure economic activity; all while being sustainable.

## ECONOMIC DEVELOPMENT ORGANIZATIONS

A variety of organizations are engaged in economic development activities in Newberg, or could be involved in the future. The graphics below identify organizations currently involved in economic development in Newberg and organizations that should be involved (aspirational) in the future.



### EC DEV—NEWBERG ORGANIZATIONS (FUTURE)

#### CORE

Chehalem Valley Chamber of Commerce (CVCC) George Fox University (GFU) Newberg Downtown Coalition (NDC) City of Newberg (City) TIER 2 Portland Community College (PCC) Chehalem Parks & Recreation District (CPRD) Newberg School District (NSD) Business Oregon (Biz OR) Oregon Department of Transportation (ODOT) Mid-Willamette Valley Council of Governments (MWVCOG) Oregon Employment Department (OED) Portland General Electric (PGE) Northwest Natural (NWN) Strategic Economic Development Corporation (SEDCOR) Regional Solutions Team (RST) Press - Newberg Graphic Greater Portland Inc. (GPI) Oregon Main Street Program (OMSP) Japan American Society of Oregon (JASO) Department of Land Conservation and Development (DLCD) Technology Association of Oregon (TAO) Portland Incubator Experiment (PIE)

#### TIER 3

Small Business Administration (SBA) US Commercial Service (USCS) Oregon Entrepreneurs Network (OEN) Oregon Wine Board (OWB) Oregon State Chamber (OSC)

Willamette Valley Wineries Association (WVWA)
Pacific Northwest Defense Coalition (PNDC)
Oregon Business Council (OBC)
Oregon Manufacturing Extension Partnership (OMEP)
Yamhill County Transit Area (YCTA)
Small Business Development Center (SBDC)
Oregon Transitional Research Development Institute (OTRADI)
Oregon Nanoscience & Mircotechnologies Institute (ONAMI)
Portland & Western Railroad (P&W RR)
Newberg Urban Management Area Commission (NUMAC)

### **GOALS/STRATEGIES/ACTIONS**

#### **INDUSTRIAL SECTOR**

## Goal: Enhance industrial development capabilities and employment opportunities

#### Strategies:

1.1 Diversify the local economy by building on the four (4) key existing traded sector industries of Advanced Manufacturing, Technology, Agriculture and Wood Products; while targeting High Tech Manufacturing, General Manufacturing, Aviation related industry and Food/Beverage Processing

#### **Project Lead:**

City of Newberg – Community Development

#### Stakeholders & Partners:

Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Chehalem Valley Chamber of Commerce, Oregon Employment Department, US Commercial Service, OTRADI, ONAMI, Oregon Manufacturing Extension Partnership, Oregon Business Council, Yamhill County, Pacific Northwest Defense Coalition, Regional Solutions, Portland General Electric, Northwest Natural, Frontier, Industrial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Identify existing community assets and needed assets.
- 2. Identify needs of companies through a gap analysis.
- 3. Engage the Oregon Employment Department in an analysis of the four (4) traded sectors industries and targeted industries in Newberg.
- 4. Conduct an industry cluster analysis to identify opportunities.
- 5. Implement the eight actions of the vertical wine integration proposal from the America's Best Communities plan.

Mid-term Implementation (12 – 24 months):

- 1. Implement one or more of the vertical wine integration demonstration projects.
- 2. Supply chain analysis of the four (4) existing traded sector industries.
- 3. Conduct business mission/lessons learned trips to communities with similar targeted industries.

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#### Long-term (24 – 36 months)

- 1. Re-assess the targeted industries to determine if the focus areas are on target or should be modified.
- 2. Supply chain analysis of the targeted traded sector industries.

#### Metrics & Reporting:

- 1. Community assets report.
- 2. Number of companies participating in gap analysis.
- 3. Report on traded sectors.
- 4. Report on cluster analysis.
- 5. Number of business expansions.
- 6. Number of recruited businesses.
- 7. Supply chain analysis report.
- 8. Vertical Wine Integration
  - Number of wine-industry stakeholders interviewed
  - Number of wine-industry stakeholders attending the project kick-off meeting
  - Number of endorsements or letters of interest from regional wine associations
  - Findings of the gap analysis
  - Findings of the best practices research
  - Implementation actions identified in the action plan
  - Grant(s) applied for and awarded
  - Identified demonstration project

#### Funding Sources (in-kind/cash)

City of Newberg, Chehalem Valley Chamber of Commerce, Oregon Employment Department, Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Portland General Electric, Northwest Natural, Frontier, Yamhill County, Industrial Brokers

#### Staffing Resources

City of Newberg Community Development - 0.2 FTE Chehalem Valley Chamber of Commerce - Volunteers

#### **1.2** *Retention and Expansion of Existing Industrial Businesses*

#### **Project Lead:**

City of Newberg – Community Development

#### Stakeholders & Partners:

Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Oregon Manufacturing Extension Partnership, Chehalem Valley Chamber of Commerce, Portland Community College, Japan American Society of Oregon, Regional Solutions, Portland General Electric, Industrial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

1. Retention visits conducted by City in coordination with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.

Mid-term Implementation (12 - 24 months)

- 1. Retention visits conducted by City in coordination with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Leverage the Business Resource Center implementation to provide an integrated set of services from the City, Chamber and other organizations.

Long-term (24 – 36 months)

1. Retention visits conducted by City in coordination with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.

#### Metrics & Reporting:

- 1. Number of retention visits conducted annually by City.
- 2. Number of retention visits conducted annually by Stakeholders and Partners.
- 3. Number of business expansions.
- 4. Net employment loss/gain from expansions or business closures.
- 5. Annual report on retention activities including issues and findings.

#### Funding Sources (in-kind/cash)

City of Newberg, Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Oregon Manufacturing Extension Partnership, Chehalem Valley Chamber of Commerce, Portland Community College, Japan American Society of Oregon, Regional Solutions, Portland General Electric, Industrial Brokers

#### **Staffing Resources**

City of Newberg Community Development – 0.2 FTE

#### 1.3 *Recruitment of Traded Sector Companies*

#### Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Chehalem Valley Chamber of Commerce, Industrial Brokers, Japan American Society of Oregon, Regional Solutions, Portland General Electric

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. City coordinates recruitment activities with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Focus on the four (4) existing traded sector industries and supply chains.
- 3. Evaluate opportunities for the four targeted traded sector industries.
- 4. Develop a program for Chehalem Valley Chamber of Commerce involvement in industrial business recruitment.
- 5. Develop relationships and frequent communications with industrial brokerage community in the greater Portland area.
- 6. Identify target companies and sectors and include face to face recruitment visits with targeted companies. I.e. travel to the Silicon Valley if appropriate.

Mid-term Implementation (12 - 24 months)

- 1. City coordinates recruitment activities with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Recruitment of food processing (wine) companies and suppliers as part of vertical integration of wine industry.

Long-term (24 – 36 months)

1. City coordinates recruitment activities with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.

#### Metrics & Reporting:

- 1. Number of recruitment leads
- 2. Number of engagements by Chehalem Valley Chamber of Commerce
- 3. Number of contacts with brokerage community
- 4. Number of successes

#### Funding Sources (in-kind/cash)

Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Chehalem Valley Chamber of Commerce, Industrial Brokers, Japan American Society of Oregon, Regional Solutions, Portland General Electric

#### **Staffing Resources**

City of Newberg Community Development – 0.1 FTE Industrial Brokers

#### 1.4 Participate and Partner with Regional, State and Federal Organizations

#### Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Strategic Economic Development Corporation, Greater Portland Inc., Regional Solutions, US Commercial Service, US Economic Development Administration, Mid-Willamette Valley Council of Governments

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Build and maintain relationships with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Build relationships with organizations such as Oregon Business Council, Oregon Nanoscience & Mircotechnologies Institute, Pacific Northwest Defense Coalition, Oregon Transitional Research Development Institute, Technology Association of Oregon, and others.
- 3. Develop a "Why Newberg" marketing strategy and elevator speech to promote in the relationships.
- 4. Determine specifically what we would like to "ask" from players and present the information when appropriate.

Mid-term Implementation (12 - 24 months)

- 1. Build and maintain relationships with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Conduct annual roundtable forum on economic development activities with regional, state and federal organizations.
- 3. Connect the organizations to the Business Resource Center as it develops.

Long-term (24 – 36 months)

- 1. Build and maintain relationships with Business Oregon, Strategic Economic Development Corporation and Greater Portland Inc.
- 2. Conduct annual roundtable forum on economic development activities with regional, state and federal organizations.

#### Metrics & Reporting:

- 1. Number of contacts with Stakeholders & Partners.
- 2. Participants at annual roundtable forum.
- 3. Number of leads from Stakeholders and Partners.
- 4. Amount of assistance from Stakeholders and Partners.

#### Funding Sources (in-kind/cash)

City of Newberg, Strategic Economic Development Corporation, Greater Portland Inc., Regional Solutions, US Commercial Service, US Economic Development Administration, Mid-Willamette Valley Council of Governments

#### **Staffing Resources**

City of Newberg Economic Development – 0.05 FTE

## 1.5 Market the Competitive Advantages of Newberg to National and International Audiences

#### Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Chehalem Valley Chamber of Commerce, Japan American Society of Oregon, Newberg Graphic, Industrial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Define and identify target audiences for marketing.
- 2. Make specific face-to-face presentations.
- 3. Research and identify Newberg's competitive advantages.
- 4. Analyze existing data and develop strategies for industrial recruitment marketing material.
- 5. Coordinate data gathering and marketing material with Strategic Economic Development Corporation, Greater Portland Inc., Mid-Willamette Valley Council of Governments and other entities.
- 6. Promote the Newberg Enterprise Zone program through marketing material and face-to-face discussions.
- 7. Promote existing financial incentive programs (local and state) marketing material and face-to-face discussions.
- 8. Distribute marketing material (e.g. web, social media, trade shows, and international tours).

Mid-term Implementation (12 - 24 months)

- 1. Develop community profile to place on Greater Portland Inc. web site.
- Coordinate marketing material with Strategic Economic Development Corporation, Greater Portland Inc., Mid-Willamette Valley Council of Governments and other entities.
- 3. Promote the Business Resource Center and its resources through appropriate websites including the City and the Chamber.

Long-term (24 – 36 months)

- 1. Coordinate marketing material with Strategic Economic Development Corporation, Greater Portland Inc., Mid-Willamette Valley Council of Governments and other entities.
- 2. Disseminate Newberg specific marketing material.

#### Metrics & Reporting:

- 1. Report on competitive advantages.
- 2. Type of marketing material produced.

- 3. Number of Enterprise Zone packets distributed.
- 4. Track where marketing material is distributed.
- 5. Develop target lists and track activity by specific target.

#### Funding Sources (in-kind/cash)

City of Newberg, Business Oregon, Strategic Economic Development Corporation, Greater Portland Inc., Chehalem Valley Chamber of Commerce, Japan American Society of Oregon, Newberg Graphic, Industrial Brokers

#### **Staffing Resources**

City of Newberg Economic Development - 0.05 FTE

#### 1.6 Increase the Supply of Industrial Land

#### **Project Lead:**

City of Newberg – Community Development

#### Stakeholders & Partners:

Department of Land Conservation and Development, Business Oregon, Chehalem Valley Chamber of Commerce, Newberg Urban Management Area Commission, Newberg Community, Newberg Downtown Coalition, Oregon Department of Transportation, Regional Solutions, Yamhill County, City of Dundee, Friends of Yamhill County, 1000 Friends of Oregon, Oregon Legislature, Industrial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Apply for grant(s) to evaluate expanding the urban growth boundary.
- 2. Update Comprehensive Plan Policies.
- 3. Complete Buildable Lands Inventory.
- 4. Evaluate expansion land opportunities.
- 5. Identify the expansion properties.
- 6. Engage the owners of the targeted property in the effort.

Mid-term Implementation (12 - 24 months)

- 1. Identify needed infrastructure and financing for the infrastructure.
- 2. Expand the Urban Growth Boundary.
- 3. Identify shovel ready sites.
- 4. Tell the story of the expansion to build community support for future expansions.

Long-term (24 – 36 months)

1. Monitor land absorption to determine next horizon for urban growth boundary expansion.

#### Metrics & Reporting:

- 1. Number of grants applied for and awarded.
- 2. Completion of Comprehensive Plan Policies.
- 3. Completion of Buildable Lands Inventory.
- 4. Number of shovel ready sites.
- 5. Acres of land added to the UGB for industrial development.

#### Funding Sources (in-kind/cash)

City of Newberg, Department of Land Conservation and Development, Business Oregon, Chehalem Valley Chamber of Commerce, Newberg Urban Management Area Commission, Newberg Community, Newberg Downtown Coalition, Oregon Department of Transportation, Regional Solutions, Yamhill County, Industrial Brokers

### Staffing Resources

City of Newberg Community Development – 0.3 FTE

#### 1.7 Create a Cooperative Business Environment with Regulatory Agencies

#### **Project Lead:**

City of Newberg – Community Development

#### Stakeholders & Partners:

Regional Solutions, Mid-Willamette Valley Council of Governments, Yamhill County, State Agencies

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Build and enhance relationships with State agencies such as Oregon Department of Transportation, Oregon Department of Environmental Quality, Oregon Department of State Lands, Oregon Department of Energy, Oregon Water Resources Department, Oregon Building Codes Division and Oregon Employment Department.
- 2. Coordinate with Regional Solutions on community economic development needs.
- 3. Consider a city position that provides coordination services with outside regulatory agencies.
- 4. Follow-up interviews with expansion and new industrial developments.

Mid-term Implementation (12 - 24 months)

- 1. Enhance city permitting processes.
- 2. Follow-up interviews with expansion and new industrial developments.

Long-term (24 months – 36 months)

1. Continue enhancing city permitting process.

#### Metrics & Reporting:

- 1. Number of contacts with State Agencies.
- 2. Number of interviews with expansion and new industrial developments.
- 3. Quantify and report on the amount and quality of the assistance from targeted agencies.

#### Funding Sources (in-kind/cash)

City of Newberg, Regional Solutions, Mid-Willamette Valley Council of Governments, Yamhill County, State Agencies

#### Staffing Resources

City of Newberg Community Development - 0.05 FTE

## **1.8** Ensure Adequate Utilities (water, sewer, storm draining, electricity, natural gas and telecommunications) to Support Industrial Growth

#### **Project Lead:**

City of Newberg – Public Works

#### Stakeholders & Partners:

Portland General Electric, Northwest Natural, Frontier, Comcast, Bonneville Power Administration, Industrial Brokers

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Update master plans for transportation and water.
- 2. Coordinate with Portland General Electric, Northwest Natural, Frontier and Comcast on utility infrastructure capacities and locations. Inventory gaps or weaknesses in systems.
- 3. Evaluate cogeneration opportunities with WestRock.

Mid-term Implementation (12 - 24 months)

- 1. Update sanitary sewer master plan.
- 2. On-going coordination with utility companies.

Long-term (24 – 36 months)

- 1. Update necessary master plans every ten (10) years (transportation, water, sanitary sewer, storm drainage).
- 2. On-going coordination with utility companies. Enhance accessibility to high-speed fiber.

#### Metrics & Reporting:

- 1. Completion date of transportation and water master plans.
- 2. Completion date of sewer master plan.
- 3. Number of coordination meetings with utility companies.

#### Funding Sources (in-kind/cash)

City of Newberg, Portland General Electric, Northwest Natural, Frontier, Comcast, Bonneville Power Administration, Industrial Brokers

#### Staffing Resources

City of Newberg Public Works – 0.2 FTE City of Newberg Community Development – 0.1 FTE

#### 1.9 Improve Transportation Access for Industrial Land

#### **Project Lead:**

City of Newberg – Public Works - Engineering Services/Community Development

#### Stakeholders & Partners:

Oregon Legislature, Oregon Department of Transportation, Yamhill County, Marion County, Portland & Western Railroad, Chehalem Valley Chamber of Commerce, Yamhill County Transit Area, Yamhill County Parkway Committee, Oregon Congressional delegation, Federal Highway Administration, Industrial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Evaluate and establish a street maintenance fee program.
- 2. Update the Transportation System Plan to include focus on needed improvements to existing/future industrial area access/freight routes.
- 3. Coordinate with the Parkway Committee to lobby the Oregon Legislature for funding/construction of the East leg of the Newberg/Dundee bypass.

Mid-term Implementation (12 – 24 months):

1. Work with stakeholders to obtain funding for the east leg of the Newberg-Dundee Bypass from Oregon Highway 219 to Oregon Highway 99W.

Long-term Implementation (24 – 36 months):

- 1. Evaluate rail service capabilities (freight & commuter).
- 2. Enhance transit service for industrial businesses.
- 3. Work with stakeholders to construct the east leg of the Newberg-Dundee Bypass from Oregon Highway 219 to Oregon Highway 99W.
- 4. Work with organizations towards a funding source for the I-5/Ehlen Road interchange at Exit 278 (Donald/Aurora Exit) improvements.
- 5. Coordinate with Oregon Department of Transportation and Marion County to transfer jurisdiction of Highway 219 from the McKay Road to Woodburn to Marion County and ODOT to acquire McKay-Ehlen Road to I-5.
- 6. Coordinate with Oregon Department of Transportation and the Oregon congressional delegation on transportation funding sources.

#### Metrics & Reporting:

- 1. Type of street maintenance program and annual funding.
- 2. Annual street maintenance projects completed.
- 3. Transit route modifications to serve industrial businesses.
- 4. Actions and activities undertaken to advance east leg of Newberg-Dundee Bypass.
- Actions and activities undertaken to I-5/Ehlen Road interchange at Exit 278 (Donald/Aurora Exit) improvements.

6. Funds allocated from outside sources for transportation improvements benefiting industrial businesses.

#### Funding Sources (in-kind/cash)

City of Newberg, Oregon Legislature, Oregon Department of Transportation, Yamhill County, Marion County, Portland & Western Railroad, Chehalem Valley Chamber of Commerce, Yamhill County Transit Area, Yamhill County Parkway Committee, Oregon Congressional delegation, Federal Highway Administration, Industrial Brokers

#### **Staffing Resources**

City of Newberg Public Works – Engineering Services – 0.1 FTE City of Newberg Community Development – 0.1 FTE

### **COMMERCIAL SECTOR**

## Goal: Enhance commercial development capabilities and employment opportunities

#### Strategies:

#### 2.1 Revitalization of Downtown Newberg

#### Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, Chehalem Parks and Recreation District, Newberg Kiwanis, Newberg Rotary, Oregon Department of Land Conservation and Development, Oregon Department of Transportation, Faith Based, Commercial Brokers, Finance Community, Oregon Main Street Program

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Perform a Market Analysis on the Butler property.
- 2. Planning Commission public hearing on the draft Newberg Downtown Improvement Plan.
- 3. City Council public hearing on the draft Newberg Downtown Improvement Project and adoption process.
- 4. Complete the Newberg Downtown Improvement Plan.

Mid-term Implementation (12 – 24 months):

- 1. Secure funds for downtown improvement implementation.
- 2. Implement recommendations from the Newberg Downtown Improvement Plan.
- 3. Evaluate options for an Urban Renewal Area (URA), Business Improvement District (BID), or Economic improvement District (EID).
- 4. Research best practices from comparable sized cities on downtown development activities.

Long-term Implementation (24 – 36 months):

- 1. On-going implementation of recommendations from the Newberg Downtown Improvement Plan.
- 2. Attract a mid-level hotel to the area.
- 3. Increase downtown housing.

#### Metrics & Reporting:

- 1. Findings of the Newberg Downtown Improvement Project plan.
- 2. Findings of the Butler Property market analysis.
- 3. Increases in retail sales, pedestrian counts, transient lodging taxes, and other activity levels.
- 4. Grant(s) applied for and awarded.
- 5. Infrastructure improvements, public/private investment, or other projects implemented as a result of the process.
- 6. Projects annually implemented from Newberg Downtown Improvement Plan.

#### Funding Sources (in-kind/cash)

City of Newberg, Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, Chehalem Parks and Recreation District, Newberg Kiwanis, Newberg Rotary, Oregon Department of Land Conservation and Development, Oregon Department of Transportation, Faith Based, Commercial Brokers, Finance Community, Oregon Main Street Program, Downtown Property Owners.

#### **Staffing Resources**

City of Newberg - 0.2 FTE Newberg Downtown Coalition Chehalem Valley Chamber of Commerce

#### 2.2 Retain Existing Commercial/Retail Businesses In Newberg

#### **Project Lead:**

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

Newberg Downtown Coalition, City of Newberg, Commercial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Chehalem Valley Chamber of Commerce and Newberg Downtown Coalition survey/interview existing businesses in downtown to establish business needs and develop appropriate programs.
- 2. Enhance the quality of permitting services from the City of Newberg.
- 3. Interview businesses exiting Newberg.

Mid-term Implementation (12 – 24 months):

- 1. Enhance the quality of permitting services from the City of Newberg.
- 2. Interview businesses exiting Newberg.
- 3. Leverage the development of the Business Resource Center to provide integrated set of services from the City, Chamber and other organizations.

Long-term Implementation (24 – 26 months):

- 1. Newberg downtown Coalition survey/interview existing businesses in downtown to establish business needs and develop appropriate programs.
- 2. Chehalem Valley Chamber of Commerce and Newberg Downtown Coalition survey/interview existing businesses in downtown to establish business needs and develop appropriate programs.
- 3. Enhance the quality of permitting services from the City of Newberg.
- 4. Interview businesses exiting Newberg.

#### Metrics & Reporting:

- 1. Business needs survey.
- 2. Number of programs established.
- 3. Track timelines for processing permits and applications.
- 4. Business exit interviews.

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, Newberg Downtown Coalition, City of Newberg, Commercial Brokers

#### Staffing Resources

Chehalem Valley Chamber of Commerce – Staff, Volunteers, Interns Newberg Downtown Coalition City of Newberg Community Development – 0.02 FTE

#### 2.3. Redevelop Vacant and Underutilized Commercial/Retail Sites

#### Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Chehalem Valley Chamber of Commerce, Newberg Downtown Coalition, Commercial Brokers, Finance Community

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Inventory vacant and underutilized sites.
- 2. Work with partners to market sites.
- 3. Meet with property owners on development and redevelopment opportunities.

Mid-term Implementation (12 – 24 months):

- 1. Develop a program for possible property assemblage.
- 2. Enhance existing or create new incentive packages.
- 3. Evaluate the feasibility of an urban renewal program downtown.
- 4. Update inventory vacant and underutilized sites.
- 5. Work with partners to market sites.
- 6. Meet with property owners on development and redevelopment opportunities.

Long-term Implementation (24 – 36 months):

- 1. Update inventory vacant and underutilized sites.
- 2. Work with partners to market sites.
- 3. Meet with property owners on development and redevelopment opportunities

#### Metrics & Reporting:

- 1. Buildable Lands Inventory
- 2. Marketing material produced.
- 3. Number of meetings held annually with property owners.
- 4. Number of new or revised financial incentive programs.
- 5. Success of establishing an urban renewal district downtown.

#### Funding Sources (in-kind/cash)

City of Newberg, Valley Chamber of Commerce, Newberg Downtown Coalition, Commercial Brokers, Finance Community, Property Owners

#### **Staffing Resources**

City of Newberg Community Development - 0.1 FTE

#### 2.4 Market Vacant and/or Underutilized Commercial/Retail Sites

#### Project Lead:

**Commercial Brokers** 

#### Stakeholders & Partners:

Chehalem Valley Chamber of Commerce, City of Newberg, Newberg Downtown Coalition

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Brokerage community to develop a robust marketing program.
- 2. Establish a list of desired business types to market to.
- 3. Launch the marketing program.

Mid-term Implementation (12 – 24 months):

- 1. Establish processes and programs for connecting the brokerage community to lead sources (e.g. businesses, individuals, service organizations, etc.) using the Business Resource Center as a hub.
- 2. Continue marketing program.

Long-term Implementation (24 – 36 months):

1. Continue marketing program.

#### Metrics & Reporting:

- 1. List of desired business types to attract.
- 2. Number of marketing opportunities distributed.
- 3. Number of successful developments.

#### Funding Sources (in-kind/cash)

Commercial Brokers, Chehalem Valley Chamber of Commerce, City of Newberg, Newberg Downtown Coalition, Property Owners

#### Staffing Resources

Commercial Brokers City of Newberg Community Development – 0.02 FTE

#### 2.5 Improve Public Infrastructure in Downtown Newberg

#### Project Lead:

City of Newberg – Community Development/Public Works

#### Stakeholders & Partners:

Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, Oregon Department of Transportation, Mid-Willamette Valley Council of Governments, Business Oregon, Portland General Electric, Northwest Natural, Frontier, Commercial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

1. Complete the Newberg Downtown Improvement Plan.

Mid-term Implementation (12 – 24 months):

2. Implement infrastructure recommendations from the Newberg Downtown Improvement Plan.

Long-term Implementation (24 – 36 months):

3. Implement infrastructure recommendations from the Newberg Downtown Improvement Plan.

#### Metrics & Reporting:

- 1. Number of projects implemented annually.
- 2. Number of funding applications submitted per year.
- 3. Meetings with Infrastructure Finance Authority on funding opportunities.

#### Funding Sources (in-kind/cash)

City of Newberg, Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, Oregon Department of Transportation, Mid-Willamette Valley Council of Governments, Business Oregon, Portland General Electric, Northwest Natural, Frontier, Property Owners, Commercial Brokers

#### Staffing Resources

City of Newberg Community Development – 0.05 FTE City of Newberg Public Works – 0.05 FTE

# 2.6 Support Creation of New Retail/Commercial Businesses

#### Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

City of Newberg, Commercial Brokers, Finance Community, Property Owners, Newberg Downtown Coalition

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Business inventory identifying what we have for businesses and what is missing.
- 2. Streamlining City permitting processes.
- 3. Establish a low interest loan program.

Mid-term Implementation (12 – 24 months):

1. Establish business startup assistance program as a part of the Business Resource Center implementation.

Long-term Implementation (24 – 36 months):

- 1. Maintain and publish data on vacant office, industrial buildings and land.
- 2. Expand the Urban Growth Boundary to support additional commercial land supply.

#### Metrics & Reporting:

- 1. Number of new businesses started.
- 2. Number of new businesses assisted.

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, City of Newberg, Commercial Brokers, Finance Community, Property Owners

#### **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff and Interns City of Newberg Community Development – 0.03 FTE

# 2.7 Increase The Supply of Commercial/Retail Land

# Project Lead:

City of Newberg – Community Development

#### Stakeholders & Partners:

Department of Land Conservation and Development, Business Oregon, Chehalem Valley Chamber of Commerce, Newberg Urban Management Area Commission Newberg Community, Oregon Department of Transportation, Regional Solutions, Yamhill County, City of Dundee, Friends of Yamhill County, 1000 Friends of Oregon, Commercial Brokers

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Apply for grant(s) to evaluate expanding the urban growth boundary.
- 2. Update Comprehensive Plan Policies.
- 3. Complete Buildable Lands Inventory.
- 4. Evaluate expansion land opportunities.

Mid-term Implementation (12 - 24 months)

1. Expand the Urban Growth Boundary.

Long-term (24 – 36 months)

1. Monitor land absorption to determine next horizon for urban growth boundary expansion.

#### Metrics & Reporting:

- 1. Number of grants applied for.
- 2. Completion of Comprehensive Plan Policies
- 3. Completion of Buildable Lands Inventory

#### Funding Sources (in-kind/cash)

City of Newberg, Department of Land Conservation and Development, Business Oregon, Chehalem Valley Chamber of Commerce, Newberg Urban Management Area Commission Newberg Community, Oregon Department of Transportation, Regional Solutions, Yamhill County

#### Staffing Resources

City of Newberg Community Development – 0.2 FTE

# **BUSINESS DEVELOPMENT AND WORKFORCE**

# Goal: Create a premier business and workforce development program

# Strategies:

# 3.1 Foster Entrepreneurial Business Formation and Growth

# Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

City of Newberg, Newberg Downtown Coalition, George Fox University, Portland Community College, Chehalem Park and Recreation District, Finance Community, Portland Community College CLIMB Center, Mid-Willamette Valley Council of Governments, Small Business Administration

# Actions:

Short-term Implementation (0 - 12 months):

- 1. Foster connections between George Fox University and Portland Community College and entrepreneurs.
- 2. Develop a Business Resource Center.
- 3. Connect financing programs such as Small Business Administration and Mid-Willamette Valley Council of Governments with entrepreneurs.
- 4. Market the Newberg Economic Development Revolving Loan program.

Mid-term Implementation (12 - 24 months)

1. Establish the Chehalem Valley Entrepreneurs Network.

Long-term (24 – 36 months)

1. Establish an angel funding program.

#### Metrics & Reporting:

1. Number of new businesses started.

# Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, City of Newberg, Newberg Downtown Coalition, George Fox University, Portland Community College, Chehalem Park and Recreation District, Finance Community, Portland Community College CLIMB Center, Mid-Willamette Valley Council of Governments, Small Business Administration

# **Staffing Resources**

Chehalem Valley Chamber of Commerce - Staff City of Newberg Community Development – 0.02 FTE

# 3.2 Establish an Innovation Accelerator

#### Project Lead:

Chehalem Valley Chamber of Commerce/Accelerator Advisory Board

#### Stakeholders & Partners:

George Fox University; Portland Community College, Technology Association of Oregon; Portland Incubator Experiment; various technology-driven wineries; and other local and regional businesses, Chehalem Parks and Recreation District, City of Newberg

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Establish Board of Directors to oversee operations and organization.
- 2. Establish an accelerator facility (temporary or startup).
- 3. Create a business plan with help from experts such as PIE, TAO, etc.
- 4. Establish a Board of Advisors to review, select, coach/mentor/advise tenants.
- 5. Hold an accelerator kick-off meeting with stakeholders from key industries and funding sources such as angels and venture capitalists.
- 6. Recruit, vet and select tenants.
- 7. Achieve projects-to-products-to market successes.

Mid-term Implementation (12 – 24 months):

1. Promote and market the Accelerator through the Business Resource Center, City, Chamber, Newberg Downtown Coalition websites, and George Fox University, PIEPDX, and other channels.

Long-term Implementation (24 – 36 months):

- 1. Move the accelerator to a permanent facility.
- 2. Integrate the Accelerator with George Fox University's Collaboratium and other local makerspace(s).

#### Metrics & Reporting:

- 1. Number of stakeholders attending accelerator kick-off meeting
- 2. Findings of the feasibility study
- 3. Set up a temporary accelerator facility
- 4. Accelerator business plan
- 5. Number of businesses using the accelerator
- 6. Identified demonstration project
- 7. In-kind funds raised

# Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce/Accelerator Advisory Board, George Fox University; Portland Community College, Chehalem Parks and Recreation District, City of Newberg

# **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff and Volunteers Accelerator Advisory Board - Volunteers City of Newberg Community Development – 0.02 FTE

# 3.3 Buy Local Campaign

#### **Project Lead:**

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

Newberg Downtown Coalition, Newberg commercial businesses, and the City of Newberg

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Chehalem Valley Chamber of Commerce engages George Fox University for research for a buy local program.
- 2. Chehalem Valley Chamber of Commerce meets with the Newberg Downtown Coalition Merchants Committee and other businesses and review program.
- 3. Implement and promote the program with a focus on educating the community about benefits, use, etc.
- 4. Extend the Buy Local program to Dundee and the rest of the valley.
- 5. Monitor and improve as necessary.

Mid-term Implementation (12 months - 24 months)

- 1. Evaluate if eScripts is a viable tool and / or find equivalent tools.
- 2. Work with Rural Studies program at Oregon State University to develop reporting mechanism by business that will measure success of program over time. (i.e. zip code collection by merchants, percent sales growth of business. In addition Oregon State University could conduct trade analysis that looks at current tail pull factors and improvement over time.
- 3. Promote the program and its success to local and non-local market segments through the Business Resource Center, the City's website, etc.

Long-term (24 month – 36 months)

1. Work with City of Newberg to develop a purchasing program that provides preference to local vendors.

#### Metrics & Reporting:

1. Number of businesses participating in Buy Local program and their success ratings/feedback through annual surveys.

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, Newberg Downtown Coalition, Newberg commercial businesses

# **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff and Volunteers Newberg Downtown Coalition City of Newberg – 0.02 FTE

# 3.4 Enhance Business Mix in Downtown Newberg

## **Project Lead:**

Newberg Downtown Coalition

#### Stakeholders & Partners:

Chehalem Valley Chamber of Commerce, City of Newberg, LLP Properties, Brokerage Community, Industrial and Commercial Brokers, Financial Community, City of Newberg

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Conduct a market analysis, including an inventory of the existing business mix to determine missing retails needs.
- 2. Maintain inventory of available retail space.
- 3. Establish marketing and recruitment program.

Mid-term Implementation (12 - 24 months)

- 1. Establish a dedicated space for food carts.
- 2. Promote development of vacant parcels to expand retail and office business opportunities.
- 3. Continue marketing and recruitment program.
- 4. Establish a position in the Business Resource Center.

Long-term (24 – 36 months)

- 1. Work with City of Newberg and Chehalem Valley Chamber of Commerce to develop the Butler property.
- 2. Continue marketing and recruitment program.

#### Metrics & Reporting:

- 1. Development Code Update to allow food carts.
- 2. Number of new businesses in downtown area

#### Funding Sources (in-kind/cash)

Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, City of Newberg, Property Owners, Industrial and Commercial Brokers, Financial Community

#### Staffing Resources

Newberg Downtown Coalition City of Newberg Community Development – 0.02 FTE

# 3.5 Workforce Development

#### **Project Lead:**

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners Support:

George Fox University, Portland Community College, Newberg School District, Incite, Oregon Employment Department, Portland Community College CLIMB Center, SE Stem Center, Innovate Oregon, City of Newberg

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Evaluate current and future needs.
- 2. Conduct a survey of local businesses' workforce needs.
- 3. Conduct a gap analysis.
- 4. Scale-up the Chamber of Commerce Steps Up internship program with help from George Fox University, Newberg High School, Portland Community College and Chemeketa CTE.
- 5. Connect to regional technical programs such as Innovate Yamhill County and create new programs as needed.
- 6. Implement the SE STEM Center "Oregon Connections" database with local businesses and schools.
- 7. Expand Tasting Room Associate Course from one to three classes.

Mid-term Implementation (12 months - 24 months)

- 1. Establish mentoring programs at the high school level.
- 2. Extend the Chamber of Commerce internship to run year-round.
- 3. Facilitate region-wide collaboration between workforce development stakeholders to expand and extend services.
- 4. Extend opportunities for local students to earn technical degrees within the region.
- 5. Implement employability soft skills curriculum into Newberg School District.
- 6. Build and leverage best practices from organizations like American Association of Chamber Executives.

Long-term (24 – 36 months)

1. Promote a community-based, inclusive, world-class education system that attends to needs of all students from cradle, to career, to grave.

#### Metrics & Reporting:

- 1. Number of businesses participating in the workforce needs survey.
- 2. Findings of the workforce needs survey.
- 3. Findings of the gap analysis.
- 4. Number of students enrolled in the Chamber of Commerce internship program.

- 5. Estimated total return on investment for interns.
- 6. Number of courses (credit and non-credit) offered at the Portland Community College Newberg Center.
- 7. Number of college-credit courses offered at the high school level.
- 8. Number of students enrolled in tasting room course at the Chamber of Commerce.
- 9. Number of George Fox Students who stay in the community after graduation.
- 10. High school graduation rates.
- 11. Number of high school students that pursue post graduate education (trade school, community college, university).

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, George Fox University, Portland Community College, Newberg School District, Incite, Oregon Employment Department, Portland Community College CLIMB Center, City of Newberg

#### **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff + PT/FTE City of Newberg Community Development – 0.02 FTE

# 3.6 Establish Business Resource Center

#### Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

Portland Community College; George Fox University; City of Newberg; Newberg Downtown Coalition; Mid-Willamette Valley Council of Governments, other local businesses, Portland Community College CLIMB

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Collaborate with Portland Community College CLIMB to fund a staff person.
- 2. Conduct a gap analysis and best practices research.
- 3. Create a Business Resource Center website.
- 4. Perform a feasibility study to determine operating structure, space, staffing, focus, linkages, and revenue structure.
- 5. Provide in-person small business development services.
- 6. Connect student interns with local businesses.
- 7. Chehalem Valley Chamber of Commerce Outreach (e.g. Breakfast for Champions, Customer Service, wine industry, etc.)
- 8. Develop mentoring programs from existing business owners.
- 9. Integrate services with the City of Newberg.

Mid-term Implementation (12 - 24 months):

- 1. Facilitate region-wide collaboration between workforce development stakeholders to expand and extend services.
- 2. Apply for funding/grants to expand operations and/or hire a full-time employee.
- 3. Integrate goals and purpose with the Accelerator, GFU, PCC, Chemeketa, and regional and state organizations.

Long-term Implementation (24 – 36 months):

- 1. Move the Business Resource Center to a permanent facility.
- 2. Expand the facility, operations and services as needed.

#### Metrics & Reporting:

- 1. Findings of the gap analysis
- 2. Business Resource Center website
- 3. Number of visitors to the Business Resource Center website
- 4. Findings of the feasibility study
- 5. Hiring one or more full or part-time staff persons
- 6. Number of students connected to internships through the Resource Center
- 7. Funding applications to organizations such as Economic Development Administration or US Department of Agriculture

# Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, Portland Community College; George Fox University; City of Newberg; Newberg Downtown Coalition; Mid-Willamette Valley Council of Governments, other local businesses, PCC CLIMB

#### **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff + PT/FTE City of Newberg Community Development – 0.02 FTE

# 3.7 Market Employment Training Opportunities to Employers and Employees

## Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

George Fox University, Portland Community College, Incite, Oregon Employment Department, Chemeketa Community College, Express Professionals, McMinnville Chamber of Commerce

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Promote Chehalem Valley Chamber of Commerce programs.
- 2. Promote Portland and Chemeketa Community College programs.
- 3. Promote George Fox University programs.
- 4. Create Semi-annual job fairs co-sponsored Chehalem Valley Chamber of Commerce, McMinnville Area Chamber of Commerce and Oregon Employment Department.
- 5. Identification of training opportunities based on employer needs.
- 6. Promote Incite job training programs.

Mid-term Implementation (12 - 24 months)

- 1. Fund a FTE dedicated to expansion of workforce development programs that serve new and existing businesses.
- 2. Integrate workforce services with the Business Resource Center.

Long-term (24 – 36 months)

1. Three-year review and evaluation of programs and progress.

#### Metrics & Reporting:

- 1. Number of businesses participating in programs listed above.
- 2. Business survey results n workforce readiness (suggest every two years).

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, George Fox University, Portland Community College, Incite, Oregon Employment Department

#### Staffing Resources

Chehalem Valley Chamber of Commerce – Staff + PF/FTE

# 3.8 Business Financing Program

#### Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

City of Newberg, Newberg Downtown Coalition, Mid-Willamette Valley Council of Governments, Finance Community, Small Business Administration, Commercial and Industrial Brokers

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Connect businesses and entrepreneurs with local lending institutions.
- 2. Make the Business Resource Center a repository of business financing alternatives including regional, state, national and industry specific sources.
- 3. Promote Yamhill County small and large grant programs to local businesses.

Mid-term Implementation (12 - 24 months)

- 1. Establish a regional angel funding program to support the Accelerator as well as other business, promoted through the Business Resource Center.
- 2. Evaluate non-traditional financing programs such as Kick Starter, Crowd Supply, etc. Promote them and provide advisory services as needed through the Accelerator and Business Resource Center.

Long-term (24 – 36 moths)

- 1. Bring the Economic Development Revolving Loan Fund loan program currently managed by the Mid-Willamette Valley Council of Governments back to Newberg.
- 2. Expand Economic Development Revolving Loan Fund.
- 3. Modify requirements in the Economic Development Revolving Loan Fund program to increase accessibility to small businesses.

#### Metrics & Reporting:

- 1. Increase promotion of programs through lead and support agencies.
- 2. Number of loans issued.

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, City of Newberg, Newberg Downtown Coalition, Mid-Willamette Valley Council of Governments, Finance Community, Small Business Administration, Commercial and Industrial Brokers

# **Staffing Resources**

Chehalem Valley Chamber of Commerce – Staff + PT/FTE City of Newberg Community Development – 0.03 FTE

# TOURISM AND HOSPITALITY

# Goal: Make Newberg / Chehalem Valley a regional, national & international tourist destination

# Strategies:

# 4.1 Increase Tourist/Visitor Counts In Newberg

#### Project Lead:

Chehalem Valley Chamber of Commerce

#### Stakeholders & Partners:

City of Newberg, Oregon State Chamber, Travel Oregon, Oregon Wine Board, Willamette Valley Winery Association, Industrial and Commercial Brokers, the Newberg Downtown Coalition

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Enhance Newberg Downtown Coalition outreach program to tourists.
- 2. Enhance signage and gateway elements in the downtown area for tourists and visitors.
- 3. Increase advertising and public relations dollars.
- 4. Enhance pedestrian infrastructure downtown (e.g. lighting, trash, benches, etc.).
- 5. Promote the Buy Local program.
- 6. Evaluate alternatives for a mid-tier hotel.

Mid-term Implementation (12 - 24 months)

- 1. Recruit a mid-tier hotel to the valley.
- 2. Create a regional marketing campaign that promotes Newberg and the valley as a destination location.
- 3. Work with major businesses, George Fox University, Sportsman Airpark, the Allison Inn & Spa, local major wineries, and other national/international sources of potential visitors to increase out-of-region destination traffic.
- 4. Establish annual reporting on tourism activities.

Long-term (24 – 36 months)

- 1. Expand the regional marketing campaign that promotes Newberg and the valley as a destination visit into a national/international campaign.
- 2. Three-year review and evaluation of programs and progress.
- 3. Continue annual reporting on tourism activities.

#### Metrics & Reporting:

- 1. Transient Lodging Taxes collected.
- 2. Visitor counts in the Visitor Center.
- 3. Website metrics on the Chehalem Valley Chamber of Commerce Visitor site.
- 4. Growth in Direct to Consumer wine sales in Yamhill County.

#### Funding Sources (in-kind/cash)

Chehalem Valley Chamber of Commerce, City of Newberg, Oregon State Chamber, Travel Oregon, Oregon Wine Board, Willamette Valley Winery Association, Industrial and Commercial Brokers

#### Staffing Resources

Chehalem Valley Chamber of Commerce – Staff + PT/FTE, Volunteers, Contractor

# 4.2 Support and Expand Events That Increase Activity in Downtown Newberg Year Around

#### Project Lead:

Newberg Downtown Coalition

#### Stakeholders & Partners:

Chehalem Valley Chamber of Commerce, City of Newberg, Chehalem Parks and Recreation District, Chehalem Cultural Center, Willamette Valley Winery Association

#### Actions:

Short-term Implementation (0 - 12 months):

- 1. Evaluate the impact of existing events.
- 2. Design a coordinated event marketing program.
- 3. Coordinate events calendars.
- 4. Existing Events:
  - i. Artwalk
  - ii. Trick or Treat Street
  - iii. Holiday Market
  - iv. Retail Events
  - v. Oktoberfest
  - vi. Chehalem Cultural center events
  - vii. Tunes on Tuesday's
  - viii. Downtown Newberg First Friday's
  - ix. Farmers Market
  - x. Old Fashioned Festival
  - xi. Special Olympics
  - xii. Lavender Festival
  - xiii. Brews & BBQ
  - xiv. Truffle Festival
  - xv. Camellia Festival
- 5. Evaluate redesigning Francis Square as an event venue.
- 6. Chehalem Valley Chamber of Commerce conduct two Job Fair's annually.

Mid-term Implementation (12 – 24 months):

- 1. Evaluate expanding the number of events and activities.
- 2. Establish a Chehalem Valley wine festival.
- 3. Continue the build-out of the Newberg Cultural District as a premier event venue.
- 4. Establish a classic car/concourse de elegance.
- 5. Chehalem Valley Chamber of Commerce conduct two Job Fair's annually.

Long-term Implementation (24 – 36 months):

1. Chehalem Valley Chamber of Commerce conduct two Job Fair's annually.

#### Metrics & Reporting:

1. Track attendance at events.

# Funding Sources (in-kind/cash)

Newberg Downtown Coalition, Chehalem Valley Chamber of Commerce, City of Newberg, Chehalem Parks and Recreation District, Chehalem Cultural Center, Willamette Valley Winery Association

# **Staffing Resources**

Newberg Downtown Coalition – Staff + PT/FTE

# 4.3 Transient Lodging Tax Program

## **Project Lead:**

City of Newberg – City Manager's Office

#### Stakeholders & Partners:

Chehalem Valley Chamber of Commerce, George Fox University, Allison Inn & Spa, Providence Newberg Medical Center, Chehalem Cultural Center, Anam Cara Cellars, Premier Community Bank, Pulp & Circumstance, Newberg Ford, Austin Industries, The Painted Lady Restaurant

#### Actions:

Short-term Implementation (0 – 12 months):

- 1. Establish transient lodging tax workgroup on uses of Transient Lodging Tax.
- 2. Engage consultant to develop a comprehensive Tourism Action Plan that encompasses the existing Visitor Center as well as new marketing initiatives funded by the 2014 increases in Transient Lodging Tax.

Mid-term Implementation (12 - 24 months)

1. Establish annual reporting on tourism activities.

Long-term (24 – 36 months)

1. TBD

#### Metrics & Reporting:

- 1. Transient Lodging Taxes collected.
- 2. TBD after Action Plan is developed.

#### Funding Sources (in-kind/cash)

City of Newberg, Chehalem Valley Chamber of Commerce, George Fox University, Allison Inn & Spa, Providence Newberg Medical Center, Chehalem Cultural Center, Anam Cara Cellars, Premier Community Bank, Pulp & Circumstance, Newberg Ford, Austin Industries, The Painted Lady Restaurant

#### Staffing Resources

City of Newberg - .3 FTE

# APPENDIX A

Newberg's population has grown faster than the county, the Portland MSA, and the	AVERAGE POPULATION GROWTH PER YEAR, 1990-2013 Source: US Census 1990 SF1 Table NP1, 2000 Table DP-1, and ACS 5-year estimates 2013 Table B01003.				
state. Yamhill County's population is predicted to grow faster than the Portland 3-county area and the state over the next 40 years.	2.3%	<b>1.8%</b>	1.7%	1.3%	
	Newberg	Yamhill Co.	Portland MSA	Oregon	
Newberg has a younger population than the county or the state.	MEDIAN AGE, 2013 Source: US Census ACS 5 year estimates, 2013 Table S0101.				
	32.3	31	7.7	38.7	
	Newberg	Yaml	hill Co.	Oregon	
Newberg lags behind Oregon in higher education attainment.	HIGHER EDUCATIONAL ATTAINMENT OF THE POPULATION AGE 25 AND C Source: US Census ACS 5 year estimates, 2013 Table S2301			AGE 25 AND OLDER, 2	2013
	27%	23	3%	30%	
	Newberg	Yaml	hill Co.	Oregon	
Newberg has a relatively large Latino population.	PERCENTAGE OF THE POPULATION THAT IS HISPANIC OR LATINO, 2013 Source: US Census ACS 5-year estimates 2009-2013 Table DP05.				
71 percent of Newberg's non-white population is Hispanic or Latino.	14.4%	14	<b>.9</b> %	11.9%	
	Newberg	Yaml	hill Co.	Oregon	

# COMMUTING CHARACTERISTICS

EMPLOYMENT INFLOW AND OUTFLOW, 2012

Source: US Census OntheMap Data, 2012

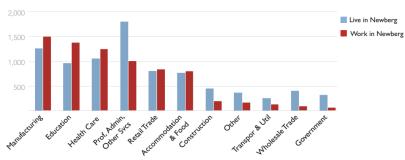


PERCENT OF NEWBERG RESIDENTS THAT WORK OUTSIDE THE CITY, 2013 Source: US Census OntheMap Data, 2012

<b>9.7</b> %	6.0%	<b>5.8</b> %
commute to	commute to	commute to
Portland	Tigard	Tualatin

JOBS BY INDUSTRY FOR WORKERS EMPLOYED IN NEWBERG AND WORKERS WHO LIVE IN NEWBERG, 2012

Source: US Census OntheMap Data, 2012



# The majority of Newberg residents work outside of the City.

Only 23 percent of Newberg's residents both live and work in the community.

The majority of Newberg's residents who work outside of Newberg commute to the Portland Metropolitan Area.

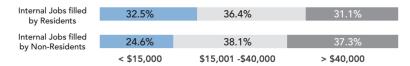
#### Disparities exist between people who live in Newberg and people who work in Newberg.

Residents who live in Newberg (blue) are more likely to work in the service sector than those who work in Newberg but are not residents (red). In addition, those who commute outside of Newberg tend to work in high paying sectors such as professional, administration, and other services.

#### WORKFORCE AND INDUSTRY CHARACTERISTICS

Disparities exist between people who live in Newberg and people who work in Newberg.

ANNUAL INCOME DISTRIUBTION FOR WORKERS EMPLOYED IN NEWBERG, 2012 Source: U.S. Census OntheMap Data, 2012



# The majority of businesses in Newberg are small.

# AVERAGE NUMBER OF WORKERS PER FIRM, 2013

97 percent of all firms in Newberg employ less than 950 people.

Source: Quarterly	Census of Emp	ployment and	Wages, 2	2013

12.3	11.3	7.3
Newberg	Yamhill Co.	Dundee

Newberg has almost twice as many			
jobs in manufacturing relative to			
the nation.			

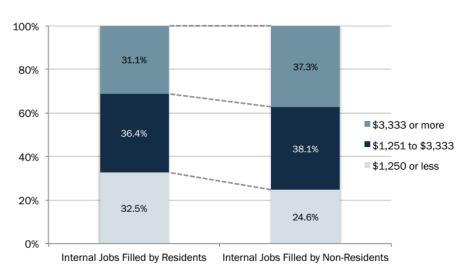
#### PERCENT OF JOBS IN MANUFACTURING, 2013 Source: Quarterly Census of Employment and Wages, 2013; US Bureau of Labor Statistics, 2013

<b>21.1%</b>	<b>23.0</b> %	<b>12.4%</b>	<b>10.6%</b>
Newberg	Yamhill Co.	Oregon	United States

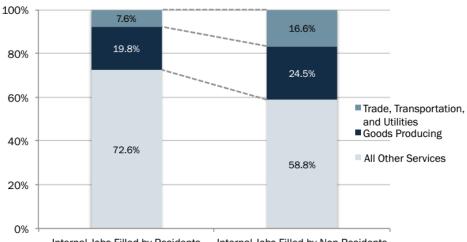
#### Disparities exist between people who live in Newberg and people who work in Newberg.

Residents who work in Newberg on average have a lower monthly salary and are more likely to work in the service sector than those who work in Newberg but are not residents.

#### Monthly Income Distribution of Workers Employed in Newberg, 2012 Source: US Census OnTheMap Data, 2012.



# Industry Sector of Workers Employed in Newberg, 2012



Source: US Census OnTheMap Data, 2012.

Internal Jobs Filled by Residents Internal Jobs Filled by Non-Residents

# APPENDIX B

# STRENGTHS/WEAKNESSES/OPPORTUNITIES/THREATS

# **STRENGTHS**

- 1. Cheaper Power
- 2. Affordable industrial land
- 3. Good K-12 schools
- 4. Surrounding wineries/vineyards
- 5. Sense of community
- 6. Supportive community
- 7. Reasonable real estate values
- 8. Accessible city services
- 9. Sense of place (identity)
- 10. Available rail service
- 11. Good housing supply
- 12. Strong agricultural base
- 13. Community events
- 14. Good work ethic
- 15. Available assisted/retirement centers
- 16. Stable healthcare services
- 17. Good park system
- 18. Highway crossroads (Hwy 99W/219/240)
- 19. Good higher education (George Fox University/Portland Community College)
- 20. Good water quality
- 21. Chehalem Cultural Center
- 22. Faith based organizations
- 23. Access to recreational opportunities
- 24. Allison Inn & Spa
- 25. Gateway to wine country
- 26. Water quantity
- 27. Sportsman Air Park
- 28. Safe community
- 29. Public safety
- 30. Temperate climate
- 31. Proximity to Portland Metro area
- 32. Water recreational resource (Willamette River)
- 33. Aquatic facility

# **WEAKNESSES**

- 1. Distance from Portland
- 2. Distance from I-5
- 3. Lack of industrial building space
- 4. Lack of shopping variety/ Lack of retail diversity
- 5. Lack of industrial land
- 6. Lack of affordable housing for lower income families
- 7. Lack of commercial land
- 8. Lack of destination conference center
- 9. Lack of multi-family housing
- 10. Traffic congestion on 99W
- 11. Public transit
- 12. Aging/undersized infrastructure
- 13. Lack of local family wage jobs
- 14. Lower educational statistics (graduation rate)
- 15. Lack of vacant rental residential housing
- 16. Lack of mid-tier lodging
- 17. Lack of tourist services/amenities

#### **OPPORTUNITIES**

- 1. Newberg as a distinctive community
- 2. Quality K-12 education
- 3. George Fox University and Portland Community College academic resources
- 4. Revitalization of downtown
- 5. Riverfront development
- 6. Expanded wine tourism
- 7. Entrepreneurial business incubator
- 8. Workforce Center of Excellence
- 9. Regional Business Resource Center
- 10. Completion of Newberg-Dundee By-pass
- 11. Expanded recreational opportunities
- 12. Wine industry tech center
- 13. Mid-level hotel development
- 14. Expanded community events
- 15. Springbrook Properties modification of master plan to respond to community needs and desires
- 16. Downtown core development and/or redevelopment
- 17. Multi-story buildings downtown
- 18. Construction of east leg of the Newberg-Dundee Bypass
- 19. Residential and commercial land held by a small group of individuals

## THREATS

- 1. Traffic congestion 99W/Springbrook Road
- 2. Relocation of industrial traded sector businesses out of the community
- 3. Proximity to Portland area amenities/business services
- 4. Become a bedroom community to Portland
- 5. Disproportionate population exodus every morning
- 6. Financial capability to install necessary public infrastructure
- 7. Financial capability to maintain public infrastructure
- 8. Community stagnation due to inadequate residential, commercial, industrial land supply
- 9. Quality of education (includes statewide)
- 10. The State's inability to resolve the land use system
- 11. Inability of Yamhill County to provide service needs (infrastructure)
- 12. Inability of Yamhill County to provide appropriate urban services
- 13. Residential and commercial land held by a small group of individuals